DCED-CLGS-30 (9-09)
Received by DCED: 03/24/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

230724 MARPLE TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

MARPLE TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	3,505,661	137,424	344,033		1,746,180		17,366,801			23,100,099
140-144	Tax Receivable	297,546									297,546
121-129, 145-149	Accounts Receivable (excluding taxes)	281,117				701,938		492,769			1,475,824
130.00	Due From Other Funds	20,849				14,423		13,036			48,308
131-139, 150-159	Other Current Assets	185,712				41,003		124,649			351,364
160-169	Fixed Assets					3,235,443			23,606,627		26,842,070
180-189	Other Debits					35,830				5,185,252	5,221,082
Total Assets and Other Debits		4,290,885	137,424	344,033		5,774,817		17,997,255	23,606,627	5,185,252	57,336,293
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	173,495				41,351					214,846
200-209, 231-239	All Other Current Liabilities	805,681		2,784		255,714		26,083			1,090,262
230.00	Due To Other Funds	11,766				34,832		1,710			48,308

MARPLE TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities	837,235				315,464				4,184,985	5,337,684
240-259	Current Portion of Long-Term Debt and Other Credits					115,622				1,000,267	1,115,889
Total Liabilities and Other Credits		1,828,177		2,784		762,983		27,793		5,185,252	7,806,989
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets								23,606,627		23,606,627
270-289	Fund Balance / Retained Earnings on 12/31	2,462,708	137,424	341,249		5,011,834					7,953,215
291-299	Other Equity							17,969,462			17,969,462
Total Fund and Account Group Equity		2,462,708	137,424	341,249		5,011,834		17,969,462	23,606,627		49,529,304

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	57,336,293

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	7,321,267							7,321,267
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	605,058							605,058
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes	1,643,826							1,643,826
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	523,433							523,433
310.60	Amusement / Admission Taxes	34,493							34,493
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		10,128,077							10,128,077
Licenses and Permits									
320-322	All Other Licenses and Permits	800,225							800,225
321.80	Cable Television Franchise Fees	516,635							516,635
Total Licenses and Permits		1,316,860							1,316,860
Fines and Forfeits									
330-332	Fines and Forfeits	78,157							78,157
Total Fines and Forfeits		78,157							78,157

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	5,351	105	23		1,797		2,511,362	2,518,638
342.00	Rents and Royalties	140,538							140,538
Total Interest, Rents and Royalties		145,889	105	23		1,797		2,511,362	2,659,176
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101	44,340							44,340
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	12,555							12,555
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		477,266						477,266
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	473,892							473,892
355.07	Foreign Fire Insurance Tax Distribution	219,651							219,651
355.08	Local Share Assessment/Gaming Proceeds								

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		750,438	477,266						1,227,704
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units									
Charges for Service									
361.00	General Government	26,025							26,025
362.00	Public Safety	250,646							250,646
363.20	Parking								
363.00	All Other Charges for Highway & Street Services	24,720		243,055					267,775
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)	49,250				3,036,711			3,085,961
364.30	Solid Waste Collection and Disposal Charge (trash)	51,122				1,651,089			1,702,211
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation					1,622,950			1,622,950

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service					18,308			18,308
Total Charges for Service		401,763		243,055		6,329,058			6,973,876
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors								
388.00	Fiduciary Fund Pension Contributions							1,399,157	1,399,157
389.00	All Other Unclassified Operating Revenues	21,455						11,281	32,736
Total Unclassified Operating Revenues		21,455						1,410,438	1,431,893
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	5,980							5,980
392.00	Interfund Operating Transfers	665,000							665,000
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	40,300							40,300
Total Other Financing Sources		711,280							711,280
TOTAL REVENUES		13,553,919	477,371	243,078		6,330,855		3,921,800	24,527,023
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	44,931							44,931
401.00	Executive (Manager or Mayor)	480,960							480,960
402.00	Auditing Services / Financial Administration	526,805							526,805
403.00	Tax Collection	39,830							39,830
404.00	Solicitor / Legal Services	81,033							81,033
405.00	Secretary / Clerk								
406.00	Other General Government Administration	615		4					619
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	83,190							83,190
409.00	General Government Buildings and Plant	144,680							144,680
Total General Government		1,402,044		4					1,402,048
Public Safety									
410.00	Police	5,069,523							5,069,523
411.00	Fire	458,736							458,736
412.00	Ambulance / Rescue	96,241							96,241
413.00	UCC and Code Enforcement	374,267							374,267
414.00	Planning and Zoning	9,616							9,616
415.00	Emergency Management and Communications	6,912							6,912

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		6,015,295							6,015,295
Health and Human Services									
420.00-425.00	Health and Human Services								
Total Health and Human Services									
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)					1,490,248			1,490,248
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					3,012,317			3,012,317
Total Public Works - Sanitation						4,502,565			4,502,565
Public Works - Highways and Streets									
430.00	General Services - Administration	1,870,948							1,870,948
431.00	Cleaning of Streets and Gutters	11,622							11,622
432.00	Winter Maintenance – Snow Removal	80,497							80,497
433.00	Traffic Control Devices	38,791							38,791
434.00	Street Lighting	283,051							283,051
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges	12,833		22,312					35,145
439.00	Highway Construction and Rebuilding Projects								
Total Public Works - Highways and Streets		2,297,742		22,312					2,320,054
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	6,309							6,309
452.00	Participant Recreation					1,327,522			1,327,522
453.00	Spectator Recreation								
454.00	Parks	634,699		85,018					719,717
455.00	Shade Trees								
456.00	Libraries	638,542							638,542

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation	74,156							74,156
Total Culture and Recreation		1,353,706		85,018		1,327,522			2,766,246
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)	1,141,970							1,141,970
472.00	Debt Interest (short-term and long-term)	174,697				8,081			182,778
475.00	Fiscal Agent Fees								
Total Debt Service		1,316,667				8,081			1,324,748
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	1,155,641							1,155,641
484.00	Worker Compensation Insurance								

MARPLE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		1,155,641							1,155,641
Insurance									
486.00	Insurance, Casualty, and Surety	207,524							207,524
Total Insurance		207,524							207,524
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							1,593,366	1,593,366
489.00	All Other Unclassified Expenditures							171,143	171,143
Total Unclassified Operating Expenditures								1,764,509	1,764,509
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers		340,000			325,000			665,000
493.00	All Other Financing Uses								
Total Other Financing Uses			340,000			325,000			665,000
TOTAL EXPENDITURES		13,748,619	340,000	107,334		6,163,168		1,764,509	22,123,630
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		-194,700	137,371	135,744		167,687		2,157,291	2,403,393

MARPLE TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Note	Note	2003	2009	1,196,000	116,000		116,000		0		0
Bond Series 2010A	Bond	2010	2019	2,955,000	1,390,000		575,000		815,000		815,000
Bond Series 2010B	Bond	2010	2019	2,630,000	2,265,000		150,000		2,115,000		2,115,000
DCED Note	Note	2010	2019	365,000	182,499		60,833		121,666		121,666
Bond Series 2011	Bond	2011	2015	2,725,000	2,330,000		400,000		1,930,000		1,930,000
Revenue Bonds and Notes											
Lease Rental Debt											
Capital Lease	Captial Leases	2011	2013	146,003	48,645		48,645		0		0
Packer Truck	Captial Leases	2013	2015	157,278	0	157,278	53,809		103,469		103,469
Roll Off Truck	Captial Leases	2013	2015	152,137	0	152,137	52,020		100,117		100,117
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	5,185,252
Capitalized lease obligations	
Net debt	5,185,252

MARPLE TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	2,000		2,000
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	96,674		96,674
Recreation	13,141	137,001	150,142
Sewer	25,568		25,568
Solid Waste	163,780		163,780
Streets / Highways	88,080	12,833	100,913
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	389,243	149,834	539,077

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 6,380,243

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Leitzell & Economidis, PC Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

MARPLE TWP, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 04/01/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

230785 MIDDLETOWN TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

MIDDLETOWN TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	924,413	136,314	3,296,293		294,976		3,828,959			8,480,955
140-144	Tax Receivable	107,925									107,925
121-129, 145-149	Accounts Receivable (excluding taxes)	28,645		15,684		293					44,622
130.00	Due From Other Funds		112,987			5,251					118,238
131-139, 150-159	Other Current Assets					7,003					7,003
160-169	Fixed Assets								20,776,363		20,776,363
180-189	Other Debits									10,650,000	10,650,000
Total Assets and Other Debits		1,060,983	249,301	3,311,977		307,523		3,828,959	20,776,363	10,650,000	40,185,106
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities	64,875	112,987	10,000		8,317		424,527			620,706
230.00	Due To Other Funds	118,238									118,238

MIDDLETOWN TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities									9,990,000	9,990,000
240-259	Current Portion of Long-Term Debt and Other Credits									660,000	660,000
Total Liabilities and Other Credits		183,113	112,987	10,000		8,317		424,527		10,650,000	11,388,944
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets								20,776,363		20,776,363
270-289	Fund Balance / Retained Earnings on 12/31	877,870	136,314	3,301,977		299,206		3,404,432			8,019,799
291-299	Other Equity										
Total Fund and Account Group Equity		877,870	136,314	3,301,977		299,206		3,404,432	20,776,363		28,796,162

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	40,185,106

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	494,647	326,027		978,116				1,798,790
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	617,518							617,518
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes	1,209,782							1,209,782
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **								
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		2,321,947	326,027		978,116				3,626,090
Licenses and Permits									
320-322	All Other Licenses and Permits	273,868							273,868
321.80	Cable Television Franchise Fees	187,970							187,970
Total Licenses and Permits		461,838							461,838
Fines and Forfeits									
330-332	Fines and Forfeits	20,721							20,721
Total Fines and Forfeits		20,721							20,721

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	4,248	1,533	23,085		369		214,283	243,518
342.00	Rents and Royalties	88,636							88,636
Total Interest, Rents and Royalties		92,884	1,533	23,085		369		214,283	332,154
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101	33,796							33,796
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	4,275							4,275
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		326,507						326,507
355.04	Alcoholic Beverage Licenses	1,550							1,550
355.05	General Municipal Pension System State Aid	69,918							69,918
355.07	Foreign Fire Insurance Tax Distribution	144,680							144,680
355.08	Local Share Assessment/Gaming Proceeds								

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		254,219	326,507						580,726
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units									
Charges for Service									
361.00	General Government	65,475							65,475
362.00	Public Safety								
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)								
364.30	Solid Waste Collection and Disposal Charge (trash)	220,131							220,131
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation					646,035			646,035

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		285,606				646,035			931,641
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors			2,600		209,647			212,247
388.00	Fiduciary Fund Pension Contributions							111,976	111,976
389.00	All Other Unclassified Operating Revenues	5,546	1,115	890					7,551
Total Unclassified Operating Revenues		5,546	1,115	3,490		209,647		111,976	331,774
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	6,775		37,500					44,275
392.00	Interfund Operating Transfers			1,218,230					1,218,230
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	14,105						241,378	255,483
Total Other Financing Sources		20,880		1,255,730				241,378	1,517,988
TOTAL REVENUES		3,463,641	655,182	1,282,305	978,116	856,051		567,637	7,802,932
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	112,004							112,004
401.00	Executive (Manager or Mayor)	442,211							442,211
402.00	Auditing Services / Financial Administration	299,327						23,234	322,561
403.00	Tax Collection	27,697							27,697
404.00	Solicitor / Legal Services	54,652							54,652
405.00	Secretary / Clerk								
406.00	Other General Government Administration								
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	114,518							114,518
409.00	General Government Buildings and Plant	70,823		35,309					106,132
Total General Government		1,121,232		35,309				23,234	1,179,775
Public Safety									
410.00	Police								
411.00	Fire	308,371	88,805						397,176
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	155,602							155,602
414.00	Planning and Zoning	13,493							13,493
415.00	Emergency Management and Communications								

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories	880							880
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)	5,600							5,600
419.00	Other Public Safety								
Total Public Safety		483,946	88,805						572,751
Health and Human Services									
420.00-425.00	Health and Human Services	36,000							36,000
Total Health and Human Services		36,000							36,000
Public Works - Sanitation									
426.00	Recycling Collection and Disposal	218,128							218,128
427.00	Solid Waste Collection and Disposal (garbage)								
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection								
Total Public Works - Sanitation		218,128							218,128
Public Works - Highways and Streets									
430.00	General Services - Administration	659,535							659,535
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal		43,287						43,287
433.00	Traffic Control Devices	4,624	16,574						21,198
434.00	Street Lighting		7,576						7,576
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery	39,245							39,245
438.00	Maintenance and Repairs of Roads and Bridges	14,331							14,331
439.00	Highway Construction and Rebuilding Projects	89,108	339,230	153,057					581,395
Total Public Works - Highways and Streets		806,843	406,667	153,057					1,366,567
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	96,413				733,537			829,950
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	7,521		54,791					62,312
455.00	Shade Trees								
456.00	Libraries	143,595	118,058						261,653

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		247,529	118,058	54,791		733,537			1,153,915
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)			645,000					645,000
472.00	Debt Interest (short-term and long-term)			374,228					374,228
475.00	Fiscal Agent Fees	1,365		3,029					4,394
Total Debt Service		1,365		1,022,257					1,023,622
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses	8,428							8,428
483.00	Pension / Retirement Fund Contributions	131,973							131,973
484.00	Worker Compensation Insurance	15,966							15,966

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		156,367							156,367
Insurance									
486.00	Insurance, Casualty, and Surety	99,939							99,939
Total Insurance		99,939							99,939
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							100,203	100,203
489.00	All Other Unclassified Expenditures								
Total Unclassified Operating Expenditures								100,203	100,203
Other Financing Uses									
491.00	Refund of Prior Year Revenues	1,002							1,002
492.00	Interfund Operating Transfers	120,950	119,164		978,116				1,218,230
493.00	All Other Financing Uses								
Total Other Financing Uses		121,952	119,164		978,116				1,219,232
TOTAL EXPENDITURES		3,293,301	732,694	1,265,414	978,116	733,537		123,437	7,126,499
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		170,340	-77,512	16,891		122,514		444,200	676,433

MIDDLETOWN TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
GOB 2011	Bond	2011	2020	3,885,000	3,675,000		415,000		3,260,000		3,260,000
GOB 2010	Bond	2010	2035	0	7,620,000		230,000		7,390,000		7,390,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	10,650,000
Capitalized lease obligations	
Net debt	10,650,000

MIDDLETOWN TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	16,393	16,094	32,487
Health			
Housing			
Libraries			
Mass Transit			
Parks		9,500	9,500
Police			
Recreation			
Sewer			
Solid Waste			
Streets / Highways	6,962	575,057	582,019
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	23,355	600,651	624,006

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 1,282,888

Independent Public Accountant/Certified Public Accountant Submission Page
Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Barbacane Thornton Co Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

MIDDLETOWN TWP, DELAWARE County
December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 03/28/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

230843 MORTON BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

MORTON BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	385,522	55,978			192,654		1,784,290			2,418,444
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds					219,712					219,712
131-139, 150-159	Other Current Assets							6,083			6,083
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		385,522	55,978			412,366		1,790,373			2,644,239
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	3,617									3,617
200-209, 231-239	All Other Current Liabilities	2,410									2,410
230.00	Due To Other Funds	219,712									219,712

MORTON BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		225,739									225,739
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31										
291-299	Other Equity	159,783	55,978			412,366		1,790,373			2,418,500
Total Fund and Account Group Equity		159,783	55,978			412,366		1,790,373			2,418,500

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	2,644,239

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	939,219							939,219
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	40,446							40,446
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes	173,577							173,577
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	48,913							48,913
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes	1,640							1,640
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		1,203,795							1,203,795
Licenses and Permits									
320-322	All Other Licenses and Permits	75,129							75,129
321.80	Cable Television Franchise Fees	61,648							61,648
Total Licenses and Permits		136,777							136,777
Fines and Forfeits									
330-332	Fines and Forfeits	52,419							52,419
Total Fines and Forfeits		52,419							52,419

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	774	76			171		202,989	204,010
342.00	Rents and Royalties	55,600							55,600
Total Interest, Rents and Royalties		56,374	76			171		202,989	259,610
Federal									
351.03	Highways and Streets	572							572
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants	3,080							3,080
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal		3,652							3,652
State									
354.03	Highways and Streets								
354.09	Community Development	225							225
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	1,108							1,108
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		49,085						49,085
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	42,728							42,728
355.07	Foreign Fire Insurance Tax Distribution	18,238							18,238
355.08	Local Share Assessment/Gaming Proceeds								

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements	214							214
356.00	State Payments in Lieu of Taxes								
Total State		62,513	49,085						111,598
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	10,598							10,598
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		10,598							10,598
Charges for Service									
361.00	General Government	3,555							3,555
362.00	Public Safety	13,476							13,476
363.20	Parking	14,512							14,512
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					504,215			504,215
364.30	Solid Waste Collection and Disposal Charge (trash)	147,650							147,650
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services					1,300			1,300
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation								

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		179,193				505,515			684,708
Unclassified Operating Revenues									
383.00	Special Assessments					6,205			6,205
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	3,485							3,485
388.00	Fiduciary Fund Pension Contributions							136,564	136,564
389.00	All Other Unclassified Operating Revenues	5,187							5,187
Total Unclassified Operating Revenues		8,672				6,205		136,564	151,441
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers		14,147						14,147
393.00	Proceeds of General Long-Term Debt	478,250							478,250
394.00	Proceeds of Short Term-Debt	250,000							250,000

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	1,389							1,389
Total Other Financing Sources		729,639	14,147						743,786
TOTAL REVENUES		2,443,632	63,308			511,891		339,553	3,358,384
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	14,869	1		1				14,871
401.00	Executive (Manager or Mayor)	1,875							1,875
402.00	Auditing Services / Financial Administration	16,544				7,308			23,852
403.00	Tax Collection	7,244							7,244
404.00	Solicitor / Legal Services	22,894				11,089			33,983
405.00	Secretary / Clerk	40,140							40,140
406.00	Other General Government Administration	169,393				5,193		15,303	189,889
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	41,430				8,179			49,609
409.00	General Government Buildings and Plant	82,259							82,259
Total General Government		396,648	1		1	31,769		15,303	443,722
Public Safety									
410.00	Police	825,406							825,406
411.00	Fire	81,511							81,511
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	66,182							66,182
414.00	Planning and Zoning	1,740							1,740
415.00	Emergency Management and Communications								

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		974,839							974,839
Health and Human Services									
420.00-425.00	Health and Human Services	1,899							1,899
Total Health and Human Services		1,899							1,899
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	120,930							120,930
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					483,567			483,567
Total Public Works - Sanitation		120,930				483,567			604,497
Public Works - Highways and Streets									
430.00	General Services - Administration	2,237	15,949						18,186
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal		943						943
433.00	Traffic Control Devices		2,338						2,338
434.00	Street Lighting		25,846						25,846
435.00	Sidewalks and Crosswalks		578						578
436.00	Storm Sewers and Drains								

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges	1,800							1,800
439.00	Highway Construction and Rebuilding Projects	308,481							308,481
Total Public Works - Highways and Streets		312,518	45,654						358,172
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	6,625							6,625
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	6,585							6,585
455.00	Shade Trees								
456.00	Libraries								

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations	1,500							1,500
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		14,710							14,710
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)	280,723				24,788			305,511
472.00	Debt Interest (short-term and long-term)	2,516				15,430			17,946
475.00	Fiscal Agent Fees								
Total Debt Service		283,239				40,218			323,457
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	112,124							112,124
484.00	Worker Compensation Insurance								

MORTON BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		112,124							112,124
Insurance									
486.00	Insurance, Casualty, and Surety	62,614							62,614
Total Insurance		62,614							62,614
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							64,167	64,167
489.00	All Other Unclassified Expenditures	162							162
Total Unclassified Operating Expenditures		162						64,167	64,329
Other Financing Uses									
491.00	Refund of Prior Year Revenues	7,039							7,039
492.00	Interfund Operating Transfers	14,147							14,147
493.00	All Other Financing Uses								
Total Other Financing Uses		21,186							21,186
TOTAL EXPENDITURES		2,300,869	45,655		1	555,554		79,470	2,981,549
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		142,763	17,653		-1	-43,663		260,083	376,835

MORTON BORO

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
DVRFA	Note	2007	2010	250,000	205,000		10,000		195,000		195,000
Sharon Bank	Note	2013	2013	250,000	0	250,000	250,000		0		0
PA Dept of Transportation	Note	2013	2023	478,250	0	478,250			478,250		478,250
Revenue Bonds and Notes											
Lease Rental Debt											
Copier	Note	2010	2015	10,800	7,200		2,160		5,040		5,040
Other											
Pennvest Authority	Note	2003	2023	313,182	183,933		14,788		169,145		169,145
Ford Credit - Police Car	Note	2011	2013	22,954	7,641		7,641		0		0
Ford Credit - Hwy Truck	Note	2011	2013	35,915	11,555		11,555		0		0
Ford Credit - Police Car	Note	2013	2015	23,838	0	23,838	8,451		15,387		15,387
John Deere Financial	Note	2013	2018	10,018	0	10,018	916		9,102		9,102

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	871,924
Capitalized lease obligations	
Net debt	871,924

MORTON BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	2,160		2,160
Health			
Housing			
Libraries			
Mass Transit			
Parks	916		916
Police	23,344		23,344
Recreation	710		710
Sewer			
Solid Waste			
Streets / Highways	12,946	340,742	353,688
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	40,076	340,742	380,818

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 691,225

ELECTED CONTROLLER'S/AUDITOR'S CERTIFIED OPINION

To the: Governing Body of the Municipality

President Judge of the Court of Common Pleas

Secretary of the Department of Community & Economic Development

I/We, the undersigned, the duly elected (or appointed replacement), qualified, and Acting Controller/Auditors of the MORTON BORO have audited, adjusted and settled the various funds and account groups of the MORTON BORO for the year ended December 31, 2013. My/Our audit, adjustment and settlement was made in accordance with law rather than with generally accepted auditing standards

(PLEASE CROSS OUT ONLY IF ON MODIFIED ACCRUAL/ACCRUAL BASIS)
This municipality's policy is to prepare its financial statements on the basis of cash receipts and disbursements; consequently, certain revenues and the related assets are recognized when received rather than when earned, and certain expenditures or expenses are recognized when paid rather than when a liability is incurred. Accordingly, the accompanying financial statements are not intended to present the financial position and results of operations of this municipality in conformity with generally accepted accounting principles.

These financial statements do not include all of the disclosures required by generally accepted accounting principles.

In my/our opinion, the aforementioned financial statements present the financial position of the various funds and account groups of the municipality of MORTON BORO for the year ended December 31, 2013, and the results of operations of such funds in accordance with the law.

SIGNATURE AND VERIFICATION

Signed: Ronald R Woodworth CPA Appointed Auditor/CPA

Subscribed and sworn to before me this 10 day of September, 2014.

SEAL

Signed: _____

Witness (Controller)/Auditor (Auditors)

MORTON BORO, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 05/20/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

230874 NETHER PROVIDENCE TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

NETHER PROVIDENCE TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	665,371	1,082,921	806,208		1,077,404		6,405,824			10,037,728
140-144	Tax Receivable	201,986									201,986
121-129, 145-149	Accounts Receivable (excluding taxes)	14,106		9,053		61,258					84,417
130.00	Due From Other Funds	562,122	19,093	293,262		23,932		8,716			907,125
131-139, 150-159	Other Current Assets	30,633									30,633
160-169	Fixed Assets										
180-189	Other Debits									4,770,181	4,770,181
Total Assets and Other Debits		1,474,218	1,102,014	1,108,523		1,162,594		6,414,540		4,770,181	16,032,070
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	104,276									104,276
200-209, 231-239	All Other Current Liabilities	267,792	11,559	15,889		703,586		59,614			1,058,440
230.00	Due To Other Funds	321,070	325,504	144,706		115,845					907,125

NETHER PROVIDENCE TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities									4,408,618	4,408,618
240-259	Current Portion of Long-Term Debt and Other Credits									361,563	361,563
Total Liabilities and Other Credits		693,138	337,063	160,595		819,431		59,614		4,770,181	6,840,022
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	781,080	764,951	947,928		343,163		6,354,926			9,192,048
291-299	Other Equity										
Total Fund and Account Group Equity		781,080	764,951	947,928		343,163		6,354,926			9,192,048

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	16,032,070

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	4,072,907							4,072,907
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	37,291							37,291
310.10	Real Estate Transfer Taxes	350,849							350,849
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	107,967							107,967
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		4,569,014							4,569,014
Licenses and Permits									
320-322	All Other Licenses and Permits	7,600							7,600
321.80	Cable Television Franchise Fees	300,162							300,162
Total Licenses and Permits		307,762							307,762
Fines and Forfeits									
330-332	Fines and Forfeits	37,111	3,037						40,148
Total Fines and Forfeits		37,111	3,037						40,148

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	925	79	864		213		724,721	726,802
342.00	Rents and Royalties	13,800							13,800
Total Interest, Rents and Royalties		14,725	79	864		213		724,721	740,602
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101	48,352							48,352
354.00	All Other State Capital and Operating Grants	51,256		364,633					415,889
355.01	Public Utility Realty Tax (PURTA)	5,242							5,242
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		274,016						274,016
355.04	Alcoholic Beverage Licenses	300							300
355.05	General Municipal Pension System State Aid	163,143							163,143
355.07	Foreign Fire Insurance Tax Distribution	119,241							119,241
355.08	Local Share Assessment/Gaming Proceeds								

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		387,534	274,016	364,633					1,026,183
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants	18,968							18,968
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		18,968							18,968
Charges for Service									
361.00	General Government	18,580		9,053					27,633
362.00	Public Safety	333,732							333,732
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					2,019,070			2,019,070
364.30	Solid Waste Collection and Disposal Charge (trash)	280,901							280,901
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	39,930							39,930

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		673,143		9,053		2,019,070			2,701,266
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	34,451	703,008	32,787					770,246
388.00	Fiduciary Fund Pension Contributions							776,468	776,468
389.00	All Other Unclassified Operating Revenues	46,366		1,690					48,056
Total Unclassified Operating Revenues		80,817	703,008	34,477				776,468	1,594,770
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition			8,459					8,459
392.00	Interfund Operating Transfers	185,426	1,000	216,776					403,202
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	138,143	647						138,790
Total Other Financing Sources		323,569	1,647	225,235					550,451
TOTAL REVENUES		6,412,643	981,787	634,262		2,019,283		1,501,189	11,549,164
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	17,444	604						18,048
401.00	Executive (Manager or Mayor)	551,796							551,796
402.00	Auditing Services / Financial Administration	9,700							9,700
403.00	Tax Collection	52,143							52,143
404.00	Solicitor / Legal Services	12,588							12,588
405.00	Secretary / Clerk								
406.00	Other General Government Administration	30,394							30,394
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	9,405		1,995					11,400
409.00	General Government Buildings and Plant	37,723		550,464					588,187
Total General Government		721,193	604	552,459					1,274,256
Public Safety									
410.00	Police	1,996,326	28,135	11,228					2,035,689
411.00	Fire	325,943		3,146					329,089
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	219,966							219,966
414.00	Planning and Zoning	22,702							22,702
415.00	Emergency Management and Communications								

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		2,564,937	28,135	14,374					2,607,446
Health and Human Services									
420.00-425.00	Health and Human Services	1,227							1,227
Total Health and Human Services		1,227							1,227
Public Works - Sanitation									
426.00	Recycling Collection and Disposal	232,819							232,819
427.00	Solid Waste Collection and Disposal (garbage)	5,415							5,415
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection			369,542		1,819,207			2,188,749
Total Public Works - Sanitation		238,234		369,542		1,819,207			2,426,983
Public Works - Highways and Streets									
430.00	General Services - Administration	763,010	5,485						768,495
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal	22,713							22,713
433.00	Traffic Control Devices	31,743							31,743
434.00	Street Lighting	62,726							62,726
435.00	Sidewalks and Crosswalks		42,911						42,911
436.00	Storm Sewers and Drains	1,510		57					1,567

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery	4,336							4,336
438.00	Maintenance and Repairs of Roads and Bridges								
439.00	Highway Construction and Rebuilding Projects	121,355		57					121,412
Total Public Works - Highways and Streets		1,007,393	48,396	114					1,055,903
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	68,739							68,739
452.00	Participant Recreation		6,319						6,319
453.00	Spectator Recreation								
454.00	Parks	7,238							7,238
455.00	Shade Trees								
456.00	Libraries	80,840							80,840

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		156,817	6,319						163,136
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing	11,247							11,247
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development		11,247							11,247
Debt Service									
471.00	Debt Principal (short-term and long-term)	489,982				18,192			508,174
472.00	Debt Interest (short-term and long-term)	152,949				6,896			159,845
475.00	Fiscal Agent Fees	605							605
Total Debt Service		643,536				25,088			668,624
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	688,644							688,644
484.00	Worker Compensation Insurance	130,178							130,178

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		818,822							818,822
Insurance									
486.00	Insurance, Casualty, and Surety	145,875							145,875
Total Insurance		145,875							145,875
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							487,055	487,055
489.00	All Other Unclassified Expenditures	1,799		1,906				24,579	28,284
Total Unclassified Operating Expenditures		1,799		1,906				511,634	515,339
Other Financing Uses									
491.00	Refund of Prior Year Revenues	746							746
492.00	Interfund Operating Transfers	147,776		5,426		250,000			403,202
493.00	All Other Financing Uses								
Total Other Financing Uses		148,522		5,426		250,000			403,948
TOTAL EXPENDITURES		6,459,602	83,454	943,821		2,094,295		511,634	10,092,806
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		-46,959	898,333	-309,559		-75,012		989,555	1,456,358

NETHER PROVIDENCE TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
2011 General Onligation	Note	2011	2026	655,000	621,000		175,000		446,000		446,000
2004 General Obligation	Note	2004	2019	1,030,000	553,000		70,000		483,000		483,000
1999 Volunteer Loan Assistance	Bond	1999	2014	100,000	10,152		10,152		0		0
2000 Volunteer Loan Assistance	Bond	2000	2015	100,000	18,203		9,022		9,181		9,181
2006 General Obligation	Note	2006	2026	3,772,000	2,958,000		157,000		2,801,000		2,801,000
General Obligation	Note	2009	2023	1,310,000	1,118,000		87,000		1,031,000		1,031,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	4,770,181
Capitalized lease obligations	
Net debt	4,770,181

NETHER PROVIDENCE TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government			
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	45,278		45,278
Recreation			
Sewer		217,354	217,354
Solid Waste			
Streets / Highways			
Water			
Other: _____			
Community Development		630,547	630,547
TOTAL CAPITAL EXPENDITURES	45,278	847,901	893,179

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 2,214,869

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Barbacane,Thornton & Company LLP Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

NETHER PROVIDENCE TWP, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 11/03/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

230905 NEWTOWN TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

NEWTOWN TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	1,507,711	123,651	1,284,415		623,987		11,200,940			14,740,704
140-144	Tax Receivable	83,460									83,460
121-129, 145-149	Accounts Receivable (excluding taxes)	366,129				246,148					612,277
130.00	Due From Other Funds	299,019	1,000			819,073		18,692			1,137,784
131-139, 150-159	Other Current Assets	349,856						41,991			391,847
160-169	Fixed Assets								12,238,640		12,238,640
180-189	Other Debits									3,012,447	3,012,447
Total Assets and Other Debits		2,606,175	124,651	1,284,415		1,689,208		11,261,623	12,238,640	3,012,447	32,217,159

Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities	725,577		3,652		39,482		21,937			790,648
230.00	Due To Other Funds	46,974	39,124	9,028		1,042,658					1,137,784

NEWTOWN TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities									2,847,447	2,847,447
240-259	Current Portion of Long-Term Debt and Other Credits					44,000				165,000	209,000
Total Liabilities and Other Credits		772,551	39,124	12,680		1,126,140		21,937		3,012,447	4,984,879
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets								12,238,640		12,238,640
270-289	Fund Balance / Retained Earnings on 12/31	1,833,624	85,527	1,271,735		563,068		11,239,686			14,993,640
291-299	Other Equity										
Total Fund and Account Group Equity		1,833,624	85,527	1,271,735		563,068		11,239,686	12,238,640		27,232,280

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	32,217,159

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	4,277,085							4,277,085
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	721,174							721,174
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	481,904							481,904
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		5,480,163							5,480,163
Licenses and Permits									
320-322	All Other Licenses and Permits	29,571							29,571
321.80	Cable Television Franchise Fees	281,978							281,978
Total Licenses and Permits		311,549							311,549
Fines and Forfeits									
330-332	Fines and Forfeits	51,957							51,957
Total Fines and Forfeits		51,957							51,957

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	2,252	164	392		14,060		1,572,390	1,589,258
342.00	Rents and Royalties	3,164							3,164
Total Interest, Rents and Royalties		5,416	164	392		14,060		1,572,390	1,592,422
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes	10,000							10,000
Total Federal		10,000							10,000
State									
354.03	Highways and Streets	19,654							19,654
354.09	Community Development								
354.15	Recycling / Act 101	21,491							21,491
354.00	All Other State Capital and Operating Grants	1,398							1,398
355.01	Public Utility Realty Tax (PURTA)	6,362							6,362
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		293,120						293,120
355.04	Alcoholic Beverage Licenses	300							300
355.05	General Municipal Pension System State Aid	178,680							178,680
355.07	Foreign Fire Insurance Tax Distribution	162,079							162,079
355.08	Local Share Assessment/Gaming Proceeds								

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		389,964	293,120						683,084
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units									
Charges for Service									
361.00	General Government	75,980							75,980
362.00	Public Safety	1,256,256							1,256,256
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					1,483,114			1,483,114
364.30	Solid Waste Collection and Disposal Charge (trash)								
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services					18,216			18,216
365.00	Health	392,889							392,889
366.00	Human Services								
367.00	Culture and Recreation								

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		1,725,125				1,501,330			3,226,455
Unclassified Operating Revenues									
383.00	Special Assessments	27,940							27,940
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	145,848	35,565	578,720					760,133
388.00	Fiduciary Fund Pension Contributions							393,182	393,182
389.00	All Other Unclassified Operating Revenues	4,983				6,003			10,986
Total Unclassified Operating Revenues		178,771	35,565	578,720		6,003		393,182	1,192,241
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	13,686		11,751					25,437
392.00	Interfund Operating Transfers		5,001						5,001
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	30,948							30,948
Total Other Financing Sources		44,634	5,001	11,751					61,386
TOTAL REVENUES		8,197,579	333,850	590,863		1,521,393		1,965,572	12,609,257
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	117,349							117,349
401.00	Executive (Manager or Mayor)	502,946							502,946
402.00	Auditing Services / Financial Administration	3,202							3,202
403.00	Tax Collection	22,177							22,177
404.00	Solicitor / Legal Services	162,648							162,648
405.00	Secretary / Clerk								
406.00	Other General Government Administration								
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services								
409.00	General Government Buildings and Plant	109,896							109,896
Total General Government		918,218							918,218
Public Safety									
410.00	Police	2,602,929	16,460	29,448					2,648,837
411.00	Fire	412,229							412,229
412.00	Ambulance / Rescue	798,349	1,546						799,895
413.00	UCC and Code Enforcement	411,505							411,505
414.00	Planning and Zoning	226,451							226,451
415.00	Emergency Management and Communications								

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		4,451,463	18,006	29,448					4,498,917
Health and Human Services									
420.00-425.00	Health and Human Services								
Total Health and Human Services									
Public Works - Sanitation									
426.00	Recycling Collection and Disposal	148,248							148,248
427.00	Solid Waste Collection and Disposal (garbage)								
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection	270,897				1,493,751			1,764,648
Total Public Works - Sanitation		419,145				1,493,751			1,912,896
Public Works - Highways and Streets									
430.00	General Services - Administration	486,342		5,900					492,242
431.00	Cleaning of Streets and Gutters	13,410							13,410
432.00	Winter Maintenance – Snow Removal	80,256							80,256
433.00	Traffic Control Devices	34,222		14,548					48,770
434.00	Street Lighting	35,037							35,037
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains	2,378							2,378

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery	84,219							84,219
438.00	Maintenance and Repairs of Roads and Bridges	57,101	514,338						571,439
439.00	Highway Construction and Rebuilding Projects								
Total Public Works - Highways and Streets		792,965	514,338	20,448					1,327,751
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	55,849							55,849
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	145,981							145,981
455.00	Shade Trees								
456.00	Libraries	195,078							195,078

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		396,908							396,908
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)	170,000							170,000
472.00	Debt Interest (short-term and long-term)	78,430							78,430
475.00	Fiscal Agent Fees	1,500							1,500
Total Debt Service		249,930							249,930
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	315,565							315,565
484.00	Worker Compensation Insurance								

NEWTOWN TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		315,565							315,565
Insurance									
486.00	Insurance, Casualty, and Surety	65,066							65,066
Total Insurance		65,066							65,066
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							491,081	491,081
489.00	All Other Unclassified Expenditures							91,535	91,535
Total Unclassified Operating Expenditures								582,616	582,616
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers	5,001							5,001
493.00	All Other Financing Uses								
Total Other Financing Uses		5,001							5,001
TOTAL EXPENDITURES		7,614,261	532,344	49,896		1,493,751		582,616	10,272,868
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		583,318	-198,494	540,967		27,642		1,382,956	2,336,389

NEWTOWN TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
2010A GOB	Bond	2010	2026	2,615,000	2,400,000		150,000		2,250,000		2,250,000
2010B GOB	Bond	2010	2030	500,000	460,000		20,000		440,000		440,000
NTMA Florida Park	Note	1990	2015	115,000	36,916		0		36,916		36,916
Revenue Bonds and Notes											
Lease Rental Debt											
Ford Motor Lease	Captial Leases	2012	2015	56,854	27,406		27,406		0		0
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	2,726,916
Capitalized lease obligations	
Net debt	2,726,916

NEWTOWN TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	15,986		15,986
Health			
Housing			
Libraries			
Mass Transit			
Parks	50,148		50,148
Police			
Recreation			
Sewer			
Solid Waste			
Streets / Highways	5,900		5,900
Water			
Other: Traffic Signals & Signs	15,679		15,679
Community Development			
TOTAL CAPITAL EXPENDITURES	87,713		87,713

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 2,322,317

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Rainer & Company Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

NEWTOWN TWP, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 12/05/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2012 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

230963 PARKSIDE BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

PARKSIDE BORO, DELAWARE County

BALANCE SHEET

December 31, 2012

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	38,046	84,869					35,868			158,783
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds		35,500					1,818			37,318
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		38,046	120,369					37,686			196,101
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities										
230.00	Due To Other Funds	37,318									37,318

PARKSIDE BORO, DELAWARE County

BALANCE SHEET

December 31, 2012

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities							37,686			37,686
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		37,318						37,686			75,004
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	728	120,369								121,097
291-299	Other Equity										
Total Fund and Account Group Equity		728	120,369								121,097

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	196,101

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	641,259							641,259
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	17,644							17,644
310.20	Earned Income Taxes / Wage Taxes	183,162							183,162
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	2,792							2,792
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		844,857							844,857
Licenses and Permits									
320-322	All Other Licenses and Permits	41,288							41,288
321.80	Cable Television Franchise Fees	39,831							39,831
Total Licenses and Permits		81,119							81,119
Fines and Forfeits									
330-332	Fines and Forfeits	11,570							11,570
Total Fines and Forfeits		11,570							11,570

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	523	122						645
342.00	Rents and Royalties								
Total Interest, Rents and Royalties		523	122						645
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants	62,052							62,052
355.01	Public Utility Realty Tax (PURTA)	1,032							1,032
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		39,009						39,009
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	21,457							21,457
355.07	Foreign Fire Insurance Tax Distribution	11,768							11,768
355.08	Local Share Assessment/Gaming Proceeds								

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		96,309	39,009						135,318
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units									
Charges for Service									
361.00	General Government	370							370
362.00	Public Safety	5,322							5,322
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)								
364.30	Solid Waste Collection and Disposal Charge (trash)	137,948							137,948
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation								

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		143,640							143,640
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors								
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	9,156							9,156
Total Unclassified Operating Revenues		9,156							9,156
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers								
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt	100,000							100,000

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	35,568							35,568
Total Other Financing Sources		135,568							135,568
TOTAL REVENUES		1,322,742	39,131						1,361,873
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	14,063							14,063
401.00	Executive (Manager or Mayor)	2,500							2,500
402.00	Auditing Services / Financial Administration	20,004							20,004
403.00	Tax Collection	10,310							10,310
404.00	Solicitor / Legal Services	22,991							22,991
405.00	Secretary / Clerk	29,740							29,740
406.00	Other General Government Administration	27,401							27,401
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	17,261							17,261
409.00	General Government Buildings and Plant	28,781							28,781
Total General Government		173,051							173,051
Public Safety									
410.00	Police	643,781							643,781
411.00	Fire	23,653							23,653
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	23,867							23,867
414.00	Planning and Zoning								
415.00	Emergency Management and Communications								

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety	3,234							3,234
Total Public Safety		694,535							694,535
Health and Human Services									
420.00-425.00	Health and Human Services	1,667							1,667
Total Health and Human Services		1,667							1,667
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	132,302							132,302
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection								
Total Public Works - Sanitation		132,302							132,302
Public Works - Highways and Streets									
430.00	General Services - Administration	26,565							26,565
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal								
433.00	Traffic Control Devices		1,460						1,460
434.00	Street Lighting		16,142						16,142
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges	2,664							2,664
439.00	Highway Construction and Rebuilding Projects		43,454						43,454
Total Public Works - Highways and Streets		29,229	61,056						90,285
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks								
455.00	Shade Trees								
456.00	Libraries								

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation	3,786							3,786
Total Culture and Recreation		3,786							3,786
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)	145,850							145,850
472.00	Debt Interest (short-term and long-term)	25,682							25,682
475.00	Fiscal Agent Fees								
Total Debt Service		171,532							171,532
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	48,691							48,691
484.00	Worker Compensation Insurance								

PARKSIDE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2012

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		48,691							48,691
Insurance									
486.00	Insurance, Casualty, and Surety								
Total Insurance									
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures								
Total Unclassified Operating Expenditures									
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers								
493.00	All Other Financing Uses								
Total Other Financing Uses									
TOTAL EXPENDITURES		1,254,793	61,056						1,315,849
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		67,949	-21,925						46,024

PARKSIDE BORO

December 31, 2012

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
GON	Note	2005	2006	675,000	527,761		28,785		498,976		498,976
Revenue Bonds and Notes											
Lease Rental Debt											
Ford Motor Credit	Bond	2010	2013	28,586	17,319		8,798		8,521		8,521
Ford Motor Credit	Bond	2010	2012	25,650	10,627		8,267		2,360		2,360
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	509,857
Capitalized lease obligations	
Net debt	509,857

PARKSIDE BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2012

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government		3,957	3,957
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	26,540		26,540
Recreation			
Sewer			
Solid Waste			
Streets / Highways	43,454		43,454
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	69,994	3,957	73,951

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 422,729

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Leitzell & Economidis, PC Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

PARKSIDE BORO, DELAWARE County

December 31, 2012

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 03/18/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

230993 PROSPECT PARK BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

PROSPECT PARK BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	1,472,779	107,565			838,364		3,112,821			5,531,529
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds	6,511				5,052					11,563
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		1,479,290	107,565			843,416		3,112,821			5,543,092
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	859									859
200-209, 231-239	All Other Current Liabilities	30,030						72,804			102,834
230.00	Due To Other Funds	5,052	5,000					1,511			11,563

PROSPECT PARK BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		35,941	5,000					74,315			115,256
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	1,443,349	102,565			843,416					2,389,330
291-299	Other Equity							3,038,506			3,038,506
Total Fund and Account Group Equity		1,443,349	102,565			843,416		3,038,506			5,427,836

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	5,543,092

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	1,840,540							1,840,540
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	30,576							30,576
310.10	Real Estate Transfer Taxes	86,998							86,998
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	71,978							71,978
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		2,030,092							2,030,092
Licenses and Permits									
320-322	All Other Licenses and Permits	185,084							185,084
321.80	Cable Television Franchise Fees	125,029							125,029
Total Licenses and Permits		310,113							310,113
Fines and Forfeits									
330-332	Fines and Forfeits	42,421							42,421
Total Fines and Forfeits		42,421							42,421

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	4,191				1,900		427,557	433,648
342.00	Rents and Royalties								
Total Interest, Rents and Royalties		4,191				1,900		427,557	433,648
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development	2,996							2,996
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants	3,192							3,192
355.01	Public Utility Realty Tax (PURTA)	2,435							2,435
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		109,098						109,098
355.04	Alcoholic Beverage Licenses	800							800
355.05	General Municipal Pension System State Aid	89,340							89,340
355.07	Foreign Fire Insurance Tax Distribution	39,392							39,392
355.08	Local Share Assessment/Gaming Proceeds								

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		138,155	109,098						247,253
Local Government Units									
357.03	Highways and Streets	15,120							15,120
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	27,866							27,866
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		42,986							42,986
Charges for Service									
361.00	General Government	456							456
362.00	Public Safety	20,662							20,662
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)	130,433				889,449			1,019,882
364.30	Solid Waste Collection and Disposal Charge (trash)	378,671							378,671
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services		7,151						7,151
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation								

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		530,222	7,151			889,449			1,426,822
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors								
388.00	Fiduciary Fund Pension Contributions							219,999	219,999
389.00	All Other Unclassified Operating Revenues	1,013	46			189			1,248
Total Unclassified Operating Revenues		1,013	46			189		219,999	221,247
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers	17,956	28,511						46,467
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt	600,000							600,000

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	79,929	5,531						85,460
Total Other Financing Sources		697,885	34,042						731,927
TOTAL REVENUES		3,797,078	150,337			891,538		647,556	5,486,509
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	65,863							65,863
401.00	Executive (Manager or Mayor)	1,800							1,800
402.00	Auditing Services / Financial Administration	10,000							10,000
403.00	Tax Collection	8,814							8,814
404.00	Solicitor / Legal Services	21,724							21,724
405.00	Secretary / Clerk	83,693							83,693
406.00	Other General Government Administration	8,772							8,772
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	117,327							117,327
409.00	General Government Buildings and Plant	514,209							514,209
Total General Government		832,202							832,202
Public Safety									
410.00	Police	1,461,308							1,461,308
411.00	Fire	136,613							136,613
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement								
414.00	Planning and Zoning	83,526							83,526
415.00	Emergency Management and Communications								

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety	4,405							4,405
Total Public Safety		1,685,852							1,685,852
Health and Human Services									
420.00-425.00	Health and Human Services	5,866							5,866
Total Health and Human Services		5,866							5,866
Public Works - Sanitation									
426.00	Recycling Collection and Disposal		1,000						1,000
427.00	Solid Waste Collection and Disposal (garbage)	228,088							228,088
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection	1,610				999,994			1,001,604
Total Public Works - Sanitation		229,698	1,000			999,994			1,230,692
Public Works - Highways and Streets									
430.00	General Services - Administration	164,766	4,548						169,314
431.00	Cleaning of Streets and Gutters		11,063						11,063
432.00	Winter Maintenance – Snow Removal	1,663	9,990						11,653
433.00	Traffic Control Devices		10,312						10,312
434.00	Street Lighting	54,166							54,166
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains		1,918						1,918

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges								
439.00	Highway Construction and Rebuilding Projects	295,900	73,109						369,009
Total Public Works - Highways and Streets		516,495	110,940						627,435
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	33,237							33,237
455.00	Shade Trees								
456.00	Libraries	36,116							36,116

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation	15,021							15,021
Total Culture and Recreation		84,374							84,374
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)	11,700							11,700
472.00	Debt Interest (short-term and long-term)	976							976
475.00	Fiscal Agent Fees								
Total Debt Service		12,676							12,676
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	37,192							37,192
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	183,076							183,076
484.00	Worker Compensation Insurance	17,280							17,280

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits	111,456							111,456
Total Employer Paid Benefits and Withholding Items		349,004							349,004
Insurance									
486.00	Insurance, Casualty, and Surety	64,245							64,245
Total Insurance		64,245							64,245
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							278,621	278,621
489.00	All Other Unclassified Expenditures							12,632	12,632
Total Unclassified Operating Expenditures								291,253	291,253
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers	28,511	17,956						46,467
493.00	All Other Financing Uses								
Total Other Financing Uses		28,511	17,956						46,467
TOTAL EXPENDITURES		3,808,923	129,896			999,994		291,253	5,230,066
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		-11,845	20,441			-108,456		356,303	256,443

PROSPECT PARK BORO

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Fire Truck	Note	2004	2020	100,000	50,962		6,779		44,183		44,183
Fire Truck	Note	1998	2009	110,000	4,921		4,921		0		0
Revenue Bonds and Notes											
Lease Rental Debt											
Other											
Short term note for property purchase	Note	2013	2014	600,000	0	600,000			600,000		600,000

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	644,183
Capitalized lease obligations	
Net debt	644,183

PROSPECT PARK BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	480,620		480,620
Health			
Housing			
Libraries			
Mass Transit			
Parks	9,580		9,580
Police	24,642		24,642
Recreation			
Sewer			
Solid Waste			
Streets / Highways			
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	514,842		514,842

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 1,285,722

Independent Public Accountant/Certified Public Accountant Submission Page
Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Leitzell & Economidis, PC Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

PROSPECT PARK BORO, DELAWARE County
December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 04/01/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231053 RIDLEY PARK BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

RIDLEY PARK BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	154,149	88,774	444,577							687,500
140-144	Tax Receivable	12,704	16,783		2,685	7,612					39,784
121-129, 145-149	Accounts Receivable (excluding taxes)	26,779									26,779
130.00	Due From Other Funds	1,747,094	1,507,733		62,319	767,703					4,084,849
131-139, 150-159	Other Current Assets	19,971	38,405			3,185					61,561
160-169	Fixed Assets										
180-189	Other Debits									1,547,422	1,547,422
Total Assets and Other Debits		1,960,697	1,651,695	444,577	65,004	778,500				1,547,422	6,447,895

Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities	148,858	46,052			22,409					217,319
230.00	Due To Other Funds	2,325,442	1,685,814	37,418	11,630	24,545					4,084,849

RIDLEY PARK BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities									1,317,886	1,317,886
240-259	Current Portion of Long-Term Debt and Other Credits									229,536	229,536
Total Liabilities and Other Credits		2,474,300	1,731,866	37,418	11,630	46,954				1,547,422	5,849,590
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	-513,603	-80,171	407,159	53,374	731,546					598,305
291-299	Other Equity										
Total Fund and Account Group Equity		-513,603	-80,171	407,159	53,374	731,546					598,305

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	6,447,895

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	174,415	1,842,217		294,683				2,311,315
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	44,395							44,395
310.10	Real Estate Transfer Taxes	72,749							72,749
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	120,408							120,408
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes	1,500							1,500
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		413,467	1,842,217		294,683				2,550,367
Licenses and Permits									
320-322	All Other Licenses and Permits	46,564							46,564
321.80	Cable Television Franchise Fees	149,422							149,422
Total Licenses and Permits		195,986							195,986
Fines and Forfeits									
330-332	Fines and Forfeits	48,034	13,283						61,317
Total Fines and Forfeits		48,034	13,283						61,317

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	1,552	283	616					2,451
342.00	Rents and Royalties								
Total Interest, Rents and Royalties		1,552	283	616					2,451
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants		30,241						30,241
355.01	Public Utility Realty Tax (PURTA)	3,282							3,282
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		124,826						124,826
355.04	Alcoholic Beverage Licenses	1,000							1,000
355.05	General Municipal Pension System State Aid	93,980							93,980
355.07	Foreign Fire Insurance Tax Distribution	47,747							47,747
355.08	Local Share Assessment/Gaming Proceeds								

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements	6,151							6,151
356.00	State Payments in Lieu of Taxes								
Total State		152,160	155,067						307,227
Local Government Units									
357.03	Highways and Streets	9,518							9,518
357.00	All Other Local Governmental Units Capital and Operating Grants	2,500	27,382						29,882
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		12,018	27,382						39,400
Charges for Service									
361.00	General Government	985							985
362.00	Public Safety	41,744	44,210						85,954
363.20	Parking	89,356							89,356
363.00	All Other Charges for Highway & Street Services	5,751							5,751
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					1,151,818			1,151,818
364.30	Solid Waste Collection and Disposal Charge (trash)	511,034							511,034
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	1,021							1,021

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		649,891	44,210			1,151,818			1,845,919
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	164,320	1,490						165,810
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	7,216	10						7,226
Total Unclassified Operating Revenues		171,536	1,500						173,036
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	5,301	4,950						10,251
392.00	Interfund Operating Transfers								
393.00	Proceeds of General Long-Term Debt		78,678						78,678
394.00	Proceeds of Short Term-Debt								

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	4,094							4,094
Total Other Financing Sources		9,395	83,628						93,023
TOTAL REVENUES		1,654,039	2,167,570	616	294,683	1,151,818			5,268,726
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	10,178							10,178
401.00	Executive (Manager or Mayor)	95,911							95,911
402.00	Auditing Services / Financial Administration	27,980							27,980
403.00	Tax Collection	14,703							14,703
404.00	Solicitor / Legal Services	38,358							38,358
405.00	Secretary / Clerk	109,785							109,785
406.00	Other General Government Administration								
407.00	IT-Networking Services-Data Processing	4,025							4,025
408.00	Engineering Services	38,224							38,224
409.00	General Government Buildings and Plant	50,701							50,701
Total General Government		389,865							389,865
Public Safety									
410.00	Police		1,814,616						1,814,616
411.00	Fire	47,746	83,012						130,758
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement								
414.00	Planning and Zoning	116,524							116,524
415.00	Emergency Management and Communications	1,200							1,200

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		165,470	1,897,628						2,063,098
Health and Human Services									
420.00-425.00	Health and Human Services	7,812							7,812
Total Health and Human Services		7,812							7,812
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	461,898							461,898
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					1,047,550			1,047,550
Total Public Works - Sanitation		461,898				1,047,550			1,509,448
Public Works - Highways and Streets									
430.00	General Services - Administration	206,202	131,452						337,654
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal		16,230						16,230
433.00	Traffic Control Devices		21,983						21,983
434.00	Street Lighting		66,772						66,772
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges		120,361						120,361
439.00	Highway Construction and Rebuilding Projects	9,518	20,918						30,436
Total Public Works - Highways and Streets		215,720	377,716						593,436
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation		112,186						112,186
453.00	Spectator Recreation								
454.00	Parks								
455.00	Shade Trees								
456.00	Libraries		128,031						128,031

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation	23,405							23,405
Total Culture and Recreation		23,405	240,217						263,622
Community Development									
461.00	Conservation of Natural Resources	1,251							1,251
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development			45,126					45,126
Total Community Development		1,251		45,126					46,377
Debt Service									
471.00	Debt Principal (short-term and long-term)		44,844		204,533				249,377
472.00	Debt Interest (short-term and long-term)		3,778		67,154				70,932
475.00	Fiscal Agent Fees								
Total Debt Service			48,622		271,687				320,309
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions								
484.00	Worker Compensation Insurance	11,482							11,482

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits	266,110							266,110
Total Employer Paid Benefits and Withholding Items		277,592							277,592
Insurance									
486.00	Insurance, Casualty, and Surety	71,870							71,870
Total Insurance		71,870							71,870
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures								
Total Unclassified Operating Expenditures									
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers								
493.00	All Other Financing Uses								
Total Other Financing Uses									
TOTAL EXPENDITURES		1,614,883	2,564,183	45,126	271,687	1,047,550			5,543,429
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		39,156	-396,613	-44,510	22,996	104,268			-274,703

RIDLEY PARK BORO

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Ridley Ave Sanitary Sewer	Note	1995	2015	577,722	189,316		60,472		128,844		128,844
Storm Sewer	Note	1995	2013	348,000	20,298		20,298		0		0
Police Building	Note	2007	2017	1,400,000	1,146,314		78,352		1,067,962		1,067,962
Revenue Bonds and Notes											
Lease Rental Debt											
2010 Crown Victoria - Police	Note	2010	2013	30,871	5,516		5,516		0		0
2011 Crown Victoria - Police	Note	2011	2014	29,184	15,031		9,866		5,165		5,165
2012 Dodge Charger	Note	2012	2015	31,180	28,356		9,761		18,595		18,595
John Deere Backhoe Loader	Note	2013	2016	78,678	0	78,678	19,701		58,977		58,977
Other											
LaFrance Ladder	Note	2003	2018	500,000	254,739		34,903		219,836		219,836
PEMA - LaFrance Loader	Note	2003	2018	150,000	58,551		10,508		48,043		48,043

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	1,547,422
Capitalized lease obligations	
Net debt	1,547,422

RIDLEY PARK BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	12,653	14,452	27,105
Health			
Housing			
Libraries	7,295		7,295
Mass Transit			
Parks		27,172	27,172
Police	64,779		64,779
Recreation			
Sewer			
Solid Waste			
Streets / Highways	78,678	129,879	208,557
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	163,405	171,503	334,908

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 1,603,631

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Barbacane, Thornton & Company LLP Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

RIDLEY PARK BORO, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 03/24/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231084 RIDLEY TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

RIDLEY TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	5,036,474	3,232,871	15,716,289	2,702,804			19,837,866			46,526,304
140-144	Tax Receivable	522,401	52,082		76,865						651,348
121-129, 145-149	Accounts Receivable (excluding taxes)	599,638	500,910								1,100,548
130.00	Due From Other Funds	221,741	84,692	400,000	73,964			818			781,215
131-139, 150-159	Other Current Assets	23,865									23,865
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		6,404,119	3,870,555	16,116,289	2,853,633			19,838,684			49,083,280
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	290,518									290,518
200-209, 231-239	All Other Current Liabilities	159,377	24,926	28,298				2,381			214,982
230.00	Due To Other Funds	76,415	4,486	400,000				300,314			781,215

RIDLEY TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities	714,890	494,578	102,550	62,605			835,140			2,209,763
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		1,241,200	523,990	530,848	62,605			1,137,835			3,496,478
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	5,162,919	3,346,565	15,585,441	2,791,028						26,885,953
291-299	Other Equity							18,700,849			18,700,849
Total Fund and Account Group Equity		5,162,919	3,346,565	15,585,441	2,791,028			18,700,849			45,586,802

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	49,083,280

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	8,389,273	834,249		1,231,203				10,454,725
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	287,985							287,985
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes	558,101							558,101
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	716,134							716,134
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		9,951,493	834,249		1,231,203				12,016,945
Licenses and Permits									
320-322	All Other Licenses and Permits	1,290,575							1,290,575
321.80	Cable Television Franchise Fees	655,299							655,299
Total Licenses and Permits		1,945,874							1,945,874
Fines and Forfeits									
330-332	Fines and Forfeits	144,813							144,813
Total Fines and Forfeits		144,813							144,813

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	15,801	6,675	23,252	3,323			2,736,515	2,785,566
342.00	Rents and Royalties	450,224							450,224
Total Interest, Rents and Royalties		466,025	6,675	23,252	3,323			2,736,515	3,235,790
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101	114,134							114,134
354.00	All Other State Capital and Operating Grants	1,000							1,000
355.01	Public Utility Realty Tax (PURTA)	13,979							13,979
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		551,701						551,701
355.04	Alcoholic Beverage Licenses	8,950							8,950
355.05	General Municipal Pension System State Aid	473,891							473,891
355.07	Foreign Fire Insurance Tax Distribution	207,187							207,187
355.08	Local Share Assessment/Gaming Proceeds								

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements	900							900
356.00	State Payments in Lieu of Taxes								
Total State		820,041	551,701						1,371,742
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants	41,243							41,243
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	131,316							131,316
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		172,559							172,559
Charges for Service									
361.00	General Government	39,397							39,397
362.00	Public Safety	99,374							99,374
363.20	Parking								
363.00	All Other Charges for Highway & Street Services			661,610					661,610
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)		3,032,515						3,032,515
364.30	Solid Waste Collection and Disposal Charge (trash)	1,763,749							1,763,749
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	477,833							477,833

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		2,380,353	3,032,515	661,610					6,074,478
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors							985	985
388.00	Fiduciary Fund Pension Contributions							840,940	840,940
389.00	All Other Unclassified Operating Revenues	200	14,273					970	15,443
Total Unclassified Operating Revenues		200	14,273					842,895	857,368
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers	70,000		800,000					870,000
393.00	Proceeds of General Long-Term Debt			10,000,000					10,000,000
394.00	Proceeds of Short Term-Debt								

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	246,984							246,984
Total Other Financing Sources		316,984		10,800,000					11,116,984
TOTAL REVENUES		16,198,342	4,439,413	11,484,862	1,234,526			3,579,410	36,936,553
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	39,375							39,375
401.00	Executive (Manager or Mayor)	107,628							107,628
402.00	Auditing Services / Financial Administration	34,250							34,250
403.00	Tax Collection	96,228							96,228
404.00	Solicitor / Legal Services	48,275							48,275
405.00	Secretary / Clerk								
406.00	Other General Government Administration	778,734		244,348	392				1,023,474
407.00	IT-Networking Services-Data Processing	2,707							2,707
408.00	Engineering Services								
409.00	General Government Buildings and Plant	244,399		13,900					258,299
Total General Government		1,351,596		258,248	392				1,610,236
Public Safety									
410.00	Police	3,941,998							3,941,998
411.00	Fire	214,613	216,529						431,142
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	428,860							428,860
414.00	Planning and Zoning	45,252							45,252
415.00	Emergency Management and Communications								

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety	6,060							6,060
Total Public Safety		4,636,783	216,529						4,853,312
Health and Human Services									
420.00-425.00	Health and Human Services	10,850							10,850
Total Health and Human Services		10,850							10,850
Public Works - Sanitation									
426.00	Recycling Collection and Disposal	528,227							528,227
427.00	Solid Waste Collection and Disposal (garbage)	1,376,958							1,376,958
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection		2,934,506						2,934,506
Total Public Works - Sanitation		1,905,185	2,934,506						4,839,691
Public Works - Highways and Streets									
430.00	General Services - Administration	866,773	4,862						871,635
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal	66,057							66,057
433.00	Traffic Control Devices	387,852							387,852
434.00	Street Lighting		255,906						255,906
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains	485							485

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges			328,093					328,093
439.00	Highway Construction and Rebuilding Projects	50,669	195,489	150,517					396,675
Total Public Works - Highways and Streets		1,371,836	456,257	478,610					2,306,703
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	635,583							635,583
452.00	Participant Recreation	249,323							249,323
453.00	Spectator Recreation								
454.00	Parks								
455.00	Shade Trees								
456.00	Libraries		460,000						460,000

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers	15,000							15,000
459.00	All Other Culture and Recreation	30,721							30,721
Total Culture and Recreation		930,627	460,000						1,390,627
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development							1,000	1,000
Total Community Development								1,000	1,000
Debt Service									
471.00	Debt Principal (short-term and long-term)				265,000				265,000
472.00	Debt Interest (short-term and long-term)				319,441				319,441
475.00	Fiscal Agent Fees								
Total Debt Service					584,441				584,441
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	444,690							444,690
482.00	Judgments and Losses	58,573							58,573
483.00	Pension / Retirement Fund Contributions	964,688							964,688
484.00	Worker Compensation Insurance	490,336							490,336

RIDLEY TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits	2,483,593							2,483,593
Total Employer Paid Benefits and Withholding Items		4,441,880							4,441,880
Insurance									
486.00	Insurance, Casualty, and Surety	497,730							497,730
Total Insurance		497,730							497,730
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							912,641	912,641
489.00	All Other Unclassified Expenditures							36,863	36,863
Total Unclassified Operating Expenditures								949,504	949,504
Other Financing Uses									
491.00	Refund of Prior Year Revenues	125,266							125,266
492.00	Interfund Operating Transfers	800,000	70,000						870,000
493.00	All Other Financing Uses								
Total Other Financing Uses		925,266	70,000						995,266
TOTAL EXPENDITURES		16,071,753	4,137,292	736,858	584,833			950,504	22,481,240
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		126,589	302,121	10,748,004	649,693			2,628,906	14,455,313

RIDLEY TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
GOB	Bond	2009	2022	3,065,000	2,400,000		205,000		2,195,000		2,195,000
GON	Note	2006	2009	1,500,000	1,233,000		60,000		1,173,000		1,173,000
GON	Note	2013	2028	10,000,000	0	10,000,000	0		10,000,000		10,000,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	13,368,000
Capitalized lease obligations	
Net debt	13,368,000

RIDLEY TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	52,351		52,351
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	57,429		57,429
Recreation	23,432		23,432
Sewer			
Solid Waste			
Streets / Highways	326,216		326,216
Water			
Other: _____			
Community Development	10,700		10,700
TOTAL CAPITAL EXPENDITURES	470,128		470,128

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 7,031,198

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Leitzell & Economidis, PC Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

RIDLEY TWP, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 07/17/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231143 RUTLEDGE BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

RUTLEDGE BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	74,673	15,716			51,704					142,093
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds										
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		74,673	15,716			51,704					142,093

Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	781	88								869
200-209, 231-239	All Other Current Liabilities	943									943
230.00	Due To Other Funds										

RUTLEDGE BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities	107,515									107,515
240-259	Current Portion of Long-Term Debt and Other Credits	11,704									11,704
Total Liabilities and Other Credits		120,943	88								121,031
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	-46,270	15,628			51,704					21,062
291-299	Other Equity										
Total Fund and Account Group Equity		-46,270	15,628			51,704					21,062

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	142,093

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	169,482							169,482
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	2,428							2,428
310.10	Real Estate Transfer Taxes	3,503							3,503
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **								
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		175,413							175,413
Licenses and Permits									
320-322	All Other Licenses and Permits	3,350							3,350
321.80	Cable Television Franchise Fees	15,070							15,070
Total Licenses and Permits		18,420							18,420
Fines and Forfeits									
330-332	Fines and Forfeits	4,167							4,167
Total Fines and Forfeits		4,167							4,167

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	136	5			12			153
342.00	Rents and Royalties	35,486							35,486
Total Interest, Rents and Royalties		35,622	5			12			35,639
Federal									
351.03	Highways and Streets		61,880						61,880
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal			61,880						61,880
State									
354.03	Highways and Streets		59						59
354.09	Community Development								
354.15	Recycling / Act 101	757							757
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	208							208
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		16,318						16,318
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid								
355.07	Foreign Fire Insurance Tax Distribution	5,719							5,719
355.08	Local Share Assessment/Gaming Proceeds								

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		6,684	16,377						23,061
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units									
Charges for Service									
361.00	General Government								
362.00	Public Safety	16,562							16,562
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					173,523			173,523
364.30	Solid Waste Collection and Disposal Charge (trash)	59,287							59,287
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation								

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		75,849				173,523			249,372
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors								
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	454							454
Total Unclassified Operating Revenues		454							454
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers								
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures								
Total Other Financing Sources									
TOTAL REVENUES		316,609	78,262			173,535			568,406
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	10,538							10,538
401.00	Executive (Manager or Mayor)								
402.00	Auditing Services / Financial Administration	420							420
403.00	Tax Collection	2,407							2,407
404.00	Solicitor / Legal Services	2,400							2,400
405.00	Secretary / Clerk	25,292							25,292
406.00	Other General Government Administration								
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	4,954	2,718						7,672
409.00	General Government Buildings and Plant	17,568							17,568
Total General Government		63,579	2,718						66,297
Public Safety									
410.00	Police	80,932							80,932
411.00	Fire	27,869							27,869
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	11,612							11,612
414.00	Planning and Zoning								
415.00	Emergency Management and Communications								

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		120,413							120,413
Health and Human Services									
420.00-425.00	Health and Human Services	200							200
Total Health and Human Services		200							200
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	58,322							58,322
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					181,105			181,105
Total Public Works - Sanitation		58,322				181,105			239,427
Public Works - Highways and Streets									
430.00	General Services - Administration								
431.00	Cleaning of Streets and Gutters		499						499
432.00	Winter Maintenance – Snow Removal								
433.00	Traffic Control Devices		74						74
434.00	Street Lighting	681	7,354						8,035
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery		1,050						1,050
438.00	Maintenance and Repairs of Roads and Bridges	209,741	6,293						216,034
439.00	Highway Construction and Rebuilding Projects								
Total Public Works - Highways and Streets		210,422	15,270						225,692
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation	500							500
453.00	Spectator Recreation								
454.00	Parks	2,352							2,352
455.00	Shade Trees	500							500
456.00	Libraries								

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations	500							500
458.00	Senior Citizens' Centers	300							300
459.00	All Other Culture and Recreation	29							29
Total Culture and Recreation		4,181							4,181
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)	5,034							5,034
472.00	Debt Interest (short-term and long-term)	3,829							3,829
475.00	Fiscal Agent Fees								
Total Debt Service		8,863							8,863
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions								
484.00	Worker Compensation Insurance	2,386							2,386

RUTLEDGE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		2,386							2,386
Insurance									
486.00	Insurance, Casualty, and Surety	17,582							17,582
Total Insurance		17,582							17,582
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures								
Total Unclassified Operating Expenditures									
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers								
493.00	All Other Financing Uses								
Total Other Financing Uses									
TOTAL EXPENDITURES		485,948	17,988			181,105			685,041
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		-169,339	60,274			-7,570			-116,635

RUTLEDGE BORO

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Loan	Note	1994	2024	80,000	47,297		5,034		42,263		42,263
General Obligation Note	Note	2013	2023	125,000	0	125,000	5,781		119,219		119,219
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	161,482
Capitalized lease obligations	
Net debt	161,482

RUTLEDGE BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government			
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police			
Recreation			
Sewer			
Solid Waste			
Streets / Highways			
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES			

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 47,257

ELECTED CONTROLLER'S/AUDITOR'S CERTIFIED OPINION

To the: Governing Body of the Municipality

President Judge of the Court of Common Pleas

Secretary of the Department of Community & Economic Development

I/We, the undersigned, the duly elected (or appointed replacement), qualified, and Acting Controller/Auditors of the RUTLEDGE BORO have audited, adjusted and settled the various funds and account groups of the RUTLEDGE BORO for the year ended December 31, 2013. My/Our audit, adjustment and settlement was made in accordance with law rather than with generally accepted auditing standards

(PLEASE CROSS OUT ONLY IF ON MODIFIED ACCRUAL/ACCRUAL BASIS)
This municipality's policy is to prepare its financial statements on the basis of cash receipts and disbursements; consequently, certain revenues and the related assets are recognized when received rather than when earned, and certain expenditures or expenses are recognized when paid rather than when a liability is incurred. Accordingly, the accompanying financial statements are not intended to present the financial position and results of operations of this municipality in conformity with generally accepted accounting principles.

These financial statements do not include all of the disclosures required by generally accepted accounting principles.

In my/our opinion, the aforementioned financial statements present the financial position of the various funds and account groups of the municipality of RUTLEDGE BORO for the year ended December 31, 2013, and the results of operations of such funds in accordance with the law.

SIGNATURE AND VERIFICATION

Signed: Paul S. Garrity Elected Auditor

Catherine A. Myers Elected Auditor

Henry J. Borsch, III Elected Auditor

Subscribed and sworn to before me this 12 day of August, 2014.

SEAL

Signed: _____

Witness (Controller)/Auditor (Auditors)

RUTLEDGE BORO, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 03/29/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231204 SPRINGFIELD TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

SPRINGFIELD TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	2,452,511	149,131	1,434,662		631,312	3,951,390	2,407,567			11,026,573
140-144	Tax Receivable	170,506									170,506
121-129, 145-149	Accounts Receivable (excluding taxes)	38,095					64,688				102,783
130.00	Due From Other Funds	3,823,258					842,300				4,665,558
131-139, 150-159	Other Current Assets					43,539					43,539
160-169	Fixed Assets					3,350,491			1,557,489		4,907,980
180-189	Other Debits					21,200				262,958	284,158
Total Assets and Other Debits		6,484,370	149,131	1,434,662		4,046,542	4,858,378	2,407,567	1,557,489	262,958	21,201,097
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	180,180									180,180
200-209, 231-239	All Other Current Liabilities	285,893				406		394,708			681,007
230.00	Due To Other Funds	3,308				3,785,740	35,750				3,824,798

SPRINGFIELD TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities	7,006				3,962,145		2,012,820	720,000	241,855	6,943,826
240-259	Current Portion of Long-Term Debt and Other Credits					345,898			120,000	21,103	487,001
Total Liabilities and Other Credits		476,387				8,094,189	35,750	2,407,528	840,000	262,958	12,116,812
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	6,007,983	149,131	1,434,662		-4,047,647	4,822,628	39	717,489		9,084,285
291-299	Other Equity										
Total Fund and Account Group Equity		6,007,983	149,131	1,434,662		-4,047,647	4,822,628	39	717,489		9,084,285

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	21,201,097

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	8,679,467							8,679,467
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	751,268							751,268
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes	1,435,641							1,435,641
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	460,681							460,681
310.60	Amusement / Admission Taxes	55,057							55,057
310.70	Mechanical Device Taxes	26,350							26,350
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		11,408,464							11,408,464
Licenses and Permits									
320-322	All Other Licenses and Permits	234,039						28,178	262,217
321.80	Cable Television Franchise Fees	533,806							533,806
Total Licenses and Permits		767,845						28,178	796,023
Fines and Forfeits									
330-332	Fines and Forfeits	124,778		9,838					134,616
Total Fines and Forfeits		124,778		9,838					134,616

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	8,064	1,374	1,449		506	10,929	418	22,740
342.00	Rents and Royalties	119,959	50,400			811,822			982,181
Total Interest, Rents and Royalties		128,023	51,774	1,449		812,328	10,929	418	1,004,921
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101			142,273					142,273
354.00	All Other State Capital and Operating Grants	457,082					267,369		724,451
355.01	Public Utility Realty Tax (PURTA)	13,764							13,764
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		455,052						455,052
355.04	Alcoholic Beverage Licenses	8,350							8,350
355.05	General Municipal Pension System State Aid	539,926							539,926
355.07	Foreign Fire Insurance Tax Distribution	218,632							218,632
355.08	Local Share Assessment/Gaming Proceeds								

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		1,237,754	455,052	142,273			267,369		2,102,448
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units									
Charges for Service									
361.00	General Government	75,745							75,745
362.00	Public Safety	1,154,023							1,154,023
363.20	Parking								
363.00	All Other Charges for Highway & Street Services	20,268							20,268
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)						3,027,996		3,027,996
364.30	Solid Waste Collection and Disposal Charge (trash)	1,863,997							1,863,997
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services	84,303							84,303
365.00	Health	32,703							32,703
366.00	Human Services								
367.00	Culture and Recreation		1,800			1,644,468			1,646,268

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		3,231,039	1,800			1,644,468	3,027,996		7,905,303
Unclassified Operating Revenues									
383.00	Special Assessments						3,694		3,694
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors							325,965	325,965
388.00	Fiduciary Fund Pension Contributions							155,339	155,339
389.00	All Other Unclassified Operating Revenues	7,109							7,109
Total Unclassified Operating Revenues		7,109					3,694	481,304	492,107
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition			121,303					121,303
392.00	Interfund Operating Transfers	526,443		1,850,000	34,327		120,000		2,530,770
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	240,121					330		240,451
Total Other Financing Sources		766,564		1,971,303	34,327		120,330		2,892,524
TOTAL REVENUES		17,671,576	508,626	2,124,863	34,327	2,456,796	3,430,318	509,900	26,736,406
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	146,690							146,690
401.00	Executive (Manager or Mayor)								
402.00	Auditing Services / Financial Administration	2,400						11,176	13,576
403.00	Tax Collection	76,625							76,625
404.00	Solicitor / Legal Services								
405.00	Secretary / Clerk	824,340	391	12,983					837,714
406.00	Other General Government Administration								
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	356,132							356,132
409.00	General Government Buildings and Plant	308,097		68,108					376,205
Total General Government		1,714,284	391	81,091				11,176	1,806,942
Public Safety									
410.00	Police	5,226,161		86,355					5,312,516
411.00	Fire	567,610		247,466					815,076
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	382,005							382,005
414.00	Planning and Zoning								
415.00	Emergency Management and Communications	2,383							2,383

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		6,178,159		333,821					6,511,980
Health and Human Services									
420.00-425.00	Health and Human Services	88,980		18,185					107,165
Total Health and Human Services		88,980		18,185					107,165
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	1,950,002		487,433					2,437,435
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection						2,907,704		2,907,704
Total Public Works - Sanitation		1,950,002		487,433			2,907,704		5,345,139
Public Works - Highways and Streets									
430.00	General Services - Administration	1,383,833							1,383,833
431.00	Cleaning of Streets and Gutters	56,461		387,437					443,898
432.00	Winter Maintenance – Snow Removal								
433.00	Traffic Control Devices	139,084							139,084
434.00	Street Lighting	195,762							195,762
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges	479,243							479,243
439.00	Highway Construction and Rebuilding Projects								
Total Public Works - Highways and Streets		2,254,383		387,437					2,641,820
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation					2,704,204			2,704,204
453.00	Spectator Recreation								
454.00	Parks	398,334	91,757	4,674					494,765
455.00	Shade Trees								
456.00	Libraries	693,528							693,528

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations	500							500
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		1,092,362	91,757	4,674		2,704,204			3,892,997
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)				20,125		120,000		140,125
472.00	Debt Interest (short-term and long-term)				14,202	232,789			246,991
475.00	Fiscal Agent Fees	1,967							1,967
Total Debt Service		1,967			34,327	232,789	120,000		389,083
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	550,897							550,897
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	1,525,233							1,525,233
484.00	Worker Compensation Insurance								

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		2,076,130							2,076,130
Insurance									
486.00	Insurance, Casualty, and Surety	796,365							796,365
Total Insurance		796,365							796,365
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							470,128	470,128
489.00	All Other Unclassified Expenditures	148,286							148,286
Total Unclassified Operating Expenditures		148,286						470,128	618,414
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers	2,004,327	444,345			53,500		28,598	2,530,770
493.00	All Other Financing Uses								
Total Other Financing Uses		2,004,327	444,345			53,500		28,598	2,530,770
TOTAL EXPENDITURES		18,305,245	536,493	1,312,641	34,327	2,990,493	3,027,704	509,902	26,716,805
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		-633,669	-27,867	812,222		-533,697	402,614	-2	19,601

SPRINGFIELD TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
General Obligation Notes	Note	1998	2023	8,250,000	4,921,000		350,000		4,571,000		4,571,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	4,571,000
Capitalized lease obligations	
Net debt	4,571,000

SPRINGFIELD TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire	247,466		247,466
Gas System			
General Government	67,294	149,596	216,890
Health	18,185		18,185
Housing			
Libraries			
Mass Transit			
Parks	4,674	76,512	81,186
Police	86,355		86,355
Recreation	65,076	66,977	132,053
Sewer		22,431	22,431
Solid Waste	487,433		487,433
Streets / Highways	387,437	344,729	732,166
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	1,363,920	660,245	2,024,165

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 8,281,397

ELECTED CONTROLLER'S/AUDITOR'S CERTIFIED OPINION

To the: Governing Body of the Municipality

President Judge of the Court of Common Pleas

Secretary of the Department of Community & Economic Development

I/We, the undersigned, the duly elected (or appointed replacement), qualified, and Acting Controller/Auditors of the SPRINGFIELD TWP have audited, adjusted and settled the various funds and account groups of the SPRINGFIELD TWP for the year ended December 31, 2013. My/Our audit, adjustment and settlement was made in accordance with law rather than with generally accepted auditing standards

(PLEASE CROSS OUT ONLY IF ON MODIFIED ACCRUAL/ACCRUAL BASIS)
This municipality's policy is to prepare its financial statements on the basis of cash receipts and disbursements; consequently, certain revenues and the related assets are recognized when received rather than when earned, and certain expenditures or expenses are recognized when paid rather than when a liability is incurred. Accordingly, the accompanying financial statements are not intended to present the financial position and results of operations of this municipality in conformity with generally accepted accounting principles.

These financial statements do not include all of the disclosures required by generally accepted accounting principles.

In my/our opinion, the aforementioned financial statements present the financial position of the various funds and account groups of the municipality of SPRINGFIELD TWP for the year ended December 31, 2013, and the results of operations of such funds in accordance with the law.

SIGNATURE AND VERIFICATION

Signed: James T. DeLizzio Elected Auditor

Robert B. Simpson Elected Auditor

Joseph T. Rago Elected Auditor

Subscribed and sworn to before me this 11 day of September, 2014.

SEAL

Signed: _____

Witness (Controller)/Auditor (Auditors)

SPRINGFIELD TWP, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 04/01/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231233 SWARTHMORE BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

SWARTHMORE BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	624,427	225,512	377,235	39,458	203,613		5,553,088			7,023,333
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds							16,391			16,391
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		624,427	225,512	377,235	39,458	203,613		5,569,479			7,039,724
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	17,881									17,881
200-209, 231-239	All Other Current Liabilities							14,877			14,877
230.00	Due To Other Funds	16,391									16,391

SWARTHMORE BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		34,272						14,877			49,149
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	590,155	225,512	377,235	39,458	203,613		5,554,602			6,990,575
291-299	Other Equity										
Total Fund and Account Group Equity		590,155	225,512	377,235	39,458	203,613		5,554,602			6,990,575

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	7,039,724

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	1,644,437	184,026		172,245				2,000,708
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	201,272							201,272
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	89,509							89,509
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		1,935,218	184,026		172,245				2,291,489
Licenses and Permits									
320-322	All Other Licenses and Permits	22,550							22,550
321.80	Cable Television Franchise Fees	95,364							95,364
Total Licenses and Permits		117,914							117,914
Fines and Forfeits									
330-332	Fines and Forfeits	30,739							30,739
Total Fines and Forfeits		30,739							30,739

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	211	18	93		168		803,687	804,177
342.00	Rents and Royalties								
Total Interest, Rents and Royalties		211	18	93		168		803,687	804,177
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets			27,182					27,182
354.09	Community Development								
354.15	Recycling / Act 101					13,321			13,321
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	2,783							2,783
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		113,158						113,158
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid		97,109						97,109
355.07	Foreign Fire Insurance Tax Distribution	52,801							52,801
355.08	Local Share Assessment/Gaming Proceeds								

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		55,584	210,267	27,182		13,321			306,354
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants	15,930							15,930
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		15,930							15,930
Charges for Service									
361.00	General Government	900							900
362.00	Public Safety	315,707	7,198						322,905
363.20	Parking	67,513							67,513
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					923,948			923,948
364.30	Solid Waste Collection and Disposal Charge (trash)					498,168			498,168
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	20,295							20,295

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service					26,570			26,570
Total Charges for Service		404,415	7,198			1,448,686			1,860,299
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	116,000		33,293					149,293
388.00	Fiduciary Fund Pension Contributions							417,267	417,267
389.00	All Other Unclassified Operating Revenues	5,571						9,761	15,332
Total Unclassified Operating Revenues		121,571		33,293				427,028	581,892
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers		35,362	42,000		30,000			107,362
393.00	Proceeds of General Long-Term Debt	37,523		500,000					537,523
394.00	Proceeds of Short Term-Debt								

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	24,485							24,485
Total Other Financing Sources		62,008	35,362	542,000		30,000			669,370
TOTAL REVENUES		2,743,590	436,871	602,568	172,245	1,492,175		1,230,715	6,678,164
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body								
401.00	Executive (Manager or Mayor)	63,637				27,273			90,910
402.00	Auditing Services / Financial Administration	11,822				4,829			16,651
403.00	Tax Collection	7,944				6,040			13,984
404.00	Solicitor / Legal Services	45,189				7,250			52,439
405.00	Secretary / Clerk	58,190				31,956			90,146
406.00	Other General Government Administration	24,809							24,809
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services			2,000					2,000
409.00	General Government Buildings and Plant	85,845		20,000					105,845
Total General Government		297,436		22,000		77,348			396,784
Public Safety									
410.00	Police	1,023,041							1,023,041
411.00	Fire	173,712		5,514					179,226
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	450							450
414.00	Planning and Zoning	24,307							24,307
415.00	Emergency Management and Communications								

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		1,221,510		5,514					1,227,024
Health and Human Services									
420.00-425.00	Health and Human Services	1,100							1,100
Total Health and Human Services		1,100							1,100
Public Works - Sanitation									
426.00	Recycling Collection and Disposal					78,076			78,076
427.00	Solid Waste Collection and Disposal (garbage)					293,833			293,833
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					653,133			653,133
Total Public Works - Sanitation						1,025,042			1,025,042
Public Works - Highways and Streets									
430.00	General Services - Administration	42,592	4,240	22,791		40,561			110,184
431.00	Cleaning of Streets and Gutters	8,936	450						9,386
432.00	Winter Maintenance – Snow Removal	6,929	4,913						11,842
433.00	Traffic Control Devices	10,801	9,122						19,923
434.00	Street Lighting	53,852	9,437						63,289
435.00	Sidewalks and Crosswalks	19,358							19,358
436.00	Storm Sewers and Drains	7,738	5,237			5,975			18,950

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery		10,591						10,591
438.00	Maintenance and Repairs of Roads and Bridges	2,784	16,060			11,122			29,966
439.00	Highway Construction and Rebuilding Projects			327,610					327,610
Total Public Works - Highways and Streets		152,990	60,050	350,401		57,658			621,099
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	21,000							21,000
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	27,661							27,661
455.00	Shade Trees	37,080							37,080
456.00	Libraries	120,000							120,000

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		205,741							205,741
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing	20,000		3,058					23,058
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development		20,000		3,058					23,058
Debt Service									
471.00	Debt Principal (short-term and long-term)	47,829			141,568	90,368			279,765
472.00	Debt Interest (short-term and long-term)	7,266			36,716	24,791			68,773
475.00	Fiscal Agent Fees			2,250					2,250
Total Debt Service		55,095		2,250	178,284	115,159			350,788
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	90,823							90,823
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions		303,578			47,963			351,541
484.00	Worker Compensation Insurance	24,646				4,553			29,199

SWARTHMORE BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits	314,243				66,141			380,384
Total Employer Paid Benefits and Withholding Items		429,712	303,578			118,657			851,947
Insurance									
486.00	Insurance, Casualty, and Surety	32,917				9,832			42,749
Total Insurance		32,917				9,832			42,749
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							285,400	285,400
489.00	All Other Unclassified Expenditures	857						14,869	15,726
Total Unclassified Operating Expenditures		857						300,269	301,126
Other Financing Uses									
491.00	Refund of Prior Year Revenues	16,813							16,813
492.00	Interfund Operating Transfers	77,362				30,000			107,362
493.00	All Other Financing Uses								
Total Other Financing Uses		94,175				30,000			124,175
TOTAL EXPENDITURES		2,511,533	363,628	383,223	178,284	1,433,696		300,269	5,170,633
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		232,057	73,243	219,345	-6,039	58,479		930,446	1,507,531

SWARTHMORE BORO

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
GON	Note	2000	2015	1,640,000	436,000		138,000		298,000		298,000
GON	Note	2002	2022	580,000	352,000		29,000		323,000		323,000
GON	Note	2004	2024	885,000	496,000		33,000		463,000		463,000
GON	Note	2006	2026	870,000	680,000		36,000		644,000		644,000
GON	Note	2008	2028	500,000	429,000		20,000		409,000		409,000
GON	Note	2013	2033	500,000	0	500,000	0		500,000		500,000
Revenue Bonds and Notes											
Lease Rental Debt											
Capital Lease	Lease Rentals	2012	2014	3,472	21,605	0	10,462		11,143		11,143
Police Car	Note	2013	2015	37,523	0	37,523	13,303		24,220		24,220
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	2,672,363
Capitalized lease obligations	
Net debt	2,672,363

SWARTHMORE BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government			
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	40,816		40,816
Recreation			
Sewer		7,400	7,400
Solid Waste			
Streets / Highways	22,791	327,610	350,401
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	63,607	335,010	398,617

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 1,329,306

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Barbacane, Thornton & Company LLP Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

SWARTHMORE BORO, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 03/29/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231323 TRAINER BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

TRAINER BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	612,946	132,904								745,850
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds										
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		612,946	132,904								745,850
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	3,097									3,097
200-209, 231-239	All Other Current Liabilities	122									122
230.00	Due To Other Funds										

TRAINER BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		3,219									3,219
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	609,727	132,904								742,631
291-299	Other Equity										
Total Fund and Account Group Equity		609,727	132,904								742,631

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	745,850

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	1,181,121							1,181,121
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	9,837							9,837
310.20	Earned Income Taxes / Wage Taxes	917,903							917,903
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	48,393							48,393
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		2,157,254							2,157,254
Licenses and Permits									
320-322	All Other Licenses and Permits	66,139							66,139
321.80	Cable Television Franchise Fees	23,960							23,960
Total Licenses and Permits		90,099							90,099
Fines and Forfeits									
330-332	Fines and Forfeits	11,371							11,371
Total Fines and Forfeits		11,371							11,371

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	718	134						852
342.00	Rents and Royalties	6,739	5,975						12,714
Total Interest, Rents and Royalties		7,457	6,109						13,566
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	2,723							2,723
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		33,441						33,441
355.04	Alcoholic Beverage Licenses	50							50
355.05	General Municipal Pension System State Aid	42,728							42,728
355.07	Foreign Fire Insurance Tax Distribution	10,406							10,406
355.08	Local Share Assessment/Gaming Proceeds								

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		55,907	33,441						89,348
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units									
Charges for Service									
361.00	General Government	40,507							40,507
362.00	Public Safety								
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)								
364.30	Solid Waste Collection and Disposal Charge (trash)								
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	4,268	4,158						8,426

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		44,775	4,158						48,933
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	70,000							70,000
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	8,451							8,451
Total Unclassified Operating Revenues		78,451							78,451
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers		11,629						11,629
393.00	Proceeds of General Long-Term Debt	129,301							129,301
394.00	Proceeds of Short Term-Debt	300,000							300,000

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures								
Total Other Financing Sources		429,301	11,629						440,930
TOTAL REVENUES		2,874,615	55,337						2,929,952
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	13,437							13,437
401.00	Executive (Manager or Mayor)	3,144							3,144
402.00	Auditing Services / Financial Administration	36,154							36,154
403.00	Tax Collection	4,153							4,153
404.00	Solicitor / Legal Services	13,016							13,016
405.00	Secretary / Clerk	32,114							32,114
406.00	Other General Government Administration	10,561							10,561
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	57,801							57,801
409.00	General Government Buildings and Plant	26,931							26,931
Total General Government		197,311							197,311
Public Safety									
410.00	Police	938,058							938,058
411.00	Fire	115,607							115,607
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	3,410							3,410
414.00	Planning and Zoning								
415.00	Emergency Management and Communications								

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety	169							169
Total Public Safety		1,057,244							1,057,244
Health and Human Services									
420.00-425.00	Health and Human Services	28,576							28,576
Total Health and Human Services		28,576							28,576
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	113,137							113,137
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection								
Total Public Works - Sanitation		113,137							113,137
Public Works - Highways and Streets									
430.00	General Services - Administration	88,365	49,529						137,894
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal		2,541						2,541
433.00	Traffic Control Devices		5,402						5,402
434.00	Street Lighting	34,058							34,058
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery	6,277	2,672						8,949
438.00	Maintenance and Repairs of Roads and Bridges	2,652	318						2,970
439.00	Highway Construction and Rebuilding Projects								
Total Public Works - Highways and Streets		131,352	60,462						191,814
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	6,591							6,591
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	6,748							6,748
455.00	Shade Trees								
456.00	Libraries								

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers	1,000							1,000
459.00	All Other Culture and Recreation		18,478						18,478
Total Culture and Recreation		14,339	18,478						32,817
Community Development									
461.00	Conservation of Natural Resources	2,000							2,000
462.00	Community Development and Housing	2,396							2,396
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development		4,396							4,396
Debt Service									
471.00	Debt Principal (short-term and long-term)	345,635							345,635
472.00	Debt Interest (short-term and long-term)	8,090							8,090
475.00	Fiscal Agent Fees								
Total Debt Service		353,725							353,725
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	75,645							75,645
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	114,785							114,785
484.00	Worker Compensation Insurance	59,865							59,865

TRAINER BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits	233,477							233,477
Total Employer Paid Benefits and Withholding Items		483,772							483,772
Insurance									
486.00	Insurance, Casualty, and Surety	50,010							50,010
Total Insurance		50,010							50,010
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures	10,001							10,001
Total Unclassified Operating Expenditures		10,001							10,001
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers	11,629							11,629
493.00	All Other Financing Uses								
Total Other Financing Uses		11,629							11,629
TOTAL EXPENDITURES		2,455,492	78,940						2,534,432
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		419,123	-23,603						395,520

TRAINER BORO

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Revenue Bonds and Notes											
Lease Rental Debt											
Police Cars - Dodge Charger (4)	Note	2013	2015	129,301	0	129,301	45,635		83,666		83,666
Other											
Tax Anticipation Note	Note	2013	2013	300,000	0	300,000	300,000		0		0

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	83,666
Capitalized lease obligations	
Net debt	83,666

TRAINER BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government			
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	171,958		171,958
Recreation			
Sewer			
Solid Waste			
Streets / Highways	49,529		49,529
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	221,487		221,487

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 824,597

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Barbacane, Thornton & Company LLP Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

TRAINER BORO, DELAWARE County

December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 05/07/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231353 UPLAND BORO, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

UPLAND BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	552,110	242,679	1,125,230	298,194	91,756					2,309,969
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds										
131-139, 150-159	Other Current Assets					35,314					35,314
160-169	Fixed Assets										
180-189	Other Debits	18,331								1,776,954	1,795,285
Total Assets and Other Debits		570,441	242,679	1,125,230	298,194	127,070				1,776,954	4,140,568
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	4,914									4,914
200-209, 231-239	All Other Current Liabilities					35,314					35,314
230.00	Due To Other Funds										

UPLAND BORO, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities									1,691,828	1,691,828
240-259	Current Portion of Long-Term Debt and Other Credits									85,126	85,126
Total Liabilities and Other Credits		4,914				35,314				1,776,954	1,817,182
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	565,527	242,679	1,125,230	298,194	91,756					2,323,386
291-299	Other Equity										
Total Fund and Account Group Equity		565,527	242,679	1,125,230	298,194	91,756					2,323,386

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	4,140,568

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	149,028							149,028
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	1,428							1,428
310.10	Real Estate Transfer Taxes	6,158							6,158
310.20	Earned Income Taxes / Wage Taxes	1,979,735							1,979,735
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	194,634							194,634
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes		183,765						183,765
	Other: _____								
Total Taxes		2,330,983	183,765						2,514,748
Licenses and Permits									
320-322	All Other Licenses and Permits	386,625							386,625
321.80	Cable Television Franchise Fees	50,712							50,712
Total Licenses and Permits		437,337							437,337
Fines and Forfeits									
330-332	Fines and Forfeits	59,683							59,683

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Total Fines and Forfeits		59,683							59,683
Interest, Rents and Royalties									
341.00	Interest Earnings	12	72	223					307
342.00	Rents and Royalties	18,000				784,415			802,415
Total Interest, Rents and Royalties		18,012	72	223		784,415			802,722
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	2,585							2,585
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		57,390						57,390
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	69,918							69,918
355.07	Foreign Fire Insurance Tax Distribution	16,301							16,301

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.08	Local Share Assessment/Gaming Proceeds								
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		88,804	57,390						146,194
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	4,050							4,050
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes	33,277							33,277
Total Local Government Units		37,327							37,327
Charges for Service									
361.00	General Government	14,673							14,673
362.00	Public Safety								
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)								
364.30	Solid Waste Collection and Disposal Charge (trash)	143,610							143,610
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health	1,945							1,945
366.00	Human Services								

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
367.00	Culture and Recreation								
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		160,228							160,228
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	58,414	15,499			940			74,853
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues								
Total Unclassified Operating Revenues		58,414	15,499			940			74,853
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers	737,141	10,000	500,000	148,047	3,862			1,399,050
393.00	Proceeds of General Long-Term Debt								

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
394.00	Proceeds of Short Term-Debt								
395.00	Refunds of Prior Year Expenditures								
Total Other Financing Sources		737,141	10,000	500,000	148,047	3,862			1,399,050
TOTAL REVENUES		3,927,929	266,726	500,223	148,047	789,217			5,632,142
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	132,087							132,087
401.00	Executive (Manager or Mayor)	37,396							37,396
402.00	Auditing Services / Financial Administration	10,740							10,740
403.00	Tax Collection	14,680							14,680
404.00	Solicitor / Legal Services	100,035							100,035
405.00	Secretary / Clerk	31,295							31,295
406.00	Other General Government Administration	73,658							73,658
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	142,457							142,457
409.00	General Government Buildings and Plant	698,992							698,992
Total General Government		1,241,340							1,241,340
Public Safety									
410.00	Police	686,305							686,305
411.00	Fire	52,299							52,299
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement								
414.00	Planning and Zoning	260,820							260,820

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Public Safety									
415.00	Emergency Management and Communications								
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		999,424							999,424
Health and Human Services									
420.00-425.00	Health and Human Services	1,000							1,000
Total Health and Human Services		1,000							1,000
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	315,924							315,924
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection								
Total Public Works - Sanitation		315,924							315,924
Public Works - Highways and Streets									
430.00	General Services - Administration	13,534							13,534
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal								
433.00	Traffic Control Devices								
434.00	Street Lighting	31,909							31,909
435.00	Sidewalks and Crosswalks								

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
436.00	Storm Sewers and Drains								
437.00	Repairs of Tools and Machinery	62,637							62,637
438.00	Maintenance and Repairs of Roads and Bridges								
439.00	Highway Construction and Rebuilding Projects		72,572						72,572
Total Public Works - Highways and Streets		108,080	72,572						180,652
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	12,665							12,665
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks								
455.00	Shade Trees								

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
456.00	Libraries								
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation	11,000							11,000
Total Culture and Recreation		23,665							23,665
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development					493,181			493,181
Total Community Development						493,181			493,181
Debt Service									
471.00	Debt Principal (short-term and long-term)				82,236				82,236
472.00	Debt Interest (short-term and long-term)				62,578				62,578
475.00	Fiscal Agent Fees								
Total Debt Service					144,814				144,814
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	99,379				20,591			119,970
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	75,007							75,007
484.00	Worker Compensation Insurance	116,636							116,636

UPLAND BORO, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits	205,809							205,809
Total Employer Paid Benefits and Withholding Items		496,831				20,591			517,422
Insurance									
486.00	Insurance, Casualty, and Surety	66,015				54,670			120,685
Total Insurance		66,015				54,670			120,685
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures								
Total Unclassified Operating Expenditures									
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers	661,909	328,283	200,000		208,858			1,399,050
493.00	All Other Financing Uses								
Total Other Financing Uses		661,909	328,283	200,000		208,858			1,399,050
TOTAL EXPENDITURES		3,914,188	400,855	200,000	144,814	777,300			5,437,157
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		13,741	-134,129	300,223	3,233	11,917			194,985

UPLAND BORO

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Note A-2	Note	2012	2032	652,000	652,000		0		652,000		652,000
Note	Note	2009	2029	850,000	771,549		29,643		741,906		741,906
Note	Note	1999	2019	216,658	87,640		12,593		75,047		75,047
Note A-1	Note	2012	2020	348,000	348,000		40,000		308,000		308,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	1,776,953
Capitalized lease obligations	
Net debt	1,776,953

UPLAND BORO, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government	462,518	72,615	535,133
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	23,677		23,677
Recreation			
Sewer			
Solid Waste			
Streets / Highways		63,689	63,689
Water			
Other: _____			
Community Development	12,364	129,067	141,431
TOTAL CAPITAL EXPENDITURES	498,559	265,371	763,930

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 1,165,755

Independent Public Accountant/Certified Public Accountant Submission Page
Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: John Hanna Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

UPLAND BORO, DELAWARE County
December 31, 2013

NOTES / COMMENTS

Note 3 - Pension information has been omitted from the Fiduciary Fund because the independent audit firm was not engaged to audit the Pension Fund.

Note 2 - Other Current Assets and Other Current Liabilities recorded in the Enterprise Fund represent escrow deposits maintained on behalf of tenants and developers

Note 1 - Other Debits recorded in the General Fund represent a payroll tax deposit processed by the bank as of December 31, 2013 to cover the payroll scheduled for January 2, 2014.

DCED-CLGS-30 (9-09)
Received by DCED: 05/05/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231384 UPPER CHICHESTER TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

UPPER CHICHESTER TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	5,098,343	921,231	933,731				13,739,561			20,692,866
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds	17,109	460								17,569
131-139, 150-159	Other Current Assets							68,157			68,157
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		5,115,452	921,691	933,731				13,807,718			20,778,592

Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities							1,061,241			1,061,241
230.00	Due To Other Funds	460	17,109								17,569

UPPER CHICHESTER TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities	1,005									1,005
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		1,465	17,109					1,061,241			1,079,815
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	5,113,987	904,582	933,731							6,952,300
291-299	Other Equity							12,746,477			12,746,477
Total Fund and Account Group Equity		5,113,987	904,582	933,731				12,746,477			19,698,777

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	20,778,592

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	4,481,438							4,481,438
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes								
310.10	Real Estate Transfer Taxes	241,393							241,393
310.20	Earned Income Taxes / Wage Taxes	4,608,495							4,608,495
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	268,209							268,209
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes	3,170							3,170
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		9,602,705							9,602,705
Licenses and Permits									
320-322	All Other Licenses and Permits	822,648							822,648
321.80	Cable Television Franchise Fees	377,455							377,455
Total Licenses and Permits		1,200,103							1,200,103
Fines and Forfeits									
330-332	Fines and Forfeits	69,457							69,457
Total Fines and Forfeits		69,457							69,457

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	5,583	523	184				647,241	653,531
342.00	Rents and Royalties	80,388							80,388
Total Interest, Rents and Royalties		85,971	523	184				647,241	733,919
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101	23,278							23,278
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	10,714							10,714
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		314,818						314,818
355.04	Alcoholic Beverage Licenses	3,050							3,050
355.05	General Municipal Pension System State Aid	271,905							271,905
355.07	Foreign Fire Insurance Tax Distribution	123,193							123,193
355.08	Local Share Assessment/Gaming Proceeds								

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		432,140	314,818						746,958
Local Government Units									
357.03	Highways and Streets	25,920							25,920
357.00	All Other Local Governmental Units Capital and Operating Grants	81,236							81,236
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	57,728							57,728
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		164,884							164,884
Charges for Service									
361.00	General Government	75,579							75,579
362.00	Public Safety	69,518							69,518
363.20	Parking								
363.00	All Other Charges for Highway & Street Services	47,035							47,035
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)								
364.30	Solid Waste Collection and Disposal Charge (trash)	883,943							883,943
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	84,050	113,995						198,045

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service	47,760							47,760
Total Charges for Service		1,207,885	113,995						1,321,880
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors		50,000						50,000
388.00	Fiduciary Fund Pension Contributions							957,619	957,619
389.00	All Other Unclassified Operating Revenues	2,970							2,970
Total Unclassified Operating Revenues		2,970	50,000					957,619	1,010,589
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition								
392.00	Interfund Operating Transfers	742,694	215,460	160,000					1,118,154
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures								
Total Other Financing Sources		742,694	215,460	160,000					1,118,154
TOTAL REVENUES		13,508,809	694,796	160,184				1,604,860	15,968,649
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	20,625							20,625
401.00	Executive (Manager or Mayor)	19,630							19,630
402.00	Auditing Services / Financial Administration	30,937							30,937
403.00	Tax Collection	21,500							21,500
404.00	Solicitor / Legal Services	104,663							104,663
405.00	Secretary / Clerk	41,841							41,841
406.00	Other General Government Administration	721,844							721,844
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	243,554							243,554
409.00	General Government Buildings and Plant								
Total General Government		1,204,594							1,204,594
Public Safety									
410.00	Police	3,931,758	2,652						3,934,410
411.00	Fire	373,586							373,586
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	312,788							312,788
414.00	Planning and Zoning	18,738							18,738
415.00	Emergency Management and Communications	26,340							26,340

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety	9,318							9,318
Total Public Safety		4,672,528	2,652						4,675,180
Health and Human Services									
420.00-425.00	Health and Human Services								
Total Health and Human Services									
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	1,031,545							1,031,545
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection								
Total Public Works - Sanitation		1,031,545							1,031,545
Public Works - Highways and Streets									
430.00	General Services - Administration	1,300,097							1,300,097
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal	26,871							26,871
433.00	Traffic Control Devices	40,908							40,908
434.00	Street Lighting	144,234							144,234
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery								
438.00	Maintenance and Repairs of Roads and Bridges	18,541							18,541
439.00	Highway Construction and Rebuilding Projects	354,211							354,211
Total Public Works - Highways and Streets		1,884,862							1,884,862
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	212,374							212,374
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	138,827							138,827
455.00	Shade Trees								
456.00	Libraries	73,200							73,200

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers	12,000							12,000
459.00	All Other Culture and Recreation								
Total Culture and Recreation		436,401							436,401
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)	465,240							465,240
472.00	Debt Interest (short-term and long-term)	148,321							148,321
475.00	Fiscal Agent Fees								
Total Debt Service		613,561							613,561
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	809,383							809,383
484.00	Worker Compensation Insurance								

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		809,383							809,383
Insurance									
486.00	Insurance, Casualty, and Surety								
Total Insurance									
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							913,602	913,602
489.00	All Other Unclassified Expenditures							21,777	21,777
Total Unclassified Operating Expenditures								935,379	935,379
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers	375,460	324,245		418,449				1,118,154
493.00	All Other Financing Uses								
Total Other Financing Uses		375,460	324,245		418,449				1,118,154
TOTAL EXPENDITURES		11,028,334	326,897		418,449			935,379	12,709,059
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		2,480,475	367,899	160,184	-418,449			669,481	3,259,590

UPPER CHICHESTER TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
General Obligation Bond	Bond	1999	2019	706,700	239,266		34,260		205,006		205,006
General Obligation Bond	Bond	2001	2021	559,000	280,454		26,980		253,474		253,474
General Obligation Note	Note	2002	2022	1,230,000	720,000		61,000		659,000		659,000
General Obligation Note	Note	2005	2025	300,000	220,000		13,000		207,000		207,000
General Obligation Bond	Bond	2010	2022	4,680,000	3,880,000		330,000		3,550,000		3,550,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	4,874,480
Capitalized lease obligations	
Net debt	4,874,480

UPPER CHICHESTER TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government			
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	71,075		71,075
Recreation		7,787	7,787
Sewer			
Solid Waste	22,140		22,140
Streets / Highways	72,197		72,197
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	165,412	7,787	173,199

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 3,945,226

Independent Public Accountant/Certified Public Accountant Submission Page
Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Leitzell & Economidis, PC Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

UPPER CHICHESTER TWP, DELAWARE County
December 31, 2013

NOTES / COMMENTS

DCED-CLGS-30 (9-09)
Received by DCED: 04/04/2014

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

231445 UPPER PROVIDENCE TWP, DELAWARE COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

UPPER PROVIDENCE TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	845,683	548,043	908,672		23,030		5,240,818			7,566,246
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)	52,602									52,602
130.00	Due From Other Funds		4,736								4,736
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		898,285	552,779	908,672		23,030		5,240,818			7,623,584
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings	4,533									4,533
200-209, 231-239	All Other Current Liabilities					4,736					4,736
230.00	Due To Other Funds										

UPPER PROVIDENCE TWP, DELAWARE County

BALANCE SHEET

December 31, 2013

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities	17,882						108,850			126,732
240-259	Current Portion of Long-Term Debt and Other Credits										
Total Liabilities and Other Credits		22,415				4,736		108,850			136,001
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	875,870	552,779	908,672		18,294					2,355,615
291-299	Other Equity							5,131,968			5,131,968
Total Fund and Account Group Equity		875,870	552,779	908,672		18,294		5,131,968			7,487,583

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	7,623,584

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	2,996,459	184,022						3,180,481
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	30,526							30,526
310.10	Real Estate Transfer Taxes	1,312,350							1,312,350
310.20	Earned Income Taxes / Wage Taxes								
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	95,661							95,661
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other Local Tax Enabling Act / Act 511 / Taxes								
	Other: _____								
Total Taxes		4,434,996	184,022						4,619,018
Licenses and Permits									
320-322	All Other Licenses and Permits	224,534							224,534
321.80	Cable Television Franchise Fees	260,497							260,497
Total Licenses and Permits		485,031							485,031
Fines and Forfeits									
330-332	Fines and Forfeits	143,420							143,420
Total Fines and Forfeits		143,420							143,420

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	1,998	639	390	3,323	23		703,585	709,958
342.00	Rents and Royalties		60,000						60,000
Total Interest, Rents and Royalties		1,998	60,639	390	3,323	23		703,585	769,958
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101	8,767							8,767
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	5,207							5,207
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		210,199						210,199
355.04	Alcoholic Beverage Licenses	1,400							1,400
355.05	General Municipal Pension System State Aid	137,539							137,539
355.07	Foreign Fire Insurance Tax Distribution	100,909							100,909
355.08	Local Share Assessment/Gaming Proceeds								

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
State									
355.09	Marcellus Shale Impact Fee Distribution								
355.00	All Other State Shared Revenues and Entitlements	121,660							121,660
356.00	State Payments in Lieu of Taxes								
Total State		375,482	210,199						585,681
Local Government Units									
357.03	Highways and Streets	14,243							14,243
357.00	All Other Local Governmental Units Capital and Operating Grants								
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	32,148							32,148
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		46,391							46,391
Charges for Service									
361.00	General Government	5,558							5,558
362.00	Public Safety	5,291							5,291
363.20	Parking								
363.00	All Other Charges for Highway & Street Services								
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)	29,833							29,833
364.30	Solid Waste Collection and Disposal Charge (trash)		111,899						111,899
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services	589							589
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	14,535							14,535

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
368.00	Airports								
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		55,806	111,899						167,705
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	3,800							3,800
388.00	Fiduciary Fund Pension Contributions							341,102	341,102
389.00	All Other Unclassified Operating Revenues	3,508							3,508
Total Unclassified Operating Revenues		7,308						341,102	348,410
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	14,331							14,331
392.00	Interfund Operating Transfers		8,500	1,249,374		11,421			1,269,295
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	2,941							2,941
Total Other Financing Sources		17,272	8,500	1,249,374		11,421			1,286,567
TOTAL REVENUES		5,567,704	575,259	1,249,764	3,323	11,444		1,044,687	8,452,181
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	222,638							222,638
401.00	Executive (Manager or Mayor)	89,618							89,618
402.00	Auditing Services / Financial Administration	121,700							121,700
403.00	Tax Collection	12,669							12,669
404.00	Solicitor / Legal Services	26,192							26,192
405.00	Secretary / Clerk								
406.00	Other General Government Administration			1,050					1,050
407.00	IT-Networking Services-Data Processing								
408.00	Engineering Services	159,575							159,575
409.00	General Government Buildings and Plant	80,532	28,857	11,421					120,810
Total General Government		712,924	28,857	12,471					754,252
Public Safety									
410.00	Police	2,151,705							2,151,705
411.00	Fire	210,781	61,057						271,838
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	65,476							65,476
414.00	Planning and Zoning	3,597							3,597
415.00	Emergency Management and Communications								

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		2,431,559	61,057						2,492,616
Health and Human Services									
420.00-425.00	Health and Human Services								
Total Health and Human Services									
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)	668	126,286						126,954
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection	6,284							6,284
Total Public Works - Sanitation		6,952	126,286						133,238
Public Works - Highways and Streets									
430.00	General Services - Administration	158,689							158,689
431.00	Cleaning of Streets and Gutters	291							291
432.00	Winter Maintenance – Snow Removal	86,970							86,970
433.00	Traffic Control Devices	13,411	3,943						17,354
434.00	Street Lighting		37,322						37,322
435.00	Sidewalks and Crosswalks	1,943							1,943
436.00	Storm Sewers and Drains	23,582							23,582

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
437.00	Repairs of Tools and Machinery	37,368							37,368
438.00	Maintenance and Repairs of Roads and Bridges	62,356							62,356
439.00	Highway Construction and Rebuilding Projects	289,421	88,228						377,649
Total Public Works - Highways and Streets		674,031	129,493						803,524
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration	22,316							22,316
452.00	Participant Recreation								
453.00	Spectator Recreation								
454.00	Parks	27,370							27,370
455.00	Shade Trees								
456.00	Libraries		80,000						80,000

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation	70,125							70,125
Total Culture and Recreation		119,811	80,000						199,811
Community Development									
461.00	Conservation of Natural Resources								
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development									
Debt Service									
471.00	Debt Principal (short-term and long-term)		36,700	496,237		9,300			542,237
472.00	Debt Interest (short-term and long-term)		6,246	100,088		2,121			108,455
475.00	Fiscal Agent Fees								
Total Debt Service			42,946	596,325		11,421			650,692
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	259,400							259,400
484.00	Worker Compensation Insurance								

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2013

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
487.00	Other Group Insurance Benefits	126,228							126,228
Total Employer Paid Benefits and Withholding Items		385,628							385,628
Insurance									
486.00	Insurance, Casualty, and Surety	54,013	482						54,495
Total Insurance		54,013	482						54,495
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid							274,640	274,640
489.00	All Other Unclassified Expenditures	49						63,715	63,764
Total Unclassified Operating Expenditures		49						338,355	338,404
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers	1,269,295							1,269,295
493.00	All Other Financing Uses								
Total Other Financing Uses		1,269,295							1,269,295
TOTAL EXPENDITURES		5,654,262	469,121	608,796		11,421		338,355	7,081,955
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		-86,558	106,138	640,968	3,323	23		706,332	1,370,226

UPPER PROVIDENCE TWP

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
GOB	Bond	2000	2009	295,000	155,000		16,000		139,000		139,000
GOB	Bond	2009	2019	5,005,000	2,607,000		310,000		2,297,000		2,297,000
GON	Note	2001	2009	950,000	701,000		30,000		671,000		671,000
GON	Note	2005	2009	1,700,000	581,504		186,237		395,267		395,267
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	3,502,267
Capitalized lease obligations	
Net debt	3,502,267

UPPER PROVIDENCE TWP, DELAWARE County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

Category	Capital Purchases	Capital Construction	Total
Electric			
Fire			
Gas System			
General Government		12,630	12,630
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	52,199		52,199
Recreation	9,975		9,975
Sewer			
Solid Waste			
Streets / Highways		233,441	233,441
Water			
Other: _____			
Community Development			
TOTAL CAPITAL EXPENDITURES	62,174	246,071	308,245

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials) 1,867,002

Independent Public Accountant/Certified Public Accountant Submission Page
Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Leitzell & Economidis, PC Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

UPPER PROVIDENCE TWP, DELAWARE County
December 31, 2013

NOTES / COMMENTS

Appendix 7: City of Chester 2012 Property Tax Revenues

THE CITY OF CHESTER
NOTES TO FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2012

Note 4 RECEIVABLES, (Continued)

Property Taxes, (Continued)

Following schedule details property taxes collections for 2012, and a ten year summary of property taxes showing the relationship between amount levied and amount actually collected.

TAX LEVIES AND TAX COLLECTIONS FOR THE LAST TEN FISCAL YEARS

Fiscal Year	Net Total Tax Levy	Amount of Current Taxes Collected	Percent of Current Taxes Collected
2003	$ 8,355,625	$ 6,017,976	72.02%
2004	$ 8,320,357	$ 6,277,397	75.45%
2005	$ 8,308,503	$ 6,254,179	75.27%
2006	$ 7,920,967	$ 6,267,533	79.13%
2007	$ 7,887,274	$ 6,552,978	83.08%
2008	$ 7,844,101	$ 6,522,135	83.15%
2009	$ 7,799,215	$ 6,426,365	82.40%
2010	$ 7,750,361	$ 6,422,303	82.86%
2011	$ 7,765,079	$ 6,221,450	80.12%
2012	$ 7,694,586	$ 6,283,197	81.66%

Trash Assessments Receivable

Gross trash assessments receivable	$ 2,427,115
Less: allowance for uncollectible accounts	(2,176,358)
	$ 250,757

Other Receivables

Harrah's gaming fee	$ 556,508
Covanta host fees	1,339,232
Commonwealth of Pennsylvania / gaming revenue	1,404,178
Payments in lieu of taxes	1,007,393
Chester Upland School District	799,526
Reimbursements	190,722
Grants	4,070
Other receivables	96,919
	5,398,548
Less: allowance for uncollectible accounts	(694,761)
	$ 4,703,787

Appendix 8: Debt for Overlapping Entities

DCED-CLGS-20 (10-05)
Received by DCED: 03/25/2015

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2013

COUNTY

ANNUAL FINANCIAL REPORT

23 COUNTY OF DELAWARE

County of DELAWARE

GOVERNMENT-WIDE STATEMENT OF NET ASSETS

December 31, 2013

	Governmental Activities	Business-Type Activities	Total
CURRENT ASSETS:			
Cash and cash equivalents	58,782,090	3,724,155	62,506,245
Investments	174,954,385		174,954,385
Receivables (net of allowance for uncollectibles)	54,799,700	18,552,842	73,352,542
Due from other governments	7,475,000		7,475,000
Internal balances	-4,158,910	4,158,910	
Cash and cash equivalents	46,619,450	796,261	47,415,711
Other: Subcontractors	222,377		222,377
Other: Miscellaneous Assets	7,499,931	17,485	7,517,416
NON-CURRENT ASSETS:			
Land	10,770,883		10,770,883
Construction in progress	9,012,202		9,012,202
Buildings and system	121,768,904	8,467,387	130,236,291
Machinery and equipment	23,627,767	3,414,682	27,042,449
Infrastructure	3,983,690		3,983,690
TOTAL ASSETS	515,357,469	39,131,722	554,489,191
LIABILITIES:			
Accounts payable	30,306,539	3,884,940	34,191,479
Unearned revenue	35,964,171	2,151,463	38,115,634
Debt due within one year	23,235,438	2,377,247	25,612,685
Other current liabilities	15,809,665		15,809,665
Debt due in more than one year	416,956,585	30,718,072	447,674,657
Other: Liabilities payable from restricted assets	122,489		122,489
Other: Accrued interest payable	1,868,735		1,868,735
TOTAL LIABILITIES:	524,263,622	39,131,722	563,395,344
NET ASSETS:			
Net investment in capital assets	-67,891,655	-21,213,250	-89,104,905
Restricted	10,474,592		10,474,592

County of DELAWARE

GOVERNMENT-WIDE STATEMENT OF NET ASSETS

December 31, 2013

	Governmental Activities	Business-Type Activities	Total
NET ASSETS:			
Unrestricted	48,510,910	21,213,250	69,724,160
TOTAL NET ASSETS:	-8,906,153		-8,906,153

County of DELAWARE

GOVERNMENT-WIDE STATEMENT OF ACTIVITIES

Proprietary Funds

December 31, 2013

	Expenses	Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	Governmental Activities	Business-type Activities	Total Fiduciary
Governmental Activities:							
General government - administrative	130,258,805	10,410,962	43,873,623		-75,974,220		-75,974,220
General government - judicial	48,371,935	5,206,386	22,692,111		-20,473,438		-20,473,438
Corrections	70,790,012	12,500,228	798,420		-57,491,364		-57,491,364
Highways and streets	2,807,351		1,107,553	1,462,919	-236,879		-236,879
Health and welfare	248,301,666		234,512,578		-13,789,088		-13,789,088
Interest on long term debt	8,457,413				-8,457,413		-8,457,413
TOTAL GOVERNMENTAL ACTIVITIES	508,987,182	28,117,576	302,984,285	1,462,919	-176,422,402		-176,422,402
Major Business Type Activities:							
Business 1	80,763,126	75,172,541				-5,590,585	-5,590,585
TOTAL BUSINESS-TYPE ACTIVITIES	80,763,126	75,172,541				-5,590,585	-5,590,585
TOTAL PRIMARY GOVERNMENTS	589,750,308	103,290,117	302,984,285	1,462,919	-176,422,402	-5,590,585	-182,012,987

County of DELAWARE

GOVERNMENT-WIDE STATEMENT OF ACTIVITIES

December 31, 2013

	Governmental Activities	Business-Type Activities	Total
TOTAL PRIMARY GOVERNMENTS	-176,422,402	-5,590,585	-182,012,987
GENERAL REVENUES:			
Real estate	164,661,208		164,661,208
Hotel room rental	1		1
Gaming Revenue	9,334,840		9,334,840
License & Permits			
Investment Earnings			
General Grants			
Other			
Licenses and permits			
Grants and contributions not restricted	352,508		352,508
Unrestricted investment earnings	2,830,737	1,107,882	3,938,619
Transfers	-4,482,704	4,482,703	-1
TOTAL GENERAL REVENUES AND TRANSFERS	172,696,590	5,590,585	178,287,175
CHANGE IN NET ASSETS	-3,725,812		-3,725,812
NET POSITION - BEGINNING OF YEAR	-3,397,408		-3,397,408
PRIOR PERIOD ADJUSTMENT	-1,782,933		-1,782,933
NET ASSETS - END OF YEAR	-8,906,153		-8,906,153

County of DELAWARE

BALANCE SHEET - GOVERNMENT FUNDS

(Including the Reconciliation of Total Governmental Fund Balance to Net Assets of Governmental Actvities)

December 31, 2013

	General	Capital Projects	Health and Human Services	Major #3	Major #4	Major #5	Other Governmental Funds	Total Government Funds
ASSETS:								
Cash and cash equivalents	30,798,765	1,479,468	8,366,857				14,607,103	55,252,193
Receivables (net of allowance for uncollectibles)	20,273,216	1,405,867	20,747,007				6,522,273	48,948,363
Due from other governments	2,000,000	5,475,000						7,475,000
Due from other funds	29,153,991		11,904,540				8,901,375	49,959,906
Other: assets	1,381,507		4,292,193				102,907	5,776,607
Other: Other restricted asset	4,772,777	33,455,056	8,391,617					46,619,450
Other: Due from Subcontractors							222,377	222,377
Other: Other Receivables	166,295							166,295
TOTAL ASSETS	88,546,551	41,815,391	53,702,214				30,356,035	214,420,191
LIABILITIES:								
Accounts payable	12,816,625	937,796	13,230,677				3,321,441	30,306,539
Due to other funds	18,285,669	15,457,787	11,009,122				12,327,168	57,079,746
Unearned revenue	4,653,785		23,963,017				7,347,369	35,964,171
Other: Payable from restricted asset	122,489							122,489
Other: Other Liablilities	9,566,135		5,499,398				1,102,703	16,168,236
TOTAL LIABILITIES	45,444,703	16,395,583	53,702,214				24,098,681	139,641,181
FUND BALANCE:								
Not in spendable form	1,381,507							1,381,507
Requirement to be maintained intact		5,475,000						5,475,000
Other: Highways & Streets							1,777,099	1,777,099
Other: Library							682,598	682,598
Other: Community Developement							3,797,657	3,797,657
Other: Title IV D program	1,870,555							1,870,555
Other: Capital Project		19,435,592						19,435,592
Other: Capital Project		509,216						509,216
Other: County Geriatric Center	11,400,000							11,400,000
Other: Employee Healthcare cost	11,400,000							11,400,000

County of DELAWARE

BALANCE SHEET - GOVERNMENT FUNDS

(Including the Reconciliation of Total Governmental Fund Balance to Net Assets of Governmental Actvities)

December 31, 2013

	General	Capital Projects	Health and Human Services	Major #3	Major #4	Major #5	Other Governmental Funds	Total Government Funds
FUND BALANCE:								
Unassigned fund balance*	9,532,158							9,532,158
TOTAL FUND BALANCE	35,584,220	25,419,808					6,257,354	67,261,382
Unavailable Revenue	7,517,628							7,517,628
	7,517,628							7,517,628
TOTAL LIABILITIES AND FUND BALANCE	88,546,551	41,815,391	53,702,214				30,356,035	214,420,191

Amounts reported for governmental activities in the statement of net assets are different because:	
Internal service funds are used by management to charge certain costs to county departments and employees	
The assets, deferred outflows of resources, liabilities and deferred inflows of resources of the internal service funds are included in governmental activities in the STATEMENT OF NET POSITION	
Long-term liabilities and deferred inflows are not due and payable in the current period and therefore are not reported as a fund liability	-431,619,301
The difference in net position between full accrual accounting and modified accrual accounting is due to differing revenue recognition criteria between the two methods	
The difference in net position between full accrual accounting and modified accrual accounting is due to differing expenditure recognition criteria between the two methods	
Capital assets used in government activities are not financial resources and, therefore, are not reported in the funds	344,117,831
Other: _____	
Other: Accrued interest	-1,868,735
Other: Allowance for Doubtful Accounts	-900,710
Other: Property Taxes Receivable	14,103,380
NET ASSETS OF GOVERNMENTAL ACTIVITIES	-8,906,153

County of DELAWARE

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES

GOVERNMENTAL FUNDS

December 31, 2013

	General	Capital Projects	Health and Human Services	Major #3	Major #4	Major #5	Other Governmental Funds	Total Government Funds
REVENUES:								
Taxes								
Real estate	164,860,852							164,860,852
Hotel room rental	2,028,918							2,028,918
Other: Gaming Revenue	9,334,840							9,334,840
Other: License & Permits	62,948							62,948
Other: General Grants	24,778,008	2,723,820					41,944,350	69,446,178
Other: Investment Earnings	934,677	153,896						1,088,573
Other: Other	6,404,596		2,233					6,406,829
TOTAL TAXES	208,404,839	2,877,716	2,233				41,944,350	253,229,138
Intergovernmental Revenues								
Combination			234,003,423					234,003,423
TOTAL INTERGOVERNMENTAL REVENUES			234,003,423					234,003,423
Charges for Service	22,860,520							22,860,520
	22,860,520							22,860,520
Miscellaneous Revenues								
TOTAL MISCELLANEOUS REVENUES								
TOTAL REVENUES	231,265,359	2,877,716	234,005,656				41,944,350	510,093,081
EXPENDITURES:								
General government - administrative	22,575,866							22,575,866
General government - judicial	50,000,068							50,000,068
Corrections	63,059,037							63,059,037
Highways and streets							1,187,336	1,187,336
Health and welfare			240,428,656					240,428,656
Other: Transportation	6,921,000							6,921,000
Other: Other	47,263,253	101,894					47,321,758	94,686,905

County of DELAWARE

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES

GOVERNMENTAL FUNDS

December 31, 2013

	General	Capital Projects	Health and Human Services	Major #3	Major #4	Major #5	Other Governmental Funds	Total Government Funds
Other: Debt Service - Principal	16,179,257							16,179,257
Other: Debt Service - Interest	8,068,452	498,111						8,566,563
Other: Capital Outlay		10,460,337						10,460,337
TOTAL EXPENDITURES	214,066,933	11,060,342	240,428,656				48,509,094	514,065,025
OTHER FINANCING SOURCES/(USES):								
Other: Issuance of Note		25,000,000						25,000,000
Other: Transfers In	1,922,404		6,423,000				7,798,587	16,143,991
Other: Transfers Out	-18,704,290	-382,404					-1,540,000	-20,626,694
TOTAL OTHER FINANCING SOURCES/(USES)	-16,781,886	24,617,596	6,423,000				6,258,587	20,517,297
CHANGE IN FUND BALANCE	416,540	16,434,970					-306,157	16,545,353
FUND BALANCE (DEFICIT) - BEGINNING OF YEAR	35,167,680	8,984,838					6,563,511	50,716,029
FUND BALANCE - END OF YEAR	35,584,220	25,419,808					6,257,354	67,261,382

County of DELAWARE

RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS TO THE STATEMENT OF ACTIVITIES

December 31, 2013

Amounts reported for governmental activities in the statement of activities are different because:

Net changes in fund balances (deficit) - total governmental funds	16,545,353
The net revenue (expense) of certain activities of the internal services fund is reported with governmental activities	-1,292,700
The issuance of long-term debt (e.g. bonds, leases) provides current financial resources to governmental funds, while the repayment of the principal of long-term debt consumes the current financial resources of governmental funds. Neither transaction, however, has any effect on net position. Additionally, various other long-term liabilities and deferred inflows do not require the use of current financial resources and, therefore are not reported as expenditures in governmental funds. This amount is the net effect of the differences in the treatment of long-term liabilities and deferred inflows on the statement of activities	-7,141,911
Other: SEPTA Contribution	7,607,246
Other: Revenues related to Real estate	-209,481
Other: Collections related to Chester City	-133,611
Other: Accrued Interest Payable	109,149
Other: OPEB (Pension) does no tconsume current financial resources	-19,555,000
Other: Early retirement expense	357,713
Other: Allowance for doubtful real estate taxes receivable	-12,570
CHANGE IN NET ASSESTS OF GOVERNMENTAL ACTIVITIES	-3,725,812

County of DELAWARE

STATEMENT OF NET ASSETS FUNDS

Proprietary Funds

December 31, 2013

	Nursing Home	Major Bus. #2	Major Bus. #3	Major Bus. #4	Major Bus. #5	Other Business Funds	Total Business Funds	Internal Service Fund
CURRENT ASSETS								
Cash and cash equivalents	3,724,155						3,724,155	3,529,897
Receivables (net of allowance for uncollectibles)	18,552,842						18,552,842	
Due from other funds	4,158,910						4,158,910	6,272,766
Other: Prepaid Expense	17,485						17,485	1,723,324
TOTAL CURRENT ASSETS	26,453,392						26,453,392	11,525,987
NON-CURRENT ASSETS								
Other: Noncurrent Assets	11,882,069						11,882,069	
Other: Other Retricted Assets	796,261						796,261	
TOTAL NON-CURRENT ASSETS	12,678,330						12,678,330	
TOTAL ASSETS	39,131,722						39,131,722	11,525,987
CURRENT LIABILITIES								
Accounts payable	3,884,940						3,884,940	
Due to other funds								3,311,836
Unearned revenue	2,151,463						2,151,463	
Other: General obligation bonds & notes	2,377,247						2,377,247	
Other: Claims Payable								5,893,559
TOTAL CURRENT LIABILITIES	8,413,650						8,413,650	9,205,395

County of DELAWARE

STATEMENT OF NET ASSETS FUNDS

Proprietary Funds

December 31, 2013

	Nursing Home	Major Bus. #2	Major Bus. #3	Major Bus. #4	Major Bus. #5	Other Business Funds	Total Business Funds	Internal Service Fund
NON-CURRENT LIABILITIES								
Other non-current liabilities								2,320,592
Other: General Obligation bonds & notes payable	30,718,072						30,718,072	
TOTAL NON-CURRENT LIABILITIES	30,718,072						30,718,072	2,320,592
TOTAL LIABILITIES	39,131,722						39,131,722	11,525,987
NET ASSETS								
TOTAL NET ASSETS								
TOTAL LIABILITIES AND NET ASSETS	39,131,722						39,131,722	11,525,987

Adjustments to reflect the consolidation of internal service fund activities related to enterprise funds	
Changes in Net Assets of Business-type Activities	

County of DELAWARE

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET ASSETS-

Proprietary Funds

December 31, 2013

	Nursing Home	Major Bus. #2	Major Bus. #3	Major Bus. #4	Major Bus. #5	Other Business Funds	Total Business Funds	Internal Service Fund
OPERATING REVENUES								
Charges for service	75,172,541						75,172,541	46,907,965
TOTAL OPERATING REVENUES	75,172,541						75,172,541	46,907,965
OPERATING EXPENSES								
Personnel services	12,487,777						12,487,777	111,506
Repairs and maintenance	10,681,461						10,681,461	
Depreciation and amortization	2,028,095						2,028,095	
Other: Nursing	22,549,020						22,549,020	
Other: Dietary	7,416,679						7,416,679	
Other: Medical & Physical therapy	4,539,422						4,539,422	
Other: Employee Benefits	19,360,193						19,360,193	
Other: Insurance Claims								46,796,719
TOTAL OPERATING EXPENSES	79,062,647						79,062,647	46,908,225
OPERATING INCOME/(LOSS)	-3,890,106						-3,890,106	-260
NONOPERATING REVENUES/(EXPENSES)								
Investment earnings	1,107,882						1,107,882	260
Interest expense	-1,700,479						-1,700,479	
TOTAL NONOPERATING REVENUES/(EXPENSES)	-592,597						-592,597	260
TRANSFERS IN/(OUT)	4,482,703						4,482,703	
CHANGE IN NET ASSETS								

County of DELAWARE

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN FUND NET ASSETS-

Proprietary Funds

December 31, 2013

	Nursing Home	Major Bus. #2	Major Bus. #3	Major Bus. #4	Major Bus. #5	Other Business Funds	Total Business Funds	Internal Service Fund
NET ASSETS - END OF YEAR								

Adjustments to reflect the consolidation of internal service fund activities related to enterprise funds	
Changes in Net Assets of Business-type Activities	

County of DELAWARE

STATEMENT OF FIDUCIARY NET ASSETS

Fiduciary Funds

December 31, 2013

	Deshong	Pension	Fiduciary #3	Fiduciary #4	Fiduciary #5	Total Fiduciary
ASSETS						
Cash and cash equivalents	283,225	95,402,512				95,685,737
Investments, at fair value		352,992,804				352,992,804
Other: Gov't Securities						
Other: Corporate bonds						
Other: common & preferred stocks						
Other: Guaranteed investment contrats						
Other: fixed income						
TOTAL ASSETS	283,225	448,395,316				448,678,541
LIABILITIES						
TOTAL LIABILITIES						
LIABILITIES						
Accounts payable and other current liabilities	16,216	493,240				509,456
Other: death benefits						
Other: contribution refunds						
Other: administrative expenses						
Other: retirement allowance						
Other: employee benefits						
TOTAL LIABILITIES	16,216	493,240				509,456
NET ASSETS						
Assets held in trust for pension/other post employment benefits	267,009	447,902,076				448,169,085
TOTAL NET ASSETS	267,009	447,902,076				448,169,085
TOTAL LIABILITIES AND NET ASSETS	283,225	448,395,316				448,678,541

County of DELAWARE

STATEMENT OF CHANGES IN FIDUCIARY NET ASSETS

Fiduciary Funds

December 31, 2013

	Deshong	Pension	Fiduciary #3	Fiduciary #4	Fiduciary #5	Total Fiduciary
ADDITIONS						
Contributions						
Employer		7,146,528				7,146,528
Plan members		10,041,381				10,041,381
TOTAL CONTRIBUTIONS		17,187,909				17,187,909
Investment Earnings						
Interest	17	9,142,187				9,142,204
Net increase/(decrease) in the fair value of investments		60,654,467				60,654,467
TOTAL INVESTMENT EARNINGS	17	69,796,654				69,796,671
Less Investment Expenses		2,093,439				2,093,439
TOTAL ADDITIONS	17	84,891,124				84,891,141
DEDUCTIONS						
Benefits		1,726,099				1,726,099
Administrative Expenses	24,414	32,567				56,981
Other: Refunds of contributions		2,297,218				2,297,218
Other: Retirement allowance		17,035,905				17,035,905
TOTAL DEDUCTIONS	24,414	21,091,789				21,116,203

County of DELAWARE

STATEMENT OF CHANGES IN FIDUCIARY NET ASSETS

Fiduciary Funds

December 31, 2013

	Deshong	Pension	Fiduciary #3	Fiduciary #4	Fiduciary #5	Total Fiduciary
CHANGE IN NET ASSETS	-24,397	63,799,335				63,774,938
NET POSITION - BEGINNING OF YEAR	291,406	384,102,741				384,394,147
NET ASSETS - END OF YEAR	267,009	447,902,076				448,169,085

County of DELAWARE

December 31, 2013

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Refinance 1999 notes for various SEPTA project	Note	2002	2022	61,524,000	40,124,000		4,113,000		36,011,000		36,011,000
Refund 2008 General Obligation Note	Bond	2010	2028	45,180,000	45,175,000		5,000		45,170,000		45,170,000
Voting machines and Various County Projects	Bond	2005	2019	10,000,000	3,092,000		432,000		2,660,000		2,660,000
Refund 1999 General Obligation Note	Bond	2009	2019	54,750,000	45,335,000		5,905,000		39,430,000		39,430,000
Refund 1997 bond	Bond	2007	2016	15,584,000	8,399,000		2,057,000		6,342,000		6,342,000
Refinance 1995 Bonds For SEPTA and various County Projects	Bond	2005	2021	69,425,000	65,130,000		3,115,000		62,015,000		62,015,000
Grant funds for Chester Waterfront & Stadium	Bond	2009	2039	28,595,000	26,930,000		605,000		26,325,000		26,325,000
Fund SEPTA projects and various County projects	Bond	2012	2032	20,000,000	20,000,000		1,000		19,999,000		19,999,000
Fund SEPTA Projects and various County projecct	Bond	1997	2022	50,000,000	49,850,000		40,000		49,810,000		49,810,000
Fund SEPTA & County Bldgs	Bond	2013	2033	25,000,000	25,000,000		1,000		24,999,000		24,999,000
Revenue Bonds and Notes											
Refinance 2004 note	Note	2007	2027	26,720,000	23,125,000		2,130,000		20,995,000		20,995,000
Refund 2002 bond & portions 2007 note	Bond	2008	2017	9,537,000	5,359,000		1,036,000		4,323,000		4,323,000
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	338,079,000
Capitalized lease obligations	
Net debt	338,079,000

County of DELAWARE

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

	Capital Purchases	Capital Construction	Total
GOVERNMENTAL-TYPE ACTIVITY:			
General Government - administrative	8,276,470		8,276,470
Corrections	23,702		23,702
Other: Infrastructure	172,206		172,206
Health and welfare	144,017		144,017
Culture - recreation	16,569		16,569
BUSINESS-TYPE ACTIVITY:			

County of DELAWARE

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2013

	Capital Purchases	Capital Construction	Total
TOTAL CAPITAL EXPENDITURES	8,632,964		8,632,964

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials)	148,085,506

ELECTED CONTROLLER'S/AUDITOR'S CERTIFIED OPINION

To the: Governing Body of the County

President Judge of the Court of Common Pleas

Secretary of the Department of Community & Economic Development

I/We*, the undersigned, the duly elected (or appointed replacement) and Acting Controller/Auditors* of the County of DELAWARE have audited, adjusted and settled the accounts of the County of DELAWARE for the year ended December 31, 2013. My/Our* audit, adjustment and settlement was made in accordance with Act 103 of 2002 rather than with U.S. generally accepted auditing standards

The County has prepared these financial statements on bases of accounting consistent with U.S. generally accepted accounting principles; consisting of the accrual basis for the government-wide, proprietary fund and fiduciary fund financial statements, and the modified accrual basis for the governmental fund financial statements.

Due to the absence of notes and other disclosures required by U.S. generally accepted accounting principles, these financial statements are not intended to be a complete presentation in accordance with U.S. generally accepted accounting principles.

In my/our* opinion, these financial statements accurately reflect the results of operations and the financial position of the county of DELAWARE for the year ended December 31, 2013

SIGNATURE AND VERIFICATION

Signed: edward olone Controller

Subscribed and sworn to before me this 15 day of April, 2015.

Signed: _____

Witness (Controller)/Auditor (Auditors)

Counties are encouraged to have financial statement audits performed in accordance with U.S. generally accepted auditing standards or the standards applicable to financial audits contained in "Government Auditing Standards", issued by the Comptroller general of the United States. Controllers may submit opinions resulting from such audits in lieu of this page.

SEAL

***Circle one**

December 31, 2013

NOTES / COMMENTS

Appendix 9: Real Estate Assessments

Commonwealth of Pennsylvania
STATE TAX EQUALIZATION BOARD
2012 School District Yearly Market Values

Date : 7/14/2014

AUN	SD#	School District	M#	Municipality	C#	Tax County	SD County	Market Value	Assessed Value	Ratio
125231232	204	Chester-Upland	0201	Chester City	23	Delaware	Delaware	673,368,806	499,974,541	74.25%
125231232	204	Chester-Upland	0202	Chester Township	23	Delaware	Delaware	209,035,936	166,372,624	79.59%
125231232	204	Chester-Upland	0203	Upland Borough	23	Delaware	Delaware	87,871,941	73,309,647	83.43%
125231303	205	Chichester	0401	Lower Chichester Township	23	Delaware	Delaware	119,928,228	117,035,679	97.59%
125231303	205	Chichester	0402	Marcus Hook Borough	23	Delaware	Delaware	140,590,064	116,190,987	82.65%
125231303	205	Chichester	0403	Trainer Borough	23	Delaware	Delaware	70,507,134	66,071,740	93.71%
125231303	205	Chichester	0406	Upper Chichester Township	23	Delaware	Delaware	1,129,271,698	863,725,764	76.49%
125234103	206	Garnet Valley	0601	Bethel Township	23	Delaware	Delaware	843,893,336	696,610,283	82.55%
125234103	206	Garnet Valley	0602	Chester Heights Borough	23	Delaware	Delaware	266,487,913	187,756,098	70.46%
125234103	206	Garnet Valley	0603	Concord Township	23	Delaware	Delaware	2,045,205,373	1,509,697,767	73.82%
125235103	208	Interboro	1001	Glenolden Borough	23	Delaware	Delaware	338,612,919	249,110,169	73.57%
125235103	208	Interboro	1002	Norwood Borough	23	Delaware	Delaware	264,779,102	196,520,340	74.22%
125235103	208	Interboro	1003	Prospect Park Borough	23	Delaware	Delaware	294,877,884	217,045,658	73.61%
125235103	208	Interboro	1004	Tinicum Township	23	Delaware	Delaware	589,882,410	478,127,124	81.05%
125235502	209	Marple Newtown	1201	Marple Township	23	Delaware	Delaware	2,399,028,191	1,758,289,636	73.29%
125235502	209	Marple Newtown	1202	Newtown Township	23	Delaware	Delaware	2,074,985,636	1,512,388,891	72.89%
125236903	210	Penn Delco	1401	Aston Township	23	Delaware	Delaware	1,245,105,581	919,578,672	73.86%
125236903	210	Penn Delco	1402	Brookhaven Borough	23	Delaware	Delaware	540,973,806	393,014,407	72.65%
125236903	210	Penn Delco	1403	Parkside Borough	23	Delaware	Delaware	91,130,712	67,899,114	74.51%
125237702	212	Ridley	1801	Eddystone Borough	23	Delaware	Delaware	227,955,948	189,419,263	83.09%
125237702	212	Ridley	1802	Ridley Park Borough	23	Delaware	Delaware	406,745,239	303,232,493	74.55%
125237702	212	Ridley	1803	Ridley Township	23	Delaware	Delaware	1,741,924,382	1,313,341,810	75.40%
125237903	213	Rose Tree Media	2001	Edgemont Township	23	Delaware	Delaware	672,450,268	501,483,801	74.58%
125237903	213	Rose Tree Media	2002	Media Borough	23	Delaware	Delaware	590,087,590	391,169,011	66.29%
125237903	213	Rose Tree Media	2003	Middletown Township	23	Delaware	Delaware	1,557,628,872	1,145,742,590	73.56%
125237903	213	Rose Tree Media	2004	Upper Providence Township	23	Delaware	Delaware	1,139,439,569	843,161,197	74.00%
125238502	215	Springfield	2401	Morton Borough	23	Delaware	Delaware	155,694,813	117,959,943	75.76%
125238502	215	Springfield	2402	Springfield Township	23	Delaware	Delaware	2,334,306,470	1,642,022,122	70.34%
125239603	217	Wallingford-Swarthmore	2801	Nether Providence Township	23	Delaware	Delaware	1,242,996,450	874,050,502	70.32%
125239603	217	Wallingford-Swarthmore	2802	Rose Valley Borough	23	Delaware	Delaware	133,461,799	106,809,228	80.03%
125239603	217	Wallingford-Swarthmore	2803	Rutledge Borough	23	Delaware	Delaware	52,001,868	33,524,081	64.47%
125239603	217	Wallingford-Swarthmore	2804	Swarthmore Borough	23	Delaware	Delaware	542,897,902	371,723,868	68.47%

Source File: TED_Market_Value_2012.xls

Commonwealth of Pennsylvania
STATE TAX EQUALIZATION BOARD
2013 School District Yearly Market Values

Date : 7/31/2014

AUN	SD#	School District	M#	Municipality	C#	Tax County	SD County	Market Value	Assessed Value	Ratio
125231232	204	Chester-Upland	0201	Chester City	23	Delaware	Delaware	668,332,484	497,524,766	74.44%
125231232	204	Chester-Upland	0202	Chester Township	23	Delaware	Delaware	211,331,072	167,877,514	79.44%
125231232	204	Chester-Upland	0203	Upland Borough	23	Delaware	Delaware	86,916,839	72,698,137	83.64%
125231303	205	Chichester	0401	Lower Chichester Township	23	Delaware	Delaware	119,803,390	116,864,938	97.55%
125231303	205	Chichester	0402	Marcus Hook Borough	23	Delaware	Delaware	140,432,669	116,051,582	82.64%
125231303	205	Chichester	0403	Trainer Borough	23	Delaware	Delaware	80,303,015	82,554,675	102.80%
125231303	205	Chichester	0406	Upper Chichester Township	23	Delaware	Delaware	1,131,350,161	865,387,438	76.49%
125234103	206	Garnet Valley	0601	Bethel Township	23	Delaware	Delaware	851,442,202	703,441,311	82.62%
125234103	206	Garnet Valley	0602	Chester Heights Borough	23	Delaware	Delaware	266,784,394	187,954,031	70.45%
125234103	206	Garnet Valley	0603	Concord Township	23	Delaware	Delaware	2,074,567,574	1,531,206,549	73.81%
125235103	208	Interboro	1001	Glenolden Borough	23	Delaware	Delaware	338,795,100	249,248,874	73.57%
125235103	208	Interboro	1002	Norwood Borough	23	Delaware	Delaware	264,502,064	196,307,655	74.22%
125235103	208	Interboro	1003	Prospect Park Borough	23	Delaware	Delaware	295,032,728	217,167,038	73.61%
125235103	208	Interboro	1004	Tinicum Township	23	Delaware	Delaware	589,140,557	477,575,604	81.06%
125235502	209	Marple Newtown	1201	Marple Township	23	Delaware	Delaware	2,405,956,904	1,763,119,251	73.28%
125235502	209	Marple Newtown	1202	Newtown Township	23	Delaware	Delaware	2,116,962,376	1,530,209,600	72.28%
125236903	210	Penn Delco	1401	Aston Township	23	Delaware	Delaware	1,244,551,376	919,050,188	73.85%
125236903	210	Penn Delco	1402	Brookhaven Borough	23	Delaware	Delaware	541,287,028	393,146,444	72.63%
125236903	210	Penn Delco	1403	Parkside Borough	23	Delaware	Delaware	91,240,609	67,980,944	74.51%
125237702	212	Ridley	1801	Eddystone Borough	23	Delaware	Delaware	226,703,647	188,235,673	83.03%
125237702	212	Ridley	1802	Ridley Park Borough	23	Delaware	Delaware	405,569,802	302,575,418	74.61%
125237702	212	Ridley	1803	Ridley Township	23	Delaware	Delaware	1,744,630,085	1,315,442,198	75.40%
125237903	213	Rose Tree Media	2001	Edgemont Township	23	Delaware	Delaware	674,554,080	503,615,677	74.66%
125237903	213	Rose Tree Media	2002	Media Borough	23	Delaware	Delaware	590,852,918	391,582,233	66.27%
125237903	213	Rose Tree Media	2003	Middletown Township	23	Delaware	Delaware	1,546,015,387	1,133,593,165	73.32%
125237903	213	Rose Tree Media	2004	Upper Providence Township	23	Delaware	Delaware	1,166,565,930	862,618,954	73.95%
125238502	215	Springfield	2401	Morton Borough	23	Delaware	Delaware	155,311,247	117,661,239	75.76%
125238502	215	Springfield	2402	Springfield Township	23	Delaware	Delaware	2,332,826,856	1,641,431,659	70.36%
125239603	217	Wallingford-Swarthmore	2801	Nether Providence Township	23	Delaware	Delaware	1,242,612,683	873,582,294	70.30%
125239603	217	Wallingford-Swarthmore	2802	Rose Valley Borough	23	Delaware	Delaware	131,187,125	105,078,158	80.10%
125239603	217	Wallingford-Swarthmore	2803	Rutledge Borough	23	Delaware	Delaware	52,079,034	33,573,811	64.47%
125239603	217	Wallingford-Swarthmore	2804	Swarthmore Borough	23	Delaware	Delaware	542,909,677	371,717,578	68.47%

Source file: TED_Market_Value_2013.xls

Appendix 10: Tax Rates

Reporting Year	Municipality	School District	Tax Name	Municipal Tax Amount	School District Tax Amount	Total Tax Rate
2012	CHESTER CITY	CHESTER-UPLAND S D	Real Estate - General Purpose (mills)	29.792	0	29.792
2012	CHESTER CITY	CHESTER-UPLAND S D	Real Estate - Debt Service (mills)	2.392	0	2.392
2012	CHESTER CITY	CHESTER-UPLAND S D	Real Estate - Library (mills)	1.5	0	1.5
2012	CHESTER CITY	CHESTER-UPLAND S D	Mercantile/Business Privilege - Wholesale (mills)	2.74	0	2.74
2012	CHESTER CITY	CHESTER-UPLAND S D	Mercantile/Business Privilege - Retail (mills)	3.65	0	3.65
2012	CHESTER CITY	CHESTER-UPLAND S D	Mercantile/Business Privilege - Other (mills)	4.19	0	4.19
2012	PARKSIDE BORO	PENN-DELCO S D	Real Estate - General Purpose (mills)	9.5	22.422	31.922

Reporting Year	Municipality	School District	Tax Name	Municipal Tax Amount	School District Tax Amount	Total Tax Rate
2013	ASTON TWP	PENN-DELCO S D	Real Estate - General Purpose (mills)	3.39	25.276	28.666
2013	ASTON TWP	PENN-DELCO S D	Real Estate - Debt Service (mills)	0.47	0	0.47
2013	ASTON TWP	PENN-DELCO S D	Real Estate - Fire Equipment & Firehouses (mills)	0.1	0	0.1
2013	ASTON TWP	PENN-DELCO S D	Real Estate - Library (mills)	0.04	0	0.04
2013	ASTON TWP	PENN-DELCO S D	Mercantile/Business Privilege - Wholesale (mills)	1	0	1
2013	ASTON TWP	PENN-DELCO S D	Mercantile/Business Privilege - Retail (mills)	1.5	0	1.5
2013	ASTON TWP	PENN-DELCO S D	Mercantile/Business Privilege - Other (mills)	1.5	0	1.5
2013	BETHEL TWP	GARNET VALLEY S D	Real Estate - General Purpose (mills)	1.69	0	1.69
2013	BETHEL TWP	GARNET VALLEY S D	Real Estate - Fire Equipment & Firehouses (mills)	0.125	0	0.125
2013	BETHEL TWP	GARNET VALLEY S D	Real Estate - Library (mills)	0.05	0	0.05
2013	BROOKHAVEN BORO	PENN-DELCO S D	Real Estate - General Purpose (mills)	4.35	25.276	29.626
2013	BROOKHAVEN BORO	PENN-DELCO S D	Mercantile/Business Privilege - Wholesale (mills)	0.1	0	0.1
2013	BROOKHAVEN BORO	PENN-DELCO S D	Mercantile/Business Privilege - Retail (mills)	0.15	0	0.15
2013	CHESTER TWP	CHESTER-UPLAND S D	Real Estate - General Purpose (mills)	8	0	8
2013	CHESTER TWP	CHESTER-UPLAND S D	Real Estate - Fire Equipment & Firehouses (mills)	0.8	0	0.8
2013	CHESTER TWP	CHESTER-UPLAND S D	Mercantile/Business Privilege - Wholesale (mills)	1	0	1
2013	CHESTER TWP	CHESTER-UPLAND S D	Mercantile/Business Privilege - Retail (mills)	1.5	0	1.5
2013	EDDYSTONE BORO	RIDLEY S D	Real Estate - General Purpose (mills)	5.49	39.125	44.615
2013	EDDYSTONE BORO	RIDLEY S D	Real Estate - Debt Service (mills)	0.26	0	0.26
2013	EDGMONT TWP	ROSE TREE MEDIA S D	Real Estate - General Purpose (mills)	0.611	22.9445	23.5555
2013	EDGMONT TWP	ROSE TREE MEDIA S D	Real Estate - Ambulance & Rescue Squads (mills)	0.0311	0	0.0311
2013	EDGMONT TWP	ROSE TREE MEDIA S D	Real Estate - Fire Equipment & Firehouses (mills)	0.1862	0	0.1862

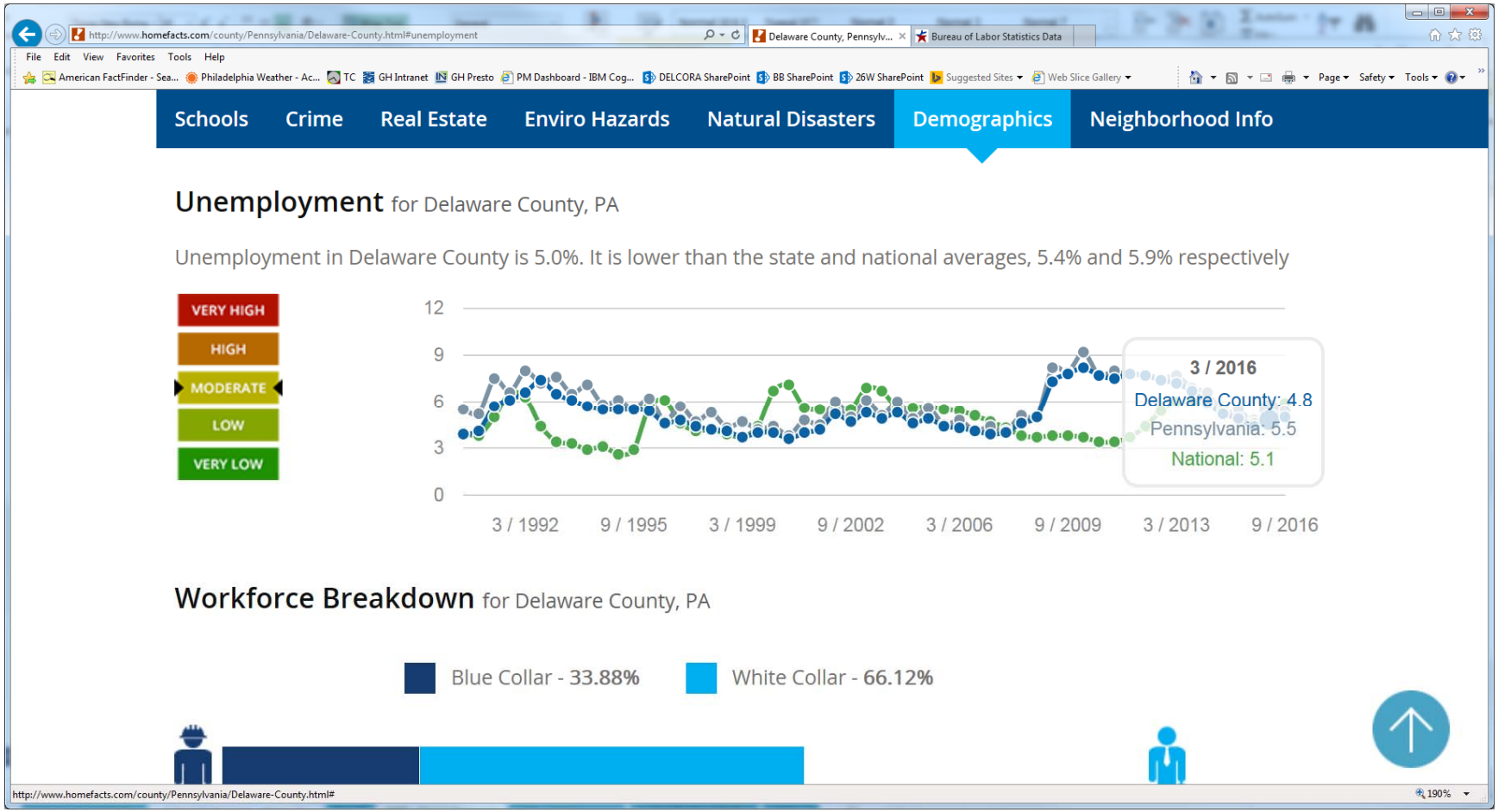
Reporting Year	Municipality	School District	Tax Name	Municipal Tax Amount	School District Tax Amount	Total Tax Rate
2013	MARCUS HOOK BORO	CHICHESTER S D	Real Estate - General Purpose (mills)	11.47	0	11.47
2013	MARCUS HOOK BORO	CHICHESTER S D	Real Estate - Debt Service (mills)	0.7	0	0.7
2013	MARCUS HOOK BORO	CHICHESTER S D	Real Estate - Fire Equipment & Firehouses (mills)	0.18	0	0.18
2013	MARPLE TWP	MARPLE NEWTOWN S D	Real Estate - General Purpose (mills)	4.184	17.6839	21.8679
2013	MARPLE TWP	MARPLE NEWTOWN S D	Mercantile/Business Privilege - Wholesale (mills)	1	0	1
2013	MARPLE TWP	MARPLE NEWTOWN S D	Mercantile/Business Privilege - Retail (mills)	1.5	0	1.5
2013	MARPLE TWP	MARPLE NEWTOWN S D	Mercantile/Business Privilege - Other (mills)	1.5	0	1.5
2013	MIDDLETOWN TWP	ROSE TREE MEDIA S D	Real Estate - General Purpose (mills)	0.44	22.9445	23.3845
2013	MIDDLETOWN TWP	ROSE TREE MEDIA S D	Real Estate - Debt Service (mills)	0.87	0	0.87
2013	MIDDLETOWN TWP	ROSE TREE MEDIA S D	Real Estate - Fire Equipment & Firehouses (mills)	0.185	0	0.185
2013	MIDDLETOWN TWP	ROSE TREE MEDIA S D	Real Estate - Library (mills)	0.105	0	0.105
2013	MIDDLETOWN TWP	ROSE TREE MEDIA S D	Mercantile/Business Privilege - Wholesale (mills)	1.5	0	1.5
2013	MIDDLETOWN TWP	ROSE TREE MEDIA S D	Mercantile/Business Privilege - Retail (mills)	2.25	0	2.25
2013	MIDDLETOWN TWP	ROSE TREE MEDIA S D	Mercantile/Business Privilege - Other (mills)	2.25	0	2.25
2013	MORTON BORO	SPRINGFIELD S D	Real Estate - General Purpose (mills)	4.38	0	4.38
2013	MORTON BORO	SPRINGFIELD S D	Real Estate - Debt Service (mills)	0.179	0	0.179
2013	MORTON BORO	SPRINGFIELD S D	Real Estate - Fire Equipment & Firehouses (mills)	0.456	0	0.456
2013	MORTON BORO	SPRINGFIELD S D	Real Estate - Street Lighting (mills)	0.098	0	0.098
2013	MORTON BORO	SPRINGFIELD S D	Real Estate - Distressed Pension Systems Recovery Program (mills)	3.048	0	3.048
2013	MORTON BORO	SPRINGFIELD S D	Mercantile/Business Privilege - Wholesale (mills)	0.5	0.5	1
2013	MORTON BORO	SPRINGFIELD S D	Mercantile/Business Privilege - Retail (mills)	0.75	0.75	1.5

Reporting Year	Municipality	School District	Tax Name	Municipal Tax Amount	School District Tax Amount	Total Tax Rate
2013	NETHER PROVIDENCE TWP	WALLINGFRD-SWARTHMR S D	Real Estate - General Purpose (mills)	4.68	39.693	44.373
2013	NETHER PROVIDENCE TWP	WALLINGFRD-SWARTHMR S D	Real Estate - Community Colleges (mills)	0	0	0
2013	NEWTOWN TWP	MARPLE NEWTOWN S D	Real Estate - General Purpose (mills)	2.5037	17.6839	20.1876
2013	PROSPECT PARK BORO	INTERBORO S D	Real Estate - General Purpose (mills)	8.72	0	8.72
2013	RIDLEY PARK BORO	RIDLEY S D	Real Estate - General Purpose (mills)	5.94	39.125	45.065
2013	RIDLEY PARK BORO	RIDLEY S D	Real Estate - Debt Service (mills)	0.98	0	0.98
2013	RIDLEY PARK BORO	RIDLEY S D	Real Estate - Fire Equipment & Firehouses (mills)	0.32	0	0.32
2013	RIDLEY PARK BORO	RIDLEY S D	Real Estate - Library (mills)	0.34	0	0.34
2013	RIDLEY PARK BORO	RIDLEY S D	Real Estate - Recreation (mills)	0.21	0	0.21
2013	RIDLEY TWP	RIDLEY S D	Real Estate - General Purpose (mills)	5.819	39.125	44.944
2013	RIDLEY TWP	RIDLEY S D	Real Estate - Ambulance & Rescue Squads (mills)	0.025	0	0.025
2013	RIDLEY TWP	RIDLEY S D	Real Estate - Debt Service (mills)	0.946	0	0.946
2013	RIDLEY TWP	RIDLEY S D	Real Estate - Fire Equipment & Firehouses (mills)	0.16	0	0.16
2013	RIDLEY TWP	RIDLEY S D	Real Estate - Library (mills)	0.373	0	0.373
2013	RIDLEY TWP	RIDLEY S D	Real Estate - Pensions and Retirement (mills)	0.11	0	0.11
2013	RIDLEY TWP	RIDLEY S D	Real Estate - Recreation (mills)	0.5	0	0.5
2013	RIDLEY TWP	RIDLEY S D	Real Estate - Fire and Water District (mills)	0.083	0	0.083
2013	RIDLEY TWP	RIDLEY S D	Mercantile/Business Privilege - Wholesale (mills)	1	0	1
2013	RIDLEY TWP	RIDLEY S D	Mercantile/Business Privilege - Retail (mills)	1.5	0	1.5
2013	RUTLEDGE BORO	WALLINGFRD-SWARTHMR S D	Real Estate - General Purpose (mills)	5.28	39.693	44.973
2013	RUTLEDGE BORO	WALLINGFRD-SWARTHMR S D	Real Estate - Community Colleges (mills)	0	0.419	0.419
2013	SPRINGFIELD TWP	SPRINGFIELD S D	Real Estate - General Purpose (mills)	5.32	0	5.32

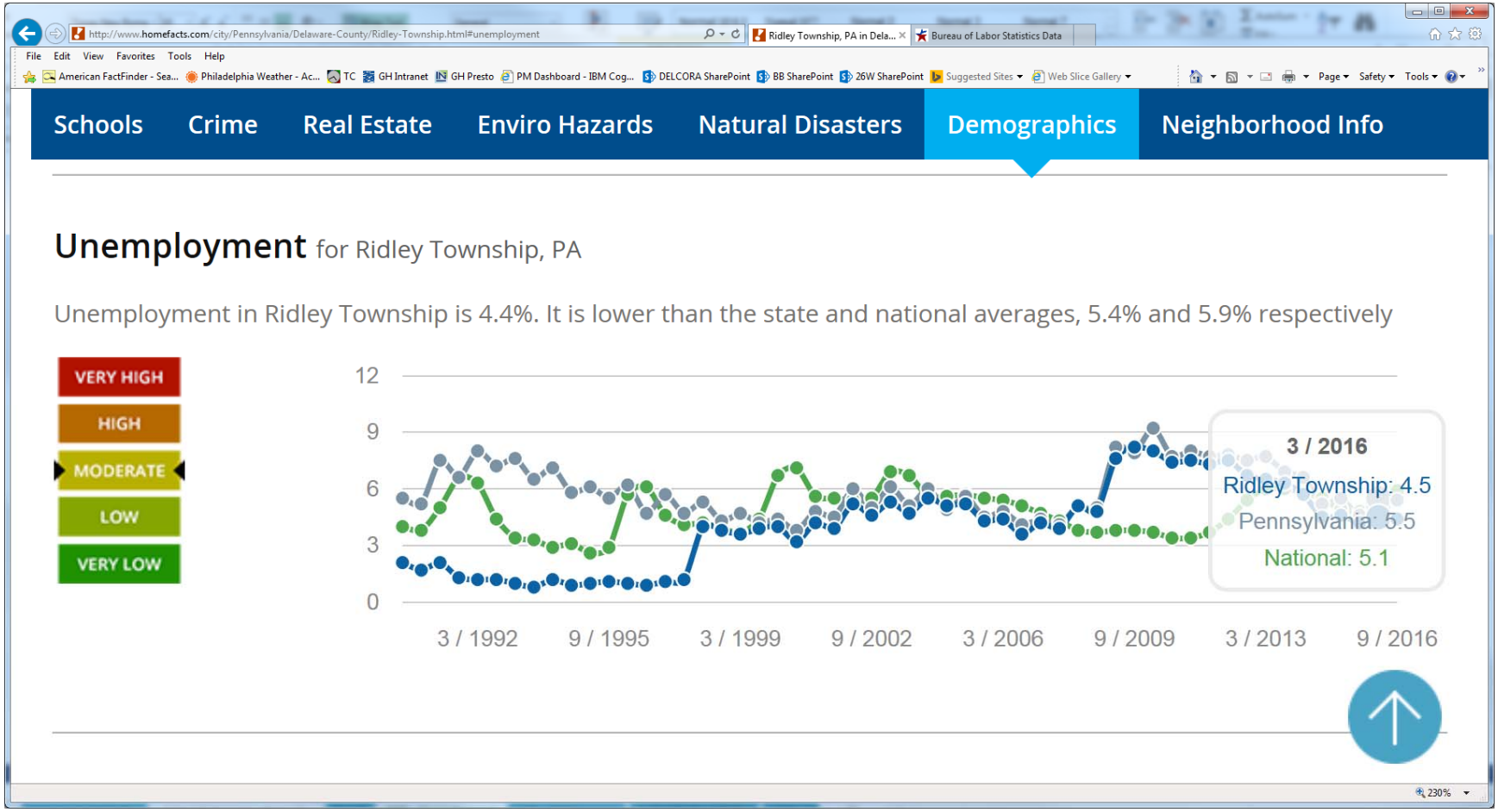
Reporting Year	Municipality	School District	Tax Name	Municipal Tax Amount	School District Tax Amount	Total Tax Rate
2013	SPRINGFIELD TWP	SPRINGFIELD S D	Mercantile/Business Privilege - Wholesale (mills)	0.5	0.5	1
2013	SPRINGFIELD TWP	SPRINGFIELD S D	Mercantile/Business Privilege - Retail (mills)	0.75	0.75	1.5
2013	SPRINGFIELD TWP	SPRINGFIELD S D	Mercantile/Business Privilege - Other (mills)	3	0	3
2013	SWARTHMORE BORO	WALLINGFRD-SWARTHMR S D	Real Estate - General Purpose (mills)	4.484	39.693	44.177
2013	SWARTHMORE BORO	WALLINGFRD-SWARTHMR S D	Real Estate - Debt Service (mills)	0.468	0	0.468
2013	SWARTHMORE BORO	WALLINGFRD-SWARTHMR S D	Real Estate - Pensions and Retirement (mills)	0.5	0	0.5
2013	SWARTHMORE BORO	WALLINGFRD-SWARTHMR S D	Real Estate - Community Colleges (mills)	0	0.419	0.419
2013	TRAINER BORO	CHICHESTER S D	Real Estate - General Purpose (mills)	14.75	0	14.75
2013	UPLAND BORO	CHESTER-UPLAND S D	Real Estate - General Purpose (mills)	2	0	2
2013	UPPER CHICHESTER TWP	CHICHESTER S D	Real Estate - General Purpose (mills)	5.1	0	5.1
2013	UPPER CHICHESTER TWP	CHICHESTER S D	Real Estate - Debt Service (mills)	0	0	0
2013	UPPER PROVIDENCE TWP	ROSE TREE MEDIA S D	Real Estate - General Purpose (mills)	3.734	22.9445	26.6785

Appendix 11: Bureau of Labor Statistics Data

Source: www.homefacts.com



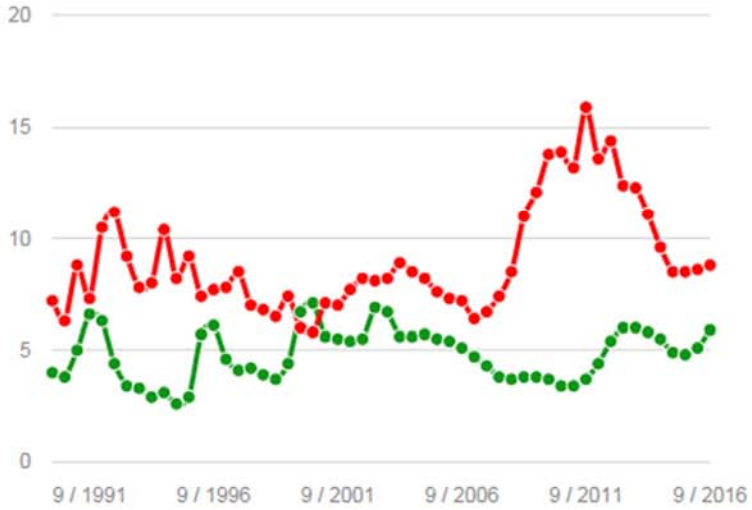
http://www.homefacts.com/city/Pennsylvania/Delaware-County/Chester.html#unemployment
Chester, PA in Delaware Co...
Bureau of Labor Statistics Data
Schools
Crime
Real Estate
Enviro Hazards
Natural Disasters
Demographics
Neighborhood Info
Unemployment for Chester, PA
Unemployment in Chester is 8.8%. It is lower than the state and national averages, 5.4% and 5.9% respectively
VERY HIGH
HIGH
MODERATE
LOW
VERY LOW
20
15
10
5
0
3 / 1992
9 / 1995
3 / 1999
9 / 2002
3 / 2006
9 / 2009
3 / 2013
9 / 2016
3 / 2016
Chester: 8.6
Pennsylvania: 5.5
National: 5.1
Workforce Breakdown for Chester, PA


http://www.homefacts.com/city/Pennsylvania/Delaware-County/Ridley-Township.html#unemployment
Ridley Township, PA in Dela...
Bureau of Labor Statistics Data
Schools
Crime
Real Estate
Enviro Hazards
Natural Disasters
Demographics
Neighborhood Info
Unemployment for Ridley Township, PA
Unemployment in Ridley Township is 4.4%. It is lower than the state and national averages, 5.4% and 5.9% respectively
VERY HIGH
HIGH
MODERATE
LOW
VERY LOW
12
9
6
3
0
3 / 1992
9 / 1995
3 / 1999
9 / 2002
3 / 2006
9 / 2009
3 / 2013
9 / 2016
3 / 2016
Ridley Township: 4.5
Pennsylvania: 5.5
National: 5.1

Chester, PA Unemployment Rate Report

Chester, PA Historical Unemployment Trends

Type City Name vs Type City Name



Since 2005 the unemployment rate in Chester, Pennsylvania has ranged from 4.9% in April 2000 to 17.4% in July 2011. The current unemployment rate for Chester is 8.8% in September 2016. See how other local areas compare by using our Unemployment Compare tool.

Chester, PA Unemployment Rate by Month

Very High Unemployment Area

Chester, PA Current Unemployment - 8.8%

2016 **1974 Chester, PA Unemployment Rate**

Month/Year	Chester, PA%	Pennsylvania%	National %
1 / 2016	7.9%	5.2%	5.1%
2 / 2016	7.4%	5.3%	5.2%
3 / 2016	8.6%	5.5%	5.1%
4 / 2016	8.4%	5.2%	5.1%
5 / 2016	9.1%	5.5%	5.1%
6 / 2016	9.3%	5.6%	5.4%
7 / 2016	10.5%	6.1%	5.5%
8 / 2016	10.9%	6.0%	5.5%
9 / 2016	8.8%	5.4%	5.9%

Appendix 12: U.S. Census/American Community Survey Data

S1903: MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2013 INFLATION-ADJUSTED DOLLARS)
2009-2013 American Community Survey 5-Year Estimates

Subject	Aston township, Delaware County, Pennsylvania		Bethel township, Delaware County, Pennsylvania		Brookhaven borough, Delaware County, Pennsylvania		Chester city, Delaware County, Pennsylvania		Chester township, Delaware County, Pennsylvania		Eddystone borough, Delaware County, Pennsylvania	
	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Households	5,862	77,966	3,053	120,869	3,522	63,808	11,817	27,249	1,341	44,353	877	41,832
One race--												
White	97.8%	77,977	92.5%	120,061	96.6%	64,913	15.1%	24,167	20.9%	43,667	83.5%	42,829
Black or African American	0.7%	71,310	1.8%	85,956	1.7%	56,700	80.4%	29,266	74.1%	46,600	14.5%	27,750
American Indian and Alaska Native	0.0%	-	0.0%	-	0.0%	-	0.2%	-	1.7%	43,661	0.0%	-
Asian	1.4%	98,125	5.2%	193,929	1.7%	26,829	0.2%	35,536	0.0%	-	0.0%	-
Native Hawaiian and Other Pacific Islander	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-
Some other race	0.0%	-	0.0%	-	0.0%	-	2.4%	17,050	2.6%	14,688	0.0%	-
Two or more races	0.2%	-	0.5%	-	0.0%	-	1.7%	20,357	0.7%	-	2.1%	41,111
Hispanic or Latino origin (of any race)	0.9%	-	1.2%	-	1.2%	48,365	5.8%	17,687	2.2%	14,375	1.4%	-
White alone, not Hispanic or Latino	96.8%	78,252	91.8%	119,394	95.4%	65,550	12.5%	24,119	20.9%	43,667	82.1%	42,961
HOUSEHOLD INCOME BY AGE OF HOUSEHOLDER												
15 to 24 years	0.4%	33,750	0.0%	-	1.4%	-	7.0%	18,316	1.8%	-	4.6%	33,571
25 to 44 years	28.5%	91,341	23.4%	138,472	27.9%	77,414	31.2%	25,104	36.3%	47,396	33.4%	41,793
45 to 64 years	44.8%	83,271	51.1%	129,076	40.0%	87,813	38.9%	34,951	44.1%	46,618	41.3%	43,929
65 years and over	26.3%	36,675	25.5%	68,787	30.7%	40,116	22.9%	26,443	17.7%	26,932	20.8%	41,458
FAMILIES												
Families	4,170	88,992	2,500	126,803	2,162	89,216	6,885	33,822	920	52,583	545	46,563
With own children under 18 years	45.5%	92,183	45.5%	152,663	33.9%	105,032	43.0%	20,813	50.9%	47,083	47.7%	41,250
With no own children under 18 years	54.5%	84,973	54.5%	118,646	66.1%	85,208	57.0%	42,351	49.1%	54,000	52.3%	51,875
Married-couple families	82.2%	95,572	90.4%	134,275	80.9%	90,031	31.6%	60,852	38.8%	69,761	54.7%	61,591
Female householder, no husband present	11.4%	53,789	6.6%	77,386	14.1%	53,482	58.6%	22,105	49.2%	38,693	34.7%	29,479
Male householder, no wife present	6.4%	52,750	3.0%	64,900	5.0%	100,074	9.9%	41,776	12.0%	33,889	10.6%	47,000
NONFAMILY HOUSEHOLDS												
Nonfamily households	1,692	43,300	553	72,566	1,360	35,042	4,932	19,922	421	19,482	332	33,387
Female householder	59.2%	34,943	80.7%	59,107	59.4%	33,173	60.7%	19,265	58.2%	19,496	47.6%	21,875
Living alone	55.4%	29,125	72.5%	58,125	56.3%	31,853	50.8%	18,879	56.1%	19,315	43.4%	19,891
Not living alone	3.8%	56,806	8.1%	78,558	3.2%	121,146	10.0%	24,375	2.1%	-	4.2%	53,125
Male householder	40.8%	52,841	19.3%	99,650	40.6%	40,000	39.3%	22,059	41.8%	19,375	52.4%	34,400
Living alone	31.3%	43,864	9.0%	-	33.9%	36,518	33.1%	20,799	31.4%	11,691	44.6%	40,000
Not living alone	9.5%	97,039	10.3%	86,528	6.7%	54,297	6.1%	23,419	10.5%	234,286	7.8%	-
PERCENT IMPUTED												
Household income in the past 12 months	34.3%	(X)	23.7%	(X)	27.0%	(X)	56.4%	(X)	45.6%	(X)	21.8%	(X)
Family income in the past 12 months	36.0%	(X)	24.6%	(X)	32.2%	(X)	60.0%	(X)	43.0%	(X)	25.3%	(X)
Nonfamily income in the past 12 months	29.7%	(X)	19.9%	(X)	18.8%	(X)	49.4%	(X)	44.4%	(X)	16.0%	(X)

S1903: MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2013 INFLATION-ADJUSTED DOLLARS)
2009-2013 American Community Survey 5-Year Estimates

Subject	Edgmont township, Delaware County, Pennsylvania		Lower Chichester township, Delaware County, Pennsylvania		Marcus Hook borough, Delaware County, Pennsylvania		Marple township, Delaware County, Pennsylvania		Middletown township, Delaware County, Pennsylvania		Morton borough, Delaware County, Pennsylvania	
	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Households	1,640	114,355	1,165	53,460	832	39,167	8,339	74,503	5,839	85,593	1,088	59,022
One race--												
White	95.0%	117,000	87.3%	56,378	85.9%	41,528	92.3%	75,720	94.7%	84,759	69.7%	65,000
Black or African American	0.7%	-	10.2%	23,109	12.7%	30,789	2.4%	38,485	1.1%	51,453	24.6%	39,189
American Indian and Alaska Native	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.5%	-	0.0%	-
Asian	4.3%	69,311	0.9%	-	0.0%	-	4.9%	108,021	3.3%	118,214	3.4%	46,528
Native Hawaiian and Other Pacific Islander	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-
Some other race	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-
Two or more races	0.0%	-	1.6%	-	1.3%	-	0.4%	41,667	0.4%	-	2.3%	163,281
Hispanic or Latino origin (of any race)	0.0%	-	2.8%	-	0.0%	-	2.1%	29,503	1.7%	183,142	0.0%	-
White alone, not Hispanic or Latino	95.0%	117,000	87.0%	56,506	85.9%	41,528	90.2%	76,847	93.2%	84,408	69.7%	65,000
HOUSEHOLD INCOME BY AGE OF HOUSEHOLDER												
15 to 24 years	0.4%	-	1.0%	-	8.2%	23,611	0.9%	34,875	0.8%	6,528	0.5%	-
25 to 44 years	18.7%	173,750	45.8%	49,092	38.7%	44,435	18.8%	95,926	19.8%	114,853	27.7%	69,766
45 to 64 years	43.2%	132,148	39.6%	56,681	34.6%	41,176	48.6%	95,016	41.6%	113,843	53.2%	64,542
65 years and over	37.7%	66,458	13.6%	56,625	18.5%	30,109	31.7%	46,079	37.8%	42,416	18.7%	29,671
FAMILIES												
Families	1,047	147,969	785	52,049	582	39,200	6,122	91,898	3,966	107,013	663	69,375
With own children under 18 years	40.4%	161,125	56.4%	48,698	56.0%	34,457	36.7%	101,591	40.5%	114,688	37.1%	67,000
With no own children under 18 years	59.6%	141,842	43.6%	69,786	44.0%	46,250	63.3%	84,278	59.5%	100,400	62.9%	73,456
Married-couple families	90.0%	160,104	64.8%	71,007	40.2%	63,438	83.0%	96,796	86.9%	115,980	76.3%	81,250
Female householder, no husband present	7.4%	112,917	32.5%	24,511	48.6%	33,207	11.7%	67,396	10.6%	51,757	11.5%	59,000
Male householder, no wife present	2.6%	166,042	2.7%	60,972	11.2%	21,250	5.3%	74,125	2.4%	88,661	12.2%	32,708
NONFAMILY HOUSEHOLDS												
Nonfamily households	593	55,375	380	55,431	250	34,792	2,217	40,877	1,873	37,396	425	36,964
Female householder	68.3%	51,528	39.5%	55,086	43.2%	33,125	56.9%	33,825	69.1%	31,026	57.4%	29,342
Living alone	65.1%	46,875	32.4%	51,442	39.6%	32,250	51.0%	31,690	62.6%	28,733	49.4%	27,895
Not living alone	3.2%	-	7.1%	91,625	3.6%	-	5.9%	83,750	6.5%	81,458	8.0%	90,357
Male householder	31.7%	66,042	60.5%	62,900	56.8%	37,717	43.1%	56,058	30.9%	51,528	42.6%	40,281
Living alone	26.8%	51,821	44.5%	48,798	51.6%	37,663	36.8%	46,336	22.4%	41,750	28.0%	32,656
Not living alone	4.9%	-	16.1%	72,813	5.2%	-	6.4%	99,236	8.5%	84,091	14.6%	41,938
PERCENT IMPUTED												
Household income in the past 12 months	28.9%	(X)	52.0%	(X)	35.7%	(X)	37.4%	(X)	30.2%	(X)	33.2%	(X)
Family income in the past 12 months	21.5%	(X)	46.9%	(X)	32.8%	(X)	39.3%	(X)	25.9%	(X)	32.4%	(X)
Nonfamily income in the past 12 months	40.8%	(X)	62.6%	(X)	42.4%	(X)	32.2%	(X)	38.0%	(X)	34.4%	(X)

S1903: MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2013 INFLATION-ADJUSTED DOLLARS)
2009-2013 American Community Survey 5-Year Estimates

Subject	Nether Providence township, Delaware County, Pennsylvania		Newtown township, Delaware County, Pennsylvania		Parkside borough, Delaware County, Pennsylvania		Prospect Park borough, Delaware County, Pennsylvania		Ridley township, Delaware County, Pennsylvania		Ridley Park borough, Delaware County, Pennsylvania		Rutledge borough, Delaware County, Pennsylvania	
	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Households	5,098	98,608	4,586	93,565	827	51,103	2,438	67,143	12,270	62,500	2,873	57,516	294	71,923
One race--														
White	89.0%	96,756	96.5%	93,704	83.0%	57,000	95.5%	68,239	89.9%	62,874	96.6%	57,938	92.9%	71,875
Black or African American	4.8%	94,306	0.2%	-	10.9%	42,174	1.2%	-	6.1%	45,078	1.3%	-	2.7%	70,833
American Indian and Alaska Native	0.0%	-	0.0%	-	1.1%	-	0.0%	-	0.2%	63,611	0.0%	-	0.0%	-
Asian	4.2%	131,518	3.2%	82,120	2.1%	-	2.5%	-	2.2%	79,484	0.7%	116,750	3.1%	121,875
Native Hawaiian and Other Pacific Islander	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-
Some other race	0.0%	-	0.0%	-	0.0%	-	0.8%	-	0.5%	29,375	0.0%	-	1.4%	-
Two or more races	2.0%	103,264	0.1%	-	3.0%	93,438	0.0%	-	1.0%	41,743	1.4%	39,327	0.0%	-
Hispanic or Latino origin (of any race)	1.4%	103,611	0.2%	-	2.9%	116,944	2.2%	-	2.2%	73,780	2.1%	-	2.0%	-
White alone, not Hispanic or Latino	88.1%	96,614	96.3%	93,889	83.0%	57,000	94.1%	69,176	88.5%	62,770	94.8%	58,750	92.2%	72,125
HOUSEHOLD INCOME BY AGE OF HOUSEHOLDER														
15 to 24 years	0.5%	-	0.0%	-	2.3%	46,705	0.0%	-	0.9%	43,811	1.6%	51,528	9.5%	40,000
25 to 44 years	24.3%	102,464	20.7%	105,733	44.1%	63,482	39.2%	61,477	34.7%	67,684	31.8%	63,698	18.7%	68,125
45 to 64 years	46.6%	120,042	45.4%	133,750	39.7%	46,250	44.1%	75,102	41.1%	71,686	43.3%	70,398	56.1%	88,875
65 years and over	28.6%	59,982	33.9%	42,909	13.9%	21,991	16.7%	30,395	23.3%	34,199	23.2%	39,740	15.6%	59,500
FAMILIES														
Families	3,750	121,039	3,147	120,746	600	59,167	1,536	72,075	7,829	76,076	1,681	78,413	214	89,250
With own children under 18 years	42.4%	134,133	39.1%	129,222	49.2%	48,068	50.7%	53,056	43.0%	70,253	43.8%	80,208	48.1%	71,023
With no own children under 18 years	57.6%	110,841	60.9%	112,125	50.8%	65,341	49.3%	86,250	57.0%	80,390	56.2%	74,609	51.9%	106,875
Married-couple families	84.3%	131,906	88.3%	127,045	56.7%	85,000	69.8%	82,000	73.5%	88,922	74.2%	92,574	78.5%	108,333
Female householder, no husband present	9.9%	73,681	10.9%	68,088	35.5%	34,036	17.6%	38,304	20.8%	47,025	18.5%	53,508	18.7%	40,750
Male householder, no wife present	5.7%	80,556	0.8%	33,194	7.8%	52,708	12.6%	51,546	5.8%	66,275	7.3%	35,972	2.8%	-
NONFAMILY HOUSEHOLDS														
Nonfamily households	1,348	53,977	1,439	34,984	227	35,114	902	36,855	4,441	36,365	1,192	36,893	80	36,250
Female householder	70.3%	49,000	62.0%	30,556	51.5%	25,625	40.8%	21,886	53.6%	26,432	64.0%	35,610	61.3%	34,250
Living alone	60.9%	41,582	56.8%	29,063	49.3%	24,375	36.7%	21,075	49.1%	23,329	55.3%	32,917	43.8%	22,250
Not living alone	9.4%	91,635	5.1%	63,750	2.2%	-	4.1%	80,375	4.5%	86,330	8.7%	66,250	17.5%	48,214
Male householder	29.7%	58,929	38.0%	41,625	48.5%	45,227	59.2%	49,786	46.4%	43,333	36.0%	38,792	38.8%	43,250
Living alone	26.4%	56,042	32.4%	36,875	37.9%	21,944	46.6%	48,929	35.8%	38,750	33.1%	38,833	33.8%	44,250
Not living alone	3.3%	82,727	5.6%	118,558	10.6%	85,313	12.6%	74,643	10.6%	66,050	2.9%	37,431	5.0%	-
PERCENT IMPUTED														
Household income in the past 12 months	27.2%	(X)	38.6%	(X)	34.3%	(X)	22.6%	(X)	26.9%	(X)	22.1%	(X)	27.9%	(X)
Family income in the past 12 months	27.5%	(X)	40.2%	(X)	40.0%	(X)	23.4%	(X)	26.6%	(X)	23.7%	(X)	26.6%	(X)
Nonfamily income in the past 12 months	25.7%	(X)	34.7%	(X)	19.4%	(X)	21.3%	(X)	25.8%	(X)	19.8%	(X)	31.3%	(X)

S1903: MEDIAN INCOME IN THE PAST 12 MONTHS (IN 2013 INFLATION-ADJUSTED DOLLARS)
2009-2013 American Community Survey 5-Year Estimates

Subject	Springfield township, Delaware County, Pennsylvania		Swarthmore borough, Delaware County, Pennsylvania		Trainer borough, Delaware County, Pennsylvania		Upland borough, Delaware County, Pennsylvania		Upper Chichester township, Delaware County, Pennsylvania		Upper Providence township, Delaware County, Pennsylvania	
	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income	Total	Median income
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Households	8,632	92,468	2,006	117,604	639	40,863	1,171	31,597	6,528	68,294	3,845	104,399
One race--												
White	95.9%	91,640	94.9%	117,656	79.7%	40,156	64.4%	38,864	83.7%	71,168	91.7%	105,194
Black or African American	1.2%	49,625	3.8%	138,447	18.6%	42,014	34.8%	20,057	13.3%	44,886	2.8%	61,131
American Indian and Alaska Native	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.3%	-	0.0%	-
Asian	2.4%	103,958	1.3%	-	0.6%	-	0.0%	-	1.6%	108,750	5.1%	106,429
Native Hawaiian and Other Pacific Islander	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-
Some other race	0.1%	-	0.0%	-	1.1%	-	0.9%	-	0.5%	-	0.3%	-
Two or more races	0.3%	125,870	0.0%	-	0.0%	-	0.0%	-	0.6%	49,125	0.2%	-
Hispanic or Latino origin (of any race)	0.4%	19,489	7.0%	138,939	4.2%	76,250	4.9%	72,361	2.8%	31,955	0.9%	172,946
White alone, not Hispanic or Latino	95.9%	91,721	89.5%	117,308	76.5%	37,263	60.8%	38,295	82.1%	70,678	90.8%	104,423
HOUSEHOLD INCOME BY AGE OF HOUSEHOLDER												
15 to 24 years	0.5%	70,000	3.3%	-	0.5%	-	1.8%	26,875	2.2%	31,026	2.2%	48,250
25 to 44 years	26.2%	107,623	19.7%	121,473	37.4%	37,393	38.1%	40,714	28.2%	79,722	29.7%	105,119
45 to 64 years	42.9%	111,824	48.1%	132,944	38.2%	53,500	31.6%	43,750	43.6%	79,063	47.3%	124,821
65 years and over	30.4%	44,780	28.9%	79,861	23.9%	40,417	28.5%	22,556	26.1%	35,647	20.9%	78,182
FAMILIES												
Families	6,733	105,586	1,290	172,222	491	41,280	763	42,061	4,156	81,962	2,703	131,856
With own children under 18 years	40.2%	108,635	45.0%	204,044	46.2%	40,240	52.8%	27,750	34.4%	82,917	39.3%	149,605
With no own children under 18 years	59.8%	101,346	55.0%	150,481	53.8%	44,000	47.2%	54,207	65.6%	81,800	60.7%	115,078
Married-couple families	85.0%	110,601	92.2%	181,226	53.2%	57,981	38.1%	67,917	77.0%	96,070	81.7%	142,432
Female householder, no husband present	10.7%	57,988	6.0%	52,589	35.0%	29,625	53.3%	26,477	16.9%	48,897	12.2%	64,271
Male householder, no wife present	4.3%	44,875	1.8%	-	11.8%	38,750	8.5%	75,458	6.1%	71,875	6.1%	105,066
NONFAMILY HOUSEHOLDS												
Nonfamily households	1,899	36,858	716	52,885	148	30,652	408	17,169	2,372	32,619	1,142	51,250
Female householder	55.8%	25,725	61.7%	56,786	48.6%	28,750	66.9%	16,496	59.3%	30,984	52.4%	56,250
Living alone	52.9%	24,574	53.2%	60,993	43.9%	26,719	55.4%	15,677	48.9%	24,107	42.6%	48,750
Not living alone	2.9%	83,929	8.5%	2,500-	4.7%	-	11.5%	70,391	10.5%	66,739	9.8%	104,700
Male householder	44.2%	60,430	38.3%	45,500	51.4%	31,346	33.1%	24,844	40.7%	34,886	47.6%	45,900
Living alone	35.4%	46,442	36.5%	39,375	36.5%	33,750	31.9%	25,714	24.3%	26,820	42.2%	44,000
Not living alone	8.8%	111,875	1.8%	-	14.9%	30,357	1.2%	-	16.4%	63,611	5.4%	147,273
PERCENT IMPUTED												
Household income in the past 12 months	25.0%	(X)	29.5%	(X)	41.3%	(X)	39.8%	(X)	34.0%	(X)	29.8%	(X)
Family income in the past 12 months	24.3%	(X)	23.1%	(X)	40.5%	(X)	44.7%	(X)	29.8%	(X)	28.3%	(X)
Nonfamily income in the past 12 months	25.7%	(X)	41.1%	(X)	43.9%	(X)	30.6%	(X)	41.4%	(X)	32.6%	(X)

Appendix 13: Flow Allocation

Appendix 13

Determination of Chester City's Wet Weather Flow as Fraction of Total Wet Weather Flow

DELCORA's system serves a variety of customers from numerous municipalities in Delaware County, PA, as depicted in the schematic diagram depicted in Figure 1-1. The majority of the sewer systems within the Model Area have separated sanitary sewers, with the exception of a portion of Chester City, which is served by combined sewers. While the combined sewer outfalls in DELCORA's service area are all located within the City of Chester, it is recognized that wet weather flow from customers outside of the City of Chester may influence the conveyance of flow from the City of Chester, thereby affecting the CSO volume discharged from Chester City's outfalls.

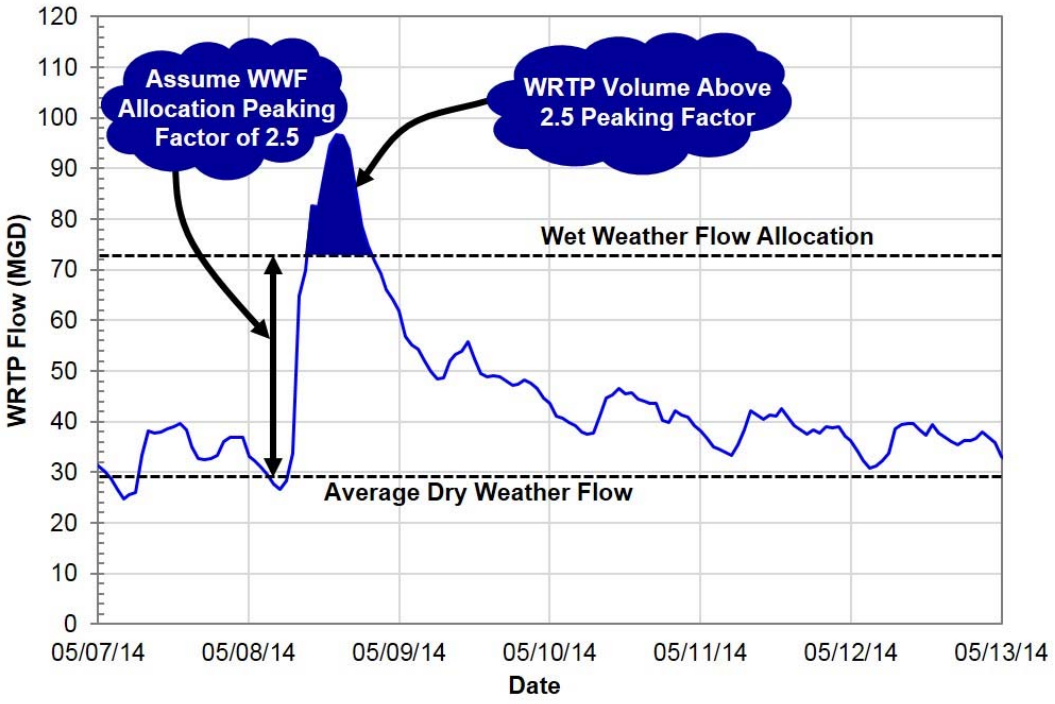
Because the service area includes many municipalities, DELCORA must consider distributing costs among its customers in relation to the services each customer group receives and must set rates in a fair and reasonable manner. Thus, for the purpose of the Draft FCA, the allocation of CSO LTCP costs between Chester City and the separate sewer systems in the Model Area is based on separate sewer system's share of the Model Area's total excess Wet Weather Flow (WWF) volume.

The existing Hydrologic and Hydraulic (H&H) Model focuses on the Chester City collection system. As part of updates to the CSO LTCP, the H&H model will be calibrated and modified to allow for estimation of the relative contributions to wet weather flow from the Model Area customers. At this time, the H&H Model has not yet been updated, so an alternative method for approximating wet weather flow contributions will be used for this Draft FCA as described below.

Excessive wet weather flow is defined as flows exceeding the peaking factor of 2.5 times dry weather flow. In addition, flow that never reaches the plant during wet weather but instead is discharged into a receiving stream would also be characterized as excessive flow. Total excess wet weather flow would then be the sum of these two items.

Dry weather flow was estimated based on an analysis of hourly flow data for the Western Regional Treatment Plant (WRTP). Flow data for the period 2009-2013 was obtained. For each year, dry weather day flow was estimated as the 5th percentile of the WRTP flow (i.e. 5% of the days the flow will be less than the estimated DWF). With the dry weather flow baseline established, the peaking factor of 2.5 was applied and the flow data was re-analyzed to obtain an estimate of excess flow, which was the summed to estimate excess volume for a storm. Figure A13-1 shows an example WRTP's WWF volume from a single storm event in May 2014. The annual sum of excess wet weather volume for the WRTP was assigned to the separate sewer segments of the Model Area.

Figure A13-1: Basis for Estimating Wet Weather Flow from Separate Sewer Areas



CSO discharge data for the same time period (2009-2013) was obtained and analyzed to determine the annual CSO discharge volume. As this flow emanates from Chester City, this wet weather volume was assigned to Chester City.

The relative allocation for Chester City would then be the ratio of Chester City's excess wet weather volume to the total excess wet weather volume for the Model Area. Similarly, the allocation for the remainder of the Model Area (i.e., the separated sewer areas) would be the ration of the excess volume from the separate sewer areas to the total excess wet weather volume.

Conceptually, the allocation can be summarized as:

Vs = Excess WWF Volume from Separate Sewer Areas = Excess WRTP Volume .....(Eq A13-1)

Vc = Excess Chester City WWF Volume = CSO Discharge.....(Eq A13-2)

Vt = Total Excess WWF Volume = Excess WRTP Volume + CSO Discharge.....(Eq A13-3)

Chester City Allocation = Vc/(Vs + Vc).....(Eq A13-4)

Separate Sewer System Area Allocation = Vs/(Vs + Vc).....(Eq A13-5)

Results of the analysis are summarized in Table A13-1, which indicates that the separate sewer system has about a 3 percent to 5 percent share of the total wet weather volume.

Table A13-1: CSO Volume as Percent of Total Wet Weather Volume

Year	WRTP WWF Volume above 2.5 Peak Factor (MG)	CSO Volume (MG)	Total Wet Weather Volume (MG)	Percent CSO
2009	24.2	785	809.2	97%
2010	39.3	696	735.3	95%
2011	30.0	1144	1174.0	97%
2012	6.6	538	544.6	99%
2013	13.5	744	757.5	98%
Average	22.7	781.4	804.1	97%

DISCUSSION

As mentioned above, the existing Hydrologic and Hydraulic (H&H) Model focuses on the Chester City collection system and is in the process of being updated as part of the updates to the CSO LTCP. At this time, the H&H Model has not yet been updated, so the alternative method for approximating wet weather flow contributions described above was used for this Draft FCA. Further hydraulic evaluations are required to better understand the separate sewer system flows and refine the separate sewer system share of the CSO LTCP costs. Therefore for this Draft FCA, it is assumed 15 percent of CSO LTCP costs would be allocated to the separate sewer system and 85 percent of the CSO LTCP costs would allocated to combined sewer system in Chester City. For the final FCA, the updated hydrologic and hydraulic (H&H) model will be used to improve the estimate of CSO attributable to Chester City and to the remainder of the Model Area.

BACKING DATA

Plant flow and CSO discharge data is approximately 800 pages and will be provided upon request.

Appendix 14: Worksheet Details

Explanation for Worksheet 1			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A1a	100	Input Data	Existing O&M costs based on DELCORA's cost of service for each customer.
A1b	101	Input Data	Existing debt service based on DELCORA's debt cost for each customer.
A1c	102	101+102	
A2a	103	(1.5% of capital cost) * (1.03)^n	where n = number of years after completion of construction
A2b	104	Input Data	Projected additional costs for non-CSO projects Future CSO LTCP costs are based on annualized costs, assuming total CSO cost is divided into three projects as described in Draft FCA. Allocation to municipalities based on fraction of excess flow as described in the Draft FCA Appendix 13. Annualized costs for captial projects are based on bond term and interest rate described in the Draft FCA. Reported in 2035 dollars.
A2c	105	103+104	
A3	106a	102+105	
B	106b	(Western collection costs for Chester City + Retail I&I for Chester City) / Chester City Usage	Modeled on costs for DELCORA's retail customers.
C	106c	106a+106b	
D	NA	Input Data	Usage from DELCORA records and projections.
E	NA	(106c*10^6) / D	
F	107	input data: 55,000	Residential water usage (typ); based on Chester Water Authority data (2010-15)
G	108	D / F	
H	109a	E * F	
I	109b	Input data	Assumed projected SW cost of $45/Household (2016 dollars). Cost adjusted to the year used for FCA analysis by assuming inflation of 3% per year ($79/HH in 2035 dollars; $44/HH in 2015 dollars)
J	109c	H + I	

Explanation for Worksheet 2			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A1	201	Input data	Input based on US Census Bureau's 5-year American Community Survey (ACS), 2009-2013. See Draft FCA Appendix 12.
A2		Input data	Input: Year Ym
A3		Input data	Input: Data year Yf
A4		Input data	Input: MHI Inflation Rate
A5	202	(1+r) ^ (Yf-Ym)	r=MHI inflation rate, Yf=FCA Analysis year, Ym=Year of MHI Estimate. See Draft FCA Appendix 4
A6		Line 201 * Line 202	
B		Line 109c	
C		Line 204 / Line 203 * 100	

Explanation for Worksheet 3			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A	301	Input data	DELCORA has no general obligation bond. A weighted composite from the bond rating and number of households of the municipalities was determined. Strong was weighted as a 3 for investment grade, mid-range was weighted 2 for the line of investment grade (Baa, BBB), and weak was weighted 1 for junk bonds.
B	302	Input data	DELCORA's revenue bond as of 2015 from "2015 Official Statement"

Explanation for Worksheet 4			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A	401	Input data * pro-rate factor	Input data from Municipal Annual Audit and Financial Reports (MAAFR) in "Excess/Deficit of Revenues" in the "General Obligation Bonds and Notes" section at the end of each city's report. See Draft FCA Appendix 6. **Exception:** City of Chester Debt obtained from 2012 Independent Audit, Note 8 "Long-Term Debt", pg 43 Pro-rated for partial areas based on the fraction of a municipality's land area that is within the DELCORA service area. Land areas were obtained through GIS analysis. (see Table WS4.E below)
B	402	See below for more detail	Input for County Outstanding debt from Delaware County Comprehensive Annual Financial Report. Pro-rated for partial areas. Input for debt of school districts from PA State website.
C	403	Line 401 + Line 402	
D	404	Input data * pro-rate factor	Input from PA State Tax Equalization Board (STEB) - Tax Equalization Division (TED) Pro-rated for partial areas based on the fraction of a municipality's land area that is within the DELCORA service area. Land areas were obtained through GIS analysis. (see Table WS4.E below)
E		Line 403 / Line 404	

Explanation for Worksheet 4, Line 402: Calculation of Proportionate Share of Debt from Overlapping Entities

Overlapping entity: Delaware County

1. Determine Percent chargeable to service area (i.e., pro-rate factor)

Row	Description	Formula	Notes
AA	Municipality Full Market Property Value 2013 (PA STEB)	Input data	See Appendix 9
BB	Delaware County Full Market Property Value 2013 (PA STEB)	Input data	See Appendix 9
CC	Percent chargeable to your service area	Row AA / Row BB	

See Table WS4.A below for example

2. Determine Share of Debt

Row	Description	Formula	Notes
DD	Delaware County Oustanding Debt	Input data	See Appendix 8
EE	Percent chargeable to your service area	Row CC	
FF	Delaware County Debt attributable to permitee's service area	Row DD * Row EE	

See Table WS4.B below for example

Explanation for Worksheet 4, Line 402: Calculation of Proportionate Share of Debt from Overlapping Entities

Overlapping entity: School Districts

1. Identify school districts and their debts (see Table WS4.C below)

2. Determine percent chargeable to service area based on fraction of school district that is within municipality (pro-rate factor 1) and fraction of municipality that is within the service area (pro-rate factor 2).

Row	Description	Formula	Notes
GG	Municipality Full Market Property Value 2013 (PA STEB)	Input data	See Appendix 9
HH	School District Full Market Property Value 2013 (PA STEB)	Sum of FMPV for all municiaplities served by the school district	See Appendix 9
II	Percent of school district chargeable to municipality	Row GG/ Row HH	
JJ	Percent of municipality chargeable to your service area	Input data	Obtained though GIS analysis of municipality land area that is within the service area
KK	Overall percent chargeable to your service area	Row II * Row JJ	

3. Determine Share of Debt

Row	Description	Formula	Notes
LL	School District Oustanding Debt	Input data	See Table WS4.C below
MM	Percent chargeable to your service area	Row KK	
NN	Delaware County Debt attributable to permitee's service area	Row LL * Row MM	

Explanation for Worksheet 4 (cont.)

Table WS4.A

		Retail Customers						Wholesale Customers		Western				Southwest				
										Southern								
Row	Description	Chester City	Parkside Borough	Upland Borough	Chester Township (DELCORA)	Trainer Borough	Marcus Hook Borough	Brookhaven Borough (wholesale)	Nether Providence Township (wholesale)	Bethel Township	Upper Chichester Township	Eddystone Borough	Lower Chichester Township	Aston Township	Brookhaven Borough	Chester Township (SW)	Middletown Township	Upper Providence Township
AA	Municipality Full Market Property Value 2013 (PA STEB)	$ 668,332,484	$ 140,432,669	$ 86,916,839	$ 211,331,072	$ 80,303,015	$ 140,432,669	$ 541,287,028	$ 1,242,612,683	$ 851,442,202	$ 1,131,350,161	$ 226,703,647	$ 119,803,390	$ 1,244,551,376	$ 541,287,028	$ 211,331,072	$ 1,546,015,387	$ 1,166,565,930
BB	Delaware County Full Market Property Value 2013 (PA STEB)	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931
CC	Percent chargeable to your service area	1.61%	0.34%	0.21%	0.51%	0.19%	0.34%	1.31%	3.00%	2.05%	2.73%	0.55%	0.29%	3.00%	1.31%	0.51%	3.73%	2.81%

		Central Delaware County Authority											
Row	Description	Edgmont Township	Marple Township (CDCA)	Morton	Nether Providence Township (CDCA)	Newtown Twp	Prospect Park	Ridley Park Borough	Ridley Township (CDCA)	Rutledge	Springfield	Swarthmore	Upper Providence Township (CDCA)
AA	Municipality Full Market Property Value 2013 (PA STEB)	$ 674,554,080	$ 2,405,956,904	$ 155,311,247	$ 1,242,612,683	$ 2,116,962,376	$ 295,032,728	$ 405,569,802	$ 1,744,630,085	$ 52,079,034	$ 2,332,826,856	$ 542,909,677	$ 1,166,565,930
BB	Delaware County Full Market Property Value 2013 (PA STEB)	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931	$41,457,785,931
CC	Percent chargeable to your service area	1.63%	5.80%	0.37%	3.00%	5.11%	0.71%	0.98%	4.21%	0.13%	5.63%	1.31%	2.81%

Table WS4.B

		Retail Customers						Wholesale Customers		Western				Southwest				
										Southern								
Row	Description	Chester City	Parkside Borough	Upland Borough	Chester Township (DELCORA)	Trainer Borough	Marcus Hook Borough	Brookhaven Borough (wholesale)	Nether Providence Township (wholesale)	Bethel Township	Upper Chichester Township	Eddystone Borough	Lower Chichester Township	Aston Township	Brookhaven Borough	Chester Township (SW)	Middletown Township	Upper Providence Township
DD	Delaware County Debt	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000
EE	Percent chargeable to your service area	1.61%	0.34%	0.21%	0.51%	0.19%	0.34%	1.31%	3.00%	2.05%	2.73%	0.55%	0.29%	3.00%	1.31%	0.51%	3.73%	2.81%
FF	Delaware County Debt attributable to permitee's service area	$ 408,146	$ 85,761	$ 53,080	$ 129,059	$ 49,041	$ 85,761	$ 330,560	$ 758,855	$ 519,970	$ 690,908	$ 138,446	$ 73,163	$ 760,039	$ 330,560	$ 129,059	$ 944,142	$ 712,414

		Central Delaware County Authority											
Row	Description	Edgmont Township	Marple Township (CDCA)	Morton	Nether Providence Township (CDCA)	Newtown Twp	Prospect Park	Ridley Park Borough	Ridley Township (CDCA)	Rutledge	Springfield	Swarthmore	Upper Providence Township (CDCA)
DD	Delaware County Debt	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000	$ 25,318,000
EE	Percent chargeable to your service area	1.63%	5.80%	0.37%	3.00%	5.11%	0.71%	0.98%	4.21%	0.13%	5.63%	1.31%	2.81%
FF	Delaware County Debt attributable to permitee's service area	$ 411,946	$ 1,469,302	$ 94,848	$ 758,855	$ 1,292,815	$ 180,175	$ 247,679	$ 1,065,434	$ 31,804	$ 1,424,642	$ 331,551	$ 712,414

Explanation for Worksheet 4 (cont.)

Table WS4.C: School District Debts

Chester Upland School District	Chi-Chester School District	Garnet Valley School District	Interboro	Marple Newtown School District	Penn-Delco School District	Ridley School District	Rose Tree Media School District	Springfield School District	Wallingford-Swarthmore School District
$ 72,845,617	$ 63,716,819	$ 115,073,539	$ 43,891,721	$ 91,063,393	$ 86,447,954	$ 64,552,037	$ 83,564,714	$ 48,460,032	$ 91,769,834

Explanation for Worksheet 4 (cont.)

Table WS4.D

		Retail Customers						Wholesale Customers		Western				Southwest				
										Southern								
Row	Description	Chester City	Parkside Borough	Upland Borough	Chester Township (DELCORA)	Trainer Borough	Marcus Hook Borough	Brookhaven Borough (wholesale)	Nether Providence Township (wholesale)	Bethel Township	Upper Chichester Township	Eddystone Borough	Lower Chichester Township	Aston Township	Brookhaven Borough	Chester Township (SW)	Middletown Township	Upper Providence Township
	School District	Chester-Upland	Penn Delco	Chester-Upland	Chester-Upland	Chi Chester	Chi Chester	Penn Delco	Wallingford - Swarthmore	Garnet Valley	Chi Chester	Ridley	Chi Chester	Penn Delco	Penn Delco	Chester Upland	Rose Tree Media	Rose Tree Media
II	Percent of school district chargeable to municipality	63.4%	7.3%	10.7%	25.9%	5.5%	9.5%	28.1%	63.12%	26.67%	0.77	9.54%	0.08	0.65	28.84%	25.9%	38.86%	29.33%
JJ	Percent of municipality chargeable to your service area	100%	100%	100%	39%	100%	100%	64%	33%	72%	100%	100%	100%	100%	18%	61%	100%	7%
KK	Overall percent chargeable to your service area	63.4%	7.3%	10.7%	10.1%	5.5%	9.5%	18.0%	20.66%	19.28%	1	9.54%	0	1	5.18%	15.8%	38.86%	2.05%
LL	School District Debt	72,845,617	86,447,954	72,845,617	72,845,617	63,716,819	63,716,819	86,447,954	91,769,834	115,073,539	63,716,819	64,522,037	63,716,819	86,447,954	86,447,954	72,845,617	83,564,714	83,564,714
NN	School district debt attributable to service area	$ 46,181,397	$ 6,302,393	$ 7,770,615	$ 7,368,506	$ 3,476,248	$ 6,079,209	$ 15,578,519	$ 18,963,362	$ 22,186,971	$ 48,975,175	$ 6,153,965	$ 5,186,186	$ 55,853,468	$ 4,479,689	$ 11,525,099	$ 32,476,801	$ 1,715,405

		Central Delaware County Authority											
Row	Description	Edgmont Township	Marple Township (CDCA)	Morton	Nether Providence Township (CDCA)	Newtown Twp	Prospect Park	Ridley Park Borough	Ridley Township (CDCA)	Rutledge	Springfield	Swarthmore	Upper Providence Township (CDCA)
	School District	Rose Tree Media	Marple Newtown	Springfield	Wallingford Swarthmore	Marple Newtown	Interboro	Ridley	Ridley	Wallingford Swarthmore	Springfield	Wallingford Swarthmore	Rose Tree Media
II	Percent of school district chargeable to municipality	16.96%	53.19%	6.24%	63.12%	46.81%	19.83%	17.06%	73.40%	2.65%	93.76%	27.58%	29.33%
JJ	Percent of municipality chargeable to your service area	12%	56%	100%	64%	50%	100%	100%	82%	100%	54%	100%	53%
KK	Overall percent chargeable to your service area	2.03%	29.79%	6.24%	40.18%	23.40%	19.83%	17.06%	60.19%	2.65%	50.63%	27.58%	15.54%
LL	School District Debt	83,564,714	91,063,393	48,460,032	91,769,834	91,063,393	43,891,721	64,522,037	64,522,037	91,769,834	48,460,032	91,769,834	83,564,714
NN	School district debt attributable to service area	$ 1,700,425	$ 27,126,943	$ 3,024,908	$ 36,872,560	$ 21,311,211	$ 8,705,715	$ 11,009,361	$ 38,834,143	$ 2,427,525	$ 24,534,967	$ 25,306,289	$ 12,988,069

Explanation for Worksheet 4 (cont.)

Table WS4.E. Pro-rating factors based on land area

		Retail Customers						Wholesale Customers		Western				Southwest				
										Southern								
Line	Description	Chester City	Parkside Borough	Upland Borough	Chester Township (DELCORA)	Trainer Borough	Marcus Hook Borough	Brookhaven Borough (wholesale)	Nether Providence Township (wholesale)	Bethel Township	Upper Chichester Township	Eddystone Borough	Lower Chichester Township	Aston Township	Brookhaven Borough	Chester Township (SW)	Middletown Township	Upper Providence Township
	Municipality Debt	$ 22,948,627	$ 498,976	$ 652,000			$ 1,314,000	$ 102,532	$ 446,000	$ 676,000	$ 205,006	$ 39,224		$ 3,150,000	$ 102,532		$ 3,260,000	$ 139,000
	Municipality Debt			741,906			112,603	1,434,000	483,000	222,000	253,474	2,880,000		1,703,000	1,434,000		7,390,000	2,297,000
	Municipality Debt			75,047			350,000	2,062,000	9,181		659,000	450,000			2,062,000			671,000
	Municipality Debt			308,000					2,801,000		207,000							395,267
	Municipality Debt								1,031,000		3,550,000							
	Municipality Debt																	
	Total Municipality Debt	22,948,627	498,976	1,776,953	0	0	1,776,603	3,598,532	4,770,181	898,000	4,874,480	3,369,224	0	4,853,000	3,598,532	0	10,650,000	3,502,267
	Fraction of municipality within service area	100%	100%	100%	39%	100%	100%	64%	33%	72%	100%	100%	100%	100%	18%	61%	100%	7%
A	Direct Net Debt (G.O. Bonds Excluding Double-Barreled Bonds) within service area	$ 22,948,627	$ 498,976	$ 1,776,953	$ 0	$ 0	$ 1,776,603	$ 2,307,739	$ 1,561,757	$ 649,254	$ 4,874,480	$ 3,369,224	$ 0	$ 4,853,000	$ 646,656	$ 0	$ 10,650,000	$ 245,159

		Central Delaware County Authority											
Line	Description	Edgmont Township	Marple Township (CDCA)	Morton	Nether Providence Township (CDCA)	Newtown Twp	Prospect Park	Ridley Park Borough	Ridley Township (CDCA)	Rutledge	Springfield	Swarthmore	Upper Providence Township (CDCA)
	Municipality Debt	$ -	$ 815,000	$ 195,000	$ 446,000	$ 2,250,000	$ 44,183	$ 128,844	$ 2,195,000	$ 42,263	$ 4,571,000	$ 298,000	$ 139,000
	Municipality Debt		2,115,000	478,250	483,000	440,000		1,067,962	1,173,000	119,219		323,000	2,297,000
	Municipality Debt		121,666		9,181	36,916			10,000,000			463,000	671,000
	Municipality Debt		1,930,000		2,801,000							644,000	395,267
	Municipality Debt				1,031,000							409,000	
	Municipality Debt											500,000	
	Total Municipality Debt	0	4,981,666	673,250	4,770,181	2,726,916	44,183	1,196,806	13,368,000	161,482	4,571,000	2,637,000	3,502,267
	Fraction of municipality within service area	12%	56%	100%	64%	50%	100%	100%	82%	100%	54%	100%	53%
A	Direct Net Debt (G.O. Bonds Excluding Double-	$ 0	$ 2,789,733	$ 673,250	$ 3,036,697	$ 1,363,458	$ 44,183	$ 1,196,806	$ 10,961,760	$ 161,482	$ 2,468,340	$ 2,637,000	$ 1,856,202

Explanation for Worksheet 5			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A	501	Input data	Input from Bureau of Labor and Statistics. See Draft FCA Appendix 11
B	502	Input data	Input from Bureau of Labor and Statistics. See Draft FCA Appendix 11
C	503	Input data	Input from Bureau of Labor and Statistics. See Draft FCA Appendix 11
D1		Line 501 - Line 503	

Explanation for Worksheet 6			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A1		Input data	Input based on US Census Bureau's 5-year American Community Survey (ACS), 2009-2013. See Draft FCA Appendix 12.
A2		(1+r) ^ (Yf-Ym)	r=MHI inflation rate, Yf=FCA Analysis year, Ym=Year of MHI Estimate. See Draft FCA Appendix 4
A3	601	A1 * A2	
B1	602	Input data	Input based on US Census Bureau's 5-year American Community Survey (ACS), 2009-2013. See Draft FCA Appendix 12.
B2	603	(1+r) ^ (Yf-Ym)	r=MHI inflation rate, Yf=FCA Analysis year, Ym=Year of MHI Estimate. See Draft FCA Appendix 4
B3	604	Line 602 * Line 603	
C1		(Line 601 - Line 604) / Line 604	

Explanation for Worksheet 7			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A	701	Line 404	
B	702	Input data	Input from Line 301 of MAAFR, See Draft FCA Appendix 6.
C	703	Line 702 / Line 701 * 100%	

Explanation for Worksheet 8			
Worksheet Item	**Worksheet Line No.**	**Formula**	**Notes**
A	801	Line 702	
B	802	[Property Assessment (Line 404) * Sum of Municipality Tax Rates] / 100	Assessments obtained from 2013 State Tax Equalization Board (See Draft FCA Appendix 9) except for Chester City.Chester City is classified as a third class city by PA State, allowing them to determine their own assessed values; Chester City assessment is from 2012 Tax rates obtained from 2013, except for Chester City and Parkside which were from 2012 (see Draft FCA Appendix 10).
C	803	Line 801 / Line 802 * 100	

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GREELEY AND HANSEN

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 25, 2017

Ms. Margaret Anne Hill
Partner and Chair
Environmental, Energy, and Natural Resources Practice Group
Blank Rome LLP
One Logan Square
Philadelphia, PA 19103

Re: *United States and PADEP v. Delaware County Regional Water Quality Control Authority (DELCORA)*, Civil Action No. 15-4652, Draft Financial Capability Assessment (Revised April 2017)

Dear Ms. Hill:

Thank you for the revised *Draft Financial Capability Assessment Report*, May 2016 (Revised April 2017) (Draft FCA) submitted on behalf of the Delaware County Regional Water Quality Control Authority (DELCORA), pursuant to the requirements of Paragraph 18 of the Consent Decree entered in the referenced case and in response to U.S. Environmental Protection Agency (EPA) comments in its letter dated February 16, 2017. This letter requests two items required to complete DELCORA's Draft FCA and provides comments on the Draft FCA consistent with Paragraph 18 of the Consent Decree.

Paragraph 18 of the Consent Decree requires DELCORA to prepare a draft Financial Capability Assessment in accordance with CSO Control Policy Paragraph II.C.8 and "Combined Sewer Overflows—Guidance for Financial Capability Assessment and Schedule Development," EPA 832-B-97-004, February 1997 (FCA Guidance), and to submit it to EPA and Pennsylvania Department of Environmental Protection (PADEP) for review and comment. This letter summarizes EPA's comments to date on the revised April 2017 *Draft Financial Capability Assessment Report*. We are requesting that DELCORA amend certain tables and text as soon as practicable. We are also providing comments that DELCORA should keep in mind as it moves forward in preparing the final version of the Financial Capability Assessment and in implementing the Consent Decree.

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Customer Service Hotline: 1-800-438-2474

1. ***Requiring Amendment to the Draft FCA*.**
We appreciate that DELCORA's latest revision is responsive to several comments from EPA's letters dated September 15, 2016 and February 16, 2017. DELCORA provided detailed backup for current demographic data; and presented the Residential Indicator results in terms of current dollars and demographic characteristics.

Two related aspects of the Residential Indicator analysis still need to be corrected: the service area and the residential share of costs. These issues are not new, and we discussed them at our last meeting. DELCORA need only to provide the pages corrected and added to its Draft FCA to show its revisions.

a. *Service Area*. DELCORA's April 2017 Draft FCA reflected adjustments to the service area used to calculate the Residential Indicator, but failed to meet the service area definition ("Model Area") explicitly established in Paragraph 14.b of the Consent Decree and used in Paragraph 18. Consistent with the Consent Decree definition of the Model Area and with the FCA Guidance,[1] DELCORA's Residential Indicator calculation must include both the entire "Western Service Area" and the entire "Eastern Service Area." As discussed at our May 22, 2017 meeting and consistent with the FCA Guidance and EPA's 2014 Financial Capability Assessment Framework (FCA Framework), DELCORA needs to incorporate all current and projected costs for all the authorities in the Eastern Service Area for which DELCORA collects and sends wastewater to the Philadelphia wastewater treatment plant. The Residential Indicator calculation should also include DELCORA's expected payments to Philadelphia for treatment and Long Term Control Plan (LTCP) costs based on available documentary evidence.[2]

b. *Residential Share of Costs*. DELCORA also needs to calculate the Residential Share of Costs relative to the entire Model Area as defined above. The Residential Share of Costs defines the share of costs assigned to total number of households in the permittee's total wastewater service area. The Residential Share of Costs must be based on total flows generated by residential users throughout the Model Area relative to the total wastewater flows generated. The Residential Share of Costs is to be estimated by determining the flow billed to households relative to total flow billed overall by the utility.[3] Note that the reference point is households, not residential customers. Generally, we accept residential flow estimates that add residential customer flow plus an estimate of the flow generated by households in multifamily buildings that are commercial customers. The Residential Indicator is not a calculation to set rates, but is used to determine whether CSO controls will produce a possible high, midrange, or low financial impact on the permittee's residential users.

2. ***Comments on the Draft FCA***. A number of issues have arisen in discussions with DELCORA regarding the Draft FCA. We offer the following comments as provided for in the Consent Decree. These comments should help DELCORA as it moves into the identification and

[1] Cost Per Household (CPH) is calculated by dividing residential share of costs by "the total number of households (line 108) in the permittee's total wastewater service area." FCA Guidance, Page 14.
[2] "Communities should demonstrate how the CWA work included as costs in the financial capability assessment will be implemented, including appropriate assurances that those expenditures will be made." FCA Framework, Page 3.
[3] This assumes that infiltration and inflow are allocated to customers in the same proportion as billed flow.

evaluation of technical alternatives to control CSOs and the process for approval of DELCORA's revised and updated LTCP.

a. *Calculating Residential Indicator based on Wet Weather Flow volume.* DELCORA's calculation of the Residential Indicator based on Wet Weather Flow volume assigns the majority of CSO flows to Chester City, when, in fact, Chester City is a small proportion of the entire Model Area relative to the total wastewater flow treated or the number of households in the Model Area. As part of the Residential Indicator calculations from the FCA Guidance, the residential share of total costs is proportionate to the residential portion of "total wastewater flow," not wet weather flow. FCA Guidance, Page 14. In addition, the Cost Per Household (CPH) calculation takes into account the current costs for existing wastewater treatment operations and the projected costs for any proposed wastewater treatment and CSO controls. DELCORA's existing wastewater operations at the Western Regional Treatment Plant include treatment of combined and separate flows during dry and wet weather conditions. Therefore, both dry and wet weather flows need to be considered in the CPH calculation.

b. *Goal of 1997 FCA Guidance and Relationship to CD Requirements:* A Financial Capability Assessment combines the Residential Indicator and Permittee Financial Capability Indicator to give an overall assessment of DELCORA's financial capability. DELCORA's Draft FCA states that "[t]he CSO LTCP will be designed and constructed as required to meet the Consent Decree deadline of August 2035 to the limit of Chester City's financial capability." DELCORA misconstrues the purpose of a FCA. The intent of the 1997 FCA Guidance and its use under the Consent Decree is not to limit the design or scope of the CSO controls to a particular geographic area within the overall permittee service area. This assessment is used to help establish an appropriate CSO control implementation schedule. Pursuant to Paragraph 9 of the Consent Decree, the selected CSO controls set forth in the LTCP shall be designed to meet the overarching goals of bringing all CSO discharge points into full compliance with the technology-based and water quality-based requirements of the CWA and minimizing the impacts of CSOs on water quality, aquatic biota, and human health. Furthermore, Paragraph 19 of the Consent Decree states that available CSO control technologies are not intended to be limited by cost, and requires DELCORA to identify an appropriately broad range of technically feasible CSO controls for detailed evaluation, regardless of the cost of each technically feasible CSO control.

c. *Summary of Previous EPA Comments*: Since DELCORA's April 2017 Draft FCA was submitted, EPA, PADEP, and DELCORA have had one in-person meeting on May 22, 2017, and two phone calls, which took place on June 1, 2017 and June 23, 2017. There were a number of questions exchanged between EPA, PADEP, and DELCORA during those discussions, some of which were outside the scope of the Draft FCA. The following responses provide our reply to those questions:

    i. Kimberly-Clark. DELCORA asked whether Kimberly-Clark would be responsible for LTCP costs proportionate to its flow to the treatment plant. The CSO Control Policy recommends that the municipality consider sources of funding in determining the phasing of construction projects, which can include the availability of grants and loans; previous and current *residential, commercial, and*

industrial sewer user fees and rate structures; and other viable funding mechanisms. Emphasis added. The EPA document, "CSOs: Guidance for Funding Options" (1995) states that "because CSO controls benefit the whole service area, permittees should recognize that, in most cases, it will be necessary to use a fee structure that distributes the CSO control costs among all system customers. Recovering costs through increases to system-wide user fees will distribute the cost increases more broadly." The specific rate design that a utility develops is largely in its discretion. The FCA is a uniform and consistent methodology for evaluating the financial impact of proposed CSO LTCP costs and not appropriate for setting rates. Utility rate structures are designed to generate revenues to cover costs and assure that various financial ratios are met. Utility rate design can range from simple to complex, including charges for concentrated waste discharge or lower cost for higher volume customers. Ultimately, the rate design is up to the permittee, balancing the revenue requirements with allocation of costs to various types of customers.

Further, as part of the CSO Policy's Nine Minimum Controls and LTCP requirements, the permittee's publicly owned treatment works (POTW) options are an integral part of the alternatives evaluation process. Specifically, the CSO Policy states that the LTCP should consider expansion of POTW secondary and primary capacity in the CSO abatement alternative analysis. Thus, the permittee should take into account any industrial flow to the treatment plant relative to the POTW's role in addressing CSOs.

ii. 2014 Framework. DELCORA asked EPA to state its position about the relationship between the FCA Framework and the FCA Guidance. The cover memorandum that EPA issued to accompany the FCA Framework notes that the FCA Guidance provides an aid for assessing financial capability as part of negotiating schedules for implementing CWA requirements for municipalities and local authorities. The FCA Guidance also encourages permittees "to submit any additional documentation that would create a more accurate and complete picture of their financial capability" that may "affect the conclusion" of the analysis described in the guidance. The FCA Framework identifies the key elements EPA uses in working with permittees to evaluate how their financial capability should influence schedules. In addition, the FCA Framework provides examples of additional information that may help some communities provide a "more accurate and complete picture" of their financial capability as is envisioned in the FCA Guidance.

iii. Incorporation of dry weather flow. DELCORA asked whether every EPA-approved FCA requires that all dry weather flow areas be included in the FCA and whether there is any provision in the FCA or LTCP/CSO guidance that supports the position that all areas contributing dry weather flows must be included for FCA purposes. The FCA Guidance does not provide for how DELCORA will apportion costs of the LTCP, other than the Residential Indicator calculations, which identifies the impact of wastewater and CSO control costs on individual households based on a flow-based allocation. As part of the Residential Indicator calculations from the FCA Guidance, the residential share of total costs

is proportionate to the residential portion of "total wastewater flow," not wet weather flow. FCA Guidance, Page 14. In addition, the Cost Per Household portion of the Residential Indicator is calculated by dividing the residential share of WWT and CSO costs by "the number of households in the permittee's total wastewater service area," not just households that contribute dry weather flows. FCA Guidance, Page 12.

iv. Proportionate share. DELCORA asked EPA to consider the CWA principles of "proportionate share." EPA's FCA Guidance was developed, in part, based on the experience of EPA in the Construction Grants program. EPA's Construction Grants regulations require that a grantee's user charge system, if not using ad valorem taxes, "shall provide that each user (or user class) pays its proportionate share of operation and maintenance (including replacement) costs of treatment works within the grantee's service area, based on the user's proportionate contribution to the total wastewater loading from all users (or user classes)." 40 C.F.R. 35.2140(a). The CSO Control Policy states that "each permittee is ultimately responsible for aggressively pursuing financial arrangements for the implementation of its long-term CSO control plan." Placing almost all of the financial responsibility upon the City of Chester for implementing the LTCP is not consistent with the CWA principle of "proportionate share" of the DELCORA's treatment and conveyance costs, given that DELCORA should be examining a broad range of compliance options within its overall system. As noted above, the City of Chester is a relatively small proportion of the overall service area and total wastewater loading. Disproportionately burdening the City of Chester would avoid DELCORA's responsibilities under its NPDES permit, the CSO Policy and the Clean Water Act.

3. ***Response to Information Submitted on August 17, 2017.*** Thank you for providing additional information related to DELCORA's FCA methodology, received by EPA on August 17, 2017. EPA encourages permittees to submit any additional documentation that would create a more accurate and complete picture of their financial capability, but we must stress that the FCA analysis is designed to measure the permittee's, i.e., DELCORA's, financial capability to implement CSO controls and therefore review of other cases is not particularly useful.

The purpose of an FCA is to inform development of a CSO LTCP schedule and is not a cost-allocation or rate setting exercise. As part of the long term planning process, DELCORA is responsible for identifying existing user fees and rate structures for wastewater treatment and then developing a new rate structure to finance and implement CSO controls. While this is related to financial capability, it is not part of the FCA. We also reiterate that the FCA Guidance is meant to provide a common basis for financial burden discussions with the permittee when the permittee has identified its CSO control options. In order to maintain this basis for a general comparison of financial conditions between communities across the country, the FCA Guidance provides straightforward calculations that are intended to assess a permittee's financial capability. As noted in the FCA Framework, EPA allows municipalities to submit other relevant financial or demographic information that illustrates the unique or atypical circumstances the permittee faces, allowing for a case-specific assessment of local considerations, including financing and technical implementation. Given the case-specific nature of each FCA, comparisons are of limited utility.

As noted above, there are two items DELCORA needs to provide to complete its Draft FCA. Please send the information at your earliest convenience. Replacement pages and any additional addendum will be sufficient. Consistent with Paragraph 18 of the Consent Decree, this letter also summarizes EPA comments to date on DELCORA's Draft FCA submittals. EPA intends to review the proposed final FCA in accordance with Paragraphs 18 and 34 of the Consent Decree when it is submitted concurrently with the revised and updated LTCP. If you have any questions concerning this letter, please call Philip Yeany at 215-814-2495 or contact him at yeany.philip@epa.gov.

Sincerely,

/s/ Andrew Dinsmore, Chief
NPDES Enforcement Branch

cc: Andrew Seligman
Philip Yeany
Paul Fericelli
Chrisna Baptista
Morgan Rog
Donna Duer
William Gelles

DELAWARE COUNTY REGIONAL WATER QUALITY CONTROL AUTHORITY
P.O. Box 999 • Chester, PA 19016-0999

October 31, 2017

FED EX - NEXT DAY

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
601 D Street NW
Washington, DC 20004
Re: DOJ No. 90-5-1-1-10972

Philip Yeany
Office of Regional Counsel (3RC20)
U.S. EPA, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Chief
NPDES Enforcement Branch (3WP42)
Water Protection Division
U.S. EPA, Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Program Manager - Clean Water Program
PA DEP
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

RE: Civil Action Number Case 2:15-cv-04652-RB &
DOJ Case Number 90-5-1-1-10972
DELCORA CSO Long Term Control Plan Update
Draft Financial Capability Assessment Report May 2016
(Revised April 2017)

Dear Sir/Madam:

By this letter the Delaware County Regional Water Quality Control Authority is providing the following responses to USEPA / PADEP comments related to the above mentioned report in accordance with the requirements of the Consent Decree.

DELCORA Responses to USEPA / PADEP Comments (including referenced attachment):

Two related aspects of the Residential Indicator analysis still need to be corrected: the service area and the residential share of costs. These issues are not new, and we discussed them at our last meeting. DELCORA need only to provide the pages corrected and added to its Draft FCA to show its revisions.

1. *Requiring Amendment to the Draft FCA*

Comment:

a. *Service Area.* DELCORA's April 2017 Draft FCA reflected adjustments to the service area used to calculate the Residential Indicator, but failed to meet the service area definition ("Model Area") explicitly established in Paragraph 14.b of the Consent Decree and used in Paragraph 18. Consistent with the Consent Decree definition of the Model Area and with the FCA Guidance, DELCORA's Residential Indicator calculation must include both the entire "Western Service Area" and the entire "Eastern Service Area." As discussed at our May 22, 2017 meeting and consistent with the FCA Guidance and EPA's 2014 Financial Capability Assessment Framework (FCA Framework), DELCORA needs to incorporate all current and projected costs

for all the authorities in the Eastern Service Area for which DELCORA collects and sends wastewater to the Philadelphia wastewater treatment plant. The Residential Indicator calculation should also include DELCORA's expected payments to Philadelphia for treatment and Long Term Control Plan (LTCP) costs based on available documentary evidence.

Response:

- ***First, in negotiations with the Department of Justice and EPA, DOJ Counsel Marcello Mollo and EPA acknowledged and agreed that wastewater flows from the Eastern Service Area (excluding the Central Authority flows which can be delivered to the DELCORA WRTP or the Philadelphia WWTP) do not hydraulically connect to, or directly affect or indirectly affect the DELCORA WRTP, and more importantly, that this "fact" would be acknowledged as part of the DELCORA FCA submission. In brief, the government agreed that EPA's FCA Guidance document considers unique circumstances and facts associated with individual wastewater treatment systems. DELCORA incorporated its unique circumstances in the preparation of its draft FCA; specifically, the Eastern Service Area does not discharge, nor can it discharge to the DELCORA WRTP.***

- ***Second, EPA's view is contrary to the unambiguous definition of the "Model Area" because it excludes and ignores certain portions of that definition. In EPA's view, the Model Area includes the entire Western Service Area and Eastern Service Area without exception. Paragraph 14 b. defines the Model Area to include: "hydrologic representation of all areas tributary to the entire Collection System, as well as all areas tributary to all municipal wastewater collection and transmission systems*** that are, as of the date the LTCP is submitted, hydraulically connected to, or that directly or indirectly influence flow to, the CSOs and/or the WRTP, ***regardless of who owns or operates the system(s), <u>including but not limited to the entire "Western Service Area" and "Eastern Service Area"</u> depicted on Figure 1-2 of the Long-Term Control Plan submitted by DELCORA in April 2012, and attached as Appendix A hereto (collectively, the "Model Area")."***

- ***EPA seizes upon the language underlined above in concluding that the applicable Model Area <u>must</u> include the DELCORA's entire service area (Western and Eastern) without <u>any</u> regard to hydraulic connectivity or impacts upon the WRTP or CSOs. This interpretation ignores and renders meaningless the non-bolded language in the definition set forth above and is contrary to DELCORA's and DOJ's intent during negotiations of the Consent Decree. A more reasonable interpretation would give effect to <u>both</u> clauses meaning that the Model Area includes all areas in the Western and Eastern Service Areas <u>to the extent that those areas are hydraulically connected or directly or indirectly influence flow to the CSOs and /or the WRTP</u>.***

- ***It should also be noted that the current version of the FCA is a "Draft". The FCA will continue to be updated and the final version will be included with the completion of the Long Term Control Plan Update.***

Comment:

b. <u>*Residential Share of Costs*</u>. DELCORA also needs to calculate the Residential Share of Costs relative to the entire Model Area as defined above. The Residential Share of Costs defines the share of costs assigned to total number of households in the permittee's total wastewater service area. The Residential Share of Costs must be based on total flows generated by residential users throughout the Model Area relative to the total wastewater flows generated. The Residential Share of Costs is to be estimated by determining the flow billed to households

relative to total flow billed overall by the utility Note that the reference point is households, not residential customers. Generally, we accept residential flow estimates that add residential customer flow plus an estimate of the flow generated by households in multifamily buildings that are commercial customers. The Residential Indicator is not a calculation to set rates, but is used to determine whether CSO controls will produce a possible high, midrange, or low financial impact on the permittee's residential users.

Response:

See the response to "a" above.

2. ***Comments on the Draft FCA.*** *A number of issues have arisen in discussions with DELCORA regarding the Draft FCA. We offer the following comments as provided for in the Consent Decree. These comments should help DELCORA as it moves into the identification and evaluation of technical alternatives to control CSOs and the process for approval of DELCORA's revised and updated LTCP.*

Comment:

a. *Calculating Residential Indicator based on Wet Weather Flow volume. DELCORA's calculation of the Residential Indicator based on Wet Weather Flow volume assigns the majority of CSO flows to Chester City, when, in fact, Chester City is a small proportion of the entire Model Area relative to the total wastewater flow treated or the number of households in the Model Area. As part of the Residential Indicator calculations from the FCA Guidance, the residential share of total costs is proportionate to the residential portion of "total wastewater flow," not wet weather flow. FCA Guidance, Page 14. In addition, the Cost Per Household (CPH) calculation takes into account the current costs for existing wastewater treatment operations and the projected costs for any proposed wastewater treatment and CSO controls. DELCORA's existing wastewater operations at the Western Regional Treatment Plant include treatment of combined and separate flows during dry and wet weather conditions. Therefore, both dry and wet weather flows need to be considered in the CPH calculation.*

Response:

Attached are Responses to USEPA comments received February 23, 2017. See response to Comment No. 2. Totalizing all dry and wet weather flows and dividing that flow per residential customers does not characterize the true residential burden of addressing the excess wet weather flow in the system.

Comment:

b. *Goal of 1997 FCA Guidance and Relationship to CD Requirements.* A Financial Capability Assessment combines the Residential Indicator and Permittee Financial Capability Indicator to give an overall assessment of DELCORA's financial capability. DELCORA's Draft FCA states that "[t]he CSO LTCP will be designed and constructed as required to meet the Consent Decree deadline of August 2035 to the limit of Chester City's financial capability." DELCORA misconstrues the purpose of a FCA. The intent of the 1997 FCA Guidance and its use under the Consent Decree is not to limit the design or scope of the CSO controls to a particular geographic area within the overall permittee service area. This assessment is used to help establish an appropriate CSO control implementation schedule. Pursuant to Paragraph 9 of the Consent Decree, the selected CSO controls set forth in the LTCP shall be designed to meet the overarching goals of bringing all CSO discharge points into full compliance with the technology-based and water quality-based requirements of the CWA and minimizing the impacts of CSOs on water quality, aquatic biota, and human health. Furthermore, Paragraph 19 of the Consent Decree states that available CSO control technologies are not intended to be limited by cost, and requires DELCORA to identify an appropriately broad range of

technically feasible CSO controls for detailed evaluation, regardless of the cost of each technically feasible CSO control.

Response:

DELCORA will provide a full range of level of control alternatives that are consistent with the National CSO Policy and the Consent Decree. The LTCP will include a schedule for implementation based on various factors including construction phasing. Also attached are responses to USEPA comments received February 23, 2017. See response to Comment No. 3.

Comment:

c. Summary of Previous EPA Comments. *Since DELCORA's April 2017 Draft FCA was submitted, EPA, PADEP, and DELCORA have had one in-person meeting on May 22, 2017, and two phone calls, which took place on June 1, 2017 and June 23, 2017. There were a number of questions exchanged between EPA, PADEP, and DELCORA during those discussions, some of which were outside the scope of the Draft FCA. The following responses provide our reply to those questions:*

i. Kimberly-Clark. DELCORA asked whether Kimberly-Clark would be responsible for LTCP costs proportionate to its flow to the treatment plant. The CSO Control Policy recommends that the municipality consider sources of funding in determining the phasing of construction projects, which can include the availability of grants and loans; previous and current *residential, commercial, and industrial sewer user fees and rate structures*; and other viable funding mechanisms. Emphasis added. The EPA document, "CSOs: Guidance for Funding Options" (1995) states that "because CSO controls benefit the whole service area, permittees should recognize that, in most cases, it will be necessary to use a fee structure that distributes the CSO control costs among all system customers. Recovering costs through increases to system-wide user fees will distribute the cost increases more broadly." The specific rate design that a utility develops is largely in its discretion. The FCA is a uniform and consistent methodology for evaluating the financial impact of proposed CSO LTCP costs and not appropriate for setting rates. Utility rate structures are designed to generate revenues to cover costs and assure that various financial ratios are met. Utility rate design can range from simple to complex, including charges for concentrated waste discharge or lower cost for higher volume customers. Ultimately, the rate design is up to the permittee, balancing the revenue requirements with allocation of costs to various types of customers.

Further, as part of the CSO Policy's Nine Minimum Controls and LTCP requirements, the permittee's publicly owned treatment works (POTW) options are an integral part of the alternatives evaluation process. Specifically, the CSO Policy states that the LTCP should consider expansion of POTW secondary and primary capacity in the CSO abatement alternative analysis. Thus, the permittee should take into account any industrial flow to the treatment plant relative to the POTW's role in addressing CSOs.

Response:

The alternatives analysis will include a review of maximizing flow to the POTW. DELCORA agrees that the specific rate design that a utility develops is largely in its discretion and that the rate design is up to the permittee. DELCORA will consider the other rate impacts as part of the development of the LTCP."

ii. 2014 Framework. DELCORA asked EPA to state its position about the relationship between the FCA Framework and the FCA Guidance. The cover memorandum that EPA

issued to accompany the FCA Framework notes that the FCA Guidance provides an aid for assessing financial capability as part of negotiating schedules for implementing CWA requirements for municipalities and local authorities. The FCA Guidance also encourages permittees "to submit any additional documentation that would create a more accurate and complete picture of their financial capability" that may "affect the conclusion" of the analysis described in the guidance. The FCA Framework identifies the key elements EPA uses in working with permittees to evaluate how their financial capability should influence schedules. In addition, the FCA Framework provides examples of additional information that may help some communities provide a "more accurate and complete picture" of their financial capability as is envisioned in the FCA Guidance.

Response:

Additional information was provided to USEPA on August 17, 2017 that describes DELCORA's unique circumstances.

iii. Incorporation of dry weather flow. DELCORA asked whether every EPA-approved FCA requires that all dry weather flow areas be included in the FCA and whether there is any provision in the FCA or LTCP/CSO guidance that supports the position that all areas contributing dry weather flows must be included for FCA purposes. The FCA Guidance does not provide for how DELCORA will apportion costs of the LTCP, other than the Residential Indicator calculations, which identifies the impact of wastewater and CSO control costs on individual households based on a flow-based allocation. As part of the Residential Indicator calculations from the FCA Guidance, the residential share of total costs is proportionate to the residential portion of "total wastewater flow," not wet weather flow. FCA Guidance, Page 14. In addition, the Cost Per Household portion of the Residential Indicator is calculated by dividing the residential share of WWT and CSO costs by "the number of households in the permittee's total wastewater service area," not just households that contribute dry weather flows. FCA Guidance, Page 12.

Response:

See response to Comment 2a above.

iv. Proportionate share. DELCORA asked EPA to consider the CWA principles of "proportionate share." EPA's FCA Guidance was developed, in part, based on the experience of EPA in the Construction Grants program. EPA's Construction Grants regulations require that a grantee's user charge system, if not using ad valorem taxes, "shall provide that each user (or user class) pays its proportionate share of operation and maintenance (including replacement) costs of treatment works within the grantee's service area, based on the user's proportionate contribution to the total wastewater loading from all users (or user classes)." 40 C.F.R. 35.2140(a). The CSO Control Policy states that "each permittee is ultimately responsible for aggressively pursuing financial arrangements for the implementation of its long-term CSO control plan." Placing almost all of the financial responsibility upon the City of Chester for implementing the LTCP is not consistent with the CWA principle of "proportionate share" of the DELCORA's treatment and conveyance costs, given that DELCORA should be examining a broad range of compliance options within its overall system. As noted above, the City of Chester is a relatively small proportion of the overall service area and total wastewater loading. Disproportionately burdening the City of Chester would avoid DELCORA's responsibilities under its NPDES permit, the CSO Policy and the Clean Water Act.

Response:

See responses to Comments 1b and 2a above.

If there are any questions, please contact me. Thank You.

Sincerely,

Michael J. DiSantis
Director of Operations & Maintenance

MJD:bab
attachment

cc: via email
Margaret Hill, Blank Rome
Marlene Finizio, Greeley and Hansen
Michael Hope, Greeley and Hansen
Charles Hurst, DELCORA
Michael DiSantis, DELCORA
John Pileggi, DELCORA
Robert Willert, DELCORA
File- Consent Order- LTCP CSO

DELCORA LTCPU Task 9: DRAFT Financial Capabilities Assessment Report (rev. Nov. 2016)				
Responses to USEPA and PADEP Concerns (Comments received February 23, 2017) DUE April 24, 2017				
No.	**Reviewer Name**	**Report Reference**	**Review Concerns**	**Response to Concerns**
1	EPA/PADEP	Page 1-4	1. Model Area: Consistent with the terms of the Consent Decree, the Model Area must include the entire Eastern Service Area. DELCORA has expanded the FCA's discussion of the basis for having the Model Area include the Western Service Area plus the Central Authority of the Eastern Service Area (Page 1-4, FCA). However, DELCORA's exclusion of the rest of the Eastern Service Area in its assessments is inconsistent with the Consent Decree. Paragraph 18 of the Consent Decree requires that the Financial Capability Assessment include: information on sewer rate setting and median household income and number of households in the entire Model Area (as defined in Paragraph 14.b above), as well as information on all other financial resources available to DELCORA. [Emphasis added.] Paragraph 14.b of the Consent Decree defines "Model Area" to include: all areas tributary to the entire Collection System, as well as all areas tributary to all municipal wastewater collection and transmission systems that are, as of the date the LTCP is submitted, hydraulically connected to, or that directly or indirectly influence flow to, the CSOs and/or the WRTP, regardless of who owns or operates the system(s), including but not limited to the entire "Western Service Area" and "Eastern Service Area." [Emphasis added.]	Paragraph 14.b of the Consent Decree defines the "Model Area" as: all areas tributary to the entire Collection System, as well as all areas tributary to all municipal wastewater collection and transmission systems that are, as of the date the LTCP is submitted, hydraulically connected to, or that directly or indirectly influence flow to, the CSOs and/or the WRTP, regardless of who owns or operates the system(s), including but not limited to the entire "Western Service Area" and "Eastern Service Area." [Emphasis added.] We examined the entire "Western Service Area" and "Eastern Service Area" and found that only the "Western" service area and "Central" portion of the Eastern service area are hydraulically connected to, or directly or indirectly influence flow to the CSOs and/or the WRTP. Therefore, in compliance with the Consent Decree, the entire "Model Area" is defined by the "Western Service Area" and "Central" portion of the "Eastern Service Area," since these areas are hydraulically connected to and/or directly or indirectly influent flow to teh CSOs and/or the WRTP. The remainder of the "Eastern Service Area" flows to the Philadelphia SW plant. This portion of the Eastern Service Area is not hydraulically connected to the WRTP and does not directly or indirectly influence plant flow at the DELCORA WRTP or to CSO outfalls in Chester City.
			1. (cont.) Financially and operationally, DELCORA controls the wastewater flows discharged from the Eastern Service Area and Western Service Area. In the Eastern Service Area, DELCORA owns and operates the three major pumping stations that transmit the wastewater from the Central Delaware County Authority, the Muckinipates Authority and the Darby Creek Authority. DELCORA is responsible for conveying the Eastern Service Area wastewater to DELCORA's WRTP via the DELCORA's central diversion force main or through DELCORA's eastern force mains to the City of Philadelphia's Southwest Water Pollution Control Plant (SWWPCP). DELCORA controls the wastewater flow from the DELCORA's Central Delaware Pump Station that goes either to the WRTP or to the SWWPCP. If flows to the central diversion force main exceed 20 MGD, DELCORA can divert the flow to the SWWPCP. If the flows from the three pump stations to the SWWPCP exceed the limits in the contract with Philadelphia, DELCORA can send more flow to the WRTP up to a maximum of 20 MGD. DELCORA has a contract with Philadelphia to pay for both treatment and a portion of Philadelphia's LTCP costs. As listed above, DELCORA owns the pump stations and force mains located within the Eastern Service Area that transmit wastewater to either the SWWPCP or the WRTP. DELCORA needs to revise the FCA to include the entire Eastern Service area, including the costs of sending wastewater flow to the Philadelphia treatment plant and related Philadelphia LTCP costs.	The Central Delaware Pump Station pumps flow only from the Central Delaware County Authority service area. Normally, flow from this pump station is pumped into the central diversion force main which conveys flow to the WRTP. When flows from this pump station exceed 20 MGD, the excess portion is diverted to the Philadelphia SWWPCP. However, flows from the Muckinipates And Darby Creek Joint Authority service areas do not pass through the Central Delaware Pump Station and cannot be diverted into the central diversion force main. Flows from the Muckinipates and Darby Creek pump stations are conveyed to the Philadelphia SWWPCP only. The only flow that can be diverted from the Eastern Service area to the WRTP is flow originating from the Central Delaware County Authority. As such, this portion of the of the Eastern Service Area is included in the Draft FCA.

DELCORA LTCPU Task 9: DRAFT Financial Capabilities Assessment Report (rev. Nov. 2016)				
Responses to USEPA and PADEP Concerns (Comments received February 23, 2017) DUE April 24, 2017				
No.	**Reviewer Name**	**Report Reference**	**Review Concerns**	**Response to Concerns**
2	EPA/PADEP	Pages 4-3 and 4-4	2. Allocation of Financial Capability Based on Wet Weather Flow Relative to Combined Sewers' Documentation. In response to our comment, DELCORA appears to have adjusted the analysis slightly with respect to taking a fuller engineering-based examination of a wide range of options involving the service area beyond Chester City. (Item 4 below also relates to this.) As EPA noted in its letter of September 15, 2016, DELCORA must consider, among other things, "inflow and infiltration to sanitary sewers that may occur during storm events and the impacts of the various control alternatives on such inflow and infiltration." The impact of the calculations described on pages 4-3 and 4-4 of the FCA on DELCORA's ultimate analysis and approach to resolving the CSO and other compliance issues remains unclear. The FCA needs to have a more detailed and transparent explanation of the basis for the calculations and the calculations' impact on the analysis and approach to resolving CSO and other compliance issues.	As described on page 4-3 of the revised report, allocation of costs was based on the customer contribution to CSO volume as well as excess volume generated from separate sewer communities. A review of the WRTP hourly flow records were used to estimate allocation for wet weather flows as the basis to assign costs to communities served by separate sewer systems. The original calculations are based on the hourly records and indicated that 3% of the wet weather flow would have been allocated to other communities and 97% to Chester City. In order to be conservative, this was revised for the draft FCA to be 15% to other communities and 85% to Chester City.The basis for calculation of the allocation along with the backing flow data is included in the revised Appendix. Also, as mentioned in the Draft FCA, the allocation will be revised for the final FCA (to be included as part of the revised LTCP Update) based on the updated, calibrated, and validated hydrologic and hydraulic model. Regarding "...impacts of various control alternatives...," please note that no alternatives have been considered at this time since the Draft FCA is being prepared prior to the LTCP alternative analysis. Alternatives will be presented in the LTCP Update and the FCA will be revised as necessary as part of the LTCP Update.
3	EPA/PADEP	Appendices 6 through 13	3. Backup for Current and Demographic Data. The FCA's Appendices 6 through 13 are partially responsive to EPA's request for detailed backup to the FCA computations. These Appendices include source documents without any explanation or citations of the derivation of the computations in the FCA analysis for the "Model Area." To expedite EPA's review of DELCORA's FCA, we request that DELCORA provide the spreadsheets supporting the FCA calculations, including identification of specific source data and computations. Also note that the Financial Capability Indicator should be for the permit holder, DELCORA, not for Chester City.	Additional explanation for the material in the Appendices has been added. In addition to the Chester City Financial Capability Indicator, the Draft FCA also shows Financial capability indicators for the Model Area.

DELCORA LTCPU Task 9: DRAFT Financial Capabilities Assessment Report (rev. Nov. 2016)				
Responses to USEPA and PADEP Concerns (Comments received February 23, 2017) DUE April 24, 2017				
No.	**Reviewer Name**	**Report Reference**	**Review Concerns**	**Response to Concerns**
4	EPA/PADEP		4. Allocation of Costs to Chester City: EPA's September 15, 2016 letter expressed concern that DELCORA was proposing to assign the bulk of the CSO costs to Chester City, an area which accounts for a small percentage of the Model Area households and flow. In the FCA, it appears that DELCORA has slightly adjusted its allocation of costs, but persists in allocating wastewater treatment costs and combined sewer overflow costs specific to Chester City in a proportion greater than Chester City's size relative to the service area flow or households. As a result, Chester's cost per household ($323 on 2015 basis) is significantly higher than the cost per household for the Model Area ($279 on 2015 basis). DELCORA explains the basis for this allocation on page 4-3 of the revised report: "...the allocation of costs for CSO abatement has been revised to distribute costs not to Chester City alone but rather to the Model Area customers in proportion to their contribution to CSO volume as well as excess volume generated from separate sewer communities within the Model Area during wet weather." While EPA accepts the analysis of the potential impact of the LTCP on residents of Chester City, an analysis that allocates all or much of the LTCP costs to Chester City is not acceptable. As the permittee, DELCORA is the responsible party for completing the injunctive relief, not Chester City. Therefore, the concerns EPA expressed in the September 15 letter remain. (EPA requests the underlying basis and calculations supporting the allocations of costs., and notes that the issues raised in Item 2, above, also relate to Item 4.) There are other details, such as cost basis, which EPA has not thoroughly reviewed due to the methodological shortcomings identified above. Thus, EPA may have additional comments on any resubmittals. According to paragraph 35 of the CD, DELCORA has sixty days in which to address these deficiencies and resubmit the revised report to EPA, and/or invoke the Dispute Resolution process set forth in Section XII of the CD.	As described on page 4-3 of the revised report, allocation of costs was based on the customer contribution to CSO volume as well as excess volume generated from separate sewer communities. The basis for calculation of the allocation along with the backing flow data is included in the revised Appendix. Also, as mentioned in the Draft FCA, the allocation will be revised for the final FCA (to be included as part of the revised LTCP Update) based on the revised hydrologic and hydraulic model. DELCORA believes that its “proportional” approach to allocating CSO costs is supported by the Clean Water Act and its implementing regulations. By way of example, when Congress wrote the CWA, it considered the contractual process and financial mechanisms by which wastewater treatment systems are financed and operated by local governmental authorities. By way of example, Section 204(b) of the Clean Water Act states that a wastewater treatment provider can only receive a federal construction grant if it charges the “recipients” of its services a commensurate, or proportional, amount to the services actually received. That section requires an applicant for the grant to have adopted a “system of charges” whereby each “recipient” of waste treatment services be charged its “proportionate share” of the costs of operation and maintenance of any waste water treatment services provided by the applicant. Similarly, the implementing regulations states that a user charge system shall be “based on the users’ proportionate contribution to the total waste water loading from all users.” (40 C.F.R. § 35.939-1). The legislative history to these provisions makes clear that Congress’s intent behind Section 204(b) was to provide localities with flexibility in designing user fee systems. As applied here, any plan to defray CSO costs should be proportionally charged to those who are served by and contribute to the CSO. Conversely, municipalities not contributing to or served by the CSO should not be charged unfairly because they are not serviced by the CSO. The allocation of costs proposed by DELCORA is both proportional and equitable. In addition, it is important that EPA consider the fact that the FCA Guidance states that the two-phase analysis set forth in the FCA Guidance may not provide a complete representation of financial capability, and that other relevant financial or demographic information might demonstrate atypical circumstances. For example, as EPA and DOJ know well, the Eastern Service Area is required to pay the fees associated with the Philadelphia LTCP which has increased substantially from the original amount of $178 Million to over $400 Million (documented in a 2/8/2017 letter to EPA Counsel Yeany). Accordingly, DELCORA will not be considering those municipalities within the Eastern Service Area as responsible towards paying for costs associated with the LTCP for the Western Service Area and plant. In fact, during the consent decree negotiations, both EPA and DOJ were receptive to allowing DELCORA to consider factoring in this specific information into the FCA as supporting DELCORA’s reason not to impose charges on all municipalities.

APPENDIX S

FCA SUPPLEMENT AUGUST 2017

- DELCORA Precedents for DELCORA's FCA Methodology dated August 16, 2017
- Appendix A - Case Studies
- Appendix B - EPA Combined Sewer Overflows - Guidance for Financial Capability Assessment and Schedule Development - Final
- Appendix C - USEPA Financial Capability Assessment Framework for Municipal Clean Water Act Requirements dated November 24, 2014
- Appendix D - Separate Sewer Flow to WWTP Slides
- E-Mail from Margaret Hill (Blank Rome) to USEPA Regarding DELCORA/DRAFT FCA dated August 17, 2017

Note: This Appendix includes a report from Greeley & Hansen which rebranded to TYLin in 2023

DELCORA CSO Long Term
Control Plan Update

Precedents for DELCORA's FCA Methodology

Delaware County Regional Water Quality Control Authority

August 16, 2017

GREELEY AND HANSEN

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Section 1 Introduction

The development of and timing for the implementation of a LTCP should be based upon the true affordability of the community and how the CSO LTCP will be financed, which means that all customers in the wastewater service area must pay their fair share of all the services provided by the Authority, including the wholesale customers. Most communities develop rates based on a cost of service to achieve "approval" from the community and their wholesale customers, especially when significant rate increases are required and all users want to understand why their wastewater bill has doubled or tripled. Most Financial Capability Assessments (FCAs) have not used cost of service as an approach because there was either insufficient information available at the time the FCA was developed or there was not enough time to discuss cost sharing options with wholesale customers. More recently, however, cost of service approach has been developed and used by CSO communities with advanced CSO LTCPs that serve as a "lessons learned" for those communities that will need to prepare a future FCAs.

1.1 Purpose

The DELCORA Financial Capability Assessment incorporates unique financial circumstances requiring local considerations and approaches that require the flexibility offered by EPA's 1997 FCA Guidance and the EPA's 2014 FCA Framework. The two purposes of this technical memorandum and the case studies are (1) to identify precedents for DELCORA's FCA approach and (2) provide lessons learned from how Wholesale Customers actually shared in the LTCP costs that could be incorporated into the DELCORA FCA, which better reflects the true affordability for the communities.

1.2 DELCORA's Financial Capability Assessment Objectives

The complexity of DELCORA's service area, number of municipalities, authorities, and industries, and the DELCORA service agreement with the Philadelphia Water Department (PWD) offers unique challenges. To manage these challenges, DELCORA has developed clear objectives for the development of the FCA and identifies a path to minimize financial risks. The FCA objectives are as follows:

- Objective #1: Comply with DELCORA's 2015 Consent Decree regarding the development and implementation of the Long-Term Control Plan for the CSOs in Chester City.
- Objective #2: Develop the DELCORA LTCP Financial Capability Assessment consistent with current rate making practices which are based on industry standard approaches.
  - Allocate LTCP costs in a fair and equitable manner for all DELCORA customers.
  - Calculate LTCP cost allocations based on each municipality, authority, and industrial customer's contribution to the problem (i.e., share of the wet weather volume discharged).
- Objective #3: Minimize DELCORA's financial risks:
  - Minimize the potential loss of an industrial customer. Since industrial flows are ~24% of DELCORA's WRTP flow, loss of an industrial customer would result in an economic loss for the community as the remaining customers would absorb a larger share of fixed costs.
  - Avoid potential litigation from wholesale and industrial customers associated with unfair rate increases or inequitable rate making practices.
  - Minimize potential withdrawal of municipalities, industries, and authorities from the DELCORA facilities (i.e. municipality, industry, or authority could decide to construct its own new WWTP).
  - Allow for a detailed planning model that will allow DELCORA to predict the need for phased-in rate increases that will not result in any large, one-time increases to rates.

Section 2 Financial Capability Assessment Approach

2.1 Flexibility Allowed by EPA Financial Capability Guidance

2.1.1 EPA's 1997 CSO – Guidance for Financial Capability Assessment and Schedule Development

EPA's 1997 Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development (EPA 1997 FCA Guidance) provides a basic framework for preparing the CSO community's Financial Capability Assessment, which is used to facilitate discussions between the permittees and the governmental authorities on phasing in CSO controls and establishes a reasonable implementation schedule based in part on the community's affordability. The EPA 1997 FCA Guidance consistently highlights the importance of "flexibility" in the development of the CSO community's LTCP and FCA. Excerpts from EPA 1997 CSO FCA Guidance are provided in **Table 2-1**.

2.1.2 EPA's 2014 Financial Capability Assessment Framework for Municipal Clean Water Act Requirements

EPA's 2014 Financial Capability Assessment Framework for Municipal Clean Water Act Requirements (EPA 2014 FCA Framework) provided greater clarity on the flexibilities that were already built into the existing 1997 CSO FCA Guidance (See highlighted sentence in Item 1 of **Table 2-2**). Excerpts from EPA 2014 FCA Framework, provided in **Table 2-2**, show the flexibility to calculate the financial metrics differently from the schedules in the EPA 1997 CSO FCA Guidance.

2.2 Unique Financial Circumstances for DELCORA's CSO LTCP FCA

The EPA 2014 FCA Framework's purpose was to provide greater clarity on the flexibilities already built into the EPA 1997 FCA Guidance. Accordingly, the approaches to DELCORA's unique financial circumstances, as shown in **Table 2-3**, are consistent with and acceptable under the EPA 1997 CSO FCA Guidance.

Table 2-3 (below) shows the unique features of the DELCORA FCA and describes the approach used in the FCA.

Table 2-1: EPA 1997 CSO FCA Guidance and Example of DELCORA's Unique Financial Circumstances

Item	Flexibility from EPA 1997 FCA Guidance	Example of DELCORA's Unique Financial Circumstance
1	Section I. "Introduction", Page 7; "**It must be emphasized that the financial indicators found in this guidance might not present the most complete picture of a permittee's financial capability to fund the CSO controls.** *(emphasis added)* However, the financial indicators do provide a common basis for financial burden discussions between the permittee and EPA and state NPDES authorities. **Since flexibility is an important aspect of the CSO Policy, permittees are encouraged to submit any additional documentation that would create a more accurate and complete picture of their financial capability**. *(emphasis added)*"	• DELCORA serves 44 municipalities and 14 major industries. There is a risk of losing wholesale or industrial customers if costs are not allocated to all customers in a transparent, fair and equitable manner. • The EPA 1997 CSO FCA Guidance does not present the complete picture of the complexity of allocating all costs for services to all of DELCORA's retail and wholesale customers in a fair and equitable manner.
2	Section II. "CSO Financial Capability Assessment Approach", Page 10; "Since flexibility is an important component of the CSO Policy, WQS authorities, NPDES authorities, EPA personnel, and permittees should communicate throughout the CSO control planning process to coordinate the development of an effective LTCP. **This guidance document provides all CSO participants with a structured yet flexible approach for evaluating the financial burden CSO controls place on permittees, it also recognizes the importance of this financial burden when establishing a CSO control implementation schedule.** *(emphasis added)* The financial capability information developed in this guidance provides a basis for the permittee and the NPDES authorities to negotiate the implementation schedule for the CSO controls. **However, when a permittee believes that there are unique circumstances that would affect the conclusion of this guidance, the permittee may submit documentation of its unique financial conditions to the appropriate EPA or State NPDES authorities for consideration.** *(emphasis added)*"	• Chester City is the only municipality with a combined sewer system and is the poorest municipality in the service area. • The City of Chester is a financially distressed municipality as defined by the 1987 Financially Distressed Municipalities Act 47 (Act 47). Chester City continues to have budget deficits and remains in the Act 47 program until their financial health improves.

Table 2-1: EPA 1997 CSO FCA Guidance and Example of DELCORA's Unique Financial Circumstances (Continued)

Item	Flexibility from EPA 1997 FCA Guidance	Example of DELCORA's Unique Financial Circumstance
3	Section III. "Phase One: The Residential Indicator", Page 19; "**In situations where a permittee believes that there are unique circumstances that would affect the conclusion of the first phase, the permittee may submit documentation of its unique financial conditions to the appropriate state NPDES and EPA authorities for consideration.** *(emphasis added)*"	• DELCORA has several unique circumstances that would affect the conclusion of the first phase (residential indicator), which include; ○ DELCORA serves 44 municipalities and 14 major industries that require fair and equitable cost allocations based on services provided. ○ DELCORA allocates current costs to retail, wholesale, and industrial customers based on annual wastewater volume for each customer and water consumption. ○ Chester City is the only combined sewer system. ○ Chester City is the poorest community. ○ Chester City is located in the Western Service Area. ○ The bedrock principle of rate setting is COST CAUSATION – assigning costs to those customers who cause the costs. ○ DELCORA only operates a few collection systems. Costs for collection systems not operated by DELCORA are accounted for separately. • **Table 2-3** provides approaches to DELCORA's unique circumstances.

Table 2-1: EPA 1997 CSO FCA Guidance and Example of DELCORA's Unique Financial Circumstances (Continued)

Item	Flexibility from EPA 1997 FCA Guidance	Example of DELCORA's Unique Financial Circumstance
4	Section IV. "Phase Two: Permittee Financial Capability Indicators", Page 20; Even though the financial capability analysis reflects current conditions, pending changes in the service area should be considered in development of the second phase indicators. For example, if the current unemployment rate is high, but there is a new plant opening that will stimulate economic growth, the unemployment indicators for the service area would need to be modified to reflect the projected impact of the new plant. The permittee should submit documentation of such conditions to the appropriate EPA and state NPDES authorities for consideration. **When the permittee is a sanitary district, sewer authority or similar entity, the second phase indicators related to property values and tax revenues may not be applicable. In those circumstances, the permittee may simply use the remaining indicators or submit other related documentation that will help assess its financial capability to implement the CSO controls.** *(emphasis added)*"	• As an authority, DELCORA does not have the ability to generate revenue by increasing tax rates on real estate or personal property to fund CSO improvements.
5	Section IV. "Phase Two: Permittee Financial Capability Indicators", Page 36, **In situations where a permittee believes that there are unique circumstances that would affect the conclusion of the second phase, the permittee may submit documentation of its unique financial conditions to the appropriate EPA and state NPDES authorities for consideration.** *(emphasis added)* The purpose of additional information is to clarify unique circumstances which are not fairly represented by the overall scores of the selected indicators. An example could be where a state or community imposes restrictions on property taxes.	• The City of Chester is a financially distressed municipality as defined by the 1987 Financially Distressed Municipalities Act 47 (Act 47). Chester City continues to have budget deficits and remains in the Act 47 program until their financial health improves.

Table 2-2: EPA 2014 CSO FCA Framework and Example of DELCORA's Unique Financial Circumstances

Item	Flexibility from EPA 2014 FCA Framework	Example of DELCORA's Unique Financial Circumstance
1	"**Purpose**", Page 1; "This financial capability assessment framework is intended to provide additional examples and **greater clarity on the flexibilities built into existing guidance that local governments or authorities can use in assessing their financial capability** *(emphasis added)*, and the relationship between that assessment and consideration of schedules for permit and consent decree implementation. This framework builds on the progress already made in the May 2012 "Integrated Municipal Stormwater and Wastewater Planning Approach Framework," and the **experience gained from talking with communities about their financial capability in actual, on the ground circumstances**. *(emphasis added)* Integrated Planning has been helping in identifying a permittee's relative priorities for projects based on the relative importance of adverse impacts on human health and water quality and the municipality's financial capability."	• The EPA 2014 CSO FCA Framework clarifies the flexibilities that are already included in the EPA 1997 FCA Guidance. Therefore, the approaches to DELCORA's unique financial circumstances, as shown in **Table 2-3**, are consistent with and acceptable under the EPA 1997 CSO FCA Guidance.

Table 2-2: EPA 2014 CSO FCA Framework and Example of DELCORA's Unique Financial Circumstances (Continued)

Item	Flexibility from EPA 2014 FCA Framework	Example of DELCORA's Unique Financial Circumstance
2	**"Financial Capability Assessment"**, key element No. 1, Page 2; **"The 1997 FCA Guidance identifies a valuable assessment that provides a common basis for financial burden discussions between the permittee, EPA and state NPDES authorities. Permittees have the option of submitting additional information that would create a more accurate and complete picture of their financial conditions.** The financial capability assessment described in the 1997 FCA Guidance identifies information that provides a basis for a general comparison of financial conditions between communities across the country and provides a consistent assessment of basic financial indicators as part of the overall analysis. **Additional information that the community provides on its unique financial circumstances will be considered so that schedules take local considerations into account. Where appropriate, this information can result in schedules that are different than the schedules suggested by the baseline analysis suggested in the 1997 FCA Guidance."** *(emphasis added)*	• DELCORA has several unique circumstances that affect the conclusion of the residential indicator phase and require slight modifications to schedules in the EPA 1997 CSO FCA Guidance, which include; ○ DELCORA serves 44 municipalities and 14 major industries that require fair and equitable cost allocations based on services provided ○ DELCORA allocates current costs to retail, wholesale, and industrial customers based on annual wastewater volume for each customer and water consumption. ○ Chester City is the only combined sewer system ○ Chester City is the poorest community ○ Chester City is located in the Western Service Area ○ DELCORA only operates a few collection systems. Costs for collection systems not operated by DELCORA are accounted for separately. • **Table 2-3** provides approaches to DELCORA's unique circumstances, which creates a more accurate and complete picture of DELCORA's financial conditions.

Table 2-2: EPA 2014 CSO FCA Framework and Example of DELCORA's Unique Financial Circumstances (Continued)

Item	Flexibility from EPA 2014 FCA Framework	Example of DELCORA's Unique Financial Circumstance
3	**"The Financial Capability Assessment Guidance and Examples of Additional Information that are Relevant to a Consideration of Financial Capability"**, Pages 5 and 6; "The examples given below are not intended to be a complete list, nor a list of factors that will be relevant in every community. Rather it provides an illustration of information that may prove useful in some instances. <u>Examples of Information Related to Residential Impacts</u>: **1. Income distribution by quintile, geography or other breakdown, illustrating how income distribution in the service area differs from comparable data on the national level or for similar cities.** *(emphasis added)* 2. Where cities have adopted differential rates for low income customers, the income distribution that led to that rate structure. **3. Information about service area poverty rates and trends.** *(emphasis added)* 4. Projected, current and historical sewer, and stormwater fees as a percentage of household income, quintile, geography or other breakdown. 5. Information on sewer and water usage for various classes of ratepayers or by type of dwelling unit. <u>Examples of Information Related to Financial Strength</u>: 1. Historical population trends or population projections. 2. Service area unemployment data and trends, or other labor market indicators, including unemployment on an absolute basis. **3. Rate or revenue models, including dynamic financial planning models showing the projections of impacts over the program period. All revenue sources tied to CWA obligations may be included as appropriate."** *(emphasis added)*	• Chester City is the only municipality with a combined sewer system and is the poorest municipality in the service area. • The City of Chester is a financially distressed municipality as defined by the 1987 Financially Distressed Municipalities Act 47 (Act 47). Chester City continues to have budget deficits and remains in the Act 47 program until their financial health improves. • When comparing the median household income for the Chester City between the decennial censuses, Chester City's median household income is not keeping up with rate of inflation. • DELCORA serves 44 municipalities and 14 major industries that require fair and equitable cost allocations based on services provided. Since the DELCORA FY2016 financial model already includes methodologies to allocate conveyance and dry/wet weather treatment costs in an industry standard fair and equitable manner that is consistent with current rate making practices and includes the timeframe when debt service will retire, DELCORA's approach is to use the FY2016 financial model to calculate the Cost per Household by municipality.

Table 2-3: Unique Financial Circumstances for DELCORA's CSO LTCP FCA

Item	Unique Circumstance	Financial Consideration	DELCORA's FCA Approach	Comments
1	DELCORA serves 44 municipalities and 14 major industries.	Approach required to allocate conveyance and dry/wet weather treatment costs in fair and equitable manner that is consistent with current rate making practices.	• Adapt existing FY2016 financial model to calculate the DELCORA's portion of Cost per Household for each municipality/ authority/ industry. • Calculate equivalent residential households based on 55,000 gallons per year per household.	
2	Chester City is the only municipality with a combined sewer system.	Approach required to allocate CSO LTCP costs in fair and equitable manner that minimizes the risk of losing a municipality/ authority/ industry	• Establish Peak Wet Weather Flow Targets for each municipality/ authority/ industry. • Total annual excess wet weather volume is the summation of annual excess wet weather volumes above flow targets plus the annual volumes discharged from the CSO Outfalls. • Municipalities/ authorities/ industries share of CSO LTCP costs would be based on their annual excess wet weather volume above their flow target divided by the total annual wet weather volume.	ALCOSAN is employing a similar approach for sizing their regional wet weather facilities, which will most likely result in updating wholesale customer cost sharing methodology.
3	Chester City is the poorest municipality in service area.	The Chester City MHI is $27,249 in 2013 dollars and is a distressed community.	• Show columns for both Chester City and Model Area in the FCA calculations • Overall affordability should be based on Chester City	
4	Chester City is located in the Western Service Area and flows to the Western Regional Treatment Plant.	Municipalities/ authorities/ industries in Eastern Service Area flow to PWD's SW WPCP, do not contribute flow to DELCORA's WRTP, and therefore are not included in the Model Area.	Exclude from the FCA municipalities/ authorities/ industries in the Eastern Service Area that do not contribute flow to DELCORA's WRTP.	
5	DELCORA does not own or operate all of the wastewater collection systems in the service areas.	• Wastewater collection systems not operated by DELCORA are billed separately to residential customers. • A few municipalities fund wastewater collection systems through their general fund and exact costs to residential customers are not known.	• Add wastewater collection system costs to the Cost per Household calculation for municipalizes / authorities who own and operate their collection system. • If collection system costs are not known, use the same unit charge for collection system renewal / operation as the DELCORA retail customers.	
6	DELCORA does not own or operate the stormwater system	Most municipalities fund stormwater systems through their general fund and exact costs to residential customers are not known.	Added stormwater system costs to the Cost per Household calculation, which is based on the average fee from a national survey.	

2.3 DELCORA's Approach for Allocating LTCP Costs to Municipalities, Authorities, and Industries

System Configuration

DELCORA has two service areas (Western and Eastern) that are served by two wastewater treatment plants; DELCORA's Western Regional Treatment Plant (WRTP) and PWD's Southwest Water Pollution Control Plant (SW-WPCP) as shown in **Figure 2-1**. All the flows (dry and wet weather) in the Western Service Area flow to DELCORA's WRTP. The Eastern Service Area is comprised of four Authorities – Central Delaware County Authority, Muckinipates Authority, Radnor-Haverford-Marple Authority, and Darby Creek Joint Authority. All the flows (dry and wet weather) from the Muckinipates Authority, Radnor-Haverford-Marple Authority, and Darby Creek Joint Authority flow to PWD's SW-WPCP. The first 20 mgd of flow, which includes all of the dry weather flow and a majority of the wet weather flow, from the Central Delaware County Authority is conveyed to DELCORA's WRTP and the remaining flows (primarily high wet weather flows) are conveyed to PWD's SW-WPCP though a valve operation on the Eastern Force main.

Unique Financial Circumstance

Since DELCORA serves 44 municipalities and 14 major industries, only operates a few of the wastewater collection systems (only in the Western Service Area), and fair and equitable cost allocations for industries and authorities are required, DELCORA has developed a financial model to allocate costs for services provided to retail customers and wholesale customers (industries, municipalities, and authorities). The financial model has been modified to serve as the basis to calculate the Cost per Household required under the EPA's 1997 FCA Guidance and the 2014 FCA Framework. The EPA 2014 FCA Framework specifically recognized that schedules/worksheets that account for the local considerations associated with unique financial circumstances may be different from the schedules/worksheets shown in the EPA 1997 FCA Guidance (See EPA 2014 FCA Framework, **"Financial Capability Assessment"**, Key Element No. 1, at Page 2).

Current debt service, O&M costs, and future renewal costs for the facilities that serve all current permitted Clean Water Act requirements have been allocated to all the DELCOA customers in a fair and equitable manner in the base financial model. **Figure 2-2** shows how the two LTCPs (Chester City LTCP and DELCORA's portion of PWD LTCP) will be assigned to the customers in the FCA financial model.

DELCORA has completed the model calibration and has initial flow results from the calibrated model for the climate period of 1994 through 1996. **Appendix D** shows how the separate sewer system flows were calculated from the model results and includes the hydrographs for the period between 1994 and 1996. The horizontal dashed line on the hydrographs represents the collective wet weather flow target for the WRTP model area. **Table 2-4** summarizes the annual CSO volume and the annual excess wet weather volume from the separate sewer system. The separate sewer system is functionally increasing the CSO volume by 8.2% to 11.6%. Therefore, separate sewer system's share of the Chester City CSO problem should remain about 15% for planning purposes. This evaluation should be updated after future dry weather flow projections are added to the model and the recommended CSO control alternatives are selected.

Figure 2-1
DELCORA's Approach to Allocating LTCPs Costs by Service Area

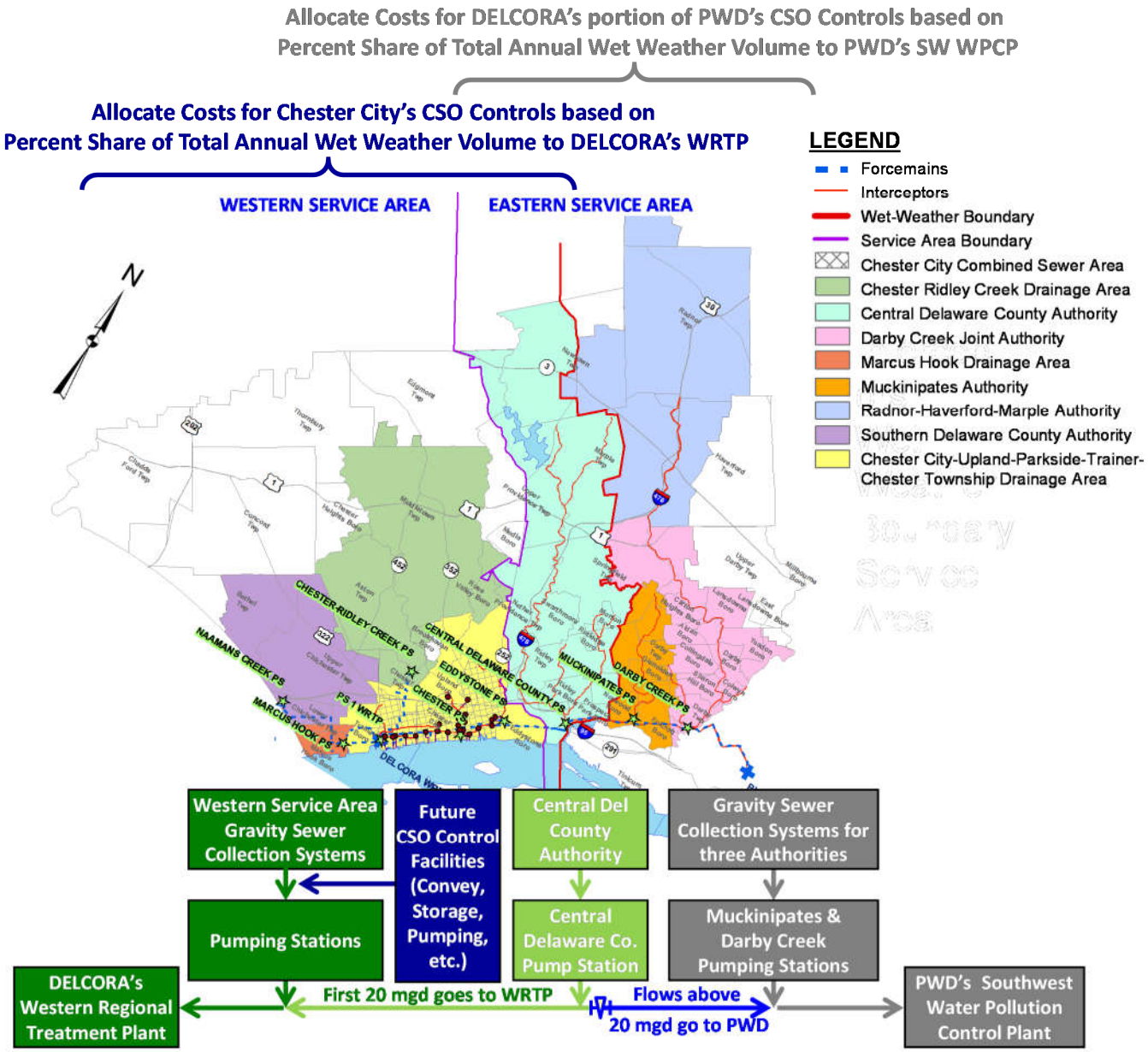


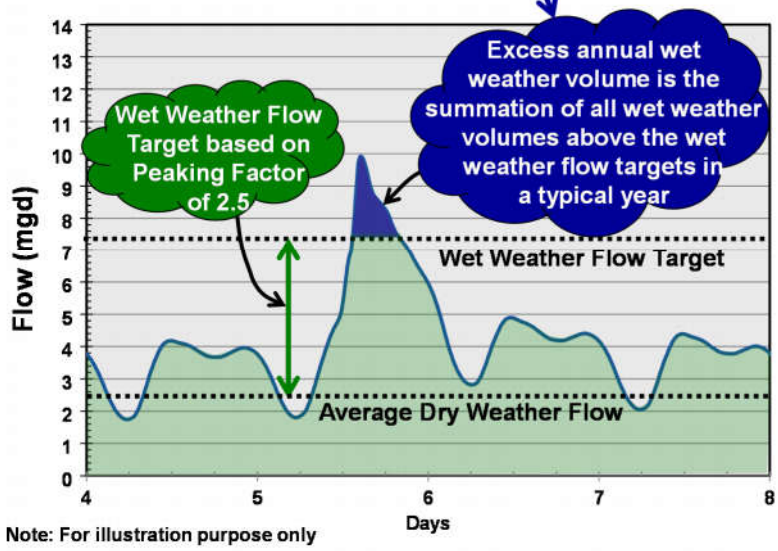
Figure 2-2
DELCORA's Approach to Allocating LTCP Costs by Customer

Cost Allocation for Flows above Wet Weather Flow Target

- Flow above Wet Weather Flow Target prevents / blocks Chester CSOs flows from entering WRTP, which functionally increases Chester CSO volumes by an amount equivalent to the separate sewer system's excess annual wet weather volume.
- Therefore, the excess annual wet weather volume represents the separate sanitary sewer system's portion or contribution to the CSO problem.
- A municipality's/ authority's/ industry's share of CSO LTCP costs is based on their excess annual wet weather volume divided by the total annual wet weather volume.

Cost Allocation for Flows up to Wet Weather Flow Target

- The WRTP peak flow capacity is based on a Peaking Factor 2.5 times the annual average daily dry weather flow capacity.
- Each municipality/ authority/ industry has a dry weather flow share of the existing WRTP.
- Therefore, the Wet Weather Flow Target is the municipality's/ authority's/ industry's annual average daily dry weather flow allocation times the WRTP's design Peaking Factor of 2.5.
- Each municipality/ authority/ industry are already paying for capacity up to the Wet Weather Flow Target.
- Costs associated with the Wet Weather Flow Target are already included in the base financial model.



Note: For illustration purpose only

Table 2-4:
Basis for Allocating LTCP Costs for CSOs in Chester City

	A	B	C = A +B	D = A / C	E = B / C
Year	Annual CSO Volume (MG)	Excess Wet Weather Volume from Separate Sewer System (MG)	Total Excess Wet Weather Volume (MG)	Annual CSO Volume (%)	Excess Wet Weather Volume from Separate Sewer System (%)
1994	327	34	361	90.7%	9.3%
1995	201	18	219	91.8%	8.2%
1996	371	49	420	88.4%	11.6%
Average	300	33	333	90.0%	10.0%

Section 3 FCA Case Studies for Precedents and Lessons Learned

The DELCORA FCA has unique financial circumstances requiring local considerations and approaches that require the flexibilities offered in the EPA 1997 FCA Guidance and the EPA 2014 FCA Framework. The two purposes of the case studies are (1) to identify precedents for DELCORA's FCA approaches and (2) provide lessons learned from how Wholesale Customers actually shared in the CSO costs that could be incorporated into the DELCORA FCA, which reflects the true affordability for the communities. CSO Communities were surveyed for the following information:

- Provide CSO Community characteristics
- Summarize the most recent FCA
  - How were Wholesale Customers incorporated into the FCA?
  - Where there any Unique Financial Circumstances or precedent setting approaches that were allowed under the EPA 1997 FCA Guidance or EPA 2014 FCA Framework?
- Describe how the CSO Community paid for the CSO LTCP?
  - Were Municipal Service Agreements re-negotiated?
  - How were CSO LTCP costs allocated to the Wholesale Customers?
  - What was the outcome of allocating CSO costs to the Wholesale Customers?
- Lessons Learned for future FCAs

3.1 Case Study Results

The communities surveyed have advanced CSO control programs with wholesale customers who pay a portion of the CSO LTCP costs. The four CSO case studies have the following relevant features to the DELCORA FCA:

- Case Study #1 – DC Water:
  - Original FCA did not include wholesale customers.
  - Multi-year process to update service agreements where wholesale customers agreed to pay their fair share of the CSO LTCP, which is based on same excess annual wet weather volume approach proposed by DELCORA.
  - 2015 FCA based on financial model that included wholesale customers' cost share.
- Case Study #2 – PWD:
  - PWD's FCA did not include wholesale customers.
  - PWD wholesale customer CSO LTCP cost share is flow based.
  - DELCORA is the major wholesale customer and has direct knowledge of the process to engage a separate sewer community in cost sharing of CSO controls.
- Case Study #3 – Indianapolis:
  - Indianapolis' FCA did not include wholesale customers.
  - Indiana Utility Regulatory Commission required Indianapolis-based Citizens Energy Group to update service agreements such that the Wholesale Customers pay their fair share.

- Case Study #4 – Anderson, Indiana:
  - Anderson FCA rigorously conformed to the EPA 1997 FCA Guidance
  - FCA assigned CSO costs allocated to all residential households, including residential households in wholesale customer service areas.

The CSO case studies are provided in **Appendix A**. A high level summary of the case studies is shown in **Table 3-1**, comparison with DELCORA's FCA approaches are shown in **Table 3-2**, and lessons learned are provided in **Section 3.3**, below.

Table 3-1
Summary of Case Studies

Description	DC Water	PWD	Indiana-polis	Anderson
Combined Sewer System Size in acres	12,400	40,960	35,000	4,700
Total Service Area in acres	464,000	87,040	177,500	10,500
CSO Control Program Capital Costs	$ 2.6 B	$ 3.5 B[1]	$ 2.0 B	$ 161 M
Municipal Service Agreements	8	10	6	2
Industrial Customers	52 SIUs			9
When was FCA prepared?	2002 & 2015	2009	2006	2010
Were Wholesale Customers included latest FCA?	Yes	No	No	Yes
Are Wholesale Customers paying for a portion of the CSO LTCP costs?	Yes	Yes	Yes	Yes
What percentage of CSO LTCP costs are being paid by Wholesale Customers?	7.1%	14.57%	7.95%	Unknown/ Not Calculated
What is the basis for Wholesale Customers share of CSO LTCP costs?	Excess Annual Wet Weather Volume	Peak Flow	Cost of Service based Peak Flow	Number of Households
Have any Wholesale Customers withdrawn from the service area and built their own wastewater treatment plant as result of the request to fund a portion of the CSO LTCP?	No	No[2]	No	Yes

Notes:
1. PWD's 2017 Bond Issue indicated that "As of the most recent projections, the total of the 25-year program is approximately $ 4.5 billion, of which approximately $ 3.5 billion are capital related costs and $ 1 billon are operation and maintenance costs."
2. DELCORA is PWD's largest wholesale customer. Based on the recent $ 4.5 billion estimate, DELCORA is considering other options, including the potential withdrawal from the PWD system and construction of a DELCORA Eastern Service Area Wastewater Treatment Plant.

3.2 Precedent for DELCORA's FCA Approaches

Many of the approaches employed to address the unique circumstances in the DELCORA FCA have been used by other CSO communities. **Table 3-2** shows the precedent of where the approach was used in other FCAs. There are a few circumstances, such as Items 4 and 5 in **Table 3-2**, which are only applicable to DELCORA's FCA and no precedents have been identified.

Table 3-2
Comparison of DELCORA's FCA Approach to other CSO Communities

Item	Unique Circumstance	DELCORA's FCA Approach	DC Water 2015 FCA	PWD 2009 FCA	Indianapolis 2006 FCA	Anderson 2010 FCA
1	DELCORA serves 44 municipalities and 14 major industries	Use Financial Model as basis for FCA calculations (future dollars, inflate MHI differently from O&M/Capital)	Financial Model (future dollars)	Financial Model (future dollars, inflate MHI differently from O&M/ Capital)	Financial Model (future dollars)	Did not use financial model
		Calculate equivalent residential households based on 55,000 gallons per year per household.			Used 65,000 gal per year	
2	Chester City is the only municipality with a combined sewer system.	Assign CSO Costs to Wholesale Customers base on annual wet weather volume above flow targets	Same approach as DELCORA FCA; Included in DC Water's Financial Model for 2015 FCA	Excluded Wholesale Customers from FCA	Excluded Wholesale Customers from FCA	Assigned CSO costs to all residential households
3	Chester City is the poorest municipality in service area.	Show impact on residential customers in most distressed community and overall WWTP service area	Yes	Yes	Yes	No (Only one burden level shown)
4	Chester City is located in the Western Service Area and flows to the Western Regional Treatment Plant.	Exclude municipalities/ authorities/ industries not tributary to Western Regional Treatment Plant	NA	NA	NA	NA
5	DELCORA does not own or operate all of the wastewater collection systems in the service areas.	Add wastewater collection system costs to the Cost per Household calculation for municipalizes / authorities who own and operate their collection system.	NA	NA	NA	NA
6	DELCORA does not own or operate the stormwater system	Add stormwater system costs to the Cost per Household calculation	Included DC specific stormwater fee	No	No	No

3.3 Lessons Learned

To understand the true affordability of the community the FCA should be based on how the LTCP will be financed, which means that all customers in the wastewater service area pay their fair share of all the services provided by the authority, including the wholesale customers. Most communities develop rates based on a cost of service to achieve approval from the community and their wholesale customers, especially when significant rate increases are required and customers want to understand why their wastewater bill double or tripled. Most FCA's have not used cost of service approaches because there was either insufficient information available at the time of the FCA or there was not enough time to discuss cost sharing options with wholesale customers. However, more recently, cost of service approaches have been developed by CSO communities with advanced LTCPs that serve as a "lessons learned" for the development of future FCAs.

3.3.1 Include Wholesale Customers in FCA with Clear / Defensible CSO Cost Share Basis

The Clean Water Act enforcement of EPA's 1994 CSO Control Policy required the larger CSO communities to develop LTCPs with FCAs and these CSO communities either did not have the information or the time to develop an approach for the CSO LTCP cost share with the wholesale customers. Therefore, most of these communities simply excluded the wholesale customers from the FCA, which was the case for DC Water's FCA prepared in 2002 and Indianapolis' FCA prepared in 2006. PWDs 2009 FCA also excluded the wholesale customers from the residential indicator calculation.

In the Indianapolis case, Indianapolis-based Citizens Energy Group (CEG) owns and operates the wastewater collection system, combined sewer system, and the wastewater treatment facilities. CEG sets wastewater rates that are regulated by the Indiana Utility Regulatory Commission. Currently, only Indianapolis City customers are paying for the LTCP. In 2013, CEG updated the cost of service assumptions to include the wholesale customer's share of the CSO LTCP. In the 2013 rate hearings the Indiana Utility Regulatory Commission required CEG to update the service agreements to eliminate the subsidy identified in the 2013 cost of service. In June 2017, CEG successfully re-negotiated new municipal service agreements that incorporated wholesale customer's share of the Indianapolis CSO LTCP costs. It should be noted that updating municipal service agreements was a contentious process, which required significant testimony from all parties involved before the Indiana Utility Regulatory Commission over the four year negotiations. Ultimately, CEG's success was due to transparent cost of service based approaches that allowed for wholesale customer buy-in and regulatory approval. CEG indicated that future FCAs (required by CEG's NDPES permit and Consent Decree) would include wholesale customers 7.98% share of the Indianapolis LTCP costs, which is based on cost of service.

In the DC Water case, the Inter-Municipal Agreement was updated in 2012 and became effective in 2013, which more clearly documented the wholesale customer's share of LTCP. The process to update Inter-Municipal Agreement started in 2008 and required several stakeholder meetings to document to the wholesale customers why and how they contributed to the CSO problem. Ultimately, DC Water was able to convince the wholesale customers that they needed to pay their fair share of the LTCP based on the flow data used to calibrate the hydrologic and hydraulic model and that the wholesale customers were exceeding their contract peak flow requirements (i.e. wet weather flow targets). DC Water recently modified their Consent Decree with EPA/DOJ to include a Green Infrastructure component using the 2012 Integrated Planning Framework. The FCA in DC Water's 2015 "Long Term Control Plan Modification for Green

Infrastructure" was based on the EPA 2014 FCA Framework, which allowed DC Water to show the affordability of the LTCP using methods that are different from EPA 1997 FCA Guidance. DC Water's 2015 FCA was based on a financial model that include the wholesale customer's 7.1% cost share of the LTCP. The approached DC Water used to allocate LTCP costs to the wholesale customers is the same approach proposed by DELCORA.

The lessons learned include:

- FCAs should be based on how the CSO LTCP will be funded and financed.
- Wholesale customers should be included in the FCA based on their share of the CSO problem.
- Industry standard cost of service based approaches are required to achieve wholesale customer buy-in and to understand the true affordability of the community.

3.3.2 Risk Management

Wholesale (industrial and municipal) service agreements are a two way street with benefits to both parties. Each party understands that operating one system results in lower costs for all parties due to economies of scale (i.e. fewer operation staff required to operate a single WWTP, only one WWTP laboratory and administration building is required, etc.). As long as costs for services are shared in a fair and equitable manner all the parities share in the cost savings. However, there are risks associated with not sharing costs in a fair and equitable manner, which are summarized as follows:

- Loss of an industrial customer
  - An industry leaving the community would be an economic loss on multiple fronts.
    - Loss of tax revenue from industry for the local government that fund schools, roads, police, firefighters, etc., would increase taxes on citizens to provide same services.
    - Loss of local jobs may result in people leaving the community, which places further burden on the remaining citizens.
  - Increase wastewater rates due to reduction in wastewater flows.
    - Debt service and the majority of operation and maintenance costs (labor and equipment maintenance, etc.) are fixed costs, and higher wastewater rates would be required to produce the same revenue needed to renew, operate and maintain the constructed facilities.

- Law suits from wholesale and industrial customers regarding unfair or unequitable rate making practices.
  - If wholesale and industrial customers determine that CSO costs are not being allocated in fair and equitable manner, the wholesale and industrial customers could challenge the cost allocations / rates in court.
  - If the court finds that CSO LTCP cost share were unfair or unequitable, then:
    - The CSO LTCP costs would have to be allocated to the remaining customers.
    - The CSO LTCP FCA would have not been a true reflection of community's affordability.

- Withdrawal of municipal wholesale customer
  - A municipality or authority may determine that it is cheaper to construct new WWTP than to continue to participate in the larger system. Similar to loss of industrial customer, higher wastewater rates would be required to produce the same revenue needed to renew, operate and maintain the constructed facilities.
  - Overall impact is that entire community would pay more for wastewater service due to the loss of the economy of scale.

In the case of Philadelphia Water Department (PWD), the 2009 FCA indicated that "residential indicator is based on the retail cost of wastewater service for households in the City of Philadelphia served directly by PWD". However, Table 4 in the City of Philadelphia, Water and Wastewater Revenue Bonds, Series 2017A indicates that wholesale customer share of the PWD's CSO LTCP costs is 14.57%. Table 4 also shows that DELCORA's share is 9.44% of the PWD CSO LTCP costs. PWD is allocating costs to the wholesale customers based on peak flow. DELCORA is currently evaluating if the 9.44% share of the PWD CSO LTCP costs is fair and equitable or if it cheaper to build a new DELCORA owned eastern service area wastewater treatment plant.

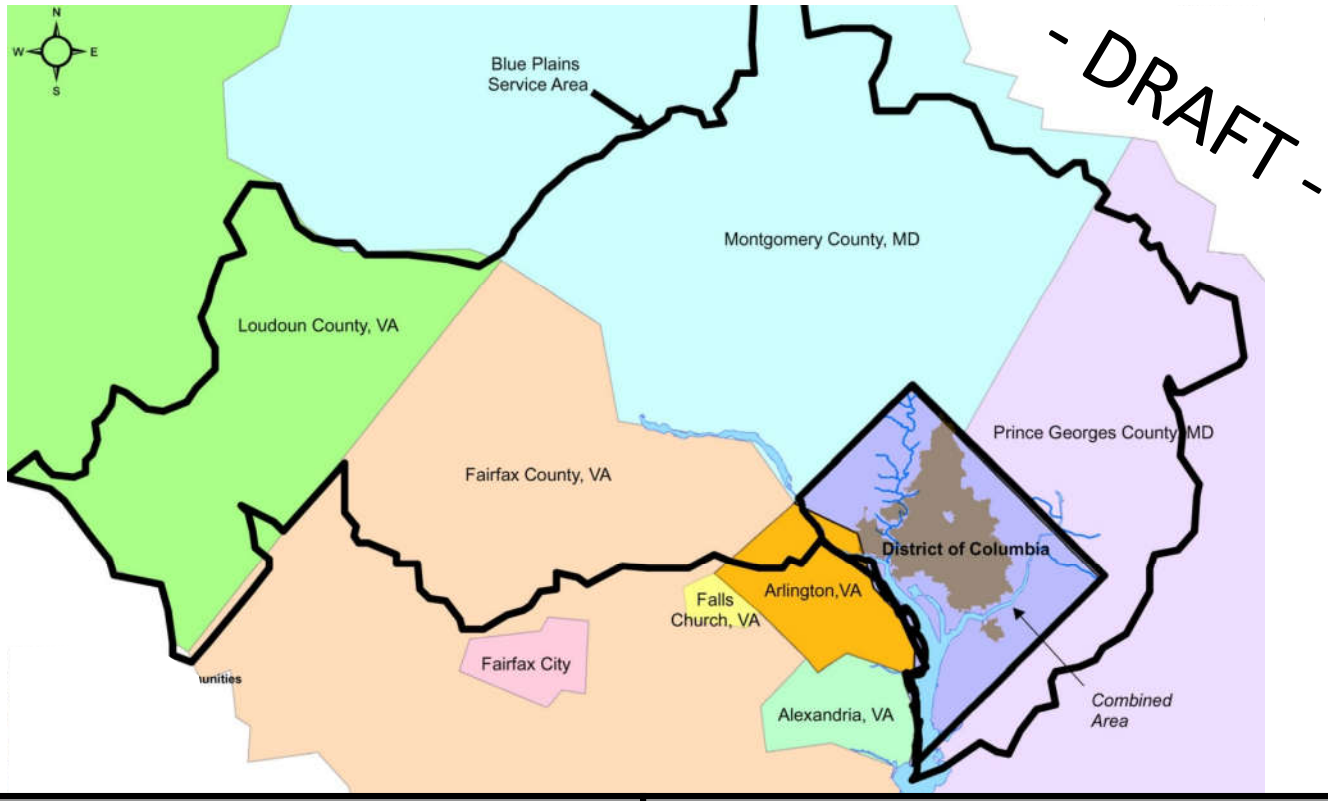
In the case of Anderson, Indiana, the 2010 FCA allocated LTCP costs to all households in the entire service area, including residential households in the wholesale customer service areas. Anderson attempted to incorporate the FCA assumptions into new wholesale customer service agreements. As a result of the re-negotiation process, the Town of Chesterfield decided that it was cheaper to build its own wastewater treatment facility. The decision resulted in higher costs for the remaining City of Anderson customers, because there were fewer households to share the dry weather flow treatment costs (i.e. WWTP facilities are the same size, but Capital, and O&M costs are allocated to fewer customers). Also, there was an increased financial burden on all customers (including Chesterfield) due to loss of economy of scale.

The lessons learned include:

- LTCP costs should be allocated in a fair and equitable manner. Otherwise, Wholesale Customers will consider withdrawal from the CSO community's system to control cost impacts on their customers.
- Cost share decisions need to be incorporated into FCA that minimize long term risks to CSO community.

In closing, the lessons learned from the FCA Case Studies further support DELCORA's approach to allocate LTCP costs in a fair and equitable manner based on current rate making practices that minimizes the risks associated with losing wholesale customer.

Case Study #1: DC Water CSO LTCP



Characteristics

Description	Value
Combined Sewer System	12,400 acres
Totals Service Area	464,000 acres
CSO Control Program Cost	$2.6 billion
Municipal Service Agreements	8
Industrial Customers	52 SIUs
Residential Population in CSS	300,000
Residential Population in Service Area	1.6 million

Financial Capability Analyses

- 2002 FCA for CSO LTCP (Attachment 1-1)
  - ✓ Provided in Section 12 of 2002 CSO LTCP
  - ✓ Consistent with EPA's 1997 financial guidance
  - ✓ Wholesale Customers NOT included in FCA
- 2015 FCA for CD Modification (Attachment 1-2)
  - ✓ Based on EPA's "Financial Capability Assessment Framework for Municipal CWA Requirements"
  - ✓ Used 40th Percentile household income instead of median household income
  - ✓ Wholesale Customers pay 7.1% of DC Water's CSO LTCP due to extra CSO generated due to flows that exceeded their contract amounts.

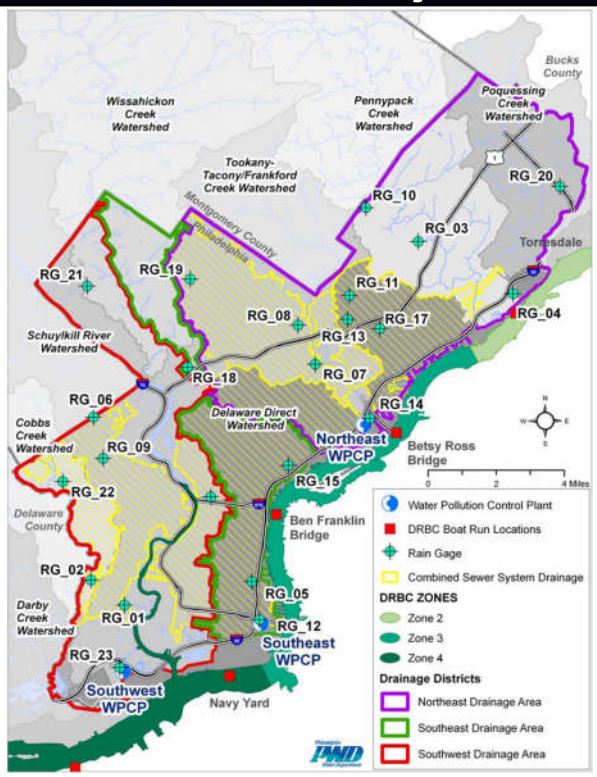
How CSO Community Paid for LTCP?

- In 2012 DC Water re-negotiated Inter-Municipal Agreements (Attachment 1-3)
  - ✓ Made it clear that communities will only pay based on what they use.
  - ✓ Suburbs agreed to pay for some of the LTCP costs only because it was possible to demonstrate they were sending flows greater than their contract allocations to the Blue Plains Wastewater Treatment Plant.

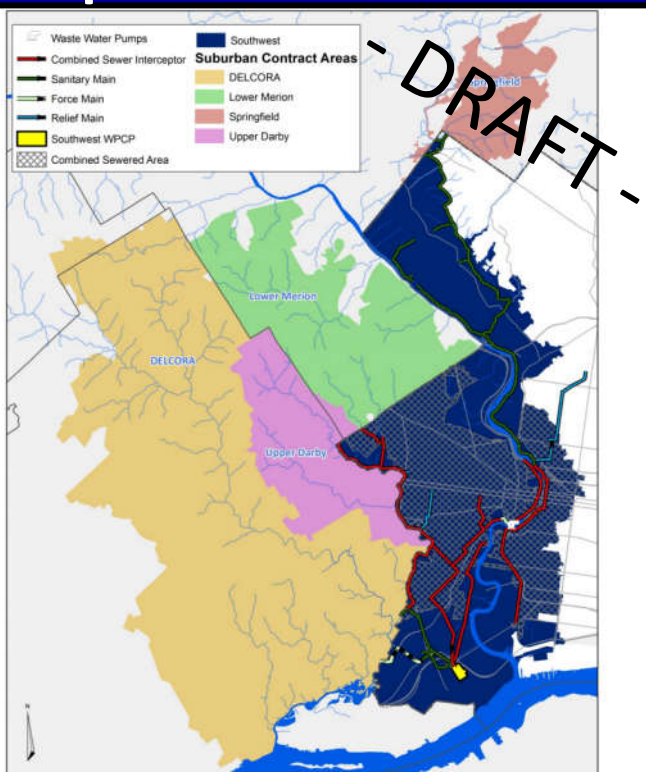
Lessons Learned

- FCA should be based on how the CSO LTCP will be actually financed.
- Demonstrating impact of Separate Sewer System on Combined Sewer Overflows provided evidence required to obtain buy-in from Wholesale Customers.
  - ✓ Required long-term flow monitoring of separate communities
  - ✓ Required updating service agreement to make it clear that community is only paying their fair share
- EPA's 2014 Financial Capability Assessment Framework provided increased flexibility over 1997 FCA guidance

Case Study #2: Philadelphia CSO LTCP



Northeast, Southeast and Southwest WPCP Service Areas



Southwest WPCP Service Area including suburban customers

Characteristics

Description	Value
Combined Sewer System	40,960 acres
Totals Service Area	87,040 acres
CSO Control Program Cost	$3.5 Billion
Municipal Service Agreements	10
Industrial Customers	
Residential Population in CSS	
Residential Population in Service Area	2.2 Million

Financial Capability Analysis

- FCA for CSO LTCP (Attachment 2-1)
  - ✓ Provided in Section 11 of 2009 CSO LTCP Update
  - ✓ Consistent with EPA's 1997 financial guidance
  - ✓ MHI inflated at 2.29%; O&M inflated at 4.7%; Capital inflated at 3.87%
  - ✓ Revenue projections based on PWD's existing cost-of-service based rate structure (future dollars).
  - ✓ Wholesale Customers NOT included in FCA cost share of CSO LTCP Update

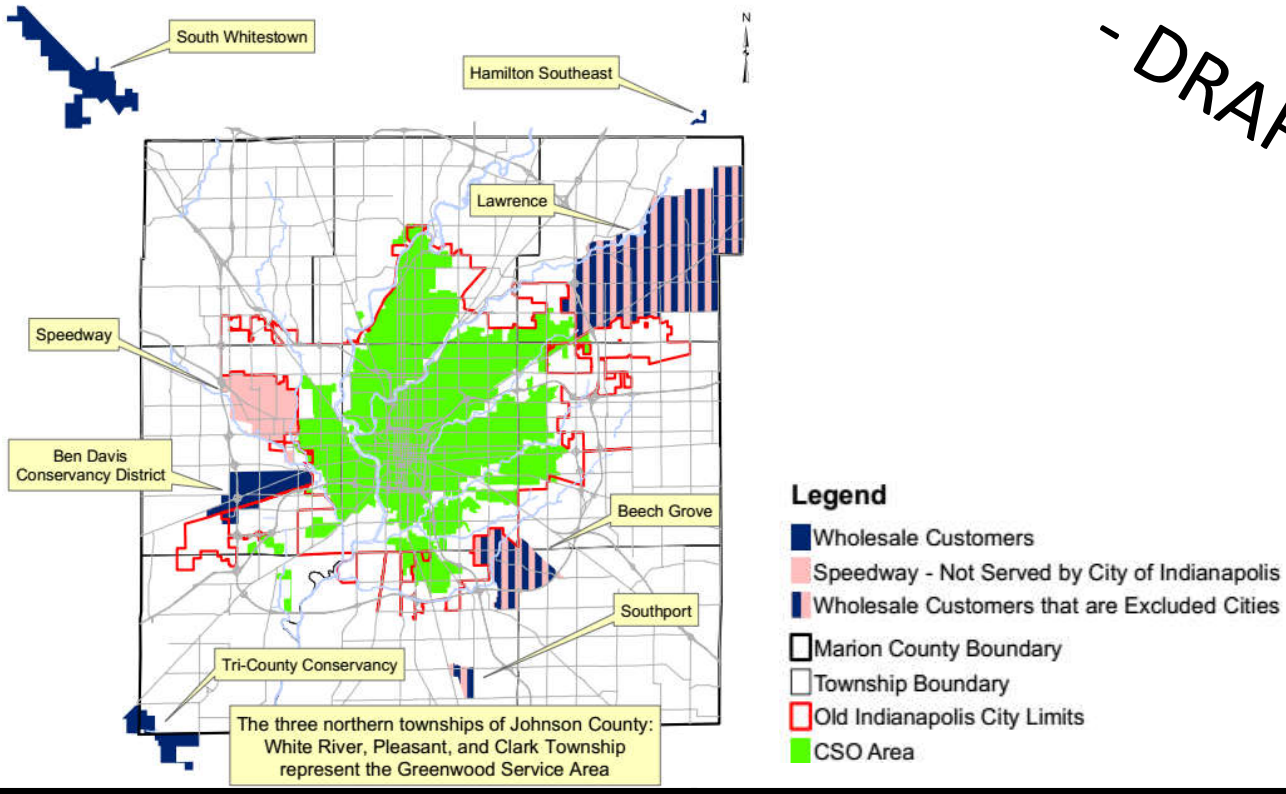
How CSO Community Paid for LTCP?

- Subsequent to 2009 FCA, PWD assigned about 9.44% of PWD's CSO LTCP costs to DELCORA. As a result DELCORA is considering options to control costs:
  - ✓ Option 1: Construct storage facility to reduce peak flow to PWD's Southwest plant
  - ✓ Option 2: Construct new DELCORA WWTP for Eastern Service Area and withdraw from PWD
  - ✓ Option 3: Re-negotiate agreement with PWD for a fair and equitable cost share of PWD's CSO LTCP
- PWD is using a peak wet weather flow as a basis to assess CSO LTCPs to DELCORA.

Lessons Learned

- To determine future impact on residential customers, FCA should be based on how the rates are made and costs are assessed
  - ✓ Inflated MHI, O&M costs, and capital costs at different rates
  - ✓ Revenue projections based on cost-of-service and future dollars
- CSO LTCP costs should be allocated in a fair and equitable manner. Otherwise, Wholesale Customers will consider withdrawal from the CSO community's system to control cost impacts on their customers.

Case Study #3: Indianapolis CSO LTCP



- DRAFT -

Characteristics

Description	Value
Combined Sewer System	35,000 acres
Totals Service Area	177,500 acres
CSO Control Program Cost	$ 2.0 billion
Municipal Service Agreements	6
Industrial Customers	
Residential Population in CSS	
Residential Population in Service Area	740,000

Financial Capability Analysis

- FCA for CSO LTCP (Attachment 3-1)
  - ✓ Provided in Section 6 of the 2006 CSO LTCP
  - ✓ Consistent with EPA's 1997 financial guidance
  - ✓ Wholesale Customers NOT included in FCA
  - ✓ Residential share (Cost per Household) was developed using a rate-based methodology.
    - City projects total revenue required,
    - City then estimates future rates,
    - City then estimates Cost per Household based on per-dwelling unit annual water consumption of 65,000 gallons per year (derived from records)

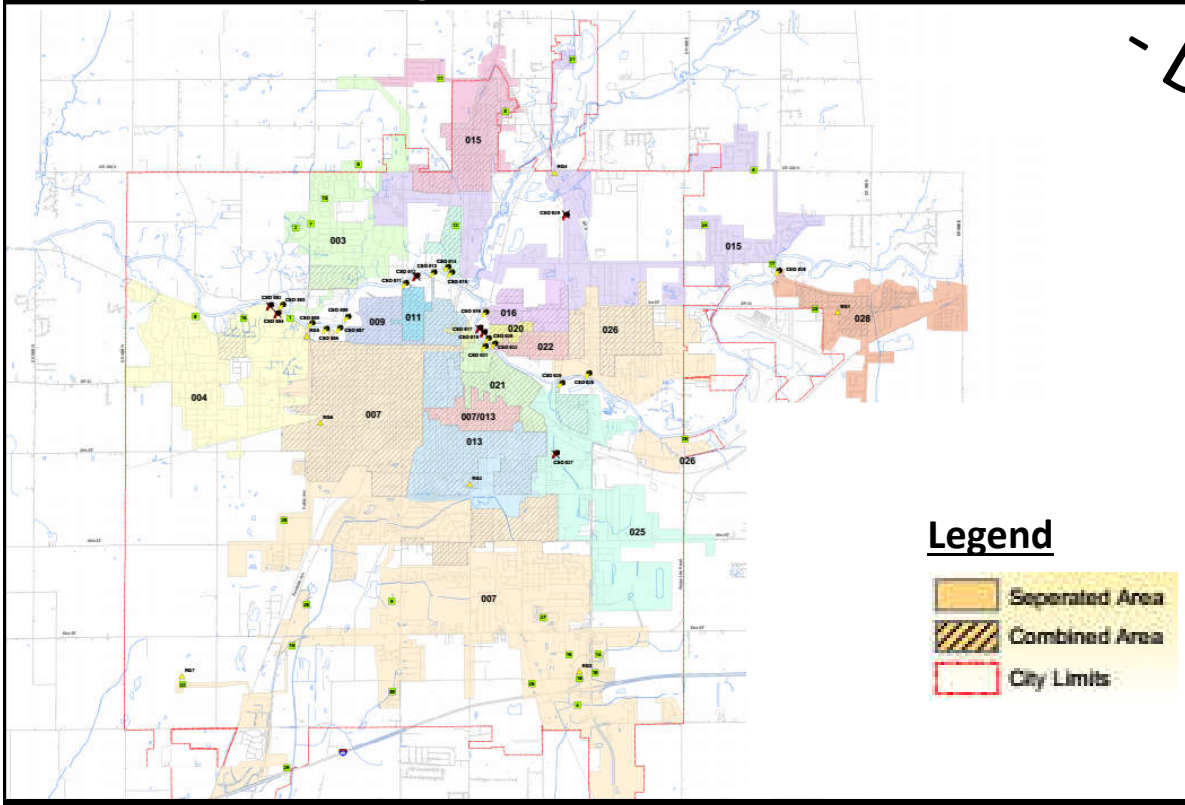
How CSO Community Paid for LTCP?

- Currently, only the Indianapolis City customers were paying for the CSO LTCP.
- In 2013 Indianapolis-based Citizens Energy Group (CEG) updated cost of service assumptions to include Wholesale Customers' share of CSO LTCP
- In 2017, Indiana Utility Regulatory Commission required CEG to update service agreements.
  - ✓ Wholesale Customers' share of CSO LTCP is 7.96%, which was based on the Wholesale Customer's Permitted Capacity for peak wet weather flow.
  - ✓ Surcharge rates if flows above Permitted Capacity

Lessons Learned

- FCA should consider
  - ✓ Wholesale Customers should pay their fair share of CSO LTCP based on cost of service assumptions consistent with Wholesale Customers' share of facilities providing service.
  - ✓ True burden on lower income population of CSO LTCP costs.

Case Study #4: Anderson, Indiana CSO LTCP



Characteristics

Description	Value
Combined Sewer System	4,700 acres
Totals Service Area	10,500 acres
CSO Control Program Cost	$161 million
Municipal Service Agreements	2 (2010)
Industrial Customers	9 (2010)
Residential Population in CSS	
Residential Population in Service Area	63,505

Financial Capability Analysis

- FCA for CSO LTCP (Attachment 4-1)
  - ✓ Provided in Section 7 of 2010 CSO LTCP
  - ✓ Consistent with EPA's 1997 financial guidance
  - ✓ Residential households in Wholesale Customers' service area included in FCA

How CSO Community Paid for LTCP?

- Anderson re-negotiated agreements with wholesale communities to increase rates for Anderson's CSO control and operational requirements.
- Subsequently, the Town of Chesterfield decided to build its own WWTP. Chesterfield cited that it was "cheaper" to build its own treatment facility than to send flows to the Anderson facilities (See Attachment 4-2)

Lessons Learned

- CSO LTCP costs should be allocated to Wholesale Customers equitably or risk losing the Wholesale Customer the system, which results in the following:
  - ✓ Fewer customers to share the dry weather flow treatment costs (i.e. WWTP facilities are the same size, but Capital, and O&M costs are allocated to fewer customers)
  - ✓ Increase financial burden on all customers (including Chesterfield) due to loss of economy of scale
- Cost share decisions need to be incorporated into FCA that minimize long term risks to CSO community.

Case Study #1: DC Water CSO LTCP
Attachment 1-1
DC Water's 2002 FCA

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

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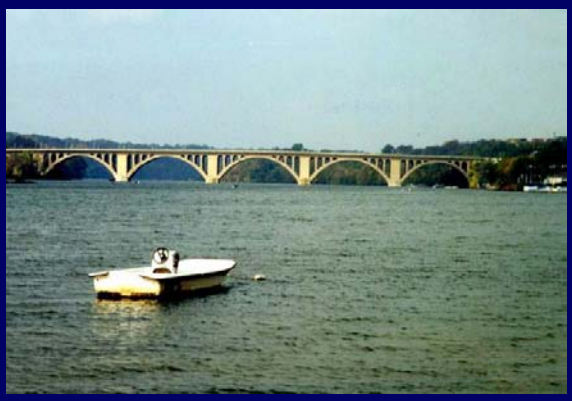
Anacostia River



Potomac River

Rock Creek

Combined Sewer System Long Term Control Plan

Final Report

July 2002

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

Combined Sewer System Long Term Control Plan

Submitted by:

District of Columbia
Water and Sewer Authority

Prepared by:

Greeley and Hansen LLC

July 2002

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY
Washington, D.C.

Combined Sewer System Long Term Control Plan

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Engineering Program Management Consultant - III
Program Manager - Greeley and Hansen LLC
July 2002

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Section 12
Financial Capability

12.1 INTRODUCTION

Financing CSO programs in a fair and equitable manner without placing an unreasonable burden on ratepayers is one of the most challenging aspects facing CSO communities. CSO control costs can be one of the largest single expenditures made on a public works project for many communities. No dedicated grant programs currently exist to fund CSO control programs. As a result, a detailed affordability analysis is necessary to assess the impact of CSO control costs on the fiscal health of a community. A procedure for assessing financial capability is described in EPA's Guidance Document, *Guidance for Financial Capability Assessment and Schedule Development* (EPA, 1997). This procedure was used to perform the financial capability assessment for WASA.

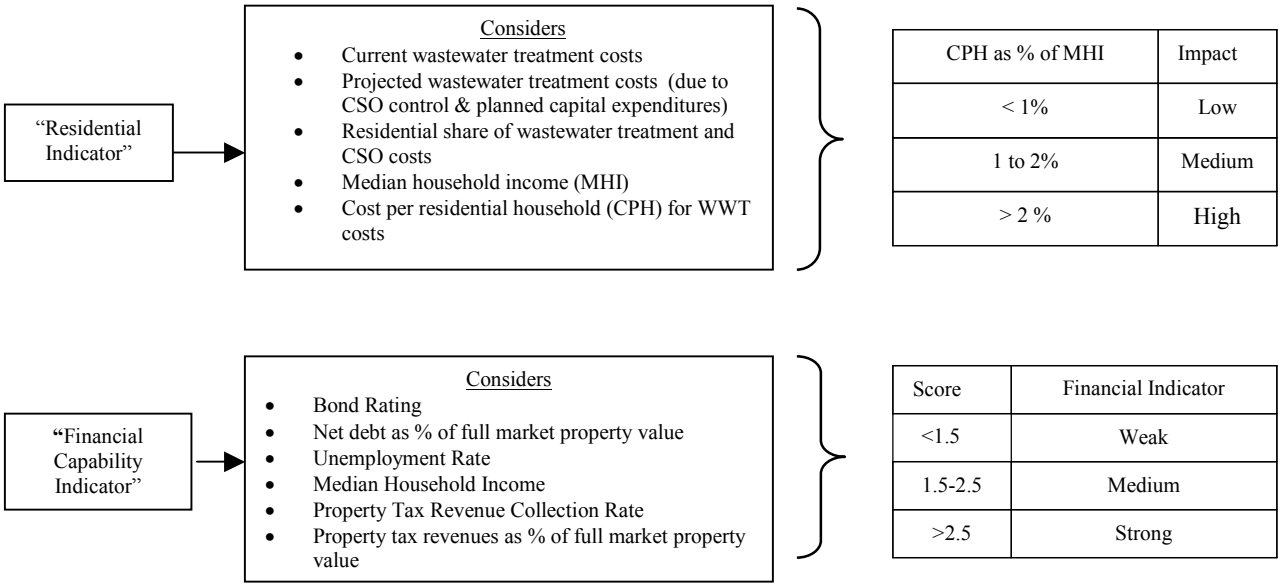
Regulatory agencies are allowed to consider other factors that will have an impact on the ability of a community to finance CSO controls. As a result, this evaluation also considers the District's income distribution, the ability of the District to remain competitive in the greater Washington area, and the effect of WASA's existing capital improvement program on the ability to finance CSO controls.

12.2 METHODOLOGY

In EPA's guidance document, assessment of financial capability entails a two-phase approach. The first phase consists of the calculation of a "Residential Indicator", which measures the financial impact of current and proposed CSO controls on residential users. The residential indicator is calculated by estimating the cost per household (CPH) for current and proposed wastewater treatment and CSO control costs. The CPH is used in conjunction with the median household income (MHI) to estimate residential impacts. Residential impacts are considered by EPA to be 'low' if the CPH is less than 1% of the MHI, 'medium' if the CPH is between 1% and 2% of the MHI, and 'high' if the CPH is greater than 2% of the MHI. Note that the CPH is not strictly equivalent to a monthly or annual sewer user fee. The CPH does not take into account all factors that are included when developing a sewer bill such as project scheduling, industrial vs. residential rates and other factors.

The second phase of the assessment involves calculation of a "Financial Capability Indicator", which assesses the overall financial health of the community. This indicator examines bond rating, debt burden, unemployment rate, property tax collection rates, MHI and other factors to develop a numerical score. The financial capability is considered by EPA to be low if the score is less than 1.5, medium if the score is between 1.5 and 2.5, and strong if the score is greater than 2.5. Figure 12-1 summarizes the development and scoring of the residential and financial capability indicators.

Figure 12-1
EPA's Residential and Financial Capability Indicators



Once the residential and financial capability indicators are calculated, they are combined into a financial capability matrix. The matrix provides EPA's assessment of the overall burden associated with funding CSO controls. This is summarized in Table 12-1.

Table 12-1
EPA's Financial Capability Matrix

Financial Capability Indicator	Residential Indicator (Cost per Household as % of Median Household Income)		
	Low (Below 1.0%)	Medium (Between 1.0% and 2.0%)	High (Above 2.0%)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Medium (Between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

12.3 RESIDENTIAL INDICATOR

12.3.1 Median Incomes

The CPH for wastewater treatment (WWT) and CSO controls was developed using a three-step process. First, WASA's total WWT and CSO costs were calculated by adding current costs for existing wastewater treatment operations and projected costs for proposed WWT facilities and CSO

controls. Next, the residential share of total WWT and CSO costs was calculated. The final step consists of calculating the CPH by dividing the residential share of total WWT and CSO costs by the number of households in the District.

Current WWT costs consist of current annual wastewater operating and maintenance (O & M) expenses, plus current annual debt service (principal and interest). Planned WWT capital costs were obtained from WASA's ten year Capital Improvement Program (CIP) (WASA, 2000b). The CIP amounts to $1.6 billion for the ten-year period FY2000 through FY2009, of which about $564 million are attributable to wastewater treatment for WASA customers within the District. The remainder of the CIP is attributable to water system improvements or to expenditures to be borne by others such as the surrounding counties whose wastewater is treated at Blue Plains.

The affordability analysis was conducted for a range of CSO control plan capital costs between $100 million and $2 billion in year 2001 dollars. Five cost levels were selected to compute the CPH: $0 million, $100 million; $500 million; $1 billion; and $2 billion. Each of the foregoing CSO control cost levels was assumed to occur in FY2001 to establish a common implementation year for all assumed CSO control cost scenarios as a benchmark for their comparison.

WASA's Board of Directors has adopted financial policies that require maintenance of 140 percent debt service coverage, and maintenance of cash reserves of 180 days O&M expenses, currently approximately $91 million. The present analysis factored in WASA's debt service coverage requirement. CSO control O&M costs will add substantially to the reserve requirement. An interest rate of 7% and a term of 30 years were used in the analysis to determine the capital recovery factor, which are consistent with WASA's assumptions for debt issuance for the CIP (WASA, 2002a). An interest rate of 2.6% was used as a present value adjustment factor based on the past 5 year average annual increase in the Consumer Price Index (CPI) from the Bureau of Labor Statistics (U.S. Bureau of Labor, 2000).

The residential share of total annual WWT and CSO costs is computed by multiplying the percent of total wastewater flow attributable to residential users by the total costs. For FY 1999, the residential share of wastewater flow within the District boundaries was 50% (WASA, 2000c).

The latest median household income (MHI) for the District estimated by the Census Bureau for 2000 is $38,752 (U.S. Census Bureau, 2002). This was adjusted upward to year 2001 using an inflation adjustment factor resulting in an adjusted MHI of $39,760. Dividing this amount by total annual WWT and CSO control costs per household (CPH) yields the Residential Indicator and the financial impact on residential customers.

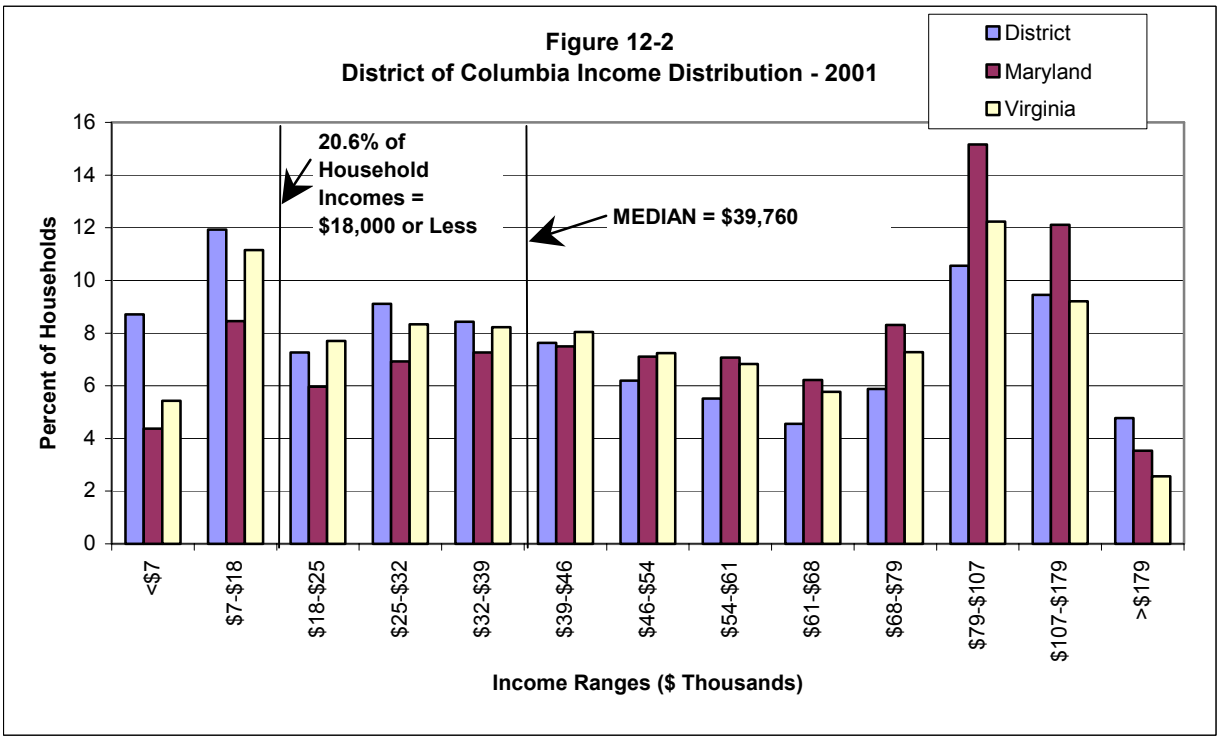
The annual cost per household and the residential indicator are summarized in Table 12-2.

Table 12-2
Projected Cost Per Household and Residential Indicator
Median Income Households

Category	*CSO Control Costs in Year 2001 (ENR=6383)*					*Line No. from EPA Worksheet*
	$0	*$100 Million*	*$500 Million*	*$1,000 Million*	*$2,000 Million*	
Current WWT Costs:						
Annual O&M Expenses	$88,059,582	$88,059,582	$88,059,582	$88,059,582	$88,059,582	100
Annual Debt Service (P&I)	$17,111,944	$17,111,944	$17,111,944	$17,111,944	$17,111,944	101
Subtotal (Line 100 + Line 101)	$105,171,526	$105,171,526	$105,171,526	$105,171,526	$105,171,526	102
Projected WWT Costs: Annual O & M Expense	$0	$0	$0	$0	$0	103a
Projected CSO Costs: Annual O & M Expense	$0	$1,500,000	$7,500,000	$15,000,000	$30,000,000	103b
Projected WWT & CSO Costs: Annual Debt Service (P&I)	$58,110,933	$69,107,129	$113,091,910	$168,072,887	$278,034,842	104
Subtotal (Lines 103a + 103b+ 104)	$58,110,933	$70,607,129	$120,591,910	$183,072,887	$308,034,842	105
Total Current & Projected WWT & CSO Costs (Line 102 + Line 105):	$163,282,459	$175,778,655	$225,763,436	$288,244,413	$413,206,368	106
Residential Share of Total WWT & CSO Costs:	$81,641,230	$87,889,327	$112,881,718	$144,122,207	$206,603,184	107
Total No. of Households in District:	248,338	248,338	248,338	248,338	248,338	108
Annual Cost per Household (Line 107 / Line 108):	**$329**	**$354**	**$455**	**$580**	**$832**	**109**
Median Household Income (MHI) for Census Year 2000	$38,752	$38,752	$38,752	$38,752	$38,752	201
MHI Adjustment to Year 2001	1.026	1.026	1.026	1.026	1.026	202
Adjusted MHI (Line 201 x Line 202)	$39,760	$39,760	$39,760	$39,760	$39,760	203
Annual WWT & CSO Control Costs per Household (CPH) (Line 109)	$329	$354	$455	$580	$832	204
Residential Indicator: CPH as % MHI) (Line 204 / Line 203 x 100)	**0.83%**	**0.89%**	**1.14%**	**1.46%**	**2.09%**	**205**
Financial Impact:	**Low**	**Low**	**Mid-Range**	**Mid-Range**	**High**	

12.3.2 Lower Incomes

The financial impact of wastewater treatment and CSO control costs on residential customers in the District is not fully measured by the foregoing method. Because of the demographics of the District, income does not follow a normal statistical distribution, or bell curve, among households across the full range of incomes. In the District, there is a distinct clustering of household incomes at the lower and upper extremes of the income spectrum. This creates a 'u' shaped or upside down income distribution which is shown on Figure 11-2.



Because of the disproportionate number of low income households in the District, the impact of wastewater treatment and CSO control costs on the most well off households in the lowest 20% of income distribution in the District was calculated. The most well off households in this category have incomes of approximately $18,000 per year. The results are presented in Table 12-3, which shows a high impact on this segment of the population for all assumed levels of CSO control costs.

Table 12-3
Projected Cost Per Household and Residential Indicator
Lower 20% of Household Incomes

Category	*CSO Control Costs Year 2001 (ENR=6383)*					*Line No. from EPA Worksheet*
	$0	*$100 Million*	*$500 Million*	*$1,000 Million*	*$2,000 Million*	
Highest Household Income of Lower 20% of Income Range:	$18,000	$18,000	$18,000	$18,000	$18,000	201a
Annual WWT & CSO Control Costs per Household (CPH) (Line 109)	$329	$354	$455	$580	$832	204
Residential Indicator: CPH as % MHI) (Line 204 / Line 203 x 100)	**1.83%**	**1.97%**	**2.53%**	**3.22%**	**4.62%**	**205a**
Financial Impact:	**Mid-Range**	**Mid-Range**	**High**	**High**	**High**	

12.4 FINANCIAL CAPABILITY INDICATORS

12.4.1 General

The permittee's financial indicator score was determined by evaluation of selected factors that portray WASA's and the District's debt burden, socioeconomic conditions, and financial operations. WASA's current debt burden was assessed as well as its ability to issue new debt to finance CSO controls by determining bond ratings and overall debt as a percentage of full market property value in the District. Socioeconomic conditions in the District were evaluated by assessing its unemployment rate and median household income (MHI). The District's ability to manage financial operations were evaluated by determining the property tax collection rate and property tax revenues as a percentage of full market property value. A value range for each of these indicators characterizes whether WASA's residential users are in a "Weak", "Mid-Range" or "Strong" position to bear WASA's WWT and CSO control costs relative to national benchmarks according to the EPA guidance document.

12.4.2 Bond Ratings

Ratings of WASA's Public Utility Revenue Bonds, Series 1998, have been upgraded since their issuance by Moody's, Standard & Poors and Fitch IBCA to A1, A, and A+, respectively. Continued compliance with the Board of Directors' 140 percent debt service coverage and 180 day O&M expense cash reserves policies has been critical to these bond rating upgrades. This will ultimately result in lower interest rates on future WASA debt issuance.

When WASA was first created in 1996, it was an unrated utility. WASA started operations with the negative cash position left by its predecessor agency, the Water and Sewer Utility Administration (WASUA). In barely two years WASA reached its 180 day O & M cash reserve goal, 11 months ahead of schedule. Without strong cash reserves and debt service coverage policies, WASA's bond ratings would be significantly lower and its cost of capital significantly higher. WASA has worked hard to implement these policies and achieve their goals. They must be maintained in order to ensure WASA's long-term financial viability and not be compromised by unaffordable new projects.

According to criteria in the guidance document, the rating of the most recent bonds to be issued either by the District or WASA is to be used to determine a bond rating indicator for WASA. Consequently, a rating of Baa1 for the District's General Obligation Bonds (Series 1999A) and General Obligation Bonds (Series 1999B) by Moody's Investor Service has been used, corresponding to a "Mid-Range" indicator rating (WASA 2002a).

12.4.3 Summary of Financial Capability Indicators

An average score for the indicators determined in this phase of the financial capability assessment was calculated. The indicators are compared to national benchmarks to form an overall assessment

of the financial capability and its effect on implementation schedules in the long-term CSO control plan. Each indicator is scored using the following rating scale:

Indicator Ratings	Score
Weak	1
Mid-Range	2
Strong	3

The average score for the indicators was calculated by dividing the sum of the scores by the number of entries. The average score is given on line 907 of Table 12-4 and the overall financial capability rating is given at the bottom of the table. According to this procedure, WASA's overall financial capability corresponds to a "Mid-Range" rating. However, because of the disproportionate number of lower income households in the District previously described, an alternative score is presented using the income of the most well off households in the lowest 20% of income distribution in the District instead of the MHI. This score results in a "Low" overall financial capability rating.

Table 12-4
Financial Capability Indicators

Indicator(Line No. from EPA Worksheet)	*Value*	*Indicator Rating*	*Score Using Median Household Incomes*	*Score Using Lower 24% of Household Incomes*	*Line No. from EPA Worksheet*
Bond Rating (Line 303):	Baa1	Mid-Range	2	2	901
Overall Net Debt as a Percent of Full Market Property Value (Line 405):	7.30%	Weak	1	1	902
Unemployment Rate (Line 501):	5.1	Weak	1	1	903
Median Household Income (Line 601):	$39,760	Mid-Range	2	0	904
Highest Household Income of Lower 20% of Income Range (Line 601a):	$18,000	Weak	0	1	904a
Property Tax Revenues as a Percent of Full Market Property Value (Line 703):	1.31%	Strong	3	3	905
Property Tax Revenue Collection Rate (Line 803):	86.89%	Weak	1	1	906
Permittee Indicators Score (Sum of Scores/ Number of Entries):			1.67	1.50	907
Financial Capability:			**Mid-Range**	**Low**	

12.5 COMBINED RESIDENTIAL AND FINANCIAL INDICATORS

The Residential Indicator and the Financial Capability Indicators were combined in the Financial Capability Matrix to evaluate the level of financial burden that CSO controls might impose on WASA. The Residential Indicator score is given on line 1001 and the Financial Capability Indicator score is given on line 1002 of Table 12-5.

Table 12-5
Financial Capability Matrix Overall Score

	CSO Control Costs in Year 2001 (ENR-6383)					*Line No. from EPA Worksheet*
	$0	*$100 Million*	*$500 Million*	*$1,000 Million*	*$2,000 Million*	
For Median Incomes						
Residential Indicator Score (Line 205):	0.83%	0.89%	1.14%	1.46%	2.09%	1001
Financial Capability Indicators Score (Line 907 Column B):	1.67	1.67	1.67	1.67	1.67	1002
Financial Capability Matrix Category:	**Low Burden**	**Low Burden**	**Medium Burden**	**Medium Burden**	**High Burden**	**1003**
Lower 20% of Household Incomes						
Residential Indicator Score (Line 205a):	1.83%	1.97%	2.53%	3.22%	4.62%	1001a
Financial Capability Indicators Score (Line 907 Column C):	1.50	1.50	1.50	1.50	1.50	1002a
Financial Capability Matrix Category:	**Medium Burden**	**Medium Burden**	**High Burden**	**High Burden**	**High Burden**	**1003a**

Based on EPA's approach, it would appear that CSO control programs costing between $500 million and $1 billion would impose a "Medium Burden" and a CSO control program costing $2 billion would impose a "High Burden" on WASA and its residential customers.

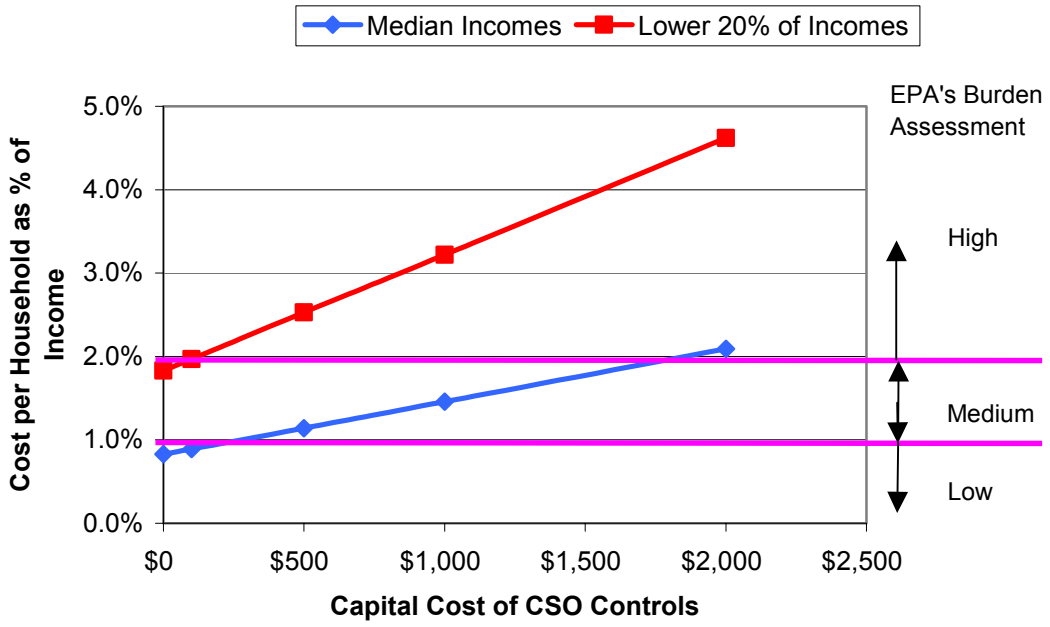
This method of determining a Financial Capability Matrix category for WASA understates the impact of CSO controls on the disproportionately large number of low income households in the District. Therefore, the Financial Capability Matrix Score was also calculated for the most well off households in the lowest 20% of income distribution. This score presents a very different picture of the impact of CSO control costs, indicating that any program above approximately $100 million would impose a "High Burden" on this segment of the population.

Additional analyses were performed to determine the CSO control cost levels that would trigger each of the financial burden categories established by EPA. The results suggest that for median income households, the threshold CSO capital cost for rising into EPA's 'high' burden level is about $1.85 billion. For the upper end of the lower 20% income range, this threshold is only $125 million. These results are summarized in Table 12-6 and on Figure 12-3.

Table 12-6
Summary of CSO Control Cost Impacts on Residential Customers
(Year 2001 Dollars)

EPA's Burden Assessment	*Median Income Households*			*Low Income Households (Income of 18,000)*		
	CPH as a % of MHI	*Wastewater & CSO CPH*	*CSO Control Plan Cost*	*CPH as a % of Income*	*Wastewater & CSO CPH*	*CSO Control Plan Cost*
No Additional CSO Controls (Baseline Condition)	0.83%	$329	$0	1.83%	$329	$0
Medium Burden Threshold	1.0%	$399	$280 million	1.0%	$180	$0
High Burden Threshold	2.0%	$794	$1.85 billion	2.0%	$360	$125 million

Figure 12-3
Impact of CSO Controls on Cost Per Household



12.6 OTHER FACTORS

12.6.1 Baseline Rate Impacts Facing WASA's Rate Payers

The financial assessment and affordability analysis presented in the previous sections uses EPA's standard methodology to assess the financial capability of the Authority and its customers relative to the proposed LTCP. The assessment using EPA's approach results in a finding of an overall "medium impact" on the Authority and its customers; the impact is high when applied to the over 51,000 households that have incomes of less than $18,000. These households approach the medium impact with WASA's existing capital program and financial plan; including CSO costs, their wastewater costs will fall in the very high range. A more accurate and complete picture of the financial capability of the Authority and its customers to fund the proposed LTCP must take into consideration the total cost of wastewater treatment and CSO controls, the rising cost of drinking water services, and, as pointed out earlier, the disparate impact on low income residents of the District of Columbia.

This analysis reflects several important analytical conventions that differ from the analysis presented in earlier sections.

- This rate impact analysis focuses on a typical residential customer with metered water consumption of 100 ccf per year. The EPA approach documented in earlier sections uses the number of households and cost per household (CPH) to evaluate financial capability. Note the two methods are not strictly equivalent. The CPH does not take into account all factors that are included in retail rate making such as project scheduling, varying consumption levels, etc.

- The EPA approach uses cost estimates in current dollars. The plan reflects 2001 values for all cost estimates. This analysis of rate impacts uses "year-of-expenditure" values which reflect the inflationary impact of time on costs and rates.

In January 2002, the Authority adopted a 10-year financial plan that provides for operations, maintenance and capital expenditures for the period of FY 2001 to FY 2010. This 10-year plan continues the Authority's current $1.6 billion water and wastewater capital improvement program (CIP).

Approximately 24 percent of the CIP is for mandated improvements that will enable the Authority to meet its current regulatory requirements. The balance of the program reflects the age and condition of the system and historical disinvestment in the system's infrastructure by predecessor agencies.

- Over half of WASA's pumping stations were constructed before 1940 and are not operating at optimal capacity.
- Half of WASA's pipes were built prior to 1930.
- Preventive maintenance expenditures were extremely low from 1980 to 1996.
- Virtually no technology existed in the Authority's operations prior to 1997.
- Prior to WASA's creation in 1997, annual capital spending averaged less than $40 million per year on total plant in service of over $1.3 billion.

Between FY 2003 and FY 2007, in the peak years of this capital program, WASA's annual capital investments in water and wastewater infrastructure (before consideration of the LTCP) exceed $200 million, a fivefold increase from the average investment only five years ago.

Even with significant capital funding from wholesale customers and grants – about 13% of the CIP's funding will come from EPA grants and 28% from wholesale customers – WASA will need to issue approximately $775 million in new debt between FY 2001 and FY 2010 to finance 47% percent of the program. As a result debt service costs will increase by more than $50 million per year by 2010 over current levels. This rising trend is equivalent to average annual increases of 11% in annual debt service costs.

The majority of the burden of this capital investment falls on the District's retail rate payers. Annual increases in retail rates of approximately 6.5% to 7.0% through FY 2008 followed by 6% annual increases from FY 2009 through FY 2012 will be required to finance the Authority's existing capital program. This projection is consistent with the policy adopted by WASA's Board of Directors to use steady rate increases as a way to mitigate the impacts of rising and mandated costs to customers. The Board established this policy after implementing a critically-needed 42% rate increase in 1997.

Over the long-term, the Authority is projecting that future necessary infrastructure investment will continue to require steady rate increases of at least 5% per year. This longer-term outlook is consistent with national infrastructure studies that document the need for doubling of rates over 20 years for infrastructure investment (see Clean and Safe Water for the 21st Century, Water Infrastructure Network, Washington, D.C.).

Under this "baseline" scenario, in which customer rates are affected by the water and wastewater capital program and routine inflationary increases in the cost of doing business, the annual cost for water and wastewater costs for a typical residential customer with metered consumption of 100 CCF per year prior to consideration of the CSO LTCP will increase from $290 to $617, a 113% increase, in fifteen years.

12.6.2 Substantial Rate Increases Required to Fund LTCP

Implementation of the LTCP will result in substantial additional rate increases and higher costs to the Authority's customers over and above the increases needed to fund the baseline capital program. Through analysis of a range of LTCP implementation schedules WASA has determined that the only rates impacts that are feasible (without substantial outside funding) are those associated with the longest possible implementation schedules. Shorter implementation schedules create too high a burden on the Authority's rate payers in terms of rapid escalation of the cost of wastewater services.

If WASA implemented the proposed LTCP over a 40-year period, a typical residential customer with annual metered water consumption of 100 CCF will see their annual wastewater costs rise from $290 to $722 in 15-years; an increase of 150%. This figure is $105 per year more than the annual bill in the baseline case without any CSO program.

Any shortening of the implementation schedule to less than 40 years will significantly increase the impacts on WASA's rate payers of the CSO controls. A fifteen-year LTCP implementation schedule would result in a more than tripling of wastewater bills to $1002 in fifteen years, and would require multiple peak increases within the next 5 to 10 years exceeding 15%, as described further below. A twenty-year program also has similar peaking impacts during the first 10 years.

Table 12-7 displays the impacts for a 100 CCF customer over 15 years for the baseline and for several LTCP implementation schedules.

Table 12-7
Summary of Rate Impacts of the CSO LTCP on 100 CCF Residential Customer

	FY 2003 Annual Bill	*Annual Bill in 15 Years*	*Average Annual Rate Increases Over 15 Years*
Baseline – No LTCP	$290	$617	6.0%
Baseline Plus LTCP – 40 Years	$290	$722	7.2%
Baseline Plus LTCP – 30 Years	$290	$795	8.0%
Baseline Plus LTCP – 20 Years	$290	$942	9.4%
Baseline Plus LTCP – 15 Years	$290	$1,002	9.9%

12.6.3 True Affordability Measure -- Impacts on Annual Household Budgets

A key indicator of the affordability of the proposed LTCP is the impact on the annual household budgets for District ratepayers as measured by the timing and extent of the required annual rate increases.

The 15 and 20-year LTCP implementation schedules would require a large number of consecutive "double-digit" rate increases when the costs of those programs are added to the demands imposed by the baseline investment in water and wastewater infrastructure. The 15-year program is projected to require 8 consecutive increases over 10% per year. Such rate increases would outpace expected growth in household incomes by two to three times, therefore eroding household resources for other items .

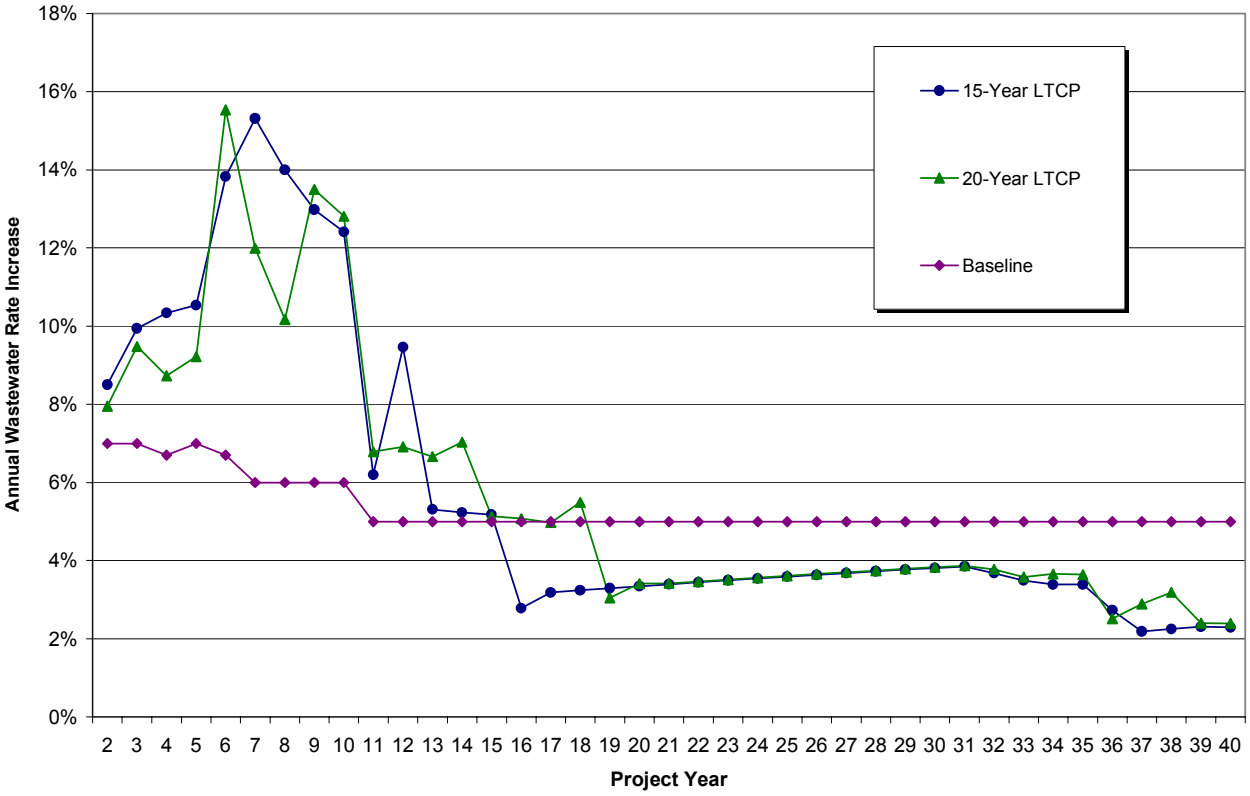
In addition to the extreme peaking of rate increases, the disparity between the rising costs that would be borne by District of Columbia residents and national experience is illustrated by the difference between 9.9% average annual increases associated with the 15-year program and the 3.6% annual rate of growth in consumer expenditures for water and sewer maintenance reported by the Bureau of Labor Statistics (BLS from January 1992 to January 2002.

These burdens will make it increasingly difficult for the District to remain competitive on a "cost of living" or "cost of doing business basis" compared to neighboring jurisdictions or other major cities that are not faced with the same capital investment burden. Currently the Authority's rates are generally competitive with the wastewater rates paid in neighboring jurisdictions in Maryland and Virginia but none of these jurisdictions is faced with the burden of an expensive CSO LTCP. The impact of this program will reduce the ability of the District to attract and retain residents and businesses relative to other locations in the area.

Nationally, a survey conducted by Memphis Gas, Light and Water Division of residential wastewater bills for rates in effect in 2001 found the monthly wastewater bills for residential customers in the District were the sixth highest out of 28 cities surveyed. All of the future rate increases associated with the baseline infrastructure investment needs and the CSO will likely further reduce the District's competitiveness on a cost of living and cost of doing business basis relative to other major cities that do not have the same burdens.

Figure 12-4 shows the annual increase in wastewater rates required for the 15 and 20-year programs as well as the baseline case.

Figure 12–4
Annual Rate Increases Required for 15 and 20-Year LTCP Plans



Another important measure is the total increase in revenue requirement added in each fiscal year, as shown in Figure 12-5. This measure demonstrates the intense peaking requirements of the CSO program as well. A 15-year program would require approximately $20 million of annual rate increases solely for CSO in five out of six years at the height of the program. The highest annual increase in revenue requirement would be approximately $33 million when the total needs of the baseline infrastructure program and the CSO are taken together.

Longer implementation schedules that range from 30 to 40 years greatly minimize peak rate increases: the 15-year schedule required eight consecutive annual increases in excess of 10 percent, while a 40 year schedule will only require one increase that is greater than 10 percent. Fewer peak increases under longer-term implementation schedules minimize the near-term impact on customers, particularly the 51,000 households with incomes less than $18,000 per year, allowing them to plan for more gradual rate increases that are in line with projected salary and other income increases. Figure 12-6 displays the annual rate increases required for 30- and 40-year implementation programs.

Figure 12-5
Annual Increase in Revenue Requirement for 15-Year LTCP and Baseline Needs

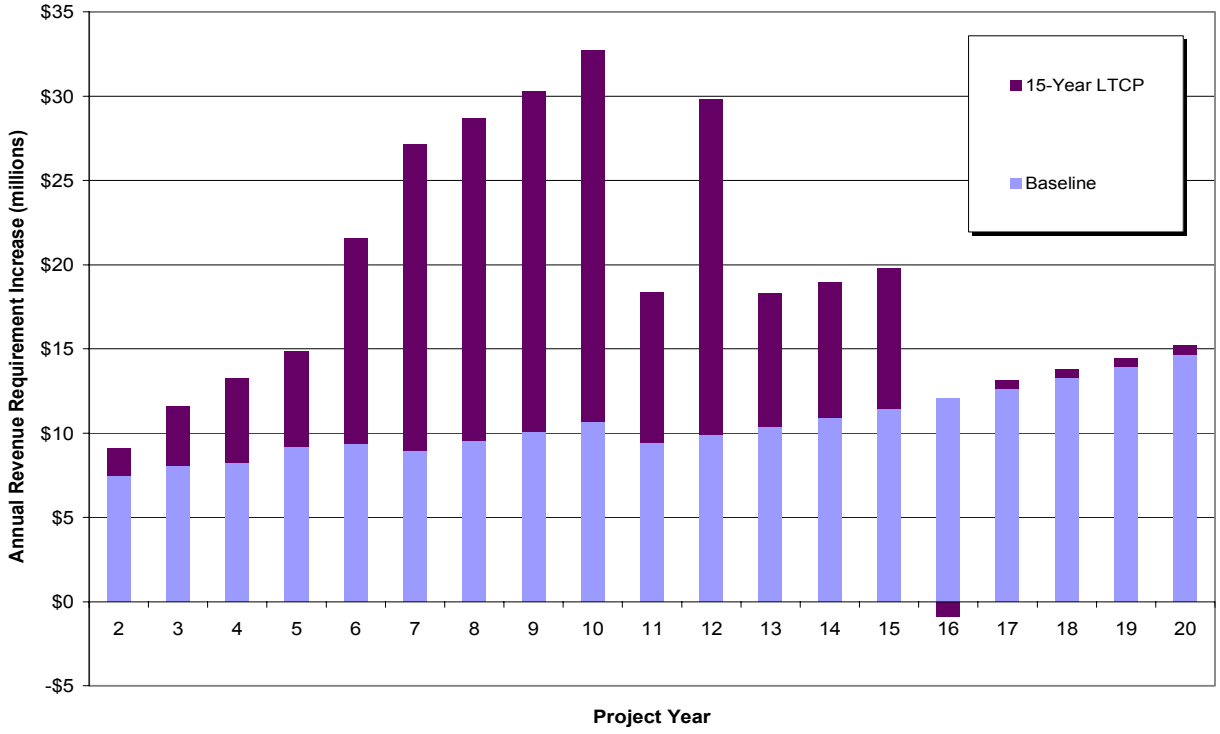
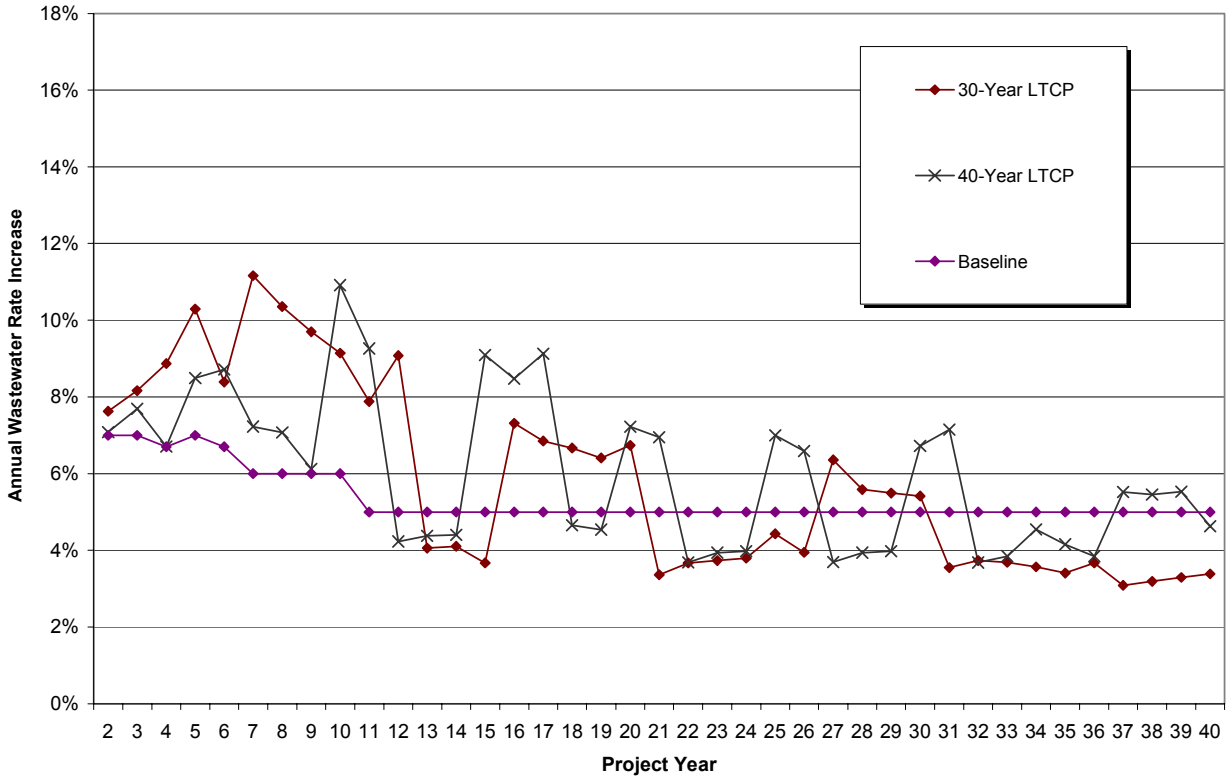
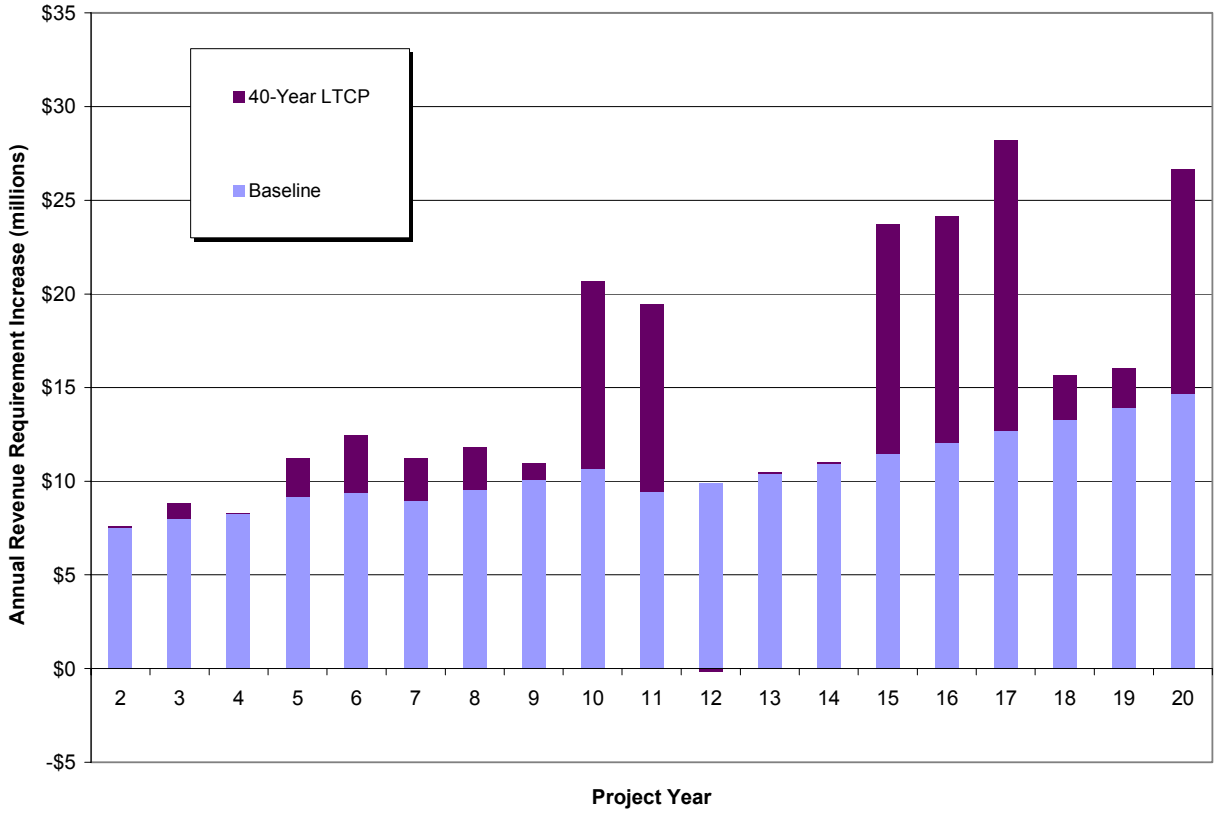


Figure 12-6
Annual Rate Increases Required for 30 and 40-Year LTCP Plans



Although there are still burdensome peaks, in general the 40-year program requires less annual increases in rate revenues for CSO. As shown in Figure 12-5, a 15-year program will require annual rate revenue increases in excess of $20 million for five out of fifteen years. Figure 12-7 shows that a 40-year schedule will require only one increase in excess of $20 million during the first fifteen years of implementation. This illustrates the minimizing effect of a longer term program on WASA's customers, particularly low income customers.

Figure 12-7
Annual Increases in Revenue Requirements for 40-Year Program



12.6.4 High Degree of Uncertainty in Rate Impacts Should Be Considered

In formulating its rate impact analysis WASA focused on a "most probable" approach to key assumptions that represent the economic and demographic conditions during the foreseeable future in a manner appropriate for this planning document. Nevertheless, the economic and demographic conditions that actually materialize on a year-to-year basis may differ from those associated with the forecast. Some of these considerations are described below:

- Water Consumption - The analysis of rate impacts has assumed that metered water consumption is maintained at current levels over the long-term. Water consumption has declined over the past 2 decades due to technological improvements and shifts in consumer

behavior. Although WASA has taken steps to maintain a high level of meter accuracy and to reduce unbilled water, it is possible that water consumption will continue to decrease over the long-term, particularly in response to increasing rates. It is not unreasonable to expect that the 150% increase in rates over 15 years associated with the 40-year LTCP program will result in some level of reduced consumption. Any reduction in consumption will result in higher impacts have to be offset with further rate increases on the balance of the water sold by the Authority. There exists the potential to initiate a vicious cycle that would be particularly hard on low income households.

- Cost Estimates -The rate impact analysis reflects the cost estimates prepared for this planning document. These costs estimates have a level of confidence of minus-15% to plus-40%. It would be equally likely that the final cost estimates in today's dollars are 40% greater or 15% less than the cost estimates included in this plan. These estimates reflect the level of planning and engineering completed to date on each alternative which is only a portion of the work needed to complete the project. It is very likely that the costs will be higher due to the complexity of the project and the unique risks involved with a mega-project. In recent months many high-profile mega-projects of this type have seen bid amounts far exceed preliminary estimates. Several examples within the Washington region are the Woodrow Wilson Bridge replacement and the I-495/I-395 interchange (the "Mixing Bowl") project. Unlike those projects however, any cost increases or contract overruns would be borne by a relatively small population of wastewater rate payers in the District of Columbia. These are very real risks that should be considered as part of the financial capability assessment.

- Interest Rates - This rate impact analysis assumes that the Authority will be able to borrow for future CSO costs at the same interest rates as it currently pays for its utility revenue debt. Any increase in interest rates due to market conditions will need to be absorbed by WASA's retail customers and will increase the financial burden of all LTCP schedule options. The Authority's future credit rating and the structure of future bond issues could also have negative impacts on the revenue requirements. These risks should also be considered in the financial capability analysis.

- Future Regulatory Requirements - The rates impact analysis reflects the current regulatory horizon that the Authority has used to develop its current capital improvement program and the LTCP for its combined sewer system. The analysis does not provide for additional costs that may be mandated to cover future regulations such as Total Maximum Daily Loads (TMDLs) or additional nitrogen removal requirements at Blue Plains. While the baseline analysis provides substantial capital funding for future reinvestment in infrastructure, any extraordinary capital costs related to future regulation (e.g., disinfection by-products) or

critical infrastructure replacement needs would further increase rates for the Authority's rate payers.

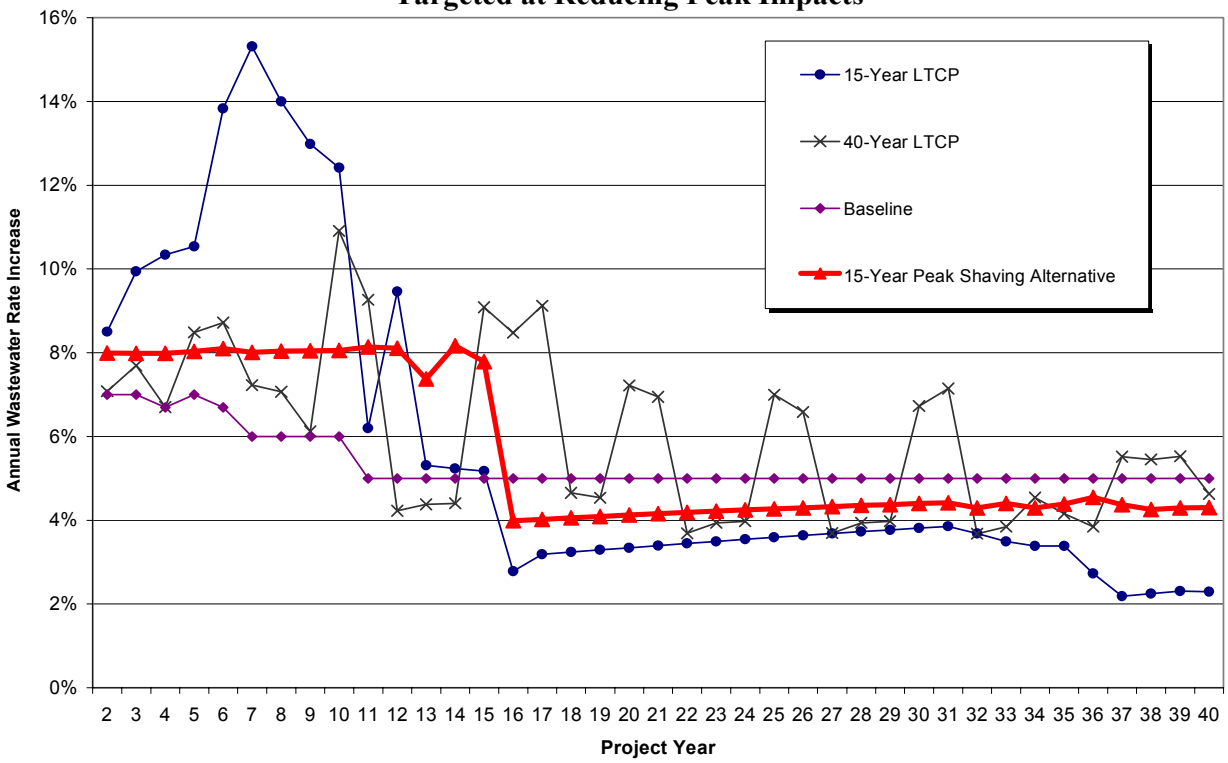
12.6.5 Effect of Federal Funding on Rate Increases

There are two ways to reduce the rate impacts of a shorter LTCP implementation schedule, external funding assistance and deferral of other water and wastewater capital expenditures.

External assistance targeted at limiting peak rate increases can reduce the severe impacts of high annual rate increases associated with the shorter programs. External assistance of 62% of the capital cost of the program could keep rate increases to 8% per year as shown in the following chart. The additional annual revenue required would gradually increase to $11.2 million by year 15.

Total external capital assistance under this scenario would be $960 million over 15 years. The external assistance in this case is targeted at the peaking impacts on wastewater rates and varies from year to year as necessary to limit rate increases to 8% or less. In any case, it is important for external assistance to reflect year-of-expenditure values or the actual "cost to complete" the project. If external assistance is determined on current dollars or on an amount per year, the cost to complete and inflation risks are shifted to ratepayers.

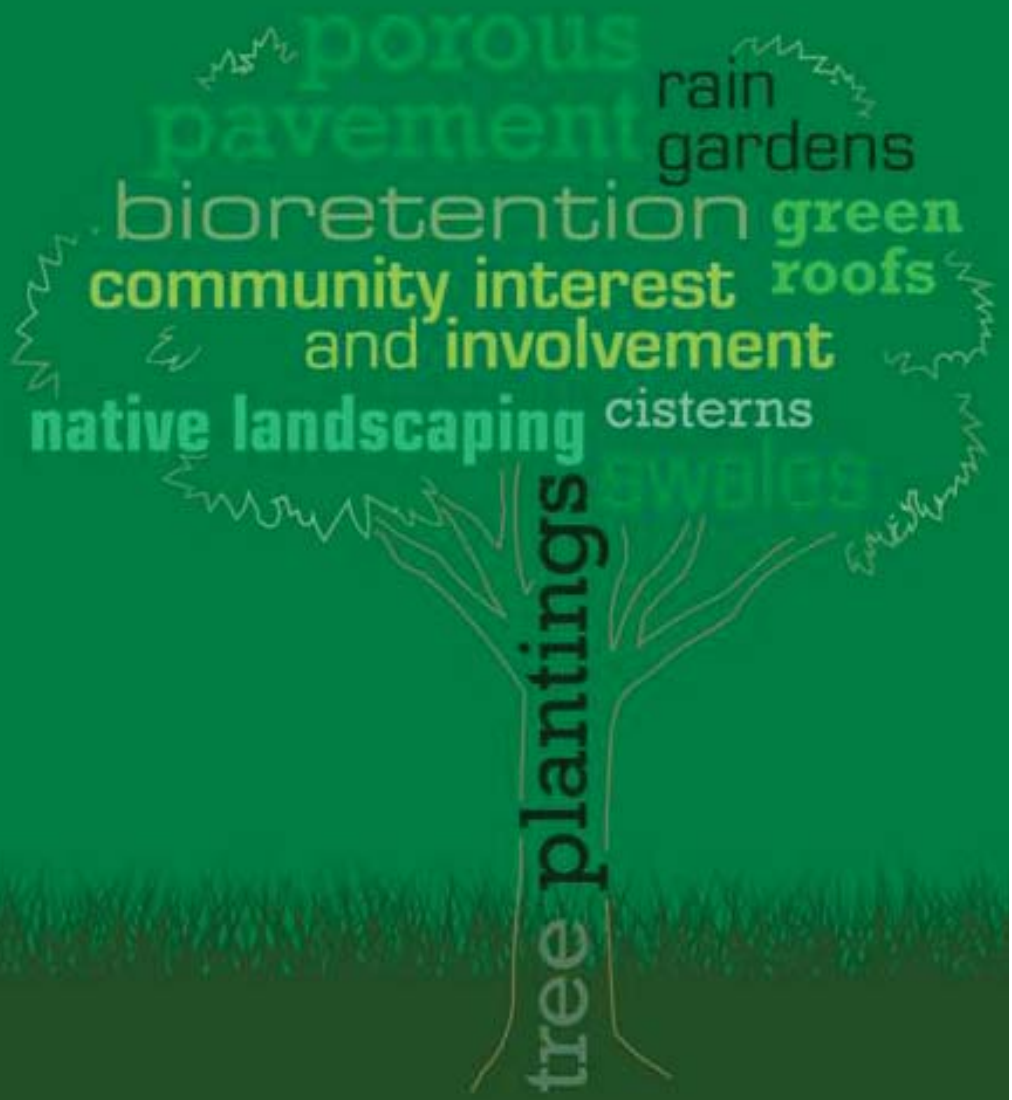
Figure 12-8
Rate Increases for a 15-Year LTCP Plan with External Assistance Targeted at Reducing Peak Impacts



Case Study #1: DC Water CSO LTCP
Attachment 1-2
DC Water's 2015 FCA for CD Modification

Long Term Control Plan Modification for Green Infrastructure

May 2015



prepared by

dc water is life
District of Columbia
Water and Sewer Authority
Washington, DC

dc clean RIVERS PROJECT
RESTORING OUR RIVERS
PROTECTING OUR DISTRICT

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

DC CLEAN RIVERS PROJECT

LONG TERM CONTROL PLAN MODIFICATION FOR GREEN INFRASTRUCTURE

May 2015

FINAL

Prepared for:

Prepared by:

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General Manager's Message

I am pleased to announce the completion of the process to modify DC Water's Long Term Control Plan to enable a significant investment in Green Infrastructure. This plan represents an enormous body of work and painstaking analysis performed by DC Water and its contractors. Exploring Green Infrastructure to reduce combined sewer overflows to the Potomac River and Rock Creek was a personal priority for me when I accepted the position of General Manager at DC Water in 2009. Since then, DC Water has invested $14 million in ratepayer funds to further our understanding of this innovative solution to stormwater control that will bring environmental, social, and economic benefits to the residents of the District of Columbia.

DC Water CEO & General Manager
George S. Hawkins

This document is a product of methodical outreach and collaboration with our regulatory, environmental, and community stakeholders. DC Water solicited feedback on its plans for Green Infrastructure by holding multiple summits, more than 14 public meetings, and notifying District residents through a proactive ad campaign. The updated proposal reflects the nearly 500 comments we received from the public, and I am confident will position DC Water as a leader in the responsible use of Green Infrastructure for combined sewer overflows. We are grateful for the comments we received, and we strongly believe that our proposal is much better for it.

The release of this document marks an important moment in DC Water's history. Some argue about the role of Green Infrastructure in comparison to gray. We have learned over this process that embracing both techniques in a complementary manner builds on their relative strengths and yields an outcome that is better than either alone. I want to thank all who have engaged DC Water on this herculean effort, and I look forward to collaborating with the public and our stakeholders as DC Water begins to make this plan a reality in the District of Columbia.

George S. Hawkins

What is the Purpose of this Initiative?

DC Water is proposing to implement **Green Infrastructure** or **GI** as part of our plan to control Combined Sewer Overflows (CSOs). CSOs are one of the sources of pollution impairing the quality of the District's waterways. The current plan to control overflows in the District's Potomac River and Rock Creek sewersheds relies largely on the construction of large tunnels ("gray" infrastructure) designed to capture CSO during heavy rains and transport it to the Blue Plains Advanced Wastewater Treatment Plant (Blue Plains) for treatment. GI reduces the scope of gray infrastructure needed to control stormwater runoff that contributes to CSOs, and has the potential to provide many environmental, social, and economic benefits to the community. While additional time is needed to effectively implement GI, it will deliver earlier pollutant reductions through phased construction when compared to gray infrastructure. This report explains the basis for this initiative and why a modification to DC Water's plan for controlling CSOs (called the Long Term Control Plan, LTCP or DC Clean Rivers Project) is required to implement it.

Bioretention in the Public Right of Way

What is the Consent Decree?

The Consent Decree is the 2005 agreement among DC Water, the District, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Justice (DOJ) that establishes schedules for construction of the tunnels and related CSO control facilities, including a 2025 deadline to construct and place the tunnels in operation.

What is Green Infrastructure?

GI, also known as Low Impact Development (LID), uses plants, trees and other measures to mimic natural processes to control stormwater, resulting in cleaned, cooled, and slowed stormwater runoff. These systems promote rainwater detention and infiltration into the soil and include techniques such as rain gardens, porous pavements, green roofs and other technologies.

Typical Green Infrastructure Measures
• Rain Gardens (Bioretention)
• Porous Pavements
• Green Roofs
• Rain Barrels and Downspout Disconnections

By integrating natural processes into the urban environment, GI provides not only stormwater management, but also can support additional benefits such as local job creation, improved air quality, a cooler city, greener public and private spaces, added wildlife habitat, increased property values, and greenhouse gas mitigation.

DC Water's recommended plan is to construct a hybrid green-gray solution to control CSOs while improving the quality of life in the District.

What is a Combined Sewer Overflow?

Like many older cities in the United States, the sewer system in the District is comprised of both combined sewers and separate sanitary sewers. While sanitary sewers carry only sewage, combined sewers carry both sewage and runoff from storms.

Modern practice is to build separate sewers for sewage and stormwater. No new combined sewers have been built in the District since the early 1900's. Approximately one-third of the District is served by combined sewers, the majority of which are in the older, developed sections of the District.

CSO Facts
• **"CSO"** stands for **C**ombined **S**ewer **O**verflow • About 1/3 of the District is served by combined sewers • Combined sewers have not been built in the District since the early 1900's • Combined sewers overflow when stormwater runoff exceeds the sewer capacity

In a combined sewer system, sewage from homes and businesses during dry weather conditions is conveyed to DC Water's Advanced Wastewater Treatment Plant at Blue Plains, located in the southwestern part of the District on the east bank of the Potomac River. There, the wastewater is treated to remove pollutants before being discharged to the Potomac River. When the capacity of a combined sewer is exceeded during storms, the excess flow, which is a mixture of sewage and stormwater runoff, is discharged to the Anacostia and Potomac Rivers, Rock Creek and tributary waters. This excess flow is called Combined Sewer Overflow (CSO). There are 47 active CSO outfalls in the District's combined sewer system.

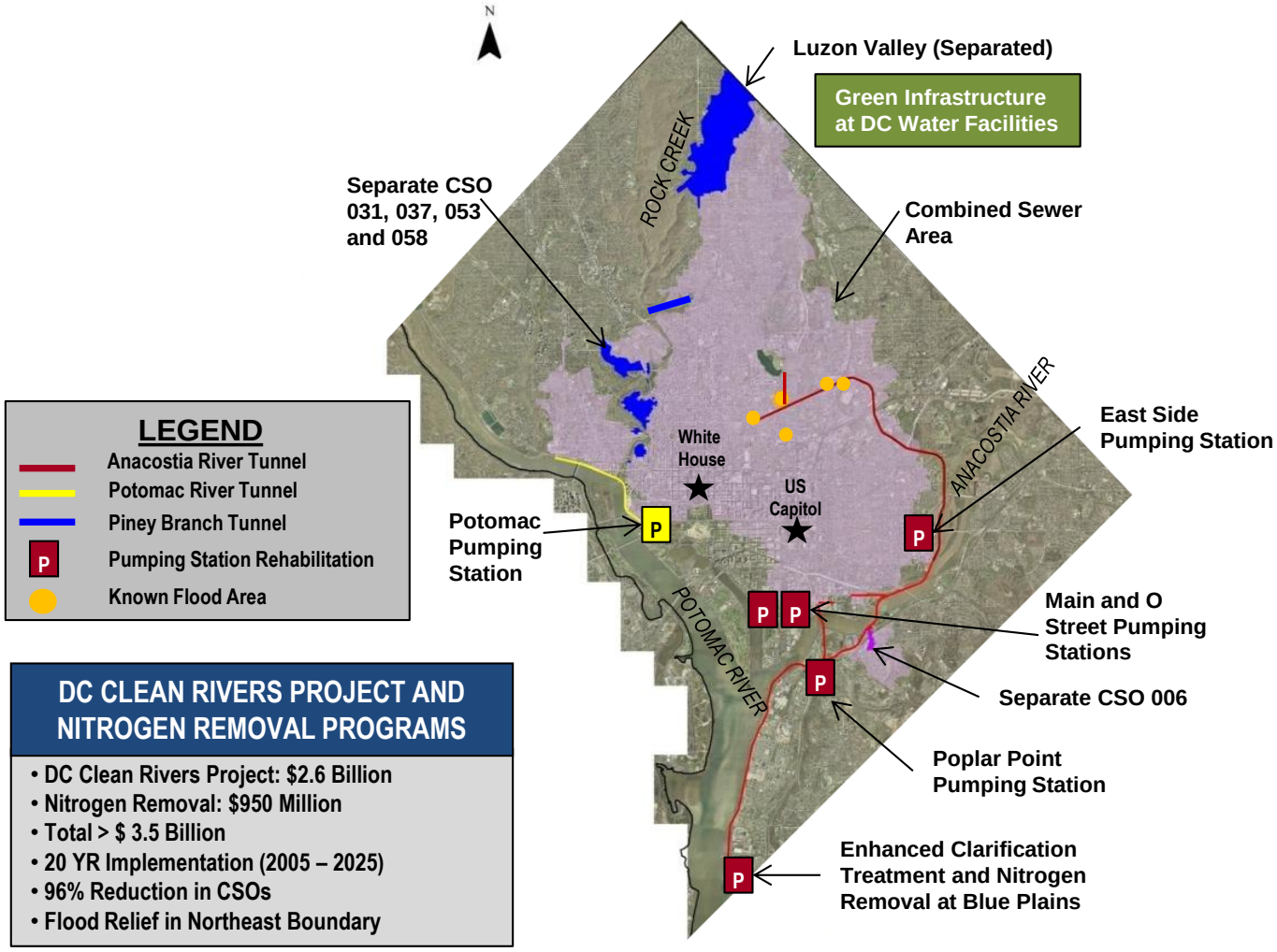
"Lady Bird" Tunnel Boring Machine for the Blue Plains Tunnel

What is the DC Clean Rivers Project?

The DC Clean Rivers Project (DCCR) is DC Water's massive infrastructure program to reduce combined sewer overflows into the District's waterways - the Anacostia and Potomac Rivers and Rock Creek. It includes more than 13 miles of tunnels that are larger than the Metro tunnels and are constructed more than 100 feet below the ground. The tunnels are designed to capture CSO during heavy rains and transport it to Blue Plains for treatment. The tunnels to control CSOs on the Anacostia River are currently under construction.

With the DC Clean Rivers Project, DC Water will improve our waterways by reducing CSOs system-wide by 96% in the average year. The DC Clean Rivers Project will also provide flood relief to neighborhoods in the Northeast Boundary section of the city, such as Bloomingdale, LeDroit Park, Trinidad and Ivy City.

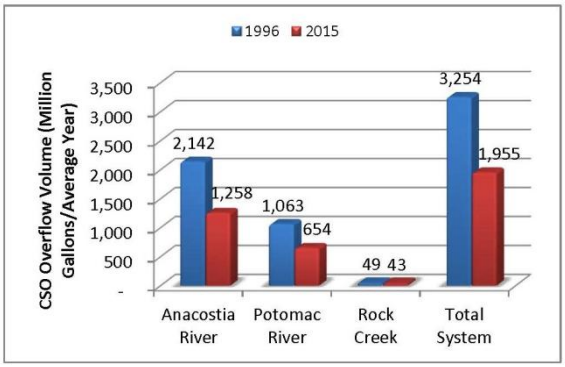
DC Water has reduced CSO overflow volume by approximately 40% since 1996 and has issued more than $1.3 billion in engineering and construction contracts.



Existing Plan

What Progress has already been made in CSO Control?

DC Water has made great strides toward reducing CSOs since the Authority was created in 1996. Since 1996, CSO overflow volume has been reduced by about 40% on a system-wide basis in an average year of rain. DC Water has done this by replacing and upgrading pumping stations and control structures and separating combined sewers in selected sewersheds. The investments have already improved water quality and reduced trash in our waterways.



DC Water has Reduced CSO Overflow Volume by 40% Between 1996 and 2013

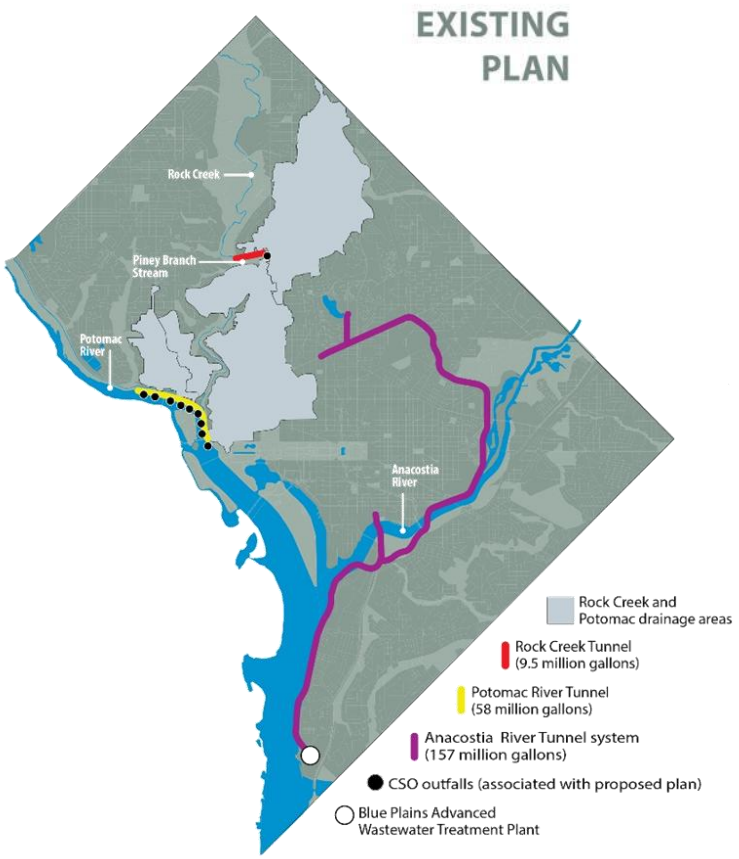
DC Water is currently constructing the tunnel system for the Anacostia River. This will achieve an 81% reduction in CSO volume on the Anacostia by 2018 when the tunnel from Blue Plains to RFK Stadium is placed into operation and a 98% reduction in volume when all Anacostia River controls are placed into service. While the Consent Decree deadline for completion of the Anacostia River Tunnel system is 2025, DC Water is accelerating the work to achieve a completion date of 2022 to provide early flood relief to Bloomingdale and LeDroit Park per the Mayor's Task Force Recommendations.

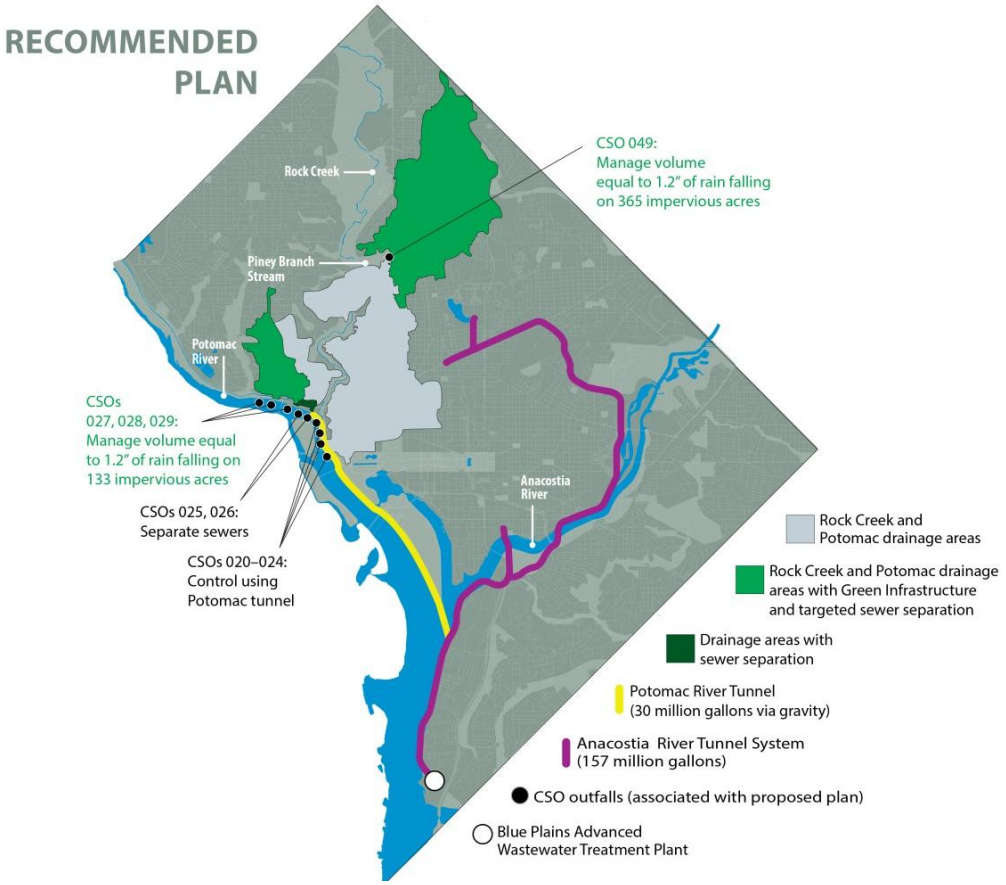
What is DC Water's Recommended Plan?

On the Anacostia River, DC Water will complete construction of the tunnel system and will meet the existing aggressive schedules. For the Potomac River and Rock Creek, DC Water will implement a hybrid plan of green and gray infrastructure, where each technology will be applied in areas selected to maximize their effectiveness.

For Rock Creek, DC Water will construct GI and targeted sewer separation to manage the volume of runoff produced by 1.2" of rain falling on 365 impervious acres instead of the Rock Creek Tunnel to control the Piney Branch CSO Outfall. This approach is feasible in this sewershed because of its low CSO overflow volumes and because of the lower density of

Receiving Water	Existing Plan	Recommended Plan
Rock Creek	• Construct Rock Creek Tunnel by 2025	• Raise the diversion weir at CSO 049 (Piney Branch) by 2020 • Construct GI and targeted sewer separation to manage the volume of runoff produced by 1.2" of rain falling on 365 impervious acres to control CSO 049 (Piney Branch) by 2030
Potomac River	• Construct Potomac Tunnel by 2025	• For CSOs 027, 028 and 029, construct GI and targeted sewer separation to manage the volume of runoff produced by 1.2" of rain falling on 133 impervious acres by 2027 • For CSO 025 and 026, separate these sewersheds by 2023 • For CSOs 020, 021, 022 and 024, construct a 30 million gallon Potomac Tunnel by 2030. Configure the tunnel to drain by gravity to the Blue Plains Tunnel


EXISTING PLAN
Rock Creek
Piney Branch Stream
Potomac River
Anacostia River
Rock Creek and Potomac drainage areas
Rock Creek Tunnel (9.5 million gallons)
Potomac River Tunnel (58 million gallons)
Anacostia River Tunnel system (157 million gallons)
CSO outfalls (associated with proposed plan)
Blue Plains Advanced Wastewater Treatment Plant


RECOMMENDED PLAN
Rock Creek
CSO 049: Manage volume equal to 1.2" of rain falling on 365 impervious acres
Piney Branch Stream
Potomac River
CSOs 027, 028, 029: Manage volume equal to 1.2" of rain falling on 133 impervious acres
CSOs 025, 026: Separate sewers
CSOs 020–024: Control using Potomac tunnel
Anacostia River
Rock Creek and Potomac drainage areas
Rock Creek and Potomac drainage areas with Green Infrastructure and targeted sewer separation
Drainage areas with sewer separation
Potomac River Tunnel (30 million gallons via gravity)
Anacostia River Tunnel System (157 million gallons)
CSO outfalls (associated with proposed plan)
Blue Plains Advanced Wastewater Treatment Plant

development in the sewershed. GI projects will start in 2017 and will be completed by 2030.

For the Potomac River, DC Water will implement a hybrid green and gray solution. GI and targeted sewer separation will be used to control CSO 027, 028 and 029, while CSO 025 and 026 will be separated because the drainage areas for these outfalls are very small. Implementation will start in 2017 and will be completed by 2027. The largest CSOs are outfalls 020 through 024 and these will be controlled by a modified Potomac Tunnel, with a storage volume of 30 million gallons. The Potomac Tunnel will be drained by gravity to the Blue Plains Tunnel, thereby eliminating the need for a new very large pumping station to empty the tunnel near the National Mall. The Potomac Tunnel will be placed in service by 2030.

For both the Potomac River and Rock Creek, the recommended plan will result in CSO reductions and water quality improvements equivalent to those predicted for the CSO controls in the existing plan.

What are the Benefits of the Recommended Plan?

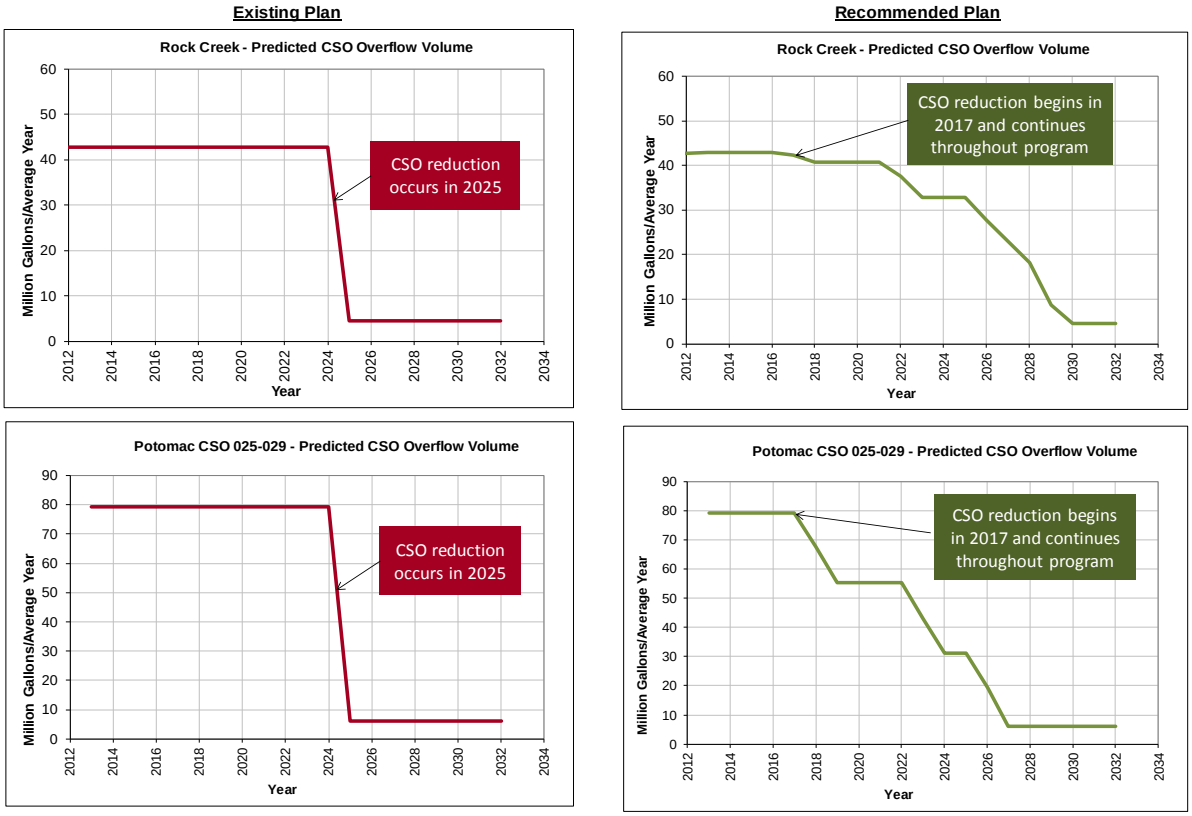
The hybrid GI plan offers many more benefits than the existing tunnel-only solution. These benefits include:

1. ***Timing of CSO Reduction***

   Under the existing plan, the District would need to wait until the tunnels are placed in service in 2025 before any additional CSO reduction is achieved. With the recommended plan, CSO reduction will begin to occur much earlier (in 2017).

   Although the controls for Potomac CSOs 020-024 will be placed in operation in 2030

CSO Reduction versus Time



instead of 2025, installation of these controls would likely have been delayed with the existing plan due to several factors including new federal requirements to perform an Environmental Impact Statement, and new planning and location challenges which did not exist when the original Consent Decree was signed. Establishing a new deadline will also mitigate the financial burden on rate payers for the $2.6 billion project.

2. *Added Environmental, Social and Economic Benefits*

GI can offer environmental, social and economic benefits that gray infrastructure does not, including, but not limited to, increased property values, neighborhood beautification, reduced heat island effects, habitat creation, green jobs, and enhanced community gathering spaces.

costs associated with the schedule of the existing plan coupled with other necessary sewer and wastewater improvements are projected to be unaffordable for more than 40% of households by 2018. The analysis also showed that extension of both the Consent Decree schedule and optimization of capital spending for other sewer and wastewater projects is necessary to maintain affordable rates.

To complete the CSO control program as early as possible, DC Water evaluated engineering constraints and determined that extending the Potomac River Tunnel schedule by five years and the GI schedule by five years would result in the earliest affordable, practical, and technically achievable schedules for CSO control. With the Consent Decree extended, DC Water

Triple Bottom Line Benefits of Green Infrastructure

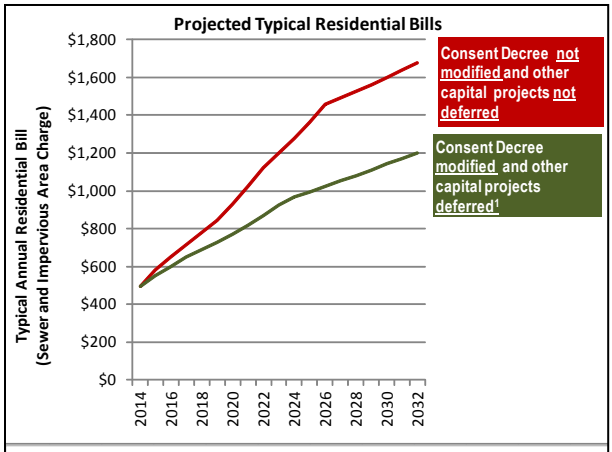
3. *Reduced Financial Impact on Ratepayers by Spreading Out Construction*

DC Water updated its 2002 affordability analysis as part of evaluating GI plans for CSO control. The analysis showed that the

determined that more than $2.5 billion dollars of other sewer and wastewater projects must be considered in an optimization of capital spending between 2015 and 2032 to meet the affordability criteria established by the analysis. As shown in the figure below, extending the

Consent Decree schedule and optimizing implementation of other capital projects is projected to reduce typical residential sewer bills from about $1,675 per year to about $1,200 per year.

Given that median sewer age will be approaching nearly 100 years by 2032, optimization of capital spending for other projects inevitably presents risks to customer service, environmental protection, and management of infrastructure. DC Water balanced these risks with our obligations to complete the CSO control program as soon as is practicable when the recommended schedule for CSO control described in this report was developed.



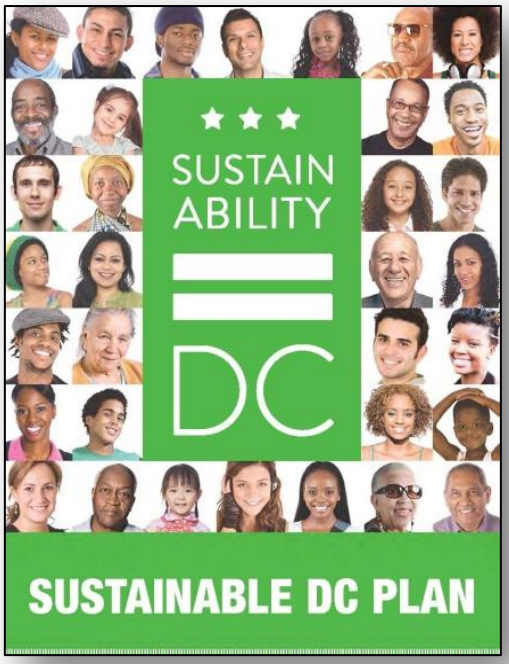
Notes:
1. With Consent Decree Modification and Capital Improvement Progam projects deferred to achieve residential sewer + Impervious Area Charge not more than 2% of household income for incomes at upper limit of second quintile, adjusted for cost of living in Washington DC or $33,926 in 2013. See Section 4 and Appendix E of the *Long Term Control Plan Modification for Green Infrastructure* for a detailed description of the analysis.

4. *Opportunity for Local, Green Jobs*

GI will increase opportunities for local, green jobs both for construction and for long term maintenance of the facilities. DC Water's economic analysis suggests that GI has the potential to create about 190 more local jobs over three decades than the current plan. See Appendix D of the *Long Term Control Plan Modification for Green Infrastructure* for details.

5. *Supports Sustainable DC Plan*

DC Water's GI program supports and advances the District's plan to make it the healthiest, greenest, most livable city in the nation over the next 20 years.



Sustainable DC Plan
(http://sustainable.dc.gov/)

Why is Time Needed to Implement the Hybrid GI Approach for the Potomac River and Rock Creek?

DC Water has determined that an extension of the schedule is required in order to implement the GI hybrid approach in the District's Potomac River and Rock Creek watersheds. Specifically, additional time is needed to implement GI for the following reasons:

- **Large-scale GI is new in the District.** Given the scale of such a project, time will

be needed to select GI technologies suitable for urbanized areas, address planning issues, develop agreements, and perform outreach to ensure successful GI implementation.

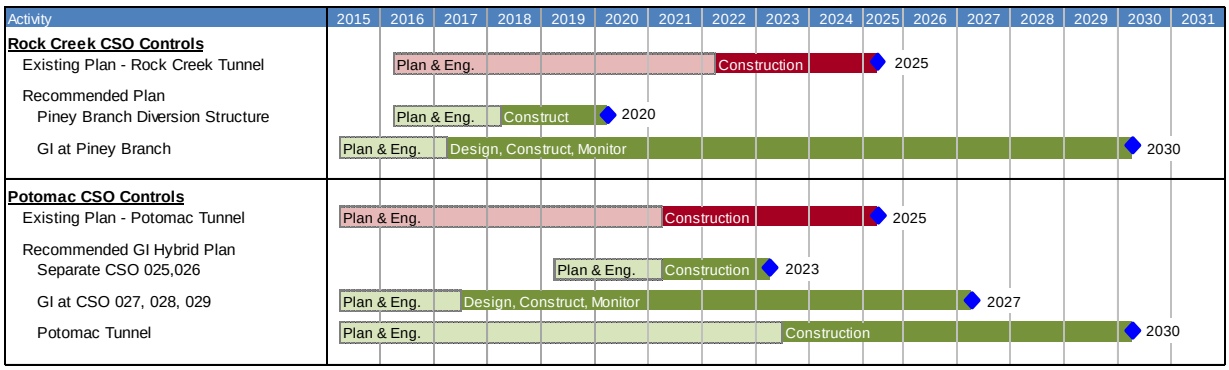
- **Adaptive Management.** DC Water will use an Adaptive Management Approach to implement GI. This means that projects will be constructed in a sequential fashion. In between construction phases, the projects will be monitored and assessed to evaluate their performance. Data collected and lessons learned during the monitoring will be used when planning and designing the next round of GI projects. This will ensure that the GI projects are practical and effective for CSO control and the betterment of the community.

Under both the existing and recommended plans, additional time will be needed to implement the Potomac Tunnel, due to the following:

- **New Federal Requirement to Prepare Environmental Impact Statement.** The development of the LTCP and the Consent Decree included a significant public process to select the CSO controls for each receiving water. Since the existing CSOs are located on National Park Service (NPS) property, and the Potomac Tunnel facilities may have a significant impact on their property, the NPS is requiring that an Environmental Impact Statement be prepared for the Potomac Tunnel. This was not envisioned when the schedule in the Consent Decree was entered in 2005. The NPS indicates that at least three years should be allowed for this process.

Green Roof at Eastside Pumping Station

- **Planning and Location Challenges.** The Potomac riverfront has changed significantly since the existing plan was finalized. The NPS has improved and completed facilities along the riverfront such as the Georgetown Waterfront Park, leaving few undeveloped or vacant sites other than valuable parkland in which to construct facilities. As a result, planning and obtaining approval for the Potomac facilities will take considerably longer than previously anticipated. DC Water's GI proposal will allow shortening the Potomac Tunnel, thereby minimizing impacts to riverfront resources such as the



Schedule Comparison – Existing and Recommended Plans

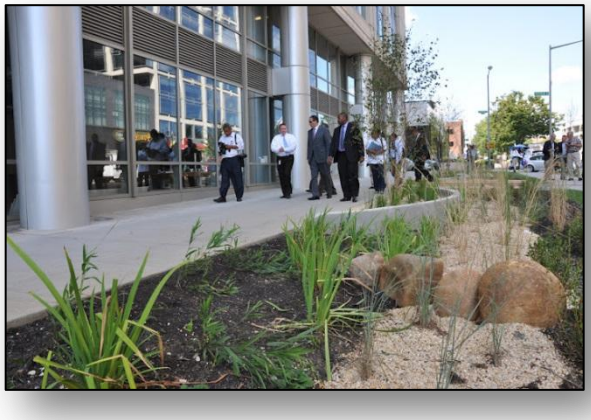
Georgetown Waterfront Park.

Together, the Environmental Impact Statement and planning and location challenges are expected to extend completion of the Potomac Tunnel beyond the 2025 deadline in the existing plan. DC Water's recommended schedule extension accounts for this anticipated extension.

- **Utility Relocation.** Experience gained on the Anacostia River Tunnel System demonstrates that up-front time is needed to identify utilities and arrange for relocation prior to tunnel and shaft construction. This increases the time required to construct the Potomac Tunnel.

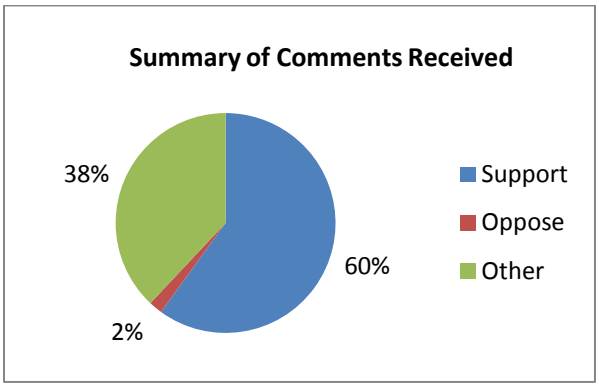
Public Comments and Responses

DC Water issued its Proposed Draft LTCP Modification to include GI in January 2014. The public comment period was open from January 12, 2014 through April 14, 2014. An extensive public outreach program was conducted to provide information about the Proposed Draft LTCP Modification and to solicit public comments. In response to the outreach, 366 commenters submitted 471 comments on the draft LTCP Modification for GI. The comments received have been bound in a separate report titled "*Public Comments, Long Term Control Plan Modification for Green Infrastructure*," DC Water, May 2015 and a detailed response to the comments is provided in Appendix K.



Bioretention at DDOE Headquarters, 1200 First Street NE

The figure shows the disposition of the comments, with the majority of comments supporting the Proposed Draft LTCP Modification.



DC Water has made significant revisions to the draft plan in response to the comments. The key comments received and revisions to the plan are summarized below:

Nature of Commitment

DC Water's Proposed Draft LTCP Modification included committing $60 million for GI in Rock Creek and $30 million for GI for the Potomac CSOs 027, 028 and 029. This magnitude of expenditures was based on the estimated costs of the GI. A limit on the financial commitment was proposed given the uncertainties in terms of the cost to construct GI and in order to manage these risks to ratepayers. There was also precedent for a financial commitment in other enforceable documents such as New York City's order with the State of New York to construct GI.

Some commenters indicated that a financial commitment would not ensure that the

necessary amount of GI was constructed to provide the degree of CSO control required. These commenters suggested that the commitment to GI should be expressed in terms of acres of GI constructed, gallons stored, or a performance standard other than or in addition to a financial commitment.

In response to these comments, DC Water has removed the limit on its financial commitment to GI and expressed the commitment in terms of constructing sufficient GI and targeted sewer separation to manage the volume of runoff produced by 1.2" of rain falling on the number of impervious acres specified for the applicable sewershed. This is a commitment to manage a specified volume of runoff and will ensure that the necessary amount of GI is in place in order to provide the degree of CSO control required.

Feasibility/Effectiveness of GI

Some commenters indicated that GI may not be feasible to construct at a sufficient application rate to provide the degree of CSO control needed, or may not be as effective as anticipated.

Green Roof During Construction at DC Water's East Side Pumping Station

Given the lack of large scale implementation of GI in the District, DC Water has revised the LTCP Modification to provide for constructing the first GI project in the Potomac and Rock Creek sewersheds and then evaluating GI in terms of constructability, operability, efficacy, public acceptability and cost effectiveness. If, based on that evaluation, it is determined that it is impractical to complete all of the specified GI projects by the specified deadlines, then DC Water would be required to construct the gray controls as specified in the LTCP Modification. Should this occur, DC Water would be required to construct the gray controls within the same timeframe allowed for GI so there is no extension of the time allowed for implementation. If GI is determined to be practicable after the first project, then DC Water will continue to implement the remaining GI projects by the specified deadlines.

Schedule

Some commenters suggested that the seven year extension was too long and advocated for a shorter schedule. In addition, some commenters urged DC Water to accelerate individual components of the controls where feasible.

For GI, the schedule extension allows an adaptive management approach to be implemented to ensure that performance of the GI projects is optimized. Adaptive management means early GI projects will be monitored and assessed so that later projects are as practical and effective as possible. In response to comments, DC Water has evaluated the engineering, fiscal and practicality issues and has revised the modification to complete projects as early as practical. In addition, the separation at CSO 025 and 026 and Piney

Facility	Place in Operation Deadline		Change
	Proposed Draft LTCP Modification	Recommended Final LTCP Modification	
Potomac River			
1. Separate CSO 025, 026	2032	2023	9 years earlier
2. Potomac GI	2028	2027	1 year earlier
3. Potomac Tunnel	2030	2030	No change
Rock Creek			
4. Piney Branch Diversion Str. Improvements	2032	2020	12 years earlier
5. Rock Creek GI	2032	2030	2 years earlier

Branch Diversion Structure improvements have been substantially accelerated. The schedule revisions are summarized in the table above.

For the Potomac Tunnel, extra time in the schedule is needed compared to the original LTCP plan due to a new requirement to complete environmental studies, in view of the increased development in recent years along the Potomac River waterfront, and to mitigate the tremendous financial impacts on ratepayers. It is therefore not feasible to shorten the schedule for the Potomac Tunnel earlier than 2030.

Disruption due to Tunnel in Georgetown, NPS Property and Mall area

Some commenters expressed concern about potential disruption caused by tunneling, particularly in the Georgetown and National Park areas.

The Proposed Draft LTCP Modification included a 21 million gallon, approximately 4,500 foot long Potomac Tunnel to capture CSOs 020-024, a new pumping station to empty the tunnel and the addition of 75 million gallon per day of capacity at the Tunnel Dewatering Pumping Station and Enhanced Clarification Facility at Blue Plains. As part of the response to comments, DC Water has evaluated an approximately 23,000 foot long gravity Potomac Tunnel that would run from the Potomac River CSOs to connect to the Blue Plains Tunnel at Joint Base Anacostia-Bolling (formerly Bolling Air Force Base). This would eliminate the need for a tunnel dewatering pumping station for the Potomac Tunnel. This is advantageous because of the complexity of the station, the difficulty in siting such a facility in the vicinity of the National Mall area, long term operational and power requirements and costs and the need for a permanent building associated with a large deep pumping station. The alternative gravity tunnel provides substantially less disruption both

Bioretention Facility

DC Water Bioretention Facility at Irving St NW

during and after construction.

The gravity Potomac Tunnel also allows interconnecting the storage volumes of the Potomac and Anacostia River Tunnel Systems into one tunnel system, allowing any CSO on either water body access to the entire storage volume of both tunnels. DC Water's analyses have demonstrated that a 30 million gallon gravity Potomac Tunnel for CSO 020-024 connected to the Blue Plains Tunnel provides a degree of CSO control equal to the LTCP without the need to expand the Blue Plains Tunnel Pumping Station and wet weather treatment system. The gravity tunnel offers greater reliability and avoids a new pumping station, making it the recommended plan.

Stewardship for Ratepayer Dollars

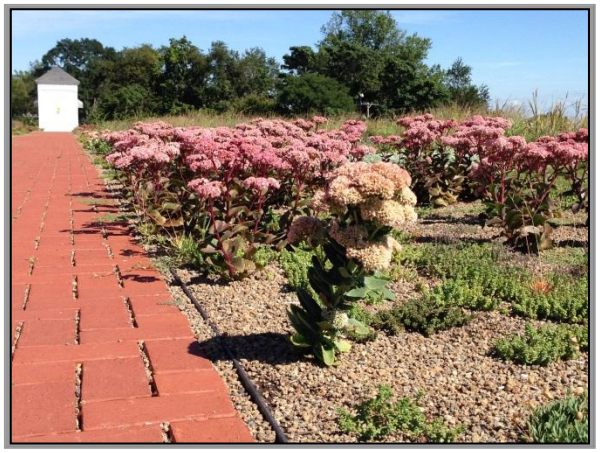
Some commenters expressed concern over affordability for ratepayers.

DC Water is acutely aware of the heavy financial burden born by District ratepayers to implement the DC Clean Rivers Project and has taken steps to both mitigate and spread out water rate increases over time. Unfortunately, this is not voluntary spending by DC Water but is mandated to comply with the Clean Water Act through a Federal Consent Decree signed by the Department of Justice, EPA, the District of Columbia and DC Water. The Final LTCP Modification will mitigate rates by extending the schedule for the Potomac Tunnel, thereby slowing the rate of increase in rates compared to what otherwise would be required.

Maintenance

Some commenters expressed the importance of maintenance in assuring the GI is effective over the long term.

DC Water will perform maintenance or will arrange for others to perform maintenance of all GI implemented to control CSOs. DC Water will be ultimately responsible to ensure that maintenance is performed adequately to



Green Roof at Ft. Reno Reservoir

maintain the CSO reduction functions of the GI. DC Water also anticipates that this will be a requirement included in its National Pollutant Discharge Elimination System (NPDES) Permit issued by EPA.

Support for Green Jobs

Some commenters supported the long term economic benefits of GI, specifically the ability to make jobs more accessible to unemployed local residents. This is especially true considering labor required to construct the facilities, as well as that required for long term maintenance.

GI will increase opportunities for local, green jobs both for construction and for long term maintenance of the facilities. DC Water will work to promote green jobs with a living wage for District residents. Activities may include establishing a certification program for GI jobs, partnering with organizations to provide training that ultimately leads to certification, conducting outreach in the District and partnering with local organizations.

Where Can I Obtain More Information?

More information is available on DC Water's website at www.dcwater.com/green or by contacting DC Water's Office of External Affairs at (202) 787-2200.

1 Introduction

1.1 Purpose

The District of Columbia Water and Sewer Authority (DC Water) is implementing a Long Term Control Plan (LTCP or DC Clean Rivers Project, DCCR) to control combined sewer overflows (CSOs) to the District's waterways. The DCCR is comprised of a variety of projects including pumping station rehabilitations, targeted sewer separation, green infrastructure at DC Water facilities and a system of underground storage/conveyance tunnels to control CSOs. The DCCR is being implemented in accordance with a Consent Decree (LTCP Decree) signed by DC Water, the District and the U.S Government that specifies the schedule for implementation. The Consent Decree is provided in Appendix A. Projects on the Anacostia River are first in the schedule and DC Water is implementing those projects in accordance with the Decree.

The purpose of this document is to provide information to the public on a proposed modification to the LTCP to incorporate Green Infrastructure (GI) on a large scale. The tunnel projects for the Potomac River and Rock Creek are later in the schedule and facility planning for those projects is scheduled to start in 2015 and 2016, respectively. Because of this, there is time to revise the LTCP to allow construction of a hybrid green/gray CSO controls instead of the all gray controls currently planned.

Unlike single-purpose gray infrastructure which uses tanks, tunnels and pipes to store and convey CSO, GI uses vegetation and soil to manage stormwater where it falls. GI has the ability to reduce stormwater and CSOs, and provide multiple environmental, social and economic benefits. Examples of these benefits include improved air quality, reduction in heat island effects, improved property values and local job creation. In addition, GI consists of many small projects which can be brought on line as soon as individual projects are completed. In contrast, gray CSO projects can typically only be brought on line when all the elements are completed. Because of this, GI projects can provide earlier CSO reduction than all-gray projects.

Based on an assessment of the sewersheds, DC Water's recommended plan is to implement hybrid CSO controls for the Potomac and Rock Creek as follows:

- In Rock Creek, construct GI instead of the Piney Branch tunnel to control the Piney Branch CSO
- On the Potomac River, construct a hybrid green and gray control system for the Potomac River CSOs

This document provides the bases and rationale for the proposed change to the LTCP to allow implementation of hybrid green/gray controls.

1.2 Background

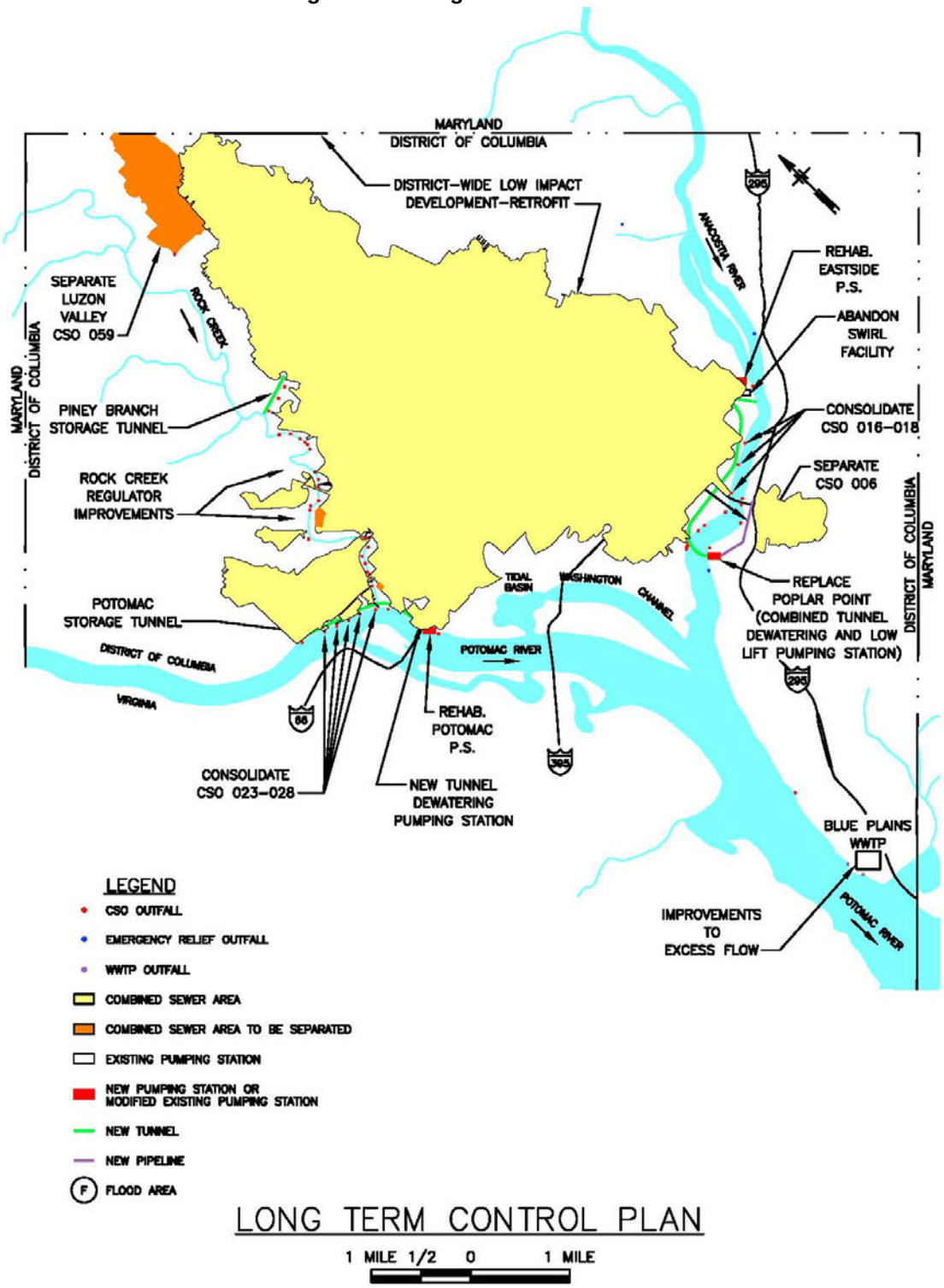
1.2.1 Long Term Control Plan

Like many older cities in the United States, the sewer system in the District is comprised of both combined sewers and separate sanitary sewers. A combined sewer carries both sewage and runoff from storms. Modern practice is to build separate sewers for sewage and stormwater, and no new combined sewers have been built in the District since the early 1900's. Approximately one-third of the District (12,478 acres) is served by combined sewers. The majority of the area served by combined sewers is in the older developed sections of the District.

In the combined sewer system, sewage from homes and businesses during dry weather conditions is conveyed to the District of Columbia's Advanced Wastewater Treatment Plant at Blue Plains (Blue Plains), which is located in the southwestern part of the District on the east bank of the Potomac River. There, the wastewater is treated to remove pollutants before being discharged to the Potomac River. When the capacity of a combined sewer is exceeded during storm events, the excess flow, which is a mixture of sewage and stormwater runoff, is discharged to the Anacostia and Potomac Rivers, in addition to Rock Creek and tributary waters, through outfalls. This excess discharge during storm events is called CSO. A total of 47 active CSO outfalls are listed in DC Water's NPDES Permit issued by the United States Environmental Protection Agency (EPA).

Communities with combined sewer systems are required to prepare long term plans for control of CSOs in accordance with the 1994 CSO Policy at Section 402 (q) of the Clean Water Act. In accordance with the CSO Policy and its NPDES permit requirements, DC Water submitted a Draft LTCP to EPA in 2001. After an extensive public participation program which generated over 2,300 comments on the Draft LTCP, DC Water submitted a Final LTCP to EPA in 2002. The Final LTCP is shown on Figure 1-1. The DC Department of the Environment (formerly Department of Health) and EPA approved the Final LTCP and determined that CSOs remaining after implementation of the plan would not cause or contribute to the exceedance of water quality standards, subject to post construction monitoring. Regulatory agencies also determined that the CSOs remaining after implementation of the plan would comply with total maximum daily loads (TMDLs) established for the receiving waters. An extended executive summary of the LTCP called Control Plan Highlights is provided in Appendix B.

Figure 1-1. Long Term Control Plan



1.2.2 Total Nitrogen Removal/ Wet Weather Plan

On April 5, 2007, EPA issued a modification to DC Water's NPDES permit. The permit modification included a total nitrogen effluent limit for Blue Plains of 4.689 million pounds per year. The total nitrogen limit was developed by EPA to achieve the goals of the Chesapeake Bay Program for nutrient reductions. In addition to meeting the new effluent limit for total nitrogen, DC Water had existing NPDES Permit requirements for treating wet weather flows at Blue Plains. The latter requirement is part of DC Water's LTCP for the combined sewer system.

When the LTCP was finalized in 2002, there was no effluent limit for total nitrogen in DC Water's NPDES permit for Blue Plains and the LTCP. The imposition of the new total nitrogen limit could require a modification to the LTCP and its implementation schedule. DC Water conducted evaluations to assess the impact of adding the new total nitrogen effluent limit on top of the LTCP and existing NPDES permit requirements for treating wet weather flows. On October 12, 2007, DC Water submitted its Final Total Nitrogen Removal/Wet Weather Plan (TN/WW Plan) to EPA. The TN/WW Plan is provided as a companion document to the Consent Decree Modification.

Under the LTCP and the NPDES permit existing at the time, Blue Plains was rated for an annual average flow of 370 mgd. During wet weather events, flows up to 740 mgd receive complete treatment for up to 4 hours. After the first 4 hours, the complete treatment capacity is reduced to 511 mgd to protect the biological process. Additional flows of up to 336 mgd that exceed the complete treatment capacity of the plant receive excess flow treatment, which consists of screening, grit removal, primary treatment and disinfection before being discharged to the Potomac River. This provides a total treatment capacity of 1076 mgd for the first four hours and 847 mgd thereafter.

The TN/WW Plan modified the plant treatment capacities and the handling of flows during wet weather. The major components of the TN/WW Plan are as follows:

- Complete treatment capacity – Blue Plains will provide complete treatment up to 555 mgd for the first four hours and 511 mgd thereafter. In accordance with the existing NPDES permit, combined sewer system flow (CSSF) conditions (i.e., wet weather events) exist and start when plant influent flow is greater than 511 mgd. CSSF conditions stop four hours after plant influent flow drops below 511 mgd or 4 hours has elapsed since the start of CSSF conditions, whichever occurs last.

- Enhanced nitrogen removal (ENR) – ENR facilities will be constructed with capacity to provide complete treatment for the flow rates identified above and to meet the new total nitrogen effluent limit.

- Enhanced Clarification Facility (ECF) – A 225 mgd ECF facility will be constructed at Blue Plains.

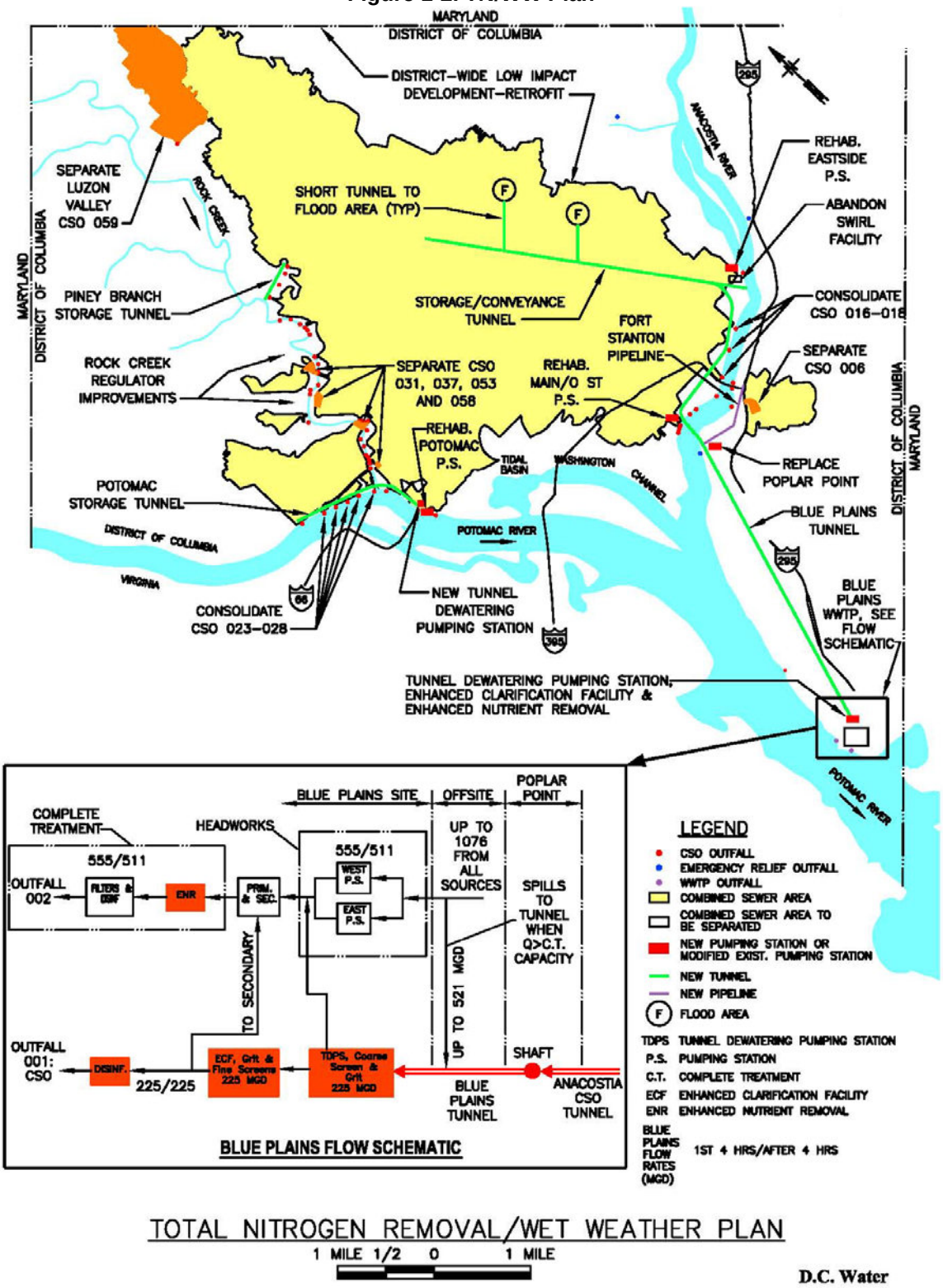
- Tunnel to Blue Plains and System Storage Volume – A new tunnel is being constructed from Poplar Point to Blue Plains. The total tunnels system storage volume will be increased from 126 mg to 157 mg. This new tunnel segment will not only serve as a flow equalization

facility but will also allow a reduction in the required capacity of the ECF and the peak flow rates that receive complete treatment at the Plant.

- Outfall Sewer Overflow to Blue Plains Tunnel – Connections between the existing Outfall sewers on the influent side of Blue Plains and the tunnel to Blue Plains will be constructed. These facilities will allow flow from the collection system that exceeds the complete treatment capacity of the plant to overflow into the tunnel.

- Tunnel Dewatering Pumping Station – Under the Final LTCP, a tunnel dewatering pumping station was proposed to be constructed at the tunnel terminus at Poplar Point. As part of the TN/WW plan, the same tunnel dewatering pumping station is relocated to the new terminus of the tunnel at Blue Plains. The pumping station will be sized to have a minimum firm capacity of 225 mgd, equal to the capacity of the ECF. In addition, the facility will have the ability to dewater the tunnel system up to the new ECF and be able to discharge ECF effluent to complete treatment and discharge at Outfall 002 or at Outfall 001. Figure 1-2 shows the TN/WW plan.

Figure 1-2. TN/WW Plan



1.3 Consent Decrees

DC Water has entered into two consent decrees (CD) related to its CSO program. Each of these decrees is described below:

Three-Party Consent Decree - Civil Action No. 1:00CV00183TFH and No. 02-2511 (TFH)
DC Water and the District of Columbia entered into this CD with the United States Government and certain citizen plaintiffs to resolve allegations regarding the combined sewer system (CSS). The CD was lodged with and entered by the court on June 25, 2003 and October 10, 2003, respectively. The CD provides a schedule for implementation of various operation and maintenance-type items associated with DC Water's Nine Minimum Controls Program. In addition, the CD provides a schedule for replacement of the inflatable dams in the CSS and for rehabilitation of DC Water's pumping stations.

Long Term Control Plan Consent Decree - Civil Action No. 1:CV00183TFH
DC Water and the District of Columbia entered into this CD with the United States Government. The CD was entered by the court on March 23, 2005, and provides a schedule for implementation of the LTCP.

DC Water is proposing to modify the LTCP as described in subsequent sections.

1.4 Partnership Agreement

On December 10, 2012, the EPA, District of Columbia and DC Water signed a Partnership Agreement (PA) to advance Green Infrastructure for urban wet weather pollution control. The PA is included in Appendix C. The PA established a framework and working relationship between the parties to support sustainable stormwater management that can yield multiple benefits for community livability. The PA also demonstrates each party's commitment to GI. The following is a summary of the commitments in the PA:

All Parties (EPA, District, DC Water)

- Implement a Green Design Challenge to engage private sector in demonstrating and advancing GI
- Enlist participation by public and private organizations in a collaborative effort to develop next generation GI designs
- Facilitate participation by local academic institutions in various aspects of the GI Demonstration Project
- Actively involve the environmental community in the GI initiative to facilitate implementation based on an agreed upon course of action
- Review and assess the water quality benefits and impacts of alternative green and gray/green controls compared to the benefits and impacts of the controls now required in the Potomac and Rock Creek watersheds.

DC Water and District

- Consult with each other on a continuing basis to ensure that the GI Demonstration Project, water quality review and assessment, and alternatives analysis conform to EPA's expectations and Clean Water Act requirements.

DC Water

- Once regulatory framework is in place, conduct GI demonstration project
- Prepare EIS required for the Potomac Storage Tunnel

EPA

- Communicate with EPA's Office of Research and Development (ORD) on the progress of the GI Demonstration Project and opportunities for ORD's involvement.
- Assist DC Water in sharing the results of its GI Demonstration Project work so that other communities nation-wide can benefit from DC Water's experiences

The PA also lays out a procedure for modifying the Consent Decree which consists of the following steps:

- DC Water submits draft proposed CD Modification package to EPA
- DC Water public notices proposed CD Modification package within 60 days of receiving EPA comments
- Public Notice the CD Modification package for 60 days
- DC Water responds to comments and submits revised proposed CD Modification Package to EPA in 21 days
- EPA/DOJ determines whether or not to support the proposed CD Modification and makes the corresponding recommendation to the court
- Federal Judge decides whether to accept recommendation from EPA/DOJ
- Consent Decree is modified

Note that in lieu of constructing a demonstration project for GI, DC Water is now proposing to construct hybrid green/gray CSO controls.

1.5 CSO Controls in LTCP Consent Decree

The LTCP Consent Decree specifies the schedule for implementation of the DCCR. The major requirements of the decree are described in the following subsections.

1.5.1 Anacostia River Projects

The Anacostia River Projects components included in the LTCP Consent Decree are summarized in Table 1-1.

Table 1-1. Anacostia River Projects in LTCP Decree

Component	Description
Anacostia River	
Storage Tunnel from Poplar Point to Northeast Boundary Outfall	49 million gallon storage tunnel between Poplar Point and Northeast Boundary. Tunnel will intercept CSOs 009 through 019 on the west side of the Anacostia. Project includes new tunnel dewatering pumping station and low lift pumping station at Poplar Point.
Storage/Conveyance Tunnel Parallel to Northeast Boundary Sewer	77 million gallon storage/conveyance tunnel parallel to the Northeast Boundary Sewer. Also includes side tunnels from main tunnel along West Virginia and Mt. Olivet Avenues NE and Rhode Island and 4th St NE to relieve flooding. Abandon Northeast Boundary Swirl Facility upon completion of main tunnel.
Outfall Consolidation	Consolidate the following CSOs in the Anacostia Marina area: CSO 016, 017 and 018
Separate CSO 006	Separate this CSO in the Fort Stanton Drainage Area
Ft Stanton Interceptor	Pipeline from Fort Stanton to Poplar Point to convey CSO 005, 006 and 007 on the east side of the Anacostia to the storage tunnel.

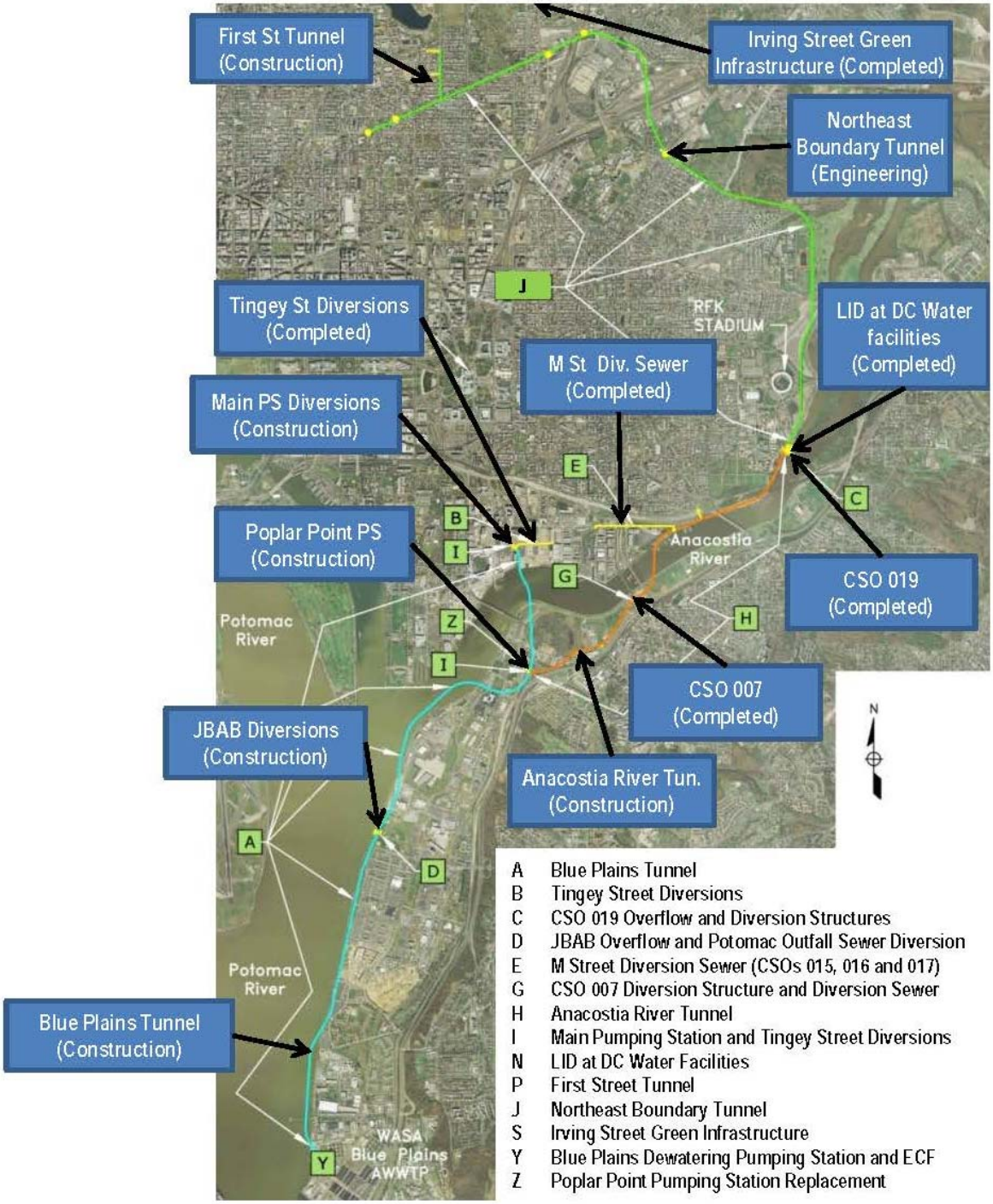
As a result of the TN/WW Plan, DC Water has added 31 mg of storage to the Anacostia Tunnel system for a total of 157 mg of storage. This was accomplished by extending the tunnel from Poplar Point to Blue Plains and constructing the tunnel dewatering pumping station at Blue Plains in lieu of Poplar Point. These and other changes to the LTCP are not reflected in the LTCP Decree. DC Water is proposing to modify the LTCP to conform it to the TN/WW Plan.

Based on the current level of planning, the Anacostia River Projects have been divided into various contract divisions to facilitate implementation. There is one contract division proposed for each of the three major tunnel segments and their associated shafts. The other contract divisions are comprised of near-surface diversion structures, associated diversions, junction sewers and the tunnel overflow structures. The planned contract divisions are listed in Table 1-2. Figure 1-3 shows the contract divisions and the current status of implementation.

Table 1-2. Planned Contract Divisions for Anacostia River Projects

Contract Division	Description
A	Blue Plains Tunnel
B	Tingey Street Diversion Sewer for CSOs 013 and 014
C	CSO 019 Overflow and Diversion Structures
D	Joint Base Anacostia-Bolling Overflow and Diversion Structures
E	M Street Diversion Sewer (CSOs 015, 016, and 017)
G	CSO 007 Diversion Sewer
H	Anacostia River Tunnel
I	Main Pumping Station Diversions
N	Low Impact Development at DC Water Facilities
J	Northeast Boundary Tunnel
P	First Street Tunnel
S	Irving Street Green Infrastructure
Y	Blue Plains Tunnel Dewatering Pumping Station and Enhanced Clarification Facility
Z	Poplar Point Pumping Station Replacement

Figure 1-3. Anacostia River Projects Status (as of May 2015)



1.5.2 Potomac River Projects

The control measures selected for the Potomac River are predicted to limit overflows to four events per average year. The principal control measures include rehabilitation of the Potomac Pumping Station and construction of a storage tunnel from west of the Key Bridge, along the Potomac River waterfront parallel to Georgetown, and terminating at Potomac Pumping Station. The tunnel will intercept the Georgetown CSOs and the large CSOs downstream of Rock Creek. A new pumping station would be constructed to dewater the tunnel. In addition, the LTCP will consolidate and close all CSOs between the Key Bridge and Rock Creek to remove the impact of these CSOs from the Georgetown waterfront area.

The major elements of the Final LTCP for the Potomac River Projects are summarized in Table 1-3 and are shown on Figure 1-4.

Table 1-3. Potomac River Projects

Component	Description	Status (as of May 2015)
Potomac River		
Replace Inflatable Dams (1)	Replace inflatable dams at Potomac River CSOs where these are installed	Completed
Rehabilitate Potomac Pumping Station (1)	Rehabilitate station to firm 460 mgd pumping capacity	Completed
Outfall Consolidation (2)	Consolidate CSOs 023 through 028 in the Georgetown Waterfront Area.	Future work
Potomac Storage Tunnel (2)	58 million gallon storage tunnel from Georgetown to Potomac Pumping Station. Includes tunnel dewatering pumping station	Future work

Notes:
(1). Required by Three Party Consent Decree
(2). Required by LTCP Consent Decree

Figure 1-4. Potomac River Projects

1.5.3 Rock Creek Projects

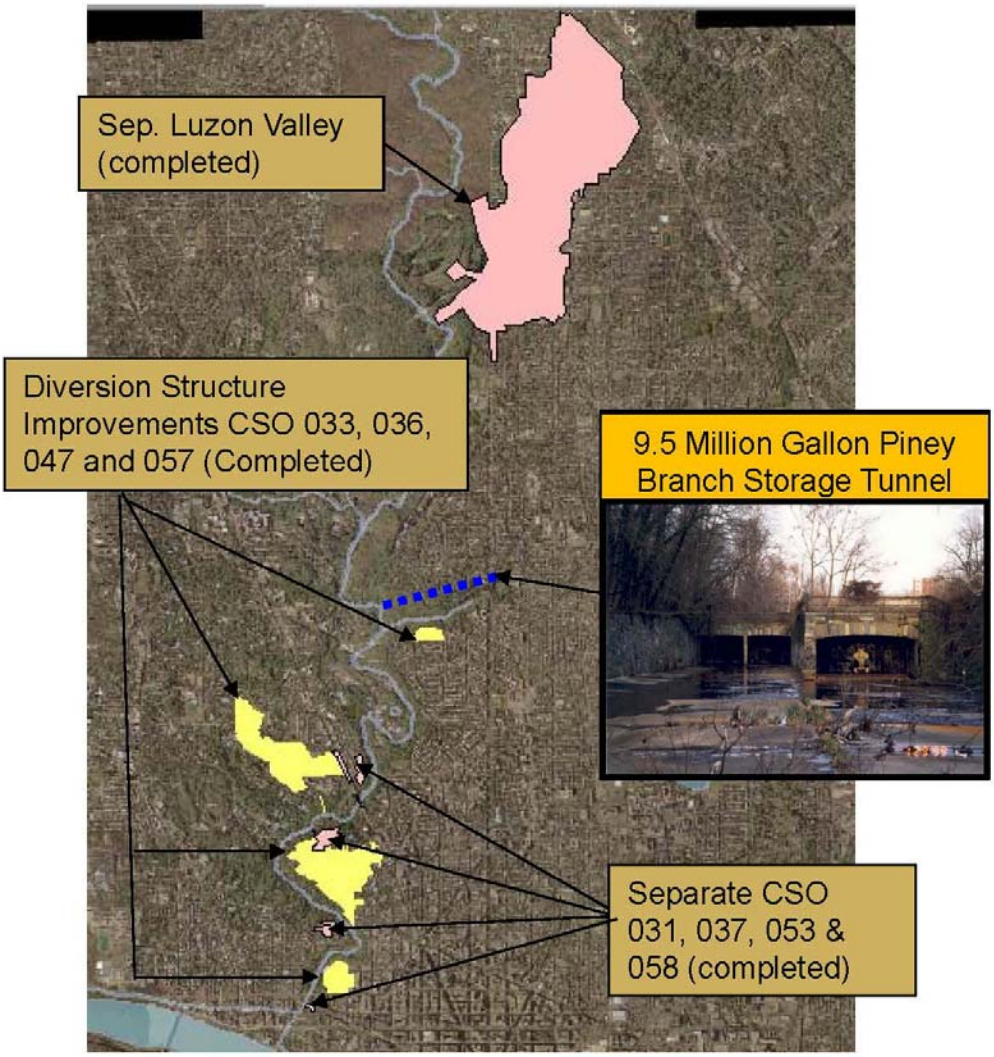
The control measures in the LTCP for Rock Creek are predicted to limit Piney Branch overflows to one per average year. The remaining overflows in Rock Creek will be controlled to 4 events per average year. The principal control measures include separation of four CSOs, construction of a storage tunnel at Piney Branch, and monitoring and regulator improvements to four CSOs south of Piney Branch.

The major elements of the Final LTCP for Rock Creek are summarized in Table 1-4 and are shown on Figure 1-5.

Table 1-4. Rock Creek Projects

Component	Description	Status (as of May 2015)
Rock Creek		
Separate Luzon Valley	Separate CSO 059	Completed
Separation	Separate CSOs 031, 037, 053, and 058.	Completed
Monitoring at CSO 033, 036, 047 and 057	Conduct monitoring to confirm prediction of overflows. If overflows confirmed, then perform the following: • Regulator Improvements: Improve regulators for CSO 033, 036, 047 and 057. • Connection to Potomac Storage Tunnel: Relieve Rock Creek Main Interceptor to proposed Potomac Storage Tunnel when it is constructed	Completed
Storage Tunnel for Piney Branch (CSO 049)	9.5 million gallon storage tunnel	Future work

Figure 1-5. Rock Creek Projects



1.5.4 System-Wide Improvements

The LTCP also includes the following system-wide improvements:

- Low Impact Development Retrofit (LID-R) at DC Water Facilities – the Decree requires DC Water to construct $3 M of LID at DC Water facilities and to evaluate the effectiveness of these measures. The projects are complete.

- Excess Flow Treatment Improvements at Blue Plains – the Decree requires the addition of four new primary clarifiers and improvement to the excess flow treatment control and operations. Because of the TN/WW plan, these improvements have been deleted and are scheduled to be replaced by a new 225 mgd enhanced clarification facility (ECF).

1.5.5 Consent Decree Schedule

There are numerous deadlines and interim milestones in the LTCP Decree. Major deadlines are summarized in Table 1-5.

Table 1-5. Key Deadlines in LTCP Consent Decree

Item	Deadline Type	Deadline
Anacostia River Projects		
CSO 006 Separation	Place in Operation	Completed -2010
Tunnel from Blue Plains to RFK Stadium	Place in Operation	March 23, 2018
Complete System	Place in Operation	March 23, 2025
Potomac River Projects		
Potomac Tunnel	Start Facility Plan Award Design Contract Award Construction Contract Place in Operation	Completed - 2015 March 23, 2018 March 23, 2021 March 23, 2025
Rock Creek Projects		
Separate CSO 059 Luzon Valley		Completed - 2002
Separate CSO 031, 037, 053, 058		Completed - 2011
Rock Creek Regulator Improvements		Completed - 2013
Piney Branch Tunnel	Start Facility Plan Award Design Contract Award Construction Contract Place in Operation	March 23, 2016 March 23, 2019 March 23, 2022 March 23, 2025
System-Wide		
LID-R at DC Water Facilities	Place in Operation	Completed - 2014

1.6 Predicted CSO Reduction

The DC Department of the Environment (formerly Department of Health) and EPA approved the Final LTCP and determined that CSOs remaining after implementation of the plan would not cause or contribute to the exceedance of water quality standards, subject to post construction monitoring. Regulatory agencies also determined that the CSOs remaining after implementation of the plan would comply with total maximum daily loads (TMDLs) established for the receiving waters. Table 1-6 shows the CSOs predicted as a result of implementation of the DCCR.

Table 1-6. Key Deadlines in LTCP Consent Decree

Item	Anacostia River	Potomac River	Rock Creek	Total
CSO Overflow Volume (mg/avg. yr.)				
1996 – DC Water formed	2,142	1,063	49	3,254
2015 – After inflatable Dams and Pumping Station rehabilitations	1,258	654	48	1,960
2025 – LTCP in Place	54	79	5	138
% Reduction	98%	93%	90%	96%
Number of Overflows (#/avg. yr.)				
1996 – DC Water formed	82	74	30	
2015 – After inflatable Dams and Pumping Station rehabilitations	75	74	30	
2025 – LTCP in Place	2	4	1 / 4 (1)	

Notes:

(1) One overflow per average year at Piney Branch, four overflows per average year at other Rock Creek CSOs

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2 Bases for Modification

2.1 New Technology and Recognition by Regulatory Agencies

The LTCP was developed from 1998-2002. At that time, GI was not a well developed and recognized technology for providing CSO control. In addition, there was no formal recognition of the technology by regulatory agencies as a viable method for providing CSO control. Because of this and other factors, GI in the LTCP was limited to a $3 M demonstration project at DC Water facilities.

Since development of the LTCP, GI has been recognized as a potentially viable technology for controlling CSOs. Further, EPA strongly encourages the use of GI approaches to manage wet weather flows. Since 2007, EPA's Office of Water has released the following policy memos and documents supporting the integration of green infrastructure into NPDES permits and CSO programs:

- Memorandum, Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans
  In October 2011, EPA's Office of Water (OW) and Office of Enforcement and Compliance Assurance (OECA) issued a joint memo encouraging EPA Regions to assist their state and local partners in pursuing an integrated planning approach to Clean Water Act waste and stormwater obligations. The memo identifies green infrastructure as one example of a comprehensive solution that can improve water quality while supporting other quality of life attributes that enhance the vitality of communities.

EPA Factsheet 2: CSOs

- Memorandum, Protecting Water Quality with Green Infrastructure in Water Permitting and Enforcement Programs
  In April 2011, EPA OW and OECA jointly issued a memo supporting the use of green infrastructure. The memo reaffirms the commitment of both offices to work with interested communities on incorporating green infrastructure into stormwater permits and into remedies for non-compliance with the Clean Water Act.

- Memorandum, Use of Green Infrastructure in NPDES Permits and Enforcement
  In August, 2007, EPA issued a memo encouraging the incorporation of green infrastructure into National Pollutant Discharge Elimination System (NPDES) stormwater permits and CSO

long term control plans. Additionally, the memo states that green infrastructure can and will be used in future EPA enforcement activities.

- Memorandum, Using Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and other Water Programs
  In March, 2007, Benjamin Grumbles, EPA's Assistant Administrator for Water, issued this memo to promote green infrastructure as a viable stormwater management solution.

- EPA Permitting and Enforcement Series
  In 2012, EPA issued a Permitting and Enforcement series guide to integrating green infrastructure into NPDES wet weather programs. The series consists of six factsheets and four supplements as follows:

  - Factsheet 1: General Accountability Considerations for Green Infrastructure
  - Factsheet 2: Combined Sewer Overflows
  - Factsheet 3: Sanitary Sewer Overflows
  - Factsheet 4: Stormwater
  - Factsheet 5: Total Maximum Daily Loads
  - Factsheet 6: Water Quality Standards
  - Supplement 1: Consent Decrees that Include Green Infrastructure Provisions
  - Supplement 2: Consent Decree Language Addressing Green for Grey Substitution
  - Supplement 3: Green Infrastructure Models and Calculators
  - Supplement 4: Green Infrastructure in Total Maximum Daily Loads

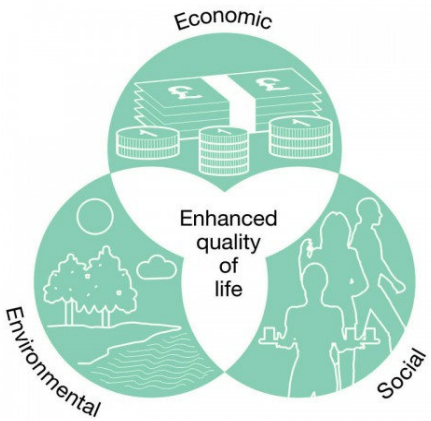
2.2 Added Benefits

Unlike single-purpose gray stormwater infrastructure, which uses tanks, tunnels and pipes to store and convey stormwater, GI uses vegetation and soil to manage stormwater where it falls. GI has the potential to not only reduce stormwater and combined sewer overflows (CSOs), but to provide multiple environmental, social and economic benefits. Known as Triple Bottom Line, the added benefits fall into three categories:

Environmental

- Water Quality and Quantity - By retaining rainfall from small storms, green infrastructure reduces stormwater discharge volumes. Lower discharge volumes translate into reduced combined sewer overflows. Green infrastructure can also mitigate flood risk by slowing and reducing stormwater discharges.

- Air Quality – Increased vegetation can remove pollutants, such as particulate matter and carbon monoxide, thereby improving air quality.



- Urban Heat Island Reduction - The urban heat island (UHI) effect occurs when urban areas replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat. Trees, green roofs, and other green infrastructure features can cool urban areas by shading building surfaces, deflecting radiation from the sun, and releasing moisture into the atmosphere.

US Tax Court Green Roof

- Energy Conservation: GI can reduce local temperatures and shade building surfaces, lessening the cooling demand for buildings, thereby reducing energy needs and decreasing emissions from power plants.

- Carbon Sequestration - Since GI includes plants which use carbon dioxide as part of photosynthesis, GI has the potential to reduce carbon load to the atmosphere and assist with mitigation of greenhouse gases.

- Habitat Improvement - GI can provide habitat for birds, mammals, amphibians, reptiles, and insects. Even small patches of vegetation such as green roofs provide habitat for a variety of insects and birds.

Social

- Health Effects - Increased tree canopy has the potential to reduce ozone and particulate pollution levels enough to benefit mortality, hospital admissions, and work loss days due to illness.

- Enhanced Aesthetics - The aesthetic benefits provided by GI have the potential to increase the quality of life in the District by increasing local jobs, decreasing crime and enhancing the enjoyment of the citizenry

- Reduced Disruption during Construction – Since GI involves primarily construction on a small scale, it can reduce large construction impacts (traffic, noise, dust, closures and relocations) associated with heavy civil construction projects.

Economic

- Poverty reduction/job creation - Specialized labor is required for construction of conventional gray infrastructure (e.g., tunneling). Such skilled laborers might typically be already employed in the construction field. GI creates the opportunity to hire local unskilled – and otherwise unemployed – laborers for landscaping and restoration activities. GI thus can provide an economic boost to the local community and can decrease the costs of social

services that would otherwise be required. The economic benefits of GI in the District are described in a report in Appendix D.

- Enhanced Property Values – Improved aesthetics, decreased crime and increased live-ability can improve property values in the areas where GI is installed.

- Enhanced recreation and improved quality of life - The aesthetic benefits provided by GI have the potential to increase the quality of life in the District by increasing local jobs, property values and recreational space. A recent economic study found that when compared to grey infrastructure, a GI program in the District will provide nearly twice as many local jobs.

2.3 DC Water's GI Investigations

DC Water has invested significant resources and funds ($3.5 M) over the past three years to research and analyze GI for CSO control. This work was documented in technical memoranda which are included in the appendices as follows:

- Appendix E: Economic Impact of Alternative CSO Control Strategies
- Appendix F: Technical Memorandum No. 2 - Approach to Hydrologic and Hydraulic Modeling
- Appendix G: Technical Memorandum No. 4 - The District of Columbia's Experience with Green Infrastructure
- Appendix H: Technical Memorandum No. 5 - Green Infrastructure Experience – Foreign and Domestic Case Studies
- Appendix I: Technical Memorandum No. 6 - Green Infrastructure Technologies
- Appendix J: Technical Memorandum No. 7 - Green Infrastructure Screening for the Potomac River and Rock Creek

Technical Memorandum No. 7 (Screening Analysis) assessed the feasibility of implementing GI by itself or in combination with gray infrastructure. The results showed that there are viable green and green/gray hybrid solutions to CSO control. Based in part on this analysis, DC Water has proposed the hybrid green/gray CSO controls summarized in Section 3.

3 Control Plan for Rock Creek and Potomac River

DC Water is recommending a modification of its LTCP to change the CSO control plan for the largest CSO in Rock Creek (Piney Branch, CSO 049) and the Potomac River CSOs. The control plan includes green and green/gray controls. Each control technology will be used where it is the most appropriate. The hybrid green/gray controls are predicted to provide a degree of CSO control equivalent to the gray controls in the LTCP. The hybrid approach will have a higher socio economic benefit to the District, especially in the communities served by GI. Figure 3-1 at the end of this section compares the recommended controls to those in the existing LTCP.

3.1 Green Controls for Rock Creek's Piney Branch Sewershed

3.1.1 Scope

GI will be constructed in the Piney Branch drainage area in Rock Creek sized to manage the volume of runoff produced by 1.2" of rain falling on 365 impervious acres (30% of the impervious acres) in the sewershed. GI projects may include bioretention practices (bioretention cells, bioswales, vegetated filter strips, and tree box filters), rooftop collection practices (green roofs, blue roofs, downspout disconnection, rain barrels, and cisterns) and permeable pavement. These facilities will be constructed in both public and privately-owned spaces. In addition to GI, targeted sewer separation may be utilized to offload storm water from the combined sewer system.

30% GI Implementation in Rock Creek's Piney Branch Sewershed
Total Sewershed area = 2,329 acres
Impervious area = 1,215 acres
30% of impervious acres = 365 acres
Manage volume of runoff produced by 1.2" of rain falling on 365 impervious acres

In addition to GI, the weir height of the existing diversion structure (Structure 70) serving CSO 049 will be raised to increase the capture of combined sewage. The resulting captured sewage will be diverted to the existing East Rock Creek Diversion Sewer for conveyance to Blue Plains for treatment. This control structure modification is not predicted to increase overflow frequency or volume at other downstream CSOs in the Rock Creek sewershed.

3.1.2 Schedule

GI has not been used at a large scale in dense urban areas to provide a high degree of CSO control. Therefore, there is a need to develop basic information regarding permitting, location of facilities, public outreach and involvement, development of design details and maintenance. DC Water will use an adaptive management approach to implement GI. This means that projects will be constructed in a sequential fashion. Lessons learned on early projects will be used to adjust and improve later projects to make GI successful.

DC Water does not own significant property in the District. Construction of GI therefore requires permits and concurrence from the property owner, which is the District or Federal Government in the majority of cases. Siting of GI in public space will require developing and adopting new policies regarding how to organize public space. Examples include establishing standards regarding how

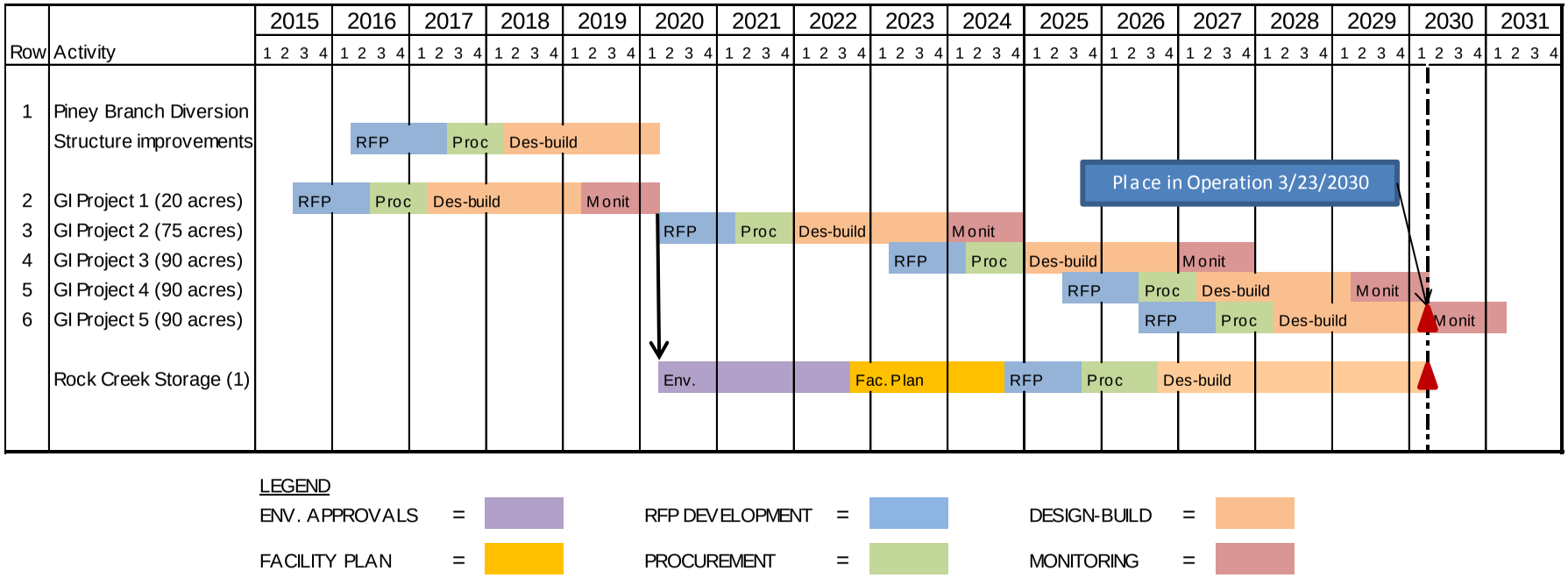
bioretention, parking, cross walks and pedestrian access will coexist in the public right of way. In addition, maintenance standards and responsibilities will need to be established and addressed. Further, codes and regulations will need to be reviewed and possibly revised to encourage and allow GI construction in public space. These institutional and planning issues will need to be addressed in order to have successful implementation of GI.

Because of the items identified above, a schedule extension is required in order to implement GI for CSO control. The current consent decree requires completion of the controls for Rock Creek by March 23, 2025. Based on an adaptive management approach and a review of feasible planning, design and construction schedules, DC Water has determined that an extension of the schedule to March 23, 2030 (5 years) is required in order to implement GI. The Piney Branch diversion structure improvements can be implemented early in the schedule.

Given that there is some uncertainty associated with the ability to implement GI in the District at a large scale, DC Water proposes to construct the first GI project in Rock Creek and then evaluate GI in terms of constructability, operability, efficacy, public acceptability and cost effectiveness. If, based on that evaluation, GI is determined to be impracticable, then DC Water will construct the 9.5 million gallons of storage (gray infrastructure) for the Piney Branch CSO. If GI is determined to be practicable after the first project, then DC Water will continue to implement the remaining GI projects.

Figure 3-2 shows the schedule and the basis for the schedule is summarized below:

- Environmental Approvals: This involves prepare National Environmental Policy Act (NEPA) and District Environmental Policy Act documentation necessary to construct the project.
- Facility Plan: The Facility Plan involves preparing preliminary engineering information necessary for detailed design such as siting, geotechnical data, existing utility, property ownership, design criteria and other information.
- Prepare Request for Proposal (RFP) and Neighborhood Outreach: DC Water anticipates using a design-build process that will require coordination with the District and with neighborhood stakeholders and private property owners. Based on past DC projects, the time needed for outreach and RFP preparation is 12 months for GI projects.
- Procurement: The bidding and award process for GI projects will take 9 months which is typical for DC Water construction contracts. The first contract is anticipated to take only 6 months, accounting for a smaller contract scope.
- Design and Construction: GI and sewer separation projects will be performed using design-build project delivery. Based on the area of coverage and prior DC Water design and construction work under the Anacostia River Projects, each contract will take 2 years.
- Post-Construction Monitoring: The schedule includes 12 months of post construction monitoring. The results will be used to determine the effectiveness in a variety of different rainfall and weather conditions, and to inform the implementation approach for subsequent projects.



Notes:

1. Rock Creek Storage will only be constructed if GI is determined to be impracticable after GI Project 1 in Rock Creek

Figure 3-2. Rock Creek Schedule

3.1.3 Predicted Performance

Hydraulic modeling predictions indicate that GI implementation and modifications to Structure 70 will eliminate the need to construct 9.5 MG of tunnel storage included in the LTCP. The GI program is predicted to provide a degree of CSO control equivalent to the gray controls in the LTCP, as summarized in Table 3-1.

Predicted water quality is summarized in Table 3-2 and the GI controls are predicted to provide a degree of water quality performance in the receiving water equivalent to the gray controls in the LTCP.

Figure 3-3 shows that GI allows earlier reductions in CSO overflow volume than the gray controls because individual GI components provide a benefit as soon as they are placed in operation. This is in contrast to the gray controls which typically require all of the structural components to be completed before the facility provides a CSO reduction benefit.

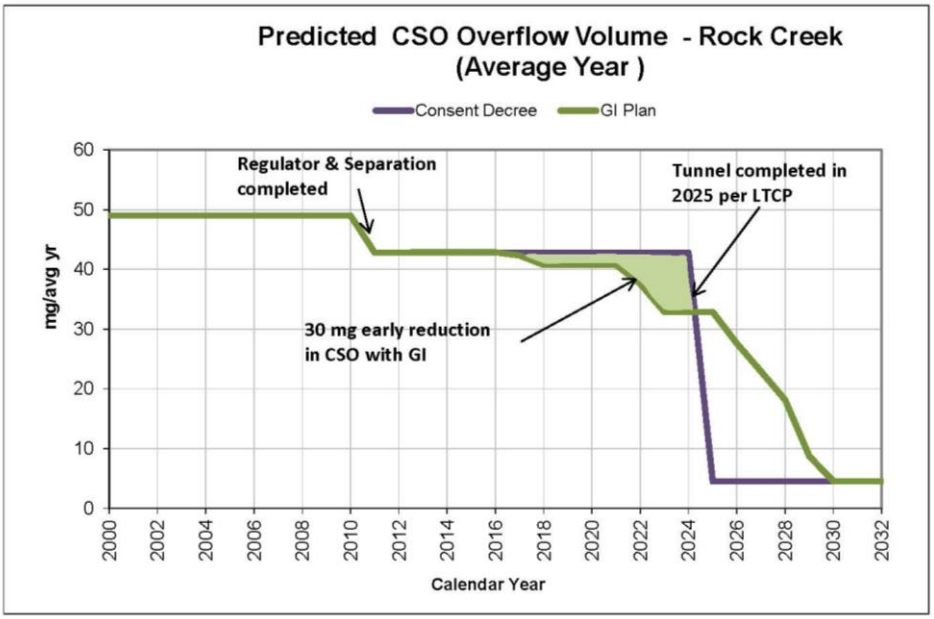


Figure 3-3. Predicted CSO Overflow Volume in Rock Creek

Table 3-1
Piney Branch Predicted CSO Overflows in Average Year

Parameter	Before LTCP[1]	LTCP	Green Controls[2]
No. of Overflows (#/avg yr)	25	1	1
Overflow Volume (mg/avg yr)	39.73	1.41	<1
% reduction from Before LTCP	--	96%	96% or greater

Table 3-2
Predicted Water Quality in
Rock Creek after Piney Branch (Segment 17) in Average Year

Parameter	Before LTCP[1]	LTCP	Green Controls[2]
# Months Fecal Geomean>200 (all loads)	12	12	12
# Months Fecal Geomean>200 (CSO only)	0	0	0
# Days Fecal>200 (all loads)	335	335	335
# Days Fecal>200 (CSO Only)	24	1	1
# Days Fecal>200 (all loads) May - Sept	135	135	135
# Days Fecal>200 (CSO Only) May - Sept	15	1	1
# Months E. Coli Geomean>126 (all loads)	12	12	12
# Months E. Coli Geomean>126 (CSO only)	0	0	0
# Days E. Coli>126 (all loads)	365	365	365
# Days E. Coli>126 (CSO Only)	24	1	1
# Days E. Coli>126 (all loads) May - Sept	153	153	153
# Days E. Coli>126 (CSO Only) May - Sept	15	1	0
# Days D.O.< 5 mg/L (all loads)	0	0	0
# Days D.O.< 5 mg/L (CSO Only)	0	0	0

Notes for Tables 3-1 and 3-2:

1. Results shown for Before LTCP are without Phase1 Controls in place (i.e., without inflatable dams, pumping station rehabilitations and Northeast Boundary Swirl Facility in operation).
2. At the low levels of CSO overflows projected herein, model accuracy is highly dependent on many variables such as the accuracy of rainfall data, information on the drainage area and other factors. Further, additional overflows will occur for rain events which exceed or are not represented in the average year. The model predictions contained herein do not change the level of CSO control determined to be adequate to meet water quality standards which was included by DC Water in its LTCP, and subsequently approved by EPA and the D.C. Department of the Environment.

3.2 Hybrid GI Plan for Potomac River

3.2.1 Scope

DC Water will construct the following controls for the Potomac River CSOs:

- **Potomac Tunnel (CSOs 020 – 024)**
  The Potomac Storage Tunnel will capture CSOs 020 through 024. These outfalls serve the major interceptors draining Rock Creek and the large downtown areas in the Potomac sewershed. Given the large overflow volume produced by these outfalls and the highly urbanized nature of the sewershed, DC Water will construct gray infrastructure to control these CSOs. The tunnel in the LTCP was a 58 million gallon (mg) facility with a tunnel dewatering pumping station at the low end. After rain events, the pumping station would bleed captured flow via the existing system to Blue Plains for treatment. The large size of the tunnel was driven, in part, by the inability to completely dewatering the tunnel during back-to-back rain events.

  As part of this modification, DC Water is proposing to construct a gravity tunnel from CSO 024 to interconnect with the Blue Plains Tunnel on the Anacostia System. The total volume of the Potomac Tunnel will be 30 mg and the tunnel will be emptied by gravity. This configuration will create one interconnected tunnel system. The advantages of this system include:

  - The Potomac and Anacostia Tunnel Systems will be interconnected, with a total system storage volume of 187 mg (30 mg for the Potomac + 157 mg for the Anacostia River Tunnel System). Since rainfall has both geographic and temporal variability, the interconnection of the tunnel system improves the ability of the system to provide CSO control. As an example, intense rain events in one part of the District can utilize the tunnel system volume as needed to control overflows. This, combined with the sewer separation and GI, allows the 30 mg Potomac Tunnel to provide a degree of control equivalent to the gray controls in the LTCP.

  - The gravity tunnel does not require construction of a new pumping station in the National Mall area. This preserves space for other higher value use. In addition, it reduces the need for operation and maintenance associated with a complex mechanical system. Elimination of the pumping station also improves reliability and redundancy since the gravity tunnel does not require electrical power or other mechanical equipment to function.

  - The gravity tunnel improves the reliability and operability of the existing sewer system. The system will be configured such that if the Potomac Pumping Station loses power, then normal sanitary flows in the system will drop into the tunnel by gravity for conveyance to Blue Plains, thereby preventing a dry weather overflow. Further, if the Potomac Pumping Station or the Potomac Force Mains experience

equipment failures or need to be worked on for repair or maintenance, the gravity tunnel can be used as a backup to convey flows to Blue Plains for treatment.

- The gravity Potomac Tunnel is more environmentally responsible because it eliminates the need for an energy intensive pumping station.

- **Separation of Combined Sewers (CSOs 025 – 026)**
  The drainage areas for CSO 025 (17 acres) and CSO 026 (3 acres) are very small and, therefore, it is practical to separate the tributary combined sewers. Separation will result in the elimination of combined sewer overflows from these sewersheds.

- **Green Infrastructure (CSOs 027 – 029)**
  GI will be constructed in the CSO 027, 028 and 029 drainage areas sized to provide a retention capacity equivalent to 1.2" of rain falling on 133 impervious acres in the sewersheds. This is equivalent to GI treatment of 30% of impervious areas in the CSO 027 and 028 sewersheds, and 60% of impervious areas in the CSO 029 sewershed. GI projects may include bioretention practices (bioretention cells, bioswales, vegetated filter strips, and tree box filters), rooftop collection practices (green roofs, blue roofs, downspout disconnection, rain barrels, and cisterns), permeable pavement, and large-volume underground storage. In addition to GI, targeted sewer separation may be utilized to offload storm water from the combined sewer system. Diversion structures within the CSO 027, 028, and 029 sewersheds will be modified to increase diversion capacities. The diversion structure improvements coupled with the GI are predicted to provide a degree of CSO control equivalent to the LTCP.

CSO 025 Separation
Sewershed = 17 acres

CSO 026 Separation
Sewershed = 3 acres

CSO 027 30% GI Implementation
Sewershed = 164 acres
Impervious = 104 acres
30% GI = 31 acres

CSO 028 30% GI Implementation
Sewershed = 21 acres
Impervious = 13 acres
30% GI = 4 acres

CSO 029 60% GI Implementation
Sewershed = 330 acres
Impervious = 164 acres
60% GI = 98 acres

3.2.2 Schedule

As with Rock Creek, an adaptive management approach is recommended for the Potomac River to address institutional and planning challenges for GI. The same issues exist on the Potomac River and DC Water will follow the same approach and schedule for the GI for CSOs 027, 028 and 029. The current consent decree requires completion of the controls for the Potomac River controls by March 23, 2025. DC Water has determined that an extension of the schedule to 2027 (3 years) is required in order to implement GI while addressing adaptive management and institutional and planning challenges.

Given that there is some uncertainty associated with the ability to implement GI in the District at a large scale, DC Water proposes to construct the first GI project in the Potomac and then evaluate GI in terms of constructability, operability, efficacy, public acceptability and cost effectiveness. If, based on that evaluation, GI is determined to be impracticable for CSO 027, 028 and 029, then DC Water will construct the Potomac Tunnel with a 40 million gallon capacity instead of a 30 million gallon capacity and will connect CSOs 027, 028 and 029 to the Potomac Tunnel (9.5 million gallons of storage (gray infrastructure) for the Piney Branch CSO). If GI is determined to be practicable after the first project, then DC Water will continue to implement the remaining GI projects.

For the Potomac Tunnel, the current consent decree requires placing the facilities in operation by March 23, 2025. Because of changes that have occurred since the consent decree was negotiated, the Potomac Tunnel schedule should be extended by five years to 2030. This schedule extension is required for the following reasons:

- Requirement to prepare Environmental Impact Statement – The development of the LTCP and LTCP consent decree included a significant public process to select the controls for receiving water. Because the existing CSOs are located on National Park Service property, the Potomac Tunnel facilities may have a significant impact on Park Property. Because of this, the National Park Service has indicated that an Environmental Impact Statement will need to be prepared for the Potomac Tunnel. This was not envisioned or planned for when the schedule in the original consent decree was established. The NPS indicates that at least three years should be allowed for this process.

- Planning and Siting Challenges – The Potomac River front is essentially completely developed. There are few, if any, undeveloped or open sites absent valuable parkland in which to construct facilities. As a result, planning and obtaining approval for the Potomac facilities will take considerably longer than anticipated. Developing the consensus necessary to site facilities, obtaining land rights and obtaining approvals necessary for construction will add significant time to the project.

- Utility relocation – Experience gained on the Anacostia River Projects demonstrates that up-front time is needed to identify utilities and arrange for them to be relocated prior to tunnel and shaft construction. DC Water has therefore planned for early utility relocation contracts.

- Ability to Expand Tunnel to Include CSO 027, 028 and 029 – Time is required to construct and evaluate the first GI project in the sewersheds for CSO 027, 028 and 029. This is required to determine whether a 30 million gallon or 40 million gallon tunnel is required.

The sewer separation projects for CSO 025 and 026 are independent of the GI and the Potomac Tunnel. These projects can therefore proceed earlier in the schedule and can be completed by 2023.

Figure 3-4 shows the schedule and the basic steps in the schedule are similar to that required for the Rock Creek Projects.

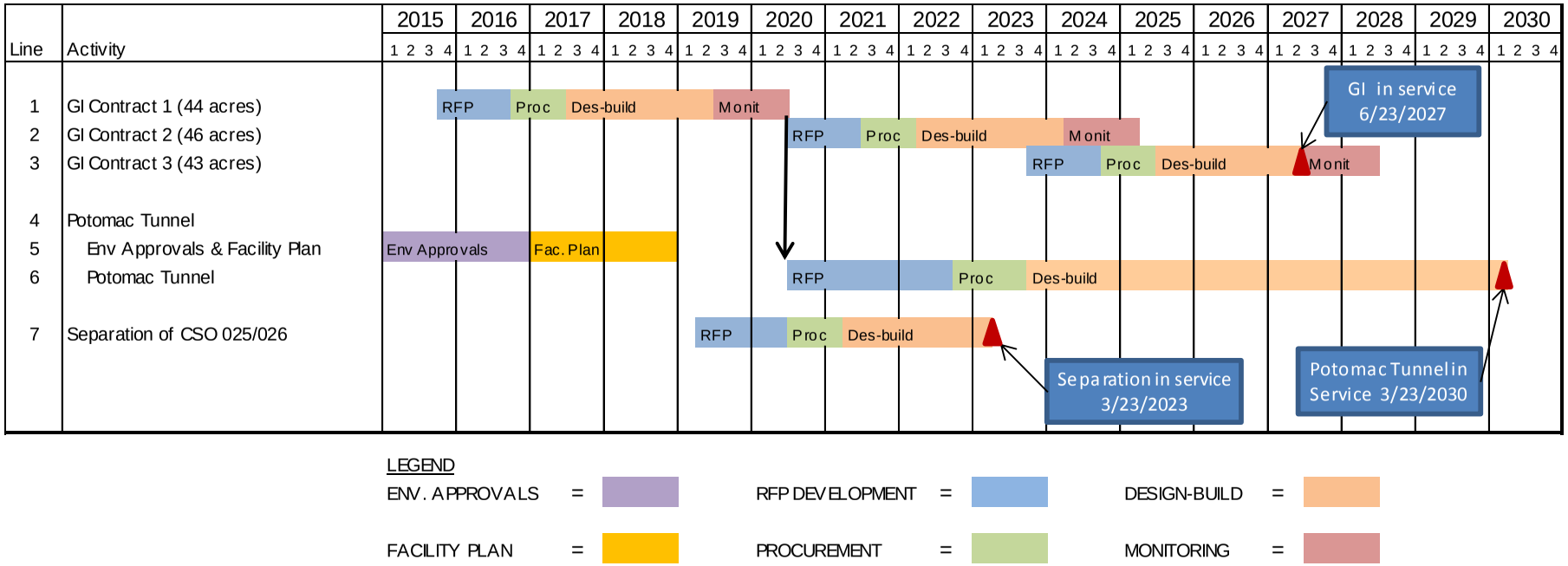


Figure 3-4. Potomac Schedule

3.2.3 Predicted Performance

Once fully implemented, the hybrid green/gray approach will provide the same overall degree of control for the Potomac River as the LTCP, as summarized in Table 3-5 below. Predicted water quality is summarized in Table 3-3, and also meets the improvements predicted for the LTCP. Table 3-4 demonstrates that the pollutant loads to the Potomac River and the water quality in the Potomac River are predicted to be equal to or better than that predicted for the LTCP.

Table 3-3
Potomac River Predicted CSO Overflows
(Average Year)

Parameter	Before LTCP[1]	LTCP	Hybrid GI Plan[2]
No. of Overflows (#/avg yr)	74	4	Equivalent to LTCP
Overflow Volume (mg/avg yr)	953	79	
% reduction from Before LTCP	--	92%	

Notes:

1. Results shown for Before LTCP are without Phase1 Controls in place (i.e. without inflatable dams, pumping station rehabilitations and Northeast Boundary Swirl Facility in operation).

Table 3-4
Potomac River Predicted Water Quality
Memorial Bridge (Segment 6) in Average Year

Parameter	Before LTCP[1]	Original LTCP	Hybrid GI Plan[2]
# Months Fecal Geomean>200 (all loads)	3	1	1
# Months Fecal Geomean>200 (CSO only)	0	0	0
# Days Fecal>200 (all loads)	142	109	109
# Days Fecal>200 (CSO Only)	57	6	3
# Days Fecal>200 (all loads) May - Sept	64	44	44
# Days Fecal>200 (CSO Only) May - Sept	33	4	1
# Months E. Coli Geomean>126 (all loads)	2	0	0
# Months E. Coli Geomean>126 (CSO only)	0	0	0
# Days E. Coli>126 (all loads)	118	77	74
# Days E. Coli>126 (CSO Only)	60	6	3
# Days E. Coli>126 (all loads) May - Sept	57	36	30
# Days E. Coli>126 (CSO Only) May - Sept	35	5	1
# days D.O.< 5 mg/L (all loads)	0	0	0
# days D.O.< 5 mg/L (CSO Only)	0	0	0

Notes:

1. Results shown for Before LTCP are without Phase1 Controls in place (i.e., without inflatable dams, pumping station rehabilitations and Northeast Boundary Swirl Facility in operation).
2. At the low levels of CSO overflows projected herein, model accuracy is highly dependent on many variables such as the accuracy of rainfall data, information on the drainage area and other factors. Further, additional overflows will occur for rain events which exceed or are not represented in the average year. The model predictions contained herein do not change the level of CSO control determined to be adequate to meet water quality standards which was included by DC Water in its LTCP, and subsequently approved by EPA and the D.C. Department of the Environment.

Table 3-5
Blue Plains Facilities, Flows and Loads, and Receiving Water Quality
(Average Year)

Parameter	LTCP	TN/WW Plan[1]	Hybrid GI Plan [1]
Facility Capacities			
Blue Plains complete treatment capacity (mgd)			
1st 4 hrs	740	555	555
After 4 hrs	511	511	511
Excess flow treatment (mgd)	336		
ECF capacity (mgd)	None	225	225
Anacostia tunnel storage volume (mg)	126	157	157
Anacostia tunnel max dewatering rate (mgd)	170	225	225
Min. tunnel dewatering time (hrs)	59	17	17
Outfall 001 Flows and Loads			
Volume (mg/avg yr)	1548	2657	3012
Avg Flow Rate (mgd)	4.2	7.3	8.3
CBOD5 (lb/avg yr)	730,724	703,562	797,861
TSS (lb/avg yr)	1,679,633	586,890	664,884
Ammonia (lb/yr)	112,320	123,461	140,504
TN (lb/avg yr)	219,475	179,396	203,229
TP (lb/avg yr)	30,985	3,989	4,516
Fecal Coliform (MPN x 10^{15}/avg yr)	411	2.0	2.3
E Coli (MPN x 10^{15}/avg yr)	300	1.3	1.4
Outfall 002 Flows and Loads			
Volume (mg/avg yr)	139,596	138,505	138,150
Avg Flow Rate (mgd)	382	379	378
CBOD5 (lb/avg yr)	5,821,153	5,775,659	5,753,948
TSS (lb/avg yr)	8,149,614	8,085,922	8,055,527
Ammonia (lb/yr)	4,424,076	1,617,184	1,611,105
TN (lb/avg yr)	17,579,883	4,509,604	4,485,771
TP (lb/avg yr)	209,562	207,924	207,142
Fecal Coliform (MPN x 10^{15}/avg yr)	106	105	105
E Coli (MPN x 10^{15}/avg yr)	67	66	66
Backcalculated Nitrogen Effluent (mg/L)	15.1	3.9	3.7
Outfall 001 + 002 Flows and Loads			
Volume (mg/avg yr)	141,144	141,162	141,162
Avg Flow Rate (mgd)	387	387	387
CBOD5 (lb/avg yr)	6,551,877	6,479,221	6,551,808
TSS (lb/avg yr)	9,829,247	8,672,812	8,720,410

Parameter	LTCP	TN/WW Plan[1]	Hybrid GI Plan [1]
Ammonia (lb/yr)	4,536,396	1,740,645	1,751,609
TN (lb/avg yr)	17,799,358	4,689,000	4,689,000
TP (lb/avg yr)	240,546	211,912	211,658
Fecal Coliform (MPN x 10^{15}/avg yr)	517	107	107
E Coli (MPN x 10^{15}/avg yr)	367	67	67
Anacostia CSO Overflows (Model Predictions)			
#/Avg Year	2	0	0
Overflow Volume/avg year (mg)	54	0	0
Potomac Water Quality at Segment 129- Blue Plains			
CSO & WWTP Loads Only			
# months FC > 200/100 ml geomean	0	0	0
# days FC > 200/100 ml	9	1	1
# months E Coli >126/100 ml geomean	0	0	0
# days E Coli > 126/100 ml	12	1	1
# days DO <5.0 mg/L	0	0	0
Min Day DO (mg/L)	>5	6.2	6.2
All Loads Present			
# months FC > 200/100 ml geomean	0	0	0
# days FC > 200/100 ml	27	12	12
# months E Coli >126/100 ml geomean	0	0	0
# days E Coli > 126/100 ml	25	7	7
# days DO <5.0 mg/L	27	20	17
Minimum Day DO (mg/L)	4.0	4.6	4.7

Notes:

1. At the low levels of CSO overflows projected herein, model accuracy is highly dependent on many variables such as the accuracy of rainfall data, information on the drainage area and other factors. Further, additional overflows will occur for rain events which exceed or are not represented in the average year. The model predictions contained herein do not change the level of CSO control determined to be adequate to meet water quality standards which was included by DC Water in its LTCP, and subsequently approved by EPA and the D.C. Department of the Environment.
2. FC= fecal coliform
3. DO = dissolved oxygen
4. MPN = Most probable number

Figure 3-5 shows that GI allows earlier reductions in CSO overflow volume for the Georgetown CSOs than the gray controls because individual GI components provide a benefit as soon as they are placed in operation. This is in contrast to the gray controls which typically require all of the structural components to be completed before the facility provides a CSO reduction benefit.

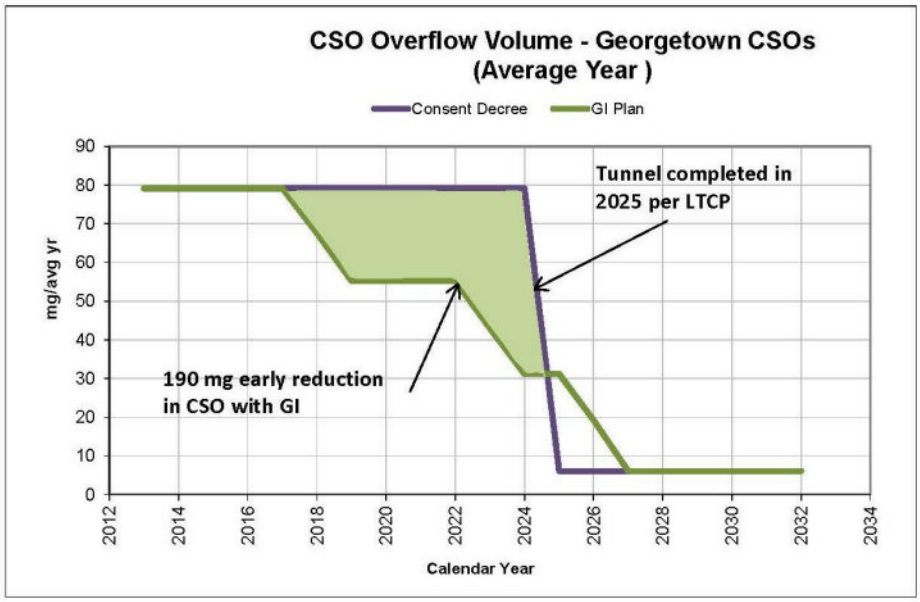


Figure 3-5. Predicted CSO Overflow Volume from Georgetown CSOs

Figure 3-6 shows that for Potomac CSOs 020-024, the recommended plan will result in a delay in CSO control for those outfalls from 2025 until 2030. This additional time is necessary due to new federal requirements to perform an Environmental Impact Statement, new planning and location challenges which did not exist when the original consent decree was signed and to mitigate the financial impact on rate payers.

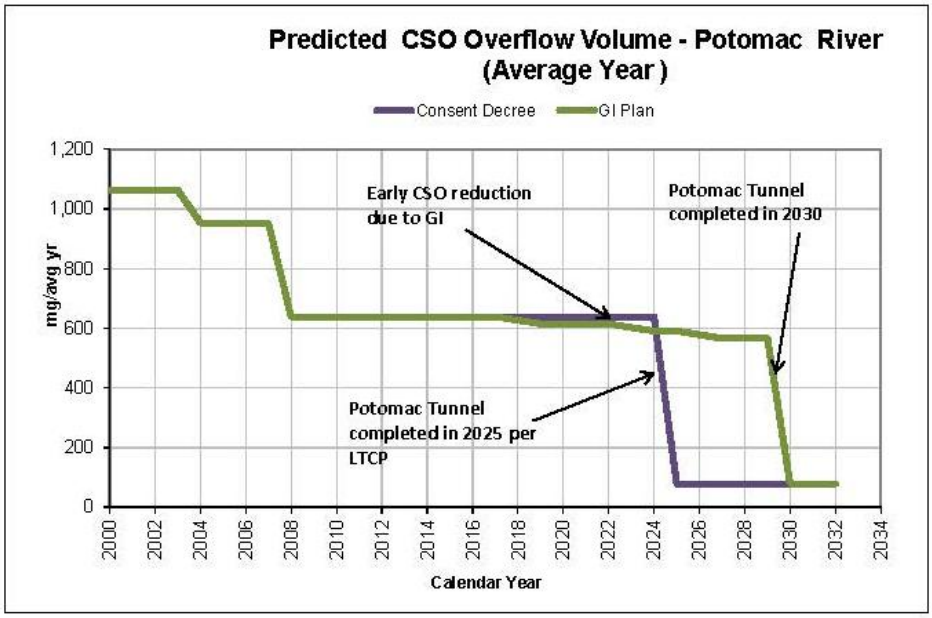


Figure 3-6. Predicted CSO Overflow Volume from all Potomac CSOs

3.3 Change in GI for MS4 Improvements

The District of Columbia recently promulgated stormwater management regulations to address MS4 requirements. The District elected to require that these MS4 regulations apply in the CSO area as well as the MS4 area. In addition to other requirements, the regulations require that land disturbing activities of more than 5000 square feet capture the first 1.2" of runoff volume from the sites. Land disturbing activities in the District public right of way must meet the maximum extent practicable standard. The MS4 regulations require the construction of GI to control storm water volumes.

The new MS4 regulations will therefore require GI to be constructed as a result of redevelopment and other land disturbing activities in the same sewersheds where DC Water will be constructing GI (CSO 027, 028 and 029 on the Potomac and Piney Branch CO 049 on Rock Creek). If this GI is constructed as a result of the MS4 program, it will reduce the GI that DC Water must construct in order to obtain the same degree of CSO control. DC Water will compile the amount of GI actually constructed in the specific targeted sewersheds (CSO 027, 028 and 029 on the Potomac and Piney Branch CSO 049 on Rock Creek) and will reduce the GI required to be constructed based on the retention capacity of the GI constructed pursuant to MS4 requirements.

3.4 Coordination with District

GI can be constructed in public space and private space. DC Water is committed to encouraging GI construction in private space. Possible tactics will be evaluated as part of the GI program but may include review of existing regulations, incentives and partnering with non-profit groups

In public space in the Piney Branch and CSO 027-029 sewersheds, the District of Columbia is the primary public landowner. Coordination and cooperation between the District and DC Water will be important for the success of the GI program for CSO control. The District and DC Water are committed to working together to encourage and make more cost effective the implementation of GI in the District. This coordination is already underway. As an example, the District Department of Transportation is producing engineering design standards and guidelines for construction of GI in the public right of way. DDOE has produced a Stormwater Management Guidebook as part of the MS4 regulations which include design approaches and guides for GI. DC Water has published Utility Protection Guidelines when constructing GI near water and sewer infrastructure. DC Water and the District have provided input and consultation on each other's guidelines and standards to optimize efficiency and ensure consistency.

The District's new MS4 regulations have made considerable progress toward implementing GI and will support DC Water's GI plan. The regulations were issued in July 2013 and require the construction of GI for stormwater control for land disturbing activities that disturb more than 5,000 square feet. This is required in the combined sewer area as well as in the separate MS4 area. These regulations will encourage GI and will make the CSO controls more effective on a City-wide basis.

The District is also implementing the Mayor's Sustainable DC Plan, which lays out a path to make the District the healthiest, greenest, most livable city in the nation over the next 20 years. Improving

the environment and making the District more sustainable are key features of the plan, which is available at http://sustainable.dc.gov/finalplan.

The District and DC Water will continue to work together as GI is implemented to:

- Minimize regulatory and institutional barriers to construction of GI
- Maximize cost effectiveness by looking for opportunities to add GI as part of ongoing DC Government capital projects to minimize costs
- Ensure consistency of design standards as applicable
- Encourage and facilitate GI construction in public and private space.
- Encourage consistency and transfer of ideas and standards between the MS4 program and the CSO program

3.5 Maintenance

DC Water will perform maintenance or will arrange for others to perform it. DC Water will be ultimately responsible to assure that maintenance is performed adequately to maintain the CSO reduction functions of the GI. DC Water also anticipates that this will be a requirement in its National Pollutant Discharge Elimination System (NPDES) Permit issued by EPA.

3.6 Post Construction Monitoring

The NPDES Permit specifies the scope and schedule for post construction monitoring. In accordance with the permit, DC Water will perform post construction monitoring at the completion of the program.

3.7 Compliance with 1994 CSO Policy

The Recommended Final LTCP Modification is in compliance with the CSO Policy. Table 3-6 identifies the key requirements in the CSO Policy and summarizes how the hybrid green/gray approach complies with the Policy.

Table 3-6. Demonstration of Compliance with 1994 CSO Policy

CSO Policy Reference	CSO Policy Requirement	Demonstration of Compliance
II.B.	Implement Nine Minimum Controls	DC Water is implementing a Nine Minimum Controls Plan. Once constructed and in service, the new CSO controls will be operated and maintained in accordance with the nine minimum controls
C.	Long Term Control Plan Development	The CD modifications will modify the LTCP as described in this document
C.1.	Characterization, Monitoring and Modeling	Characterization and monitoring were performed as part of the development of the LTCP. The calibrated models were used to make the performance predictions as part of the GI Screening Analysis.

CSO Policy Reference	CSO Policy Requirement	Demonstration of Compliance
C.2.	Public Participation	Public outreach was conducted as part of the development of the GI Plan and is described in the preceding section.
C.3.	Evaluation of Alternatives	A range of alternatives were considered in the GI Screening Analysis.
C.4.	Cost//Performance Considerations	Cost, performance, efficacy and compliance with water quality standards were evaluated as part of the preparation of the GI Screening Analysis.
C.5.	Operational Plan	The operation and maintenance plan and associated nine minimum controls requirements will be reviewed and adjusted if necessary upon implementation of the controls in the GI Plan.
C.6.	Maximizing Flow at Existing POTW	The LTCP maximizes flow to Blue Plains for treatment. Further, the GI Screening Analysis evaluated maximizing tunnel storage through treatment during wet weather, as described in section 3.2.1 above.
C.7.	Implementation Schedule	An implementation schedule is included.
C.8.	Post Construction Monitoring Program	The NPDES Permit includes detailed provisions requiring post construction monitoring at defined intervals in the implementation of the program.
III.	Coordination with State Water Quality Standards	Subject to post-construction monitoring, the original LTCP was determined to meet water quality standards. The GI Plan is predicted to provide CSO control performance equal to or better than the original LTCP.

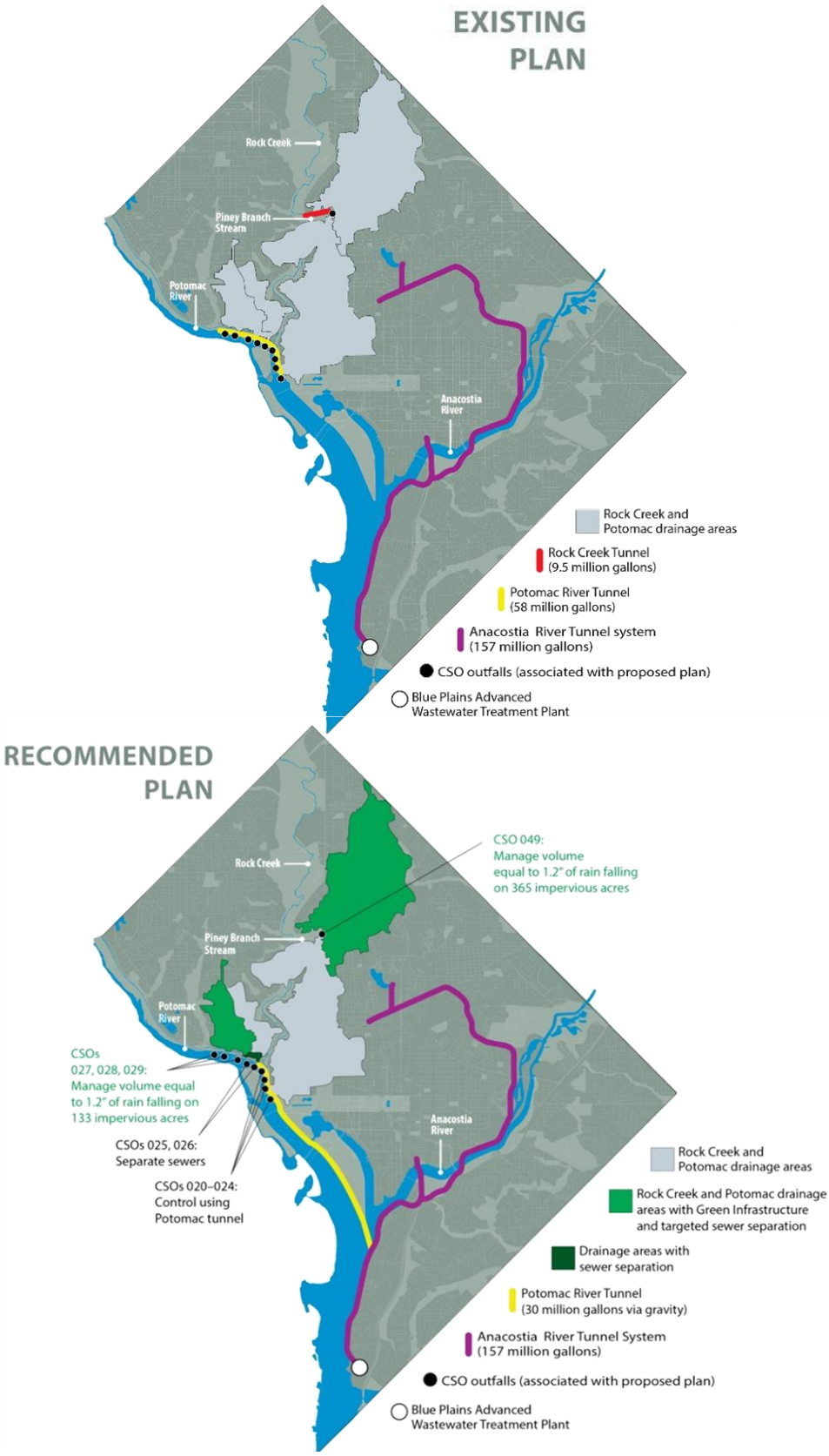

EXISTING PLAN
Rock Creek
Piney Branch Stream
Potomac River
Anacostia River
Rock Creek and Potomac drainage areas
Rock Creek Tunnel (9.5 million gallons)
Potomac River Tunnel (58 million gallons)
Anacostia River Tunnel system (157 million gallons)
CSO outfalls (associated with proposed plan)
Blue Plains Advanced Wastewater Treatment Plant
RECOMMENDED PLAN
Rock Creek
CSO 049: Manage volume equal to 1.2" of rain falling on 365 impervious acres
Piney Branch Stream
Potomac River
CSOs 027, 028, 029: Manage volume equal to 1.2" of rain falling on 133 impervious acres
CSOs 025, 026: Separate sewers
CSOs 020–024: Control using Potomac tunnel
Anacostia River
Rock Creek and Potomac drainage areas
Rock Creek and Potomac drainage areas with Green Infrastructure and targeted sewer separation
Drainage areas with sewer separation
Potomac River Tunnel (30 million gallons via gravity)
Anacostia River Tunnel System (157 million gallons)
CSO outfalls (associated with proposed plan)
Blue Plains Advanced Wastewater Treatment Plant

Figure3-1

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4 Financial Affordability Update

4.1 Background

From 1998 to 2001, DC Water developed its Draft LTCP. Following an extensive public comment period where more than 2,300 comments were received, DC Water finalized its LTCP in July 2002. On March 23, the LTCP Consent Decree was entered with the court requiring implementation of the LTCP.

As part of the development of LTCP, DC Water performed a financial affordability analysis based on information available at the time. The purpose of this document is to update the financial affordability analysis. This update is being performed for the following two main reasons:

Significant Changes Have Impacted the Burden on Ratepayers

Since the LTCP Consent Decree was entered in 2005, there have been significant changes that have impacted the burden on District ratepayers. These include, but are not limited to:

- Nitrogen Removal at Blue Plains' effluent to meet the Chesapeake Bay TMDL - this requirement was added to DC Water's NPDES permit in 2007. As a result of this requirement, DC Water implemented the Total Nitrogen Removal/Wet Weather Plan (TN/WW Plan) at a cost of nearly $950 million

- Biosolids Program – In order to achieve a sustainable program for biosolids from Blue Plains Wastewater Treatment Plant, DC Water is implementing a biosolids program. The program includes construction of Cambi digesters which will allow production of Class A biosolids.

- Increased costs for DC Clean Rivers Project – The DC Clean Rivers Project is a $2.6 billion program. This is more than the original estimate in 2002 when the LTCP was finalized.

- Schedule acceleration of Anacostia River Tunnel – In July and September 2102, severe flooding impacted the Bloomingdale and LeDroit park neighborhoods in the Northeast Boundary Sewershed tributary to the Anacostia River. As a result of this, the Anacostia River Projects tunnel facilities have been accelerated in schedule to provide earlier flood mitigation than originally included in the Decree. The First Street tunnel will be placed in operation in 2016 instead of 2025 and the complete Northeast Boundary Tunnel system is scheduled to be placed in operation in 2022 instead of 2025. This has significantly impacted spending on the program

- Infrastructure renewal – The sewer system in the District is extremely old, with some sewers constructed as early as the 1870's. The median age of sewers in the District is over 70 years old. Given this, a significant rehabilitation and renewal program is underway to preserve and improve the sewer system.

Financial Affordability Guidance has Changed

The financial analysis performed as part of the development of the LTCP was based on EPA's CSO guidance document (*Combined Sewer Overflows - Guidance for Financial Capability Assessment and Schedule Development*, Feb 1997, EPA 832-B-97-004). This approach essentially uses 2% of median household income as the threshold for affordability for sewer rates. This approach to measure ratepayer affordability has come under scrutiny with organizations such as the American Water Works Association (AWWA) and the Water Environmental Federation (WEF) recommending alternative approaches.

In response to these issues including the increased financial burdens imposed on water agencies and communities, EPA has also recognized the need to incorporate greater flexibility in meeting Clean Water Act (CWA) requirements. In a January 13, 2013 Memorandum, the Agency clarified its policy going forward on affordability issues as well on using the integrated planning framework process to provide the regulated community with the necessary flexibility to meet CWA requirements while lessening the financial burden, especially to low income populations.

DC Water's complete affordability update is included in Appendix E and this section presents a summary of the results.

4.2 Affordability Measures for the District.

The 1997 Final EPA guidance presented methods for estimating the annual cost per household (for CSO capital expenditures) and for comparing that estimate against Median Household Income (MHI) to derive a "Residential Indicator" (RI). Although the 1997 guidance document did not prescribe a regulatory threshold ratio, it implied that sewer rates resulting in a typical residential bill exceeding 2 percent of MHI could be considered unaffordable.

EPA has acknowledged the increasing cost burden to communities of complying with the CWA, as well as the methodological limitations of using the RI as an indicator of affordability. As a result of these concerns, EPA issued a memorandum on January 13, 2013 that addressed financial affordability issues and clarified the Agency's policy going forward. The Agency's overall message, as articulated in the memorandum, was that EPA has developed, in cooperation with the regulated community, the "Integrated Planning Approach Framework" that "encourages municipalities to balance CWA requirements in a manner that addresses the most pressing health and environmental protections issues first." The memorandum also attempts to clarify that it is not EPA's policy that the RI, based on expenditures as a percentage of MHI, constitutes the sole measure of affordability. The Agency further emphasized that it is a "common misperception that the EPA requires communities to spend to a level of 2% of MHI to meet CWA obligations." Instead, EPA states that the percent MHI calculation should be considered along with a "suite of other financial indicators to assess the overall burden on a community."

DC Water evaluated the following factors to assess affordability:

- Sources of revenue for DC Water
- Current sewer rates and affordability based on MHI
- Household income distribution in the District\
- Poverty rates in the District

- Distribution of income and poverty by Ward
- Degree of public assistance or food stamp use
- Cost of living in DC compared to the national average

The analysis showed that the income distribution in the District is significantly skewed with a large percentage of households in poverty and in affluence, with lower amounts of households with middle incomes. The analysis also showed that the cost of living in the District is significantly higher than in the U.S., primarily due to elevated housing, transportation and food costs.

Given both the skewed distribution of household income and the high cost of living for District of Columbia residents compared to the national average, using 2 percent of unadjusted MHI as the threshold for unaffordability does not effectively capture the real burden of increasing sewer bill costs on low income populations. Considering affordability across a broader household income distribution provides the most accurate indication of how utility bills pose financial burdens to the population of customers.

Therefore, to assess affordability, DC Water used the following alternative criteria for the affordability measurements

- Unadjusted MHI
- Cost of Living Adjusted (COLA) MHI
- Unadjusted Upper Limit of the Second Quintile for Household Income
- COLA Adjusted Upper Limit of the Second Quintile for Household Income

4.3 Scenarios Evaluated

DC Water used its financial model to assess the impact of capital expenditures on rates. The financial model allows the user to enter annual capital outlays to determine the impact on revenue generation for DC Water and on ratepayer household incomes. The financial model was run for the following scenarios:

- Scenario 1 Original Consent Decree – this is the CIP that existed when the 2002 LTCP Decree was negotiated. This was evaluated using the measures of affordability described above

- Scenario 2 Status Quo CIP – this includes the current CIP with the Anacostia River Projects finishing in 2022, and the Potomac and Rock Creek Tunnels finishing in 2025

- Scenario 3 Constrained CIP – for this scenario, the Anacostia River Projects are completed in 2022, the Potomac Tunnel is completed in 2030, and the Potomac and Rock Creek GI projects are completed in 2032. To meet affordability limits, wastewater and sewer CIP projects were deferred.

4.4 Results

Table 4-1 presents the results of the rate model calculation for the various scenarios. Shaded values indicate wastewater costs more than 2% of income for the various scenarios listed.

Table 4-1
Results Summary - Predicted Sewer Bills as Percent of Income

	Scenario 1- Original Decree			Scenario 2 – Status Quo CIP			Scenario 3 – CIP Constrained by Upper Limits 2nd Quintile		Scenario 3 – CIP Constrained by Adjusted Upper Limit 2nd Quintile	
Year	% MHI	% Upper Limit 2nd Quintile	% Adjusted Upper Limit 2nd Quintile	% MHI	% Upper Limit 2nd Quintile	% Adjusted Upper Limit 2nd Quintile	% Upper Limit 2nd Quintile	% Adjusted Upper Limit 2nd Quintile	% Upper Limit 2nd Quintile	% Adjusted Upper Limit 2nd Quintile
FY2014	1.0	1.4	1.9	0.8	1.05	1.51	1.05	1.51	1.51	1.05
FY2015	0.9	1.2	1.7	0.91	1.21	1.73	1.15	1.64	1.64	1.15
FY2016	0.9	1.3	1.8	0.98	1.32	1.89	1.23	1.77	1.74	1.22
FY2017	1.0	1.4	1.9	1.04	1.42	2.03	1.32	1.90	1.85	1.29
FY2018	1.0	1.5	2.1	1.09	1.50	2.16	1.42	2.04	1.92	1.34
FY2019	1.1	1.5	2.2	1.15	1.60	2.29	1.53	2.19	1.99	1.39
FY2020	1.1	1.6	2.3	1.23	1.72	2.47	1.65	2.36	2.06	1.44
FY2021	1.2	1.8	2.5	1.31	1.85	2.65	1.77	2.54	2.14	1.49
FY2022	1.3	1.9	2.7	1.39	1.99	2.86	1.91	2.73	2.22	1.55
FY2023	1.3	2.0	2.8	1.44	2.08	2.98	1.98	2.83	2.31	1.61
FY2024	1.4	2.1	3.0	1.49	2.17	3.11	2.04	2.92	2.37	1.66
FY2025	1.2	1.9	2.7	1.54	2.27	3.25	2.10	3.01	2.39	1.67
FY2026	1.3	2.0	2.8	1.60	2.37	3.40	2.13	3.05	2.41	1.68
FY2027	1.3	2.0	2.8	1.59	2.38	3.41	2.16	3.10	2.42	1.69
FY2028	1.3	2.0	2.9	1.57	2.39	3.42	2.20	3.15	2.44	1.70
FY2029	1.3	2.1	2.9	1.56	2.40	3.43	2.23	3.20	2.46	1.72
FY2030	1.3	2.1	3.0	1.55	2.40	3.45	2.23	3.19	2.48	1.73
FY2031	1.4	2.3	3.2	1.54	2.41	3.46	2.22	3.18	2.49	1.74
FY2032	1.3	2.2	3.1	1.53	2.42	3.47	2.21	3.17	2.50	1.74

4.5 Conclusions

The following are the conclusions of the affordability update:

- Using a sewer bill threshold of 2 percent of MHI is a poor indicator for assessing affordability. In jurisdictions such as Washington, DC, not only are household incomes highly skewed but there has been an increasing divergence between high income households and low income households. From 2006 to 2012, for example, MHI grew more than 28 percent while household incomes at the upper limit of the second quintile grew only 20 percent. Consequently by 2011 the MHI was 25 percent higher than the upper limit of the second quintile.

- Evaluating the financial impacts of DC Water's CIP on the ratepayer base found that impacts to lower income households become much more apparent when the upper limit of the second quintile is used than when using the 2 percent of MHI threshold. With the COLA factor taken into account, forecasted sewer bills become unaffordable to 40 percent of the households as soon as 2018.

- The impacts on ratepayers for the Status Quo CIP (Scenario 2, CSO Projects completed by 2025) are significantly worse than projected when the LTCP Consent Decree was entered and negotiated.

- The analysis showed that extension of both the Consent Decree schedule and deferment of other sewer and wastewater projects is necessary to maintain affordable rates. To achieve CSO control as early as possible, we evaluated engineering constraints and determined that extending the Potomac River Tunnel schedule by five years and the GI schedule by seven years would result in the earliest practical and technically achievable schedules for CSO control. Given this schedule constraint, DC Water determined that more than $2.5 billion dollars of other sewer and wastewater projects must be deferred between 2014 and 2032 to meet the affordability criteria established by the analysis. Given that average sewer age will be approaching nearly 100 years by 2032, this deferment of other projects inevitably presents risks to customer service, environmental protection, and management of infrastructure. DC Water balanced these risks with our obligations to complete the CSO control program as soon as is practicable when we developed the proposed schedule for CSO control described in this report.

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5 Public Comments and Responses

5.1 Introduction

As part of DC Water's proposal for a Long Term Control Plan Modification for Green Infrastructure (LTCP Modification), a public comment period was instituted from January 12, 2014 through April 14, 2014. A public outreach program was conducted to provide information about the proposed modification and to solicit public comments. This section summarizes the outreach conducted, the comments received and the revisions made to the draft plan in response to comments.

5.2 Public Outreach

Public outreach was facilitated via notifications and advertisements disseminated using distribution channels including press releases, print and social media, DC Water's website, emails and mailings. The following summarizes public outreach conducted:

- Washington Post Legal Notice
  A legal notice was placed in the Washington Post on January 12, 2014. The notice described the purpose of the LTCP modification, indicated where additional information could be obtained and the method and deadline for submitting comments. A second legal notice was placed in the Washington Post on March 9, 2014 extending the public comment period to April 14, 2014.

- Public Information Depositories
  Hard copies of the "*Long Term Control Plan Modification for Green Infrastructure*" Document and its Executive Summary, were made available for review from January 22 through April 14, 2014 at the reference desks of the following libraries in District of Columbia neighborhoods:
  - Capitol View Library - 5001 Central Avenue, SE
  - Mount Pleasant Library - 3160 16th Street, NW
  - Rosedale Library - 1701 Gales Street, NE
  - William O. Lockridge/Bellevue Library - 115 Atlantic Street, SW
  - Martin Luther King, Jr. Library Room 307 - 901 G Street, NW
  - Southeast Library - 403 7th Street, SE
  - Shepherd Park Library - 7420 Georgia Avenue, NW
  - Tenley-Friendship Library - 4450 Wisconsin Avenue, NW
  - Lamond-Riggs Library - 5401 South Dakota Avenue, NE

- Web Site
  The proposed modification, public meeting dates and an on-line survey were placed on the DC Water website on a dedicated web page. A link through the DC Water homepage and its rotating banner were also implemented to facilitate easier access. During the comment period, the webpage overall statistics recorded 3,623 sessions and 2527 new users. Visitors to the

site were also provided links to the following:

- YouTube video of General Manager Hawkins' presentation at the January 22, 2014 GI Summit
- Informational presentation slides presented at DC Water sponsored public meetings
- January 22, 2014 GI Summit slides
- February 18 and 20, 2014 GI Public Meetings
- March 5, 2014 Poplar Point and GI Public Meeting
- February 19, 2014 Kojo Nnamdi Show radio interview of General Manager Hawkins describing the proposed LTCP Modification

- Meetings
  DC Water conducted the meetings summarized below to share information regarding the proposed plan and to solicit public comments:
  - On January 22, 2014, DC Water hosted a Public Summit Meeting held at the Metropolitan Washington Council of Governments. Attendees could review a series of 12 stations manned by DC Clean Rivers technical staff discussing various project components graphically represented on presentation boards. The meeting began with an overview of the proposed amendments and supporting justification presented by General Manager George Hawkins, followed by a question and answer period.

  - On Tuesday, February 18, 2014, DC Water hosted a public meeting in support of its Green Infrastructure proposal at Georgetown Visitation Preparatory School, located at 1524 35th Street, NW. The meeting was held in the 2nd floor New Founders Hall. Attendees could review a series of 12 stations manned by DC Clean Rivers technical staff discussing various project components graphically represented on presentation boards. The meeting began with an overview of the proposed amendments and supporting justification presented by General Manager George Hawkins, followed by a question and answer period.

  - On Thursday, February 20, 2014, DC Water hosted a public meeting in support of its Green Infrastructure proposal at Petworth Public Library, located at 4200 Kansas Avenue, NW. Attendees could review a series of 12 stations manned by DC Clean Rivers technical staff discussing various project components graphically represented on presentation boards. The meeting began with an overview of the proposed amendments and supporting justification, followed by a question and answer period.

  - On Thursday, February 27, 2014, DC Water hosted a public meeting in support of its Northeast Boundary Tunnel Project/Green Infrastructure proposal at McKinley Technology High School, located at 151 T Street, NE.

  - On Tuesday, March 4, 2014, DC Water attended the monthly meeting of ANC 2E to discuss its Green Infrastructure proposal for the Georgetown community. The meeting was held at Georgetown Visitation Preparatory School, located at 1524 35th Street, NW, in the 3rd floor Founder's Hall.

- On Tuesday, March 4, 2014, DC Water attended the monthly meeting of ANC 4A to present its Green Infrastructure proposal. The location of the meeting was held at Fort Stevens Recreation Center, located at 1327 Van Buren Street, NW.

- On Wednesday, March 5, 2014, DC Water hosted a public meeting in support of its Poplar Point Pumping Station Replacement Project/Green Infrastructure proposal at United Planning Organization-Ralph Waldo "Petey" Greene Community Service Center, located at 2907 Martin Luther King, Jr. Avenue, SE.

- On Wednesday, March 12, 2014, DC Water attended the monthly meeting of ANC 4C to present its Green Infrastructure proposal. The meeting was held at Petworth Public Library, located at 4200 Kansas Avenue NW.

- On Wednesday, March 12, 2014, DC Water conducted a briefing on its Green Infrastructure plan to the Construction Management Association of America at the Frank D. Reeves Center, located at 2000-14th Street, NW.

- On Thursday, March 13, 2014, DC Water attended the monthly meeting of ANC 3B to discuss the water quality and cost implications of its Green Infrastructure proposal. The meeting was held at Stoddert Elementary School, located at 4001 Calvert Street, NW.

- On Thursday, March 13, 2014, DC Water attended the monthly meeting of ANC 3E to present its Green Infrastructure proposal. The meeting was held at Woodrow Wilson High School, located at 3950 Chesapeake Street, NW.

- On Thursday, April 3, 2014, DC Water's Clean Rivers Project team attended the 5th Annual Ward 2 Town Hall co-hosted by DC Water General Manager George Hawkins and District Councilmember Jack Evans to provide information and address inquiries pertaining to the proposed Green Infrastructure plan. The meeting was held at Francis-Stevens Education Campus, 2425 N Street NW.

- On Wednesday, April 9, 2014, DC Water's Clean Rivers Project team attended the 5th Annual Ward 8 Town Hall Meeting co-hosted by DC Water General Manager George Hawkins and District Councilmember Marion Barry to provide information and address inquiries pertaining to the proposed Green Infrastructure plan. The meeting was held at United Planning Organization's Ralph Waldo "Petey" Greene Community Service Center, 2907 Martin Luther King Jr. Avenue SE.

- On Thursday, April 10, 2014, DC Water's Clean Rivers Project team attended the 5th Annual Ward 4 Town Hall Meeting co-hosted by DC Water General Manager George Hawkins and District Councilmember Muriel Bowser to provide information and address inquiries pertaining to the proposed Green Infrastructure plan. The meeting was held at Shepherd Elementary School, 7800 14th Street NW.

- Social Media
  DC Water posted the Draft LTCP Modification release, meeting notices and the public comment period extension on both DC Water Twitter and Facebook. In addition, two Facebook ads and two promoted tweets were completed to promote the modification to a wider audience. Also, General Manager Hawkins' videotaped presentation at the Green Infrastructure Summit was posted on YouTube (https://www.youtube.com/-watch?v=JkUJH0Tdh3o) and received 167 visits.

- Public Information Materials
  DC Water created multiple dedicated materials for use in the LTCP Modification public comment period including:

  - 600 informational brochures were printed and distributed at public meetings and events
  - Direct mail or ebill inserts were sent to 120,000 DC Water customers between January and April 2014
  - Comment cards were distributed to approximately 600 attendees at the Public Meetings
  - Reference to the LTCP Modification proposal and its comment period was also provided in the "*DC Water Biannual Report April 2014 Combined Sewer Overflow (CSO) Control Activities Clean Rivers Project News*" newsletter which had ongoing mailings to 120,000+ customers between the end of March and end of April, 2014.

- On-Line Survey
  Seventy-one individuals responded to one or more questions and 51 provided narrative comments.

- Earned Media
  Outreach was conducted to several key DC reporters and bloggers to brief them on the proposed Modification. DC Water General Manager George Hawkins was interviewed live on February 19, 2014 by WAMU's Kojo Nnamdi (http://thekojonnamdishow.org/shows-/2014-02-18/dc-water-proposes-green-infrastructure).

  In addition, the following media printed stories about the LTCP modification proposal:

  - *'Green' Modifications Proposed to D.C. Clean-water Plan; Environmentalists are Skeptical*, Mike DeBonis, Washington Post, January 23, 2014 (http://www.washingtonpost.com/local/dc-politics/green-modifications-proposed-to-dc-clean-water-plan-environmentalists-are-skeptical/2014/01/23/e4c43068-8459-11e3-bbe5-6a2a3141e3a9_story.html).

  - *DC Water Proposal Would Swap Tunnels for Green Infrastructure*, Washington City Paper/Housing Complex Blog, posted by Aaron Wiener on January 22, 2014 at 5:35 pm. (http://www.washingtoncitypaper.com/blogs/housingcomplex/2014/01/22/dc-water-proposal-would-swap-tunnels-for-green-infrastructure/).

- *DC Water Modifies Long Term Control Plan to Include Green Infrastructure* Civil+Structural Engineer webpost (http://www.cenews.com/post/2696/dc-water-modifies-long-term-control-plan-to-include-green-infrastructure).

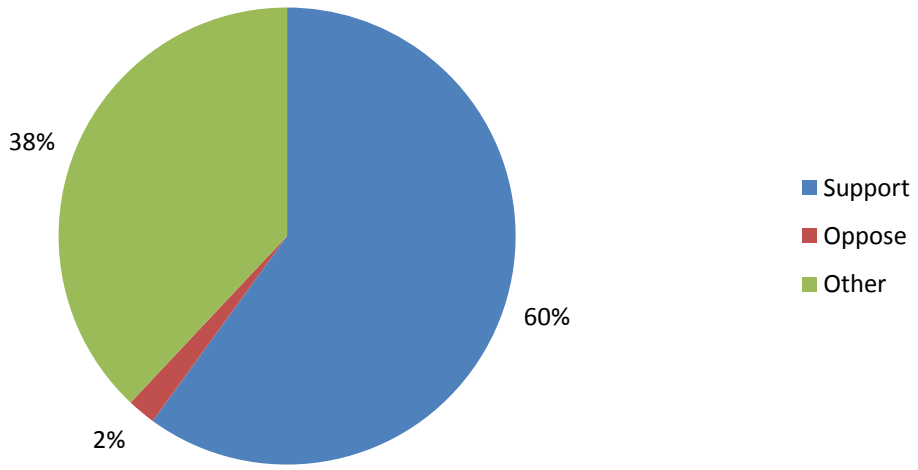
- Key Stakeholder Outreach
  Extensive outreach via phone and email was conducted to stakeholders announcing the LTCP Modification and seeking input including environmental, business and jobs training groups. Briefings were provided to ANCs, Mayor Gray, Congresswoman Norton, DC Councilmember Mary Cheh and key stakeholders. In addition, dedicated email invitations to the January 22, 2014 Green Infrastructure Summit, DC Water February 18 and 20, 2014 Public Meetings and DC Water Town Hall meetings were sent.

5.3 Public Comments

In response to the outreach, 366 commenters submitted 471 comments on the draft LTCP Modification for GI. The comments received have been bound in a separate report titled "*Public Comments, Long Term Control Plan Modification for Green Infrastructure*", DC Water, May 2015.

Figure 5-1 shows the disposition of the comments, with the majority of comments supporting the proposed modification. Comments considered to be "other" in nature covered a variety of topics including comments on other aspects of DC Water's operations, requests for information or suggestions for implementing the program.

Figure 5-1. Summary of Comments



Public Comments and Responses

Since a large number of comments were received and because there are significant degrees of overlap and common themes in the comments, the comments were grouped by type and subject matter and addressed together in a commentary type response. The goal of this approach is to produce a commentary that is both readable and comprehensive. The comments were grouped as being related to the following topics:

- Nature of Commitment
- Degree of Control
- Rates/ Financial
- Implementability
- Schedule
- Maintenance
- Implementation Strategies
- Miscellaneous
- General Opposition
- General Support

Appendix K provides a response to each type of comment received.

5.4 Modifications to Draft GI Plan in Response to Comments

As part of finalizing the LTCP Modification for GI, DC Water has made significant revisions to the draft plan. This section describes the major revisions made.

- **Nature of Commitment**
  DC Water's Proposed Draft LTCP Modification included committing $60 million for GI in Rock Creek and $30 million for GI for the Potomac CSOs 027, 028 and 029. This magnitude of expenditures was based on the estimated costs of the GI. A limit on the financial commitment was proposed given the uncertainties in terms of the cost to construct GI and in order to manage these risks to ratepayers. There was also precedent for a financial commitment in other enforceable documents such as New York City's order with the State of New York to construct GI.

  Some commenters indicated that a financial commitment would not ensure that the necessary amount of GI was constructed to provide the degree of CSO control required. These commenters suggested that the commitment to GI should be expressed in terms of acres of GI constructed, gallons stored, or a performance standard other than or in addition to a financial commitment.

  In response to these comments, DC Water has removed the limit on its financial commitment to GI and expressed the commitment in terms of constructing sufficient GI and targeted sewer separation to manage the volume of water produced by 1.2" of rain falling on the number of impervious acres specified for the applicable sewershed. This is a commitment to manage a specified volume of runoff and will ensure that the necessary amount of GI is in place in order to provide the degree of CSO control required.

- **Feasibility/Effectiveness of GI**
  Some commenters indicated that GI may not be feasible to construct at a sufficient application rate to provide the degree of CSO control needed, or may not be as effective as anticipated.

  Given the lack of large scale implementation of GI in the District, DC Water has revised the LTCP Modification to provide for constructing the first GI project in the Potomac and Rock Creek sewersheds and then evaluating GI in terms of constructability, operability, efficacy, public acceptability and cost effectiveness. If, based on that evaluation, it is determined that it is impractical to complete all of the specified GI projects by the specified deadlines, then DC Water would be required to construct the gray controls as specified in the LTCP Modification. Should this occur, DC Water would be required to construct the gray controls within the same timeframe allowed for GI so there is no extension of the time allowed for implementation. If GI is determined to be practicable after the first project, then DC Water will continue to implement the remaining GI projects by the specified deadlines.

- **Schedule**

  Some commenters suggested that the seven year extension was too long and advocated for a shorter schedule. In addition, some commenters urged DC Water to accelerate individual components of the controls where feasible.

  For GI, the schedule extension allows an adaptive management approach to be implemented to ensure that performance of the GI projects is optimized. Adaptive management means early GI projects will be monitored and assessed so that later projects are as practical and effective as possible. In response to comments, DC Water has evaluated the engineering, fiscal and practicality issues and has revised the modification to complete projects as early as practical. In addition, the separation at CSO 025 and 026 and Piney Branch Structure improvements have been substantially accelerated. The schedule revisions are summarized in Table 5-1.

  For the Potomac Tunnel, extra time in the schedule is needed compared to the original LTCP plan due to a new requirement to complete environmental studies, in view of the increased development in recent years along the Potomac River waterfront, and to mitigate the tremendous financial impacts on rate payers. It is therefore not feasible to shorten the schedule for the Potomac Tunnel earlier than 2030.

Table 5-1
Schedule Comparison

Facility	Place in Operation Deadline		Change
	Proposed Draft LTCP Modification	Recommended Final LTCP Modification	
Potomac River			
1. Separate CSO 025, 026	2032	2023	9 years earlier
2. Potomac GI	2028	2027	1 year earlier
3. Potomac Tunnel	2030	2030	No change
Rock Creek			
4. Piney Branch Diversion Structure Improvements	2032	2020	12 years earlier
5. Rock Creek GI	2032	2030	2 years earlier

- **Disruption due to Tunnel in Georgetown, NPS Property and Mall area**
  Some commenters expressed concern about potential disruption caused by tunneling, particularly in the Georgetown and National Park areas.

  The Proposed Draft LTCP Modification included a 21 million gallon, approximately 4,500 foot long Potomac Tunnel to capture CSOs 020-024, a new pumping station to empty the tunnel and the addition of 75 million gallon per day of capacity at the Tunnel Dewatering Pumping Station (TDPS) and Enhanced Clarification Facility (ECF) at Blue Plains. As part of the response to comments, DC Water has evaluated an approximately 23,000 foot long gravity Potomac Tunnel that would run from the Potomac River CSOs to connect to the Blue Plains Tunnel at Joint Base Anacostia-Bolling (formerly Bolling Air Force Base). This would eliminate the need for a tunnel dewatering pumping station for the Potomac Tunnel. This is advantageous because of the complexity of the station, the difficulty in siting such a facility in the vicinity of the National Mall area, long term operational and power requirements and costs and the need for a permanent building associated with a large deep pumping station. Because of the elimination of the pumping station, the gravity tunnel provides substantially less disruption both during and after construction.

  The gravity Potomac Tunnel also allows interconnecting the storage volumes of the Potomac and Anacostia River Tunnel Systems into one tunnel system, allowing any CSO on either water body access to the entire storage volume of both tunnels. DC Water's analyses have demonstrated that a 30 million gallon gravity Potomac Tunnel for CSO 020-024 connected to the Blue Plains Tunnel provides a degree of CSO control equal to the LTCP without the need to expand the Blue Plains Tunnel Pumping Station and wet weather treatment system. Because the gravity tunnel offers greater reliability and avoids a new pumping station, the gravity tunnel is the recommended plan.

- **Stewardship for Ratepayer Dollars**
  Some commenters expressed concern over affordability for ratepayers.

  DC Water is acutely aware of the heavy financial burden bourn by District ratepayers to implement the DC Clean Rivers Project and has taken steps to both mitigate and spread out water rate increases over time. Unfortunately, this is not discretionary spending by DC Water but is mandated to comply with the Clean Water Act through a Federal Consent Decree signed by the Department of Justice, EPA, the District of Columbia and DC Water. The Final LTCP Modification will mitigate rates to the extent possible by extending the schedule for the Potomac Tunnel, thereby slowing the rate of increase in rates compared to what otherwise would be required.

- **Maintenance**
  Some commenters expressed the importance of maintenance in assuring the GI is effective over the long term.

  DC Water will perform maintenance or will arrange for others to perform maintenance of all GI implemented to control CSOs. DC Water will be ultimately responsible to ensure that

maintenance is performed adequately to maintain the CSO reduction functions of the GI. DC Water also anticipates that this will be a requirement included in its National Pollutant Discharge Elimination System (NPDES) Permit issued by EPA.

- **Support for Green Jobs**
  Some commenters supported the long term economic benefits of GI, specifically the ability to make jobs more accessible to unemployed local residents. This is especially true considering labor required to construct the facilities, as well as that required for long term maintenance.

  GI will increase opportunities for local, green jobs both for construction and for long term maintenance of the facilities. DC Water will work to promote green jobs with a living wage for local residents. Activities may include establishing a certification program for GI jobs, partnering with organizations to provide training that ultimately leads to certification, conducting outreach in the District and partnering with local organizations.

6 Proposed LTCP Modifications for Green Infrastructure

6.1 Changes to CSO Controls/Schedule

In order to proceed with the hybrid green/gray controls for the Potomac River and GI for Rock Creek's Piney Branch sewershed, modification of the LTCP is required. Proposed changes to the LTCP are summarized below:

Potomac River CSO Controls

- Require implementation of GI and targeted sewer separation to control CSOs 027, 028, and 029 with the facilities managing volume of water runoff produced by a 1.2" of rain falling on 133 impervious acres. Phased implementation of GI would be required, with all facilities being placed in operation by 2027.
- Indicate that DC Water has awarded a contract for preparation of an Environmental Impact Statement for the Potomac Tunnel.
- Change the deadline for start of the Facility Plan for the Potomac Tunnel from 2015 to 2017
- Require the construction of a 30 million gallon tunnel to control CSOs 020, 021, 022 and 024 with facilities being placed in operation by 2030. Drain the tunnel by gravity to the Blue Plains Tunnel.
- Require the construction and evaluation of the first GI project in the Potomac sewershed to determine its practicability. If, based on that evaluation, GI is determined to be impracticable, require the construction of a 40 million gallon Potomac Tunnel in lieu of the 30 million gallon tunnel and require CSOs 027, 028 and 029 to be controlled by the tunnel. If GI is determined to be practicable after the first project, require the continued implementation of GI.
- Require sewer separation of CSOs 025 and 026 by 2023 to eliminate these outfalls from the combined sewer system.
- Delete the requirement to consolidate CSOs 024 through 028 and replace this requirement with the other CSO controls described above.

Rock Creek CSO Controls

- Delete the requirement to construct the Piney Branch Tunnel.
- Require implementation of GI and targeted sewer separation to control Piney Branch CSO 049 with facilities managing the volume of water runoff produced by a 1.2" of rain falling on 365 impervious acres. Phased implementation of the GI would be required, with all facilities being placed in operation by 2030.
- Require the construction and evaluation of the first GI project in Rock Creek to determine its practicability. If, based on that evaluation, GI is determined to be impracticable, require the construction of 9.5 million gallons of storage for Rock Creek's Piney Branch CSO 049. If GI is determined to be practicable after the first project, require the continued implementation of GI.

Low Impact Development-Retrofit

- Delete the requirement for DC Water to review current LID and LIDR information to determine if the sizes of the Potomac and Piney Branch tunnels can be reduced with the installation of LID and LIDR.

Other

- Require DC Water and the District to cooperate and coordinate efforts to facilitate implementation of GI in the District.

Case Study #1: DC Water CSO LTCP
Attachment 1-3
DC Water's 2012 Inter-Municipal Agreements

BLUE PLAINS INTERMUNICIPAL AGREEMENT of 2012

[Effective: 4/3/13]

Among the

District of Columbia
District of Columbia Water and Sewer Authority
Fairfax County, Virginia
Montgomery County, Maryland
Prince George's County, Maryland
Washington Suburban Sanitary Commission

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BLUE PLAINS INTERMUNICIPAL AGREEMENT OF 2012

PREAMBLE

THIS BLUE PLAINS INTERMUNICIPAL AGREEMENT OF 2012, is made among the **DISTRICT OF COLUMBIA** (District)**,** the **DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY** (DC Water), **FAIRFAX COUNTY, Virginia** (Fairfax), **MONTGOMERY COUNTY**, **Maryland** (Montgomery), **PRINCE GEORGE'S COUNTY, Maryland** (Prince George's), and the **WASHINGTON SUBURBAN SANITARY COMMISSION** (WSSC), collectively, "the Parties." This Agreement shall be known as "this IMA" or "the 2012 IMA."

Witness:

WHEREAS, the Parties desire to protect the fish, wildlife, scenic and recreational qualities of the Chesapeake Bay, the Potomac River estuary, the Anacostia River, and other tributary waters, pursuant to the federal Clean Water Act, while providing wastewater collection and treatment services and related biosolids management for the Blue Plains Service Area (BPSA); and

WHEREAS, the District, Fairfax, Montgomery, Prince George's, and WSSC entered into the Blue Plains Intermunicipal Agreement of 1985 (the 1985 IMA) in order to resolve a variety of critical wastewater treatment, biosolids management, and cost allocation issues with the Blue Plains Wastewater Treatment Plant (Blue Plains); and

WHEREAS, much of the wastewater collection and all of the wastewater treatment and related biosolids management required by the 1985 IMA was provided by the District at Blue Plains until 1996, when the District created DC Water as an independent authority with regional responsibilities to provide these and other services through the operation and management of Blue Plains and Other Associated Facilities; and

WHEREAS, the District holds title to the real property, appurtenances, and fixtures of Blue Plains; and

WHEREAS, DC Water is the National Pollutant Discharge Elimination System (NPDES) permit holder for and operates Blue Plains; and

WHEREAS, WSSC is an agency created by the State of Maryland to provide water supply and wastewater collection and treatment and biosolids management services to Montgomery and Prince George's, whose governments each appoint three (3) of WSSC's six (6) Commissioners; WSSC, on behalf of the residents of Montgomery and Prince George's, contributes their allocated share of costs of wastewater services provided by DC Water; and

WHEREAS, the District, Fairfax, Montgomery, and Prince George's are governments, which have cooperated to provide wastewater collection and treatment and biosolids management to protect the public health of their residents and to provide the infrastructure necessary to realize their respective current and long-range planning

and development goals; additionally Fairfax purchases wastewater services directly from DC Water and retails such services to Fairfax customers; and

WHEREAS, the District and DC Water have individual service agreements with other entities, known as Non-Party Users, that have defined Allocated Flow Capacity within the IMA but are not Signatories to the IMA, and Fairfax and WSSC also have individual service agreements with other entities, known as Indirect Users, that share a portion of Fairfax or WSSC's Allocated Flow Capacity within the BPSA; and

WHEREAS, DC Water represents the interests of the Non-Party Users and is responsible for enforcing any Limited Party Agreements with Non-Party Users, whether those agreements are in the name of DC Water or the District, and Fairfax and WSSC are responsible for enforcing any Limited Party Agreements which they have with Indirect Users; and

WHEREAS, the existing institutional arrangements for wastewater treatment, biosolids management, and for Capital Cost and Operating and Maintenance (O&M) Cost allocations among the Parties set forth in the 1985 IMA had their origin in a series of agreements dating back to the 1950s; and

WHEREAS, the Parties have demonstrated their willingness to share in the burdens associated with the demands of regional wastewater collection and treatment and biosolids management for the BPSA; and

WHEREAS, the Parties desire to establish an equitable arrangement for allocating Capital Costs in relationship to their Allocated Flow Capacity and for allocating O&M Costs in relationship to their Actual Flows, with the potential need to allocate certain costs based on factors not linked to capacity allocation or flow (e.g. loadings); and

WHEREAS, the Parties desire to improve and formalize mechanisms for continued cooperation, coordination and communication among the Parties, including capacity planning and technical input regarding Blue Plains and Other Associated Facilities and the BPSA; and

WHEREAS, the Parties desire to provide for a continuing water quality monitoring and evaluation program to address Potomac River estuary, Anacostia River and Chesapeake Bay water quality issues, as well as to recognize the continued need for long-term regional water quality planning, wastewater planning, and biosolids management planning for the BPSA and the region as a whole; and

WHEREAS, the Parties desire to set forth their rights, obligations and responsibilities with respect to the use and management of facilities necessary for wastewater collection and treatment and for biosolids management for the BPSA; and

WHEREAS, the Parties acknowledge that changing conditions may require modifications to Allocated Flow Capacity, Peak Flow Limitations and cost allocations as well as constraints on loadings and potential load allocations; and

WHEREAS, the Parties acknowledge the need for flexibility and expedited responsiveness concerning many issues of wastewater collection and treatment systems and facilities, and biosolids management issues within the BPSA and, to that end, desire to authorize the use of Derivative Agreements to implement the intent of the Parties.

NOW, THEREFORE, the undersigned Parties agree that

1. This Blue Plains Intermunicipal Agreement of 2012 (this IMA) is entered into for the purposes of:
   a. Allocating the wastewater treatment capacity of Blue Plains and Other Associated Facilities and related peak flows for the collection system;

   b. Equitably allocating the Capital Costs of wastewater treatment and biosolids management;

   c. Equitably allocating O&M Costs;

   d. Defining the responsibilities of pretreatment and operational requirements and biosolids management;

   e. Defining the process of making future wastewater capacity planning decisions, including addressing load allocations;

   f. Providing a mechanism for continuing coordination, cooperation and communication; and

   g. Providing environmental stewardship.

2. Upon signing of this IMA by all Parties, this IMA shall replace the 1985 IMA, and as of such date the 1985 IMA shall be of no further force and effect, and the Blue Plains Regional Committee shall become the Regional Committee created by this IMA.

3. The terms used in this IMA are defined in **Section 12. Glossary**.

4. The headings used in this IMA are for reference purposes only.

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SECTION 1. KEY PRINCIPLES

The provisions of this IMA, and the Derivative Agreements created to implement it, are based upon certain Key Principles. This IMA and the Derivative Agreements shall be governed by and consistent with these Key Principles. These Key Principles shall guide any interpretation or dispute resolution process.

1. **Ensure Best Management -** The Parties commit to continued cooperation, coordination and communication to ensure the best possible management of all Multi-Jurisdiction Use Facilities (MJUFs), including Blue Plains and Other Associated Facilities for the benefit of the District, Fairfax, Montgomery and Prince George's and their residents. In this regard, the Parties acknowledge that, irrespective of their individual agreements with Non-Party Users and Indirect Users of Blue Plains, the Parties shall meet their contractual obligations under this IMA.

2. **Capacity Allocations and Peak Flow Limitations** - The wastewater treatment flow capacity and Peak Flow Limitations, and associated loadings for Blue Plains, are defined and allocated among the Parties and Non-Party Users as set forth in this IMA.

3. **Management of Flows and Loads** - The Parties agree to manage their flows in accordance with their Allocated Flow Capacity and associated Peak Flow Limitations, and overall loads in accordance with Blue Plains Design Load Capacities.

4. **Assessment of Capital Costs** - All Capital Costs associated with Blue Plains and Other Associated Facilities which are MJUFs, shall be assessed in relationship to the District's, Fairfax's and WSSC's and Non-Party Users' Allocated Flow Capacity, Peak Flow Limitations, or other approved Usage Allocation as may be agreed among the Parties. The methodologies and tools used to make those determinations are defined in this IMA. DC Water shall assess Capital Costs against Non-Party Users in accordance with applicable contracts. These Capital Costs shall include the costs associated with rehabilitation of or other improvements to existing facilities, as well as construction of new facilities.

5. **Assessment of Operating and Maintenance (O&M) Costs and Other Costs** - All O&M Costs associated with MJUFs and processes shall be assessed in relationship to the Parties' and Non-Party Users' Billing Flows, or other approved Usage Allocation as may be agreed among the Parties; and DC Water shall be responsible for O&M Costs of Non-Party Users. The Parties also bear financial responsibility for certain fines, penalties and claims.

6. **Costs of Biosolids Management** - The Parties accept individual and collective regional responsibility for the long-term viability of management for biosolids generated by Blue Plains, and agree to appropriately share the biosolids management Capital Costs in proportion to their Allocated Flow Capacity, and O&M Costs in proportion to their Billing Flows.

7. **DC Water's Responsibility for Operation of Blue Plains** - While DC Water shall afford the other Parties due opportunity to review and comment on important technical and financial issues that may affect the other Parties' rights and obligations under this IMA, or that may have regional implications, DC Water shall continue to exercise its discretion and judgment with regard to the operation, maintenance and management of Blue Plains and Other Associated Facilities.

8. **Agreement to Cooperate with DC Water -** The Parties have historic, current and future responsibilities for the effective and efficient development of the region, and the provision and maintenance of the region's infrastructure, including wastewater collection and treatment, and biosolids management within the BPSA. These interconnected responsibilities require the close cooperation and collaboration by the other Parties with DC Water.

9. **Assessment of Projected Flow Capacity Needs and Future Expansion** - The Parties recognize that the wastewater flow capacity and loading requirements for all Parties and Non-Party Users within the BPSA must be assessed periodically and plans made to provide adequate wastewater collection and treatment facilities. They further recognize that the District shall always possess wastewater treatment capacity at Blue Plains sufficient to meet its Projected Flow Capacity Needs; and, therefore, that all future Projected Flow Capacity Needs may or may not be able to be met at Blue Plains. The Parties agree to establish procedures to define these Projected Flow Capacity Needs, identify options to provide for these needs, agree on time frames for notification and actions, and agree on the allocation of capacity and costs. The District has no obligation to expand the currently authorized capacity or loadings of Blue Plains, although an expansion option is not precluded. The Parties may decide to expand Blue Plains or Other Associated Facilities, or accommodate such future flows at facilities other than Blue Plains, based on a Jointly Managed Study. The Parties (and Non-Party Users, as appropriate) agree to share the costs of an expansion at Blue Plains or Other Associated Facilities, or at any other facilities, based on agreed upon capacity and loading allocations, and associated Peak Flow Limitations.

10. **Protection of Water Quality** – Stewardship and protection of the water quality of the Potomac River estuary, the Anacostia River, and contributing to the health of the Chesapeake Bay are fundamental values of the Parties. Achieving these goals is an inherent function of Blue Plains, manifested through its NPDES permit.

11. **Effect and Amendment of this IMA and Derivative Agreements** - This IMA remains in effect until June 30, 2111, unless amended, replaced or terminated earlier by mutual consent of all the Parties. The Parties may amend this IMA in accordance with its terms. The Parties may create, amend or terminate any associated Derivative Agreements addressing implementation of this IMA, as provided in this IMA. Certain agreements, set forth in the Appendix, which were suspended, extinguished or superseded by the 1985 IMA, are extinguished and superseded by this IMA.

12. **Dispute Resolution** - The Parties agree to a dispute resolution process to resolve differences regarding interpretation of or disputes regarding this IMA or the Derivative Agreements.

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SECTION 2. GOVERNANCE

A. LEVELS OF AUTHORITY

The physical and financial interdependence of Blue Plains and Other Associated Facilities requires regular forums where technical, policy and financial issues affecting more than one Party can be presented and discussed, and where differences and disputes can be resolved. The Parties agree that they shall make every effort to achieve consensus decisions. In fulfilling these responsibilities, the Parties may proceed or act at three different levels of authority: (1) the policy level, (2) the administrative level or (3) the technical level.

B. AUTHORITY TO ACT AND GENERAL PARTY RESPONSIBILITIES

1. **Basis** - Authority for action or decision by each member of the three (3) bodies identified herein as levels of governance is pursuant to applicable enabling legislation, charter provisions or formal policies of each Party.

2. **General Party Responsibilities**
   a. Unless otherwise stated herein, each Party shall determine which of its officials or staff will act on its behalf.

   b. Unless otherwise stated herein, each Party shall be responsible for any notice to its officials, staff or constituents, pursuant to applicable legislation, charter provisions, or formal or informal policies of the Party.

   c. Consistent with the respective bylaws of the Leadership Committee and the Regional Committee, those Committees may allow observers invited by members of those committees to attend their meetings.

C. POLICY LEVEL: THE IMA SIGNATORIES

1. **Signatory** - The Signatories of this IMA are the highest level of officials of each Party, as designated below:
   a. District of Columbia – Mayor
   b. DC Water – Chairman, Board of Directors
   c. Fairfax County, Virginia – Chairman, Board of Supervisors
   d. Montgomery County, Maryland – President, County Council and County Executive
   e. Prince George's County, Maryland – Chair, County Council and County Executive
   f. Washington Suburban Sanitary Commission – Chair and Vice Chair

2. Each Signatory warrants that its signature is authorized.

3. Written agreement of the Parties, at the Signatory level, is required to revise, amend or terminate this IMA pursuant to **Section 10**.

4. Signatory review shall constitute the last or highest internal level of dispute resolution under **Section 10**.

D. ADMINISTRATIVE LEVEL: THE IMA LEADERSHIP COMMITTEE

1. **Composition** - The IMA Leadership Committee (the Leadership Committee) shall be composed of the governmental Chief Administrative Officers and the Operating Agencies' General Managers, i.e. six (6) members, consisting of one (1) member from each Party as designated below:
   a. District of Columbia – City Administrator
   b. DC Water – General Manager
   c. Fairfax County, Virginia – County Executive
   d. Montgomery County, Maryland – Chief Administrative Officer
   e. Prince George's County, Maryland – Chief Administrative Officer
   f. Washington Suburban Sanitary Commission – General Manager

2. **General Responsibility** - The Leadership Committee shall oversee the implementation of this IMA. The Committee shall convene at least annually to receive briefings and to resolve issues or endorse positions presented by the Regional Committee or a Party, including dispute resolution.

3. **Specific Functions** - The Leadership Committee is charged with overseeing this IMA which function includes, where appropriate or required, authorization, review and approval of:
   a. Derivative Agreements, except for Limited Party Agreements, and amendments to or termination of Derivative Agreements, except for Limited Party Agreements, entered into pursuant to **Section 11**, in order to address routine, procedural or operational elements of this IMA;

   b. Final interpretations of this IMA and Derivative Agreements for matters referred to it by the Regional Committee or when dispute resolution has been invoked;

   c. Action on issues covered by this IMA and Derivative Agreements that have a potential policy or fiscal impact on the Parties, or on the capability of Blue Plains to effectively provide wastewater treatment; and

   d. Other duties as set forth in this IMA.

4. **Procedures**
   a. The Leadership Committee shall act by the unanimous agreement of all of its members and formal action documented in minutes or other documents.

   b. The Leadership Committee may agree that certain decisions or actions implementing this IMA may be made by the unanimous agreement of the respective governmental Chief Administrative Officers or the unanimous agreement of the respective Operating Agency Representatives alone. The Parties acknowledge that Fairfax is both a governmental entity and an Operating Agency, and may participate in either subgroup as appropriate.

c. The Leadership Committee shall select a chair and develop procedures consistent with this IMA.

5. **Regional Committee Input** - The Leadership Committee may seek the recommendation of and request reports from the Regional Committee.

E. TECHNICAL LEVEL: THE IMA REGIONAL COMMITTEE

1. **Composition** - The IMA Regional Committee (the Regional Committee) shall be composed of 12 members, consisting of two (2) members from each Party.

2. **Appointment** - Members of the Regional Committee shall be appointed by the members of the Leadership Committee for their respective Party, and shall consist of professional staff representatives from each of the Parties.

3. **General Responsibilities**
   a. The Regional Committee is created for the purpose of assisting in the interpretation, administration and implementation of this IMA and to resolve issues pertaining to Blue Plains that are within the scope of this IMA and the Derivative Agreements.

   b. The Regional Committee shall identify issues relevant to the implementation and oversight of this IMA, and shall coordinate, review and consider appropriate actions for the effective provision of wastewater collection and treatment and biosolids management to support the current and future Projected Flow Capacity Needs of the BPSA.

   c. The Regional Committee shall make recommendations to the Leadership Committee and, where appropriate, to other entities with respect to the rights and obligations of the Parties.

   d. The Regional Committee shall make decisions and take actions as delegated to it by the Leadership Committee.

4. **Specific Functions** - The Regional Committee is responsible for the following:
   a. Implementing this IMA and Derivative Agreements, including:
      1) Recommendations on policy issues;

      2) Initial resolution of disputes associated with implementation;

      3) Providing recommendations to the Leadership Committee on amendments to this IMA;

      4) Providing recommendations to the Leadership Committee on creation, modification or termination of Derivative Agreements to address routine, procedural or operational elements of this IMA;

5) Providing guidance and recommendations for any other issues that may arise within the scope of this IMA.

b. Evaluating the terms of agreements with Non-Party Users and Indirect Users;

c. Evaluating population impacts, flow projections and service area boundaries;

d. Providing analysis of flow measurement and data collection efforts, as well as flow management programs and their flow capacity impacts;

e. Evaluating the Parties' flows and conformance with Allocated Flow Capacity and Peak Flow Limitations;

f. Defining and assessing the Parties' Projected Flow Capacity Needs, loading requirements and options;

g. Evaluating proposals regarding any capacity reallocation;

h. Evaluating proposed permit conditions, including potential capacity and financial impacts;

i. Establishing cost allocations for Capital Costs and O&M Costs of MJUFs;

j. Evaluating Blue Plains impacts and contributions towards meeting local and regional water quality goals;

k. Providing input and regional support for Blue Plains biosolids management program;

l. Evaluating the Parties' compliance with their requirements under Blue Plains Pretreatment Program;

m. Providing recommendations for DC Water's proposed "Capital Improvements Program Budget" and annual "Operating Budget" as they relate to MJUFs; and

n. Other duties as set forth in this IMA.

5. **Serve as a Forum** - The Regional Committee shall provide a forum for in-depth discussion and coordination regarding the wastewater and biosolids technical, policy and financial issues affecting Parties. Any Party may submit issues to the Regional Committee for review and comment prior to regional action or prior to Implementation by DC Water or any other Party.

6. **Procedures** - The Regional Committee shall act by the unanimous agreement of all of its members and formal action documented in minutes or other documents.

   a. The Regional Committee may agree that certain categories of decisions or actions may be made by the unanimous agreement of the representatives of the

governmental entities alone or the unanimous agreement of the Operating Agency Representatives alone. The Parties acknowledge that Fairfax is both a governmental entity and an Operating Agency, and may participate in either subgroup, as appropriate.

b. The Regional Committee shall select its own chair and develop its own procedures consistent with this IMA.

c. The Regional Committee shall meet at least quarterly.

d. The Regional Committee may create standing or ad-hoc subcommittees or work groups to address issues/topics as required. These subcommittees/work groups shall be responsible for addressing issues assigned to them, and for developing recommendations for the Regional Committee.

e. The Operating Agency Representatives are a subset of members of the Regional Committee and shall be a standing work group of the Regional Committee.

7. **Annual Work Program and Budget for Secretariat Services** - The Regional Committee shall recommend, and the Leadership Committee shall approve, an annual work program and budget, and an agreement with an entity to provide secretariat services for the Leadership Committee, the Parties and the Regional Committee to carry out their responsibilities under this IMA, as set forth in a Service Agreement.

8. **Annual Work Program and Budget for a Regional Water Quality Management Program** - The Regional Committee shall recommend, and the Leadership Committee shall approve, an annual work program and budget, and an agreement with an entity to address a regional water quality management program, as set forth in a Service Agreement.

9. **Regional Committee Communication with Parties** - On behalf of the Leadership Committee, the Regional Committee shall prepare an annual report to the Parties regarding the implementation of this IMA, and shall provide such other reports on its activities as the Leadership Committee or Signatories may require.

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SECTION 3. BLUE PLAINS PERMIT RESPONSIBILITIES AND TREATMENT PROCESS REQUIREMENTS

A. DC WATER'S OVERALL PERMIT RESPONSIBILITIES

As operator of Blue Plains and Other Associated Facilities, DC Water is responsible for monitoring pending federal, state and local statutory and regulatory developments; and for anticipating potential impacts on the Blue Plains National Pollution Discharge Elimination System (NPDES) permit, or other permit requirements, as a result of such developments. DC Water is also responsible for monitoring and analyzing other issues that can reasonably be expected to impact Blue Plains permit conditions, programs and process requirements. DC Water's assessment of these impacts shall include, but not be limited to, an assessment of the potential impacts on Blue Plains and Other Associated Facilities and Pretreatment Program requirements.

B. DC WATER'S NOTIFICATION RESPONSIBILITIES

If DC Water determines that any matter or issue in this **Section 3** may result in modification of permit conditions, programs or process requirements at Blue Plains and Other Associated Facilities, it shall determine the anticipated timing and potential financial impacts of such modifications on the Parties and Non-Party Users, and shall inform the Regional Committee. Potential financial impacts include Capital Costs, as well as O&M Costs. Once DC Water identifies the need for additional Capital Costs or O&M Costs, the other Parties shall have an opportunity to comment on the timing and other aspects of the projects prior to the projects proceeding.

C. INDIVIDUAL PARTY RESPONSIBILITIES

Each Party is responsible for its share of any financial commitment, including Capital Costs and O&M Costs, to address any modification of permit conditions, programs or process requirements at Blue Plains, as set forth in **Section 5**.

D. COLLECTIVE PARTY RESPONSIBILITIES

In addition to addressing the financial impacts of regulations, permit conditions, programs, and process impacts determined under this **Section 3**, the Parties agree to evaluate this IMA to determine if any elements, including, but not limited to, cost elements need to be amended.

E. REGIONAL WATER QUALITY MANAGEMENT PROGRAM SUPPORT

1. **Stewardship** - The Parties recognize their collective and regional responsibilities for the long-term protection of the Potomac River estuary and the Anacostia River water quality, and supporting restoration of the Chesapeake Bay; and responding to other environmental requirements impacting Blue Plains and Other Associated Facilities. The Parties agree to fulfill these objectives of regional water quality management planning, monitoring and modeling programs in the most cost-effective manner for Blue Plains.

2. **Program Activities** - The Parties shall actively support regional water quality and environmental programs to monitor and analyze state, federal and local water quality

management policies and regulations, as well as wastewater treatment and biosolids management technologies and permitting issues, and engage in policy and technical advocacy.

F. DERIVATIVE AGREEMENT – Derivative Agreements shall address additional matters set forth in this **Section 3**. They may be replaced or supplemented by successor or other Derivative Agreements.

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SECTION 4. BLUE PLAINS FLOW CAPACITY, LOADS, AND PEAK FLOWS - ALLOCATIONS AND LIMITATIONS

A. BLUE PLAINS ALLOCATED FLOW CAPACITY

1. **Basis for Capacity Allocations**
   a. The Allocated Flow Capacity for the District, Fairfax, WSSC, and Non-Party Users is defined in **Table 4-A** below**.**

   b. The Allocated Flow Capacity is based on Blue Plains current Design Flow Capacity and reflects the ability of Blue Plains to provide treatment of the incoming wastewater under Annual Average Hydrologic Conditions.

   c. It is recognized that the Captured Stormwater Flows (CSF) that receive treatment to meet the Combined Sewer Overflow Long-term Control Plan (CSO LTCP) requirements are not part of the District's Allocated Flow Capacity.

TABLE 4-A

BLUE PLAINS ALLOCATED FLOW CAPACITY	
ENTITIES	**ALLOCATIONS (MGD)**[1]
District of Columbia	152.50
Non-Party Users:	
Loudoun County Sanitation Authority, Virginia	13.80
Dulles Airport, Virginia	1.50
Town of Vienna, Virginia	1.50
Naval Ship Research & Development Center, Maryland	0.07
National Park Service, Maryland	0.03
Sub-total	16.90
District of Columbia – Total	**169.40**
WSSC[2] (for Prince George's County & Montgomery County), **Maryland – Total**	**169.60**
Fairfax County, Virginia[3] **- Total**	**31.00**
Grand Total – Blue Plains Design Flow Capacity	**370.00**

[1] Flows represent Annual Average Hydrologic Conditions.
[2] The Allocated Flow Capacity for WSSC is on behalf of Prince George's and Montgomery; with any sub-allocations determined by separate agreements between those entities. The WSSC allocation also includes wastewater from other political jurisdictions with which WSSC has separate agreements.
[3] The Allocated Flow Capacity for Fairfax also includes wastewater from other political jurisdictions with which Fairfax has separate agreements.

2. **Compliance with Capacity Allocations**
   a. The District, Fairfax and WSSC shall comply with their Allocated Flow Capacity.

   b. Compliance with the Allocated Flow Capacity by the District, Fairfax and WSSC shall be assessed based on their Adjusted Flow, and as calculated in **Operating Agreement #3.**

   c. Continued use of this Allocated Flow Capacity by the District, Fairfax, WSSC or Non-Party Users, however, shall be dependent on the respective entity making the financial contribution for its appropriate share of the Capital Cost and O&M Costs of all MJUFs in accordance with **Section 5**.

3. **Assessment of Future Needs** - Assessment of Projected Flow Capacity Needs for the District, Fairfax, WSSC and Non-Party Users, as compared to their Allocated Flow Capacity, shall be in accordance with **Section 7**.

4. **Compliance by Non-Party Users and Indirect Users**
   a. The District and DC Water shall use their best efforts to require Non-Party Users to comply with their Allocated Flow Capacity.

   b. Fairfax and WSSC shall use their best efforts to require Indirect Users to comply with their capacity allocations as defined under Limited Party Agreements with the Indirect Users.

   c. Irrespective of such efforts, all Parties shall be bound by their Allocated Flow Capacity.

5. **Conditions on Limited Party Agreements for a Transfer of Allocated Flow Capacity**
   a. Before a Limited Party Agreement, as permitted by **Section 11**, for a transfer of Allocated Flow Capacity can be executed:
      1) It must include terms which do not change the financial obligations required under this IMA to DC Water for the Allocated Flow Capacity being transferred; and

      2) It shall be reviewed by the Regional Committee to ensure, among other matters, that the proposed transfer does not change the rights and responsibilities of a Party as set forth in this IMA.

   b. Financial arrangements pursuant to a Limited Party Agreement for a transfer of Allocated Flow Capacity shall be determined by the involved parties.

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B. BLUE PLAINS EFFLUENT LOADS AND BLUE PLAINS EFFLUENT LOAD ALLOCATIONS

1. **Basis for Blue Plains Effluent Loads and Blue Plains Effluent Load Allocations** - The Blue Plains Effluent Loads and the associated Blue Plains Effluent Load Allocations shall be consistent with Blue Plains permit and as defined in **Operating Agreement #1**.

2. **Requirements for Transfers of Flow and/or Effluent Load Allocations Outside Blue Plains or BPSA**
   a. If the District, Fairfax or WSSC determine that it will divert any or all of its current or projected wastewater flows originating in the BPSA from Blue Plains, the associated Effluent Load Allocation may be transferred away from Blue Plains.

   b. The transfer of any Effluent Load Allocations away from Blue Plains, whether by the District, Fairfax, WSSC or by others, shall result in a proportionate reduction in the usable Allocated Flow Capacity of the Party(ies) having their Effluent Load Allocations reduced; unless additional Blue Plains Load Allocations or Blue Plains Load Offsets are obtained. This shall not result in a change to the Allocated Flow Capacities defined in **Table 4-A.**

C. BLUE PLAINS INFLUENT LOADS AND INFLUENT DESIGN LOAD CAPACITY

1. **Basis for Blue Plains Influent Loads**
   a. The pollutant loads from all influent wastewater flows to Blue Plains, their concentrations, associated flow characteristics, and related design assumptions are related to Blue Plains Influent Load(s) and are expressed as the Design Load Capacity, as defined in **Operating Agreement #1**.

   b. The Design Load Capacity is based on Blue Plains current Design Flow Capacity and reflects the ability of Blue Plains to provide treatment of the incoming wastewater under maximum year flow conditions.

2. **Compliance with Blue Plains Influent Loads** - The Parties shall work to ensure that pollutant loads from all influent flows do not exceed Design Load Capacity(ies), as defined in **Operating Agreement #1;** unless pollutant loads in excess of the Design Load Capacity(ies) have been determined by DC Water to not pose a potential risk of contributing to Blue Plains Permit violations.

D. MONITORING OF AND RECOMMENDATIONS REGARDING INFLUENT FLOWS AND LOADS

1. DC Water shall routinely sample and monitor influent loads and wastewater process performance, with input from the other Parties, to determine if and when either the collective or individual influent concentrations from each Party appear to exceed normal variations in influent wastewater strength as determined by DC Water.

2. Such assessments shall address, but not be limited to addressing wastewater and Captured Stormwater Flow contributions, as well as Inflow/Infiltration ("I/I") impacts on influent loads.

3. DC Water shall determine whether these variations have the potential to impact Blue Plains plant performance, permit compliance, Allocated Flow Capacity, Effluent Load Allocations, or the Design Load Capacity, and make recommendations to the Regional Committee.

4. DC Water shall review influent flow rates and influent loads compared to Design Flow Capacity and Design Load Capacity values, and recommend whether plant-wide influent loads may need to be sub-allocated to the District, Fairfax, WSSC and Non-Party Users, or if any adjustments to the Allocated Flow Capacities might be required in order to meet NPDES permit requirements.

5. The Regional Committee shall routinely review all of these matters to determine whether the rights and responsibilities of the Parties are affected, and to make necessary recommendations to the Leadership Committee regarding, but not limited to, the following: cost elements, Effluent Load Allocations, and/or Allocated Flow Capacity. These recommendations shall address potential assignments to the District, Fairfax and WSSC, individually or collectively, as well as to Non-Party Users.

E. BLUE PLAINS SERVICE AREA (BPSA) PEAK FLOW LIMITATIONS - GENERAL CONDITIONS

1. **Peak Flow Limitations** - The Peak Flow Limitations for metered points of connection between the collection systems of two (2) or more Parties within the BPSA are defined as follows:
   a. Potomac Interceptor (PI) and other interceptors for WSSC, Fairfax and Non-Party Users' flows to collection systems operated by DC Water - **Table 4-B**.

   b. Interceptors for WSSC flows to collection systems operated by DC Water – **Table 4-C.**

   c. Interceptors for District flows to collection systems operated by WSSC - **Table 4-D.**

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Table 4-B - PEAK FLOW LIMITATIONS[1] FOR WSSC, FAIRFAX COUNTY & NON-PARTY USERS FOR THE POTOMAC INTERCEPTOR & OTHER INTERCEPTORS OPERATED BY DC WATER, FAIRFAX AND WSSC

Jurisdiction / Agency Points of Connection	Flow Capacity (Annual Average in MGD)	Peak Flow Limitation (MGD)	Peak/ Average Ratio
WSSC			
Cabin John (to MUPI)[2]	**10.3**	**23.3**	**2.3**
Cabin John (to PI)	6.1	37.0	6.1
Muddy Branch	8.4	28.3	3.4
Watts Branch	5.8	16.5	2.8
Rock Run	1.3	5.6	4.3
Subtotal to PI	**21.6**	**87.4**	
WSSC Total to PI & UPI[3]	**31.9**	**110.7**	**3.5**
Fairfax County			
Sully Road #1	4.0	14.0	3.5
Sully Road #2	1.1	3.0	2.7
Rock Hill Road	0.9	2.4	2.7
Sugarland Run	4.0	14.0	3.5
Great Falls[4]	8.7	30.0	3.4
Scotts Run	2.9	10.2	3.5
Subtotal to PI	**21.6**	**73.6**	
Pimmit Run	9.4	35.0	3.7
Fairfax Total to PI & Pimmit Run	**31.0**	**108.6**	**3.5**
Loudoun County Sanitation Authority to PI	**13.8**	**31.9**	
Other Non-Party Users to PI	**3.1**	**7.2**	
Grand Total to PI	**60.1**	**200.1**	

-END OF PAGE-

[1] The Peak Flow Limitations and peak flow ratios for the Potomac Interceptor are acknowledged to be greater than design and modeling values.
[2] MUPI - Maryland Upper Potomac Interceptor
[3] UPI - Upper Potomac Interceptor
[4] This excludes the flow from the Town of Vienna, Virginia.

TABLE 4-C – PEAK FLOW LIMITATIONS FOR WSSC FOR OTHER INTERCEPTORS OPERATED BY DC WATER

Jurisdiction / Agency Points of Connection	Flow Capacity (Annual Average in MGD)	Peak Flow Limitation (MGD)
WSSC		
Little Falls Trunk Sewer	7.6	20.8
Rock Creek Main Interceptor[1] and Relief	33.5	56.6
Anacostia Forcemain & Project 89	83.2	185.0
Watts Branch Interceptor (Prince George's County)	1.3	5.9
Upper Oxon Run Trunk Sewer	6.1	15.6
Barnaby Branch	2.8	8.4
Owens Road	1.7	5.5
Indian Head Highway	1.5	5.3
TOTAL	**137.7**	**N/A**

TABLE 4-D – PEAK FLOW LIMITATIONS FOR THE DISTRICT FOR OTHER INTERCEPTORS OPERATED BY WSSC

Jurisdiction / Agency Points of Connection	Flow Capacity (Annual Average in MGD)	Peak Flow Limitation (MGD)
DISTRICT		
Point M-Kennedy St.	0.7	4.4
Point S-Fort Dupont St.	0.4	3.0
Point W-30th St.	0.7	4.8

2. **Basis for Peak Flow Limitations** - The Peak Flow Limitations, defined in **Table 4-B, Table 4-C, and Table 4-D**, have been developed consistent with the Allocated Flow Capacity for the District, Fairfax, WSSC and Non-Party Users, and reflect the maximum flows that have been determined (through modeling and historical observation of system performance) that the BPSA collection systems can convey without exceeding the capacity of the sewer system during wet weather conditions (e.g., rainfall or snowmelt events).

3. **Constraints on Peak Flow Limitations**
   a. The Peak Flow Limitations, defined in **Table 4-B, Table 4-C, and Table 4-D**, are predicated on the assumption that the District, Fairfax, and WSSC shall not make piping/service area modifications that would increase or significantly alter the character of the peak flows delivered to these points of connection.

[1] This includes that portion of Silver Spring Maryland which enters the Rock Creek Main Interceptor Sewer within the District.

b. If the District, Fairfax or WSSC proposes to make such modifications, they shall submit requests to DC Water, and DC Water will evaluate the request to determine whether such modifications can be accommodated.

c. The District, Fairfax and WSSC shall manage their systems or flow management so that the peak flows or sustained peak flows are consistent with historical patterns and assumptions underlying the Peak Flow Limitations, as determined by DC Water.

4. **Adjustments to Peak Flow Limitations**

a. The peak flows from the District, Fairfax or WSSC can exceed their Peak Flow Limitations for any point of connection, as defined in **Table 4-B**, **Table 4-C,** and **Table 4-D,** if their Adjusted Flow does not exceed their Allocated Flow Capacity and if there are no adverse hydraulic impacts to the affected interceptors. Any peak flow shaving facilities or operations must be approved by DC Water with respect to proposed peak flow rates, duration, and overall interceptor system capacity.

b. DC Water shall routinely monitor all peak flows within the BPSA collection system, determine appropriate action for any problems which arise, and make recommendations to the Regional Committee, consistent with **Section 6**. Specific details for how this monitoring and assessment shall be conducted are described in **Operating Agreement #3.**

c. Should future model analysis or observation of system performance indicate a need to revise these Peak Flow Limitations, the affected Parties shall support appropriate modifications to these limits, or to the system to ensure compliance with permit and other legal and Operational Requirements.

5. **Compliance by District, Fairfax and WSSC with Peak Flow Limitations**

a. Except as otherwise provided herein, the District, Fairfax and WSSC shall comply with their Peak Flow Limitations at the various points of connection.

b. Continued use of these Peak Flow Limitations by the District, Fairfax and WSSC, however, shall be dependent on that entity making the financial contribution for its appropriate share of the Capital Cost and O&M Costs of all MJUFs in accordance with **Section 5**.

c. The Parties shall ensure that the District, Fairfax and WSSC's collection systems limit the amount of I/I entering these systems. Collection systems shall be maintained so that I/I volumes do not contribute to exceedances of the Peak Flow Limitations.

6. **Compliance by Non-Party Users & Indirect Users with Peak Flow Limitations**

a. Continued use of these Peak Flow Limitations by the Non-Party Users, however, shall be dependent on that entity making the financial contribution for its appropriate share of the Capital Cost and O&M Costs of all MJUFs in accordance with **Section 5**.

b. The Parties shall use their best efforts to require Non-Party Users and Indirect Users to comply with the defined Peak Flow Limitations.

c. Except as otherwise provided herein, irrespective of such efforts, the Parties shall comply with the Peak Flow Limitations.

d. As appropriate and necessary, collection systems for the Non-Party Users and Indirect Users should limit the amount of I/I entering these systems.
   1) DC Water shall be responsible for ensuring that similar requirements are upheld by the Non-Party Users;

   2) Fairfax and WSSC shall be responsible for ensuring that similar requirements are upheld by the Indirect Users; and

   3) Irrespective of such efforts, and except as provided herein, the Parties shall be bound by these requirements.

7. **Wastewater Collection System Connections**
   a. **Additional Interconnections** - Subject to the conditions imposed by this IMA and any other conditions which might be imposed by the Parties at the time, additional interconnections between the wastewater collection systems of the District, Fairfax, WSSC and Non-Party Users shall be allowed.

   b. **No Requirement to Accept Flow Causing an Exceedance** - The District, Fairfax and WSSC shall not be required to accept flow into its wastewater collection system if that flow exceeds its own or the Non-Party User's Peak Flow Limitations.

   c. **Sewer Connection Approval** - Every connection of a sewer by the District, Fairfax or WSSC, or a Non-Party User, to the sewage collection system of another shall be made only based on prior written approval of the Operating Agency representative for that entity to whom the connection is being made, with notice provided to the Regional Committee.

F. ADDITIONAL BPSA PEAK FLOW LIMITATIONS – POTOMAC INTERCEPTOR (PI) CONDITIONS

1. **Additional Basis for PI Peak Flow Limitations** - These Peak Flow Limitations are based on analysis that indicates that the PI has not overflowed when the sum of the peak flows delivered has been limited to the 220-240 million gallons per day range. This performance is due to the large service area, timing of flows and rainfall variability.

2. **Potential Modifications to Potomac Interceptor Peak Flow Limitations**
   a. DC Water shall monitor flows and the performance of the PI system to determine if overflows do occur; and then shall work with Fairfax and WSSC to identify the reasons and to determine if revisions/reductions to the Peak Flow Limitations presented in **Table 4-B** are required.

   b. If DC Water determines based upon its monitoring and technical analysis that such revisions/reductions are necessary, it can require those reductions until this IMA is amended and Fairfax and WSSC shall comply with such determination.

G. DERIVATIVE AGREEMENT – **Operating Agreement #1, Blue Plains Flow Capacity, Loads and Peak Flows – Allocations and Limitations,** addresses additional matters set forth in this Section. It may be replaced or supplemented by successor or other Derivative Agreements.

-END OF PAGE-

SECTION 5. FINANCIAL RESPONSIBILITIES OF PARTIES

A. ASSIGNMENT OF RESPONSIBLITIES

1. **Acknowledgements**
   a. The Parties acknowledge their financial responsibility for their respective shares of the Capital Costs and the O&M Costs of all MJUFs, including but not limited to Blue Plains and Other Associated Facilities. The Parties also bear financial responsibility for certain fines, penalties and claims.

   b. The Parties acknowledge that the "*Blue Plains Intermunicipal Agreement of 1985 Equity Payment Study*" (dated February, 1987), and the subsequent "equity payments" required by the 1985 IMA, reconciled all Capital Cost contributions for the Parties prior to 1987 and established a new baseline as of 1988 for calculating and allocating any future Capital Costs associated with Blue Plains.

2. **Leadership Committee** - The Leadership Committee shall ensure that the financial commitments of the Parties and Non-Party Users are met.

3. **Regional Committee**
   a. The Regional Committee shall agree upon MJUFs determinations and cost allocations, with detailed project lists and cost rationales, as well as billing and payment procedures.

   b. The Regional Committee shall address any new cost elements and cost allocation issues.

   c. The Regional Committee shall also ensure that a record is kept of calculations, procedures and agreements which implement this **Section 5**, including financial allocations for Capital Costs, O&M Costs, billing and payment procedures, User Fees, as well as fines, penalties and claims.

B. DETERMINATION OF MULTI-JURISDICTION USE FACILITIES (MJUFs)

1. **Basis for Making MJUF Determinations** - DC Water shall make determinations of the extent to which any facility is utilized by one or more entities and is, therefore, a MJUF; and, based thereon, shall make a recommendation regarding how the cost of building, operating, maintaining, or rehabilitating the facilities might be equitably shared among those entities, as more fully described in **Section 3.B.3**. below.

2. **Parties Commit to Pay Costs** - The District, Fairfax, WSSC and Non-Party Users are responsible for their respective share of all Capital Costs, O&M Costs, and other direct costs and indirect costs associated with MJUFs at Blue Plains and Other Associated Facilities. The costs include those associated with meeting permit requirements, as well as normal wastewater treatment process and biosolids management requirements for Blue Plains and Other Associated Facilities. These costs shall be developed to ensure full cost-recovery for the O&M, construction or

rehabilitation of the specified facilities. District costs are met through direct ratepayer payments.

3. **DC Water to Recommend Cost Allocations**
   a. DC Water shall utilize a methodology and associated technical tools that the Regional Committee has agreed to for making determinations whether a facility is a MJUF.

   b. DC Water shall make recommendations to the Regional Committee regarding MJUFs, and the proposed cost allocations proposed for those facilities, including providing specific project/program details and cost allocation rationale for making the MJUF determinations.

   c. DC Water shall inform the Regional Committee in a timely manner of the potential magnitude and anticipated timing of the necessary financial commitments to address their share of those commitments.

   d. DC Water shall consider Regional Committee input regarding the proposed amount and timing of those financial commitments. This process shall be an iterative process as regulatory requirements, process impacts, and major capital program requirements are defined and subsequently refined. The costs associated with the O&M, rehabilitation, construction or other use of these facilities shall be allocated among the Parties and Non-Party Users.

   e. The methodology and technical tools to be used in making these determinations shall be set out in **Operating Agreement #2**.

4. **Regional Committee to Endorse Cost Allocations and Identify Policy Issues** – The Regional Committee shall review DC Water's recommendations regarding MJUF designations and proposed cost allocations and, if appropriate, endorse the allocations, and identify any resultant policy issues associated with those recommendations.

5. **Regional Committee to Recommend Cost Allocation** - The Regional Committee shall recommend cost allocations to the Leadership Committee for approval.

C. CAPITAL COST RESPONSIBILITIES

1. **General Requirements - DC Water's Responsibility** - DC Water shall be responsible for addressing all of the obligations in this **Section 5** as they pertain to the Non-Party Users. Once DC Water identifies the need for additional Capital Costs, the other Parties shall be provided the opportunity to comment on the timing and other aspects of the projects. DC Water shall assess Fairfax and WSSC for their proportionate share of the Capital Costs incurred for MJUFs. DC Water shall assess District ratepayers using the same basis and reflecting the District's proportionate share of all costs.
2. **Blue Plains Capital Cost Allocations** - The costs for construction, installation, upgrade or expansion of any facilities which are built to manage wastewater, other

than Captured Stormwater Flow, that is treated at Blue Plains, or the biosolids or other residuals from Blue Plains shall be allocated to the District, Fairfax, WSSC, and Non-Party Users, based on the methodology set forth in **Operating Agreement #2.**

3. **Other Associated Facilities' Capital Cost Allocations** – Except as provided herein, the costs for construction, installation, upgrade or expansion of any Other Associated Facilities shall be allocated to the District, Fairfax, WSSC and Non-Party Users in proportion to their Allocated Flow Capacity or other Usage Allocations.

4. **Capital Equipment Cost Allocations Relating to MJUFs** - Capital Equipment Costs, that are incurred to replace, extend the life of or increase capacity of Blue Plains assets, will be allocated consistent with Allocated Flow Capacity, Actual Flows or other Usage Allocations, as defined in **Operating Agreement #2**.

5. **Basis for Cost Allocations for Fairfax or WSSC MJUFs** - The District, Fairfax, WSSC, and Non-Party Users shall pay the costs for construction, installation, upgrade or expansion of any MJUFs which are built by Fairfax or WSSC for wastewater treatment or biosolids management, or management of residuals from Blue Plains, in proportion to their Allocated Flow Capacity or other Usage Allocations, or as otherwise may be provided by this IMA or Derivative Agreements.

6. **Basis for Non-Standard Cost Allocations** – Projects, whose basis of design or operation DC Water has determined are not inherently linked to standard systems developed for flow or capacity as otherwise set forth in this IMA, may have their Capital Costs allocated based on a Usage Allocation agreed upon by the Parties. Such cost methodologies and rationale shall be consistent with the Key Principles.

D. OPERATING AND MAINTENANCE (O&M) COST RESPONSIBILITIES

1. **Blue Plains O&M Cost Allocations**
   a. **Assessments for Proportionate Treatment Costs** - DC Water shall assess Fairfax and WSSC for their proportionate share of the O&M Costs incurred for MJUFs. DC Water shall assess District ratepayers using the same basis and reflecting the District's proportionate share of all costs. All O&M costs incurred shall include all direct costs and indirect costs as agreed by the Regional Committee.

   b. **Assessments for Blue Plains** -The District's, Fairfax's and WSSC's proportion of the annual Blue Plains O&M Costs shall be as defined in **Operating Agreement #2.**

   c. **Process to Address Differential Treatment Costs** - If it is determined, based on a Jointly Managed Study, that there is a significant financial impact and, therefore, a basis for having differential treatment costs applied to the flows from various Parties and Non-Parties (i.e., based on strength of wastewater or other flow parameters), the Regional Committee shall be responsible for assessing and

recommending how cost allocations should be borne by the Parties, and making recommendations to the Leadership Committee.

d. **Use of Revenue** - Any revenue earned from the by-products from the wastewater treatment and/or biosolids processes at Blue Plains shall be used to offset overall O&M expenses, and be attributed, as appropriate, in proportion to the Capital Cost and/or O&M Cost allocations for those associated MJUFs. Revenue shall include, but not be limited to, any revenue generated by: water reuse, methane gas, electricity, carbon trading, compost and any other biosolids-derived products.

2. **Pipelines and Appurtenances O&M Cost Allocations** – The District, Fairfax and WSSC shall each be assessed by DC Water for their proportionate share of the O&M costs for any MJUFs as defined in **Operating Agreement #2**.

3. **Other Associated Facilities' O&M Cost Allocations** – The District, Fairfax and WSSC shall each be assessed by DC Water for their proportionate share of the O&M Costs associated with these Other Associated Facilities, based on the proportion of their Actual Flow versus Total Flow through facilities, or based on other Usage Allocations as defined in **Operating Agreement #2**.

E. USER FEE RESPONSIBILITIES

1. **Annual User Fee** – Fairfax, WSSC and Non-Party User Loudoun County Sanitation Authority (LCSA or Loudoun Water) shall pay to DC Water an annual User Fee on behalf of the District. The initial fee was set at $1,500,000 per annum, effective July 1, 1986; with subsequent payments compounded annually by one and one half percent (1.5%).

2. **Apportionment** - DC Water shall annually calculate the User Fee for Fairfax, WSSC and LCSA, based in proportion to their share of the Allocated Flow Capacity at Blue Plains.

3. **DC Water's Use of the User Fee** - DC Water shall utilize the User Fee payments from Fairfax, WSSC and LCSA as a credit to the District's share of Blue Plains O&M Costs.

F. FINES, PENALTIES AND CLAIMS RESPONSIBILITIES

1. **Joint Responsibility** - The Parties shall have joint responsibility for and shall pay their respective shares of such fines, penalties or claims in accordance with their agreed shares of the O&M Costs or Capital Costs as appropriate for MJUFs or programs, provided that the following criteria are met:
   a. The fines, penalties or claims are associated with MJUFs;

b. The Party incurring the fines, penalties or claims demonstrated a reasonable effort to avoid imposition of such fines, penalties or claims, and dispute or contest any unreasonable charges; and

c. There is no judicial or adjudicative determination that the fines, penalties or claims are the result of gross negligence or willful misconduct of an employee or agent of the Party incurring the fine, penalty or claim.

2. **Reimbursement of Litigation Costs** - If litigation is filed against a Party for injuries to a third party resulting from operation of a MJUF, the Parties shall share the costs of defense or judgment in accordance with their proportionate shares of the associated O&M Costs or Capital Costs, as appropriate, as long as there is no determination by a court or arbitrator that any such judgment is the result of gross negligence or willful misconduct of an employee or agent of the defendant Party. If a determination is made that there has been gross negligence or willful misconduct of an employee or agent of the defendant Party, the defendant Party shall be solely responsible for the costs of defense and judgment.

3. **Review and Dispute Resolution** - The Regional Committee shall be responsible for reviewing these fines, penalties or claims and their associated costs, when they relate to billing disputes, and concurring with their applicability to the Parties. If there are disagreements regarding the responsibility of any of the appropriate Parties to pay for such costs, the Regional Committee shall address the issues in a timely manner, including, if necessary, referring the matter to the Leadership Committee for resolution.

G. ESTIMATES, BILLINGS, PAYMENTS, AND RECONCILIATION PROCEDURES

1. **General Requirements for Addressing DC Water Capital Costs and O&M Costs** – In accordance with the procedures outlined in Operating Agreement #2, DC Water shall:
   a. Assess costs based on estimated annual expenses;
   b. Prepare quarterly billings;
   c. Receive quarterly payments; and
   d. Reconcile all costs with payments.

2. **DC Water's Responsibility for Assessing Capital Costs and O&M Costs for MJUFs for Party and Non-Party Users** – DC Water is responsible for assessing all Capital Costs and O&M Costs associated with MJUFs for the District, Fairfax, WSSC and Non-Party Users. Assessments for each user will be based on their Allocated Flow Capacity or Billing Flows, or other approved Usage Allocations as appropriate.

3. **Fairfax's and WSSC's Responsibility for Assessing Capital Costs and O&M Costs for MJUFs for Party and Non-Party Users** – Fairfax and WSSC are responsible for assessing all Capital Costs and O&M Costs associated with MJUFs that they construct on behalf of the District, Fairfax, WSSC and Non-Party Users. Assessments for each user will be based on their Allocated Flow Capacity or Billing Flows, or other approved Usage Allocation as appropriate.

4. **Allocation Method for Capital and O&M Costs for MJUFs** - The method for allocating project-specific Capital Costs and O&M Costs associated with all MJUFs, and the associated billing procedures are as defined in **Operating Agreement #2**.

5. **Party Rights to Documents** – The Parties have the right to audit DC Water's or another Party's billings, and access to all existing, relevant financial documents for any billing for which such Party is wholly or partially responsible. Upon written request by a Party, the billing Party shall make the supporting documentation for such billing available for inspection, copy or review by, or on behalf of, the requesting Party.

H. DERIVATIVE AGREEMENT – Operating Agreement #2, Financial Responsibilities of Parties, addresses additional matters set forth in this Section. It may be replaced or supplemented by successor or other Derivative Agreements.

-END OF PAGE-

SECTION 6. FLOW AND LOAD MEASUREMENT AND MANAGEMENT

A. WASTEWATER FLOW AND LOAD MEASUREMENT, REPORTING AND MANAGEMENT

1. **Parties' Responsibility to Manage Flows** - The Parties shall take all reasonable actions to maintain their flows within their Allocated Flow Capacity, Peak Flow Limitations, and consistent with any load constraints for Blue Plains, as defined in **Section 4**. These actions shall include, but not be limited to, minimizing extraneous flows and loads in order to preserve capacity at Blue Plains and in the various wastewater collection systems within the BPSA. Based on recommendations from the Regional Committee, the Leadership Committee shall consider and recommend to any or all of the Parties programs, procedures or actions which will minimize wastewater flow and, therefore, preserve these capacities.

2. **Derivative Agreement to Address Procedures** - The methods for measuring monitoring, reporting and assessing Actual Flows within the BPSA and Billing Flows are described in **Operating Agreement #3** and shall include, but not be limited to addressing:
   a. An assessment of the quantity and timing of any flow management actions that any Party has committed to in order to ensure that they do not exceed their Allocated Flow Capacity, as defined in **Section 4,** and consistent with the long-term planning assumptions described in **Section 7**;

   b. The methods and frequency of reporting and assessing Actual Flows and Billing Flows;

   c. The process by which DC Water shall monitor and address any exceedances by the Non-Party Users, and by which Fairfax and WSSC shall monitor and address any exceedances by the Indirect Users as defined in **Operating Agreement #3**; and

   d. The Regional Committee shall routinely monitor and assess these methods and procedures and make recommendations to the Leadership Committee.

3. **Non-compliance** - If the District, Fairfax or WSSC, or Non-Party User does not comply with its Allocated Flow Capacity, Peak Flow Limitations or load allocations, as defined in **Section 4**; or fails to meet its flow management obligations, the Regional Committee shall address these issues on behalf of all of the Parties, including through use of dispute resolution, as necessary.

4. **District Commitment Regarding Management of Captured Stormwater Flows** - The District shall not expand the service area of its combined sewer system or take other actions that result in significantly increased Captured Stormwater Flow to Blue Plains above the amount set forth in **Operating Agreement #3** except as required for DC Water to meet its NPDES permit. If such actions are required, DC Water shall make recommendations to the Regional Committee, and the other Parties shall address any resultant cost implications consistent with **Section 3**.

B. CONTROL OF INFLOW AND INFILTRATION (I/I)

1. **Parties' Responsibility to Manage I/I** - The Parties shall manage their collection systems to minimize the amount of I/I entering their systems. Collection systems shall be maintained so that the I/I volume does not contribute to or cause exceedances of capacities and assumptions defined for:
   a. Blue Plains,

   b. The Potomac Interceptor and other wastewater collection system capacities, and

   c. Facilities associated with the Combined Sewer Overflow Long-term Control Plan.

2. **Non-Party User and Indirect Users' Responsibility to Manage I/I** - DC Water shall work with the Non-Party Users to manage their collection systems to meet the requirements of **Subsection B.1.** above; and Fairfax and WSSC shall work with the Indirect Users to meet the same requirements. Irrespective of arrangements with Non-Party Users or Indirect Users, the Parties shall comply with the flow projection assumptions.

C. DERIVATIVE AGREEMENT – **Operating Agreement #3, Flow and Load Measurement and Management,** addresses matters set forth in this Section. It may be replaced or supplemented by successor or other Derivative Agreements.

-END OF PAGE-

SECTION 7. WASTEWATER PROJECTED FLOW CAPACITY NEEDS AND FUTURE OPTIONS

A. RATIONALE FOR CONDUCTING ANALYSIS OF PROJECTED FLOW CAPACITY NEEDS

1. **Major Regional Investment** - The Parties recognize that the scale of the BPSA and the associated wastewater collection system, the importance of wastewater treatment provided to the region, and the contributions to local water quality improvements that are provided by Blue Plains constitute a major regional investment by the Parties.

2. **Planning Required** - The Parties also recognize that the planning needed to address future wastewater needs for the BPSA, manage wastewater flows to Blue Plains and respond to evolving water quality issues and regulatory developments will require the Parties to continue to work together to address these interdependent matters.

3. **Commitment to District** – The Parties recognize that, due to the limited options available to the District, the Parties have an obligation to ensure that the District's wastewater flow capacity needs are addressed in a timely manner.

B. CONDUCTING PROJECTED FLOW CAPCITY NEEDS ANALYSIS

1. **Analysis and Determination of Options** - In order to assess wastewater flow capacity and loading requirements and define how future flows and loads will be treated, the Regional Committee shall routinely analyze future capacity and loading requirements. Once it has been determined that the facilities and processes at Blue Plains are not sufficient to meet those Projected Flow Capacity Needs, the Regional Committee shall conduct a thorough analysis which includes the following criteria:

   a. Options for managing and/or treating flows at Blue Plains, as well as other sites;

   b. A time frame for triggering management actions (including diverting flows and/or rental/sale of capacity);

   c. A process for notification of all entities potentially affected by those options, and

   d. A basis and formula for compensation, which includes development costs and the allocation of those costs among the Parties, and Non-Party Users, as appropriate.

2. **Process for Adjustments** - The Regional Committee shall analyze options, and recommend to the Leadership Committee any proposed construction or flow management options, associated cost allocations, and any necessary adjustments to this IMA or the Derivative Agreements. These planning elements shall be conducted consistent with the requirements detailed in the following subsection C.

C. DETERMINATION OF PROJECTED FLOW CAPACITY NEEDS

1. **Respective Roles of Regional Committee and DC Water**
   a. **Regional Committee**
      1) Shall address the technical, policy and financial interests of the Parties when defining and assessing the Parties' flow capacity and loading requirements and options.
      2) Shall routinely evaluate and analyze projected flows and loads as compared with Actual Flows, Adjusted Flows and Allocated Flow Capacity, and confirm any potential permit or process implications.

   b. **DC Water** – DC Water shall represent the interests of and assess the future flow capacity and loading requirements of the Non-Party Users, and identify if there are any potential permit or process implications.

2. **Jointly Managed Study of Projected Flow Capacity Needs** - The Regional Committee shall also periodically and at least every five (5) years, assess and determine the individual and collective Projected Flow Capacity Needs of the Parties, and Non-Party Users, through a Jointly Managed Study. This Study shall project the Parties and Non-Party Users' future flow capacity and loading requirements and shall utilize the most recently approved projection methodology for the BPSA. The BPSA flow projection methodology shall be determined and shall include, but not be limited to, application and utilization of:

   a. The latest approved version of the BPSA Flow Forecast Model and COG's latest approved Cooperative Forecast demographic data, or other agreed upon methods; and

   b. The latest agreed upon wastewater flow factors and flow management assumptions of the Parties, including those programs, procedures or actions that minimize wastewater flow and, therefore, preserve capacity.

3. **Time Frame for Assessment of Future Projections** - A Jointly Managed Study for determining Projected Flow Capacity Needs will project both short-term (approximately 5-15 years) and long-term (approximately 20-30 years) flow capacity and loading requirements. This study must confirm all assumptions related to projecting future flows and loads, including but not limited to: growth, flows and loads, flow management, and flow factors. This study shall also evaluate whether projected peak flows may trigger additional capacity needs beyond current limitations. It will also project whether changes in climatalogical, system conditions, or any other conditions might cause potential capacity or permit exceedances.

-END OF PAGE-

D. DETERMINATION OF OPTIONS

1. **Flow Management Options to Address Projected Flow Exceedances**
   a. If, within the time frame of the long-term projections, the District, Fairfax, WSSC, or any Non-Party User's projected annual average flow is anticipated to exceed its Allocated Flow Capacity, or the associated peak flows exceed their Peak Flow Limitations, then the District, Fairfax or WSSC shall have the option of committing to specific flow management actions and a schedule that reconciles its projected flows with its Allocated Flow Capacity and Peak Flow Limitations.

   b. These flow management actions may include the temporary or permanent diversion of wastewater flows out of the BPSA.

   c. The BPSA flow projections shall then be adjusted to reflect such actions, and the Regional Committee shall be responsible for monitoring and assessing compliance with those actions, as defined in **Section 6**.

2. **Additional Options to Address Projected Flow Exceedances**
   a. If, after all flow management adjustments are accounted for, the projection results of a Jointly Managed Study for projected flow capacity requirements demonstrate that either the overall flows to Blue Plains generated within the BPSA exceed the plant's Design Flow Capacity or that one or more Parties' projected wastewater capacity requirements exceed their individual Allocated Flow Capacity (as defined in **Section 4**), the Regional Committee shall consider alternative technical and/or programmatic options to address these unmet Projected Flow Capacity Needs.

   b. These options may include, but are not limited to:
      1) Reduction of or improved management of wastewater flows to reduce I/I or any other flow or load contributions;
      2) Modification of treatment processes at Blue Plains;
      3) Diverting flows from the BPSA to other facilities;
      4) Sale or rental of excess capacity at Blue Plains between the Parties;
      5) Expansion of existing treatment facilities or the addition of new treatment facilities, whether in or out of the BPSA; and
      6) Construction of new wastewater treatment and/or storage facilities, whether in or out of the BPSA.

3. **Jointly Managed Studies to Develop Options**
   a. The development of specific technical and programmatic options and potential construction projects shall generally be based upon a Jointly Managed Study that includes participation of all of the Parties.

   b. The Regional Committee may determine, however, that a Jointly Managed Study is not required, and that development of specific technical or programmatic options and potential construction projects may be conducted by one or more of the Parties.

c. If the Regional Committee makes such a determination, the Party(ies) conducting the evaluation shall ensure that the Regional Committee has an opportunity to review and evaluate the resulting options in order to confirm that the proposed approach will adequately address the flow management requirements, and that the Allocated Flow Capacity of the other Parties not involved in the proposed approach are not modified or altered.

d. Each Jointly Managed Study to develop options shall include a recommendation on cost allocations.

4. **Regional Committee to Make Recommendation** – Based on a Jointly Managed Study, the Regional Committee shall recommend to the Leadership Committee those technical and/or programmatic options that address the individual and collective Projected Flow Capacity Needs of the Parties. The Regional Committee's recommendations shall include, but not be limited to, addressing:
   a. The proposed time frame for taking specific actions (whether due to changes in existing facilities or processes, or due to the construction of new facilities);

   b. The estimated cost of these actions;

   c. The proposed flow, load, and cost allocations and implications for each Party (and Non-Party User) associated with any options; and

   d. Whether a facility is to be a MJUF.

5. **Regional Committee to Develop Plan** - Once the Leadership Committee approves the proposed options and resulting allocations, the Regional Committee shall develop a plan to address those Projected Flow Capacity Needs that includes the costs associated with any agreed upon treatment options.

E. COST CONSIDERATIONS

1. The plan developed pursuant to **Section D.5** shall address at a minimum the following criteria:
   a. The estimated Capital Costs and O&M Costs and cost basis of any proposed facilities (whether new or modified at Blue Plains or at any other facilities or sites) shall be consistent with the MJUFs and cost allocations, as defined in **Section 5**;

   b. The proposed allocation of Capital Costs and O&M Costs;

   c. The anticipated schedule for when funds to support these actions are likely to be needed.

2. The rental or sale of Allocated Flow Capacity shall be at the discretion of the Party which is providing the Allocated Flow Capacity for rent or sale.

3. The Parties to the rental or sale transaction shall mutually agree on the cost basis for the rental or sale of Allocated Flow Capacity.

F. IMPLEMENTATION OF PLAN TO ADDRESS PROJECTED FLOW CAPACITY NEEDS

1. The Leadership Committee shall review and consider the Regional Committee's options and allocation recommendations on behalf of the Parties.

2. Once an option or set of options and allocations are agreed upon to meet the future Projected Flow Capacity Needs, the Parties shall, if necessary, amend this IMA, and the Leadership Committee shall create or modify the Derivative Agreement(s)**.** For example, if any of the options that are selected result in revisions to the Design Flow Capacity for Blue Plains, or Allocated Flow Capacity defined in **Section 4**, or to reconcile the associated Capital Costs and O&M Costs, as defined in **Section 5**, and any associated Derivative Agreements, the Parties shall make appropriate amendments to this IMA, and the Leadership Committee shall create or modify the Derivative Agreement(s).

3. Any Party which requests additional Allocated Flow Capacity is responsible for securing additional Blue Plains Effluent Load Allocations, or Blue Plains Effluent Load Offsets in proportion to the additional Allocated Flow Capacity which the Party seeks.

G. DERIVATIVE AGREEMENT – **Operating Agreement #4, Wastewater Projected Flow Capacity Needs and Future Options,** addresses matters set forth in this Section. It may be replaced or supplemented by successor or other Derivative Agreements.

-END OF PAGE-

SECTION 8. PRETREATMENT AND OPERATIONAL REQUIREMENTS

A. PRETREATMENT PROGRAM REQUIREMENTS

1. **Fairfax and WSSC Pretreatment Program Responsibilities**
   a. **Implementation of Programs** - Fairfax and WSSC shall adopt, implement and enforce Pretreatment Programs as required and approved by the United States Environmental Protection Agency (EPA). The Pretreatment Programs shall comply with federally imposed discharge limitations, prohibitions, and controls, as well as any Local Limits defined by DC Water, as needed to protect the collection system and treatment processes at Blue Plains and its biosolids management program requirements. Fairfax and WSSC shall set their Pretreatment Program standards to match or exceed any standards specifically required by DC Water.

   b. **Compliance and Recordkeeping** – Fairfax and WSSC shall conduct annual on-site inspections and obtain samples, and shall maintain documentation to verify compliance with, the Pretreatment Program and shall provide DC Water access to the pretreatment records. They shall also provide DC Water with reasonable access to all pretreatment records required by federal, state, and local regulations.

   c. **Indirect User Compliance** - To the extent applicable, Fairfax and WSSC shall ensure that the applicable Pretreatment Program terms and conditions which they impose on Indirect Users are consistent with those placed on the Parties.

2. **DC Water's Responsibilities**
   a. **Compliance by Fairfax and WSSC** - DC Water shall have the right to conduct sampling of the Fairfax and WSSC collection systems tributary to Blue Plains to ensure compliance with the provisions of these Pretreatment Programs. The Fairfax and WSSC Pretreatment Programs shall provide that, in the event of discovery of a case of noncompliance, they shall take corrective action, and Fairfax and WSSC, as applicable, shall compensate DC Water for the cost of sampling to identify and track resolution of the problem.

   b. **Non-Party User Compliance** - DC Water shall ensure that the applicable Pretreatment Program terms and conditions imposed upon the Non-Party Users are consistent with those placed upon the other Parties.

B. OPERATIONAL REQUIREMENTS

1. **Basis for Requirement** - The Parties recognize that, in addition to formal regulatory Pretreatment Program requirements, additional Operational Requirements are necessary to protect the operation and maintenance of Blue Plains wastewater, biosolids, residuals and other plant processes, facilities, and equipment.

2. **DC Water's Responsibility for Non-Party User Compliance** - DC Water shall ensure that the applicable Operational Requirements and conditions imposed upon the Non-Party Users are consistent with those placed upon the other Parties. Irrespective of such efforts, DC Water shall be bound by the additional Operational Requirements.

3. **Fairfax and WSSC Responsibility for Indirect User Compliance** - Fairfax and WSSC shall ensure that the applicable Operational Requirements terms and conditions imposed upon Indirect Users within the BPSA are consistent with those placed upon the other Parties. Irrespective of such efforts, Fairfax and WSSC shall be bound by the additional Operational Requirements.

C. DERIVATIVE AGREEMENT – Operating Agreement #5, Pretreatment and Operational Requirements, addresses additional matters set forth in this Section. It may be replaced or supplemented by successor and other Derivative Agreements.

-END OF PAGE-

SECTION 9. BIOSOLIDS MANAGEMENT COMMITMENTS

A. BIOSOLIDS UTILIZATION AND DISPOSAL

1. **Collective Commitment to Blue Plains Biosolids Management Program** - The Parties recognize their collective interests in the sound management of all biosolids produced at Blue Plains and its regional implications, and commit to continued planning and coordination in all aspects of biosolids management.

2. **Legislative Support to DC Water** - The Parties shall provide regional coordination and support to DC Water to address proposed legislation, regulations and other related activities that may impact the Blue Plains biosolids management program.

3. **Support for DC Water's Efforts** - The Parties shall actively support DC Water's efforts to ensure that biosolids produced at Blue Plains can be managed in a cost-effective, equitable and environmentally sound manner, and in compliance with all Blue Plains permit requirements and applicable regulations.

4. **Contracting Responsibilities** - DC Water is responsible for the Blue Plains biosolids management program; however, the Parties may determine that Fairfax County or WSSC may also be responsible for portions of the biosolids management. Specific details regarding such contractual or programmatic responsibilities shall be as set forth in **Operating Agreement #6**.

5. **Allocation of Value from Sale of Biosolids or By-Products** - All benefits (including revenue, and cost savings derived from products recycled or generated at Blue Plains) are to first offset the biosolids program and, then to offset Blue Plains operating costs, thereby reducing costs for all Parties.

B. EMERGENCY CONDITIONS

1. **Emergency Conditions** – An "emergency condition" shall mean situations when various actions or events occur (or have the potential to occur) such as acute weather conditions, abrupt changes in regulatory or legal requirements, or unavoidable contract complications, that will or are likely to impact the normal wastewater treatment processes.

2. **Basis for Emergency Planning** - The Parties recognize that emergency conditions require DC Water take prompt action to protect the Blue Plains processes and permit, to quickly implement alternative management or disposal options for Blue Plains biosolids, or to take other actions, in order to ensure that wastewater operations at Blue Plains and Other Associated Facilities, or the biosolids management program, are not compromised and that all permit conditions continue to be met.

3. **Notice** - As part of its their shared biosolids management responsibilities, DC Water and/or any other Party sharing biosolids management responsibilities on behalf of the Parties, shall alert the other Parties when an emergency condition is likely to or has occurred.

4. **Measures to be Taken** - Once the Parties are alerted that an emergency condition has been designated, the Parties shall work collectively, and in a timely manner, to provide active support to DC Water to address the situation and ensure that the Parties' collective and individual wastewater treatment needs at Blue Plains can continue to be provided, including, but not limited to, the following:
   a. Utilizing other existing contract mechanisms to handle management of all or portions of the biosolids;

   b. Working to identify additional land application or other management sites;

   c. Working with local and state regulatory officials to obtain land application or other management permits;

   d. Working with local and state regulatory officials to change regulations, legislation or legal action that are deemed harmful to the effective and environmentally sound management of biosolids; and

   e. Invoking the Parties' political leadership and other elected officials to support actions necessary to mitigate the impact of the designated emergency condition.

C. DERIVATIVE AGREEMENT – Operating Agreement #6, Biosolids Management Commitments, addresses additional matters set forth in this Section. It may be replaced or supplemented by successor or other Derivative Agreements.

-END OF PAGE-

SECTION 10. ADMINISTRATIVE PROVISIONS AND PROCEDURES

A. DURATION OF AGREEMENT

1. This IMA shall become effective upon the date the last Party executes it, as set forth below, subject to any orders of the United States District Court for the District of Columbia in State Water Control Board, et al., vs. Washington Suburban Sanitary Commission, et al., Civil Action No. 1813-73.

2. This IMA may be executed in counterparts, which together shall be regarded as one original.

3. This IMA remains in force and effect until June 30, 2111, unless amended, replaced or terminated earlier by mutual consent of the Parties.

B. SEVERABILITY

Should any provision(s) of this IMA or a Derivative Agreement be deemed illegal or unenforceable by a Court of competent jurisdiction, the remainder of this IMA or the Derivative Agreement shall remain in full force and effect. Provided, however, that within 60 days of the date that such ruling becomes final, including appeals if any, the Signatories or Leadership Committee, as appropriate, shall determine, directly or through the Leadership Committee whether this IMA, or the applicable Derivative Agreement, must be amended to fulfill the original intent of the Parties and to maintain, insofar as possible, the service and financial relationships created by this IMA. Should a determination be made to amend this IMA or the applicable Derivative Agreements, the Parties or Leadership Committee, respectively, shall promptly act on the amendments.

C. AUTHORITY

Each Party represents that it has the authority to enter into this IMA, and that the individuals signing this IMA on its behalf, have the authority to bind the Party to the terms and conditions of this IMA. This IMA shall apply to, and be binding upon, the Parties hereto, their elected officials, officers, agents, employees, successors and assigns, all persons, firms and corporations acting under, through or for them, and upon those persons, firms and corporations in active concert with them in any matter affected by this IMA.

D. AMENDMENTS TO THIS IMA

This IMA may be amended in whole, or in part, by the Parties as follows:

1. Proposed amendments to this IMA may be offered by any Party, directly, or through the Regional Committee, which shall make its recommendations to the Leadership Committee and to the Parties; and

2. If the Leadership Committee unanimously recommends an amendment to this IMA, it shall be submitted in writing to the Parties and shall become effective upon approval and execution by the Signatories of all of the Parties.

E. DISPUTE RESOLUTION

1. **Goal** - On occasion the Parties may differ on matters including but not limited to: a) their interpretation of terms and conditions of this IMA; b) the implementation of this IMA; c) whether any Derivative Agreement should be created, revised or terminated; and d) whether an IMA amendment should be adopted. If the Parties are unable to reach consensus through their normal coordination processes, in order to promote continued regional cooperation, and to avoid litigation when possible, the Parties shall first utilize the informal dispute resolution process. If the Parties are unable to resolve the dispute through the informal process, the formal dispute resolution process set forth herein shall be implemented.

2. **Informal Resolution** - If disagreements regarding the interpretation or implementation of this IMA surface during its routine business, and the Regional Committee cannot reach a consensus, the Regional Committee shall refer the matter to the Leadership Committee for advice, comment or suggested direction, or if appropriate, for direct resolution of the matter.

3. **Formal Resolution** - Any Party may initiate the formal dispute resolution process if it believes an issue has not been adequately addressed through normal coordination processes or an informal dispute resolution process**.**

   The formal resolution process includes the following requirements:

   a. The aggrieved Party shall provide written notice to the Regional Committee that it has an issue for dispute resolution. The notice must contain the aggrieved Party's rationale, together with the assumptions, supporting documents and computations necessary for an understanding and potential resolution of the dispute.

   b. The Regional Committee must address this issue directly or refer it for non-binding arbitration or third-party mediation within 30 days, or other reasonable time agreed to by the aggrieved Party. The Regional Committee may ask for additional written analysis from the aggrieved Party or from any Party which objects to or disagrees with the aggrieved Party's submission.

   c. The Regional Committee may use a non-binding arbitration or third-party mediation process to resolve the dispute if the aggrieved Party agrees to bear the cost of such non-binding arbitration or third-party mediation services, or the Parties otherwise agree to share costs.

   d. If after consideration by the Regional Committee or, as a result of non-binding arbitration or third-party mediation, agreement is not reached, the Regional Committee shall refer the matter to the Leadership Committee.

   e. If the Regional Committee fails to resolve the issue or refer the matter to non-binding arbitration or third-party mediation within the prescribed time, and the matter is not resolved, the aggrieved Party may then forward the issue to the Leadership Committee for resolution.

f. The Leadership Committee must address the matter within 30 days, or other reasonable time agreed to by the aggrieved Party, after receiving formal notice from the aggrieved Party. This notice should include the documentation previously submitted by the aggrieved Party to the Regional Committee.

g. The Leadership Committee may utilize non-binding arbitration or third-party mediation to assist it in reaching a unanimous decision on the dispute presented; if the aggrieved Party agrees to bear the costs of the non-binding arbitration or third-party mediation services, or the Parties otherwise agree to share costs.

h. If the Leadership Committee cannot resolve the issue within 30 days after presentation, or other reasonable time agreed to the aggrieved Party, the aggrieved Party may then inform the other Parties of the dispute, the inability to reach agreement, and its intention to seek legal or other resolution, including injunctive, declaratory or other relief. Upon receipt of such notice, the Parties agree to meet before any such litigation or other resolution is commenced by any Party or Parties against any other Party. No meeting shall be required as a condition precedent to litigation if such a meeting cannot be held within 30 days after the date on which the written notice was sent to all Parties or within in such other reasonable time agreed to by the aggrieved Party.

i. No Party may seek independent state or federal litigation or other resolution, including federal legislative assistance, of a dispute that has not yet completed this formal dispute resolution process.

F. NOTICES

1. **To Parties** - Whenever any formal notice is required to be given to any Party under this IMA, it shall be in writing and deemed to be given on the date of actual delivery (or rejection) if delivered by nationally recognized overnight service or by personal delivery. Notices shall be directed to the following officials at their officially designated business addresses:
   a. District of Columbia - City Administrator
   b. DC Water – General Manager
   c. Fairfax County, Virginia - County Executive
   d. Montgomery County, Maryland - Chief Administrative Officer
   e. Prince George's County, Maryland - Chief Administrative Officer
   f. Washington Suburban Sanitary Commission, Maryland - General Manager

2. **To Secretariat/Administrative Entity** - A copy of any formal notice shall also be sent to the offices of the secretariat/administrative entity, designated by the Leadership Committee, and to the Regional Committee.

3. **Responsibility** - Where notice is required to be given by this IMA or a Derivative Agreement and a specific Party is not designated to give notice, the notice shall be given by the secretariat/administrative entity.

4. **Timing** - Where time deadlines are given, all days are calendar days unless otherwise indicated.

5. **Electronic Notice** – In addition to service by U.S. mail or hand-delivery, the Parties may be served with notice electronically if the Party to be served has given written notice to the other Parties of its email address. Provided, however, that notices of changes to this IMA or a Derivative Agreement, court action or formal dispute resolution shall also be served in accordance with **Section F.1.**

G. PRIOR AGREEMENTS - As set forth in the introductory paragraphs of this IMA and in the Appendix, certain agreements preceded the 1985 IMA. Those agreements, which are set forth in the Appendix, as well as the 1985 IMA, are extinguished and superseded by this IMA.

H. ANTI-DEFICIENCY ACTS PROVISIONS

1. **Relating to the District and DC Water**

Notwithstanding any other provisions of this IMA and the Derivative Agreements:

a. Pursuant to the provisions of (i) the federal Anti-Deficiency Act, 31 U.S.C. §§ 1341, 1342, 1349-1351 1511-1519 (2008), and D.C. Official Code §§ 1-206.03(e) and 47-105; (ii) the District of Columbia Anti-Deficiency Act, D.C. Official Code §§ 47-355.01 – 355.08 (collectively, as amended from time to time, the "Anti-Deficiency Acts"); and (iii) Section 446 of the District of Columbia Home Rule Act, D.C. Official Code § 1-204.46, the District and DC Water cannot obligate themselves to any financial obligation or expenditure (including capital obligations and expenditures, operating and maintenance obligations and expenditures, and obligations and expenditures related to fines, penalties, and claims) in any present or future year unless the necessary funds to pay that obligation or expenditure have been appropriated by the Congress of the United States (the "Congress") and are lawfully available for the purpose of the obligation or expenditure. Pursuant to the Anti-Deficiency Acts, nothing in this IMA or the Derivative Agreements creates an obligation of the District or DC Water in anticipation of an appropriation by Congress for such purpose, and the District's or DC Water's legal liability for the payment of any amount under this IMA and the Derivative Agreements does not and may not arise or obtain in advance of the lawful availability of appropriated funds for the applicable fiscal year as approved by Congress. No District of Columbia or DC Water official or employee is authorized to obligate or expend any amount under this IMA or the Derivative Agreements unless such amount has been appropriated by Act of Congress and is lawfully available.

b. The amount of the DC Water Board of Directors', or its successors', annual budget estimate approved by Congress shall serve as the basis for, and the limit on, the billing, payments, and expenditures described in this IMA and the Derivative Agreements. If no appropriation or a smaller appropriation than requested is made by Congress to pay any amount under this IMA, or if appropriated funds for such purposes are not otherwise lawfully available, the legal obligations of all of the Parties under this IMA shall be limited to the amount of any lawfully available appropriation. The District's right to continued use of its Allocated Flow Capacity, nonetheless, remains subject to the limitations provided in Section 4(A)(2)(c) of the IMA.

2. Relating to WSSC

Notwithstanding any other provisions of this IMA and the Derivative Agreements: The financial obligations (including capital obligations and expenditures, operating and maintenance obligations and expenditures, and obligations and expenditures related to fines, penalties, and claims) of WSSC in any present or future year are subject to any applicable laws regarding appropriation by its governing body and any applicable anti-deficiency or non-appropriation laws. WSSC's right to continued use of its Allocated Flow Capacity, nonetheless, remains subject to the limitations provided in Section 4(A)(2)(c) of the IMA.

3. Relating to Fairfax, Montgomery and Prince George's

Notwithstanding any other provisions of this IMA and the Derivative Agreements: The financial obligations (including capital obligations and expenditures, operating and maintenance obligations and expenditures, and obligations and expenditures related to fines, penalties, and claims) of Fairfax, Montgomery or Prince George's counties in any present or future year are subject to any applicable laws regarding appropriation by their respective governing or legislative body and any applicable anti-deficiency or non-appropriation laws. Fairfax, Montgomery and Prince George's counties' right to continued use of their respective Allocated Flow Capacity, nonetheless, remains subject to the limitations provided in Section 4(A)(2)(c) of the IMA.

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SECTION 11. DERIVATIVE AGREEMENTS UNDER THIS IMA

A. USE AND PROCESS FOR DERIVATIVE AGREEMENTS

1. **Purpose** - Derivative Agreements are intended to implement the intent of the Parties in an efficient and effective manner without reopening or renegotiating the terms of this IMA. Derivative Agreements are limited to addressing issues that are authorized by this IMA. A Derivative Agreement shall not modify, negate or adversely impact any right or obligation of the Parties set forth in this IMA.

2. **Types** - Three (3) kinds of Derivative Agreements may implement this IMA: Operating Agreements, Service Agreements and Limited Party Agreements. These agreements are designed to address procedural, technical, operational and service issues.

3. **Amendments to Derivative Agreements or Supplemental or Successor Derivative Agreements** – Where this IMA refers to a Derivative Agreement such reference shall include any amendment(s) to that Derivative Agreement or supplemental or successor Derivative Agreement(s).

B. OPERATING AGREEMENTS

1. **Purpose** - Operating Agreements are made among all the Parties, but deal with a specific function or group of like functions. Specifically authorized functions for Operating Agreements include but are not limited to:
   a. Allocation and management of flow capacity, loads and peak flows and their associated allocations and limitations;
   b. Parties' financial responsibilities;
   c. Flow and load measurement and management;
   d. Pretreatment and operational requirements; and
   e. Biosolids management commitments.

2. **Current Agreements** - The Operating Agreements which are executed simultaneously with the execution of this IMA are:
   a. Blue Plains Flow Capacity, Loads and Peak Flows – Allocations and Limitations;
   b. Financial Responsibilities of Parties;
   c. Flow and Load Measurement and Management;
   d. Wastewater Projected Flow Capacity Needs and Future Options;
   e. Pretreatment and Operational Requirements; and
   f. Biosolids Management Commitments.

3. **Development and Approval Process** - The Regional Committee shall recommend Operating Agreements for Leadership Committee approval. The Leadership Committee must unanimously approve Operating Agreements, amendments thereto, or termination thereof, before they are effective.

4. **Notification to Parties and Effective Date** - Once the Leadership Committee approves a new/amended Operating Agreement, or termination thereof, it shall be forwarded to the Parties by the secretariat entity and be subject to a 60-day review period by the Signatories.

   a. If a Party objects in writing to the Operating Agreement or the amendment or termination thereof within the 60 day period, the Operating Agreement, or the amendment or termination of the Operating Agreement shall not be approved, and, the dispute resolution process may be commenced, as defined in **Section 10.E**.

   b. If no Party objects in writing within the 60 day period, the new or amended Operating Agreement or termination of an existing Operating Agreement shall take effect upon expiration of the 60 day period and the signature of the chair of the Leadership Committee.

C. SERVICE AGREEMENTS

1. **Purpose** - Service Agreements provide for specific function(s) for the benefit of regional wastewater treatment or for implementation of this IMA.

2. **Development and Approval Process** - The Regional Committee shall recommend Service Agreements for Leadership Committee approval. The Leadership Committee must unanimously approve Service Agreements, amendments thereto, or termination thereof, before they are effective.

3. **Effective Date** - Once the Leadership Committee approves a Service Agreement, the Agreement is effective. Service Agreements are not subject to the 60 day review period for Operating Agreements.

4. **Service Agreements -** Include, but are not limited to:

   a. **For Secretariat Services** - A Service Agreement pursuant to **Section 2** with an entity on behalf of the Parties to provide secretariat support; and

   b. **For Regional Water Quality Management Program** - A Service Agreement pursuant to **Sections 2 and 3** with an entity on behalf of the Parties to provide water quality monitoring and evaluation support to address Potomac River estuary, the Anacostia River, and Chesapeake Bay water quality issues.

D. LIMITED PARTY AGREEMENTS

1. **Purpose –** Limited Party Agreements include, but are not limited to, agreements to provide wastewater treatment services and transfers of capacity to satisfy Projected Flow Capacity Needs originating in the BPSA. Such transfers of capacity shall not modify any requirements of or allocations defined under this IMA.

2. **Permitted Limited Party Agreements** – Limited Party Agreements may be between the following entities: a) two (2) or more Parties; b) a Party(ies) and Non-

Party User(s); or c) a Party(ies) and Indirect User(s). These include, but are not limited to:

a. **DC Water and/or the District and Non-Party Users** – Agreements between DC Water and/or the District and Non-Party Users to provide wastewater treatment services using capacity allocated by this IMA, as defined in **Section 4**.

b. **Fairfax and WSSC and Indirect Users** – Agreements between Fairfax or WSSC and Indirect Users to provide wastewater treatment services using capacity within their respective Allocated Flow Capacity, as defined in **Section 4**.

3. **Limited Party Agreements in Effect Upon Execution of this IMA** - Limited Party Agreements between DC Water and/or the District and Non-Party Users, or Fairfax or WSSC and Indirect Users which are in existence as of the execution of this IMA, and the rights given in those agreements, are valid under this IMA.

4. **Limited Party Agreements Convey No Rights in IMA -** Limited Party Agreements with Non-Party Users or Indirect Users do not convey any IMA rights to those Users.

5. **Regional Committee to Review Limited Party Agreements** – Limited Party Agreements shall be submitted to the Regional Committee for review to ensure that the terms and conditions do not negatively impact the other Parties' rights or responsibilities under the IMA.

6. **Notification to Parties and Effective Date for Limited Party Agreements** - Once the Regional Committee reviews a Limited Party Agreement, and does not object, the Agreement is effective. Limited Party Agreements are not subject to the 60 day review period for Operating Agreements. Once the Regional Committee has reviewed a Limited Party Agreement and not objected, the Limited Party Agreement becomes part of the IMA record.

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SECTION 12. GLOSSARY

This Glossary defines terms that have a specific meaning and are used in this IMA.

Actual Flow(s) – Wastewater flow that is contributed by the District, Fairfax and WSSC, as well as by Non-Party Users and Indirect Users, that is delivered through various points of connection (both metered and unmetered flows) to Blue Plains for treatment.

Adjusted Flow(s) – Actual Flows for only the District, Fairfax and WSSC (less Captured Stormwater Flow in the case of the District), that have been normalized to reflect Annual Average Hydrologic Conditions in order to compare the values to their respective Allocated Flow Capacity.

Allocated Flow Capacity – Blue Plains annual average Design Flow Capacity that is apportioned among the District, Fairfax, WSSC, and Non-Party Users (expressed as annual average MGD under Annual Average Hydrologic Conditions).

Annual Average Hydrologic Conditions – Conditions based on an average amount of rainfall in a year developed based upon the available historical rainfall and groundwater level records.

Billing Flow(s) – Actual Flow for the District, Fairfax, WSSC, and Non-Party Users that has been calculated to account for any differential treatment cost impacts as have been defined or permitted in this IMA, and that is billed by DC Water.

Blue Plains - The wastewater treatment plant located at 5000 Overlook Avenue, S.W., Washington, D.C.

Blue Plains Effluent Load(s) – A maximum quantity of pollutants assigned to Blue Plains in its NPDES permit and associated Fact Sheet that may be discharged from Outfall #001 and/or Outfall #002 (generally expressed as pounds/day or pounds/year).

Blue Plains Effluent Load Allocation(s) – Blue Plains Effluent Load(s) that have been sub-allocated into District, Maryland and Virginia portions.

Blue Plains Effluent Load Offset(s) – An allocation of pollutants that can be secured by a Blue Plains User to increase its proportionate share of Blue Plains Effluent Load Allocation to compensate for any additional increase in wastewater flow that it wants to have treated at Blue Plains.

Blue Plains Influent Load(s) – Quantity of pollutants that are conveyed to Blue Plains in the incoming wastewater that may or may not be associated with Blue Plains Effluent Loads or any Blue Plain Effluent Load Allocations.

Blue Plains Service Area (BPSA) – The combined areas of all sewersheds within all jurisdictions that have historically been authorized to discharge wastewater flows to Blue Plains. This includes wastewater sources (metered or unmetered) that flow by gravity, as well as those that may be pumped into the system.

Capital Cost(s) - Costs incurred in the acquisition, construction, modification, replacement, enlargement, rehabilitation, or upgrade of fixed assets. Fixed assets shall include buildings and appurtenances, pipelines, and equipment. Capital Costs must expand facility capacity, improve the efficiency or output of a facility, or extend the useful life of an asset.

Captured Stormwater Flow (CSF) – Stormwater flow in the District's "Combined Sewer System" that is captured within the collection system and conveyed to Blue Plains for treatment in accordance with the CSO LTCP.

Chief Administrative Officers (CAOs) – Highest level non-elected government executive in the District of Columbia, Fairfax, Montgomery, and Prince George's Counties.

Combined Sewer Overflow Long-term Control Plan (CSO LTCP) – The approved plan controlling combined sewer overflows from the District that was prepared pursuant to the 1994 Combined Sewer Overflow Policy (55 Fed. Reg. 18688, issued 4/19/94 by the EPA) and Section 402(q) of the Clean Water Act and any supplements thereto.

Derivative Agreement(s) (DA) - A formal document, authorized by this IMA, which sets forth technical and procedural details as part of the implementation of this IMA.

Design Flow Capacity(ies) – The wastewater flow rates (expressed as MGD) used as the basis of wastewater treatment design for Blue Plains under various flow conditions (e.g., annual average, maximum 30-day, maximum year).

Design Load Capacity(ies) – The maximum quantity of pollutants in influent wastewater (expressed as pounds per day, or pounds per year) that is used as the basis of wastewater treatment design for Blue Plains.

Diversion(s) – Specific management actions taken by DC Water, Fairfax, WSSC, or Non-Party User to cause wastewater flows generated within the BPSA to be rerouted, pumped, or otherwise redirected from a BPSA sewershed with the result that that the Blue Plains User's flows are or will be reduced. These actions are generally taken to ensure that a Blue Plains User's flow does not or will not exceed either its Allocated Flow Capacity and/or its Peak Flow Limitations, but may also become appropriate to ensure the District's long-term wastewater treatment needs can be met at Blue Plains.

General Managers – Highest level executive in DC Water and WSSC.

Indirect User(s) – Those entities that send wastewater flow to Blue Plains pursuant to service agreements with WSSC or Fairfax. These entities have no direct rights under this IMA, but the Parties have the responsibility to ensure that any agreements and activities associated with the Indirect Users do not infringe or threaten the rights of the Parties under this IMA.

Intermunicipal Agreement (this IMA) – The formal agreement that defines the rights, obligations, and relationships of the Parties.

Jointly Managed Study(ies) – A formal study that is conducted in order to address issues related to the interests of the Parties under this IMA where the Regional Committee: a) has direct input on preparing the scope of work; b) has input on selection of consultant/contractor (whether through contracting mechanisms of the Regional Committee, DC Water or any Party); and c) is actively involved in the review and acceptance of the work products from that study (e.g., the BPSA Long-term Planning Study, 2003).

Key Principle(s) - Statements of general philosophy and intent that govern this IMA and Derivative Agreements, and shall be used to guide any interpretation or dispute resolution process.

Leadership Committee – A committee established pursuant to **Section 2** of this IMA to oversee the implementation of this IMA, the members of which are the Chief Administrative Officer or General Manager of each Party.

Local Limit(s) – Specific discharge limits developed and enforced by DC Water, Fairfax and WSSC upon industrial or commercial facilities to implement the general and specific discharge prohibitions listed in 40 CFR 403.5(a)(1) and (b), as amended.

Multi-Jurisdiction Use Facility(ies) (MJUFs) – A term that recognizes that more than one jurisdiction's flows are treated by or pass through a facility(ies) and that the costs associated with those facilities are shared among the Parties. It is comprised of those facilities that have something to do with wastewater collection or treatment or biosolids management that have some relationship to Blue Plains. Although such facilities are generally managed by DC Water, some facilities are operated by Fairfax or WSSC on behalf of the Parties. The term refers to any facilities that any of the Parties are operating/managing on behalf of all or some subset of the Parties.

Non-Party User(s) - Those entities that contribute wastewater flows to Blue Plains that are managed through separate service agreements either by DC Water directly or on behalf of the District. These include: Loudoun County Sanitation Authority (LCSA or Loudoun Water), Virginia; Town of Vienna, Virginia; Dulles Airport, Virginia; National Park Service, Maryland; and Naval Ship Research and Development Center, Maryland. These entities do not have contractual rights under the IMA; and their interests under this IMA are represented by DC Water.

Operating Agency(ies) – DC Water, Fairfax and WSSC (i.e., those Parties that have operational responsibility for wastewater collection and/or treatment within the BPSA, and the associated billing and payment responsibilities).

Operating Agency Representative(s) – The members of DC Water, Fairfax and WSSC on the Leadership or Regional Committee, as applicable.

Operating and Maintenance Cost(s) (O&M) - Costs incurred by DC Water, Fairfax or WSSC in providing wastewater collection, treatment, and biosolids management and disposal services. Such costs include labor, materials and the repair and upkeep of equipment, but do not include Capital Costs. Costs shall be recognized in accordance

with generally accepted accounting principles. These costs include direct costs, indirect costs and overhead costs.

Operational Requirements – Constraints placed on the wastewater sent to Blue Plains that DC Water has determined are required in order to protect DC Water's wastewater collection system, or equipment, or the processes and equipment at Blue Plains, with which the District, Fairfax, WSSC and, as appropriate, the Non-Party Users and Indirect Users, must comply. These are in addition to any regulatory Pretreatment Program requirements.

Other Associated Facilities – All the other facilities, pipelines, and appurtenances within the District, and the Potomac Interceptor sewer system which are managed by DC Water, and are used for the storage and collection of wastewater sent to, or the management of biosolids generated by Blue Plains.

Party(ies) – Collectively those entities governed by and signatory to this IMA, being: the District of Columbia (District), the District of Columbia Water and Sewer Authority (DC Water), Fairfax County, Virginia (Fairfax), Montgomery County, Maryland (Montgomery), Prince George's County, Maryland (Prince George's), and the Washington Suburban Sanitary Commission (WSSC).

Peak Flow Limitation(s) – Maximum wastewater flow rate (MGD) allowed to be transmitted between the wastewater collection systems of two (2) of the Parties using Blue Plains, i.e. the District, Fairfax or WSSC.

Potomac Interceptor (PI) - The major wastewater interceptor built as a result of Public Law 86-0515 passed by Congress (June 12, 1960) that conveys wastewater from portions of suburban Virginia and Maryland to the District boundary and hence to Blue Plains for treatment.

Potomac Interceptor User(s) – Fairfax, Loudoun County Sanitation Authority (LCSA or Loudoun Water), Town of Vienna, and Dulles Airport, in Virginia; and WSSC, the National Park Service, the Naval Ship Research and Development Center, in Maryland, which utilize portions of the PI to transmit their wastewater flows to Blue Plains.

Pretreatment Program(s) – Formal programs established by the District, Fairfax and WSSC in compliance with the Clean Water Act, as amended, to reduce the amount of pollutants or that alter the nature of pollutant properties in wastewater to a less harmful state prior to discharging such wastewater into the sewer system discharging to Blue Plains.

Projected Flow Capacity Need(s) – The formal determination, based on a Jointly Managed Study, of the long-term wastewater flows and associated treatment requirements (in MGD) that the District, Fairfax and WSSC and Non-Party Users are anticipated to generate within the BPSA, during or at the end of the agreed upon planning period. These projected wastewater flows are calculated as annual average flows under Annual Average Hydrologic Conditions and therefore do include an inherent contribution from Inflow and Infiltration, but do not include any Captured Stormwater Flow contributions, which are determined through separate processes.

Regional Committee - A committee established for the purpose of assisting in the interpretation, administration and implementation of this IMA and to resolve issues pertaining to Blue Plains and Other Associated Facilities that are within the scope of this IMA, its amendments and its associated Derivative Agreements.

Signatory(ies) – The representatives for the Parties that have the legal authority to bind their entities to the terms and conditions of this IMA.

Usage Allocation(s) - The basis for apportioning Capital Costs and O&M Costs of Multi-Jurisdiction Use Facilities (MJUFs) to the District, Fairfax, WSSC or Non-Party User that is not linked directly to the user's share of Allocated Flow Capacity or measured flow. This basis may include consideration of flow rates, percentage volume, modeled contributions, pollutant loadings (such as nutrients), or other methods for determining the District's, Fairfax's, WSSC's, or Non-Party User's portion of facilities, pipelines, and appurtenances and their associated costs.

User Fee(s) – A fee paid by Fairfax, WSSC and Non-Party User Loudoun County Sanitation Authority (LCSA or Loudoun Water) to DC Water, on behalf of the District, in accordance with **Section 5** of this IMA.

-END OF PAGE-

SIGNATORIES

WITNESS the following signatures of the Parties by their duly authorized representatives:

District of Columbia

Vincent C. Gray 4/2/13

Mayor Date:

DC Water

0402 13

Chairman, Board of Directors Date:

Fairfax County, Virginia

3/25/13

Chairman, Board of Supervisors Date:

Montgomery County, Maryland

3/2/13

President, County Council Date:

4/2/13

County Executive Date:

Prince George's County, Maryland

Andrea C. Harrison 4/2/13

Chair, County Council Date:

4/3/13

County Executive Date:

Washington Suburban Sanitary Commission

3/20/2013

Chair Date:

3/20/13

Vice Chair Date:

APPENDIX

HISTORICAL AGREEMENTS (These agreements are inapplicable as of the execution of this IMA. They are mentioned here solely for historical context)

1. The 1985 Blue Plains Intermunicipal Agreement (IMA).

2. Accordingly, except as otherwise provided herein and subject to any orders of the U.S. District Court for the District of Columbia in State Water Control Board, et al. vs. WSSC, et al., Civil Action No. 1813-73, this Agreement shall extinguish and supersede the following agreements, which were also previously suspended, extinguished or superseded by the 1985 IMA:
   a. Agreement No. DCF-A-766, dated August 12, 1954, between the District and WSSC;
   b. Agreement No. DCF-A-1357, dated April 28, 1959, between the District and Fairfax County;
   c. Memorandum of Understanding on Washington Metropolitan Regional Water Pollution Control Plan of October 1970 among the District, WSSC and Fairfax County;
   d. Interim Treatment Program Agreement, dated October 18, 1971, among the District, WSSC and Fairfax;
   e. The 1974 Blue Plains Sewage Treatment Plant Agreement, as amended;
   f. Agreement No. DCF-A-766, dated February 11, 1965, between the District and Fairfax County;
   g. Agreement No. DCF-A-2824, dated July 6, 1967, between the District and WSSC; and
   h. Agreement No. DCF-A-145-DES, dated April 21, 1976, between the District and WSSC.

-END OF PAGE-

2012 IMA
LIST OF DERIVATIVE AGREEMENTS

OPERATING AGREEMENTS		
NO.	**TITLE**	**EFFECTIVE DATE**
1.	BLUE PLAINS FLOW CAPACITY, LOADS AND PEAK FLOWS - ALLOCATIONS AND LIMITATIONS	4/3/13
2.	FINANCIAL RESPONSIBILITIES OF PARTIES	4/3/13
3.	FLOW AND LOAD MEASUREMENT AND MANAGEMENT	4/3/13
4.	WASTEWATER PROJECTED FLOW CAPACITY NEEDS AND FUTURE OPTIONS	4/3/13
5.	PRETREATMENT AND OPERATIONAL REQUIREMENTS	4/3/13
6.	BIOSOLIDS MANAGEMENT COMMITMENTS	4/3/13

OPERATING AGREEMENT #1

PARTIES' AGREEMENT REGARDING: BLUE PLAINS FLOW CAPACITY, LOADS, AND PEAK FLOWS - ALLOCATIONS AND LIMITATIONS

THIS OPERATING AGREEMENT ("Agreement"), made among the **DISTRICT OF COLUMBIA** (the District)**,** the **DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY** (DC Water), **FAIRFAX COUNTY, Virginia** (Fairfax), **MONTGOMERY COUNTY, Maryland** (Montgomery), **PRINCE GEORGE'S COUNTY, Maryland** (Prince George's), and the **WASHINGTON SUBURBAN SANITARY COMMISSION** (WSSC),

Witness:

WHEREAS, the Parties have entered into the Blue Plains Intermunicipal Agreement (2012 IMA); and

WHEREAS, the Parties have agreed to comply with the Allocated Flow Capacity values for the Blue Plains Wastewater Treatment Plant (Blue Plains), which apportion capacity among the District, Fairfax, WSSC and Non-Party Users, as set forth in the 2012 IMA, **Section 4**; and

WHEREAS, the Parties agree to comply with nutrient loads for Blue Plains effluent discharged through two Blue Plains effluent points, designated Outfall #001 and Outfall #002; and

WHEREAS, the Parties agree to routinely monitor their Actual Flows, Adjusted Flows and the associated nutrient loads to Blue Plains to ensure that all allocations and/or limitations for Blue Plains are not exceeded; and

WHEREAS, the Parties have agreed to regularly monitor all wastewater process, permit, regulatory and other developments that have the potential to impact either flow capacity, nutrient loads or other parameters that may affect Blue Plains and its ability to comply with its permit or process requirements as defined in **Section 6**; and

WHEREAS, the Parties recognize that the Blue Plains NPDES permit, applicable Total Maximum Daily Load (TMDLs) for the Potomac River Watershed, and associated state Watershed Implementation Plans (WIPs) must all be complied with, and that the load limits in Blue Plains' permit are applied to Outfall #001 and #002; and

WHEREAS, the Parties have agreed to regularly monitor their peak flows at the point of connection to the collection system owned by the District and operated by DC Water, and to comply with their Peak Flow Limitations, as set forth in the 2012 IMA, **Section 6**; and

WHEREAS, the Parties acknowledge their responsibility to ensure that the Non-Party Users and Indirect Users also comply with the terms of this Agreement as applicable;

and

WHEREAS, Section 2 of the 2012 IMA authorizes the Leadership Committee to create, modify or terminate an Operating Agreement to implement the terms of the IMA consistent with **Section 11.**

NOW, THEREFORE, the Parties agree as follows:

PURPOSE: The purpose of this Agreement is to address matters relating to **Section 4** of the 2012 IMA

A. BLUE PLAINS EFFLUENT LOADS AND ALLOCATIONS

1. The Blue Plains Effluent Loads and Blue Plains Effluent Load Allocations (for Outfalls #001 and #002) are defined in **Table OA 1-A** below**.**

2. The Parties acknowledge that these Effluent Load Allocations are based on various state and District flow and concentration assumptions.

Table OA 1-A

BLUE PLAINS EFFLUENT LOADS[1],[2]		
ENTITIES WITH ALLOCATIONS	**LOAD ALLOCATIONS (LBS/YR)**	
	Total Nitrogen	**Total Phosphorus**
District of Columbia's Blue Plains Load Allocation[3] - Total	**2,114,542.00**	**87,993.54**
WSSC	*Not specified*	*Not specified*
Naval Ship Research & Development Center	*Not specified*	*Not specified*
National Park Service	*Not specified*	*Not specified*
Maryland's Blue Plains Load Allocation-Total[4]	**1,993,000.00**	**89,694.91**
Fairfax County	*Not specified*	*Not specified*
Loudoun County Sanitation Authority	*Not specified*	*Not specified*
Dulles Airport	*Not specified*	*Not specified*
Town of Vienna	*Not specified*	*Not specified*
Virginia's Blue Plains Load Allocation-Total	**581,458.00**	**26,166.00**
Blue Plains Effluent Loads (Grand Total)[1]	**4,689,000.00**	**203,854.45**

[1] Loads for Blue Plains and sub-allocations are as documented in EPA's Final TMDL (December 29, 2010), Section Q.
[2] Use of Allocated Flow Capacity is contingent on providing an allocation equivalent to at least 4.0 mg/L for TN and 0.18 mg/L for TP for Allocated Flow Capacity plus Captured Stormwater Flow, i.e. all flow out of Outfall 002. The District must also provide an allocation for flow discharged to Outfall 001.
[3] The load allocations shown for the District only address that portion associated with District flows to Blue Plains. Allocations for other Non-Party Users are reflected in the respective state allocations.
[4] WSSC use of allocated flow capacity is limited to 163.6 mgd due to diversion of nitrogen and phosphorus load allocations to the Seneca WWTP (i.e., loads associated with 6 mgd).

B. BLUE PLAINS INFLUENT DESIGN LOAD CAPACITY

1. Influent loads to Blue Plains must be limited so that the Blue Plains effluent loads meet permit requirements. The Parties agree that the Design Load Capacities are set forth in **Table OA 1-B**. If there are potential problems with meeting plant permits then the load capacities set forth in **Table OA 1-B** will apply.

2. The Design Load Capacity reflects Complete Treatment requirements for those flows that are discharged through Outfall #002, under Maximum Design Flow Capacity flows.

Table OA 1-B

BLUE PLAINS DESIGN LOAD CAPACITY FOR INFLUENT FLOWS[1]		
Parameters	**Loads (lb/day)**	
	Annual Average	**Maximum 30-Day Rolling Average**
BOD	525,977	694,290
TSS	562,282	747,836
TKN	104,940	137,471
NH_3,	55,390	64,252
TP	14,108	18,340
Associated Maximum Design Flow Capacity – Basis (mgd)		
Flow, Average Year	**384**	**485**
Flow, Maximum Year	**431**	**485**

GLOSSARY TERMS FOR OPERATING AGREEMENT #1

This Glossary identifies terms that have a specific and defined meaning for purposes of interpreting this Operating Agreement. Additional terms that are also used in the 2012 IMA Core Agreement are defined in the Glossary included in the IMA.

Complete Treatment – Flow that is discharged out of Outfall #002 and receives the following treatment: screening, grit removal, primary treatment, secondary treatment, nutrient reduction, disinfection, and de-chlorination.

Maximum Design Flow Capacity – Design flow capacity figures, used to develop design loads for complete treatment out of Outfall #002, that reflects flow assumptions during specific wet weather conditions (i.e., 60 inch Rain Year and after full implementation of the CSO LTCP and the Total Nitrogen and Wet Weather Plan).

[1] *Source: "Design - Level Plant Influent Flows and Loads Technical Memorandum", AECOM May 2009 and "Projected Flows and Sources – NT/Wet Weather Plan", Greeley and Hansen, July 2010.

EXECUTION

This Agreement is executed on behalf of the Parties by the Members of the IMA Leadership Committee who, by affixing their signatures, confirm the authorization of their respective Party to be bound thereby. It shall be effective on the date indicated by the Chair below.

DISTRICT OF COLUMBIA

6462 13

City Administrator Date

DC WATER

3/21/13

General Manager Date

FAIRFAX COUNTY, VIRGINIA

3/25/13

County Executive Date

MONTGOMERY COUNTY, MARYLAND

4/3/2013

Chief Administrative Officer Date

PRINCE GEORGE'S COUNTY, MARYLAND

4/2/13

Chief Administrative Officer Date

WASHINGTON SUBURBAN SANITARY COMMISSION, MARYLAND

3/21/13

General Manager Date

Approved by Leadership Committee: 4/3/13

Chair **Date**

All Parties have been notified, 60 days have passed from notification, no objection has been made by any Party, this Agreement is, therefore,

EFFECTIVE: 4/3/13

Chair **Date**

OPERATING AGREEMENT #2

PARTIES' AGREEMENT REGARDING: FINANCIAL RESPONSIBILITIES OF PARTIES

THIS OPERATING AGREEMENT (Agreement), made among the **DISTRICT OF COLUMBIA** (the District), the **DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY** (DC Water), **FAIRFAX COUNTY, Virginia** (Fairfax), **MONTGOMERY COUNTY, Maryland** (Montgomery), **PRINCE GEORGE'S COUNTY, Maryland** (Prince George's), and the **WASHINGTON SUBURBAN SANITARY COMMISSION** (WSSC),

Witness:

WHEREAS, the Parties have entered into the Blue Plains Intermunicipal Agreement (2012 IMA); and

WHEREAS, the Parties recognize their collective and mutual interests under the 2012 IMA include the authorization, review, or approval of actions that have a potential fiscal impact on the Parties, including, but not limited to billing, auditing and fiscal management; and

WHEREAS, the Parties agree to their collective and individual responsibility for complying with the fiscal allocations for Capital Costs, Operating and Maintenance (O&M) Costs, billing and payment procedures, User Fees, as well as fines, penalties and claims; and

WHEREAS, the Parties agree that their financial responsibilities and payment obligations for Capital Costs and O&M Costs of facilities include those implemented by DC Water and by Fairfax or WSSC, to the extent that those facilities are deemed to be Multi-Jurisdiction Use Facilities (MJUFs); and

WHEREAS, the Parties agree to work with DC Water and, as applicable, Fairfax and WSSC, to ensure that MJUF determinations and associated cost allocations are consistent with the 2012 IMA; and

WHEREAS, the Parties recognize that any significant changes in the wastewater flows, peak flows, and/or loads could require modification to the terms of the 2012 IMA, **Section 5,** and this Operating Agreement**;** and

WHEREAS, Section 2 of the 2012 IMA authorizes the Leadership Committee to create, modify or terminate an Operating Agreement to implement the terms of the IMA consistent with **Section 11.**

NOW, THEREFORE, the Parties agree as follows:

PURPOSE: This Operating Agreement shall set forth additional matters implementing **Section 5** of the 2012 IMA:

A. General Cost Responsibilities;
B. Capital Cost Responsibilities;
C. Operation and Maintenance Costs Responsibilities;
D. User Fees Responsibilities;
E. Fines, Penalties and Claims Responsibilities; and
F. Billing and Payment Procedures.

A. GENERAL COST RESPONSIBILITIES

1. **Timing** - Following agreement of the directly involved Operating Agency Representatives regarding the needs, location, size, allocation of capacity, and allocation of cost for new or expanded collection facilities, such facilities shall be constructed as promptly as needs require.

2. **Contingent Obligations**
   a. Construction of new or improved MJUFs shall be contingent on funding; however, failure to fund will result in a loss of allocation to the non-paying Party.

   b. No Operating Agency shall be obligated to commence construction or installation of any additional pipelines and appurtenances until:

      1) DC Water, Fairfax and WSSC have made their share of the cost available to the constructing Operating Agency or have otherwise satisfied the constructing Operating Agency that funds will be available as expended; and

      2) The constructing Operating Agency has available sufficient funds, including funds which the other Operating Agencies have made available or will make available as expended, to pay for all estimated costs of such facility.

3. **Cost Basis** – The cost basis for Capital Costs shall be actual incurred Capital Costs associated with the MJUFs. The cost basis for O&M costs shall be actual incurred O&M costs associated with the MJUFs.

4. **Billing Disputes** – If disputes regarding billings cannot be resolved through routine procedures, the affected Operating Agency Representatives shall endeavor to reach a consensus with DC Water and/or others involved. If a consensus cannot be reached, the dispute resolution process outlined in **Section 10** of the 2012 IMA will be used.

-END OF PAGE-

B. CAPITAL COST RESPONSIBILITIES

1. **Blue Plains Capital Cost Allocations** - Capital Costs for Blue Plains and Other Associated Facilities shall be allocated proportionate to the District, Fairfax, WSSC, and Non-Party Users' Allocated Flow Capacity or other Usage Allocations as defined in the 2012 IMA **Section 5**. Cost allocations for all Blue Plains wastewater treatment and biosolids management are as set forth in **Table OA 2-A** below**.**

TABLE OA 2-A

BLUE PLAINS ALLOCATED FLOW CAPACITY AND RESULTING COST ALLOCATIONS		
ENTITIES	**CAPACITY ALLOCATIONS (MGD)**	**COST ALLOCATIONS (Percent)**
District of Columbia	152.50	**41.216**
Non-Party Users:		
LCSA, Virginia	13.80	**3.730**
Dulles Airport, Virginia	1.50	**0.405**
Town of Vienna, Virginia	1.50	**0.405**
Naval Ship Research & Development Center, Maryland	0.07	**0.019**
National Park Service, Maryland	0.03	**0.008**
Sub-total	16.9	N/A
District of Columbia - Total[1]	**169.40**	45.783
WSSC[2] (for Prince George's County & Montgomery County), **Maryland – Total**	**169.60**	**45.838**
Fairfax County, Virginia[3] **- Total**	**31.00**	**8.378**
Grand Total	**370.00**	**100.000**

[1] Pursuant to the 2012 IMA, the District is responsible for costs on behalf of the Non-Party Users, which it then recovers through separate agreements with those entities.
[2] The Allocated Flow Capacity for WSSC is on behalf of Prince George's and Montgomery; with any sub-allocations determined by separate agreements between those entities. The WSSC allocation also includes wastewater from other political jurisdictions, including some within those Counties with which WSSC has separate agreements.
[3] The Allocated Flow Capacity for Fairfax also includes wastewater from other political jurisdictions with which Fairfax has separate agreements.

2. **Pipelines and Appurtenances Capital Cost Allocations Methodology for Determining MJUF Portions of Pipelines & Appurtenances** - Capital Costs associated with constructing, replacing, or rehabilitating the wastewater collection systems and facilities shall be allocated utilizing the MJUF capital cost allocation methodology. This methodology uses a computer model to calculate a percentage of use by each entity for each project, and for each portion of the facility being evaluated (i.e., node-to-node). This assessment determines the MJUF portion for every project and its components.

3. **CSO Long-term Control Plan (LTCP) Capital Cost Allocations**
   a. **Parties Agree to Pay MJUF Portion** - The Parties agree to pay proportionate shares of the Capital Costs of that portion of the CSO LTCP that has been determined to be a MJUF, as defined in **Table OA 2-B**.

   b. **Basis for Determining MJUF Portion of CSO LTCP Cost Allocations** - The MJUF portion of the approved CSO LTCP and resulting Capital Cost allocations are based on the modeling used in the development and assessment of the CSO LTCP**.** These Capital Cost allocations shall apply to the District, Fairfax, WSSC and Non-Party Users. Sub- allocations of those Capital Cost allocations for Fairfax, WSSC and the Non-Party Users shall be in proportion to their Allocated Flow Capacity.

   c. **Modification of the CSO LTCP** - DC Water shall evaluate performance assumptions associated with any modifications to the CSO LTCP to determine if the Capital Cost allocations should be modified; and present the findings to the Regional Committee.

   d. **Leadership Committee to Approve Modifications** - The Leadership Committee, after reviewing recommendations from the Regional Committee and determining that such modifications are desirable or required, shall approve and adopt revisions. The revisions may supplant the established Capital Cost allocations.

TABLE OA 2-B

COMBINED SEWER OVERFLOW LONG-TERM CONTROL PLAN CAPITAL COST ALLOCATIONS FOR MJUF DESIGNATED PORTIONS ONLY	
USER	**PERCENT**
District of Columbia	**92.90**
Fairfax County	**1.01**
WSSC	**5.54**
Non-Party Users	**0.55**
Sub-Total: Fairfax, WSSC & Non-Party Users	**7.10**
TOTAL	**100.00**

4. **Capital Equipment Capital Cost Allocations**
   a. Cost allocations for all capital equipment are set forth in **Table OA 2-C.**

   b. Those capital equipment assets which reflect capital that has a shorter life span (such as information technology equipment and fleet, etc.), will be allocated using capacity or flow rates. See **Table OA 2-C** for a list of items included in capital equipment costs and designation as to the cost allocation basis.

   c. Funding of the MJUF portion of capital equipment is derived by first allocating each pool of capital equipment costs to one or more agreed upon cost drivers. (These cost drivers include the number of full time employees, departmental budgets, etc.)

   d. Changes to these cost drivers can be proposed by DC Water, Fairfax or WSSC and are subject to future evaluation by the Regional Committee.

-END OF PAGE-

TABLE OA 2-C

CAPITAL EQUIPMENT COST ALLOCATION METHODOLOGY		
SERVICE AREA	**PROJECT**	**ALLOCATION METHODOLOGY**
Wastewater Treatment	Plant Model	Allocated Capacity
	Laboratory Equipment	Allocated Capacity
Maintenance Services	Maintenance	Allocated Capacity
	Pump Repairs/Replacement	Allocated Capacity
	Turbine, Aerator & Methanol	Allocated Capacity
	Maintenance Management System	Actual Flows
	Large Electric Motors	Allocated Capacity
	Potomac Sewage Pumping Station	Allocated Capacity
	High Priority Rehabilitation Program	Allocated Capacity
	Large Meter Testing	Allocated Capacity
	Centrifuge Repair/Replace	Allocated Capacity
Fleet	Vehicles	Actual Flows
	Indirect Fleet Allocation	Actual Flows
Information Technology	Financial Management	Actual Flows
	Radio Equipment	Actual Flows
	General IT Infrastructure	Actual Flows
	Payroll/HR System	Actual Flows
Facilities & Security	HVAC at Various Locations	Actual Flows
	Doors, Signage, Fencing, etc.	Actual Flows

-END OF PAGE-

5. **Other Capital Cost Allocation Calculations - Indirect Labor Cost Pools** – DC Water will segregate its Blue Plains indirect labor cost pool from its non-Blue Plains indirect labor cost pool. The Blue Plains indirect labor cost pool's allocation base will be the total costs of Blue Plains project/activities managed by DC Water's Engineering Department or its successor. The non-Blue Plains indirect labor cost pool's allocation base will be the total cost of all non-Blue Plains projects/activities managed by DC Water's Engineering Department or its successor.

C. OPERATION AND MAINTENANCE (O&M) COST RESPONSIBILITIES

1. **Determination of Billing Flow**
   a. Each of the District, Fairfax and WSSC's proportion of the annual MJUF O&M Costs shall be its Billing Flow divided by the Total Billing Flow. The Billing Flow will be the Actual Flow for each entity; except that the District Actual Flow is adjusted to account for any differential treatment cost impacts to calculate the District Billing Flow. The procedures for calculating these Billing Flows are set forth below in **Table OA 2-D**. For purposes of this calculation, all Actual Flows reflect Allocated Flow Capacities, and the Captured Stormwater Flow represents total estimated flows once the CSO LTCP is fully implemented.

   b. **Differential Treatment Cost Impacts** - Consistent with 2012 IMA **Section 5**, the calculation of Billing Flow from Actual Flow shall take into account any differential treatment cost impacts that have been determined based on a Jointly Managed Study.

   c. **District Billing Flows** - As of the date of this Agreement, the only agreed upon differential treatment cost applies to the District's CSF. The cost of treating CSF has been determined to be 49.28% of the cost of treating average strength wastewater (consistent with a technical review of DC Water analysis, 3/22/10). This percentage will be reviewed and updated periodically for changed conditions.

   d. **Annual Adjustment of Billing Flow** - The Billing Flow for any year will, therefore, be adjusted as follows:
      1) DC Water will calculate the CSF treated at Blue Plains using the measured rainfall and the CSO LTCP model. The CSO LTCP model, this calculation, and the nomograph in the **Appendix of OA #3** will be reviewed periodically by the Regional Committee.
      2) The calculated CSF will be subtracted from the Actual Flow.
      3) The CSF will be multiplied by the CSF cost ratio (i.e. the cost per gallon of treating CSF divided by the cost per gallon of treating average strength wastewater). This is the Adjusted CSF.
      4) The Billing Flow is calculated by adding the Adjusted CSF to the Actual Flow less the CSF.

-END OF PAGE-

NOTE: For purposes of this calculation, all Actual Flows reflect Allocated Flow Capacities, and the Captured Stormwater Flow represents total estimated flows once the CSO LTCP is fully implemented. Numbers are rounded for purposes of the example.

TABLE OA 2-D

Actual Flow			
Flow Sources	**Flows (MGD)**	**Outfalls**	
		#001	**#002**
MD			
WSSC	169.60		
Navy	0.07		
NPS	0.03		
Sub-Total MD	**169.70**		
VA			
Fairfax	31.00		
Loudoun	13.80		
Dulles	1.50		
Vienna	1.50		
Sub-Total VA	**47.80**		
Suburb Total	**217.50**		
DC			
DC	152.5		
CSF	21		
Total DC	173.5		
Grand Total	**391.00**	**7.30**	**383.70**

2. **Blue Plains & Associated Facility O&M Cost Allocations**
   a. The District, Fairfax and WSSC and Non-Party Users shall be assessed by DC Water for their proportionate share of the cost of operating and maintaining Blue Plains.

   b. The DC Water Central Operations Facility (COF) building O&M Costs allocated to wastewater services shall be 54%. However, all Parties have the right to request a detailed analysis of this agreed allocation percentage if a circumstance occurs that materially changes the assumptions used in developing this ratio. Where practicable, DC Water will continue to segregate COF related costs from other cost pools in the Facilities Department or its successor.

3. **Pipelines and Appurtenances O&M Cost Allocations**
   a. The District, Fairfax and WSSC and Non-Party Users shall be assessed by DC Water for their proportionate share of the cost of operating and maintaining the interceptors (including the Potomac Interceptor) and appurtenances, and including wastewater pumping stations at locations other than Blue Plains which are determined to be MJUFs.

   b. WSSC shall assess DC Water, as appropriate, for its proportionate share of the cost of O&M of the interceptors, wastewater pumping stations, screen chambers and wastewater Flow meters that are operated and maintained by WSSC or any of the other parties to handle BPSA flows that are directed to Blue Plains.

   c. The District, Fairfax and WSSC's share of these O&M Costs shall be based on a node-to-node assessment methodology.

4. **CSO LTCP O&M Cost Allocations** – The District, Fairfax, WSSC and Non-Party Users shall be assessed by DC Water for their proportionate share of the cost of operating and maintaining that portion of the CSO LTCP that has been determined to be a MJUF by the Regional Committee based on the proportion of their Actual Flow versus Total Flow through the facility or based on other Usage determinations. Any methodology used shall be approved by the Regional Committee.

Billing Flow – Example Calculation		
1	Metered Plant Flow (Actual Flow), MGD	391
2	Metered **WSSC** (Actual Flow = Billing Flow), MGD	169.6
3	Metered **Fairfax** (Actual Flow = Billing Flow) MGD	31
4	Metered **Loudoun** (Actual Flow = Billing Flow)MGD	13.8
5	**Other PI Users** (Actual Flow = Billing Flow), MGD	3.1
6	Total Suburban (Actual Flow = Billing Flow), MGD	217.5
7	**District** (Actual Flow), MGD	391 – 217.5 =173.5
8	Captured Stormwater Flow (CSF) (from LTCP model), MGD	21
9	CSF Cost Ratio (from AECOM cost study)	49%[1]
10	Adjusted CSF Flow, MGD	(21)(.49) = 10.3
11	District Billing Flow, MGD	173.5 - 21 + 10.3 = 162.8
12	Total Billing Flow, MGD	217.5 + 162.8 = 380.3

[1] Cost ratio applied to Captured Stormwater Flow is based on determination cited in **Subsection C.1.c**.

D. USER FEE RESPONSIBILITIES

1. **Payment** - The WSSC and Fairfax shall pay to the District an annual User Fee in accordance with **Section F.2**. of this Agreement. This fee shall be proportionately adjusted if the Allocated Flow Capacities defined in **Section 4** of the 2012 IMA are reduced.

2. **Annual Estimate** - In accordance with **Section 5** of the 2012 IMA, DC Water shall prepare an estimate of the User Fee prior to the beginning of each DC Water fiscal year and include it in the next billings rendered to Fairfax, Loudoun County Sanitation Authority (LCSA or Loudoun Water) and WSSC.

E. FINES, PENALTIES AND CLAIMS RESPONSIBILITIES

1. **Proportionate Allocation for Capital Projects** - Except as otherwise provided in the 2012 IMA, all fines, penalties and claims relating to Capital Projects will be allocated proportionately to the District, Fairfax and WSSC, and Non-Party Users based on Allocated Flow Capacity.

2. **Proportionate Allocation for O&M Activities** -Except as otherwise provided in the 2012 IMA, all fines, penalties and claims relating to O&M Activities will be allocated based on the Actual Flows of District, Fairfax, WSSC and Non-Party Users.

F. BILLING AND PAYMENT PROCEDURES

1. **DC Water to Annually Estimate Costs** - Before October 1 of each year, DC Water shall prepare an annual estimate of the Capital Costs and O&M Costs expected to be incurred during the following year and the estimated share of these costs for the District, Fairfax and WSSC. These estimates will be allocated in accordance with **Section 5.C. and 5.D**. As appropriate, the estimated share of the annual costs for each of these Parties shall be offset by each Party's estimate of the costs that it will incur in operating and maintaining its share of MJUFs for managing BPSA flows, or its share of managing Blue Plains biosolids or other residuals.

2. **Billing and Payment** - DC Water shall bill Fairfax and WSSC quarterly for Capital Costs and O&M Costs. Fairfax and WSSC shall remit quarterly payments to DC Water to cover 25% of their share of estimated annual Blue Plains O&M Costs and User Fees. Payments shall be made within 30 days of receipt of the invoices. If quarterly payments are not made on time, interest shall be charged at the Federal Reserve Bank's Discount Rate in effect on the due date of the bill. The Federal Reserve Bank Discount Rate will be determined quarterly at the end of each quarter.

3. **Reconciliation of Annual Bills**
   a. **Capital Costs** – DC Water shall submit a reconciled quarterly invoice, including the estimate for the following quarter.

b. **O&M Costs -** No later than 90 days after the completion of the annual independent audit or March 31st, DC Water shall prepare an annual bill for the purpose of reconciling payments made during the year by Fairfax and WSSC. This bill shall be based upon the actual costs incurred by each Party; such information to be provided to DC Water by Fairfax and WSSC within 30 days after the close of each DC Water fiscal year.

c. **Capital Costs and O&M Costs** - Any overpayments or underpayments shall be equally prorated to each quarterly payment date and simple interest calculated from the date the quarterly payment was paid until the overpayment is refunded or the underpayment is paid. See **Table OA 2-E** for an example of the computation of the interest discussed in this sub-section

TABLE OA 2-E

FEDERAL RESERVE DISCOUNT RATE INTEREST CALCULATION EXAMPLE
(For illustrative purposes only)

Quarter	Interest Rate[1]	In Thousand Dollars			Period Outstanding[2] (Months)
		Payment[3]	Over/ <Under>[4]	Interest Owed[5]	
1	2.00%	7,500.00	625.00	14.06	13.5
2	2.00%	7,500.00	625.00	10.94	10.5
3	2.50%	7,500.00	625.00	9.77	7.5
4	3.00%	7,500.00	625.00	7.03	4.5
Total Annual Payment		30,000.00	2,500.00	41.8	
Total Annual Actual		(27,500.00)			
Over/<Under>[4]		2,500.00			

* ** Assumes refund/payment received end of subsequent year Quarter 1.

4. **<u>Maintenance and Review of Records</u> -** DC Water, Fairfax and WSSC shall maintain books, accounts, records, documents and other evidence, employing generally accepted accounting principles and practices sufficient to show properly

[1] Federal Reserve Discount Rate in effect at end of each Quarter.
[2] Number of months between making payment and time of refund/payment (true up). Assumes quarterly payment made in mid-quarter. Assumes true up received end of subsequent year Quarter 1. This would be 13.5 months for Quarter 1, 10.5 months for Quarter 2, etc.
[3] Quarterly payments based upon annual budget.
[4] Over or Underpayment equally prorated over each quarter. Annual difference is divided evenly between the quarters.
[5] Example interest calculation for the first quarter: (625) x (0.02) x (13.5/12) = 14.06

all direct and indirect costs of whatever nature they claim to have incurred or anticipate incurring. The foregoing records shall be subject at reasonable times to audit, examination, inspection or reproduction by DC Water, Fairfax or WSSC or a duly authorized representative of these Parties. Upon request, the Party shall provide a mutually acceptable electronic data processing medium containing all available computerized cost data to support the billing. Records shall be preserved for a period of at least three (3) years from the end of the fiscal year in which payment was made.

5. **Right to Audit** - All cost elements charged to DC Water, Fairfax, WSSC, or any Non-Party User may be audited by any Party. These cost elements include, but are not limited to: Capital Costs, O&M Costs, direct costs, indirect costs and flow data. Any adjustments made to DC Water, Fairfax or WSSC's bill as the result of an audit shall also automatically be made, as applicable, to other entities.

6. The right of any Party to any sum due pursuant to this Agreement shall not be barred by any statute of limitations.

7. **Biosolids Management Cost Procedures** - WSSC will incur Blue Plains biosolids management costs in accordance with **Operating Agreement #6, Biosolids Management Commitments**. The payment procedures for these costs shall be as follows:
   a. DC Water shall credit WSSC for all Blue Plains related biosolids costs incurred by WSSC less the share allocated to WSSC.
   b. DC Water shall then collect the share of these costs allocated to Fairfax by adding these costs to the regular payments due from Fairfax.
   c. DC Water shall also recover the costs paid on behalf of the Non-Party Users.

-END OF PAGE-

EXECUTION

This Agreement is executed on behalf of the Parties by the Members of the IMA Leadership Committee who, by affixing their signatures, confirm the authorization of their respective Party to be bound thereby. It shall be effective on the date indicated by the Chair below.

DISTRICT OF COLUMBIA

040213

City Administrator Date

DC WATER

3/21/13

General Manager Date

FAIRFAX COUNTY, VIRGINIA

3/25/13

County Executive Date

MONTGOMERY COUNTY, MARYLAND

4/3/13

Chief Administrative Officer Date

PRINCE GEORGE'S COUNTY, MARYLAND

4/2/13

Chief Administrative Officer Date

WASHINGTON SUBURBAN SANITARY COMMISSION, MARYLAND

3/20/13

General Manager Date

Approved by Leadership Committee: 4/3/13

Chair **Date**

All Parties have been notified, 60 days have passed from notification, no objection has been made by any Party, this Agreement is, therefore,

EFFECTIVE: 4/3/13

Chair **Date**

OPERATING AGREEMENT #3

PARTIES' AGREEMENT REGARDING: FLOW AND LOAD MEASUREMENT AND MANAGEMENT

THIS OPERATING AGREEMENT (Agreement), among the **DISTRICT OF COLUMBIA** (the District), the **DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY** (DC Water), **FAIRFAX COUNTY, Virginia** (Fairfax), **MONTGOMERY COUNTY, Maryland** (Montgomery), **PRINCE GEORGE'S COUNTY, Maryland** (Prince George's), and the **WASHINGTON SUBURBAN SANITARY COMMISSION** (WSSC),

Witness:

WHEREAS, the Parties have entered into the Blue Plains Intermunicipal Agreement (2012 IMA); and

WHEREAS, the Parties agree to routinely monitor and assess their Actual Flows, Adjusted Flows, and the associated Pollutant/Nutrient Loads to Blue Plains to ensure that all allocations and/or limitations for Blue Plains are not exceeded, as set forth in **Section 4** of the 2012 IMA; and

WHEREAS, the Parties agree to regularly monitor and assess their Peak Flows at the point of connection to the BPSA's collection system; and comply with Peak Flow Limitations, as set forth in **Section 4** of the 2012 IMA and **Operating Agreement #1**; and

WHEREAS, the Parties acknowledge their responsibility to ensure that the Non-Party Users and Indirect Users also comply with the terms of this Operating Agreement; and

WHEREAS, Section 2 of the 2012 IMA authorizes the Leadership Committee to create, modify or terminate an Operating Agreement to implement the terms of the 2012 IMA consistent with **Section 11.**

NOW THEREORE, the Parties agree as follows:

PURPOSE: The purpose of this Agreement is to address matters related to **Section 6** of the 2012 IMA, including:

A. Flow Measurement, Reporting and Assessment;
B. Load Measurement, Reporting and Assessment; and
C. Load Management.

A. FLOW MEASUREMENT, REPORTING AND ASSESSMENT

1. Flow Measurement

a. For each sewer of a Party that has, or is expected to have, a discharge of 60,000 GPD or greater which discharges from a sewer of the District, Fairfax or WSSC into a sewer owned or operated by the District, DC Water, Fairfax or WSSC; the owner/manager of such discharging sewer(s) shall provide and install wastewater flow meters of the maximum practicable accuracy, at its own expense. The receiving Party directly involved shall mutually approve all such meter installations, shall designate who shall read, test, operate and maintain all such meters, and shall determine the methods and procedures to be followed. DC Water, Fairfax and WSSC may jointly read, test and inspect such meters at reasonable times at the request of any Party.

b. DC Water shall provide, operate and maintain metering of the total Blue Plains wastewater Flow, as well as Intra-plant Flows[1], in order to implement this agreement. DC Water, Fairfax and WSSC may jointly read, test and inspect such meters at reasonable times at the request of any Party.

c. In case a wastewater flow meter fails to function for any reason, the meter shall be repaired as expeditiously as possible. Wastewater flow for the period of such failure shall be deemed to be equal to the flow during the most recent equivalent period that the meter was in satisfactory operation. If there is no such corresponding period, the flow shall be determined or estimated in such a manner as shall be agreed upon by the Parties involved.

d. **Wastewater Units** - For each sewer that has, or is expected to have, a discharge of less than 60,000 GPD which discharges from a sewer of the District, Fairfax or WSSC into a sewer of another entity, the total annual estimated wastewater flow shall be calculated based upon the number of wastewater units connected to or discharging into such sewer. A wastewater unit shall equate to an annual discharge of 125,000 gallons. Each service connection shall be counted as one or more wastewater units depending upon the use of the premises served through such connections as follows:
   1) Each single family dwelling unit, whether detached or attached, shall constitute one (1) wastewater unit;
   2) Each apartment unit shall constitute one-half (0.5) of a wastewater unit;
   3) Wastewater units for premises used for other than residential purposes shall be determined by multiplying the annual water consumption by one and one-half (1.5)[2] and dividing by 125,000 gallons[3].

[1] Wastewater flow meters that are located within the Blue Plains WWTP that are used to help calculate District Flows.
[2] Ratio of 1.5 accounts for contributions from I/I sources to the estimated flows.
[3] 125,000 gallon figure reflects conversion of flows (water consumption and I/I) to estimated wastewater units.

e. The monthly computation of the District, Fairfax, WSSC, and Non-Party User's Actual Flow shall include both its metered and unmetered flow entering the District's sewer system.
f. The District's Actual Flow shall be calculated by subtracting the sum of Fairfax, WSSC and Non-Party Users' Actual Flows from the total plant Actual Flow.

g. Additional long-term flow meters to monitor flows to the Potomac Interceptor are critical to ensuring that there is adequate and detailed flow data to evaluate how well the PI system is functioning under various flow conditions; and to ensure that individually and collectively that the flows into and through the PI are consistent with those values set forth in **Section 4** of the IMA.

h. In order to address flow limitations necessary to ensure the proper performance of the Potomac Interceptor, the Regional Committee shall evaluate the need for developing a long-term rain gauge network, adding meters near Manholes #7 or #18 (i.e., section of PI where surcharging occurs), and addressing any other technical issues that would aid in this effort. The Regional Committee shall develop a plan to identify, fund, and implement this evaluation; which shall include defining specific tasks, roles and responsibilities, and a schedule for accomplishing this work.

2. **<u>Flow Reporting</u>**
   a. No later than 15 days after the end of each month, Fairfax, WSSC and each Non-Party User shall prepare and send to DC Water a report on the status of its Actual Wastewater Flows and commitments. DC Water shall compile these reports into a single report and distribute this report to the Parties no later than 30 days after the end of the month. DC Water shall also prepare an annual summary report for each calendar year and distribute this report to the Parties no later than February 15th of the following year.
   b. Fairfax, WSSC and Non-Party Users' report shall include at least the following information:
      1) The measured average flow and Peak Flow rate and duration during the month of the report for each metered point of connection between two (2) entities in the wastewater collection systems;
      2) The measured Actual Flow and the Peak Flow rate and duration for each metered point of connection between two (2) entities' wastewater collection systems for the 12 month period ending with the month for which the report is prepared;
      3) The estimated Actual Flow for the unmetered points of connection between the two (2) entities' wastewater collection systems, and the method used to estimate the annual average;
      4) The User's total daily average of all Actual Flows (i.e. the sum of all metered and unmetered flows) during the month for which the report is prepared;
      5) The total rainfall, as measured at Washington National Airport, during the 12 months ending with the month for which the report is prepared;
      6) The Highest Rolling Annual Average for its Actual Flow during the 12 months ending with the month for which the report is prepared;

7) Such other related information/data as may be deemed necessary to implement the 2012 IMA.

c. DC Water shall be responsible for ensuring that the Non-Party Users comply with these reporting requirements.
d. DC Water's monthly and annual summary reports shall include Actual Flow data at Blue Plains, including total flow through the plant, and the distribution of the flow to Outfall #001 and Outfall #002; and such other related information/data as may be deemed necessary to implement the 2012 IMA.

e. The District's Actual Flow for the purposes of flow management within the context of this Agreement shall be the total flow to Blue Plains less flows reported by Fairfax and WSSC and the Non-Party Users. The Parties recognize that a portion of the District's Actual Flow to Blue Plains is stormwater flow from its Combined Sewer area.

3. **Flow Assessment**
   a. DC Water shall monitor reported flows and calculate Adjusted Flows from Actual Flows provided by Fairfax, WSSC and Non-Party Users (i.e., to present normalized flows that reflect average hydrologic conditions). **Table OA 3-A** shows Adjusted Flow –Calculation Example.
   b. DC Water shall monitor the flow trends and any potential allocation or limit exceedances and alert the Parties each month if any reported flows or peak flow values indicate problems.
   c. DC Water shall prepare an annual BPSA flow report for the Regional Committee that assesses flow trends, as well as noting any instances where Adjusted Flows and/or Peak Flow values indicate that flows are or have the potential to exceed Allocated Flow Capacity and/or Peak Flow Limitations, as defined in **Section 4** of the 2012 IMA**.**
   d. DC Water shall also be responsible for assessing all flows, analyzing data and modeling flows as needed to make recommendations what and where peak flow reductions are required in the system and for potential modifications to the Peak Flows in the Potomac Interceptor defined in the **Section 4** of the 2012 IMA.
   e. The Regional Committee is responsible for reviewing the BPSA flow report and assessing what actions, if any, are required. These actions may include, but are not limited to, determining if additional flow management or documentation of flow management efforts are required from the District, Fairfax, WSSC and/or the Non-Party Users; and determining whether a comprehensive BPSA Long-term Planning Study and updated BPSA Flow Projections are needed in advance of their regularly scheduled 5-year update. These efforts will be used to formally assess Adjusted Flow and Peak Flow trends against Allocated Flow Capacity and Peak Flow Limitations, as well as flow management actions. The procedures for conducting this BPSA work are outlined in **Operating Agreement #4**.
   f. The Regional Committee shall report to and make recommendations to the Leadership Committee based on the results of the BPSA Long-term Planning Study.

4. **Flow Management**
   a. The District's, Fairfax's, WSSC's and Non-Party Users' Adjusted Flow shall at no time exceed its Allocated Flow Capacity as defined in **Section 4** of the 2012 IMA**.**
   b. If the Adjusted Flow of the District, Fairfax or WSSC exceeds the Allocated Flow Capacity for any reason, the District, Fairfax or WSSC shall immediately stop making any further commitments for hookups, connections and extensions to its sewage system tributary to Blue Plains until three (3) consecutive months have passed during which the sum of the entity's Adjusted Flow shall not have exceeded its Allocated Flow Capacity. The sole exceptions to this prohibition shall be:
      1) To eliminate an alternative method of wastewater disposal that has been certified by a duly constituted health officer in the District, Fairfax or WSSC's BPSA, or his designated local representative, to constitute a public health hazard. This certification shall be on a parcel by parcel basis;
      2) For public service buildings, which include schools, hospitals, nursing homes, medical and dental clinics, and other structures used by public agencies in providing essential services for public health and welfare;
      3) If the User has a plan approved by the Regional Committee to bring its Adjusted Flow within its Allocated Flow Capacity.

B. LOAD MEASUREMENT, REPORTING AND ASSESSMENT

1. DC Water shall be responsible for sampling, monitoring and assessing the influent flows to Blue Plains. If there are exceedances that create problems with the Blue Plains permit or other issues, then the Load Capacities set forth in **Table OA 1-B** of **Operating Agreement #1** will apply.

2. DC Water shall be responsible for providing annual reports to the Regional Committee regarding the results of these assessments and recommending any potential actions, including conducting detailed strength of influent wastewater studies.

3. The Regional Committee shall participate in DC Water-required Jointly Managed Studies to assess the strength of influent wastewater and to determine what changes, if any are required to Allocated Flow Capacity, Peak Flow Limitations or any Load Limitations in order to ensure that Blue Plains continues to have the ability to comply with all of its process and permit requirements.

4. Based on the results of such studies, the Regional Committee shall make recommendations to the Leadership Committee regarding changes that may be required to the flow, load and/or financial obligations of the Parties.

A. LOAD MANAGEMENT

1. The Regional Committee shall review options for managing loads in influent wastewater flows, including but not limited to, assessing the increase in loadings that

result from extensive Inflow/Infiltration reductions in sewer collection system, use of garbage disposals, and potential Pretreatment requirements for commercial, household or other activities.

2. Based on the results of such studies, the Regional Committee may make recommendations to the Leadership Committee regarding any potential changes to the Flow Management responsibilities, Pretreatment obligations, and any other obligations of the Parties.

APPENDIX

Table OA 3-A

Adjusted Flow - Calculation Example
(for comparing to Allocated Flow Capacity)

1) **Actual Flows, Rainfall and Well Depths**

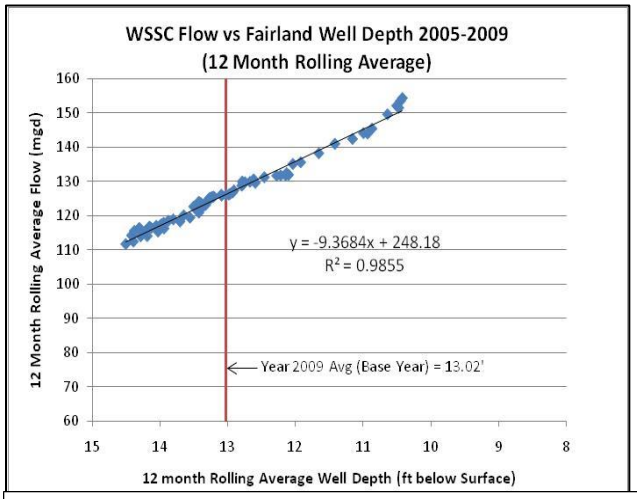
a) Assume it was a wet year and annual averages of Actual Flows were measured as follows:

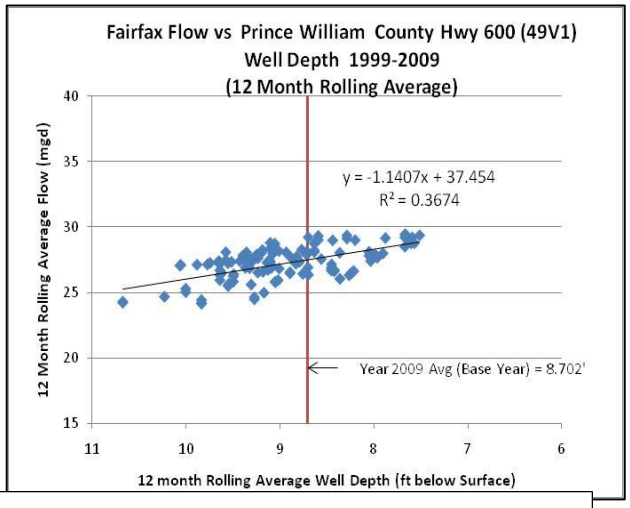
Line	Item	Value (MGD)	Calculation
1	Blue Plains Outfall #002	400.00	
2	Blue Plains Outfall # 001	8.00	
3	Total Blue Plains	408.00	Lines 1 + Line 2
4			
5	Maryland		
6	WSSC	175.00	
7	Navy	0.07	
8	NPS	0.03	
9	**Sub-Total Maryland**	175.10	Sum of Lines 6,7,9
10			
11	Virginia		
12	Fairfax	30.00	
13	Loudoun	13.80	
14	Dulles	1.50	
15	Vienna	1.50	
16	**Sub-Total Virginia**	46.80	Sum of Lines 12 to 15
17			
18	**Total Suburban Flow**	221.9	Line 9 + Line 16
19			
20	**Total District Flow**	186.10	Line 3 minus Line 18

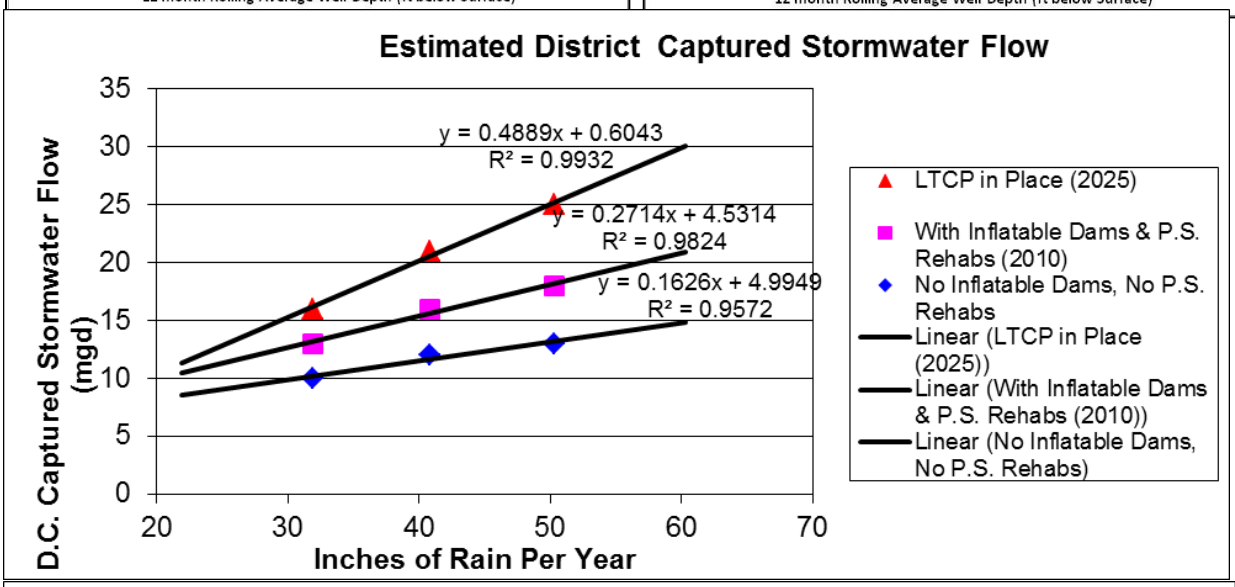
b) **Rainfall and Well Depths**
Assume 12 month rolling average rainfall and well depths were as follows:

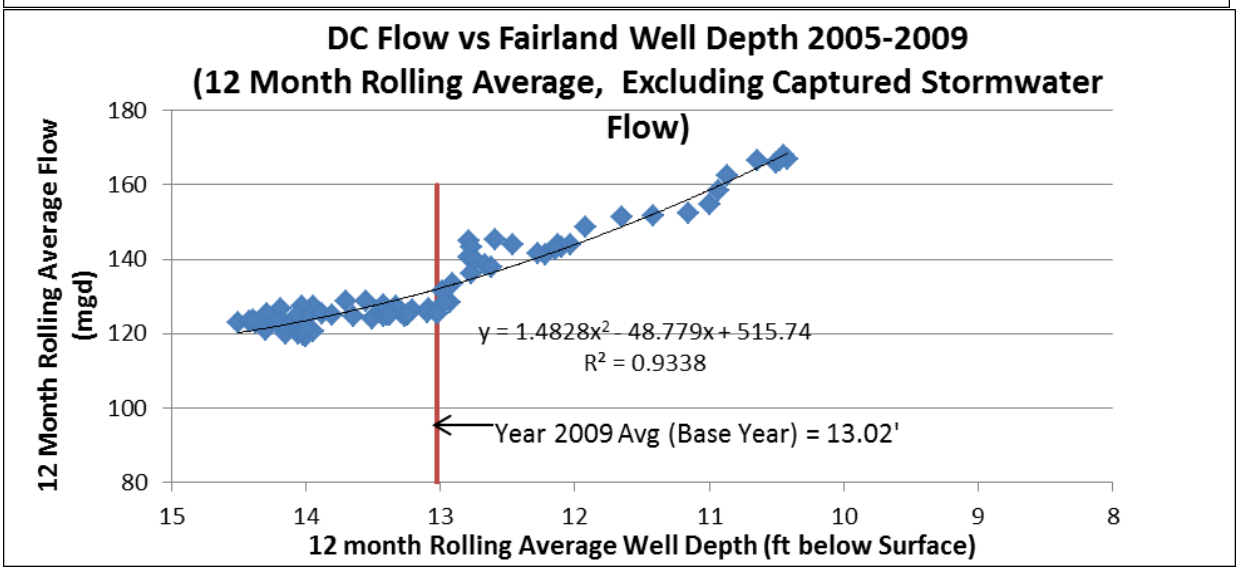
Item	Value	Notes
Rainfall at National Airport	48 in.	12 month rolling average
Fairland Well Depth	11.5 ft	12 month rolling average
Prince William County Highway 600 Well Depth	7.50 ft	12 month rolling average

Nomographs Used to Calculate Flow Adjustments[1]









[1] These nomographs shall be reviewed periodically by the Regional Committee for accuracy and adjusted accordingly.

SAMPLE CALCULATIONS

2) **WSSC Flow Calculation**
   a) Assume Actual Flow = 175.00 MGD (metered)

   b) Make adjustment to average hydrologic conditions using Fairland Well depth
      i) Assume actual 12 month rolling average Fairland well depth = 11.50 ft
      ii) Nomograph flow: y = - 9.3684 *(11.50) + 248.18 = 140.4 MGD
      iii) Base year (2009) 12 month rolling average Fairland well depth = 13.02 ft
      iv) Nomograph flow: y = - 9.3684 *(13.02) + 248.18 = 126.2 MGD
      v) Adjustment = 126.2-140.4 = - 14.2 MGD

   c) WSSC Adjusted Flow = 175.00 – 14.2 =160.8 MGD

3) **Fairfax Flow Calculation**
   a) Assume Actual Flow = 30 MGD (metered)

   b) Make adjustment to average hydrologic conditions using Prince William County Highway 600 Well depth
      i) Assume actual 12 month rolling average Prince William County well depth = 7.50 ft
      ii) Nomograph flow: y = -1.1407*(7.5) + 37.454= 28.9 MGD
      iii) Base year (2009) 12 month rolling average Prince William County well depth = 8.702 ft
      iv) Nomograph flow: y = -1.1407*(8.702) + 37.454= 27.5 MGD
      v) Adjustment = 27.5 – 28.9 = - 1.4 MGD

   c) Fairfax Adjusted Flow = 30 – 1.4 = 28.6 MGD

4) **District Flow Calculation**
   a) Assume Actual Flow = 186.1 MGD

   b) Make adjustment to average hydrologic conditions using Fairland Well depth
      i) Assume actual 12 month rolling average Fairland well depth = 11.50 ft
      ii) Nomograph flow: y = 1.4828*(11.50^2)-48.779*(11.50)+515.74 = 150.9 MGD
      iii) Base year (2009) 12 month rolling average Fairland well depth = 13.02 ft
      iv) Nomograph flow: y = 1.4828*(13.02^2)-48.779*(13.02)+515.74 = 132.0 MGD
      v) Adjustment = 132.0 – 150.9 = - 18.9 MGD

   c) Make adjustment for Captured Stormwater Flow (CSF)
      i) Assume LTCP is in place and 48” rainfall
      ii) CSF = 0.4889 *(48)+0.6043 = 24.1

   d) District Adjusted Flow = 186.1 – 18.9 - 24.1 = 143.1

5) Comparison of Actual Flow and Adjusted Flow

Line	Item	Actual Flow (MGD)	Adjusted Flow (MGD)
1	Blue Plains Outfall #002	400.00	
2	Blue Plains Outfall #001	8.00	
3	**Total Blue Plains**	408.00	349.40
4			
5	Maryland		
6	WSSC	175.00	160.80
7	Navy	0.07	0.07
8	NPS	0.03	0.03
9	**Sub-Total Maryland**	175.10	160.90
10			
11	Virginia		
12	Fairfax	30.00	28.60
13	Loudoun	13.80	13.80
14	Dulles	1.50	1.50
15	Vienna	1.50	1.50
16	**Sub-Total Virginia**	46.80	45.40
17			
18	**Total Suburban Flow**	221.9	206.30
19			
20	**Total District Flow**	186.10	143.10

-END OF PAGE-

EXECUTION

This Agreement is executed on behalf of the Parties by the Members of the IMA Leadership Committee who, by affixing their signatures, confirm the authorization of their respective Party to be bound thereby. It shall be effective on the date indicated by the Chair below.

DISTRICT OF COLUMBIA

_____ 04/02/13
City Administrator Date

DC WATER

_____ 3/21/13
General Manager Date

FAIRFAX COUNTY, VIRGINIA

_____ 3/25/13
County Executive Date

MONTGOMERY COUNTY, MARYLAND

_____ 4/3/13
Chief Administrative Officer Date

PRINCE GEORGE'S COUNTY, MARYLAND

_____ 4/2/13
Chief Administrative Officer Date

WASHINGTON SUBURBAN SANITARY COMMISSION, MARYLAND

_____ 3/20/13
General Manager Date

Approved by Leadership Committee: _____ 4/3/13
Chair **Date**

All Parties have been notified, 60 days have passed from notification, no objection has been made by any Party, this Agreement is, therefore,

EFFECTIVE: _____ 4/3/13
Chair **Date**

1

OPERATING AGREEMENT #4

PARTIES' AGREEMENT REGARDING: WASTEWATER PROJECTED FLOW CAPACITY NEEDS AND FUTURE OPTIONS

THIS OPERATING AGREEMENT (Agreement), among the **DISTRICT OF COLUMBIA** (the District), the **DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY** (DC Water), **FAIRFAX COUNTY, Virginia** (Fairfax), **MONTGOMERY COUNTY, Maryland** (Montgomery County), **PRINCE GEORGE'S COUNTY, Maryland** (Prince George's), and the **WASHINGTON SUBURBAN SANITARY COMMISSION** (WSSC),

Witness:

WHEREAS, the Parties have entered into the Blue Plains Intermunicipal Agreement (2012 IMA); and

WHEREAS, the Parties recognize their collective and mutual interests under the 2012 IMA, which includes the management of Wastewater flows generated in the Blue Plains Service Area (BPSA) and sent to the Blue Plains Wastewater Treatment Plant (Blue Plains); and

WHEREAS, the Parties recognize that the District has limited options available to it to address its own Projected Flow Capacity Needs; and

WHEREAS, the Parties agree to work together to address their individual and collective Projected Flow Capacity Needs for flows generated within the BPSA, including development of Jointly Managed Studies to determine these Projected Flow Capacity Needs and to develop alternatives for addressing these Projected Flow Capacity Needs as defined in **Section 7**; and

WHEREAS, Section 2 of the 2012 IMA authorizes the Leadership Committee to create, modify or terminate an Operating Agreement to implement the terms of the IMA consistent with **Section 11.**

NOW, THEREFORE, the Parties agree as follows:

PURPOSE: The purpose of this Agreement is to address matters relating to **Section 7** of the 2012 IMA, including:

A. Long-term Planning for BPSA;
B. Development of Options and Proposed Actions; and
C. Assessment and Notification Requirements.

A. LONG-TERM PLANNING FOR BPSA

1. **Jointly Managed Study** - The Regional Committee shall be responsible for conducting a Jointly Managed Study to produce a BPSA Long-term Planning Study at least every five (5) years, unless flow or load or other issues require this

assessment to be done sooner. It is anticipated that 5-year updates for an approximately 30-year planning horizon are adequate to assess and take necessary actions to protect the Parties' rights under this Agreement. As flows to the Blue Plains approach its Design Flow Capacity, the frequency of conducting such assessments may be increased.

2. **Flow Projection Methodology**
   a. The BPSA Long-term Planning Study shall address at a minimum:
      1) Updated flow projections for the District, Fairfax and WSSC, as well as for Non-Party Users and Indirect Users as well as for the overall BPSA, including:
         a) Incorporation of MWCOG's most recently adopted Cooperative Forecast, which includes regionally developed demographic data, or other mutually agreed forecast;
         b) Updates to all Parties' wastewater flow management actions and plans;
         c) Confirmed or updated wastewater flow factors;
         d) Confirmed or updated Inflow and Infiltration assumptions; and
         e) Updated base year flow figures (i.e. flow defined or calculated that best reflects annual average flows under average hydrologic conditions), that are used to develop Projected Flow Capacity Needs of the BPSA for each jurisdiction/entity that contributes flow to Blue Plains;

      2) Updated information regarding water quality issues, loading limits, state or federal regulations, and any other activities or initiatives that will or have the potential to impact the Blue Plains' permit and/or treatment process requirements;

      3) Updated information and assessments about peak flows generated in the BPSA; and

      4) Trend data and analysis as needed to assess the potential impacts all of these factors will or could have on the Allocated Flow Capacity, Peak Flow Limitations and/or load assumptions for the BPSA.

   b. As a result of this periodic assessment, the Parties agree to reconcile any differences between the total and individual projected Annual Average Design Capacity requirements and with each of the Parties' and Non-Party User's Allocated Flow Capacity. This reconciliation may include, but is not limited to, the application of the following:
      1) Flow management projects/programs that reduce and/or increase flows;
      2) Load management programs that reduce or increase loads; and
      3) Reallocation (via sale or rental) of Allocated Flow Capacity.

   c. Evaluation of projected Annual Average Design Flow Capacity requirements will address the associated flow allocations, limitations, definitions, and assumptions set forth in the Derivative Agreement(s), to determine if any flow parameters, allocations, and/or limitations require modification to reflect the new projections.

B. DEVELOPMENT OF OPTIONS AND PROPOSED ACTION

1. Based on the results of any Jointly Managed Study, as defined in **Section 7** of the 2012 IMA, the Regional Committee shall develop options (for the Parties and Non-Party Users, as appropriate) that address at a minimum the following elements and criteria:
   a. Provide wastewater capacity at Blue Plains to meet the District's Projected Flow Capacity Needs unless other options better meet the District's Projected Flow Capacity Needs;

   b. Give priority to the reallocation of annual average wastewater flow capacity that is not expected to be needed for more than 15 to 20 years;

   c. Use the following hierarchy for considering the location of any proposed new or expanded treatment options: at Blue Plains, at WSSC's facilities, or at Fairfax's facilities, all of which shall be deemed to be Multi-Jurisdiction Use Facilities (MJUF) as defined in **Section 5** of the 2012 IMA, unless the Regional Committee agrees to alternative site considerations;

   d. Evaluate storage options to identify any potential impacts on the peak flows and Allocated Flow Capacity defined in **Section 4** of the 2012 IMA;

   e. Evaluate the rental or sale of capacity to ensure it would be consistent with the terms and assumptions in **Sections 4** and **6** of the 2012 IMA, and the associated Derivative Agreement(s), considering that the rental or sale of capacity shall be at the discretion of the Party allocated the capacity.

   f. Consider that rental of capacity shall be viewed as a short-term solution and must be reassessed at least every five (5) years;

   g. Consider that the Non-Party Users' Projected Flow Capacity Needs may have unique contractual agreements and there may be limited options available for them to address their capacity requirements outside of Blue Plains;

2. The options developed during a Jointly Managed Study shall address the following elements for each Party and Non-Party User, as appropriate:
   a. The resulting Allocated Flow Capacities;
   b. The resulting Peak Flow Limitations; and
   c. The impact on Design Flow Capacities and Design Load Capacities.

3. The Regional Committee shall recommend to the Leadership Committee technical and/or programmatic options that address the individual and collective Projected Flow Capacity Needs of the Parties under **Section 7** of the 2012 IMA. These recommendations shall include, but not be limited to, addressing:
   a. The proposed time frame for taking specific actions (whether operational or construction);
   b. The estimated cost of these actions; and

c. The proposed flow, load, and cost allocations and implications for each Party (and Non-Party User) associated with any options.

4. If suburban flows are diverted, nutrient loads associated with the diverted flows go with those flows and the District is responsible for finding nutrient offsets.

5. Any jurisdiction that requires additional flow capacity shall be responsible for finding nutrient offsets for that flow.

C. ASSESSMENT AND NOTIFICATION REQUIREMENTS

1. The Regional Committee shall periodically assess the Adjusted Flows set forth in **Section 6** and the flow projections set forth in **Section 7** of the 2012 IMA, and as set forth in this Agreement, to determine if the timing or the scope of the agreed upon actions are being implemented in a manner that protects the interests of all the Parties.

2. The Regional Committee shall develop an implementation plan that outlines the proposed actions to be taken and associated schedule and defines the Parties' responsibilities. For those options which require that additional flow or load capacity be provided at Blue Plains or at other sites, this implementation plan shall include, but not be limited to:
   a. A timeline with periodic milestones (generally every 5 to 10 years) that ensures that the necessary flow and/or load capacity is available when the Projected Flow Capacity Need is required;

   b. A reassessment of Projected Flow Capacity Needs versus agreed upon actions, whether addressed via flow management, rental/sale of capacity, or construction projects;

   c. A minimum 15-year advance notification period for any proposed action that requires capital funding.

3. Any Party that requires additional capacity in the BPSA in order to meet its Projected Flow Capacity Needs, which it cannot meet through its own flow management actions or are not being addressed through a Jointly Managed Study, shall provide 15-year advance notification to the Regional Committee that it requires such capacity, define those actions it must undertake to manage its future flows, and outline a schedule for those actions.

4. Unless otherwise agreed to by the Regional Committee, any diversions or reallocation of flow capacity by Fairfax or WSSC greater than five (5) MGD to meet District Projected Flow Capacity Needs shall occur at least one (1) year before the projected requirement for those flows.

EXECUTION

This Agreement is executed on behalf of the Parties by the Members of the IMA Leadership Committee who, by affixing their signatures, confirm their authorization of their respective Party to be bound thereby. It shall be effective on the date indicated by the Chair below.

DISTRICT OF COLUMBIA

04 02 13

City Administrator Date

DC WATER

3/21/13

General Manager Date

FAIRFAX COUNTY, VIRGINIA

3/25/13

County Executive Date

MONTGOMERY COUNTY, MARYLAND

4/3/13

Chief Administrative Officer Date

PRINCE GEORGE'S COUNTY, MARYLAND

4/2/13

Chief Administrative Officer Date

WASHINGTON SUBURBAN SANITARY COMMISSION, MARYLAND

3/20/13

General Manager Date

Approved by Leadership Committee: 4/3/13

Chair **Date**

All Parties have been notified, 60 days have passed from notification, no objection has been made by any Party, this Agreement is, therefore,

EFFECTIVE: 4/3/13

Chair **Date**

1

OPERATING AGREEMENT #5

PARTIES' AGREEMENT REGARDING: PRETREATMENT & OPERATIONAL REQUIREMENTS

THIS OPERATING AGREEMENT (Agreement), among the **DISTRICT OF COLUMBIA** (the District), the **DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY** (DC Water), **FAIRFAX COUNTY, Virginia** (Fairfax), **MONTGOMERY COUNTY, Maryland** (Montgomery), **PRINCE GEORGE'S COUNTY, Maryland** (Prince George's), and the **WASHINGTON SUBURBAN SANITARY COMMISSION** (WSSC),

Witness:

WHEREAS, the Parties have entered into the Blue Plains Intermunicipal Agreement (2012 IMA); and

WHEREAS, the 2012 IMA authorizes and requires the IMA Leadership Committee (the Leadership Committee), to set forth specific pretreatment and operational requirements, as well as monitoring and reporting processes, that they determine are appropriate to implement the provisions of **Section 8**;

WHEREAS, the Parties recognize their legal obligations to comply with all state, federal and local pretreatment requirements applicable to the Blue Plains Wastewater Treatment plant (Blue Plains) and its collection systems and their need to establish operational requirements for wastewater coming into Blue Plains as necessary to preclude damage to Blue Plains' wastewater and biosolids processes and equipment, to meet permit requirements, to avoid contributing any pollutants which cause or have the ability to cause wastewater, air, and/or biosolids permit exceedances, or that have any negative impacts at the plant;

WHEREAS, the Leadership Committee hereby agrees on behalf of the Parties to set forth specific requirements and monitoring and reporting processes necessary to protect the wastewater collection lines within the Blue Plains Service Area (BPSA), as well as the wastewater treatment processes and biosolids management programs at Blue Plains; and

WHEREAS, Section 2 of the 2012 IMA authorizes the Leadership Committee to create, modify or terminate an Operating Agreement to implement the terms of the IMA consistent with **Section 11.**

NOW, THEREFORE, the Parties agree as follows:

A. <u>SCOPE</u>

The requirements of this Agreement are intended to apply to only those regulations, requirements, and discharges in the BPSA and/or to the Blue Plains WWTP.

B. REGULATORY AUTHORITY

The Parties recognize their legal obligations to comply with all state, federal and local pretreatment requirements applicable to Blue Plains and its collection systems.

C. EXISTING AGREEMENTS

In addition to the 2012 IMA, the following agreements are applicable to this Agreement

1. **Agreements among Parties**
   a. **District & Fairfax,** *Wastewater Pretreatment Agreement* (June 27, 1986)
   b. **District & WSSC,** *Wastewater Pretreatment Agreement* (June 30, 1986)

2. **Agreements among Parties and Non-Party Users, and Parties and Indirect Users**

   Indirect User Agreements
   a. **Fairfax Co. & Herndon**, *Interjurisdictional Wastewater Pretreatment Agreement* (October 10, 1995)
   b. **Fairfax Co. & Arlington Co.,** *Sewage Conveyance, Treatment and Disposal* (October 03, 1994)
   c. **Fairfax Co. & Arlington Co.,** *Interjurisdictional Pretreatment Agreement* (June 17, 1994)

   Non-Party User Agreements
   a. **District & LCSA,** *Wastewater Pretreatment Agreement* (September 12, 1989)
   b. **District & LCSA**, *Amendment to the Agreement* (November, 11, 1998)
   c. **District & Vienna,** *Wastewater Pretreatment Agreement* (April 20, 1986)
   d. **District & US FAA,** General Agreement (January 1966)
   e. **District & the Navy,** General Agreement (April 27, 1965)
   f. **District & Fairfax County Park Authority,** General Agreement (January 23, 1964)
   g. **District & National Park Services,** General Agreement (August 18, 1964)

Copies of these agreements and all future agreements relating to Pretreatment and operational requirements between and among the Parties and Non-Party Users shall be maintained at the offices of DC Water and the IMA Secretariat. As these agreements are replaced or amended, their successor agreements will be appended to and incorporated by reference into this Derivative Agreement.

D. PRELIMINARY TREATMENT AND OPERATING REQUIREMENTS

1. Coarse screening shall be provided at any pumping station pumping more than an average of 2.5 mgd of flow, unless coarse screening is provided at a downstream facility. Screenings shall not be ground and returned to the wastewater flow under normal operations.

2. If necessary to bypass screens for more than four (4) hours, DC Water shall be notified within 24 hours.

3. If conditions arise requiring screening to be ground and returned to the wastewater flow, DC Water shall be notified within 24 hours.

4. Fairfax and WSSC shall generate a screenings report semi-annually which documents the location and total tonnage of screenings removed during each month within the six (6)-month period (January to June and July to December). The reports shall be due by the 30th of the month following the end of the reporting period (i.e., by July 30 and January 30) and shall be submitted to the DC Water Wastewater Treatment Manager:
   DC Water Wastewater Treatment Manager
   5000 Overlook Ave., SW, Washington, DC 20032
   202-787- 4008

E. TRUCKED WASTE MONITORING REQUIREMENTS

1. Trucked waste shall only be discharged at monitored location(s). Access control or surveillance cameras shall be required for unmanned stations.

2. Within 12 months of the 2012 IMA Agreement, all septage receiving stations that send waste to the BPSA shall have access control or surveillance cameras in operation, except when units are out of service for routine maintenance – a time period not to exceed one (1) week.

3. Surveillance camera records or gate records shall be reviewed as necessary to verify discharge activity. Camera records shall be maintained for 72 hours.

4. After proper notification and review, DC Water reserves the right to prohibit any wastes that are deemed to cause, or have the potential to cause, operational or system problems, and/or which cause or have the ability to cause wastewater, air, and/or biosolids permit exceedances.

5. DC Water shall be notified prior to the establishment of any new septage receiving sites in the BPSA.

6. Periodic self-monitoring data shall be required for existing discharges of non-domestic trucked waste, landfill leachate, or trucked waste containing sludge or other residuals. The Party shall determine the list of requested parameters and frequency of self-monitoring. Data shall be submitted to DC Water in the quarterly pretreatment program reports.

7. Each Party shall conduct random sampling of the trucked wastes at least semi-annually for all parameters. Data shall be submitted to DC Water in the quarterly pretreatment program reports.

F. PROHIBITED TRUCKED WASTES

Prohibited wastes shall not be discharged to the BPSA unless conditionally authorized under the terms outlined in Subsection G of this Agreement. Prohibited wastes include:

1. Trucked wastes that are generated outside of the counties included in the BPSA (i.e., out-of-state and out-of-county wastes), unless the out-of-state and/or out-of county waste is incidental to other waste collected from within the counties included in the BPSA;

2. Hazardous waste, as defined by EPA in 40 CFR 261 and/or in District of Columbia Code § 8-1302(2);

3. Wastes that are specifically prohibited by DC Water's prohibited discharge standards;

4. Wastes that exceed DC Water's local discharge standards or EPA's gas/vapor toxicity screening levels (EPA 812-B92-001), if measured in mg/L; or wastes that exceed EPA's Part 503 biosolids quality standards or applicable State biosolids standards, if measured in mg/kg; and

5. Portable toilet waste, where formaldehyde and 1,4-dichlorobenzene are used in deodorizer/sanitizer products. The prohibition of these products shall be implemented within 90 calendar days from the effective date of this Agreement.

G. CONDITIONALLY AUTHORIZED TRUCKED WASTES

DC Water may conditionally accept the following trucked wastes:

1. Grease trap waste – if no blockages or significant grease accumulation in the collection system or other issues arise;

2. Car wash waste – if no blockages or significant solids accumulation in the collection system or other issues arise;

3. Non-hazardous non-domestic waste - if characterized and approved by DC Water in advance;

4. Leachate from domestic landfills – if characterized and approved by DC Water in advance; and

5. Sludge or other residuals - if characterized and approved by DC Water in advance, and no blockages or significant solids accumulation in the collection system or other issues arise.

H. AUTHORIZED TRUCKED WASTES

DC Water will accept the following trucked wastes:

1. Portable toilet waste, where formaldehyde and 1,4-dichlorobenzene are not used in deodorizer/sanitizer products; and

2. Domestic septage.

I. CHARACTERIZATION AND MONITORING OF NEW TRUCKED WASTES

Any Party proposing to accept hauled waster from a new non-domestic source (i.e., those that have not already been approved by DC Water) shall submit a request for approval to DC Water for new discharges of non-domestic trucked waste, landfill leachate, or trucked waste containing sludge or other residuals. DC Water shall respond with a determination on such a request within 30 calendar days. DC Water shall hold Non-Party Users to these same conditions for requesting new discharges of non-domestic trucked waste, landfill leachate, or trucked waste containing sludge or other residuals. The request may include:

1. Analytical data representative of the discharge, including, but not limited to:
   a. pH,
   b. Total Solids,
   c. Total Suspended Solids,
   d. Volatile Suspended Solids,
   e. Biochemical Oxygen Demand,
   f. Total Phosphorus,
   g. Total Kjeldahl Nitrogen,
   h. Total Metals (i.e., arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, and zinc),
   i. Total Petroleum Hydrocarbon/Oil and Grease, and
   j. Polychlorinated Biphenyls (PCBs).

2. Estimates of volume and frequency of discharge that DC Water will use to evaluate the effect of the loading on the wastewater and sludge treatment plant processes.
   a. If the sewage strength and/or load impacts warrant consideration of differential treatment cost, this will be negotiated among the Parties.
   b. If the discharge is accepted, periodic monitoring may be required, with frequency and parameters to be agreed upon by the affected Party and DC Water.
   c. If the discharge is prohibited, the limitations of **Subsection F.** apply.

J. TREATMENT PLANT RESIDUALS

Other Wastewater Treatment Plants or Water Treatment Plants within the BPSA shall not directly discharge sludge or other residuals into the Blue Plains sewage system, unless characterized and approved by DC Water in advance.

K. PRETREATMENT PERMITS

1. Significant Industrial Users (SIU) in the BPSA must obtain a pretreatment permit from DC Water, Fairfax, or WSSC, unless the SIUs are regulated through Limited Party Agreements with Non-Party Users or Indirect Users.

2. Permits must contain, at a minimum, effluent limitations that match or exceed DC Water's discharge standards, monitoring and reporting requirements, a statement of duration, a statement of non-transferability, a statement of applicable civil and criminal penalties, and any other conditions requested to be included in the permit by DC Water.

3. Permits shall require immediate notification to DC Water of a spill, slug, or other unplanned emergency discharge (such as decontamination Wastewater) to the sewer at 202-612-3400 (24 hours per day, 7 days a week), and written notification to the DC Water Pretreatment Supervisor within five (5) days following the event, to the:

   DC Water Pretreatment Supervisor
   5000 Overlook Ave., SW, Washington, DC 20032
   202-787- 4177

4. Such notification shall include:
   a. Name and address of the premises where the discharge occurred or is occurring;
   b. The precise location of the discharge at the premises;
   c. Type of waste discharged or being discharged;
   d. Volume and concentration of Wastewater discharged;
   e. Corrective actions conducted or planned to mitigate the incident and prevent reoccurrence; and
   f. Contact name and phone number.

5. Permits shall require immediate notification to DC Water of any changes at its facility affecting the potential for a slug discharge.

6. Permits shall indicate that DC Water has right of entry and inspection of pretreatment and sewer facilities, observation, measurement, sampling, testing, and access to (with the right to copy) all pertinent compliance records located on the premises of the SIU. Whenever DC Water exercises this right, advance reasonable notice shall be given to the Operating Agencies. The Operating Agencies shall make all necessary legal and administrative arrangements for these inspections.

L. <u>REPORTING</u>

1. **<u>Quarterly Pretreatment Program Reports</u>**
   a. Reports shall be due to DC Water 45 days following the last day of the quarter for the 1st, 2nd, 3rd and 4th quarters. However, the 4th quarter report due date may be extended an additional 30 days (if necessary, to allow additional time for completing the annual report).
   b. Reports shall be prepared in accordance with a format to be developed by DC Water. For example, report all violations during the quarter, compliance status of each SIU, the date enforcement action is taken or is anticipated to be taken, identify any SIUs with a substantial change in volume or character of pollutants, etc.
   c. Each Operating Agency/Jurisdiction shall submit all requested hauled waste documentation to DC Water in the quarterly report. Documentation shall include, but not be limited to:
      1) A current list of haulers (or changes to the list from the previous report), including approved sources (types) of waste, permitted vehicle information, and truck volume for each hauler;

2) Results of all analytical monitoring done on the hauled waste during that quarter (either by the Operating Agency/Jurisdiction or the waste hauler);
3) Where possible, flow estimates or number of loads of each waste type received during the quarter; and
4) If requested, gate records or security camera records, for verification of discharge activity.

2. **Annual Pretreatment Program Reports**
   a. In addition to the quarterly reports, an annual report shall be prepared. However, if the fourth quarter report is expanded to incorporate all the requirements of the annual report noted below, that report will suffice to meet both reporting obligations
   b. Reports shall be prepared in accordance with instructions from EPA Region III. If a Party does not receive 'new or updated' guidance from DC Water by January 5, the same report format/procedures used the previous year shall apply.
   c. The annual report shall include a master list of permitted waste haulers. At a minimum, the list shall include hauler name, contact information, list of vehicles, permitted truck capacities, and permitted waste type. The master list can reference the list provided in the fourth quarter report, as long as it notes any subsequent changes.
   d. Reports shall be due to DC Water 45 days following the last day of the year (i.e., by February 15th), unless an alternate date is established in writing by DC Water.
   e. Reports shall be accurate and complete upon submittal. Allowable exceptions to this include the following:
      1) Significant Non-Compliance (SNC) for the July to December period shall be submitted no later than March 15).
      2) The publication of the SNC violators shall occur no later than June 30, when required, and proof of publication shall be submitted to DC Water immediately following publication.

3. Follow-up comments from DC Water and/or EPA Region III shall be addressed as soon as practicable or as required by a comment letter.

M. ENFORCEMENT

1. The Parties shall, in accordance with their approved Enforcement Response Plans, take escalating enforcement action against any industrial user or waste hauler in the BPSA that violates any provision of the approved DC Water or Parties' pretreatment program. If EPA Region III, or the delegated state agency for the Parties, reviews the enforcement action taken by the Party and requests further action, the Party shall comply with the request or show just cause why such action is not warranted.

2. If DC Water does not agree with a decision made by a Party regarding specific enforcement action against a SIU or waste hauler, the issue shall be raised to the Regional Committee for dispute resolution pursuant to the 2012 IMA.

N. REVISIONS TO LEGAL AUTHORITY

1. DC Water shall forward a copy of proposed revisions to its legal authority (DC Code § 8-105) and/or implementation regulations (21 DCMR Chapter 15), to the Parties prior to or at the time of submittal to EPA Region III. Similarly, whenever the Parties revise their legal authority and/or implementation regulations, they shall forward a copy of the proposed revisions to DC Water prior to or at the time of submittal to their state approval authority. If there are significant changes to the regulations, EPA Region III review and approval may also be required.

2. Adopted Final Rulemaking or regulations shall be submitted to the Parties (or to DC Water, if the Parties adopted new regulations) within 30 days of the adoption date.

3. As necessary, the Parties shall adopt revisions (either directly or by reference) to their Sewer Use Ordinances (SUOs) pertaining to industrial waste pretreatment that are at least as stringent as those adopted by DC Water pertaining to industrial waste pretreatment. Proposed SUO revisions will be forwarded to DC Water within 180 days of receipt of DC Water's Final Rulemaking. If this schedule cannot be met, the Party shall notify DC Water in writing, and provide an alternate due date and reason why the schedule cannot be met. The Party shall then proceed to adopt the final regulations.

4. DC Water shall provide the Parties an opportunity to provide comments prior to making any revisions or additions to its Local Limits. Once DC Water makes any revisions or additions to its Local Limits, the Parties shall adopt any such revisions or additions and incorporate the new limits into all applicable SIU permits as soon as practical following receipt of the Final Rulemaking.

O. COMPLIANCE BY NON-PARTY USERS

DC Water shall require and enforce the same compliance by Non-Party Users, as applicable, with the substantive provisions of Subsections C through M**,** above, as is required of the Parties.

P. PERIODIC REVIEW OF PRETREATMENT AND OPERATIONAL REQUIREMENTS

1. The Regional Committee, as part of the review for its Annual Report, shall consider the efficiency and effectiveness of the practices and procedures of this Agreement. This review will include technical input from any appropriate Regional Committee work group(s). The Regional Committee will also consider, in a timely manner, any concerns that are raised by DC Water or any other Party over these practices and procedures or proposed modifications required by EPA or any state agency.

2. If the Regional Committee determines these requirements, practices or procedures should be modified, the Regional Committee shall recommend to the Leadership Committee any revisions that may be required to this Operating Agreement, the 2012 IMA or any associated Derivative Agreements.

EXECUTION

This Agreement is executed on behalf of the Parties by the Members of the IMA Leadership Committee who, by affixing their signatures, confirm the authorization of their respective Party to be bound thereby. It shall be effective on the date indicated by the Chair below.

DISTRICT OF COLUMBIA

0402 B

City Administrator Date

DC WATER

3/21/13

General Manager Date

FAIRFAX COUNTY, VIRGINIA

3/25/13

County Executive Date

MONTGOMERY COUNTY, MARYLAND

4/3/13

Chief Administrative Officer Date

PRINCE GEORGE'S COUNTY, MARYLAND

4/2/13

Chief Administrative Officer Date

WASHINGTON SUBURBAN SANITARY COMMISSION, MARYLAND

3/20/13

General Manager Date

Approved by Leadership Committee: 4/3/13

Chair **Date**

All Parties have been notified, 60 days have passed from notification, no objection has been made by any Party, this Agreement is, therefore,

EFFECTIVE: 4/3/13

Chair **Date**

OPERATING AGREEMENT #6

PARTIES' AGREEMENT REGARDING: BIOSOLIDS MANAGEMENT COMMITMENTS

THIS OPERATING AGREEMENT (Agreement), among the **DISTRICT OF COLUMBIA** (the District), the **DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY** (DC Water), **FAIRFAX COUNTY, Virginia** (Fairfax), **MONTGOMERY COUNTY, Maryland** (Montgomery), **PRINCE GEORGE'S COUNTY, Maryland** (Prince George's), and the **WASHINGTON SUBURBAN SANITARY COMMISSION** (WSSC),

Witness:

WHEREAS, the Parties have entered into the Blue Plains Intermunicipal Agreement (2012 IMA); and

WHEREAS, DC Water, Fairfax and WSSC recognize their obligations to comply with all state, federal and local biosolids preparation and land application regulations applicable to the Blue Plains Wastewater Treatment plant (Blue Plains); and the need to remove biosolids from the sewage generated within the Blue Plains Service Area (BPSA); and

WHEREAS, DC Water, Fairfax and WSSC recognize the need to establish operational requirements for the manufacturing of biosolids products at Blue Plains or offsite; and

WHEREAS, the Parties desire to manage the biosolids resource by the most practical, sustainable, environmentally sound, and economically beneficial means;

WHEREAS, the 2012 IMA authorizes and requires the Leadership Committee to set forth specific operational processes and contractual support for biosolids management that they determine are appropriate to implement the provisions of **Section 9** of the 2012 IMA;

WHEREAS, Section 2 of the 2012 IMA authorizes the Leadership Committee to create, modify or terminate an Operating Agreement to implement the terms of the IMA consistent with **Section 11.**

NOW, THEREFORE, the Parties agree as follows:

PURPOSE: The purpose of this Agreement is to address matters relating to **Section 9** of the 2012 IMA. This Agreement confers no rights upon any person other than the Parties to this Agreement.

A. REGULATORY AUTHORITY

The Parties recognize their legal obligations to comply with all state, federal and local biosolids preparation and land application regulations applicable to Blue Plains.

B. REGIONAL COMMITTEE ASSIGNMENT AND REPORTING RESPONSIBILITIES

The Regional Committee shall periodically review and analyze the biosolids management activities of the Parties. The Regional Committee may request the assistance of Party experts and biosolids contractors in performing these analyses. The Regional Committee shall make recommendations to the Leadership Committee to maintain or improve the management of biosolids, including:

1. Utilizing contract mechanisms to handle management of all or portions of the biosolids;

2. Identification of additional land application or other management sites;

3. Working with local and state officials to obtain land application or other management permits;

4. Working with local and state officials to change regulations, legislation, or legal actions that are deemed harmful to the effective and environmentally sound management of biosolids;

5. Requesting support of the Leadership Committee and elected officials as necessary to support these efforts; and

6. Contracting for research that supports the biosolids management activities of the Parties.

C. BIOSOLIDS REUSE AND DISPOSAL OPTIONS – ALLOCATION, MATERIAL RESPONSIBILITY AND CONTRACTS

1. DC Water and WSSC shall independently contract for services related to reuse or disposal (if necessary) of biosolids produced at Blue Plains. The percentage of biosolids reuse and disposal managed by DC Water shall be no less than 50% and no greater than 70%. WSSC will manage the remainder. The percentages within these limits are to be based on a balance between financial and contractual security, and on programmatic needs as determined by the Regional Committee.

2. DC Water and WSSC may also, with concurrence of the Regional Committee, allocate tonnage to a user or a regional entity that has the opportunity to contract for sustainable reuse of biosolids. DC Water and WSSC shall separately issue one or more contracts for the sustainable reuse of biosolids resources for use in agriculture, mine reclamation, silviculture, composting, soil blending, energy production, or any other sustainable and economically feasible technology.

3. Other options, such as landfilling, may also be included in contracts by DC Water and WSSC for backup and emergency purposes or as recommended by the Regional Committee. In all scenarios, the Parties shall meet the biosolids management commitments set forth in the 2012 IMA. The Parties may consider regional contractual coordination, if another entity outside of DC Water is willing and interested in such collaboration. A recommendation in this direction would allow for

diversification of reuse options and geography, but should only be done if it furthers the biosolids commitments in the 2012 IMA.

D. PREPARATION OF CONTRACT SOLICITATIONS

1. DC Water and WSSC shall be responsible for the issuance and administration of their contract solicitations for the reuse of biosolids generated at Blue Plains.

2. The specifications, terms, conditions, and evaluating criteria for any biosolids reuse contract solicitations shall be developed by DC Water and WSSC with input from the Regional Committee.

3. The Regional Committee, either directly or through technical staff, may participate in the review of technical proposals or other contract documents for the hauling and reuse of biosolids received, pursuant to contract solicitations issued by DC Water and WSSC, and make recommendations for award to the respective contracting officers.

E. CONTRACT REVIEW

1. DC Water and WSSC shall each execute contracts awarded pursuant to the contract solicitations. They shall appoint contracting officers for such contracts and, in consultation with the other participating parties, administer all aspects of contract performance in accordance with their respective procurement laws and regulations.

2. With respect to DC Water and WSSC's contracts, the Regional Committee's functions and responsibilities shall include the following:
   a. Provide information, recommendations and requests to the contracting officer to remedy or avoid existing or potential problems caused by any contractors or subcontractors operating within any of the Parties' jurisdictions or caused by their operation in other areas that are or will adversely impact a Party; and

   b. Monitor the performance and administration of all contracts awarded and provide the contracting officer with the recommendations of the other participating jurisdictions on administrative actions that should be taken to protect the interests of such other parties in all such biosolids contracts; and

   c. Receive and assess progress and other relevant reports relating to the performance and administration of all biosolids contracts and reports on proposed actions contemplated by the contracting officers in the administration of such contracts; and

   d. Review research findings funded through the Regional Committee.

F. COST AND PAYMENT

All costs, including administrative costs, of managing the biosolids program will be borne by the Parties and shared based upon the methods and procedures described in **Section 5** of the 2012 IMA. The Parties will receive monthly reports of tonnage allocations to each contract and a final cost accounting at the end of the DC Water fiscal year.

G. EMERGENCY PROVISIONS

1. If any contractors for Blue Plains biosolids reuse and/or disposal service unexpectedly cease operations for any reason, all Parties shall cooperate in order to continue transportation and management of the quantities of Blue Plains biosolids defined in the 2012 IMA and this Agreement.

2. All Parties shall assist in making available, to the extent possible, disposal and reuse options in the region (landfills, incinerators, etc.). If necessary, all Parties shall commit to investigating regional cooperation on biosolids reuse with other parties. This investigation shall include, but not be limited to, other land application programs, composting, incineration, soil blending, etc., and emergency plans shall consider all these options.

3. Separately, or as part of the BPSA Emergency Operating Plan, the Parties shall include emergency back-up contingency plans for removal and transport of biosolids generated at Blue Plains.

H. PRODUCT MARKETING AND REVENUE

1. DC Water will produce into the foreseeable future a Class B stabilized biosolids cake products, as well as a Class A biosolids cake suitable (with further conditioning or mixing) for marketing. DC Water and WSSC shall market and reuse this material for all of the Parties in a manner advantageous to DC Water, Fairfax and WSSC. This marketing will promote the product's use and, if successful, will generate revenue. Potential products from the Blue Plains biosolids program include compost, blended soil, dried product, green energy/carbon credits, and electrical power. DC Water and WSSC will use all revenue to first offset biosolids program and, then, Blue Plains' operating costs thereby reducing costs for all Parties.

2. Each Party shall provide data monthly regarding the revenue or credits generated by DC Water and WSSC. At the end of each fiscal year, DC Water and WSSC shall calculate annual totals for each product, and calculate the percentage of each product for which each Party may take credit. These credits are not for monetary purposes (as the revenue will be used to offset biosolids program costs) but for the purposes of informing rate payers and regulators of efforts to produce valuable products, clean energy, and carbon credits.

3. DC Water and WSSC shall separately be responsible for preparing, negotiating and managing all contracts and agreements related to the sale or use biosolids products. Other products such as steam, electricity, and/or carbon/renewable energy credits produced at Blue Plains shall be managed by DC Water.

4. The Regional Committee shall cooperate in these distribution and marketing efforts with the DC Water biosolids manager to determine if there are markets and/or distribution points in their respective jurisdiction. The region has many potential uses for a Class A biosolids product, and the Parties shall work to maximize reuse within the BPSA. All users will work to inform end-users of the benefits and limited risks of using these products.

5. DC Water shall develop an agency-wide carbon footprint model and establish a baseline for registration with a certified entity. This model will be updated and audited, as necessary, to maintain certification. As improvements occur at Blue Plains (digesters, fine bubble diffusers, energy efficiency projects, etc.) the DC Water carbon footprint will shrink, possibly making carbon credits available for sale or trade. The production of energy from a renewable source (biosolids) may also make available Renewable Energy Credits (REC's) for sale or trade.

-END OF PAGE-

EXECUTION

This Agreement is executed on behalf of the Parties by the Members of the IMA Leadership Committee who, by affixing their signatures, confirm the authorization of their respective Party to be bound thereby. It shall be effective on the date indicated by the Chair below.

DISTRICT OF COLUMBIA

04 02 13

City Administrator Date

DC WATER

3/21/13

General Manager Date

FAIRFAX COUNTY, VIRGINIA

3/25/13

County Executive Date

MONTGOMERY COUNTY, MARYLAND

4/3/13

Chief Administrative Officer Date

PRINCE GEORGE'S COUNTY, MARYLAND

4/2/13

Chief Administrative Officer Date

WASHINGTON SUBURBAN SANITARY COMMISSION, MARYLAND

3/20/13

General Manager Date

Approved by Leadership Committee: 4/3/13

Chair **Date**

All Parties have been notified, 60 days have passed from notification, no objection has been made by any Party, this Agreement is, therefore,

EFFECTIVE: 4/3/13

Chair **Date**

Case Study #2: Philadelphia CSO LTCP
Attachment 2-1
PWD's 2009 FCA

11 FINANCIAL CAPABILITY

11.1 INTRODUCTION

The United States Environmental Protection Agency (US EPA) suggests that a financial capability assessment should be included in the CSO Long Term Control Plan (LTCP) in order to establish the burden of compliance on both ratepayers and the permittee. The assessment in this section follows the guidelines and methodology as described in the US EPA's "Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development," published February 1997. The purpose of the financial capability assessment is twofold.

First, the affordability process contemplates balancing the pace of environmental improvement with the financial and economic capability of the permittee. The process allows flexibility in scheduling completion of CSO compliance measures, based on the financial capability of the area served. Second, a financial capability can support the determination of funding needs by agencies providing loan and grant monies for capital projects.

The financial capability assessment is a two phased process. The residential indicator is the percentage of median household income (MHI) expended on wastewater management. The financial capability indicator is an assessment of the permittee's debt burden, socioeconomic conditions, and financial operations. These two measures are subsequently entered into a financial capability matrix, suggested by US EPA, to determine the level of financial burden that the existing wastewater management system and the CSO control measures will place on residential customers and the permittee. The US EPA matrix appears in Table 11-8 at the end of this section.

In addition to following guidelines for these two measures, US EPA encourages inclusion of any information that would have a financial impact on CSO compliance by the permittee in the capability report. This assessment, therefore, includes extensive discussion of socioeconomic trends in the Philadelphia area because of the financial challenges that the City and the region faces.

11.2 PHASE 1 - CALCULATION OF THE RESIDENTIAL INDICATOR

PWD has projected future revenue requirements and associated rates, taking into account current and future costs to operate, maintain, and replace the PWD's system, currently outstanding debt service, and future debt service resulting from anticipated and identified capital improvements. The focus for evaluating the impact of the residential indicator is the next 20 years (FY 2029)[1], however it is anticipated that elements of the LTCPU implementation program will continue well beyond this 20 year timeframe.

PWD has developed its financial projections consistent with the manner in which it develops rate projections, with expenses, revenues and capital costs stated in future year dollar terms

[1] The City of Philadelphia's fiscal year runs from July 1st through June 30th.

(*i.e.*, inflated to the future year). Thus, household bills in 2015 (for example), reflect what PWD estimates households are projected to pay in that year. For purposes of the affordability analysis, these future household rates are compared to projected household incomes (also projected to future year dollars) in those specific years. The approach keeps all cost figures on a consistent basis and provides PWD with a realistic picture of actions required to raise needed revenue and comply with its ultimate requirements.

In developing these projections, PWD has sought to estimate the future burden of the LTCPU in addition to the full utility system's long term needs for wastewater and water service, as currently understood. Although PWD provides both water and wastewater (including stormwater) service, they have traditionally maintained separate water and wastewater rates, in accordance with standard cost-of-service criteria. PWD has evaluated the impact of the LTCPU by estimating those capital and operation and maintenance (O&M) costs in conjunction with an estimate of other costs anticipated to be incurred by the utility over the next 20-plus years. The associated rates for wastewater and stormwater are then estimated on an average household basis. The residential indicator is based on that average annual cost per household relative to projected MHI for each year over the forecast period.

11.2.1 Key Assumptions

The key assumptions used to develop these projections are:

- The combined sewer area is located within the City limits of Philadelphia, therefore the determination of the residential indicator is based on the retail cost of wastewater service for households in the City of Philadelphia served directly by PWD. The cost of contract sales to wholesale customers outside of the City is anticipated to increase in response to increased costs of service for non-LTCPU related activities
- The projected average growth in MHI is 2.29%. Since 1989, MHI in Philadelphia has grown at a rate which is below both those of the state (2.94%) and national (3.18%) levels. This appears to be a consistent and long-term trend resulting from structural elements of the Philadelphia's demographic and economic makeup, rather than just being the result of cyclical or outlying occurrences. Metered sales (for water/wastewater customers) and associated billable discharges to the wastewater system have been trending downward (*e.g.*, billed water consumption declined approximately 5.4% for FY 2000 to FY 2008). To provide for a conservative estimate, the residential indicator projections assume that consumption will stabilize at current levels
- Costs associated with O&M (including labor and materials) are anticipated to grow at rates experienced in recent years. The costs for O&M of PWD's existing wastewater system are estimated to increase at 4.7% per year throughout the planning period. The inflation rate for the O&M costs for LTCPU related projects is projected to be 3.87%
- Future costs for capital projects are inflated at an annual rate of 3.87%. For the most recent 10 year period, the Engineering News Record City Cost Index – Philadelphia construction cost index and the building cost index have increased at an average annual rate of 4.1% and 3.9% respectively

- The PWD's capital improvement program for non-LTCPU related projects reflects continued investments in facility upgrades and replacements throughout the entire system. The estimated costs for the non-LTCPU capital improvements are approximately $3.7 billion (water and sewer - 2009 dollars) through Philadelphia's FY 2029 (ending June 30, 2029). The primary capital expenditures generally consist of the following: improvements to water and wastewater treatment plants; rehabilitations and replacement of water mains; rehabilitation and replacement of old sewers and construction of new sewers to relieve unsanitary conditions; and construction of new storm flood relief sewers and storage tanks
- PWD assumes the funding for its capital program will be financed primarily through the issuance of revenue bonds through the municipal bond market, supplemented through PennVest financings. PWD will also utilize pay-as-you-go funding and, to the extent available, miscellaneous grants. Best practices vis-à-vis the municipal bond market requires that PWD's capital debt be structured with various interest rates and maturities. Therefore, rather than specifying an assumed interest rate and bond duration, PWD's Financial Capability analysis utilizes long term experience in defining an annual cost per unit of principal borrowed. PWD has determined that a capital cost factor of 8.059% is appropriate. Costs of O&M associated with the LTCPU were synchronized with the implementation schedule and with escalation factors generally resembling historical cost escalation for PWD's overall O&M program
- Revenue projections for this financial capability assessment rely on PWD's existing cost-of-service based rate structure with forecast revisions reflecting the proportional increase in wastewater and stormwater costs due to implementation of the LTCPU as well as a continuation of the non-rate revenues the City currently generates

As detailed in Section 10 of this report, PWD is proposing green infrastructure with targeted traditional infrastructure as its preferred alternative. The recommended plan seeks to reduce CSO frequency and volume through a range of land-based stormwater management techniques or source controls. As described in previous sections, this option will be implemented in stages through 2029. The total capital need for the LTCPU program is $902 million (Table 11-1), and the total O&M need through 2029 for the LTCPU as it is implemented is $98 million, both stated in 2009 dollars.

The LTCPU capital program will be implemented within the context of PWD's overall capital improvement program, also summarized in Table 11-1. Total capital expenditures through 2029 of approximately $4.6 billion (2009 dollars) for improvements to the water and wastewater systems are projected. Of these projected capital expenditures, around $3.4 billion or 73 % are projected for wastewater and wet weather; including $902 million for the implementation of the recommended LTCPU through 2029. The remaining projected wastewater expenditures go towards system renewal, replacement, rehabilitation and improvements necessary for adequate and compliant services.

PWD assumes the continuation of its ongoing program related to water main and sewer rehabilitation and replacement and treatment plant upgrades throughout the 20 year period. PWD will also pursue an aggressive storm flood relief program that is intended to be completed within the next decade. The cost of that program is not included in the estimate

Table 11-1 PWD Capital Improvements Program (in billion $) 2010-2029

Capital Program	Present Dollar Value (2009 Dollars)
Water Treatment and Distribution	$1.22
Wastewater Treatment and Collection	$2.12
Storm Flood Relief	$0.36
Long Term Control Plan	$0.90
Total Capital Cost	**$4.60**

for the LTCPU, although it is expected to have a beneficial impact on the City's ability to manage wet weather flows in the future.

11.2.2 Projected Revenue Requirements and Rate Impacts

For FY 2009 through FY 2029, the annual revenue requirement for PWD's wastewater system is expected to increase by about $720 million, from approximately $350 million to $1.07 billion in 2029. Annual wastewater system debt service in 2029 is projected to be approximately $366 million. This amount compares to current (2009) annual wastewater system debt service costs of approximately $130 million.

PWD is empowered and required under the Philadelphia Home Rule Charter to establish rates for water, wastewater and stormwater at levels that provide sufficient revenue to meet all operating expenses of the water, wastewater and stormwater systems, including interdepartmental charges for services provided to the PWD, and debt service requirements on all obligations issued for the PWD, including specific bond ordinance covenants.

PWD estimates that the typical household in the City currently pays approximately $400 annually for wastewater services, including stormwater. The most recently available U.S. Census data for MHI in Philadelphia is $35,431 for 2007. Based upon the projected annual MHI growth of 2.29%, the estimated 2009 MHI would be $37,072. PWD customers are currently (2009) paying approximately 1.10% of their income for wastewater charges. In addition to the general rates, special rates are applicable to certain properties or customer groups as prescribed by ordinance. Charges are also administered for municipal fire protection and private fire protection and for industrial dischargers of high strength wastewater. Service to customers located outside the City is on a wholesale basis through contracts with various municipalities, authorities and townships. Each wholesale contract has been negotiated on a case-by-case basis, and has a different cost structure and variations in the method for adjusting those wholesale charges to reflect changes in their cost of service.

Under the US EPA guidance, a key measure of affordability is the residential indicator: the ratio of the wastewater cost per household to MHI. The residential indicator is compared to US EPA-defined criteria to determine whether costs impose a low, mid-range, or high impact on residential users. Table 11-2 shows US EPA's residential indicator criteria, which define a "low" impact as a cost per household less than 1.0% MHI, a "mid-range" impact between 1.0 and 2.0%, and "high" impact as greater than 2.0% of MHI.

Table 11-2 US EPA Residential Indicator

Residential Indicator	Cost per Household
Low	Less than 1.0% of MHI
Mid-Range	1.0-2.0% of MHI
High	Greater than 2.0% of MHI

Implementation of the PWD's LTCPU projects along with other necessary wastewater system capital improvements require wastewater system rates to be increased at an annualized rate of approximately 6.18%. The cumulative effects of these increases are shown graphically on Figure 11-1. The primary measure of the affordability (wastewater cost as percent of MHI), the residential indicator, is currently around 1.1%. The residential indicator is expected to rise to approximately 2.27% by 2029); based upon projected average annual household wastewater costs of approximately $1,321 and a projected MHI of approximately $58,305. As may be noted in Figure 11-1, the cost, demographic and economic trends will result in continued increases in the percentage of household income to be expended on wastewater services well beyond 2029.

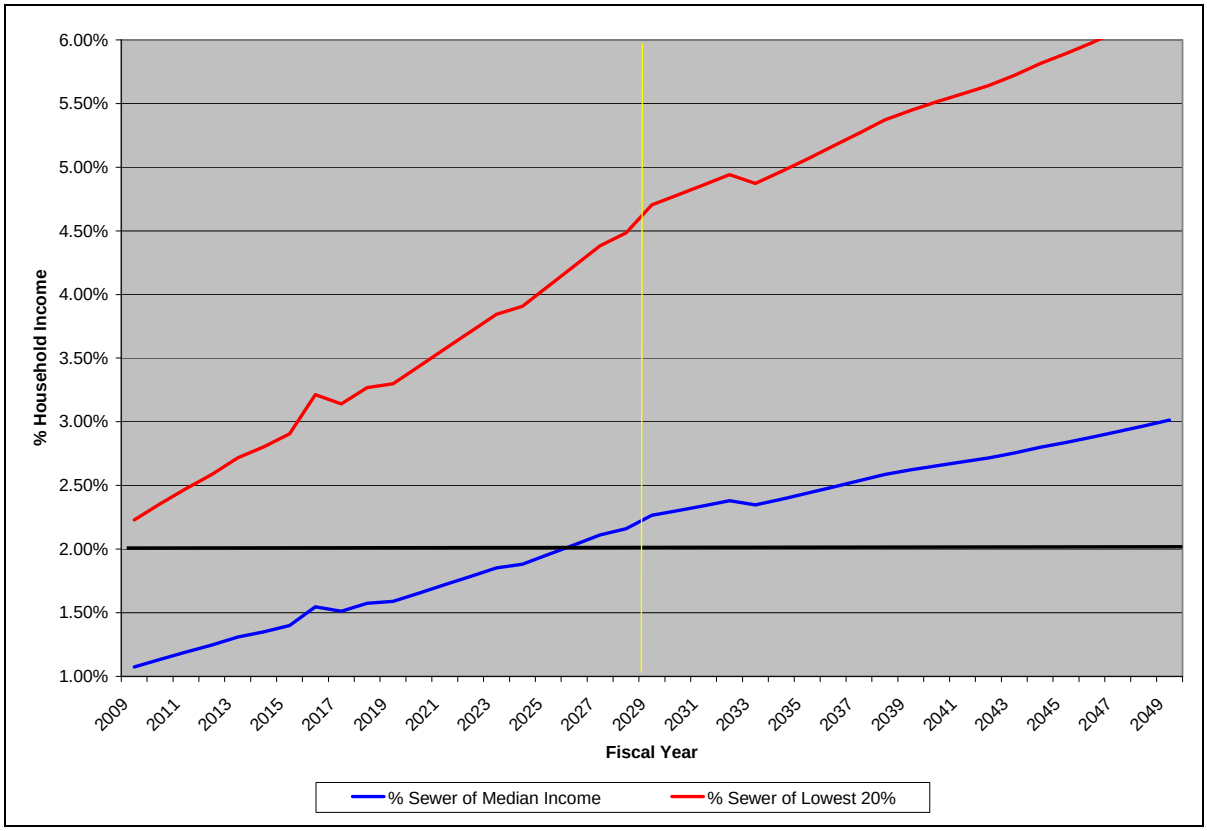


Figure 11-1 Residential Indicator, 2009-2029 Recommended Plan, 2009-2020 Implementation

US EPA's residential indicator is based upon the City's MHI. By definition, one half of the households (approximately 279,000) have household incomes that are less than the current $37,072 median and will be less than the $58,305 MHI that is projected for 2029. At an average of approximately 2.5 residents per household, the lower half of the MHI population for the City would total approximately 698,000. Therefore, a group that would comprise the 16th largest cities within the U.S., (exceeding major cities such as Boston, Baltimore, Washington D.C., and Seattle), would be paying more than 2.27% of their incomes for wastewater services in 2029.

The financial impact of the LTCPU implementation and other LTCPU costs on the lower income population of Philadelphia will be significant. The projected 2029 MHI for the lowest 20% MHI group is less than $38,000. This group would be paying between 3.5% of their MHI (upper limit of the second quintile) to 7.0% MHI (first quintile) in 2029. This group includes around 158,000 households representing a population of around 396,000. This number is larger than the populations of major cities such as Cincinnati, Minneapolis, Honolulu, Pittsburgh, and Toledo. The disparate impact of the implementation of the LTCPU and other necessary wastewater capital improvements upon the City's varying income areas is shown on Figure 11-2. The map shows the projected Residential Indicators for the 368 census tracts within the City of Philadelphia in 2029.

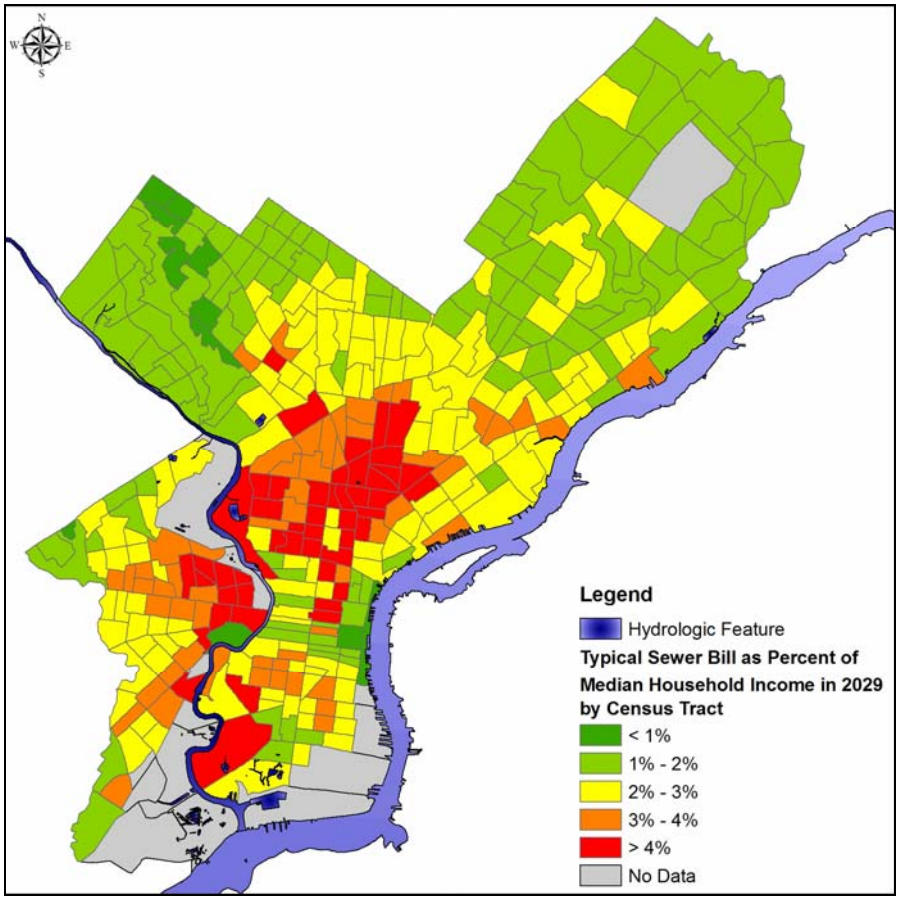


Figure 11-2 Projected Residential Indicator by Census Tract (2029)

11.2.3 Financing Assumptions

The projections of burden and the residential indicator are sensitive to assumptions regarding debt financing. PWD has traditionally funded its capital programs with a combination of traditional debt (revenue backed bonds), existing reserve funds, grant funding (when available), and the state revolving fund (PennVEST). Although this combination of funding mechanisms may continue to be available, it is assumed that the predominant funding source will be traditional debt (revenue bonds issued through the municipal bond market) supplemented by pay as you go funding and limited grants.

11.2.4 Grant Availability

Although PWD will pursue available grant programs, the financial analysis does anticipate grant funding for CSO controls. The amount of grant funding that may become available is expected to be relatively minor in comparison to the projected capital expenditures for the LTCPU.

11.3 PHASE 2 - CALCULATION OF PERMITTEE FINANCIAL CAPABILITY INDICATORS

The second phase of the financial capability assessment - calculation of the financial capability indicator for the permittee – includes six items that fall into three general categories of debt, socioeconomic, and financial management indicators. The six items are:

- Bond rating
- Total net debt as a percentage of full market real estate value
- Unemployment rate
- MHI
- Property tax revenues as a percentage of full market property value
- Property tax revenue collection rate

Each item is given a score of three, two, or one, corresponding to ratings of strong, mid-range, or weak, according to US EPA-suggested standards. The overall financial capability indicator is then derived by taking a simple average of the ratings. This value is then entered into the financial capability matrix to be compared with the residential indicator for an overall capability assessment). Table 11-3 contains the six criteria and the ratings that categorize the permittee as strong, mid-range, or weak in each category. Shaded areas of this table indicate the City of Philadelphia's position in each category. Indicators with shading in two ratings such as the bond rating category reflect a score between the two ratings. A discussion of each item follows.

Table 11-3 US EPA Permittee Financial Capability Indicator Benchmarks

Indicator	Strong	Mid-Range	Weak
Bond rating	AAA-A (S&P) or Aaa-A (Moody's)	BBB (S&P) Baa (Moody's)	BB-D (S&P) B-C (Moody's)
Overall net debt as a percent of full market property value	< 2%	2% to 5%	> 5%
Unemployment rate	> one percentage point below the national average	± one percentage point of national average	> one percentage point above the national average
MHI	More than 25% above adjusted national MHI	± 25% of adjusted national MHI	> 25% below adjusted national MHI
Property tax revenues as a percent of full market property value	< 2%	2% to 4%	> 4%
Property tax collection rate	> 98%	94% to 98%	< 94%

(Blue areas indicate City of Philadelphia ratings)

Bond Rating – Indicator 1

General obligation debt, which is debt backed by the full faith, credit, and taxing power of the City of Philadelphia, has been rated by Moody's Investors Service at Baa1, by Standard & Poor's Corporation at BBB, and by Fitch Investors Service at BBB+.

The PWD issues debt pursuant to the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989 ("General Ordinance"), which superseded the General Water and Wastewater Revenue Bond Ordinance of 1974 ("Prior Ordinance"). PWD's debt is a special obligation of the City, secured along with previously issued water and wastewater revenue bonds, by a pledge of and security interest in all project revenues established in various funds and accounts, all as defined in the General Ordinance.

PWD's debt is currently rated as A3 by Moody's Investors Service, A by Standard and Poor's and A- by Fitch.[2] Based on the current credit rating of the City and PWD the overall bond rating is between strong and mid-range.

Net Debt as Percent of Full Market Value – Indicator 2

Total net debt includes overlapping debt, which is the indebtedness of the School District of Philadelphia and the City of Philadelphia General Bonded Debt in addition to the City of Philadelphia. School District debt totaled $2,634 million and bonded debt totaled $4,136 million on June 30, 2008, for total overlapping debt of $6.77 billion. The percent of total net debt to full market value was 37.30%. The calculation of the above percentage is based on a deduction of $255.7 million in sinking fund monies from outstanding debt. Self-sustaining debt (*i.e.*, revenue-backed bonds) are also excluded from total debt outstanding. Overall net debt as a percent of full market property value places the City of Philadelphia in the weak range on this measure.

[2] Source: OFFICIAL STATEMENT relating to $140,000,000 City of Philadelphia, Pennsylvania Water and Wastewater Revenue Bonds, Series 2009A (page 59)

Unemployment Rate – Indicator 3
The unemployment rate for the City of Philadelphia was 7.2% in 2008. The unemployment rate for the Commonwealth of Pennsylvania in 2008 was 5.4%, and the national rate for 2008 was 5.8%.

According to US EPA guidelines, a local variance of greater than 1% from the national rate indicates a weak financial capability. Philadelphia maintained an unemployment rate greater than 1% of the national average for the year 2008. Most recent data from the Department of Labor, Bureau of Labor Statistics shows the unemployment rate for Philadelphia to be as high as 9.7% in March 2009, its highest rate since 1993 and remaining ahead of the state and national averages.

MHI – Indicator 4
The most recent data (2007) from the Census Bureau estimate Philadelphia's MHI to be $35,431. US EPA guidelines suggest that a variance of greater than 25% below the national MHI figure constitutes a weak rating. Pennsylvania's MHI estimate was $47,913 and the national estimate was $50,007 over the same period of time, percent differences of nearly 32 and 36%, respectively.

Property Tax Revenues as a Percent of Full Market Property Value – Indicator 5
The City of Philadelphia assessed valuation is 29.22% of the full market value of real estate. A tax of 33.05 mills is levied on the assessed valuation. Therefore, the property tax levy is 3.305% of assessed valuation, or approximately 1.0% of full market value set by the State Tax Equalization Board. The projected full market value for 2008 was $41.67 billion. The result shows current year real estate collections to be approximately 0.85% of full market value. Table 11-4 shows assessed valuation, full markets value, tax levy and current year tax collections for real estate taxes.

The US EPA financial capability assessment makes no provision for measuring a local tax burden other than the real estate tax. This gives Philadelphia an artificially strong rating in the property tax revenues as a percent of full market value category.

However, the City of Philadelphia is somewhat unique in that real estate collections are not its primary source of income. The earned income tax levied by the City comprised 23% of the operating revenues in FY 2008, while the property tax only accounted for 6% of revenue. The City's current earned income tax rate is 4.22% of residents' wages. Although real estate taxes are comparatively low, Philadelphia taxpayers are heavily burdened by other local levy, including a Philadelphia sales tax.

Analysis by a Pew Foundation study[3] documents that the total tax burden per household in Philadelphia are about double the average for comparable large cities. For a family of three earning $50,000 annually, the tax burden in Philadelphia is 17.3% compared to the large city average of 8.8%. The total tax burdens for ten cities in the Pew study are shown on Table 11-5.

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[3] Philadelphia 2009 – The State of The City. The Pew Charitable Trusts – Philadelphia Research Initiative; page 13 (http://www.pewtrusts.org)

Table 11-4 City of Philadelphia, 2003-2008 Adjusted Real Estate Valuation, Real Estate Taxes Levied, and Collection Rates (in millions $)

Year	Total Taxable Assessed Valuation	Full Market Value based on State Tax Equalization Board	Adjusted Gross Real Estate Taxes Levied	Amount Collected in Year of Levy	Current Year Property Tax Revenue Collection Rate	Real Estate Tax Collected as Percent of Full Market Value
2008	12,175	41,667	391.1	355.901	91.0%	0.85%
2007	11,615	39,696	391.1	347.5	88.9%	0.88%
2006	11,431	39,600	385.6	339.6	88.1%	0.86%
2005	11,032	37,153	373.5	350.3	93.8%	0.94%
2004	10,946	36,856	372.5	340.9	91.5%	0.92%
2003	10,621	35,384	359.4	326.8	90.9%	0.92%

Source: Pennsylvania State Tax Equalization Board, FY 2008 CAFR, and City of Philadelphia Yearly Supplemental Reports

Table 11-5 Comparison of Large City Tax Burdens (Family of Three with $50,000 Income)

City		Tax Burden	% Income
1	Philadelphia	$8,629	17.3
2	Baltimore	$7,105	14.2
3	Detroit	$6,180	12.4
4	Columbus	$5,589	11.2
5	Houston	$4,398	8.8
6	New York	$4,259	8.5
7	Boston	$3,892	7.8
8	Washington	$3.590	7.2
9	Chicago	$3,547	7.1
10	Phoenix	$3,403	6.8
	Average	**$4,423**	**8.8**

Source: Philadelphia 2009 – The State of The City The Pew Charitable Trusts – Philadelphia Research Initiative; page 13 (http://www.pewtrusts.org)

The residential indicator is a national screening parameter and does not account for localized factors which erode the effective household income. The high total tax burden facing Philadelphia households reduces their effective household income. Consequently, measuring the household burden imposed by wastewater costs as a percentage of the MHI (estimated in 2009 to be $37,072 and projected to be $58,305 in 2029) may underestimate the financial burden of the projected wastewater costs per household. As was noted in an analysis of the impacts of CSO controls in the Boston region:

> *"The greater are the costs of other necessities as a share of MHI, the greater will be the economic burden associated with sewer charges equal to a given percent of MHI."* [4]

[4] Assessment of the Economic Impact of Additional Combined Sewer Overflow Controls in the Massachusetts Water Resource Authority Service Area (page 13) prepared by Robert N. Stavins, Genia Long, and Judson Jaffee. Analysis Group Incorporated, August 2004.

The impacts of the tax burden in Philadelphia are further exacerbated by the relatively high cost of living in Philadelphia. The American Chamber of Commerce Researchers Association Cost of Living Index for Philadelphia was 1.249 in 2006[5] (*i.e.*, the cost of living in Philadelphia is approximately 25% higher than the national average). The estimated U.S. MHI in 2009 is approximately $52,500 or 41% higher than the Philadelphia MHI. Thus, the household at the median Philadelphia income faces costs of living that are 25% higher than the national average while earning an income that is about 71% of the national median income.

Property Tax Collection Rate – Indicator 6
Real estate tax collections had shown a pattern of increase since the rate was lowered to 34.74 mills on assessed valuation in 2003, however, the collection rate dropped below 90% for 2006 and 2007. The US EPA criterion for a strong rating in this category is a collection rate of more than 98%. Philadelphia's rate is estimated to be 91%, which places it in the weak range for real estate tax collections.

Summary of the Six Municipal Financial Capability Indicators
The City of Philadelphia received a financial capability rating of 1.58, according to the scores on the six items included in the assessment. This is based on a strong-to-mid-range rating of "2.5" on its bond rating; weak ratings of "1" on overall net debt as a percent of full market property value, unemployment rate, MHI, and property tax collection rate; and the strong rating of "3" on its property tax revenues as a percent of full market value of real estate. The 1.58 rating represents the simple average of those scores.

11.4 ADDITIONAL SOCIO-ECONOMIC TRENDS IN THE PWD SERVICE AREA

In addition to following US EPA guidelines for completion of the financial capability assessment matrix, a discussion of socioeconomic trends in the PWD service area is essential to the consideration of scheduling and compliance levels with CSO guidelines. Approximately 70% of the service area population consists of City of Philadelphia residents, and neighboring counties served are limited in the flows that can be sent to PWD's wastewater treatment plants. Therefore, this discussion includes socioeconomic trends in Bucks, Delaware, and Montgomery Counties, but it is focused primarily on demographic and employment conditions and projections for Philadelphia.

Philadelphia's Demographic and Economic Trends
This section advances an analysis of demographic and economic changes that have taken place in Philadelphia and the surrounding suburban counties during the years 1980 to 2008 and for the forecast period of 2010 to 2035. Emphasis is placed upon demographic and economic changes as they impact Philadelphia County. Demographic and economic trends that are analyzed include population, age of population, the number of households, household composition, and income levels.

[5] American Chamber of Commerce Research Association Cost of Living Index, http://www.coli.org.

Population
Population levels are a significant indicator in any analysis of demographic and economic changes. Philadelphia's population is depicted in Table 11-6 for the historic period 1980 through 2007 and the forecast period of 2010 through 2035. During the period 1990 to 2000, the population of Philadelphia decreased significantly from 1,585,577 to 1,517,549, a 4.5% decline. As illustrated in Table 11-6, the Delaware Valley Regional Planning Commission (DVRPC) has projected a small increase in the City of Philadelphia's population for the forecasted period 2010-2035. However, most recent census data indicates that the City's population has continued its dramatic decline with a currently estimated population of 1,454,382. Therefore, unless there is a reversal of this trend, the estimated projections for the year 2035 would need to be adjusted significantly downward. In this event, the PWD would anticipate a reduction in the number of residential customers and a corresponding increase in the burden on the remaining households. The Philadelphia County population trend is a reasonable basis for predicting that residential demand for wastewater service in Philadelphia County is not likely to increase significantly during the forecast period.

Table 11-6 Philadelphia County Population Levels 1980-2035

1980 Census	1,688,210
1990 Census	1,585,577
2000 Census	1,517,549
2005 – 2007 Census Estimate	1,454,382
2010 Forecast	1,475,613
2020 Forecast	1,474,268
2030 Forecast	1,478,065
2035 Forecast	1,480,023

Source: DVRPC, Analytical Data report "Regional, County, and Municipal Population and Employment Forecasts, 2005-2035," July 2007

Minority Population
The proportion of minority population in the PWD service area varies between 8.9% in Bucks County and 57.3% in Philadelphia based on most recent Census data. Philadelphia's minority population is over 31% higher than the national average and over 41% higher than the state average. A portion of that population experiences lower incomes, slower growth in income, and greater difficulty meeting the increased burden of utility costs.

Age of Population
The age of the local population is also a significant factor in this analysis. In this regard, it should be noted that in 1980, approximately 14% of all Philadelphians were 65 years of age or older (elderly), and in 1990 the number rose to 15.2%. In 2000, the percentage of elderly in the local population decreased to 14.1%, and the most recent data estimate a 13.0% elderly population. The national average is estimated to be 12.5%, so despite the decrease in elderly population within the City, it still remains above average.

An increase in the elderly population is evident in the suburban counties served by the permittee. The elderly population in the surrounding counties increased from 13.8% to

14.3% during the 1990 to 2000 time period. According to the DVRPC[6], based on population forecasts and the current age distribution, the percent of elderly within Philadelphia and its surrounding communities will increase to roughly 19% of the population by 2025. The DVRPC estimates that the elderly population within Philadelphia will be around 15%, and as high as 22% in Bucks County. As the baby boomer generation ages, the percentage of elderly should increase dramatically.

This trend of the locally aging population is alarming since there appears to be a historic positive correlation in Philadelphia between the percentage of the elderly population and the percentage of the population living in poverty. This is evident in Philadelphia County, based upon population and demographic trends observed between 1970 and 2000. Along with the increased percentage of elderly population, the number of residents living in poverty went from just less than 12% to more than 22%.[7]

It can be reasonably projected, based on the foregoing, that the permittee's customer base will consist of an increasing number of elderly persons, who in many instances are living on limited incomes. Further, an aging customer base indicates limits on future economic expansion.

Number of Households
Another significant factor in this analysis of demographic and economic trends is the number of established households in Philadelphia County. In 1980, 1990, and 2000, there were 634,665, 600,740, and 590,238 households in Philadelphia, respectively. Most recent Census data estimates 557,985 households. The consistent decrease in the number of households is not surprising given the general decline in Philadelphia's population. However, this trend is more alarming when viewed in conjunction with the changes in local household composition, addressed in the following section. These factors suggest that significant income growth in Philadelphia will be unlikely during the forecast period.

Household Composition
Family households in Philadelphia numbered 352,331 in 2000, compared to 378,048 in 1990 and 415,891 in 1980. In 2000, 189,291 such households were headed by two parents, compared to 227,187 in 1990 and 280,619 in 1980. The number of female-headed households in this mix was 131,332 in 2000, compared to 122,370 in 1990 and 113,489 in 1980. This is significant because two parent households tend to have higher incomes than non-family households and family households headed by single parents[8]. Illustrative of this point is in the 12 months prior to the last census estimates, 34% of female-headed families in Philadelphia were below the poverty line compared to only 8.5% of married couple families.

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6 DVRPC, "The Aging of the Baby Boomers: Elderly and Near-Elderly Population Characteristics," January 2007.

7 In this same context, it should be noted that a significant percentage of children in Philadelphia County live in poverty. In 2006, roughly 35 percent of all children in Philadelphia lived in poverty. This is also an indicator that many households served by the permittee operate under severe economic constraints at present.

8 US Census Bureau, "Income, Poverty, and Health Insurance Coverage in the United States: 2007."

As noted previously, recent trends reflect a drop in total number of households, which includes an 18% decrease in family households. However, most recent census data estimates that the decrease in the number of married couple families is over 16% since 2000, while the female-headed households have barely dropped 10%. Combined with an increase in non-family households of nearly 17%, the result is a proportional increase in households with historically lower earning potential.

Taken together with the above average population of elderly in the service area, these household composition trends do not forecast significant income growth. An examination of the historical and recent income levels further illustrates this point.

Income Levels

Personal income per capita in Philadelphia decreased from $17,430 in 1990 to $16,509 in 2000, compared to a regional increase from $18,383 to $27,789 over the same period of time. Recent census estimates show that Philadelphia's per capita income has increased to $19,875, still significantly lower than the regional and national per capita income estimates of $34,019 and $26,178, respectively. Despite the increase in per capita income, 16.5% of the families in Philadelphia, including 136,277 households, must sustain themselves on incomes below $15,000.

As shown in Figure 11-3, MHI in Philadelphia has significantly lagged behind the national level since the 1970s. Since 1989, MHI in Philadelphia has grown at a rate which is below both those of the state (2.94%) and national (3.18%) levels. This appears to be a consistent and long-term trend resulting from structural elements of the Philadelphia's demographic and economic make-up, rather than being the result of cyclical or outlying occurrences. It is reasonable to expect that this trend in income levels and growth will continue into the future.

From 1990 to 2000, the percentage of all persons with incomes below the poverty level in Philadelphia increased from 20.3% to 22.9%. This trend has continued with the most recent census figure at 24.5%. Given the local increase in unemployment due to the recent economic climate, it is possible that in the near future the number of Philadelphians living in poverty could increase dramatically.

Employment Trends in Philadelphia

Future income growth in Philadelphia is dependent upon prospective economic trends, driven in large part by employment. The affordability of PWD's LTCPU is tied to such economic trends.

The data assembled by the DVRPC in their study entitled "Regional, County, and Municipal Population and Employment Forecasts, 2005-2035", indicates that Philadelphia will experience minimal growth in employment during the forecast period. This estimate focuses on long-term trends and assumptions, and should be evaluated with actual data as available to address any potential long-term shifts that may occur due to the current economic climate and eroding job market. The projected changes in job numbers by employment sector for Philadelphia appear in Table 11-7.

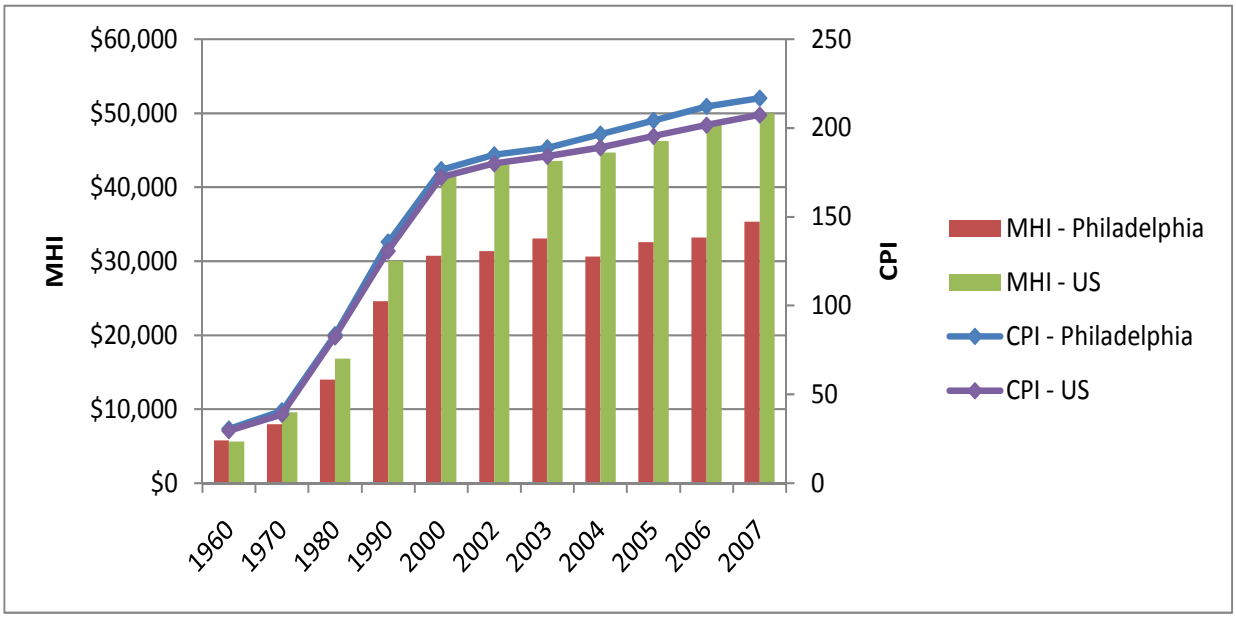


Figure 11-3 MHI Trends and Comparisons

Employment composition in Philadelphia is also not substantially changed in any employment sector during the forecast period, as shown in Table 11-7, although small increases and decreases are shown in some job sectors. Total job forecasts and employment sector forecasts indicate a reversal of past trends, in which employment levels dropped overall. It bears emphasis, however, that Philadelphia County has yet to experience the sizable upward employment trend projected in the above data and the current uncertainty in the job market will negate short-term growth estimates and may potentially hinder long term employment level growth.

11.5 THE FINANCIAL CAPABILITY MATRIX

It was established previously in the Phase One (Residential Indicator) analysis that Philadelphia's residential indicator is projected to fall into the high-range category on the financial capability matrix. The Phase two analysis on the assessment of the financial capability indicators placed Philadelphia in the mid-range category for current conditions. The intersection of these two ratings on the EPA financial capability matrix places the City of Philadelphia in the category of high financial burden, as shown on Table 11-8.

In addition to these strictly numerical measures, socioeconomic trends in the Philadelphia area require careful consideration as level and scheduling of CSO control expenditures are determined.

11.6 CONCLUSIONS AND IMPLICATIONS

PWD will be implementing the innovative approach to combined sewer overflow controls detailed elsewhere within this document within the context of its financial and demographic reality. This reality may be summarized by the unprecedented needs for capital reinvestments in the City's water and sewer systems juxtaposed with structural economic and

Table 11-7 Philadelphia County Employment Forecasts by Sector

Sector	2005	2010	2015	2020	2025	2030	2035
Agriculture & Mining	977	919	866	848	806	765	764
Construction	24,172	20,895	20,302	21,436	21,022	20,504	20,557
Manufacturing	50,335	50,077	48,118	49,208	47,549	45,819	45,805
Transportation / Utilities	33,892	33,515	32,770	31,995	31,502	30,941	31,026
Wholesale	23,505	22,881	22,373	22,092	21,706	21,261	21,275
Retail	97,010	91,230	89,277	87,867	86,642	85,260	85,365
FIRE	61,588	54,847	53,678	53,644	53,217	52,406	52,767
Services	318,831	335,615	346,195	342,303	351,950	360,385	361,570
Government	117,048	112,106	110,674	117,046	116,745	116,015	116,454
Federal/Military	677	715	709	700	692	683	685
Total	**728,035**	**722,800**	**724,962**	**727,139**	**731,831**	**734,039**	**736,268**

Source: DVRPC Employment Forecasts by Sector, based on 2009 economic model run by DVRPC.

Table 11-8 The Financial Capability Matrix at Year 2029

Permittee Financial Capability Indicators Score (Socioeconomic, Debt and Financial Indicators)	Residential Indicator		
	Low (Below 1.0%)	Mid-Range (Between 1.0 and 2.0%)	High (Above 2.0%)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (Between 1.5 and 2.5)	Low Burden	Medium Burden	**High Burden**
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

(Blue areas indicate City of Philadelphia ratings)

demographic changes that will continue to erode both PWD's ability to finance required capital investments and the citizen's ability to afford them.

As noted above, PWD's current capital improvements for its water and sewer systems total $4.6 billion through 2029. This includes $3.7 billion for its current systems required to maintain current levels of service and regulatory compliance; and approximately $900 million (2009 dollars) in new capital expenditures for the implementation of the LTCPU recommended alternatives.

The anticipated tripling of the PWD's annual wastewater system revenue requirements from approximately $350 million in 2009 to over $1 billion in 2029 will be paid for by a rate base whose income is projected to increase by less than 60% during the same period. The results of this will be burden measured as the residential indicator of 2.27% of the median income. A population equivalent to cities larger than Boston, Washington D.C., Baltimore and Seattle will pay more than 2.27% of their household income for wastewater services. The lowest quintile of the households, a population larger than cities such as Cincinnati, Minneapolis,

Pittsburgh or Toledo will face annual wastewater costs totaling between 3.55 to upwards of 7% of their household incomes.

It is reasonable to expect that an implementation schedule (through 2029) imposing residential burdens well above 2.27% for populations the size of major American cities is untenable. The municipal financing market likely would agree with such a conclusion. PWD might face insurmountable difficulties in financing their capital needs as outlined above.

These realities suggest an implementation schedule extending beyond the 2029 deadline. Indeed, through its Green Infrastructure approach to CSO control, PWD fully intends to continue to expand the green features within the City so that control levels will increase and improve well beyond 2029. PWD's Green Infrastructure approach is uniquely suited for incremental and modular implementation and the scheduling context is a completely different paradigm than that of a traditional infrastructure control strategy. A storage and conveyance tunnel, for example, would be of little or marginal benefit before it is fully constructed and operated. CSO control and the resulting water quality benefits would not occur until initiation of operation of at least large portions of the program. In such cases, the regulatory and environmental imperatives might push towards a discrete short term (ten to twenty) year timeframe. PWD's approach however provides for immediate compliance and water quality benefits that will grow annually. The proposed implementation schedule will allow the City of Philadelphia and its watersheds to achieve these benefits within the constraints that the nation's changing economics and demographics have dealt it.

Case Study #3: Indianapolis CSO LTCP
Attachment 3-1
Indianapolis 2006 FCA

6.0 Financial Capability Assessment

Contents:

6.1 Introduction
6.2 Key Assumptions
6.3 Projected Revenue Requirements, Financing and Rate Impacts
6.4 U.S. EPA Financial Capability Analysis
6.5 Summary

6.1 Introduction

Financial capability is a significant factor affecting a community's CSO long-term control plan (LTCP). According to U.S. EPA's 1994 *CSO Guidance for Long-Term Control Plan:*

> As part of LTCP development, the ability of the municipality to finance the final recommendations should be considered. The CSO Control Policy[1] "…recognizes that financial considerations are a major factor affecting the implementation of CSO controls…[and]…allows consideration of…financial capability in connection with the [LTCP] effort…and negotiation of enforceable schedules." The CSO Control Policy also specifically states that "…schedules for implementation of the CSO controls may be phased based on…financial capability."[2]

This section describes the methodology and results of applying U.S. EPA's financial capability process to the Indianapolis long-term control plan. The focus of this effort is to estimate the cost per household for Indianapolis' customers, assess how that cost will compare to future household income, and then determine and discuss financial capability factors set forth in the U.S. EPA guidance document. This guidance document is not binding and the resulting analysis may not fully capture the fiscal stress and/or ability of Indianapolis residents to fund CSO controls. The city has projected future revenue requirements and associated rates, taking into account current costs to operate the city's system, how those costs will change over time, existing debt service, and future debt service resulting from anticipated and identified capital improvements. The city's planning horizon for evaluating the impacts of the LTCP exceeds 20 years.

The city has developed its financial projections consistent with the way it will develop rate projections, with expenses, revenues and capital costs stated in future year dollar terms. Thus, household bills in 2015 reflect what the city estimates households will actually pay in that year. For purposes of the affordability analysis, these future household rates are compared to projected household incomes in those specific years. This is consistent with the approach used by a number of other municipal sewer agencies. The approach keeps all cost figures on a consistent basis and gives the city a realistic picture of actions required to raise needed revenue.

In developing these projections, the city has sought to estimate the future burden of the CSO program in addition to the full wastewater system's long-term needs, as currently understood by the city. The city has evaluated the impact of the long-term control plan and other wastewater needs by estimating long-term revenue requirements and then estimating typical household sanitary sewer costs based on estimated rates. The residential indicator is based on that average annual cost per household relative to projected median household income for each year over the forecast period.

6.2 Key Assumptions

The key assumptions used to develop these projections are:

- Using U.S. Census data for the Consolidated City best captures the city's retail service area. Most customers outside the Consolidated City are served through wholesale contracts, which hinder the ability of the city to readily pass through rate increases and where the wholesale customer has little or no responsibility for combined sewers. See Section 6.3.1 for further discussion of the Consolidated City and wholesale customers.
- Based on a review of historical flow data, the city does not anticipate increases in billable flows over the forecast period due to the historic trend of commercial and industrial conservation measures being implemented as rates increase. But the city does anticipate that the number of households connected to the system will increase slowly as the city moves forward with septic conversions, and experiences limited infill of undeveloped areas.
- Labor costs for the existing system are projected to increase at an average annual rate of 2.5 percent, except for the period from 2008 to 2018, when they are expected to increase at 4.5 percent. The period 2008 to 2018 is anticipated to be a peak construction period in the Indianapolis area. The city anticipates increased labor price competition due to concurrent and significant infrastructure programs occurring in the city during this period, which will increase costs beyond industry standard escalation. Pension costs are assumed to increase at a 5.8 percent rate. Contract operations costs are assumed to increase at a 4 to 6 percent an-

[1] 59 Fed Register, 18688
[2] U.S. EPA, Office of Water, EPA 832-B-95-002, September 1995, p. 3-66.

nual rate, consistent with the city's history under the existing agreements. In addition, it is assumed that there will be a step up in costs of approximately 5 percent at the time operations contracts are renewed, based upon experience with these types of operational contracts.

- Capital costs are projected to increase consistent with the 25-year average national Engineering News Record (ENR) construction cost index. However, during the peak construction period of 2008 to 2018, the city assumes that the costs will increase at 2 percent per year above the historical national ENR index due to the very high anticipated level of construction.
- The city's repair and replacement and capital maintenance activities are assumed to increase over time, reflecting the increased attention the systems will require as they age.
- The city's capital improvement program assumes that the city will move forward during the forecast period with the following plans and projects: LTCP, the Large and Mid-Diameter Combined Sewer Master Plans, the Sanitary Sewer Master Plan, the Basin Master Plan, septic conversion program, as well as other projected wastewater improvements and maintenance needs within the collection system and at the city's two treatment plants. The current estimated cost of this capital improvement program (CIP) is approximately $5.5 billion at the time of construction, including LTCP costs. The above costs do not include the costs of complying with state and federal stormwater management requirements, which are expected to become more stringent during the 20-year planning period.
- The city assumes that it will finance this CIP with a combination of State Revolving Fund (SRF), revenue bonds and 'pay-as-you-go' funds. The city is hoping to obtain SRF financing for 10 percent of this CIP. Over the 20-year LTCP implementation period, the city has assumed that all debt issued will have a term of 20 years with an average interest rate of 6.0 percent.
- Consistent with revenue bond requirements, it is assumed that the city will set rates to comply with a debt service coverage ratio of 130 percent. This has no impact on future rates, since the revenues generated through coverage are used to fund pay-as-you-go capital and other system expenses.
- Operating and maintenance costs for new infrastructure were incorporated based on projects that would directly result in new system components or improved performance. These costs were summarized into five major categories: labor, power, chemicals, infrastructure, and materials and supplies. The indexed annual costs were synchronized with the capital program implementation schedule and were compared to historical expenses and published rates for accuracy and consistency.
- Revenue projections for this Financial Capability Assessment rely on the city's current rate policy and structure and assume that the share of revenues derived from industrial and commercial customers remains stable, despite a history of declines in base flow over time.

The total capital needed by the City of Indianapolis over the next 20 years is estimated at nearly $5.5 billion (future dollars) to fund both CSO improvements required by this LTCP and other projected wastewater collection and treatment needs. The details of the long-term control plan are described in Section 7.0 of this report. For purposes of the financial capability analysis, the city analyzed LTCP Plan 1 at 97 percent capture on Fall Creek and 95 percent capture on the remaining streams, implemented over 20 years. The total capital needed for the LTCP is estimated at $1.6885 billion in current dollars or $2.459 billion in future dollars (**Table 6-1**).

The Wastewater Improvements CIP assumes that the city implements the various master plans that have been prepared for the city, together with other wastewater improvement and maintenance needs. These include unspent por-

Table 6-1
CIP Capital Costs by Program

Capital Program	Present Dollar Value (2004 dollars)	Future Dollar Value (at time of construction)
Long-Term Control Plan	$1.6885 billion	$2.459 billion
Wastewater Improvements CIP	$1.546 billion	$2.548 billion
Septic Tank Elimination Program	$319 million	$474 million

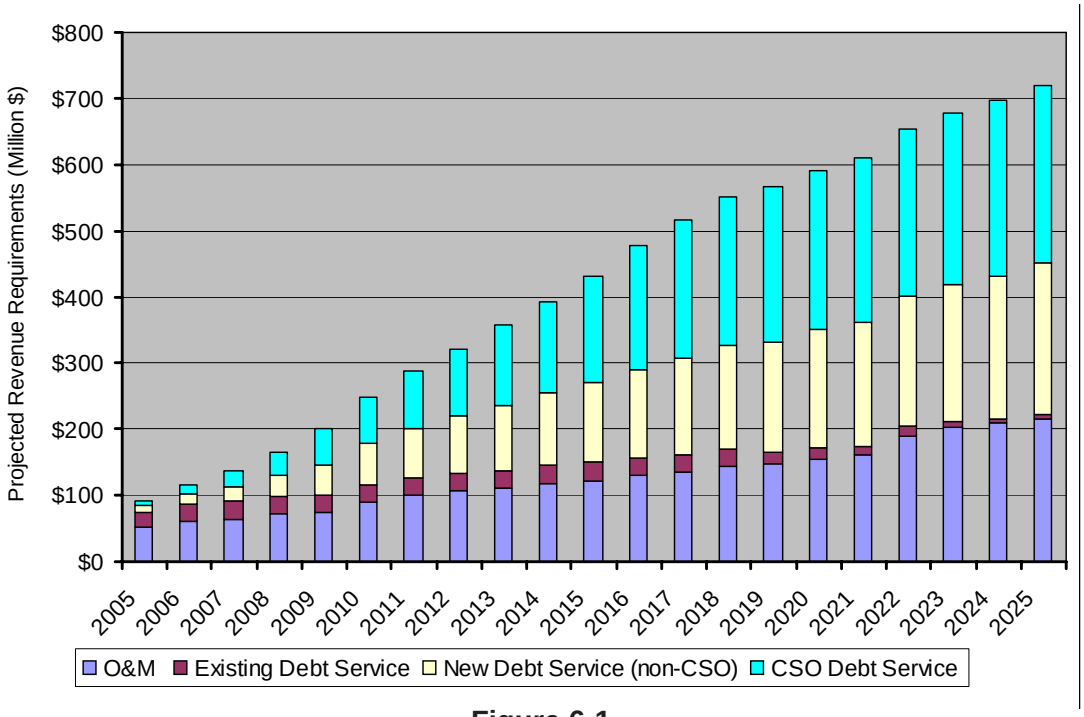


Figure 6-1
Projected Revenue Requirements

tions of the Sanitary Sewer Master Plan, the Large and Mid-Diameter Combined Sewer Master Plans, Basin Master Plan and other projected capital improvements and maintenance needs at the AWT plants and collection system. Since the costs published in the various master plans were developed at different times, all costs were converted to a common dollar base (2004 dollars). The total remaining capital need for the Wastewater Improvements CIP is estimated at $1.6885 billion in current dollars or $2.459 billion in future dollars (**Table 6-1**). Finally, the city is assumed to accelerate extension of sanitary sewers to replace the approximately 18,000 failing septic systems within the retail service area.

The total capital needed for the first 18,000 homes in the Septic Tank Elimination Program is estimated at $319 million in current dollars or $474 million in future dollars (**Table 6-1**).

6.3 Projected Revenue Requirements, Financing and Rate Impacts

Figure 6-1 displays the projected revenue requirements for the wastewater system over the forecast period.

For the period 2005 to 2015, the average annual increase in revenue requirements will exceed 18 percent. On average, through the end of 2025, the city's revenue requirements will increase by approximately 12 percent per year. As the figure shows, new debt service to ensure the long-term integrity of the system and LTCP compliance causes the greatest increases in revenue requirements. CSO debt service will increase from less than 5 percent of total revenue requirements in 2005 to nearly 30 percent in 2025. Similarly, debt service to fund ongoing improvements to the existing sanitary system is projected to increase from 25 percent of the existing revenue requirement to more than 50 percent.

6.3.1 Impact on Future Rates and Affordability

The city's current rate structure includes both a minimum charge per month and a volume-based charge. The volume-based charge is allocated among retail customers based on metered water consumption. (A small number of retail customers do not have centralized water service, and therefore pay a flat rate). Each wholesale contract has been negotiated on a case-by-case basis, over time; and has a different rate, rate structure methodology and process for adjusting those wholesale charges to reflect changes in the cost of service. Furthermore, the city does not control how retail rates are set inside the wholesale customer's service area. While the city has assumed that wholesale customers will pay a proportionate share of the increased costs, this assumption may prove to be optimistic.

The 2005 baseline city retail rate consisted of a monthly billing charge of $2.39 and a commodity rate of $1.33 per 1,000 gallons. There was also a minimum charge, such that no customer paid less than $6.40 per month. For the average residential customer using approximately 64,800 gallons per year, the annual bill in 2005 was approximately $115 per year.

Residential bills are projected to increase by an annual average exceeding 12 percent during the LTCP implementation period. The City-County Council approved a new rate structure on Oct. 31, 2005, that will raise rates approximately 29 percent annually in the years 2006-2008.

Under the U.S. EPA guidance, a key measure of affordability is the Residential Indicator: the ratio of the wastewater cost per household to median household income (MHI). The Residential Indicator is compared to EPA-defined criteria to determine whether costs impose a low, mid-range or high impact on residential users. **Figure 6-2** shows U.S. EPA's Residential Indicator criteria, which define a "low" impact as a cost per household less than 1.0 percent of MHI, a "mid-range" impact between 1.0 and 2.0 percent, and "high" impact as greater than 2.0 percent of MHI. For the forecast period, the residential indicator for Indianapolis is projected over time in **Figure 6-3**.

Figure 6-3 presents the data for three "classes" of households. The first is the Consolidated City, which best represents the city's retail service area. As described earlier in Section 5.0, the consolidation of city and county governments in Marion County left four "excluded cities" that retained some local control. Marion County also contains an independent conservancy district (Ben Davis). Lawrence, Beech Grove and the Ben Davis Conservancy District have wholesale contracts with the City of Indianapolis for sewage treatment services. Southport does not own its collection or treatment systems. Its residents are simply billed as retail customers of the Indianapolis sewer system. The fourth excluded city, Speedway, operates its own sewage collection system and wastewater treatment plant. Several smaller communities outside Marion County also receive wholesale sewage treatment services from the City of Indianapolis. **Figure 6-4** provides a map of Marion County, showing the excluded cities, Ben Davis Conservancy District, township boundaries and out-of-county wholesale customers. U.S. Census data for the Consolidated City includes all of Marion County except the excluded cities of Lawrence, Beech Grove, Southport and Speedway.

Figure 6-3 also shows residential indicators for the median household in Center Township and for a household at or below the poverty level. The Residential Indicator and financial impact on these low-income segments of the service area are significantly greater than they are for the consolidated city service area as a whole.

For the median Consolidated City household, the residential indicator will increase from below 0.5 percent in 2005 to nearly 1.0 percent by 2010 and over 1.5 percent by 2018. This median household will bear a sewer bill exceeding 1 percent of income for 13 years of the forecast period. For Center Township, the city's most populous township, the residential indicator will grow from approximately 0.5 percent in 2005 to approximately 1.30 percent by 2010 and over 2.5 percent (high impact) by 2018. For poverty-level households, the situation is more severe. The residential indicator will rise from nearly 1 percent in 2005 to over 4 percent in 2018.

Based on these projections and using the U.S. EPA guidance, the city anticipates that the residential burden will reach the high end of the medium burden range for the service area's median household in or about 2018. That burden level is projected to persist through the end of the forecast period (2025) and beyond. For the other classes of the city's residential base (Center Township and poverty level households), the burden is projected to be well within the high burden category beginning in approximately 2014 for Center Township and 2010 for poverty-level households. That burden will remain throughout the forecast period and a significant period after December 2025.

The city believes that these projections are reasonable. However, they assume that the share of billable flow allocated to residential customers will remain flat and that wholesale customers will pay a proportionate share of the cost increases. The projections also assume that the share of revenues generated from industrial and commercial customers remains stable, despite a history of declines in base flow over time. Finally, these projections are subject to actual construction costs, which may vary from the city's current projections.

6.3.2 Impacts of Future Competition and Inflation of Capital Costs

Program affordability may be negatively impacted if inflation of the capital costs increases dramatically during this 20-year timeframe. Based on currently available plans, the regional construction market will face significant competition given the large amount of public and private construction anticipated to occur. The city believes this will result in significant price increases for technical services, construction workers, materials and supplies in excess of that in the national construction market. The anticipated level of construction is summarized in **Figure 6-5**. Significant projects include:

- Indianapolis Airport Expansion
- Interstate 465 rehabilitation/reconstruction
- Interstate 69 construction
- New sports stadium/convention center expansion
- Market Square Arena site residential/commercial development
- Indianapolis Rapid Transit investments

Financial Impact	Cost per Household
Low (3)	Less than 1.0 percent of MHI
Mid-Range (2)	1.0 - 2.0 percent of MHI
High (1)	Greater than 2.0 percent of MHI

Note: Low impact equates to strong financial capability; high impact equates to weak financial capability.

Figure 6-2
Residential Indicator Criteria - U.S. EPA Guidance

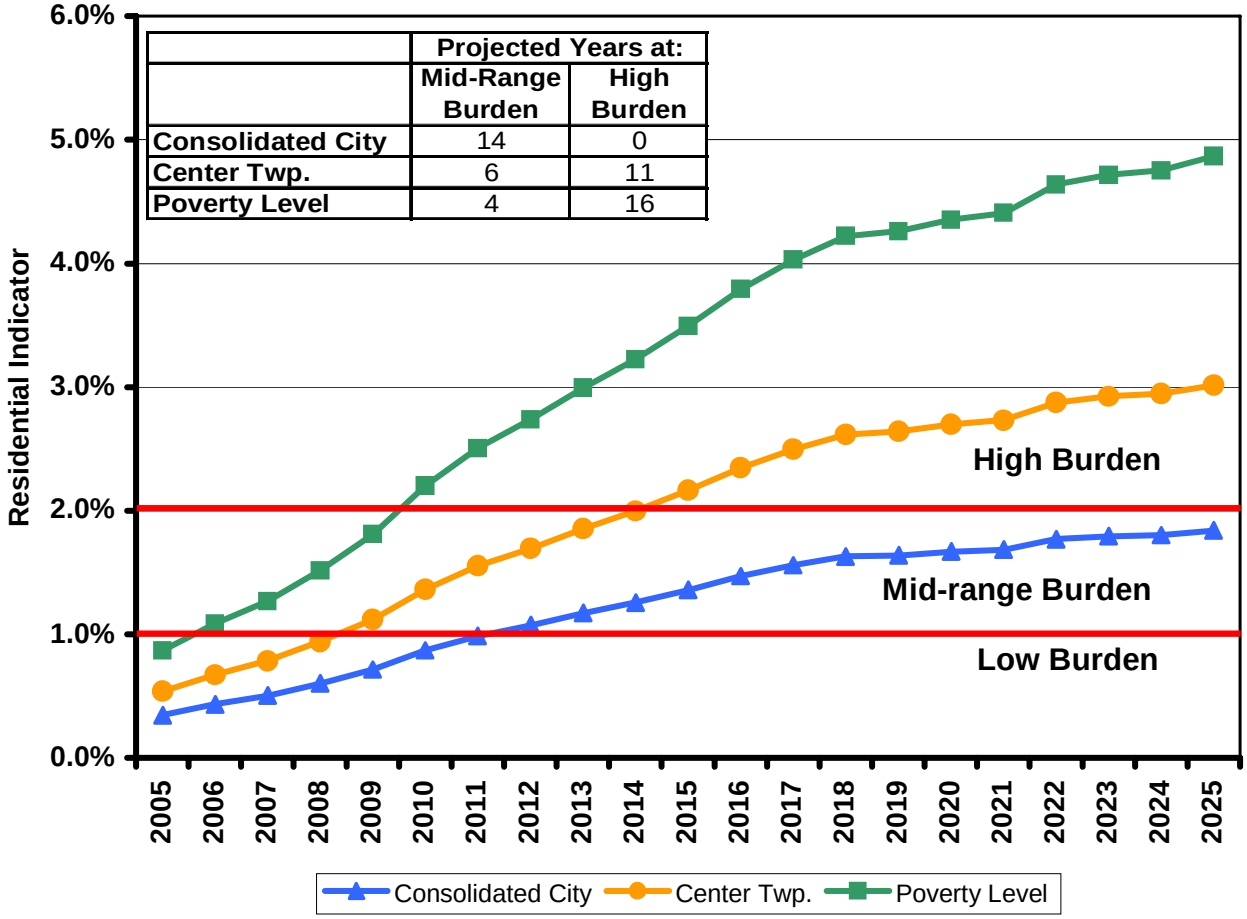


Figure 6-3
Residential Indicator, 2005-2025
Recommended Plan, 20-Year Implementation

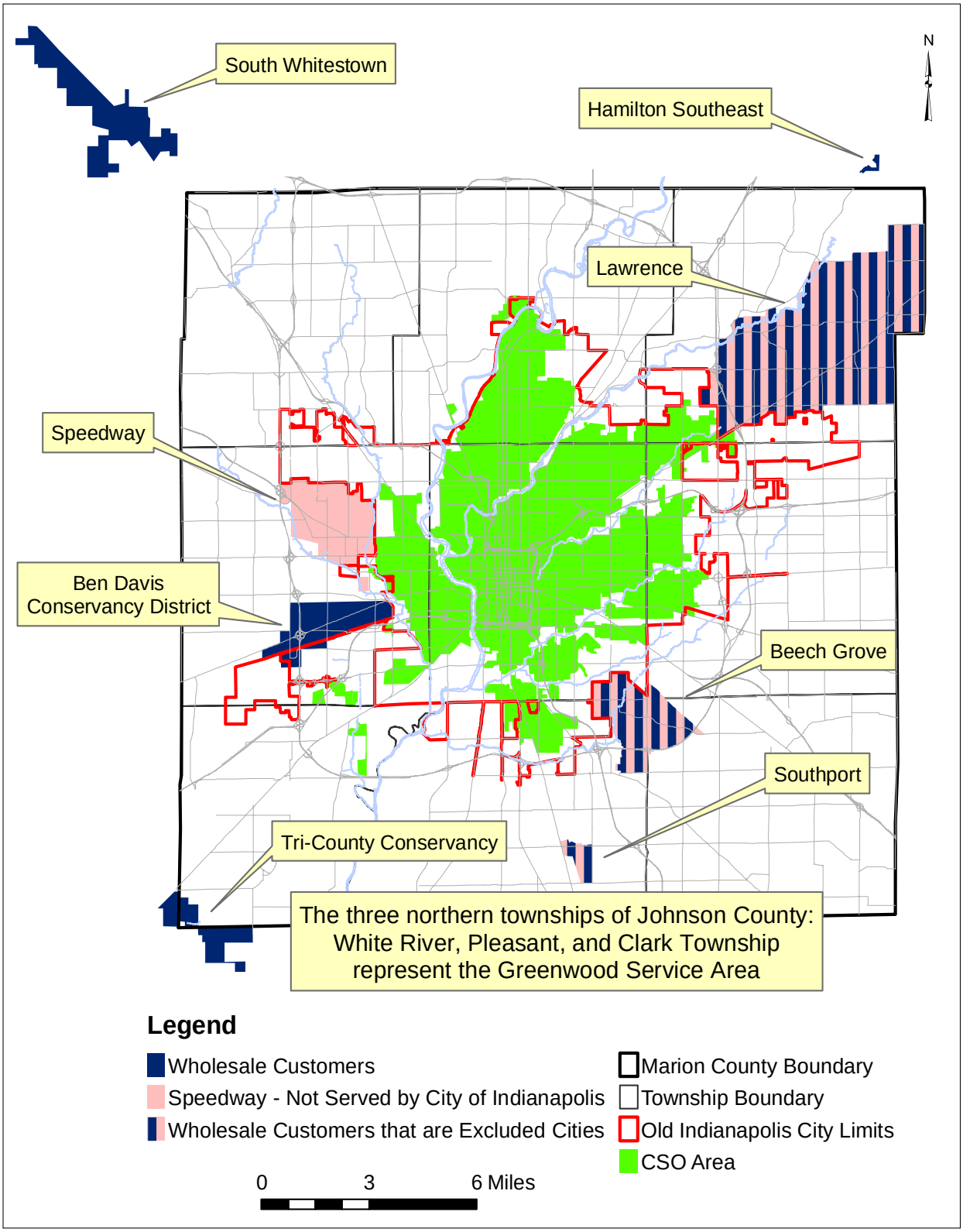
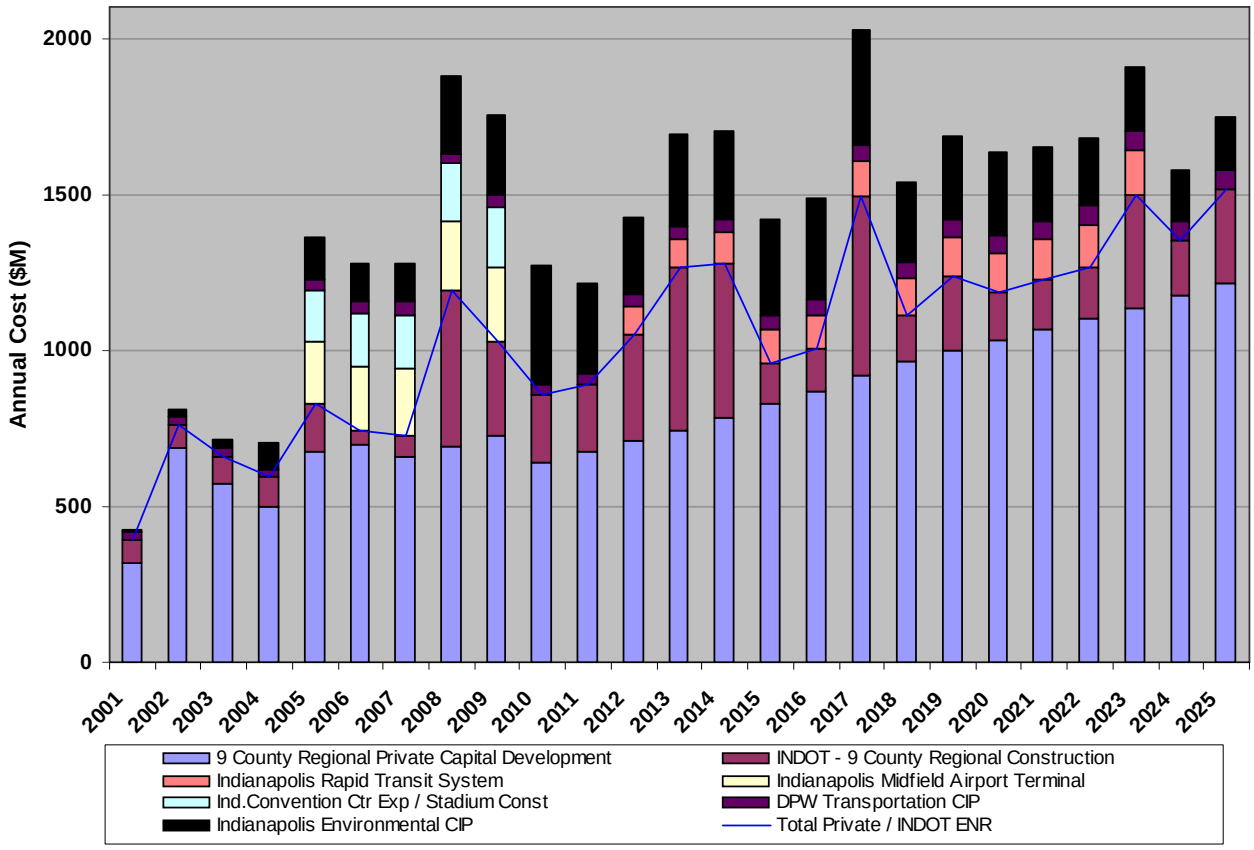


Figure 6-4
Wholesale Customers



Notes:
Costs shown on this chart are expressed in terms of estimated Engineering News Record Construction Cost Index (ENRCCI) over the 20-year project period.

Figure 6-5
Indianapolis Regional Major Capital Investment Programs / Projects 2001 - 2025
(20-year ENR Indexed)

These projects are in addition to standard infrastructure expenditures in the sectors of roads and bridges, transit and water. The volume of work generated by these projects, along with the city's CSO, sanitary, and transportation programs, will stretch local construction firms to the limits of their equipment and manpower resources. As seen in **Figure 6-5**, construction spending is projected to increase from the historical average of approximately $650 million per year in 2001-04 to more than $1.5 billion per year – nearly tripling on an annual basis.

In addition, the city is concerned that the large number of CSO programs underway at the same time in the Midwest will stretch the specialized construction resources associated with these types of programs. The concern is especially true for tunneling-related activities. **Table 6-2** shows eight Midwestern cities that have estimated CSO control programs totaling approximately $10.6 billion. This is in addition to

Table 6-2
Midwest Cities' CSO Control Programs: Estimated Costs

City	Estimated CSO Control Program ($Billion)
Cincinnati	$1.50
Toledo	$0.80
Detroit	$1.40
Cleveland	$1.60
Akron	$0.40
Columbus, Ohio	$1.50
Youngstown	$0.40
Pittsburgh	$3.00

the City of Indianapolis's CSO program, and excludes the 103 other CSO plans being implemented by smaller Indiana communities.

Given this high concentration of similar programs in the region, the city expects considerable regional competition for engineering and construction resources. Construction resources can be the most critical component for achieving required implementation schedules.

Given the large amount of anticipated construction and the concentration of CSO-related programs, as well as similar impacts in other areas of the country, the city believes that its capital costs will increase faster than the historic national ENR index. Therefore, these projections assume that capital costs will increase at a rate two percentage points higher than the projected national ENR index during the period 2008 to 2018. In addition, the city anticipates upward pressure on its labor costs for operating and maintaining the sewer system and has assumed that these costs will increase at a rate two percentage points higher than the consumer price index during the same time period.

6.3.3 Financing Assumptions

The projections of burden and the residential indicator are extremely sensitive to assumptions regarding debt. The city has assumed that it will finance its program with a combination of state revolving fund loans and city-issued revenue bonds. The city is assuming that this debt will carry a weighted average interest rate of 6.0 percent with 20-year debt. This assumption is extremely sensitive to:

- The proportion of debt actually placed with the SRF
- Actual market rates over the forecast period

The city's projections assume that the city will fund 10 percent of its CIP through the SRF at an average interest rate of approximately 4.75 percent. This would amount to roughly $25 million per year in SRF loan funding, which is consistent with information provided to the city by representatives of the Indiana SRF program. If the city obtains less than the 10 percent that is assumed, actual rates will increase from current estimates.

The city is also assuming that over the 20-year implementation period, market interest rates do not increase significantly from current levels, and that its general obligation bond rating will not drop below AAA. The weighted average rate of 6.0 percent provides a cushion of approximately 100 to 125 basis points above current market rates. The city acknowledges that in the short term this interest rate assumption is conservative. However, current rates are at historically low levels. Given recent Federal Reserve Board actions, it is clear that rates will be moving up, not down. If the weighted average rates were to increase to 7.0 percent from the current assumption of 6.0 percent, the average cost per household could increase by approximately $60 per year.

6.3.4 Grant Availability

Although Indianapolis will pursue available grant programs, the city's financial analysis does not rely on significant grants to fund CSO controls. The amount of grant funding that may become available is expected to be relatively minor in comparison to the projected capital expenditures for the program. The city encourages the State of Indiana to issue substantial grants for CSO abatement projects, as has been the practice in other states. We also call on Congress to halt the federal disinvestment in grants and loans for municipal wastewater projects.

6.3.5 Income Growth

The city has assumed that incomes in the service area will continue to grow at their historical rate relative to inflation. The city believes that this is an aggressive assumption given changing demographics and other factors impacting income. These are discussed in more detail in the next section.

6.4 U.S. EPA Financial Capability Analysis

U.S. EPA Guidance documents set forth an approach for evaluating financial capability. This section presents the results of that assessment, including replicas of the worksheet/forms contained in the U.S. EPA Guidance. It is important to understand that since the CSO program will most likely be funded by revenue bonds and not general obligation bonds, most of these indicators do not reflect the financial capability of issuing revenue bonds.

The assessment is performed in two phases. Phase 1 determines the "Residential Indicator," described earlier, and Phase 2 develops the "Permittee Financial Capability Indicators," which include six indicators in the sub-categories of Debt Indicators, Socioeconomic Indicators, and Financial Management Indicators.

The U.S. EPA guidance also encourages a community to include additional factors or alternative assessment methods in assessing its financial capability and negotiating the CSO program implementation schedule. Therefore, the city has provided some supplemental information below related to population, employment and property tax reassessments.

As noted earlier, the city's retail service area is essentially the same as the Indianapolis Consolidated City boundaries

Table 6-3
Cost Per Household
U.S. EPA Guidance Worksheet 1

Row	Item	Unit	Peak
	Residential share of total wastewater treatment and CSO costs		
107	Total Revenue Requirement in Peak Year	($)	$ 718,370,000
	Current Revenue Requirement	($)	$65,586,000
	Total Increase	%	995.31%
	2005 Monthly bill	($)	$ 9.57
	2005 Annual bill	($)	$ 114.84
109	Projected Annual Cost per Household ("CPH")	($)	$ 1,258

shown on **Figure 6-4**. All data, unless specifically noted, is for the Indianapolis Consolidated City.

6.4.1 Phase One: The Residential Indicator

The city's methodology and projections described in Sections 6.1 through 6.3 set forth the calculations for the residential indicator.

6.4.1.1 Cost Per Household

Cost per household is summarized in **Table 6-3**.

As described in Section 6.1, the city's projection of the cost per household is a rates-based methodology. That is, the city projects total revenue requirements throughout the forecast period, estimates future rates and then estimates the cost per household based on per-dwelling unit annual water consumption of 65,000 gallons (this estimate is derived from the city's billing records). The determining factors are the revenue requirements and total billable flow. The city is assuming that the volume of billable flow remains relatively constant and that the average consumption per household remains at 65,000 gallons per year.

Table 6-4 calculates the Consolidated City's Residential Indicator: cost per household as a percentage of median household income. As a result of this process, the city has determined that the selected plan (Plan 1-storage/conveyance) at 95/97 percent capture would create a medium burden on residents in the Consolidated City, according to U.S. EPA's definitions.

6.4.1.2 Sub-Area Consideration

The Consolidated City is the city's retail service area, where it has direct control over the rates charged for wastewater service. Like most urbanized areas in the United States, the city has experienced a loss of population, income and employment to surrounding communities.

Table 6-5 shows that Center Township has the largest proportion of households at or below poverty level in the service area. Based on historical trends, the city anticipates that this concentration will continue.

Table 6-5 also shows that 9 percent of households in Indiana live at or below the poverty level, compared to 12 percent in Indianapolis and 24 percent in Center Township. The national percentage is 12.4 percent.

U.S. Census data show that the Indianapolis Consolidated City population grew 6 percent and the number of households grew 9 percent between 1990 and 2000. During this same period, the Center Township population declined about 9 percent and households declined 6 percent, while some other townships showed vigorous growth. However, Center Township continues to be the most populous township, with 159,527 people and 21 percent of the city's households. During this same time period, the Indiana population grew 9 percent and the national population grew 12 percent, indicating that the Consolidated City is lagging behind the state as well as the nation in growth.

Center Township residents, on average, have lower incomes and will experience more economic hardship associated with the CSO Program. The median household income in Center Township in 1999 (latest Census) was $26,435, compared to $40,154 for Indianapolis consolidated city, as shown in **Table 6-5**. The cost per household divided by the lower MHI yields a higher peak year Residential Indicator for Center Township: 2.92 percent vs. 1.78 percent for Indianapolis as a whole. This places residents in Center Township in the high burden category.

Table 6-4
Residential Indicator
U.S. EPA Guidance Worksheet 2

Row	Item	Unit	Indianapolis Value
	Median household income ("MHI")		
	Census year MHI		
	Census year		2000
201	MHI	($)	$ 40,154
	MHI adjustment		
	Adjustment Factor for 2004	(unit)	1.115
	Adjusted MHI 2004		$ 44,772
	Analysis year		2025
202	Annual Adjustment factor 2004 to 2025	(unit)	2.20
203	Adjusted MHI	($)	$ 70,705
204	Annual cost per household (line 109)	($)	$ 1,258
205	Residential indicator		
	CPH as a percentage of adjusted MHI	(%)	1.78%
	Financial capability score		2

Table 6-5
Median Household Income and the Poverty Level

	Households: Median Household Income in 1999	Population Above Poverty Level	Population at or Below Poverty Level	Total Population Counted	Percent of Population at or Below Poverty Level
Center	$ 26,435	120,671	38,856	159,527	24%
Decatur	$ 45,690	22,970	1,451	24,421	6%
Franklin	$ 58,482	30,885	1,120	32,005	3%
Lawrence	$ 49,246	101,085	9,860	110,945	9%
Perry	$ 42,378	84,660	6,247	90,907	7%
Pike	$ 47,250	65,593	4,942	70,535	7%
Warren	$ 39,672	84,208	8,240	92,448	9%
Washington	$ 47,079	118,722	10,241	128,963	8%
Wayne	$ 37,554	115,679	14,870	130,549	11%
Indianapolis City	$ 40,154	681,833	91,163	772,996	12%
State of Indiana	$ 41,567	5,334,811	559,484	5,894,295	9%

6.4.2 Phase Two: Permittee Financial Indicators

In the Phase 2 assessment, financial capability is determined by factors assessing a community's financial health and ability rather than by the residential financial burden estimated in Phase 1. The Phase 2 assessment computes six benchmarks, two in each of the following subcategories:

- Debt Indicators,
- Socioeconomic Indicators, and
- Financial Management Indicators.

Figure 6-6 shows U.S. EPA Financial Capability Benchmarks used to evaluate the six indicators. The benchmarks are shown in the left-hand column. A value of "3", "2", or "1" is assigned to a benchmark whose value assessments are "strong," "mid-range," or "weak," respectively.

6.4.2.1 Debt Indicators

The two Debt Indicators are Bond Rating and the Overall Net Debt as a percent of full market property value in the city's service area.

6.4.2.1.1 Bond Rating

This indicator is intended to address a community's general capacity to undertake debt. In January 2005, Standard & Poor's and Moody's Investors Service both rated the city's general obligation credit to be AAA: Negative Outlook. The agencies were concerned about the city's current operating deficit and the growing unfunded pension liability.

Overall the outstanding debt of the city is rated to be sound, and this indicator is considered strong by U.S. EPA criteria, as shown in **Table 6-6**. Standard & Poor's rated the city's revenue bonds AA in December 2004. The city's Sanitary District has outstanding General Obligation and revenue bonds and SRF loans. The 2003 revenue bonds were rated by Fitch Ratings and Standard & Poor's and received a AAA rating based on bond insurance. The SRF loans are rated AA by Standard & Poor's and, in some cases, also by Fitch.

6.4.2.1.2 Net Debt

Net debt is the amount of tax-backed bond debt for all taxing units, including the City of Indianapolis, Marion County, townships, libraries, and schools, that is not supported by revenue from user fees.

Information from the January 19, 2005 research report by Moody's Investors Service was used to develop **Table 6-7**. According to Moody's, the net direct debt as of January 2005 for the City of Indianapolis was $867,475,000. The overlapping debt of the other taxing units attributable to the residents and businesses in the city was $1,439,320,000. Moody's used the assessed value of property in the consolidated city from the 2004 Comprehensive Annual Financial Report statistical section. Because the percent ratio of

Indicator	Strong (3)	Mid-Range (2)	Weak (1)
Bond Rating	AAA-A (S&P) or Aaa-A (MIS)	BBB-A (S&P) or Baa-A (MIS)	BB-D (S&P) or Ba-C (MIS)
Net Debt/Property Value	Below 2%	2% - 5%	Above 5%
Unemployment Rate	>1% below National Ave.	±1% of National Ave.	>1% above National Ave.
Median Household Income	>25% above adj. Nat'l MHI	±25% of adj. Nat'l MHI	>25% below adj. Nat'l MHI
Property Tax/Property Value	Below 2%	2% - 4%	Above 4%
Prop. Tax Collection Rate	Above 98%	94% - 98%	Below 94%

Figure 6-6
Permittee Financial Capability Indicator Criteria
U.S. EPA Guidance

Table 6-6
Bond Rating
U.S. EPA Guidance Worksheet 3

Row	Item	Value
	Most recent general obligation	
	bond rating	
	Date	2005
	Rating agency	Standard & Poor's / Moody's
301	Rating	AAA / Aaa
	Most recent revenue bonds	
	Date	2004
	Rating agency:	S&P
	Bond insurance	no
302	Rating	AA
	Financial capability score	3

Table 6-7
Overall Net Debt as a Percent of Full Market Property Value
U.S. EPA Guidance Worksheet 4

Row	Item	Unit	Value
401	Direct net debt	($)	$ 867,475,000
	(tax-supported debt)		
402	Debt of overlapping entities	($)	$ 1,439,320,000
	(Proportionate share of multijurisdictional debt)		
403	Overall net debt	($)	$ 2,306,795,000
404	Market value of property (Consolidated City)	($)	$39,047,432,000
405	Overall net debt as a percent of full market property value	($)	5.91%
	Financial capability score		1

All numbers are based on data from Moody's Investor Services and appear in Moody's January 19, 2005 report.

net debt to property value is in excess of 5 percent, this indicator is considered weak by U.S. EPA criteria, as shown in **Table 6-7**.

6.4.2.2 Socioeconomic Indicators

The two Socioeconomic Indicators are Unemployment Rate and Household Income.

6.4.2.2.1 Unemployment Rate

The Unemployment Rate indicator is shown in **Table 6-8**. The Indianapolis monthly unemployment rate for 2004 was 5.63 percent, according to the U.S. Department of Labor, Bureau of Labor Statistics. The national unemployment rate was 5.50 percent and the State of Indiana's was 5.1 percent.

Because local unemployment is between one percentage point more than or less than the national unemployment rate benchmark, this indicator is considered mid-range, according to U.S. EPA criteria.

Table 6-9 shows employment increases and decreases in Indianapolis for various industries between 1990 and 2000. **Figure 6-7** shows the loss of employment from some key Indianapolis employers during the past four years due to closures and downsizing. The transportation decreases are predominantly related to the airline cutbacks.

6.4.2.2.2 Household Income

The Household Income indicator is related to the Residential Indicator in that both consider MHI. While the Residential Indicator compares MHI with the cost per household, here the Household Income indicator compares MHI with national MHI as a benchmark measurement of relative wealth or poverty as of the date of the General Census. Both MHI calculations are adjusted to 2025 numbers.

The MHI shown in **Table 6-10** is the same value used in **Table 6-4** for the Residential Indicator. National MHI is adjusted by the same factor, also as shown in **Table 6-10**.

Because local MHI is more than 75 percent of national MHI and less than 25 percent greater than national MHI, this indicator is judged to be mid-range and assigned a value of "2" according to the U.S. EPA benchmark criteria.

6.4.2.3 Financial Management Indicators

The two Financial Management indicators are Property Tax Revenues and Tax Collection Efficiency. Property tax revenues are collected by multiple taxing jurisdictions for residents within the consolidated city, including the City of Indianapolis, Marion County, the libraries, Marion County Health and Hospital Corporation, the townships, and the school districts.

6.4.2.3.1 Property Tax Revenues as Percent of Full Market Value

In the city's service area, property tax revenues collected in the 2004 fiscal period were $1,135.5 million. Property value shown in **Table 6-11** is about $36.8 billion. This information was obtained from the Marion County Auditor's Office, based on the Certified Assessed Valuations provided by the Indiana Department of Local Government Finance.

The calculated property tax revenue indicator for the city's service area is between 2 and 4 percent, suggesting a mid-range local financial capability under the U.S. EPA criteria.

In December 1998, the Indiana Supreme Court ruled that the state's method of property tax assessment was unconstitutional and required that the state implement a more market-based approach to valuation. The new rules for assessment

Table 6-8
Unemployment Rate
U.S. EPA Guidance Worksheet 5

Row	Item	Unit	Value
501	Unemployment rate of permittee	(%)	5.63%
	Source: Indianapolis Consolidated City, Bureau of Labor Statistics		
	Benchmark:		
503	Average national unemployment rate	(%)	5.50%
	Comparison of permittee with benchmark	(%)	(0.13%)
	Financial capability score		2

Table 6-9
Employed Persons by Industry for Indianapolis

Industry	1990	2000	Percent Increase/ Decrease in Jobs
Construction	19,754	24,719	20%
Manufacturing; nondurable goods	59,100	53,730	-10%
Wholesale trade	18,854	17,465	-8%
Retail trade	65,800	47,514	-38%
Transportation	18,678	22,753	18%
Communications and other public utilities	10,759	13,601	21%
Finance; insurance; and real estate	32,830	34,173	4%
Professional; scientific; management; administrative; and waste management services	19,976	37,813	47%
Professional and related services; educational services	24,408	24,873	2%
Professional and related services; health services	36,585	48,619	25%
Entertainment and recreation services, food service	16,926	34,014	50%
Other professional and related services	26,344	20,096	-31%
Public administration	18,431	16,899	-9%
Total	**368,445**	**396,269**	**7%**

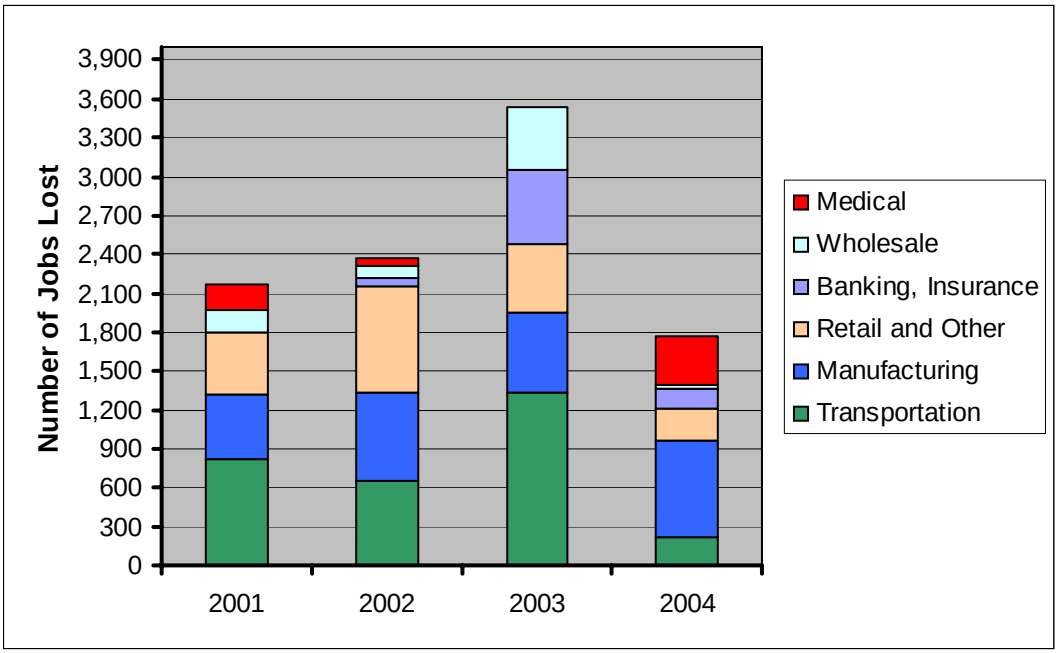


Figure 6-7
Jobs Lost 2001-2004

Table 6-10
Median Household Income
U.S. EPA Guidance Worksheet 6

Row	Item	Unit	Value
601	MHI of permittee (line 203)	($)	$ 70,705
	Benchmark:		
602	Census year national MHI	($)	$ 41,994
603	MHI adjustment factor to 2025	(unit)	176%
604	Adjusted national MHI	($)	$ 73,909
	Compare permittee with benchmark		-4.34%
	Financial capability score		2

Table 6-11
Property Tax Revenues as Percent of Full Market Property Value
U.S. EPA Guidance Worksheet 7

Row	Item	Unit	Value
701	Full market value of real property (Certified Assessed Value, Payable 2004)	($)	$ 36,808,011,015
702	Property tax revenue (paid in 2004)	($)	$ 1,135,502,840
703	Property tax revenue as a percentage of full market property value	(%)	3.08%
	Financial capability score		2

were implemented in 2003, resulting in a substantial shift in tax burden from business to residential taxpayers.

In 2002, the Indiana General Assembly adopted a significant tax reform package, including provisions to phase out certain business personal property taxes, place caps on certain local tax levies, and institute property tax relief measures for homeowners to mitigate the impact of the new assessment methodology. As a result of the combined impact of reassessment, appeals and tax reform, the city has seen a real decline in both assessed value and property tax revenue.

6.4.2.3.2 Tax Collection Efficiency

The final U.S. EPA Financial Guidance Phase 2 indicator is the rate of property tax collection. The 2004 property tax collection rate presented in **Table 6-12** represents the current taxes collected divided by property taxes levied for the Consolidated City. These amounts were provided by the Marion County Auditor's Office.

In the city's service area, tax collection efficiency is 102.79 percent. Because this figure is above 98 percent, it is indicative of a strong financial capability and receives a score of "3." However, the 102.79 percent efficiency rate includes collections for delinquent taxes. Without delinquencies, the collection rate in 2004 was 97.17 percent, which would result in a mid-range score of "2."

6.4.2.4 Summary of Phase 2 Indicators

The values and scores of the six Phase 2 Evaluation indicators are compared in **Table 6-13**. Overall, the unweighted average score for the Phase 2 Evaluation is 2.167.

6.4.3 Summary of Financial Capability Indicators

The Phase 1 Residential Indicator has a value of 1.84 percent of adjusted MHI and the Phase 2 Permittee Financial Capability Indicators have an unweighted average of 2.167, as shown in **Table 6-14**. These two converge on the Financial Capacity Matrix (**Figure 6-8**) and indicate a medium burden for the service area. However, due to the lower MHI in Center Township, residents in this area face a high burden.

Table 6-12
Property Tax Revenue Collection Rate
U.S. EPA Guidance Worksheet 8

	Item	Unit	Value
801	Property tax revenue collected (Consolidated City, 2004)	($s)	$ 1,135,502,840
802	Property taxes levied (Consolidated City, 2004)	($s)	$ 1,104,723,892
803	Property tax revenue collection rate (includes delinquent taxes)	(%)	102.79%
	Financial capability score		3

Table 6-13
Summary of Financial Capability Indicators
U.S. EPA Guidance Worksheet 9

Row	Item	Value	Score
901	Bond rating	AAA / Aaa	3
902	Net debt percent of property value	5.91%	1
903	Unemployment rate compared with national average	(0.13%)	2
904	Median household income compared with national average	-4.34%	2
905	Property tax revenue percent of property value	3.08%	2
906	Property tax revenue collection rate	102.79%	3
907	Permittee indicator score		2.17

Table 6-14
Financial Capability Matrix Score
U.S. EPA Guidance Worksheet 10

Row	Item	Value	Score
1001	Residential indicator score	1.78%	mid-range
1002	Permittee financial capability indicators score	2.17	mid-range
1003	Financial capability matrix category	medium burden	

Permittee Financial Capability Indicators Score (Socioeconomic, Debt & Financial Indicators)	Residential Indicator (Cost Per Household as a percentage of MHI)		
	Low Burden (below 1.0%)	Mid-Range (between 1.0 and 2.0%)	High (greater than 2.0%)
Weak (below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (above 2.5)	Low Burden	Low Burden	Medium Burden

Service Area-wide indicates a medium burden.

Center Township indicates a high burden.

Figure 6-8
Summary of Financial Capability Indicators: U.S. EPA Guidance

6.5 Summary

Implementing the long-term control plan will place a financial and economic burden on the City of Indianapolis. During the next 20 years, the city's wastewater revenue requirements will increase by approximately 12 percent per year, on average. This will significantly impact industrial, commercial and residential sewer rates. The impact on disadvantaged residents in Center Township and those living below the poverty level also must be considered. Based upon U.S. EPA guidance, the residential burden for the retail service area will reach the medium burden category. In Center Township and for people living below poverty, the burden will fall into the high burden category.

Following U.S. EPA's guidance document, the city is facing a medium to high burden, which is an important factor in the plan's implementation schedule of 20 years. A more aggressive schedule is impracticable for constructability reasons and would further increase the financial burden on residential customers.

Based upon this analysis, the city has selected a level of control for the Plan 1 systemwide alternative and developed a 20-year implementation schedule. The selected plan's individual components, projected costs and benefits, and implementation schedule are further described in Section 7.

Case Study #4: Anderson, Indiana CSO LTCP
Attachment 4-1
Anderson 2010 FCA

Section 7 Financial Capability Assessment

7.1 Introduction

The Indiana Department of Environmental Management (IDEM) and the United States Environmental Protection Agency (EPA) recognize that meeting the requirements of the Clean Water Act and the state water quality standards will present major challenges for most Combined Sewer Overflow (CSO) communities. One of the most significant challenges is finding a way to finance CSO controls without placing an undue burden on citizens and industries. In many communities, including the City of Anderson ("City"), the requirements contained in the Long-Term Control Plan (LTCP) can represent the single most costly public works project ever undertaken or likely to be undertaken by the current generation. Although EPA has provided communities with grants for wastewater projects in the past, no dedicated grant programs for CSO control are currently available.

The regulators also realize that among the many factors affecting the financial evaluation, the implementation and scheduling of the CSO-related projects is directly tied to a community's ability to reasonably afford proposed remediation activities. Consequently, both agencies require a comprehensive affordability analysis within the LTCP to determine its effect on both the current and future fiscal well being of any CSO community.

Therefore, the following affordability analysis discussion will focus on numerous integrated financial and socioeconomic issues such as:

- Median household income
- Total annual wastewater and CSO costs per household as a percent of the median household income
- Fixed service costs in addition to wastewater and CSO costs that impact affordability
- Residential Indicator as a percent of the median household income
- Overall net debt of the City as a percent of full market property value
- Term of current total bond indebtedness

- The City's current bond rating
- The City's ability to assume more debt
- Property tax revenues as a percent of full market property value
- Property tax collection rate
- City unemployment rate.

7.2 Factors Determining What Residents Can Afford

Federal CSO guidance documents suggest that the financial capability assessment be developed in two phases. The first phase involves calculating a Residential Indicator, and the second phase involves analyzing the City's Financial Capability Indicator.
The Residential Indicator considers the cost per household expended on wastewater collection and treatment, expressed as a percentage of median household income (MHI). The Financial Capability Indicator assesses community-wide factors such as the City's debt burden, socioeconomic conditions, and financial operations. Once these two financial indicators are developed, they are entered into a financial capability matrix (developed by EPA) to assess the overall financial burden placed on individual households and the City by the wastewater/stormwater treatment and CSO compliance measures. These two values, the Residential Indicator and the Financial Capability Indicator, are merely indicators used to assist the communities and regulators in making decisions. These indicators are based on standard calculations developed by EPA to compare the financial impacts of the CSO program for different communities across the nation. The Residential Indicator's cost per household should not be confused with a monthly or annual sewer user fee. The cost per household does not take into account all factors that are incorporated into an actual sewer rate study, such as project scheduling, account balances, debt service coverage, and industrial vs. residential rates. For these reasons, the cost per household should be considered simply an indicator of the financial impact that the current and proposed wastewater and CSO controls will have on residential users.

The regulatory agencies also encourage the City to report any information that will have a financial impact on CSO compliance.

7.2.1 Phase 1: Calculation of the Residential Indicator

Developing the residential indicator requires determining the current and proposed wastewater treatment and CSO project costs on a per-household basis. Once the total costs are developed, the cost per household is calculated as a percent of median household income. In addition, in the case of the City, certain other service and utility costs that significantly impact the affordability for residents must be taken into account. These other factors, further discussed below, include, sixteen percent (16%) decrease in population since 2000 and a significant loss of large employers. This Residential Indicator is then used in an EPA matrix to determine whether the CSO control program will produce a high, medium, or low impact on the community's residential users (Table 7-1).

Table 7-1 EPA Residential Indicator Financial Impacts

Financial Impact	Residential Indicator (CPH as % MHI)
Low	Less than 1.0 Percent of MHI
Mid-Range	1.0 - 2.0 Percent of MHI
High	Greater than 2.0 Percent of MHI

In the case of the City, the calculation of the Residential Indicator, based upon estimated project scenarios revealed that the estimate of various ranges of project costs resulted in a residential indicator score that was greater than the EPA "high" level guidance of two percent (2%) of MHI. This provides a conclusion that the estimated ranges of project cost were not affordable for the residents of the City. We therefore analyzed the range of projects that could be provided through a cost per household equal to no more than 2% of MHI for the City of Anderson.

7.2.1.1 Residential Indicator Calculation

The residential indicator represents the annual wastewater and CSO control costs per household as a percent of adjusted median household income. It is typically calculated as an amount of projected cost per household (CPH) as a percentage of the average adjusted MHI. In the case of the City of Anderson, because the residential indicator calculated under the normal methodology resulted in an analysis that showed the projected project costs to be unaffordable, the City determined to calculate the project costs that could result from a residential indicator of 1% to 2%, which is the ”Mid–Range” in the EPA guidance.

EPA guidelines suggest that the financial impact on a city is low if the CSO and wastewater treatment costs per household fall below one percent (1%) of median household income. Impacts are in the mid-range if costs fall between 1% and 2% of MHI. Costs are considered high when they exceed 2% of the adjusted MHI. While 1-2% of MHI may appear to be a relatively small number, the impacts may be quite large. For example, the average family only saves about 3% of disposable household income each year. Therefore, 2% of household income represents two-thirds of family savings that could otherwise be used for new homes, college educations, or a secure retirement. These levels can hardly be considered insignificant.

The City and the project team analyzed the amount of capital investment dollars that would trigger the 2% residential indicator for the City. These calculations show that City residents would reach the 2% threshold at approximately $161 million in capital costs (Table 7-2).

Table 7-2 Calculation of Cost Per Household Estimate and Residential Indicator

ANDERSON MUNICIPAL SEWAGE WORKS
Anderson, Indiana

Calculation of the Cost Per Household Estimate and Residential Indicator

Line No.	Current Wastewater Costs - Excluding Revenue Funded Capital Projects	Sensitivity Analysis Financial Impact: Baseline - Low	Sensitivity Analysis Financial Impact: 2%
100	Annual Operation and Maintenance Expenses (1)	$ 9,270,929	$ 9,270,929
101	Annual Revenue Bond Debt Service (2)	1,961,596	1,961,596
	Annual Sanitary District Bond Service	743,861	743,861
	Annual Energy Audit Lease Payment	59,630	59,630
	HELP Program Lease Payment	14,344	14,344
102	Total Current Wastewater Costs	12,050,360	12,050,360
	Projected CSO Costs (Current Dollars)		
103	Estimated Annual Operation and Maintenance Expenses (3)	-	2,039,720
104	Annual Debt Service on CSO Projects to be Funded (4)	-	12,913,121
105	Total Projected CSO Costs (Current Dollars)	-	14,952,841
106	Total Current and Projected Wastewater and CSO Annual Costs	$ 12,050,360	$ 27,003,201
	Residential Factor Calculation		
	Total Annual Residential Wastewater Flow (Gallons) (5)	1,349,442,864	1,349,442,864
	Divided by: Total Annual Wastewater Flow (Gallons) (5)	2,049,409,296	2,049,409,296
	Residential Factor	0.6585	0.6585
107	Residential Share of Wastewater and CSO Annual Costs	$ 7,935,162	$ 17,781,608
108	Total Number of Households in Service Area (6)	22,246	22,246
109	Annual Wastewater Cost Per Household (CPH)	$ 356.70	$ 799.32
	Divide by: Twelve	12	12
	Total Monthly "Cost" Per Residential User	$ 29.73	$ 66.61
	Calculation of Residential Indicator		
	Adjusted Median Household Income (MHI) of the City of Anderson Service Area	$ 39,937	$ 39,937
205	Residential Indicator (CPH as a Percent of Adjusted MHI)	0.89%	2.00%
	Financial Impact	Low	High
	CSO Projects to be Funded		$ 160,926,000
	Present Worth of Operation and Maintenance Expenses	To be provided by Greely & Hansen	
	Total Present Value of CSO Plan		$ 160,926,000

IDEM specifies that a calculation similar to the EPA Residential Indicator be performed to derive the benchmark calculation. The State refers to this benchmark as the Municipal Affordability Screener, which is calculated as follows:

MAS = *[Annualized Project Cost per Household / Annualized Median Household Income] x 100%*

Solving for a MAS of 2% and using the MHI of the City's Service Area of $39,937, results in annual "high" level affordable monthly costs of $66.61.

7.2.1.2 Cost Per Household

Under EPA guidance, developing the cost per household (CPH) begins by adding current annual wastewater treatment (WWT) costs to the projected annual costs for proposed wastewater and CSO controls. In addition, the City has incorporated other fixed service and utility costs affecting City residents. Once the total annual costs are determined, the residential portion was calculated based on the percentage of flow attributed to the residential customers or other appropriate allocation factors.

Current WWT Costs: EPA defines current WWT costs as the current annual wastewater operating and maintenance expenses (excluding depreciation) plus current annual debt service. Expenses for funded depreciation, capital replacement funds, or other type of capital reserve funds are not to be included in the current WWT costs since they represent a type of savings account rather than an actual operation and maintenance expense. The annual debt service for the Sanitary District is also included because the projects funded by the Sanitary District's bond issue were for improvements to the Anderson Municipal Sewage Works and Stormwater Utility. In Table 7-2, column 1, line 102, the City's annual operation and maintenance (O & M) expenses (excluding depreciation) are shown.

Projected Additional WWT and CSO Costs: The projected total WWT and CSO costs for various levels of CSO control were developed in Section 4.0 of this report. As shown earlier, the City

developed its level of project by estimating the supportable amount of project costs as shown on Table 7-2. For purposes of this analysis, we have shown an estimated project cost of $161 million in capital project costs.

Line 104 column 2 on Table 7-2 calculates the annualized debt service costs for a $161 million capital project, financed over 20 years at five percent (5%) interest. Recently, the City has been able to issue debt in the four percent interest range, however, statistics show that the typical interest rate range over time averages to five percent. For the purposes of this analysis a rate of five percent has been used and, therefore, annualized debt service would be calculated as follows:

Annual Debt Service Costs (line 104)

$$= \textit{Total CIP Cost} \times \textit{Annualization Factor}$$

$$= \$1.0\,B \times \frac{\textit{Interest Rate}}{(1 + \textit{Interest Rate})^{\textit{Years}} - 1} + \textit{Int. Rate}$$

$$= \$1.0\,B \times \frac{.05}{(1+.05)^{20} - 1} + .05$$

= **$12,913,121**

Based on engineering and operation experience, an estimate of the annual operation and maintenance (O & M) costs were developed and entered on Line 103 of Table 7-2

Residential Share of Total WWT and CSO Costs: EPA guidance suggests computing the residential share of total costs by multiplying the percent of total wastewater flow attributable to residential users by the total costs:

Residential Share of Costs (line 107)

$$= \textit{Total Costs} \times \frac{\textit{Residential Wastewater Flow}}{\textit{Total Wastewater Flow}}$$

The project team calculated the percentage of residential flow to total flow based upon consumption data collected from December 2006 through November 2007. Based upon this data, the calculation determined that the Annual Residential Wastewater Flow percentage was 65.85%. In order to calculate the residential portion of the costs, the team used the following formula:

Residential Share of Costs (line 107)

= (*Annual Residential Wastewater Flow / Total Annual Wastewater Flow) x (Current WWT O & M + Estimated CSO O & M + Projected CSO Debt Service)*

= *(1,349,442,864 M / 2,049,409,296 M) x ($12,050,360+$2,039,720+ $12,913,121)*

= **$17,781,608**

Total Annual WWT and CSO Cost per Household (CPH): The cost per household is calculated by dividing the Residential Share of Costs by the total number of households served by the system. For this reason, Line 109 column 2 of Table 7-2 is calculated as follows:

Annual Cost per Household (line 109)

= *Residential Share of Cost / Households Served*

= *$17,781,608/22,246*

= **$799.32**

The annual cost per household can be converted to a monthly CPH by simply dividing by 12:

Monthly CPH = $799.32 / 12 months = **$66.61**

In addition to WWT and CSO CPH, additional pressures exist on the residents of the City that create an impact on the affordability of the overall CSO project. Recent shortages in electricity and gas have caused intense pressures on local residents who cannot meet their utility bill obligations. Anderson Municipal Light and Power has seen recent summer spikes in spot market electricity costs which are directly passed through to the consumer. The Anderson

Utility Office reports that they have recently had to readjust their budget and guidelines due to the increased number of cases and size of transfer payments necessary through the Energy Assistance Program due to increased gas bills and fuel oil bills for winter heating. From calendar year 2006 to 2007, the amount of revenue received by the City from energy assistance increased by 32%. The increase in revenue continued from 2007 to 2008 by an additional 6%. The current economic situation will likely cause this to increase again from 2008 to 2009.

7.2.1.3 Median Household Income

The second step in developing the Residential Indicator is determining an adjusted median household income (MHI) for the sewer service area. Guidance documents suggest two methods for calculating the Median Household Income: averaging and weighting.

Averaging Method: This method uses the most recent MHI and inflates it to the current year according to the Consumer Price Index. The sewer service area for the City of Anderson includes the communities of Anderson, Chesterfield, Edgewood and Daleville. The MHI for all households in the City's sewer service area, based on information supplied by the U.S. Bureau of Census, was $33,739 in 2000. Using Consumer Price Index increases of approximately 3 percent per year, the adjusted 2007 MHI for the service area would be approximately $39,937. (See Table 7-3.)

Table 7-3 2007 Median Household Income for Anderson

	United States	City of Anderson	Line No.
Census Year 2000 MHI (1)	$ 41,994	$ 33,739	201
MHI Adjustment Factor	1.2101	1.1837	202
Adjusted MHI	$ 50,817	$ 39,937	203

(1) 2000 Census MHI is based on 1999 Income

The EPA guidelines also suggest comparing the City's MHI with the United States MHI. The United States MHI in 2000 was $41,994. When updated to 2007 values, the national MHI would be approximately $50,817. Table 7-3 shows the adjusted Anderson MHI compared to the national MHI for 2007.

7.2.2 Phase 2 – Calculation of Financial Capability Indicators

The second phase of the financial capability assessment involves calculating a Financial Capability Indicator for the City of Anderson. The indicator includes six factors that assess debt, socioeconomic, and financial management conditions in the community. The six factors are:

- Bond rating
- Total net debt as a percentage of full market property, and real estate value
- Unemployment rates
- Median household income
- Property tax revenues as a percentage of full market property value
- Property tax collection rate

For each measure, the City was given a score of three (strong), two (mid-range), or one (weak), according to EPA-suggested standards. Table 7-4 presents the six factors and the criteria that determine whether a community is strong, mid-range, or weak in each category.

Table 7-4 Financial Capability Indicator Benchmarks

Indicator	Strong (1)	Mid-Range (2)	Weak (1)
Bond Rating	AAA_A (S&P) or Aaa-A (Moody's)	BBB (S&P) or Baa (Moody's)	BB-D (S&P) or BaC (Moody's)
Overall Net Debt as a % of Full Property Value	Below 2%	2% - 5%	Above 5%
Unemployment Rate	More than 1% Point Below National Average	Plus/minus 1% Point of National Average	More than 1% Point Above National Average
Median Household Income (MHI)	More than 25% Above Adjusted National Average	25% of Adjusted National Average	More than 25% Above Adjusted National Average
Property Tax Revenues as a % of Full Markety Property Value	Below 2%	2% - 4%	Above 4%
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%

The Matrix was provided in the EPA Combined Sewer Overflows - Guidance for Financial Capability Assessment and Schedule Development

An overall indicator is then derived by scoring each indicator for each category, and then dividing the sum by six to develop a single value. The resulting Financial Capability Indicator is then used to determine the level of financial burden on the City as a whole. The following section analyzes each of the six factors for the City of Anderson.

Bond Rating: According to Crowe Horwath LLP ("Crowe"), the City's financial advisor for the City has recently been rated by several bond-rating agencies. Standard & Poors (S&P) gave Anderson a "BBB+" rating and Moody's Investor Services ("Moody's") an "A3" rating for sewage revenue bonds in 2007. S&P downgraded the Sewage Works bonds ratings in November 2005 and affirmed the BBB+ rating in May 2007. Due to this recent downgrade and the split in ratings between Moody's and S&P, Anderson will receive a mid-range score for this indicator.

Total Net Debt as a Percentage of Full Market Property and Real Estate Value: Table 7-5 presents the direct and overlapping debt as a percent of the full market value of property in the

City. This indicator is often referred to as the "property tax burden" since it indicates the funding capacity available to support debt based on the wealth of the community. The City receives a weak score for this factor since the calculated percentage is 9.43%.

Unemployment Rates: According to EPA guidelines, the seasonally adjusted unemployment rate for the municipality should be compared to the adjusted rate for the U.S. A variance of greater than 1 percent from the national rate indicates a weak financial capability. The City maintained an unemployment rate of 5.5 percent for 2006, compared to a seasonally adjusted national unemployment rate of 4.3 percent. This gives the City a weak score for unemployment (See Table 7-5).

Median Household Income: Median household income was discussed earlier in calculations of the Residential Indicator. EPA guidelines require a comparison of the community's MHI to the adjusted national MHI. The City of Anderson's average median household income is $39,937 Because the City of Anderson's MHI is within + 25 percent the national MHI of $50,817, Anderson receives a mid-range score for this factor (See Table 7-5).

Property Tax Revenues as a Percentage of Full Market Property Value: The assessed valuation of property in Anderson is approximately equal to the full market value. Therefore, the total real estate and property tax levy for all tax districts is approximately 2.9 percent of full market value. The financial capability assessment makes no provision for measuring a local tax burden other than the personal property and real estate taxes. The City receives a mid-range rating for this factor (See Table 7-5).

Property Tax Collection Rate: Personal property and real estate tax collections are reported to be approximately 94.95 percent in 2006, as presented on Table 7-5. This collection rate is classified as mid-range by the EPA property tax collection rating criteria.

7.2.2.1 Summary of Permittee Financial Capability Indicator

Table 7-5, Summary of Financial Capability Indicators, summarizes the financial indicators for the City of Anderson. Therefore, the City of Anderson received a financial capability rating of 1.67. The City falls in the mid-range category for the financial capability indicator.

Table 7-5 Financial Capability Indicators

ANDERSON MUNICIPAL SEWAGE WORKS
Anderson, Indiana

Financial Capability Indicators

		Value	Weak, Mid-Range or Strong	Score
Bond Rating		Moody's "A3", S&P "BBB+"	Mid-Range	2
Overall Net Debt as a Percent of Full Market Property Value				
Direct Net Debt as of December 1, 2006	$	1,530,000		
Add: Debt of Overlapping Entities as of December 1, 2006		151,743,670		
Overall Net Debt as of December 1, 2006	$	153,273,670		
Divided by: Estimated Market Property Value (True Tax Value) Payable Year 2006	$	1,625,046,142		
Overall Net Debt as a Percent of Full Market Property Value Payable Year 2006		9.43%	Weak	1
Average Unemployment Rates for 2006				
City of Anderson Average Unemployment Rates for 2006		5.5%		
Less: National Average Unemployment Rates for 2006		4.3%		
Difference of Anderson to the National Average Unemployment Rates for 2006		1.2%	Weak	1
Median Household Income (MHI)				
City of Anderson Adjusted MHI from 2000 Census	$	39,937		
National Adjusted MHI from 2000 Census	$	50,817		
Service Area MHI Comparison to National MHI		-21.41%	Mid-Range	2
Property Tax Revenue as a Percent of Full Market Property Value				
Payable Year 2006 Property Tax Levied - All Tax Districts	$	47,124,798		
Divided by: Estimated Market Property Value (True Tax Value) Payable Year 2006	$	1,625,046,142		
Property Tax Levy as a Percent of Full Market Property Value Payable Year 2006		2.90%	Mid-Range	2
Property Tax Revenue Collection Rate - City of Anderson				
Payable Year 2006 Property Tax Revenue	$	24,126,905		
Payable Year 2006 Property Tax Levied	$	25,410,976		
Property Tax Revenue Collection Rate		94.95%	Mid-Range	2
Financial Capability Indicators Matrix Total				10
Financial Capability Indicators Matrix Average			Mid-Range	1.67

7.3 Financial Capability Assessment Summary

Under EPA guidelines, the results of the residential indicator and permittee financial capability indicator analyses are combined in a Financial Capability Matrix to evaluate the financial burden that CSO controls may impose on a permittee. The matrix is used by permittees and EPA and state authorities to establish "reasonable and workable CSO control implementation schedules." The Financial Capability Matrix is presented on Table 7-6. It demonstrates that spending $161 million in CSO control costs would impose a financial burden on the City that is on the border between the medium and high ranges. Any increase in costs, which are anticipated as the project progresses, would put the financial burden squarely in the high range. IDEM draft guidance suggests that further analysis is needed for communities facing a medium burden to determine the extent of the social and economic impacts of CSO controls. Additional analysis of financial conditions in Anderson is provided in the following text.

Table 7-6 Financial Capability Matrix

Permittee Financial Capability Indicators Score	Residential Indicator (Cost per Household as a percentage of MHI)		
	Low (below 1.0 %)	Mid-Range (between 1.0 and 2.0 %)	High (greater than 2.0 %)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (Between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

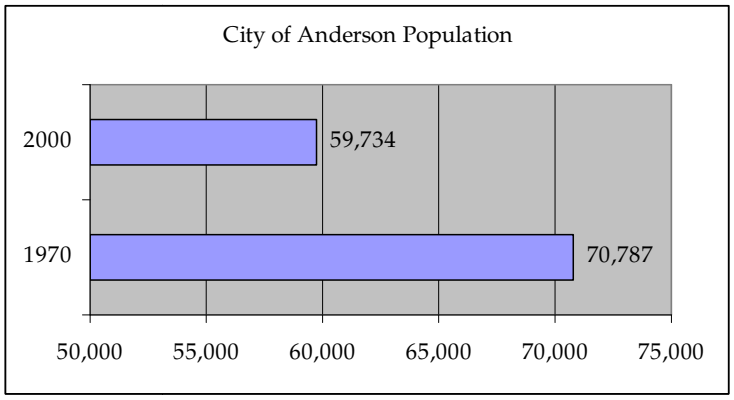
7.4 Anderson Demographics

The State and Federal CSO guidance documents recognize the need to consider a community's demographics when assessing its citizens' ability to afford improvements to wastewater treatment plants and sewers. The following demographic analysis includes discussions of the City of Anderson to accurately portray the socioeconomic, demographic, and employment conditions within the sewer service area.

7.4.1 Population of Anderson

U. S. Census data show that the City of Anderson's population decreased sixteen percent (16%) between 1970 and 2000, from 70,787 persons to 59,734. The estimated population for 2006 based upon U.S. Census statistics is 57,496 (Table 7-7).

Table 7-7 Anderson Population per U.S. Census



7.4.2 Employment Trends

Future income growth in the City and the surrounding communities depends upon prospective economic trends, driven in large part by employment. The affordability of CSO compliance is tied to such economic trends. If the economy is robust because of increased employment, median household income levels could rise, and the City would be able to afford higher compliance costs. If employment falls in a weak economy, residential households will bear a greater financial burden.

In the past few years, the City has lost many large employers. The City has recently attracted Nestle to the area. The large investment by Nestle is anticipated to add jobs to the community. While such investments indicate a recovering economy for the City, it is important at this time that the City is competitive with other communities in order to attract such investment. Undue burden in the form of utility rate increases may impact the City's ability to attract additional investments and therefore additional jobs.

7.5 Implementation Schedule

Both the EPA and IDEM have allowed ratepayers and permittees who are highly burdened by CSO compliance costs 15 to 20 years to fully address and complete capital projects. In cases where a high burden on the community is proven, permittees have been allowed a 20-year compliance schedule. The City believes that more than $161 million (including capital and O & M) will be spent to meet CSO control goals. As a result, the community burden from the Financial Capability Matrix would be pushed into the high range. In order to control the burden on the residential sewer users, the City of Anderson is proposing a 20-year implementation schedule for CSO controls.

The City realizes that the final CSO control schedule must be negotiated among the City, IDEM, and EPA. These negotiations will be based on the specific circumstances of the City's environmental and financial situation, plus the specific nature of any engineering and construction requirements that have been outlined in this LTCP. It is vital to develop an LTCP schedule that considers the overall increased financial burden on Anderson.

7.6 Funding

Funding of the CSO-related projects could be obtained through a number of different avenues. Not all projects need to utilize the same avenue of funding. The funding options available to the City could include the following:

Bonds: Bonds are promissory notes that could be issued, or sold, by the City to raise the funds to pay for the CSO project. This type funding is typically used for projects requiring large amounts of capital. Bonds typically have fixed payment schedules of 20 years, with the payments of interest and principal being made semi-annually. Interest rates of bonds are affected by the City's indebtedness and perceived ability to repay the bond. Several forms of bonds are available such as revenue bonds, general obligation bonds, moral obligation bonds, double-barreled bonds, and bonds available through state bond banks. Each bond type has specific advantages and disadvantages to the community.

Loans: Loans are another means of funding CSO-related programs. Loan interest rates vary according to each loan program. Loan programs vary in type, with some loan programs available primarily to small to mid-sized communities. Loan availability is based, in part, on the ability of a community to repay the funds it borrows. Depending on the specific municipality, loans are available from the state revolving fund (SRF) program, rural utility service, CoBank, and other commercial lending institutions. Each source of loans has different requirements, benefits, and limitations.

Grants: Traditionally, EPA grants were used for wastewater project funding. However, this funding source is very limited and the program has been replaced with a reliance on SRF loans and other funding options. Most current grant programs are designed to provide assistance for small and economically disadvantaged communities. While grants do not have to be repaid, they are not a reliable source of project funding, their requirements are extremely lengthy and complex, and they typically add both conditions and cost to projects. While the City plans to pursue both state and federal grant sources, grants are not likely to play a major role in funding the CSO program, given the project cost.

7.6.1 Grant and Loan Availability

As previously discussed, grant programs have been reduced significantly over the years and those programs currently still in place are very restrictive. Although the City is reviewing the availability of grant programs, at this time the City is not placing significant reliance on grants to

fund CSO controls. The amount of grant funding available is relatively minor in comparison to the anticipated capital expenditures for the program.

Ideally, the City of Anderson would prefer to use SRF loans to finance most CSO program projects. The SRF program would make funds available to the City at relatively low interest rates. However, there are no guarantees by the State of Indiana that SRF monies (or amounts in excess of $161 million) will be available for the City to finance the entire proposed program. Therefore, this financial capability assessment has been based on the assumption that the City will finance the project under the current bond rate.

Additionally, the City's Sewage Works currently has an "A3" and "BBB+" bond rating. The bond rate is based on the current outstanding debt, the economic condition of the City, and ability of the City to repay the debt. If the City incurs significant amounts of additional debt, the debt rating of the City and/or Sewage Works could be reduced, which could increase the interest rates paid for the bonds. A preliminary sensitivity analysis on the project indicates significant financial impacts as higher interest rates are incurred. This net effect would negatively impact sewer users in addition to potentially increasing interest costs to all other non-related projects that the City might fund through bonding programs.

7.6.2 Other Viable Funding Mechanisms

Few other viable funding mechanisms are available to fund wastewater projects. Some communities use a portion of property taxes to supplement user fee funding of capital improvements. However, the use of property taxes in this application does not place the burden of repayment equitably on the sewer system users. As an example, a single-family residence having a higher value, and consequently paying a higher amount of property tax, would not necessarily create a larger burden on the sewer system than a smaller single-family residence. In addition, property taxes would impose costs on property owners who are not connected to the sewer system, such as residences on septic systems. Therefore, the use of property taxes to fund wastewater system improvements does not provide a direct link between services and costs as does a system based on water usage and type of discharge.

7.6.3 Projected Residential, Commercial, and Industrial User Fee Impacts

The actual impact of the CSO controls on sewer user fees will depend on many factors. To cover anticipated design, engineering and construction costs during the first five years of the project, the City implemented a rate increase. The funds generated by this increase will help fund initial treatment plant upgrades as well as design and engineering work for CSO controls recommended in this LTCP. Beyond the initial five-year period, the impact on sewer user fees is difficult to predict. Actual user fees will depend on the final plan approved by IDEM and EPA, sources of funding, the interest rate and time allowed to repay any loans, and potential changes in technology that might reduce costs over time.

Crowe, the City's rate consultant, has analyzed potential impacts on residential sewer user rates based upon a 20-year implementation schedule using a variety of assumptions. This analysis estimates that residential sewer user fees would rise from their current average of $30.09 per 700 cubic feet to $121.01 per 700 cubic feet by 2029.

Because of rate increases, the largest industrial dischargers may evaluate the installation of on-site treatment or recycling facilities, which would both reduce wastewater flow in the sewer system and also reduce the projected cash flow to the City for the CSO project. If industrial rates are not comparable to other cities, some industries may re-evaluate expansion or new business startups in the City's service area. Loss of existing industrial revenue and lack of new growth could lower projected revenues, causing the project to be scaled back or causing rates to rise more than expected for the remaining ratepayers.

7.7 Summary

Using EPA and IDEM guidelines, the project team has analyzed the City's financial capability to bear the costs of proposed CSO controls. This included developing the EPA-defined cost per household as an indicator of the project's burden on citizens. In general, EPA and IDEM guidelines suggest that CSO control costs place a medium burden on a community if the cost per household is between 1% and 2% percent of the median household income (MHI). Controls are considered a high burden if the cost per household exceeds 2% of MHI.

Based on an estimated $161 million project cost, the City would face a financial burden on the border between the medium and high ranges. With anticipated capital cost increases, however, including O&M costs, the true burden is expected to push into the high range. In order to control the burden on the residential sewer users, the City is proposing a 20-year implementation schedule for CSO controls.

The City realizes that the final CSO control schedule must be negotiated among the City, IDEM, and EPA. These negotiations will be based on the specific circumstances of the City's environmental and financial situation, plus any engineering and construction constraints related to scheduling such a complex wastewater project. It is vital to develop an LTCP schedule that considers the overall increased financial burden on City of Anderson residents.

The actual impact of the CSO controls on sewer user fees will depend on many factors, including 1) the final plan approved by IDEM and EPA, 2) sources of funding (whether grants or loans), 3) the interest rate and time allowed to repay any loans, and 4) potential changes in technology that might reduce costs over time. The City also must carefully consider the relative impacts of sewer rate increases on residential, commercial and industrial users in developing a fair and equitable rate schedule.

Case Study #4: Anderson, Indiana CSO LTCP
Attachment 4-2
Newspaper Article

The Herald Bulletin
BECAUSE LIFE CHANGES DAILY
The Herald Bulletin e-Edition

Chesterfield wants sewer plant in wake of rate hike

By Brandi Watters, Herald Bulletin Staff Writer

May 18, 2009 11:41 pm

— CHESTERFIELD — Town Council members took a step toward building a wastewater treatment plant by approving the order for a preliminary engineering report, or PER, with Commonwealth Engineering Monday night.

Richard Lautz of Commonwealth told the board that a recent feasibility study showed that the town would save more money if it built its own wastewater treatment plant rather than continuing its contract with Anderson.

Chesterfield currently sends its wastewater to Anderson for treatment and Anderson has raised sewer rates. Last month, Anderson changed its rates, bringing rates up in increments over the next three years.

By 2011, Chesterfield residents will be expected to pay over $8.22 per 1,000 gallons under Anderson's new rate plan, according to Lautz.

Chesterfield residents currently pay $1.11 per 1,000 gallons.

Lautz was unable to give a specific rate estimate for residents if the plant was built, but said it was expected to be significantly cheaper than if the town continued its contract with Anderson.

The preliminary engineering report approved Monday will allow Commonwealth Engineers to complete an environmental impact study and gather data regarding the need for the sewer system as required by the state revolving loan fund, which will provide a loan for the construction of the plant.

Lautz estimated that the cost of a plant that treats up to 500,000 gallons of wastewater per day would be roughly $5.3 million, including all administrative and land acquisition costs.

Mark and Max Abrell of the Delaware County Regional Waste District attended the meeting to discuss the possibility of Daleville joining forces with Chesterfield in the operation of the plant.

Daleville will also be affected by Anderson's rate hike and the sewer lines are maintained by the Delaware County waste district.

Mark Abrell said joining forces "makes the most sense unless Anderson decides that it has made a mistake on the rates."

"It's definitely clear that it's cheaper," Lautz said.

If Chesterfield decides to go ahead with the project, with or without the cooperation of Delaware County, it will still be another two years before the town has its own plant, Lautz said.

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United States
Environmental Protection
Agency

Office of Water
Office of Wastewater Management (4204)

February 1997
EPA 832-B-97-004

EPA

Combined Sewer Overflows—Guidance for Financial Capability Assessment and Schedule Development

Final

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I. INTRODUCTION

Background

Combined sewer systems (CSSs) are wastewater collection systems designed to carry sanitary sewage (consisting of domestic, commercial and industrial wastewater) and storm water (surface drainage from rainfall or snow melt) in a single pipe to a treatment facility. CSSs serve about 43 million people in approximately 1,100 communities nationwide. Most of these communities are located in the Northeast and Great Lakes regions. During dry weather, CSSs convey domestic, commercial, and industrial wastewater. In periods of rainfall or snow melt, total wastewater flows can exceed the capacity of the CSS and/or treatment facilities. When this occurs, the CSS is designed to overflow directly to surface water bodies, such as lakes, rivers, estuaries, or coastal waters. These overflows - called combined sewer overflows (CSOs) - can be a major source of water pollution in communities served by CSSs.

Because CSOs contain untreated domestic, commercial, and industrial wastes, as well as surface runoff, many types of contaminants can be present. Contaminants may include pathogens, oxygen-demanding pollutants, suspended solids, nutrients, toxics, and floatable matter. Because of these contaminants and the volume of the flows, CSOs can cause a variety of adverse impacts on the physical characteristics of surface water, impair the viability of aquatic habitats, and pose a potential threat to drinking water supplies. CSOs have been shown to be a major contributor to use impairment and aesthetic degradation of many receiving waters and have contributed to shellfish harvesting restrictions, beach closures, and even occasional fish kills.

History of the CSO Control Policy

Historically, the control of CSOs has proven to be extremely complex. This complexity stems partly from the difficulty in quantifying combined sewer overflow (CSO) impacts on receiving water quality and the site specific variability in the volume, frequency, and characteristics of CSOs. In addition, the financial considerations for communities with CSOs can be significant. The U.S. Environmental Protection Agency (EPA) estimates the CSO abatement costs for the 1,100 communities served by CSSs to be approximately $41.2 billion.

To address these challenges, EPA's Office of Water issued a National Combined Sewer Overflow Control Strategy on August 10, 1989 (54 *Federal Register* 37370). This Strategy reaffirmed that CSOs are point source discharges subject to National Pollutant Discharge Elimination System (NPDES) permit requirements and Clean Water Act (CWA) requirements.

The CSO Strategy recommended that all CSOs be identified and categorized according to their status of compliance with these requirements. It also set forth three objectives:

- Ensure that if CSOs occur, they are only as a result of wet weather
- Bring all wet weather CSO discharge points into compliance with the technology-based and water quality-based requirements of the CWA
- Minimize the impacts of CSOs on water quality, aquatic biota, and human health.

In addition, the CSO Strategy charged all States with developing state-wide permitting strategies designed to reduce, eliminate, or control CSOs.

Although the CSO Strategy was successful in focusing increased attention on CSOs, it fell short in resolving many fundamental issues. In mid-1991, EPA initiated a process to accelerate implementation of the Strategy. The process included negotiations with representatives of the regulated community, State regulatory agencies, and environmental groups. These negotiations were conducted through the Office of Water Management Advisory Group. The initiative resulted in the development of a CSO Control Policy, which was published in the *Federal Register* on April 19, 1994 (59 *Federal Register* 18688). The intent of the CSO Control Policy is to:

- Provide guidance to permittees with CSOs, NPDES permitting and enforcement authorities, and State water quality standards (WQS) authorities
- Ensure coordination among the appropriate parties in planning, selecting, designing, and implementing CSO management practices and controls to meet the requirements of the CWA
- Ensure public involvement during the decision-making process.

The CSO Control Policy contains provisions for developing appropriate, site-specific NPDES permit requirements for all CSSs that overflow due to wet weather events. It also announces an enforcement initiative that requires the immediate elimination of overflows that occur during dry weather and ensures that the remaining CWA requirements are complied with as soon as possible.

Key Elements of the CSO Control Policy

The CSO Control Policy contains four key principles to ensure that CSO controls are cost-effective and meet the requirements of the CWA:

- Provide clear levels of control that would be presumed to meet appropriate health and environmental objectives

- Provide sufficient flexibility to municipalities, especially those that are financially disadvantaged, to consider the site-specific nature of CSOs and to determine the most cost-effective means of reducing pollutants and meeting CWA objectives and requirements

- Allow a phased approach for implementation of CSO controls considering a community's financial capability

- Review and revise, as appropriate, WQS and their implementation procedures when developing long-term CSO control plans to reflect the site-specific wet weather impacts of CSOs.

In addition, the CSO Control Policy clearly defines expectations for permittees, State WQS authorities, and NPDES permitting and enforcement authorities. These expectations include the following:

- Permittees should immediately implement the nine minimum controls (NMC), which are technology-based actions or measures designed to reduce CSOs and their effects on receiving water quality, as soon as possible but no later than January 1, 1997. More information on the NMC can be found in the EPA document *Combined Sewer Overflows: Guidance for Nine Minimum Controls* (EPA 832-B-95-003)

- Permittees should give priority to environmentally sensitive areas

- Permittees should develop long-term control plans (LTCPs) for controlling CSOs. A permittee may use one of two approaches: 1) demonstrate that its plan is adequate to meet the water quality-based requirements of the CWA ("demonstration approach"), or 2) implement a minimum level of treatment (e.g., primary clarification of at least 85 percent of the collected combined sewage flows) that is presumed to meet the water quality-based requirements of the CWA, unless data indicate otherwise ("presumption approach")

- WQS authorities should review and revise, as appropriate, State WQS during the CSO long-term planning process

- NPDES permitting authorities should consider the financial capability of permittees

when reviewing CSO control plans.

Table 1 illustrates the roles and responsibilities of permittees, NPDES permitting and enforcement authorities, and state WQS authorities.

In addition to these key elements and expectations, the CSO Control Policy also addresses important issues such as ongoing or completed CSO control projects, public participation, small communities and watershed planning.

ROLES AND RESPONSIBILITIES
Table 1

Permittee	NPDES Permitting Authority	NPDES Enforcement Authority	State WQS Authorities
• Evaluate and implement NMC • Submit documentation of NMC implementation by January 1, 1997 • Develop LTCP and submit for review to NPDES permitting authority • Support the review of WQS in CSO-impacted receiving water bodies • Comply with permit conditions based on narrative WQS • Implement selected CSO controls from LTCP • Perform post-construction compliance monitoring • Reassess overflows to sensitive areas • Coordinate all activities with NPDES permitting authority, State WQS authority, and State watershed personnel	• Reassess/revise CSO permitting strategy • Incorporate into Phase I permits CSO-related conditions (e.g., NMC implementation and documentation and LTCP development) • Review documentation of NMC implementation • Coordinate review of LTCP components throughout the LTCP development process and accept/approve permittee's LTCP • Coordinate the review and revision of WQS as appropriate • Incorporation into Phase II permits CSO-related conditions (e.g., continued NMC implementation and LTCP implementation) • Incorporate implementation schedule into an appropriate enforceable mechanism • Review implementation activity reports (e.g., compliance schedule progress reports)	• Ensure that CSO requirements and schedules for compliance are incorporated into appropriate enforceable mechanisms • Monitor compliance with Jan 1, 1997, deadline for NMC implementation and documentation • Take appropriate enforcement action against dry weather overflows • Monitor compliance with Phase I, Phase II, and post-Phase II permits and take enforcement action as appropriate	• Review WQS in CSO-impacted receiving water bodies • Coordinate review with LTCP development • Revise WQS as appropriate Development of site-specific criteria Modification of designated use to - Partial use reflecting specific situations - Define use more explicitly Temporary variance from WQS

Guidance to Support Implementation of the CSO Control Policy

To help permittees and NPDES permitting and WQS authorities implement the provisions of the CSO Control Policy, EPA has developed the following documents:

- *Combined Sewer Overflows—Guidance for Long-Term Control Plan* (EPA 832-B-95-002)
- *Combined Sewer Overflows—Guidance for Nine Minimum Controls* (EPA 832-B-95-003)
- *Combined Sewer Overflows—Guidance for Screening and Ranking* (EPA 832-B-95-004)
- *Combined Sewer Overflows—Guidance for Monitoring and Modeling* (EPA 832-B-97-001)
- *Combined Sewer Overflows—Guidance for Financial Capability Assessment and Schedule Development* (EPA 832-B-97-004)
- *Combined Sewer Overflows—Guidance for Funding Options* (EPA 832-B-95-007)
- *Combined Sewer Overflows—Guidance for Permit Writers* (EPA 832-B-95-008)

Goal of this Guidance

The CSO Policy recognizes the need to address the relative importance of environmental and financial issues when developing an implementation schedule for CSO controls to be contained in the LTCP and the NPDES permit or other enforceable mechanism. According to the CSO Policy, an implementation schedule "may be phased based on the relative importance of adverse impacts upon WQS and designated uses, priority projects identified in the long-term plan, and on a permittee's financial capability."

This guidance has two goals. The first goal is to provide a planning tool for evaluating the financial resources a permittee has available to implement CSO controls. This assessment will involve the use of the following financial capability indicators listed in the CSO Policy:

- Total annual wastewater and CSO control cost per household as a percent of median household income
- Bond ratings
- Overall net debt as percent of full market property value

- Unemployment rate
- Median household income
- Property tax revenue collection rate
- Property tax revenues as a percent of full market property value

It must be emphasized that the financial indicators found in this guidance might not present the most complete picture of a permittee's financial capability to fund the CSO controls. However, the financial indicators do provide a common basis for financial burden discussions between the permittee and EPA and state NPDES authorities. Since flexibility is an important aspect of the CSO Policy, permittees are encouraged to submit any additional documentation that would create a more accurate and complete picture of their financial capability.

Although this guidance focuses on the role of financial capability for development of an implementation schedule for CSO controls, the financial capability analysis process can be useful for the identification and evaluation of long-term control alternatives in the LTCP.

The second goal is to assist the permittee, EPA and state NPDES authorities in cooperatively developing CSO control implementation schedules. This will involve an evaluation of the following environmental and financial considerations listed in the CSO Policy:

- Eliminating overflows to sensitive areas
- Use impairment
- Financial capability
- Grant and loan availability
- Previous and current sewer user fees and rate structures
- Other viable funding mechanisms and sources of financing

This guidance does not recommend specific schedules for implementation of the CSO controls based on financial capability or other considerations identified in the CSO Policy. It does, however, provide general boundaries to aid all parties in negotiating reasonable and effective schedules for implementation of the CSO controls.

It is important to recognize that scheduling flexibility is not the only form of relief available to permittees. The CWA and EPA regulations provide mechanisms for the review and revision of WQS. The CSO Policy also encourages the "review and revision, as appropriate, of water quality standards and their implementation procedures when developing CSO control plans to reflect the site-specific wet weather impacts of CSOs." During the process of developing the

LTCP, the permittee should consult with NPDES and WQS authorities to share information on the water quality impacts of CSOs, the attainability of WQS, and the appropriate water quality-based requirements of the permit. It may be appropriate to conduct a use attainability analysis and revisit existing designated uses in order to ensure that the LTCP selected will be sufficient to attain WQS. EPA's "Interim Economic Guidance for Water Quality Standards-Workbook"(EPA-823-B-95-002) provides an approach for assessing whether a water pollution project will impose "substantial and widespread social and economic impacts," as defined in EPA regulations.

Organization of Guidance

Section II summarizes a two phase approach for assessing a permittee's financial capability to implement CSO controls. Section III describes the first phase which calculates the financial impact of wastewater and CSO controls on individual households. Section IV describes the second phase used to calculate a permittee's debt, socioeconomic and financial conditions. The results of the first and second phases are combined to give an overall assessment of a permittee's financial capability to be used in CSO schedule development. Although financial capability is only one factor in schedule development, a major portion of this guidance is devoted to financial capability assessment because of the complexity of the process and its importance. Section V describes the schedule development process for implementing CSO controls, and details how environmental and financial considerations influence schedule development.

Audience

This guidance is designed for use by permittees, EPA and state NPDES authorities, and other personnel with CSO planning and permitting responsibilities. It is written in a format that allows individuals with limited municipal financial assessment experience to conduct CSO financial capability assessments and negotiate reasonable CSO implementation schedules. Individuals with experience in establishing schedules for enforcement orders and reviewing financial capability assessments under the Water Quality Standards, Construction Grants and State Revolving Fund (SRF) programs will be able to quickly and efficiently conduct the assessment detailed in this guidebook.

II. CSO FINANCIAL CAPABILITY ASSESSMENT APPROACH

This section describes a process for evaluating parameters that measure a permittee's financial capability to implement CSO controls. The process reflects the experience of EPA in the Water Quality Standards (WQS) program, Construction Grants program, State Revolving Fund (SRF) program and the water enforcement program. Experience with these programs provides the foundation upon which EPA has built the CSO financial capability assessment approach.

In the WQS program, economic factors are considered in the process of modifying WQS. State WQS authorities conduct economic analysis of the impacts that will result from treatment levels beyond the technology-based requirements of the Clean Water Act. EPA's "Interim Economic Guidance for Water Quality Standards" (EPA 823-B-95-002) provides an approach for assessing substantial and widespread social and economic impacts of specific water pollution control projects. The process to identify "substantial" impacts is similar to the process used in this guidance to analyze financial capability and its implications for scheduling CSO controls.

Under the Construction Grants Program, financial capability assessments were conducted by municipalities and reviewed by EPA to demonstrate that municipalities had the ability to pay for the capital investments and the costs for operation and maintenance of the wastewater facilities. The assessments measured the financial conditions of the municipality and the financial burden the proposed projects imposed on households. Some of the financial indicators used in the demonstrations were similar to those used in this guidance. The demonstration procedure is described in EPA's "Financial Capability Guidebook" (1984).

As part of SRF program implementation, states devised financial capability assessment procedures for loan applicants. Often the procedures include a review of the same financial indicators described in this document.

The Agency's water enforcement program conducts detailed evaluations of a permittee's current financial conditions to assess the amount of penalty that can be borne by the permittee for violations of the CWA. The evaluations frequently include financial indicators used in this guidance.

The CSO financial capability assessment process also reflects the approach taken by bond rating agencies and other investment industry firms to assess a municipality's or wastewater utility's overall financial condition and credit capacity. The bond rating agencies generally use the same types of financial information when they evaluate specific bond issues. Rating agencies evaluate this information to determine the overall financial health of an issuer and identify any factors that could make it difficult for the permittee to repay its bonds. The approach developed for the CSO financial capability assessment incorporates the principles used by the rating agencies.

The Two-Phase Approach

The guidance presents a two-phase approach to assessing a permittee's financial capability. The first phase identifies the combined impact of wastewater and CSO control costs on individual households. The second phase examines the debt, socioeconomic, and financial conditions of a permittee. The results of the two-phase analysis are combined in a Financial Capability Matrix. Permittees and the WQS and NPDES authorities can use this matrix to assess the financial burden of the CSO control costs and establish reasonable schedules to implement the CSO controls.

Phase one determines a Residential Indicator. This indicator is the permittee's average cost per household (CPH) for wastewater treatment (WWT) and CSO controls as a percentage of the local median household income (MHI). It reflects the residential share of current and planned WWT and CSO controls needed to meet the requirements of the CWA. A value range for this indicator characterizes whether the costs impose a "low," "mid-range" or "high" financial impact on residential users.

The second phase develops the Permittee Financial Capability Indicators. Six indicators are used to evaluate the debt, socioeconomic, and financial conditions that affect a permittee's financial capability to implement the CSO controls. These indicators serve as the basis for a second phase analysis that will characterize the permittee's financial capability as "weak," "mid-range" or "strong."

A Financial Capability Matrix combines the Residential Indicator (first phase) and Permittee Financial Capability Indicators (second phase) to give an overall assessment of the permittee's financial capability. This assessment can be used to help establish an appropriate CSO control implementation schedule.

Since flexibility is an important component of the CSO Policy, WQS authorities, NPDES authorities, EPA personnel, and permittees should communicate throughout the CSO control planning process to coordinate the development of an effective LTCP. This guidance document provides all CSO participants with a structured yet flexible approach for evaluating the financial burden CSO controls place on permittees. It also recognizes the importance of this financial burden when establishing a CSO control implementation schedule. The financial capability information developed in this guidance provides a basis for the permittee and the NPDES authorities to negotiate the implementation schedule for the CSO controls. However, when a permittee believes that there are unique circumstances that would affect the conclusion of this guidance, the permittee may submit documentation of its unique financial conditions to the appropriate EPA or State NPDES authorities for consideration.

Financial Benchmarks and Information Sources

The information used to develop the indicators needed for the financial assessment is drawn from several different sources. In general, this information should be available through a combination of local, state, and Federal sources. Project cost information is available in the LTCP. Socioeconomic information, such as median household income, is available from census data. Detailed financial information is available from a community's annual financial statements. Financial statements may be obtained directly from a community or, in most states, from the state auditor's office which maintains a central file of audited reports. When the permittee's service area involves more than one jurisdiction, it will be necessary to examine data for each jurisdiction to develop the necessary data.

III. PHASE ONE: THE RESIDENTIAL INDICATOR

The Residential Indicator measures the financial impact of the current and proposed WWT and CSO controls on residential users. Development of this indicator starts with the determination of the current and proposed WWT and CSO control costs per household (CPH). Second, the service area's CPH estimate and the median household income (MHI) are used to calculate the Residential Indicator. Finally, the Residential Indicator is compared to established financial impact ranges to determine whether CSO controls will produce a possible high, mid-range or low financial impact on the permittee's residential users. Worksheets are provided to aid in developing the Residential Indicator.

Developing CPH Estimate

The first step in developing the CPH is to determine the permittee's total WWT and CSO costs by adding together the current costs for existing wastewater treatment operations and the projected costs for any proposed WWT and CSO controls. The next step is to calculate the residential share of the total WWT and CSO costs. The final step is to calculate the CPH by dividing the residential share of total WWT and CSO costs by the number of households in the permittee's total wastewater service area.

Current WWT costs are defined as current annual wastewater operating and maintenance expenses (excluding depreciation) plus current annual debt service (principal and interest). This fairly represents cash expenses for current wastewater treatment operations. (Expenses for funded depreciation, capital replacement funds, or other types of capital reserve funds are not included in current WWT costs, because they represent a type of savings account rather than an actual operation and maintenance expense.)

Estimates of projected costs are made for any proposed WWT projects and the CSO controls. Any concerns about including specific proposed WWT projects or CSO controls in the projected costs, or the length of the planning period, should be discussed with the appropriate NPDES permitting and enforcement authorities. These costs are adjusted to current dollars (i.e., deflated). These include projected operation and maintenance expenses plus projected debt service costs for any proposed WWT and the CSO controls. The residential or household costs exclude the portion of expenses attributable to commercial, governmental and industrial wastewater discharges. The information and calculations used to develop the CPH and the Residential Indicator are presented in Worksheets 1 and 2 and their instructions.

Worksheet 1 Instructions

Enter the requested data on lines 100 through 109. The operation and maintenance costs on lines 100 and 103 should include all significant cost categories, such as labor, chemicals, utilities, administration, and equipment replacement. Do not include depreciation on line 100 or line 103. Adjust the projected annual WWT and CSO costs to current dollars using the average annual national Consumer Price Index (CPI) inflation rate for the past five years available from the Bureau of Labor Statistics. The CPI is used as a simple and reliable method of indexing projected WWT costs and household income. For example, if the most recent five year average CPI is 4 percent, and the projected annual O& M and debt service costs will begin in 2 years, adjust the projected costs with the following formula:

$$Adjusted\ Projected\ Costs\ (Current\ Dollars) = Projected\ Costs \times Adjustment\ Factor$$

The adjustment factor can be calculated using the following formula or the present value factor from the table on page 55:

$$Adjustment\ Factor = \frac{1}{(1+CPI)^{years}} = \frac{1}{(1+.04)^2} = .925$$

The annualized debt service cost information for the projected WWT facilities and projected CSO controls (Line 104) can be calculated using an annualization factor obtained from the table on page 56, which reflects the local borrowing interest rate and borrowing term of the permittee. For example, if the adjusted projected debt costs (current dollars) are $25,000,000 and typical borrowing terms include an interest rate of eight percent over 20 years, then costs can be annualized with the following calculation:

$$Annual\ Debt\ Service\ Costs = Adjusted\ Debt\ Costs \times Annualization\ Factor$$

$$Annual\ Debt\ Service\ Cost = \$25{,}000{,}000 \times .1019 = \$2{,}547{,}500$$

The annualization factor can be calculated using the following formula:

$$Annualization\ Factor = \frac{Interest\ Rate}{(1+Interest\ Rate)^{years} - 1} + Interest\ Rate = \frac{.08}{(1+.08)^{20} - 1} + .08 = .1019$$

The annualized debt service cost for the projected WWT facilities and projected CSO controls is entered on line 104. Add the current and projected wastewater treatment and projected CSO control costs to estimate the total WWT and CSO costs (line 102 + line 105).

Calculate the residential share of the total cost (line 106) and enter on line 107. The residential share of total costs (line 107) is computed by multiplying the percent of total wastewater flow including infiltration and inflow attributable to residential users by the total costs (line 106). For example, for a permittee with the following characteristics:

Total Costs:	$12,000,000
Residential Flow:	10.5 Million Gallons per Day
Total Flow:	13.1 Million Gallons per Day

The residential share of the total cost is:

$$\textit{Residential Share of Costs} = \textit{Total Costs} \times \frac{\textit{Residential Wastewater Flow}}{\textit{Total Wastewater Flow}}$$

$$\textit{Residential Share of Costs} = \$12{,}000{,}000 \times \frac{10.5\ \textit{Million Gallons Per Day}}{13.1\ \textit{Million Gallons Per Day}}$$

$$\$9{,}600{,}000$$

Calculate the CPH (line 109) by dividing total residential share costs (line 107) by the total number of households (line 108) in the permittee's total wastewater service area.

Data Sources

The permittee's latest financial reports should be available to develop the current wastewater treatment costs. In order to comply with accounting requirements, most permittees develop a combined statement of revenues, expenses, and changes in fund balance. These reports should be available directly from the permittee, or, in some states, from central records kept by the state auditor or other state offices. (Many states conduct audits and generate financial reports - i.e., balance sheet, statement of revenues, expenses, and changes in fund balance, and statement of cash flows, for each permittee.) Projected costs and households in the wastewater service area should be available through planning documents. The Bureau of Labor Statistics frequently has data on the number of households in the service area.

The Consumer Price Index rate (CPI) should be the average rate for the previous five years. The CPI is available through the Bureau of Labor Statistics.

COST PER HOUSEHOLD
Worksheet 1

		Line Number
Current WWT Costs		
• Annual Operations and Maintenance Expenses (Excluding Depreciation)	_____	100
• Annual Debt Service (Principal and Interest)	_____	101
Subtotal (Line 100 + Line 101)	_____	102
Projected WWT and CSO Costs (Current Dollars)		
• Estimated Annual Operations and Maintenance Expenses (Excluding Depreciation)	_____	103
• Annual Debt Service (Principal and Interest)	_____	104
Subtotal (Line 103 + Line 104)	_____	105
Total Current and Projected WWT and CSO Costs (Line 102 + Line 105)	_____	106
Residential Share of Total WWT and CSO Costs	_____	107
Total number of Households in Service Area	_____	108
Cost Per Household (Line 107 ÷ Line 108)	_____	109

Developing the MHI Estimate

The second step in developing the Residential Indicator is to determine the adjusted median household income (MHI) for the permittee's entire wastewater service area. Information and calculations used to develop the adjusted MHI value are presented in Worksheet 2 and its instructions.

Worksheet 2 Instructions

Enter the requested information on Worksheet 2, lines 201 through 203. MHI from the latest census year should be adjusted to current year dollars with the average CPI inflation rate from the latest census year to the current year using the following formula.

$$Adjusted\ MHI = MHI \times Adjustment\ Factor$$

The MHI adjustment factor can be calculated using the following formula or the inflation adjustment factor from the table on page 58:

$$MHI\ Adjustment\ Factor = (1+CPI)^{Current\ Year - Census\ Year}$$

For example, if a permittee's MHI was $30,000 in the 1990 census year, the average annual CPI since 1990 was 4 percent and the current year is 1992, the following calculation would be made to adjust the MHI to current dollars:

$$Adjustment\ Factor = (1+.04)^{1992-1990} = 1.0816$$

$$Adjusted\ MHI = \$30{,}000 \times 1.0816 = \$32{,}448$$

On Worksheet 2, calculate the adjusted MHI by entering the latest census MHI value on line 201. Then enter the MHI Adjustment Factor on line 202. Finally, multiply the MHI (line 201) by the Adjustment Factor (line 202) and enter the Adjusted MHI on line 203.

RESIDENTIAL INDICATOR
Worksheet 2

Median Household Income (MHI)		Line Number
• Census Year MHI	_____	201
• MHI Adjustment Factor	_____	202
• Adjusted MHI (Line 201 x Line 202)	_____	203
Annual WWT and CSO Control Cost Per Household (CPH) (Line 109)	_____	204
Residential Indicator:		
Annual Wastewater and CSO Control Costs per Household as a percent of Adjusted Median Household Income (CPH as % MHI) (Line 204 ÷ Line 203 x 100)	_____	205

If the permittee's service area includes more than one jurisdiction, it may be necessary to develop a weighted MHI for the entire service area. The Bureau of Census's designated MHI areas generally encompass most permittees' service areas. For this reason, the calculation of a weighted MHI usually will not be necessary to reasonably represent the permittee's MHI. When a weighted MHI must be acquired, a weight would be assigned to each jurisdiction to reflect its share of the total households.

The following example illustrates how to develop a weighted MHI value before adjusting it to current year dollars. If a permittee is a regional authority that serves three local jurisdictions, the weighted average MHI would be calculated as follows:

Jurisdiction	MHI	Number of Households (HH)
A	$30,000	100,000
B	$45,000	25,000
C	$25,000	50,000
		175,000

$$\text{Weighted MHI} = MHI_A\left(\frac{HH_A}{Total\ HH}\right) + MHI_B\left(\frac{HH_B}{Total\ HH}\right) + MHI_C\left(\frac{HH_C}{Total\ HH}\right)$$

$$\$30{,}000\left(\frac{100{,}000}{175{,}000}\right) + \$45{,}000\left(\frac{25{,}000}{175{,}000}\right) + \$25{,}000\left(\frac{50{,}000}{175{,}000}\right)$$

$$\$17{,}143 + \$6{,}429 + \$7{,}143$$

$$= \$30{,}715$$

Data Sources

Median household income is available for most communities from the latest census. In the few cases where a local jurisdiction's MHI is not available, the surrounding county's MHI may be sufficient. Each state has a state data center that serves as a local source of census data for public use. This center may be contacted to obtain the information available from the Bureau of Census for use during this assessment (see Appendix B).

Developing the Residential Indicator

Worksheet 2 Instructions

To calculate the Residential Indicator (line 205 of Worksheet 2), divide the annual WWT and CSO control cost per household (line 109 transferred to line 204) by the Adjusted MHI (line 203) and multiply by 100.

Analyzing the Residential Indicator

The Residential Indicator will be used in the Financial Capability Matrix in Section IV to help permittees, and EPA and state NPDES authorities determine reasonable and workable long-term CSO control schedules. (The Residential Indicator does not provide special recognition for low income groups since their influence is automatically reflected in the median household income component of the indicators.)

To assess the financial impact CSO controls may have on the permittee's residential users, the Residential Indicator is compared to the financial impact ranges that reflect EPA's previous experience with water pollution control programs. These ranges are as follows:

Financial Impact	Residential Indicator (CPH as % MHI)
Low	Less than 1.0 Percent of MHI
Mid-Range	1.0 - 2.0 Percent of MHI
High	Greater than 2.0 Percent of MHI

When the Residential Indicator is less than 1.0 percent, between 1.0 and 2.0 percent, and greater than 2.0 percent, the financial impact on residential users to implement the CSO controls will be characterized as "low," "mid-range," and "high," respectively. Unless there are significant weaknesses in a permittee's financial and socioeconomic conditions, second phase reviews for permittees that have a low residential indicator score (less than 1.0) are unlikely to result in longer implementation schedules. Permittees with low residential indicators may wish to forego the second phase analysis and proceed with the normal engineering and construction implementation schedule developed as part of the CSO planning process.

In situations where a permittee believes that there are unique circumstances that would affect the conclusion of the first phase, the permittee may submit documentation of its unique financial conditions to the appropriate state NPDES and EPA authorities for consideration.

IV. PHASE TWO: PERMITTEE FINANCIAL CAPABILITY INDICATORS

In the second phase, selected indicators are assessed to evaluate the financial capability of the permittee. These indicators will examine the permittee's debt burden, socioeconomic conditions, and financial operations. The second-phase review examines three general categories of financial capability indicators for the permittee:

- Debt Indicators - Assess current debt burden of the permittee or the communities within the permittee's service area and their ability to issue additional debt to finance the CSO controls. The indicators selected for this purpose are:
  - Bond Ratings (General Obligation and/or Revenue Bond Fund)
  - Overall Net Debt as a Percent of Full Market Property Value
- Socioeconomic Indicators - Assess the general economic well-being of residential users in the permittee's service area. The indicators selected for this purpose are:
  - Unemployment Rate
  - Median Household Income
- Financial Management Indicators - Evaluate the permittee's overall ability to manage financial operations. The indicators selected for this purpose are:
  - Property Tax Revenue Collection Rate
  - Property Tax Revenues as a Percent of Full Market Property Value

Even though the financial capability analysis reflects current conditions, pending changes in the service area should be considered in development of the second phase indicators. For example, if the current unemployment rate is high, but there is a new plant opening that will stimulate economic growth, the unemployment indicators for the service area would need to be modified to reflect the projected impact of the new plant. The permittee should submit documentation of such conditions to the appropriate EPA and state NPDES authorities for consideration. When the permittee is a sanitary district, sewer authority or similar entity, the second phase indicators related to property values and tax revenues may not be applicable. In those circumstances, the permittee may simply use the remaining indicators or submit other related documentation that will help assess its financial capability to implement the CSO controls.

DEBT INDICATORS

The debt indicators described below were selected to assess the current debt burden conditions and the ability to issue new debt. These indicators are the bond rating and overall net debt as a percent of full market property value. When these indicators are not available for the permittee, other financial data which illustrates debt burden and debt issuing capacity may be used to assess the permittee's financial capability in this area.

Bond Rating

The information needed to evaluate the bond ratings is presented in Worksheet 3. Recent bond ratings for the permittee and service area communities summarize a bond rating agency's assessment of a permittee's or community's credit capacity. General obligation (G.O.) bonds are bonds issued by a local government and repaid with taxes (usually property taxes). They are the primary long-term debt funding mechanism in use by local governments. General obligation bond ratings reflect financial and socioeconomic conditions experienced by the community as a whole.

"Revenue bond" ratings, by comparison, reflect the financial conditions and management capability of the wastewater utility. They are repaid with revenues generated from user fees. Revenue bonds are sometimes referred to as water or sewer bonds. In some cases these bonds may have been issued by the state on behalf of local communities. (Additional information on bonds is contained in EPA's Combined Sewer Overflows—Guidance For Funding Options (EPA 832-B-95-007).

Bond ratings normally incorporate an analysis of many financial capability indicators. These analyses evaluate the long term trends and current conditions for the indicators. The ultimate bond ratings reflect a general assessment of the current financial conditions. However, if security enhancements like bond insurance have been used for a revenue bond issue, the bond rating may be higher than justified by the local conditions.

Many small and medium-sized communities and permittees have not used debt financing for projects and, as a result, have no bond rating. The absence of bond rating does not indicate strong or weak financial health. When a bond rating is not available, this indicator may be excluded from the financial analysis.

Worksheet 3 Instructions

Enter the most recent bond ratings on Worksheet 3, lines 301 and 302. Note that ratings are requested for general obligation bonds and revenue bonds. When there are several different bond ratings, enter the most recent bond rating on Line 303 as the summary bond rating.

Data Sources

Municipal bond reports from rating agencies (e.g., Moody's Bond Record, Standard & Poor's Corporation) provide recent ratings.

Benchmarks

Moody's Investor Services

"Baa" is the minimum investment grade rating. See *Moody's on Municipals - an Introduction to Issuing Debt* for a description of bond ratings.

Moody's Investor Services' Ratings

- Weak: Ba, B, Caa, Ca, C
- Mid-Range: Baa
- Strong: Aaa, AA, A

Standard & Poor's

"BBB" is the minimum investment grade rating. See Standard & Poor's *Municipal Finance Criteria* for a description of bond ratings.

Standard and Poor's Ratings

- Weak: BB, B, CCC, CC, C, D
- Mid-Range: BBB
- Strong: AAA, AA, A

BOND RATING
Worksheet 3

		Line Number
• Most Recent General Obligation Bond Rating	_____	
Date:	_____	
Rating Agency:	_____	
Rating:	_____	301
• Most Recent Revenue (Water/Sewer or Sewer) Bond		
Date:	_____	
Rating Agency:	_____	
Bond Insurance (Yes/No)	_____	
Rating:	_____	302
Summary Bond Rating:	_____	303

Overall Net Debt as a Percent of Full Market Property Value

Description

Overall net debt is debt repaid by property taxes in the permittee's service area. It excludes debt which is repaid by special user fees (e.g., revenue debt). This indicator provides a measure of the debt burden on residents within the permittee's service area and measures the ability of local governmental jurisdictions to issue additional debt. It includes the debt issued directly by the local jurisdiction and debt of overlapping entities, such as school districts. This indicator compares the level of debt owed by the service area population with the full market value of real property used to support that debt and serves as a measure of financial wealth in the permittee's service area. Information needed to develop overall net debt as a percent of full market value is identified on Worksheet 4.

Worksheet 4 Instructions

Enter requested data on Worksheet 4, lines 401 - 405.

Line 401 - Direct Net Debt - Enter the amount of each jurisdiction's general obligation debt outstanding that is supported by the property in the permittee's service area. General obligation bonds are secured by the "full faith and credit" of the community and are payable from general tax revenues. This debt amount excludes general obligation bonds that are payable from some dedicated user fees or specific revenue source other than the general tax revenues. These general obligation bonds are called "double-barreled bonds."

Line 402 - Debt of Overlapping Entities - Calculate the permittee's service area's share of any debt from overlapping entities using the process illustrated below.

1. Identify in Column A below each overlapping entity that has incurred debt that must be partially supported by the permittee's service area. (Check the State assessor's office for this information).
2. Identify the total amount of tax-supported outstanding debt for each overlapping entity in Column B. Money in a sinking fund is not included in the outstanding debt since it represents periodic deposits into an account to ensure the availability of sufficient monies to make timely debt service payments.
3. Identify the percentage of each overlapping entity's outstanding debt charged to persons or property in the permittee's service area in Column C. The percentage is based on the estimated full market value of real property of the respective jurisdictions.

4. Multiply the total outstanding debt of each overlapping entity by the percentage identified for the permittee's service area (Column B x C).
5. Add the figures in Column D to arrive at total overlapping debt for permittee's service area.

(A) Overlapping Entities	(B) Outstanding Debt (less Sinking Fund)	(C) Percent Chargeable to Permittee's Service Area	(D) Outstanding Debt Attributable to Permittee's Service Area
County	$10,500,000	25%	$2,625,000
School District	16,800,000	95%	15,960,000
Total Overlapping Debt			$18,585,000

Line 403 - Overall Net Debt - Add lines 401 and 402.

Line 404 - Market Value of Property - The property value should reflect the full market value of property within the permittee's service area. It is possible that the tax assessed property value will not reflect full market value. This occurs when the tax assessment ratio is less than one. In such cases the full market value of property is computed by dividing the total tax assessment value by the assessment ratio (the assessment ratio represents the percentage of the full market value that is taxed at the established tax rate). For example, if the assessed value is $1,000,000 and the assessment ratio is 50 percent then the full market value of real property is $1,000,000/.50= $2,000,000.

Line 405 - Overall Net Debt as a Percent of Full Market Property Value - Divide line 403 by line 404 and multiply by 100.

Data Sources

Debt information is available from the financial statements of each community. In most cases the most recent financial statements are on file with the state (e.g., State Auditor's Office). Overlapping debt may or may not be provided in a community's financial statements. The property assessment data should be readily available through the community or the State's assessor office. The boundary of most permittees' service areas generally conforms to one or more community boundaries. Therefore, prorating community data to reflect specific service area boundaries is not normally necessary for evaluating the general financial capability of the permittee.

Benchmarks

- Weak: Above 5%
- Mid-range: 2-5%
- Strong: Below 2%

OVERALL NET DEBT AS A PERCENT OF FULL MARKET PROPERTY VALUE
Worksheet 4

		Line Number
• Direct Net Debt (G.O. Bonds Excluding Double-Barreled Bonds)	_____	401
• Debt of Overlapping Entities (Proportionate Share of Multijurisdictional Debt)	_____	402
• Overall Net Debt (Lines 401+402)	_____	403
• Market Value of Property	_____	404
• Overall Net Debt as a Percent of Full Market Property Value (Line 403 divided by Line 404 x 100)	_____	405

SOCIOECONOMIC INDICATORS

The socioeconomic indicators are used to assess the general economic well-being of residential users in the permittee's service area. The indicators used to assess economic conditions are unemployment rate and median household income. When the permittee has additional socioeconomic data, it may want to submit the data to the appropriate EPA and state NPDES authorities to facilitate a better understanding of the permittee's unique economic conditions. Several examples of this type of socioeconomic data could be poverty rate, population growth, and employment projections.

Unemployment Rate

Unemployment information is entered on Worksheet 5. The unemployment rate is defined as the percent of a permittee's service area residents on the unemployment rolls.

Worksheet 5 Instructions

Unemployment values are entered on lines 501 - 503 on Worksheet 5. If the unemployment rate for a permittee's service area is not available, the unemployment rate for the county in which the service area is located may be used as a substitute. On line 503, enter the average national unemployment rate.

Data Sources

The Bureau of Labor Statistics (BLS) maintains current unemployment rate figures for municipalities and counties over 25,000 population. National and state unemployment data are also available for comparison purposes. This information can be obtained from the BLS by request at (202) 606-6392.

Benchmarks

Compare the permittee's unemployment values with the national average values. National averages are readily available through the Bureau of Labor Statistics.

- Weak: More than 1 percentage point above the National Average
- Mid-range: ± 1 percentage point of the National Average
- Strong: More than 1 percentage point below National Average

For example, if the national average unemployment rate is 6 percent, an unemployment rate greater than 7 percent would be considered weak, while an unemployment rate less than 5 percent would be considered strong.

UNEMPLOYMENT RATE
Worksheet 5

		Line Number
• Unemployment Rate - Permittee	_____	501
Source:	_____	
• Unemployment Rate - County (use if permittee's rate is unavailable)	_____	502
• Source:	_____	

Benchmark:

• Average National Unemployment Rate:	_____	503
• Source:	_____	

Median Household Income

Median household income (MHI) is defined as the median amount of total income dollars received per household during a calendar year in a given area. It serves as an overall indicator of community earning capacity. Worksheet 6 is used to present information for this indicator.

Worksheet 6 Instructions

Median household income was discussed during the first phase assessment and is presented on Worksheet 2. On line 601 of Worksheet 6, enter the adjusted MHI from Worksheet 2 (line 203). Use the MHI adjustment factor from Worksheet 2 (line 202) to calculate the adjusted national MHI from the latest census, national MHI value (line 602) and enter the value on Line 604.

Data Sources

Median household income is available through state data centers. Refer to Worksheet 2 for MHI of the permittee's service area. Refer to Appendix B for the address and telephone number of the state's data center to acquire the latest census national MHI value.

Benchmarks

Compare the permittee's MHI to the adjusted national MHI:

- Weak: More than 25% below Adjusted National MHI
- Mid-Range: ± 25% of the Adjusted National MHI
- Strong: More than 25% above Adjusted National MHI

MEDIAN HOUSEHOLD INCOME
Worksheet 6

		Line Number
• Median Household Income - Permittee (Line 203)	_____	601
• Source:	_____	

Benchmark:

• Census Year National MHI	_____	602
• MHI Adjustment Factor (line 202)	_____	603
• Adjusted National MHI: (line 602 x line 603)	_____	604
• Source:	_____	

FINANCIAL MANAGEMENT INDICATORS

The financial management indicators used to evaluate a permittee's financial management ability are property tax revenue as a percent of full market value of real property and property tax revenue collection rate.

Property Tax Revenues as a Percent of Full Market Property Value

This indicator can be referred to as the "property tax burden" since it indicates the funding capacity available to support debt based on the wealth of the community. It also reflects the effectiveness of management in providing community services.

Worksheet 7 Instructions

Property tax burden is computed on Worksheet 7. The full market value of real property was calculated in Worksheet 4, line 404. Enter the full market value on line 701. Enter the most recent year's property tax revenue on line 702. General fund revenues are primarily property tax receipts.

Data Sources

The property assessment data should be readily available through the community or the State's assessor office (see Worksheet 4, Line 404). Property tax revenues are available in communities' annual financial statements. Occasionally, the assessment and tax revenue data of communities partially serviced by the permittee may have to be prorated to provide a clearer picture of the permittee's property tax burden.

Benchmarks

- Weak: Above 4%
- Mid-range: 2%-4%
- Strong: Below 2%.

PROPERTY TAX REVENUES AS A PERCENT OF FULL MARKET PROPERTY VALUE

Worksheet 7

		Line Number
• Full Market Value of Real Property (Line 404)	_____	701
• Property Tax Revenues	_____	702
• Property Tax Revenue as a Percent of Full Market Property Value (702 ÷ 701 x 100)	_____	703

Property Tax Revenue Collection Rate

The property tax revenue collection rate is an indicator of the efficiency of the tax collection system and the acceptability of tax levels to residents.

Worksheet 8 Instructions

The property tax revenue collection rate is calculated on Worksheet 8. The property tax revenues collected was listed in Worksheet 7, Line 702. Enter this value on line 801. Enter the property taxes levied on line 802. Divide the property tax revenue collected by the property taxes levied and multiply by 100 to present the collection rate as a percentage on line 803.

Data Sources

Property taxes levied can be computed by multiplying the assessed value of real property by the property tax rate, both of which are available from a community's financial statements or the state assessor's office (see Worksheet 4, Line 404). Property tax revenues are available in communities' annual financial statements. Occasionally, the assessment and tax revenue data of communities partially serviced by the permittee may have to be prorated to provide a clearer picture of the permittee's property tax revenue collection rate.

Benchmarks

- Weak: Below 94%
- Mid-range: 94-98%
- Strong: Above 98%.

PROPERTY TAX REVENUE COLLECTION RATE
Worksheet 8

		Line Number
• Property Tax Revenue Collected (Line 702)	_____	801
• Property Taxes Levied	_____	802
• Property Tax Revenue Collection Rate (line 801 ÷ line 802 x 100)	_____	803

Analyzing Permittee Financial Capability Indicators

This section describes how the indicators in the second phase may be used to generate an overall score of a permittee's financial capability. The indicators are compared to national benchmarks to form an overall assessment of the permittee's financial capability and its effect on implemention schedules in the long-term CSO control plan.

In situations where a permittee believes that there are unique circumstances that would affect the conclusion of the second phase, the permittee may submit documentation of its unique financial conditions to the appropriate EPA and state NPDES authorities for consideration. The purpose of additional information is to clarify unique circumstances which are not fairly represented by the overall scores of the selected indicators. An example could be where a state or community imposes restrictions on property taxes.

Worksheet 9 Instructions

The indicators generated from the worksheets are compared to the state, national or industry benchmarks presented in Table 2. Information compiled from Worksheets 3 through 8 is summarized in Column A on Worksheet 9. Score each of these values using the rating standards in Table 2 and the following score benchmarks and enter the appropriate number in Column B. The score definitions are:

Benchmarks	Score
• Weak	1
• Mid-Range	2
• Strong	3

To calculate an average score for the indicators, total the values in Column B and divide by the number of entries. Enter the average score on Line 907.

If it is not possible to develop one or more of the six indicators, the permittee should explain why the indicator is inappropriate or unavailable. Since the point of the analysis is to measure the overall financial burden of the CSO controls, the debt and socioeconomic indicators are generally better measures of this burden than the financial management indicators. Consequently, if one of the debt or socioeconomic indicators is not available, the two financial management indicators should be averaged and used as a single indicator to average with the available debt and socioeconomic indicators. This averaging is necessary so that undue weight is not given to the financial management indicators.

PERMITTEE FINANCIAL CAPABILITY INDICATOR BENCHMARKS
Table 2

Indicator	Strong	Mid-Range	Weak
Bond Rating	AAA-A (S&P) or Aaa-A (Moody's)	BBB (S&P) Baa (Moody's)	BB-D (S&P) Ba-C (Moody's)
Overall Net Debt as a Percent of Full Market Property Value	Below 2%	2% - 5%	Above 5%
Unemployment Rate	More than 1 Percentage Point Below the National Average	± 1 Percentage Point of National Average	More than 1 Percentage Point Above the National Average
Median Household Income	More than 25% Above Adjusted National MHI	±25% of Adjusted National MHI	More than 25% Below Adjusted National MHI
Property Tax Revenues as a Percent of Full Market Property Value	Below 2%	2% - 4%	Above 4%
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%

SUMMARY OF PERMITTEE FINANCIAL CAPABILITY INDICATORS
Worksheet 9

Indicator	Column A: Actual Value	Column B: Score	Line Number
Bond Rating (Line 303)	_____	_____	901
Overall Net Debt as a Percent of Full Market Property Value (line 405)	_____	_____	902
Unemployment Rate (Line 501)	_____	_____	903
Median Household Income (Line 601)	_____	_____	904
Property Tax Revenues as a Percent of Full Market Property Value (Line 703)	_____	_____	905
Property Tax Revenue Collection Rate (Line 803)	_____	_____	906
Permittee Indicators Score (Sum of Column B ÷ Number of Entries)		_____	907

The Financial Capability Matrix

The results of the Residential Indicator and the Permittee Financial Capability Indicators analyses are combined in the Financial Capability Matrix to evaluate the level of financial burden the CSO controls may impose on a permittee. This matrix can be used by permittees, EPA and state NPDES authorities to establish reasonable and workable CSO control implementation schedules.

Worksheet 10 Instructions

First, enter the value of the Residential Indicator (Cost Per Household as a % of MHI) from Line 205 (Worksheet 2) on Line 1001 of Worksheet 10. Enter the Permittee Financial Capability Indicators score from Line 907 (Worksheet 9) on Line 1002. With this information, find the financial burden category for the permittee in the Financial Impact Matrix (Table 3). Enter the category on line 1003.

For example, if the Residential Indicator from Line 1001 is 1.3% and the Permittee Financial Capability Indicators score from Line 1002 is 2.1, the Financial Capability Matrix would indicate that implementation of the CSO control would be "Medium Burden" for the permittee.

The result from the Financial Capability Matrix is used to develop a CSO implementation schedule as described in Section V: CSO Schedule Development.

FINANCIAL CAPABILITY MATRIX SCORE
Worksheet 10

		Line Number
• Residential Indicator Score (Line 205)	_____	1001
• Permittee Financial Capability Indicators Score (Line 907)	_____	1002
• Financial Capability Matrix Category (see matrix next page)	_____	1003

FINANCIAL CAPABILITY MATRIX
Table 3

Permittee Financial Capability Indicators Score (Socioeconomic, Debt and Financial Indicators)	**Residential Indicator** (Cost Per Household as a % of MHI)		
	Low (Below 1.0 %)	Mid-Range (Between 1.0 and 2.0%)	High (Above 2.0 %)
Weak (Below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (Between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Above 2.5)	Low Burden	Low Burden	Medium Burden

V. CSO SCHEDULE DEVELOPMENT

The CSO Policy recognizes that the causes and impacts of CSOs are site-specific water pollution control problems. Identification of CSO controls involves evaluation of significant technical, environmental, and financial issues. Therefore, the CSO Policy provides an opportunity for flexible, phased implementation of CSO controls to achieve compliance with the technology-based and water quality based requirements of the Clean Water Act.

Under the CSO Policy, permittees with combined sewer systems are expected to implement the nine minimum CSO controls as expeditiously as possible but no later than January 1, 1997. The nine minimum controls are technology-based controls that can reduce the magnitude, duration, and frequency of CSOs and their effects on receiving waters (See guidance: *Combined Sewer Overflows—Guidance for Nine Minimum Controls* (EPA, 832-B-95-003)). These minimum controls are not intended to require significant engineering activities or major construction.

Permittees with combined sewer systems are also expected to develop long-term control plans (LTCPs) that include provisions for public participation, monitoring of CSOs and their impacts, evaluation and selection of control alternatives, and implementation schedules for long-term controls. A permittee is expected to develop its LTCP as soon as practicable, but generally within two years after a requirement to develop an LTCP has been specified in its NPDES permit or other enforceable mechanism. The development and implementation of an LTCP will be coordinated with implementation of the nine minimum controls. Development of the LTCP involves negotiations with the EPA and state NPDES authorities and if appropriate, state WQS authorities. Among other components the LTCP contains fixed-date implementation and financing schedules to design and construct the needed CSO controls.

The CSO Policy recognizes the need to address the relative importance of environmental and financial issues when developing an implementation schedule for CSO controls to be contained in the LTCP and the NPDES permit or other enforceable mechanism. According to the CSO Policy, an implementation schedule "may be phased based on the relative importance of adverse impacts on WQS and designated uses, priority projects identified in the long-term plan, and on a permittee's financial capability." The CSO Policy identifies the following environmental and financial considerations that may affect the phasing of an implementation schedule for CSO controls:

- Eliminating overflows to sensitive areas
- Use impairment
- Financial capability
- Grant and loan availability
- Previous and current sewer user fees and rate structures

- Other viable funding mechanisms and sources of financing.

These factors, may warrant phasing the CSO control implementation schedules in a manner other than would be prescribed by logical engineering sequencing and normal construction practices. This section illustrates how these considerations may affect scheduling and provides some general scheduling boundaries to aid all parties in negotiating the final implementation schedule for CSO controls.

Scheduling is first considered during the permittee's development of an LTCP. The LTCP should assess CSO control alternatives including estimated design and construction time requirements for various components of the CSO controls. In general, CSO controls should be implemented as expeditiously as possible.

The permittee should first develop a tentative implementation schedule based on logical engineering sequencing and normal construction practices. The permittee should complete a critical path analysis to identify the shortest implementation schedule that will achieve the control objectives identified in the LTCP (See guidance: *Combined Sewer Overflows-Guidance for Long-term Control Plan (EPA 832-13-95-002)*). As a result of negotiations with state NPDES and EPA authorities, it may be appropriate to modify the tentative design and construction schedule based on the environmental and financial considerations listed above.

In general, the final negotiated schedule for CSO controls would reflect two types of modifications to the engineering and construction schedule. First, where CSOs discharge to sensitive or significantly use-impaired water bodies, the final schedule would provide for expedited implementation of the controls for these discharges. Second, the schedules may be phased or extended to reflect the significance of various financial considerations, particularly financial capability. The number of years to implement the CSO controls would be negotiated between the permittee, EPA and state NPDES authorities.

The following discussion provides more information on environmental and financial considerations that affect implementation schedules for CSO controls..

ENVIRONMENTAL CONSIDERATIONS

Discharges to Sensitive Areas

The CSO Control Policy states that a permittee's LTCP should give the highest priority to "sensitive areas." Sensitive areas are identified by the NPDES permitting authorities. They include the following:

- Outstanding National Resource Waters
- National Marine Sanctuaries
- Waters with threatened or endangered species and their habitat
- Waters with primary contact recreation
- Public drinking water intakes or their designated protection areas
- Shellfish beds.

For discharges to sensitive areas, the CSO Control Policy provides the following approaches:

- Prohibit new or significantly increased overflows
- Eliminate or relocate overflows
- Where elimination or relocation is not feasible, provide treatment to meet WQS and regularly reassess the feasibility of prohibition, elimination, or relocation.

During the planning process the permittee should characterize existing CSO conditions and identify receiving waters that are sensitive areas. The LTCP should give priority to sensitive areas and any implementation schedule should sequence projects to mitigate impacts on sensitive areas as early as possible. Giving high priority to sensitive areas might mean in some cases that discharges to non-sensitive areas would be addressed later in the implementation schedule than would be the case under a normal engineering and construction schedule.

Use Impairment

Long-term control plans should also give priority to receiving waters that experience recurring adverse impacts from CSOs on aquatic life, human health or aesthetics. Such waters may be the subject of public or media concern.

As a result of public participation and discussion with the permitting authority, the permittee should develop an implementation schedule that gives high priority to waters with impaired uses

and addresses them as soon as possible. As was the case for sensitive areas, giving high priority to certain use-impaired waters might mean that discharges to other waters would be addressed later in the implementation schedule than would be the case under a normal engineering and construction schedule.

The EPA document *Combined Sewer Overflows—Guidance for Screening and Ranking (EPA-832-B-95-004)* can provide assistance in identifying which CSO discharge points are likely to have the greatest adverse impact on water quality, aquatic life, or human health.

PRIMARY FINANCIAL CONSIDERATIONS

Financial Capability

The CSO Control Policy recognizes that financial capability is a significant factor in schedule development. A permittee's financial capability is assessed according to where the permittee falls on the Financial Capability Matrix calculated in worksheet 10. The matrix characterizes the financial burden on the permittee to implement CSO controls as either "Low Burden," "Medium Burden," or "High Burden."

To aid permittees, and EPA and state NPDES authorities during the negotiations necessary to establish implementation schedules for CSO controls, general time periods are presented in Table 4 that correspond with the permittee's Financial Capability Matrix Score summarized in Worksheet 10. The general implementation schedule time boundaries provide a basis for developing consistent and reasonably uniform implementation schedules across the nation in situations where permittee's CSO controls impose similar financial burdens. The time boundaries are not intended to replace the negotiations and deliberations necessary to balance all of the environmental and financial considerations that influence the site specific nature of the controls and implementation schedules.

FINANCIAL CAPABILITY GENERAL SCHEDULING BOUNDARIES
Table 4

Financial Capability Matrix Category	Implementation Period
Low Burden	Normal Engineering/Construction
Medium Burden	Up to 10 years
High Burden	Up to 15 Years*
	*(Schedule up to 20 years based on negotiation with EPA and state NPDES authorities)

Generally, a permittee in the "Low Burden" category would be expected to implement CSO control projects based on a normal engineering and construction schedule. In all cases, discharge to sensitive areas and impaired waters would be addressed on a high priority basis.

For permittees in the "Medium Burden" category, an implementation schedule up to 10 years might be appropriate. A permittee in the "High Burden" category is likely to incur substantial financial impacts to implement CSO controls; in such cases, an implementation schedule up to 15 years might be appropriate. In unusually "High Burden" situations, an implementation schedule up to 20 years may be negotiated with state NPDES and EPA authorities.

SECONDARY FINANCIAL CONSIDERATIONS

The three financial considerations--grant and loan availability, sewer user fees, and other viable funding mechanisms--are normally investigated early in the process of establishing CSO controls. They are described in more detail in the EPA document *Combined Sewer Overflows—Guidance for Funding Options* (EPA-832-B-95-007). They are typically addressed and resolved in the development of the financial schedule for the LTCP prior to design and construction. Therefore, these considerations normally do not have a significant impact on the length of time needed to implement CSO controls. An exception could occur in a case where a permittee's CSO controls can be constructed quickly but where the only available CSO funding source takes an inordinately long time to implement.

Grant and Loan Availability

During the long-term planning process, the permittee should develop a financing plan that identifies sources of capital funds. Generally, these will include some form of loan or grant. Typically, availability of grants and loans will not have a significant impact on the implementation schedule. In evaluating the effect of grant and loan availability on the permittee's schedule, the following funding sources would be considered:

- State wastewater treatment grant programs
- SRF Program
- State loan program (other than SRF program)
- Rural Utility Services Program (formerly: Rural Development Administration loan program)
- CoBank loan program
- Commercial loans
- Local revenue bonds
- Local general obligation bonds

Sewer User Fees

As part of the long-term planning process, the permittee should identify existing user fees and rate structures for wastewater treatment and then develop a new rate structure that includes recovery of the costs for CSO controls. Depending upon how CSO user fees are apportioned among residential, commercial, and industrial users, implementation of the LTCP may cause fees to increase significantly. In most cases, construction of the CSO controls occurs over an extended period allowing time for an orderly increase in the user fees. Thus, user fees typically are unlikely to have a significant impact on the implementation schedule. Combining increases in user fees with an ongoing public education program can help ease the effects of "rate shock" related to the higher user fees. The EPA document "Building Support for Increasing User Fees," (EPA 430/09-89-006) provides specific details on creating a public education program to successfully raise user fees.

Other Viable Funding Mechanisms and Sources of Funding

The permittee may have to consider alternate sources of funding if loans and grants are not available or if a need exists to reduce the financial impact of CSO controls on the users. In some cases, alternative funding mechanisms or financing sources may require additional time to set up. To evaluate the scheduling impacts of other viable funding mechanisms and sources of financing, the permittee's ability to accomplish the following actions would be assessed:

- Establish special assessment districts
- Increase user fees
- Impose/increase taxes (such as income taxes, sales taxes, or property taxes)
- Privatize wastewater treatment.

Most permittees would be expected to have several of these options available; therefore other viable funding mechanisms and sources of funding typically are not likely to have a significant impact on the implementation schedule.

SCHEDULING CONSIDERATIONS

Establishing an implementation schedule for the CSO controls is a negotiating process involving the permittee and EPA and state NPDES authorities. Normally, the time period for the CSO control implementation schedule is defined by the time required for normal engineering and construction practices. However, environmental and financial considerations can influence the time allowed to complete the CSO controls. The implementation schedule would always give high priority to addressing the environmental considerations involving discharges to sensitive areas and use-impaired water bodies. The CSO controls for these discharges would be constructed as expeditiously as possible. The implementation schedule can lengthen by phasing construction of the CSO controls when financial considerations create a financial burden. The primary financial

consideration which usually results in an extended implementation schedule with phased construction is the financial capability consideration.

Application of environmental and financial considerations to the development of implementation schedules for three hypothetical permittees is presented in Table 5.

Permittee number 1 required an eight year normal engineering/construction schedule to implement the CSO controls. Negotiations between the permittee and EPA and the state NPDES authorities resulted in agreement that four years would be allowed for the special circumstances of the permittee's low-burden financial capability category. Therefore, the eight-year engineering schedule took precedence over the financial consideration (therefore were no environmental considerations), and the schedule for implementation of CSO controls was eight years.

Permittee number 2 required three years to implement long-term controls under a normal engineering/construction schedule. Negotiations with the NPDES and WQS authorities concluded that four years would be necessary to obtain SRF loans. A four-year implementation schedule for CSO controls was established by the NPDES permitting authority to accommodate the most time consuming funding option.

Implementation of permittee number 3's CSO controls required a six-year normal engineering/construction schedule. However, the following environmental and financial considerations affected the final schedule:

- One of the permittee's CSO outfalls discharges to a bathing beach. Bathing beaches are defined as sensitive areas in the CSO Control Policy. Although a normal engineering/construction schedule would have eliminated this outfall in four years, it was determined that the schedule could be modified to eliminate this outfall in two years.

- The permittee's cost per household as percent of median household income is 2.2 percent, yielding a Residential Indicator of "Weak." The other socioeconomic, debt, and financial indicators yield a Permittee Indicators score of 1.7, or "Mid-Range." According to Table 3, these two indicators place the permittee in the "High-Burden" category for financial capability.

- User fees will have to increase significantly.

The unusual nature of permittee number 3's "high burden" financial capability category resulted in a sixteen-year schedule for this financial consideration after negotiations with the EPA and state NPDES authorities. Therefore, the permittee would receive a sixteen-year schedule to implement all CSO controls, with a special requirement that the CSO discharge to the bathing beaches be removed in the first two years of the schedule.

It is important to note that the final CSO control implementation schedule established for each permittee should be a time period that is negotiated between the permittee and EPA and state NPDES authorities based on the specific circumstances of each permittee's environmental and financial situation, plus the specific nature of any engineering and construction requirements.

SCHEDULING CONSIDERATION FOR HYPOTHETICAL PERMITTEES
Table 5

Scheduling Consideration	**Permittee #1**	**Permittee #2**	**Permittee #3**
Engineering/ Construction Schedule	8 years	3 years	6 years
Sensitive Areas	n/a	n/a	2 years to remove discharges from sensitive areas
Use Impairment	n/a	n/a	16 years
Financial Capability	4 years	0 years	0 years
Grant/Loan Availability	0 years	4 years	0 years
User fees/rate Structures	0 years	0 years	0 years
Other Funding Mechanisms	0 years	0 years	0 years
Schedule:	8 years	4 years	16 years (removal of discharge from sensitive area would occur within first 2 years)

The time periods presented in this guidance should be viewed as general boundaries to aid all parties in establishing reasonable and effective CSO control implementation schedules.

It is important to note that the final CSO control implementation schedule established for each permittee should be a time period that is negotiated between the permittee and EPA and state NPDES authorities based on the specific circumstances of each permittee's environmental and financial situation, plus the specific nature of any engineering and construction requirements. The time periods presented in this guidance should be viewed as general boundaries to aid all parties in establishing reasonable and effective CSO control implementation schedules.

ACRONYM LIST

CPH	Cost Per Household
CPI	Consumer Price Index
CSS	Combined Sewer System
CSO	Combined Sewer Overflow
CWA	Clean Water Act
EPA	Environmental Protection Agency
LTCP	Long Term Control Plan
MHI	Median Household Income
NMC	Nine Minimum Controls
NPDES	National Pollutant Discharge Elimination System
SRF	State Revolving Fund
WQS	Water Quality Standards
WWT	Wastewater Treatment

State Data Centers

Alabama
Center for Business and Economic Research
University of Alabama
Tuscaloosa, AL 35487
(205) 348-6191

Alaska
Research and Analysis
Department of Labor
Juneau, AK 99802
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Arizona
Arizona Department of Economic Security
Phoenix, AZ 85005
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Arkansas
University of Arkansas
Little Rock, AR 72204
(501) 569-8530

California
Department of Finance
Sacramento, CA 95814
(916) 322-4651

Colorado
Colorado Department of Local Affairs
Denver, CO 80203
(303) 866-2156

Connecticut
Connecticut Office of Policy and Management
Hartford, CT 06106
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Delaware Development Office
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Florida
Executive Office of the Governor
Tallahassee, FL 32399
(904) 487-2114

Georgia
Office of Planning and Budget
Atlanta, GA 30334
(404) 656-0911

Guam
Guam Department of Commerce
Tamuning, Guam 96911
(671) 646-5841

Hawaii
State Department of Business and Economic Development
Honolulu, HI 96804
(808) 548-3082

Idaho
Idaho Department of Commerce
Boise, ID 83720
(208) 334-2470

Illinois
Illinois Bureau of the Budget
Springfield, IL 62706
(217) 782-1381

Indiana
Indiana State Data Center
Indiana State Library
Indianapolis, IN 46204
(317) 232-3733

Iowa
State Library of Iowa
Des Moines, IA 50319
(515) 281-4350

Kansas
State Library
Topeka, KS 66612
(913) 296-3296

Kentucky
Urban Research Institute
University of Louisville
Louisville, KY 40292
(502) 588-7990

Louisiana
Office of Planning and Budget
Baton Rouge, LA 70804
(504) 342-7410

Maine
Maine Department of Labor
Augusta, ME 04330
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Maryland
Maryland Department of State Planning
Baltimore, MD 21201
(301) 225-4450

Massachusetts
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University of Massachusetts
Amherst, MA 01003
(413) 545-3460

Michigan
Department of Management and Budget
Lansing, MI 48909
(517) 373-7910

Minnesota
State Demographer's Office
Minnesota State Planning Agency
St. Paul MN 55155
(612) 297-2360

Mississippi
Center for Population Studies
University of Mississippi
University, MS 38677
(601) 232-7288

Missouri
Missouri State Library
Jefferson City, MO 65102
(314) 751-3615

State Data Centers

Montana
Montana Department of Commerce
Helena, MT 59620
(406) 444-2896

Nebraska
Center for Applied Urban Research
University of Nebraska- Omaha
Omaha, NE 68182
(402) 595-2311

Nevada
Nevada State Library
Carson City, NV 89710
(702) 885-5160

New Hampshire
Office of State Planning
Concord, NH 03301
(603) 271-2155

New Jersey
New Jersey Department of Labor
Trenton, NJ 08625
(609) 984-2593

New Mexico
Economic Development and Tourism Department
Sante Fe, NM 87503
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New York
Department of Economic Development
Albany, NY 12245
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Office of State Budget and Management
Raleigh, NC 27603
(919) 733-7061

North Dakota
Department of Agricultural Economics
North Dakota State University
Fargo, ND 58105
(701) 237-8621

Ohio
Department of Development
Columbus, OH 43266
(614) 466-2115

Oklahoma
Department of Commerce
Oklahoma City, OK 73126
(405) 841-5184

Oregon Center for Population Research and Census
Portland State University
Portland, OR 97207
(717) 948-6336

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Puerto Rico Planning Board
San Juan, PR 00940
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Rhode Island
Office of Municipal Affairs
Providence, RI 02908
(401) 277-6493

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South Carolina Budget and Control Board
Columbia, SC 29201
(803) 734-3780

South Dakota
Business Research Bureau
University of South Dakota
Vermillion, SD 57069
(605) 677-5287

Tennessee
State Planning Office
Nashville, TN 37219
(615) 741-1676

Texas
Department of Commerce
Capital Station
Austin, Tx 78711
(512) 472-9667

Utah
Office of Planning and Budget
Salt Lake City, UT 84114
(801) 538-1036

Vermont
Office of Policy Research and Coordination
Montpelier, VT 05602
(802) 828-3326

Virgin Islands
Caribbean Research Institute
University of the Virgin Islands
Charlotte Amalie
St. Thomas, VI 00802
(809) 776-9200

Virginia
Virginia Employment Commission
Richmond, VA 23219
(804) 786-8308

Washington
Office of Financial Management
Olympia, WA 98504
(206) 586-2504

West Virginia
Office of Community and Industrial Development
Charleston, WV 25305
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Wisconsin
Demographic Service Center
Madison, WI 53707
(608) 266-1927

Wyoming
Department of Administration and Fiscal Control
Cheyenne, WY 82002
(307) 777-7504

Present Value Factors

Years	Interest Rate 1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877	0.870
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826	0.812	0.797	0.783	0.769	0.756
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751	0.731	0.712	0.693	0.675	0.658
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683	0.659	0.636	0.613	0.592	0.572
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621	0.593	0.567	0.543	0.519	0.497
6	0.942	0.888	0.837	0.790	0.746	0.705	0.666	0.630	0.596	0.564	0.535	0.507	0.480	0.456	0.432
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513	0.482	0.452	0.425	0.400	0.376
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467	0.434	0.404	0.376	0.351	0.327
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424	0.391	0.361	0.333	0.308	0.284
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386	0.352	0.322	0.295	0.270	0.247
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350	0.317	0.287	0.261	0.237	0.215
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319	0.286	0.257	0.231	0.208	0.187
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290	0.258	0.229	0.204	0.182	0.163
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263	0.232	0.205	0.181	0.160	0.141
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239	0.209	0.183	0.160	0.140	0.123
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218	0.188	0.163	0.141	0.123	0.107
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198	0.170	0.146	0.125	0.108	0.093
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180	0.153	0.130	0.111	0.095	0.081
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164	0.138	0.116	0.098	0.083	0.070
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149	0.124	0.104	0.087	0.073	0.061
25	0.780	0.610	0.478	0.375	0.295	0.233	0.184	0.146	0.116	0.092	0.074	0.059	0.047	0.038	0.030
30	0.742	0.552	0.412	0.308	0.231	0.174	0.131	0.099	0.075	0.057	0.044	0.033	0.026	0.020	0.015

Annualization Factors

Year	Interest Rate 0.005	0.01	0.015	0.02	0.025	0.03	0.035	0.04	0.045	0.05	0.055	0.06
1	1.0050	1.0100	1.0150	1.0200	1.0250	1.0300	1.0350	1.0400	1.0450	1.0500	1.0550	1.0600
2	0.5038	0.5075	0.5113	0.5150	0.5188	0.5226	0.5264	0.5302	0.5340	0.5378	0.5416	0.5454
3	0.3367	0.3400	0.3434	0.3468	0.3501	0.3535	0.3569	0.3603	0.3638	0.3672	0.3707	0.3741
4	0.2531	0.2563	0.2594	0.2626	0.2658	0.2690	0.2723	0.2755	0.2787	0.2820	0.2853	0.2886
5	0.2030	0.2060	0.2091	0.2122	0.2152	0.2184	0.2215	0.2246	0.2278	0.2310	0.2342	0.2374
6	0.1696	0.1725	0.1755	0.1785	0.1815	0.1846	0.1877	0.1908	0.1939	0.1970	0.2002	0.2034
7	0.1457	0.1486	0.1516	0.1545	0.1575	0.1605	0.1635	0.1666	0.1697	0.1728	0.1760	0.1791
8	0.1278	0.1307	0.1336	0.1365	0.1395	0.1425	0.1455	0.1485	0.1516	0.1547	0.1579	0.1610
9	0.1139	0.1167	0.1196	0.1225	0.1255	0.1284	0.1314	0.1345	0.1376	0.1407	0.1438	0.1470
10	0.1028	0.1056	0.1084	0.1113	0.1143	0.1172	0.1202	0.1233	0.1264	0.1295	0.1327	0.1359
11	0.0937	0.0965	0.0993	0.1022	0.1051	0.1081	0.1111	0.1141	0.1172	0.1204	0.1236	0.1268
12	0.0861	0.0888	0.0917	0.0946	0.0975	0.1005	0.1035	0.1066	0.1097	0.1128	0.1160	0.1193
13	0.0796	0.0824	0.0852	0.0881	0.0910	0.0940	0.0971	0.1001	0.1033	0.1065	0.1097	0.1130
14	0.0741	0.0769	0.0797	0.0826	0.0855	0.0885	0.0916	0.0947	0.0978	0.1010	0.1043	0.1076
15	0.0694	0.0721	0.0749	0.0778	0.0808	0.0838	0.0868	0.0899	0.0931	0.0963	0.0996	0.1030
16	0.0652	0.0679	0.0708	0.0737	0.0766	0.0796	0.0827	0.0858	0.0890	0.0923	0.0956	0.0990
17	0.0615	0.0643	0.0671	0.0700	0.0729	0.0760	0.0790	0.0822	0.0854	0.0887	0.0920	0.0954
18	0.0582	0.0610	0.0638	0.0667	0.0697	0.0727	0.0758	0.0790	0.0822	0.0855	0.0889	0.0924
19	0.0553	0.0581	0.0609	0.0638	0.0668	0.0698	0.0729	0.0761	0.0794	0.0827	0.0862	0.0896
20	0.0527	0.0554	0.0582	0.0612	0.0641	0.0672	0.0704	0.0736	0.0769	0.0802	0.0837	0.0872

Annualization Factors

Year	Interest Rate 0.065	0.07	0.075	0.08	0.085	0.09	0.095	0.1	0.105	0.11	0.115	0.12
1	1.0650	1.0700	1.0750	1.0800	1.0850	1.0900	1.0950	1.1000	1.1050	1.1100	1.1150	1.1200
2	0.5493	0.5531	0.5569	0.5608	0.5646	0.5685	0.5723	0.5762	0.5801	0.5839	0.5878	0.5917
3	0.3776	0.3811	0.3845	0.3880	0.3915	0.3951	0.3986	0.4021	0.4057	0.4092	0.4128	0.4163
4	0.2919	0.2952	0.2986	0.3019	0.3053	0.3087	0.3121	0.3155	0.3189	0.3223	0.3258	0.3292
5	0.2406	0.2439	0.2472	0.2505	0.2538	0.2571	0.2604	0.2638	0.2672	0.2706	0.2740	0.2774
6	0.2066	0.2098	0.2130	0.2163	0.2196	0.2229	0.2263	0.2296	0.2330	0.2364	0.2398	0.2432
7	0.1823	0.1856	0.1888	0.1921	0.1954	0.1987	0.2020	0.2054	0.2088	0.2122	0.2157	0.2191
8	0.1642	0.1675	0.1707	0.1740	0.1773	0.1807	0.1840	0.1874	0.1909	0.1943	0.1978	0.2013
9	0.1502	0.1535	0.1568	0.1601	0.1634	0.1668	0.1702	0.1736	0.1771	0.1806	0.1841	0.1877
10	0.1391	0.1424	0.1457	0.1490	0.1524	0.1558	0.1593	0.1627	0.1663	0.1698	0.1734	0.1770
11	0.1301	0.1334	0.1367	0.1401	0.1435	0.1469	0.1504	0.1540	0.1575	0.1611	0.1648	0.1684
12	0.1226	0.1259	0.1293	0.1327	0.1362	0.1397	0.1432	0.1468	0.1504	0.1540	0.1577	0.1614
13	0.1163	0.1197	0.1231	0.1265	0.1300	0.1336	0.1372	0.1408	0.1444	0.1482	0.1519	0.1557
14	0.1109	0.1143	0.1178	0.1213	0.1248	0.1284	0.1321	0.1357	0.1395	0.1432	0.1470	0.1509
15	0.1064	0.1098	0.1133	0.1168	0.1204	0.1241	0.1277	0.1315	0.1352	0.1391	0.1429	0.1468
16	0.1024	0.1059	0.1094	0.1130	0.1166	0.1203	0.1240	0.1278	0.1316	0.1355	0.1394	0.1434
17	0.0989	0.1024	0.1060	0.1096	0.1133	0.1170	0.1208	0.1247	0.1285	0.1325	0.1364	0.1405
18	0.0959	0.0994	0.1030	0.1067	0.1104	0.1142	0.1180	0.1219	0.1259	0.1298	0.1339	0.1379
19	0.0932	0.0968	0.1004	0.1041	0.1079	0.1117	0.1156	0.1195	0.1235	0.1276	0.1316	0.1358
20	0.0908	0.0944	0.0981	0.1019	0.1057	0.1095	0.1135	0.1175	0.1215	0.1256	0.1297	0.1339

Inflation Adjustment Factors

Years	Interest Rate 1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	1.010	1.020	1.030	1.040	1.050	1.060	1.070	1.080	1.090	1.100	1.110	1.120	1.130	1.140	1.150
2	1.020	1.040	1.061	1.082	1.103	1.124	1.145	1.166	1.188	1.210	1.232	1.254	1.277	1.300	1.323
3	1.030	1.061	1.093	1.125	1.158	1.191	1.225	1.260	1.295	1.331	1.368	1.405	1.443	1.482	1.521
4	1.041	1.082	1.126	1.170	1.216	1.262	1.311	1.360	1.412	1.464	1.518	1.574	1.630	1.689	1.749
5	1.051	1.104	1.159	1.217	1.276	1.338	1.403	1.469	1.539	1.611	1.685	1.762	1.842	1.925	2.011
6	1.062	1.126	1.194	1.265	1.340	1.419	1.501	1.587	1.677	1.772	1.870	1.974	2.082	2.195	2.313
7	1.072	1.149	1.230	1.316	1.407	1.504	1.606	1.714	1.828	1.949	2.076	2.211	2.353	2.502	2.660
8	1.083	1.172	1.267	1.369	1.477	1.594	1.718	1.851	1.993	2.144	2.305	2.476	2.658	2.853	3.059
9	1.094	1.195	1.305	1.423	1.551	1.689	1.838	1.999	2.172	2.358	2.558	2.773	3.004	3.252	3.518
10	1.105	1.219	1.344	1.480	1.629	1.791	1.967	2.159	2.367	2.594	2.839	3.106	3.395	3.707	4.046
11	1.116	1.243	1.384	1.539	1.710	1.898	2.105	2.332	2.580	2.853	3.152	3.479	3.836	4.226	4.652
12	1.127	1.268	1.426	1.601	1.796	2.012	2.252	2.518	2.813	3.138	3.498	3.896	4.335	4.818	5.350
13	1.138	1.294	1.469	1.665	1.886	2.133	2.410	2.720	3.066	3.452	3.883	4.363	4.898	5.492	6.153
14	1.149	1.319	1.513	1.732	1.980	2.261	2.579	2.937	3.342	3.797	4.310	4.887	5.535	6.261	7.076
15	1.161	1.346	1.558	1.801	2.079	2.397	2.759	3.172	3.642	4.177	4.785	5.474	6.254	7.138	8.137
16	1.173	1.373	1.605	1.873	2.183	2.540	2.952	3.426	3.970	4.595	5.311	6.130	7.067	8.137	9.358
17	1.184	1.400	1.653	1.948	2.292	2.693	3.159	3.700	4.328	5.054	5.895	6.866	7.986	9.276	10.761
18	1.196	1.428	1.702	2.026	2.407	2.854	3.380	3.996	4.717	5.560	6.544	7.690	9.024	10.575	12.375
19	1.208	1.457	1.754	2.107	2.527	3.026	3.617	4.316	5.142	6.116	7.263	8.613	10.197	12.056	14.232
20	1.220	1.486	1.806	2.191	2.653	3.207	3.870	4.661	5.604	6.727	8.062	9.646	11.523	13.743	16.367
25	1.282	1.641	2.094	2.666	3.386	4.292	5.427	6.848	8.623	10.835	13.585	17.000	21.231	26.462	32.919
30	1.348	1.811	2.427	3.243	4.322	5.743	7.612	10.063	13.268	17.449	22.892	29.960	39.116	50.950	66.212

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 2 4 2014

MEMORANDUM

SUBJECT: Financial Capability Assessment Framework for Municipal Clean Water Act Requirements

FROM: Ken Kopocis
Deputy Assistant Administrator
Office of Water (OW)

Cynthia Giles
Assistant Administrator
Office of Enforcement and Compliance Assurance (OECA)

TO: Regional Administrators
Regional Water Division Directors
Regional Enforcement Division Directors

In May of 2012, we distributed the Integrated Municipal Stormwater and Wastewater Planning Approach Framework (Integrated Planning Framework). Since that time, we have made solid progress in promoting integrated approaches to meet Clean Water Act (CWA) obligations. Thanks to the hard work of regional and headquarters staff, and the active engagement of cities, many of our enforcement settlements now embody integrated planning principles in the structure and schedule for injunctive relief or explicitly include integrated planning as part of the settlement. We have also seen an increasing number of municipalities and local authorities moving towards developing integrated plans to support the development of their NPDES permits. We have been working with EPA Regions and States to assist in that process.

As the implementation of the Integrated Planning Framework has progressed and evolved, we have been actively engaged with stakeholders on ways to build on our efforts. Those discussions found a natural focus on issues related to the financial capability of permittees working toward our shared goals of clean water. One consistent theme that emerged was the benefit of more clearly articulating the flexibility available under the existing guidance. EPA continues to be guided by the 1997 "Combined Sewer Overflows – Guidance for Financial Capability Assessment

and Schedule Development" (FCA Guidance) that provides an aid for assessing financial capability as part of negotiating schedules for implementing CWA requirements for municipalities and local authorities. The FCA Guidance also encourages permittees "to submit any additional documentation that would create a more accurate and complete picture of their financial capability" that may "affect the conclusion" of the analysis described in the guidance.

As part of EPA's commitment to implementing CWA objectives in a sustainable manner, we have developed the attached "Financial Capability Assessment Framework" (FCA Framework). The FCA Framework has been greatly informed by the comments and experiences of a variety of stakeholders and financial experts. The FCA Framework identifies the key elements EPA uses in working with permittees to evaluate how their financial capability should influence schedules. In addition, the FCA Framework provides examples of additional information that may help some communities provide a "more accurate and complete picture" of their financial capability as is envisioned in the FCA guidance. We will be posting the FCA Framework to our website as an important next step in the pursuit of integrated planning approaches and in our ongoing work with municipalities and local authorities to achieve our shared goals of protecting our nation's waters. While this memorandum releases the FCA Framework, we know that we will continue to learn and refine our understanding of the issues surrounding financial capability assessments as we use it moving forward. We will continue to look for ways to improve the Framework as we gain new insights and additional information.

We look forward to continue working with the Regions on these important issues and encourage you to contact Deborah Nagle, Director, Water Permits Division (nagle.deborah@epa.gov) and Mark Pollins, Director, Water Enforcement Division (pollins.mark@epa.gov) with any questions you might have.

Attachment

cc: Regional Permit and Enforcement Liaisons

FINANCIAL CAPABILITY ASSESSMENT FRAMEWORK

November 24, 2014

Purpose

The Environmental Protection Agency (EPA) is committed to working with state and local government partners to assist local municipalities and local authorities to meet Clean Water Act (CWA) obligations in a manner that recognizes the unique financial challenges that local jurisdictions face. This financial capability assessment framework is intended to provide additional examples and greater clarity on the flexibilities built into existing guidance that local governments or authorities can use in assessing their financial capability, and the relationship between that assessment and consideration of schedules for permit and consent decree implementation. This framework builds on the progress already made in the May 2012 "Integrated Municipal Stormwater and Wastewater Planning Approach Framework," and the experience gained from talking with communities about their financial capability in actual, on the ground circumstances. Integrated Planning has been helping in identifying a permittee's relative priorities for projects based on the relative importance of adverse impacts on human health and water quality and the municipality's financial capability.

Background

Local governments and authorities want to provide clean water for their communities, and they play an essential role in providing wastewater and stormwater infrastructure and services for their citizens, businesses and institutions. These municipal functions have been an important part of implementing the CWA to protect public health and improve water quality in streams, lakes, bays, and other waters nationwide. However, significant water quality challenges remain. Public officials remain strong supporters of the CWA goals and objectives by directing the public investments that are necessary to comply with the Act and to provide clean water for their citizens. Many local governments face complex water quality issues that are heightened by the need to address population growth or decline, increases in impervious surfaces, source water supply needs, and aging infrastructure. In recent years, many local governments and authorities have increased investments in their wastewater and stormwater infrastructure through capital projects to rehabilitate existing systems, improve operation and maintenance, and address additional regulatory requirements. As programs are implemented to improve water quality and attain CWA objectives, many state and local government partners find themselves facing difficult economic challenges with limited resources and financial capability. We recognize these challenging conditions and are working with states and local governments to develop and implement new approaches that will achieve water quality goals at lower costs and in a manner that addresses the most pressing problems first.

Long-term approaches to meeting CWA objectives should be sustainable and within a local government or authority's financial capability. The financial capability of these entities and other relevant factors are important to consider when developing appropriate schedules for infrastructure projects in permits or enforcement actions to help protect human health and the environment. EPA's financial capability assessment guidance, "Combined Sewer Overflows:

Guidance for Financial Capability Assessment and Schedule Development" (FCA Guidance) (EPA 832-B-97-004) provides a reference point to aid all parties in negotiating reasonable and effective schedules for implementing CWA requirements, and the flexibility to take into account local considerations that may not be fully captured by the approach detailed in the guidance. As described in more detail in this Framework, the guidance provides for consideration of the impact on residential rate payers and the financial capability of the permittee using a suite of indicators, as well as allowing schedules to be responsive to circumstances unique to that community, while advancing the mutual goal to protect clean water. The FCA Guidance encourages permittees to provide any additional information that would be useful in understanding those unique or atypical circumstances and how they may affect CWA schedules, so that all relevant information presented by a community can be taken into account to ensure that a full understanding of financial capability guides the development of schedules.

Financial Capability Assessment

The following are key elements of EPA's approach to the evaluation of the financial capability of municipalities to inform implementation schedules, both in permits and enforcement actions. The elements are fully compatible with the FCA Guidance, integrated planning approaches, and the flexibility embodied in both.

1. **The 1997 FCA Guidance identifies a valuable assessment that provides a common basis for financial burden discussions between the permittee, EPA and state NPDES authorities. Permittees have the option of submitting additional information that would create a more accurate and complete picture of their financial conditions.** The financial capability assessment described in the 1997 FCA Guidance identifies information that provides a basis for a general comparison of financial conditions between communities across the country and provides a consistent assessment of basic financial indicators as part of the overall analysis. Additional information that the community provides on its unique financial circumstances will be considered so that schedules take local considerations into account. Where appropriate, this information can result in schedules that are different than the schedules suggested by the baseline analysis suggested in the 1997 FCA Guidance.

2. **Financial capability is on a continuum.** Although the FCA Guidance approach categorizes financial burden as "high, medium, or low," this does not mean that schedules will be rigidly set according to the break points between the categories. For example, two communities whose total residential share of costs are 1.1% and 1.9% of median household income (MHI) are both categorized in the FCA Guidance as having a "medium" burden for the Residential Indicator (RI). All other things being equal, the appropriate schedules for those communities are likely to be different. Similarly, all other things being equal, two communities whose residential share of costs are 1.9% and 2.1% of MHI would be more likely to have similar overall compliance timeframes, even though one community is ranked as having a "medium" burden and the other as having a "high" burden. Finally, additional information submitted by the community may affect the length of the schedule regardless of where the community is on the "high, medium, and low" continuum.

3. **EPA will consider all CWA costs presented in the analysis described in the FCA Guidance**. EPA originally published the FCA Guidance to assist in negotiating schedules for communities with combined sewer systems, as these typically represent the most expensive CWA compliance issues. The FCA Guidance has since been recognized as equally suitable for considering other municipal CWA obligations as well, such as those related to separate sanitary sewer systems. With the release of EPA's 2012 Integrated Planning Framework, the Agency clarified that the financial capability analysis could include costs of: stormwater and wastewater; ongoing asset management or system rehabilitation programs; existing, CWA related capital improvement programs; collection systems and treatment facilities; and other CWA obligations required by state or other regulators. Where the costs of multiple CWA obligations are included in an FCA, each of those costs should be enumerated separately, so as to provide an understanding of how each contributes to the overall analysis.

4. **When presented, Safe Drinking Water Act (SDWA) obligations will be considered, primarily as additional information about a permittee's financial capability.** EPA believes that the SDWA obligations of a community can be an important consideration in establishing schedules for implementing integrated plans. EPA recognizes that both clean water and drinking water costs are often covered through charges on a single rate base. One component of a financial capability assessment includes an evaluation of the residential indicator that is based on only CWA costs as this best reflects the intended use of the metric and allows for comparisons with other communities. Drinking water costs may be reflected in other components of a financial capability assessment. For example, the financial capability indicator includes consideration of bond rating of the entity that issues debt to fund the permittee's capital project, which can be impacted by both wastewater and drinking water obligations for a permittee that provides both services. If a community has incurred general obligation debt associated with the SDWA, these obligations would be considered in the indicator "overall net debt as a percent of full market property value." In addition, as discussed below, additional information, including information regarding drinking water obligations, may be submitted for consideration in analyzing financial capability. To the extent that drinking water costs are not fully addressed by these other components, communities are encouraged to provide additional information about these costs.

5. **Communities should demonstrate how the CWA work included as costs in the financial capability assessment will be implemented, including appropriate assurances that those expenditures will be made.**

The Financial Capability Assessment Guidance and Examples of Additional Information that are Relevant to a Consideration of Financial Capability

The specific approaches laid out in the FCA Guidance provide a good foundation for the assessment of financial capability. As stated in the guidance and outlined in this Framework, communities can build on that foundation to include additional relevant information. The FCA Guidance presents a two-phased approach to assessing overall financial capability. The first phase assesses the impact on residential customers, and the first step is to calculate the portion of

the annual costs that would be borne by residential households for both current and projected Clean Water Act related expenses. The residential share of the annual costs of CWA obligations is then compared to the MHI of the service area. MHI is calculated using current census data and may be adjusted based on the current Consumer Price Index. Finally, the CWA compliance costs per household are divided by the adjusted MHI to calculate the residential indicator (RI). The FCA Guidance then identifies various ranges of RI scores as "low, mid-range or high" levels of burden. In situations where there are unique circumstances that would affect the conclusion of the first phase of the assessment, additional information documenting unique financial conditions may be submitted.

The second phase of the financial capability analysis assesses the financial strength of the permittee. Six indicators are used to evaluate the debt, socioeconomic and financial conditions that affect a permittee's financial capability to implement CWA controls necessary for compliance with the Act. These include bond ratings, overall net debt as a percent of full market property value, unemployment rate, median household income, property tax revenue collection rate, and property taxes as a percent of full market property value. In the Guidance, EPA has established benchmarks for each of the six indicators showing whether the indicator reflects a "weak", "mid-range", or "strong" financial capability. These benchmarks are used to generate an overall score of a permittee's financial capability.

The residential indicator calculated in phase one and the permittee capability indicators analyzed in phase two are evaluated together in a Financial Capability Matrix to assess the level of financial burden. The level of burden is then used to inform discussions to establish an appropriate schedule for meeting CWA obligations in permits and enforcement actions. EPA uses these indicators, including the annualized costs as a percent of MHI, to help assess when costs are reaching levels that may represent a high burden on ratepayers and that longer compliance timeframes are likely to be appropriate to spread the cost over a longer period. EPA does not view or use the Financial Capability Matrix as a rigid metric that points to a given schedule length or threshold over which the costs are unaffordable.

Permittees have suggested and the FCA Guidance recognizes that the two step analysis may not provide a complete representation of financial capability. As noted above, other relevant financial or demographic information presented that illustrates the unique or atypical circumstances faced by a permittee will also be considered in evaluating financial capability. The presentation of additional information can be very valuable in analyzing financial capability, and the submission of this type of information has become fairly common practice. For example, in many consent decree negotiations, additional information has resulted in the establishment of schedules that differ from the ones suggested by the baseline analysis described in the FCA Guidance.

Some examples of information that may be relevant in negotiating schedules to be included in permits and consent decrees are given below. In order for such information to adequately illustrate that a permittee's situation is atypical, EPA encourages permittees to compare any additional information on their circumstances to national averages or to that of other permittees.

The examples given below are not intended to be a complete list, nor a list of factors that will be relevant in every community. Rather it provides an illustration of information that may prove useful in some instances.

Examples of Information Related to Residential Impacts:

1. Income distribution by quintile, geography or other breakdown, illustrating how income distribution in the service area differs from comparable data on the national level or for similar cities.

2. Where cities have adopted differential rates for low income customers, the income distribution that led to that rate structure.

3. Information about service area poverty rates and trends.

4. Projected, current and historical sewer, and stormwater fees as a percentage of household income, quintile, geography or other breakdown.

5. Information on sewer and water usage for various classes of ratepayers or by type of dwelling unit.

6. Information on the percent of households who own versus rent.

Examples of Information Related to Financial Strength:

1. Historical population trends or population projections.

2. Service area unemployment data and trends, or other labor market indicators, including unemployment on an absolute basis.

3. Rate or revenue models, including dynamic financial planning models showing the projections of impacts over the program period. All revenue sources tied to CWA obligations may be included as appropriate.

4. Rate determination studies used to develop and support recent rate increases.

5. Data and trends on late payments, disconnection notices, service terminations, uncollectable accounts, or revenue collection rates.

6. Historical increases in rates or other dedicated revenue streams.

7. State or local legal restrictions or limitations on property taxes, other revenue streams or debt levels.

8. Other costs or financial obligations, such as those that relate to drinking water or other infrastructure, that significantly affect a permittee's ability to raise revenue.

9. Circumstances that may affect a permittee's bond rating. For instance, incurring debt beyond certain thresholds may negatively impact the permittee's bond rating, thus reducing the ability to raise capital.

10. Financial plans that show the implications of incurring additional debt for a permittee's ability to secure financing, including projections of metrics such as debt ratios, debt service coverage, debt per customer, days of cash on hand, days

of working capital and other metrics used by rating agencies. Such data should be benchmarked to metrics such as rating agency medians and relative to similar entities. This will be especially relevant where the permittee does not have a bond rating.

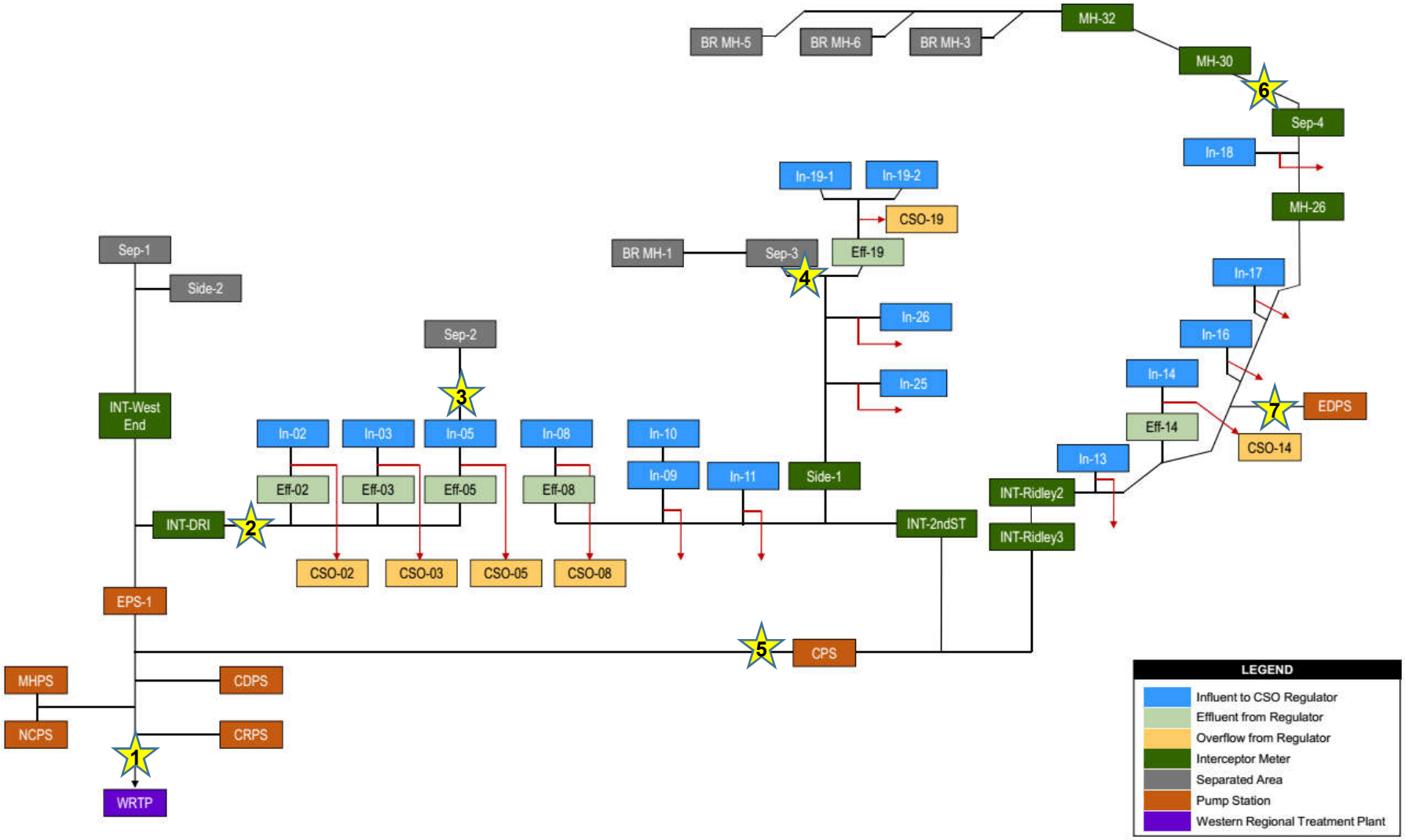
11. Extraordinary stressors such as those from natural disasters, municipal bankruptcies, unusual capital market conditions, or other situations which impact a permittee's ability to raise revenue or acquire needed financing. When such stressors occur, they may also provide support for making changes to existing schedules.

Basis for Allocating CSO LTCP Costs to Municipalities, Authorities, & Industries
Total Annual Excess Wet Weather Volume and
Percent of Total Annual Excess Wet Weather Volume

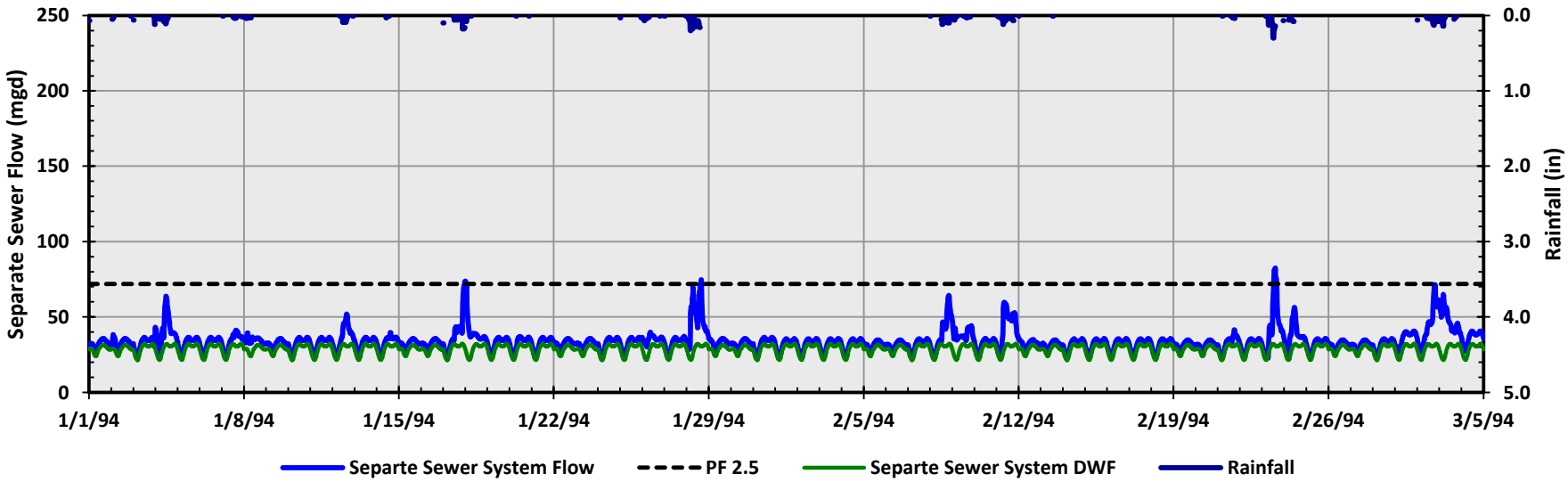
Year	A Annual CSO Volume (MG)	B Excess Wet Weather Volume from Separate Sewer System (MG)	C = A +B Total Excess Wet Weather Volume (MG)	D = A / C Annual CSO Volume (%)	E = B / C Excess Wet Weather Volume from Separate Sewer System (%)
1994	327	34	361	90.7%	9.3%
1995	201	18	219	91.8%	8.2%
1996	371	49	420	88.4%	11.6%
Average	300	33	333	90.0%	10.0%

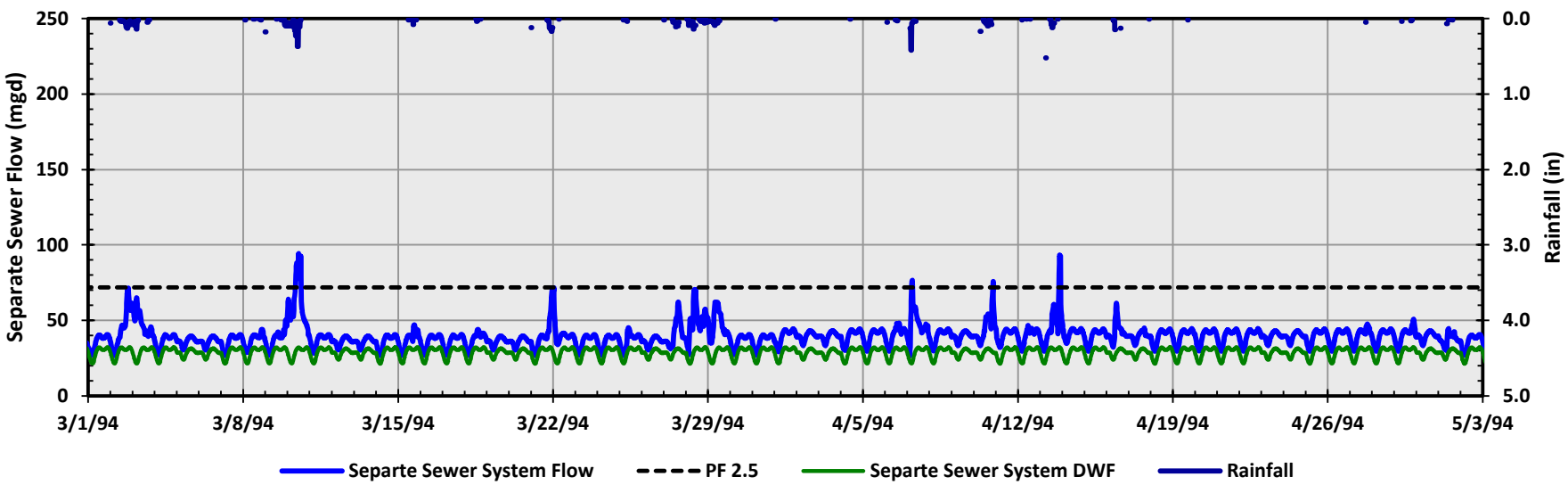
Basis for Allocating CSO LTCP Costs to Municipalities, Authorities, & Industries
Separate Sewer System Flows to Western Regional Treatment Plant
Model Locations to Calculate Separate Sewer System Flow

Separate Sewer System Flow = 1 – 2 + 3 – 5 + 4 + 6 + 7



Basis for Allocating CSO LTCP Costs to Municipalities, Authorities, & Industries
Separate Sewer System Flows to Western Regional Treatment Plant
Calibrated Model Results for CSO LTCP Climate Period





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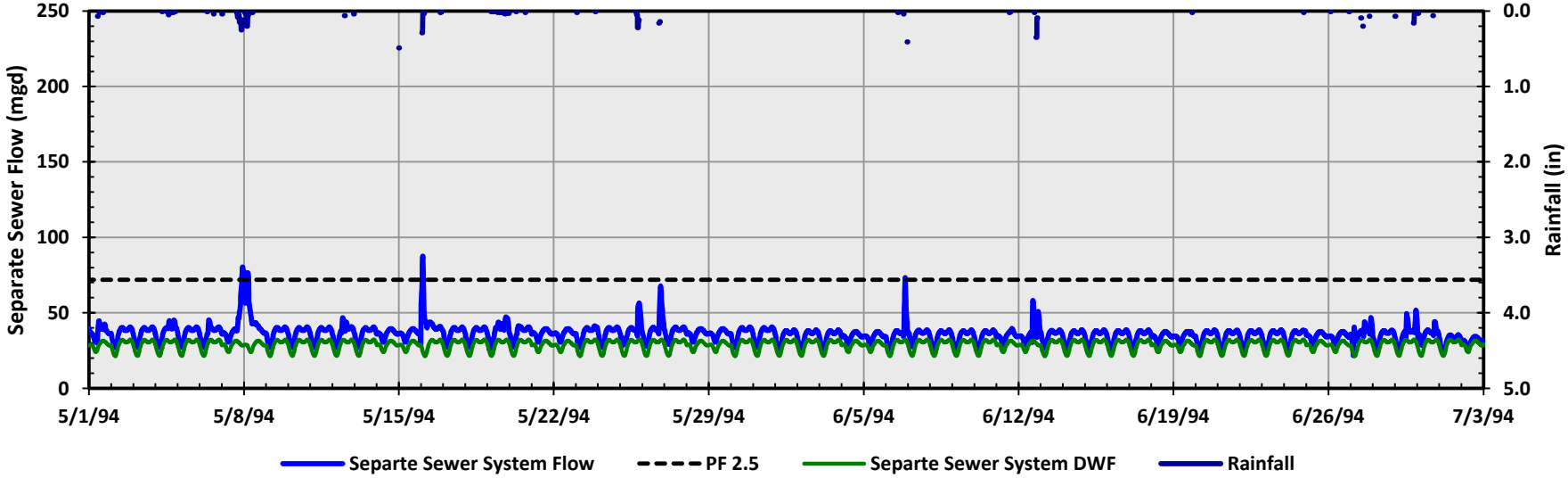

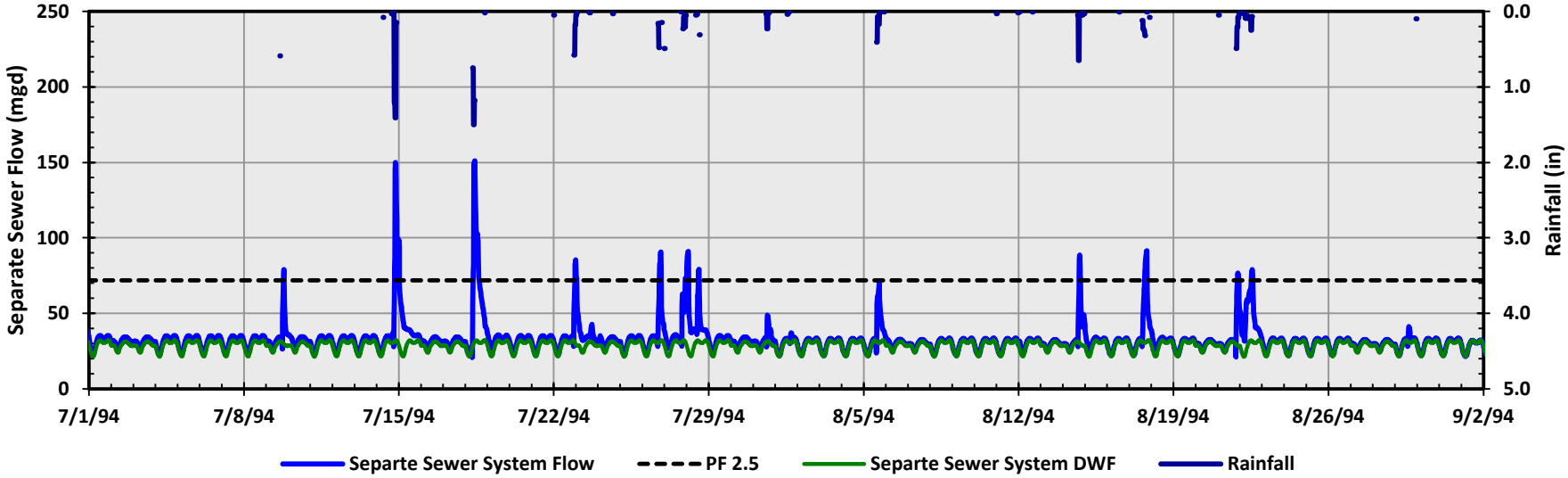

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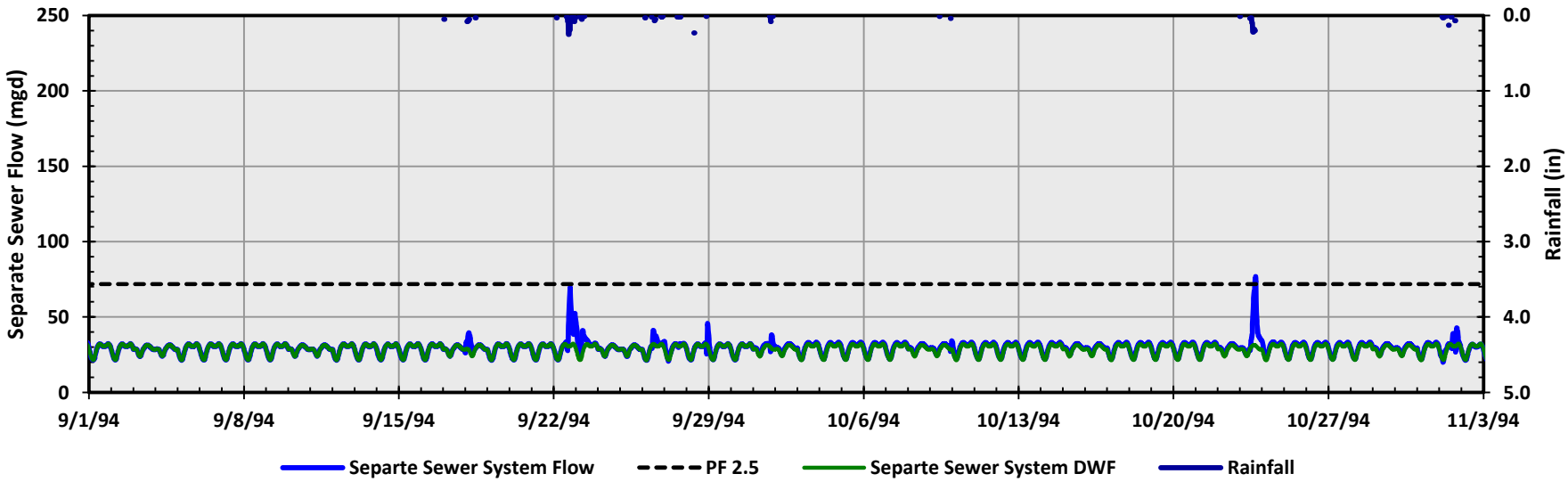

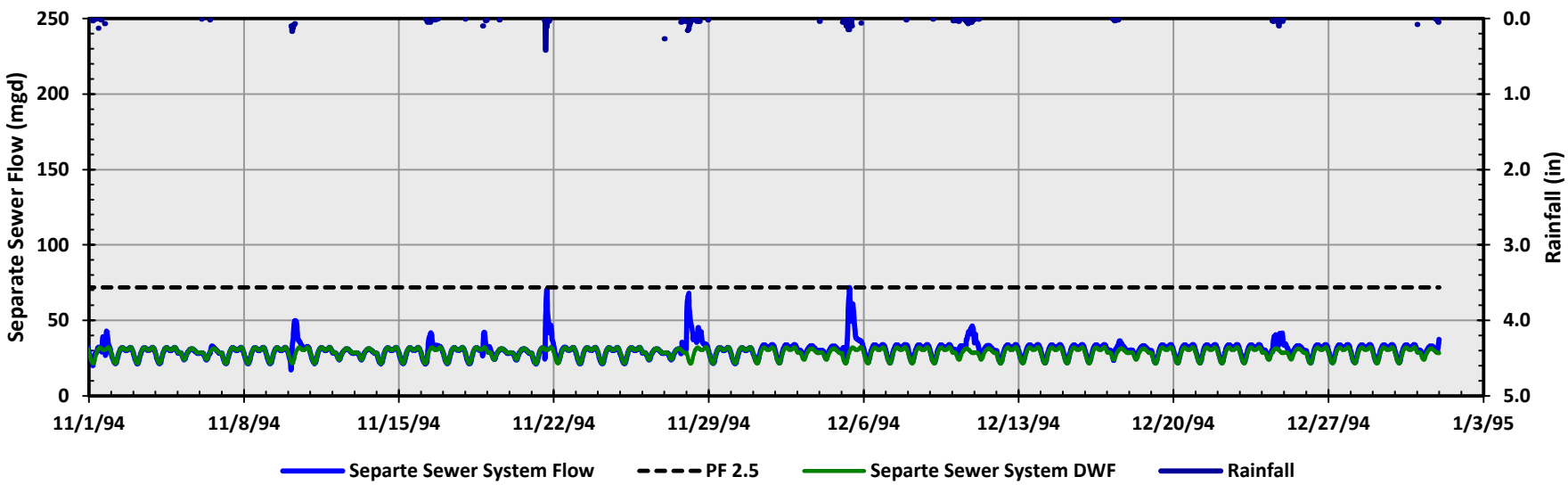

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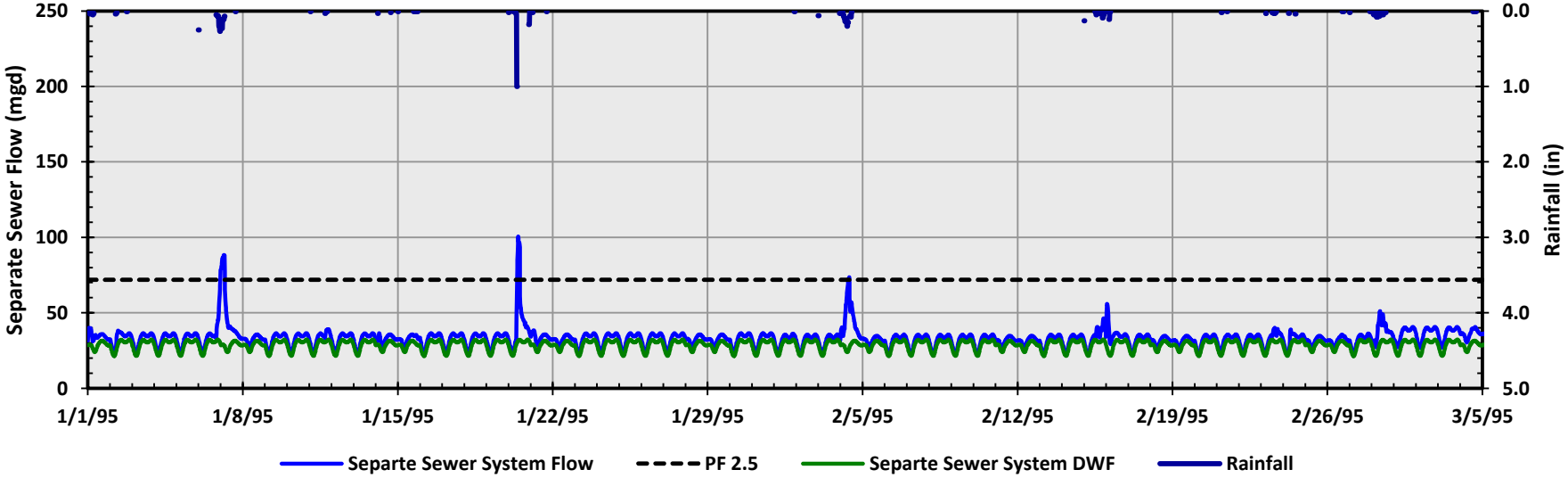

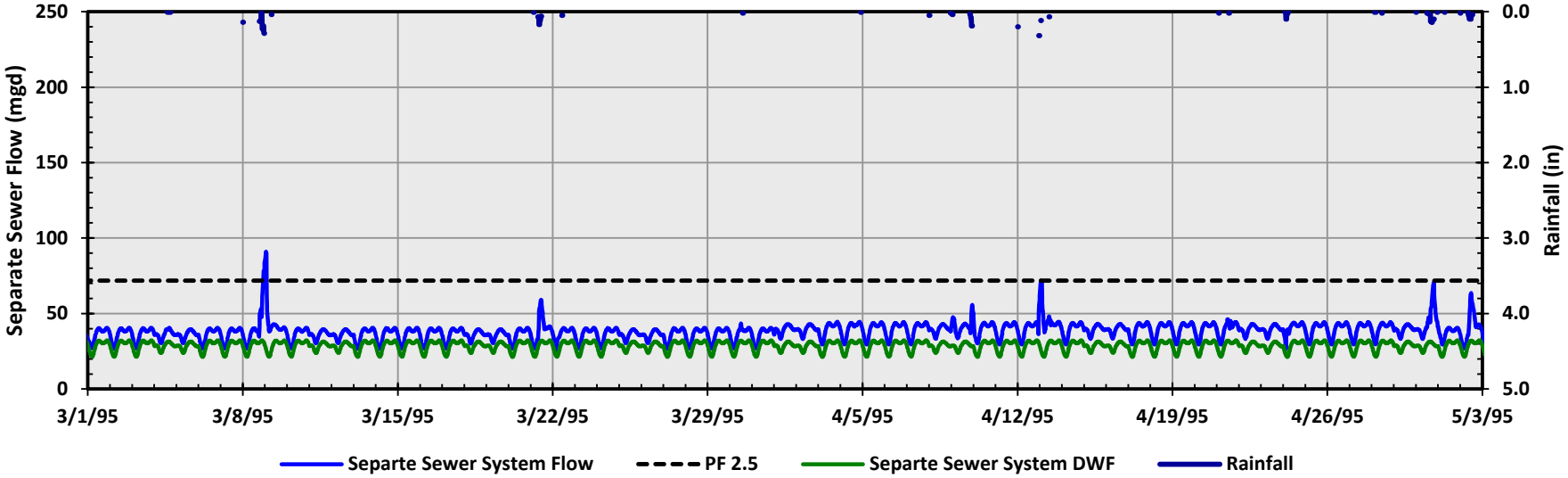

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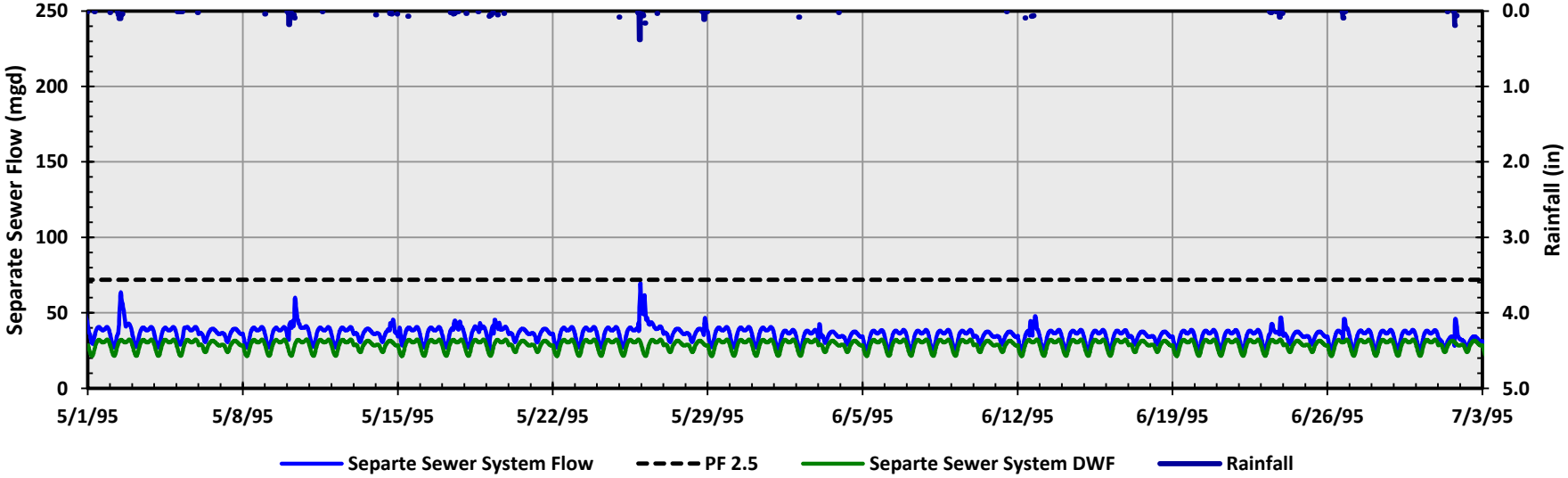

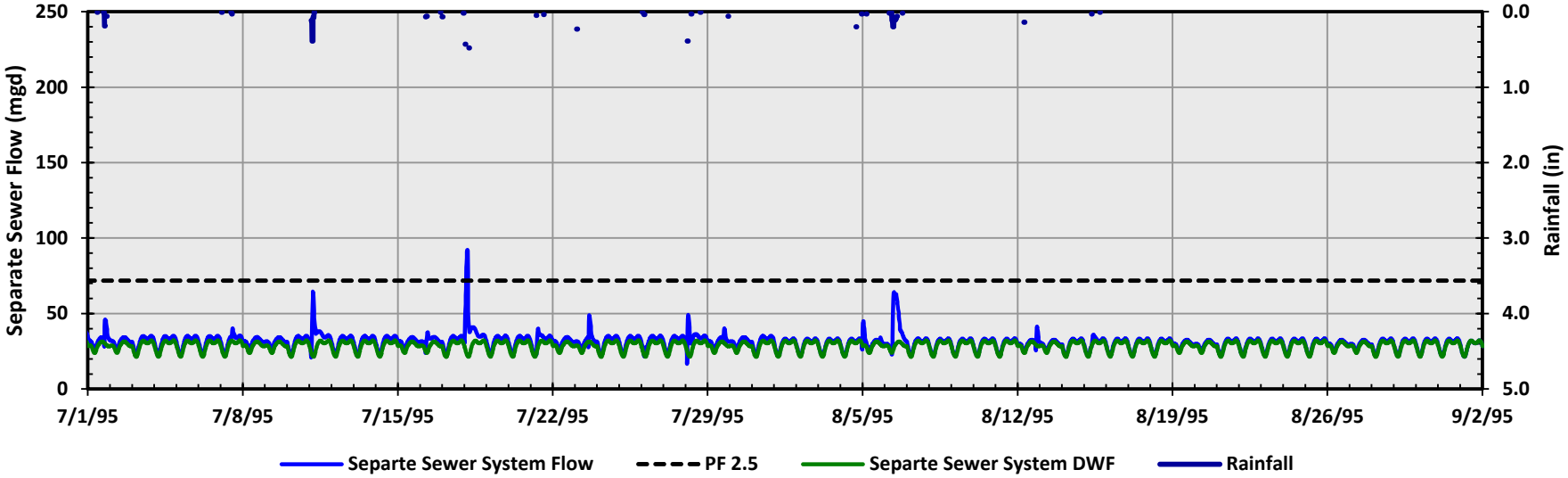

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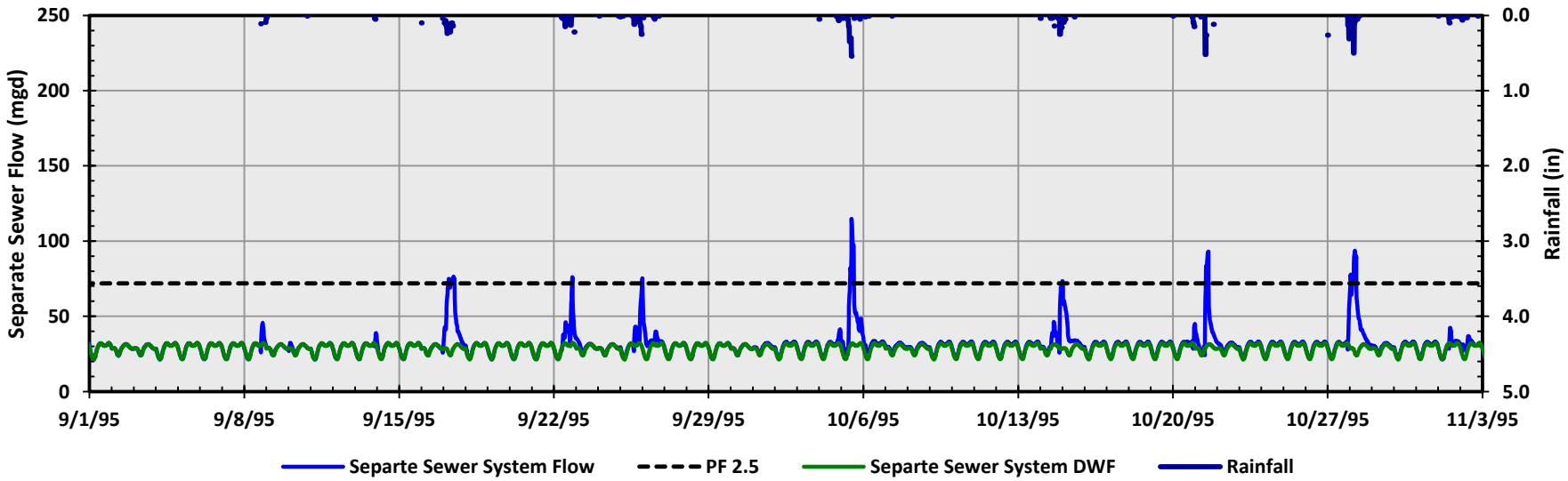

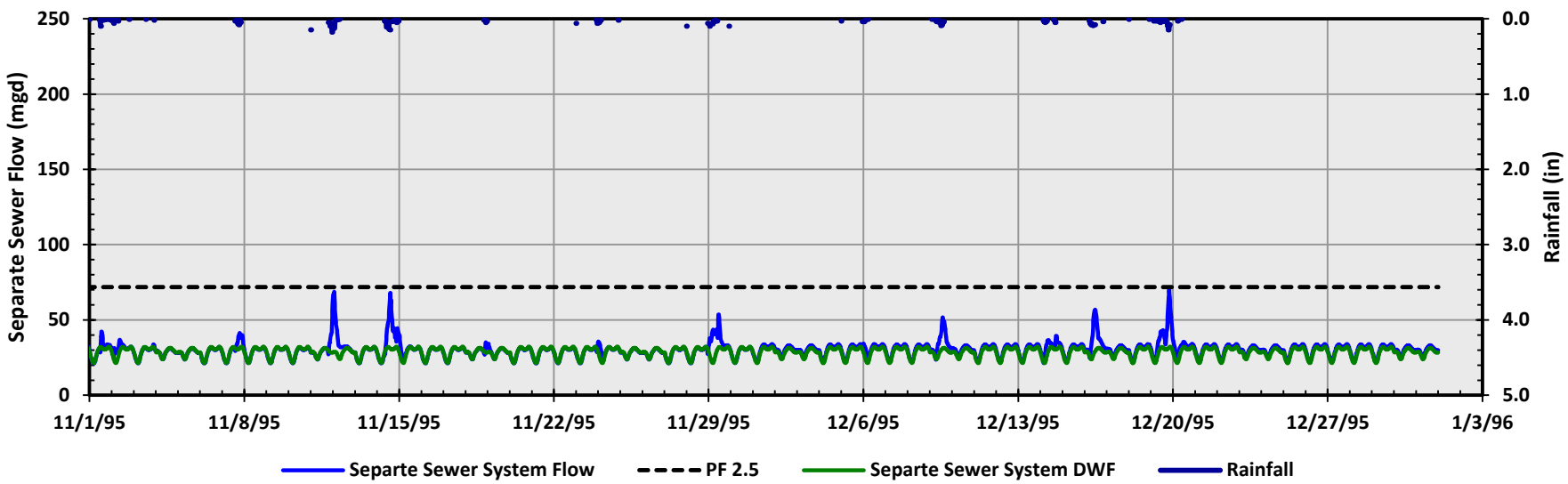

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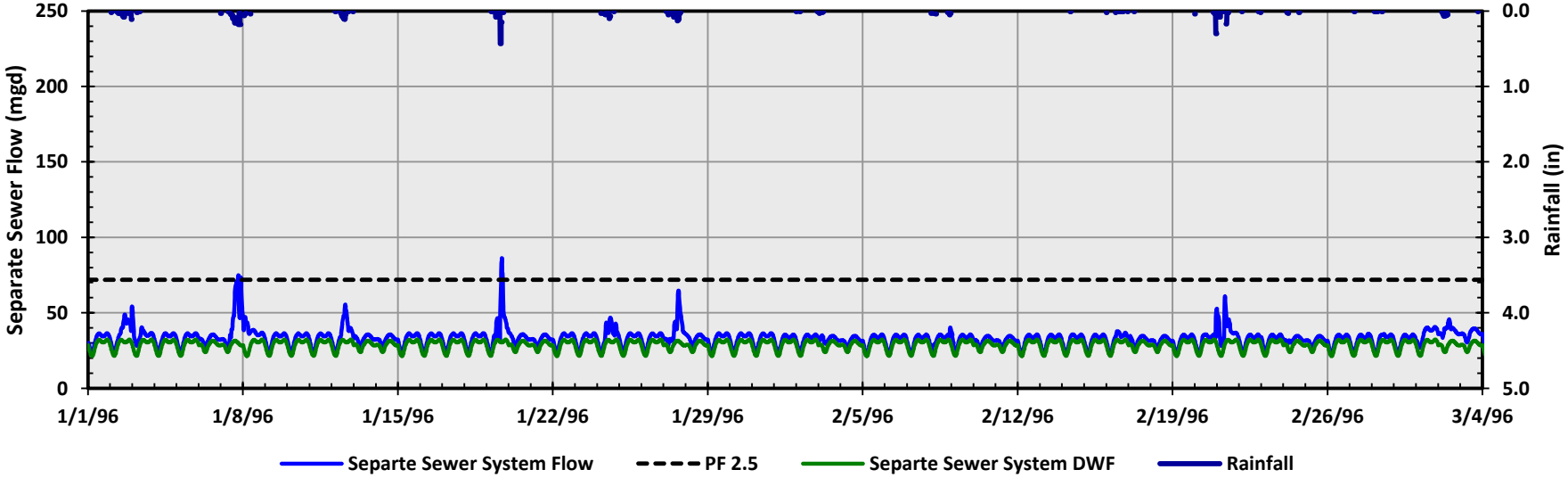

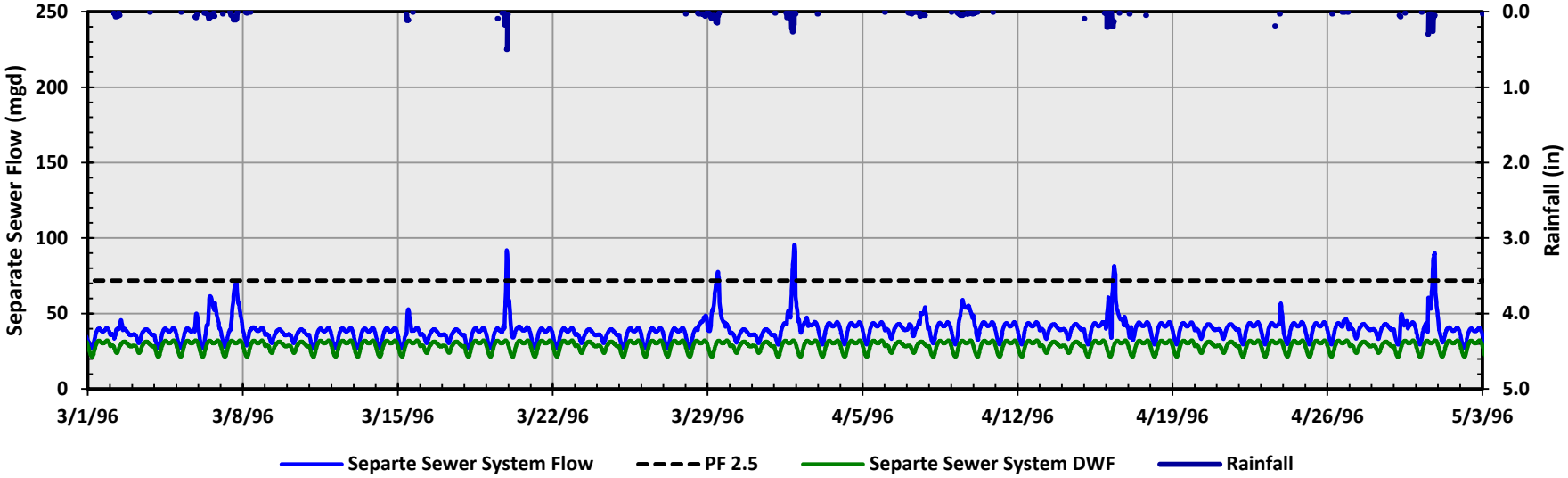

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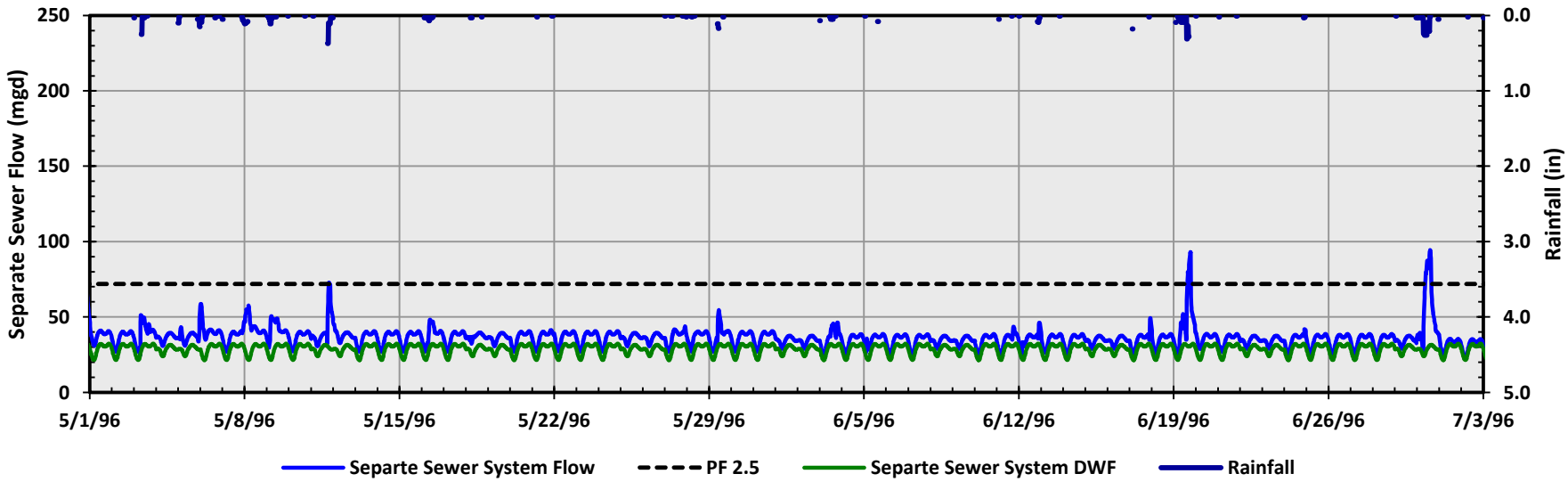

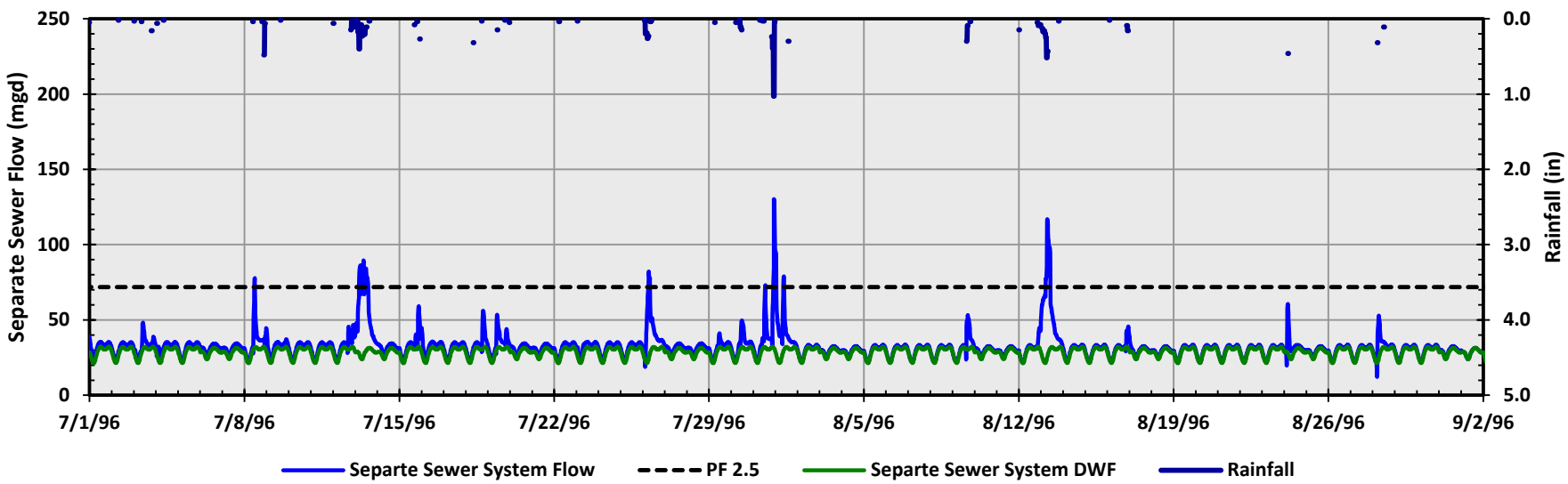

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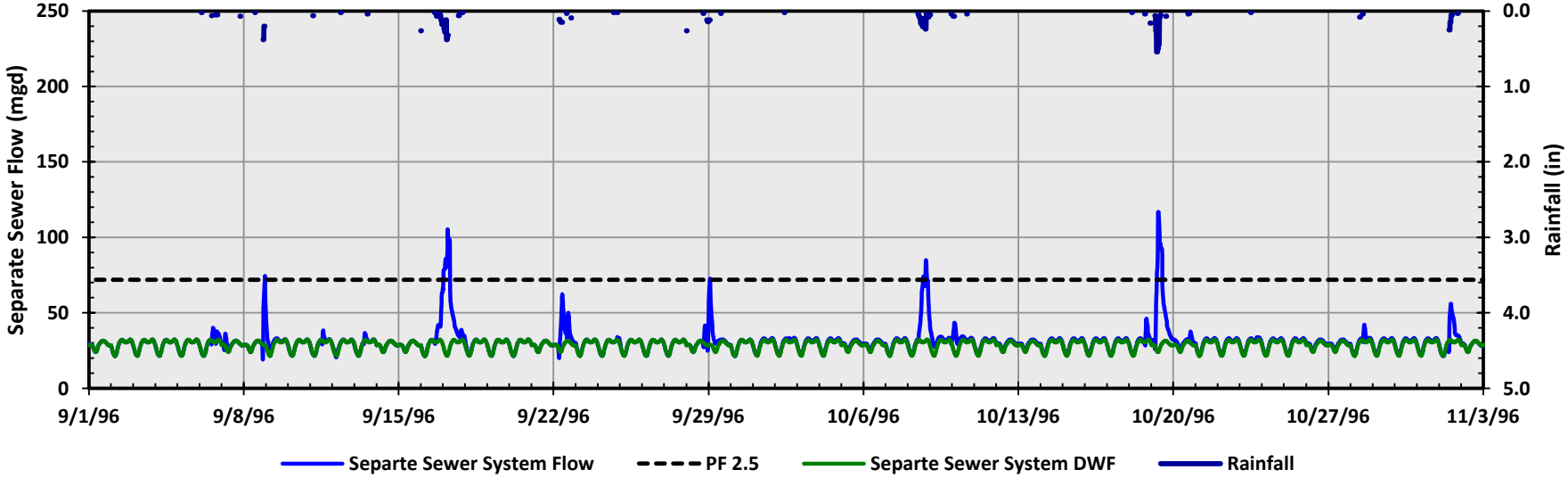

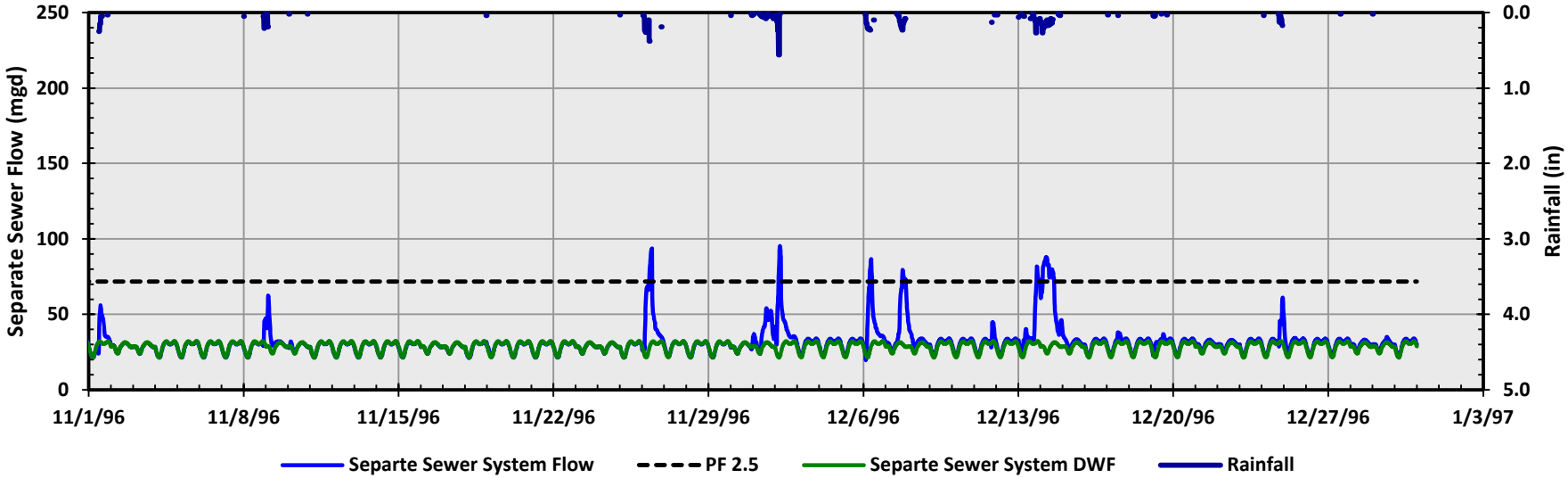

Finizio, Marlene

From: Hill, Margaret A. <mhill@blankrome.com>
Sent: Thursday, August 17, 2017 10:59 AM
To: DiSantis, Michael; Charles Hurst PE* (hurstc@delcora.org); Cronin, Edward; Hope, Michael; Finizio, Marlene
Subject: FW: DELCORA/DRAFT FCA
Attachments: FW: TM for Precedents for DELCORA's FCA Methodology

Importance: High

FYI

From: Hill, Margaret A.
Sent: Thursday, August 17, 2017 10:57 AM
To: 'Yeany, Philip' <Yeany.Philip@epa.gov>
Cc: 'Baptista, Chrisna' <Baptista.Chrisna@epa.gov>; 'Duer, Donna (ENRD)' <Donna.Duer@usdoj.gov>; 'Gelles, William H' <wgelles@pa.gov>
Subject: RE: DELCORA/DRAFT FCA
Importance: High

Phil
As discussed, I am sending relevant information to support DELCORA's approach to the Draft FCA which was submitted to EPA.

We would appreciate your review, and as previously requested, the opportunity to meet with EPA as soon as you are available to discuss this submission.

This is a follow-up to our continued dialogue following the May 22nd meeting.

Regards, Peg

From: Hill, Margaret A.
Sent: Tuesday, July 11, 2017 5:49 PM
To: 'Yeany, Philip' <Yeany.Philip@epa.gov>
Cc: Baptista, Chrisna <Baptista.Chrisna@epa.gov>; Duer, Donna (ENRD) <Donna.Duer@usdoj.gov>; Gelles, William H <wgelles@pa.gov>
Subject: RE: DELCORA
Importance: High

Phil

Since our call on June 23rd, we have been reviewing several FCAs prepared for or by other POTWs. We are preparing some relevant information related to how the FCAs were prepared by those entities in light of our discussions related to: DELCORA's draft FCA and EPA's FCA Guidance (1997 and 2014). We will be submitting a memorandum to you for your review as soon as we have finalized our review of the FCAs. There is clearly a varied pattern and practice in how the FCAs have been prepared.
Regards, Peg

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APPENDIX T

UPDATED MODEL CALIBRATION AND VALIDATION RESULTS

- Updated Appendix C of DELCORA Sewer System Hydrologic and Hydraulic Model Report/Updated Appendix B of DELCORA Existing Service Area Characterization Report, dated July 2018

Note: This Appendix includes a report from Greeley & Hansen which rebranded to TYLin in 2023

UPDATED H&H MODEL CALIBRATION AND VALIDATION RESULTS
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Statistical Evaluation: Nash-Sutcliffe Efficiencies

The Nash-Sutcliffe efficiency (NSE) was selected as an appropriate statistical measure of the goodness-of-fit for model calibration. It has been widely applied in hydrologic models (Moriasi et al., 2007) and thus can be used to assess the event volume predictions of the hydrologic component of the model. Although interpretation of NSE values may be subjective, model calibration is generally considered satisfactory for values greater than 0.5, with values greater than 0.75 being considered very good (Moriasi et al., 2007).

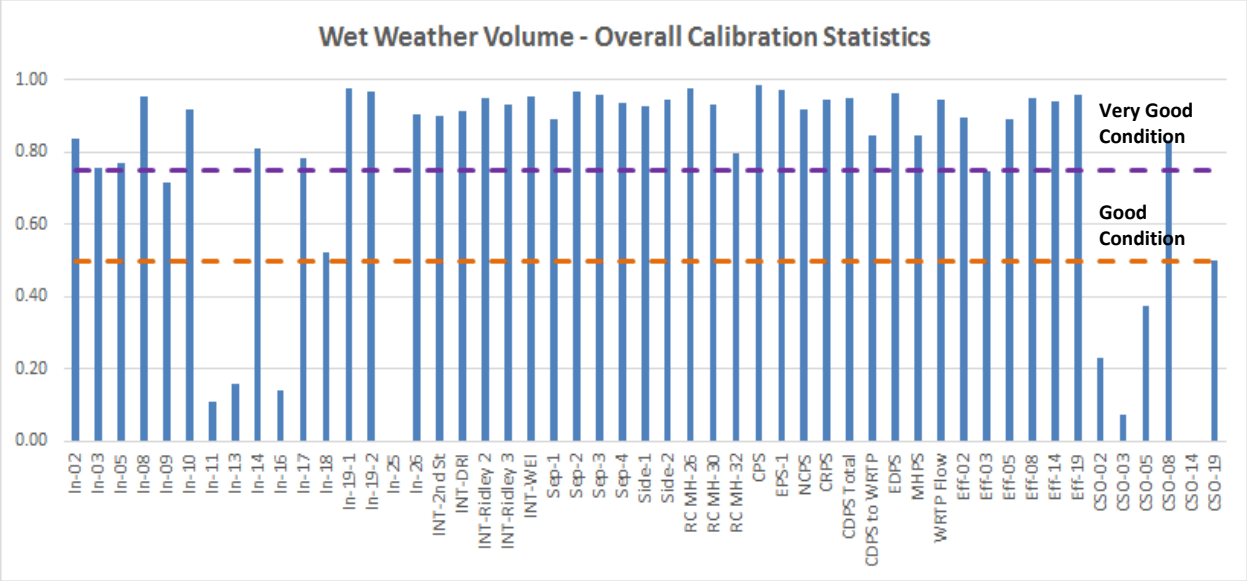
For this application the values were calculated as shown in following equation:

$$NSE = 1 - \left[\frac{\sum_{i=1}^{n}\left(Y_i^{obs} - Y_i^{sim}\right)^2}{\sum_{i=1}^{n}\left(Y_i^{obs} - Y^{mean}\right)^2}\right]$$

where,
Y_i^{obs}: the ith metered event volume
Y_i^{sim}: the ith modeled event volume
Y^{mean}: the mean metered volume
n: the total number of events

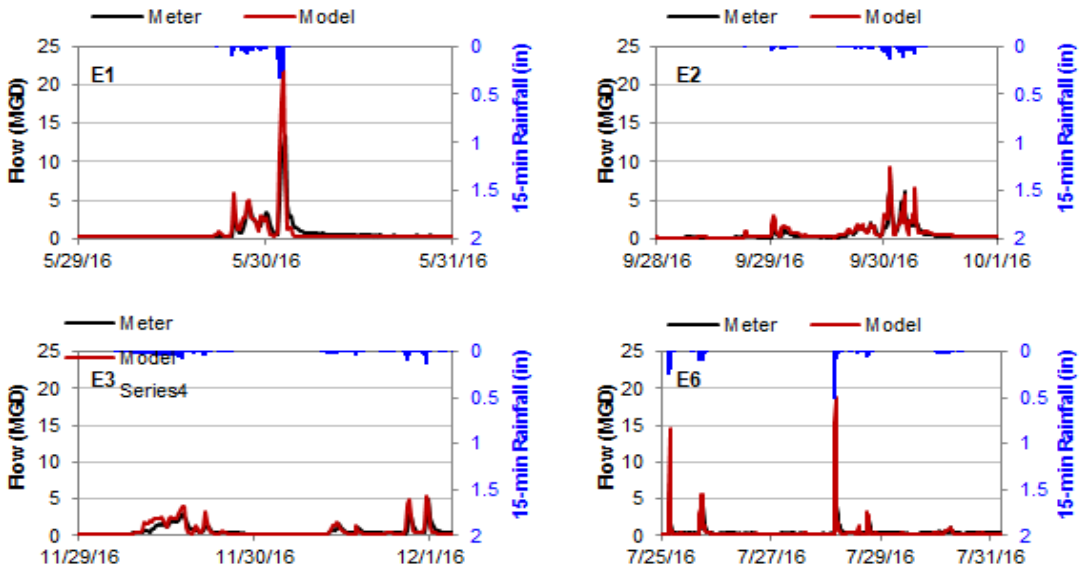
NSE values were calculated for all flow meter calibration and the results are shown in **Figure T-1** for the wet weather events**.** According to the above mentioned criteria wet weather calibration of over 82% of meters are above good condition and over 76% of the meters are above very good condition.

Figure T-1: Wet Weather Volume – Overall Calibration Statistics

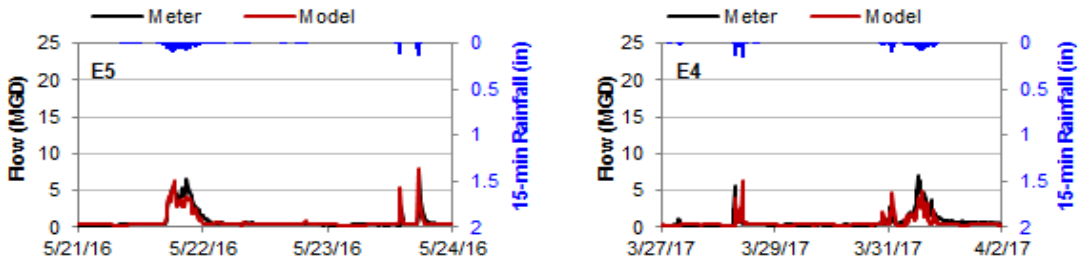


FLOW METER IN-02 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

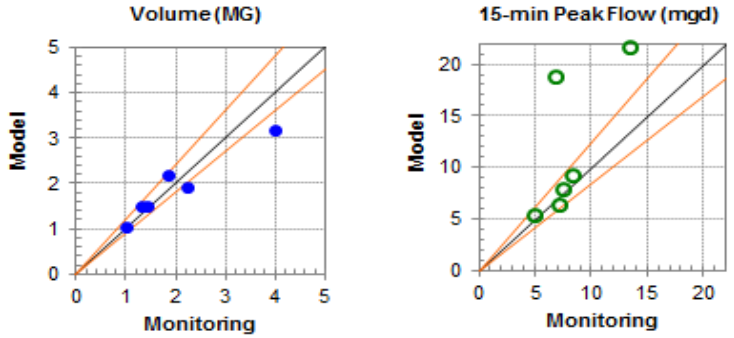
IN-02 Model Calibration Results (Metered and Modeled Flow)



IN-02 Model Validation Results (Metered and Modeled Flow)

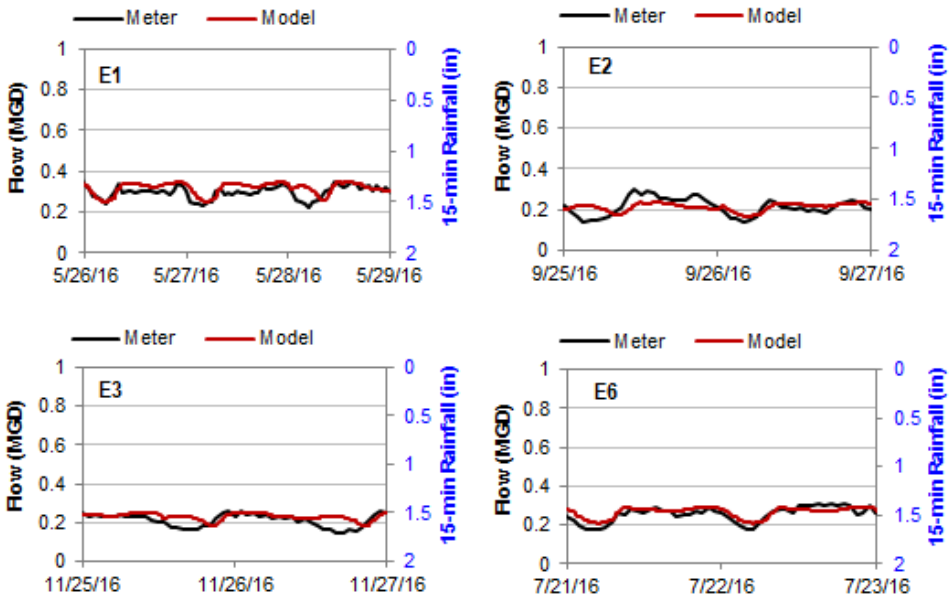


IN-02 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

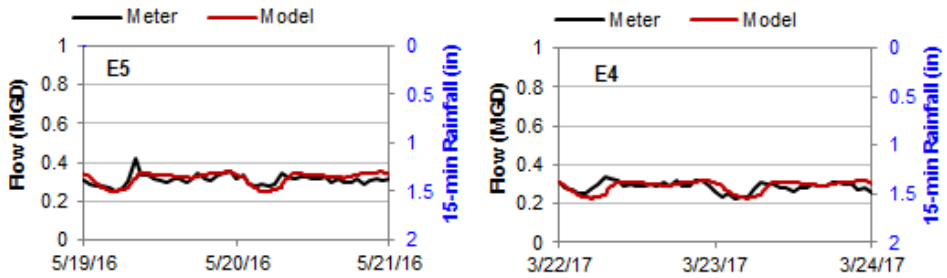


FLOW METER IN-02 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

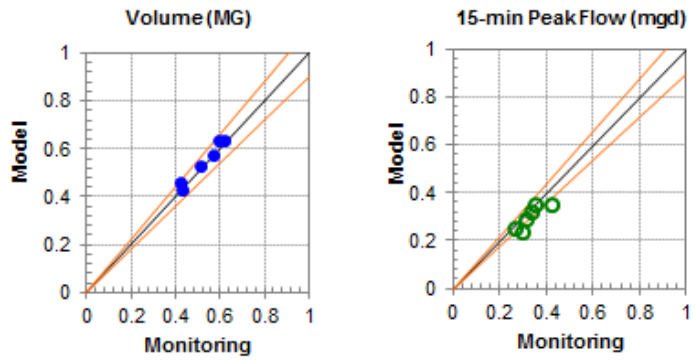
IN-02 Model Calibration Results (Metered and Modeled Flow)



IN-02 Model Validation Results (Metered and Modeled Flow)



IN-02 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



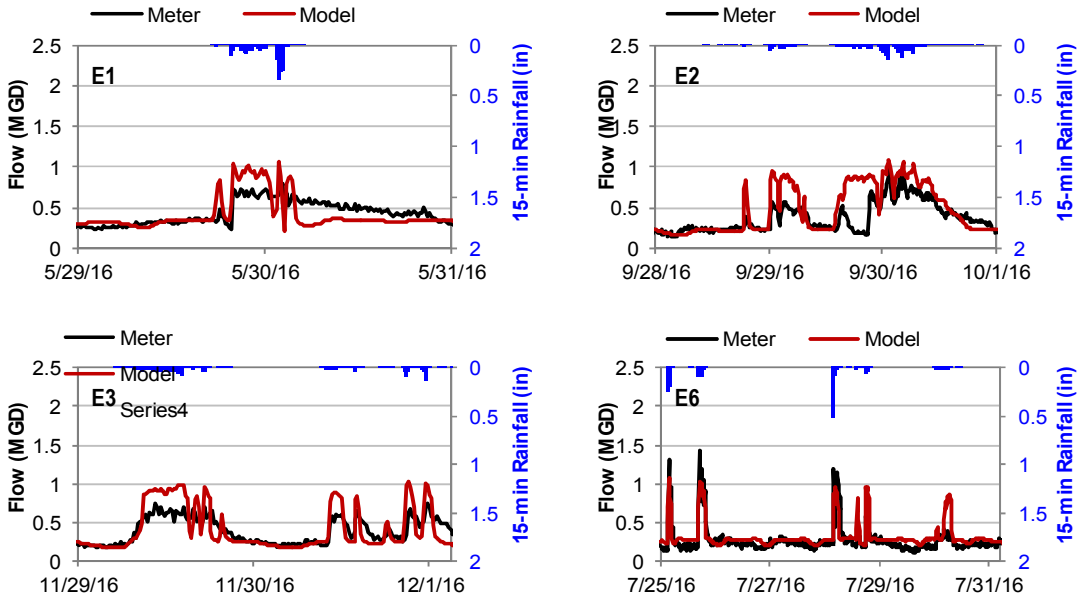
IN-02 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.35	0.35	-10% to +10%	1%	0.59	0.63	-10% to +10%	7%
E2	0.30	0.24	-10% to +10%	-20%	0.43	0.43	-10% to +10%	0%
E3	0.26	0.25	-10% to +10%	-4%	0.42	0.46	-10% to +10%	9%
E4	0.34	0.32	-10% to +10%	-5%	0.57	0.58	-10% to +10%	1%
E5	0.42	0.35	-10% to +10%	-17%	0.62	0.63	-10% to +10%	2%
E6	0.31	0.29	-10% to +10%	-5%	0.51	0.53	-10% to +10%	4%

IN-02 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	13.38	21.78	-15% to +25%	63%	1.43	1.50	-10% to +20%	4%
E2	8.31	9.28	-15% to +25%	12%	1.86	2.19	-10% to +20%	18%
E3	5.00	5.44	-15% to +25%	9%	1.32	1.50	-10% to +20%	13%
E4	7.05	6.37	-15% to +25%	-10%	4.00	3.17	-10% to +20%	-21%
E5	7.54	7.99	-15% to +25%	6%	2.25	1.91	-10% to +20%	-15%
E6	6.81	18.77	-15% to +25%	176%	1.01	1.05	-10% to +20%	4%

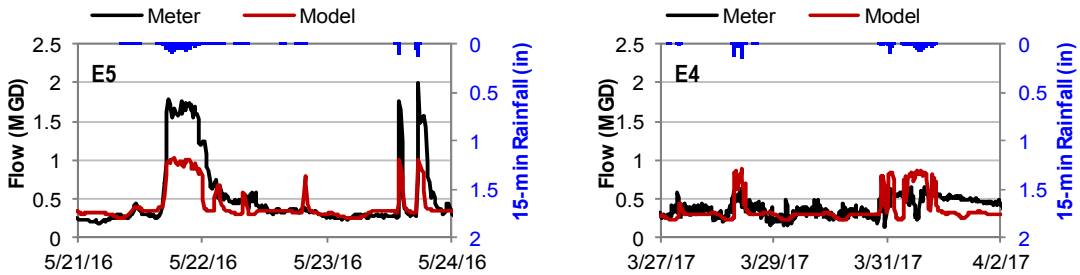
Note: Four of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for Events E1 and E6 is not consistent with the recorded rainfall intensity. These events are expected to have the highest peak flow. This is most likely a result of a malfunctioning flow meter. However, based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER EFF-02 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

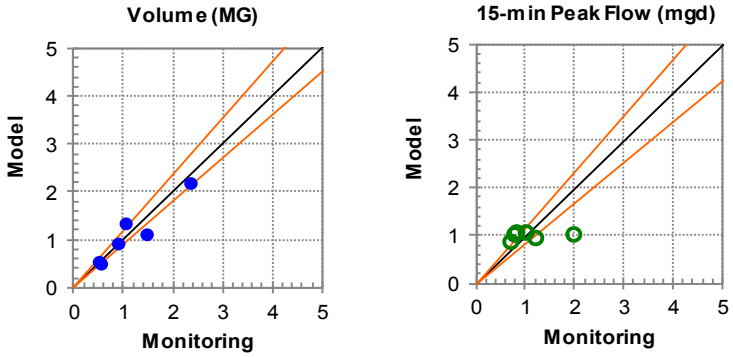
EFF-02 Model Calibration Results (Metered and Modeled Flow)



EFF-02 Model Validation Results (Metered and Modeled Flow)

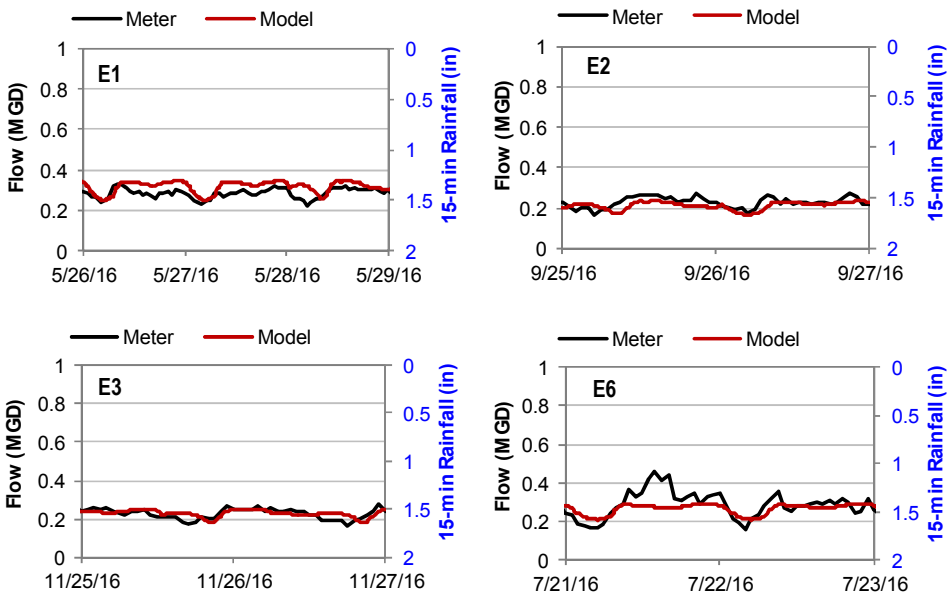


EFF-02 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

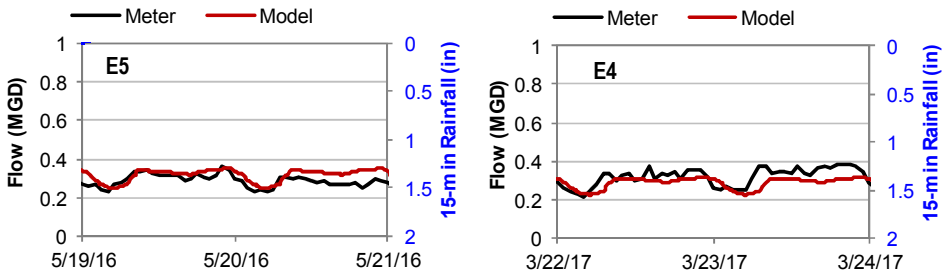


FLOW METER EFF-02 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

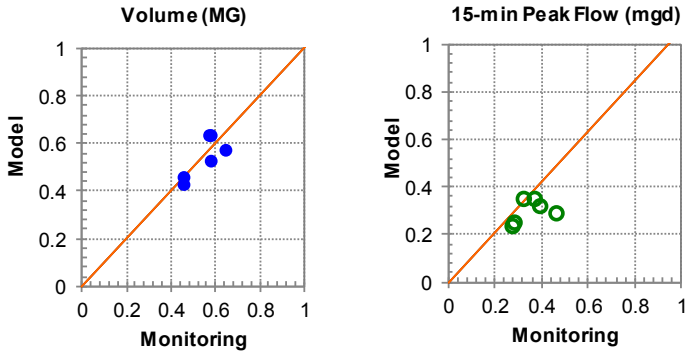
EFF-02 Model Calibration Results (Metered and Modeled Flow)



EFF-02 Model Validation Results (Metered and Modeled Flow)



EFF-02 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



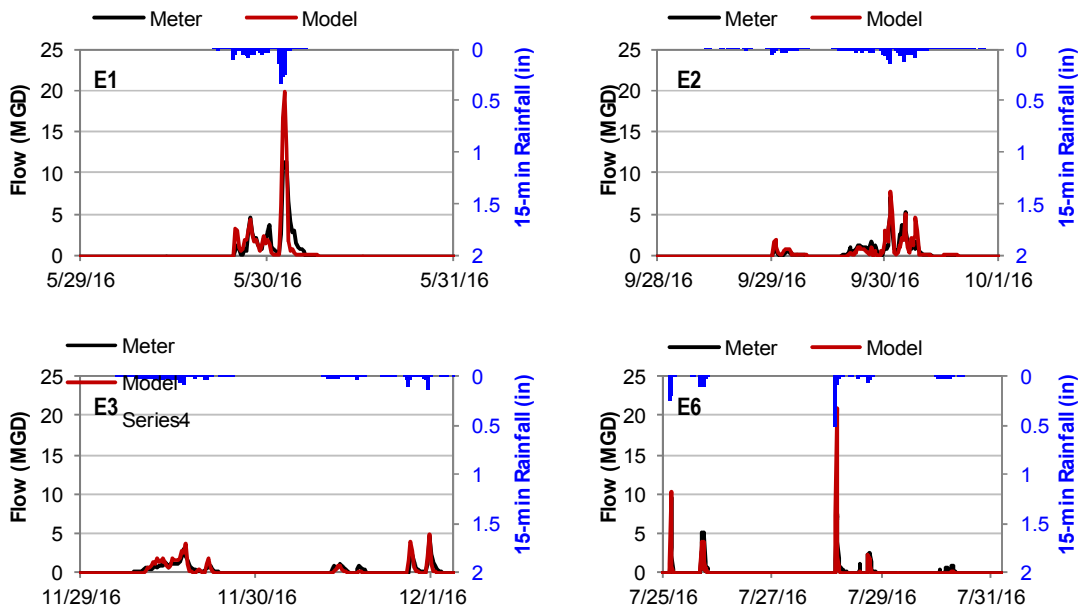
EFF-02 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.32	0.35	-10% to +10%	10%	0.57	0.64	-10% to +10%	12%
E2	0.27	0.24	-10% to +10%	-14%	0.46	0.43	-10% to +10%	-7%
E3	0.28	0.25	-10% to +10%	-10%	0.45	0.46	-10% to +10%	2%
E4	0.39	0.32	-10% to +10%	-18%	0.64	0.58	-10% to +10%	-10%
E5	0.37	0.35	-10% to +10%	-4%	0.58	0.63	-10% to +10%	10%
E6	0.46	0.29	-10% to +10%	-36%	0.58	0.53	-10% to +10%	-8%

EFF-02 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.80	1.06	-15% to +25%	32%	0.53	0.53	-10% to +20%	0%
E2	1.01	1.08	-15% to +25%	7%	1.03	1.36	-10% to +20%	32%
E3	0.75	1.04	-15% to +25%	38%	0.90	0.93	-10% to +20%	3%
E4	0.71	0.88	-15% to +25%	24%	2.36	2.20	-10% to +20%	-6%
E5	1.99	1.04	-15% to +25%	-48%	1.45	1.11	-10% to +20%	-24%
E6	1.20	0.96	-15% to +25%	-20%	0.49	0.55	-10% to +20%	14%

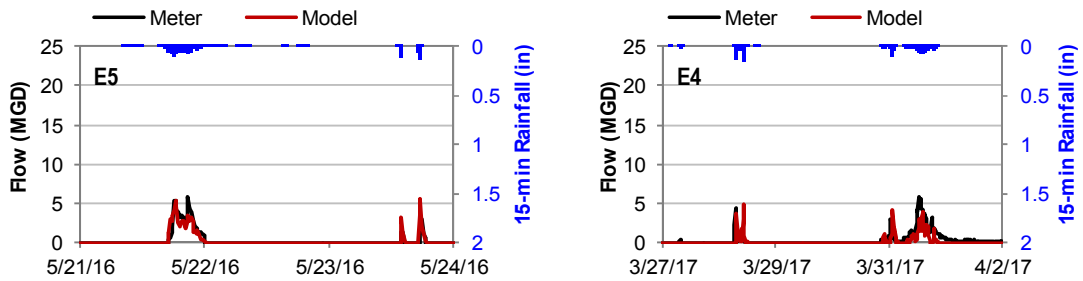
Note: Four of the six wet weather events are calibrated well within the industry criteria. The EFF-02 meter is the effluent meter from Regulator 02. The calibration of Regulator 02 meters (which include the IN-02, EFF-02 and CSO-02 meters) are more focused on the influent IN-02 meter and the overflow CSO-02 meter when the total metered influent flow (IN-02) is not balanced with the total metered effluent flow (EFF-02 plus CSO-02). Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CSO-02 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

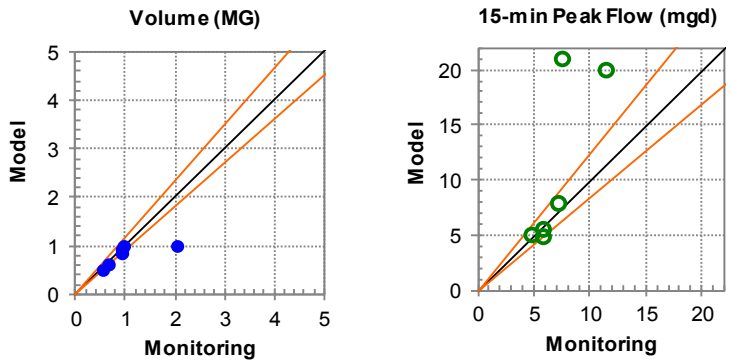
CSO-02 Model Calibration Results (Metered and Modeled Flow)



CSO-02 Model Validation Results (Metered and Modeled Flow)



CSO-02 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

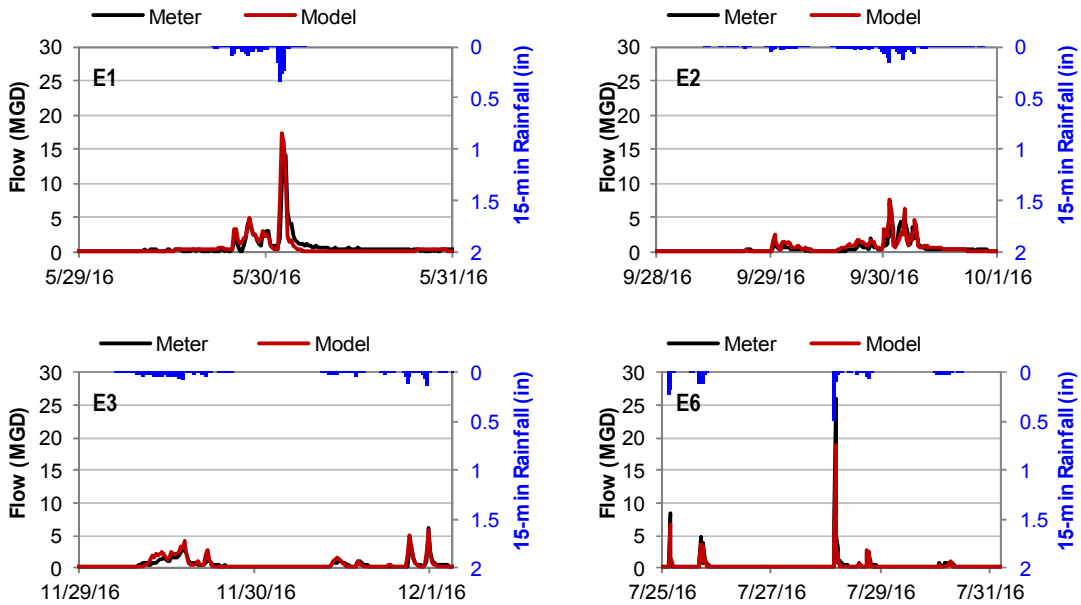


CSO-02 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	11.40	19.96	-15% to +25%	75%	0.95	1.00	-10% to +20%	5%
E2	7.16	7.85	-15% to +25%	10%	0.94	0.94	-10% to +20%	0%
E3	4.69	5.00	-15% to +25%	7%	0.64	0.64	-10% to +20%	-1%
E4	5.79	4.82	-15% to +25%	-17%	2.02	0.99	-10% to +20%	-51%
E5	5.82	5.51	-15% to +25%	-5%	0.91	0.86	-10% to +20%	-6%
E6	7.49	21.03	-15% to +25%	181%	0.55	0.51	-10% to +20%	-8%

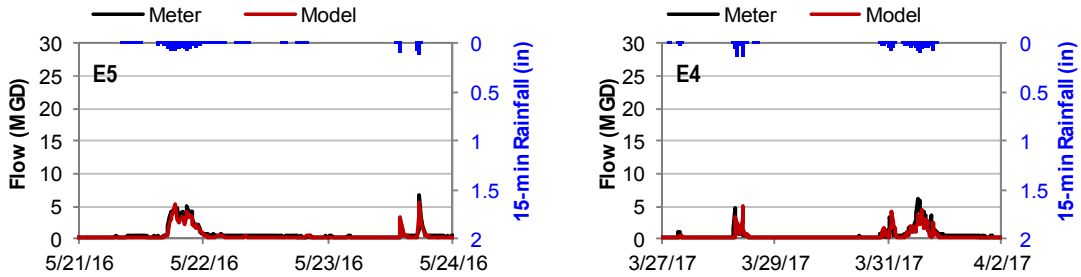
Note: Four of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the Events is not consistent with the recorded rainfall intensity. For instance, it is expected that Event E6 would have a high peak flow due to high rainfall intensity. This is most likely a result of a malfunctioning flow meter. However, based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-03 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

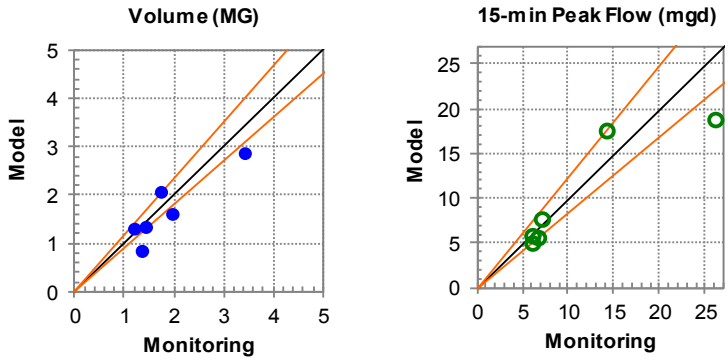
IN-03 Model Calibration Results (Metered and Modeled Flow)



IN-03 Model Validation Results (Metered and Modeled Flow)

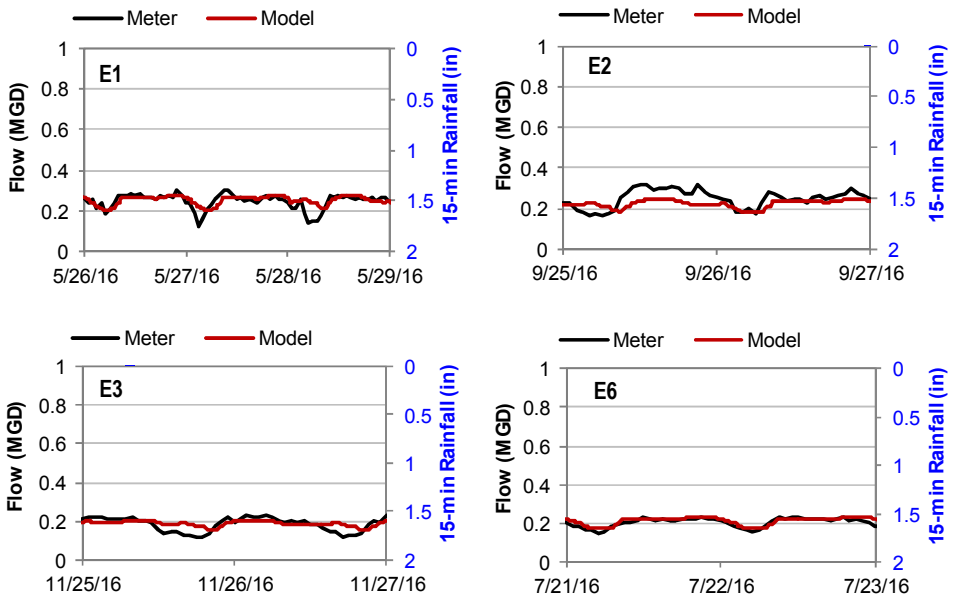


IN-03 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

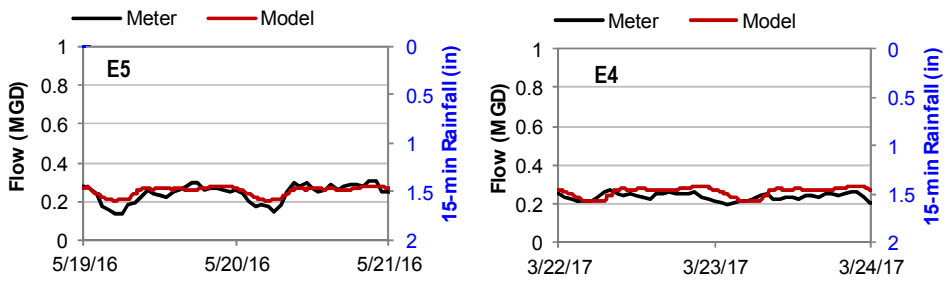


FLOW METER IN-03 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

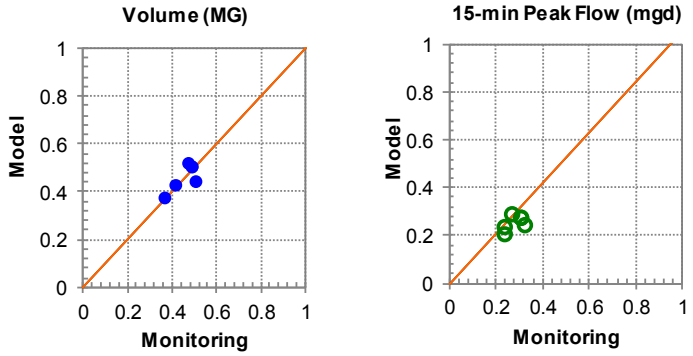
IN-03 Model Calibration Results (Metered and Modeled Flow)



IN-03 Model Validation Results (Metered and Modeled Flow)



IN-03 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



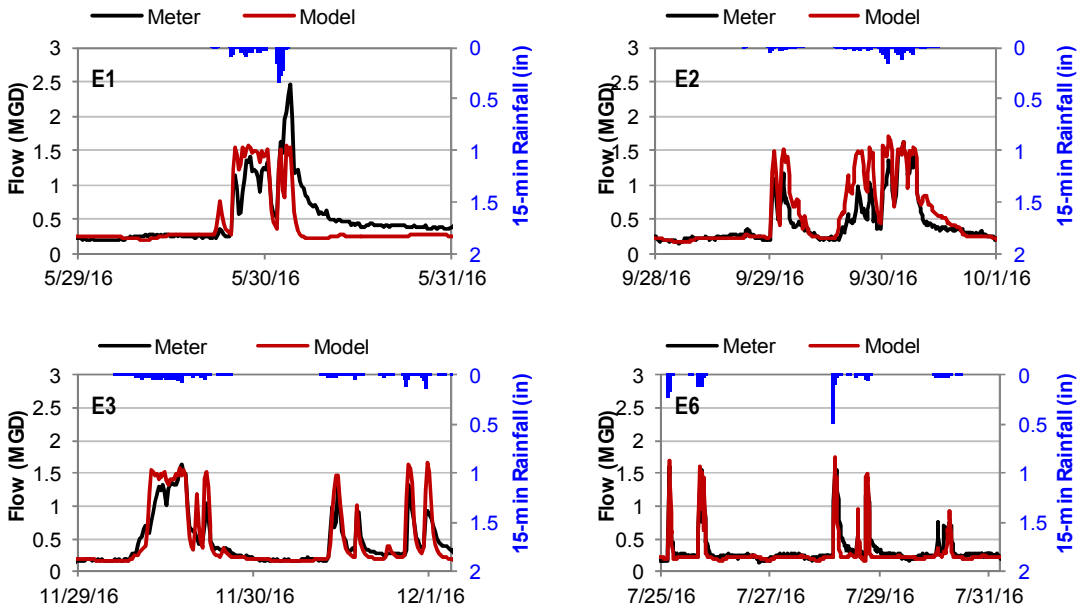
IN-03 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.31	0.28	-10% to +10%	-9%	0.48	0.51	-10% to +10%	5%
E2	0.32	0.25	-10% to +10%	-23%	0.50	0.45	-10% to +10%	-10%
E3	0.23	0.21	-10% to +10%	-12%	0.37	0.38	-10% to +10%	3%
E4	0.27	0.29	-10% to +10%	8%	0.47	0.52	-10% to +10%	11%
E5	0.31	0.28	-10% to +10%	-9%	0.48	0.51	-10% to +10%	5%
E6	0.24	0.24	-10% to +10%	-1%	0.41	0.43	-10% to +10%	4%

IN-03 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	14.09	17.45	-15% to +25%	24%	1.41	1.34	-10% to +20%	-6%
E2	7.06	7.68	-15% to +25%	9%	1.73	2.07	-10% to +20%	20%
E3	6.06	5.77	-15% to +25%	-5%	1.20	1.33	-10% to +20%	11%
E4	6.01	5.07	-15% to +25%	-16%	3.43	2.87	-10% to +20%	-16%
E5	6.71	5.49	-15% to +25%	-18%	1.96	1.60	-10% to +20%	-18%
E6	26.00	18.89	-15% to +25%	-27%	1.36	0.87	-10% to +20%	-36%

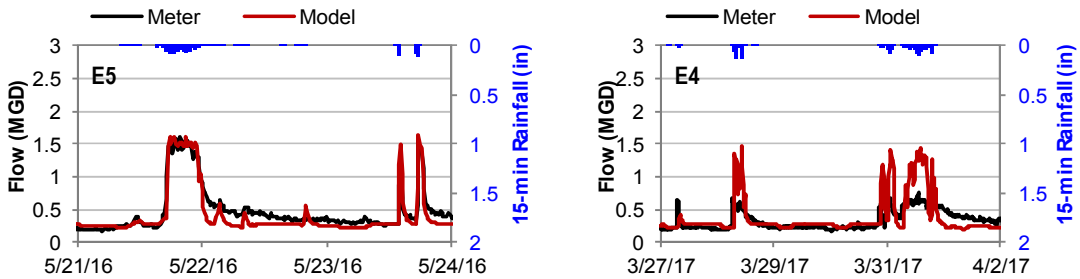
Note: All the six wet weather events are calibrated well within or close to the industry criteria.

FLOW METER EFF-03 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

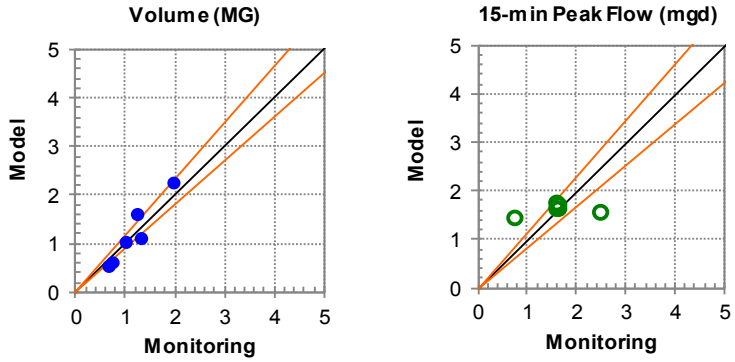
EFF-03 Model Calibration Results (Metered and Modeled Flow)



EFF-03 Model Validation Results (Metered and Modeled Flow)

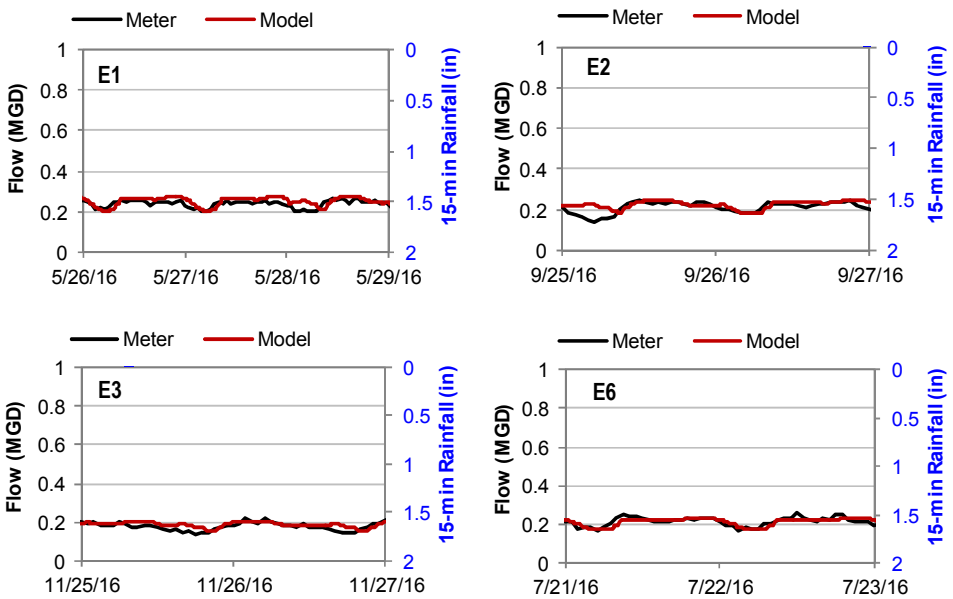


EFF-03 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

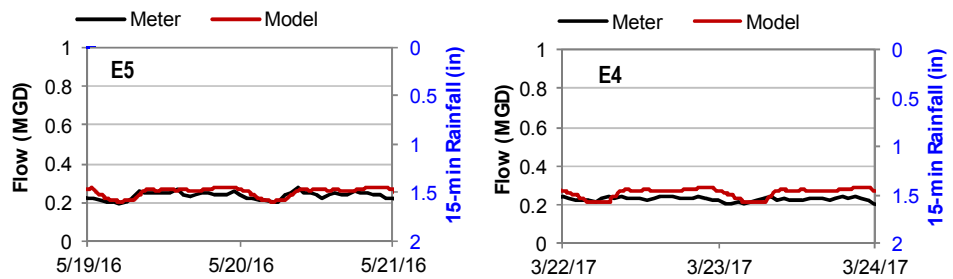


FLOW METER EFF-03 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

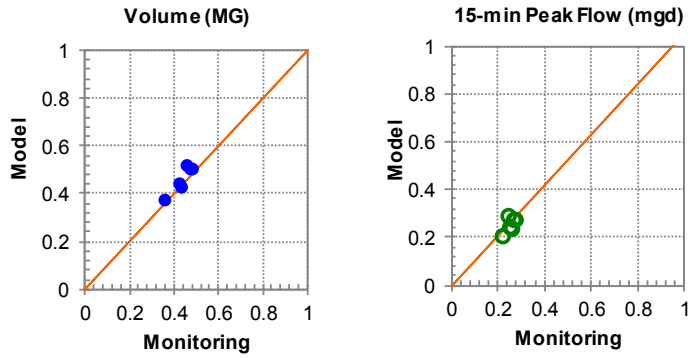
EFF-03 Model Calibration Results (Metered and Modeled Flow)



EFF-03 Model Validation Results (Metered and Modeled Flow)



EFF-03 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



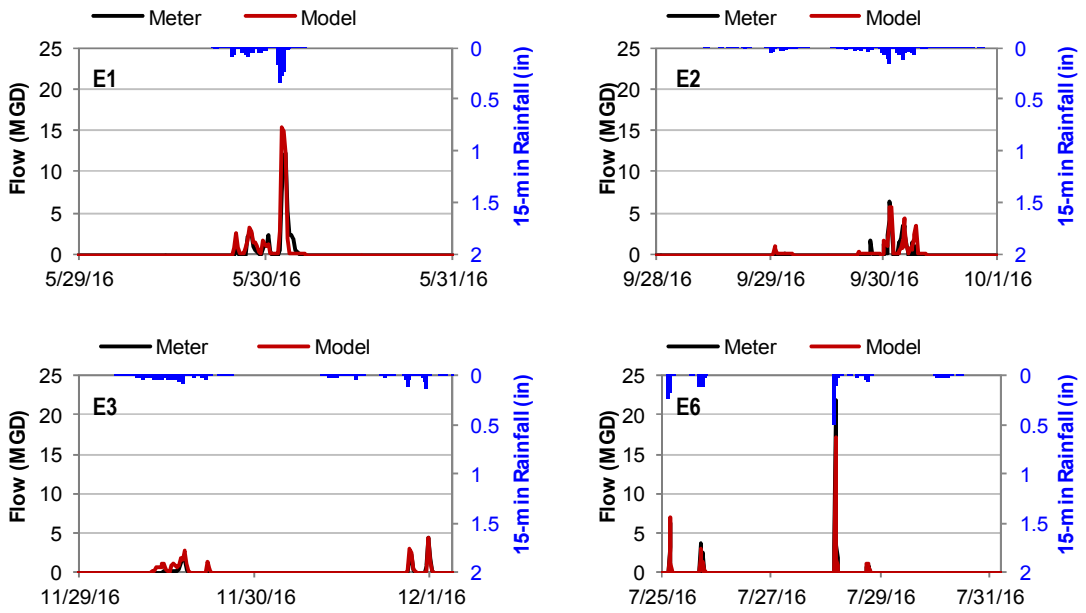
EFF-03 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.27	0.28	-10% to +10%	5%	0.48	0.51	-10% to +10%	6%
E2	0.25	0.25	-10% to +10%	-1%	0.42	0.45	-10% to +10%	6%
E3	0.22	0.21	-10% to +10%	-7%	0.36	0.38	-10% to +10%	6%
E4	0.24	0.29	-10% to +10%	18%	0.46	0.52	-10% to +10%	15%
E5	0.28	0.28	-10% to +10%	1%	0.47	0.51	-10% to +10%	8%
E6	0.26	0.24	-10% to +10%	-9%	0.43	0.43	-10% to +10%	-1%

EFF-03 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	2.47	1.59	-15% to +25%	-36%	0.73	0.62	-10% to +20%	-15%
E2	1.63	1.71	-15% to +25%	5%	1.24	1.61	-10% to +20%	30%
E3	1.63	1.66	-15% to +25%	2%	0.99	1.03	-10% to +20%	4%
E4	0.75	1.47	-15% to +25%	96%	1.98	2.28	-10% to +20%	15%
E5	1.60	1.63	-15% to +25%	2%	1.31	1.12	-10% to +20%	-14%
E6	1.57	1.75	-15% to +25%	11%	0.67	0.55	-10% to +20%	-18%

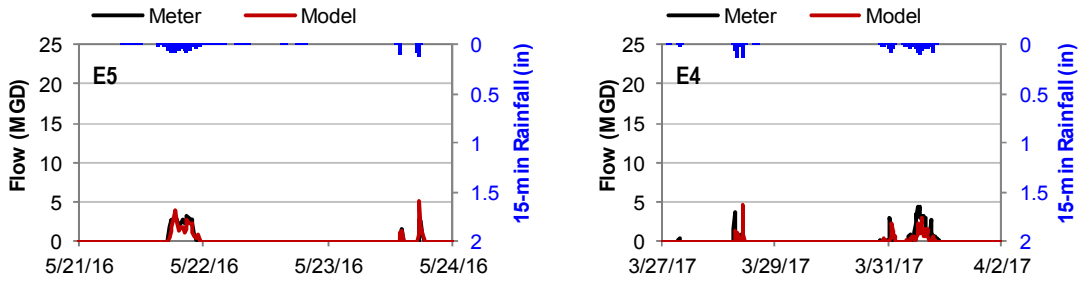
Note: Four of the six wet weather events are calibrated well within the industry criteria. The EFF-03 meter is the effluent meter from Regulator 03. The calibration of Regulator 03 meters (which include the IN-03, EFF-03 and CSO-03 meters) are more focused on the influent IN-03 meter and the overflow CSO-03 meter when the total metered influent flow (IN-03) is not balanced with the total metered effluent flow (EFF-03 plus CSO-03). Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CSO-03 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

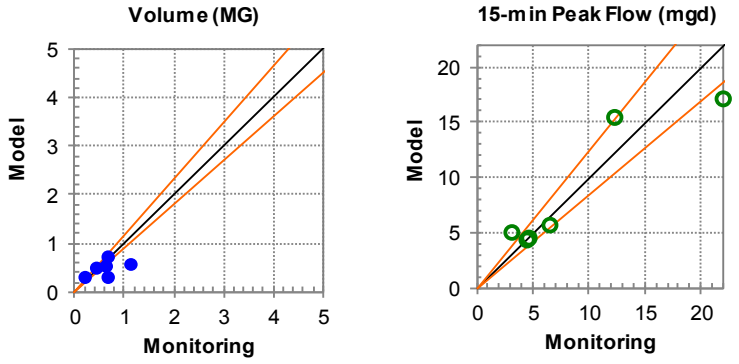
CSO-03 Model Calibration Results (Metered and Modeled Flow)



CSO-03 Model Validation Results (Metered and Modeled Flow)



CSO-03 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

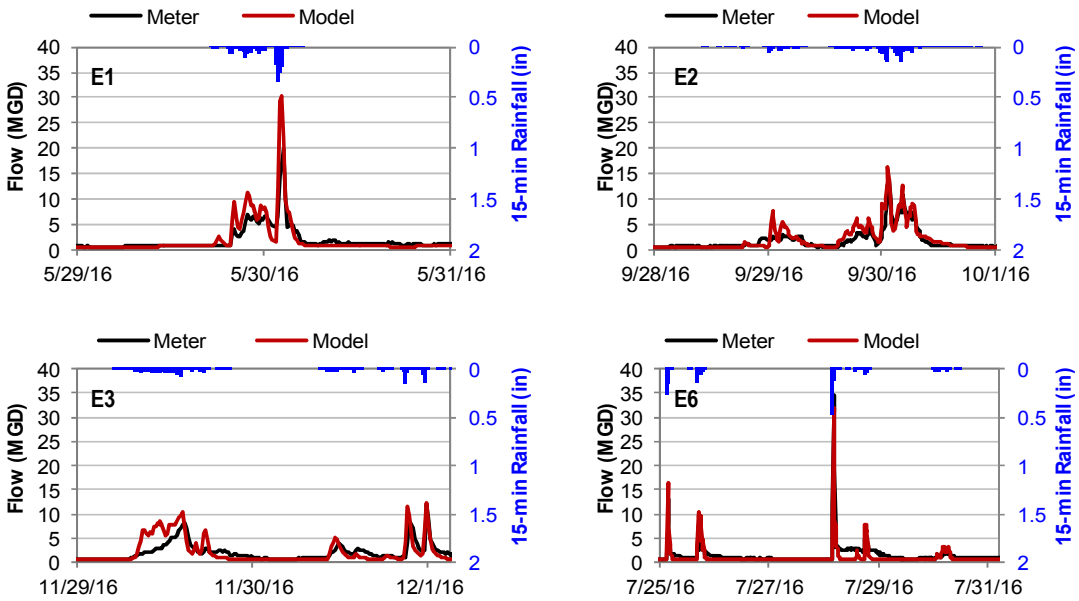


CSO-03 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	12.30	15.43	-15% to +25%	25%	0.64	0.74	-10% to +20%	15%
E2	6.41	5.78	-15% to +25%	-10%	0.42	0.51	-10% to +20%	22%
E3	4.48	4.34	-15% to +25%	-3%	0.19	0.33	-10% to +20%	79%
E4	4.52	4.56	-15% to +25%	1%	1.13	0.58	-10% to +20%	-48%
E5	3.13	5.10	-15% to +25%	63%	0.61	0.54	-10% to +20%	-12%
E6	21.93	17.12	-15% to +25%	-22%	0.66	0.33	-10% to +20%	-50%

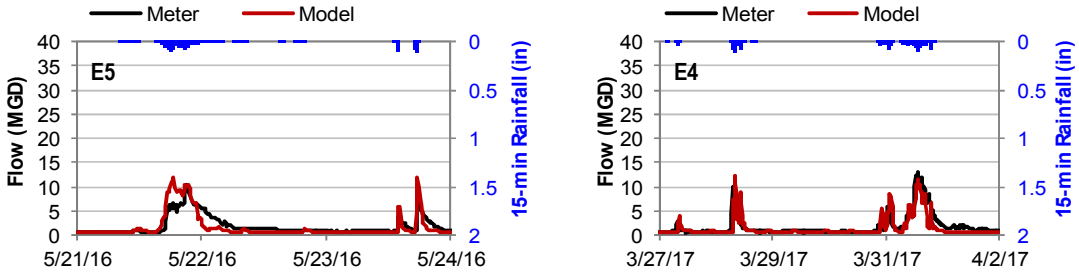
Note: Four of the six wet weather event peak flows are calibrated well within the industry criteria. The overflow volume is more challenging to match, especially for the small overflow event like E3. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-05 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

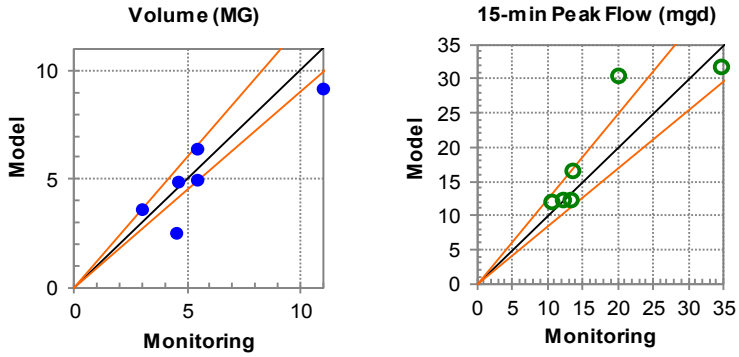
IN-05 Model Calibration Results (Metered and Modeled Flow)



IN-05 Model Validation Results (Metered and Modeled Flow)

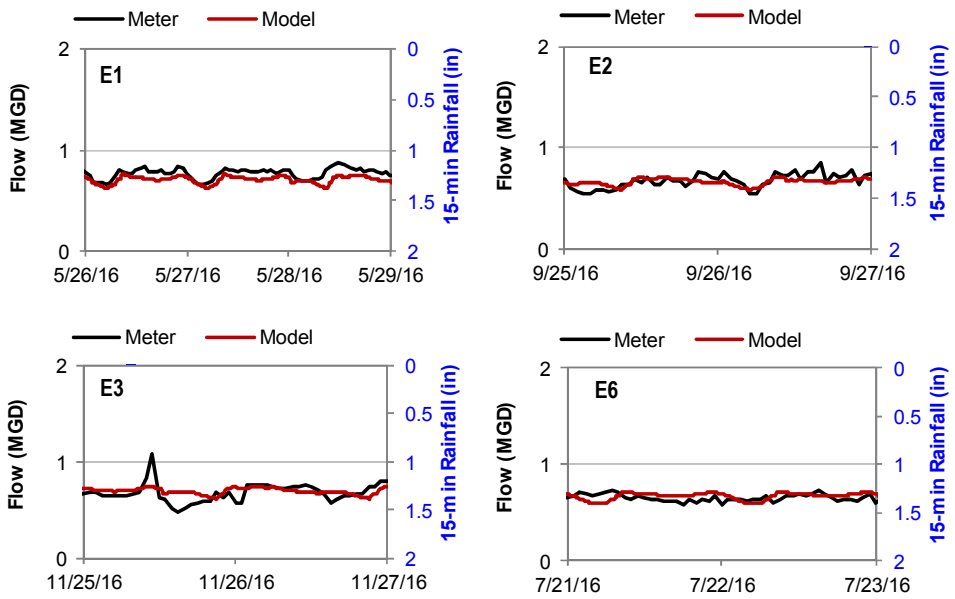


IN-05 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

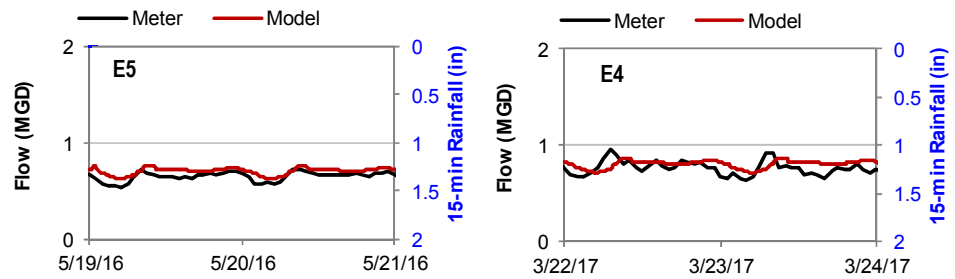


FLOW METER IN-05 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

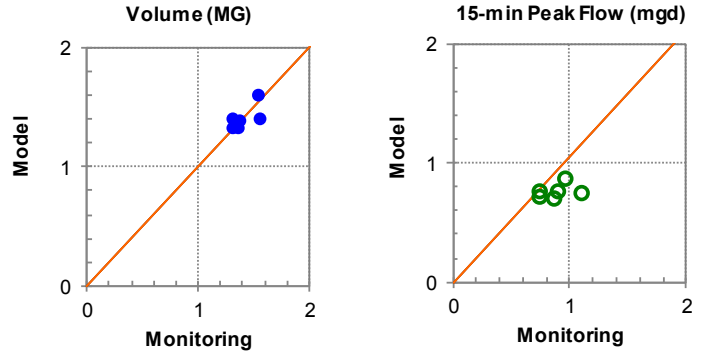
IN-05 Model Calibration Results (Metered and Modeled Flow)



IN-05 Model Validation Results (Metered and Modeled Flow)



IN-05 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



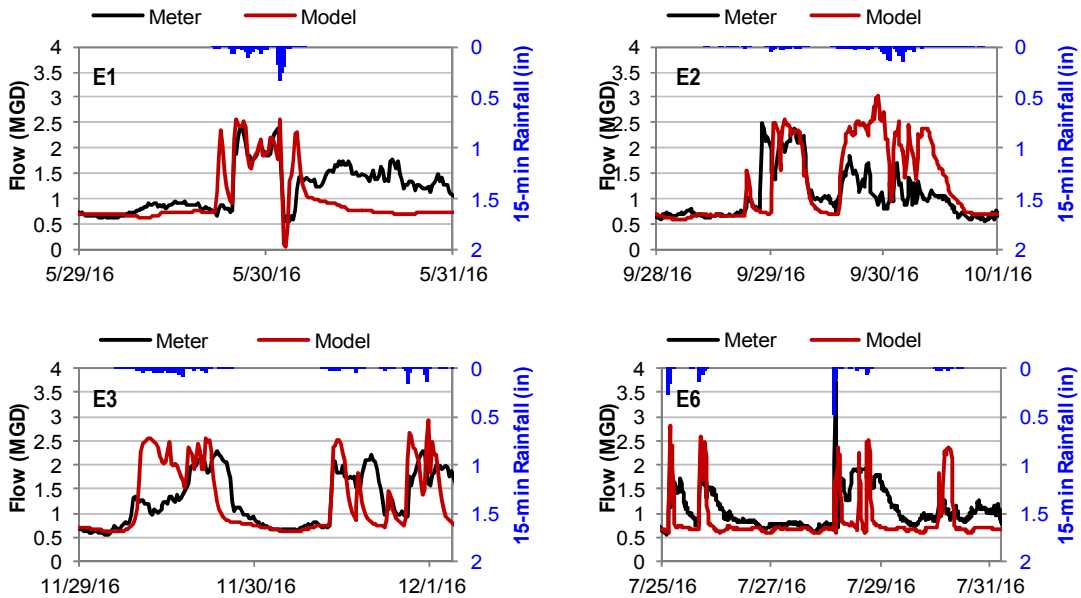
IN-05 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.88	0.76	-10% to +10%	-14%	1.54	1.41	-10% to +10%	-8%
E2	0.86	0.71	-10% to +10%	-17%	1.35	1.33	-10% to +10%	-2%
E3	1.09	0.75	-10% to +10%	-31%	1.36	1.40	-10% to +10%	3%
E4	0.95	0.87	-10% to +10%	-9%	1.53	1.61	-10% to +10%	5%
E5	0.73	0.77	-10% to +10%	4%	1.31	1.42	-10% to +10%	8%
E6	0.73	0.72	-10% to +10%	-1%	1.31	1.34	-10% to +10%	2%

IN-05 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	19.90	30.43	-15% to +25%	53%	3.00	3.63	-10% to +20%	21%
E2	13.38	16.51	-15% to +25%	23%	5.39	6.45	-10% to +20%	20%
E3	12.07	12.22	-15% to +25%	1%	4.57	4.90	-10% to +20%	7%
E4	13.17	12.43	-15% to +25%	-6%	10.98	9.18	-10% to +20%	-16%
E5	10.58	12.00	-15% to +25%	13%	5.42	4.94	-10% to +20%	-9%
E6	34.58	31.80	-15% to +25%	-8%	4.50	2.58	-10% to +20%	-43%

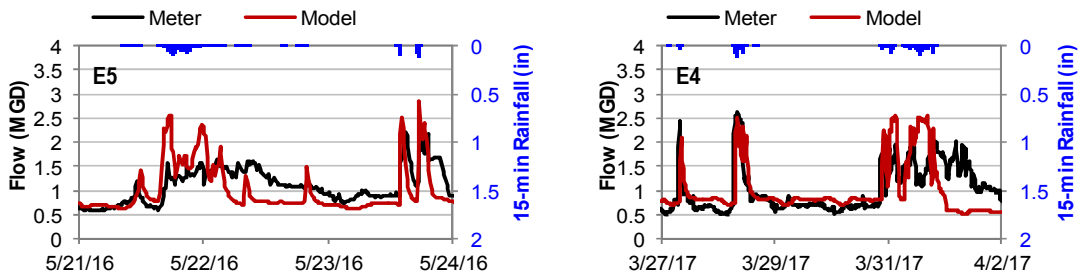
Note: Four of the six wet weather event peak flows are calibrated well within the industry criteria. Flow meter data recorded for some of the events is not consistent with the recorded rainfall intensity. For instance, it is expected that Event E1 would have a high peak flow due to high rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER EFF-05 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

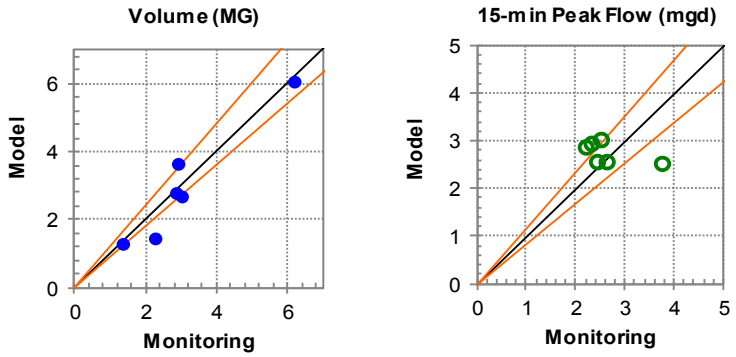
EFF-05 Model Calibration Results (Metered and Modeled Flow)



EFF-05 Model Validation Results (Metered and Modeled Flow)

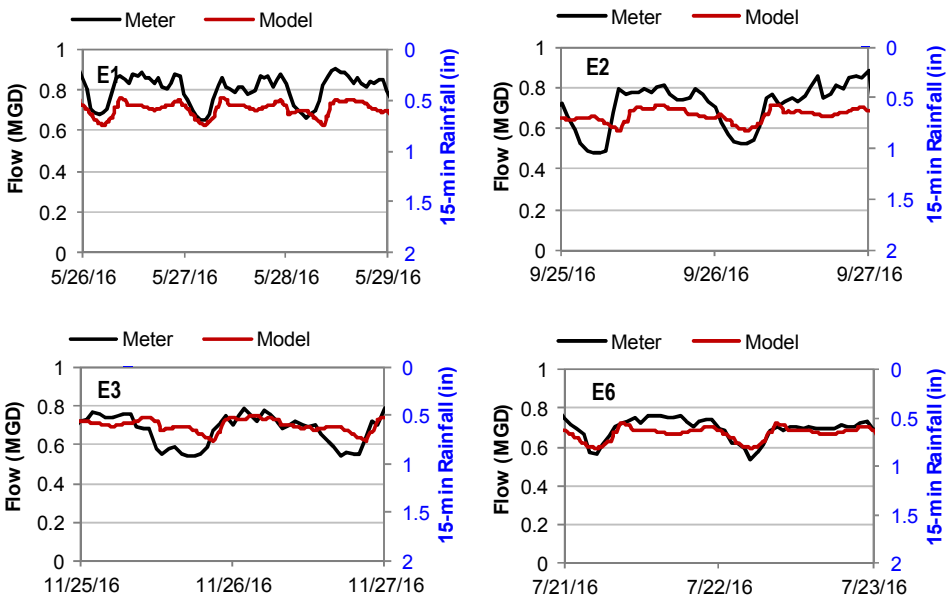


EFF-05 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

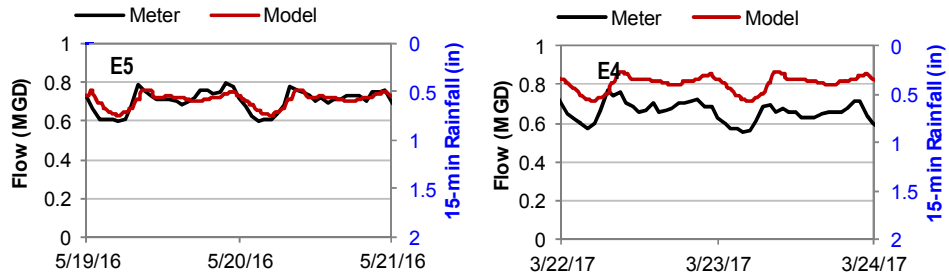


FLOW METER EFF-05 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

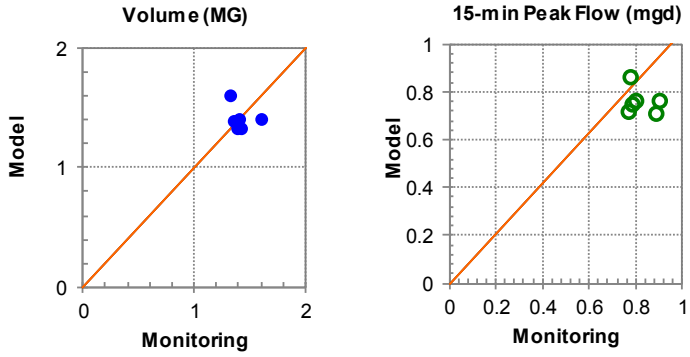
EFF-05 Model Calibration Results (Metered and Modeled Flow)



EFF-05 Model Validation Results (Metered and Modeled Flow)



EFF-05 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



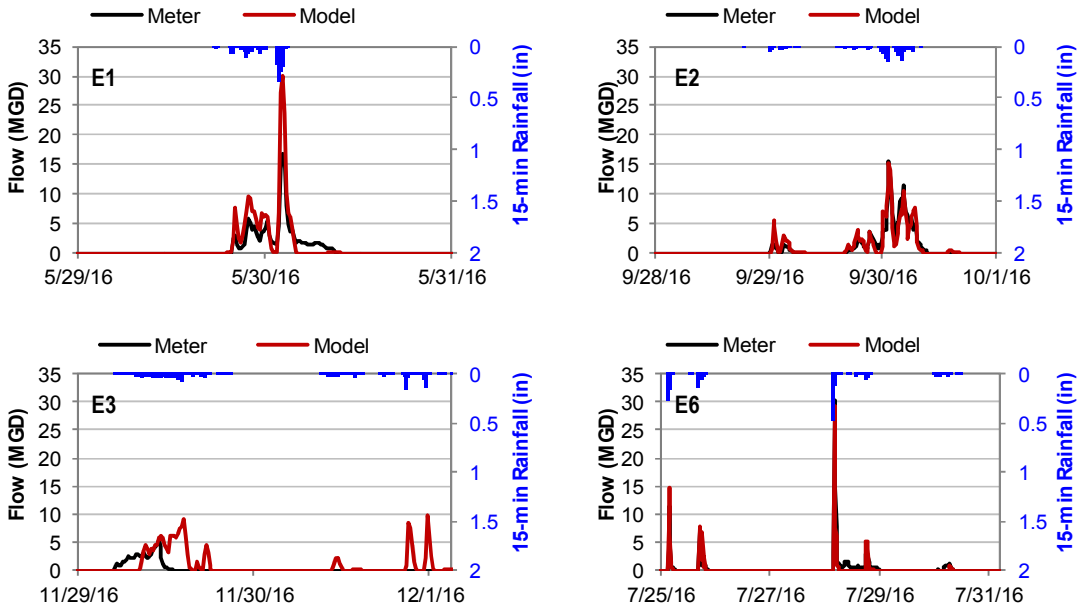
EFF-05 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.90	0.76	-10% to +10%	-16%	1.59	1.41	-10% to +10%	-11%
E2	0.88	0.71	-10% to +10%	-20%	1.42	1.33	-10% to +10%	-6%
E3	0.78	0.75	-10% to +10%	-5%	1.35	1.40	-10% to +10%	4%
E4	0.77	0.87	-10% to +10%	12%	1.32	1.61	-10% to +10%	22%
E5	0.80	0.76	-10% to +10%	-4%	1.41	1.42	-10% to +10%	1%
E6	0.77	0.72	-10% to +10%	-6%	1.38	1.34	-10% to +10%	-3%

EFF-05 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	2.44	2.57	-15% to +25%	5%	1.37	1.28	-10% to +20%	-6%
E2	2.49	3.04	-15% to +25%	22%	2.89	3.68	-10% to +20%	27%
E3	2.30	2.95	-15% to +25%	28%	2.88	2.81	-10% to +20%	-2%
E4	2.61	2.55	-15% to +25%	-3%	6.20	6.07	-10% to +20%	-2%
E5	2.20	2.85	-15% to +25%	30%	3.00	2.68	-10% to +20%	-11%
E6	3.73	2.52	-15% to +25%	-32%	2.28	1.45	-10% to +20%	-36%

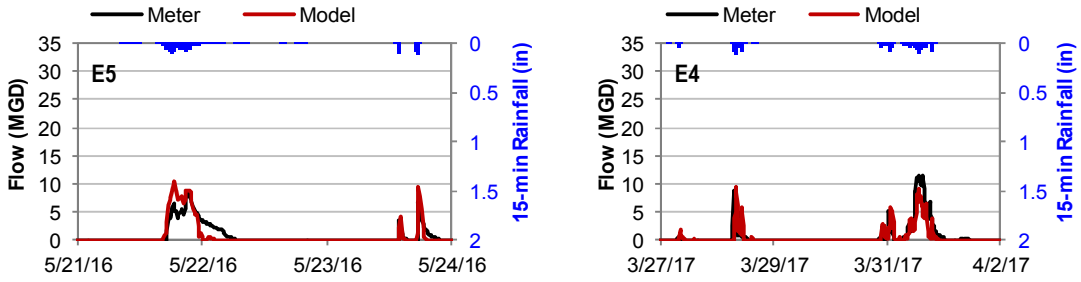
Note: Five of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E2, E3) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CSO-05 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

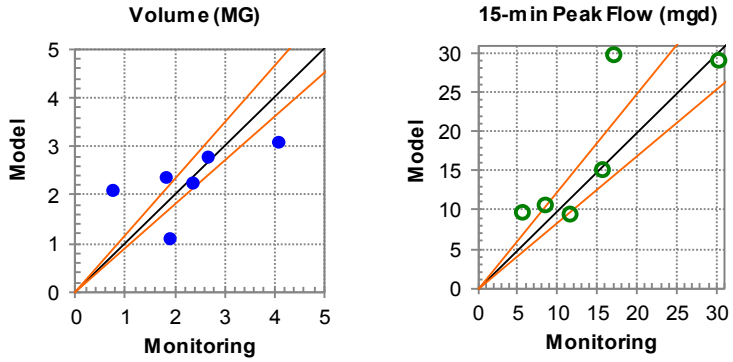
CSO-05 Model Calibration Results (Metered and Modeled Flow)



CSO-05 Model Validation Results (Metered and Modeled Flow)



CSO-05 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

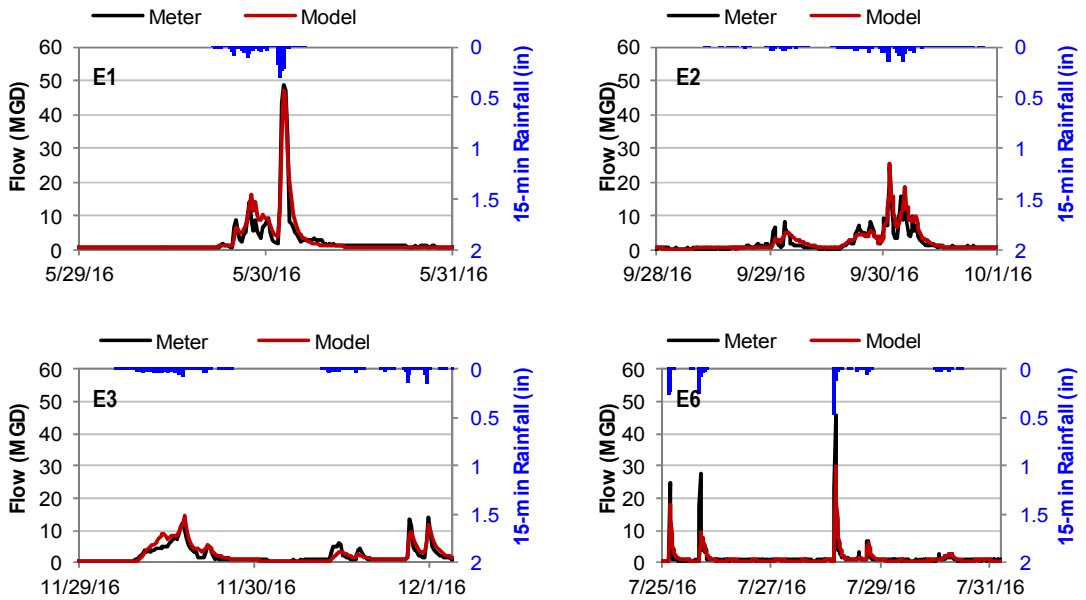


CSO-05 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	16.91	29.97	-15% to +25%	77%	1.79	2.36	-10% to +20%	32%
E2	15.44	15.09	-15% to +25%	-2%	2.64	2.80	-10% to +20%	6%
E3	5.39	9.80	-15% to +25%	82%	0.72	2.12	-10% to +20%	194%
E4	11.39	9.58	-15% to +25%	-16%	4.05	3.09	-10% to +20%	-24%
E5	8.46	10.60	-15% to +25%	25%	2.35	2.27	-10% to +20%	-3%
E6	30.25	29.25	-15% to +25%	-3%	1.88	1.12	-10% to +20%	-40%

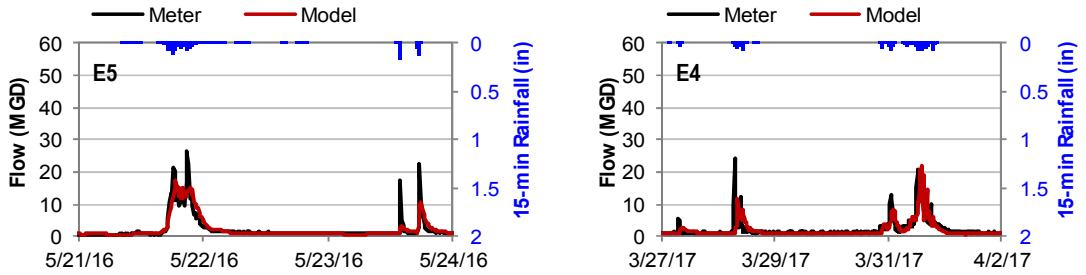
Note: Four of the six wet weather event peak flows are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E1, E2, and E3) is not consistent with the recorded rainfall intensity. The overflow volume calibration is more challenging, especially for the small overflow event like E3. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-08 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

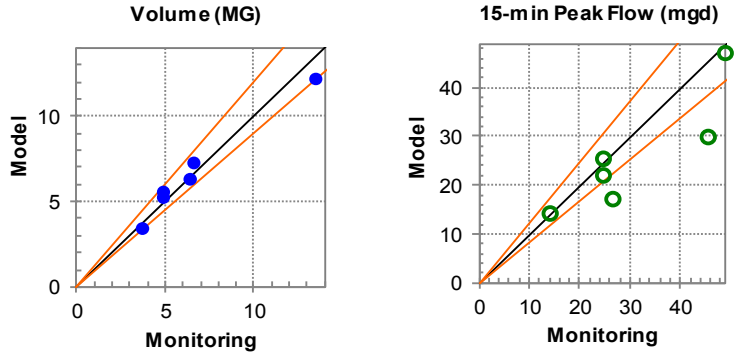
IN-08 Model Calibration Results (Metered and Modeled Flow)



IN-08 Model Validation Results (Metered and Modeled Flow)

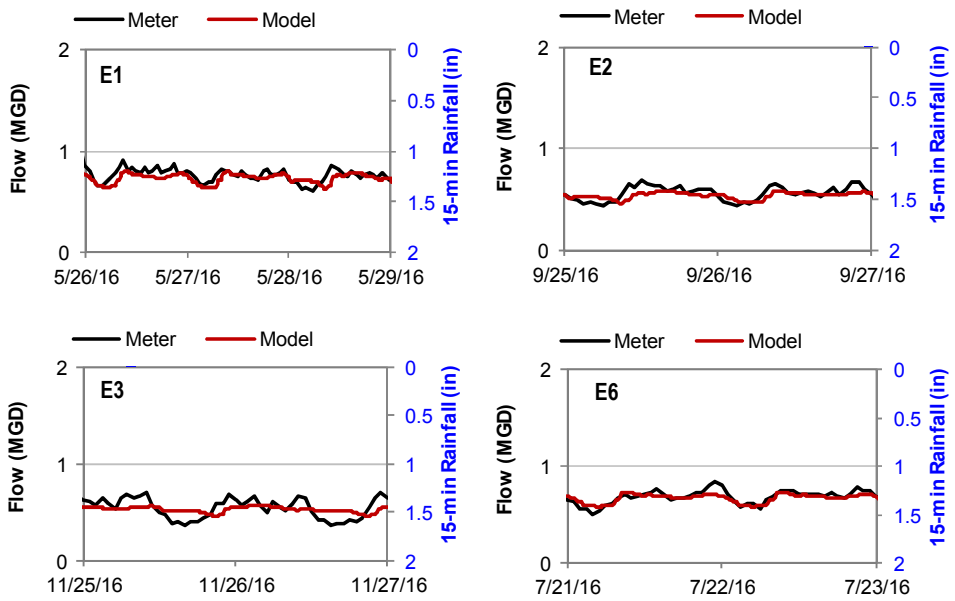


IN-08 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

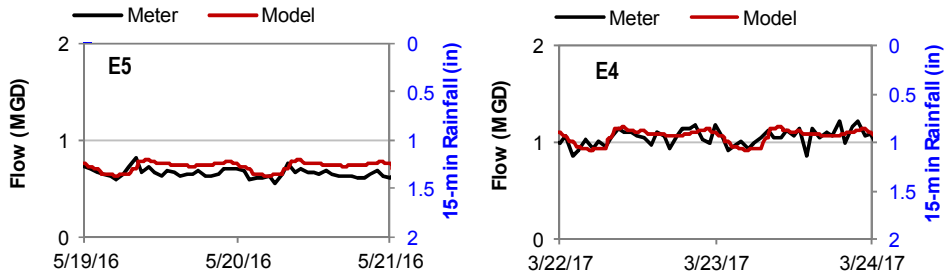


FLOW METER IN-08 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

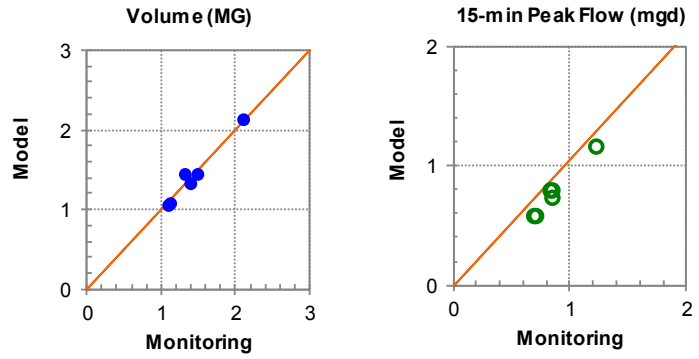
IN-08 Model Calibration Results (Metered and Modeled Flow)



IN-08 Model Validation Results (Metered and Modeled Flow)



IN-08 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



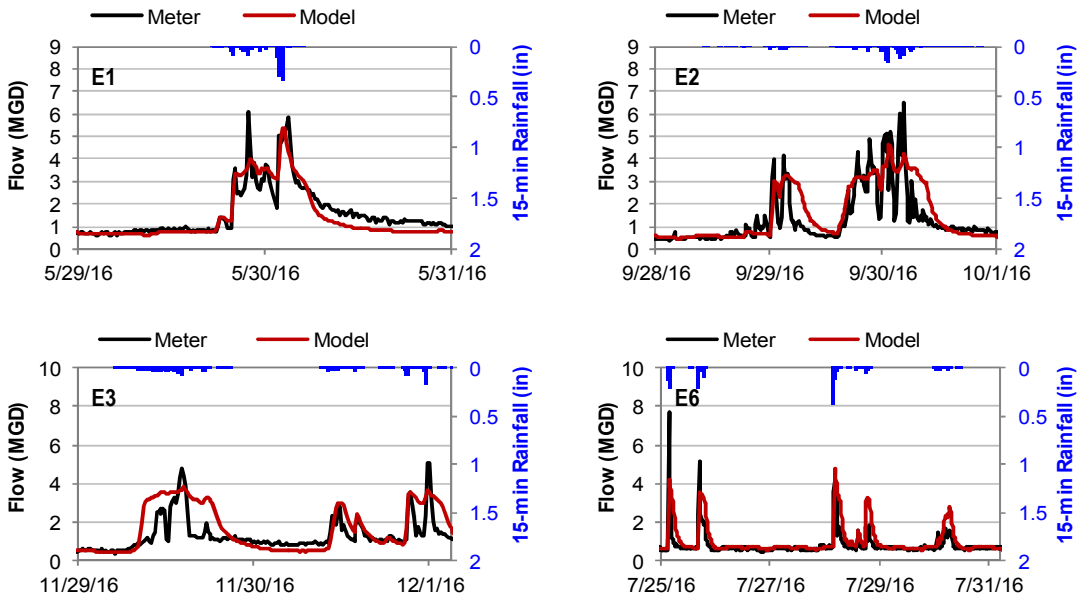
IN-08 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.85	0.80	-10% to +10%	-6%	1.49	1.46	-10% to +10%	-2%
E2	0.69	0.59	-10% to +10%	-15%	1.12	1.08	-10% to +10%	-4%
E3	0.70	0.58	-10% to +10%	-17%	1.09	1.06	-10% to +10%	-3%
E4	1.22	1.16	-10% to +10%	-5%	2.11	2.13	-10% to +10%	1%
E5	0.82	0.80	-10% to +10%	-3%	1.32	1.46	-10% to +10%	11%
E6	0.84	0.73	-10% to +10%	-13%	1.38	1.35	-10% to +10%	-2%

IN-08 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	48.94	47.29	-15% to +25%	-3%	4.81	5.28	-10% to +20%	10%
E2	24.74	25.50	-15% to +25%	3%	6.55	7.27	-10% to +20%	11%
E3	14.08	14.44	-15% to +25%	3%	4.84	5.59	-10% to +20%	16%
E4	24.42	22.15	-15% to +25%	-9%	13.46	12.23	-10% to +20%	-9%
E5	26.44	17.45	-15% to +25%	-34%	6.39	6.30	-10% to +20%	-1%
E6	45.55	30.09	-15% to +25%	-34%	3.65	3.42	-10% to +20%	-6%

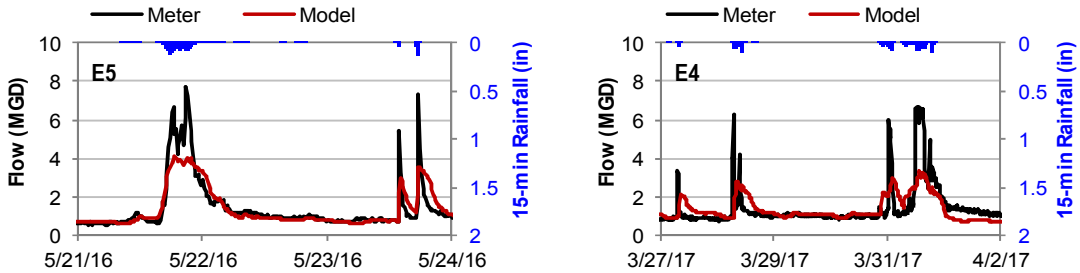
Note: All of the six wet weather events are calibrated well within the industry criteria except for the peak flow of E6. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER EFF-08 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

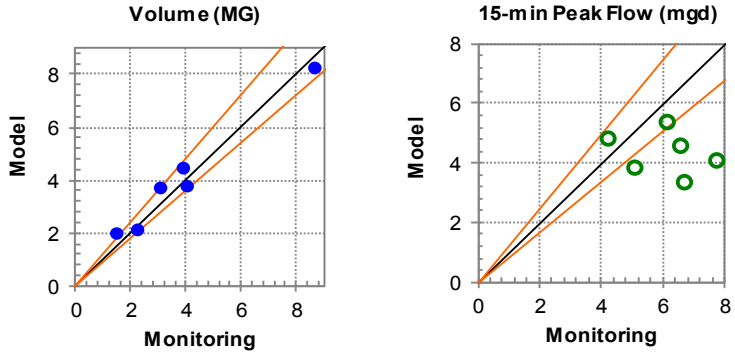
EFF-08 Model Calibration Results (Metered and Modeled Flow)



EFF-08 Model Validation Results (Metered and Modeled Flow)

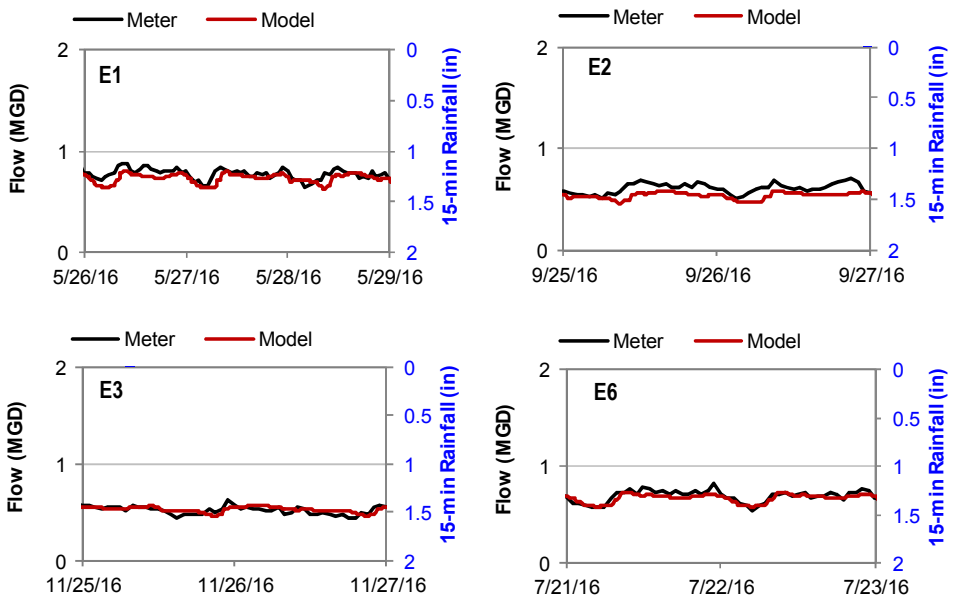


EFF-08 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

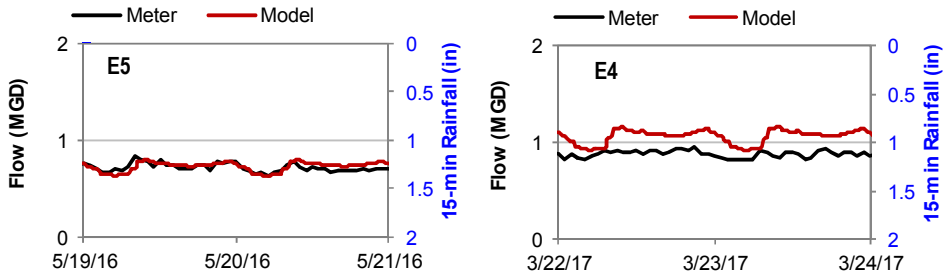


FLOW METER EFF-08 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

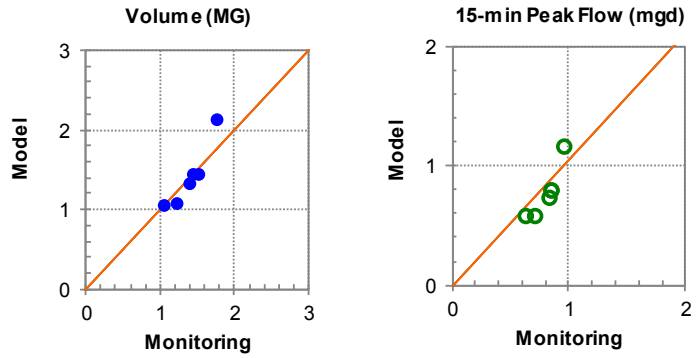
EFF-08 Model Calibration Results (Metered and Modeled Flow)



EFF-08 Model Validation Results (Metered and Modeled Flow)



EFF-08 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



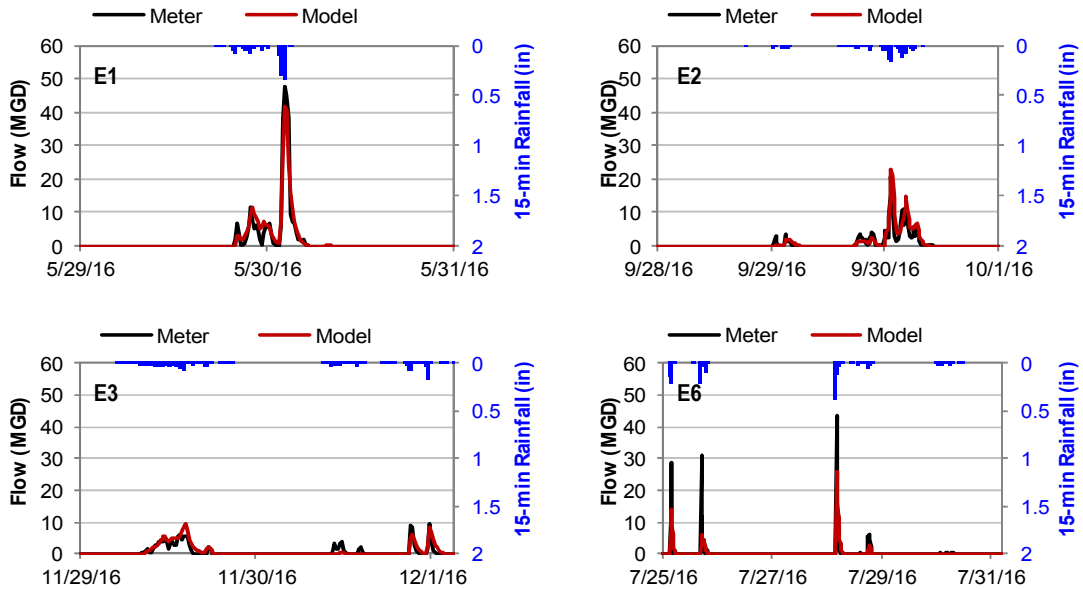
EFF-08 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.85	0.80	-10% to +10%	-6%	1.52	1.46	-10% to +10%	-4%
E2	0.70	0.59	-10% to +10%	-16%	1.22	1.08	-10% to +10%	-12%
E3	0.63	0.58	-10% to +10%	-8%	1.05	1.06	-10% to +10%	2%
E4	0.95	1.16	-10% to +10%	22%	1.76	2.13	-10% to +10%	21%
E5	0.84	0.80	-10% to +10%	-6%	1.44	1.46	-10% to +10%	1%
E6	0.83	0.73	-10% to +10%	-11%	1.39	1.35	-10% to +10%	-3%

EFF-08 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	6.09	5.39	-15% to +25%	-11%	2.23	2.13	-10% to +20%	-4%
E2	6.53	4.61	-15% to +25%	-29%	3.86	4.52	-10% to +20%	17%
E3	5.08	3.84	-15% to +25%	-24%	3.02	3.75	-10% to +20%	24%
E4	6.65	3.35	-15% to +25%	-50%	8.66	8.25	-10% to +20%	-5%
E5	7.71	4.13	-15% to +25%	-46%	3.99	3.82	-10% to +20%	-4%
E6	4.18	4.81	-15% to +25%	15%	1.44	2.05	-10% to +20%	42%

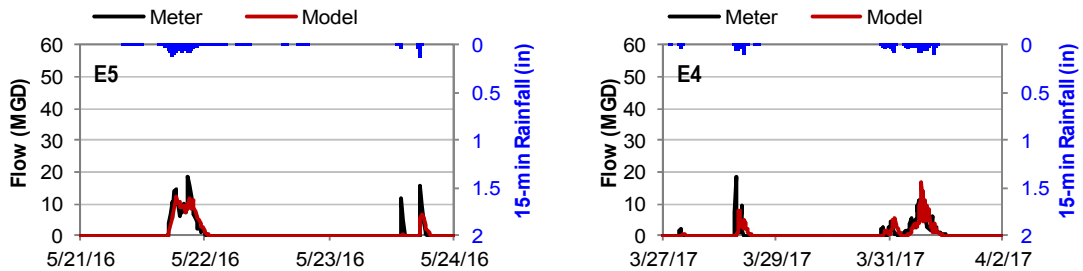
Note: Four of the six wet weather events are calibrated well within the industry criteria. The EFF-08 meter is the effluent meter from Regulator 08. The calibration of Regulator 08 meters (which include the IN-08, EFF-08 and CSO-08 meters) are more focused on the influent IN-08 meter and the overflow CSO-08 meter when the total metered influent flow (IN-08) is not balanced with the total metered effluent flow (EFF-08 plus CSO-08). Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CSO-08 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

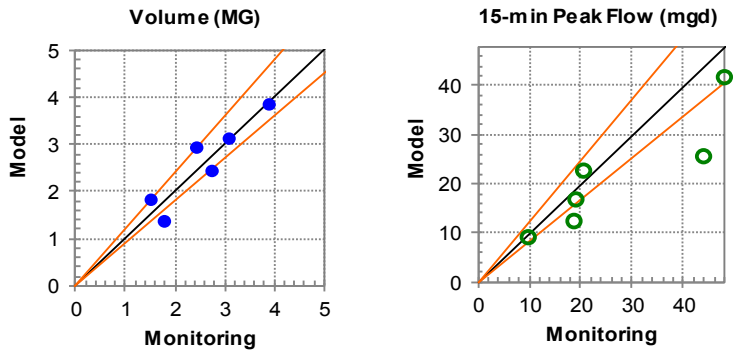
CSO-08 Model Calibration Results (Metered and Modeled Flow)



CSO-08 Model Validation Results (Metered and Modeled Flow)



CSO-08 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

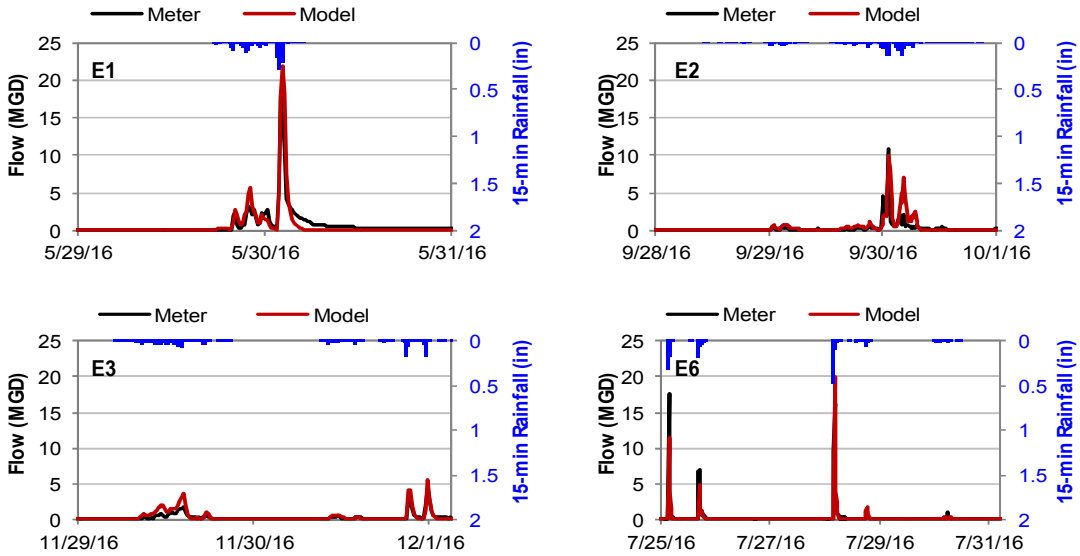


CSO-08 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	47.82	41.68	-15% to +25%	-13%	3.08	3.15	-10% to +20%	2%
E2	20.55	22.75	-15% to +25%	11%	2.42	2.95	-10% to +20%	22%
E3	9.50	9.30	-15% to +25%	-2%	1.52	1.84	-10% to +20%	22%
E4	18.72	16.78	-15% to +25%	-10%	3.87	3.87	-10% to +20%	0%
E5	18.35	12.49	-15% to +25%	-32%	2.73	2.46	-10% to +20%	-10%
E6	43.63	25.84	-15% to +25%	-41%	1.78	1.37	-10% to +20%	-23%

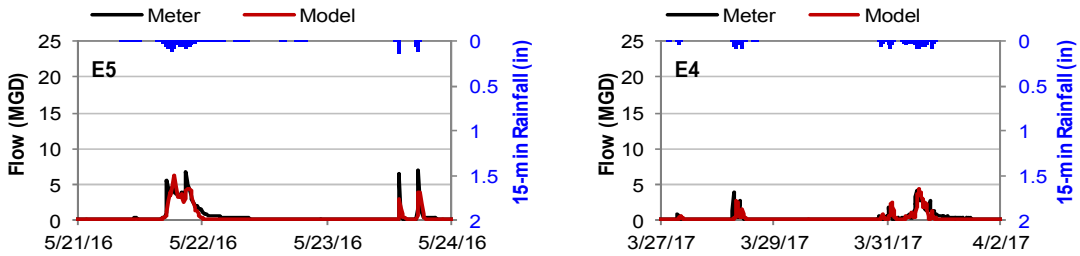
Note: Four of the six wet weather events are calibrated well within the industry criteria. This is the CSO meter from Regulator 08, the calibration of Regulator 08 meters (including Influent meter, effluent meter and CSO meter) are more focused on matching the peak flow and flow volume of the influent and CSO meter. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-09 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

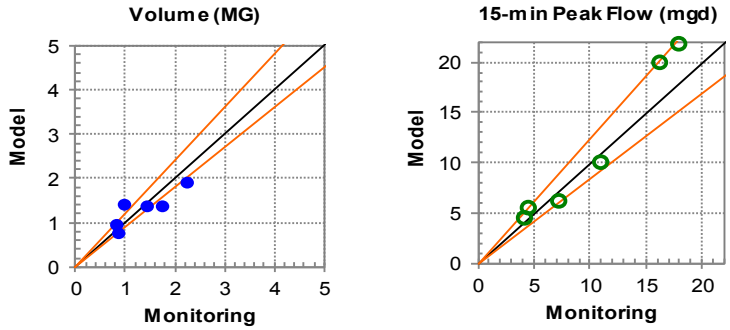
IN-09 Model Calibration Results (Metered and Modeled Flow)



IN-09 Model Validation Results (Metered and Modeled Flow)

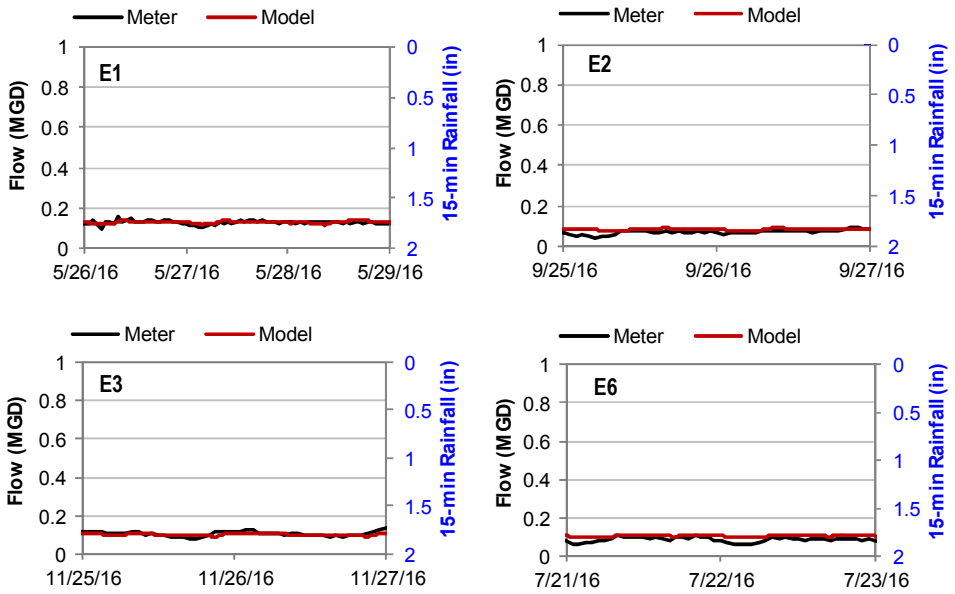


IN-09 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

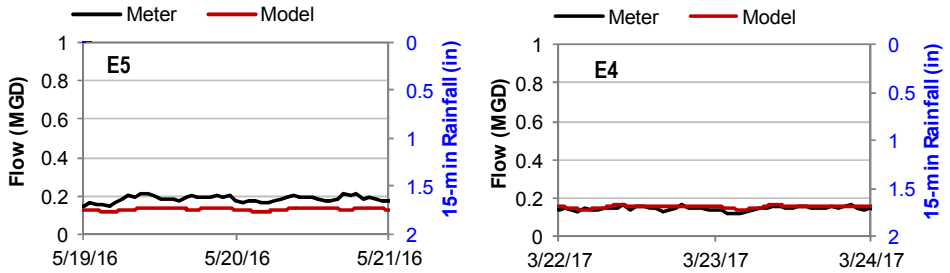


FLOW METER IN-09 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

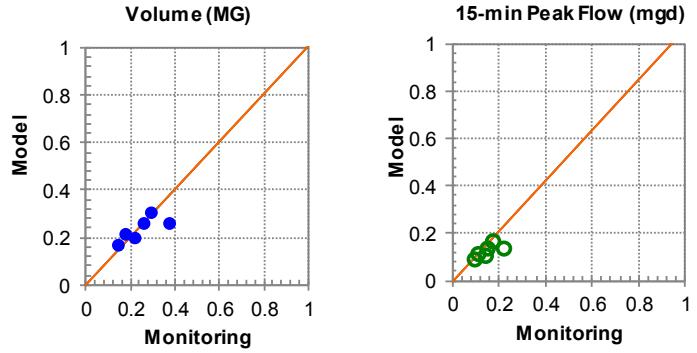
IN-09 Model Calibration Results (Metered and Modeled Flow)



IN-09 Model Validation Results (Metered and Modeled Flow)



IN-09 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



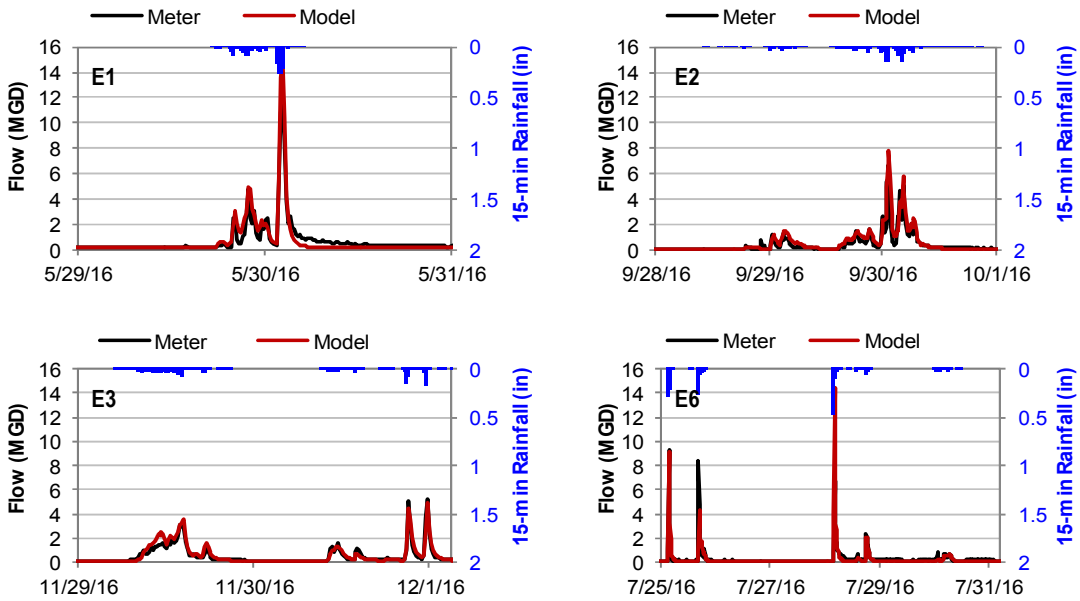
IN-09 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.15	0.14	-10% to +10%	-3%	0.26	0.26	-10% to +10%	2%
E2	0.09	0.09	-10% to +10%	-4%	0.14	0.17	-10% to +10%	19%
E3	0.14	0.11	-10% to +10%	-20%	0.21	0.20	-10% to +10%	-4%
E4	0.17	0.17	-10% to +10%	-2%	0.29	0.31	-10% to +10%	6%
E5	0.21	0.14	-10% to +10%	-35%	0.37	0.26	-10% to +10%	-29%
E6	0.11	0.11	-10% to +10%	6%	0.17	0.21	-10% to +10%	22%

IN-09 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	17.88	21.81	-15% to +25%	22%	1.42	1.39	-10% to +20%	-2%
E2	10.87	10.02	-15% to +25%	-8%	0.96	1.41	-10% to +20%	47%
E3	4.41	5.58	-15% to +25%	27%	0.79	0.98	-10% to +20%	24%
E4	4.10	4.49	-15% to +25%	10%	2.24	1.91	-10% to +20%	-15%
E5	7.10	6.25	-15% to +25%	-12%	1.74	1.41	-10% to +20%	-19%
E6	16.13	19.98	-15% to +25%	24%	0.85	0.77	-10% to +20%	-9%

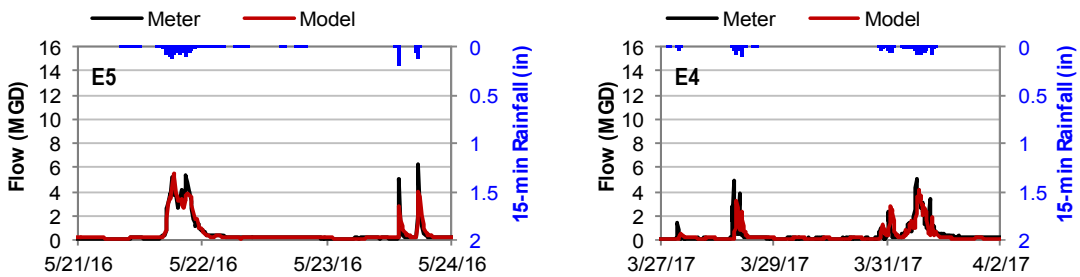
Note: Four of the six wet weather events are calibrated well within or close to the industry criteria. Flow meter data recorded for some of the events (E3, E5, and E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-10 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

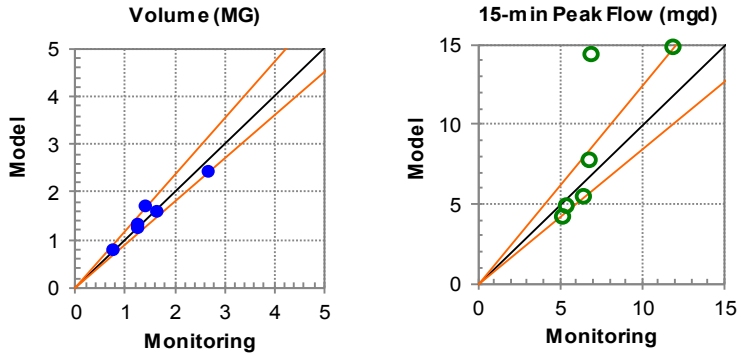
IN-10 Model Calibration Results (Metered and Modeled Flow)



IN-10 Model Validation Results (Metered and Modeled Flow)

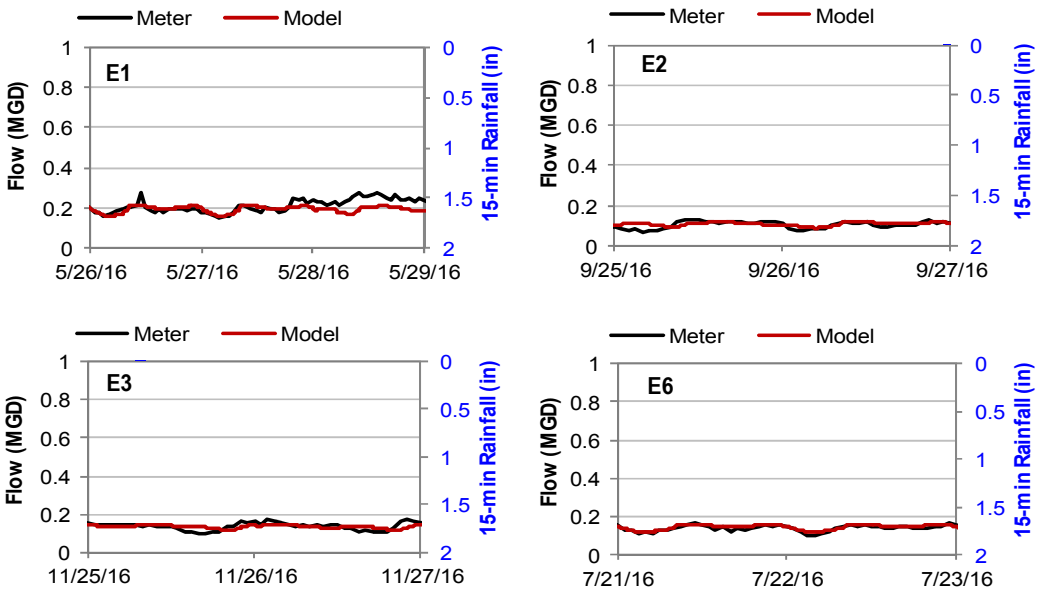


IN-10 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

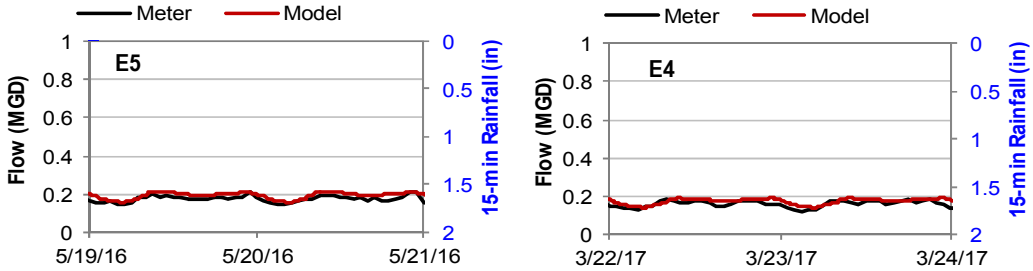


FLOW METER IN-10 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

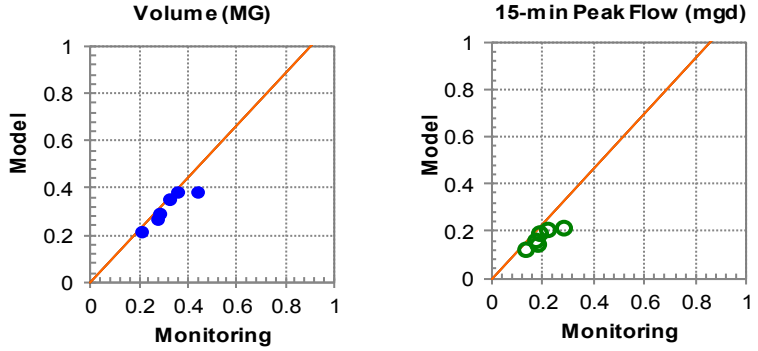
IN-10 Model Calibration Results (Metered and Modeled Flow)



IN-10 Model Validation Results (Metered and Modeled Flow)



IN-10 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



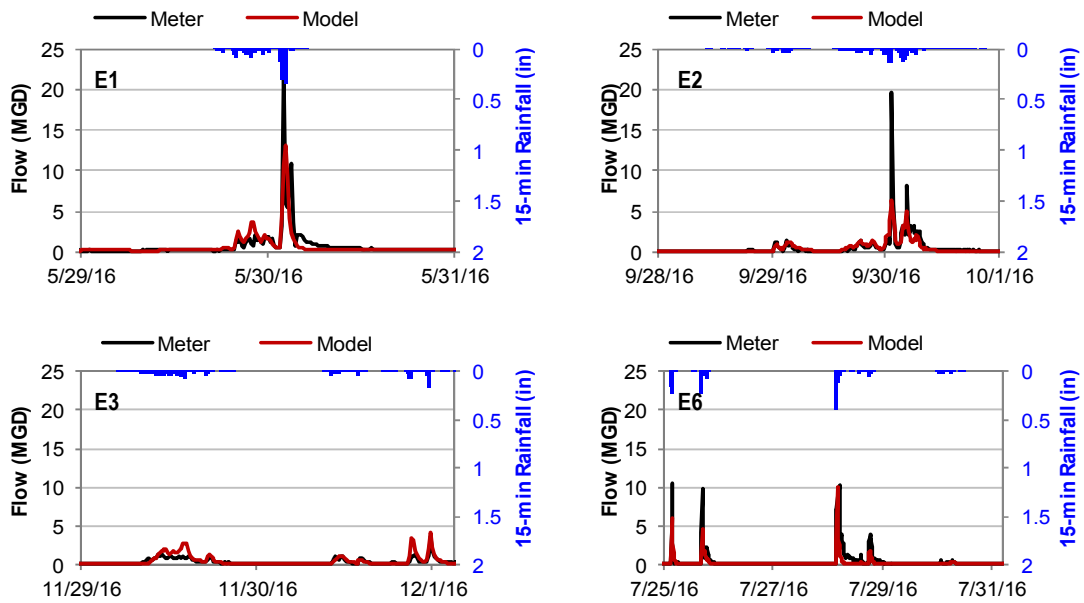
IN-10 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.28	0.21	-10% to +10%	-24%	0.44	0.39	-10% to +10%	-12%
E2	0.13	0.12	-10% to +10%	-10%	0.21	0.22	-10% to +10%	3%
E3	0.18	0.15	-10% to +10%	-16%	0.27	0.27	-10% to +10%	-1%
E4	0.19	0.19	-10% to +10%	1%	0.32	0.35	-10% to +10%	8%
E5	0.22	0.21	-10% to +10%	-2%	0.35	0.39	-10% to +10%	10%
E6	0.17	0.16	-10% to +10%	-6%	0.28	0.29	-10% to +10%	5%

IN-10 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	11.83	14.96	-15% to +25%	26%	1.25	1.28	-10% to +20%	3%
E2	6.70	7.84	-15% to +25%	17%	1.38	1.72	-10% to +20%	24%
E3	5.31	4.95	-15% to +25%	-7%	1.23	1.34	-10% to +20%	9%
E4	5.04	4.22	-15% to +25%	-16%	2.67	2.46	-10% to +20%	-8%
E5	6.31	5.56	-15% to +25%	-12%	1.61	1.60	-10% to +20%	-1%
E6	6.82	14.42	-15% to +25%	112%	0.72	0.80	-10% to +20%	11%

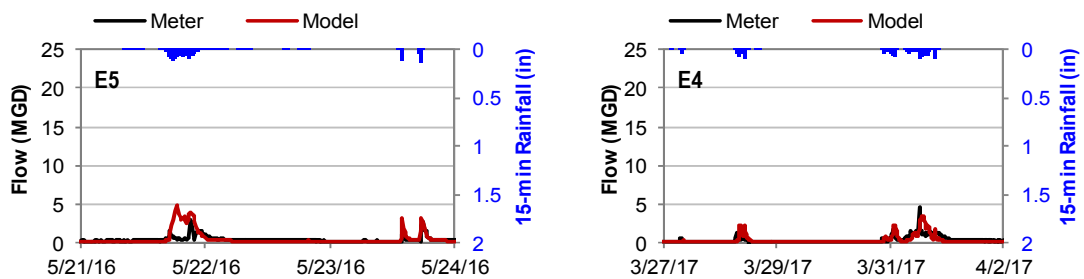
Note: Five of the six wet weather events are calibrated well within or close to the industry criteria. Flow meter data recorded for some of the events (E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-11 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

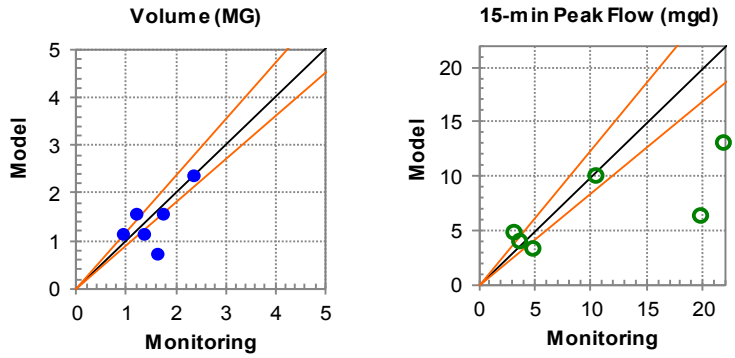
IN-11 Model Calibration Results (Metered and Modeled Flow)



IN-11 Model Validation Results (Metered and Modeled Flow)

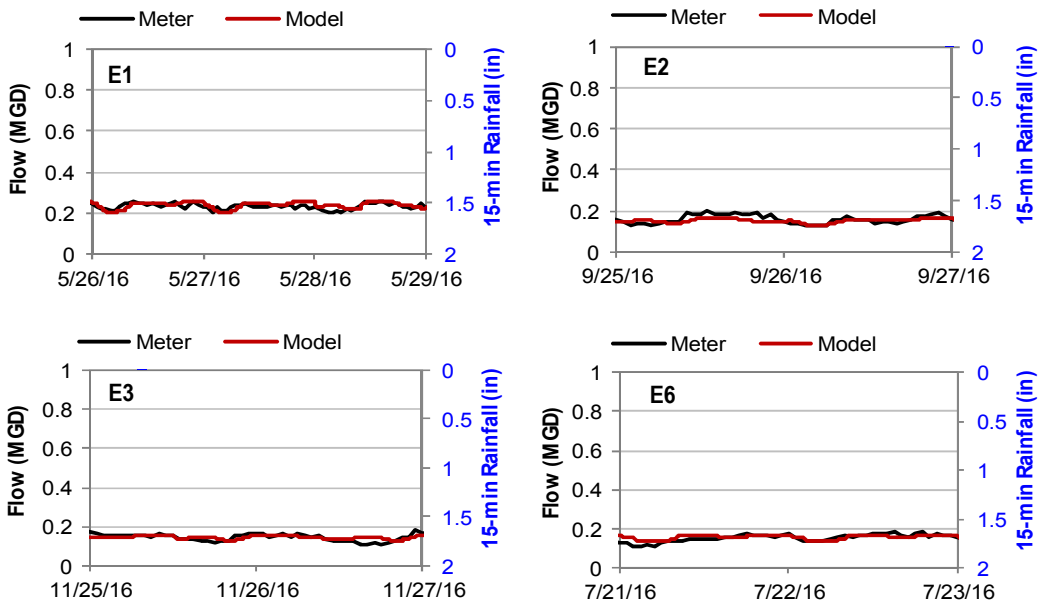


IN-11 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

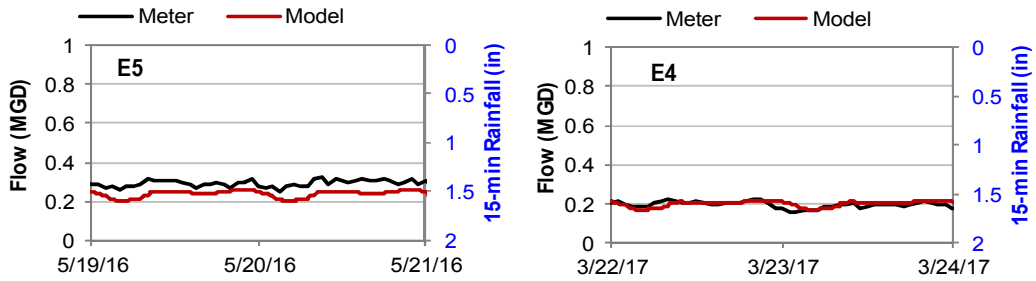


FLOW METER IN-11 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

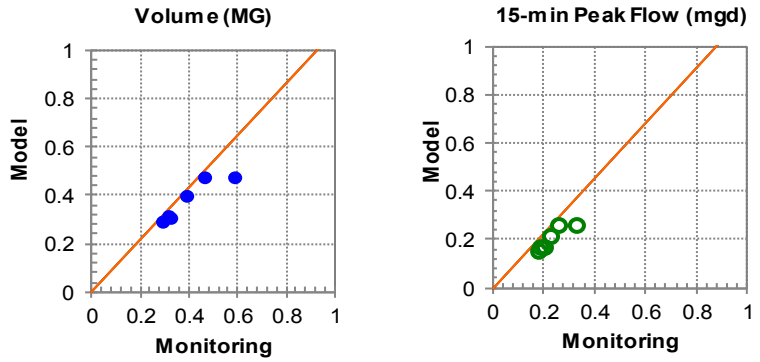
IN-11 Model Calibration Results (Metered and Modeled Flow)



IN-11 Model Validation Results (Metered and Modeled Flow)



IN-11 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



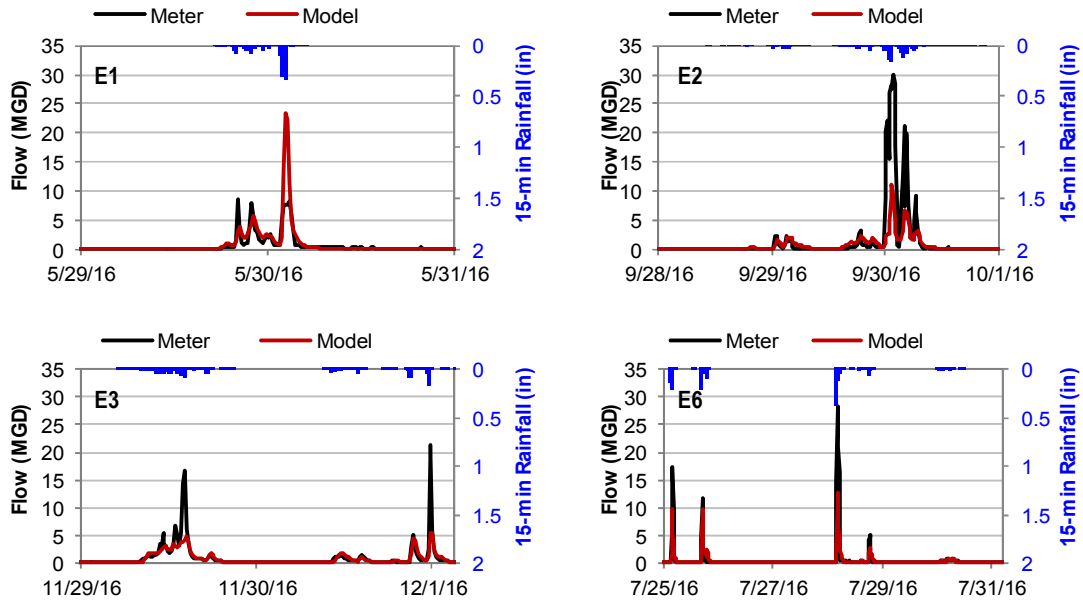
IN-11 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.26	0.26	-10% to +10%	1%	0.46	0.48	-10% to +10%	3%
E2	0.20	0.17	-10% to +10%	-17%	0.32	0.31	-10% to +10%	-4%
E3	0.18	0.16	-10% to +10%	-13%	0.29	0.29	-10% to +10%	1%
E4	0.23	0.22	-10% to +10%	-5%	0.39	0.40	-10% to +10%	2%
E5	0.32	0.26	-10% to +10%	-20%	0.59	0.48	-10% to +10%	-18%
E6	0.19	0.17	-10% to +10%	-8%	0.31	0.32	-10% to +10%	2%

IN-11 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	21.79	13.12	-15% to +25%	-40%	1.34	1.14	-10% to +20%	-15%
E2	19.64	6.47	-15% to +25%	-67%	1.71	1.56	-10% to +20%	-9%
E3	3.59	4.09	-15% to +25%	14%	0.94	1.16	-10% to +20%	24%
E4	4.74	3.44	-15% to +25%	-27%	2.34	2.37	-10% to +20%	1%
E5	3.06	4.83	-15% to +25%	58%	1.19	1.58	-10% to +20%	33%
E6	10.30	10.08	-15% to +25%	-2%	1.62	0.72	-10% to +20%	-55%

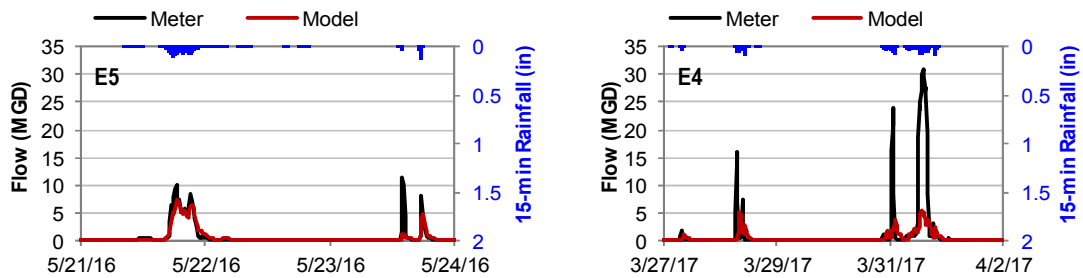
Note: Only two of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E1, E2, E5) is not consistent with the recorded rainfall intensity. The calibration goal is to balance the over-prediction and under-prediction event numbers cross all the events. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-13 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

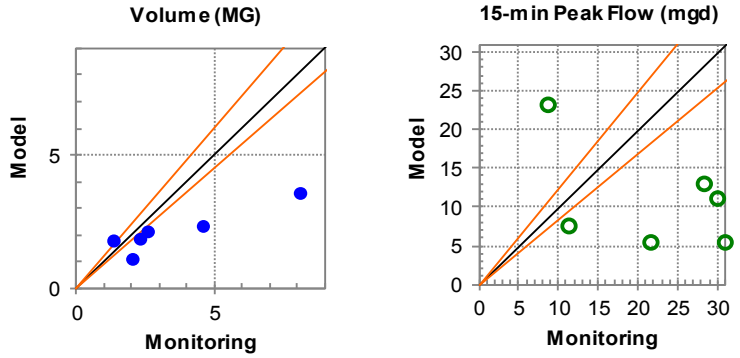
IN-13 Model Calibration Results (Metered and Modeled Flow)



IN-13 Model Validation Results (Metered and Modeled Flow)

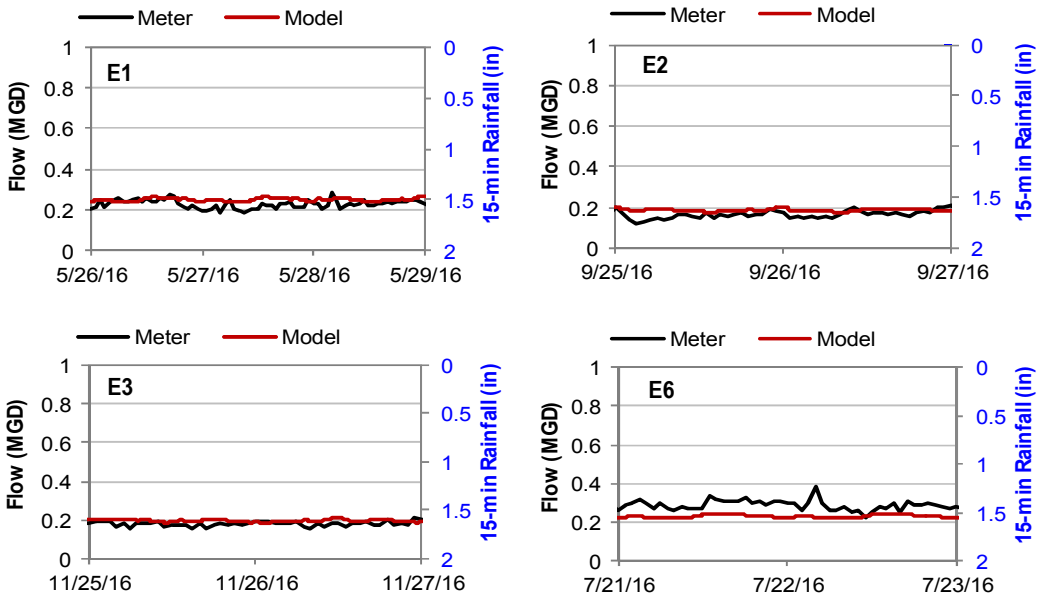


IN-13 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

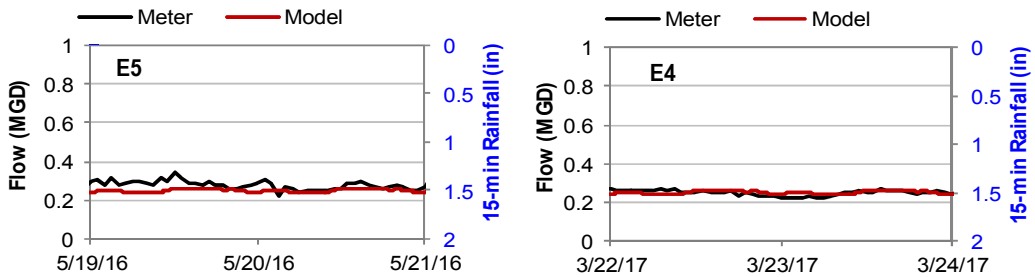


FLOW METER IN-13 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

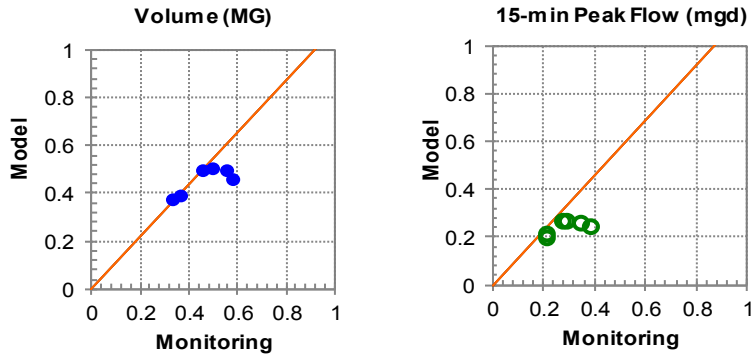
IN-13 Model Calibration Results (Metered and Modeled Flow)



IN-13 Model Validation Results (Metered and Modeled Flow)



IN-13 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



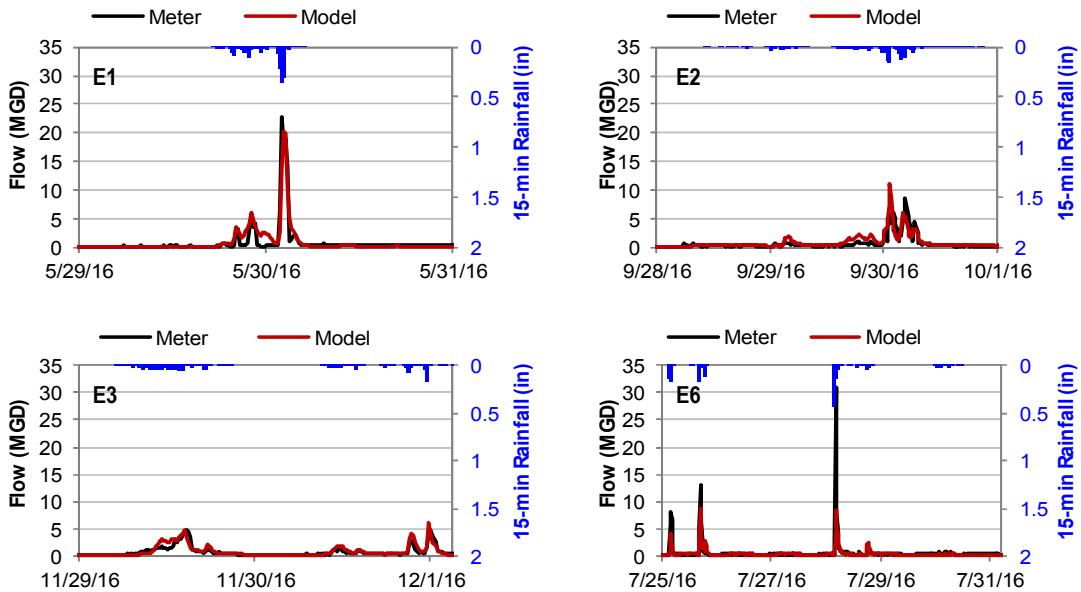
IN-13 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.29	0.27	-10% to +10%	-5%	0.45	0.50	-10% to +10%	11%
E2	0.21	0.20	-10% to +10%	-5%	0.33	0.37	-10% to +10%	13%
E3	0.21	0.21	-10% to +10%	0%	0.36	0.39	-10% to +10%	9%
E4	0.27	0.27	-10% to +10%	-2%	0.50	0.51	-10% to +10%	1%
E5	0.34	0.26	-10% to +10%	-23%	0.56	0.50	-10% to +10%	-10%
E6	0.38	0.24	-10% to +10%	-37%	0.58	0.46	-10% to +10%	-20%

IN-13 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	8.54	23.25	-15% to +25%	172%	1.35	1.80	-10% to +20%	34%
E2	29.87	11.09	-15% to +25%	-63%	4.59	2.37	-10% to +20%	-48%
E3	21.47	5.51	-15% to +25%	-74%	2.28	1.86	-10% to +20%	-18%
E4	30.86	5.53	-15% to +25%	-82%	8.12	3.58	-10% to +20%	-56%
E5	11.35	7.61	-15% to +25%	-33%	2.53	2.15	-10% to +20%	-15%
E6	28.28	12.95	-15% to +25%	-54%	1.98	1.12	-10% to +20%	-43%

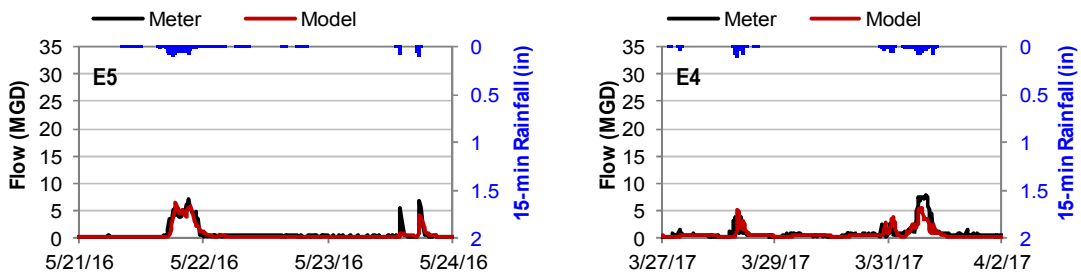
Note: This flow meter is hard to calibrate because flow meter data recorded for most of the events is not consistent with the recorded rainfall intensity. The calibration goal is to calibrate the meter to those wet weather response in line with the rainfall data.

FLOW METER IN-14 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

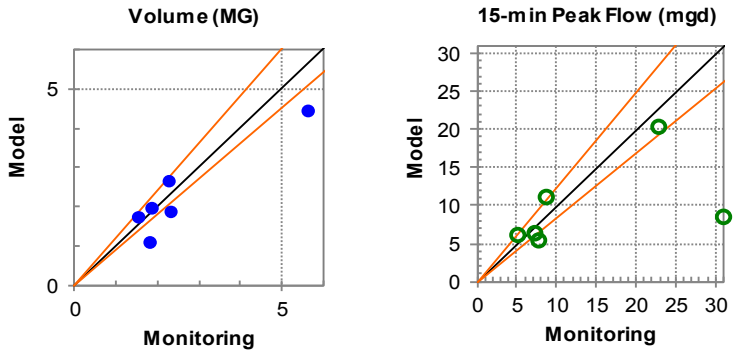
IN-14 Model Calibration Results (Metered and Modeled Flow)



IN-14 Model Validation Results (Metered and Modeled Flow)

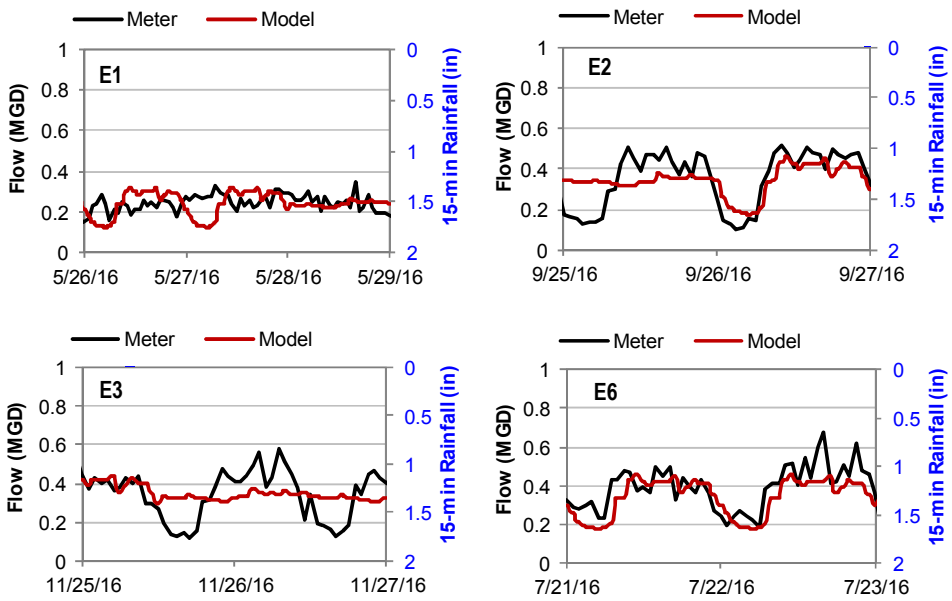


IN-14 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

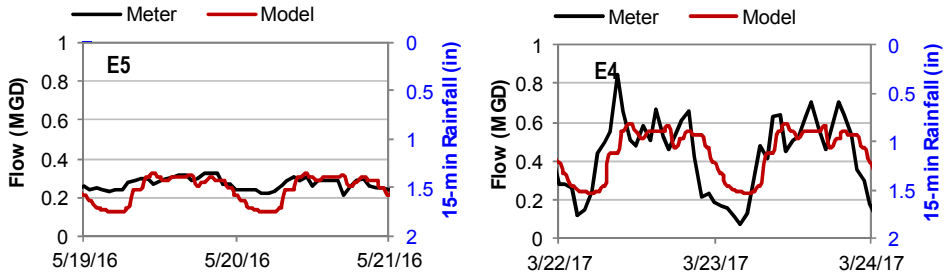


FLOW METER IN-14 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

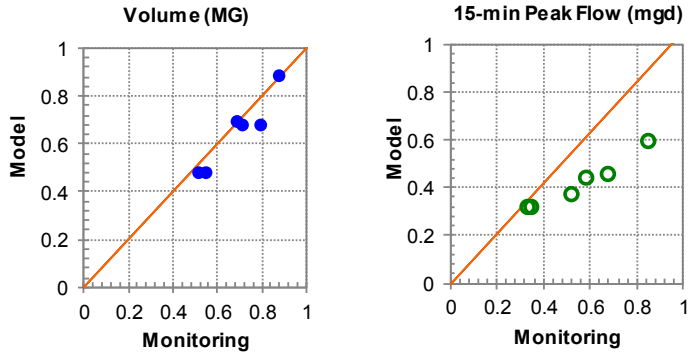
IN-14 Model Calibration Results (Metered and Modeled Flow)



IN-14 Model Validation Results (Metered and Modeled Flow)



IN-14 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



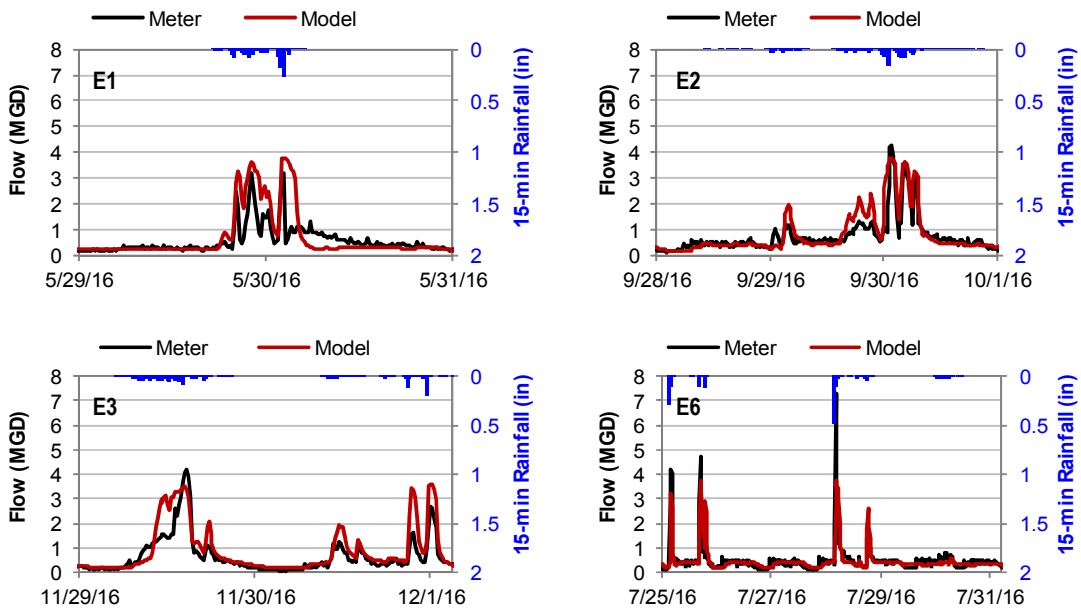
IN-14 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.35	0.32	-10% to +10%	-6%	0.51	0.48	-10% to +10%	-6%
E2	0.52	0.38	-10% to +10%	-27%	0.71	0.69	-10% to +10%	-4%
E3	0.58	0.44	-10% to +10%	-24%	0.68	0.70	-10% to +10%	2%
E4	0.84	0.59	-10% to +10%	-30%	0.87	0.89	-10% to +10%	2%
E5	0.33	0.32	-10% to +10%	0%	0.54	0.48	-10% to +10%	-11%
E6	0.67	0.46	-10% to +10%	-32%	0.79	0.68	-10% to +10%	-13%

IN-14 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	22.85	20.34	-15% to +25%	-11%	1.54	1.74	-10% to +20%	13%
E2	8.60	11.23	-15% to +25%	31%	2.25	2.67	-10% to +20%	19%
E3	4.98	6.07	-15% to +25%	22%	1.84	2.00	-10% to +20%	9%
E4	7.74	5.54	-15% to +25%	-28%	5.62	4.46	-10% to +20%	-21%
E5	7.13	6.51	-15% to +25%	-9%	2.29	1.88	-10% to +20%	-18%
E6	30.94	8.51	-15% to +25%	-73%	1.81	1.14	-10% to +20%	-37%

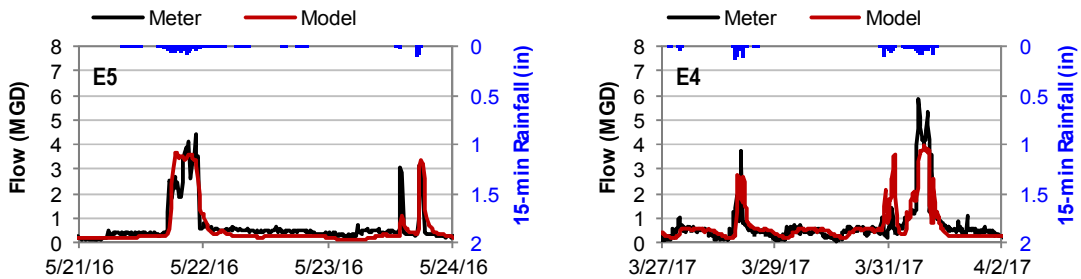
Note: Four of the six wet weather events are calibrated well within or close to the industry criteria. Flow meter data recorded for some of the events (E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER EFF-14 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

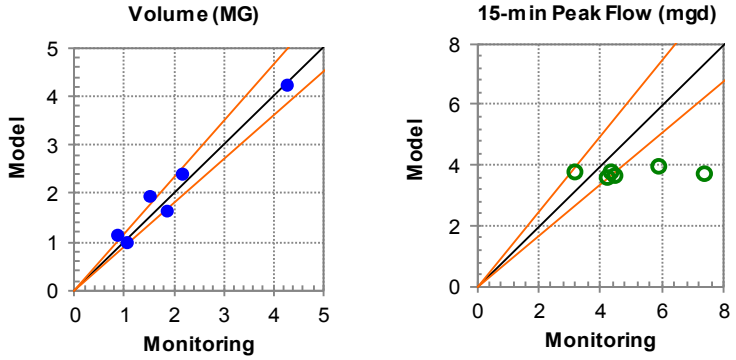
EFF-14 Model Calibration Results (Metered and Modeled Flow)



EFF-14 Model Validation Results (Metered and Modeled Flow)

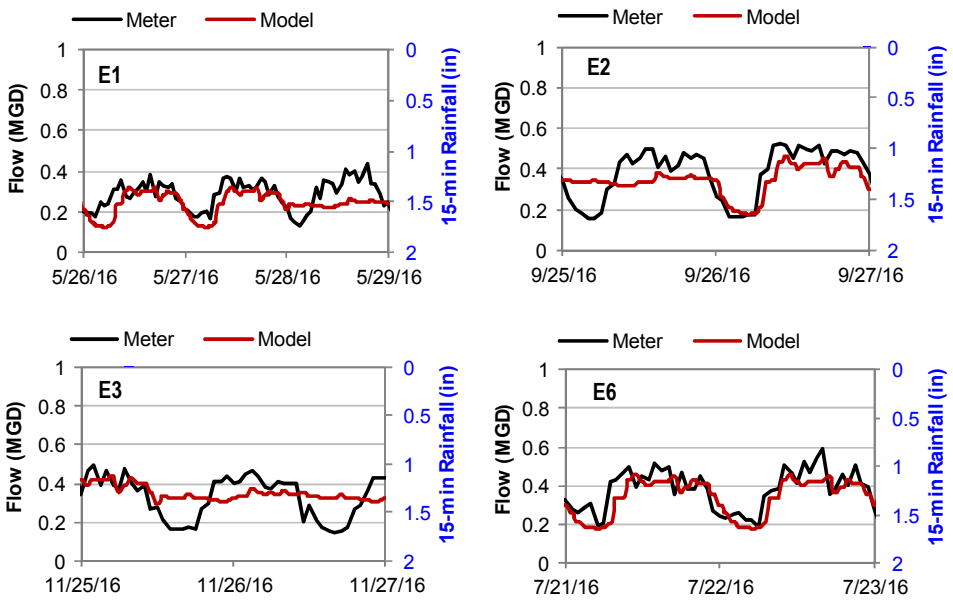


EFF-14 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

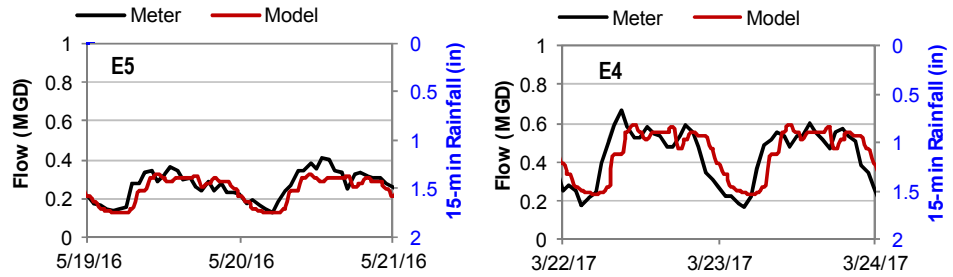


FLOW METER EFF-14 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

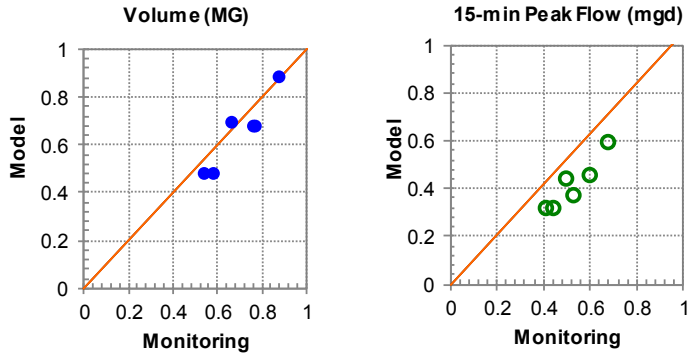
EFF-14 Model Calibration Results (Metered and Modeled Flow)



EFF-14 Model Validation Results (Metered and Modeled Flow)



EFF-14 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



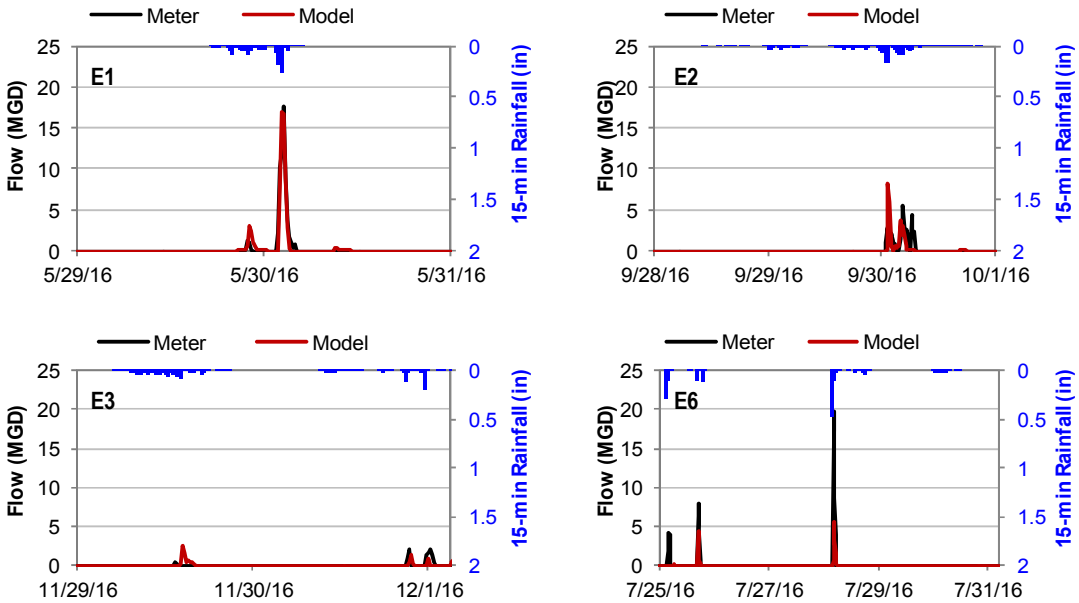
EFF-14 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.44	0.32	-10% to +10%	-26%	0.58	0.48	-10% to +10%	-17%
E2	0.53	0.38	-10% to +10%	-28%	0.76	0.69	-10% to +10%	-10%
E3	0.49	0.44	-10% to +10%	-11%	0.66	0.70	-10% to +10%	5%
E4	0.67	0.59	-10% to +10%	-11%	0.87	0.89	-10% to +10%	2%
E5	0.41	0.32	-10% to +10%	-21%	0.54	0.48	-10% to +10%	-9%
E6	0.59	0.46	-10% to +10%	-23%	0.76	0.68	-10% to +10%	-10%

EFF-14 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	3.17	3.80	-15% to +25%	20%	0.85	1.17	-10% to +20%	36%
E2	4.29	3.81	-15% to +25%	-11%	2.14	2.43	-10% to +20%	14%
E3	4.20	3.59	-15% to +25%	-15%	1.50	1.97	-10% to +20%	31%
E4	5.84	3.99	-15% to +25%	-32%	4.25	4.25	-10% to +20%	0%
E5	4.47	3.70	-15% to +25%	-17%	1.84	1.64	-10% to +20%	-11%
E6	7.32	3.75	-15% to +25%	-49%	1.05	1.01	-10% to +20%	-4%

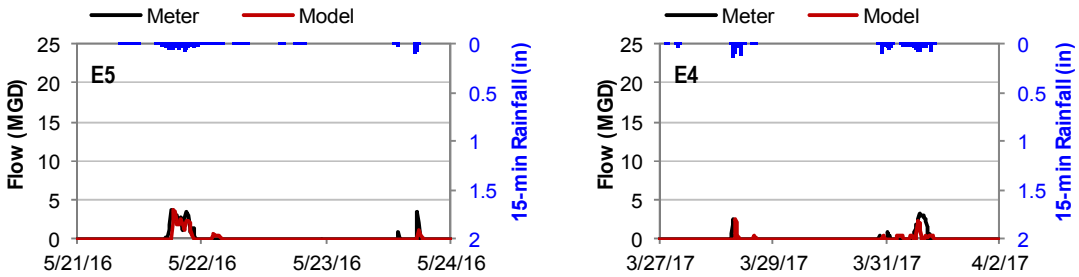
Note: Four of the six wet weather events are calibrated well within the industry criteria. The EFF-14 meter is the effluent meter from Regulator 14. The calibration of Regulator 14 meters (which include the IN-14, EFF-14 and CSO-14 meters) are more focused on the influent IN-14 meter and the overflow CSO-14 meter when the total metered influent flow (IN-14) is not balanced with the total metered effluent flow (EFF-14 plus CSO-14). Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CSO-14 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

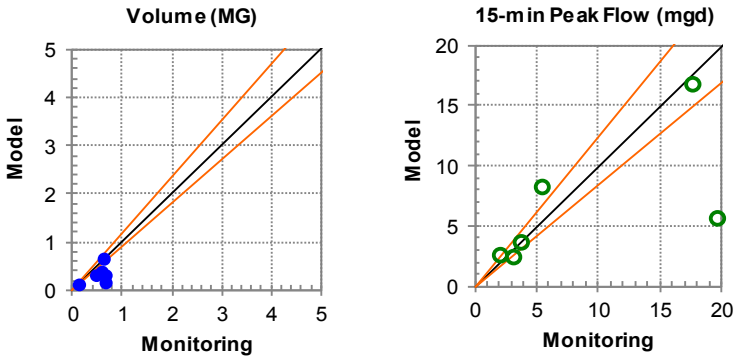
CSO-14 Model Calibration Results (Metered and Modeled Flow)



CSO-14 Model Validation Results (Metered and Modeled Flow)



CSO-14 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

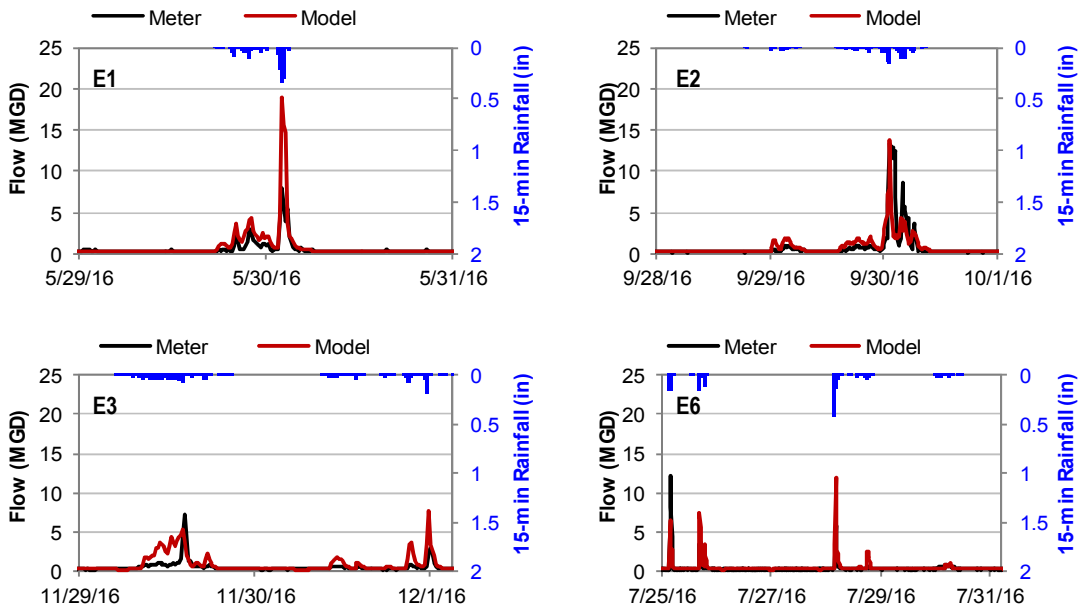


CSO-14 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	17.57	16.85	-15% to +25%	-4%	0.63	0.65	-10% to +20%	3%
E2	5.47	8.20	-15% to +25%	50%	0.45	0.34	-10% to +20%	-25%
E3	2.03	2.59	-15% to +25%	28%	0.10	0.13	-10% to +20%	29%
E4	3.16	2.50	-15% to +25%	-21%	0.65	0.33	-10% to +20%	-49%
E5	3.76	3.64	-15% to +25%	-3%	0.57	0.39	-10% to +20%	-32%
E6	19.66	5.64	-15% to +25%	-71%	0.67	0.18	-10% to +20%	-73%

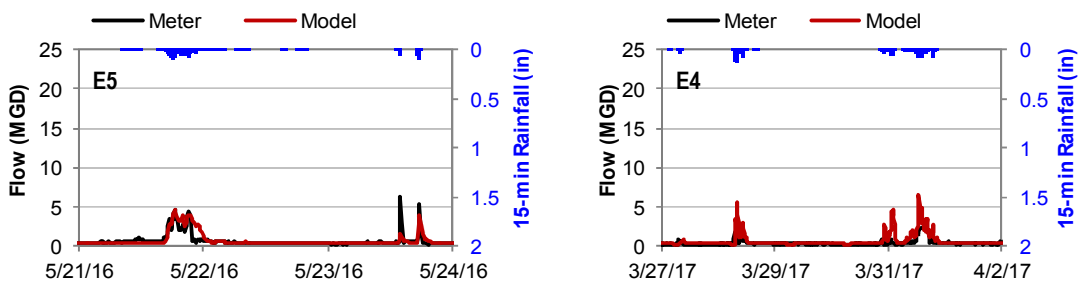
Note: Four of the six wet weather event volumes are calibrated well within or close to the industry criteria. This is the CSO meter from Regulator 14, the calibration of Regulator 14 meters (including Influent meter, effluent meter and CSO meter) are more focused on matching the peak flow and flow volume of the influent and CSO meters. The CSO meter flow volume is challenging to calibrate especially for the small overflow events like E3. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-16 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

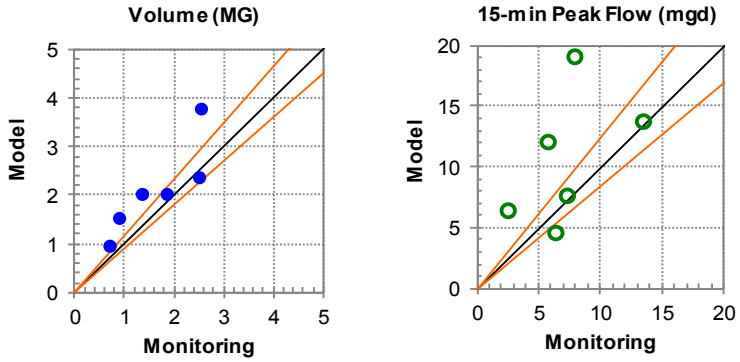
IN-16 Model Calibration Results (Metered and Modeled Flow)



IN-16 Model Validation Results (Metered and Modeled Flow)

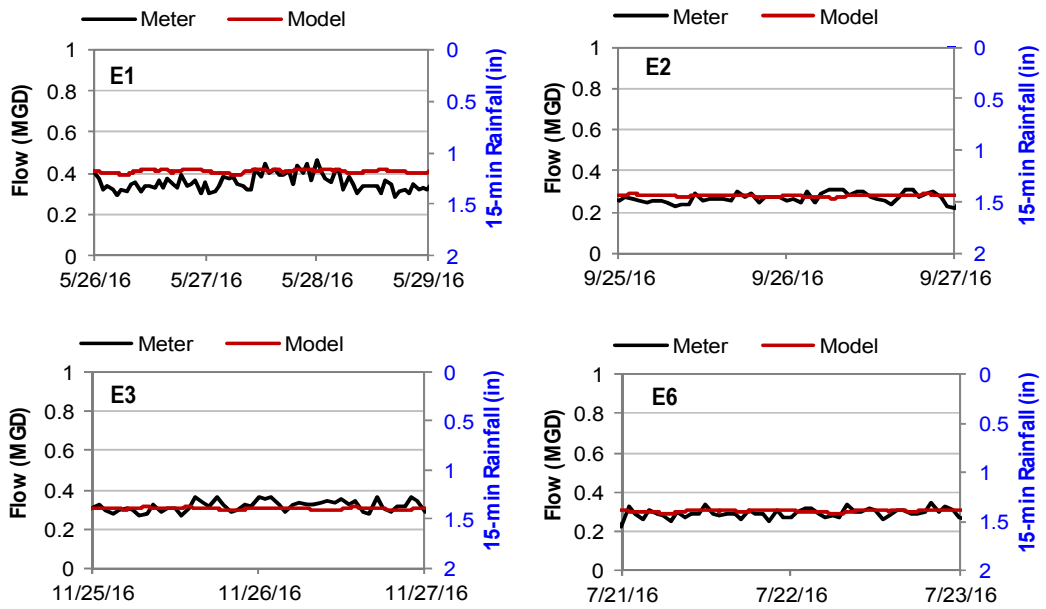


IN-16 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

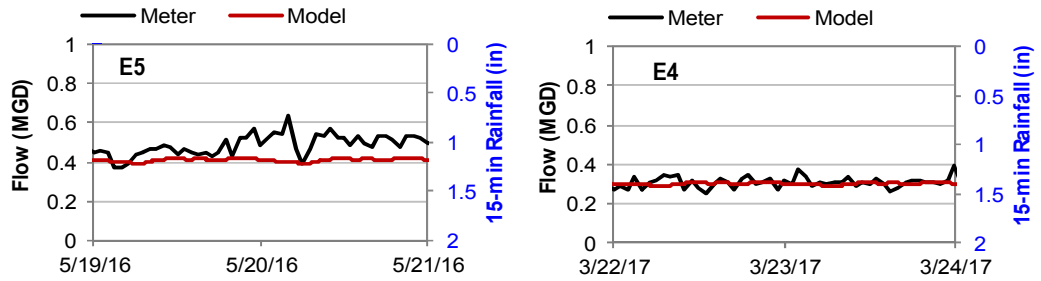


FLOW METER IN-16 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

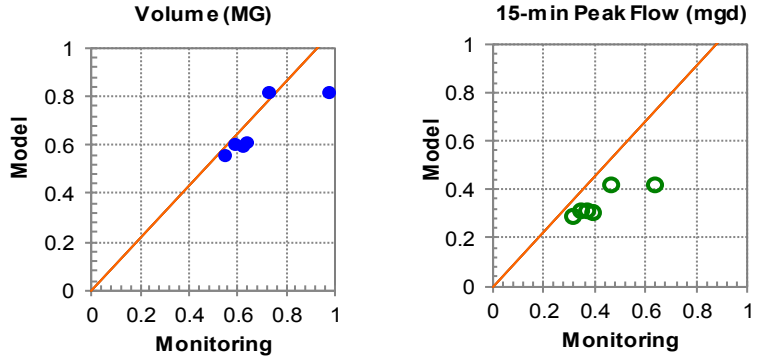
IN-16 Model Calibration Results (Metered and Modeled Flow)



IN-16 Model Validation Results (Metered and Modeled Flow)



IN-16 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



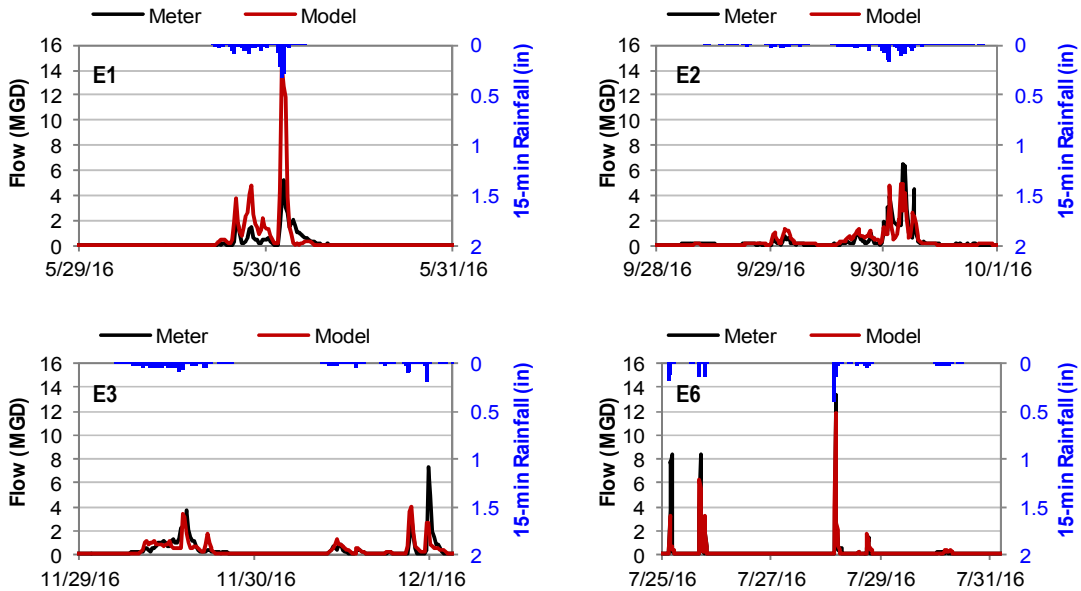
IN-16 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.46	0.42	-10% to +10%	-9%	0.72	0.82	-10% to +10%	13%
E2	0.31	0.29	-10% to +10%	-7%	0.54	0.56	-10% to +10%	4%
E3	0.37	0.31	-10% to +10%	-14%	0.63	0.61	-10% to +10%	-4%
E4	0.39	0.31	-10% to +10%	-20%	0.62	0.60	-10% to +10%	-3%
E5	0.64	0.42	-10% to +10%	-34%	0.97	0.82	-10% to +10%	-16%
E6	0.35	0.31	-10% to +10%	-9%	0.59	0.61	-10% to +10%	4%

IN-16 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	7.94	19.06	-15% to +25%	140%	0.88	1.56	-10% to +20%	77%
E2	13.37	13.70	-15% to +25%	2%	2.48	2.37	-10% to +20%	-5%
E3	7.23	7.71	-15% to +25%	7%	1.35	2.05	-10% to +20%	52%
E4	2.48	6.49	-15% to +25%	161%	2.54	3.80	-10% to +20%	50%
E5	6.35	4.62	-15% to +25%	-27%	1.83	2.05	-10% to +20%	12%
E6	5.72	12.06	-15% to +25%	111%	0.68	0.98	-10% to +20%	43%

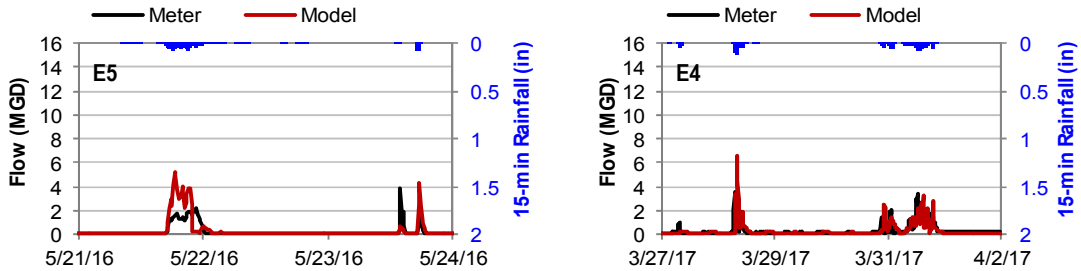
Note: Only two of the six wet weather event volumes are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E1, E4, E5, and E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-17 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

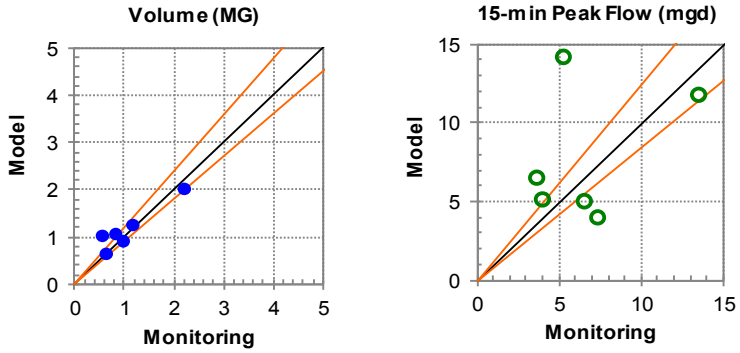
IN-17 Model Calibration Results (Metered and Modeled Flow)



IN-17 Model Validation Results (Metered and Modeled Flow)

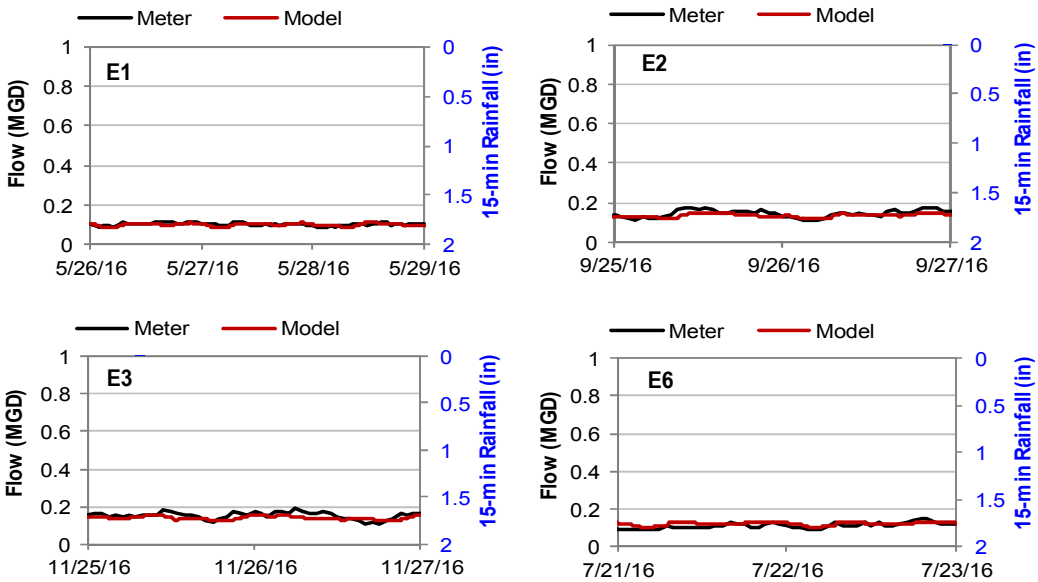


IN-17 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

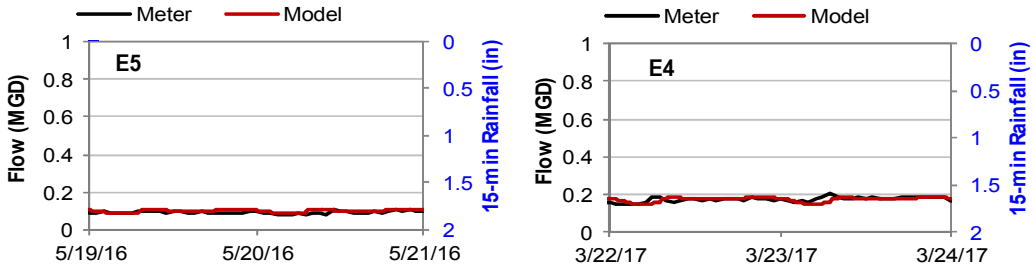


FLOW METER IN-17 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

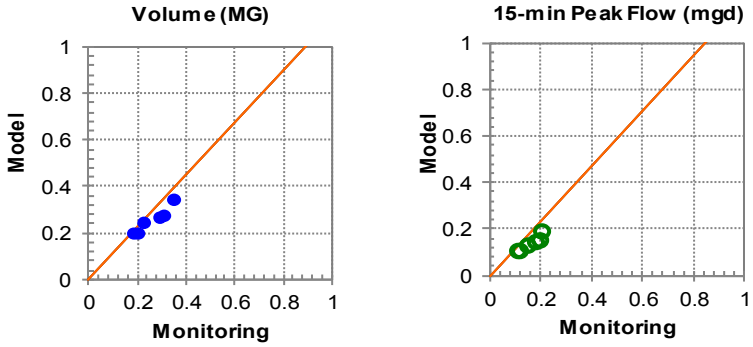
IN-17 Model Calibration Results (Metered and Modeled Flow)



IN-17 Model Validation Results (Metered and Modeled Flow)



IN-17 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



IN-17 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.12	0.11	-10% to +10%	-6%	0.20	0.20	-10% to +10%	0%
E2	0.18	0.15	-10% to +10%	-15%	0.29	0.27	-10% to +10%	-7%
E3	0.19	0.15	-10% to +10%	-19%	0.31	0.28	-10% to +10%	-9%
E4	0.20	0.19	-10% to +10%	-6%	0.35	0.35	-10% to +10%	0%
E5	0.11	0.11	-10% to +10%	1%	0.19	0.20	-10% to +10%	9%
E6	0.15	0.13	-10% to +10%	-11%	0.22	0.24	-10% to +10%	9%

IN-17 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	5.19	14.27	-15% to +25%	175%	0.53	1.06	-10% to +20%	101%
E2	6.54	5.02	-15% to +25%	-23%	1.15	1.29	-10% to +20%	12%
E3	7.31	3.98	-15% to +25%	-45%	0.95	0.94	-10% to +20%	-1%
E4	3.64	6.57	-15% to +25%	81%	2.19	2.05	-10% to +20%	-6%
E5	3.95	5.17	-15% to +25%	31%	0.79	1.07	-10% to +20%	35%
E6	13.38	11.83	-15% to +25%	-12%	0.61	0.65	-10% to +20%	6%

Note: Only two of the six wet weather event volumes are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E1, E4) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

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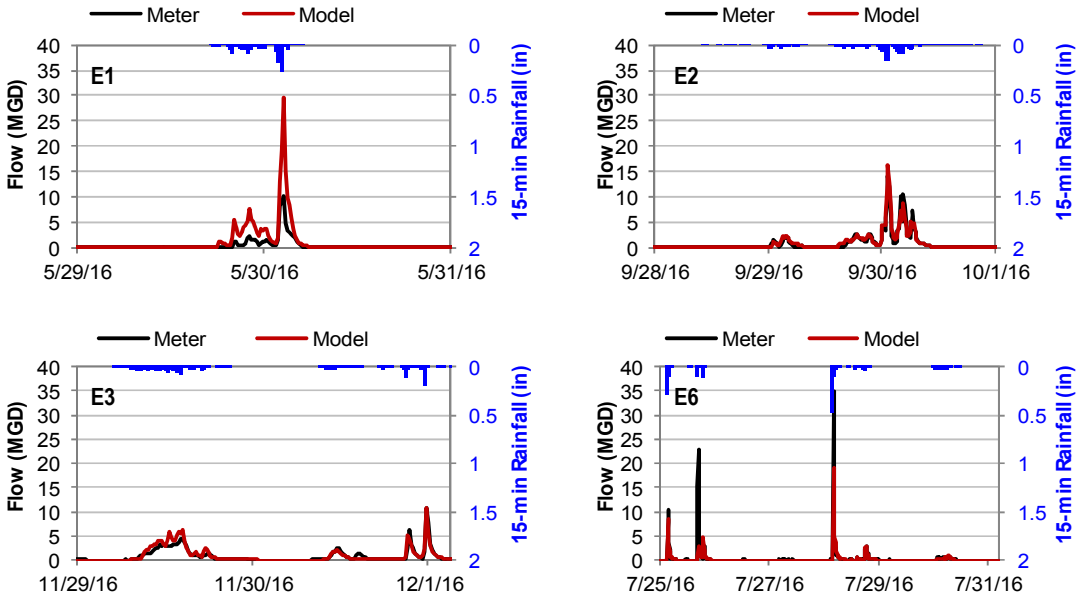
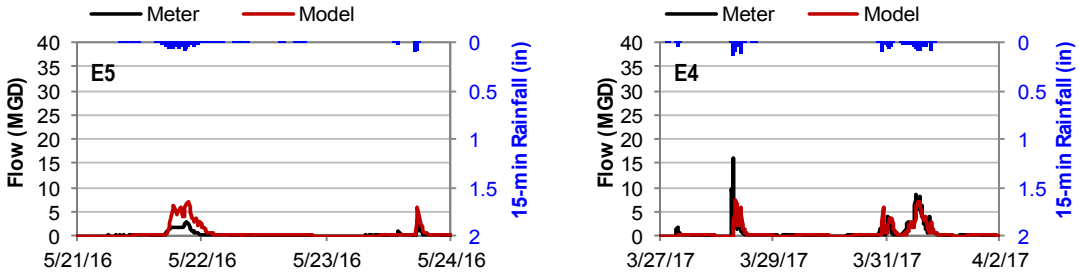
FLOW METER IN-18 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

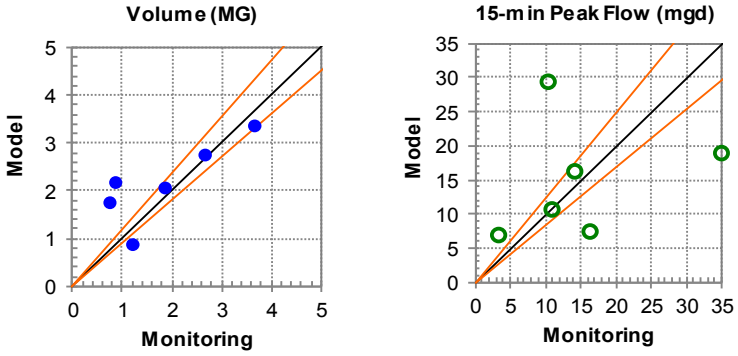
IN-18 Model Calibration Results (Metered and Modeled Flow)



IN-18 Model Validation Results (Metered and Modeled Flow)

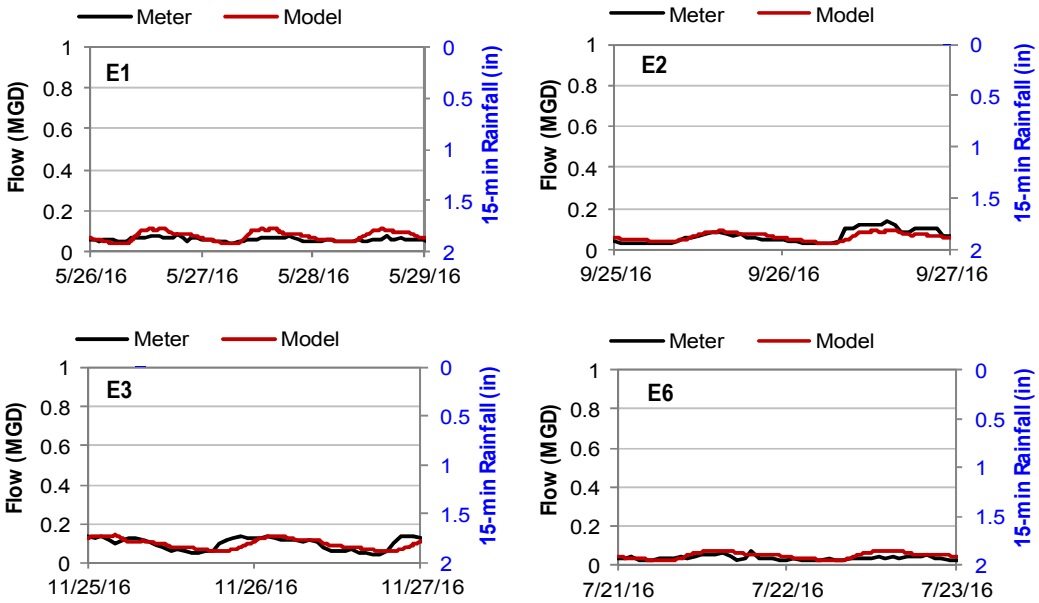


IN-18 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

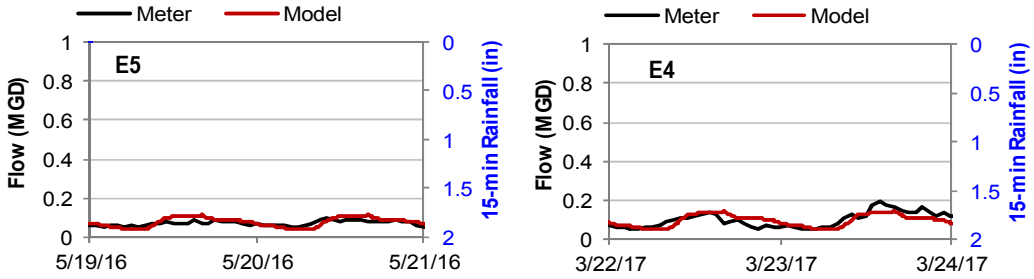


FLOW METER IN-18 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

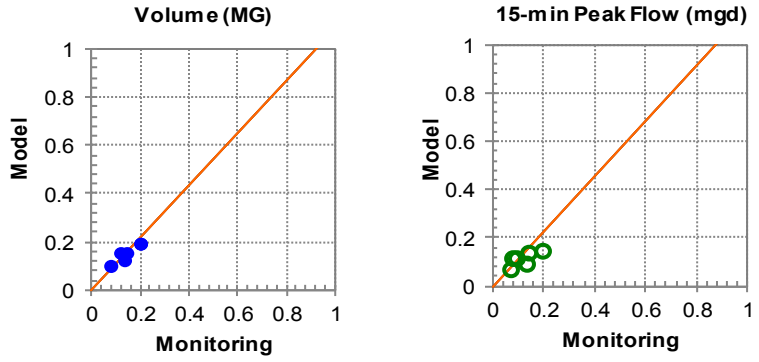
IN-18 Model Calibration Results (Metered and Modeled Flow)



IN-18 Model Validation Results (Metered and Modeled Flow)



IN-18 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



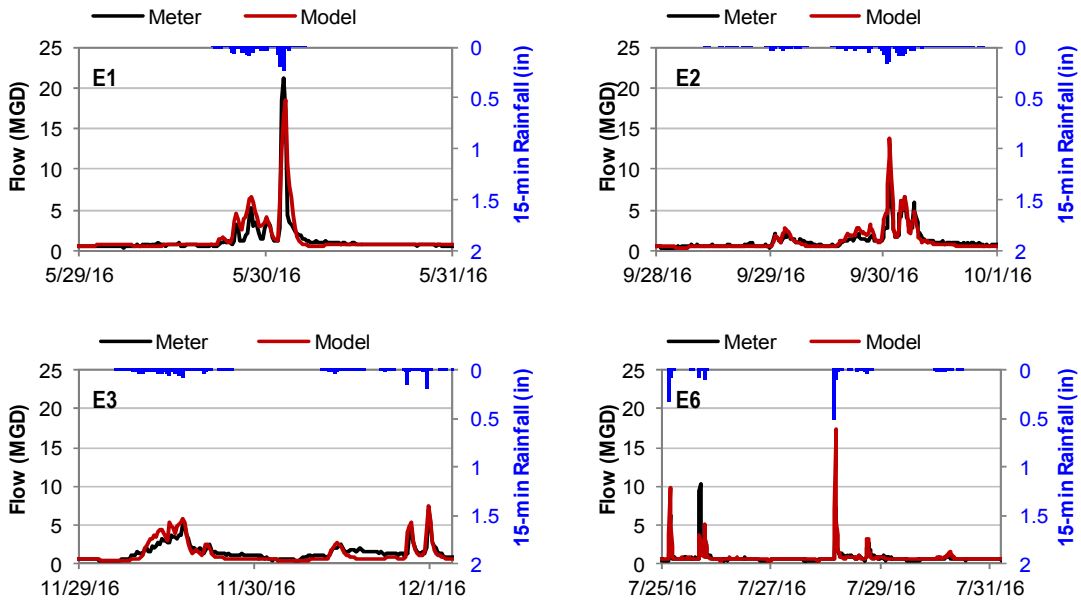
IN-18 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.08	0.11	-10% to +10%	40%	0.12	0.16	-10% to +10%	32%
E2	0.14	0.09	-10% to +10%	-33%	0.13	0.13	-10% to +10%	-5%
E3	0.14	0.14	-10% to +10%	1%	0.20	0.19	-10% to +10%	-1%
E4	0.20	0.14	-10% to +10%	-27%	0.20	0.20	-10% to +10%	-3%
E5	0.09	0.11	-10% to +10%	20%	0.14	0.16	-10% to +10%	9%
E6	0.07	0.07	-10% to +10%	2%	0.08	0.10	-10% to +10%	33%

IN-18 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	10.33	29.56	-15% to +25%	186%	0.83	2.18	-10% to +20%	162%
E2	14.07	16.40	-15% to +25%	17%	2.64	2.77	-10% to +20%	5%
E3	10.70	10.73	-15% to +25%	0%	1.84	2.07	-10% to +20%	12%
E4	16.28	7.62	-15% to +25%	-53%	3.63	3.39	-10% to +20%	-7%
E5	3.15	6.91	-15% to +25%	119%	0.75	1.78	-10% to +20%	138%
E6	34.92	18.99	-15% to +25%	-46%	1.19	0.91	-10% to +20%	-24%

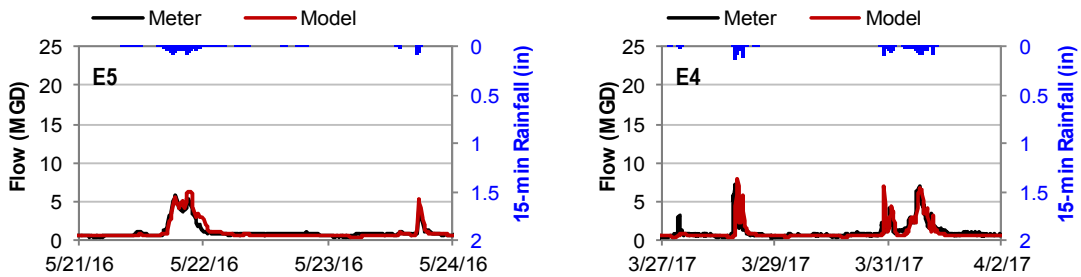
Note: Only two of the six wet weather event volumes are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E1, E4, E5, and E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-19-1 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

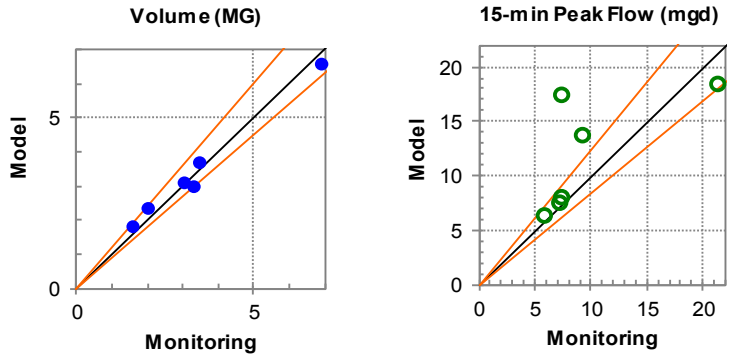
IN-19-1 Model Calibration Results (Metered and Modeled Flow)



IN-19-1 Model Validation Results (Metered and Modeled Flow)

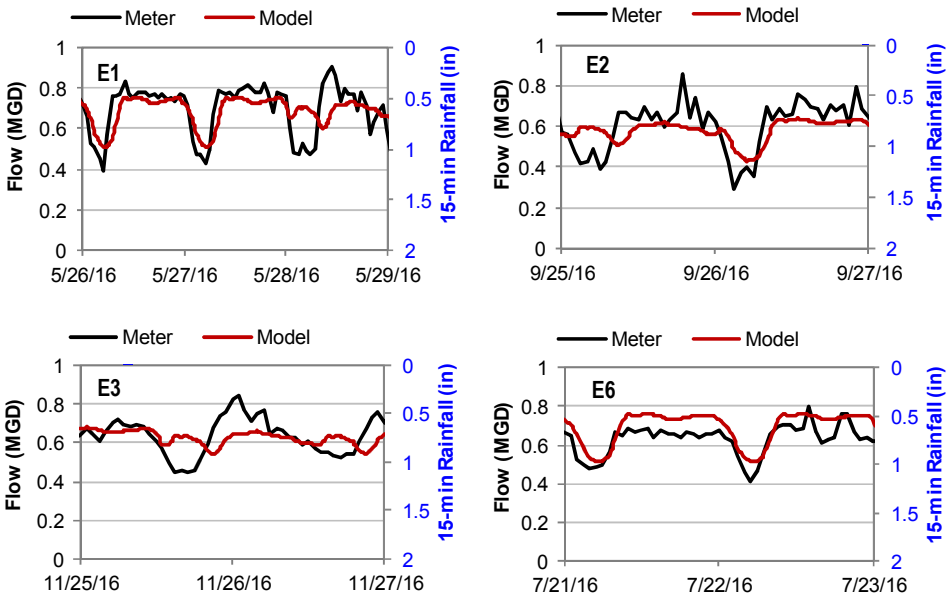


IN-19-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

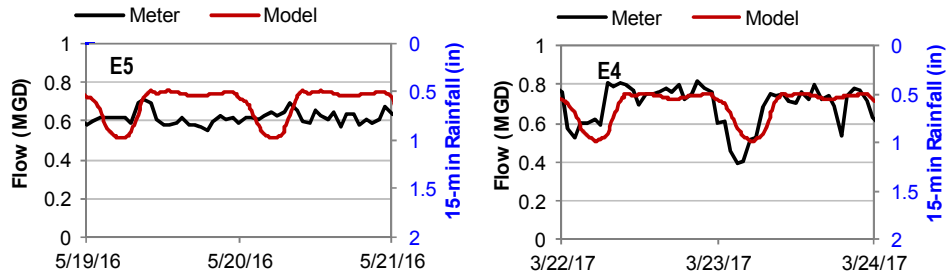


FLOW METER IN-19-1 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

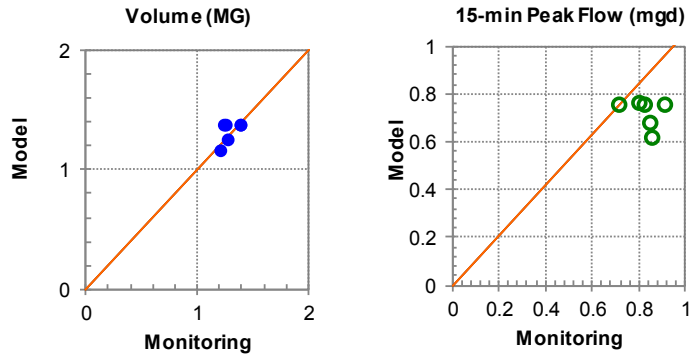
IN-19-1 Model Calibration Results (Metered and Modeled Flow)



IN-19-1 Model Validation Results (Metered and Modeled Flow)



IN-19-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



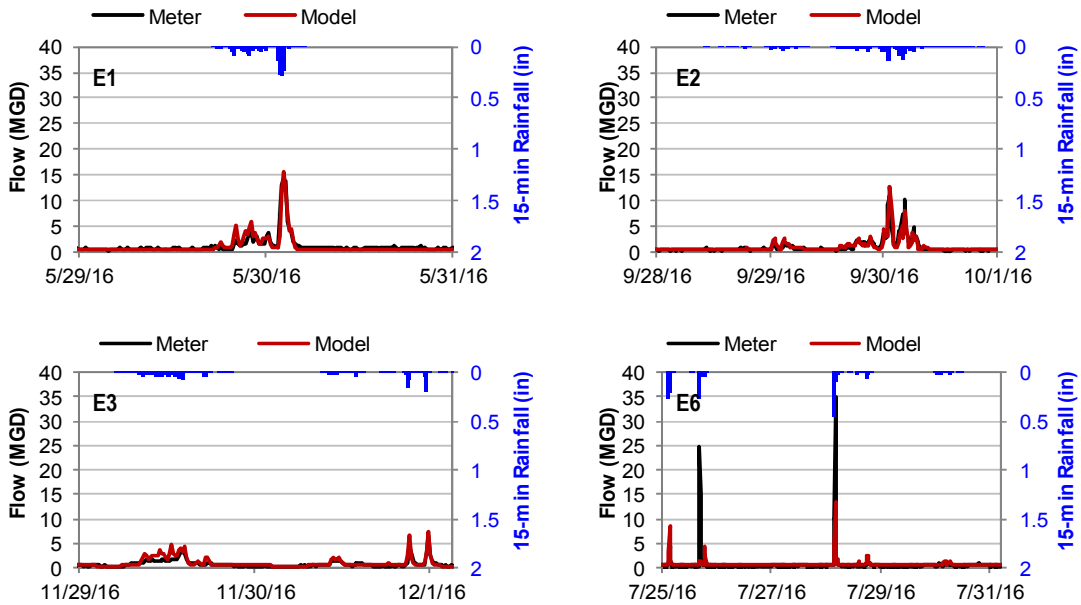
IN-19-1 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.91	0.76	-10% to +10%	-17%	1.38	1.37	-10% to +10%	-1%
E2	0.85	0.62	-10% to +10%	-27%	1.20	1.16	-10% to +10%	-4%
E3	0.84	0.68	-10% to +10%	-20%	1.27	1.25	-10% to +10%	-2%
E4	0.82	0.76	-10% to +10%	-8%	1.38	1.37	-10% to +10%	0%
E5	0.72	0.76	-10% to +10%	6%	1.24	1.38	-10% to +10%	11%
E6	0.79	0.76	-10% to +10%	-4%	1.26	1.39	-10% to +10%	10%

IN-19-1 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	21.30	18.53	-15% to +25%	-13%	2.01	2.36	-10% to +20%	18%
E2	9.15	13.74	-15% to +25%	50%	3.42	3.71	-10% to +20%	9%
E3	7.04	7.56	-15% to +25%	7%	3.28	3.04	-10% to +20%	-7%
E4	7.33	8.01	-15% to +25%	9%	6.87	6.61	-10% to +20%	-4%
E5	5.73	6.40	-15% to +25%	12%	3.00	3.11	-10% to +20%	4%
E6	7.26	17.48	-15% to +25%	141%	1.56	1.84	-10% to +20%	18%

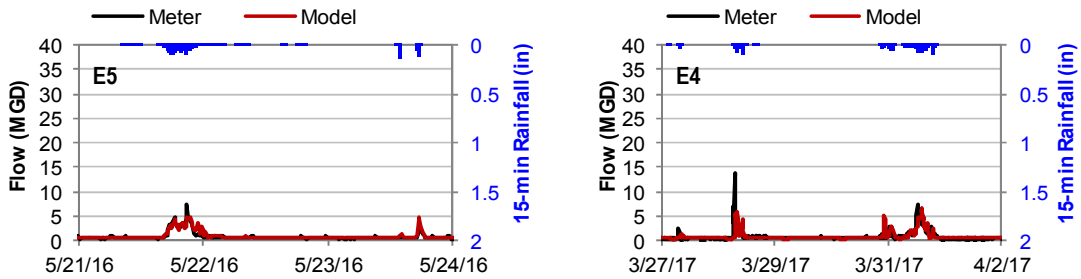
Note: Four of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E2 and E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-19-2 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

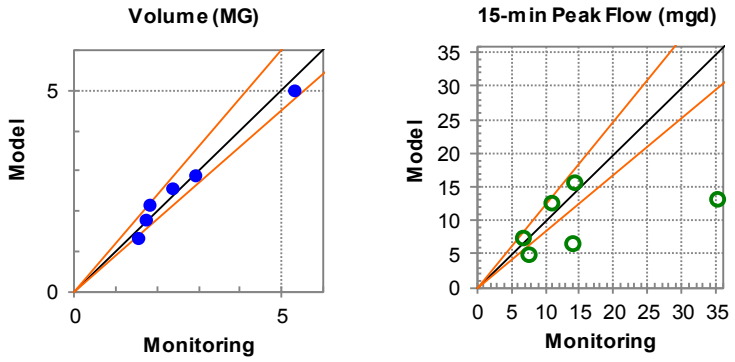
IN-19-2 Model Calibration Results (Metered and Modeled Flow)



IN-19-2 Model Validation Results (Metered and Modeled Flow)

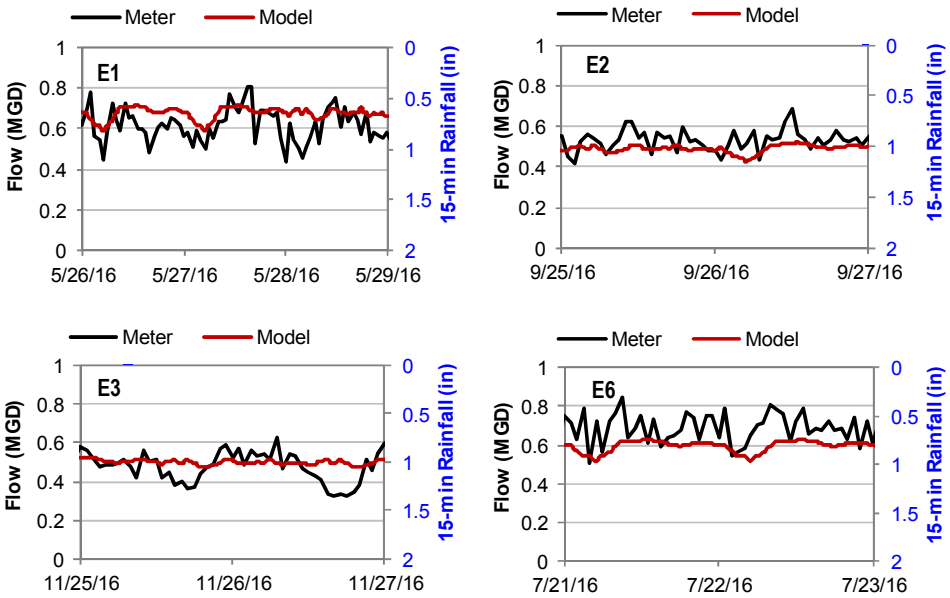


IN-19-2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

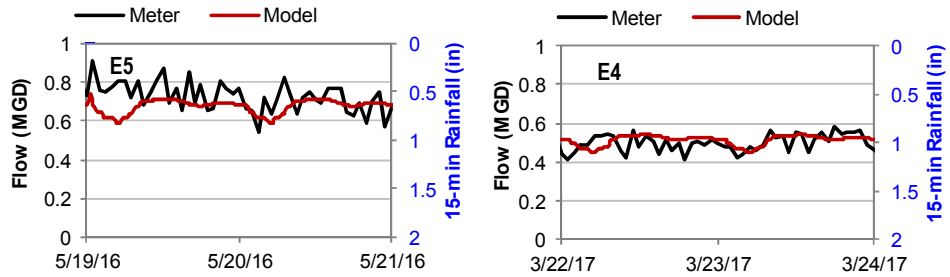


FLOW METER IN-19-2 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

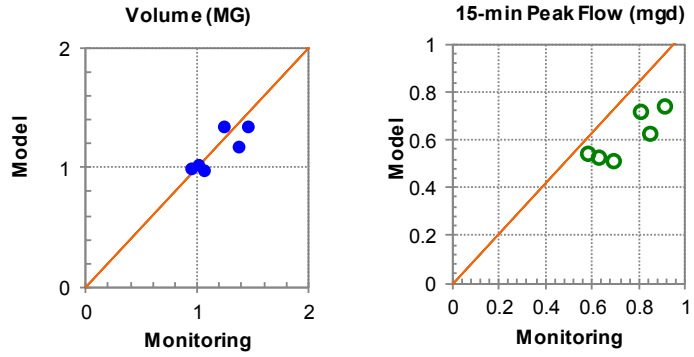
IN-19-2 Model Calibration Results (Metered and Modeled Flow)



IN-19-2 Model Validation Results (Metered and Modeled Flow)



IN-19-2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



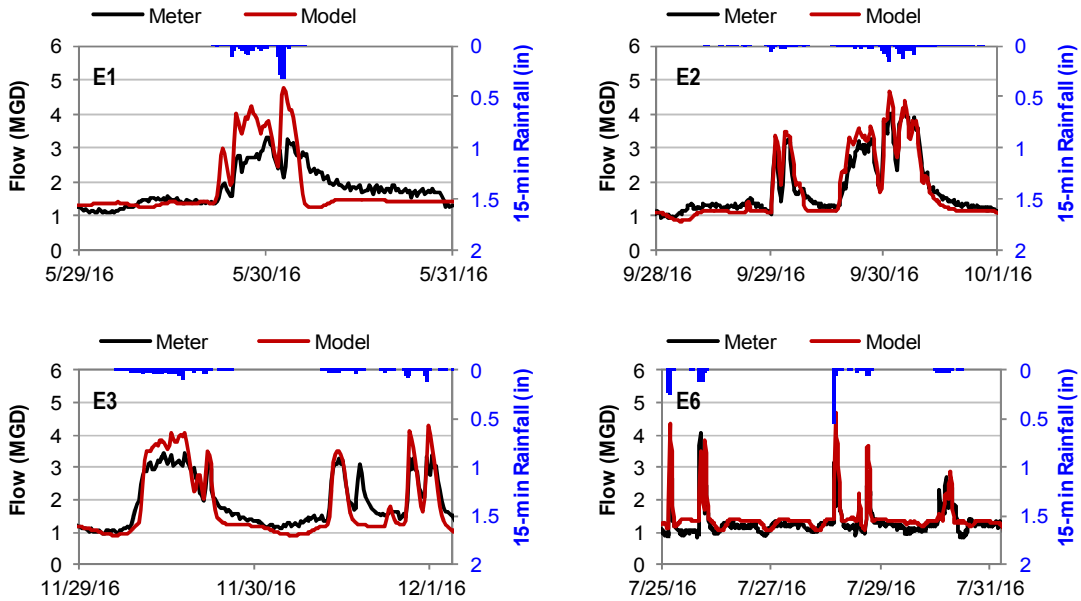
IN-19-2 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.81	0.72	-10% to +10%	-11%	1.24	1.35	-10% to +10%	9%
E2	0.69	0.51	-10% to +10%	-26%	1.06	0.98	-10% to +10%	-7%
E3	0.63	0.53	-10% to +10%	-16%	0.95	1.00	-10% to +10%	5%
E4	0.58	0.54	-10% to +10%	-6%	1.00	1.03	-10% to +10%	3%
E5	0.91	0.74	-10% to +10%	-18%	1.45	1.35	-10% to +10%	-7%
E6	0.85	0.63	-10% to +10%	-25%	1.37	1.19	-10% to +10%	-13%

IN-19-2 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	14.15	15.73	-15% to +25%	11%	1.69	1.80	-10% to +20%	6%
E2	10.79	12.67	-15% to +25%	17%	2.90	2.91	-10% to +20%	0%
E3	6.61	7.57	-15% to +25%	14%	1.80	2.18	-10% to +20%	21%
E4	13.88	6.57	-15% to +25%	-53%	5.29	4.99	-10% to +20%	-6%
E5	7.59	4.91	-15% to +25%	-35%	2.37	2.59	-10% to +20%	10%
E6	35.07	13.33	-15% to +25%	-62%	1.51	1.35	-10% to +20%	-10%

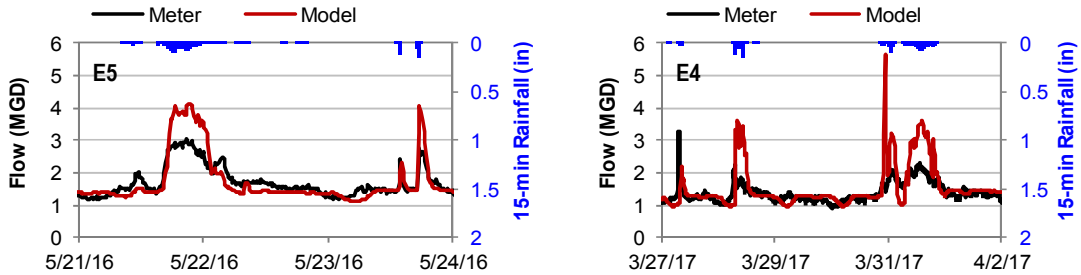
Note: Four of the six wet weather events are calibrated well within or close to the industry criteria. Flow meter data recorded for some of the events (E4, E5 and E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER EFF-19 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

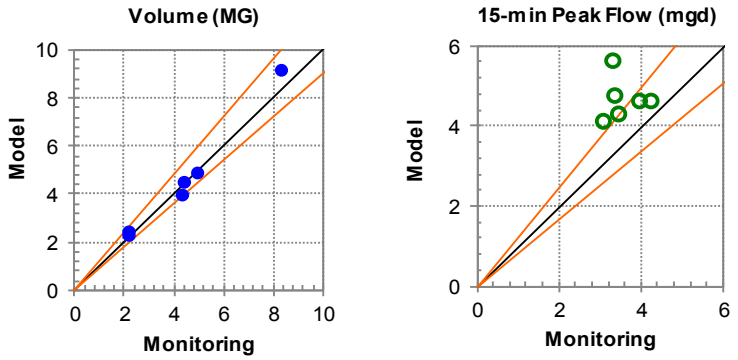
EFF-19 Model Calibration Results (Metered and Modeled Flow)



EFF-19 Model Validation Results (Metered and Modeled Flow)

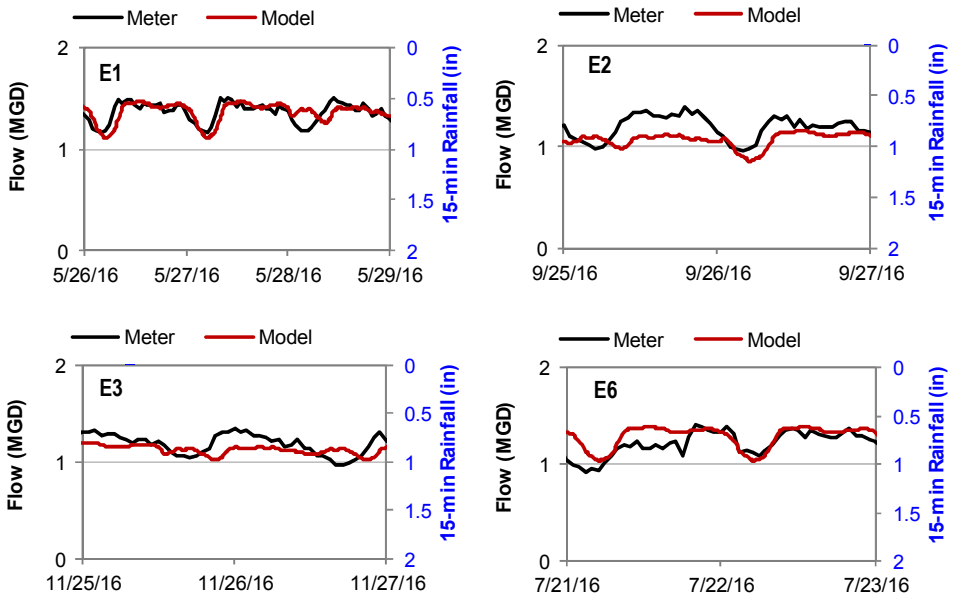


EFF-19 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

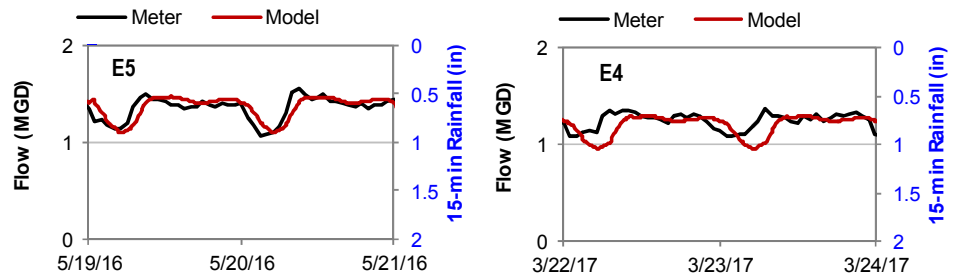


FLOW METER EFF-19 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

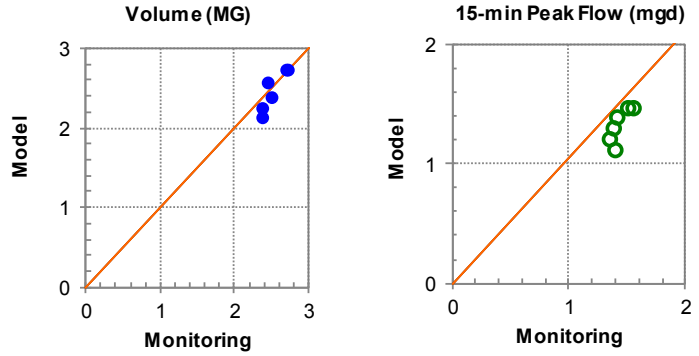
EFF-19 Model Calibration Results (Metered and Modeled Flow)



EFF-19 Model Validation Results (Metered and Modeled Flow)



EFF-19 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



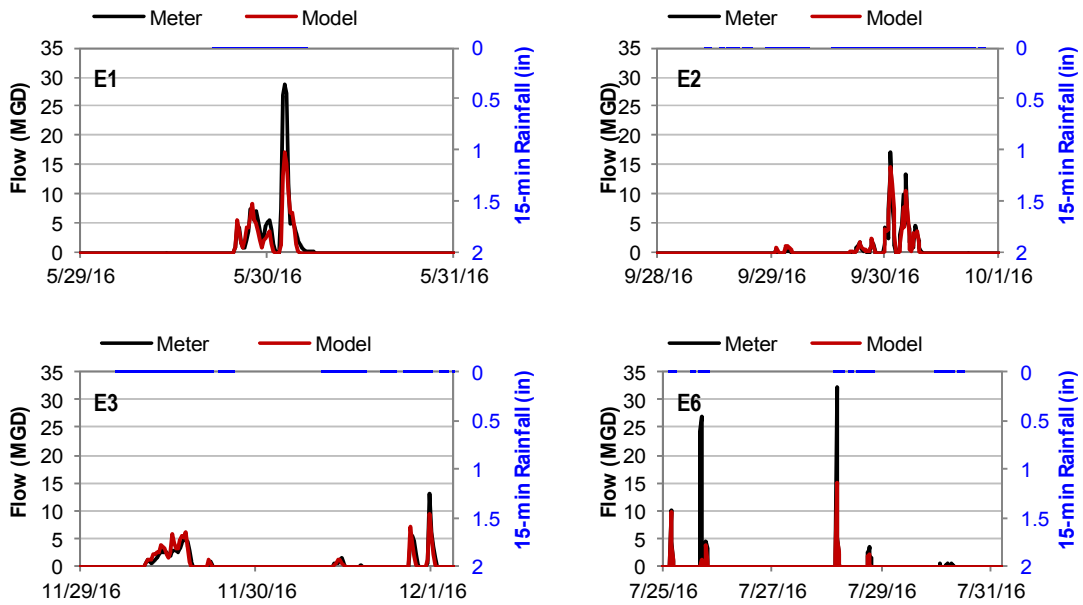
EFF-19 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	1.51	1.47	-10% to +10%	-2%	2.72	2.73	-10% to +10%	0%
E2	1.40	1.12	-10% to +10%	-20%	2.38	2.14	-10% to +10%	-10%
E3	1.34	1.21	-10% to +10%	-10%	2.37	2.25	-10% to +10%	-5%
E4	1.38	1.30	-10% to +10%	-6%	2.49	2.40	-10% to +10%	-4%
E5	1.55	1.47	-10% to +10%	-5%	2.70	2.73	-10% to +10%	1%
E6	1.41	1.39	-10% to +10%	-1%	2.44	2.58	-10% to +10%	6%

EFF-19 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	3.33	4.78	-15% to +25%	44%	2.18	2.33	-10% to +20%	7%
E2	4.22	4.65	-15% to +25%	10%	4.90	4.91	-10% to +20%	0%
E3	3.43	4.31	-15% to +25%	26%	4.33	4.03	-10% to +20%	-7%
E4	3.28	5.63	-15% to +25%	72%	8.28	9.18	-10% to +20%	11%
E5	3.05	4.13	-15% to +25%	35%	4.41	4.53	-10% to +20%	3%
E6	3.93	4.65	-15% to +25%	18%	2.12	2.48	-10% to +20%	17%

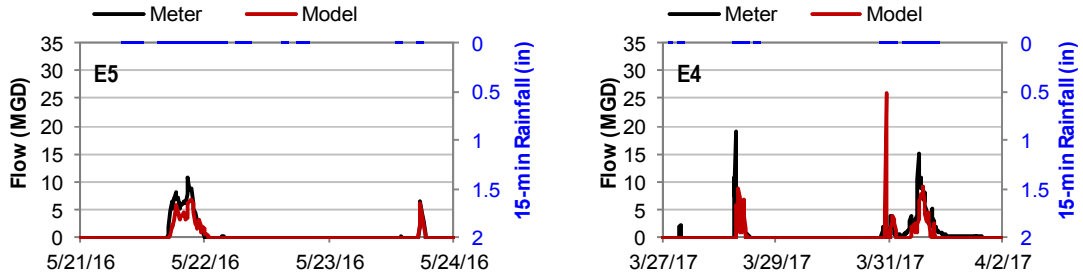
Note: Five of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E4) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CSO-19 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

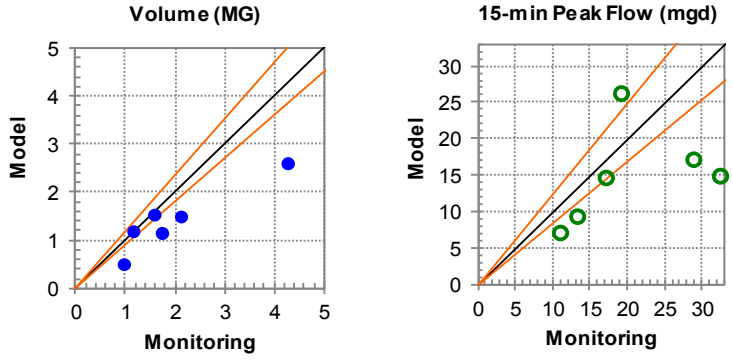
CSO-19 Model Calibration Results (Metered and Modeled Flow)



CSO-19 Model Validation Results (Metered and Modeled Flow)



CSO-19 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

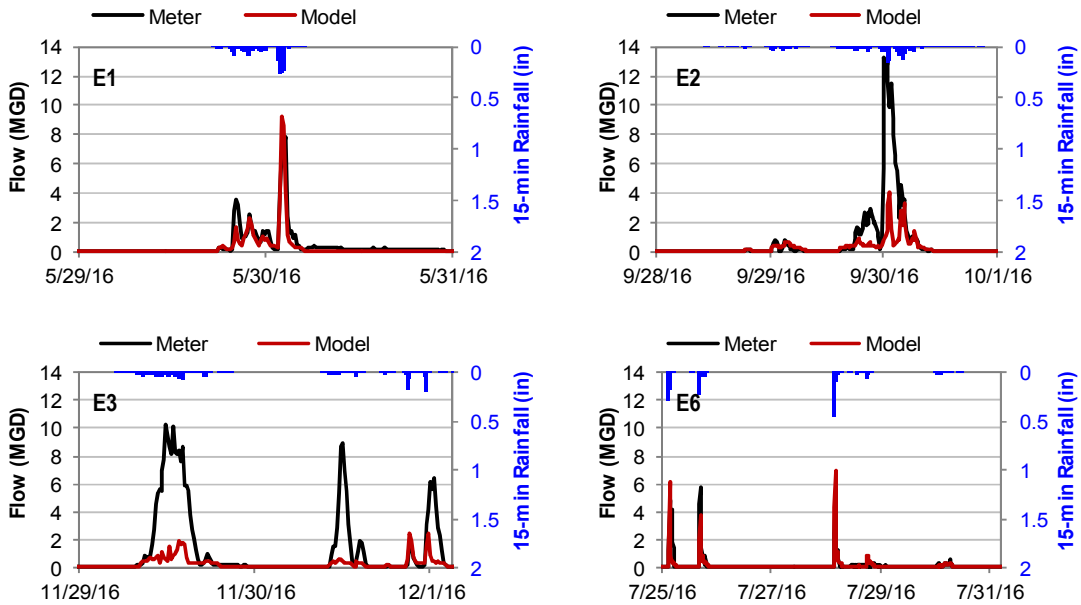


CSO-19 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	28.77	17.25	-15% to +25%	-40%	2.13	1.49	-10% to +20%	-30%
E2	17.03	14.72	-15% to +25%	-14%	1.56	1.54	-10% to +20%	-2%
E3	13.23	9.42	-15% to +25%	-29%	1.16	1.19	-10% to +20%	3%
E4	19.16	26.11	-15% to +25%	36%	4.26	2.63	-10% to +20%	-38%
E5	10.84	6.98	-15% to +25%	-36%	1.72	1.18	-10% to +20%	-31%
E6	32.37	14.98	-15% to +25%	-54%	0.98	0.52	-10% to +20%	-47%

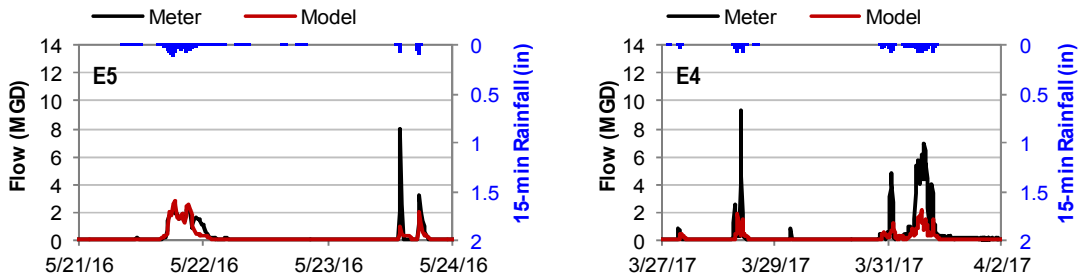
Note: Three of the six wet weather events are calibrated well within or close to the industry criteria. Flow meter data recorded for some of the events (E1 and E6) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall Regulator 19 flow meters, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-25 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

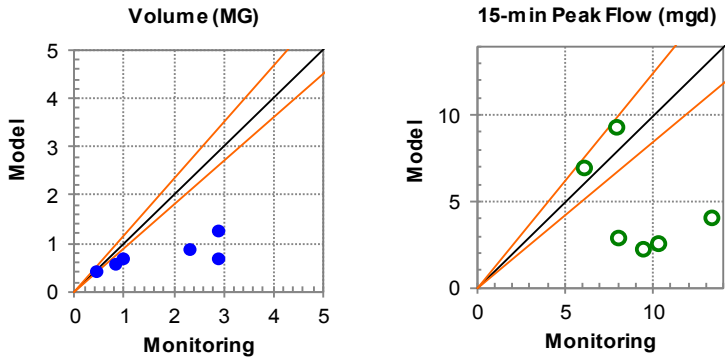
IN-25 Model Calibration Results (Metered and Modeled Flow)



IN-25 Model Validation Results (Metered and Modeled Flow)

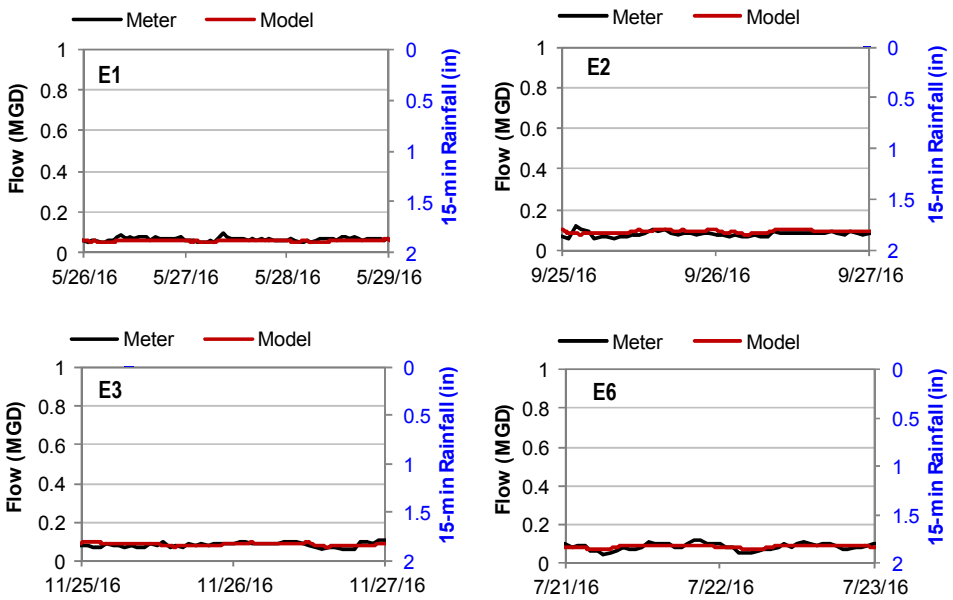


IN-25 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

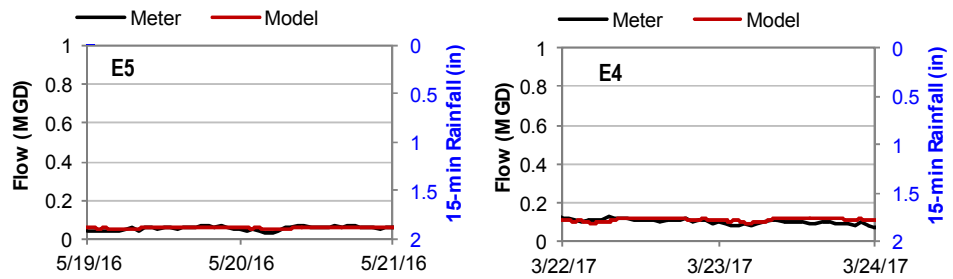


FLOW METER IN-25 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

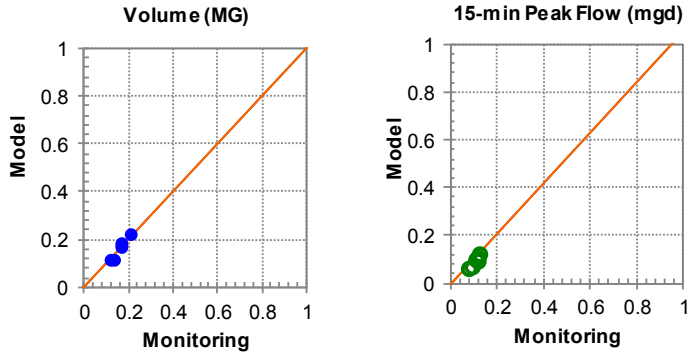
IN-25 Model Calibration Results (Metered and Modeled Flow)



IN-25 Model Validation Results (Metered and Modeled Flow)



IN-25 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



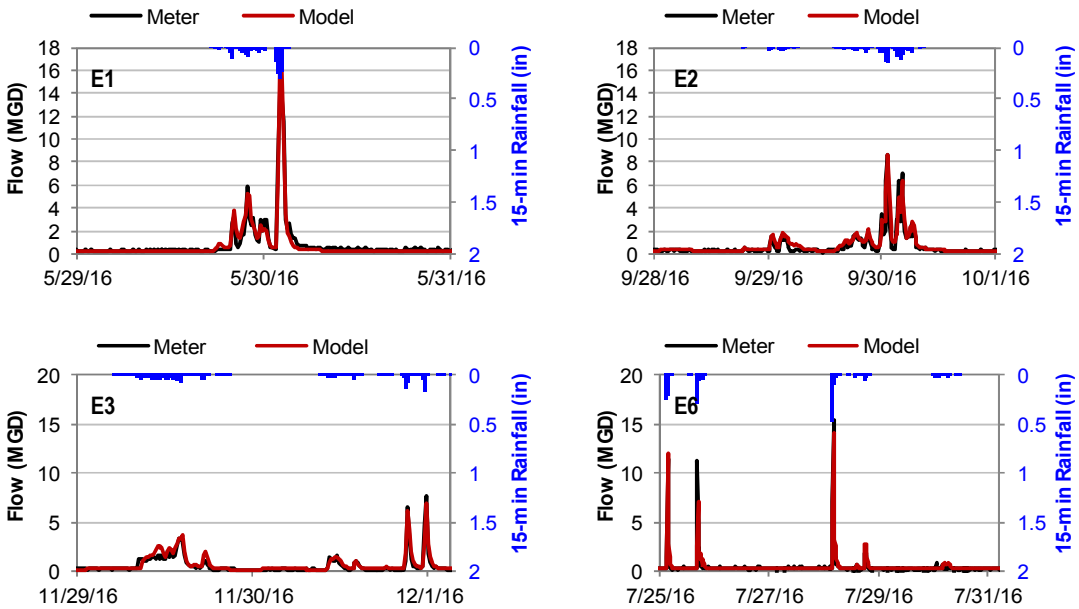
IN-25 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.09	0.07	-10% to +10%	-27%	0.13	0.12	-10% to +10%	-10%
E2	0.12	0.11	-10% to +10%	-9%	0.16	0.19	-10% to +10%	15%
E3	0.11	0.10	-10% to +10%	-9%	0.17	0.17	-10% to +10%	4%
E4	0.13	0.12	-10% to +10%	-3%	0.21	0.22	-10% to +10%	9%
E5	0.07	0.06	-10% to +10%	-14%	0.11	0.12	-10% to +10%	4%
E6	0.12	0.09	-10% to +10%	-19%	0.17	0.17	-10% to +10%	2%

IN-25 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	7.88	9.28	-15% to +25%	18%	0.82	0.60	-10% to +20%	-27%
E2	13.30	4.03	-15% to +25%	-70%	2.30	0.91	-10% to +20%	-61%
E3	10.24	2.54	-15% to +25%	-75%	2.89	0.69	-10% to +20%	-76%
E4	9.39	2.22	-15% to +25%	-76%	2.90	1.29	-10% to +20%	-56%
E5	8.02	2.85	-15% to +25%	-64%	0.97	0.71	-10% to +20%	-26%
E6	6.04	6.94	-15% to +25%	15%	0.42	0.41	-10% to +20%	-2%

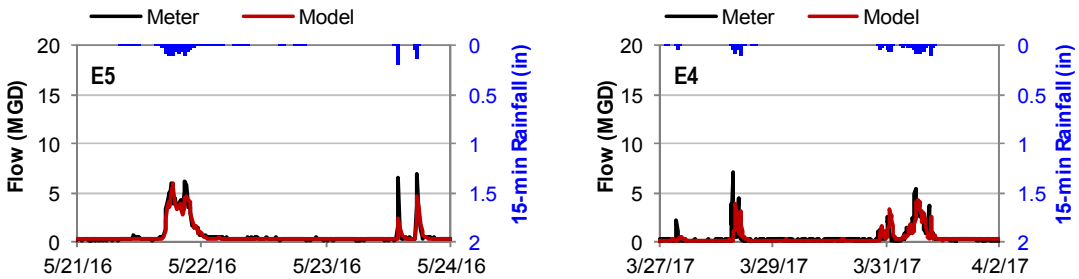
Note: Only two of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E2, E3, E4, and E5) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER IN-26 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

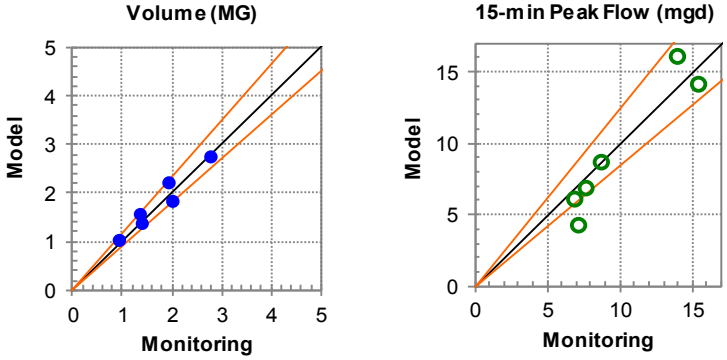
IN-26 Model Calibration Results (Metered and Modeled Flow)



IN-26 Model Validation Results (Metered and Modeled Flow)

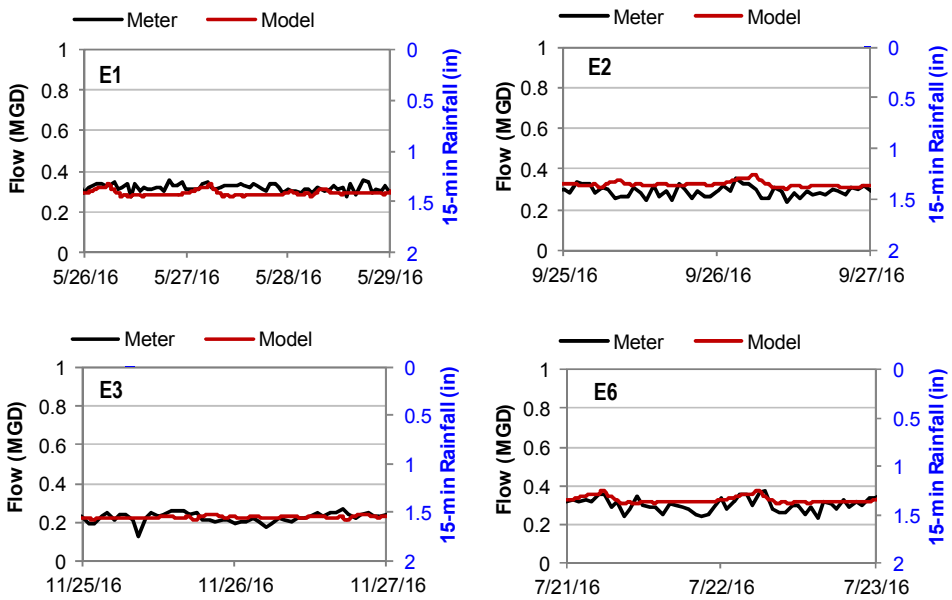


IN-26 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

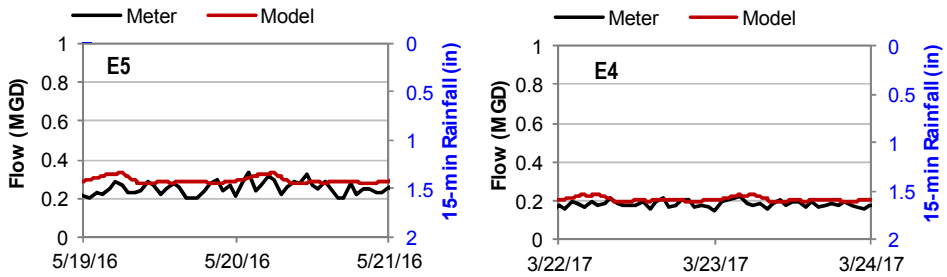


FLOW METER IN-26 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

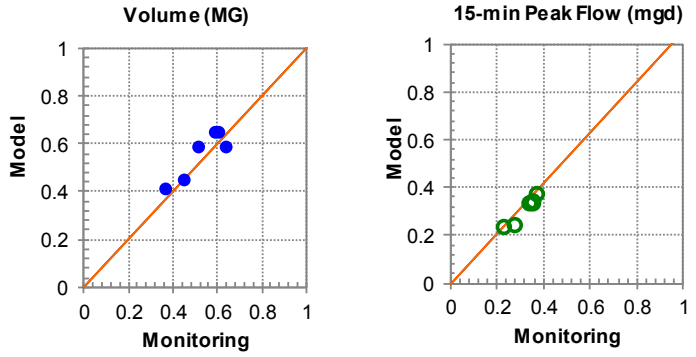
IN-26 Model Calibration Results (Metered and Modeled Flow)



IN-26 Model Validation Results (Metered and Modeled Flow)



IN-26 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



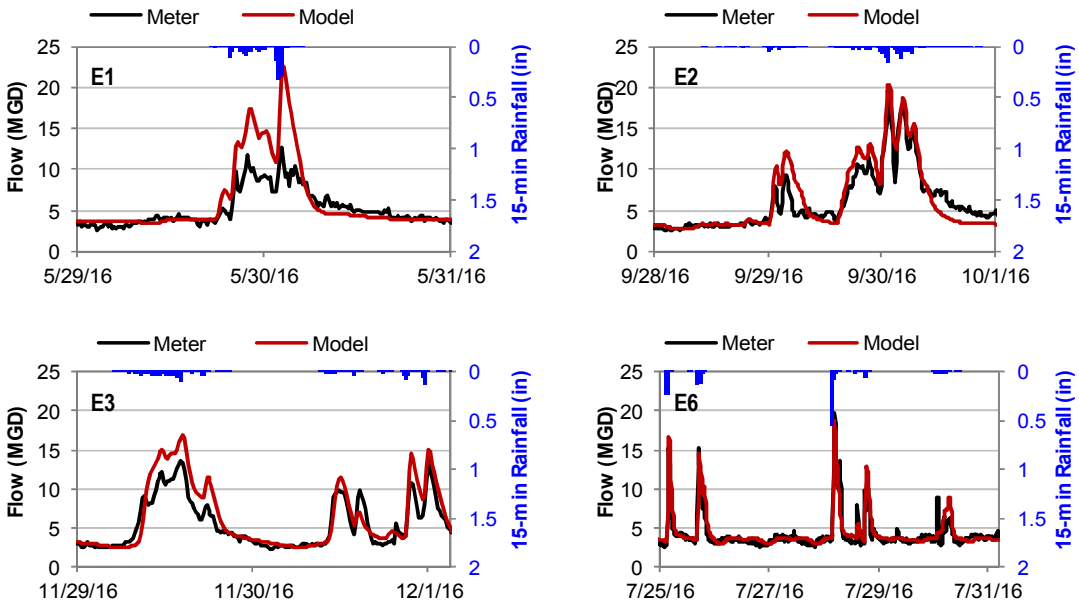
IN-26 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.35	0.34	-10% to +10%	-5%	0.64	0.59	-10% to +10%	-7%
E2	0.35	0.35	-10% to +10%	-2%	0.58	0.65	-10% to +10%	12%
E3	0.27	0.24	-10% to +10%	-11%	0.45	0.45	-10% to +10%	1%
E4	0.23	0.24	-10% to +10%	4%	0.37	0.42	-10% to +10%	13%
E5	0.34	0.34	-10% to +10%	0%	0.51	0.59	-10% to +10%	16%
E6	0.37	0.37	-10% to +10%	1%	0.60	0.65	-10% to +10%	8%

IN-26 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	13.97	16.06	-15% to +25%	15%	1.40	1.38	-10% to +20%	-1%
E2	8.60	8.69	-15% to +25%	1%	1.92	2.24	-10% to +20%	17%
E3	7.66	6.89	-15% to +25%	-10%	1.35	1.58	-10% to +20%	17%
E4	7.06	4.37	-15% to +25%	-38%	2.78	2.78	-10% to +20%	0%
E5	6.84	6.06	-15% to +25%	-11%	2.01	1.83	-10% to +20%	-9%
E6	15.36	14.12	-15% to +25%	-8%	0.92	1.04	-10% to +20%	13%

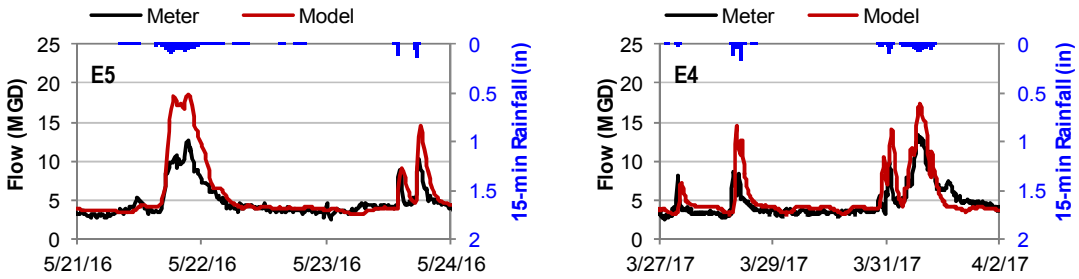
Note: All the six wet weather events are calibrated well within the industry criteria except flow peak for E4 because flow meter data recorded for E4 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER INT-2ND ST MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

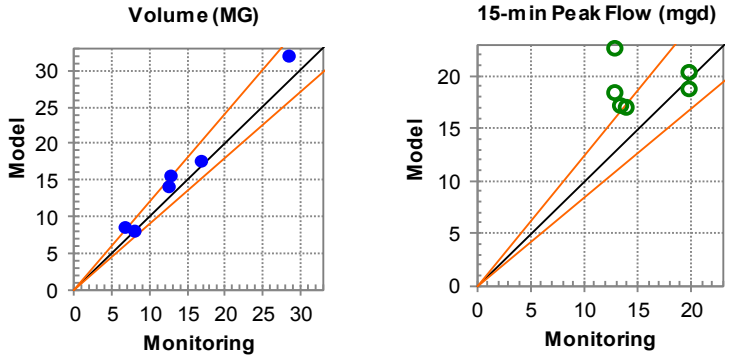
INT-2nd St Model Calibration Results (Metered and Modeled Flow)



INT-2nd St Model Validation Results (Metered and Modeled Flow)

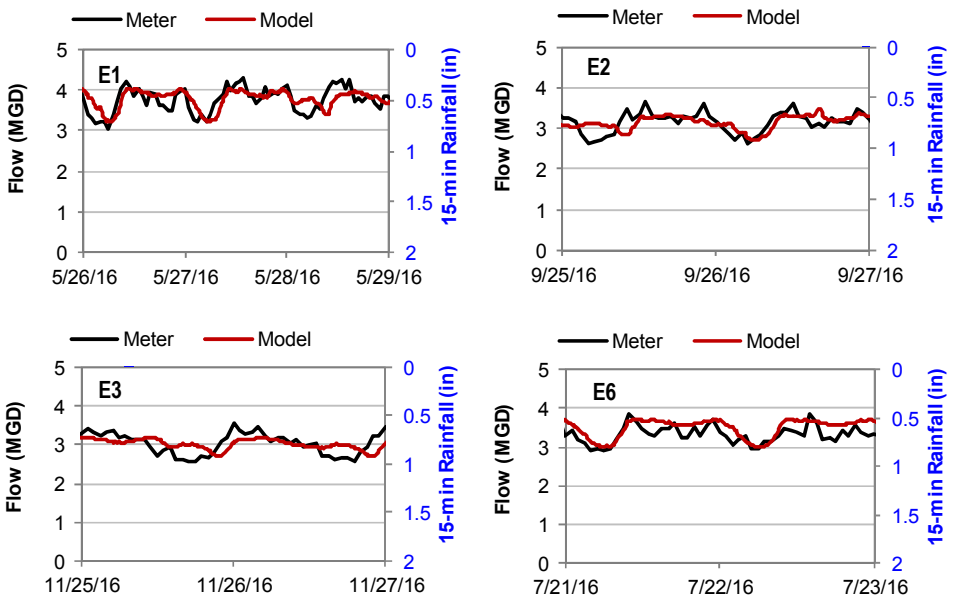


INT-2nd St Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

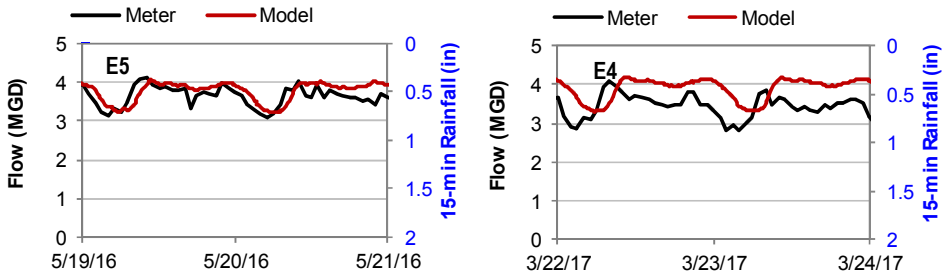


FLOW METER INT-2ND ST MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

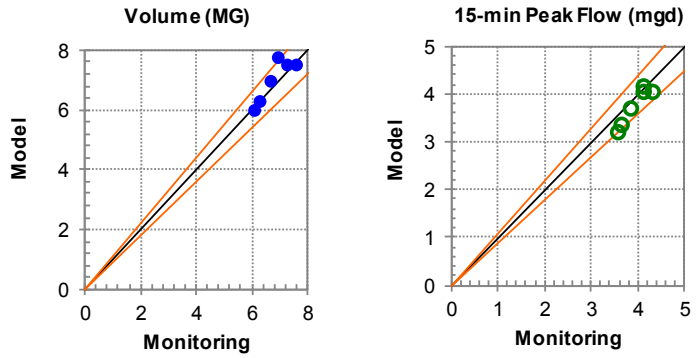
INT-2nd St Model Calibration Results (Metered and Modeled Flow)



INT-2nd St Model Validation Results (Metered and Modeled Flow)



INT-2nd St Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



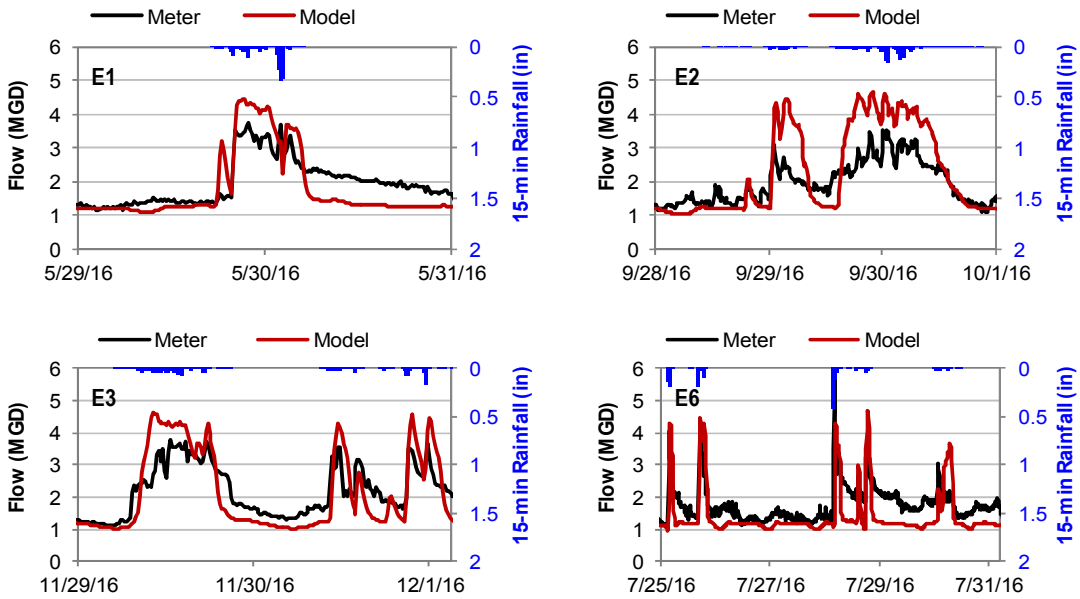
INT-2nd St Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	4.32	4.05	-10% to +10%	-6%	7.58	7.54	-10% to +10%	-1%
E2	3.64	3.37	-10% to +10%	-7%	6.29	6.30	-10% to +10%	0%
E3	3.56	3.20	-10% to +10%	-10%	6.05	6.03	-10% to +10%	0%
E4	4.11	4.18	-10% to +10%	2%	6.89	7.79	-10% to +10%	13%
E5	4.10	4.06	-10% to +10%	-1%	7.26	7.52	-10% to +10%	4%
E6	3.85	3.72	-10% to +10%	-3%	6.65	6.99	-10% to +10%	5%

INT-2nd St Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	12.71	22.66	-15% to +25%	78%	6.63	8.65	-10% to +20%	31%
E2	19.69	20.40	-15% to +25%	4%	16.80	17.74	-10% to +20%	6%
E3	13.92	16.99	-15% to +25%	22%	12.44	14.19	-10% to +20%	14%
E4	13.36	17.30	-15% to +25%	30%	28.36	32.16	-10% to +20%	13%
E5	12.76	18.49	-15% to +25%	45%	12.74	15.62	-10% to +20%	23%
E6	19.67	18.79	-15% to +25%	-4%	7.79	8.20	-10% to +20%	5%

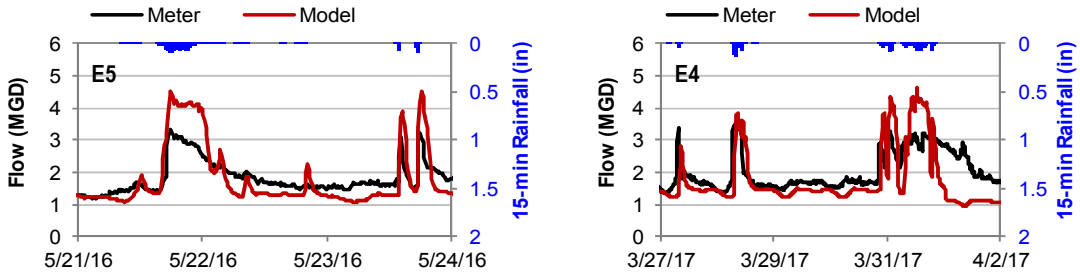
Note: Four of the six wet weather events are calibrated well within or close to the industry criteria. Flow meter data recorded for some events (E1, E4, E5) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER INT-DRI MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

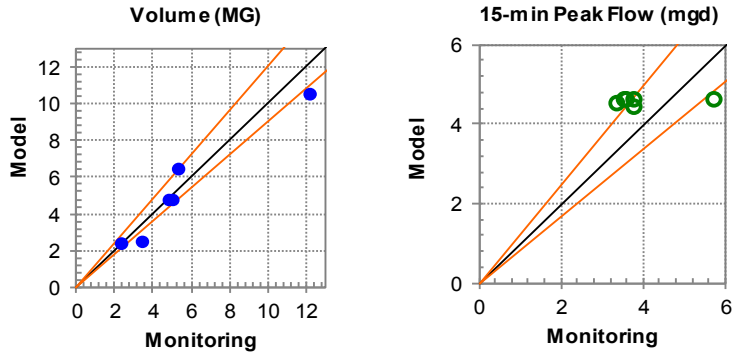
INT-DRI Model Calibration Results (Metered and Modeled Flow)



INT-DRI Model Validation Results (Metered and Modeled Flow)

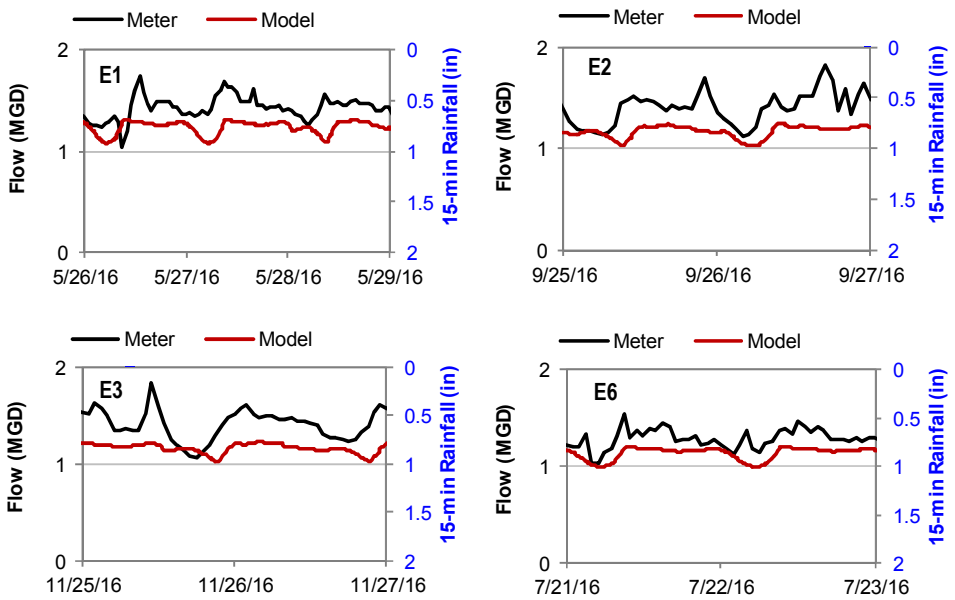


INT-DRI Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

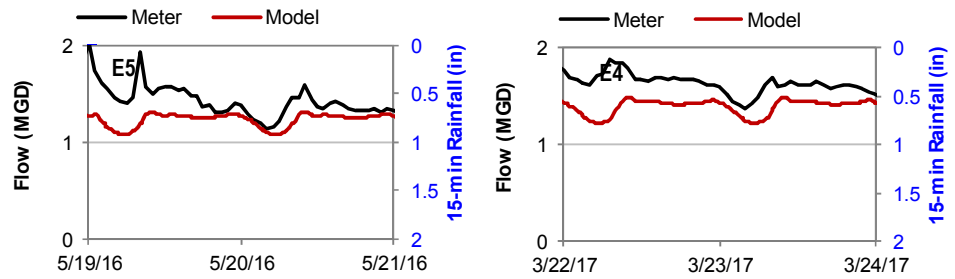


FLOW METER INT-DRI MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

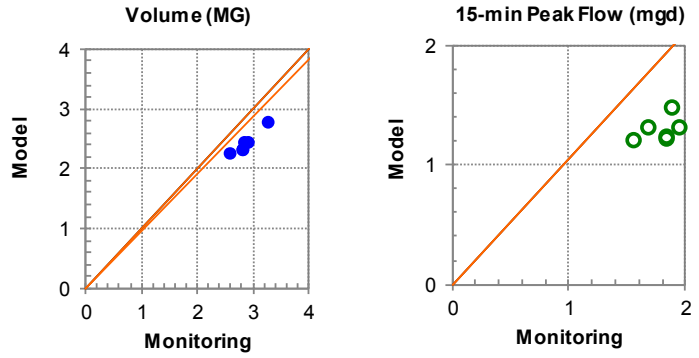
INT-DRI Model Calibration Results (Metered and Modeled Flow)



INT-DRI Model Validation Results (Metered and Modeled Flow)



INT-DRI Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



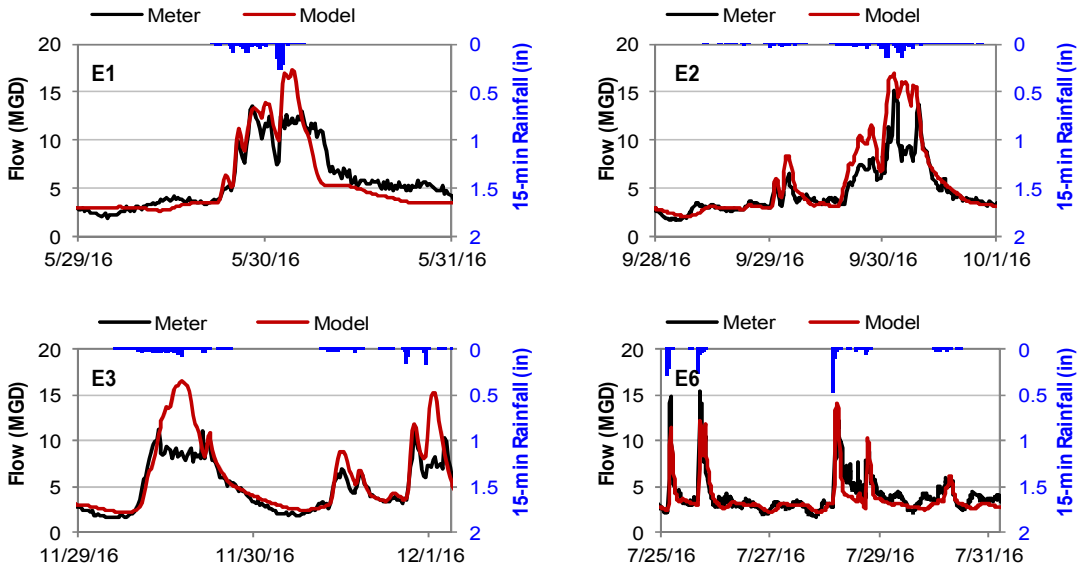
INT-DRI Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	1.68	1.31	-10% to +10%	-22%	2.90	2.47	-10% to +10%	-15%
E2	1.83	1.24	-10% to +10%	-32%	2.80	2.34	-10% to +10%	-16%
E3	1.83	1.23	-10% to +10%	-33%	2.81	2.33	-10% to +10%	-17%
E4	1.88	1.49	-10% to +10%	-21%	3.26	2.78	-10% to +10%	-15%
E5	1.94	1.31	-10% to +10%	-32%	2.84	2.47	-10% to +10%	-13%
E6	1.55	1.21	-10% to +10%	-22%	2.57	2.27	-10% to +10%	-12%

INT-DRI Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	3.75	4.45	-15% to +25%	19%	2.35	2.39	-10% to +20%	2%
E2	3.51	4.65	-15% to +25%	32%	5.27	6.45	-10% to +20%	23%
E3	3.76	4.61	-15% to +25%	23%	5.00	4.79	-10% to +20%	-4%
E4	3.57	4.62	-15% to +25%	30%	12.18	10.51	-10% to +20%	-14%
E5	3.32	4.52	-15% to +25%	36%	4.78	4.81	-10% to +20%	1%
E6	5.70	4.65	-15% to +25%	-18%	3.40	2.51	-10% to +20%	-26%

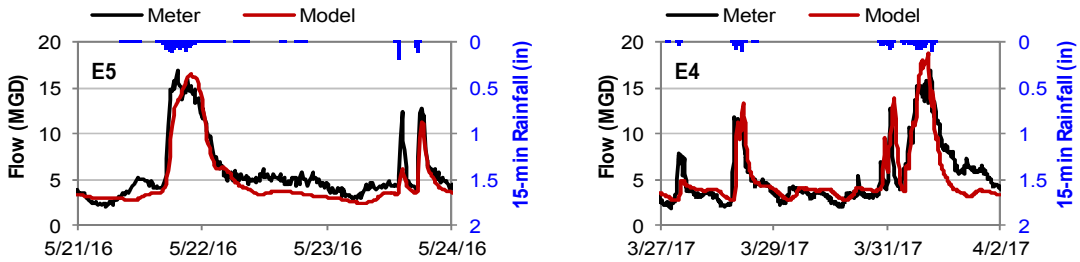
Note: Four of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E2, E3, E4, and E5) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER INT-RIDLEY 2 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

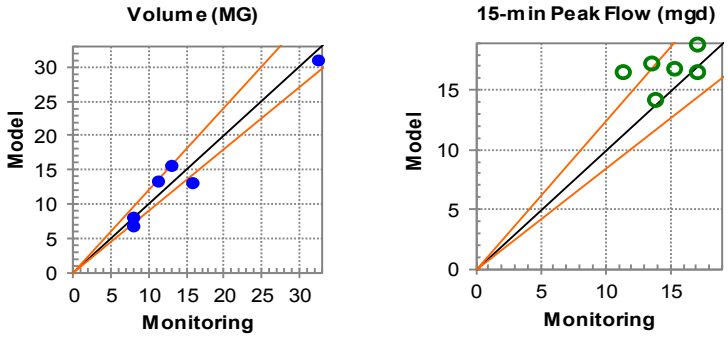
INT-Ridley 2 Model Calibration Results (Metered and Modeled Flow)



INT-Ridley 2 Model Validation Results (Metered and Modeled Flow)

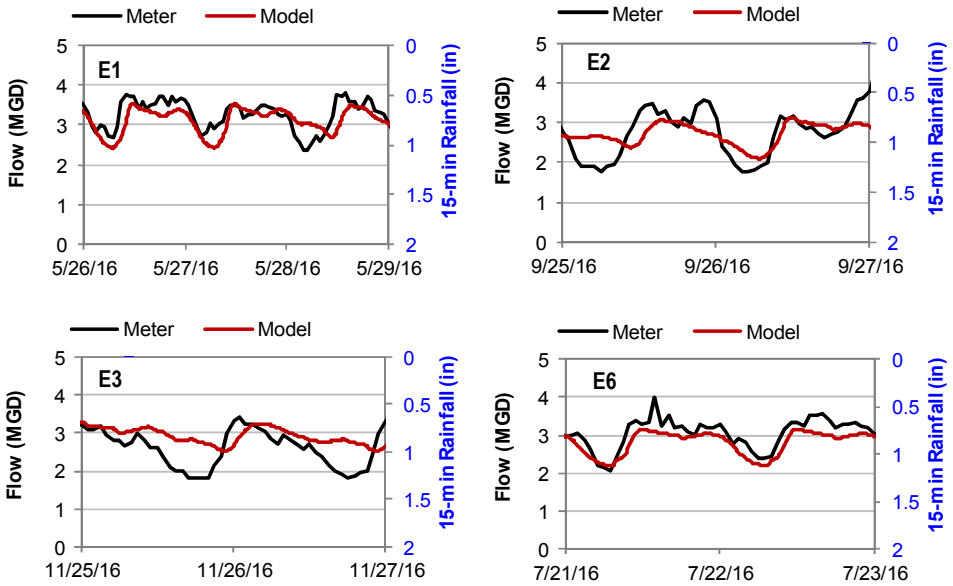


INT-Ridley 2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

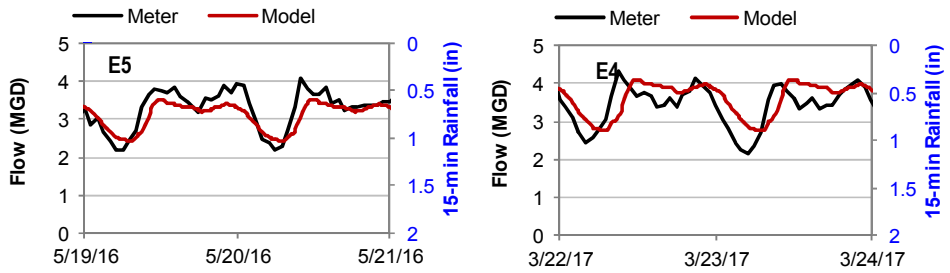


FLOW METER INT-RIDLEY 2 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

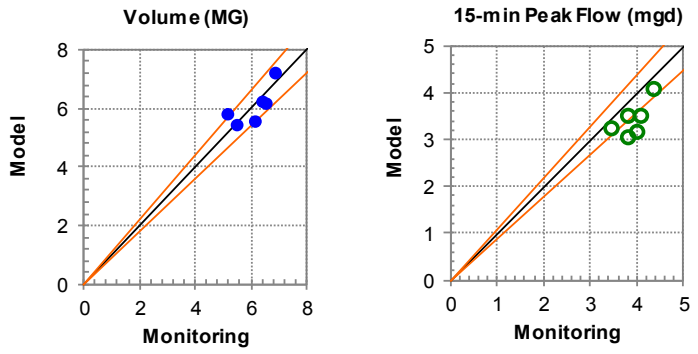
INT-Ridley 2 Model Calibration Results (Metered and Modeled Flow)



INT-Ridley 2 Model Validation Results (Metered and Modeled Flow)



INT-Ridley 2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



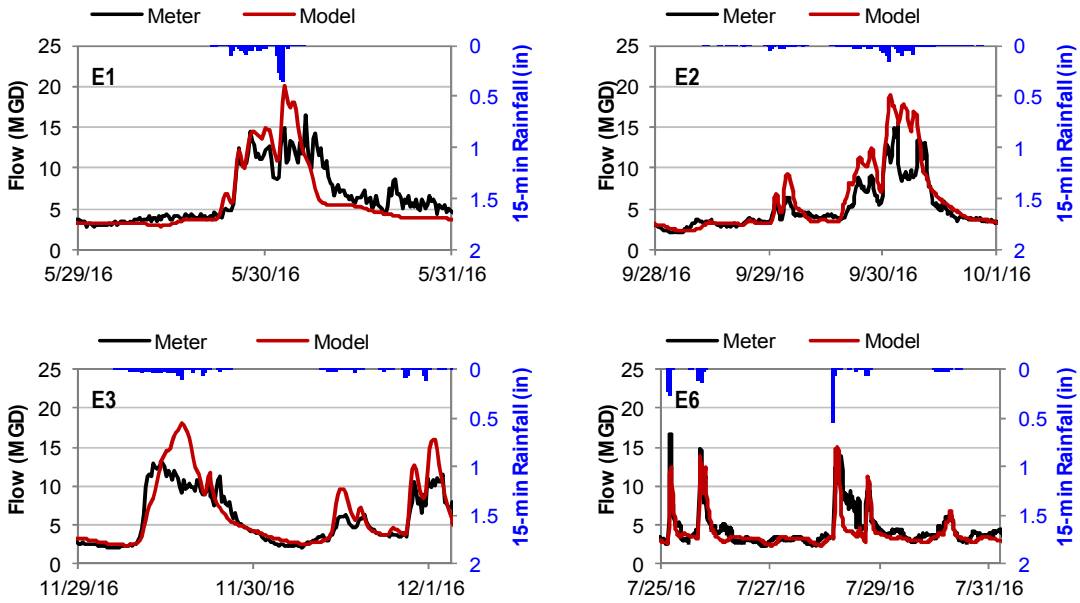
INT-Ridley 2 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	3.81	3.53	-10% to +10%	-7%	6.38	6.23	-10% to +10%	-2%
E2	3.78	3.06	-10% to +10%	-19%	5.45	5.48	-10% to +10%	1%
E3	3.43	3.26	-10% to +10%	-5%	5.15	5.82	-10% to +10%	13%
E4	4.32	4.11	-10% to +10%	-5%	6.84	7.20	-10% to +10%	5%
E5	4.07	3.53	-10% to +10%	-13%	6.54	6.20	-10% to +10%	-5%
E6	4.00	3.16	-10% to +10%	-21%	6.12	5.60	-10% to +10%	-8%

INT-Ridley 2 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	13.52	17.35	-15% to +25%	28%	7.96	8.07	-10% to +20%	1%
E2	15.19	16.88	-15% to +25%	11%	13.05	15.65	-10% to +20%	20%
E3	11.34	16.61	-15% to +25%	47%	11.24	13.57	-10% to +20%	21%
E4	17.00	18.81	-15% to +25%	11%	32.32	31.09	-10% to +20%	-4%
E5	17.00	16.53	-15% to +25%	-3%	15.68	13.12	-10% to +20%	-16%
E6	13.72	14.18	-15% to +25%	3%	7.98	6.96	-10% to +20%	-13%

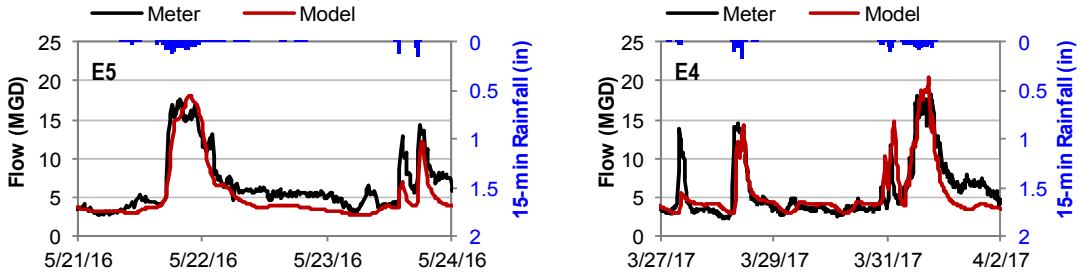
Note: Four of the six wet weather events are calibrated well within or close to the industry criteria. Flow meter data recorded for some of the events (E1 and E3) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER INT-RIDLEY 3 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

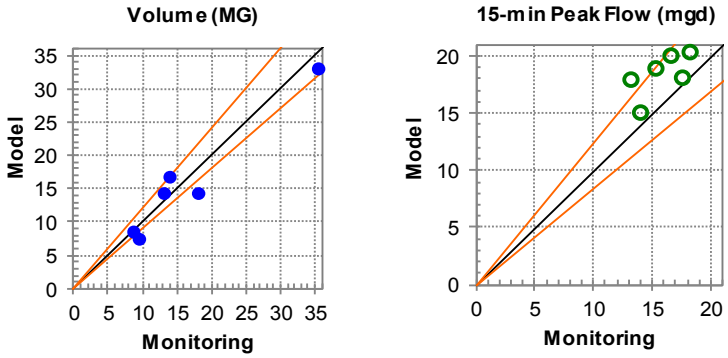
INT-Ridley 3 Model Calibration Results (Metered and Modeled Flow)



INT-Ridley 3 Model Validation Results (Metered and Modeled Flow)

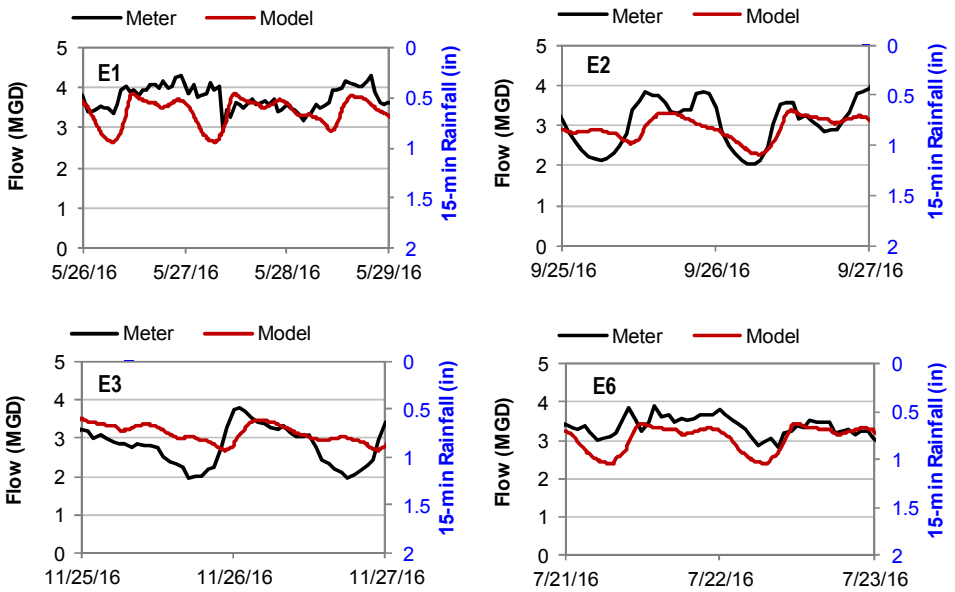


INT-Ridley 3 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

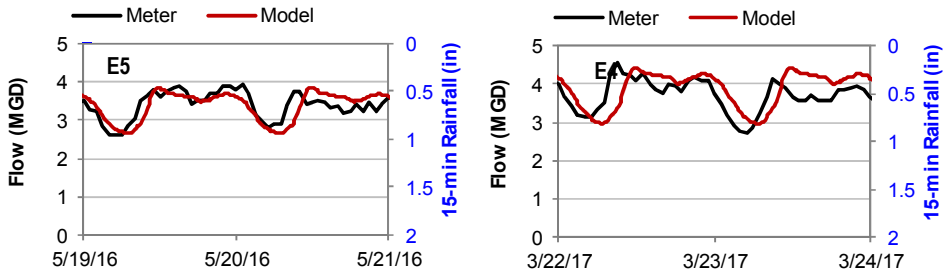


FLOW METER INT-RIDLEY 3 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

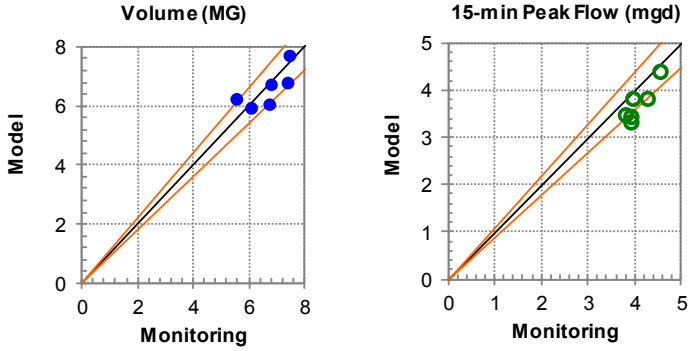
INT-Ridley 3 Model Calibration Results (Metered and Modeled Flow)



INT-Ridley 3 Model Validation Results (Metered and Modeled Flow)



INT-Ridley 3 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



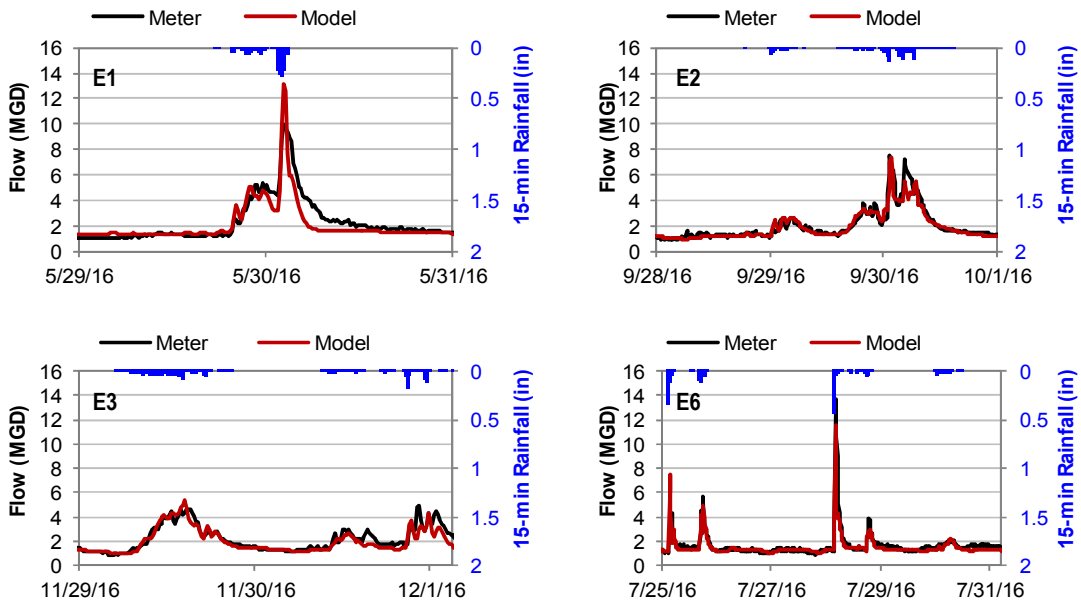
INT-Ridley 3 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	4.28	3.84	-10% to +10%	-10%	7.39	6.78	-10% to +10%	-8%
E2	3.92	3.31	-10% to +10%	-16%	6.07	5.93	-10% to +10%	-2%
E3	3.78	3.49	-10% to +10%	-8%	5.56	6.24	-10% to +10%	12%
E4	4.55	4.41	-10% to +10%	-3%	7.42	7.74	-10% to +10%	4%
E5	3.95	3.84	-10% to +10%	-3%	6.78	6.75	-10% to +10%	0%
E6	3.90	3.44	-10% to +10%	-12%	6.73	6.09	-10% to +10%	-10%

INT-Ridley 3 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	16.50	20.05	-15% to +25%	22%	8.57	8.70	-10% to +20%	2%
E2	15.23	18.92	-15% to +25%	24%	13.85	16.82	-10% to +20%	21%
E3	13.11	17.99	-15% to +25%	37%	13.01	14.51	-10% to +20%	12%
E4	18.23	20.42	-15% to +25%	12%	35.43	33.21	-10% to +20%	-6%
E5	17.50	18.17	-15% to +25%	4%	18.03	14.26	-10% to +20%	-21%
E6	13.88	15.09	-15% to +25%	9%	9.31	7.52	-10% to +20%	-19%

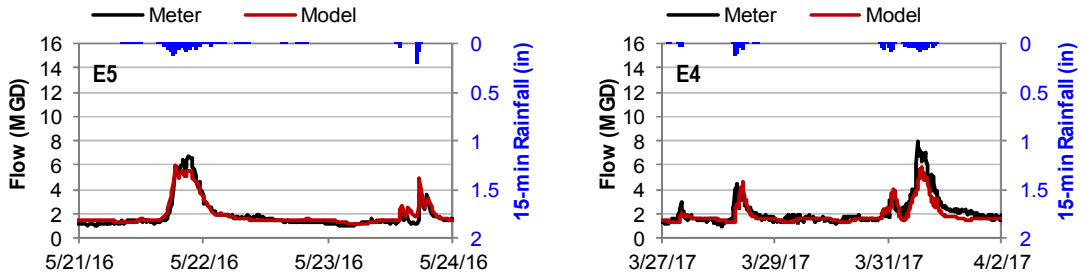
Note: All of the six wet weather events are calibrated well within or close to the industry criteria.

FLOW METER INT-WEI MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

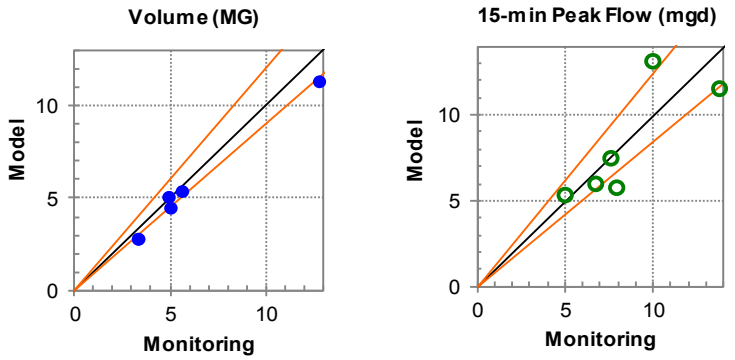
INT-WEI Model Calibration Results (Metered and Modeled Flow)



INT-WEI Model Validation Results (Metered and Modeled Flow)

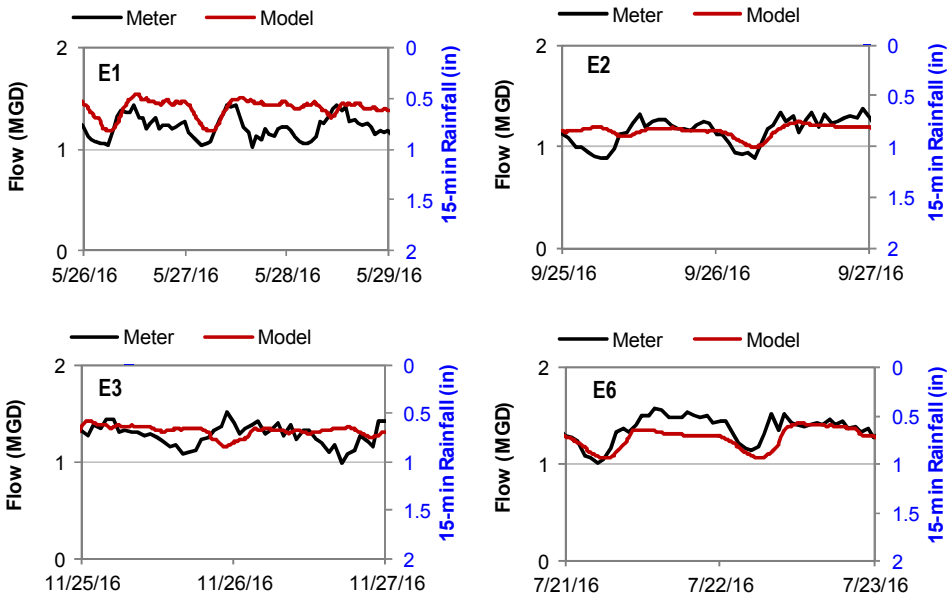


INT-WEI Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

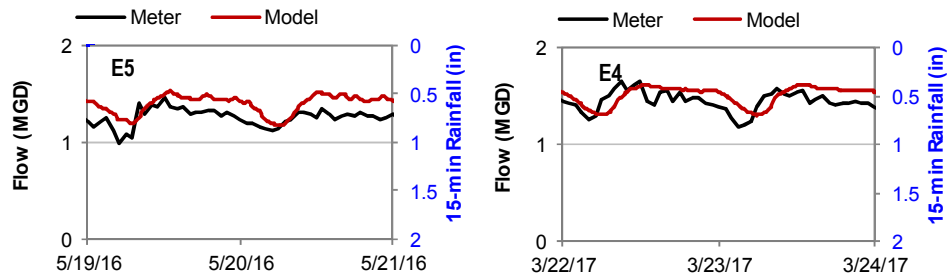


FLOW METER INT-WEI MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

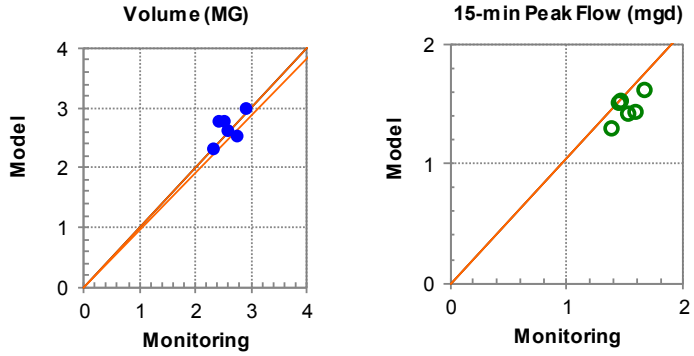
INT-WEI Model Calibration Results (Metered and Modeled Flow)



INT-WEI Model Validation Results (Metered and Modeled Flow)



INT-WEI Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



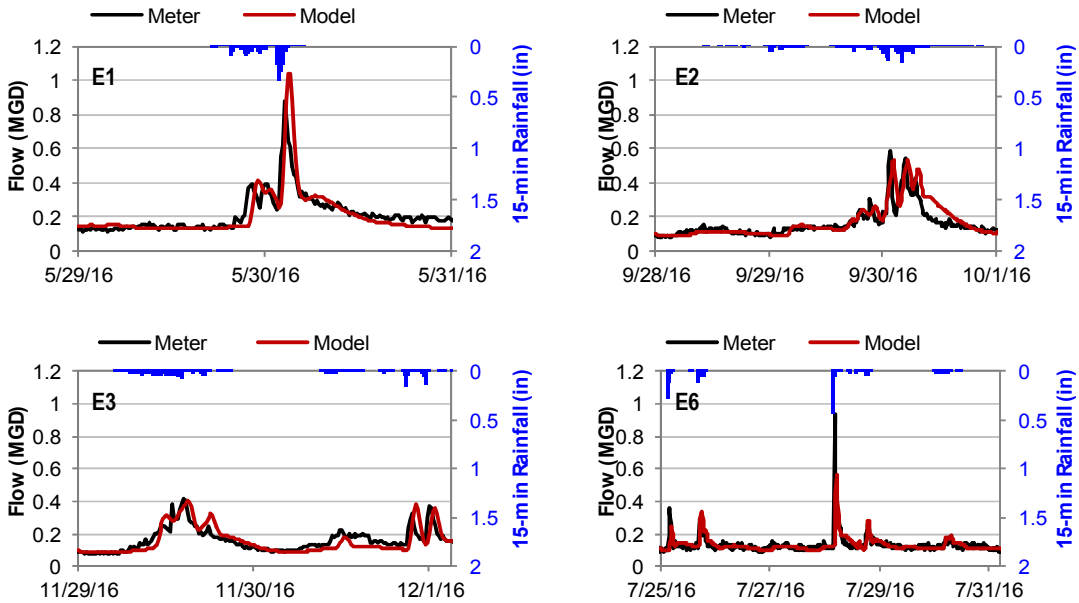
INT-WEI Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	1.44	1.51	-10% to +10%	5%	2.41	2.80	-10% to +10%	16%
E2	1.37	1.31	-10% to +10%	-5%	2.31	2.33	-10% to +10%	1%
E3	1.51	1.43	-10% to +10%	-5%	2.56	2.65	-10% to +10%	3%
E4	1.66	1.62	-10% to +10%	-2%	2.90	3.02	-10% to +10%	4%
E5	1.46	1.53	-10% to +10%	5%	2.52	2.79	-10% to +10%	11%
E6	1.58	1.43	-10% to +10%	-9%	2.73	2.54	-10% to +10%	-7%

INT-WEI Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	9.99	13.17	-15% to +25%	32%	3.27	2.85	-10% to +20%	-13%
E2	7.54	7.45	-15% to +25%	-1%	5.64	5.40	-10% to +20%	-4%
E3	4.93	5.41	-15% to +25%	10%	5.00	4.52	-10% to +20%	-10%
E4	7.91	5.83	-15% to +25%	-26%	12.77	11.34	-10% to +20%	-11%
E5	6.73	6.02	-15% to +25%	-10%	4.91	5.06	-10% to +20%	3%
E6	13.69	11.60	-15% to +25%	-15%	3.31	2.79	-10% to +20%	-16%

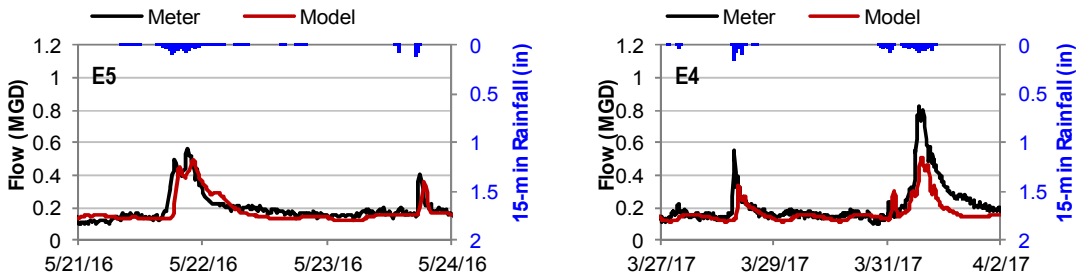
Note: All the six wet weather events are calibrated well within or close to the industry criteria.

FLOW METER SEP-1 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

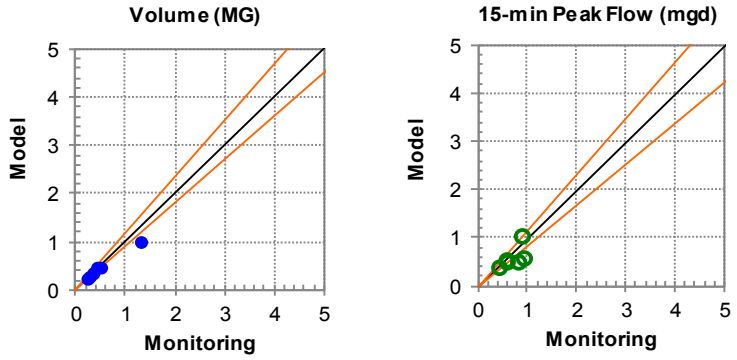
Sep-1 Model Calibration Results (Metered and Modeled Flow)



Sep-1 Model Validation Results (Metered and Modeled Flow)

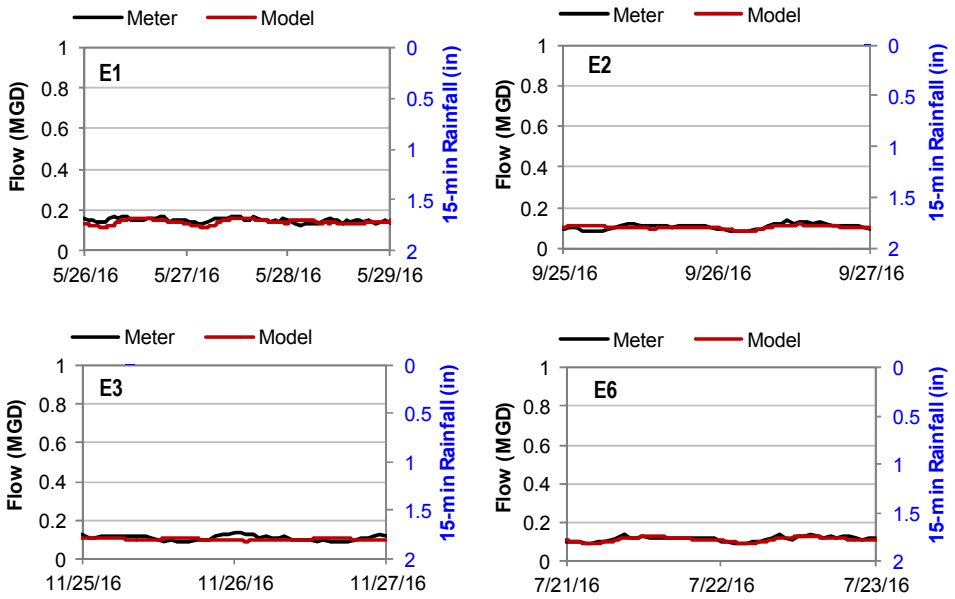


Sep-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

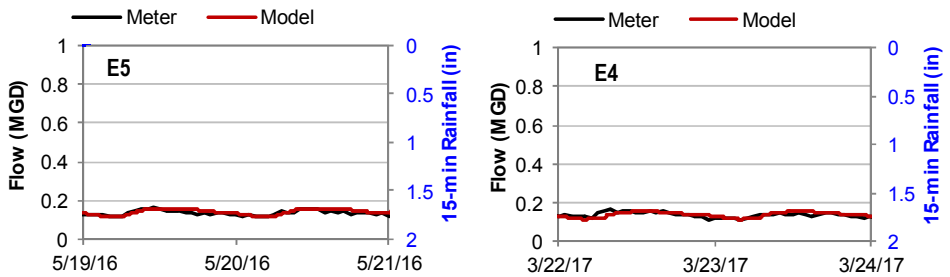


FLOW METER SEP-1 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

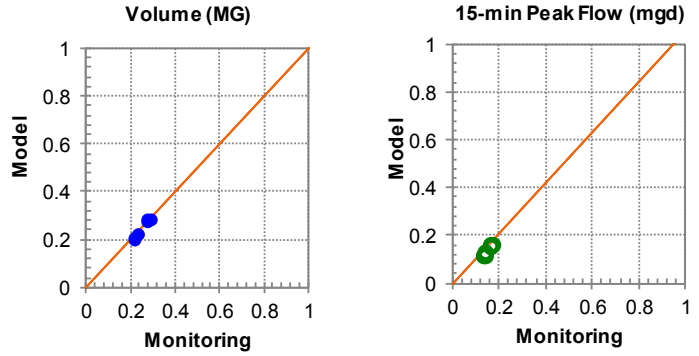
Sep-1 Model Calibration Results (Metered and Modeled Flow)



Sep-1 Model Validation Results (Metered and Modeled Flow)



Sep-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



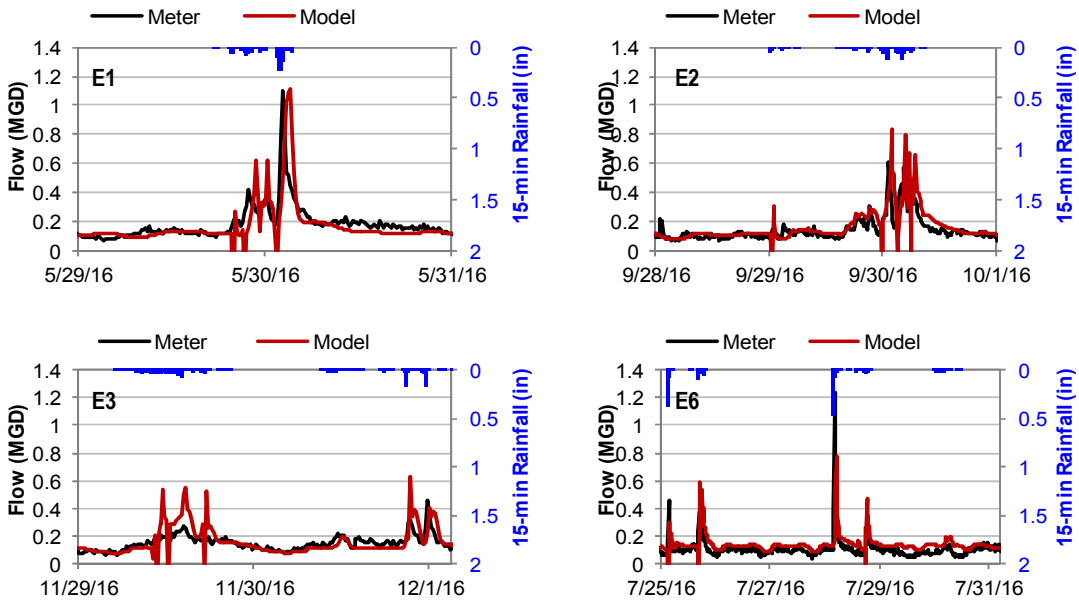
Sep-1 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.17	0.16	-10% to +10%	-7%	0.29	0.28	-10% to +10%	-4%
E2	0.14	0.11	-10% to +10%	-21%	0.22	0.21	-10% to +10%	-3%
E3	0.13	0.11	-10% to +10%	-16%	0.22	0.20	-10% to +10%	-6%
E4	0.16	0.16	-10% to +10%	-4%	0.28	0.28	-10% to +10%	1%
E5	0.17	0.16	-10% to +10%	-4%	0.27	0.28	-10% to +10%	4%
E6	0.14	0.13	-10% to +10%	-7%	0.23	0.22	-10% to +10%	-3%

Sep-1 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.88	1.04	-15% to +25%	19%	0.27	0.27	-10% to +20%	2%
E2	0.58	0.53	-15% to +25%	-8%	0.43	0.47	-10% to +20%	10%
E3	0.42	0.40	-15% to +25%	-5%	0.37	0.36	-10% to +20%	-3%
E4	0.82	0.51	-15% to +25%	-38%	1.30	1.01	-10% to +20%	-22%
E5	0.56	0.49	-15% to +25%	-11%	0.51	0.47	-10% to +20%	-9%
E6	0.94	0.57	-15% to +25%	-40%	0.25	0.25	-10% to +20%	-1%

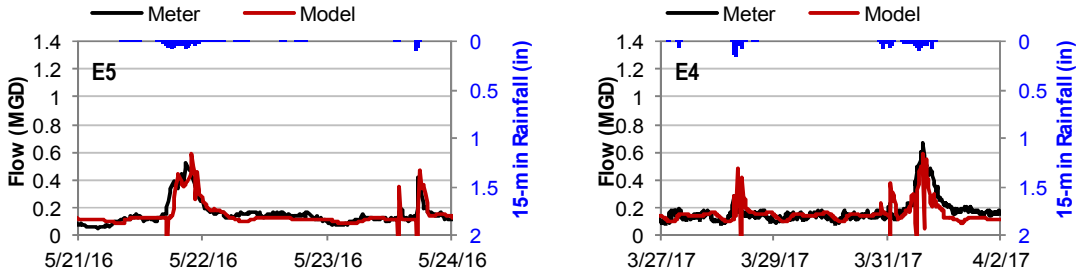
Note: Four of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E4) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER SEP-2 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

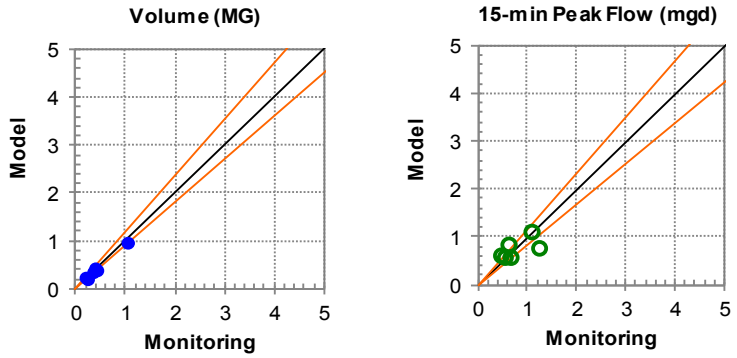
Sep-2 Model Calibration Results (Metered and Modeled Flow)



Sep-2 Model Validation Results (Metered and Modeled Flow)

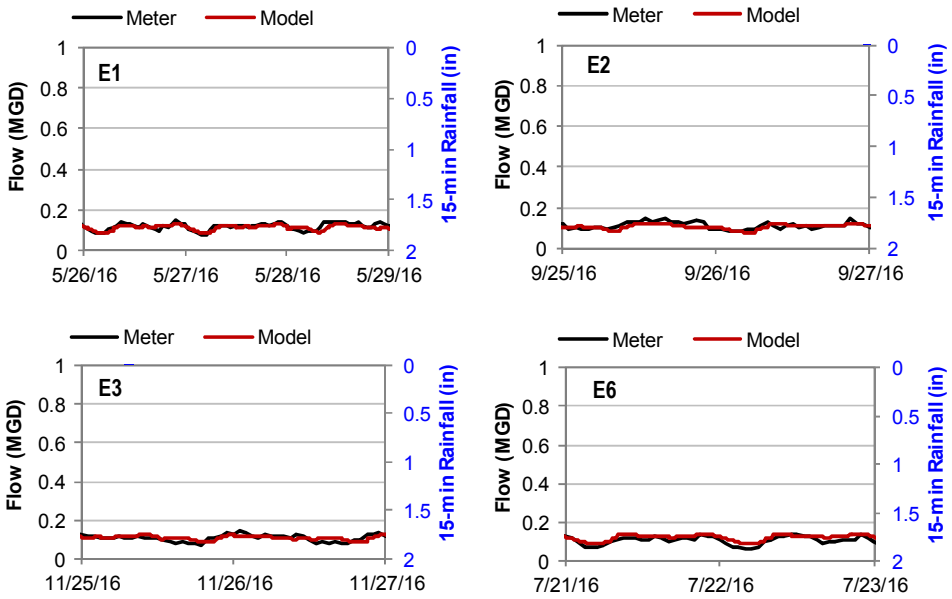


Sep-2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

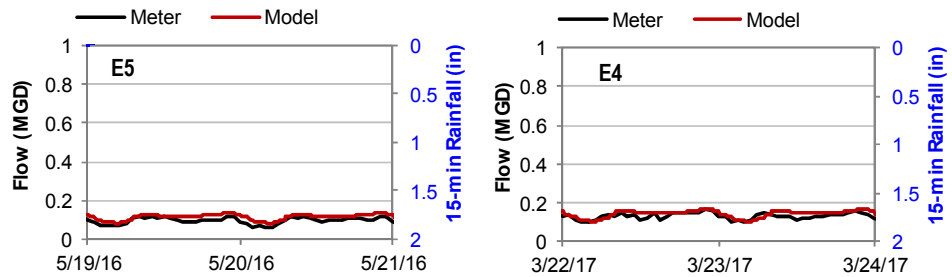


FLOW METER SEP-2 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

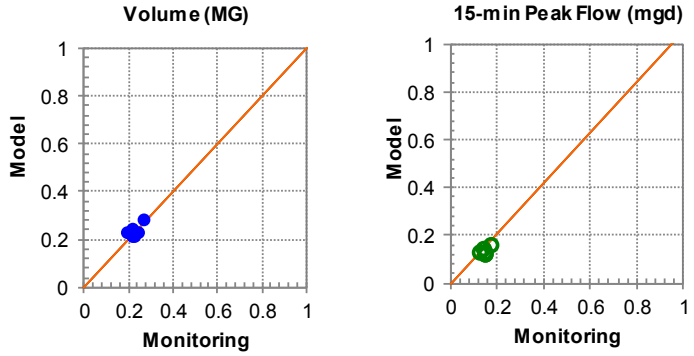
Sep-2 Model Calibration Results (Metered and Modeled Flow)



Sep-2 Model Validation Results (Metered and Modeled Flow)



Sep-2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



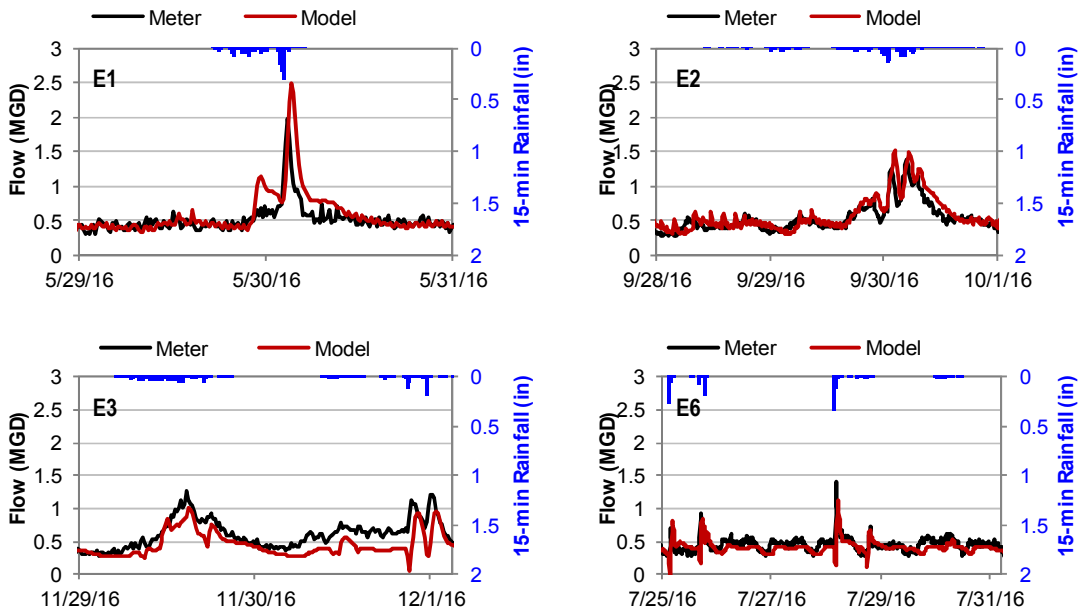
Sep-2 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.15	0.13	-10% to +10%	-8%	0.24	0.23	-10% to +10%	-4%
E2	0.15	0.12	-10% to +10%	-17%	0.23	0.21	-10% to +10%	-5%
E3	0.15	0.13	-10% to +10%	-15%	0.22	0.22	-10% to +10%	2%
E4	0.17	0.17	-10% to +10%	-3%	0.26	0.28	-10% to +10%	9%
E5	0.12	0.13	-10% to +10%	10%	0.19	0.23	-10% to +10%	20%
E6	0.14	0.14	-10% to +10%	2%	0.22	0.25	-10% to +10%	14%

Sep-2 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	1.10	1.11	-15% to +25%	2%	0.24	0.22	-10% to +20%	-7%
E2	0.61	0.84	-15% to +25%	36%	0.38	0.44	-10% to +20%	14%
E3	0.46	0.63	-15% to +25%	36%	0.34	0.36	-10% to +20%	4%
E4	0.67	0.59	-15% to +25%	-11%	1.04	0.95	-10% to +20%	-8%
E5	0.53	0.59	-15% to +25%	11%	0.42	0.38	-10% to +20%	-9%
E6	1.24	0.78	-15% to +25%	-37%	0.20	0.25	-10% to +20%	24%

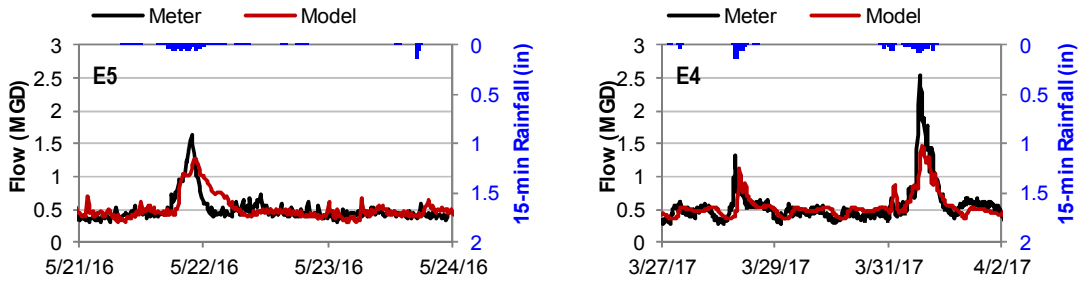
Note: All the six wet weather events are calibrated well within the industry criteria except E6 because the flow meter data recorded for E6 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER SEP-3 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

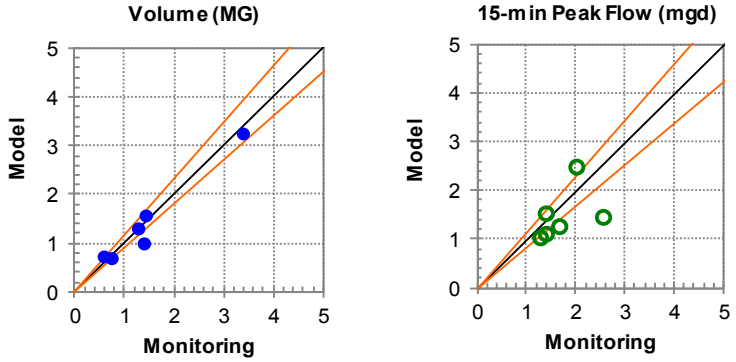
Sep-3 Model Calibration Results (Metered and Modeled Flow)



Sep-3 Model Validation Results (Metered and Modeled Flow)

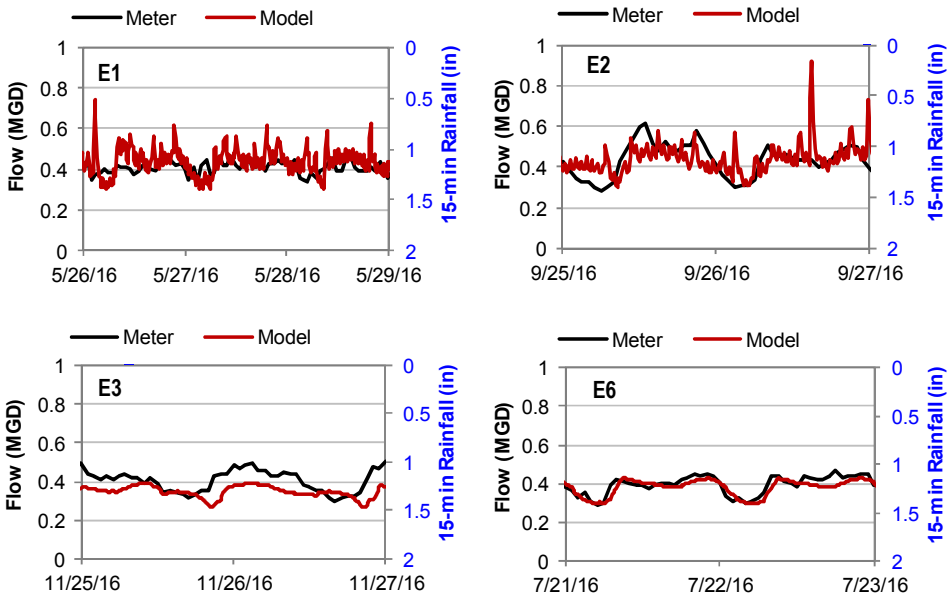


Sep-3 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

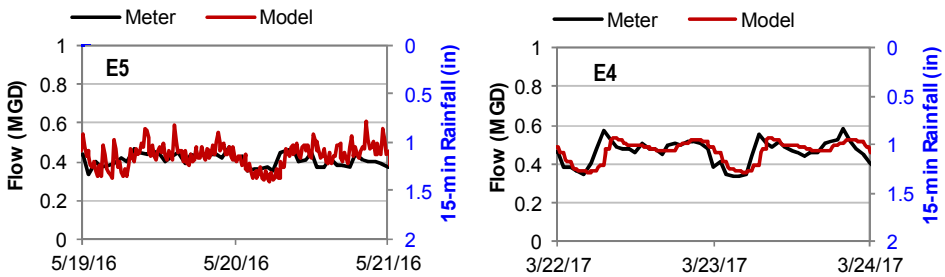


FLOW METER SEP-3 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

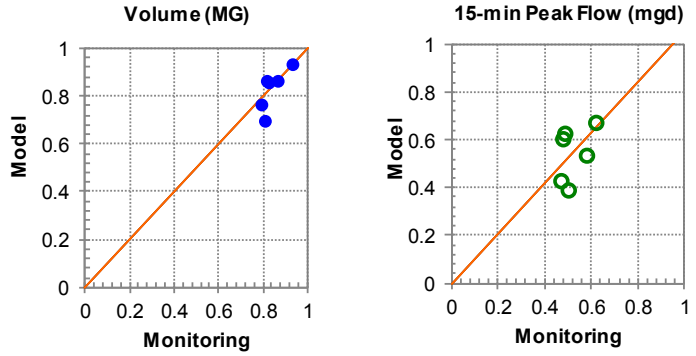
Sep-3 Model Calibration Results (Metered and Modeled Flow)



Sep-3 Model Validation Results (Metered and Modeled Flow)



Sep-3 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



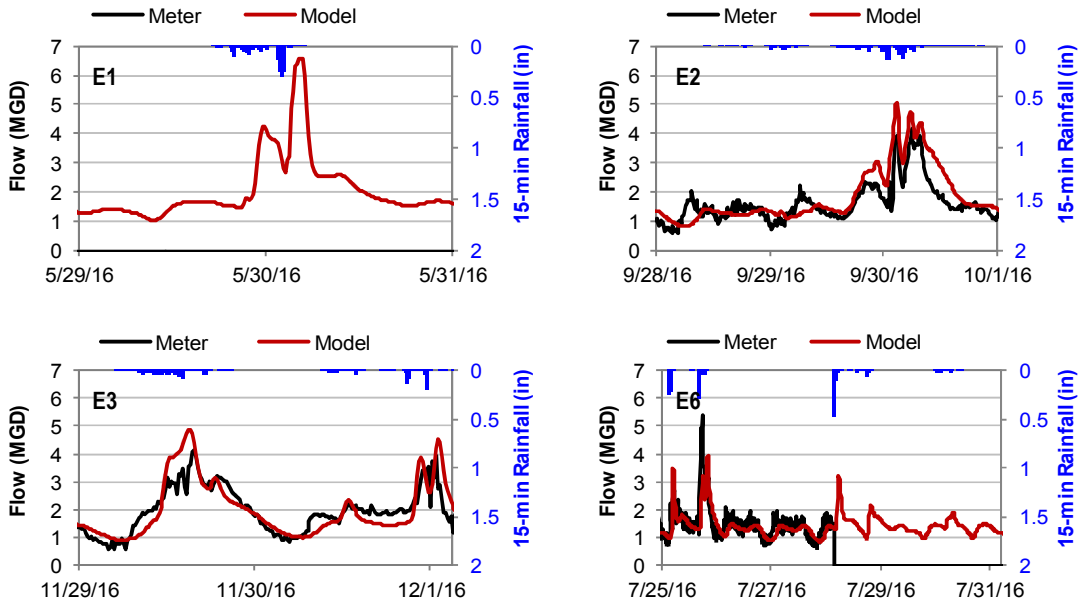
Sep-3 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.48	0.62	-10% to +10%	29%	0.82	0.87	-10% to +10%	6%
E2	0.61	0.68	-10% to +10%	10%	0.87	0.87	-10% to +10%	0%
E3	0.50	0.39	-10% to +10%	-21%	0.81	0.70	-10% to +10%	-14%
E4	0.58	0.53	-10% to +10%	-8%	0.93	0.93	-10% to +10%	1%
E5	0.48	0.60	-10% to +10%	26%	0.82	0.86	-10% to +10%	5%
E6	0.47	0.43	-10% to +10%	-7%	0.79	0.76	-10% to +10%	-3%

Sep-3 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	1.99	2.49	-15% to +25%	25%	0.59	0.75	-10% to +20%	27%
E2	1.40	1.52	-15% to +25%	8%	1.43	1.56	-10% to +20%	9%
E3	1.26	1.02	-15% to +25%	-19%	1.40	1.02	-10% to +20%	-27%
E4	2.55	1.47	-15% to +25%	-42%	3.39	3.26	-10% to +20%	-4%
E5	1.64	1.28	-15% to +25%	-22%	1.27	1.32	-10% to +20%	4%
E6	1.40	1.11	-15% to +25%	-20%	0.72	0.69	-10% to +20%	-4%

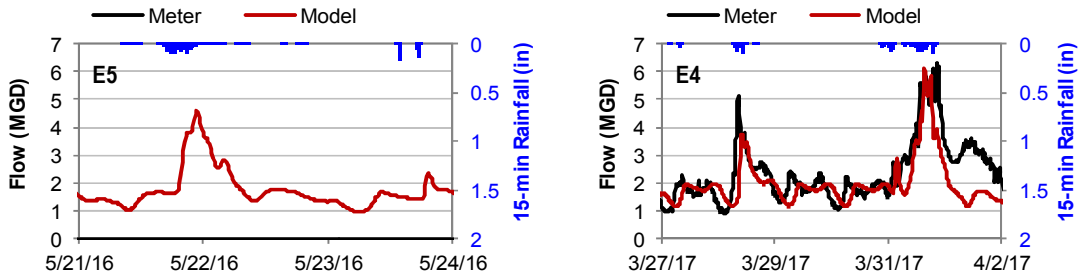
Note: All the six wet weather events are calibrated well within or close to the industry criteria except peak flow for Event E4 because the flow meter data recorded for E4 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER SEP-4 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

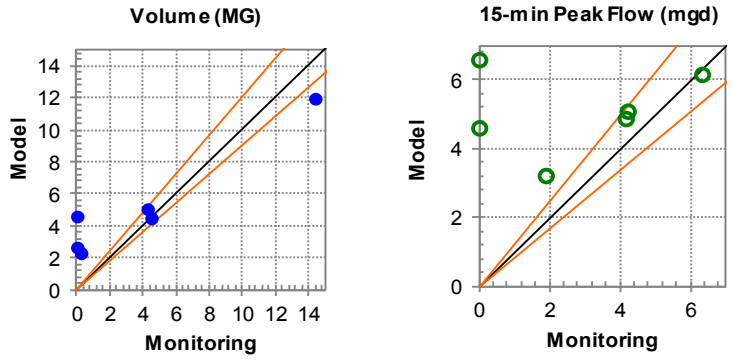
Sep-4 Model Calibration Results (Metered and Modeled Flow)



Sep-4 Model Validation Results (Metered and Modeled Flow)

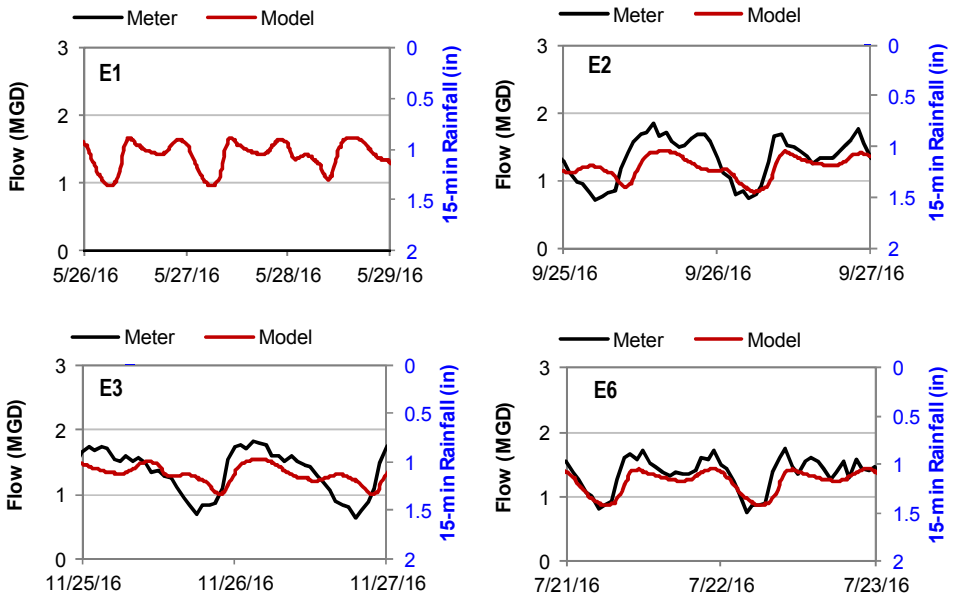


Sep-4 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

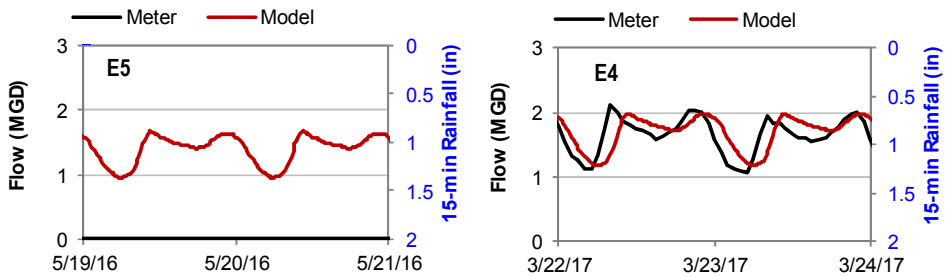


FLOW METER SEP-4 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

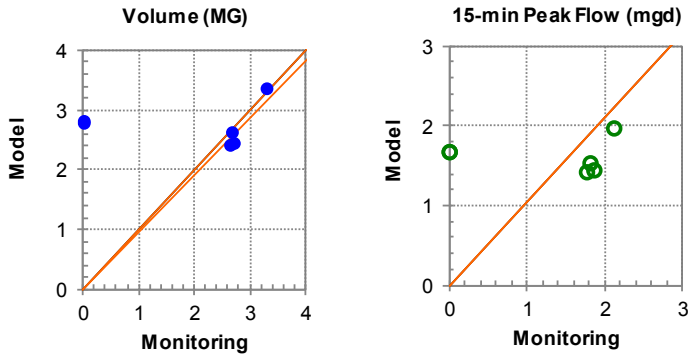
Sep-4 Model Calibration Results (Metered and Modeled Flow)



Sep-4 Model Validation Results (Metered and Modeled Flow)



Sep-4 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



Sep-4 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.00	1.67	-10% to +10%		0.00	2.81	-10% to +10%	
E2	1.84	1.44	-10% to +10%	-22%	2.65	2.43	-10% to +10%	-8%
E3	1.82	1.55	-10% to +10%	-15%	2.66	2.62	-10% to +10%	-2%
E4	2.12	1.98	-10% to +10%	-7%	3.29	3.38	-10% to +10%	3%
E5	0.00	1.67	-10% to +10%		0.00	2.79	-10% to +10%	
E6	1.75	1.43	-10% to +10%	-19%	2.70	2.45	-10% to +10%	-9%

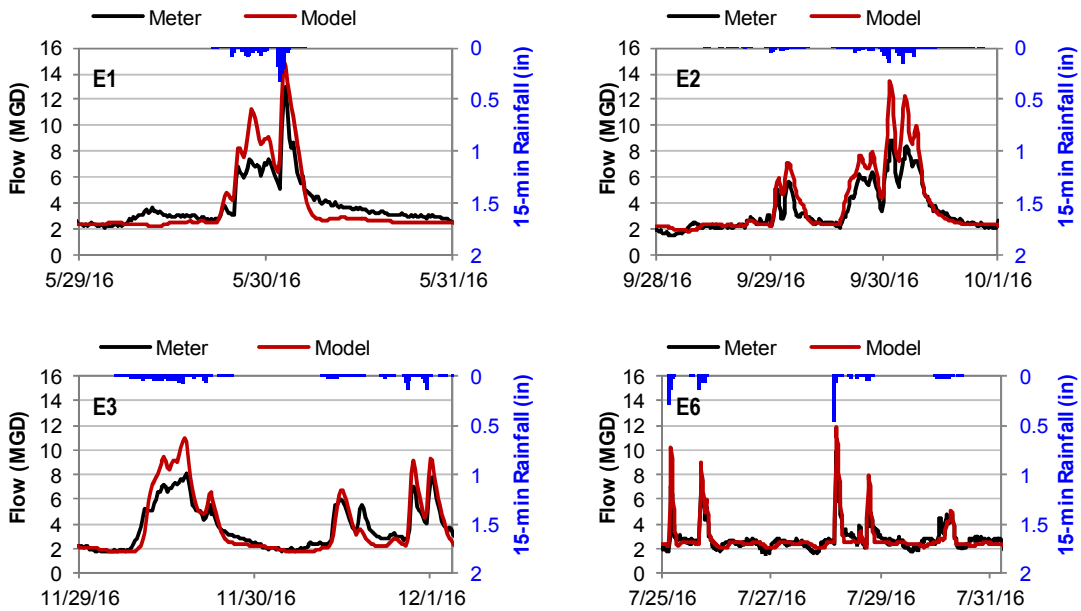
Sep-4 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.00	6.59	-15% to +25%		0.00	2.69	-10% to +20%	
E2	4.19	5.09	-15% to +25%	21%	4.27	5.06	-10% to +20%	18%
E3	4.17	4.90	-15% to +25%	17%	4.45	4.53	-10% to +20%	2%
E4	6.33	6.13	-15% to +25%	-3%	14.38	11.95	-10% to +20%	-17%
E5	0.00	4.58	-15% to +25%		0.00	4.60	-10% to +20%	
E6	1.88	3.23	-15% to +25%	71%	0.27	2.36	-10% to +20%	773%

Note: Flow meter was included after the first quarter of flow monitoring; therefore no data was available for Events E1 and E5. Also, meter data was not available for part of E6.

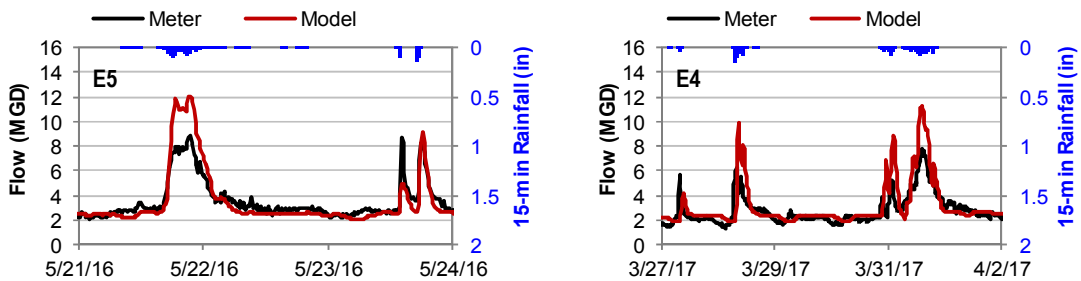
Three of the four available wet weather events are calibrated well within the industry criteria. Flow meter data recorded for E6 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER SIDE-1 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

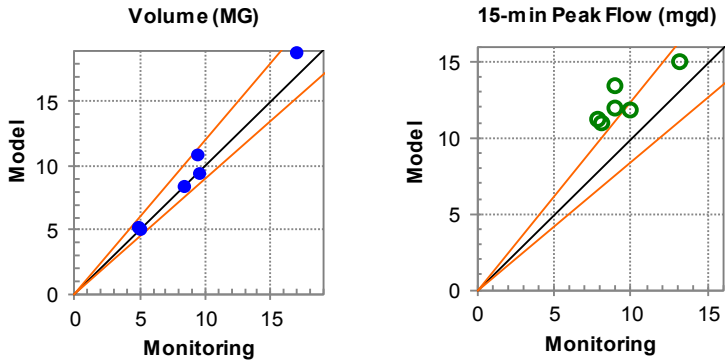
Side-1 Model Calibration Results (Metered and Modeled Flow)



Side-1 Model Validation Results (Metered and Modeled Flow)

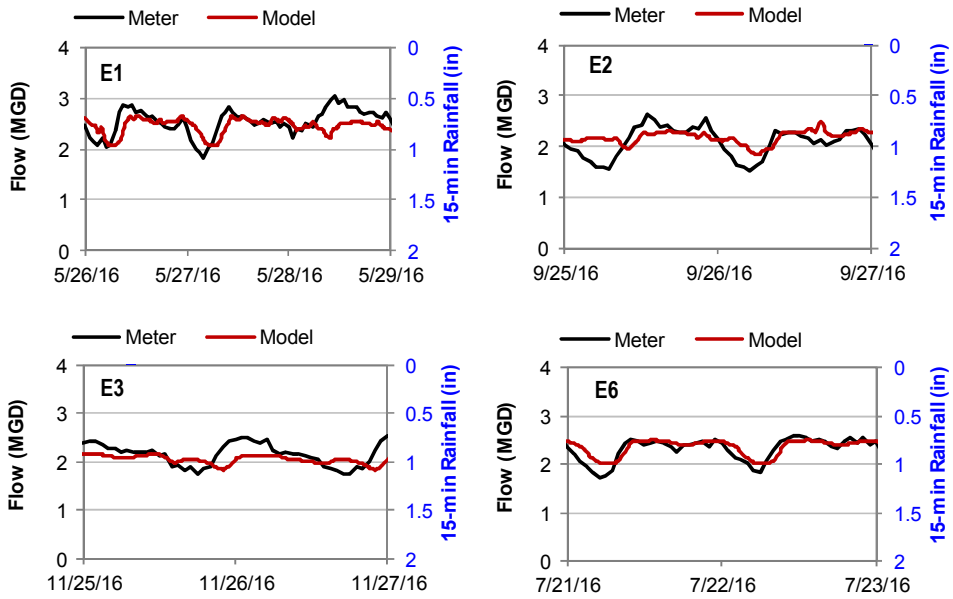


Side-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

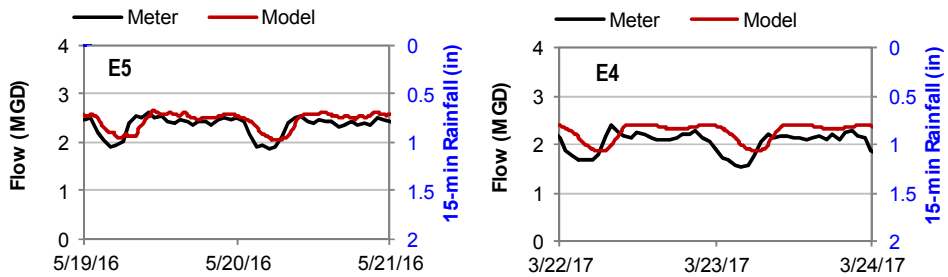


FLOW METER SIDE-1 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

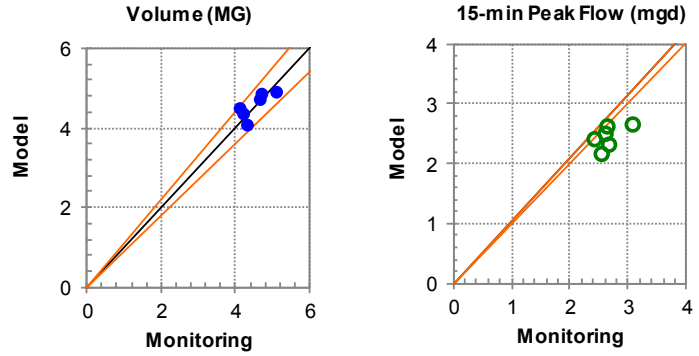
Side-1 Model Calibration Results (Metered and Modeled Flow)



Side-1 Model Validation Results (Metered and Modeled Flow)



Side-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



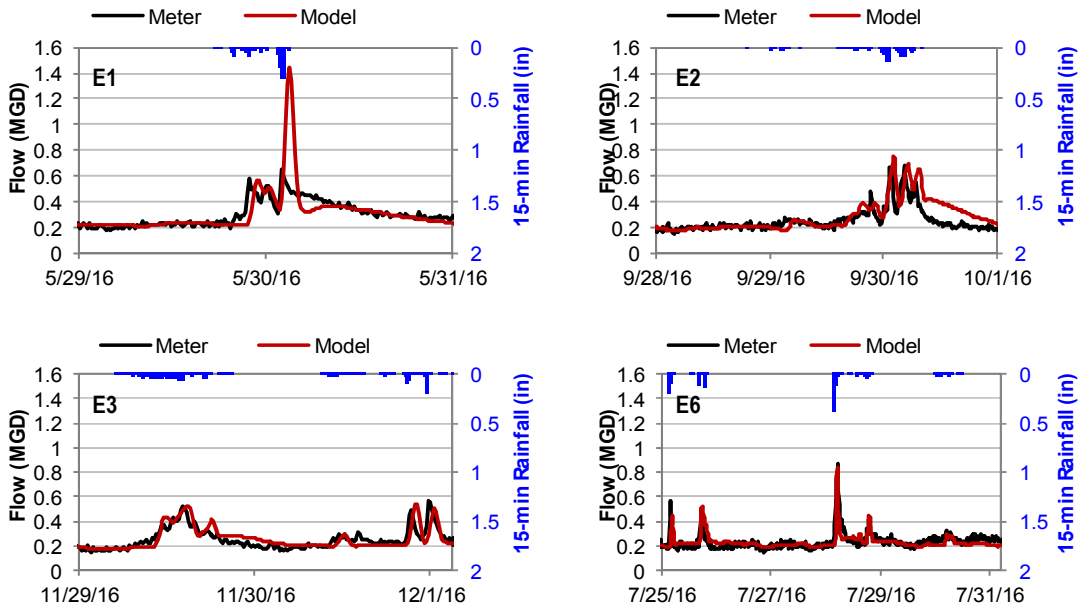
Side-1 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	3.05	2.65	-10% to +10%	-13%	5.11	4.90	-10% to +10%	-4%
E2	2.66	2.31	-10% to +10%	-13%	4.20	4.37	-10% to +10%	4%
E3	2.53	2.17	-10% to +10%	-14%	4.31	4.10	-10% to +10%	-5%
E4	2.42	2.41	-10% to +10%	0%	4.09	4.52	-10% to +10%	11%
E5	2.62	2.64	-10% to +10%	1%	4.69	4.89	-10% to +10%	4%
E6	2.61	2.50	-10% to +10%	-4%	4.62	4.72	-10% to +10%	2%

Side-1 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	13.05	15.03	-15% to +25%	15%	4.90	5.34	-10% to +20%	9%
E2	8.85	13.40	-15% to +25%	51%	9.30	10.88	-10% to +20%	17%
E3	8.03	11.00	-15% to +25%	37%	8.35	8.49	-10% to +20%	2%
E4	7.73	11.25	-15% to +25%	45%	16.90	18.97	-10% to +20%	12%
E5	8.84	12.02	-15% to +25%	36%	9.43	9.52	-10% to +20%	1%
E6	9.88	11.82	-15% to +25%	20%	5.02	5.09	-10% to +20%	1%

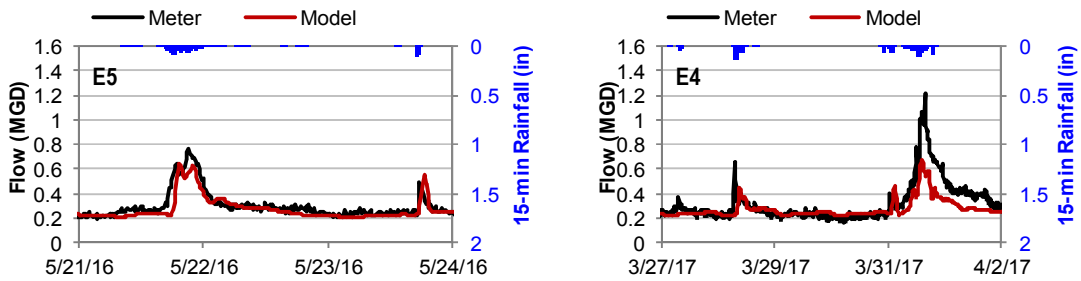
Note: All the six wet weather events are calibrated well within or close to the industry criteria except peak flows for Event E2 and E4 because the flow meter data recorded for the events is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER SIDE-2 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

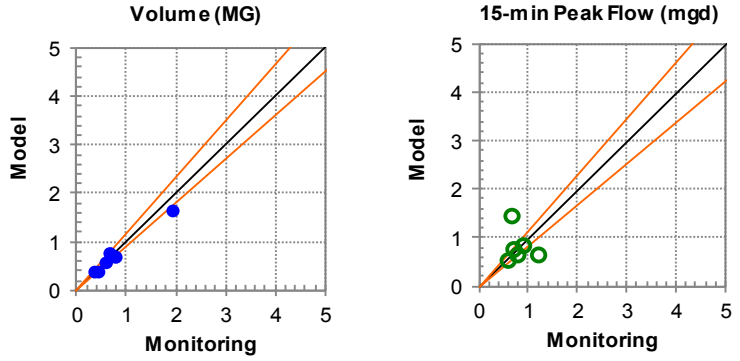
Side-2 Model Calibration Results (Metered and Modeled Flow)



Side-2 Model Validation Results (Metered and Modeled Flow)

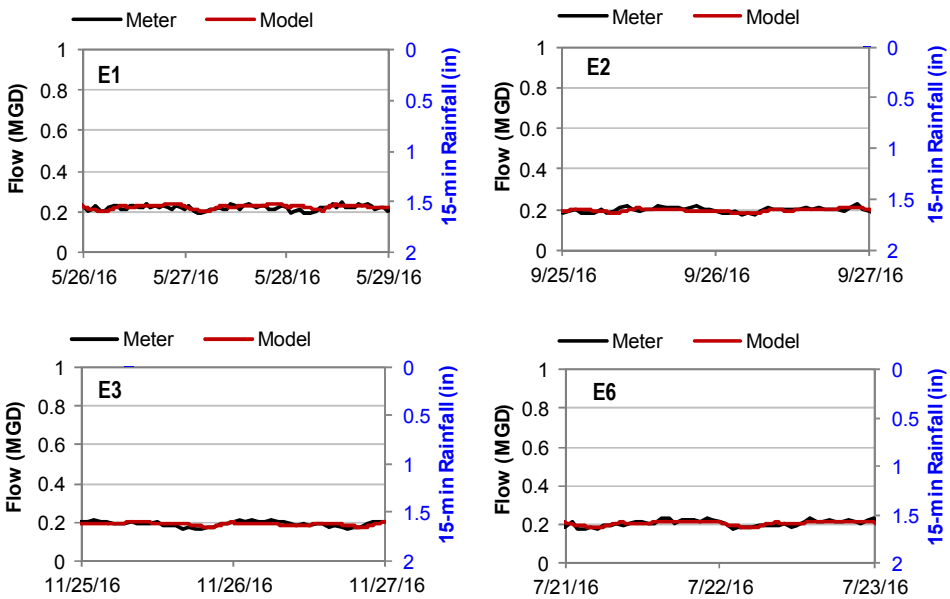


Side-2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

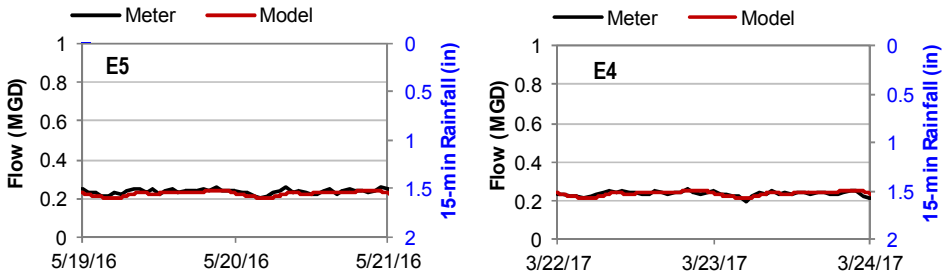


FLOW METER SIDE-2 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

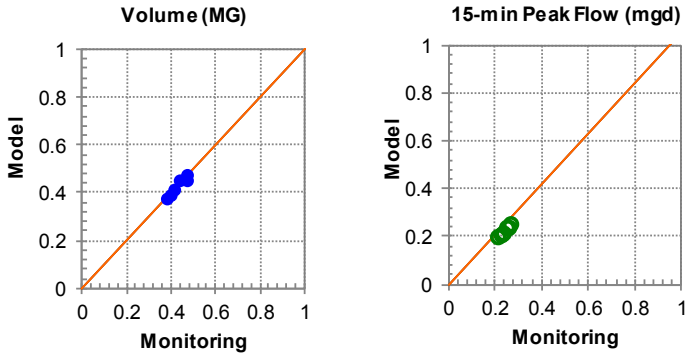
Side-2 Model Calibration Results (Metered and Modeled Flow)



Side-2 Model Validation Results (Metered and Modeled Flow)



Side-2 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



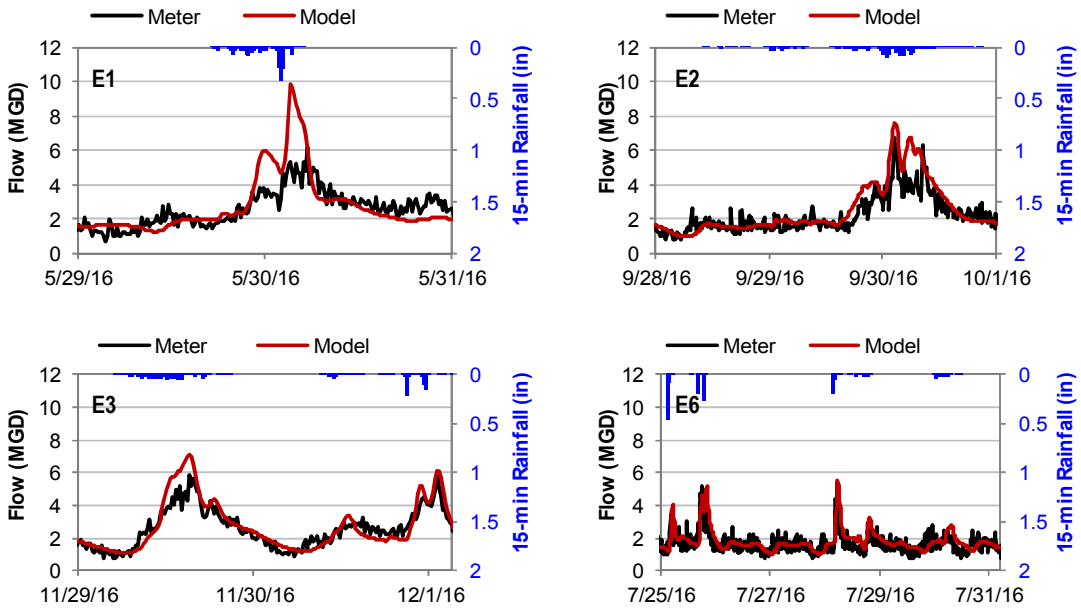
Side-2 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.25	0.24	-10% to +10%	-4%	0.44	0.45	-10% to +10%	2%
E2	0.23	0.21	-10% to +10%	-9%	0.40	0.39	-10% to +10%	-1%
E3	0.21	0.20	-10% to +10%	-4%	0.38	0.38	-10% to +10%	0%
E4	0.26	0.25	-10% to +10%	-5%	0.47	0.47	-10% to +10%	0%
E5	0.26	0.24	-10% to +10%	-7%	0.47	0.45	-10% to +10%	-5%
E6	0.23	0.22	-10% to +10%	-7%	0.41	0.41	-10% to +10%	-1%

Side-2 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.65	1.44	-15% to +25%	120%	0.36	0.38	-10% to +20%	5%
E2	0.68	0.75	-15% to +25%	10%	0.67	0.76	-10% to +20%	15%
E3	0.56	0.54	-15% to +25%	-3%	0.58	0.59	-10% to +20%	2%
E4	1.21	0.67	-15% to +25%	-45%	1.94	1.66	-10% to +20%	-14%
E5	0.76	0.65	-15% to +25%	-14%	0.78	0.71	-10% to +20%	-8%
E6	0.87	0.85	-15% to +25%	-3%	0.42	0.41	-10% to +20%	-4%

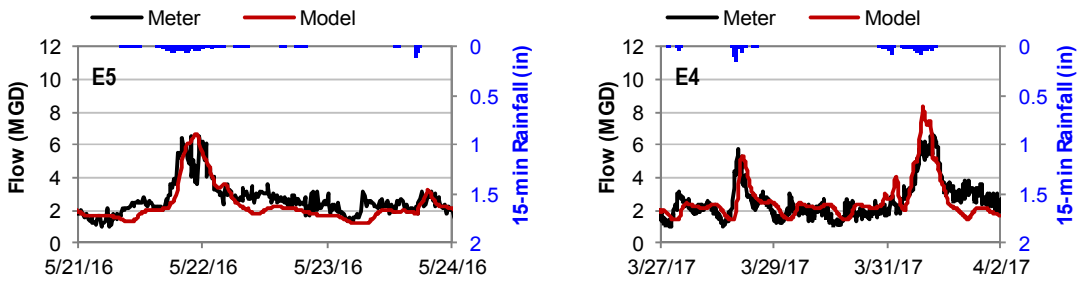
Note: Four of the six wet weather events are calibrated well within the industry criteria. Flow meter data recorded for some of the events (E1 and E4) is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER RC MH-26 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

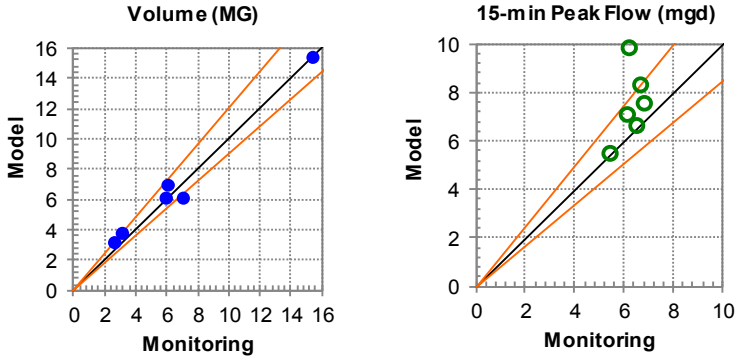
RC MH-26 Model Calibration Results (Metered and Modeled Flow)



RC MH-26 Model Validation Results (Metered and Modeled Flow)

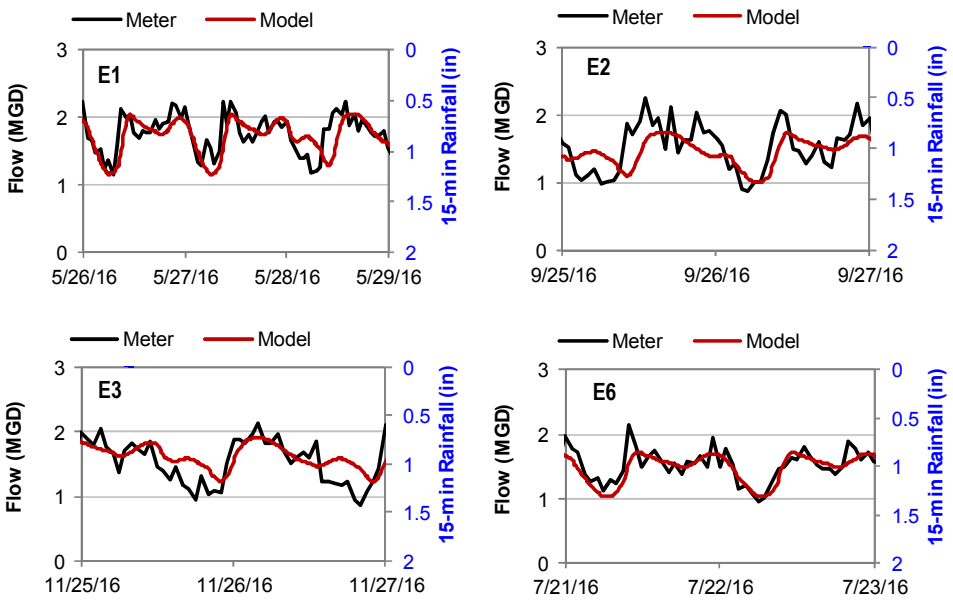


RC MH-26 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

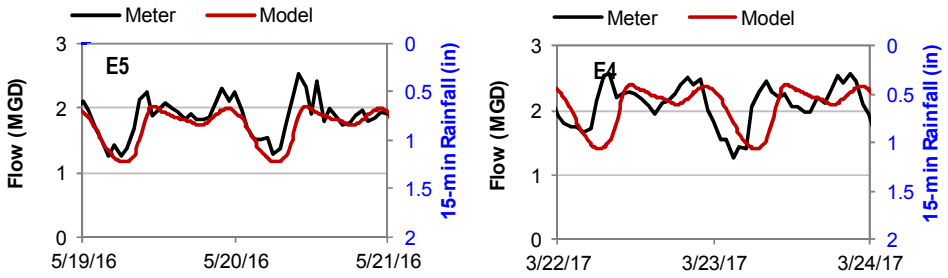


FLOW METER RC MH-26 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

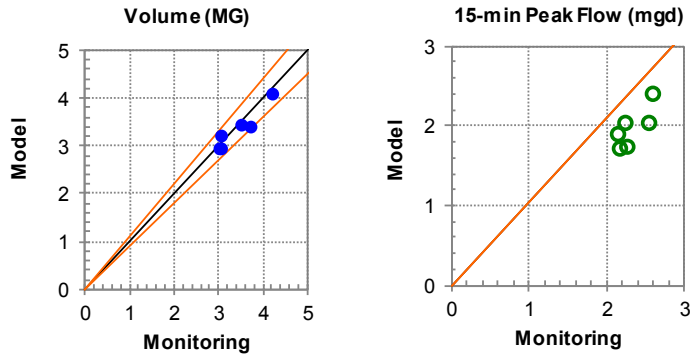
RC MH-26 Model Calibration Results (Metered and Modeled Flow)



RC MH-26 Model Validation Results (Metered and Modeled Flow)



RC MH-26 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



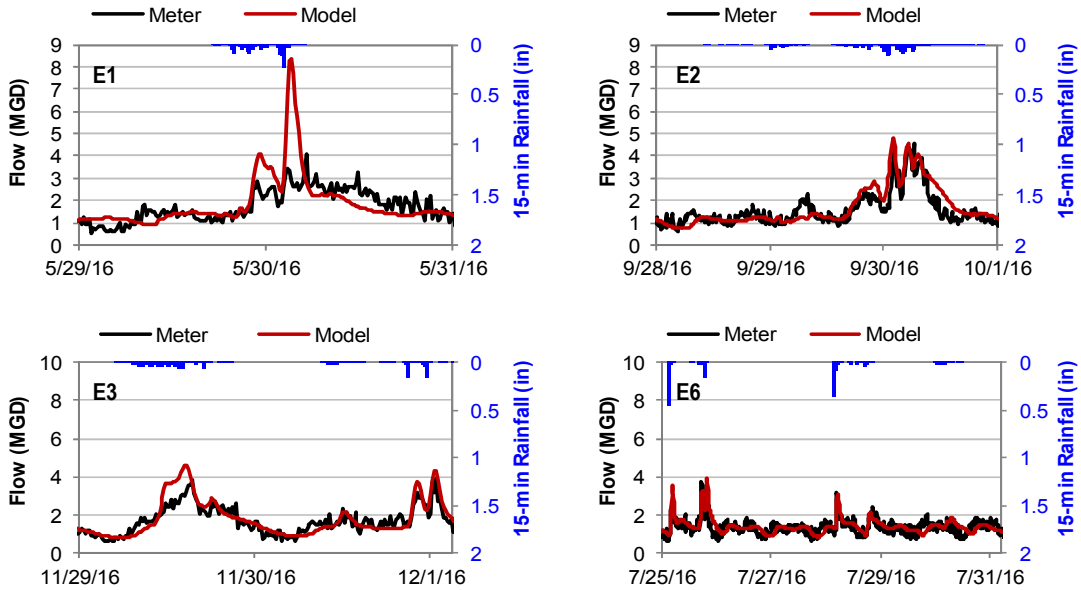
RC MH-26 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	2.23	2.05	-10% to +10%	-8%	3.49	3.44	-10% to +10%	-1%
E2	2.25	1.74	-10% to +10%	-23%	3.04	2.94	-10% to +10%	-3%
E3	2.14	1.91	-10% to +10%	-11%	3.04	3.21	-10% to +10%	6%
E4	2.58	2.40	-10% to +10%	-7%	4.20	4.09	-10% to +10%	-3%
E5	2.53	2.04	-10% to +10%	-20%	3.70	3.41	-10% to +10%	-8%
E6	2.15	1.71	-10% to +10%	-21%	3.02	2.94	-10% to +10%	-3%

RC MH-26 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	6.14	9.86	-15% to +25%	61%	3.08	3.78	-10% to +20%	23%
E2	6.76	7.57	-15% to +25%	12%	5.99	6.98	-10% to +20%	17%
E3	6.07	7.10	-15% to +25%	17%	5.85	6.15	-10% to +20%	5%
E4	6.64	8.33	-15% to +25%	25%	15.34	15.43	-10% to +20%	1%
E5	6.48	6.67	-15% to +25%	3%	7.01	6.14	-10% to +20%	-13%
E6	5.39	5.51	-15% to +25%	2%	2.64	3.17	-10% to +20%	20%

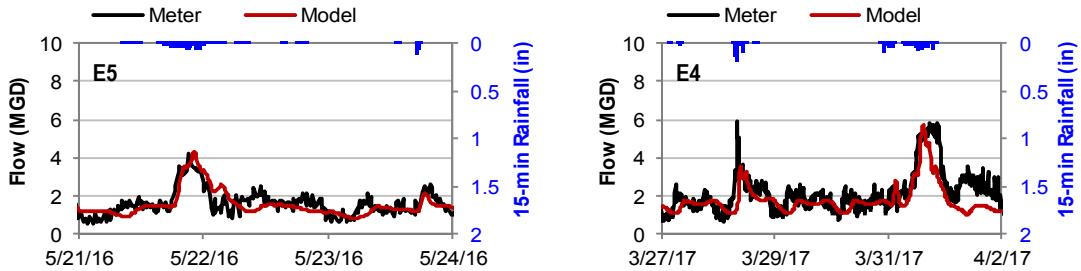
Note: All the six wet weather events are calibrated well within the industry criteria except Event E1. Flow meter data recorded for E1 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER RC MH-30 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

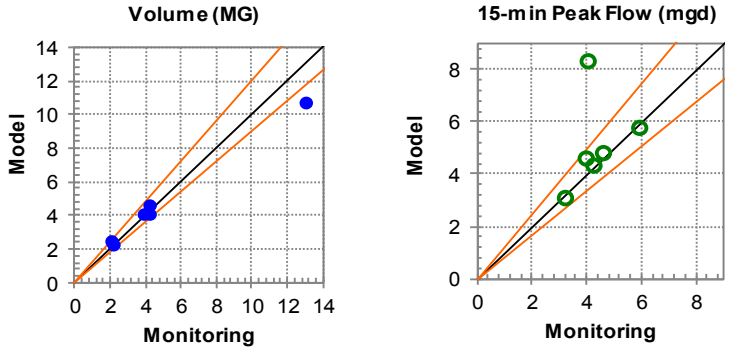
RC MH-30 Model Calibration Results (Metered and Modeled Flow)



RC MH-30 Model Validation Results (Metered and Modeled Flow)

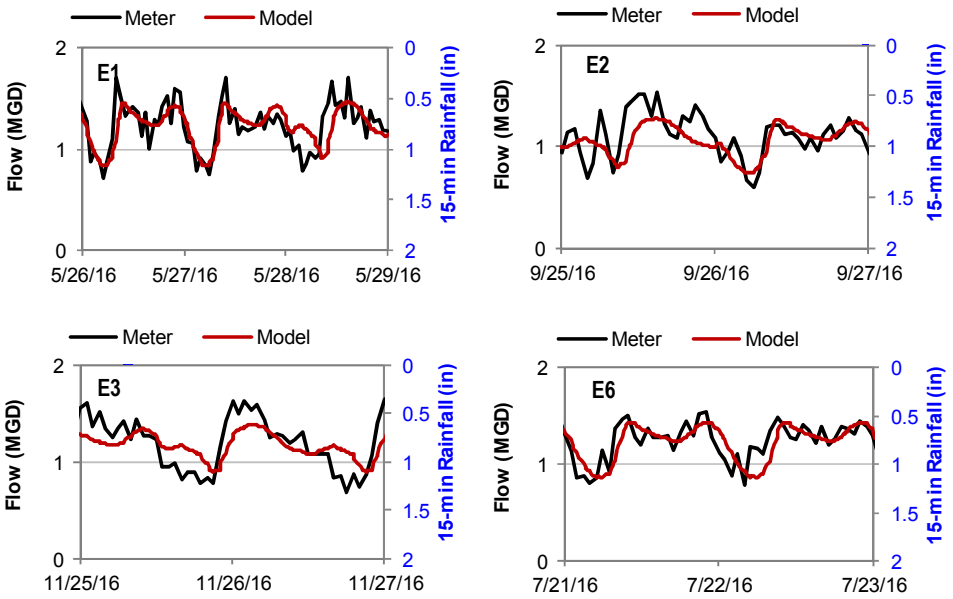


RC MH-30 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

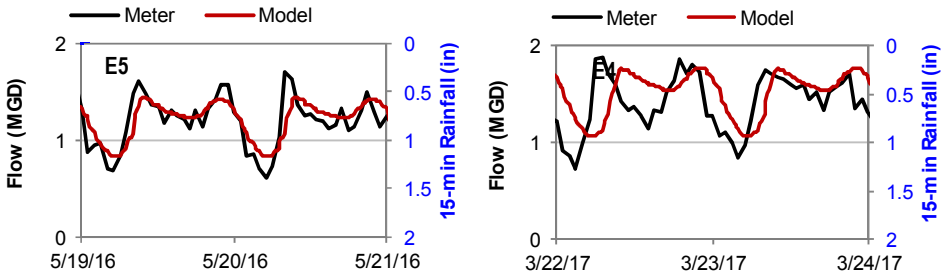


FLOW METER RC MH-30 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

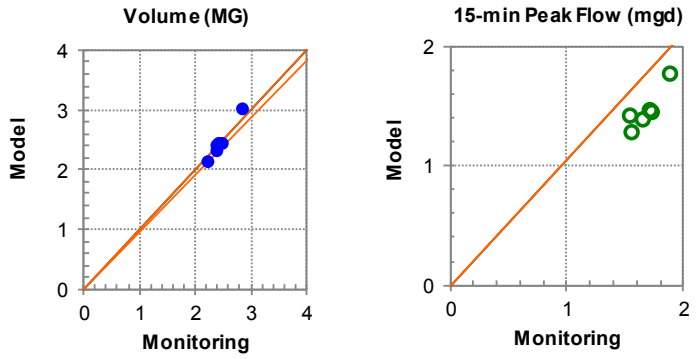
RC MH-30 Model Calibration Results (Metered and Modeled Flow)



RC MH-30 Model Validation Results (Metered and Modeled Flow)



RC MH-30 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

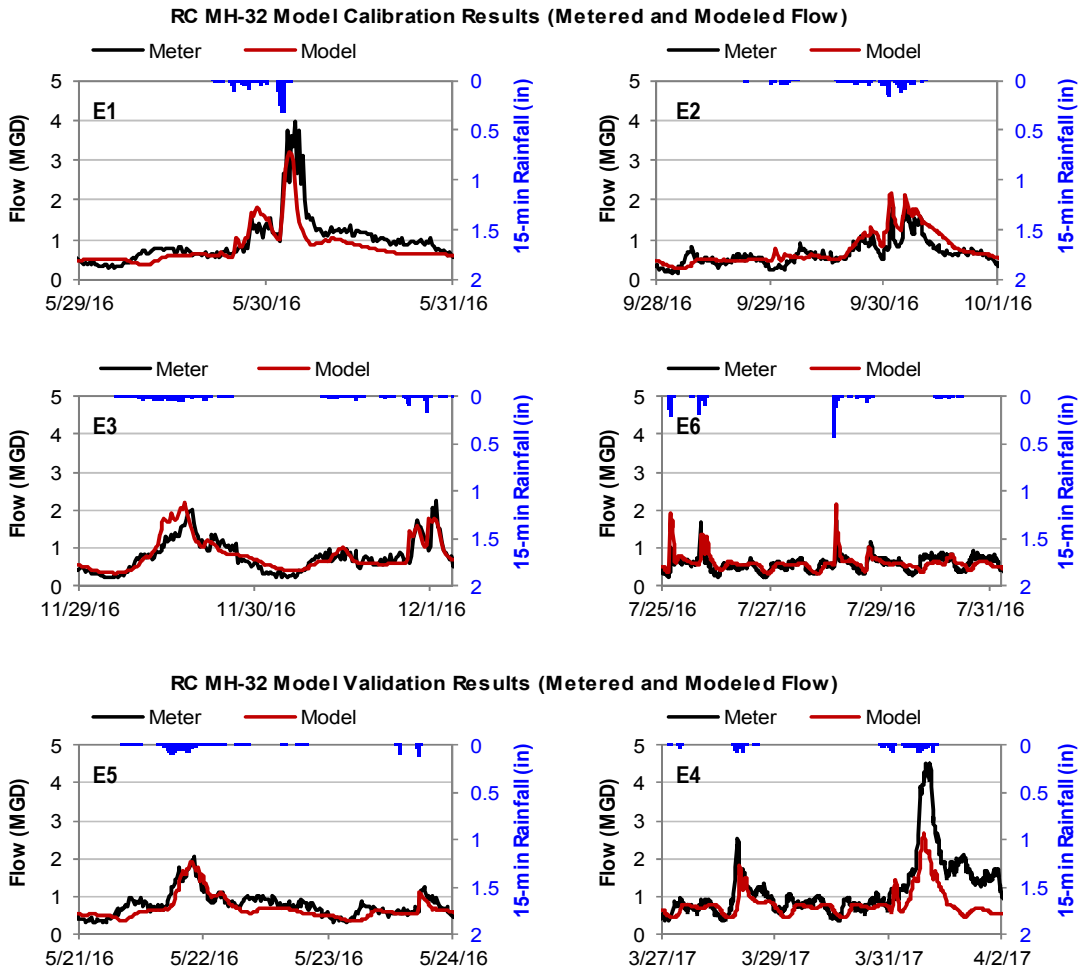


RC MH-30 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	1.71	1.47	-10% to +10%	-14%	2.41	2.44	-10% to +10%	1%
E2	1.54	1.28	-10% to +10%	-17%	2.23	2.15	-10% to +10%	-3%
E3	1.65	1.39	-10% to +10%	-16%	2.38	2.34	-10% to +10%	-2%
E4	1.88	1.77	-10% to +10%	-6%	2.84	3.03	-10% to +10%	7%
E5	1.71	1.45	-10% to +10%	-15%	2.38	2.43	-10% to +10%	2%
E6	1.53	1.43	-10% to +10%	-7%	2.48	2.45	-10% to +10%	-1%

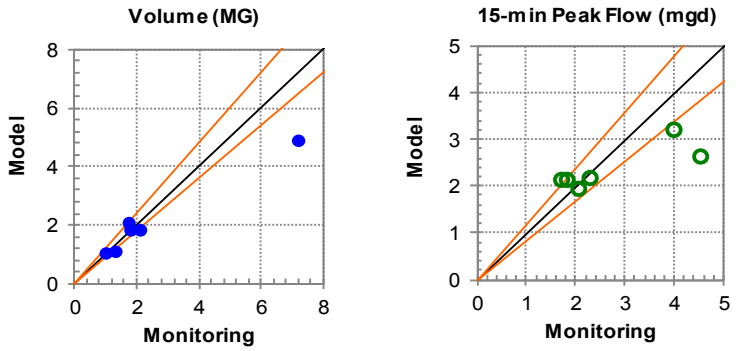
RC MH-30 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	4.04	8.33	-15% to +25%	106%	2.11	2.49	-10% to +20%	18%
E2	4.57	4.79	-15% to +25%	5%	4.17	4.59	-10% to +20%	10%
E3	3.97	4.62	-15% to +25%	16%	3.91	4.09	-10% to +20%	5%
E4	5.94	5.77	-15% to +25%	-3%	13.02	10.72	-10% to +20%	-18%
E5	4.24	4.32	-15% to +25%	2%	4.24	4.07	-10% to +20%	-4%
E6	3.23	3.11	-15% to +25%	-3%	2.15	2.31	-10% to +20%	8%

Note: All the six wet weather events are calibrated well within or close to the industry criteria except peak flow for Event E1. Flow meter data recorded for E1 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER RC MH-32 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

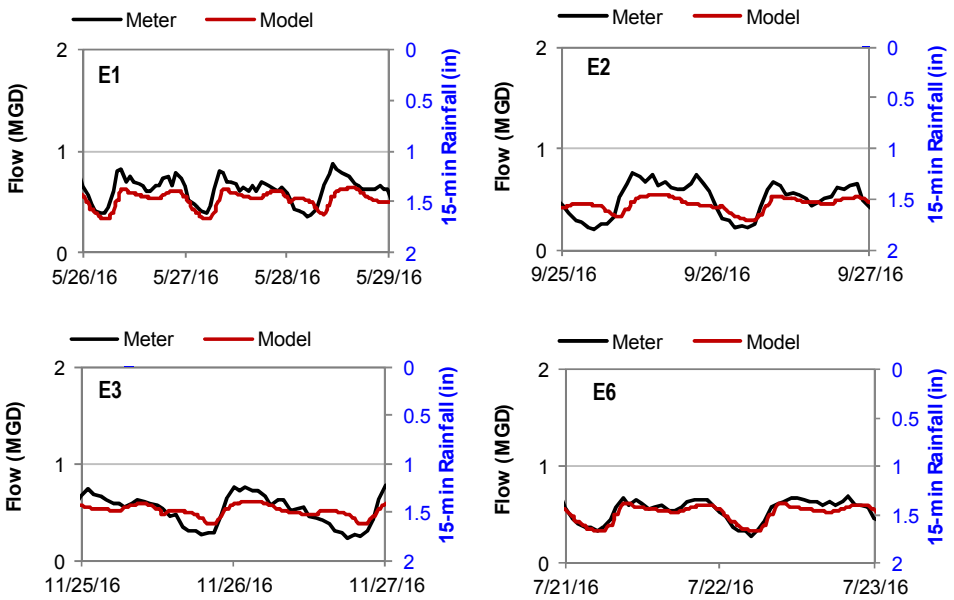


RC MH-32 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

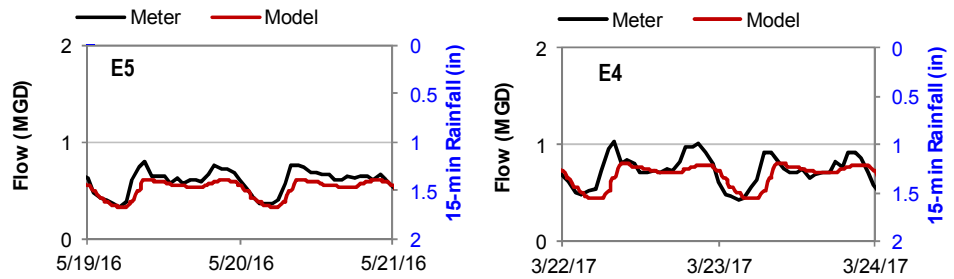


FLOW METER RC MH-32 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

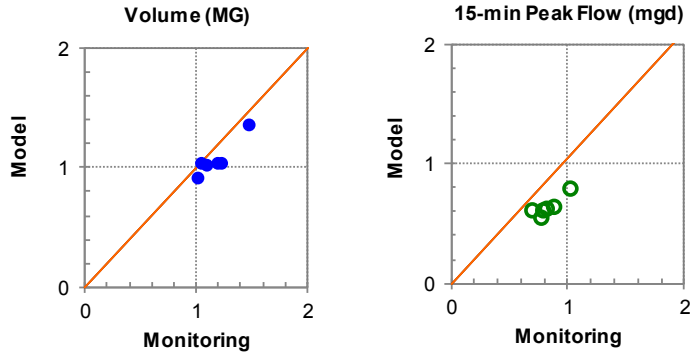
RC MH-32 Model Calibration Results (Metered and Modeled Flow)



RC MH-32 Model Validation Results (Metered and Modeled Flow)



RC MH-32 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



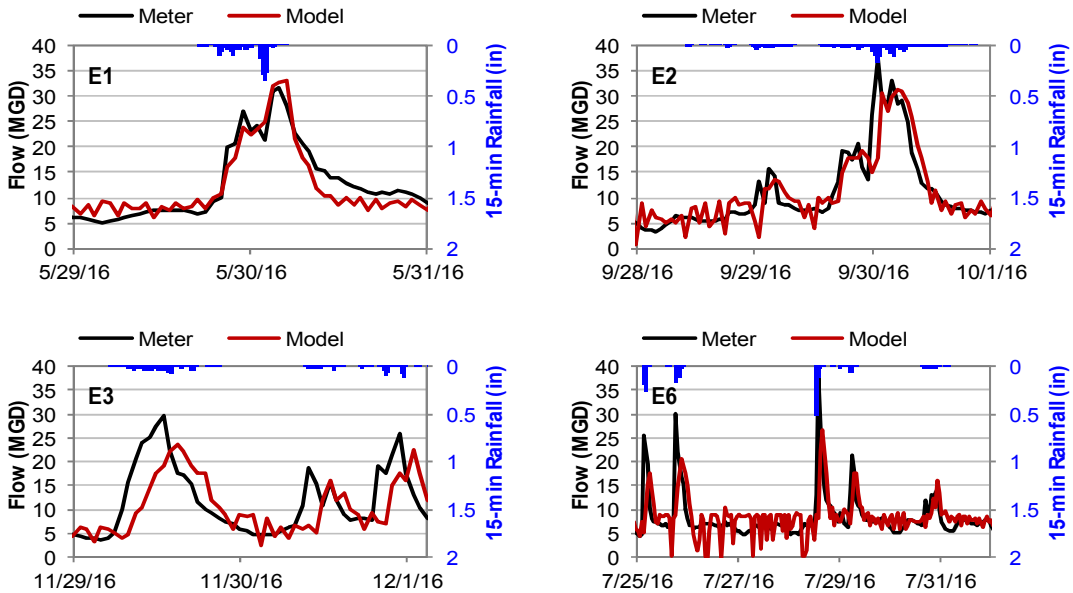
RC MH-32 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.88	0.64	-10% to +10%	-28%	1.22	1.05	-10% to +10%	-14%
E2	0.76	0.55	-10% to +10%	-28%	1.00	0.92	-10% to +10%	-8%
E3	0.77	0.62	-10% to +10%	-20%	1.04	1.04	-10% to +10%	0%
E4	1.02	0.80	-10% to +10%	-22%	1.47	1.36	-10% to +10%	-8%
E5	0.81	0.62	-10% to +10%	-23%	1.19	1.04	-10% to +10%	-13%
E6	0.69	0.61	-10% to +10%	-11%	1.09	1.03	-10% to +10%	-5%

RC MH-32 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	3.98	3.21	-15% to +25%	-19%	1.27	1.11	-10% to +20%	-13%
E2	1.80	2.16	-15% to +25%	20%	1.75	2.09	-10% to +20%	20%
E3	2.27	2.20	-15% to +25%	-3%	1.78	1.87	-10% to +20%	5%
E4	4.52	2.65	-15% to +25%	-41%	7.18	4.89	-10% to +20%	-32%
E5	2.04	1.94	-15% to +25%	-5%	2.07	1.84	-10% to +20%	-11%
E6	1.72	2.14	-15% to +25%	25%	0.98	1.03	-10% to +20%	6%

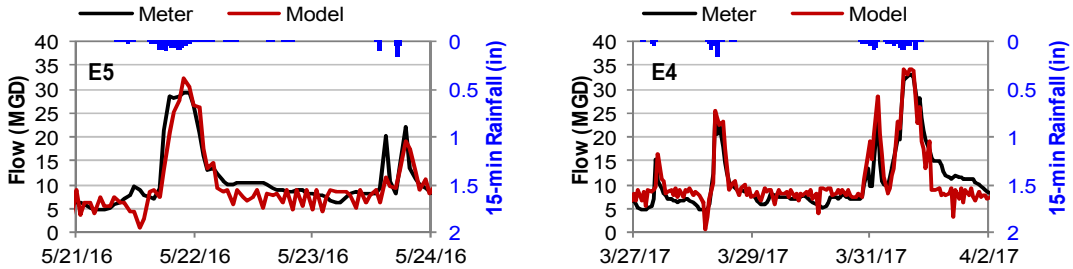
Note: All the six wet weather events are calibrated well within or close to the industry criteria except Event E4. Flow meter data recorded for E4 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CPS MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

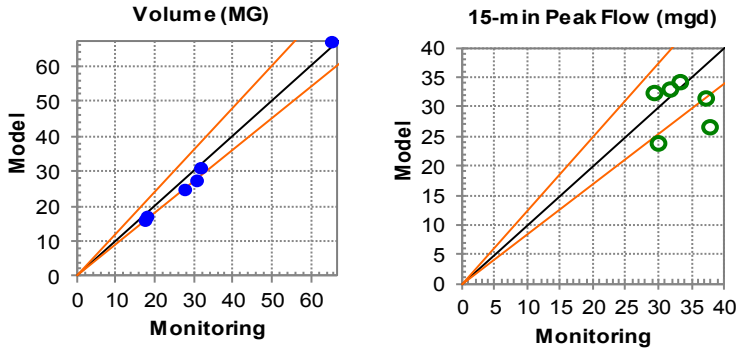
CPS Model Calibration Results (Metered and Modeled Flow)



CPS Model Validation Results (Metered and Modeled Flow)

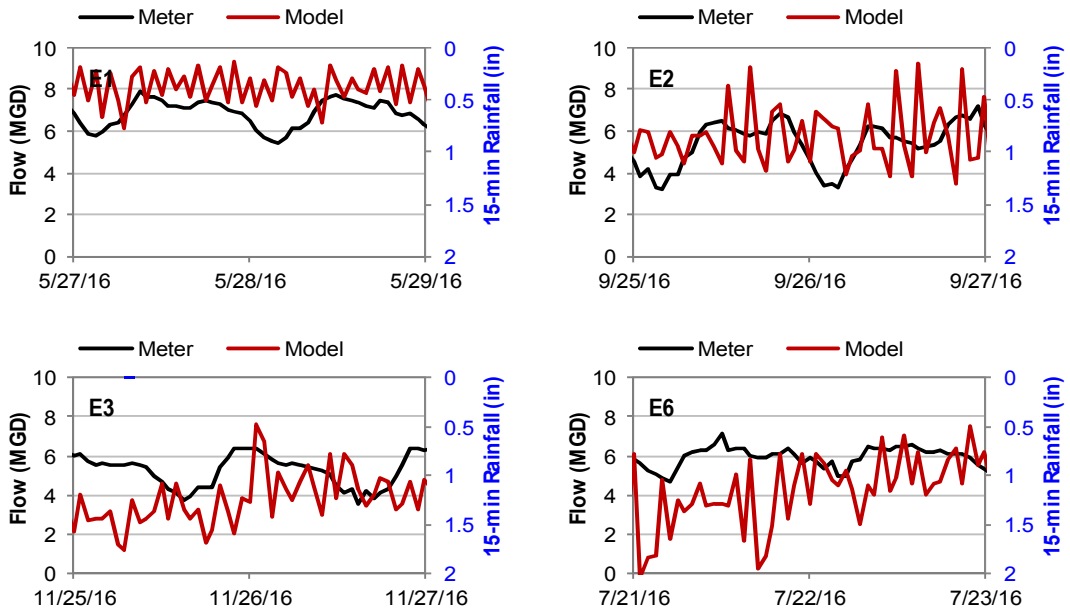


CPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

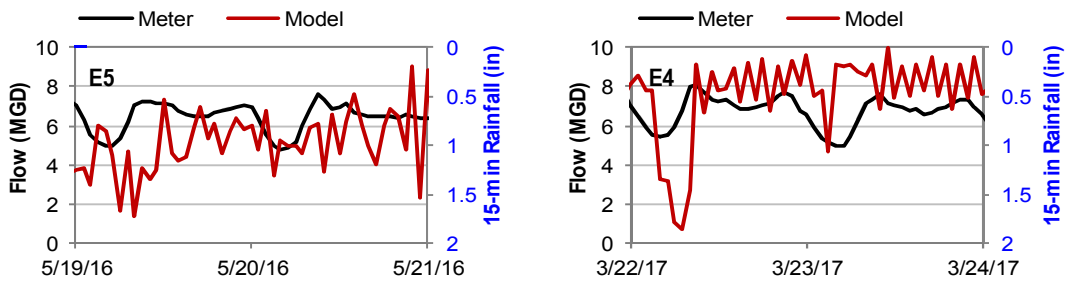


FLOW METER CPS MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

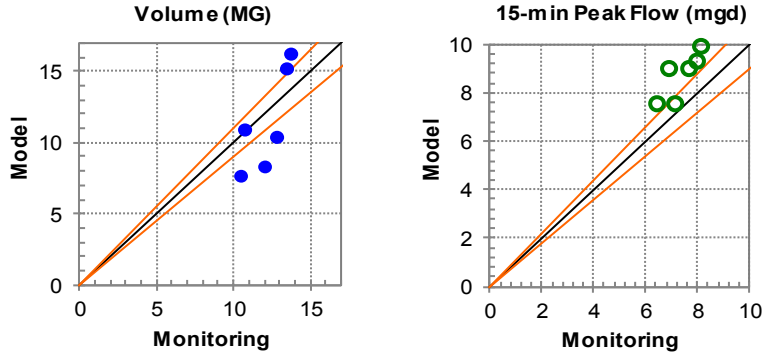
CPS Model Calibration Results (Metered and Modeled Flow)



CPS Model Validation Results (Metered and Modeled Flow)



CPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



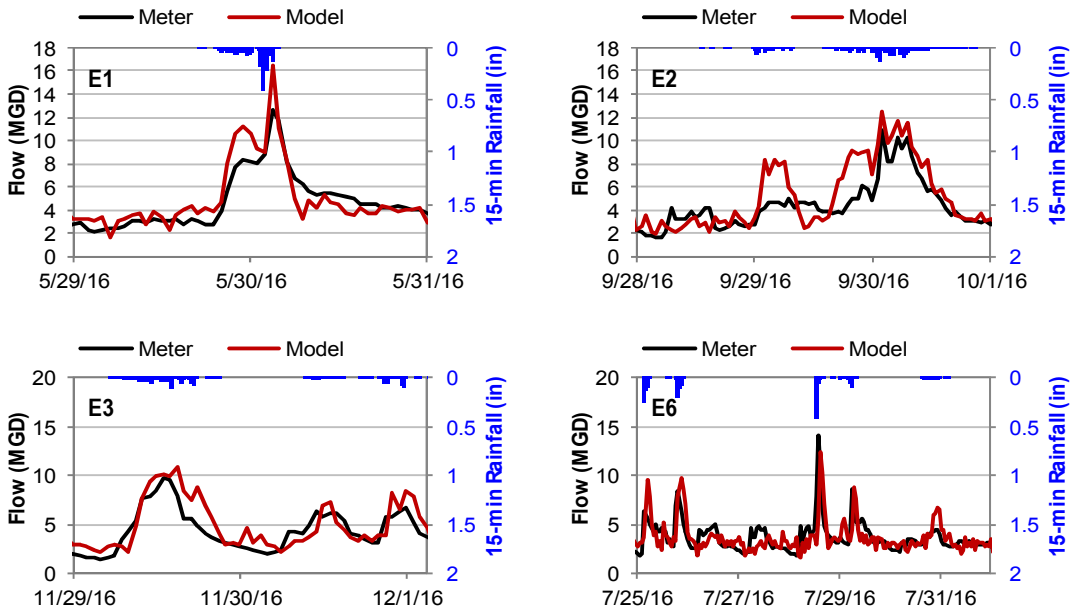
CPS Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	7.93	9.32	-10% to +10%	18%	13.69	16.30	-10% to +10%	19%
E2	6.84	9.03	-10% to +10%	32%	10.67	11.01	-10% to +10%	3%
E3	6.41	7.58	-10% to +10%	18%	10.42	7.65	-10% to +10%	-27%
E4	8.12	9.96	-10% to +10%	23%	13.45	15.24	-10% to +10%	13%
E5	7.62	9.04	-10% to +10%	19%	12.79	10.40	-10% to +10%	-19%
E6	7.11	7.55	-10% to +10%	6%	11.93	8.40	-10% to +10%	-30%

CPS Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	31.54	33.10	-15% to +25%	5%	17.67	16.88	-10% to +20%	-4%
E2	37.19	31.45	-15% to +25%	-15%	31.53	31.03	-10% to +20%	-2%
E3	29.85	23.79	-15% to +25%	-20%	27.12	24.61	-10% to +20%	-9%
E4	33.24	34.24	-15% to +25%	3%	64.77	66.78	-10% to +20%	3%
E5	29.39	32.33	-15% to +25%	10%	30.35	27.34	-10% to +20%	-10%
E6	37.62	26.62	-15% to +25%	-29%	16.98	16.03	-10% to +20%	-6%

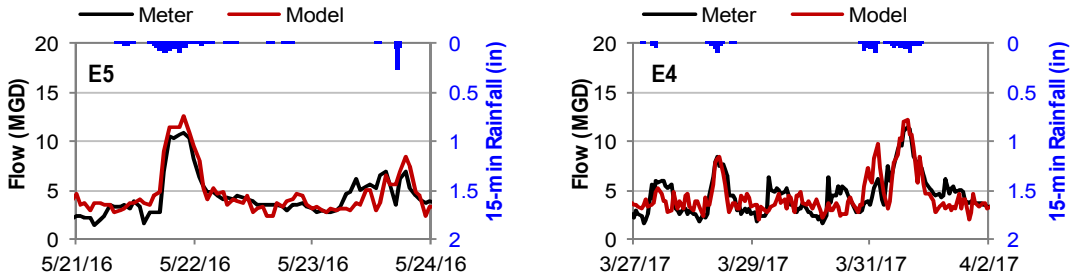
Note: All the six wet weather events are calibrated well within the industry criteria.

FLOW METER EPS-1 MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

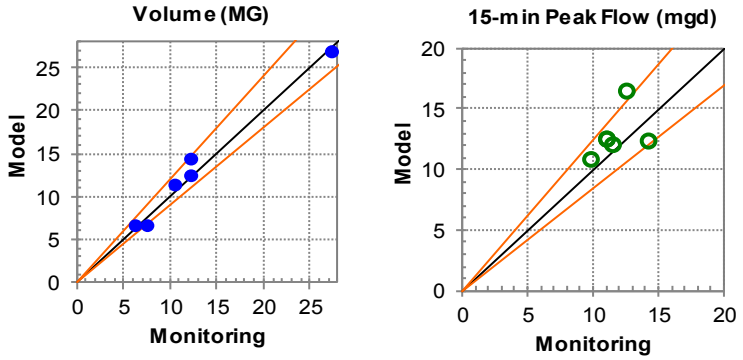
EPS-1 Model Calibration Results (Metered and Modeled Flow)



EPS-1 Model Validation Results (Metered and Modeled Flow)

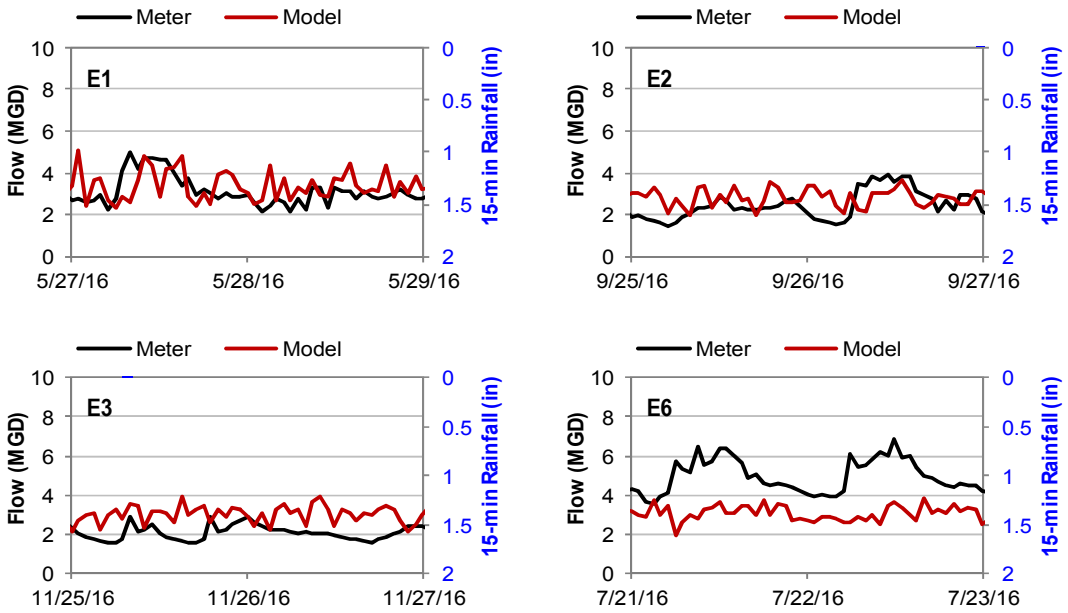


EPS-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

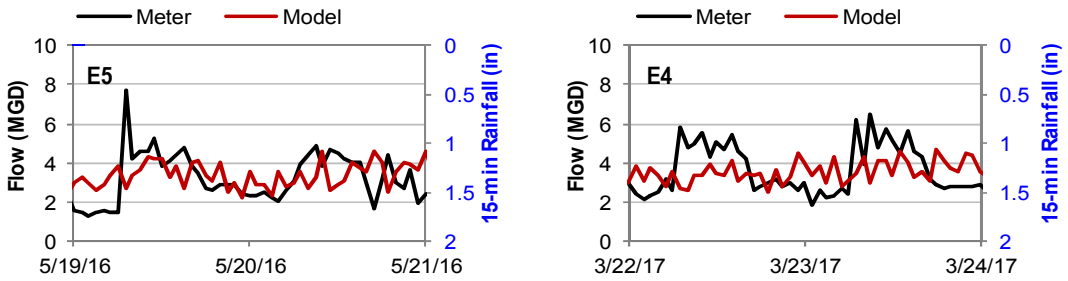


FLOW METER EPS-1 MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

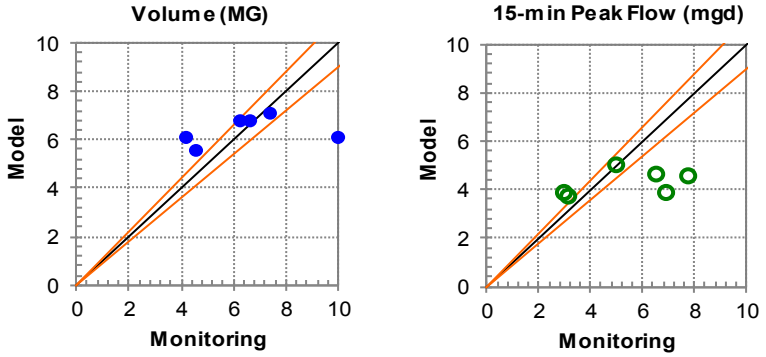
EPS-1 Model Calibration Results (Metered and Modeled Flow)



EPS-1 Model Validation Results (Metered and Modeled Flow)



EPS-1 Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



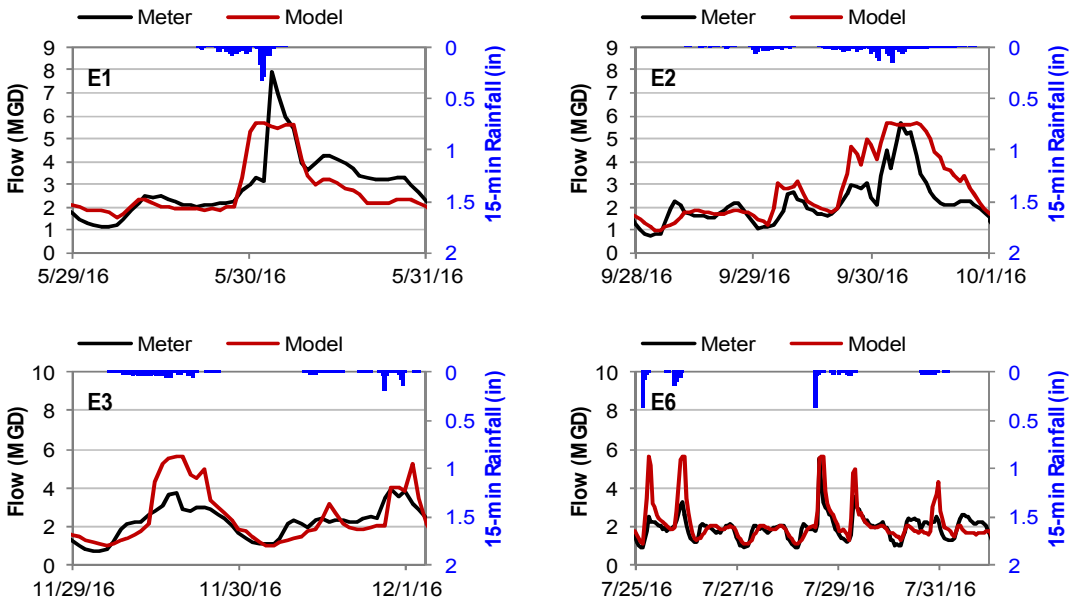
EPS-1 Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	4.95	5.04	-10% to +10%	2%	6.25	6.79	-10% to +10%	9%
E2	3.07	3.75	-10% to +10%	22%	4.50	5.60	-10% to +10%	24%
E3	2.90	3.93	-10% to +10%	36%	4.15	6.10	-10% to +10%	47%
E4	6.51	4.67	-10% to +10%	-28%	7.34	7.14	-10% to +10%	-3%
E5	7.72	4.61	-10% to +10%	-40%	6.57	6.81	-10% to +10%	4%
E6	6.83	3.89	-10% to +10%	-43%	9.97	6.16	-10% to +10%	-38%

EPS-1 Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	12.57	16.45	-15% to +25%	31%	6.19	6.67	-10% to +20%	8%
E2	10.94	12.48	-15% to +25%	14%	11.99	14.42	-10% to +20%	20%
E3	9.79	10.89	-15% to +25%	11%	10.30	11.33	-10% to +20%	10%
E4	11.50	12.12	-15% to +25%	5%	27.24	26.82	-10% to +20%	-2%
E5	10.92	12.52	-15% to +25%	15%	12.06	12.40	-10% to +20%	3%
E6	14.11	12.42	-15% to +25%	-12%	7.32	6.70	-10% to +20%	-9%

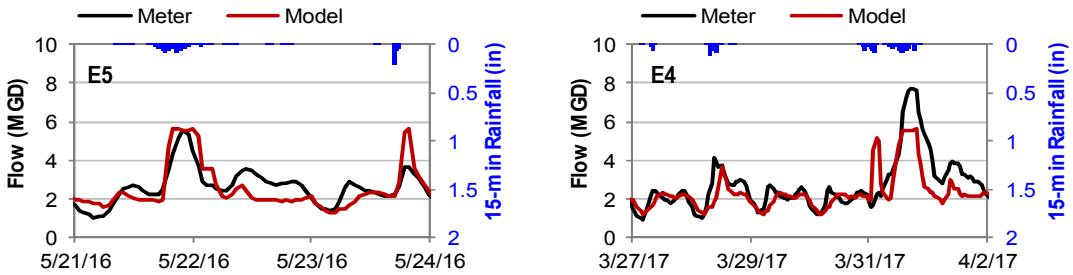
Note: All the six wet weather events are calibrated well within the industry criteria except peak flow for Event E1. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER NCPS MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

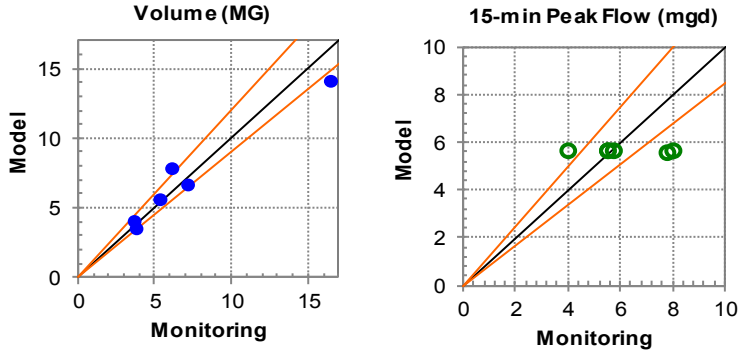
NCPS Model Calibration Results (Metered and Modeled Flow)



NCPS Model Validation Results (Metered and Modeled Flow)

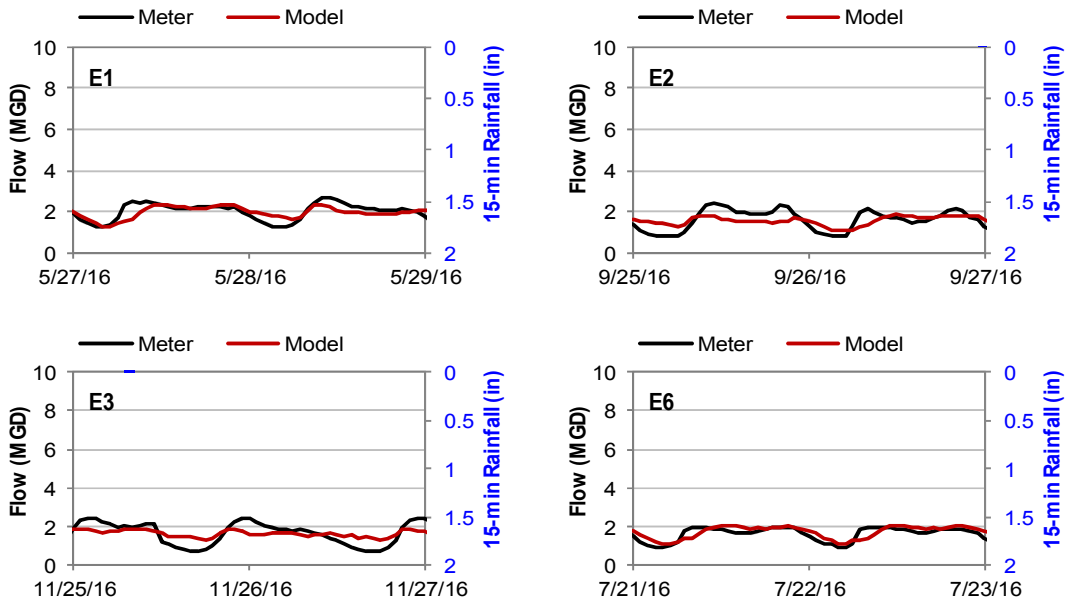


NCPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

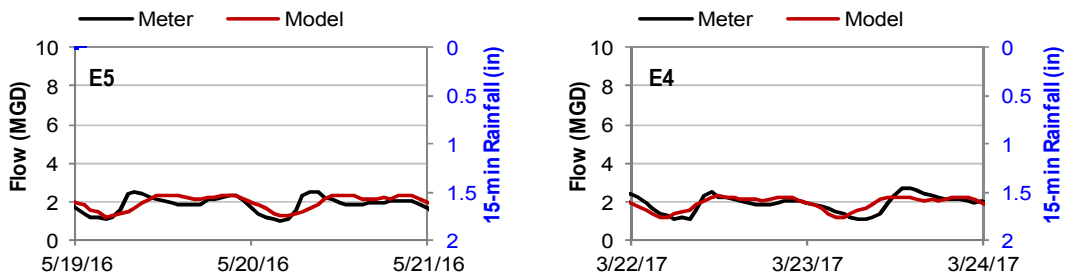


FLOW METER NCPS MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

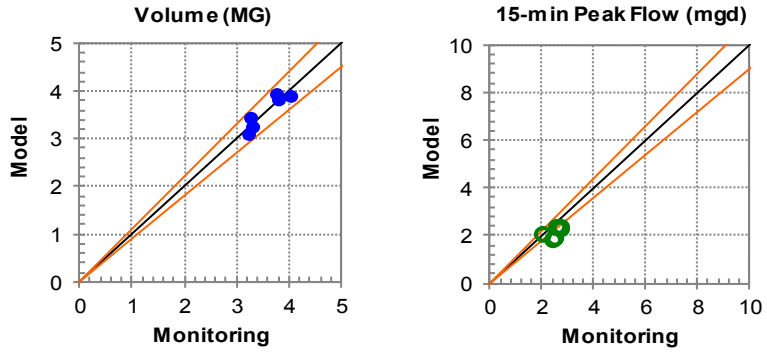
NCPS Model Calibration Results (Metered and Modeled Flow)



NCPS Model Validation Results (Metered and Modeled Flow)



NCPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



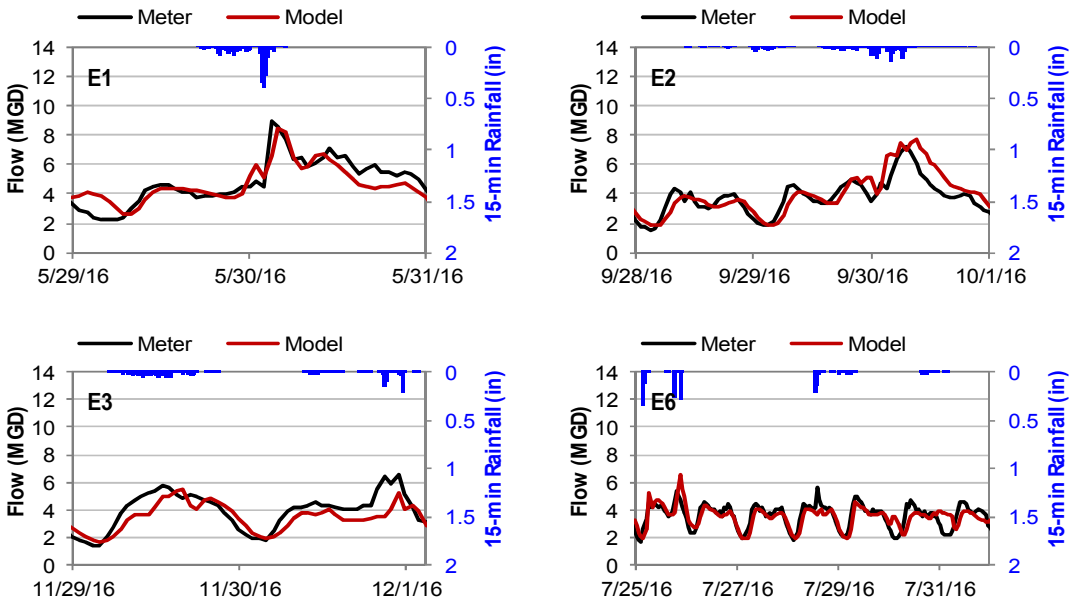
NCPS Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	2.72	2.37	-10% to +10%	-13%	4.02	3.92	-10% to +10%	-3%
E2	2.41	1.88	-10% to +10%	-22%	3.23	3.10	-10% to +10%	-4%
E3	2.45	1.91	-10% to +10%	-22%	3.31	3.27	-10% to +10%	-1%
E4	2.74	2.31	-10% to +10%	-16%	3.78	3.84	-10% to +10%	2%
E5	2.55	2.37	-10% to +10%	-7%	3.77	3.94	-10% to +10%	5%
E6	1.99	2.06	-10% to +10%	3%	3.25	3.43	-10% to +10%	6%

NCPS Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	7.95	5.67	-15% to +25%	-29%	3.67	3.52	-10% to +20%	-4%
E2	5.71	5.66	-15% to +25%	-1%	6.02	7.83	-10% to +20%	30%
E3	3.95	5.66	-15% to +25%	43%	5.29	5.65	-10% to +20%	7%
E4	7.75	5.61	-15% to +25%	-28%	16.38	14.07	-10% to +20%	-14%
E5	5.51	5.65	-15% to +25%	3%	7.07	6.67	-10% to +20%	-6%
E6	5.51	5.67	-15% to +25%	3%	3.53	4.03	-10% to +20%	14%

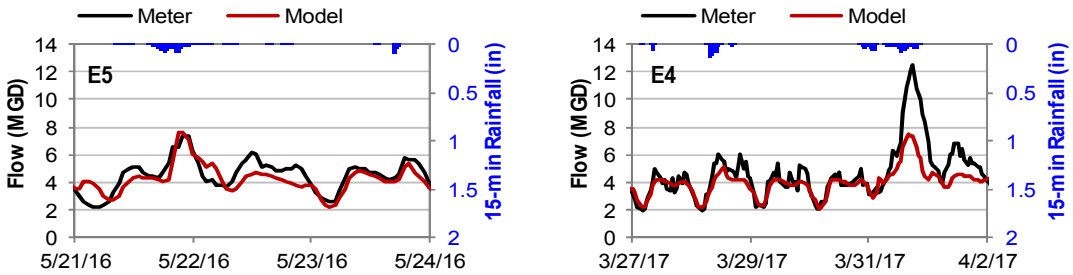
Note: Four of the six wet weather events are calibrated well within the industry criteria. The under-predicted peak flow for E1 and E4 is probably due to the pump capacity limit put in the model based on received pump curves. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CRPS MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

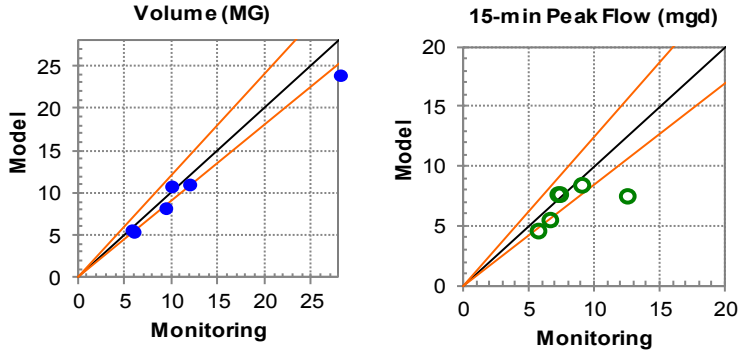
CRPS Model Calibration Results (Metered and Modeled Flow)



CRPS Model Validation Results (Metered and Modeled Flow)

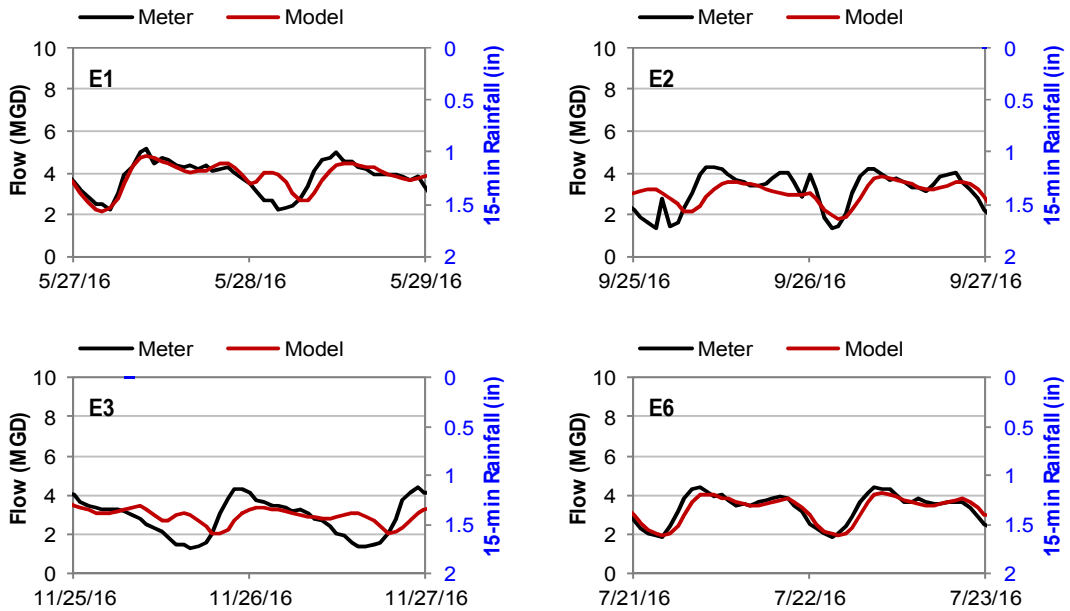


CRPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

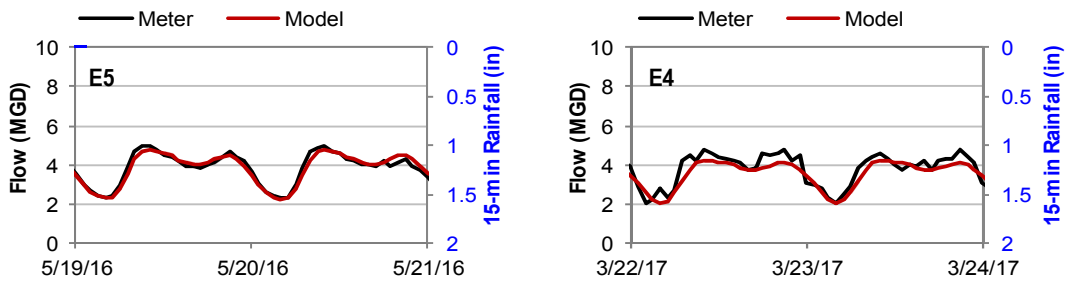


FLOW METER CRPS MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

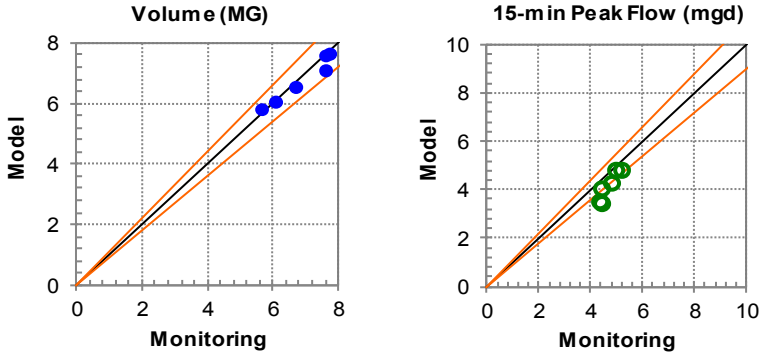
CRPS Model Calibration Results (Metered and Modeled Flow)



CRPS Model Validation Results (Metered and Modeled Flow)



CRPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



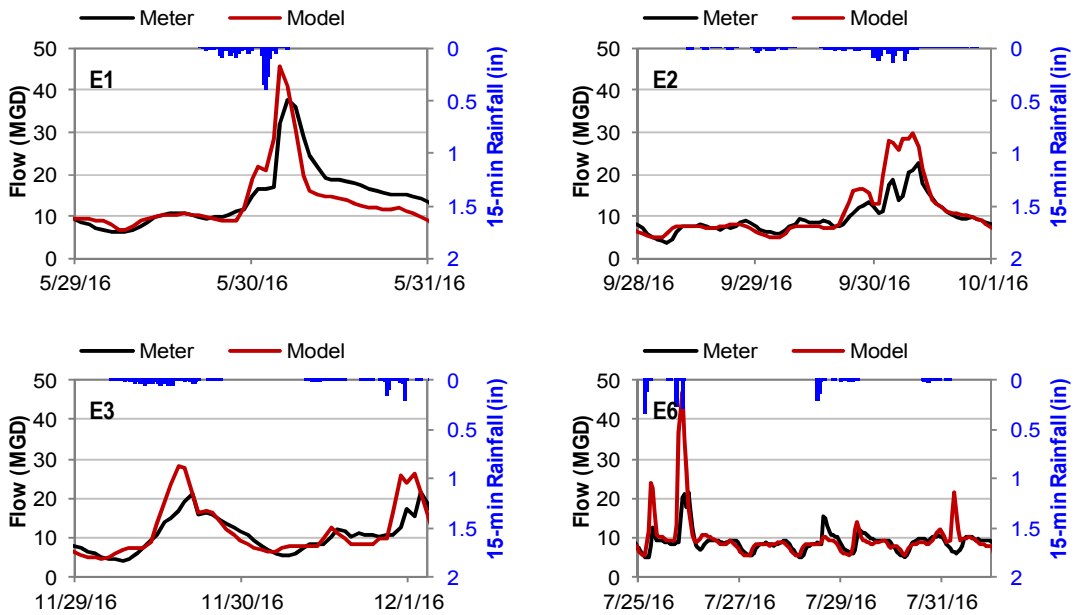
CRPS Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	5.18	4.81	-10% to +10%	-7%	7.58	7.62	-10% to +10%	1%
E2	4.35	3.56	-10% to +10%	-18%	6.10	6.07	-10% to +10%	0%
E3	4.38	3.43	-10% to +10%	-22%	5.64	5.84	-10% to +10%	4%
E4	4.81	4.26	-10% to +10%	-12%	7.59	7.10	-10% to +10%	-6%
E5	4.97	4.80	-10% to +10%	-4%	7.71	7.66	-10% to +10%	-1%
E6	4.42	4.08	-10% to +10%	-8%	6.71	6.55	-10% to +10%	-2%

CRPS Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	8.96	8.42	-15% to +25%	-6%	5.67	5.57	-10% to +20%	-2%
E2	7.22	7.67	-15% to +25%	6%	10.03	10.73	-10% to +20%	7%
E3	6.54	5.54	-15% to +25%	-15%	9.27	8.04	-10% to +20%	-13%
E4	12.48	7.48	-15% to +25%	-40%	27.92	23.89	-10% to +20%	-14%
E5	7.40	7.66	-15% to +25%	4%	11.95	10.98	-10% to +20%	-8%
E6	5.64	4.56	-15% to +25%	-19%	5.84	5.41	-10% to +20%	-7%

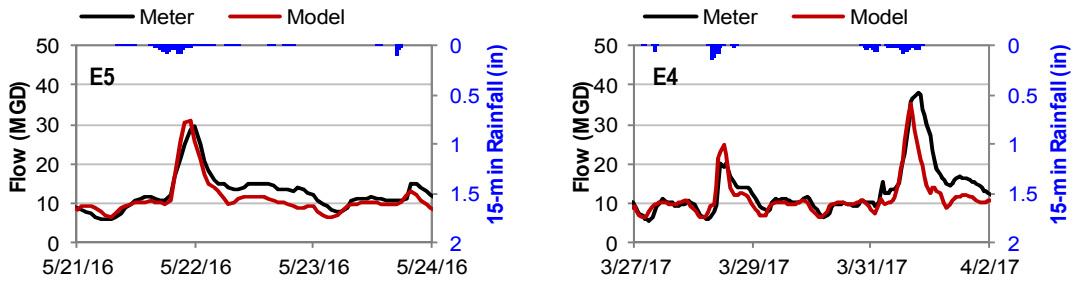
Note: All the six wet weather events are calibrated well within the industry criteria except peak flow for Event E4. Flow meter data recorded for E4 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER CDPS TOTAL MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

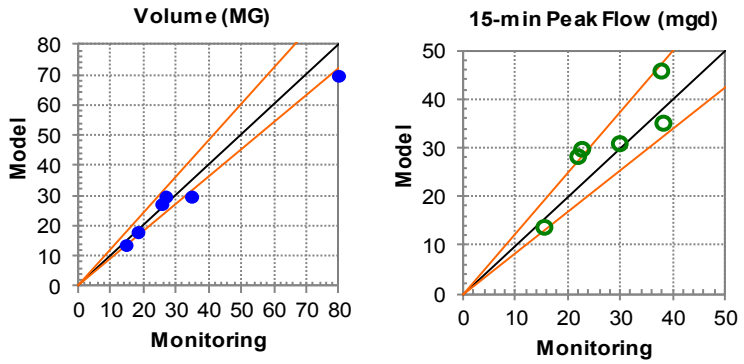
CDPS Total Model Calibration Results (Metered and Modeled Flow)



CDPS Total Model Validation Results (Metered and Modeled Flow)

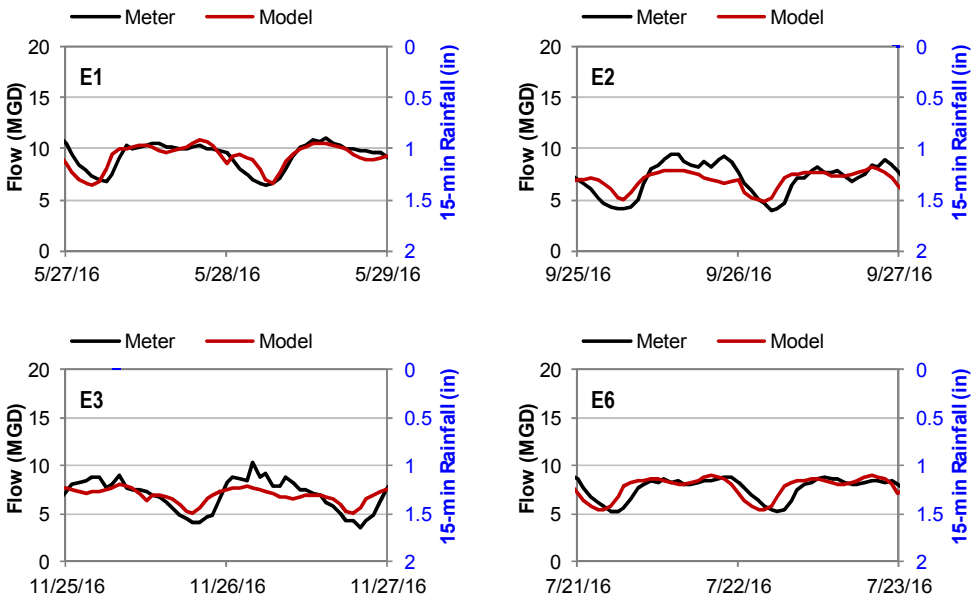


CDPS Total Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

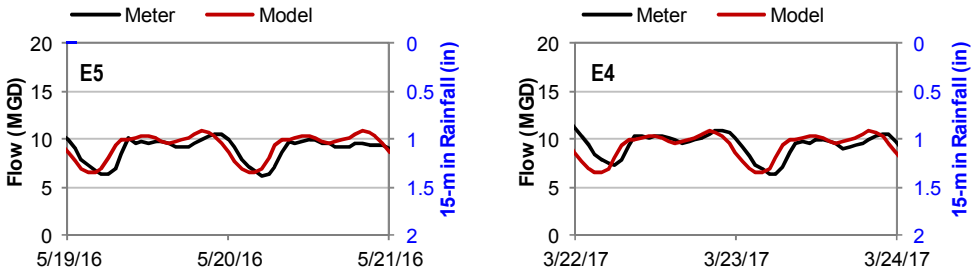


FLOW METER CDPS TOTAL MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

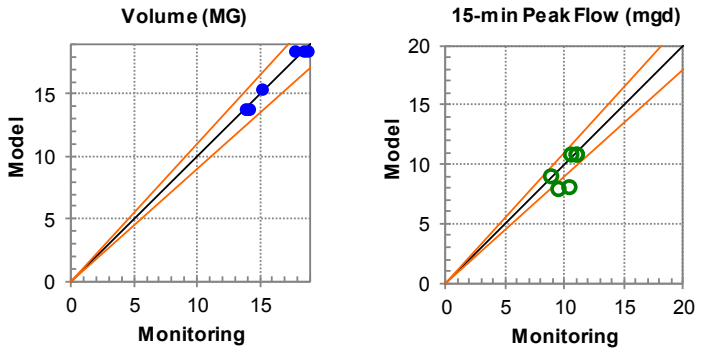
CDPS Total Model Calibration Results (Metered and Modeled Flow)



CDPS Total Model Validation Results (Metered and Modeled Flow)



CDPS Total Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



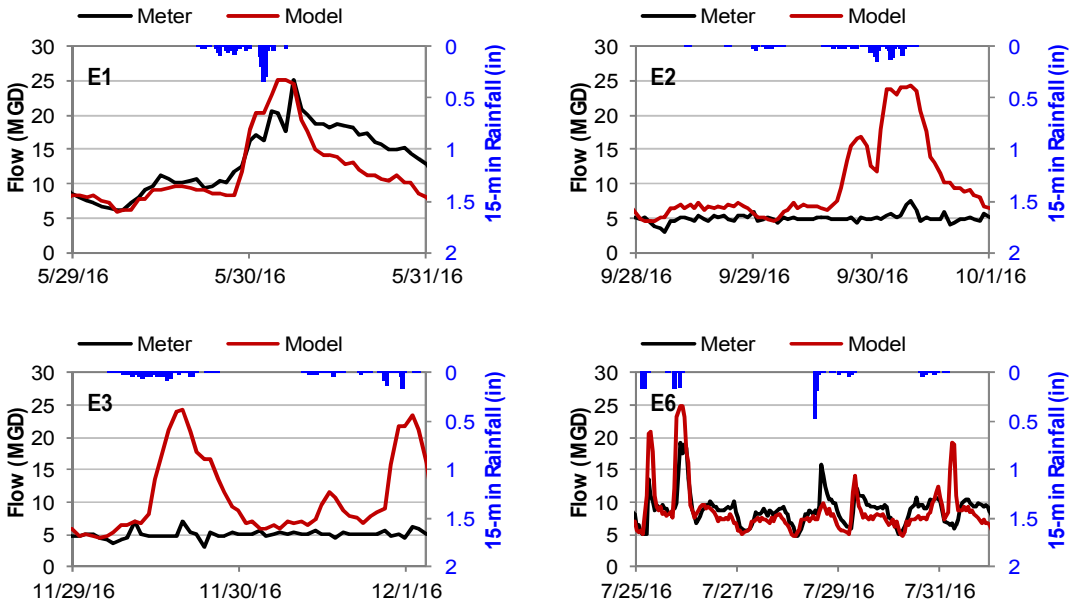
CDPS Total Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	10.96	10.82	-10% to +10%	-1%	18.43	18.45	-10% to +10%	0%
E2	9.44	7.93	-10% to +10%	-16%	14.10	13.83	-10% to +10%	-2%
E3	10.39	8.04	-10% to +10%	-23%	13.84	13.76	-10% to +10%	-1%
E4	10.97	10.82	-10% to +10%	-1%	18.70	18.50	-10% to +10%	-1%
E5	10.52	10.82	-10% to +10%	3%	17.77	18.50	-10% to +10%	4%
E6	8.81	9.06	-10% to +10%	3%	15.18	15.50	-10% to +10%	2%

CDPS Total Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	37.59	45.97	-15% to +25%	22%	18.12	17.77	-10% to +20%	-2%
E2	22.62	29.78	-15% to +25%	32%	26.28	29.45	-10% to +20%	12%
E3	21.62	28.11	-15% to +25%	30%	25.07	27.11	-10% to +20%	8%
E4	38.01	35.13	-15% to +25%	-8%	79.48	69.36	-10% to +20%	-13%
E5	29.79	31.09	-15% to +25%	4%	34.43	29.61	-10% to +20%	-14%
E6	15.30	13.84	-15% to +25%	-10%	14.43	13.27	-10% to +20%	-8%

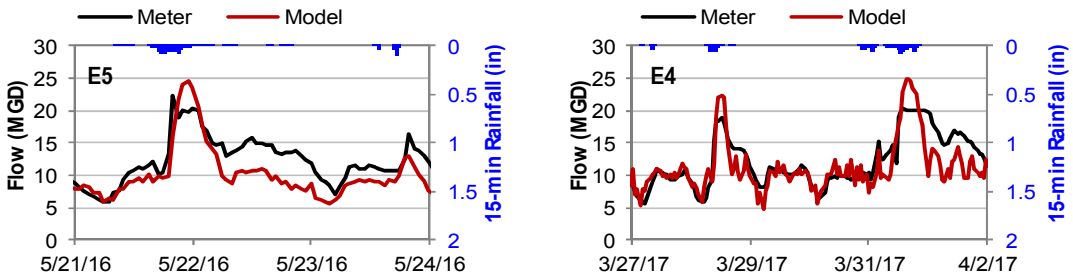
Note: All the six wet weather events are calibrated well within or close to the industry criteria.

FLOW METER CDPS TO WRTP MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

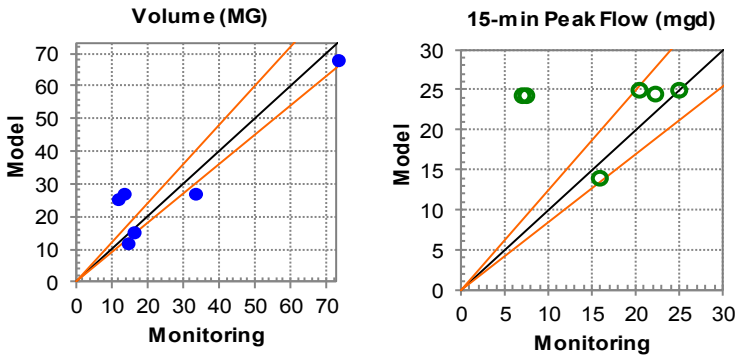
CDPS to WRTP Model Calibration Results (Metered and Modeled Flow)



CDPS to WRTP Model Validation Results (Metered and Modeled Flow)

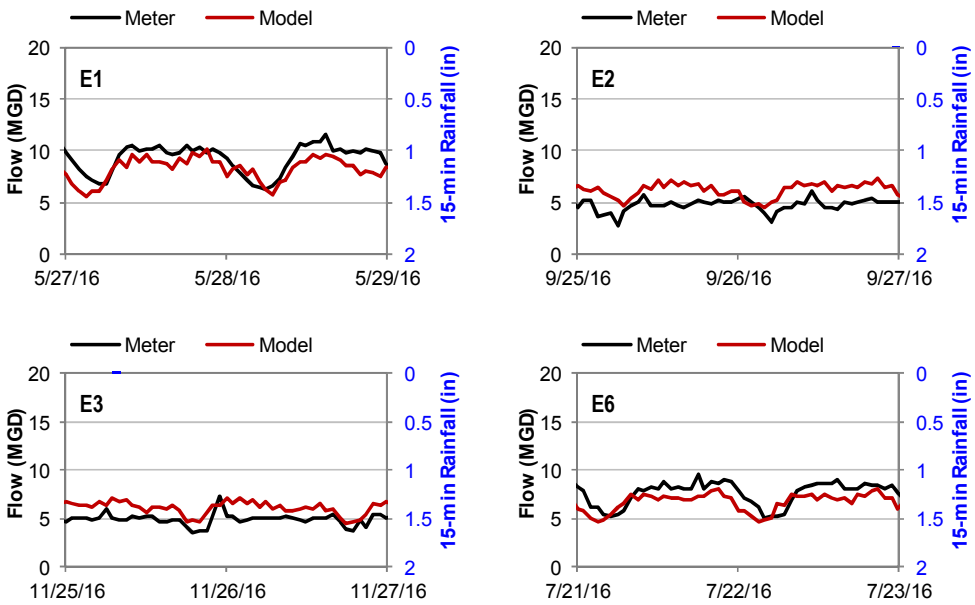


CDPS to WRTP Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

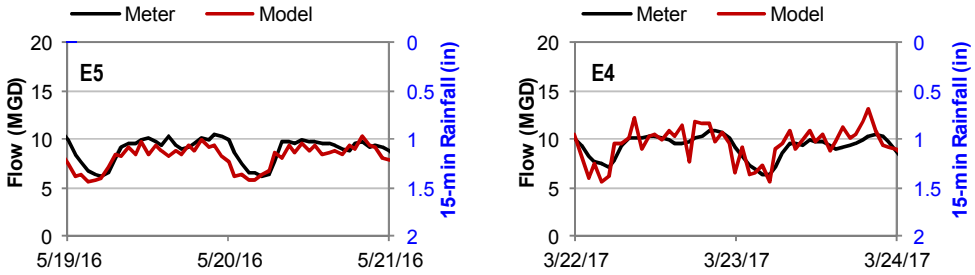


FLOW METER CDPS TO WRTP MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

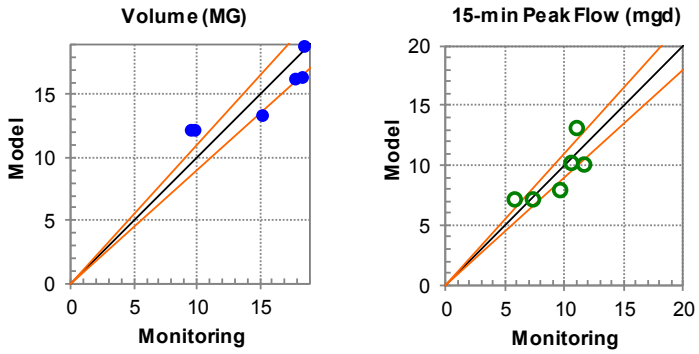
CDPS to WRTP Model Calibration Results (Metered and Modeled Flow)



CDPS to WRTP Model Validation Results (Metered and Modeled Flow)



CDPS to WRTP Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



CDPS to WRTP Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	11.51	10.14	-10% to +10%	-12%	18.39	16.41	-10% to +10%	-11%
E2	5.78	7.14	-10% to +10%	24%	9.49	12.29	-10% to +10%	30%
E3	7.22	7.16	-10% to +10%	-1%	9.83	12.19	-10% to +10%	24%
E4	10.89	13.14	-10% to +10%	21%	18.50	18.96	-10% to +10%	2%
E5	10.44	10.32	-10% to +10%	-1%	17.76	16.35	-10% to +10%	-8%
E6	9.56	8.03	-10% to +10%	-16%	15.20	13.41	-10% to +10%	-12%

CDPS to WRTP Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	24.93	24.93	-15% to +25%	0%	15.92	15.16	-10% to +20%	-5%
E2	7.41	24.35	-15% to +25%	229%	12.92	26.75	-10% to +20%	107%
E3	6.95	24.22	-15% to +25%	248%	11.69	24.94	-10% to +20%	113%
E4	20.25	24.89	-15% to +25%	23%	72.78	68.00	-10% to +20%	-7%
E5	22.24	24.53	-15% to +25%	10%	33.04	26.90	-10% to +20%	-19%
E6	15.80	14.04	-15% to +25%	-11%	14.31	11.96	-10% to +20%	-16%

Note: During Rainfall Events E2 and E3, CDPS flow to the WRTP was capped due to the aeration replacement project at WRTP.

All the remaining four wet weather events are calibrated well within the industry criteria.

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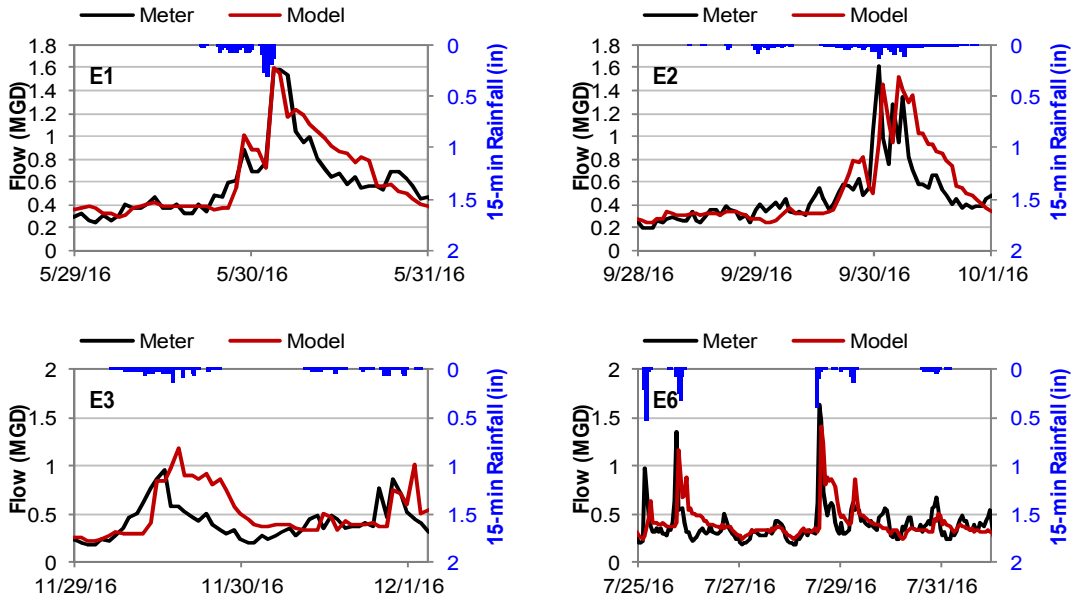
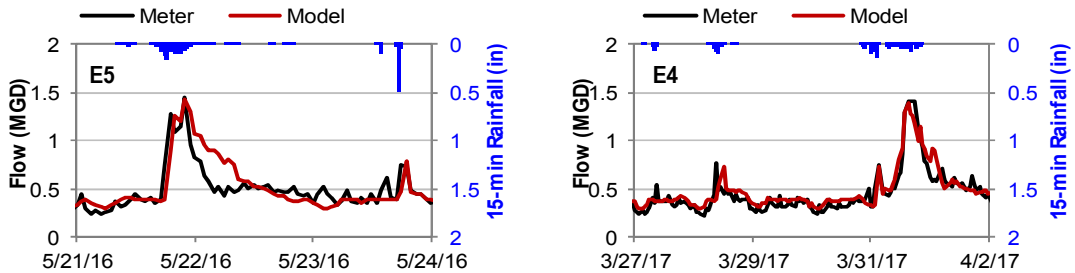
FLOW METER EDPS MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

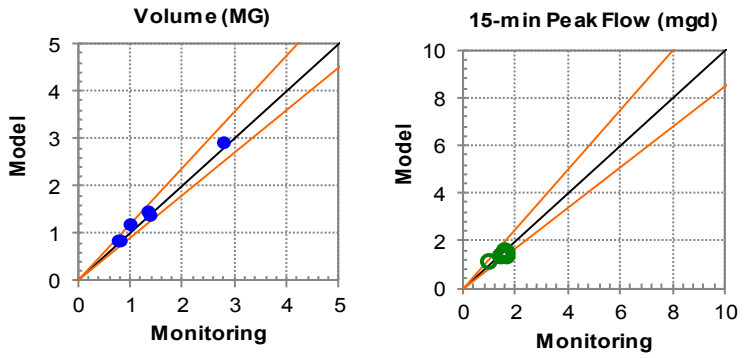
EDPS Model Calibration Results (Metered and Modeled Flow)



EDPS Model Validation Results (Metered and Modeled Flow)

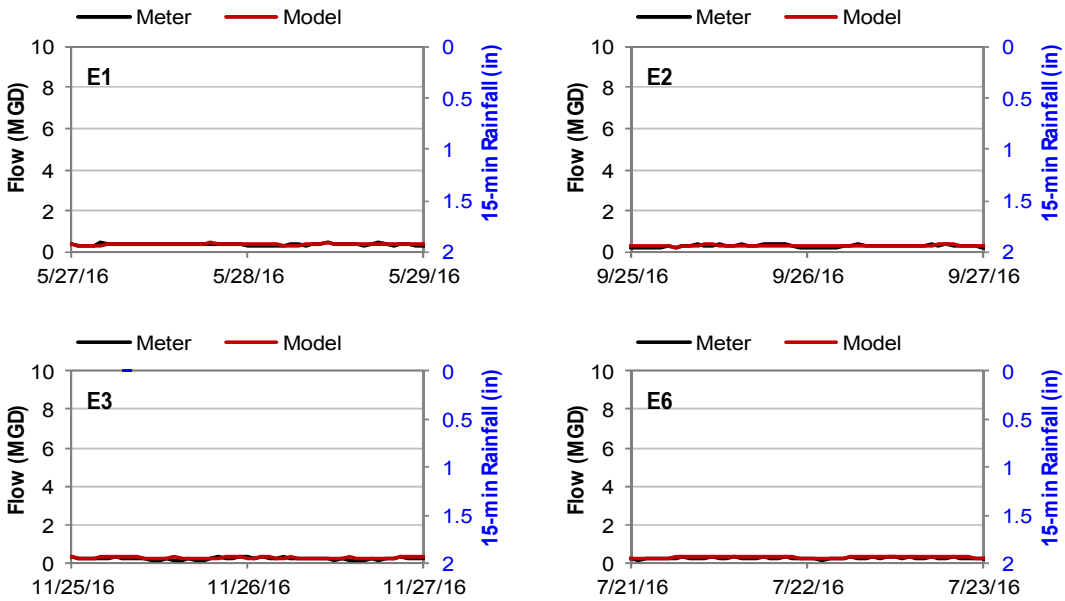


EDPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

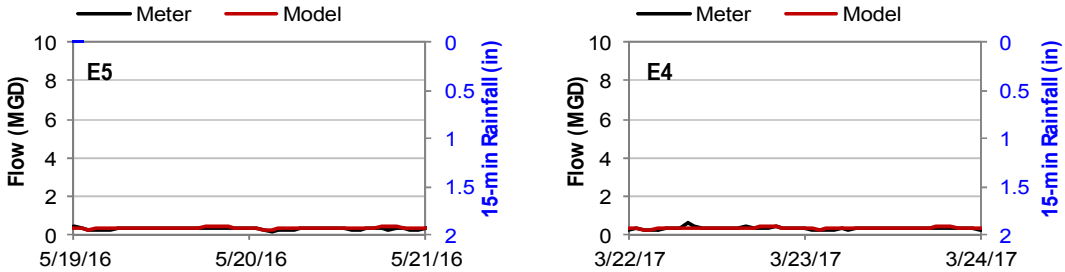


FLOW METER EDPS MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

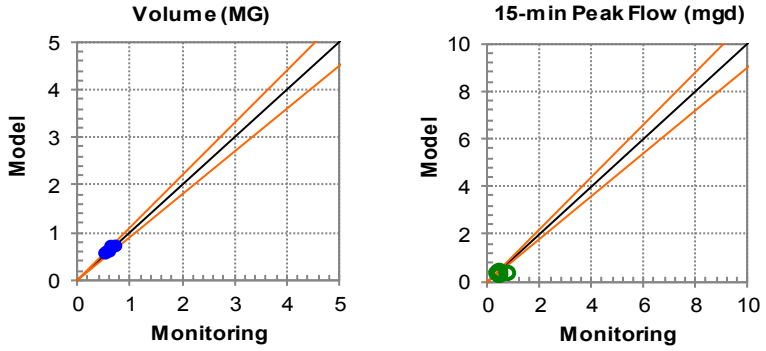
EDPS Model Calibration Results (Metered and Modeled Flow)



EDPS Model Validation Results (Metered and Modeled Flow)



EDPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



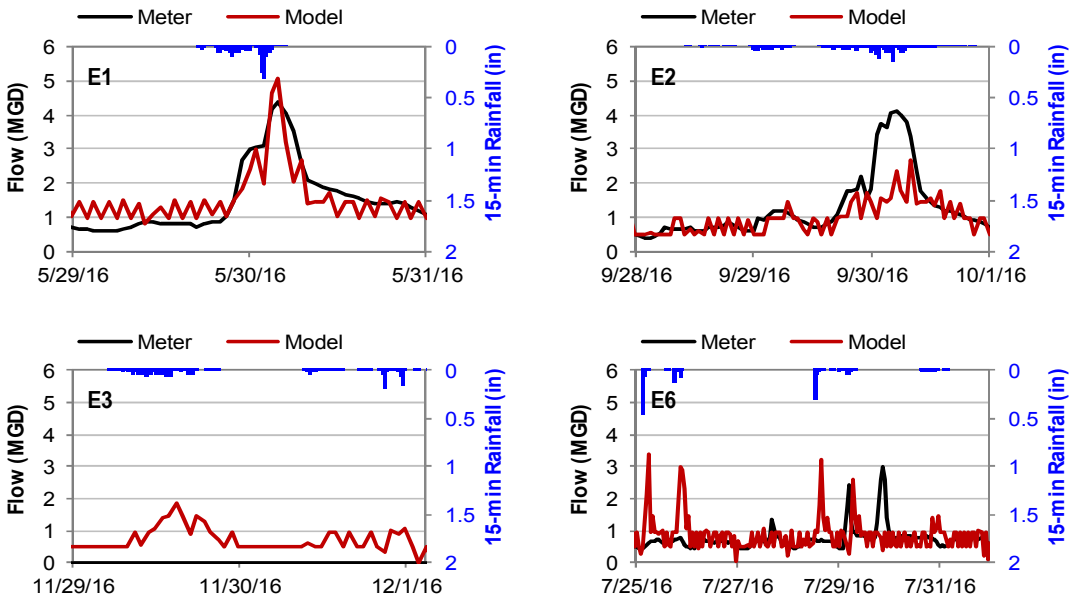
EDPS Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.44	0.44	-10% to +10%	0%	0.70	0.74	-10% to +10%	6%
E2	0.39	0.35	-10% to +10%	-10%	0.56	0.61	-10% to +10%	8%
E3	0.37	0.33	-10% to +10%	-10%	0.52	0.59	-10% to +10%	13%
E4	0.67	0.42	-10% to +10%	-37%	0.68	0.74	-10% to +10%	8%
E5	0.40	0.43	-10% to +10%	9%	0.64	0.74	-10% to +10%	17%
E6	0.36	0.37	-10% to +10%	3%	0.57	0.63	-10% to +10%	11%

EDPS Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	1.59	1.59	-15% to +25%	0%	0.77	0.83	-10% to +20%	8%
E2	1.61	1.53	-15% to +25%	-5%	1.32	1.44	-10% to +20%	10%
E3	0.95	1.19	-15% to +25%	25%	0.98	1.20	-10% to +20%	22%
E4	1.41	1.40	-15% to +25%	-1%	2.76	2.92	-10% to +20%	6%
E5	1.44	1.42	-15% to +25%	-1%	1.35	1.39	-10% to +20%	3%
E6	1.63	1.42	-15% to +25%	-13%	0.77	0.85	-10% to +20%	10%

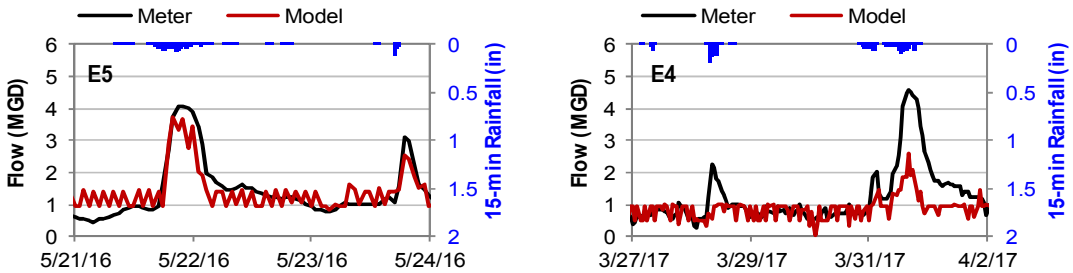
Note: All the six wet weather events are calibrated well within or close to the industry criteria.

FLOW METER MHPS MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

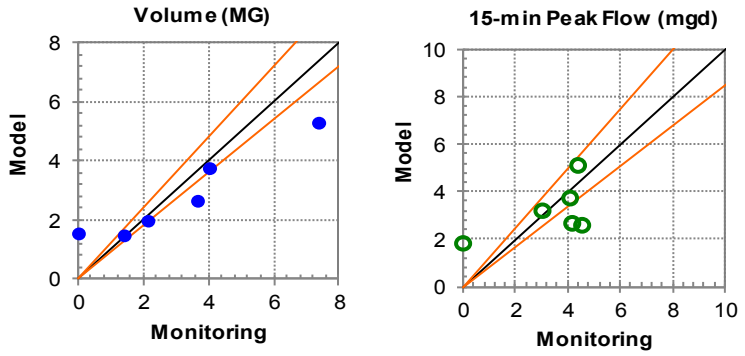
MHPS Model Calibration Results (Metered and Modeled Flow)



MHPS Model Validation Results (Metered and Modeled Flow)

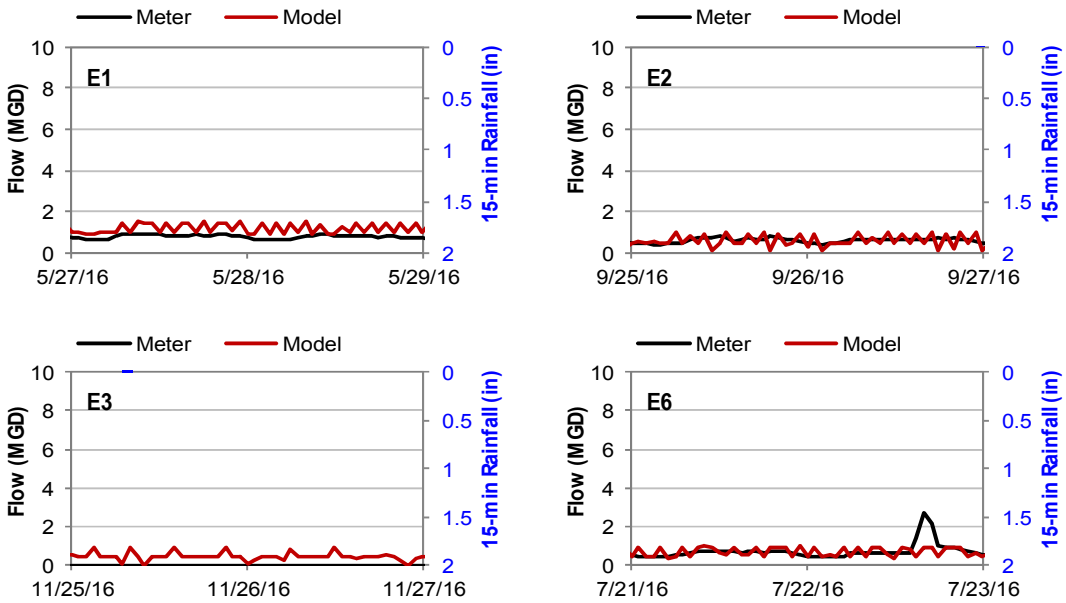


MHPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

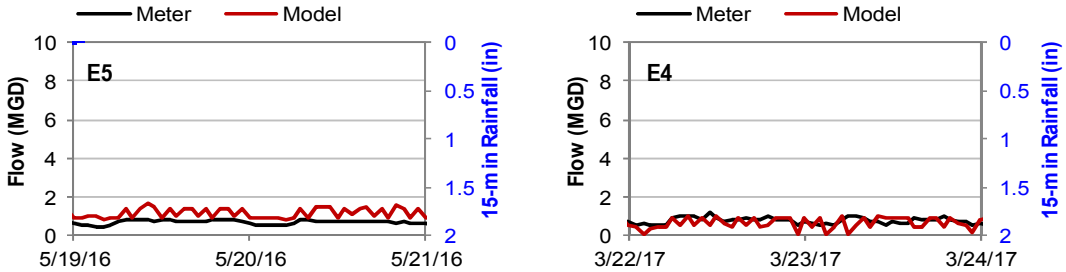


FLOW METER MHPS MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

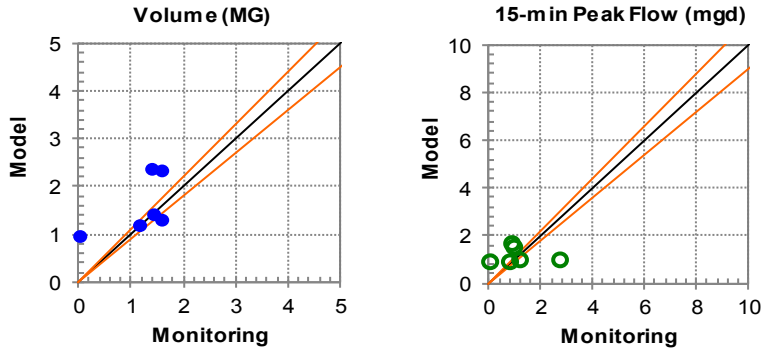
MHPS Model Calibration Results (Metered and Modeled Flow)



MHPS Model Validation Results (Metered and Modeled Flow)



MHPS Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



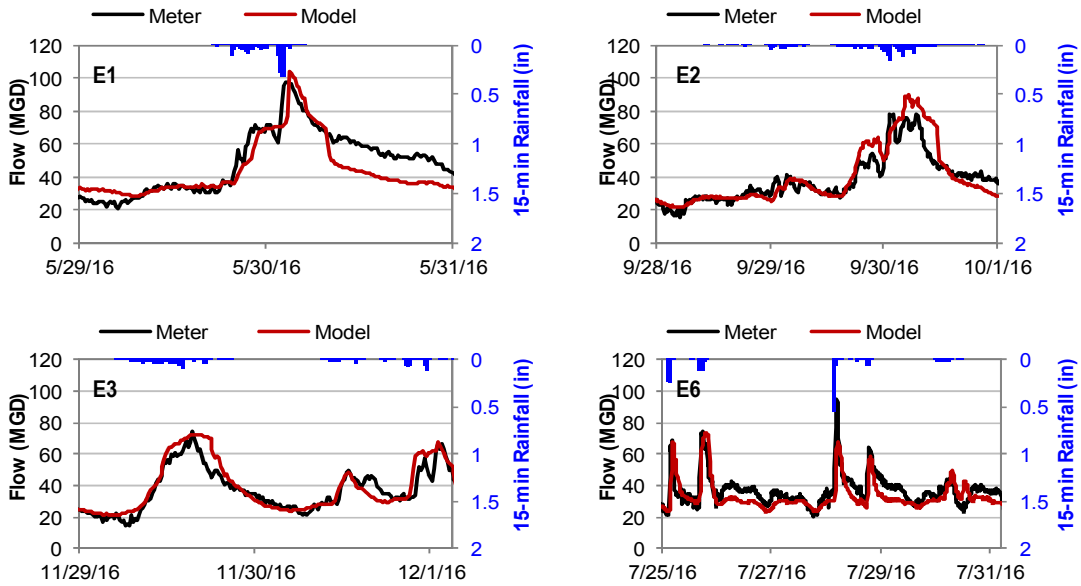
MHPS Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	0.94	1.56	-10% to +10%	66%	1.58	2.35	-10% to +10%	49%
E2	0.81	0.95	-10% to +10%	18%	1.17	1.19	-10% to +10%	1%
E3	0.00	0.95	-10% to +10%		0.00	0.95	-10% to +10%	
E4	1.20	1.02	-10% to +10%	-15%	1.58	1.33	-10% to +10%	-16%
E5	0.83	1.70	-10% to +10%	106%	1.40	2.37	-10% to +10%	69%
E6	2.68	1.04	-10% to +10%	-61%	1.43	1.44	-10% to +10%	0%

MHPS Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	4.39	5.09	-15% to +25%	16%	2.11	1.99	-10% to +20%	-6%
E2	4.12	2.68	-15% to +25%	-35%	3.62	2.65	-10% to +20%	-27%
E3	0.00	1.84	-15% to +25%		0.00	1.52	-10% to +20%	
E4	4.54	2.61	-15% to +25%	-43%	7.36	5.28	-10% to +20%	-28%
E5	4.05	3.73	-15% to +25%	-8%	4.00	3.75	-10% to +20%	-6%
E6	2.99	3.22	-15% to +25%	8%	1.39	1.50	-10% to +20%	8%

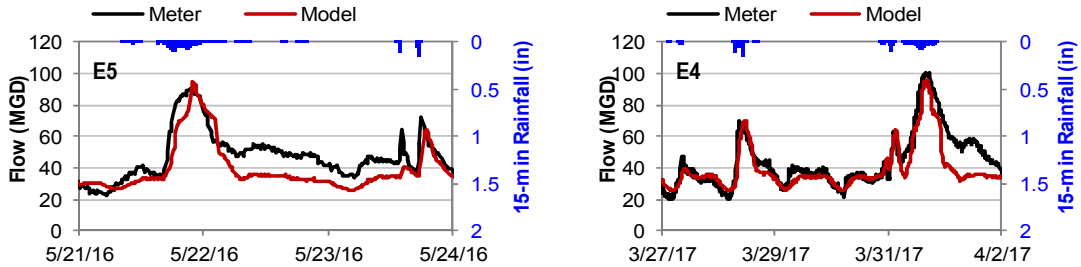
Note: Flow meter data not available for Event E3. Three of the remaining five wet weather events are calibrated well within the industry criteria. Flow meter data recorded for E2 and E4 is not consistent with the recorded rainfall intensity. Based on the calibration results of the overall model, the model calibration is adequate for purposes of long term control planning.

FLOW METER WRTP FLOW MODEL CALIBRATION AND VALIDATION RESULTS_Wet Weather Events

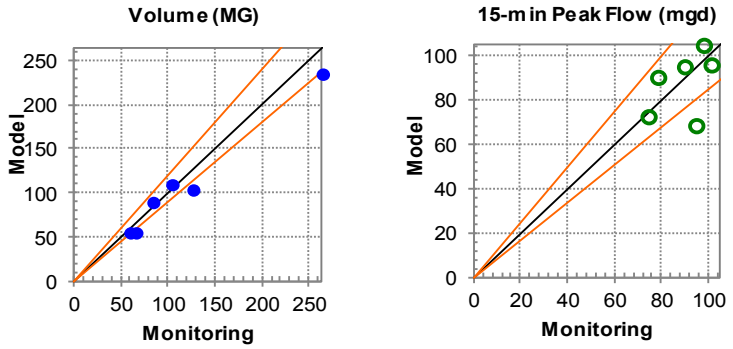
WRTP Flow Model Calibration Results (Metered and Modeled Flow)



WRTP Flow Model Validation Results (Metered and Modeled Flow)

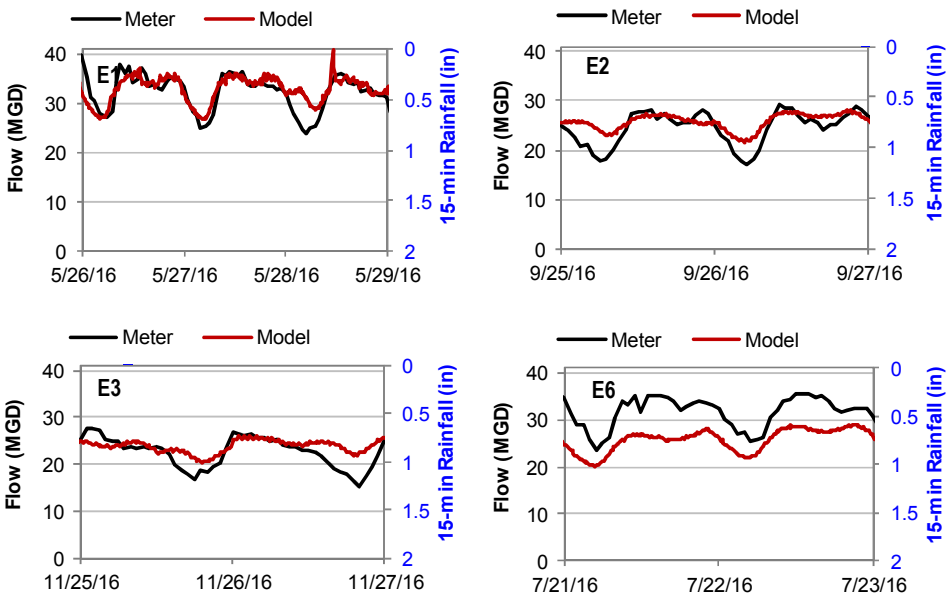


WRTP Flow Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)

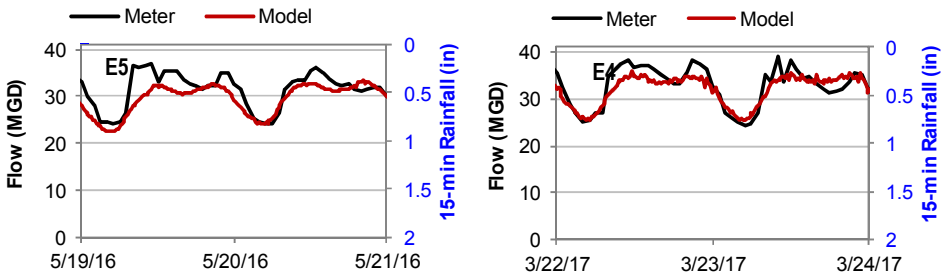


FLOW METER WRTP FLOW MODEL CALIBRATION AND VALIDATION RESULTS_Dry Weather Events

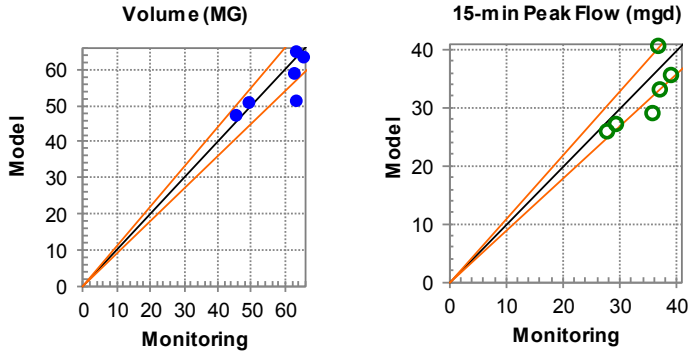
WRTP Flow Model Calibration Results (Metered and Modeled Flow)



WRTP Flow Model Validation Results (Metered and Modeled Flow)



WRTP Flow Overall Model Calibration and Validation Results (Volume and Flow 1:1 Plots)



WRTP Flow Model Dry Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	36.45	40.88	-10% to +10%	12%	62.91	65.40	-10% to +10%	4%
E2	29.28	27.29	-10% to +10%	-7%	49.02	51.10	-10% to +10%	4%
E3	27.68	26.32	-10% to +10%	-5%	45.05	48.22	-10% to +10%	7%
E4	38.76	35.72	-10% to +10%	-8%	65.29	63.81	-10% to +10%	-2%
E5	36.88	33.33	-10% to +10%	-10%	62.75	58.97	-10% to +10%	-6%
E6	35.61	29.00	-10% to +10%	-19%	63.12	51.47	-10% to +10%	-18%

WRTP Flow Model Wet Weather Calibration and Validation Summary								
Event	Peak Flow (MGD)				Volume (MG)			
	Monitored	Model	Criteria	Achieved	Monitored	Model	Criteria	Achieved
E1	97.94	104.17	-15% to +25%	6%	59.32	55.50	-10% to +20%	-6%
E2	78.26	89.85	-15% to +25%	15%	104.19	109.04	-10% to +20%	5%
E3	74.21	72.33	-15% to +25%	-3%	85.10	91.47	-10% to +20%	7%
E4	100.93	95.57	-15% to +25%	-5%	263.84	235.18	-10% to +20%	-11%
E5	89.95	94.75	-15% to +25%	5%	127.56	103.59	-10% to +20%	-19%
E6	94.40	67.86	-15% to +25%	-28%	66.96	55.02	-10% to +20%	-18%

Note: All the six wet weather events are calibrated well within or close to the industry criteria.