Appendix A

Completed Green Stormwater Infrastructure Projects

Table A-1: Completed (Re)Development Green Stormwater Infrastructure Projects in the Combined Sewer System

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
FY18-LABO-5153-01	Delaware Direct	19122	Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.7
FY16-COLU-4303-01	Delaware Direct	19147	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5
2013-PHIL-2299-01	Delaware Direct	19102	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
FY17-WHAR-4726-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.2
2014-1601-2440-01	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.7
FY16-RACE-4127-01	Delaware Direct	19106	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.9
2014-250N-2565-01	Delaware Direct	19106	Green Roof, Porous Pavement	1.2
FY19-TEMP-5500-01	Delaware Direct	19122	Green Roof	0.3
FY17-ABIG-4691-01	Delaware Direct	19148	Bio-infiltration/Bio-retention, Subsurface Infiltration Basin	0.6
FY18-WALN-4820-01	Cobbs Creek	19139	Subsurface Infiltration Basin	0.7
FY18-CHES-4975-01	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.0
FY17-STHS-4755-01	Lower Schuylkill River	19146	Subsurface Infiltration Basin	0.9
2014-1326-2422-01	Delaware Direct	19122	Subsurface Infiltration Basin	0.9
2014-3600-2426-01	Lower Schuylkill River	19104	Bioretention, Green Roof, Subsurface Detention Basin, Surface Detention Basin	1.3
FY17-XXXX-4458-01	Lower Schuylkill River	19131	Subsurface Infiltration Basin	1.8
FY17-TEMP-4573-01	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement	0.2
FY16-WASH-4360-01	Lower Schuylkill River	19146	Bioinfiltration, Subsurface Infiltration Basin	2.0
FY18-GALA-5145-01	Tacony-Frankford Creek	19138	Bio-infiltration/Bio-retention, Subsurface Detention Basin	0.5
2014-1123-2645-01	Delaware Direct	19125	Subsurface Infiltration Basin	0.4
FY17-NTHS-4672-01	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	2.1
2014-VONC-2749-01	Lower Schuylkill River	19130	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5
2011-EAST-1687-01	Delaware Direct	19107	Green Roof, Porous Pavement, Subsurface Detention Basin	0.3
FY16-EAST-4017-01	Delaware Direct	19125	Subsurface Infiltration Basin	0.5
FY18-ALBE-4973-01	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Subsurface Infiltration Basin	1.5
FY16-BERN-4350-01	Lower Schuylkill River	19121	Subsurface Infiltration Basin	1.2
FY16-FEDE-4201-01	Lower Schuylkill River	19146	Subsurface Infiltration Basin	0.9
FY17-PHAA-4543-01	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.6
FY20-WECC-5809-01	Delaware Direct	19148	Subsurface Detention Basin, WQ Treatment Device	1.9
FY16-STJO-4085-01	Lower Schuylkill River	19145	Bioretention, Porous Pavement, Subsurface Detention Basin	1.5
FY17-SOUT-4486-01	Lower Schuylkill River	19104	Green Roof, Subsurface Infiltration Basin	0.5
FY18-CHES-4832-01	Lower Schuylkill River	19104	Green Roof, Porous Pavement	0.2
2014-STEN-2616-01	Tacony-Frankford Creek	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.5
FY17-PHIL-4417-01	Delaware Direct	19121	Subsurface Detention Basin, WQ Treatment Device	2.4
2013-SHOP-2250-01	Delaware Direct	19124	Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	3.0
2014-500W-2580-01	Delaware Direct	19106	Green Roof, Subsurface Detention Basin	0.1
2015-1002-2906-01	Delaware Direct	19123	Bioinfiltration, Porous Pavement, Subsurface Detention Basin	0.8
FY17-PHAN-4699-01	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	2.5
FY19-DREX-5307-01	Lower Schuylkill River	19104	Subsurface Infiltration Basin	0.4
FY16-UCHS-4213-01	Lower Schuylkill River	19104		0.0
2015-7092-2945-01	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.4
FY19-POPL-5344-01	Lower Schuylkill River	19131	Subsurface Detention Basin	0.7
2012-AHMA-1831-01	Delaware Direct	19133	Disconnected Impervious Area, Subsurface Infiltration Basin	1.7
FY16-SIMP-4337-01	Lower Schuylkill River	19131	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	1.3
FY18-ENOR-4838-01	Delaware Direct	19125	Bioinfiltration, Porous Pavement	0.8
FY18-PHIL-5038-01	Delaware Direct	19107	Subsurface Detention Basin, WQ Treatment Device	1.6
2015-DLAT-2926-01	Delaware Direct	19120	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	8.0
2013-THES-2392-01	Lower Schuylkill River	19104	Blue Roof, Green Roof	0.6
FY16-NATI-4211-01	Delaware Direct	19106	Subsurface Detention Basin	1.0
FY18-PARK-4896-01	Lower Schuylkill River	19131	Disconnected Impervious Area	0.0
FY17-WALM-4419-01	Tacony-Frankford Creek	19114	Subsurface Detention Basin, WQ Treatment Device	13.4
FY16-LUCI-4053-01	Lower Schuylkill River	19139	Disconnected Impervious Area	0.3
FY16-EAST-4179-01	Delaware Direct	19134	Bioinfiltration, Disconnected Impervious Area	0.4
FY17-LEED-4633-01	Tacony-Frankford Creek	19150	Bioinfiltration	4.3
FY18-BART-5075-01	Lower Schuylkill River	19143	Subsurface Infiltration Basin	6.1
FY17-ROWE-4634-01	Tacony-Frankford Creek	19126	Bioinfiltration	1.2
FY17-HAMP-4618-01	Delaware Direct	19111	Bioinfiltration, Disconnected Impervious Area	1.1
FY18-RENO-4879-01	Cobbs Creek	19143	Bioinfiltration, Depave	2.1
2014-1601-2434-01	Lower Schuylkill River	19103	Bioretention, Porous Pavement, Subsurface Detention Basin	0.3

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
2015-40TH-2780-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2013-1323-2310-01	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	0.6
2011-822N-1632-01	Delaware Direct	19123	Green Roof, Porous Pavement	0.3
FY19-AUTO-5287-01	Lower Schuylkill River	19145	Subsurface Detention Basin, WQ Treatment Device	0.5
2015-SOUT-2956-01	Lower Schuylkill River	19145	Bioretention, Subsurface Detention Basin, Surface Detention Basin	5.0
2015-GROC-2925-01	Delaware Direct	19137	Bioretention, Subsurface Detention Basin	2.6
2015-TULI-2824-01	Delaware Direct	19122	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	3.1
FY17-VIEW-4457-01	Delaware Direct	19122	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	4.1
FY17-ALDI-4565-01	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, WQ Treatment Device	3.1
FY18-HSTX-5076-01	Delaware Direct	19134	Subsurface Detention Basin, WQ Treatment Device	1.3
2015-3675-2955-01	Lower Schuylkill River	19104	Green Roof, Porous Pavement, Subsurface Detention Basin	0.5
2015-PHIL-2982-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
FY17-AUTO-4659-01	Delaware Direct	19148	Subsurface Detention Basin, WQ Treatment Device	1.0
FY17-EAST-4640-01	Cobbs Creek	19139	Bioinfiltration, Blue Roof, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, WQ Treatment Device	2.0
FY16-THCH-4142-01	Lower Schuylkill River	19102	Blue Roof, Green Roof, Subsurface Detention Basin, WQ Treatment Device	1.1
2012-600N-1963-01	Delaware Direct	19123	Green Roof, Porous Pavement	0.4
2015-8385-2856-01	Delaware Direct	19123	Subsurface Infiltration Basin	0.9
FY17-BROA-4539-01	Lower Schuylkill River	19130	Disconnected Impervious Area, Subsurface Detention Basin	1.0
2011-PENN-1681-01	Lower Schuylkill River	19104	Green Roof	0.4
FY18-PARK-4775-01	Lower Schuylkill River	19131	Subsurface Detention Basin, WQ Treatment Device	1.6
2012-LAWR-1945-01	Delaware Direct	19123	Green Roof, Porous Pavement	0.4
FY17-WIDE-4636-01	Tacony-Frankford Creek	19141	Bioinfiltration	4.0
FY17-LUCI-4480-01	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Surface Detention Basin, WQ Treatment Device	1.0
FY16-USCI-4261-01	Lower Schuylkill River	19143	Bioinfiltration, Bioretention, Porous Pavement	1.4
FY16-LOVE-4088-01	Tacony-Frankford Creek	19119	Bioinfiltration, Disconnected Impervious Area, Green Roof	0.2
2011-NEWB-1672-01	Lower Schuylkill River	19145	Green Roof, Porous Pavement	0.4
FY18-PHAS-4886-01	Delaware Direct	19148	Bioretention, Disconnected Impervious Area	2.0
FY17-WYNN-4704-01	Lower Schuylkill River	19131	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8
2015-ROBE-2975-01	Tacony-Frankford Creek	19140	Bioretention, Subsurface Detention Basin	0.5
2015-2517-2803-01	Delaware Direct	19134	Green Roof, Porous Pavement, Subsurface Detention Basin	0.3
2012-SR00-2026-01	Delaware Direct	19125	Bioinfiltration, Bioretention	7.5
FY16-JACK-4123-01	Delaware Direct	19124	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	2.1
2013-UPEN-2280-01	Lower Schuylkill River	19104	Subsurface Infiltration Basin	0.8
2014-1515-2746-01	Delaware Direct	19106	Porous Pavement, Subsurface Infiltration Basin	0.5
2014-8365-2530-01	Delaware Direct	19123	Subsurface Infiltration Basin	1.5
FY16-NFRO-4270-01	Delaware Direct	19122	Subsurface Infiltration Basin	1.0
FY17-MALB-4466-01	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.7
2012-PRES-1785-01	Lower Schuylkill River	19131-3348	Green Roof, Porous Pavement	0.5
2014-WISS-2641-01	Delaware Direct	19135	Disconnected Impervious Area, Porous Pavement	0.4
2013-PARK-2357-01	Lower Schuylkill River	19130	Bioinfiltration, Disconnected Impervious Area	1.0
2013-1900-2151-01	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin, Surface Detention Basin	2.0
2015-3201-2786-01	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3
FY16-LINC-4309-01	Delaware Direct	19146	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	3.4
FY18-DEST-4909-01	Delaware Direct	19123	Subsurface Infiltration Basin	5.1
2015-2338-2915-01	Delaware Direct	19125	Subsurface Infiltration Basin	0.5
FY18-MERC-4857-01	Cobbs Creek	19143	Disconnected Impervious Area, Subsurface Detention Basin, WQ Treatment Device	0.4
2007-BENC-482-01	Tacony-Frankford Creek	19124	Porous Pavement, Subsurface Detention Basin	1.0
FY17-EAST-4468-01	Lower Schuylkill River	19121	Subsurface Detention Basin	0.8
2014-2201-2677-01	Lower Schuylkill River	19145	Subsurface Infiltration Basin, WQ Treatment Device	1.2
2013-TALL-2349-01	Delaware Direct	19133	Bioinfiltration, Subsurface Infiltration Basin	2.9
2012-CARP-1765-01	Delaware Direct	19146	Bioretention, Green Roof, Porous Pavement	0.4
2014-PHAM-2476-01	Lower Schuylkill River	19121	Bio-infiltration/Bio-retention, Bioretention, Subsurface Detention Basin	1.3
2006-MOOR-320-01	Delaware Direct	19148	Subsurface Detention Basin, Subsurface Infiltration Basin	0.3
2014-4525-2505-01	Lower Schuylkill River	19139	Green Roof	0.3
2012-SPAR-1850-01	Delaware Direct	19148	Bioinfiltration, Disconnected Impervious Area, Porous Pavement	0.7
2011-THEB-1594-01	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	0.8
FY17-WEND-4527-01	Cobbs Creek	19139	Subsurface Infiltration Basin	1.3

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
2015-ROYA-2911-01	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Subsurface Infiltration Basin, Surface Detention Basin, Surface Infiltration Basin	4.2
FY17-PESS-4511-01	Lower Schuylkill River	19145	Surface Detention Basin	9.3
2015-WYNN-2986-01	Lower Schuylkill River	19131	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.7
2014-63RD-2502-01	Cobbs Creek	19139	Subsurface Infiltration Basin	1.9
2012-1919-1929-01	Lower Schuylkill River	19103	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	1.2
2013-TAJD-2286-01	Delaware Direct	19122	Bioretention, Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	1.3
2014-DOLL-2453-01	Delaware Direct	19135-4408	Bioretention, Subsurface Detention Basin	1.5
FY17-SENI-4411-01	Lower Schuylkill River	19145	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	1.0
2014-HUNT-2525-01	Lower Schuylkill River	19140	Bioretention, Subsurface Detention Basin	0.9
2015-LASA-2848-01	Tacony-Frankford Creek	19144	Bioinfiltration, Porous Pavement	1.1
2014-ALLE-2522-01	Delaware Direct	19133	Subsurface Infiltration Basin	0.7
2013-708N-2316-01	Delaware Direct	19123	Bioinfiltration, Subsurface Infiltration Basin	0.3
2013-2413-2183-01	Delaware Direct	19132	Green Roof, Subsurface Infiltration Basin	0.8
FY16-BARI-4074-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4
FY16-FAIR-4011-01	Delaware Direct	19123	Subsurface Infiltration Basin	1.2
2014-1350-2658-01	Delaware Direct	19122	Bioretention, Subsurface Infiltration Basin	0.9
2015-LANI-2871-01	Lower Schuylkill River	19145	Disconnected Impervious Area, Porous Pavement	0.3
2012-THEM-1892-01	Delaware Direct	19106	Cistern, Disconnected Impervious Area, Green Roof, WQ Treatment Device	0.7
2014-SEPT-2614-01	Delaware Direct	19124	Disconnected Impervious Area, Green Roof	0.3
2015-JFKP-2951-01	Lower Schuylkill River	19102	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	1.0
2013-ONER-2304-01	Lower Schuylkill River	19103	Bioretention, Green Roof, Subsurface Detention Basin	0.3
2014-BLUM-2711-01	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	1.8
FY18-PEAB-4939-01	Delaware Direct	19122	Porous Pavement	0.2
2015-TEMP-2964-01	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	6.2
2013-NEWC-2114-01	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement	1.3
FY16-SMIT-4151-01	Lower Schuylkill River	19146	Disconnected Impervious Area, Porous Pavement	4.3
2014-TRUE-2595-01	Delaware Direct	19123	Subsurface Infiltration Basin	0.9
2013-MUSE-2346-01	Lower Schuylkill River	19130	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	3.6
FY16-TEMP-4178-01	Delaware Direct	19121	Bioretention, Porous Pavement, Subsurface Detention Basin	4.2
2014-LASA-2425-01	Tacony-Frankford Creek	19144	Bioinfiltration, Porous Pavement, Subsurface Infiltration Basin	2.2
FY16-HELP-4027-01	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.2
2014-5454-2552-01	Tacony-Frankford Creek	19144	Bioretention, Porous Pavement, Subsurface Detention Basin	0.9
2014-420F-2574-01	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2008-2552-873-01	Delaware Direct	19134	Subsurface Infiltration Basin	0.7
2010-THEF-1254-01	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4
2012-1213-1925-01	Delaware Direct	19107	Cistern, Green Roof, Subsurface Detention Basin	0.3
2013-NEUR-2140-01	Lower Schuylkill River	19104	Bioinfiltration, Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement	0.4
2015-GAUD-2962-01	Lower Schuylkill River	19140	Bioretention, Porous Pavement, Subsurface Detention Basin	0.6
FY16-DREX-4244-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	1.0
FY16-HANO-4040-01	Lower Schuylkill River	19107	Subsurface Detention Basin	2.1
FY16-ADAM-4220-01	Tacony-Frankford Creek	19120	Bioinfiltration	1.0
2013-4783-2339-01	Pennypack Creek	19136	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	1.8
2014-2013-2751-01	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.4
2010-WIST-1397-01	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.4
2012-GARY-1938-01	Lower Schuylkill River	19146	Bioinfiltration, Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	1.3
FY17-CAMP-4378-01	Lower Schuylkill River	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2013-CIRA-2405-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.6
FY17-THAN-4446-01	Lower Schuylkill River	19146	Subsurface Detention Basin, WQ Treatment Device	0.8
2009-WEST-1222-01	Lower Schuylkill River	19139	Disconnected Impervious Area, Green Roof, Porous Pavement	1.4
2012-3601-2053-01	Lower Schuylkill River	19104	Bioretention, Subsurface Detention Basin	0.4
2014-ALLE-2455-01	Delaware Direct	19125	Disconnected Impervious Area, Green Roof, Porous Pavement	0.4
2014-WEST-2612-01	Lower Schuylkill River	19121	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.9
FY17-STPI-4413-01	Cobbs Creek	19143	Bioinfiltration, Disconnected Impervious Area	0.2
FY17-WGOD-4567-01	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.1
2006-VILL-194-01	Lower Schuylkill River	19145	Disconnected Impervious Area, Subsurface Infiltration Basin, Surface Detention Basin, Surface Infiltration Basin	21.8

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
2015-UCHS-2939-01	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	2.2
2012-2549-1840-01	Delaware Direct	19125	Porous Pavement	1.0
2012-TOLL-1898-01	Delaware Direct	19147	Disconnected Impervious Area, Green Roof	1.2
2015-4050-2828-01	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4
FY16-FIVE-4029-01	Tacony-Frankford Creek	19124	Bioinfiltration, Bioretention, Subsurface Infiltration Basin	1.1
2013-2300-2240-01	Lower Schuylkill River	19146	Bioretention, Subsurface Detention Basin	0.9
FY16-KENS-4216-01	Delaware Direct	19125	Bioinfiltration, Porous Pavement	0.7
2015-CAMD-2769-01	Delaware Direct	19134	Surface Infiltration Basin	3.4
2011-NORT-1700-01	Tacony-Frankford Creek	19124	Porous Pavement, Subsurface Detention Basin	0.9
2013-900S-2174-01	Delaware Direct	19147	Bioinfiltration, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.2
2012-SCHU-2065-01	Lower Schuylkill River	19146	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	4.1
2011-I95S-1699-01	Delaware Direct	19125	Bioinfiltration, Bioretention, Surface Detention Basin	4.7
2010-MOYE-1306-01	Delaware Direct	19125	Green Roof, Porous Pavement	0.6
2013-RESI-2173-01	Cobbs Creek	19143	Disconnected Impervious Area, Green Roof	0.1
2013-2012-2072-01	Lower Schuylkill River	19121	Green Roof, Porous Pavement	0.2
2009-NEWP-1166-01	Delaware Direct	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2014-5800-2463-01	Lower Schuylkill River	19131	Disconnected Impervious Area, Surface Infiltration Basin	1.0
2013-FIRS-2202-01	Delaware Direct	19124	Bioinfiltration, Disconnected Impervious Area	4.9
2012-INGL-1949-01	Lower Schuylkill River	19131	Bioretention, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.6
2014-NORT-2603-01	Delaware Direct	19123	Bioretention, Subsurface Detention Basin	0.5
2012-STFR-1986-01	Delaware Direct	19125	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.3
2012-810A-1974-01	Delaware Direct	19107	Bioretention, Subsurface Detention Basin	0.2
2014-PERE-2472-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Detention Basin	0.6
2015-TEMP-2829-01	Delaware Direct	19122	Porous Pavement, Subsurface Infiltration Basin	0.2
FY16-TEMP-4277-01	Delaware Direct	19122	Porous Pavement	0.4
FY16-FRAN-4076-01	Tacony-Frankford Creek	19124	Disconnected Impervious Area	0.0
2014-2322-2715-01	Lower Schuylkill River	19130	Porous Pavement, Subsurface Infiltration Basin	0.4
2012-ESPE-1947-01	Tacony-Frankford Creek	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	3.7
2011-HAGE-1562-01	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	1.5
2014-PHAO-2459-01	Lower Schuylkill River	19132	Bioretention, Porous Pavement, Subsurface Detention Basin	0.4
2012-1220-1913-01	Delaware Direct	19123	Green Roof, Porous Pavement	0.4
2010-PSPH-1353-01	Lower Schuylkill River	19131	Green Roof, Subsurface Infiltration Basin	8.4
2013-1118-2248-01	Delaware Direct	19107	Green Roof, Porous Pavement, Subsurface Detention Basin	0.8
2013-3541-2376-01	Delaware Direct	19134	Disconnected Impervious Area, Subsurface Infiltration Basin	0.6
2012-EPIS-1888-01	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.2
2014-PHAG-2547-01	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin	0.3
2014-PAND-2762-01	Delaware Direct	19134	Subsurface Infiltration Basin	0.3
2012-TDBA-2047-01	Delaware Direct	19149	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	0.8
FY16-LASA-4354-01	Tacony-Frankford Creek	19141	Disconnected Impervious Area, Porous Pavement	0.2
2011-8318-1655-01	Lower Schuylkill River	19121	Green Roof, Porous Pavement	0.2
2013-TEMP-2178-01	Delaware Direct	19140	Bioretention, Subsurface Detention Basin	1.1
2015-WAYN-2771-01	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.2
2013-STCH-2103-01	Delaware Direct	19134	Bioinfiltration, Bioretention, Disconnected Impervious Area	4.6
2013-STCH-2149-01	Delaware Direct	19134	Bioretention, Disconnected Impervious Area	3.8
2013-CHOP-2288-01	Delaware Direct	19145	Bioretention, Porous Pavement, Subsurface Detention Basin	1.2
2014-CHIC-2755-01	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	0.5
2010-4FRA-1464-01	Lower Schuylkill River	19103	Green Roof, Subsurface Detention Basin	0.9
2007-PASH-524-01	Cobbs Creek	19142	Subsurface Infiltration Basin	0.8
2010-GRAN-1432-01	Lower Schuylkill River	19130	Green Roof, Subsurface Detention Basin	0.6
2014-UNIV-2747-01	Lower Schuylkill River	19104	Porous Pavement	0.5
2014-1325-2469-01	Delaware Direct	19121	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.8
2013-SETT-2085-01	Tacony-Frankford Creek	19144	Bioretention, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.9
2013-ALDI-2287-01	Darby Creek	19151	Bioretention	0.3
2012-CIRA-1937-01	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	2.0
2012-PENN-1774-01	Lower Schuylkill River	19104	Bioinfiltration, Subsurface Detention Basin	1.0
2006-TEMP-245-01	Delaware Direct	19122	Subsurface Infiltration Basin	1.1
2012-CANC-1770-01	Tacony-Frankford Creek	19124	Bioinfiltration, Green Roof	0.6
2011-CANC-1485-01	Tacony-Frankford Creek	19124	Green Roof	0.2
2009-CANC-1145-01	Tacony-Frankford Creek	19124	Bioretention, Disconnected Impervious Area, Surface Detention Basin	6.2
2006-NATI-441-01	Delaware Direct	19106	Subsurface Detention Basin	0.5
2014-ENVI-2646-01	Delaware Direct	19148-5607	Bioretention, Subsurface Detention Basin, Surface Infiltration Basin	2.0

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
2013-DREX-2081-01	Lower Schuylkill River	19104	Subsurface Detention Basin, Surface Detention Basin	1.3
2014-GSTR-2443-01	Tacony-Frankford Creek	19124	Bioinfiltration, Subsurface Infiltration Basin	1.1
2013-THES-2177-01	Delaware Direct	19123	Subsurface Infiltration Basin	1.2
2012-1426-1805-01	Lower Schuylkill River	19102	Blue Roof, Green Roof	0.3
2010-CHOP-1367-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Surface Detention Basin	2.6
2013-CECI-2157-01	Lower Schuylkill River	19121	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	0.9
2010-1940-1435-01	Delaware Direct	19140	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.6
2013-MAST-2259-01	Lower Schuylkill River	19121	Disconnected Impervious Area	0.6
2013-1601-2261-01	Delaware Direct	19148	Disconnected Impervious Area, Subsurface Infiltration Basin	0.9
2013-1901-2109-01	Lower Schuylkill River	19146	Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.6
2013-8268-2116-01	Delaware Direct	19123	Subsurface Infiltration Basin	0.4
2009-DORA-1041-01	Lower Schuylkill River	19131	Porous Pavement, Subsurface Infiltration Basin	0.4
2005-0052-01	Lower Schuylkill River	19139	Subsurface Infiltration Basin	2.5
2012-WISS-1891-01	Tacony-Frankford Creek	19138	Bioretention, Disconnected Impervious Area	1.3
2009-RODI-1176-01	Lower Schuylkill River	19130	Subsurface Infiltration Basin	0.2
2008-THEC-806-01	Delaware Direct	19103	Green Roof, Subsurface Detention Basin	0.2
2007-WEST-684-01	Cobbs Creek	19139	Disconnected Impervious Area, Subsurface Detention Basin	0.0
2008-SCHM-902-01	Delaware Direct	19123	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	4.4
2010-NORT-1449-01	Tacony-Frankford Creek	19124-3024	Subsurface Infiltration Basin	0.9
2013-COBB-2080-01	Cobbs Creek	19143	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.8
2010-BRID-1233-01	Delaware Direct	19137	Porous Pavement, Subsurface Infiltration Basin	1.1
2011-GREE-1706-01	Tacony-Frankford Creek	19138	Porous Pavement, Subsurface Detention Basin, Surface Infiltration Basin	1.9
2012-INGE-1798-01	Delaware Direct	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	0.9
2013-HALP-2134-01	Lower Schuylkill River	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	1.6
2011-TEMP-1739-01	Delaware Direct	19122	Bioretention, Cistern, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	2.1
2010-HUNT-1351-01	Tacony-Frankford Creek	19140-2107	Disconnected Impervious Area	0.1
2014-TEMP-2699-01	Delaware Direct	19121	Disconnected Impervious Area	0.4
2012-BUIL-1807-01	Tacony-Frankford Creek	19111	Disconnected Impervious Area	0.1
2007-MCDO-560-01	Delaware Direct	19135	Subsurface Detention Basin	0.1
2010-CREA-1427-01	Delaware Direct	19125	Disconnected Impervious Area, Green Roof, Porous Pavement	0.3
2012-HUNT-1764-01	Tacony-Frankford Creek	19140-2107	Disconnected Impervious Area, Porous Pavement	1.8
2014-VERN-2690-01	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement	0.6
2011-33RD-1697-01	Lower Schuylkill River	19132	Bioretention, Disconnected Impervious Area, Green Roof	0.1
2006-EDWI-215-01	Delaware Direct	19136	Disconnected Impervious Area, Subsurface Detention Basin, Subsurface Infiltration Basin	0.8
2006-TACO-337-01	Delaware Direct	19149	Subsurface Infiltration Basin	0.2
2013-TACO-2197-01	Delaware Direct	19135	Bioinfiltration, Disconnected Impervious Area, Subsurface Detention Basin	2.1
2011-PHIL-1596-01	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Porous Pavement, Surface Detention Basin	3.2
2006-CINT-431-01	Lower Schuylkill River	19131	Surface Detention Basin	9.5
2012-RODE-1835-01	Delaware Direct	19130	Subsurface Infiltration Basin	0.7
2010-DICK-1410-01	Delaware Direct	19148	Disconnected Impervious Area, Porous Pavement	0.7
2011-SAMU-1569-01	Delaware Direct	19111	Porous Pavement	0.4
2013-23RD-2272-01	Lower Schuylkill River	19140	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4
2012-SOUT-1782-01	Delaware Direct	19102	Green Roof, Subsurface Detention Basin	0.8
2011-TOLL-1586-01	Lower Schuylkill River	19146	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	2.4
2006-GENE-192-01	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Detention Basin	0.3
2009-SCHU-1140-01	Lower Schuylkill River	19103	Disconnected Impervious Area	0.7
2009-THEC-1174-01	Delaware Direct	19135	Bioretention, Disconnected Impervious Area, Green Roof	0.6
2008-NAVA-893-01	Lower Schuylkill River	19146	Subsurface Infiltration Basin	5.7
2011-HOME-1571-01	Delaware Direct	19107	Bioretention, Green Roof, Subsurface Detention Basin	0.2
2010-DILW-1442-01	Lower Schuylkill River	19107	Disconnected Impervious Area, Subsurface Detention Basin, Surface Detention Basin	0.7
2010-PROP-1376-01	Delaware Direct	19141	Bioinfiltration, Bioretention, Subsurface Infiltration Basin	2.4
2009-STRA-1055-01	Lower Schuylkill River	19121	Subsurface Infiltration Basin	0.3
2007-UNIV-633-01	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	0.4
2009-SIST-1131-01	Lower Schuylkill River	19103	Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	0.4
2009-SIST-1062-01	Lower Schuylkill River	19103	Disconnected Impervious Area	0.2
2006-9349-349-01	Delaware Direct	19123	Subsurface Detention Basin	0.1
2008-COMM-763-01	Lower Schuylkill River	19130	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Infiltration Basin	2.4
2008-NEWL-839-01	Delaware Direct	19140	Subsurface Infiltration Basin	0.5
2011-JWSD-1674-01	Delaware Direct	19122	Disconnected Impervious Area, Subsurface Infiltration Basin	1.8
2009-STRA-1050-01	Lower Schuylkill River	19121	Subsurface Infiltration Basin	0.2

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
2007-HOWI-498-01	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Detention Basin	0.3
2010-5526-1348-01	Darby Creek	19139	Porous Pavement, Subsurface Infiltration Basin	0.5
2012-701W-2002-01	Delaware Direct	19133	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	4.7
2014-DREX-2457-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	2.6
2013-PROP-2163-01	Tacony-Frankford Creek	19141	Subsurface Infiltration Basin	0.9
2010-3737-1331-01	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.3
2013-HELP-2241-01	Lower Schuylkill River	19153	Disconnected Impervious Area, Surface Infiltration Basin	1.8
2009-NEWH-1079-01	Lower Schuylkill River	19139	Disconnected Impervious Area, Subsurface Infiltration Basin	0.3
2014-STJO-2424-01	Delaware Direct	19122	Disconnected Impervious Area, Subsurface Infiltration Basin	5.6
2008-BARN-986-01	Lower Schuylkill River	19130	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin, Subsurface Infiltration Basin	3.5
2008-STRA-802-01	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.3
2008-STRA-799-01	Lower Schuylkill River	19121	Porous Pavement, Subsurface Infiltration Basin	0.4
2010-TEMP-1302-01	Delaware Direct	19122	Cistern, Disconnected Impervious Area, Subsurface Infiltration Basin	2.9
2012-412N-1844-01	Delaware Direct	19123	Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.2
2008-ROLA-813-01	Tacony-Frankford Creek	19141	Green Roof, Subsurface Infiltration Basin	0.2
2006-0057-01	Delaware Direct	19123	Subsurface Detention Basin	0.0
2012-915N-1854-01	Delaware Direct	19123	Porous Pavement, Subsurface Infiltration Basin	0.8
2013-9THS-2075-01	Delaware Direct	19123	Subsurface Infiltration Basin	4.6
2007-AROU-626-01	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	0.5
2008-1600-898-01	Delaware Direct	19122	Bioretention	0.5
2011-TEMP-1622-01	Delaware Direct	19122	Blue Roof, Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.9
2007-SOUT-557-01	Delaware Direct	19148	Subsurface Detention Basin	0.1
2008-WALG-838-01	Delaware Direct	19146	Bioretention, Subsurface Infiltration Basin	0.5
2010-1800-1260-01	Lower Schuylkill River	19146	Disconnected Impervious Area, Subsurface Infiltration Basin	0.8
2011-FAIR-1488-01	Delaware Direct	19130	Green Roof, Subsurface Detention Basin	0.4
2009-JANN-1141-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement	0.3
2006-30TH-236-01	Lower Schuylkill River	19104	Surface Infiltration Basin	0.6
2009-THEP-1173-01	Lower Schuylkill River	19140	Green Roof	0.1
2007-GAMB-624-01	Tacony-Frankford Creek	19124	Porous Pavement	0.1
2009-HAWT-1102-01	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement	0.3
2012-1900-1754-01	Lower Schuylkill River	19145	Green Roof, Porous Pavement	0.6
2007-POWE-679-01	Lower Schuylkill River	19104	Disconnected Impervious Area	0.4
2006-MICH-419-01	Delaware Direct	19125	Porous Pavement, Subsurface Infiltration Basin	0.4
2012-CENT-1791-01	Delaware Direct	19122	Porous Pavement	1.3
2012-SYSC-1931-01	Delaware Direct	19148	Bioretention	3.9
2006-BRID-200-01	Delaware Direct	19137	Disconnected Impervious Area, Subsurface Infiltration Basin	0.7
2009-HELP-1138-01	Lower Schuylkill River	19153	Subsurface Infiltration Basin	3.7
2009-PHIL-1205-01	Delaware Direct	19148	Porous Pavement	14.6
2013-EDBE-2293-01	Delaware Direct	19122	Subsurface Infiltration Basin	4.2
2008-MART-980-01	Delaware Direct	19147	Subsurface Infiltration Basin	0.6
2007-MTTA-480-01	Delaware Direct	19123	Green Roof, Porous Pavement	0.3
2006-PILG-444-01	Delaware Direct	19111	Subsurface Infiltration Basin	1.1
2011-STMA-1508-01	Delaware Direct	19147	Green Roof, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	0.5
2008-ROTE-960-01	Delaware Direct	19148	Bioretention, Porous Pavement, Subsurface Detention Basin	1.3
2008-4014-979-01	Delaware Direct	19123	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5
2010-PLEA-1444-01	Tacony-Frankford Creek	19119	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
2012-UNIV-1848-01	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	1.6
2010-DREX-1399-01	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	1.5
2011-NICE-1730-01	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	1.1
2011-NICE-1729-01	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Detention Basin	0.5
2011-NICE-1728-01	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	0.3
2008-WOOD-864-01	Lower Schuylkill River	19104	Porous Pavement	0.5
2011-DREX-1638-01	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Green Roof	0.8
2010-PHIL-1469-01	Delaware Direct	19148	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin, Surface Detention Basin	3.4
2012-SPRU-1813-01	Delaware Direct	19107	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.1
2011-HAMI-1518-01	Lower Schuylkill River	19104	Cistern, Disconnected Impervious Area, Green Roof, Subsurface Infiltration Basin	1.9
2008-DREX-950-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.2
2006-FEDE-409-01	Delaware Direct	19106	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3
2011-MONT-1516-01	Delaware Direct	19122	Subsurface Infiltration Basin	2.8
2012-SENI-1900-01	Lower Schuylkill River	19145	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	0.4

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
2010-NORR-1475-01	Delaware Direct	19122	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.1
2010-UNIV-1312-01	Lower Schuylkill River	19104	Green Roof, Subsurface Detention Basin	0.7
2007-MCDO-558-01	Delaware Direct	19133	Subsurface Detention Basin	0.5
2008-FRAN-921-01	Lower Schuylkill River	19104	Porous Pavement	0.3
2007-THEM-495-01	Lower Schuylkill River	19131	Subsurface Detention Basin, Surface Detention Basin	6.4
2007-4839-625-01	Lower Schuylkill River	19131	Subsurface Detention Basin	1.0
2008-FRAN-994-01	Delaware Direct	19130	Porous Pavement, Subsurface Infiltration Basin	0.7
2009-PRIN-1147-01	Lower Schuylkill River	19121	Green Roof, Subsurface Infiltration Basin	0.5
2008-CAST-875-01	Delaware Direct	19149	Subsurface Detention Basin	0.0
2006-HUNT-445-01	Delaware Direct	19133	Porous Pavement, Subsurface Infiltration Basin	1.4
2006-TEMP-210-01	Delaware Direct	19122	Porous Pavement, Subsurface Detention Basin	0.6
2009-IATS-1023-01	Delaware Direct	19148	Green Roof, Subsurface Detention Basin	0.8
2007-WILL-699-01	Delaware Direct	19134	Bioretention, Subsurface Detention Basin	5.0
2006-COMM-328-01	Cobbs Creek	19139	Cistern, Porous Pavement, Subsurface Detention Basin	0.9
2009-GLOB-1016-01	Lower Schuylkill River	19131	Bioretention, Subsurface Detention Basin	1.8
2007-DREX-669-01	Lower Schuylkill River	19104	Cistern, Disconnected Impervious Area, Porous Pavement	0.8
2007-LASA-593-01	Tacony-Frankford Creek	19144	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	10.6
2008-PROP-824-01	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin, Subsurface Infiltration Basin	5.4
2006-0110-01	Delaware Direct	19140	Subsurface Detention Basin, Subsurface Infiltration Basin	0.7
2009-LAWR-1044-01	Delaware Direct	19140	Porous Pavement, Subsurface Infiltration Basin	3.0
2007-WARN-651-01	Delaware Direct	19133	Subsurface Infiltration Basin	2.7
2006-94-01	Delaware Direct	19148	Subsurface Detention Basin	2.2
2007-GUIO-721-01	Lower Schuylkill River	19131	Disconnected Impervious Area, Porous Pavement, Subsurface Detention Basin	1.4
2008-NEWK-958-01	Delaware Direct	19122	Bioinfiltration, Green Roof, Porous Pavement, Subsurface Detention Basin	5.2
2012-PROP-1883-01	Tacony-Frankford Creek	19138	Subsurface Infiltration Basin	1.0
2006-0063-01	Delaware Direct	19122	Subsurface Infiltration Basin	1.9
2012-RIVE-2027-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement	3.3
2007-CECI-556-01	Delaware Direct	19121	Subsurface Detention Basin	1.1
2009-MANT-1033-01	Lower Schuylkill River	19104	Subsurface Infiltration Basin	3.6
2009-PECO-1133-01	Lower Schuylkill River	19146	Subsurface Infiltration Basin	2.8
2009-TEMP-1096-01	Delaware Direct	19122	Subsurface Detention Basin	2.7
2006-SOLI-300-01	Delaware Direct	19149	Bioretention, Subsurface Infiltration Basin	2.0
2006-LAWT-291-01	Delaware Direct	19135	Subsurface Detention Basin	1.2
2008-CLAS-765-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.3
2012-LINC-2012-01	Delaware Direct	19148	Bioinfiltration, Porous Pavement	1.8
2009-PENN-1144-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Green Roof, Porous Pavement, Subsurface Detention Basin	0.4
2011-CONV-1491-01	Lower Schuylkill River	19107	Disconnected Impervious Area, Green Roof, Subsurface Detention Basin	0.3
2009-TDBA-1072-01	Delaware Direct	19149	Bioinfiltration, Disconnected Impervious Area, Subsurface Infiltration Basin	1.1
2008-2116-992-01	Lower Schuylkill River	19103	Bioretention, Disconnected Impervious Area, Green Roof, Surface Detention Basin	0.5
2011-PENN-1664-01	Lower Schuylkill River	19104	Porous Pavement	0.2
2011-KARA-1505-01	Lower Schuylkill River	19139	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	4.0
2010-4109-1277-01	Lower Schuylkill River	19104	Green Roof, Porous Pavement	0.2
2010-411W-1300-01	Delaware Direct	19122	Bioretention, Subsurface Detention Basin	0.2
2010-GEST-1346-01	Lower Schuylkill River	19131	Subsurface Detention Basin, Subsurface Infiltration Basin	1.1
2009-WOLC-1169-01	Tacony-Frankford Creek	19138	Bioinfiltration, Disconnected Impervious Area, Subsurface Detention Basin	1.7
2011-NEWN-1620-01	Delaware Direct	19123	Green Roof, Porous Pavement, Subsurface Infiltration Basin	0.9
2009-PARK-1197-01	Lower Schuylkill River	19104	Bioinfiltration, Disconnected Impervious Area	0.1
2005-0099-01	Lower Schuylkill River	19131	Surface Infiltration Basin	37.4
2011-CCTD-1535-01	Lower Schuylkill River	19139	Subsurface Infiltration Basin	1.0
2011-PROP-1483-01	Tacony-Frankford Creek	19144	Porous Pavement, Surface Infiltration Basin	1.5
2010-UNIV-1385-01	Lower Schuylkill River	19104	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	1.5
2010-STJO-1239-01	Lower Schuylkill River	19131	Bioinfiltration, Green Roof, Subsurface Infiltration Basin	1.0
2010-AGIL-1461-01	Delaware Direct	19121	Disconnected Impervious Area, Subsurface Infiltration Basin	1.4
2011-DIAM-1617-01	Delaware Direct	19140	Green Roof, Subsurface Detention Basin	0.4
2011-4240-1543-01	Lower Schuylkill River	19104	Subsurface Infiltration Basin	0.7
2011-DOLL-1636-01	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	0.3
2011-PROP-1662-01	Lower Schuylkill River	19130	Subsurface Infiltration Basin, Surface Infiltration Basin	3.7
2011-BOTT-1646-01	Tacony-Frankford Creek	19124	Bioretention, Subsurface Detention Basin	2.7
2010-PNKW-1360-01	Tacony-Frankford Creek	19140	Porous Pavement, Subsurface Infiltration Basin	2.3

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
2011-CHRI-1545-01	Delaware Direct	19147	Green Roof, Porous Pavement, Subsurface Infiltration Basin	1.0
2009-PRES-1037-01	Tacony-Frankford Creek	19150	Bioretention, Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	1.9
2009-PENN-1019-01	Lower Schuylkill River	19104	Bioretention, Subsurface Detention Basin	3.9
2009-TEMP-1077-01	Delaware Direct	19122	Bioretention, Porous Pavement, Subsurface Detention Basin	0.9
2009-CONG-1210-01	Delaware Direct	19133	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.8
2008-SHER-926-01	Delaware Direct	19122	Green Roof, Porous Pavement	0.2
2008-NORT-1012-01	Lower Schuylkill River	19104	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4
2011-3343-1653-01	Tacony-Frankford Creek	19144	Porous Pavement, Subsurface Infiltration Basin	0.7
2007-GAMB-701-01	Tacony-Frankford Creek	19124	Bioinfiltration, Disconnected Impervious Area, Porous Pavement	1.6
2010-EARL-1460-01	Lower Schuylkill River	19146	Disconnected Impervious Area, Subsurface Infiltration Basin	0.5
2007-SIMO-496-01	Tacony-Frankford Creek	19138	Bioinfiltration, Porous Pavement	0.5
2007-HERR-690-01	Delaware Direct	19147	Disconnected Impervious Area, Porous Pavement	0.6
2010-8828-1321-01	Pennypack Creek	19136	Subsurface Infiltration Basin	1.2
2009-WALM-1045-01	Delaware Direct	19148	Bioretention, WQ Treatment Device	8.0
2006-LE22-460-01	Delaware Direct	19123	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	0.7
2010-PSDC-1234-01	Delaware Direct	19147	Subsurface Infiltration Basin	1.1
2009-7149-1186-01	Delaware Direct	19135	Disconnected Impervious Area, Subsurface Infiltration Basin	0.4
2010-PHIL-1362-01	Delaware Direct	19148	Bioretention, Surface Detention Basin	0.9
2010-PASC-1238-01	Cobbs Creek	19142	Disconnected Impervious Area, Porous Pavement, Subsurface Infiltration Basin	2.0
2010-ESPE-1288-01	Tacony-Frankford Creek	19140	Subsurface Infiltration Basin	1.0
2009-PASC-1226-01	Cobbs Creek	19142	Porous Pavement, Subsurface Infiltration Basin	3.2
2006-PROG-400-01	Delaware Direct	19122	Subsurface Infiltration Basin	3.7
2008-DREX-788-01	Lower Schuylkill River	19104	Bioinfiltration, Porous Pavement, Subsurface Infiltration Basin	1.5
2009-2007-1090-01	Delaware Direct	19148	Subsurface Detention Basin	17.7
2010-ARCH-1393-01	Delaware Direct	19122	Disconnected Impervious Area, Green Roof	0.2
2010-BROA-1347-01	Tacony-Frankford Creek	19141	Subsurface Infiltration Basin	0.9
2009-NICE-1136-01	Tacony-Frankford Creek	19140	Bioretention, Subsurface Detention Basin	0.4
2009-FRAN-1130-01	Delaware Direct	19137	Disconnected Impervious Area, Subsurface Infiltration Basin	0.3
2009-THEM-1167-01	Delaware Direct	19121	Disconnected Impervious Area, Green Roof, Porous Pavement	0.4

Table A-2: Completed Public Green Stormwater Infrastructure Projects in the Combined Sewer System

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
20391	1056	Ashville/Ditman/Rhawn etal	1056-1	04-May-20	2462	11	15016	0.7	Tree Trench	Streets	$568,375		Delaware,Pennypack
			1056-2	04-May-20	4438		35325	1.2	Tree Trench	Streets			Delaware,Pennypack
			1056-3	04-May-20	2774		18962	0.8	Infiltration/Storage Trench	Streets			Delaware,Pennypack
20400	306	Ontario, "A" - Glenwood / Glenwood	306-1	24-Mar-17	820	9	5649	0.2	Tree Trench	Streets	$438,850		Delaware
			306-2	24-Mar-17	574		4468	0.2	Tree Trench	Streets			Delaware
			306-3	24-Mar-17	1287		9800	0.4	Tree Trench	Streets			Delaware
			306-4	24-Mar-17	1763		13602	0.5	Tree Trench	Streets			Delaware
			306-5	24-Mar-17	1000		7649	0.3	Tree Trench	Streets			Delaware
20422	517	Woodland / 56th	517-1	06-May-16	1684	5	6834	0.3	Tree Trench	Streets	$157,075		Schuylkill
			517-2	06-May-16	2394		14841	0.7	Tree Trench	Streets			Schuylkill
20439	584	Ellsworth / 20th etal	584-5	07-Nov-18	1527	10	10952	0.4	Tree Trench	Streets	$565,810		Delaware,Schuylkill
			584-3	07-Nov-18	1150		7510	0.3	Tree Trench	Streets			Delaware,Schuylkill
			584-2	07-Nov-18	1748		9933	0.5	Tree Trench	Streets			Delaware,Schuylkill
			584-1	07-Nov-18	1683		11673	0.5	Tree Trench	Streets			Delaware,Schuylkill
20443	411	Juniata : Cayuga/Claridge/Lawndale etal Ferko Playground	411-1	08-Dec-17	40348	0	314267	11.1	Infiltration/Storage Trench	Open Space	$2,986,660	Philadelphia Department of Parks & Recreation	TTF
20444	563	Corinthian / Fairmount	563-1	26-Mar-19	3779	5	38300	1.0	Tree Trench	Streets	$750,420		Delaware,Schuylkill
			563-2	26-Mar-19	3935		26900	1.1	Tree Trench	Streets			Delaware,Schuylkill
			563-3	26-Mar-19	2442		15570	0.7	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
			563-4	26-Mar-19	1382		8300	0.4	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
20456	994	Tulpehocken / Mansfield / Lowber / Duval / Johnson	994-3	14-Dec-17	1302	0	18023	0.4	Infiltration/Storage Trench	Streets	$541,420		TTF
			994-4	14-Dec-17	814		5955	0.2	Infiltration/Storage Trench	Streets			TTF
			994-2	14-Dec-17	1131		12066	0.3	Infiltration/Storage Trench	Streets			TTF
			994-1	14-Dec-17	3103		20470	0.9	Infiltration/Storage Trench	Streets			TTF
20458	1006	Bridge/Creston/Darrah/Penn	1006-1	23-Apr-18	1886	7	13429	0.5	Tree Trench	Streets	$1,198,900		Delaware
			1006-2	23-Apr-18	4702		27323	1.3	Infiltration/Storage Trench	Streets			Delaware
			1006-3	23-Apr-18	2459		13486	0.6	Tree Trench	Streets			Delaware
			1006-4	23-Apr-18	2122		13035	0.6	Tree Trench	Streets			Delaware
			1006-5	23-Apr-18	2299		18326	0.6	Infiltration/Storage Trench	Streets			Delaware
			1006-6	23-Apr-18	2855		29644	0.8	Infiltration/Storage Trench	Streets			Delaware
20461	1066	Frankford / Pacific / Wheatsheaf	1066-4	22-Aug-16	1093	0	10566	0.3	Infiltration/Storage Trench	Streets	$542,435		Delaware,TTF
			1066-3	22-Aug-16	1480		12140	0.4	Infiltration/Storage Trench	Streets			Delaware,TTF
			1066-6	22-Aug-16	1084		10525	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
			1066-1	22-Aug-16	588		5585	0.2	Infiltration/Storage Trench	Streets			Delaware,TTF
			1066-2	22-Aug-16	1112		8455	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
			1066-5	22-Aug-16	2400		19950	0.7	Infiltration/Storage Trench	Streets			Delaware,TTF
20475	1042	31st / 34th / 35th / Wharton	1042-2	09-Jul-21	844	9	7317	0.2	Tree Trench	Streets	$389,120		Schuylkill
			1042-1	06-Aug-21	1683		11415	0.5	Tree Trench	Streets			Schuylkill
20480	1266	Somerset / 7th	1266-1	05-Jun-20	3343	4	23625	0.9	Tree Trench	Streets	$213,925		Delaware
20489	1136	Angora / Cedar / Yewdall / 57th	1136-3	26-Feb-19	938	0	10264	0.3	Infiltration/Storage Trench	Streets	$403,050		Cobbs-Darby
			1136-1	26-Feb-19	2381		18021	0.7	Infiltration/Storage Trench	Streets			Cobbs-Darby
			1136-2	26-Feb-19	928		9772	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby
20490	1206	Wishart/Clementine/Elkhart/Helen/Jasper	1206-1	18-Jan-19	850	0	7010	0.2	Infiltration/Storage Trench	Streets	$309,780		Delaware
			1206-2	18-Jan-19	1194		6410	0.3	Infiltration/Storage Trench	Streets			Delaware
			1206-3	18-Jan-19	1172		12100	0.3	Infiltration/Storage Trench	Streets			Delaware
20497	1215	44th / Larchwood / Osage / Pine	1215-1	22-Nov-19	1437	4	7698	0.4	Tree Trench	Streets	$121,685		Schuylkill
20499	1248	Crease / Frankford / Mascher / Thompson / Girard	1248-1	26-May-21	1175	0	13673	0.3	Infiltration/Storage Trench	Streets	$258,235		Delaware
40224	240	PERCY STREET / WEBSTER STREET	240-1	18-Jul-11	657	0	4740	0.2	Pervious Paving	Streets	$48,283		Delaware
40330	289	Coral, Sergeant-Huntingdon / Sepviva, Susquehanna - Dauphin	289-18	27-Jan-10	38	17	0	0.0	Stormwater Tree	Streets	$209,000		Delaware
			289-12	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-13	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-14	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-15	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-11	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-17	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-6	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-16	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-10	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-9	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-7	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-5	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-4	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-3	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-2	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
			289-1	27-Jan-10	962		27425	0.3	Infiltration/Storage Trench	Streets			Delaware
			289-8	27-Jan-10	38		0	0.0	Stormwater Tree	Streets			Delaware
		Franklin Berks - Norris / Norris - Diamond /16th	234-1	24-Oct-13	601		8750	0.2	Tree Trench	Streets			Delaware
			234-2	24-Oct-13	1128		12500	0.3	Tree Trench	Streets			Delaware

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
40368	234	Street / Dauphin Street	234-3	24-Oct-13	525	32	7625	0.1	Tree Trench	Streets	$184,925		Delaware
			234-4	24-Oct-13	2343		16875	0.6	Tree Trench	Streets			Delaware
			234-5	24-Oct-13	2618		16875	0.7	Tree Trench	Streets			Delaware
40577	441	Wagner St.,12th - Broad; Rockland St., 11th - Broad	441-43	08-Apr-11	38	26	451	0.0	Stormwater Tree	Streets	$924,000		TTF
			441-22	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-25	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-26	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-27	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-31	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-38	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-39	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-21	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-42	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-28	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-44	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-45	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-41	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-5	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-32	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-17	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-1	08-Apr-11	480		15800	0.1	Infiltration/Storage Trench	Streets			TTF
			441-3	08-Apr-11	1902		73900	0.5	Infiltration/Storage Trench	Streets			TTF
			441-7	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-8	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-10	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-15	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-12	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-13	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-14	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-11	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
			441-2	08-Apr-11	3160		89150	0.9	Infiltration/Storage Trench	Streets			TTF
			441-16	08-Apr-11	38		451	0.0	Stormwater Tree	Streets			TTF
40599	233	Belgrade / Crease / Marlborough	233-1	20-Dec-12	847	1	9750	0.2	Infiltration/Storage Trench	Streets	$26,835		Delaware
			233-2	20-Dec-12	416		4950	0.1	Infiltration/Storage Trench	Streets			Delaware
40607	235	Northern Liberties Flood Relief	235-4	15-Jul-16	791	13	6035	0.2	Tree Trench	Streets	$226,849		Delaware
			235-2	15-Jul-16	530		7749	0.1	Tree Trench	Streets			Delaware
40659	207	Waterview Rec Center Stormwater Management Improvements	207-1	01-Jul-08	1751	8	12336	0.5	Pervious Paving, Tree Trench	Streets	$50,000	Pennsylvania Horticulture Society,Philadelphia Department of Recreation	TTF
			207-2	01-Jul-08	42		516	0.0	Planter	Streets			TTF
			207-3	01-Jul-08	42		516	0.0	Planter	Streets			TTF
40662	218	Green Streets Pilot Project - Passyunk Avenue Locations	218-3	05-Mar-13	5137	0	28557	1.3	Bumpout	Streets	$0	Philadelphia Streets Department	Schuylkill
40669	331	Hope St. / 2nd St. / Hancock St.	331-1	08-Feb-16	1274	0	10490	0.4	Pervious Paving	Streets	$228,735		Delaware
40713	288	Mole. Webster, Rodman	288-1	15-Aug-18	1079	6	8924	0.3	Pervious Paving	Streets	$145,625		Delaware
40750	304	Adams / Church / Penn	304-1	09-Mar-20	710	1	6990	0.2	Tree Trench	Streets	$309,294		TTF
			304-2	09-Mar-20	1184		9412	0.3	Infiltration/Storage Trench	Streets			TTF
40755	305	Ellsworth / Federal / Wharton	305-1	25-Sep-19	1594	2	12083	0.4	Tree Trench	Streets	$226,750	Philadelphia Department of Parks & Recreation	Delaware
			305-2	25-Sep-19	1251		8501	0.3	Infiltration/Storage Trench	Streets			Delaware
40771	301	Dauphin / Sepviva etal	301-1	26-Aug-15	1588	10	11285	0.4	Pervious Paving	Streets	$133,192		Delaware
			301-2	26-Aug-15	1444		9570	0.4	Tree Trench	Streets			Delaware
			301-3	26-Aug-15	1598		9567	0.4	Pervious Paving	Streets			Delaware
40773	469	Galloway/Roseberry etal	469-1	13-Jun-18	1312	5	8458	0.4	Tree Trench	Streets	$107,500		Delaware
40784	406	Conestoga / Thompson	406-1	25-Nov-19	902	0	8143	0.2	Infiltration/Storage Trench	Streets	$169,388		Schuylkill
			406-2	25-Nov-19	1067		8143	0.3	Infiltration/Storage Trench	Streets			Schuylkill
40795	443	Cobbs Creek GSI	443-12	10-Jul-19	3177	58	17587	0.8	Bumpout, Infiltration/Storage Trench	Streets	$3,500,000	Philadelphia Department of Parks & Recreation	Cobbs-Darby
			443-13	10-Jul-19	3428		26473	0.9	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby
			443-14	11-Jun-20	8390		59167	2.3	Basin, Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
			443-15	11-Jun-20	1902		13462	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
			443-17	11-Jun-20	573		3971	0.2	Infiltration/Storage Trench	Streets			Cobbs-Darby
			443-11	10-Jul-19	2017		12279	0.6	Infiltration/Storage Trench	Streets			Cobbs-Darby
			443-3	11-Jun-20	1897		11861	0.5	Infiltration/Storage Trench	Streets			Cobbs-Darby
			443-18	11-Jun-20	1467		12601	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby
			443-16	11-Jun-20	2135		15434	0.6	Rain Garden	Open Space			Cobbs-Darby
			443-10	10-Jul-19	4738		28761	1.3	Tree Trench	Streets			Cobbs-Darby
			443-9	10-Jul-19	4196		25258	1.2	Tree Trench	Streets			Cobbs-Darby
			443-8	10-Jul-19	2390		14390	0.7	Tree Trench	Streets			Cobbs-Darby

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
			443-7	10-Jul-19	1008		7469	0.3	Rain Garden	Open Space			Cobbs-Darby
			443-6	11-Jun-20	3917		19037	0.9	Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
			443-4	11-Jun-20	1862		11479	0.5	Infiltration/Storage Trench	Streets			Cobbs-Darby
			443-1	11-Jun-20	2233		23735	0.6	Rain Garden	Open Space			Cobbs-Darby
			443-5	11-Jun-20	4533		29165	1.2	Infiltration/Storage Trench, Rain Garden	Open Space			Cobbs-Darby
40796	1086	Sepviva Street	1086-15	27-Dec-12	38	35	0	0.0	Stormwater Tree	Streets	$149,827		Delaware
			1086-25	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-24	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-23	27-Dec-12	28		0	0.0	Stormwater Tree	Streets			Delaware
			1086-22	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-21	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-7	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-20	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-27	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-19	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-18	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-17	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-16	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-26	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-5	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-1	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-2	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-9	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-4	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-14	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-6	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-8	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-10	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-11	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-12	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-13	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
			1086-3	27-Dec-12	38		0	0.0	Stormwater Tree	Streets			Delaware
40798	518	Ludlow / Hirst / Robinson	518-1	16-Jul-20	835	28	10503	0.2	Infiltration/Storage Trench	Streets	$620,215		Cobbs-Darby
			518-2	16-Jul-20	932		7125	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby
			518-3	16-Jul-20	661		8010	0.2	Infiltration/Storage Trench	Streets			Cobbs-Darby
			518-4	16-Jul-20	923		10990	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby
40799	556	Cleveland/Gratz/Greene/Roberts	556-1	01-Nov-18	2884	0	17137	0.8	Infiltration/Storage Trench	Streets	$143,646		TTF
			556-2	01-Nov-18	1433		18558	0.4	Infiltration/Storage Trench	Streets			TTF
40816	554	Weikel / Witte / Gaul	554-5	07-Jan-19	638	5	5024	0.2	Infiltration/Storage Trench	Streets	$638,040		Delaware
			554-1	07-Jan-19	3795		15770	0.7	Tree Trench	Streets			Delaware
			554-7	07-Jan-19	787		8869	0.2	Infiltration/Storage Trench	Streets			Delaware
			554-6	07-Jan-19	1058		8777	0.3	Infiltration/Storage Trench	Streets			Delaware
			554-3	07-Jan-19	1714		12759	0.5	Infiltration/Storage Trench	Streets			Delaware
			554-2	07-Jan-19	2350		14170	0.6	Stormwater Tree, Tree Trench	Streets			Delaware
			554-4	07-Jan-19	653		5040	0.2	Tree Trench	Streets			Delaware
40817	1293	C/F/Mayfield/Rosehill/Hartville	1293-3	29-Jan-18	2271	0	24784	0.6	Infiltration/Storage Trench	Streets	$272,190		Delaware
			1293-1	29-Jan-18	565		5510	0.2	Infiltration/Storage Trench	Streets			Delaware
			1293-2	29-Jan-18	1260		11681	0.3	Infiltration/Storage Trench	Streets			Delaware
40821	504	9th / Mifflin / Pierce	504-2	19-Dec-18	1194	2	7456	0.3	Tree Trench	Streets	$782,150		Delaware
40828	657	Brandywine / Green / Melon / North	657-1	07-Jun-17	1217	2	14684	0.3	Tree Trench	Streets	$112,670		Delaware
40829	990	Galloway / Orianna / Leithgow	990-1	27-Sep-19	1255	0	10300	0.3	Infiltration/Storage Trench	Streets	$249,338		Delaware
			990-2	27-Sep-19	635		7300	0.2	Infiltration/Storage Trench	Streets			Delaware
40844	989	Master / Wanamaker / Hobart	989-1	03-Jul-19	2670	0	26356	0.7	Infiltration/Storage Trench	Streets	$206,840		Schuylkill
			989-2	15-Oct-20	1919		22100	0.5	Infiltration/Storage Trench	Streets			Schuylkill
40862	1064	8th / 12th / Lemon / North	1064-1	27-May-20	2068	6	13849	0.6	Tree Trench	Streets	$262,513		Delaware
			1064-2	27-May-20	1583		10158	0.4	Infiltration/Storage Trench	Streets			Delaware
40863	1010	Bouvier / Monument / Willington / 17th	1010-4	03-Jun-19	530	3	4401	0.1	Infiltration/Storage Trench	Streets	$477,220		Delaware
			1010-3	03-Jun-19	1334		7755	0.4	Infiltration/Storage Trench	Streets			Delaware
			1010-2	03-Jun-19	1109		7994	0.3	Infiltration/Storage Trench	Streets			Delaware
			1010-1	03-Jun-19	1788		12722	0.5	Infiltration/Storage Trench	Streets			Delaware
			1010-5	03-Jun-19	2034		10011	0.5	Tree Trench	Streets			Delaware
40865	1057	Crowson / Stokes / Woodlawn	1057-3	30-Aug-18	822	0	8615	0.2	Infiltration/Storage Trench	Streets	$526,525		TTF
			1057-6	30-Aug-18	504		5397	0.1	Infiltration/Storage Trench	Streets			TTF
			1057-4	30-Aug-18	829		11407	0.2	Infiltration/Storage Trench	Streets			TTF
			1057-2	30-Aug-18	675		7054	0.2	Infiltration/Storage Trench	Streets			TTF
			1057-1	30-Aug-18	1034		8546	0.3	Infiltration/Storage Trench	Streets			TTF
			1057-5	30-Aug-18	1572		17157	0.4	Infiltration/Storage Trench	Streets			TTF

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
40866	1065	Creighton / Spring / Vogdes / Race	1065-1	17-Sep-21	1462	0	12702	0.4	Infiltration/Storage Trench	Streets	$124,545		Cobbs-Darby
40891	1062	Wynnefield, Monument - 170' W. of 50th	1062-6	25-May-17	809	13	7867	0.2	Tree Trench	Streets	$651,725		Schuylkill
			1062-2	25-May-17	1859		14535	0.5	Tree Trench	Streets			Schuylkill
			1062-7	25-May-17	5458		34462	1.5	Tree Trench	Streets			Schuylkill
			1062-5	25-May-17	3276		18527	0.9	Tree Trench	Streets			Schuylkill
			1062-4	25-May-17	2926		26365	0.8	Tree Trench	Streets			Schuylkill
			1062-3	25-May-17	2184		26430	0.6	Infiltration/Storage Trench	Streets			Schuylkill
40900	1058	Medary Avenue from 13th Street to Broad Street	1058-1	31-May-16	1605	0	14570	0.4	Infiltration/Storage Trench	Streets	$160,831		TTF
			1058-2	31-May-16	868		7188	0.2	Infiltration/Storage Trench	Streets			TTF
40903	656	Market / 43rd / Ludlow / 45th	656-1	07-Sep-16	541	3	6412	0.1	Tree Trench	Streets	$71,290		Schuylkill
40906	1246	Church / Orchard / Ruan / Salem	1246-1	12-Mar-20	867	0	6189	0.2	Infiltration/Storage Trench	Streets	$118,200		TTF
40918	1149	Loudon / Carlisle	1149-1	28-Sep-17	1379	0	15256	0.4	Infiltration/Storage Trench	Streets	$131,760		TTF
			1149-2	28-Sep-17	572		6334	0.2	Infiltration/Storage Trench	Streets			TTF
40928	1275	SR1026 Section H04	1275-1	06-Sep-19	3521	28	20561	0.9	Tree Trench	Streets	Unknown		TTF
			1275-6	06-Sep-19	2578		13808	0.6	Tree Trench	Streets			TTF
			1275-5	06-Sep-19	1083		6140	0.3	Tree Trench	Streets			TTF
			1275-4	06-Sep-19	2520		19780	0.7	Tree Trench	Streets			TTF
			1275-2	06-Sep-19	5371		30104	1.4	Tree Trench	Streets			TTF
			1275-3	06-Sep-19	1731		9173	0.4	Tree Trench	Streets			TTF
40938	1423	I-95 Section AF1	1423-1	04-Aug-20	2133	0	27248	0.6	Infiltration/Storage Trench	Streets	Unknown	-	Delaware
			1423-2	04-Aug-20	1897		15559	0.5	Infiltration/Storage Trench	Streets			Delaware
50001	14	Passyunk Square Model Neighborhood	14-1	17-Sep-13	1977	0	19690	0.5	Infiltration/Storage Trench, Rain Garden	Streets	$873,261	Department of Recreation,Passyunk Square Civic Association	Delaware
	15		15-2	17-Sep-13	1536	4	12320	0.4	Tree Trench	Streets		Passyunk Square Civic Association	Delaware
	16		16-1	17-Sep-13	1112	5	9400	0.3	Tree Trench	Streets		Department of Recreation,Passyunk Square Civic Association,South Philadelphia Older Adult Center	Delaware
	162		162-1	17-Sep-13	604	13	5030	0.2	Bumpout, Tree Trench	Streets		Department of Recreation	Delaware,Schuylkill
			162-2	17-Sep-13	1236		11550	0.3	Bumpout, Tree Trench	Streets			Delaware,Schuylkill
			162-3	17-Sep-13	2041		17740	0.6	Tree Trench	Streets			Delaware,Schuylkill
			162-4	17-Sep-13	1316		7620	0.4	Tree Trench	Streets			Delaware,Schuylkill
	313		313-1	17-Sep-13	1452	0	11620	0.4	Infiltration/Storage Trench	Streets		Department of Recreation,Passyunk Square Civic Association,South Philadelphia Older Adult Center	Delaware
50002	8	New Kensington Model Neighborhood	8-2	04-Nov-11	1681	3	21310	0.5	Rain Garden	Streets	$173,494	Department of Recreation,New Kensington Community Development Corporation,Pennsylvania Horticulture Society	Delaware
			8-1	04-Nov-11	1705		27810	0.5	Tree Trench	Streets			Delaware
50003	12	Northern Liberties Model Neighborhood	12-1	08-Feb-13	163	7	4239	0.0	Infiltration/Storage Trench, Planter	Streets	$454,930	City Play,Mural Arts Program,Northern Liberties Neighborhood Association	Delaware
			12-2	08-Feb-13	11		3148	0.0	Planter	Streets			Delaware
			12-3	08-Feb-13	336		6346	0.1	Tree Trench	Streets			Delaware
			12-4	08-Feb-13	479		3088	0.1	Tree Trench	Streets			Delaware
	91		91-1	08-Feb-13	1463	7	15630	0.4	Bumpout, Tree Trench	Streets		Northern Liberties Neighborhood Association	Delaware
50005	1	Green Street Project in 16th Street	1-2	10-Nov-10	1280	6	12625	0.4	Tree Trench	Streets	$402,396	Pennsylvania Horticulture Society	Delaware
			1-3	10-Nov-10	600		9480	0.2	Tree Trench	Streets			Delaware
			1-1	10-Nov-10	1676		22419	0.5	Tree Trench	Streets			Delaware
	9		9-1	10-Nov-10	494	5	2805	0.1	Tree Trench	Streets		New Kensington Community Development Corporation,Pennsylvania Horticulture Society	Delaware
			9-2	10-Nov-10	779		6445	0.2	Tree Trench	Streets			Delaware
	18		18-1	10-Nov-10	609	8	14735	0.2	Tree Trench	Streets			Schuylkill
50006	187	Columbus Square Park Infrastructure Demonstration Project	187-2	26-May-10	20	0	77	0.0	Planter	Streets	$65,506	Department of Public Property,Department of Recreation,Friends of Columbus Square	Delaware
			187-3	26-May-10	882		7754	0.2	Infiltration/Storage Trench, Planter	Streets			Delaware
			187-1	26-May-10	20		77	0.0	Planter	Streets			Delaware
50007	21	Blue Bell Inn Triangle Stormwater Improvements	21-1	31-Oct-13	2066	12	25911	0.6	Swale	Streets	$278,349	Fairmount Park Commission,Pennsylvania Horticulture Society,Philadelphia Department of Parks & Recreation	Cobbs-Darby
50009	20	Queen Lane Bumpouts	20-10	14-May-11	1357	13	13408	0.4	Tree Trench	Streets	Unknown		TTF
50010	19	Barry Playground - Tree Trenches	19-1	14-Oct-13	2777	36	29944	0.8	Tree Trench	Streets	$975,008	Department of Recreation	Schuylkill
			19-2	14-Oct-13	3979		26313	1.1	Tree Trench	Streets			Schuylkill
			19-3	14-Oct-13	2180		15580	0.6	Tree Trench	Streets			Schuylkill
			19-4	14-Oct-13	4463		23743	1.1	Tree Trench	Streets			Schuylkill
			19-5	14-Oct-13	2745		13392	0.6	Tree Trench	Streets			Schuylkill
50011	194	N. 3rd St and Wildey St	194-1	01-Jun-09	849	24	8000	0.2	Rain Garden	Open Space	$22,236	Northern Liberties Neighborhood Association,Pennsylvania Department of Environmental Protection,Pennsylvania Horticulture Society,Philadelphia Department of Parks & Recreation	Delaware
50012	186	Cliveden Park Extended Detention	186-1	01-Oct-07	876	0	27146	0.2	Rain Garden	Open Space	$175,000	Pennsylvania Department of Environmental Protection,Pennsylvania Horticulture Society,Philadelphia Department of Parks & Recreation	TTF
			186-2	01-Oct-07	3687		25209	1.0	Rain Garden	Open Space			TTF
50013	208	West Mill Creek Stormwater Tree Trench	208-1	01-Jul-06	311	4	10646	0.1	Tree Trench	Streets	$66,050	Pennsylvania Department of Environmental Protection,Pennsylvania Horticulture Society,Philadelphia Department of Recreation	Schuylkill
			208-2	01-Jul-06	456		5402	0.1	Tree Trench	Streets			Schuylkill
			208-3	01-Jul-06	63		1297	0.0	Pervious Paving	Streets			Schuylkill
50014	181	47th and Grays Ferry Rain Garden	181-1	01-Apr-07	1260	7	19200	0.3	Rain Garden	Vacant Land	$16,000	Pennsylvania Department of Environmental Protection,Pennsylvania Horticulture Society,University City Green	Schuylkill

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50015	185	Clark Park Stormwater Bed	185-1	01-Nov-07	3080	0	32517	0.8	Infiltration/Storage Trench	Open Space		Pennsylvania Department of Environmental Protection,Pennsylvania Department of Conservation & Natural Resources,Philadelphia Department of Parks & Recreation	Schuylkill
50016	196	Mill Creek Farm	196-1	01-May-06	360	4	13942	0.1	Rain Garden, Swale	Streets	$57,850	Pennsylvania Department of Environmental Protection,Philadelphia Water Department,Pennsylvania Horticulture Society	Schuylkill
50019	17	Anna B. Day School, Epiphany of Our Lord, Francis Scott, Dickinson Sq	17-1	25-Nov-14	2635	5	19500	0.7	Bumpout, Infiltration/Storage Trench	Streets	$948,139	Department of Recreation,Friends of Dickinson Park,Southeastern Transportation Authority	Delaware
			17-2	25-Nov-14	1015		8375	0.3	Tree Trench	Streets			Delaware
	79		79-1	25-Nov-14	619	1	4200	0.2	Infiltration/Storage Trench	Streets		Lower Moyamensing Civic Association	Delaware
	81		81-2	25-Nov-14	1374	2	9900	0.4	Infiltration/Storage Trench	Streets			Delaware
			81-1	25-Nov-14	1606		14400	0.4	Tree Trench	Streets			Delaware
	154		154-1	25-Nov-14	1853	15	15900	0.5	Tree Trench	Streets		Tookany/Tacony-Frankford Watershed Partnership	TTF
			154-2	25-Nov-14	2754		18600	0.8	Tree Trench	Streets			TTF
			154-3	25-Nov-14	2349		21000	0.6	Tree Trench	Streets			TTF
			154-4	25-Nov-14	2926		17400	0.8	Tree Trench	Streets			TTF
50020	2	Welsh and Wakisha School	2-1	23-Apr-13	989	7	14410	0.3	Infiltration/Storage Trench, Rain Garden	Streets	$679,023	Pennsylvania Horticulture Society	Delaware
			2-2	23-Apr-13	828		9009	0.2	Tree Trench	Streets			Delaware
	157		157-1	23-Apr-13	900	19	9745	0.2	Tree Trench	Streets		Department of Recreation	Delaware
			157-2	23-Apr-13	1234		11750	0.3	Tree Trench	Streets			Delaware
			157-3	23-Apr-13	943		10317	0.3	Tree Trench	Streets			Delaware
	245		245-1	23-Apr-13	974	7	9178	0.3	Tree Trench	Streets		Pennsylvania Horticulture Society	Delaware
	296		296-1	23-Apr-13	1034	4	8242	0.3	Tree Trench	Streets			Delaware
	312		312-1	23-Apr-13	1183	7	11775	0.3	Tree Trench	Streets		Department of Recreation	Delaware
			312-2	23-Apr-13	1130		12282	0.3	Tree Trench	Streets			Delaware
50022	13	Madison Park	13-1	16-Dec-11	402	13	7015	0.1	Infiltration/Storage Trench	Open Space	$99,412	City Play,Digsau,Northern Liberties Neighborhood Association,Philadelphia Department of Parks & Recreation	Delaware
50023	192	Herron Playground porous basketball court	192-2	02-Oct-12	2150	12	8024	0.4	Pervious Paving	Open Space	$190,959	Philadelphia Capital Program Office,Philadelphia Department of Parks & Recreation	Delaware
			192-1	02-Oct-12	539		6456	0.1	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50024	170	Work in Shissler Playground Blair and Hewson Street	170-2	10-Oct-10	1500	4	8920	0.4	Tree Trench	Open Space	$50,000	New Kensington Community Development Corporation,Pennsylvania Horticulture Society,Philadelphia Department of Parks & Recreation	Delaware
			170-1	10-Oct-10	1533		8680	0.4	Infiltration/Storage Trench	Open Space			Delaware
50025	223	A.S. Jenks School, Sacks Playground, Smith Elementary, St. Thomas Aquinas	223-1	22-Oct-13	1684	18	11440	0.5	Tree Trench	Streets	$1,149,933	Lower Moyamensing Civic Association	Delaware
			223-2	22-Oct-13	1690		11080	0.5	Tree Trench	Streets			Delaware
	224		224-1	22-Oct-13	2813	12	18245	0.8	Tree Trench	Streets			Delaware
			224-2	22-Oct-13	1625		11475	0.4	Tree Trench	Streets			Delaware
			224-3	22-Oct-13	2131		18055	0.6	Tree Trench	Streets			Delaware
	227		227-3	22-Oct-13	1588	18	14420	0.4	Tree Trench	Streets			Schuylkill
			227-1	22-Oct-13	1843		14650	0.5	Tree Trench	Streets			Schuylkill
			227-2	22-Oct-13	1291		13100	0.4	Tree Trench	Streets			Schuylkill
50026	210	Daroff School, Shepard Rec Center, Sayre School, Andrew Hamilton School	210-2	13-Dec-12	3420	42	23566	0.9	Tree Trench	Streets	$1,658,770	Pennsylvania Environmental Council	Cobbs-Darby
			210-3	13-Dec-12	2828		21866	0.8	Tree Trench	Streets			Cobbs-Darby
			210-1	13-Dec-12	2048		19288	0.6	Infiltration/Storage Trench	Streets			Cobbs-Darby
	211		211-2	13-Dec-12	3818	27	18126	0.8	Planter, Tree Trench	Streets			Schuylkill
			211-3	13-Dec-12	2799		19261	0.8	Tree Trench	Streets			Schuylkill
			211-1	13-Dec-12	2765		26775	0.8	Bumpout, Tree Trench	Streets			Schuylkill
	216		216-1	13-Dec-12	4551	14	44332	1.3	Tree Trench	Streets			Cobbs-Darby
	231		231-2	13-Dec-12	4884	39	32655	1.3	Bumpout, Planter, Tree Trench	Streets			Cobbs-Darby,Schuylkill
			231-3	13-Dec-12	2915		26662	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			231-1	13-Dec-12	2511		20079	0.7	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50027	59	Samuel Huey School, Bryant School, Christy Rec Center,	59-1	23-Nov-12	3251	5	22684	0.9	Tree Trench	Streets	$951,600	Pennsylvania Environmental Council	Cobbs-Darby
	212		212-1	23-Nov-12	2786	15	19256	0.8	Tree Trench	Streets			Cobbs-Darby
			212-2	23-Nov-12	1507		9663	0.4	Tree Trench	Streets			Cobbs-Darby
			212-3	23-Nov-12	886		5639	0.2	Tree Trench	Streets			Cobbs-Darby
	213		213-1	23-Nov-12	1103	19	6897	0.3	Tree Trench	Streets		Department of Recreation,Pennsylvania Environmental Council	Cobbs-Darby
			213-2	23-Nov-12	1771		13068	0.5	Tree Trench	Streets			Cobbs-Darby
			213-3	23-Nov-12	2582		23042	0.7	Tree Trench	Streets			Cobbs-Darby
	214		214-1	23-Nov-12	753	11	4491	0.2	Tree Trench	Streets			Cobbs-Darby
			214-2	23-Nov-12	2052		14873	0.6	Tree Trench	Streets			Cobbs-Darby
	215		215-2	23-Nov-12	3886	16	27638	1.1	Tree Trench	Streets		Pennsylvania Environmental Council	Cobbs-Darby
			215-1	23-Nov-12	2534		17794	0.7	Tree Trench	Streets			Cobbs-Darby
50028	175	Phila. Military Academy/MLK Rec Center/FD Elementary /Towey Rec Center	175-1	24-Dec-12	5051	20	32100	1.4	Tree Trench	Streets	$605,624		Delaware
	176		176-1	24-Dec-12	2401	14	20275	0.7	Tree Trench	Streets			Delaware
	177		177-1	24-Dec-12	3800	10	15260	0.7	Tree Trench	Streets			Delaware
			177-2	24-Dec-12	3390		26780	0.9	Tree Trench	Streets			Delaware
	178		178-1	24-Dec-12	2904	6	14970	0.7	Tree Trench	Streets		Fairmount Park Commission,Pennsylvania Horticulture Society	Delaware
			178-2	24-Dec-12	1348		5830	0.3	Tree Trench	Streets			Delaware
	147		147-1	10-May-13	709	32	11554	0.2	Infiltration/Storage Trench	Streets		Department of Recreation	TTF
			179-7	10-May-13	1518		9700	0.4	Tree Trench	Streets			TTF

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50029	179	Morris Leeds School, Pleasant Playground, Simons Rec. Center	179-14	10-May-13	1974	80	12925	0.5	Tree Trench	Streets	$1,151,670		TTF
			179-13	10-May-13	2387		16800	0.7	Tree Trench	Streets			TTF
			179-12	10-May-13	1443		20230	0.4	Tree Trench	Streets			TTF
			179-11	10-May-13	2499		17475	0.7	Tree Trench	Streets			TTF
			179-10	10-May-13	1337		10000	0.4	Tree Trench	Streets			TTF
			179-8	10-May-13	1700		10580	0.5	Tree Trench	Streets			TTF
			179-6	10-May-13	3805		27780	1.0	Tree Trench	Streets			TTF
			179-5	10-May-13	4188		26850	1.2	Tree Trench	Streets			TTF
			179-4	10-May-13	2778		21150	0.8	Tree Trench	Streets			TTF
			179-3	10-May-13	2586		19642	0.7	Tree Trench	Streets			TTF
			179-2	10-May-13	1950		13900	0.5	Tree Trench	Streets			TTF
			179-1	10-May-13	1473		13000	0.4	Tree Trench	Streets			TTF
			179-9	10-May-13	1532		9716	0.4	Tree Trench	Streets			TTF
50030	171	KendertonField, Cecil B.Moore, Congeso de Latinos, HM Stanton School	171-1	27-Sep-18	1528	11	10450	0.4	Tree Trench	Streets	$1,428,730	Fairmount Park Commission,Pennsylvania Horticulture Society	Delaware
			171-2	27-Sep-18	1238		12340	0.3	Tree Trench	Streets			Delaware
			171-3	27-Sep-18	2356		18240	0.6	Tree Trench	Streets			Delaware
	172		172-1	27-Sep-18	3921	14	22760	0.9	Bumpout, Tree Trench	Streets			Delaware
			172-2	27-Sep-18	3573		14350	0.7	Bumpout, Tree Trench	Streets			Delaware
			172-3	27-Sep-18	1721		17400	0.5	Bumpout, Tree Trench	Streets			Delaware
			172-4	27-Sep-18	1534		9415	0.4	Tree Trench	Streets			Delaware
			172-5	27-Sep-18	1943		16620	0.5	Infiltration/Storage Trench	Streets			Delaware
	173		173-2	27-Sep-18	1276	5	9155	0.4	Tree Trench	Streets			Delaware
			173-1	27-Sep-18	1152		7764	0.3	Tree Trench	Streets			Delaware
50031	123	58th St. Connector -Greenway Ave.	123-1	15-Jan-13	1705	7	15500	0.5	Rain Garden	Streets	$368,321		Cobbs-Darby,Schuylkill
			123-2	15-Jan-13	1672		16500	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			123-3	15-Jan-13	1534		14000	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
50032	180	PHS Tree Trenches	180-1	05-Nov-11	646	4	4829	0.2	Tree Trench	Streets	$0	Pennsylvania Horticulture Society	Delaware
	324		324-1	05-Nov-11	768	3	6930	0.2	Tree Trench	Streets			Delaware
	325		325-1	05-Nov-11	1088	4	9361	0.3	Tree Trench	Streets			Delaware
	326		326-1	05-Nov-11	1047	6	17972	0.3	Tree Trench	Streets			Delaware
	327		327-1	05-Nov-11	1029	4	9100	0.3	Tree Trench	Streets			Delaware
	342		342-1	05-Nov-11	1292	4	12538	0.4	Tree Trench	Streets			Delaware
50033	46	Lancaster Ave 59th to 62nd Tree Trenches	46-1	01-Nov-10	2075	17	24351	0.6	Tree Trench	Streets		Environmental Protection Agency,Philadelphia Department of Commerce,Philadelphia Industrial Development Corporation	Schuylkill
			46-2	01-Nov-10	782		6085	0.2	Bumpout	Streets			Schuylkill
			46-3	01-Nov-10	1470		19851	0.4	Rain Garden, Swale	Streets			Schuylkill
			46-4	01-Nov-10	3953		19914	0.9	Swale	Streets			Schuylkill
50034	10	Trenton and Norris, Thompson and Columbia	10-1	20-Sep-13	3428	4	30600	0.9	Bumpout, Tree Trench	Streets	$580,829	New Kensington Community Development Corporation,Pennsylvania Horticulture Society	Delaware
			10-2	20-Sep-13	493		4305	0.1	Tree Trench	Streets			Delaware
	88		88-1	20-Sep-13	2738	1	19573	0.8	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
			88-2	20-Sep-13	1128		11370	0.3	Tree Trench	Streets			Delaware
50035	45	Ben Franklin Parkway Tree Trenches	45-1	01-Jun-11	1011	0	10275	0.3	Infiltration/Storage Trench	Streets	$215,600	Fairmount Park Commission	Schuylkill
			45-2	01-Jun-11	852		8580	0.2	Infiltration/Storage Trench	Streets			Schuylkill
			45-3	01-Jun-11	1698		10750	0.5	Infiltration/Storage Trench	Streets			Schuylkill
50036	50	29th / Cambria / William Cramp / Barton / Hunting Park	50-1	25-Apr-14	3353	0	27710	0.9	Bumpout, Infiltration/Storage Trench	Streets	$622,989	Philadelphia Department of Parks & Recreation	Delaware,Schuylkill
	228		228-1	25-Apr-14	1189	2	9000	0.3	Tree Trench	Streets			Delaware
	277		277-1	25-Apr-14	3380	11	24155	0.9	Tree Trench	Streets			Delaware
			277-2	25-Apr-14	1500		12410	0.4	Tree Trench	Streets			Delaware
	278		278-1	25-Apr-14	4885	5	38500	1.3	Tree Trench	Streets			TTF
50037	250	Cassidy/Overbrook/Shoemaker/Cathedral/Durham/sister Clara/James Rhoads/Belmont	250-3	09-Sep-13	1561	29	10846	0.4	Tree Trench	Streets	$1,547,000		Schuylkill
			250-1	09-Sep-13	2261		18471	0.6	Tree Trench	Streets			Schuylkill
			250-2	09-Sep-13	2675		18441	0.7	Tree Trench	Streets			Schuylkill
	251		251-1	09-Sep-13	3614	13	24384	1.0	Tree Trench	Streets			Schuylkill
	252		252-1	09-Sep-13	1467	15	13591	0.4	Tree Trench	Streets			Schuylkill
			252-2	09-Sep-13	1466		12816	0.4	Tree Trench	Streets			Schuylkill
	253		253-1	09-Sep-13	2989	39	25169	0.8	Tree Trench	Streets			Schuylkill
			253-2	09-Sep-13	1288		7139	0.3	Tree Trench	Streets			Schuylkill
			253-3	09-Sep-13	2818		24735	0.8	Tree Trench	Streets			Schuylkill
	254		254-1	09-Sep-13	1488	4	10856	0.4	Tree Trench	Streets			Schuylkill
			254-2	09-Sep-13	1809		12895	0.5	Tree Trench	Streets			Schuylkill
	255		255-1	09-Sep-13	3159	9	25200	0.9	Tree Trench	Streets			Cobbs-Darby
			255-2	09-Sep-13	2617		16941	0.7	Tree Trench	Streets			Cobbs-Darby
	256		256-1	09-Sep-13	3189	3	26530	0.9	Tree Trench	Streets			Schuylkill
	257		257-1	09-Sep-13	2921	12	25301	0.8	Tree Trench	Streets			Schuylkill
50038	247	Donald/Wilson/Vare/StephenGirard/Southwark/	247-1	16-May-13	3566	7	22487	1.0	Tree Trench	Streets	$1,335,859	Department of Public Property	Schuylkill
	258		258-1	16-May-13	3728	23	29513	1.0	Tree Trench	Streets			Schuylkill
	259		259-1	16-May-13	6155	18	36925	1.7	Tree Trench	Streets			Schuylkill
			259-2	16-May-13	2778		18585	0.8	Tree Trench	Streets			Schuylkill

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction	Partner(s)	Watershed
	260	Markward/Cherry/JulianAbele	260-1	16-May-13	2991	20	20104	0.8	Tree Trench	Streets			Schuylkill
			260-2	16-May-13	1480		12124	0.4	Tree Trench	Streets			Schuylkill
	261		261-1	16-May-13	1604	6	9315	0.4	Tree Trench	Streets			Schuylkill
	262		262-1	16-May-13	2029	4	16658	0.6	Tree Trench	Streets			Delaware
50039	268	Temple / William Gray / Dick Elementary / Parking Lot 12th and Diamond	268-2	01-Aug-14	1495	9	10533	0.4	Infiltration/Storage Trench	Streets	$888,878		Delaware
			268-3	01-Aug-14	1015		9303	0.3	Tree Trench	Streets			Delaware
			268-1	01-Aug-14	1715		19110	0.5	Tree Trench	Streets			Delaware
	269		269-1	01-Aug-14	1601	21	12063	0.4	Tree Trench	Streets			Delaware
			269-2	01-Aug-14	1776		12435	0.5	Tree Trench	Streets			Delaware
			269-3	01-Aug-14	1303		7645	0.4	Tree Trench	Streets			Delaware
			269-4	01-Aug-14	1402		8187	0.4	Tree Trench	Streets			Delaware
			269-5	01-Aug-14	1605		8014	0.4	Tree Trench	Streets			Delaware
	270		270-1	01-Aug-14	3933	11	14265	0.7	Tree Trench	Streets			Delaware
			270-2	01-Aug-14	2708		12404	0.6	Tree Trench	Streets			Delaware
	283		283-1	01-Aug-14	1985	1	14662	0.5	Tree Trench	Streets		Philadelphia Housing Authority	Delaware
50040	153	Yorktown Green Streets	153-4	07-Nov-18	997	15	8800	0.3	Infiltration/Storage Trench, Planter	Streets	$1,399,315		Delaware
			153-5	16-Oct-18	891		8290	0.2	Infiltration/Storage Trench, Planter	Streets			Delaware
			153-3	11-Dec-18	1004		8275	0.3	Infiltration/Storage Trench, Planter	Streets			Delaware
			153-2	14-Mar-19	2677		21560	0.7	Infiltration/Storage Trench, Planter	Streets			Delaware
			153-1	20-Feb-19	1666		20425	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware
			153-6	13-Sep-18	1327		10900	0.4	Infiltration/Storage Trench, Planter	Streets			Delaware
	167	Longstretch, Little Sisters of Poor, McCresh Plground, Cobbs Crk Pkwy. Island	167-2	13-Jan-14	2733	33	21842	0.8	Tree Trench	Streets	$1,232,000	Snyderville Community Development Corporation	Schuylkill
			167-3	13-Jan-14	4354		35393	1.2	Tree Trench	Streets			Schuylkill
			167-1	13-Jan-14	2798		18321	0.8	Tree Trench	Streets			Schuylkill
	264		264-1	13-Jan-14	4488	13	35058	1.2	Planter, Tree Trench	Streets			Cobbs-Darby
50041	265		265-5	13-Jan-14	1212	12	8136	0.3	Tree Trench	Streets			Cobbs-Darby
			265-1	13-Jan-14	1754		13351	0.5	Tree Trench	Streets			Cobbs-Darby
			265-2	13-Jan-14	1446		8377	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby
			265-3	13-Jan-14	2587		19873	0.7	Infiltration/Storage Trench	Streets			Cobbs-Darby
			265-4	13-Jan-14	1481		13214	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby
	266		266-1	13-Jan-14	3312	6	33640	1.5	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby
50042	271	Bridesburg Sch., Dorsey Plygrnd, Roosevelt Plygrnd, Magnolia Cem.,Carmell	271-3	30-Sep-13	4671	3	24431	1.1	Tree Trench	Streets	$1,765,000		Delaware
			271-2	30-Sep-13	1108		10026	0.3	Infiltration/Storage Trench	Streets		Philadelphia Department of Parks & Recreation,Tacony Civic Association	Delaware
			271-1	30-Sep-13	1930		17181	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
	272		272-2	30-Sep-13	1438	16	12881	0.4	Tree Trench	Streets		Tacony Civic Association	Delaware,TTF
			272-3	30-Sep-13	1685		12584	0.5	Tree Trench	Streets			Delaware,TTF
			272-4	30-Sep-13	1673		13042	0.5	Tree Trench	Streets			Delaware,TTF
			272-5	30-Sep-13	1583		12697	0.4	Tree Trench	Streets			Delaware,TTF
			272-6	30-Sep-13	2446		15059	0.7	Tree Trench	Streets			Delaware,TTF
			272-7	30-Sep-13	2761		15363	0.7	Tree Trench	Streets			Delaware,TTF
			272-1	30-Sep-13	1128		6916	0.3	Tree Trench	Streets			Delaware,TTF
	273		273-1	30-Sep-13	2213	35	12727	0.6	Tree Trench	Streets			Delaware
			273-2	30-Sep-13	1814		11557	0.5	Tree Trench	Streets			Delaware
			273-3	30-Sep-13	1725		11320	0.5	Tree Trench	Streets			Delaware
	274		274-2	30-Sep-13	2091	6	11784	0.5	Tree Trench	Streets			Delaware
			274-3	30-Sep-13	1122		5142	0.2	Tree Trench	Streets			Delaware
			274-1	30-Sep-13	3559		27006	1.0	Tree Trench	Streets		Roosevelt Playground Park Advisory Council,Tacony Civic Association	Delaware
			274-4	30-Sep-13	1667		11539	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware
	275		275-1	30-Sep-13	1968	2	11861	0.5	Tree Trench	Streets		Tacony Civic Association	Delaware
50043	279	Harpers Hollow, Wakefield Park	279-1	04-Dec-12	2996	0	24542	0.8	Basin	Open Space	$474,000	Philadelphia Department of Parks & Recreation	TTF
	281		281-1	04-Dec-12	1798	0	17701	0.5	Rain Garden	Open Space			TTF
			281-2	04-Dec-12	2769		21009	0.8	Rain Garden	Open Space			TTF
50044	280	Wister Woods, Kemble Park	280-1	21-Jan-15	21592	69	133190	5.9	Rain Garden, Swale	Open Space	$2,360,400	Philadelphia Department of Parks & Recreation	TTF
			280-2	21-Jan-15	5052		30257	1.4	Infiltration/Storage Trench	Open Space			TTF
			280-3	21-Jan-15	7996		51202	2.2	Infiltration/Storage Trench	Open Space			TTF
			280-4	21-Jan-15	2008		12400	0.6	Infiltration/Storage Trench	Open Space			TTF
	282		282-1	21-Jan-15	9158	7	39159	1.8	Rain Garden	Open Space			TTF
			282-2	21-Jan-15	11228		55985	2.6	Rain Garden	Open Space			TTF
			282-3	21-Jan-15	11275		55562	2.6	Rain Garden	Open Space			TTF
			282-4	21-Jan-15	9504		56932	2.6	Rain Garden	Open Space			TTF

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50045	292	Ben Franklin Parkway 16-19th St.	292-1	16-Mar-17	3338	0	23204	0.9	Infiltration/Storage Trench	Streets	Unknown	Department of Public Property,Philadelphia Department of Parks & Recreation	Schuylkill
			292-2	16-Mar-17	1920		11270	0.5	Infiltration/Storage Trench	Streets			Schuylkill
			292-3	16-Mar-17	1680		9875	0.5	Infiltration/Storage Trench	Streets			Schuylkill
			292-4	16-Mar-17	1322		7544	0.3	Infiltration/Storage Trench	Streets			Schuylkill
			292-5	16-Mar-17	2424		12582	0.6	Infiltration/Storage Trench	Streets			Schuylkill
			292-6	16-Mar-17	2414		20051	0.7	Infiltration/Storage Trench	Streets			Schuylkill
50046	243	Womrath Park	243-1	27-Sep-12	3539	7	46080	1.0	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$540,071	Tookany/Tacony-Frankford Watershed Partnership,Philadelphia Department of Parks & Recreation,Frankford Civic Association	TTF
50047	366	Philadelphia Zoo Green Streets Project	366-6	29-May-13	797	5	6067	0.2	Rain Garden	Streets	$357,687	Philadelphia Department of Parks & Recreation,Philadelphia Zoo	Schuylkill
			366-5	29-May-13	582		4865	0.2	Rain Garden	Streets			Schuylkill
			366-10	29-May-13	816		5014	0.2	Infiltration/Storage Trench, Planter	Streets			Schuylkill
			366-8	29-May-13	650		4195	0.2	Infiltration/Storage Trench	Streets			Schuylkill
			366-9	29-May-13	697		4767	0.2	Infiltration/Storage Trench	Streets			Schuylkill
			366-3	29-May-13	385		2844	0.1	Rain Garden	Streets			Schuylkill
			366-2	29-May-13	894		8707	0.2	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
			366-1	29-May-13	875		7409	0.2	Rain Garden	Streets			Schuylkill
			366-4	29-May-13	814		8578	0.2	Rain Garden	Streets			Schuylkill
50048	375	Kinsey Sch./National Cem./Rowen Sch./Wagner Sch.	375-1	26-Oct-17	3997	10	28770	1.1	Tree Trench	Streets	$1,107,798		TTF
			375-2	26-Oct-17	2070		11388	0.5	Tree Trench	Streets			TTF
	377		377-1	26-Oct-17	591	0	5550	0.2	Infiltration/Storage Trench, Rain Garden, Swale	Streets			TTF
			377-2	26-Oct-17	720		8795	0.2	Infiltration/Storage Trench, Rain Garden, Swale	Streets			TTF
			377-3	26-Oct-17	587		6980	0.2	Infiltration/Storage Trench, Rain Garden, Swale	Streets			TTF
	378		378-1	26-Oct-17	3260	9	27033	0.9	Tree Trench	Streets			TTF
	379		379-1	26-Oct-17	3457	11	25446	1.0	Tree Trench	Streets			TTF
			379-2	26-Oct-17	1913		18290	0.5	Tree Trench	Streets			TTF
50049	291	Sharswood & Our Lady of Carmel Schs./ St. Monica/ Taggart Sch.	291-1	27-Sep-17	3023	3	18090	0.8	Tree Trench	Streets	$1,191,880	Community Design Collaborative	Delaware
			291-2	27-Sep-17	875		9657	0.2	Tree Trench	Streets			Delaware
			291-3	27-Sep-17	2063		13813	0.6	Infiltration/Storage Trench	Streets			Delaware
	388		388-1	27-Sep-17	2006	5	13082	0.6	Infiltration/Storage Trench	Streets			Delaware
			388-2	27-Sep-17	1494		18387	0.4	Tree Trench	Streets			Delaware
			388-3	27-Sep-17	985		7661	0.3	Tree Trench	Streets			Delaware
			388-4	27-Sep-17	1479		11745	0.4	Infiltration/Storage Trench	Streets			Delaware
	389		389-2	27-Sep-17	1306	3	10663	0.4	Tree Trench	Streets			Delaware
			389-1	27-Sep-17	2177		22095	0.6	Infiltration/Storage Trench	Streets			Delaware
50051	392	73rd/Elmwood Pk./Patterson Sch./Connell Pk./Mother Mary Sch./St. James Ch.	392-1	03-Feb-15	4871	8	35843	1.3	Tree Trench	Streets	$2,526,302		Cobbs-Darby,Schuylkill
			392-2	03-Feb-15	4663		37956	1.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
	393		393-1	03-Feb-15	4901	9	39137	1.4	Infiltration/Storage Trench, Rain Garden	Streets		Philadelphia Department of Parks & Recreation	Schuylkill
			393-2	03-Feb-15	2267		16077	0.6	Tree Trench	Streets			Schuylkill
			393-3	03-Feb-15	3855		34802	1.1	Rain Garden, Tree Trench	Streets			Schuylkill
			393-4	03-Feb-15	1081		6379	0.3	Infiltration/Storage Trench	Streets			Schuylkill
			393-5	03-Feb-15	4995		37615	1.4	Tree Trench	Streets			Schuylkill
	394		394-1	03-Feb-15	1425	6	10075	0.4	Tree Trench	Streets			Schuylkill
			394-2	03-Feb-15	3184		24818	0.9	Tree Trench	Streets			Schuylkill
			394-3	03-Feb-15	881		5970	0.2	Infiltration/Storage Trench	Streets			Schuylkill
	396		396-1	03-Feb-15	4331	17	31638	1.2	Tree Trench	Streets			Schuylkill
			396-2	03-Feb-15	1413		15798	0.4	Tree Trench	Streets			Schuylkill
			396-3	03-Feb-15	3229		23437	0.9	Tree Trench	Streets			Schuylkill
	397		397-1	03-Feb-15	3846	8	32326	1.1	Tree Trench	Streets			Schuylkill
			397-2	03-Feb-15	1832		17092	0.5	Tree Trench	Streets			Schuylkill
	398		398-1	03-Feb-15	12536	18	95007	3.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			398-2	03-Feb-15	3931		17750	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50052	335	Chelten Hills Cem./Finley Pg./Ivy Hills Cem./Pennypacker Sch./ Sedgwick Sta.	335-1	12-Mar-18	6081	2	44670	1.7	Bumpout, Infiltration/Storage Trench	Streets	$2,300,055	Southeastern Transportation Authority	TTF
	380		380-12	12-Mar-18	2048	0	15101	0.6	Infiltration/Storage Trench, Swale	Streets			TTF
			380-1	12-Mar-18	5493		49343	1.5	Infiltration/Storage Trench	Streets			TTF
			380-2	12-Mar-18	2615		16009	0.7	Bumpout, Infiltration/Storage Trench	Streets			TTF
			380-3	12-Mar-18	2709		17699	0.7	Bumpout, Infiltration/Storage Trench	Streets			TTF
			380-4	12-Mar-18	2922		16173	0.7	Bumpout, Infiltration/Storage Trench	Streets			TTF
			380-5	12-Mar-18	1544		9437	0.4	Infiltration/Storage Trench	Streets			TTF

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
			380-6	12-Mar-18	3284		17129	0.8	Bumpout, Infiltration/Storage Trench	Streets			TTF
			380-9	12-Mar-18	3185		23315	0.9	Infiltration/Storage Trench, Swale	Streets			TTF
			380-10	12-Mar-18	1560		12503	0.4	Infiltration/Storage Trench	Streets			TTF
			380-11	12-Mar-18	1534		7661	0.4	Infiltration/Storage Trench	Streets			TTF
	383		383-2	12-Mar-18	2952	0	25847	0.8	Infiltration/Storage Trench	Streets			TTF
			383-1	12-Mar-18	3622		26785	1.0	Infiltration/Storage Trench	Streets			TTF
	314		314-1	28-Mar-18	1465		12629	0.4	Tree Trench	Streets			TTF
			314-2	28-Mar-18	1746	16	17319	0.5	Tree Trench	Streets			TTF
			314-3	28-Mar-18	2932		34676	0.8	Tree Trench	Streets			TTF
	384		384-1	28-Mar-18	4170	9	28620	1.1	Tree Trench	Streets			Delaware
	385		385-1	28-Mar-18	2054	7	15814	0.6	Tree Trench	Streets			Delaware
			385-2	28-Mar-18	905		5998	0.2	Tree Trench	Streets			Delaware
50053	386	Logan Sch./Wayne/Windrim/Richmond Lib./Stokley/Vacant Lot/Skev. Pk./Westmoreland	386-2	28-Mar-18	1793	5	9742	0.4	Tree Trench	Streets	$1,834,625		Delaware
			386-3	28-Mar-18	1853		12531	0.5	Tree Trench	Streets			Delaware
	413		413-1	28-Mar-18	1365	0	10380	0.4	Bumpout, Infiltration/Storage Trench	Streets		Department of Public Property	TTF
			413-2	28-Mar-18	1093		7390	0.3	Bumpout, Infiltration/Storage Trench	Streets			TTF
	439		439-1	28-Mar-18	2770	3	16490	0.8	Tree Trench	Streets			Delaware
	246		246-1	20-Mar-19	2458	13	15879	0.7	Tree Trench	Streets		Drexel University	Schuylkill
			246-2	20-Mar-19	2794		18035	0.8	Tree Trench	Streets			Schuylkill
	344		344-1	20-Mar-19	2506	3	13587	0.6	Tree Trench	Streets			Schuylkill
	399		399-1	20-Mar-19	2525	29	13669	0.6	Tree Trench	Streets		Philadelphia Planning Commission,Philadelphia Department of Parks & Recreation	Cobbs-Darby,Schuylkill
			399-2	20-Mar-19	3759		28914	1.0	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			399-3	20-Mar-19	1605		14158	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			399-4	20-Mar-19	3382		22518	0.9	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50055	400	40th St./Drexel COMAD/Malcom X Pk./42nd St.Vacant Lot/Beeber Sch./Upland Way	400-1	20-Mar-19	3279	0	21862	0.9	Bumpout, Infiltration/Storage Trench, Swale	Streets	$1,936,198	American Cities Foundation	Schuylkill
			400-2	20-Mar-19	1756		7777	0.4	Bumpout, Infiltration/Storage Trench, Swale	Streets			Schuylkill
			400-3	20-Mar-19	1704		8216	0.4	Bumpout, Infiltration/Storage Trench, Swale	Streets			Schuylkill
			400-4	20-Mar-19	5082		35129	1.4	Infiltration/Storage Trench, Swale	Streets			Schuylkill
50057	417	Stenton Ave. & E. Washington Ln.	417-1	08-Jul-14	2326	0	12340	0.6	Rain Garden	Streets	$34,123	Philadelphia Streets Department,Ogontz Avenue Revitalization Corporation,Mayors Office of Transportation & Utilities	TTF
			410-1	01-Sep-16	1842		11580	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50059	410	Harrowgate Park	410-2	01-Sep-16	2885	0	16555	0.8	Infiltration/Storage Trench, Rain Garden	Open Space	$772,155	Southeastern Transportation Authority,Philadelphia Department of Parks & Recreation	Delaware
			410-3	01-Sep-16	4049		16701	0.8	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
			410-4	01-Sep-16	5789		33481	1.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50060	416	Hunting Park	416-10	05-Jun-19	10061	29	61910	2.8	Infiltration/Storage Trench, Rain Garden	Open Space	$1,774,108	Philadelphia Department of Parks & Recreation	Delaware,TTF
50061	471	Bustleton Avenue South, TIGER 3 Project (w/PWD Green Streets Funding)	471-1	08-Feb-16	2650	0	20261	0.7	Infiltration/Storage Trench	Streets	$174,320	Philadelphia Streets Department	Delaware
			470-1	14-Dec-15	1820		16249	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50062	470	TIGER III: Woodland Ave. Corrdor (For PWD Green Streets Program)	470-2	14-Dec-15	770	15	9482	0.2	Tree Trench	Streets	$438,171	Philadelphia Streets Department	Cobbs-Darby,Schuylkill
			470-3	14-Dec-15	3118		27360	0.9	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			470-4	14-Dec-15	1024		8472	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			310-4	02-May-12	223		535	0.0	Rain Garden	Parking			Delaware
			310-5	02-May-12	2689		24737	0.7	Rain Garden	Parking			Delaware
50063	310	Eadom St. Parking Lot - 5312-50 Eadom	310-2	02-May-12	1949	20	14922	0.5	Rain Garden	Parking	$0	Department of Public Property	Delaware
			310-1	02-May-12	3973		35278	1.1	Rain Garden	Parking			Delaware
			310-6	02-May-12	1289		6053	0.3	Rain Garden	Parking			Delaware
			310-3	02-May-12	675		4302	0.2	Rain Garden	Parking			Delaware
50065	367	Panati Playground	367-1	14-May-15	3770	8	37113	1.0	Infiltration/Storage Trench, Rain Garden	Open Space	$227,394	Department of Public Property,Philadelphia Department of Parks & Recreation	Delaware
50067	276	29th and Cambria PWD Facility Parking Lot	276-1	31-Oct-16	3963	58	32890	1.1	Swale, Tree Trench	Streets	$937,258		Delaware
			276-2	31-Oct-16	4302		38143	1.2	Swale, Tree Trench	Streets			Delaware
50068	244	Ingersoll Commons	244-1	08-Nov-16	6056	17	29894	1.4	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$730,041	Community Ventures,Department of Public Property,Philadelphia Department of Parks & Recreation	Delaware
			511-6	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
			511-9	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
			511-10	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50069	511	Callowhill St. from 2nd St. to 7th St.	511-7	05-Feb-16	27	10	0	0.0	Stormwater Tree	Streets	$0	Philadelphia Streets Department	Delaware
			511-4	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
			511-3	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
			511-2	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
			511-1	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
			511-8	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
			511-5	05-Feb-16	27		0	0.0	Stormwater Tree	Streets			Delaware
50070	524	Benson Park	524-1	13-Nov-15		0	0	0.2	Pervious Paving	Open Space	$5,715	Department of Public Property,Philadelphia Department of Parks & Recreation	Delaware
			524-2	13-Nov-15	700		8099	0.2	Infiltration/Storage Trench	Open Space			Delaware
50071	475	Green2015 - Phase I - Collazo (2.37 GA)	475-1	23-Jun-17	5697.21	16	51056	1.6	Infiltration/Storage Trench, Rain Garden	Open Space	$352,915	Philadelphia School District,Philadelphia Department of Parks & Recreation,Trust for Public Land	Delaware
50075	479	Green2015 - Phase I - William Dick Elementary	479-1	13-Jun-14	8738.01	0	65171	2.4	Rain Garden	Schools	$207,000	Philadelphia School District,Philadelphia Department of Parks & Recreation,Trust for Public Land	Delaware
50077	322	Baker, Heston, Haverford Triangle	322-2	16-Sep-16	3056	10	27407	0.8	Rain Garden	Vacant Land	$692,423		Schuylkill
			322-3	16-Sep-16	1574.15		15244	0.4	Infiltration/Storage Trench, Rain Garden, Swale	Vacant Land			Schuylkill
			322-1	16-Sep-16	944		7428	0.3	Infiltration/Storage Trench	Vacant Land			Schuylkill
	530		530-1	16-Sep-16	1417	0	11269	0.4	Infiltration/Storage Trench, Rain Garden	Open Space		Philadelphia Department of Parks & Recreation	Schuylkill
	558		558-1	16-Sep-16	3638	4	28741	1.0	Infiltration/Storage Trench, Rain Garden	Vacant Land			Schuylkill
50078	303	Clearview Community Park & Morris Estate Park	303-1	07-Oct-16	3531	0	31812	1.0	Infiltration/Storage Trench, Rain Garden	Vacant Land	$866,242	Tookany/Tacony-Frankford Watershed Partnership	TTF
	642		642-2	07-Oct-16	1037	13	12591	0.3	Tree Trench	Open Space		Philadelphia Department of Parks & Recreation	TTF
			642-3	07-Oct-16	4670		33345	1.3	Infiltration/Storage Trench, Rain Garden	Open Space			TTF
			642-6	07-Oct-16	1978		15361	0.5	Tree Trench	Open Space			TTF
50079	401	Guerin Recreation Center	401-3	23-Jul-18		1	0	0.1	Depaving	Open Space	$1,019,045	Philadelphia Department of Parks & Recreation	Schuylkill
			401-1	23-Jul-18	5641		32531	1.5	Infiltration/Storage Trench	Open Space			Schuylkill
			401-2	23-Jul-18	9563		57591	2.6	Infiltration/Storage Trench	Open Space			Schuylkill
50080	588	Penn Street Trail	588-3	13-Jun-13	447	25	8954	0.1	Rain Garden	Streets	$0	DRWC	Delaware
			588-2	13-Jun-13	1260		24696	0.3	Rain Garden	Streets			Delaware
50082	597	33rd and Dauphin St. Sept Bus Loop Green Streets Project	597-1	31-Jul-13	481.17	0	3750	0.1	Infiltration/Storage Trench	Streets	$0	Southeastern Transportation Authority	Schuylkill
50083	151	Weccacoe Playground	151-4	09-Dec-16		9	0	0.1	Depaving	Open Space	$118,707	Philadelphia Department of Parks & Recreation	Delaware
			151-5	09-Dec-16			0	0.0	Depaving	Open Space			Delaware
			151-6	09-Dec-16			0	0.0	Depaving	Open Space			Delaware
			151-2	09-Dec-16			0	0.0	Depaving	Open Space			Delaware
			151-1	09-Dec-16	1181		13466	0.3	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
			151-3	09-Dec-16			0	0.0	Depaving	Open Space			Delaware
50084	487	Moss Playground/Carmella Playground	487-1	13-Jan-20	6088	15	43939	1.7	Tree Trench	Open Space	$1,480,870	Philadelphia Department of Parks & Recreation	Delaware
			487-2	13-Jan-20	11478		76168	3.2	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
	580		580-1	13-Jan-20	4241	0	30010	1.2	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
			580-2	13-Jan-20	5611		34234	1.5	Rain Garden	Open Space			Delaware,TTF
			580-3	13-Jan-20	1775		10845	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
			580-4	13-Jan-20	4630		34981	1.3	Rain Garden	Open Space			Delaware,TTF
			580-5	13-Jan-20	1943		11861	0.5	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware,TTF
			580-6	13-Jan-20	875		6048	0.2	Infiltration/Storage Trench	Open Space			Delaware,TTF
50085	574	Ralph Brooks Park	574-1	08-Oct-15	1609	5	14510	0.4	Infiltration/Storage Trench, Rain Garden	Open Space	$152,300	Philadelphia Department of Parks & Recreation,Councilman Johnson,Urban Roots	Schuylkill
	546		546-1	11-Sep-20	2009	16	14739	0.6	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			546-2	30-Sep-21	1009		10591	0.3	Tree Trench	Streets			Delaware
			546-3	30-Sep-21	2120		13484	0.6	Infiltration/Storage Trench, Planter	Streets			Delaware
			546-4	30-Sep-21	3112		24639	0.9	Infiltration/Storage Trench, Planter	Streets			Delaware
			546-5	11-Sep-20	2380		18243	0.7	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			546-6	18-Nov-20	1475		10658	0.4	Tree Trench	Streets			Delaware
			546-7	11-Sep-20	4188		34790	1.2	Infiltration/Storage Trench, Planter, Swale	Streets			Delaware
			546-8	18-Nov-20	3616		25447	1.0	Infiltration/Storage Trench, Swale	Streets			Delaware

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50088	595	Rowland and Crispin	595-12	09-Sep-20	3027	16	23148	0.8	Bumpout, Infiltration/Storage Trench	Streets	$5,058,205		Delaware,Pennypack
			595-11	09-Sep-20	3785		30627	1.0	Bumpout, Infiltration/Storage Trench	Streets			Delaware,Pennypack
			595-10	30-Nov-21	876		5733	0.2	Infiltration/Storage Trench	Streets			Delaware,Pennypack
			595-9	09-Sep-20	6412		46148	1.8	Bumpout, Infiltration/Storage Trench	Streets			Delaware,Pennypack
			595-6	01-Dec-21	1040		7359	0.3	Tree Trench	Streets			Delaware,Pennypack
	596		596-1	27-May-20	3903	6	27496	1.1	Bumpout, Infiltration/Storage Trench	Streets			Pennypack
			596-2	27-May-20	4244		29894	1.2	Bumpout, Infiltration/Storage Trench	Streets			Pennypack
			596-3	26-May-20	1899		12940	0.5	Bumpout, Infiltration/Storage Trench	Streets			Pennypack
			596-4	26-May-20	1361		8640	0.4	Bumpout, Infiltration/Storage Trench	Streets			Pennypack
50089	455	Erie, Francis Hopkins, and Mariana Bracetti	455-1	29-Oct-19	1911	0	11706	0.5	Bumpout, Infiltration/Storage Trench	Streets	$1,819,217		TTF
			455-2	29-Oct-19	6567		39353	1.8	Infiltration/Storage Trench, Planter	Streets			TTF
	459		459-1	29-Oct-19	9203	4	77071	2.5	Planter, Tree Trench	Streets			TTF
			459-2	23-Oct-19	1593		16856	0.4	Infiltration/Storage Trench, Planter	Streets			TTF
	586		586-2	25-Oct-19	2887	7	16305	0.7	Infiltration/Storage Trench, Planter	Streets			TTF
			586-3	22-Oct-19	1580		14701	0.4	Tree Trench	Streets			TTF
			586-1	25-Oct-19	2800		47973	0.8	Planter, Tree Trench	Streets			TTF
50091	589	Stinger Square	589-1	06-Jul-16	1475	15	9852	0.4	Infiltration/Storage Trench	Open Space	$231,585	Philadelphia Department of Parks & Recreation	Schuylkill
			589-2	06-Jul-16	1558		17266	0.4	Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill
50097	483	Black Coyle McBride Playground	483-1	10-Jul-19	2711	4	20711	0.7	Infiltration/Storage Trench	Open Space	$1,194,310	Philadelphia Department of Parks & Recreation	Delaware
	634	Black Coyle McBride Playground	634-1	30-Mar-18	1683	3	11937	0.5	Tree Trench	Streets			Delaware
	637	Black Coyle McBride Playground	637-1	05-Nov-18	1371	11	7336	0.3	Tree Trench	Streets			Delaware
		Black Coyle McBride Playground	637-2	16-Aug-18	3322		26515	0.9	Tree Trench	Streets			Delaware
	638	Black Coyle McBride Playground	638-1	16-Aug-18	3065	13	22220	0.8	Tree Trench	Streets			Delaware
		Black Coyle McBride Playground	638-2	09-Jan-18	786		5400	0.2	Tree Trench	Streets			Delaware
		Black Coyle McBride Playground	638-3	02-Feb-18	958		4988	0.2	Tree Trench	Streets			Delaware
	993	Black Coyle McBride Playground	993-1	06-Aug-18	1471	2	9647	0.4	Tree Trench	Streets			Delaware
50098	1007	Neighborhood Parks - Wissinoming Park	1007-1	15-Feb-18	2225	25	24310	0.6	Infiltration/Storage Trench, Rain Garden	Open Space	$500,000	Philadelphia Department of Parks & Recreation	Delaware
			1007-2	15-Feb-18	4815		44558	1.3	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50101	608	Kingsessing Recreation Center and Street Locations	608-1	15-Jan-19	9421	17	69298	2.6	Infiltration/Storage Trench, Rain Garden	Open Space	$1,765,200	Philadelphia Department of Parks & Recreation	Schuylkill
			608-2	04-Jun-19	16397		96181	4.4	Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill
			608-3	31-Oct-18	5410		31143	1.4	Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill
			608-4	19-Feb-19	3661		24381	1.0	Infiltration/Storage Trench	Open Space			Schuylkill
	1049		1049-1	06-Mar-19	793	12	6360	0.2	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1049-2	19-Mar-19	1349		7931	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1049-3	08-Jan-19	1405		8500	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1049-4	18-Dec-18	1312		7868	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1049-5	26-Mar-19	1194		7767	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
50102	1012	Gray's Ferry Neighborhood Disconnection SMP Lanier Park	1012-1	06-Oct-16	224448	0	0	0.0	Infiltration/Storage Trench	Open Space	$3,691,857	Philadelphia Department of Parks & Recreation	Schuylkill
50103	1024	Drainage Well	1024-1	07-Sep-18	561.38	0	7432	0.3	Drainage Well	Streets	$582,900		Cobbs-Darby
	1025		1025-1	07-Sep-18	258.31	0	7942	0.2	Drainage Well	Streets			Delaware
	1029		1029-1	07-Sep-18	458.27	0	19105	0.3	Drainage Well	Streets			Delaware
50104	578	Stenton Park and Streets Locations	578-5	19-Oct-18	1466	20	10112	0.4	Tree Trench	Open Space	$2,252,260	Philadelphia Department of Parks & Recreation	TTF
			578-4	07-Dec-18	2714		13443	0.6	Rain Garden	Open Space			TTF
			578-3	18-Oct-18	6416		36041	1.7	Infiltration/Storage Trench, Rain Garden	Open Space			TTF
			578-1	04-Jun-18	7803		46386	2.1	Infiltration/Storage Trench	Open Space			TTF
			578-2	18-Oct-18	6283		34918	1.6	Infiltration/Storage Trench, Rain Garden	Open Space			TTF
			1050-4	15-Oct-18	1770		14064	0.5	Tree Trench	Streets			TTF
			1050-9	14-May-18	1273		8052	0.4	Tree Trench	Streets			TTF
			1050-8	29-Aug-18	2525		23284	0.7	Tree Trench	Streets			TTF

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
	1050		1050-7	29-Aug-18	1620	34	11292	0.4	Tree Trench	Streets			TTF
			1050-3	14-Jun-18	1292		10767	0.4	Tree Trench	Streets			TTF
			1050-2	24-May-18	3651		22777	1.0	Tree Trench	Streets			TTF
			1050-1	06-Apr-18	2078		12202	0.6	Tree Trench	Streets			TTF
			1050-5	17-May-18	2693		19195	0.7	Infiltration/Storage Trench	Streets			TTF
			1050-6	30-Nov-18	1709		13584	0.5	Tree Trench	Streets			TTF
50105	1051	Francis Myers Recreation Center and Streets Locations	1051-21	02-Jun-21	2531	70	16607	0.7	Tree Trench	Streets	$4,087,210		Cobbs-Darby,Schuylkill
			1051-14	22-Apr-21	2359		15866	0.7	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-15	28-Apr-21	3188		19051	0.9	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-16	10-Jun-21	2674		17675	0.7	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-17	22-Apr-21	901		5451	0.2	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-18	21-May-21	4218		25522	1.2	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-20	02-Jun-21	653		5465	0.2	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1051-22	02-Jun-21	3282		25328	0.9	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-3	25-Jan-21	2092		21118	0.6	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-13	15-Jul-21	4459		37394	1.2	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1051-19	15-Jul-21	1325		9464	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-4	25-Jan-21	1135		7711	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-12	16-Apr-21	3058		18396	0.8	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1051-5	25-Jan-21	1567		11100	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-2	17-Nov-20	4330		26018	1.2	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-1	17-Nov-20	8410		76851	2.3	Green Gutter, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1051-6	25-Jan-21	1548		13930	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-7	25-Jan-21	2894		17910	0.8	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-8	22-Apr-21	1898		15243	0.5	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1051-9	16-Apr-21	2506		17924	0.7	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1051-10	16-Apr-21	1902		12459	0.5	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1051-11	16-Apr-21	1676		18948	0.5	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
50108	1053	Fotterall Square Streets	1053-9	20-Sep-21	1560	24	11698	0.4	Tree Trench	Streets	$1,757,417		Delaware
			1053-1	12-May-21	1274		8710	0.4	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			1053-4	13-May-21	1634		10546	0.5	Tree Trench	Streets			Delaware
			1053-10	12-May-21	1842		18194	0.5	Tree Trench	Streets			Delaware
			1053-5	13-May-21	1840		14518	0.5	Tree Trench	Streets			Delaware
			1053-6	17-Sep-21	1469		10483	0.4	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			1053-2	13-May-21	766		6095	0.2	Bumpout, Tree Trench	Streets			Delaware
			1053-3	17-Sep-21	3587.7		22396	1.0	Tree Trench	Streets			Delaware
50109	1023	Osage Ave from 42nd to 43rd	1023-7	28-Mar-19	40	11	674	0.0	Stormwater Tree	Streets	$189,048		Schuylkill
			1023-11	28-Mar-19	40		616	0.0	Stormwater Tree	Streets			Schuylkill
			1023-10	28-Mar-19	40		616	0.0	Stormwater Tree	Streets			Schuylkill
			1023-1	28-Mar-19	40		688	0.0	Stormwater Tree	Streets			Schuylkill
			1023-8	28-Mar-19	40		583	0.0	Stormwater Tree	Streets			Schuylkill
			1023-6	28-Mar-19	40		875	0.0	Stormwater Tree	Streets			Schuylkill
			1023-5	28-Mar-19	40		1363	0.0	Stormwater Tree	Streets			Schuylkill
			1023-4	28-Mar-19	40		687	0.0	Stormwater Tree	Streets			Schuylkill
			1023-3	28-Mar-19	40		695	0.0	Stormwater Tree	Streets			Schuylkill
			1023-2	28-Mar-19	40		656	0.0	Stormwater Tree	Streets			Schuylkill
			1023-9	28-Mar-19	40		586	0.0	Stormwater Tree	Streets			Schuylkill
50110	242	North Morris Park	242-1	03-Jul-21	8165	68	100084	4.6	Infiltration/Storage Trench, Rain Garden	Streets	$2,356,772	Philadelphia Department of Parks & Recreation	Cobbs-Darby
50111	376	Mt. Airy Church	376-1	29-Oct-18	4812	15	28835	1.3	Bumpout, Infiltration/Storage Trench	Streets	$941,372		TTF
			376-2	29-Oct-18	1891		11338	0.5	Bumpout, Infiltration/Storage Trench	Streets			TTF
			376-3	29-Oct-18	1284		7842	0.4	Bumpout, Infiltration/Storage Trench	Streets			TTF
			376-4	29-Oct-18	1771		10477	0.5	Tree Trench	Streets			TTF
			376-5	29-Oct-18	1590		9566	0.4	Tree Trench	Streets			TTF
			376-6	29-Oct-18	2545		19026	0.7	Tree Trench	Streets			TTF
50112	1055	Botanic Ave	1055-1	09-Feb-18	5745	50	15384	0.7	Rain Garden	Streets	$500,000	Philadelphia Department of Parks & Recreation	Schuylkill
			1055-2	09-Feb-18	1526		28863	0.4	Rain Garden	Streets			Schuylkill
			1055-3	09-Feb-18	9540		63674	2.6	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50113	600	37th and Mount Vernon Playground	600-1	16-Dec-16	2006	5	11592	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$72,439	Philadelphia Department of Parks & Recreation	Schuylkill
50118	1059	Street Crossings - Aramingo, Cedar, Cambria, Almond	1059-1	14-Dec-20	2605	5	19115	0.7	Infiltration/Storage Trench, Rain Garden	Streets	$1,174,447		Delaware
			1059-2	03-Dec-20	3643		38558	1.0	Infiltration/Storage Trench	Streets			Delaware
			1059-3	30-Jul-20	1261		11990	0.3	Tree Trench	Streets			Delaware
			1059-4	26-Aug-20	1618		11427	0.4	Tree Trench	Streets			Delaware
			1059-5	25-Nov-20	2353		19008	0.6	Bumpout, Tree Trench	Streets			Delaware
50119	1067	Cement Park (Northern Liberties Rec Center)	1067-1	08-May-19	4138	0	33092	1.1	Infiltration/Storage Trench	Streets	$1,155,558		Delaware
			1067-2	08-May-19	1081		6091	0.3	Infiltration/Storage Trench, Rain Garden	Parking			Delaware
			1067-3	08-May-19	1946		12770	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware
			1067-4	08-May-19	2695		21963	0.7	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
	1068		1068-1	08-May-19	1587	0	11825	0.4	Infiltration/Storage Trench, Planter	Streets			Delaware
50120	1070	McPherson Streets	1070-10	24-Mar-21	1437	56	12429	0.4	Tree Trench	Streets	$1,900,719		Delaware
			1070-1	24-Mar-21	3019		25961	0.8	Tree Trench	Streets			Delaware
			1070-16	24-Mar-21	2454		25301	0.7	Tree Trench	Streets			Delaware
			1070-15	24-Mar-21	1677		10900	0.5	Tree Trench	Streets			Delaware
			1070-14	24-Mar-21	2088		14757	0.6	Tree Trench	Streets			Delaware
			1070-13	24-Mar-21	1688		12105	0.5	Infiltration/Storage Trench	Streets			Delaware
			1070-11	24-Mar-21	1019		9224	0.3	Tree Trench	Streets			Delaware
			1070-8	24-Mar-21	2012		17154	0.6	Tree Trench	Streets			Delaware
			1070-7	24-Mar-21	1689		13708	0.5	Tree Trench	Streets			Delaware
			1070-6	24-Mar-21	2747		21715	0.8	Infiltration/Storage Trench, Tree Trench	Streets			Delaware
			1070-5	24-Mar-21	1478		9816	0.4	Tree Trench	Streets			Delaware
			1070-4	24-Mar-21	2078		18220	0.6	Tree Trench	Streets			Delaware
			1070-3	24-Mar-21	3136		25191	0.9	Tree Trench	Streets			Delaware
			1070-12	24-Mar-21	1116		12580	0.3	Infiltration/Storage Trench	Streets			Delaware
50122	1077	Mount Sinai	1077-1	07-Jun-19	4959	2	38140	1.4	Infiltration/Storage Trench	Open Space	$3,377,000		Delaware,TTF
			1077-2	30-Aug-19	2646		20869	0.7	Tree Trench	Vacant Land			Delaware,TTF
	1083		1083-9	20-Dec-18	1115	59	8590	0.3	Tree Trench	Streets		Philadelphia Department of Parks & Recreation	Delaware,TTF
			1083-10	06-May-19	3808		28726	1.0	Bumpout, Tree Trench	Streets			Delaware,TTF
			1083-11	01-May-19	1852		13831	0.5	Tree Trench	Streets			Delaware,TTF
			1083-12	03-May-19	2263		16708	0.6	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1083-8	20-Dec-18	2766		20648	0.8	Tree Trench	Streets			Delaware,TTF
			1083-14	17-Jul-19	3737		30617	1.0	Planter, Tree Trench	Streets			Delaware,TTF
			1083-13	29-Jul-19	1353		11859	0.4	Infiltration/Storage Trench, Planter	Streets			Delaware,TTF
			1083-6	01-Apr-19	7304		56031	2.0	Infiltration/Storage Trench, Swale	Streets			Delaware,TTF
			1083-5	04-Jan-19	2975		24658	0.8	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1083-4	03-Apr-19	7041		43769	1.9	Bumpout, Tree Trench	Streets			Delaware,TTF
			1083-3	03-Apr-19	2539		18515	0.7	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1083-1	20-Jun-19	837		6762	0.2	Infiltration/Storage Trench	Streets			Delaware,TTF
			1083-2	03-Apr-19	2689		17306	0.7	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1083-7	01-Apr-19	5245		41406	1.4	Infiltration/Storage Trench, Swale	Streets			Delaware,TTF
50123	1084	Allegheny Ave Safety Corridor Improvement Project (MPMS 85417)	1084-8	10-Jan-19	1106	0	6481	0.3	Infiltration/Storage Trench	Streets	Unknown	PennDOT	Delaware
			1084-1	10-Jan-19	1419		10102	0.4	Infiltration/Storage Trench	Streets			Delaware
			1084-2	10-Jan-19	1485		9132	0.4	Infiltration/Storage Trench	Streets			Delaware
			1084-3	10-Jan-19	1027		6936	0.3	Infiltration/Storage Trench	Streets			Delaware
			1084-4	10-Jan-19	1293		7472	0.3	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
			1084-5	10-Jan-19	1582		8939	0.4	Infiltration/Storage Trench	Streets			Delaware
			1084-6	10-Jan-19	2086		11671	0.5	Infiltration/Storage Trench	Streets			Delaware
			1084-7	10-Jan-19	1598		9414	0.4	Infiltration/Storage Trench	Streets			Delaware
50124	1085	Trenton and Auburn Playground	1085-1	05-Feb-20	55349	0	334606	15.2	Infiltration/Storage Trench	Open Space	$3,065,250		Delaware
			1087-4	08-Sep-21	5698		45220	1.6	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1087-2	08-Sep-21	5982		47757	1.6	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50125	1087	Lawncrest Streets Southeast	1087-1	07-Sep-21	3866	9	31935	1.1	Bumpout, Infiltration/Storage Trench	Streets	$2,559,684		Delaware,TTF
			1087-5	02-Sep-21	5216		41592	1.4	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1087-3	08-Sep-21	6721		52953	1.9	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1087-6	02-Sep-21	5881		43197	1.6	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1087-7	06-Sep-21	5031		43069	1.4	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1087-8	03-Sep-21	4494		32536	1.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1087-9	03-Sep-21	2627		19621	0.7	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
50129	1127	Girard Park and Warriner Post Park	1127-1	29-Jun-20	5602	11	36163	1.5	Rain Garden, Tree Trench	Vacant Land	$2,364,471		Schuylkill
	1128		1128-2	29-Jun-20	4395	8	24576	1.1	Bumpout, Tree Trench	Streets		Philadelphia Department of Parks & Recreation	Schuylkill
			1128-3	29-Jun-20	5064		37463	1.4	Bumpout, Tree Trench	Streets			Schuylkill
			1128-1	29-Jun-20	4925		35270	1.4	Bumpout, Tree Trench	Streets			Schuylkill
	1129		1129-5	13-Jan-20	1076	22	7623	0.3	Tree Trench	Streets			Schuylkill
			1129-1	21-Feb-20	915		5506	0.3	Tree Trench	Streets			Schuylkill
			1129-6	17-Jan-20	4530		31072	1.2	Tree Trench	Streets			Schuylkill
			1129-7	17-Jan-20	3136		27080	0.9	Infiltration/Storage Trench	Streets			Schuylkill
			1129-4	10-Jan-20	3403		24740	0.9	Tree Trench	Streets			Schuylkill
			1129-2	21-Feb-20	690		4125	0.2	Tree Trench	Streets			Schuylkill
			1129-3	10-Jan-20	855		5812	0.2	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
50132	1137	Max Myers	1137-1	19-May-21	12427	17	79756	3.4	Infiltration/Storage Trench, Rain Garden, Swale	Open Space	$3,038,180		Delaware
			1137-2	25-Nov-19	20572		140104	5.7	Infiltration/Storage Trench, Planter	Streets			Delaware
			1137-3	25-Nov-19	2893		28328	0.8	Infiltration/Storage Trench	Streets			Delaware
			1137-4	25-Nov-19	3237		21389	0.9	Infiltration/Storage Trench	Streets			Delaware
			1137-5	25-Nov-19	1262		8478	0.3	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			1137-6	25-Nov-19	790		4692	0.2	Infiltration/Storage Trench	Streets			Delaware
			1137-7	25-Nov-19	5851		35034	1.6	Tree Trench	Streets			Delaware
	1138		1138-8	25-Nov-19	1562	11	8970	0.4	Infiltration/Storage Trench	Streets			Delaware
			1138-6	25-Nov-19	2930		19016	0.8	Bumpout, Tree Trench	Streets			Delaware
			1138-5	25-Nov-19	818		5061	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			1138-3	25-Nov-19	709		4767	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			1138-2	25-Nov-19	796		4965	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware
			1138-1	25-Nov-19	1208		6890	0.3	Tree Trench	Streets			Delaware
			1138-4	25-Nov-19	3928		28774	1.1	Infiltration/Storage Trench	Streets			Delaware
50134	1140	Wharton Square Greening Improvements	1140-2	08-Feb-19	1279	11	11977	0.4	Rain Garden	Open Space	$1,086,717		Schuylkill
			1140-3	13-Feb-19	9545		88619	2.6	Rain Garden, Tree Trench	Open Space			Schuylkill
50138	1145	Buist Avenue Green Streets and Buist Park Improvements	1145-7	19-Nov-19	1822	21	18057	0.5	Bumpout, Tree Trench	Streets	$2,481,046	Philadelphia Department of Parks & Recreation	Schuylkill
			1145-13	19-Nov-19	3074		19930	0.8	Bumpout, Tree Trench	Streets			Schuylkill
			1145-12	19-Nov-19	2736		17054	0.8	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
			1145-11	19-Nov-19	2709		20455	0.7	Bumpout, Tree Trench	Streets			Schuylkill
			1145-10	19-Nov-19	769		6427	0.2	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
			1145-8	19-Nov-19	961		5854	0.3	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
			1145-6	19-Nov-19	892		5875	0.2	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
			1145-5	19-Nov-19	1435		12744	0.4	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
			1145-4	19-Nov-19	1107		6278	0.3	Infiltration/Storage Trench	Streets			Schuylkill
			1145-3	19-Nov-19	2011		18618	0.6	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
			1145-2	19-Nov-19	957		6577	0.3	Infiltration/Storage Trench	Streets			Schuylkill
			1145-1	19-Nov-19	2226		13586	0.6	Bumpout, Tree Trench	Streets			Schuylkill
			1145-9	19-Nov-19	1601		11332	0.4	Bumpout, Tree Trench	Streets			Schuylkill
	1146		1146-1	19-Nov-19	7861	3	58566	2.2	Bumpout, Infiltration/Storage Trench, Rain Garden	Open Space			Schuylkill

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50143	1195	Parkside Edge - Green Streets Buyback	1195-1	19-Jan-18	11930	0	34554	1.6	Infiltration/Storage Trench, Rain Garden	Open Space	$1,163,250	Fairmount Park Conservancy	Schuylkill
			1195-2	19-Jan-18	4341		25980	1.2	Rain Garden	Open Space			Schuylkill
			1195-3	19-Jan-18	9397		52096	2.4	Rain Garden	Open Space			Schuylkill
50145	1163	Nelson Playground and Hissey Playground Green Improvement	1163-1	07-Feb-20	1861	6	14567	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$636,339		Delaware
			1163-2	07-Feb-20	8344		61986	2.3	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50146	1197	Point Breeze Vacant Lots	1197-1	21-May-19	1749.9	3	12474	0.5	Infiltration/Storage Trench, Rain Garden	Vacant Land	$2,135,753		Schuylkill
	1198		1198-1	19-Nov-18	873.7	43	6304	0.2	Infiltration/Storage Trench	Streets			Schuylkill
			1198-8	28-Jan-19	3303.8		21949	0.9	Tree Trench	Streets			Schuylkill
			1198-7	03-May-19	4255.5		20141	0.9	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
			1198-6	14-Mar-19	979		7015	0.3	Bumpout, Infiltration/Storage Trench	Streets			Schuylkill
			1198-4	09-Nov-18	1131.6		7006	0.3	Tree Trench	Streets			Schuylkill
			1198-2	25-Oct-18	1314		11491	0.4	Tree Trench	Streets			Schuylkill
			1198-3	29-Oct-18	8816		72636	2.4	Tree Trench	Streets			Schuylkill
50148	1200	Elmwood Medians Package	1200-1	08-Oct-20	7164	21	49166	2.0	Infiltration/Storage Trench, Rain Garden	Streets	$937,200		Cobbs-Darby,Schuylkill
			1200-5	08-Oct-20	1283		9043	0.4	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1200-4	08-Oct-20	3831		26670	1.1	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby,Schuylkill
			1200-3	08-Oct-20	2578		18081	0.7	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby,Schuylkill
			1200-2	08-Oct-20	3278		22994	0.9	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby,Schuylkill
50149	1202	Erie and Rising Sun Street Improvements	1202-10	30-Jul-19	1303	30	10582	0.4	Tree Trench	Streets	$1,614,000		Delaware
			1202-11	30-Jul-19	1456		12166	0.4	Tree Trench	Streets			Delaware
			1202-9	30-Jul-19	1077		11327	0.3	Tree Trench	Streets			Delaware
			1202-8	30-Jul-19	4158		38415	1.1	Tree Trench	Streets			Delaware
			1202-7	30-Jul-19	1230		12808	0.3	Tree Trench	Streets			Delaware
			1202-5	30-Jul-19	1274		12038	0.4	Infiltration/Storage Trench, Planter	Streets			Delaware
			1202-4	30-Jul-19	2074		13410	0.6	Tree Trench	Streets			Delaware
			1202-3	30-Jul-19	921		8241	0.3	Infiltration/Storage Trench	Streets			Delaware
			1202-12	30-Jul-19	1659		19419	0.5	Infiltration/Storage Trench	Streets			Delaware
			1202-2	30-Jul-19	1316		10932	0.4	Tree Trench	Streets			Delaware
			1202-1	30-Jul-19	1239		11407	0.3	Tree Trench	Streets			Delaware
			1202-6	30-Jul-19	1031		12413	0.3	Tree Trench	Streets			Delaware
	1379		1379-1	30-Jul-19	5811	3	35187	1.6	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50150	1015	Hagert Playground	1015-1	10-Feb-17	1941	1	15692	0.5	Infiltration/Storage Trench, Rain Garden	Open Space	$250,632	Philadelphia Department of Parks & Recreation	Delaware
			1015-2	10-Feb-17	2283		15462	0.6	Infiltration/Storage Trench, Rain Garden	Open Space			Delaware
50151	1204	Reading Viaduct	1204-1	13-Jun-18	1091	0	6200	0.3	Bumpout, Infiltration/Storage Trench	Streets	Unknown	Center City District	Delaware
50152	1209	Athletic Square	1209-1	29-Jan-20	733.02	9	5870	0.2	Tree Trench	Streets	$812,547		Schuylkill
			1209-2	29-Jan-20	1659		12380	0.5	Tree Trench	Streets			Schuylkill
			1209-3	29-Jan-20	1862.63		12345	0.5	Infiltration/Storage Trench, Planter	Streets			Schuylkill
			1209-4	29-Jan-20	1243		7480	0.3	Infiltration/Storage Trench	Streets			Schuylkill
			1209-5	29-Jan-20	2001.55		14360	0.6	Infiltration/Storage Trench	Streets			Schuylkill
			1209-6	29-Jan-20	1098		6579	0.3	Infiltration/Storage Trench	Streets			Schuylkill
50155	488	Smith Playground Green Improvements	488-1	22-May-18	970	8	7268	0.3	Infiltration/Storage Trench	Open Space	$678,000	Department of Public Property,Philadelphia Department of Parks & Recreation,Councilman Johnson,Urban Roots	Schuylkill
			488-2	22-May-18	4257		33437	1.2	Rain Garden, Tree Trench	Open Space			Schuylkill
			488-3	22-May-18	2249		18080	0.6	Infiltration/Storage Trench	Open Space			Schuylkill
			488-4	22-May-18	2168		18313	0.6	Infiltration/Storage Trench	Open Space			Schuylkill
			488-5	22-May-18	1081		7016	0.3	Infiltration/Storage Trench	Open Space			Schuylkill
50157	1240	Kensington Green Street Improvements	1240-8	19-Mar-20	1340	18	16512	0.4	Tree Trench	Streets	$978,650		Delaware
			1240-9	13-Mar-20	830		8137	0.2	Tree Trench	Streets			Delaware
			1240-7	20-Mar-20	4478		28374	1.2	Tree Trench	Streets			Delaware
			1240-6	20-Mar-20	642		6961	0.2	Infiltration/Storage Trench	Streets			Delaware
			1240-4	20-Mar-20	1481		11247	0.4	Tree Trench	Streets			Delaware
			1240-3	20-Mar-20	826		6727	0.2	Tree Trench	Streets			Delaware
			1240-2	20-Mar-20	490		5236	0.1	Tree Trench	Streets			Delaware
			1240-1	17-Mar-20	1115		8372	0.3	Tree Trench	Streets			Delaware

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			1240-5	20-Mar-20	932		7413	0.3	Tree Trench	Streets			Delaware
50158	1221	53rd and Baltimore	1221-1	27-Aug-21	3099	0	21281	0.9	Infiltration/Storage Trench, Rain Garden	Streets	$264,208	Philadelphia Streets Department	Cobbs-Darby
			1221-2	11-May-21	6233		35243	1.6	Infiltration/Storage Trench, Rain Garden	Streets			Cobbs-Darby
50160	1242	Kensington Neighborhood Greening Phase 2	1242-9	08-Apr-21	915	17	7673	0.3	Infiltration/Storage Trench	Streets	$1,317,377		Delaware
			1242-8	08-Apr-21	1184		10460	0.3	Tree Trench	Streets			Delaware
			1242-4	08-Apr-21	1030		7072	0.3	Tree Trench	Streets			Delaware
			1242-2	08-Apr-21	2418		22206	0.7	Tree Trench	Streets			Delaware
			1242-3	08-Apr-21	2511		16995	0.7	Infiltration/Storage Trench	Streets			Delaware
			1242-1	08-Apr-21	1993		13608	0.5	Infiltration/Storage Trench	Streets			Delaware
			1242-10	08-Apr-21	2647		19904	0.7	Infiltration/Storage Trench	Streets			Delaware
			1242-7	08-Apr-21	1268		9936	0.3	Tree Trench	Streets			Delaware
			1242-11	08-Apr-21	2497		19837	0.7	Tree Trench	Streets			Delaware
50162	1265	Cedar Park Neighborhood Streets Package 1	1265-11	08-Jun-20	1821	16	15110	0.5	Tree Trench	Streets	$2,057,000		Cobbs-Darby,Schuylkill
			1265-1	17-Feb-20	1105		7085	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1265-15	31-Aug-20	704		8429	0.2	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1265-9	20-May-20	1123		6834	0.3	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1265-7	06-May-20	1253		9281	0.3	Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1265-12	06-Jul-20	1483		15042	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1265-13	20-Jul-20	926		6794	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1265-6	11-Mar-20	1448		9818	0.4	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1265-5	18-Sep-20	1261		9779	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1265-2	20-May-20	2042		13124	0.6	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1265-10	02-Jul-20	2992		22948	0.8	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1265-4	11-Mar-20	1214		12080	0.3	Tree Trench	Streets			Cobbs-Darby,Schuylkill
			1265-3	20-May-20	1563		12224	0.4	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
			1265-14	29-Jul-20	1439		9430	0.4	Bumpout, Infiltration/Storage Trench	Streets			Cobbs-Darby,Schuylkill
50167	1267	Wissinoming	1267-104	05-Nov-21	5819	77	36895	1.6	Wetland	Open Space	$8,245,667		Delaware
			1267-3	05-Nov-21	30500		278079	8.4	Infiltration/Storage Trench	Open Space			Delaware
			1267-105	05-Nov-21	5646		0	0.0	Wetland	Open Space			Delaware
			1267-103	05-Nov-21	3324		0	0.0	Wetland	Open Space			Delaware
			1267-102	05-Nov-21	15229		125975	4.2	Wetland	Open Space			Delaware
			1267-101	05-Nov-21	36820		331908	10.1	Rain Garden	Open Space			Delaware
			1267-2	05-Nov-21	14974		135885	4.1	Infiltration/Storage Trench	Open Space			Delaware
50170	1272	East Park Greenways	1272-9	14-Dec-20	2749	6	23064	0.8	Bumpout, Tree Trench	Streets	$1,626,975		Schuylkill
			1272-10	14-Dec-20	1444		10870	0.4	Bumpout, Tree Trench	Streets			Schuylkill
	1273		1273-2	14-Dec-20	1470	15	12955	0.4	Infiltration/Storage Trench, Rain Garden	Streets		Philadelphia Department of Parks & Recreation,Fairmount Park Conservancy	Schuylkill
			1273-3	14-Dec-20	1840		17417	0.5	Infiltration/Storage Trench	Streets			Schuylkill
			1273-4	14-Dec-20	1370		11253	0.4	Infiltration/Storage Trench	Streets			Schuylkill
			1273-5	14-Dec-20	2179		21219	0.6	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
			1273-6	14-Dec-20	4424		37481	1.2	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
			1273-7	14-Dec-20	2493		21534	0.7	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
			1273-8	14-Dec-20	6303		48313	1.7	Tree Trench	Streets			Schuylkill
			1273-1	14-Dec-20	1819		14465	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
50171	1274	South Street Headhouse Square	1274-1	12-May-21	12291.48	0	96364	3.4	Infiltration/Storage Trench	Streets	$725,110	Department of Public Property,Philadelphia Streets Department	Delaware
50174	1279	Tioga Green Streets Phase I & II	1279-8	07-Oct-20	2766	29	26798	0.8	Infiltration/Storage Trench, Tree Trench	Streets	$1,670,000		Delaware
			1279-13	27-Oct-20	1838		14415	0.5	Infiltration/Storage Trench	Streets			Delaware
			1279-12	05-Oct-20	965		7505	0.3	Tree Trench	Streets			Delaware
			1279-9	07-Oct-20	1282		8738	0.4	Tree Trench	Streets			Delaware
			1279-10	06-Oct-20	2103		18105	0.6	Tree Trench	Streets			Delaware
			1279-14	06-Oct-20	1115		9985	0.3	Tree Trench	Streets			Delaware
			1279-6	08-Jun-20	1987		13836	0.5	Tree Trench	Streets			Delaware
			1279-5	07-Aug-20	1732		10744	0.5	Tree Trench	Streets			Delaware
			1279-4	08-Oct-20	1052		10348	0.3	Infiltration/Storage Trench	Streets			Delaware
			1279-3	05-Aug-20	1431		16992	0.4	Tree Trench	Streets			Delaware
			1279-2	05-Aug-20	883		5469	0.2	Tree Trench	Streets			Delaware
			1279-1	05-Aug-20	1127		10277	0.3	Tree Trench	Streets			Delaware

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
			1279-11	05-Oct-20	1421		14205	0.4	Tree Trench	Streets			Delaware
			1279-7	05-Aug-20	2034		12026	0.6	Infiltration/Storage Trench	Streets			Delaware
50175	1281	American Street Corridor Improvements	1281-28	11-Dec-20	3231	269	17190	0.8	Infiltration/Storage Trench	Streets	$5,430,545		Delaware
			1281-29	11-Dec-20	4144		16937	0.8	Swale	Streets			Delaware
			1281-42	20-Apr-21	3661		21754	1.0	Infiltration/Storage Trench	Streets			Delaware
			1281-27	11-Dec-20	5019		30005	1.4	Infiltration/Storage Trench	Streets			Delaware
			1281-26	21-May-21	3236		19811	0.9	Infiltration/Storage Trench	Streets			Delaware
			1281-31	11-Dec-20	8133		40275	1.8	Infiltration/Storage Trench, Swale	Streets			Delaware
			1281-24	01-Dec-20	3551		20385	0.9	Infiltration/Storage Trench	Streets			Delaware
			1281-37	25-May-21	7784		45706	2.1	Bumpout, Tree Trench	Streets			Delaware
			1281-23	01-Dec-20	4054		25010	1.1	Infiltration/Storage Trench	Streets			Delaware
			1281-25	11-Dec-20	6744		29051	1.3	Infiltration/Storage Trench	Streets			Delaware
			1281-32	11-Dec-20	3879		23244	1.1	Infiltration/Storage Trench, Swale	Streets			Delaware
			1281-33	20-Apr-21	2375		14276	0.7	Tree Trench	Streets			Delaware
			1281-34	20-Apr-21	6408		37707	1.7	Tree Trench	Streets			Delaware
			1281-36	12-Dec-20	5900		34556	1.6	Bumpout, Tree Trench	Streets			Delaware
			1281-38	12-Dec-20	4466		30986	1.2	Infiltration/Storage Trench	Streets			Delaware
			1281-39	25-May-21	7947		45361	2.1	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
			1281-40	01-Dec-20	3191		18650	0.9	Infiltration/Storage Trench	Streets			Delaware
			1281-41	20-Apr-21	4035		23265	1.1	Tree Trench	Streets			Delaware
			1281-22	01-Dec-20	4057		23712	1.1	Infiltration/Storage Trench	Streets			Delaware
			1281-35	12-Dec-20	3366		19581	0.9	Tree Trench	Streets			Delaware
			1281-5	12-Sep-18	1805		10759	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
			1281-30	11-Dec-20	6167		36033	1.7	Swale	Streets			Delaware
			1281-21	01-Dec-20	4458		27781	1.2	Infiltration/Storage Trench	Streets			Delaware
			1281-1	30-Aug-18	3227		19824	0.9	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
			1281-2	02-Apr-19	696		6497	0.2	Tree Trench	Streets			Delaware
			1281-4	05-Apr-21	3145		19746	0.9	Infiltration/Storage Trench	Streets			Delaware
			1281-6	05-Sep-18	1778		10015	0.5	Infiltration/Storage Trench, Rain Garden	Streets			Delaware
			1281-7	28-Jun-19	5014		28222	1.3	Tree Trench	Streets			Delaware
			1281-9	21-Apr-21	6479		39860	1.8	Tree Trench	Streets			Delaware
			1281-10	21-Apr-21	7223		36451	1.7	Tree Trench	Streets			Delaware
			1281-19	01-Dec-20	5570		32465	1.5	Swale	Streets			Delaware
			1281-12	21-Apr-21	2272		12135	0.6	Infiltration/Storage Trench	Streets			Delaware
			1281-13	21-Apr-21	6198		35968	1.7	Swale	Streets			Delaware
			1281-14	21-Apr-21	5196		20270	0.9	Swale	Streets			Delaware
			1281-15	19-Nov-20	11715		69552	3.2	Infiltration/Storage Trench	Streets			Delaware
			1281-20	01-Dec-20	7304		43687	2.0	Infiltration/Storage Trench, Swale	Streets			Delaware
			1281-16	19-Nov-20	5431		29670	1.4	Infiltration/Storage Trench	Streets			Delaware
			1281-17	19-Nov-20	6771		38171	1.8	Swale	Streets			Delaware
			1281-18	19-Nov-20	6057		34794	1.6	Swale	Streets			Delaware
			1281-11	21-Apr-21	4097		20810	1.0	Tree Trench	Streets			Delaware
			1281-3	28-Nov-18	1265		10997	0.3	Tree Trench	Streets			Delaware
50177	1287	Wayne and Manheim Streets	1287-8	05-Nov-20	1687	21	20031	0.5	Infiltration/Storage Trench	Streets	$1,700,000		Schuylkill,TTF
			1287-12	10-Jun-20	1084		8117	0.3	Tree Trench	Streets			Schuylkill,TTF
			1287-11	03-Dec-20	1985		13520	0.5	Infiltration/Storage Trench	Streets			Schuylkill,TTF
			1287-7	05-Nov-20	1911		20186	0.5	Infiltration/Storage Trench	Streets			Schuylkill,TTF
			1287-9	10-Jun-20	868		9789	0.2	Infiltration/Storage Trench	Streets			Schuylkill,TTF
			1287-13	03-Dec-20	1301		8124	0.4	Tree Trench	Streets			Schuylkill,TTF
			1287-5	10-Jun-20	2058		12139	0.6	Tree Trench	Streets			Schuylkill,TTF
			1287-4	10-Jun-20	1998		12518	0.6	Tree Trench	Streets			Schuylkill,TTF
			1287-3	05-Nov-20	1555		10411	0.4	Tree Trench	Streets			Schuylkill,TTF
			1287-2	05-Nov-20	2486		14894	0.7	Tree Trench	Streets			Schuylkill,TTF
			1287-1	05-Nov-20	1603		9556	0.4	Tree Trench	Streets			Schuylkill,TTF
			1287-6	10-Jun-20	1525		10571	0.4	Tree Trench	Streets			Schuylkill,TTF
			1287-10	05-Nov-20	1128		6679	0.3	Infiltration/Storage Trench	Streets			Schuylkill,TTF
			1288-9	25-Oct-18	1049		8155	0.3	Infiltration/Storage Trench	Streets			Schuylkill
			1288-10	09-Nov-18	2109		12868	0.6	Infiltration/Storage Trench	Streets			Schuylkill
			1288-8	25-Oct-18	2016		16781	0.6	Infiltration/Storage Trench	Streets			Schuylkill
			1288-7	30-Oct-18	1260		10259	0.3	Tree Trench	Streets			Schuylkill
			1288-6	28-Feb-19	2328		31272	0.6	Infiltration/Storage Trench	Streets			Schuylkill

Work Number	Project ID	Project Name	System Number	Construction Completion Date	Storage Volume (cf)	New Trees	Drainage Area (acres)	Greened Acres (acre-inches)	SMP Type	Program	Green Construction Cost	Partner(s)	Watershed
50179	1288	Berks & Sedgley Greening	1288-4	05-Dec-18	1347	17	11684	0.4	Infiltration/Storage Trench, Planter	Streets	$1,794,995		Schuylkill
			1288-3	20-Dec-18	862		8848	0.2	Tree Trench	Streets			Schuylkill
			1288-2	05-Dec-18	807		6312	0.2	Infiltration/Storage Trench	Streets			Schuylkill
			1288-1	05-Dec-18	1201		10626	0.3	Infiltration/Storage Trench, Planter	Streets			Schuylkill
			1288-5	14-Feb-19	5680		50657	1.6	Infiltration/Storage Trench, Rain Garden	Streets			Schuylkill
			1288-11	29-Oct-18	1483		12370	0.4	Tree Trench	Streets			Schuylkill
50184	1299	Port Richmond Green Streets Improvements	1299-7	07-Oct-20	2187	35	13465	0.6	Infiltration/Storage Trench	Streets	$1,607,560		Delaware,TTF
			1299-12	07-Oct-20	1597		9617	0.4	Tree Trench	Streets			Delaware,TTF
			1299-9	07-Oct-20	1420		11945	0.4	Tree Trench	Streets			Delaware,TTF
			1299-10	07-Oct-20	1799		11341	0.5	Tree Trench	Streets			Delaware,TTF
			1299-8	07-Oct-20	2321		13893	0.6	Tree Trench	Streets			Delaware,TTF
			1299-5	07-Oct-20	2459		18122	0.7	Infiltration/Storage Trench	Streets			Delaware,TTF
			1299-4	07-Oct-20	1262		10690	0.3	Tree Trench	Streets			Delaware,TTF
			1299-11	07-Oct-20	2955		19843	0.8	Tree Trench	Streets			Delaware,TTF
			1299-3	07-Oct-20	1034		8537	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
			1299-2	07-Oct-20	1775		11487	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
			1299-1	07-Oct-20	1724		14856	0.5	Tree Trench	Streets			Delaware,TTF
			1299-6	07-Oct-20	2077		15337	0.6	Tree Trench	Streets			Delaware,TTF
50187	1302	Palmer Park	1302-1	22-Jan-21	2581	2	20250	0.7	Infiltration/Storage Trench	Streets	$532,843	Philadelphia Department of Parks & Recreation	Delaware
	1303		1303-1	22-Jan-21	1721	3	13382	0.5	Infiltration/Storage Trench, Planter	Streets			Delaware
			1303-2	22-Jan-21	629		6916	0.2	Tree Trench	Streets			Delaware
50189	1307	Newbold Green Street Improvements	1307-6	18-Aug-20	1156	17	11470	0.4	Tree Trench	Streets	$935,715		Schuylkill
			1307-3	16-Jun-20	1351		7876	0.4	Tree Trench	Streets			Schuylkill
			1307-8	08-Sep-20	1594		11944	0.4	Tree Trench	Streets			Schuylkill
			1307-7	25-Aug-20	2195		14195	0.6	Tree Trench	Streets			Schuylkill
			1307-4	02-Jul-20	1384		13090	0.5	Tree Trench	Streets			Schuylkill
			1307-2	04-Jun-20	2805		17122	0.8	Tree Trench	Streets			Schuylkill
			1307-5	31-Jul-20	1156		7123	0.3	Tree Trench	Streets			Schuylkill
50190	1308	Clayborn & Lewis Streets GSI	1308-1	12-Oct-20	6028	4	49645	1.7	Tree Trench	Streets	$1,195,300		Schuylkill
50195	290	Windrim Avenue Green Street	290-1	06-Apr-19	3830	0	26073	1.1	Bumpout, Infiltration/Storage Trench	Streets	$925,640	Philadelphia Planning Commission,Southeastern Transportation Authority,Nicetown Community Development Corporation	TTF
			290-3	06-Apr-19	4782		25569	1.2	Bumpout, Infiltration/Storage Trench	Streets			TTF
			290-2	06-Apr-19	1839		13458	0.5	Bumpout, Infiltration/Storage Trench	Streets			TTF
50211	1347	Mifflin Square	1347-4	26-Aug-21	2883	13	17711	0.8	Tree Trench	Open Space	$1,319,675		Delaware
50212	1348	Fairmount Ave Greening Improvements	1348-9	07-Aug-20	1576	16	13213	0.4	Tree Trench	Streets	$1,127,000		Delaware,Schuylkill
			1348-5	17-Jun-20	2527		15809	0.7	Tree Trench	Streets			Delaware,Schuylkill
			1348-2	04-Jun-20	1920		13537	0.5	Tree Trench	Streets			Delaware,Schuylkill
			1348-7	31-Oct-20	5740		38933	1.6	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
			1348-3	25-Jun-20	1254		8371	0.3	Tree Trench	Streets			Delaware,Schuylkill
			1348-6	31-Oct-20	2475		14032	0.6	Tree Trench	Streets			Delaware,Schuylkill
			1348-1	19-May-20	2179		20304	0.6	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
			1348-4	31-Oct-20	1054		12359	0.3	Infiltration/Storage Trench	Streets			Delaware,Schuylkill
			1348-8	07-Aug-20	1474		8679	0.4	Tree Trench	Streets			Delaware,Schuylkill
50217	1359	Lawncrest Streets North	1359-6	19-Apr-21	915	10	9794	0.3	Infiltration/Storage Trench	Streets	$1,688,235		Delaware,TTF
			1359-10	27-Jan-21	584		4132	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-14	19-Apr-21	1368		15904	0.4	Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-13	19-Apr-21	1743		17643	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-12	19-Apr-21	1504		14494	0.4	Tree Trench	Streets			Delaware,TTF
			1359-11	19-Apr-21	1421		15062	0.4	Tree Trench	Streets			Delaware,TTF
			1359-9	07-Jan-21	1652		13266	0.5	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-7	19-Apr-21	2673		29313	0.7	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-5	19-Apr-21	1184		12197	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-4	19-Apr-21	1732		20908	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-3	19-Apr-21	1053		10125	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-2	19-Apr-21	1062		10641	0.3	Infiltration/Storage Trench	Streets			Delaware,TTF
			1359-1	19-Apr-21	1855		21748	0.5	Tree Trench	Streets			Delaware,TTF
			1359-8	07-Jan-21	833		5400	0.2	Bumpout, Infiltration/Storage Trench	Streets			Delaware,TTF
50229	1383	Columbia Field	1383-1	11-Dec-20	10064	12	61652	2.8	Infiltration/Storage Trench, Rain Garden	Open Space	$557,100		Delaware

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50235	1392	Heitzman Playground Streets	1392-5	22-Oct-20	1334	7	11655	0.4	Tree Trench	Streets	$1,063,122	-	Delaware,TTF
			1392-6	22-Oct-20	3076		27383	0.8	Infiltration/Storage Trench	Streets			Delaware,TTF
			1392-7	22-Oct-20	1709		15645	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
			1392-3	22-Oct-20	1812		17937	0.5	Infiltration/Storage Trench	Streets			Delaware,TTF
			1392-4	22-Oct-20	2005		23264	0.6	Infiltration/Storage Trench	Streets			Delaware,TTF
			1392-2	22-Oct-20	3460		30419	1.0	Tree Trench	Streets			Delaware,TTF
			1392-1	22-Oct-20	1614		14084	0.4	Tree Trench	Streets			Delaware,TTF
50237	1394	Frankford and Belgrade	1394-1	30-Sep-21	980.4	0	12451	0.3	Infiltration/Storage Trench	Streets	$129,229	-	Delaware
64056	564	Two (2) 30 Million Gallon Storage Capacity Tanks at East Park - GC	564-1	25-Feb-20	1637	0	21641	0.5	Rain Garden	Open Space	Unknown	Southeastern Transportation Authority,Philadelphia Department of Parks & Recreation	Schuylkill
90055	1539	Hydrant Relocation and Green Streets Buyback: 2035 E Lehigh Ave. & Frankford Ave.	1539-1	23-Jul-21	3273.8	8	26515	0.9	Tree Trench	Streets	$220,500	Riverwards LLC	Delaware

Table A-3: Completed Incentivized Retrofit Green Stormwater Infrastructure Projects in the Combined Sewer System

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
FY19-HOLM-5609-01	Pennypack Creek	19136	Depave, Subsurface Detention Basin	1.3
FY20-PARK-5828-01	Lower Schuylkill River	19130	Green Roof	0.2
FY19-PATT-5479-01	Delaware Direct	19148	Bioretention, Disconnected Impervious Area, Subsurface Detention Basin	70.8
FY18-PRES-4972-01	Delaware Direct	19124	Subsurface Detention Basin	8.3
FY19-STRA-5600-01	Lower Schuylkill River	19132	Subsurface Detention Basin	10.8
FY19-PEER-5346-01	Lower Schuylkill River	19151	Bioinfiltration, Subsurface Infiltration Basin	2.3
FY18-STOR-5156-01	Delaware Direct	19148	Subsurface Detention Basin	55.6
FY19-ARDL-5323-01	Tacony-Frankford Creek	19138	Bioinfiltration	2.6
FY19-WLEH-5466-01	Lower Schuylkill River	19132	Subsurface Detention Basin, Subsurface Infiltration Basin	7.9
FY17-FRAN-4728-01	Delaware Direct	19125	Green Roof	0.2
FY16-RICH-4302-01	Delaware Direct	19137	Disconnected Impervious Area	12.9
FY18-BALA-5159-01	Lower Schuylkill River	19131	Surface Detention Basin	24.4
FY19-WLEH-5378-01	Lower Schuylkill River	19132	Bioretention, Subsurface Detention Basin	7.4
FY17-NDAN-4582-01	Tacony-Frankford Creek	19140	Subsurface Detention Basin	26.0
FY19-PEER-5261-01	Lower Schuylkill River	19145	Subsurface Detention Basin	2.6
FY19-WGLE-5241-01	Delaware Direct	19132	Subsurface Detention Basin	2.7
FY19-WGLE-5243-01	Lower Schuylkill River	19132	Subsurface Infiltration Basin	6.3
FY18-ADAM-5070-01	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	3.7
FY18-ORTH-5057-01	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin	6.5
FY18-OREG-5175-01	Delaware Direct	19148	Subsurface Detention Basin	6.2
FY18-TALM-4995-01	Lower Schuylkill River	19131	Subsurface Infiltration Basin	1.4
FY18-WHIT-5066-01	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin	7.2
FY18-GRAY-4905-01	Lower Schuylkill River	19143	Subsurface Detention Basin	2.0
FY18-DEPA-4944-01	Tacony-Frankford Creek	19422	Subsurface Detention Basin	10.3
FY18-LASA-4980-01	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin	2.7
FY18-NORT-4846-01	Lower Schuylkill River	19140	Subsurface Infiltration Basin	3.7
FY18-PINN-4913-01	Lower Schuylkill River	19131	Subsurface Infiltration Basin	2.5
FY18-COML-4942-01	Delaware Direct	19135	Subsurface Detention Basin	1.4
FY18-PAUL-4979-01	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	1.7
FY18-EERI-4992-01	Delaware Direct	19124	Subsurface Infiltration Basin	9.1
FY18-ACAD-4999-01	Pennypack Creek	19114	Subsurface Infiltration Basin	3.5
FY18-TALM-4904-01	Lower Schuylkill River	19131	Subsurface Detention Basin	0.9
FY17-ECHE-4668-01	Tacony-Frankford Creek	19144	Bioinfiltration, Subsurface Infiltration Basin	3.4
FY18-WBUL-4819-01	Delaware Direct	19140	Subsurface Detention Basin	6.0
FY18-WHUN-4834-01	Lower Schuylkill River	19140	Subsurface Infiltration Basin	2.1
FY17-BAKE-4685-01	Delaware Direct	19134	Subsurface Infiltration Basin	2.7
FY17-EADO-4760-01	Delaware Direct	19137	Subsurface Infiltration Basin	5.3
FY17-NTHS-4620-01	Delaware Direct	19140	Subsurface Detention Basin	13.3
FY17-ECHE-4667-01	Tacony-Frankford Creek	19144	Bioinfiltration, Subsurface Infiltration Basin	3.4
FY17-BSTR-4742-01	Delaware Direct	19134	Subsurface Infiltration Basin	8.9
FY17-ESSI-4624-01	Lower Schuylkill River	19153	Subsurface Detention Basin	12.0
FY17-CAST-4743-01	Delaware Direct	19134	Subsurface Detention Basin	7.1
FY17-ESSI-4628-01	Lower Schuylkill River	19153	Porous Pavement, Subsurface Detention Basin, WQ Treatment Device	7.7
FY17-STMA-4406-01	Delaware Direct	19122	Bio-infiltration/Bio-retention	2.0
FY17-PASC-4472-01	Lower Schuylkill River	19143	Subsurface Detention Basin, Subsurface Infiltration Basin	7.2
FY17-WHEA-4544-01	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Subsurface Infiltration Basin	14.0
FY17-POSE-4687-01	Pennypack Creek	19136	Subsurface Detention Basin	5.2
FY17-EDMU-4680-01	Pennypack Creek	19136	Subsurface Infiltration Basin	4.3
FY17-OVER-4682-01	Lower Schuylkill River	19151	Bioinfiltration, Subsurface Infiltration Basin	2.1
FY16-SITE-4025-01	Pennypack Creek	19136	Subsurface Detention Basin	13.7
FY17-HIST-4671-01	Tacony-Frankford Creek	19144	Bioretention, Depave, Subsurface Detention Basin	0.6
FY16-JMPA-4286-01	Lower Schuylkill River	19142	Bioinfiltration, Depave	0.8
FY17-STHS-4442-01	Lower Schuylkill River	19145	Subsurface Detention Basin	14.7
2015-3560-2776-01	Delaware Direct	19134	Subsurface Infiltration Basin	0.6
FY17-TACO-4444-01	Delaware Direct	19137	Subsurface Infiltration Basin	7.4
FY17-GRAY-4520-01	Lower Schuylkill River	19143	Subsurface Detention Basin	13.5
FY17-STEN-4469-01	Tacony-Frankford Creek	19144	Subsurface Detention Basin	3.9
FY17-ELUZ-4412-01	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	8.1
FY17-EERI-4396-01	Tacony-Frankford Creek	19124	Subsurface Infiltration Basin	3.6
FY16-LIND-4086-01	Tacony-Frankford Creek	19141	Bioinfiltration	0.9
FY16-ESSI-4357-01	Lower Schuylkill River	19153	Subsurface Infiltration Basin	8.0
FY16-NAME-4323-01	Tacony-Frankford Creek	19140	Subsurface Detention Basin	7.5
FY16-ISTR-4292-01	Delaware Direct	19134	Blue Roof	1.3
FY16-GAUL-4273-01	Delaware Direct	19134	Subsurface Infiltration Basin	1.2
FY16-LASA-4274-01	Tacony-Frankford Creek	19144	Subsurface Infiltration Basin, Surface Infiltration Basin	9.5
FY16-WAKE-4282-01	Delaware Direct	19137	Subsurface Detention Basin	8.1
FY16-CHES-4233-01	Lower Schuylkill River	19146	Depave, Porous Pavement, Subsurface Infiltration Basin, Surface Infiltration Basin	1.0
FY16-STHS-4226-01	Lower Schuylkill River	19145	Bioretention, Subsurface Detention Basin	4.5

Tracking Number	Watershed Type	Zip	SMP Types	Greened Acres
FY16-JOMA-4143-01	Tacony-Frankford Creek	19124	Surface Detention Basin	1.3
FY16-ADAI-4164-01	Delaware Direct	19125	Bioinfiltration, Depave	2.3
FY16-SITE-4189-01	Tacony-Frankford Creek	19120	Subsurface Detention Basin, Surface Detention Basin	12.9
FY16-SITE-4104-01	Tacony-Frankford Creek	19120	Subsurface Infiltration Basin	9.5
2015-TAGG-2931-01	Delaware Direct	19148	Bioinfiltration, Depave, Subsurface Detention Basin	0.9
FY16-ADAM-4101-01	Tacony-Frankford Creek	19124	Disconnected Impervious Area, Surface Detention Basin	1.8
2014-WILL-2541-01	Delaware Direct	19140	Depave	0.2
FY16-PHIL-4134-01	Lower Schuylkill River	19130	Green Roof	0.1
FY16-SITE-4039-01	Delaware Direct	19148	Subsurface Detention Basin, Surface Detention Basin	5.7
FY16-SITE-4016-01	Lower Schuylkill River	19145	Subsurface Detention Basin	6.4
FY16-SITE-4020-01	Delaware Direct	19136	Subsurface Infiltration Basin	1.5
2015-MART-2832-01	Tacony-Frankford Creek	19138	Bioinfiltration, Subsurface Infiltration Basin	3.8
2015-NORT-2977-01	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Subsurface Infiltration Basin, WQ Treatment Device	17.6
2015-LASA-2865-01	Tacony-Frankford Creek	19141	Surface Detention Basin	7.4
2015-FRAN-2954-01	Delaware Direct	19130	Bioretention	0.6
2015-MAYF-2796-01	Delaware Direct	19149	Bioretention	4.8
2014-WARR-2757-01	Tacony-Frankford Creek	19124	Bioretention	3.1
2015-LEAE-2888-01	Lower Schuylkill River	19036	Bioinfiltration, Bio-infiltration/Bio-retention, Porous Pavement, Subsurface Infiltration Basin	2.0
2015-STJA-2895-01	Tacony-Frankford Creek	19120	Subsurface Detention Basin, Surface Detention Basin, Surface Infiltration Basin	0.5
2015-LIGH-2907-01	Delaware Direct	19140	Surface Detention Basin	0.7
2015-MINK-2844-01	Lower Schuylkill River	19145	Basin, Surface Infiltration Basin	0.7
2015-SITE-2809-01	Tacony-Frankford Creek	19120	Subsurface Infiltration Basin	21.9
2015-SITE-2812-01	Pennypack Creek	19136	Subsurface Infiltration Basin	10.8
2015-SITE-2810-01	Lower Schuylkill River	19153	Subsurface Infiltration Basin	9.9
2014-SITE-2665-01	Lower Schuylkill River	19145	Subsurface Detention Basin, Subsurface Infiltration Basin	8.9
2014-SITE-2666-01	Lower Schuylkill River	19153	Subsurface Infiltration Basin	2.7
2014-SITE-2682-01	Lower Schuylkill River	19131	Subsurface Detention Basin, Surface Infiltration Basin	7.4
2014-SITE-2592-01	Lower Schuylkill River	19153	Subsurface Infiltration Basin	9.1
2014-SITE-2549-01	Lower Schuylkill River	19145	Subsurface Infiltration Basin	3.3
2013-CARD-2220-01	Tacony-Frankford Creek	19124	Surface Detention Basin	15.4
2014-SITE-2550-01	Delaware Direct	19135	Subsurface Infiltration Basin	1.7
2014-SITE-2501-01	Lower Schuylkill River	19131	Bioinfiltration	35.5
2014-GLOB-2467-01	Tacony-Frankford Creek	19124	Subsurface Detention Basin, Surface Detention Basin	0.6
2013-SITE-2387-01	Lower Schuylkill River	19131	Subsurface Infiltration Basin	5.2
2013-SITE-2401-01	Lower Schuylkill River	19131	Subsurface Infiltration Basin	3.4
2013-1148-2105-01	Delaware Direct	19147	Green Roof, Subsurface Infiltration Basin, Surface Infiltration Basin	0.7
2012-WOLF-1792-01	Delaware Direct	19137		11.7
2012-GSFS-2028-01	Tacony-Frankford Creek	19144	Bioretention, Depave	1.0
2013-CARD-2076-01	Delaware Direct	19124	Subsurface Detention Basin, Surface Detention Basin	53.0
2012-5818-1784-01	Tacony-Frankford Creek	19144	Bioinfiltration	0.1

Appendix B
Calculation Methods

Glossary of Acronyms

COA	Consent Order and Agreement
CSO	Combined Sewer Overflow
EAP	Evaluation and Adaptation Plan
GA	Greened Acre
GSI	Green Stormwater Infrastructure
LTCPU	Long Term Control Plan Update
PWD	Philadelphia Water Department
WQBEL	Water Quality Based Effluent Limit

1.0 Introduction

This Appendix to the *Year 10 Evaluation and Adaptation Plan* (EAP) summarizes all calculation methods associated with applicable Water Quality Based Effluent Limit (WQBEL) Performance Standards as required by the Consent Order and Agreement (COA). All calculation methods will be available for reference on the Philadelphia Water Department (PWD) website and will be updated there as applicable. This Appendix features the recent revision to the Greened Acre (GA) Calculation Methods to be used in future reporting; all other calculation methods have not changed since they were presented in the Year 5 EAP.

2.0 Overflow Volume Reduction Calculation Method

The Combined Sewer Overflow (CSO) volume reduction calculation methodology is well documented in the *Long Term Control Plan Update* (LTCPU) "Supplemental Volume 4: Hydraulic and Hydrologic Modeling" and the COA "Supplemental Document #1: PWD System-wide Combined Sewer Overflow Volume Summary." Information about updates to the hydrologic and hydraulic models can be accessed in Section 2.4 and Appendix C of the Year 10 EAP.

3.0 Equivalent Mass Capture Calculation Method

The Equivalent Mass Capture percentage calculation information has not changed since the submission of the Year 5 EAP. Using the method described in COA Appendix E, "Document #2: Mass Loading Presumptive Approach," PWD ran the simulation with inputs based on the COA typical year hydrologic condition and Year 10 implementation progress (including 2,196 GAs and collection system improvements to date) and estimated the pollutant loads.

Pollutant load is the sum of:

- Component of CSO volume derived from sewer baseflow (sanitary sewage and groundwater inflow) x baseflow concentration,
- Component of CSO volume derived from surface runoff not treated by GSI x untreated runoff concentration, and
- Component of CSO volume derived from runoff treated by GSI (if any) x GSI-treated stormwater concentration.

PWD calculates Equivalent Mass Capture by matching the load reduction to the percent (volume) capture that would have produced that same load if primary clarification and disinfection were the end-of-pipe treatment technology, consistent with the National CSO Policy Presumption Approach.

4.0 Volume Percent Capture for Combined Sewer System Calculation Method

The Year 10 achieved percent capture was assessed by hydrologic and hydraulic modeling, and by applying the volume capture methodology as documented in COA Appendix E, "Document #1 – Technical Memorandum: PWD System-wide Combined Sewer Overflow Volume Summary."

5.0 Greened Acre Calculation Methods

As defined in COA Appendix I, a Greened Acre is described as an acre of impervious cover connected (tributary) to a combined sewer that subsequently is reconfigured to utilize green stormwater infrastructure to manage all or a portion of the stormwater runoff from that acre. Green stormwater infrastructure manages stormwater using one or more of the source control processes of infiltration, evaporation, transpiration, decentralized storage, alternative stormwater routing, reuse, and others.

A Greened Acre is an expression of the volume of stormwater managed by green stormwater infrastructure, based on the design for the project, and is conditional on the proper operation and maintenance of the project. One Greened Acre is equivalent to 1 inch of managed stormwater from 1 acre of drainage area, or 27,158 gallons of managed stormwater. These volumes are tracked as Greened Acres (GAs) using the following equation:

$$GA = IC * Wd$$

Where:

GA is Greened Acres (acre-inch)

IC is the impervious cover utilizing green stormwater infrastructure (acres). This quantity can include the area of the stormwater management feature itself, as well as the area that drains to it.

Wd is the depth of water over the impervious surface that can be physically managed in the facility (inches).

As stated in the COA, Green Stormwater Infrastructure (GSI) designs aim to control at least 1.0 inch of runoff, and up to 1.5 inches of runoff, unless otherwise deemed feasible by engineering design. Based on Philadelphia's hydrology and infiltration performance, a maximum runoff depth of 2.0 inches is deemed appropriate for Greened Acres. Because rainfall events exceeding that depth are infrequent in a typical year, PWD has capped the credited runoff depth at 2.0 inches.

For calculation of the number presented in this Year 10 EAP, the depth of runoff managed (Wd) has been conservatively assumed to equal the available storage volume in terms of inches over the impervious drainage area, which is calculated by analyzing post-construction stormwater management plans. Available storage volume is the volume of void space between the top of storage elevation and bottom of storage elevation. The volume of void space is dependent on the

porosity of the storage media present. Present assumptions for typical storage media are as follows: 40% for gravel, 30% for sand, 20% for soil, 92% for perforated pipes, and 100% for tanks, solid storage pipes, and any surface ponding. For proprietary structures, a porosity value is typically provided by the manufacturer.

Runoff volume is physically managed in a GSI system through a combination of storage, infiltration, and/or slow release. As discussed in Section 3 of the Year 10 EAP, monitoring data analysis has concluded that GSI systems have been consistently managing rainfall events that exceed the designed storage volume. This is due in part to the fact that these systems are dynamic and are effectively managing runoff through the hydrologic processes of inflow, storage, outflow, and infiltration at all points during and after a rainfall event. PWD has utilized these observations to inform more effective methods for designing and accounting for GSI to include runoff managed during a rainfall event.

In the Greened Acre calculation, the Wd term is defined as accounting for the inches of runoff over the impervious area that can be physically managed by the system. PWD intends to calculate the runoff volume managed with a performance simulation of a design rainfall distribution specific to Philadelphia and to the range of storms applicable for Greened Acre crediting. Using the design characteristics of a GSI system—including drainage area, storage volume, infiltrating footprint, depth, orifice dimensions, and observed infiltration rate—a simulation can be used to test varying runoff depths to find the value where the simulated peak water level meets, but does not exceed, the peak storage level.

Appendix C
Hydrologic and Hydraulic Model

Glossary of Acronyms

BWWF	Base Wastewater Flow
CCLL	Cobbs Creek Low-Level
COA	Consent Order and Agreement
DCIA	Directly Connected Impervious Area
DivB	Diversion Chamber B
FHL	Frankford High-level
GARR	Gage Adjusted Radar Rainfall
GSI	Green Stormwater Infrastructure
GWI	Groundwater Infiltration
H&H	Hydrologic and Hydraulic
JCA	Junction Chamber A
LDLL	Lower Delaware Low-Level
LSWS	Lower Schuylkill West-Side
LTCPU	Long Term Control Plan Update
NDCIA	Non-Directly Connected Impervious Area
NEHL	Northeast High-Level
NELL	Northeast Low-Level
OA	Oregon Avenue
PADEP	Pennsylvania Department of Environmental Protection
PWD	Philadelphia Water Department
RDII	Rainfall Dependent Inflow and Infiltration
SELL	Southeast Low-Level
SE WPCP	Southeast Water Pollution Control Plant
SMP	Stormwater Management Practice
SOM	Somerset
SSOAP	Sewer Overflow Analysis and Planning
SWHL	Southwest High-Level
SWLL	Southwest Low-Level
SWMG	Southwest Main Gravity
SWMM	Storm Water Management Model
SW WPCP	Southwest Water Pollution Control Plant
UDLL	Upper Delaware Low-Level
UFLL	Upper Frankford Low-Level
US EPA	United States Environmental Protection Agency
WPCP	Water Pollution Control Plants

1.0 Introduction

The Hydrologic and Hydraulic (H&H) models of the Philadelphia Combined and Separate Sanitary Sewer collection system, used by the Philadelphia Water Department (PWD) for evaluating collection system operation and performance, were rebuilt with updated system information, significant volumes of data collected, and research conducted since the *Long Term Control Plan Update* (LTCPU) was submitted in 2011. The 2017-2018 model rebuild includes improvements to almost all H&H model parameters including but not limited to average dry weather flow (sum of the base wastewater flow and the groundwater flow in the sewer) and contributing area properties, boundary conditions, and the representation of the Green Stormwater Infrastructure (GSI) processes. The rebuild also utilizes the upgrades to the United States Environmental Protection Agency's (US EPA) Storm Water Management Model (SWMM) 5 model engine. This update is performed by utilizing the significant amount of flow monitoring data collected from combined and sanitary sewer locations across the City of Philadelphia (City) over the past ten years. The collected data is used for calibration and verification of the wastewater collection system's response to wet weather events. Keeping the H&H models updated is essential to accurately represent hydrologic and hydraulic conditions. In addition to model calibration and validation, the extensive dataset provided by construction of GSI projects has been used to transition from a planning-level representation of GSI to an implementation level representation of GSI, in the H&H models.

2.0 Model Versioning System

A robust version control structure has been implemented for the models used for simulations that inform the Consent Order and Agreement (COA) deliverables. In 2017, PWD introduced a proposed model version cataloguing system to the Pennsylvania Department of Environmental Protection (PADEP), which is now used for reporting of modeling products. The versioning system will use the nomenclature outlined in Figure C-1.

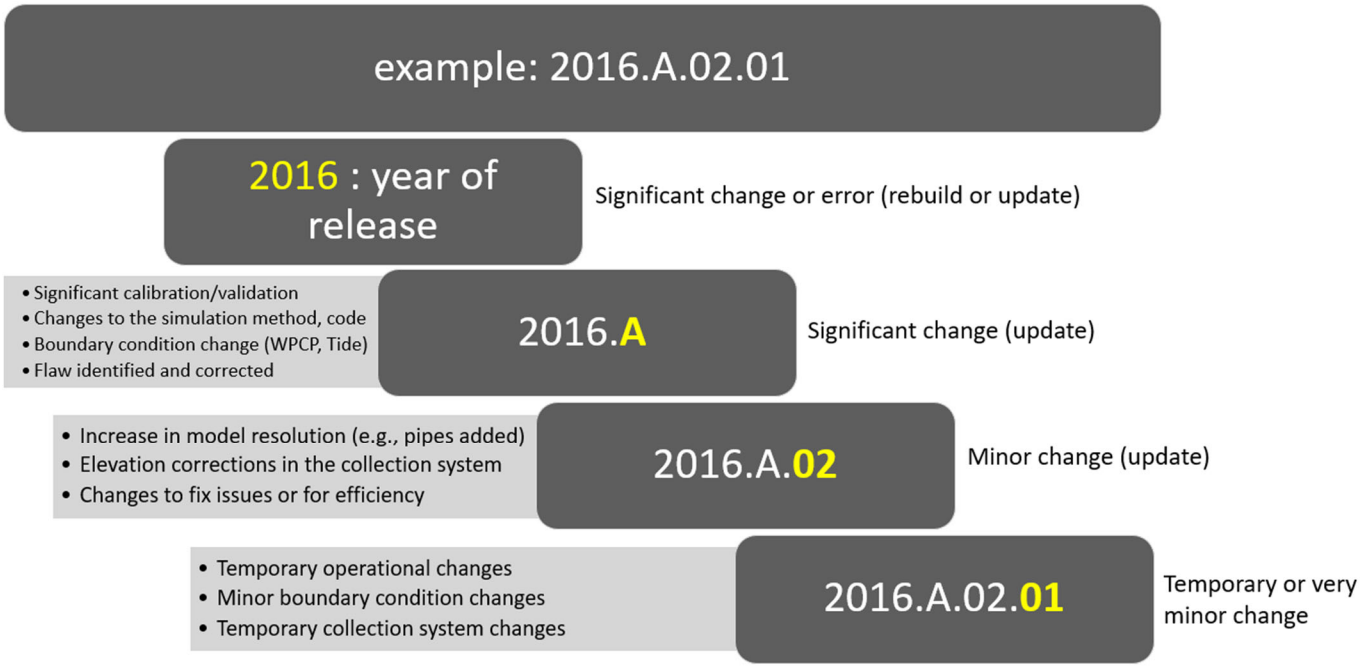

Figure C- 1: Example of the model versioning system nomenclature

Level 1 updates can be:

- Significant calibration/validation
- Changes to the simulation method and/or code
- Boundary condition change (WPCP, Tide)
- Flaw identified and corrected

Level 2 updates can be:

- Increase in model resolution (e.g., pipes added)
- Elevation corrections in the collection system
- Changes to fix issues or for efficiency

Level 3 updates can be:

- Temporary operational changes
- Minor boundary condition changes
- Temporary collection system changes

As an example, the current model version 2017. B.02.05 has been through one major Level 1 update, two Level 2 minor updates, and five Level 3 minor updates.

This versioning system assigns a unique identifier to a specific model configuration, which supports tracking as well as enables easily reproducible results. Each version of the model tracks all changes made to the model inputs, representation of physical assets and processes, and simulation code compared to the previous version. The versioning process supports communication regarding any change in the model.

3.0 Input Data Used in Model Rebuild

The first step towards calibration of each contributing area runoff parameters, is to assign measured parameters that are generally related to characteristics of the contributing area and are not considered calibration parameters. These important parameters are the area of the contributing area, an average slope, and a percentage of the total area of the contributing area that is impervious. Extensive work was performed to refine contributing area delineations by applying adjustments along the receiving water boundaries and adding more details by extending the trunk sewer (major collection pipes) representations. The data used to derive impervious cover and average slope were also updated. Gage Adjusted Radar Rainfall (GARR) was utilized as the source of precipitation for model calibration and validation.

Extensive flow monitoring data collected since 2007 is used in hydrologic and hydraulic calibration and validation. Flow monitoring locations are identified and investigated, flow monitors are installed, and the monitors are then maintained by CSL Services as directed by PWD. Flow monitors installed in the combined sewer collection system upstream of flow diversions can be used for calibration of hydrologic parameters, while monitors located downstream of flow diversions are generally used for validation only. All flow monitoring data are deconstructed using US EPA Sanitary Sewer Overflow Analysis and Planning (SSOAP) software to separate the wastewater flow into three components: Base Wastewater Flow (BWWF), Groundwater Infiltration (GWI), and Rainfall Dependent Inflow and Infiltration (RDII)/wet weather contribution. For flow monitors in combined sewers, the RDII flow is equal to the wet weather response to stormwater runoff. Influent flow and pump wet-well level data from the three Water Pollution Control Plants (WPCP) are used for establishing and verifying hydraulic boundary conditions and operating rules.

Model Calibration and Validation

Model calibration and validation is essential to accurately representing hydrologic conditions and hydraulic infrastructure. A validated model can be used to produce meaningful and reliable simulation results. Model calibration is accomplished by adjusting initial estimates of selected model variables (calibration parameters), within a specific range, to obtain a satisfactory correlation between simulated and measured flow. Calibration parameters are variables which cannot be directly measured. After model calibration, an independent monitoring data set is used to verify the calibrated model to confirm that the model accurately represents the observed hydrologic and hydraulic conditions over a broad range of wet-weather events in what is referred to as validation. In final model validation, WPCP data and level data at regulating structures and/or hydraulic control points are used to verify that hydraulic conditions are accurately represented.

3.1 Hydrologic Model Updates

Baseflow Update

Flow monitoring data collected from the combined and sanitary sewer areas, as well as outlying communities, are used for estimation of average annual baseflow contributions. The results of

US EPA SSOAP hydrograph separation analyses were compiled and used to estimate average base wastewater flow and groundwater infiltration values for each of the flow monitors. For the area that is unmonitored within the City, a multiple linear regression approach/model was developed to estimate BWWF as a function of population and non-residential building volume. Similarly, GWI rates were estimated based on a linear regression on contributing area. Using this method, the data from flow monitors were used in conjunction with population and parcel data to estimate and distribute average annual baseflow to the City-wide model. A total of 134 in-city flow monitors, 61 outlying community flow meters, and 9 WPCP meters are used for the baseflow distribution process. Figure C-2 shows the flow monitors used for baseflow distribution.

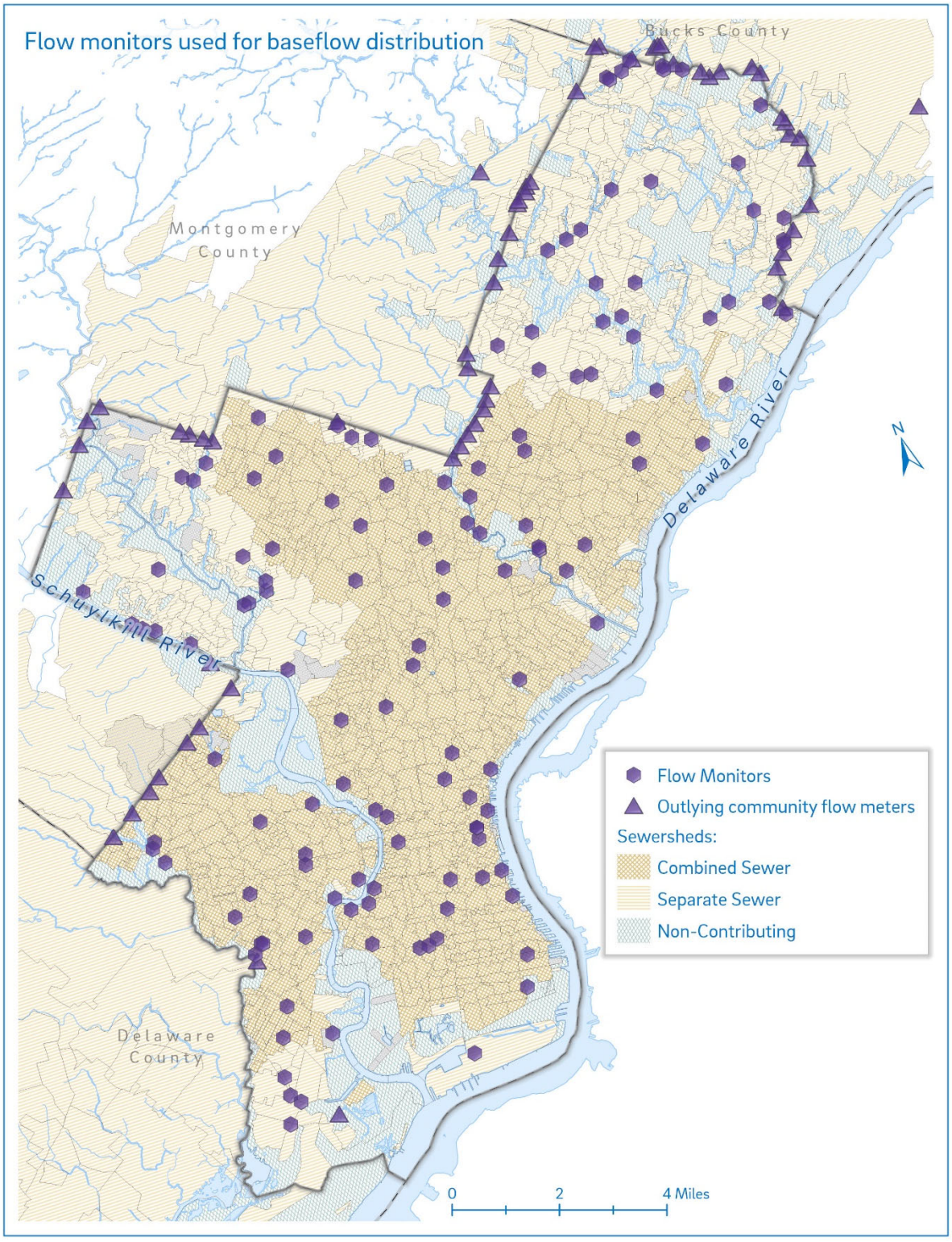

Figure C- 2: Flow monitors used for baseflow distribution

Since typical flow monitoring deployment is for one year, adjustments were made to the GWI values of all monitors using WPCP data from 2000 to 2016, to account for long term variations

in groundwater. The WPCP data displayed in Figure C-3 shows a decrease in BWWF of about 1.95 MGD per year over the 16-year period used in the baseflow distribution analysis.

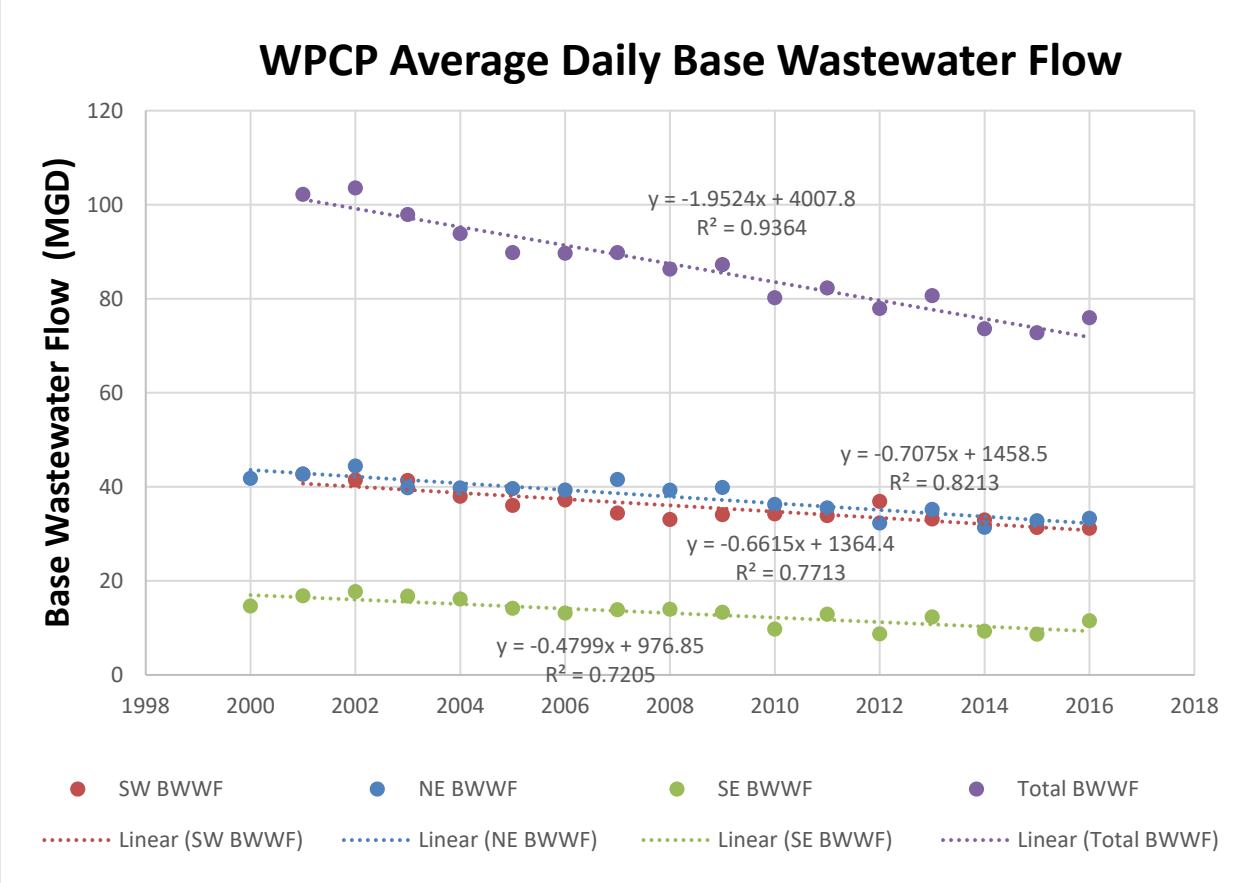

Figure C- 3: BWWF trends from 2000-2016

The total baseflow assigned to each loading node in the model was calculated as the sum of BWWF and GWI. WPCP monitors were then evaluated downstream to match the total dry weather flow reaching the WPCP. Figure C-4 shows the comparison between modeled and observed WPCP flows.

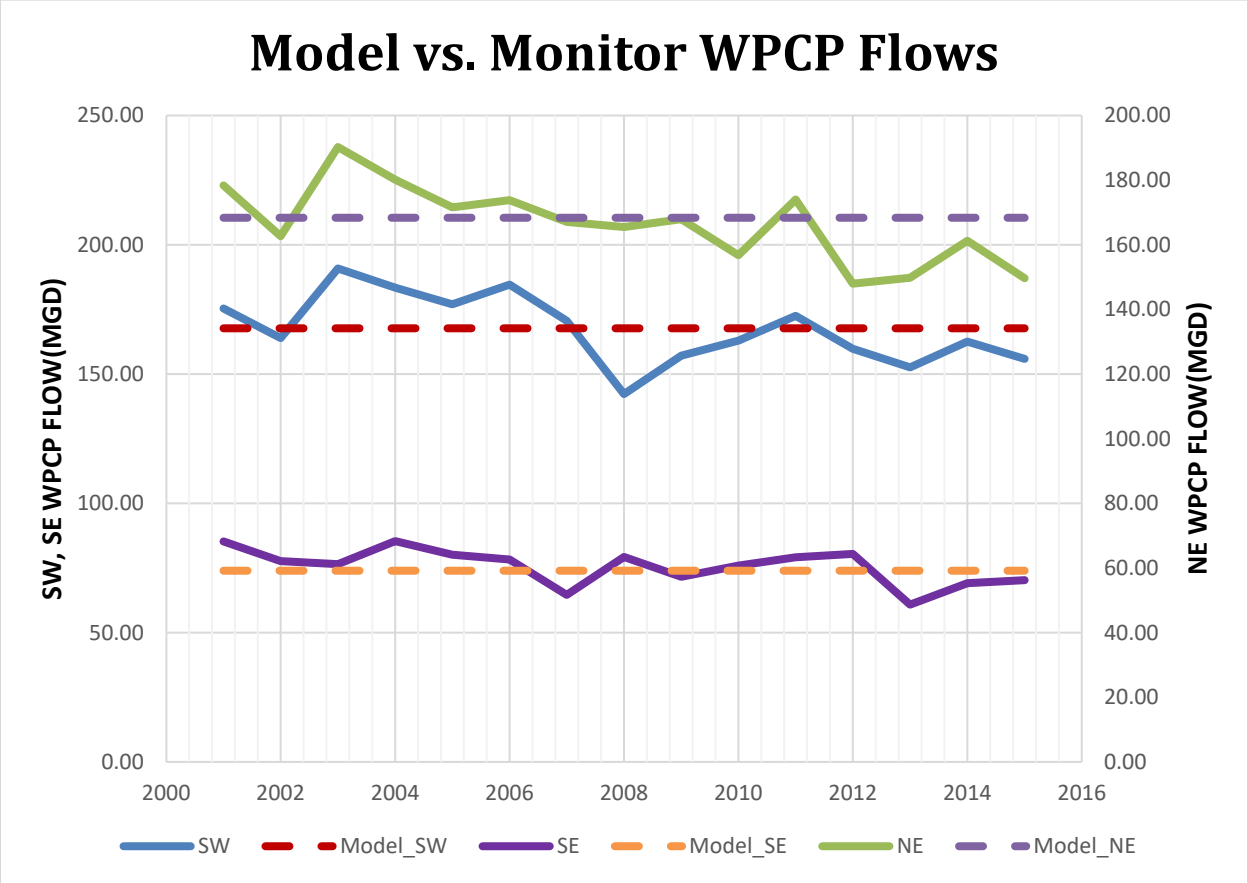

Figure C- 4: Comparison of Modeled and Observed WPCP Flows

Wet-Weather Hydrology in the Combined Sewer Areas

Collected flow monitoring data were checked to ensure suitability for use in the calibration or validation of the rainfall-runoff response. Flow monitoring data suitable for calibration are compared to model simulation results. The model parameters are adjusted, if necessary, and the model is simulated again and results compared. This process is repeated until an adequate match to the observed flow over a broad range of events is achieved. In contrast, validation data is compared to model simulations which have fixed (already calibrated) model parameters to assure that the model has been calibrated to accurately match observed data. A total of 85 flow monitors were used for calibration of hydrologic parameters, all of which were required to meet data/site requirements such as minimum deployment of 6 months, no upstream flow splits, and sufficient useable data. Data from sites which did not meet these requirements were set aside to be considered for model validation.

A program written in R was used to support the model calibration process. The R program that supported the model update produces statistical and graphical comparisons of model and monitor event hydrographs, volumes, and peaks. Model calibration is performed by iteratively adjusting the following hydrologic model parameters:

1. Subcatchment width (surrogate for length of overland flow),
2. percent of impervious area routed to pervious area,

3. infiltration characteristics (Green Ampt saturated hydraulic conductivity, and associated suction head and initial moisture deficit), and
4. impervious and pervious area depression storage

The metrics which were used to evaluate model output to the measured flows included, qualitative inspection of hydrograph plots, residual plots, and cumulative frequency distributions , as well as best-fit scatterplots of event volume, peak flow, and time to peak.

Data from sites that were used for calibration were classified based on the quality of calibration results into two categories:

1. Sites that could be used in extrapolation/distribution of parameters to unmonitored areas (data from 48 monitoring sites), and
2. sites that produced satisfactory results but may have minor issues or localized attributes and should not be used for distribution to unmonitored areas (data from 37 monitoring sites).

The median of the parameters (subcatchment width ratio, percent impervious routed to pervious, infiltration characteristics, and depression storage) from the 48 sites are used for unmonitored areas served by combined sewers. See Table C-1, for model parameter and corresponding median values from the 48 sites. The geographical distribution of calibrated areas is shown in Figure C-5.

Table C-1: Median calibrated hydrologic parameters from the 48 good calibration sites (used for un-monitored combined sewer area)

Model Parameter	Median Value
Percent of Impervious Area Routed to Pervious (percentage)	35.0
Subcatchment Width Multiplier (Width = 2*Sqrt(Area))	1.0
Saturated Hydraulic Conductivity (k_{sat}; inches/hour)	0.52
Impervious Area Depression Storage (inches)	0.02
Pervious Area Depression Storage (inches)	0.15

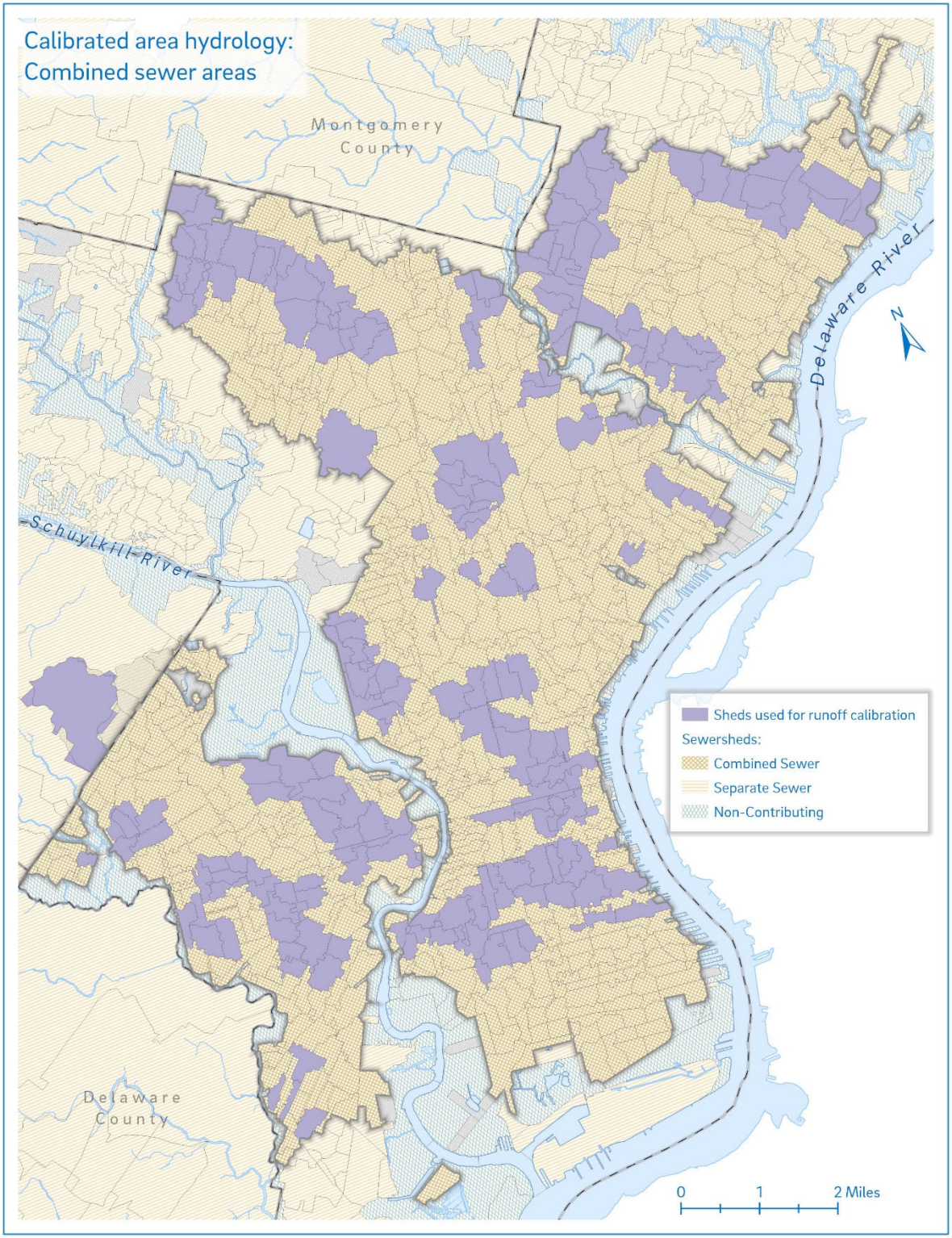

Figure C- 5: Geographical distribution of calibrated hydrology in combined sewer areas (results were used in distribution of parameters to un-monitored areas)

Wet-Weather Hydrology in the Separate Sanitary Sewer Areas

A total of 124 sanitary sewer flow monitors, composed of 67 in-City flow monitors and 57 outlying community flow meters, were used for estimating wet weather flows in sanitary sewer areas. For City monitoring sites and permanent outlying community flow meter sites, at least 12 months of data are used for the characterization analyses, and in many cases two years of monitored data are available and utilized to improve the monthly average results.

Wet weather flows in separate sanitary sewer areas are characterized using total "R-Value" and RTK-unit hydrographs are used to represent the wet-weather response in a sanitary sewer area to a unit of rainfall over a unit of contributing area for a unit of time and are determined by a series of R, T and K values defined as follows:

> R – values are used to define the quantity of the RDII responses and is defined as the fraction of rainfall volume that enters the sewer system and equals the area under the hydrograph. For example, a computed R-value of 0.045 would indicate that 4.5% of the measured rainfall over the contributing area reached the sewer system, as monitored RDII.
>
> T – values are used to define the timing of the RDII hydrograph peaks and are defined as the time from the onset of rainfall to the peak of the unit hydrograph in hours
>
> K - values are used to define the timing and length of the RDII recession limbs and are defined as the ratio of time to recession of the unit hydrograph to the time to peak

The shape of the wet weather response hydrograph observed in the sewer is characterized by a set of three RTK unit hydrographs. The first unit hydrograph is used to represent the quick, short-term system responses, the second is used to characterize the medium-term responses, and the third hydrograph is used to represent the long-term or recession limb responses. A set of three RTK unit-hydrographs are determined for each calendar month to define the shape of the wet weather response used by the US EPA SWMM software to simulate the short, medium, and long wet weather response times.

The R-values, used to represent the magnitude of the RDII responses, are computed by the SSOAP program by dividing the calculated RDII volume for each storm by the corresponding volume of rainfall over the contributing area. The T values, used to represent the timing of the RDII hydrograph peaks, are determined by the analyst by observing the time in hours from the start of the rainfall to the short-, medium-, and long-term RDII hydrograph peaks. The K values, used to represent the duration of RDII hydrograph recession limbs, are determined by the analyst to best represent the observed time in hours to the tail end of the RDII unit hydrographs, or the length of the recession limb. Two sets of evaluations were undertaken, one where monthly RTK unit hydrographs were developed (39 sites) and a second where only average annual R-values were determined (28 sites). Sites with better data quality were used for development of the full 'RTK' parameter set, while sites with poorer data were only used for calculation of an 'R' value. A subset of data including 20 of the 28 monitoring sites with full RTK analyses were used to extrapolate RTK patterns to unmonitored areas and to monitored areas with only average annual R-values determined based on three contributing area size categories: small (< 50 acres),

medium (>= 50 acres and < 200 acres), and large contributing areas (>= 200 acres) representing short, medium, and long wet weather response times, respectively. Figure C-6 shows the sanitary sewer areas which are monitored with monthly RTK values assigned, monitored with only the average annual R-value assigned, or unmonitored.

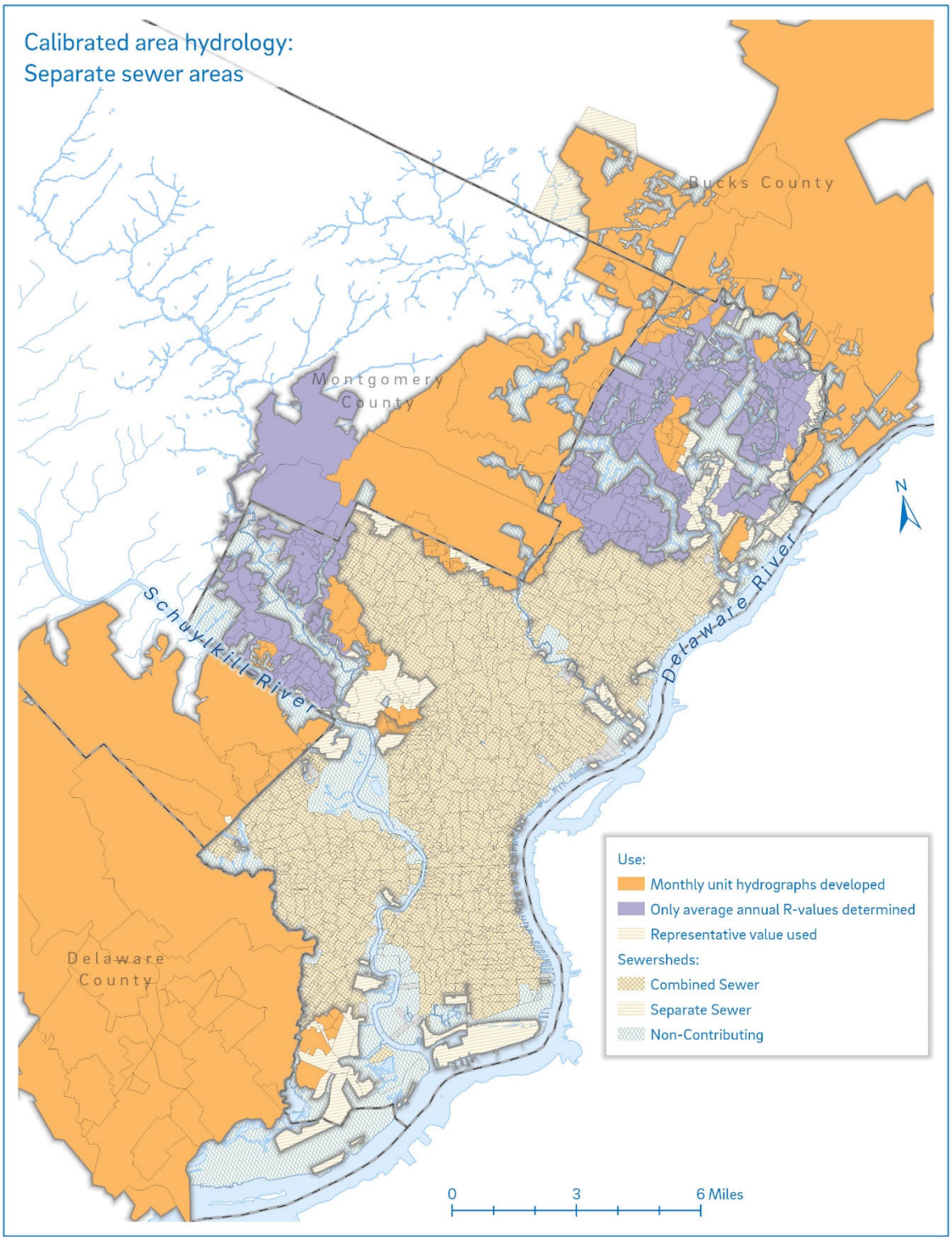

Figure C- 6: Separate sanitary sewer areas and RTK calibration status

Unmonitored areas use the median average annual R-value of 0.041 and apply the monthly RTK shape parameters based on the contributing area size category.

3.2 Hydraulic Model Updates

The accuracy of the hydraulic model performance is generally determined through comparisons to measured flows and levels at critical locations within the system across a wide range of hydrologic conditions. The primary hydraulic data used for model validation are monitored WPCP influent flows and levels. The update of hydraulic model representations was performed for each of the three WPCPs individually.

Northeast WPCP

The Northeast WPCP (NE WPCP) influent flows are delivered through the Northeast High-Level system (NEHL) and the Northeast Low-Level System (NELL). The NELL flows are combined at Junction Chamber A (JCA) before being pumped into the NE WPCP through the Low-Level Pump Station. NEHL flows enter the NE WPCP by gravity from the Frankford High-Level (FHL) interceptor. The head boundary for the NEHL is the water surface elevation measured at NE WPCP Diversion Chamber B (DivB). The FHL influent gravity flow to the NE WPCP is controlled by the upstream water level head at the R18 relief structure in addition to the downstream water level head boundary at DivB.

The NELL pump station receives flow from the Upper Delaware Low-Level (UDLL), Somerset (SOM), and Upper Frankford Low-Level (UFLL) interceptors (the flows are combined at JCA and then pumped). During wet weather conditions the flow delivered through the interceptors will be governed by the downstream water level at JCA. The NELL pump station operating curve relates the influent water levels at JCA to pump discharge rates. Figure C-7 presents the model simulated pump operating curve (orange line) overlaid with observed 5-minute average pump discharge rates and JCA operating levels for the period of January 2012 through March 2016. Pump operation in the model follows this ideal pump curve. Although there is variation in the observed operating data over the four-year period, the NELL operating curve used in the model attempts to represent average operating conditions with a recent operating strategy to keep JCA levels between 9 ft and 11 ft.

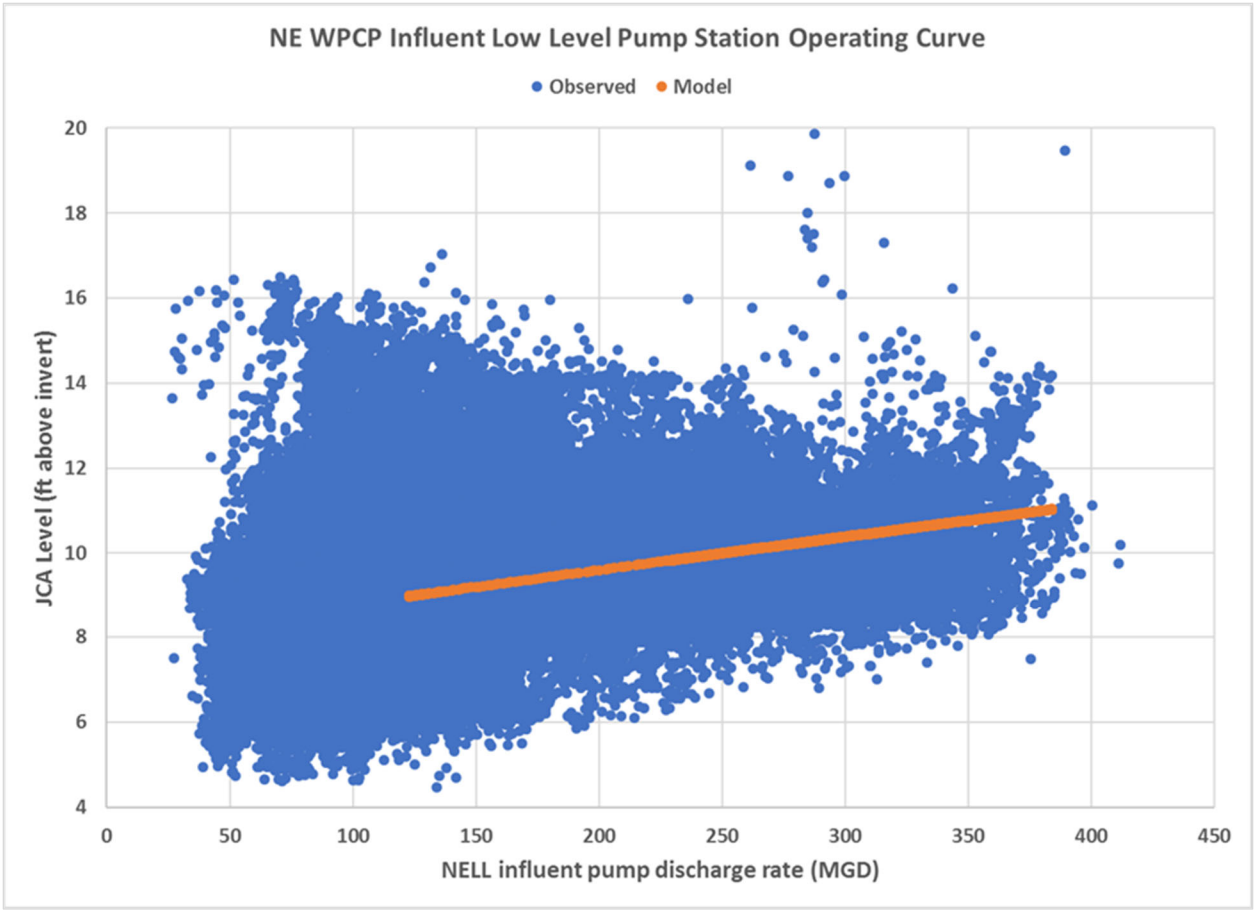

Figure C- 7: Validation of NELL model pump curve with pump operating data

The NEHL flows are driven by gravity into the NE WPCP through the Frankford High-Level interceptor. The influent head boundary at DivB as a function of flow rate is presented along with model results in Figure C-8. Two versions of the model operating curves are presented:

1. The initial operating curve is estimated based on a hydraulic analysis performed by Black & Veatch, and
2. the updated operating curve was adjusted based on observed data collected after opening of the FHL second barrel during May 2016.

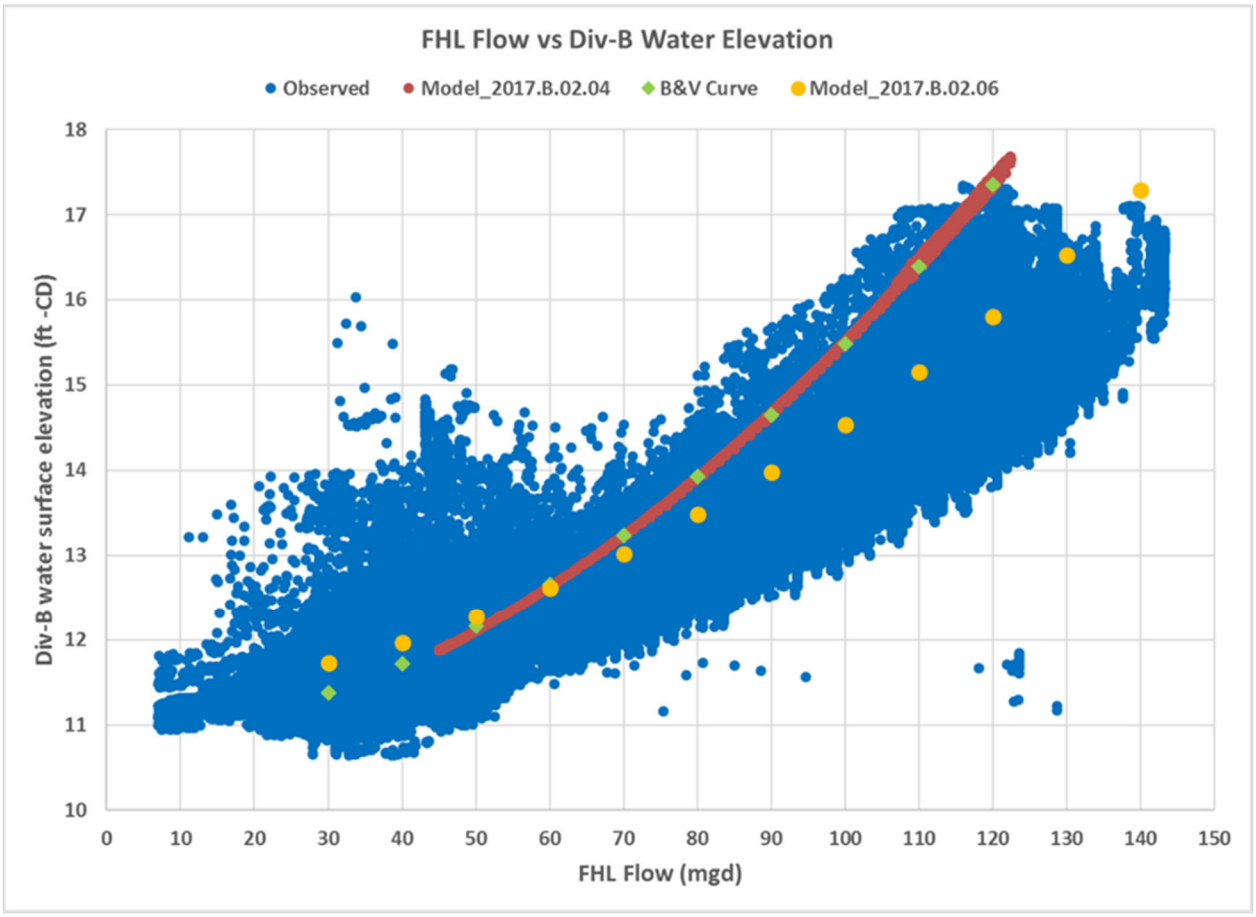

Figure C- 8: Validation of DivB water surface elevation as a function of FHL flowrate.

In addition to the downstream influent head boundary at DivB, the water surface elevation in the upstream interceptor at hydraulic control chamber R18 is critical to characterize the hydraulic behavior of the NEHL in response to wet weather. The water level at control chamber R18 as a function of FHL flow rate observed beginning two months after the opening of the FHL second barrel is presented in Figure C-9. The observed data presented in Figure C-9 is also overlaid with initial (model 2017.B.02.04 in Figure C-9) and updated (model 2017.B.02.06 in Figure C-9) model results. The water level at R18 as a function of FHL flowrate is dependent upon the downstream head boundary at DivB and the total head loss in the interceptor between the two locations. Figure C-9 shows a typical hysteresis pattern in the model results where the water level for a given flowrate is greater on the falling limb than on the rising limb of an event. The cluster of loops at the top end of the model results is due to modulating flows from T14 drain down designed to keep R18 levels below the overflow elevation. The important observation, however, is that the initial model (model 2017.B.02.04 in Figure C-9) overestimated the total head loss occurring between R18 and DivB. This head loss had been calibrated prior to opening of the second FHL barrel largely by simulating sediment levels in sections of the interceptor upstream of the 2-barrel section having low velocities and that were corroborated with the results of field investigations. The decrease in the head loss observed

beginning several months after the second barrel was open, suggests that the higher flowrates in these sections may have scoured away some of the sediments and reduced some of the head loss.

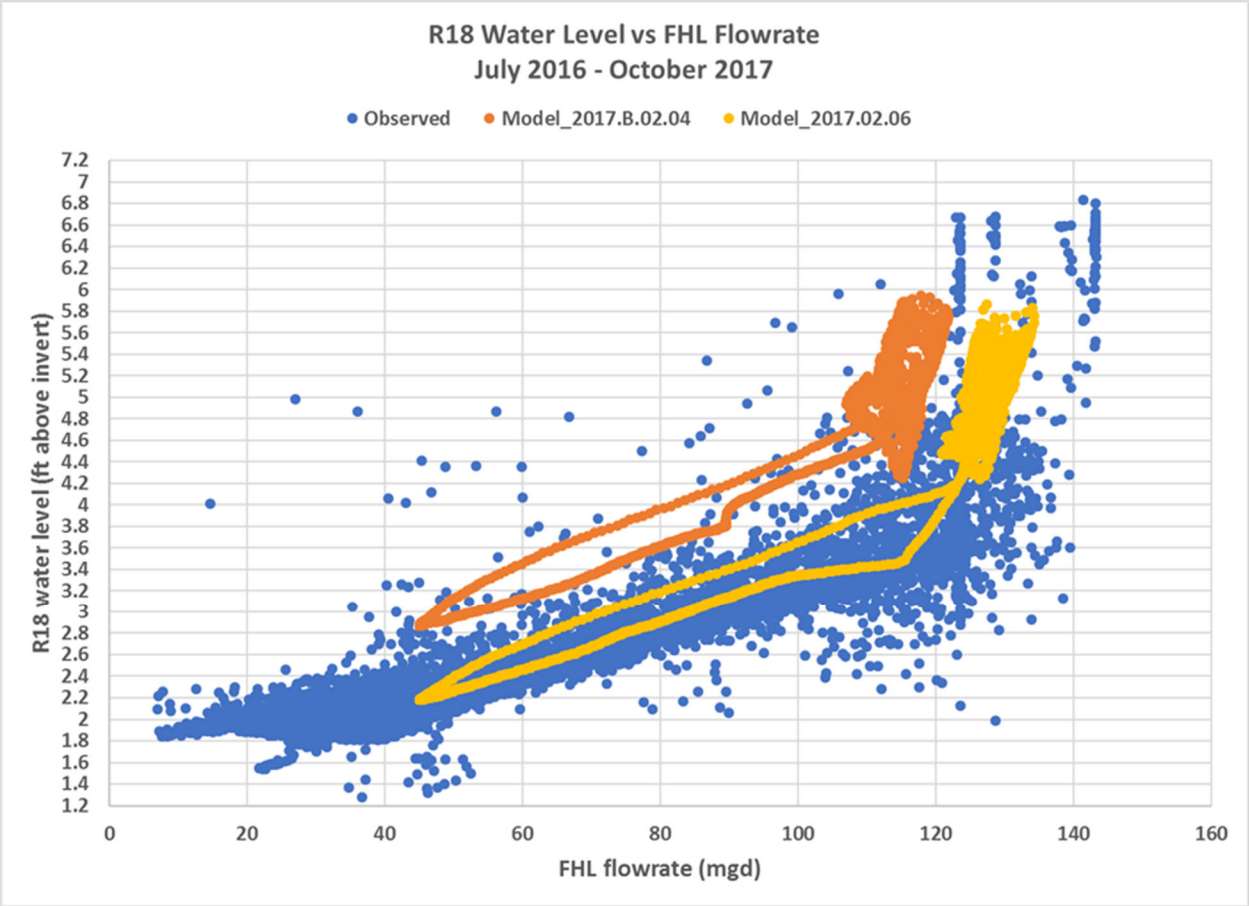

Figure C- 9: Validation of R18 water level as a function of FHL flow rate with second barrel in service.

Southwest WPCP

The Southwest WPCP (SW WPCP) influent flows are delivered through the Southwest High-Level system (SWHL) and the Southwest Low-Level system (SWLL). The SWHL flows enter the SW WPCP by gravity from the Southwest Main Gravity (SWMG) interceptor. The SWLL flows are conveyed from the Cobbs Creek Low-Level (CCLL) and the Lower Schuylkill West-Side (LSWS) interceptors to the SW Low-Level Pump Station.

Gravity flow to the SW WPCP through the SWMG Triple Barrel is governed by the downstream head boundary at the SW WPCP Dispersion Chamber and the upstream water surface elevation at the top of the SWMG Triple Barrel at 70th & Dicks Streets.

The Dispersion Chamber water surface elevation, both observed and simulated by the model, is presented as a function of total SW WPCP influent flow in Figure C-10. The water surface elevation observed in the SWMG interceptor upstream of the SWHL Triple Barrel is presented as a function of total SWMG flow in Figure C-11 along with model simulated results.

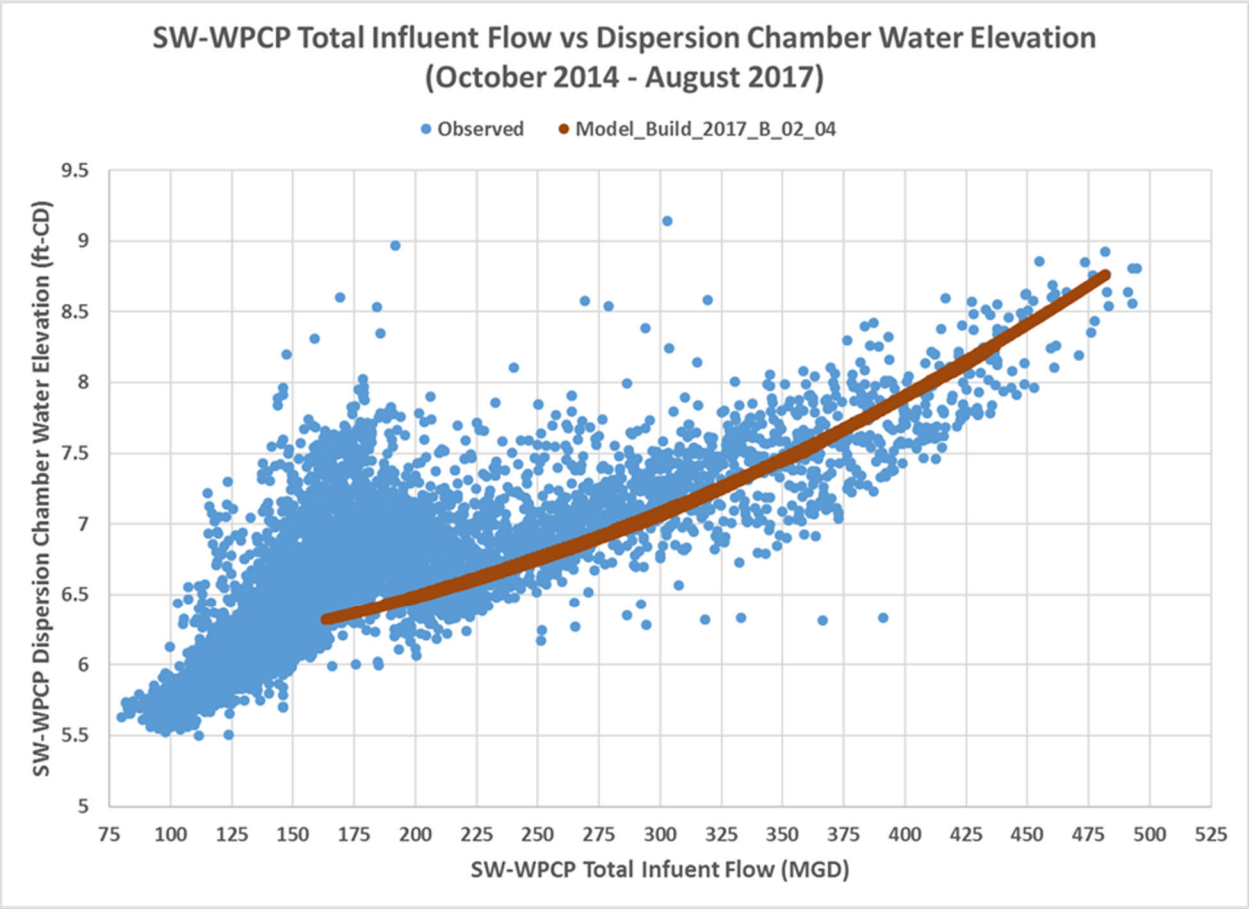

Figure C- 10: Validation of Dispersion Chamber water surface elevation as a function of total SW WPCP influent flow.

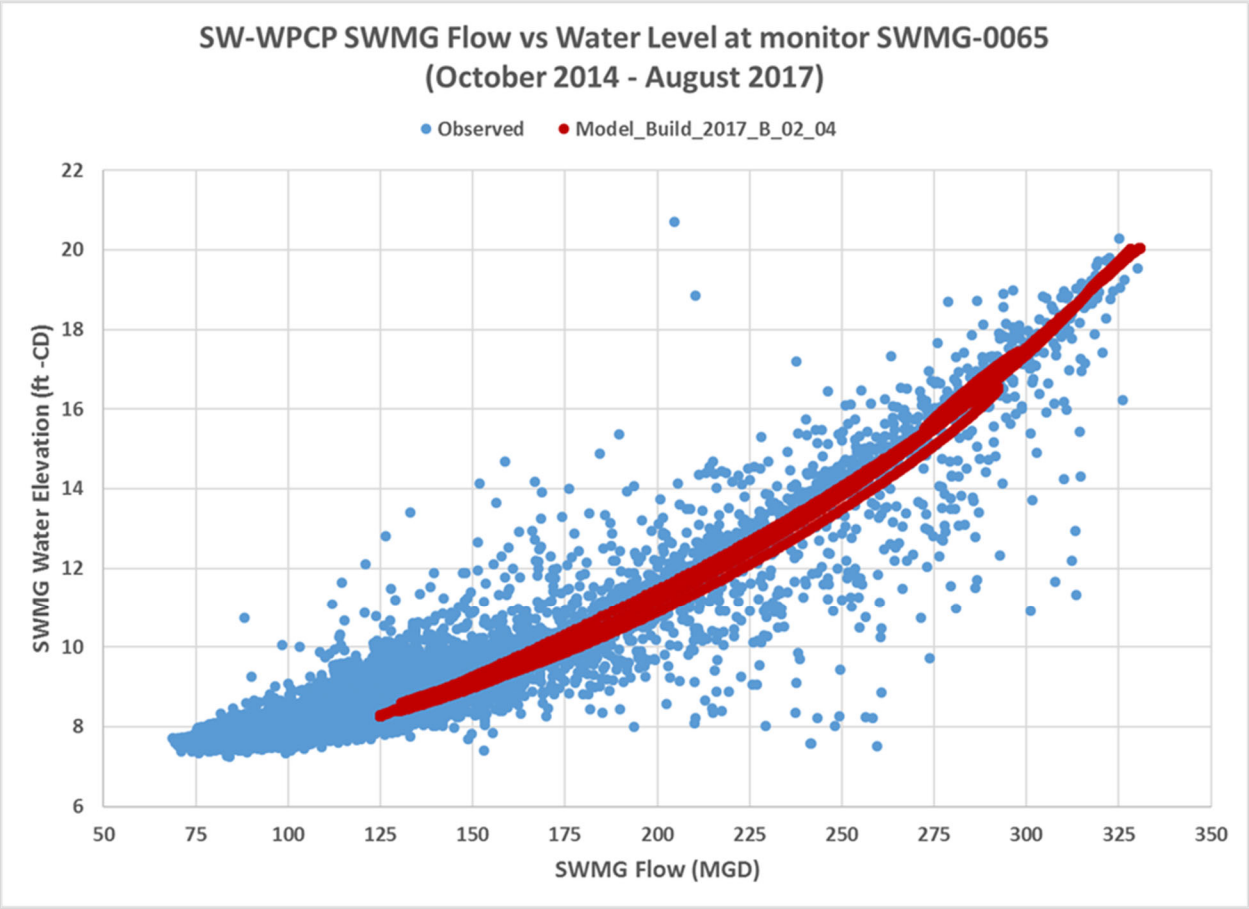

Figure C- 11: Validation of water surface elevation upstream of SWMG Triple Barrel as a function of total SWMG flow.

The SWLL pump station is comprised of three parallel 2-stage constant speed Archimedes screw type pumps with a rated capacity of 32 MGD each. Therefore, the rated capacity of the station with all three pumps in operation is estimated to be 96 MGD. These screw pumps, however, are not operated based on the influent wet well water level as is typical for centrifugal pump stations. The pump station operating data are presented in Figure C-12 for the period of April 2015 through October 2016 with the pump station influent water level plotted as a function of pump discharge rate along with model simulation results for the typical year July 8, 2005 event. The influent pump station level data presented was collected for model calibration from the nearest manhole upstream of the station. The first thing to note upon inspection of Figure C-12 is the two vertical clusters of observed data points near 35 MGD and 70 MGD. This is an indication that the capacity of a single screw pump is reached before the second pump is activated causing the influent level to rise while the meter shows a constant discharge rate. The same pattern is observed at a discharge rate of just over 70 MGD, indicating that two screw pumps are running at capacity before the third pump is activated. This indicates that each screw pump is discharging at just over 35 MGD with a total station capacity of just over 105 MGD. The observed pump discharge rates, however, are seen to be limited by the Parshall flume at approximately 92 MGD. Based on this recently collected and analyzed influent level data, the

hydraulic model was updated to extend the SW WPCP low level pump operating curve from a peak capacity of approximately 92 MGD used in the 2009 models to 106.5 MGD in the current models.

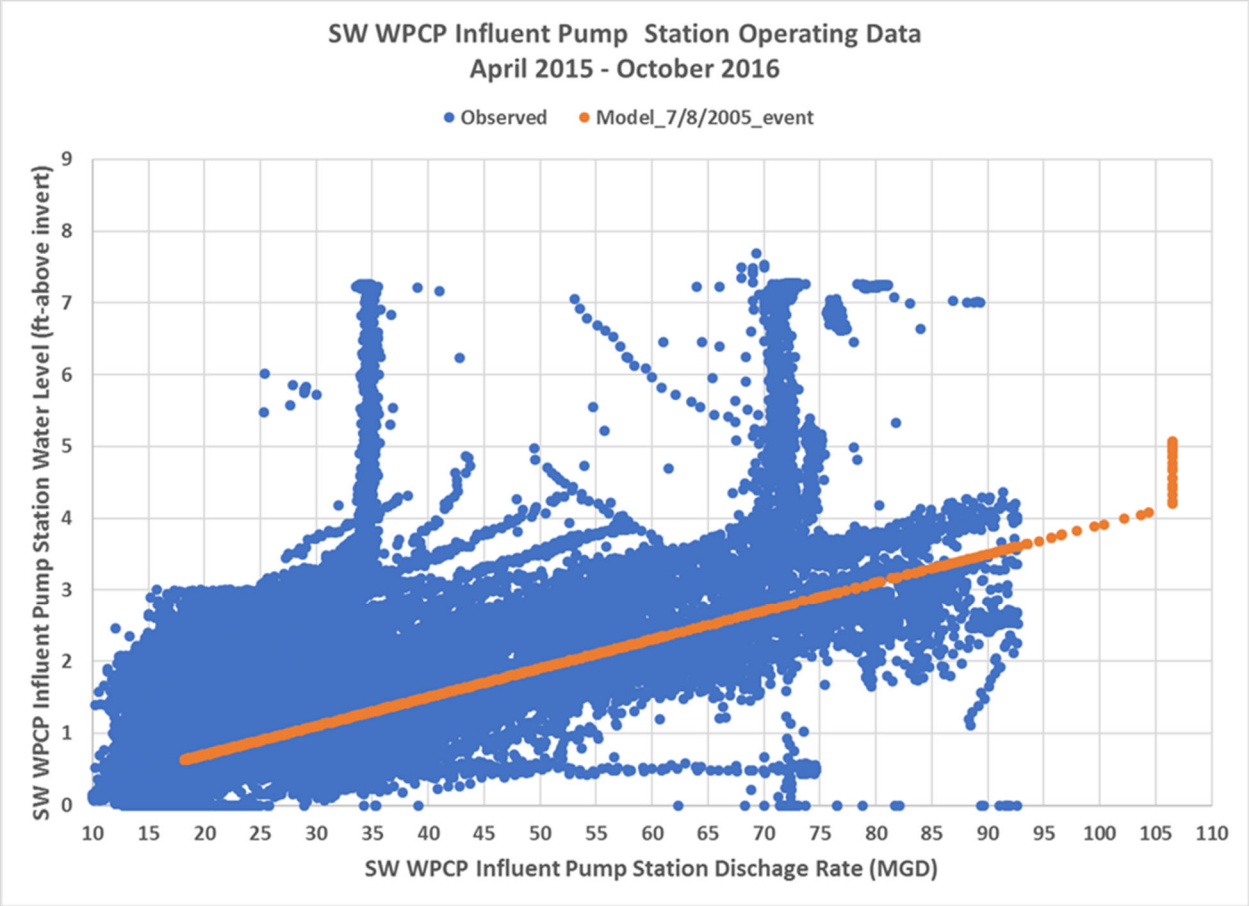

Figure C- 12: Validation of observed SWLL pump station influent level as a function of pump discharge rate with simulated results for July 8, 2005 event.

Southeast WPCP

The Southeast WPCP (SE WPCP) influent flows are delivered through the Southeast Low-Level system (SELL) which receives combined flows from the Lower Delaware Low-Level interceptor (LDLL) and the Oregon Avenue interceptor (OA) before being pumped into the SE WPCP for treatment. The SE WPCP influent pump station's operating data are presented in Figure C-13 along with the pump operating curve used in the current hydraulic model. The observed SE WPCP pump station operating data does not follow rigid operating rules as seen in the model as the actual station operation is based on various factors, including maintaining higher influent water levels during dry weather conditions to save on energy costs along with a strategy of drawing down the wet well prior to an event. While the model represents average operating conditions, the dry weather operation is not as important for determining wet weather system performance as the peak wet weather operation. Therefore, the model curve maintains a relatively flat level below 10 ft for discharge rates less than 200 MGD and increases for higher pump discharge rates to a maximum influent level of 16.4 ft at 280 MGD. This increase in influent level with higher pump discharge rates is often needed to prevent cavitation in the pumps due to drawdown of the water surface at the intakes. The model operating curve shown in Figure C-13 is essentially the same as that used for the 2009 LTCPU models.

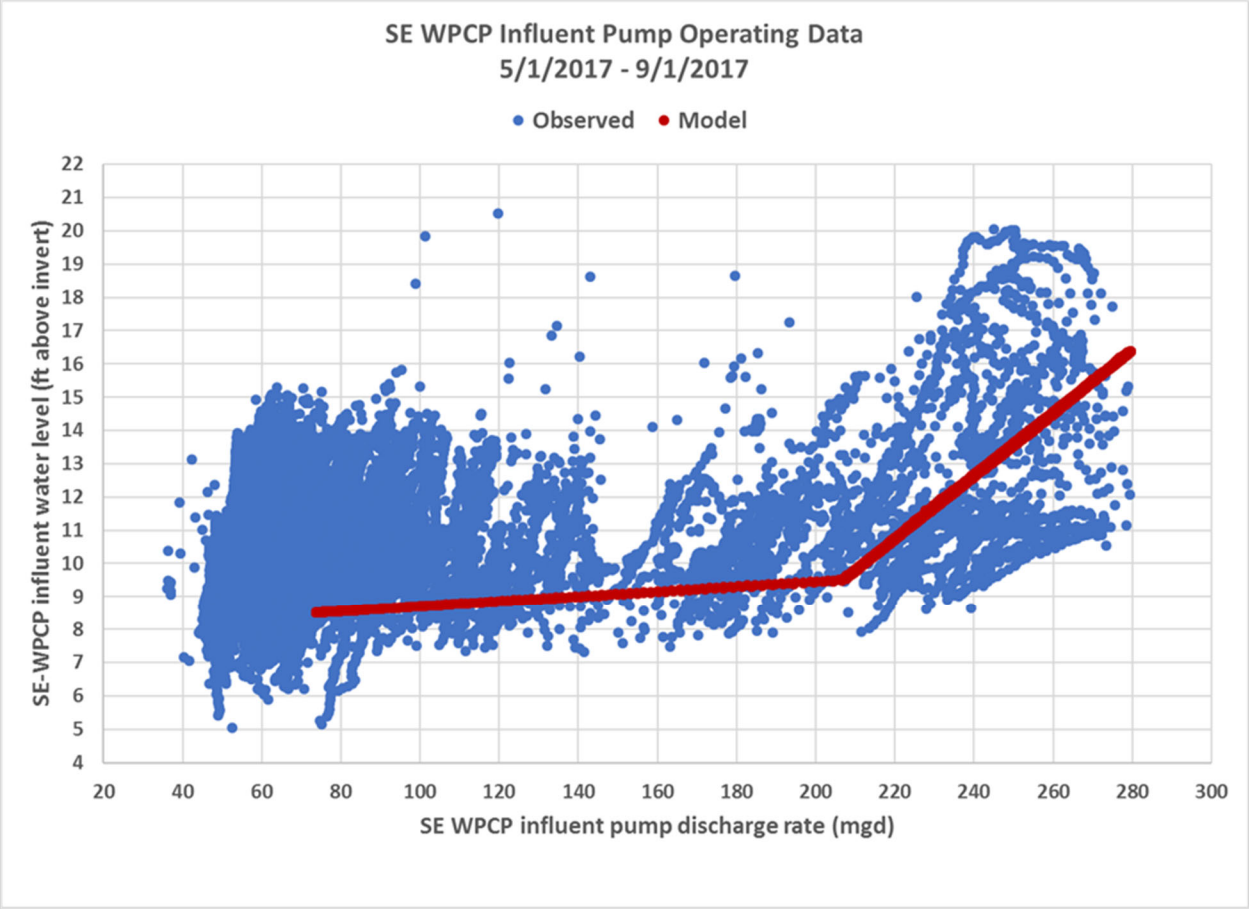

Figure C- 13: Validation of observed SEDD influent pump operating data along with current model results.

3.3 Green Stormwater Infrastructure Modeling Updates

When the LTCPU was submitted in 2009, PWD used a planning-level modeling approach to estimate the benefit of GSI. Since 2009, PWD has collected and analyzed a large amount of data from designed, as well as constructed GSI projects. The data analysis helped create an implementation level model framework that is robust and flexible. The framework was created so that it can be modified as needed to adapt to changes in the GSI implementation programs. Data collection will continue from design drawings, return plans, pre-construction subsurface infiltration tests, and post-construction performance monitoring, which will be used to validate this approach. The use of pre-construction subsurface infiltration rates in current GSI models, represents a significant improvement over the planning-level model used for the 2009 LTCPU that used lower infiltration rates taken from the underlying contributing area surface runoff model.

GSI systems are made up of one or more stormwater management practice (SMP) types that manage stormwater runoff from a specified drainage area. SMPs are classified and tracked based on their implementation approach and locations, primarily for maintenance scheduling needs. The GSI implementation approaches represent separate funding sources: Private (Re)Development, Public Investment, and Incentivized Retrofits. Each of the approaches have unique design and treatment requirements. In addition, the projected estimates of implementation rates are calculated differently for the three approaches. GSI projects are further classified into 'functional types' based on the mechanisms of runoff treatment they utilize, also called 'control functions,' for hydrology and hydraulic modeling needs. A GSI functional type describes the runoff control function and/or configuration of a GSI system and characterizes its inflow, storage, treatment, and outflow processes. Control functions include interception and storage of stormwater, infiltration, evaporation/evapotranspiration, and/or slow release back into the sewer system. Each GSI functional type has a unique set of model parameters and assumptions that are used to build the hydraulic representation of the SMP(s). A given functional type can have different footprints and/or physical attributes and can therefore describe multiple SMP types. Field data is pooled together from constructed projects and summarized by functional type, including total area, footprint of the SMP, storage volume, peak release rate, and effective porosity.

Hydrology Assumptions of GSI

In addition to the monitoring data collected and used for hydrologic calibration of the H&H models, certain assumptions need to be made about the composition of the area contributing to the SMPs based on characteristics of the sewershed in which the SMP is located, to correctly estimate the impacts of GSI on runoff. In certain situations, it may be more appropriate to assume that a portion of the managed area is non-directly connected impervious area (NDCIA). For GSI systems in the Public Investment and Incentivized Retrofits approaches there is no major reconstruction of the existing impervious area. It is assumed that all runoff from the managed directly connected impervious area (DCIA) is directed to the SMPs. For GSI systems constructed under the (Re)Development implementation approach, the pre-construction impervious area composition is not tracked (i.e., DCIA v. NDCIA). These tributary assumptions

are reviewed and revised based on pre-construction drawings, return plans, field visits, and post-construction flow monitoring data.

Hydraulic Representation of GSI

Each GSI functional type has a unique hydraulic representation that includes elements that treat runoff through a combination of storage, evaporation/evapotranspiration, infiltration, and/or slow release. Descriptions of all functional types simulated and indication of whether they are present in the three implementation approaches are included in Table C-2.

Table C-2: GSI Functional Types

GSI Functional Types	Definition/Purpose	(Re)Development	Incentivized Retrofits	Public Investment
Bioinfiltration	Runoff enters the system at the surface and is filtered through a soil media layer before reaching the storage component of the system. Runoff is stored and then infiltrates into the underlying soils. No runoff is released to the sewer through an underdrain. Evaporation is considered for water stored in the pond and the soil of the vegetated component.	X	X	X
Bioretention (*lined*)	Runoff enters the system at the surface and is filtered through a soil media layer before reaching the storage component of the system. Runoff is stored and then is released at a controlled rate to the combined sewer. No infiltration is allowed due to an impermeable liner. Evaporation is considered for water stored in the pond and the soil of the vegetated component.	X	X	X
Bioretention (*unlined*)	Runoff enters the system at the surface and is filtered through a soil media layer before reaching the storage component of the system. Runoff is stored and then is released at a controlled rate to the combined sewer. Some infiltration occurs through the bottom. Evaporation is considered for water stored in the pond and the soil of the vegetated component.	X	X	X
Cistern	Runoff is detained in a tank and subsequently used for non-potable purposes in the attached building. The runoff managed offsets wastewater baseflow that would otherwise be sources from the potable water supply.	X	X	X

GSI Functional Types	Definition/Purpose	(Re)Development	Incentivized Retrofits	Public Investment
Depaving	Depaving projects remove existing impervious pavement and restore the surface with grass, other types of vegetation, or loose materials (stone, mulch, etc.) such that the area can thereafter be considered pervious area. Depaving projects remove contributing impervious area from the sewer system.		**X**	**X**
Direct Discharge	Direct discharge area includes impervious area which is re-routed to the receiving water and no longer tributary to the combined sewer system.	**X**	**X**	
Disconnected Impervious Cover Draining Off-Site	Impervious area which drains to pervious area outside of the controlled area.	**X**	**X**	
Green roof	Vegetated surface installed over a roof surface. Runoff is managed by rainfall falling directly on the vegetated surface, or draining from adjacent roof areas, and then being stored in the green roof soil media. Stored water leaves through evapotranspiration.	**X**	**X**	
Hybrid	Treatment includes both infiltration and slow release. An offset is presented, and volume below slow release conduit is treated through infiltration.	**X**		
Permeable Pavement	Permeable surface commonly composed of concrete, asphalt, pavers, turf, or rubber play surface. Stormwater flows through the porous surface during a rain event, then drains into the subbase beneath the pavement, where it is stored until it infiltrates into the soil.	**X**	**X**	**X**
Subsurface Infiltration	Runoff enters the system through inlets and drains directly to the storage component of the system without treatment through a soil profile. Runoff is stored and then infiltrates into the underlying soils. No runoff is released to the sewer through an underdrain. No evaporation is considered.	**X**	**X**	**X**

GSI Functional Types	Definition/Purpose	(Re)Development	Incentivized Retrofits	Public Investment
Subsurface Slow Release (*lined*)	Runoff enters the system through inlets and drains directly to the storage component of the system without treatment through a soil profile. Runoff is stored and then is released at a controlled rate to the combined sewer. No infiltration is allowed due to an impermeable liner. No evaporation is considered.	**X**	**X**	**X**
Subsurface Slow Release (*unlined*)	Runoff enters the system through inlets and drains directly to the storage component of the system without treatment through a soil profile. Runoff is stored and then is released at a controlled rate to the combined sewer. Some infiltration occurs through the bottom. No evaporation is considered.	**X**	**X**	**X**

Not all control functions are present for all functional types. For example, lined functional types do not allow infiltration to occur and stormwater from subsurface functional types does not evaporate. Figure C-14 depicts an unlined bioretention functional type with all possible components and processes. There are three possible outcomes of stormwater managed by any functional type: it could bypass the stormwater inlet, exceed the SMP's capacity and overflow, and/or be treated via a combination of evaporation, infiltration, and/or slow release back to the combined sewer. PWD's current GSI modeling approach is outlined as a process in Figure C-15.

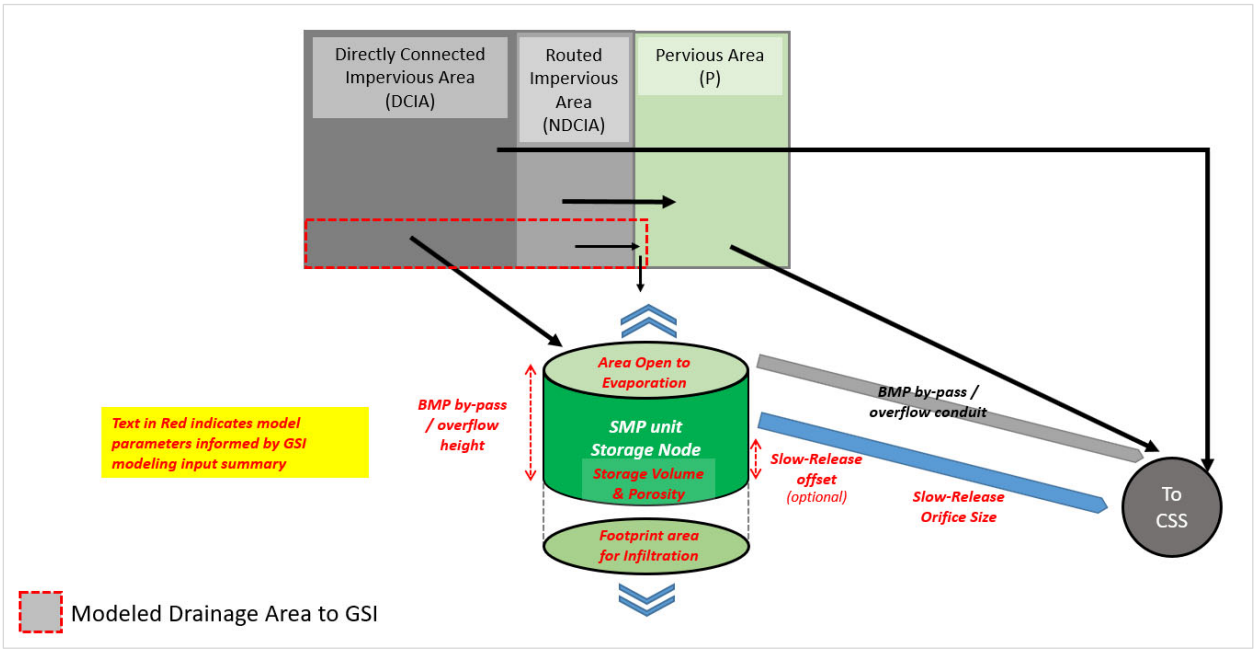

Figure C- 14: Schematic Representation of GSI Modeling Elements for an Unlined Bioretention Functional Type

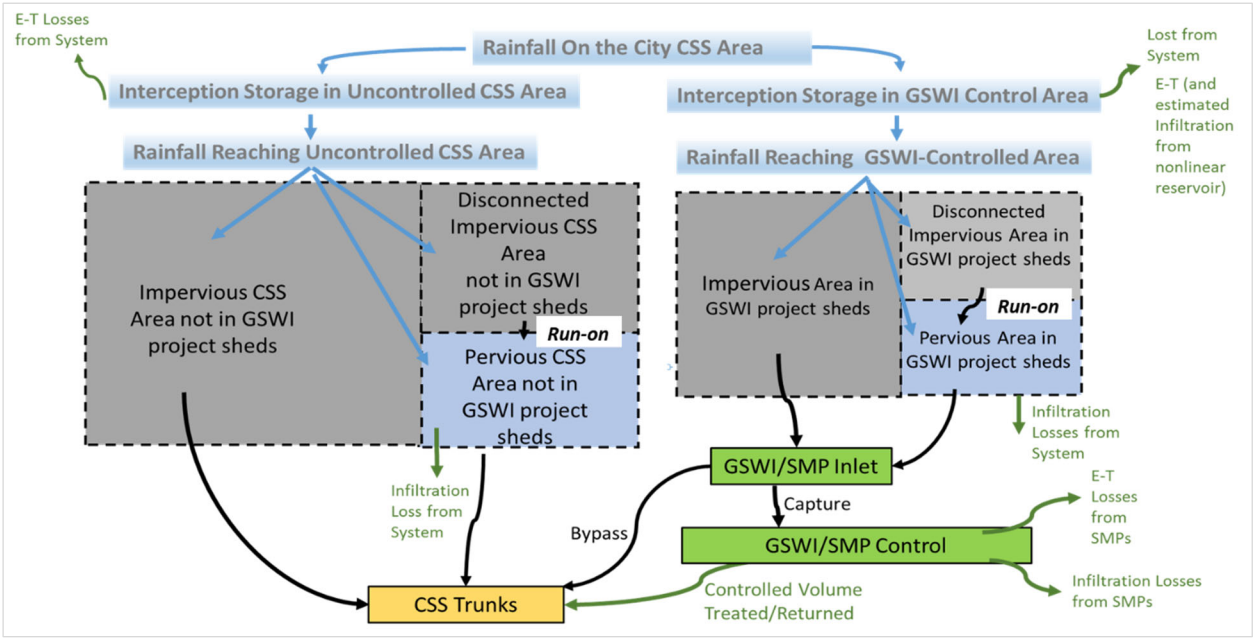

Figure C- 15: Current GSI Modeling Approach

Tables C-3, C-4, and C-5 list all functional types, their associated components, and potentially applicable SMP types by implementation approach: (Re)Development, Public Investment, and Incentivized Retrofits, respectively. Functional types with at least one component of control present are considered 'major functional types' while functional types without a component of control present are considered 'minor functional types' (e.g., direct discharge or disconnected

impervious cover draining off-site). Minor functional types are not explicitly represented by hydraulic components but rather represented as changes to hydrology and currently comprise less than 4% of impervious drainage area managed by GSI. Not included in Table C-2 is the minor functional type, 'Tree Credit.' This type applies to newly planted trees in an impervious area tributary to an SMP and is credited as GAs at a rate of 100 ft^2-inch per tree. To account for any additional tree canopy available to intercept rainfall, the impervious area tributary to the SMP is modeled as having increased depression storage equal to the GA credit volume. Currently there are less than 0.5 acres-inch of such GA credit volume.

Table C-3: (Re)Development GSI Functional Types and Associated SMP Types

	Model Components					
Functional Type Description	**Infiltration**	**Evaporation**	**Slow Release**	**Slow Release offset**	**Inlet Bypass**	**Potentially Applicable SMP types**
Bioinfiltration	X	X				Bioinfiltration/Bioretention
Bioretention (lined)		X	X			Bioinfiltration/Bioretention
Bioretention (unlined)	X	X	X	X		Bioinfiltration/Bioretention
Cistern			X			Cistern
Direct Discharge						
Disconnected Impervious Cover Draining Off-Site						Disconnected Impervious Area – Pavement Disconnections Disconnected Impervious Area – Planters Disconnected Impervious Area – Rooftop Area Disconnected
Green roof		X				Green Roof
Hybrid	X		X	X		Basin
Porous pavement	X	X				Porous Pavement
Subsurface detention (lined)			X			Basin Blue Roof
Subsurface detention (unlined)	X		X			Basin
Subsurface infiltration	X					Basin

Table C-4: Public Investment GSI Functional Types and Associated SMP Types

	Model Components					
Functional Type Description	**Infiltration**	**Evaporation**	**Slow Release**	**Slow Release offset**	**Inlet Bypass**	**Potentially Applicable SMP types**
Bioinfiltration	X	X			X	Basin Bump-out Green Gutter Infiltration/ Storage Trench Planter Rain Garden Stormwater Tree Swale Tree Trench
Bioretention (lined)		X	X		X	Basin Bump-out Green Gutter Infiltration/ Storage Trench Planter Rain Garden Swale Tree Trench
Bioretention (unlined)	X	X	X	X	X	Basin Bump-out Green Gutter Infiltration/ Storage Trench Planter Rain Garden Swale Tree Trench
Depaving						Depaving
Porous pavement	X	X				Pervious Paving
Subsurface detention (lined)			X		X	Infiltration/ Storage Trench Tree Trench
Subsurface detention (unlined)	X		X	X	X	Drainage Well Infiltration/ Storage Trench Tree Trench
Subsurface infiltration	X				X	Infiltration/ Storage Trench Tree Trench

Table C-5: Incentivized Retrofits GSI Functional Types and Associated SMP Types

	Model Components					
Functional Type Description	**Infiltration**	**Evaporation**	**Slow Release**	**Slow Release offset**	**Inlet Bypass**	**Potentially Applicable SMP types**
Bioinfiltration	X	X				Bioinfiltration/Bioretention
Bioretention (lined)		X	X			Bioinfiltration/Bioretention
Bioretention (unlined)	X	X	X	X		Bioinfiltration/Bioretention
Cistern			X			Cistern
Depaving						Depaving
Direct Discharge						
Disconnected Impervious Cover Draining Off-Site						Disconnected Impervious Area – Pavement Disconnections Disconnected Impervious Area – Planters Disconnected Impervious Area – Rooftop Area Disconnected
Green roof		X				Green Roof
Porous pavement	X	X				Porous Pavement
Subsurface detention (lined)			X			Basin Blue Roof
Subsurface detention (unlined)	X		X			Basin
Subsurface infiltration	X					Basin

Spatial Resolution of GSI

While each individual SMP is not represented on a one-to-one basis by the GSI model, they are associated by location to a sewershed. After confirming the design/build process is complete and the reported location in the City is correct, the SMPs are assigned to their corresponding functional type and aggregated at the sewershed level (see Figure C-16 below). Only the functional types present in the sewershed are simulated in the GSI model.

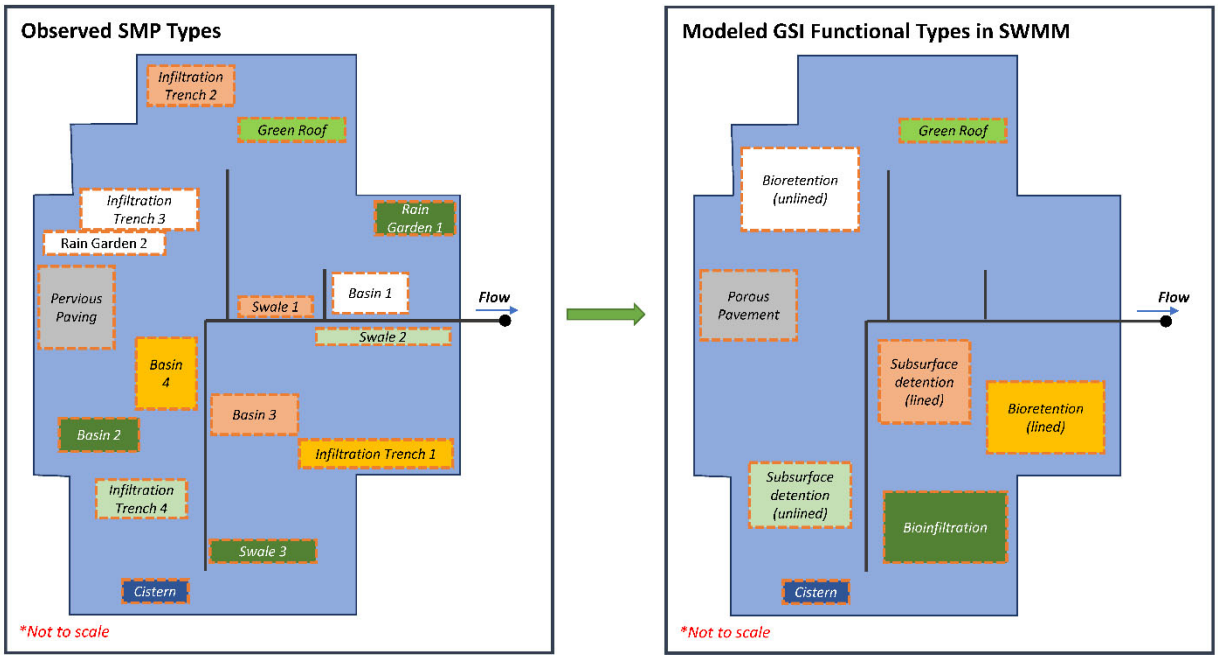

Figure C- 16: Example Representation of SMPs by GSI Functional Types in SWMM.

4.0 Conclusions

The hydrologic and hydraulic model underwent a rebuild between 2017 and 2018 to improve the representation of Philadelphia's combined and separate sewer collection system and to reduce uncertainty associated with the model results. Model updates that occurred as part of the rebuild include the use of data from a large number of flow monitors to calibrate and verify the combined and separate sewer area hydrology, collection system hydraulics, and updated average dry-weather flow. Hydraulic model representation was calibrated and validated using monitored WPCP influent flows and levels. Representation of GSI has transitioned from a planning to implementation level model in which all model elements are able to be easily updated and refined as more data becomes available. To ensure better tracking of model versions as the model is refined, a model versioning system was created and implemented in which three levels of changes to the model are used to name a particular model version.

The H&H models will continue to be updated as the data collection efforts continue. It is necessary to keep the H&H models updated with the best available information so that we can continue to support environmental compliance as well as support infrastructure related decisions. The models will also be updated to represent updates to regulations and design standards, if PWD decides to make any changes based on understanding from the analysis of data collected from the GSI projects.

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Definitions

Calibration – Iterative process of comparing simulated results to monitoring data and adjusting model parameters to best match monitoring data.

GSI Functional Type – Describes the runoff control function and/or configuration of a GSI system and characterizes its inflow, storage, treatment, and outflow processes.

GSI System – A unit of GSI made up of one of more SMP types that manage stormwater runoff from a specified drainage area.

Model – A numerical representation of physical assets and processes.

Model baseline – The model that is used to generate the initial set of information from which all progress is measured, for the COA.

Minor changes – Changes to the model prompted by temporary operational changes or changes to the contributing area properties.

Model rebuild – Changes to the model prompted by the identification of a significant flaw, and/or revisions to the hydrologic process representations; it may also include changes to hydraulic control structure representation and GSI representation, and/or a rebuild of the mathematical simulation engine and/or a change in the modeling software.

Model update – Changes to the model based on the best available information. These changes can include changes to the collection system and/or configuration and/or updates to hydrologic parameters.

Model versioning – A system to manage the model inputs and to make results replicable.

Significant revisions – Major changes to the model prompted by errors in representation or methodology or adoption of a new modeling approach and/or systematic changes to the model representation.

Stormwater management practice type – A specific configuration or aesthetic of a component of a GSI system.

Validation – Checking the mathematical model results against a set of measured values that were not used for calibration.

Appendix D

Supplemental Information for Assessment of Receiving Water Conditions

Glossary of Acronyms

CCMUA	Camden County Municipal Utilities Authority
COA	Consent Order and Agreement
CSO	Combined Sewer Overflow
DELCORA	Delaware County Regional Water Control Authority
DO	Dissolved Oxygen
DRBC	Delaware River Basin Commission
EAP	Evaluation and Adaptation Plan
EFDC	Environmental Fluid Dynamics Code
H&H	Hydrologic and Hydraulic
NCDC	National Climatic Data Center
NOAA	National Oceanic and Atmospheric Administration
PADEP	Pennsylvania Department of Environmental Protection
PORTS	Physical Oceanographic Real-Time System
PWD	Philadelphia Water Department
SWMM	Storm Water Management Model
USACE	United States Army Corps of Engineers
US EPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
WASP	Water Quality Analysis Simulation Program

1.0 Overview of 2013-2015 COA Water Quality Reports

Additional details about the required contents of the four deliverables related to water quality models that were submitted as outlined in Section 3) a) of the Consent Order and Agreement (COA) can be found below.

"Tributary Water Quality Model – Bacteria: This report will describe the methods, and provide the results, of a project to model the receiving water quality in the Tacony/Frankford Creek and the Cobbs Creek. The work will include the collection of field data for model development and validation."

"Tributary Water Quality Model – Dissolved oxygen: This report will describe the methods, and provide the results, of a project to model the receiving water quality in the Tacony/Frankford Creek and the Cobbs Creek. The work will include the collection of field data for model development and validation."

"Tidal waters Water Quality Model – Bacteria: This report will describe the methods, and provide the results, of a project to model the receiving water quality in the tidal Delaware River and the tidal Schuylkill River. The work will include the collection of field data for model development and validation."

"Tidal waters Water Quality Model – Dissolved oxygen: This report will describe the methods, and provide the results, of a project to model the receiving water quality in the tidal Delaware River and the tidal Schuylkill River. The work will include the collection of field data for model development and validation."

Each of these water quality models is validated for existing conditions. Additional data collection and updates to representation of key processes will be required to best represent the system as future conditions change.

2.0 DRBC and PADEP Water Quality Standards

Fecal coliform numeric criteria for Water Contact Sports Criteria in PA Code Title 25, Chapter 93 Water Quality Standards state:

"During the swimming season (May 1 through September 30), the maximum fecal coliform level shall be a geometric mean of 200 per 100 milliliters (ml) based on a minimum of five consecutive samples each sample collected on different days during a 30-day period. No more than 10% of the total samples taken during a 30-day period may exceed 400 per 100 ml."

"For the remainder of the year, the maximum fecal coliform level shall be a geometric mean of 2,000 per 100 milliliters (ml) based on a minimum of five consecutive samples collected on different days during a 30-day period."

For non-tidal portions of both the Cobbs Creek and Tacony/Frankford Creek, the critical designated use for dissolved oxygen is Warm Water Fishes and the relevant numeric criteria for dissolved oxygen are "*7-day average 5.5 mg/l; minimum 5.0 mg/l*".

Water quality standards for the tidal Delaware estuary are established in the Delaware River Basin Commission (DRBC) Administrative Manual – Part III, Water Quality Regulations. Relevant criteria for fecal coliform bacteria and DO in the tidal Delaware River are listed below.

Zone 2

Designated Use: "Recreation"

- Fecal coliform criteria: "*Maximum geometric average 200 per 100 milliliters*"

Designated uses: "maintenance and propagation of resident fish and other aquatic life" and *"passage of anadromous fish"*

- Dissolved Oxygen criteria:
  a. *"24-hour average concentration shall not be less than 5.0 mg/l."*
  b. *"During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average less than 6.5 mg/l."*

Zone 3

Designated Use: "Recreation – Secondary Contact"

- Fecal coliform criteria: "*Maximum geometric average 770 per 100 milliliters*"

Designated uses: "maintenance of resident fish and other aquatic life" and *"passage of anadromous fish"*

- Dissolved Oxygen criteria:
  a. *"24-hour average concentration shall not be less than 3.5 mg/l."*
  b. *"During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average less than 6.5 mg/l."*

Zone 4

Above river mile 81.8 *Designated Use: "Recreation – Secondary Contact"*

- Fecal coliform criteria: "*Maximum geometric average 770 per 100 milliliters*"

Below river mile 81.8 *Designated Use: "Recreation"*

- Fecal coliform criteria: "Maximum *geometric average 200 per 100 milliliters*"

Designated uses: "maintenance of resident fish and other aquatic life" and *"passage of anadromous fish"*

- Dissolved Oxygen criteria:

  a. *"24-hour average concentration shall not be less than 3.5 mg/l."*

  b. *"During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average less than 6.5 mg/l."*

Zone 5
Designated Use: "Recreation"

- Fecal coliform criteria: "Maximum *geometric average 200 per 100 milliliters*"

Designated uses: "maintenance of resident fish and other aquatic life" and *"passage of anadromous fish", "propagation of resident fish from river mile 70.0 to river mile 48.2"*

- Dissolved Oxygen

  a. *"24-hour average concentration shall not be less than*

     1. *3.5 mg/l at river mile 78.8*

     2. *4.5 mg/l at river mile 70.0*

     3. *6.0 mg/l at river mile 59.5"*

  b. *"During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average less than 6.5 mg/l."*

3.0 Receiving Water Model Updates and Typical Year Model Setup

Model Domain

The domain of the tidal Delaware River model is limited to a region of the estuary that is characterized typically by freshwater conditions with aperiodic intrusion of salt into the lower reaches from the Delaware Bay. The domain includes tidal reaches of the Delaware River from a point 3 miles above the confluence with the Chesapeake and Delaware Canal, just downstream of Pea Patch Island, to the head of tide at Trenton, spanning from River Mile 61.8 to 134.4. The City of Philadelphia is situated between River Mile 91 and River Mile 111.

The main sources of freshwater to the Delaware Estuary are the Delaware and Schuylkill Rivers. Between the head of tide on the Delaware River at Trenton, NJ, and Delaware City, DE, the tidal portion of the Schuylkill River and other tributaries contribute freshwater to the upper estuarine system. Creeks that receive Philadelphia Water Department (PWD) combined sewer discharges are included up to their corresponding tidal extent. The remaining tributaries are included up to two or three miles from their corresponding confluence with the Delaware River. The computational grid has 2800 horizontal grid cells, with dimensions ranging from 12m (40ft) to 1100m (3600ft), and 5 vertical layers.

The domains of the non-tidal tributary models are limited to the non-tidal reaches of the Cobbs Creek and the Tacony/Frankford Creek from the city line on the main stem to the tidal boundaries of the creeks. The Cobbs Creek model includes the main stem from US Rt1 to Woodland Avenue and includes the East Indian Creek and West Indian Creek tributaries. The computational grid contains 309 cells with a width of 1 cell and 1 vertical layer. The Tacony/Frankford Creek model includes the main stem from Adams Avenue to Torresdale Avenue. There are no tributaries to the Tacony/Frankford Creek model. The computational grid contains 172 cells with a width of 1 cell and 1 vertical layer.

Fecal Coliform Bacteria Models

Bacteria Receiving Water Models were developed for the typical year for the *Year 10 Evaluation and Adaptation Plan* (EAP) for the tidal Delaware River, non-tidal Cobbs Creek, and non-tidal Tacony/Frankford Creek. The models are used as tools to evaluate the receiving water condition at the tenth year of implementation of the *Green City, Clean Waters* program. The model results allow analysis of the extent to which PWD Combined Sewer Overflow (CSO) discharge causes or contributes to exceedance of fecal coliform bacteria criteria in the tidal and non-tidal receiving waters.

The tidal Delaware River typical year receiving water model was developed based on the validated 3D hydrodynamic and bacteria models developed for the 2012 and 2013 Tidal Waters Water Quality Model for bacteria and dissolved oxygen (DO) submitted to United States Environmental Protection Agency (US EPA) and Pennsylvania Department of Environmental Protection (PADEP) in 2015 for the COA. These models are referred to as the COA models. Hydrodynamics and bacteria were simulated in the US EPA Environmental Fluid Dynamics Code (EFDC). The EFDC model provides computational modules that include processes required for the simulation of hydrodynamics, bacteria, and dissolved oxygen. The EFDC model was selected to model fecal coliform bacteria with the hydrodynamic module of EFDC. The tidal Delaware River EFDC bacteria model has undergone some model refinements and revalidation since the COA report submittal. In the refined bacteria model, fecal coliform was simulated in the hydrodynamic module as a conservative substance. An additional update was made to the EFDC code to incorporate temperature dependent decay. The tidal Delaware River receiving water simulations for the typical year are based on the use of the refined model.

The typical year receiving water models for the non-tidal Cobbs Creek and non-tidal Tacony/Frankford Creek were developed based on the validated bacteria models developed for the Tributary Water Quality Model for Bacteria Report submitted to PADEP in 2013. This suite of models has been updated since the validation reports were submitted. The EPA Water Quality Analysis Simulation Program (WASP) 7.5 models used for the original COA efforts were event-based and validated against bacteria data collected during wet-weather. The models for the non-tidal tributaries have been converted from the event-based WASP models to EFDC models to facilitate a full year simulation for the typical year. The Tacony/Frankford Creek and the Cobbs Creek EFDC bacteria models were re-validated against observed fecal coliform bacteria. The non-tidal tributary EFDC models have been validated to represent a comparable level of validation to the WASP models and compared to the COA WASP model results for the events

included in the COA validation report. The refined EFDC models were the basis for the typical year non-tidal tributary bacteria models.

Hydrodynamic Model Modifications for the Tidal Delaware River Typical Year Model

The tidal Delaware River typical year receiving water model was developed based on the refined 2012 and 2013 COA models. Modifications were made to the model to represent the typical year condition.

Bathymetry and Bottom Roughness

The model bathymetry in the models submitted for the COA was based on raw bathymetric sounding data from the National Oceanic and Atmospheric Administration (NOAA) dating 2005 and earlier and more detailed sounding data in the navigational channel from the US Army Corps of Engineers (USACE) dating 2012-2014. The bathymetry was updated for the typical year model with updated 2014 US Army Corps of Engineers bathymetry data, where available, to represent a more recent bottom and channel condition.

Model bottom roughness was updated through sensitivity studies and subsequent revalidation performed after the COA submittal of the validated models. The updated roughness was incorporated into the typical year model. The initial bottom roughness parameter in the tidal Delaware EFDC model was based on data from a 2003 sediment inventory study of the upper Delaware River (Sommerfield & Madsen 2003) and local knowledge of the river bed composition from visual inspection during low tide. The COA model hydrodynamics were calibrated against 2012 and 2013 observed water level and velocity data at monitoring stations, and model performance was verified with the updated bottom roughness.

Atmospheric Inputs

A 2005 atmospheric input file which includes atmospheric pressure, temperature, relative humidity, precipitation, evaporation, solar radiation and cloud cover, and a wind input file with wind speed and direction were prepared based on National Climatic Data Center (NCDC) data for the Philadelphia International Airport. The wind speed was capped to 20 knots for the typical year model input.

Initial and Open Boundary Conditions

Initial conditions and most boundary conditions for the tidal Delaware River typical year model were developed using observed data for calendar year 2005. The initial water temperature was set spatially constant to the observed temperature measured at NOAA's Philadelphia station on January 1, 2005, which was the start time of the simulation.

For the Year 10 typical year model scenario, the open boundary condition of the southern open boundary downstream end was set to the predicted water level for calendar year 2005 at Delaware City, DE, obtained from NOAA's Physical Oceanographic Real-Time System (PORTS). This timeseries includes only the signal from astronomic tidal constituents. Subtidal signals, such as the set ups or set downs from meteorological events, were not included because a

"typical" water level condition was desired. To represent the mean sea level at Year 10, annual mean water level at Reedy Point was projected for the year 2021 based on a linear regression of 40 years of observed annual mean water level. This projected water level was superimposed on to the 2005 astronomical tidal signal and used to represent the Year 10 water level at the lower boundary in the model.

Temperature

Water temperature throughout the model domain was simulated in the EFDC model based on atmospheric inputs and boundary conditions. Theoretical solar radiation, calculated based on latitude, was used to represent the atmospheric boundary conditions. Continuous water temperature data was available for the main stem Delaware River at the United States Geologic Survey (USGS) stations Delaware River at Trenton, Delran, Pennypack Woods, Ben Franklin Bridge, and Chester, and at NOAA PORTS stations Newbold, Burlington, Philadelphia, and Delaware City for the calendar year 2005. Observed water temperature at Delaware City was applied to the southern open boundary. Since there was no temperature data available for smaller tributaries for calendar year 2005, the water temperature at the tributary boundaries was set to the observed water temperature from the nearest USGS station on the main stem Delaware River. For all other model boundary condition inputs including, PWD CSOs, neighboring city CSOs, direct dischargers, and direct runoff, the temperature was set to the nearest temperature location on the main stem of the Delaware River. Temperature from Delaware River at Trenton was used for the Schuylkill River and the northern open boundary at the upstream end. Modeled water temperature was calibrated in the temperature model of EFDC by scaling down theoretical clear sky solar radiation in the summer months by a global percent. Observed water temperature data from USGS stations Pennypack Woods, Ben Franklin Bridge, and Chester on the Delaware River were used in the temperature validation.

Streamflow

Streamflow from the tributaries discharging to the tidal Delaware River model was developed for the typical year model from discharge monitored by USGS at stations on the rivers and creeks within the tidal Delaware River watershed. Records of continuous streamflow timeseries are available from USGS for calendar year 2005 for most of the major tributary rivers and creeks of the tidal Delaware River within the model domain from Trenton to Delaware City. Streamflow estimates for ungaged tributaries were prepared using a watershed area ratio method using flow data from nearby or similar gaged tributaries. Reference creeks for ungaged tributaries are listed in Table D-1. The USGS stations on the gaged tributaries are located on the streams above the influence of the tide. For many of the tributaries, especially on the New Jersey side of the Delaware River where the watershed is relatively flat, there is a significant portion of the watershed downstream of the gage. The watershed area ratio method was used to estimate streamflow from these lower (ungaged) watershed areas based on the flow recorded at the USGS gage of the tributary. The watershed area ratio method is also used to estimate flow for the areas between tributaries that contribute runoff directly to the Delaware River. These areas are referred to as "direct runoff areas". The watershed area ratio method uses the rule of proportion to calculate the missing flow: $Q_{all}=Q_{gaged} * (A_{gaged}+A_{ungaged})/A_{gaged.}$ Since the non-tidal Tacony/Frankford Creek and non-tidal Cobbs Creek are CSO receiving waters, the Year 10 non-

tidal EFDC models were used to provide the flow boundary condition inputs to the tidal Delaware River model for these creeks.

Table D-1: Tributaries included in Tidal Delaware River Model Domain

River/Tributary	USGS Gage Number	Reference Tributary to Estimate Discharge	River Mile
Delaware River at Trenton	01463500		134.25
Blacks Creek	None	Crosswicks Creek	128.00
Crosswicks Creek	01464500		128.00
Stream @ Crystal Lake	None	Crosswicks Creek	126.00
Crafts Creek	None	Crosswicks Creek	124.00
Bustleton Creek	None	Crosswicks Creek	119.75
Assiscunk Creek	None	Rancocas Creek	118.00
Stream @ Burlington	None	Rancocas Creek	117.75
Neshaminy Creek	01465500		115.00
Poquessing Creek	01465798		111.25
Swede Run	None	Pennsauken Creek	110.75
Rancocas Creek north	01467000		110.50
Rancocas Creek south	01465850		110.50
Pennypack Creek	01467048		109.00
Pompeston Creek	None	Pennsauken Creek	108.50
Pennsauken Creek	01467081		104.75
Frankford Creek	01467087	Tacony Creek tributary model output	104.00
Cooper River	01467150		100.50
Newton Creek	None	Cooper River	96.75
Big Timber Creek	None	Cooper River	95.50
Schuylkill River	01474500		92.25

River/Tributary	USGS Gage Number	Reference Tributary to Estimate Discharge	River Mile
Woodbury Creek	None	Cooper River	91.50
Little Mantua Creek	None	Raccoon Creek	90.50
Mantua Creek	01475000	Raccoon Creek	89.75
Clonmell Creek	None	Raccoon Creek	87.00
Cobbs Creek	01475548	Cobbs Creek tributary model output	85.00
Darby Creek	None	Crum Creek	85.00
Hermesprota Creek	None	Crum Creek	85.00
Muckinipattis Creek	None	Crum Creek	85.00
Stony Creek	None	Crum Creek	85.00
Crum Creek	01475850		84.80
Ridley Creek	01476480		84.00
Chester Creek	01477000		82.50
Little Timber Creek	None	Raccoon Creek	82.50
Still Run	None	Raccoon Creek	82.00
Raccoon Creek	01477120		80.00
Stoney Creek	None	Crum Creek	80.00
Marcus Hook Creek	None	Crum Creek	79.50
Namaan Creek	None	Chester Creek	77.75
Oldmans Creek	None	Raccoon Creek	76.00
Shellpot Creek	01477800		71.70
Brandywine River	01481500		70.50
Christina River	01478000		70.50
Red Clay Creek	01480015		70.50
White Clay Creek	01479000		70.50

River/Tributary	USGS Gage Number	Reference Tributary to Estimate Discharge	River Mile
Salem River	01482500		68.75
Army Creek	None	Christina River	64.00

PWD CSOs

Discharge from the CSOs in the City of Philadelphia that empty to the tidal Delaware River were estimated from the Year 10 hydrologic and hydraulic (H&H) district model simulations. The H&H models represent each of the drainage districts contributing to the City's three Water Pollution Control Plants and are simulated using the US EPA Storm Water Management Model (SWMM) Version 5.

CSOs from Camden, Chester, and Wilmington

The tidal Delaware River EFDC model contains inflow points to represent the CSOs from the Camden County Municipal Utilities Authority (CCMUA), the Delaware County Regional Water Quality Control Authority (DELCORA) within Chester, and the City of Wilmington. The CSO inputs from the City of Wilmington discharge to the Christina River tributary to the tidal Delaware River model domain. Discharge for the non-PWD CSOs was estimated for the typical year using the typical year rainfall timeseries and the methods used to estimate discharge for the 2012 and 2013 validation models. These methods are described in the 2015 COA Report Tidal Waters Water Quality Model. To provide estimates for the CCMUA CSO locations, a modified version of the U.S. Army Corps of Engineers Storage, Overflow and Treatment model was employed (NetSTORM). Discharge volume from CSOs in the City of Chester were estimated, using information obtained from the DELCORA Long-Term CSO Control Plan for the City of Chester Combined Sewer System (April 1999). For Wilmington, a simplified loading approach was developed to estimate overflow loadings based on an application of a modified rational method for rainfall runoff. This application was developed using physical feature and flow data available from reports prepared by the Wilmington Department of Public Works and the USEPA. For a more detailed description of the above methods, please see the Tidal Waters Water Quality Model – Bacteria and Dissolved Oxygen Report – Submitted June 1, 2015.

Point Sources

Discharge volume for municipal and industrial wastewater dischargers were estimated for the typical year model by calculating a median of 2012-2016 data reported in the Discharge Monitoring Reports for each permitted discharger.

Modifications for the Non-tidal Tributary Typical Year Models

The non-tidal tributary receiving water models were developed based on the refined EFDC bacteria models. Modifications were made to the models to represent the typical year condition.

In order to simulate the typical year, boundary condition input files that represent the typical year were developed for the non-tidal EFDC models. The upstream boundary inflow for each

non-tidal EFDC model was generated by simulating SWMM5 models developed for the upper watershed with the typical year rainfall. Runoff from non-CSO catchments that discharge to the creek was also estimated from the SWMM5 watershed models simulated with the typical year rainfall timeseries. The atmospheric and wind model inputs were calendar year 2005 observed meteorological conditions at the Philadelphia International Airport NOAA station. Since the USGS water quality monitors were not active on the creeks in 2005, observed water temperature from calendar year 2005 at the USGS station Delaware River at Trenton was used to represent water temperature. Stream baseflow for the typical year was represented by the average monthly baseflow over the period of record at the USGS discharge gage locations on the creeks. Discharge from the CSOs in the City of Philadelphia that discharge to the non-tidal Tacony/Frankford Creek and Cobbs Creek were estimated from the Year 10 H&H model simulations.

Dissolved Oxygen Models

Tidal Delaware Dissolved Oxygen Model

The PWD maintains a validated DO water quality model of the tidal Delaware River, which includes CSO discharges into the Delaware River and its tributaries. The tidal Delaware River DO model was developed for the 2012 and 2013 Tidal Waters Water Quality Model for bacteria and dissolved oxygen submitted to U.S. EPA and PADEP in 2015 for the Consent Order & Agreement. The model development and validation processes are documented in Tidal Waters Water Quality Model – Bacteria and Dissolved Oxygen: Consent Order and Agreement Deliverable IX and X (PWD, 2015,). Hydrodynamics and water quality were simulated in the US EPA EFDC model. The EFDC model provides computational modules that include processes required for the simulation of hydrodynamics, bacteria, and DO. The EFDC model platform was selected to model DO with the hydrodynamic and water quality modules. The tidal Delaware River EFDC DO model has undergone model refinements since the 2015 COA report submittal.

The typical year was not simulated with the tidal Delaware River EFDC DO model, instead an alternate analysis was performed were the magnitude of influence that CSOs from Philadelphia have on DO concentrations in the tidal Delaware River was analyzed for the years 2012 and 2013. Simulated water column DO concentrations were compared with and without CSO contributions to quantify the relative impact that CSO discharge and associated loadings have on modeled water column DO in the tidal Delaware River. This method and results are described in Section 2.7.3.5 Tidal Delaware River DO Model Sensitivity Analysis to CSO and Appendix D Section 4.0.

Non-tidal Tributary Dissolved Oxygen Models

Dissolved Oxygen models for the non-tidal Tacony/Frankford Creek and non-tidal Cobbs Creek were developed in WASP 7.5 for the Tributary Water Quality Model Report for Dissolved Oxygen in 2014. These models were event-based and validated against dissolved oxygen, nutrient, and periphyton data collected during both dry and wet-weather. The non-tidal Tacony/Frankford Creek and Cobbs Creek WASP DO models developed for the COA were converted to EFDC to facilitate a full year simulation for the typical year. The EFDC DO model

results were compared to the COA WASP DO model results for the events included in the COA validation report. The Tacony/Frankford Creek and the Cobbs Creek EFDC DO models were re-validated against observed DO, nutrient, and periphyton data. These refined EFDC models were the basis for the typical year non-tidal tributary DO models.

Similar to the non-tidal tributary typical year EFDC bacteria models, boundary condition input files that represent the typical year 2005 were developed for the non-tidal tributary EFDC DO models. Upstream boundary inflow and non-CSO runoff was generated by simulating SWMM5 models developed for the watershed with the typical year rainfall. The atmospheric and wind model inputs were calendar year 2005 observed meteorological conditions at the Philadelphia International Airport NOAA station. Since the USGS water quality monitors were not active on the creeks in 2005, observed water temperature from calendar year 2005 at the USGS station Delaware River at Trenton was used to represent water temperature. Stream baseflow for the typical year was represented by the average monthly baseflow over the period of record at the USGS discharge gage locations on the creeks. Discharge from the CSOs in the City of Philadelphia that discharge to the non-tidal Tacony/Frankford Creek and Cobbs Creek were estimated from the Year 10 H&H model simulations.

4.0 Tidal Delaware River DO Model Sensitivity Analysis to CSO

The scenario evaluated in this analysis represents a hypothetical situation in which all Philadelphia CSO discharges are eliminated and cease to overflow. A comparison of modeled DO with and without the CSO inputs provides a method to quantify the role of Philadelphia CSOs in the DO budget of the tidal Delaware River. Summertime hydrologic conditions in 2012 represent a year that is somewhat drier than the typical year specified in the COA, while 2013 represents a year with more wet weather than the typical year specified in the COA. From historical observations of the Delaware estuary, critical DO conditions tend to occur during dryer than normal conditions.

The results of the analysis suggest that removing Philadelphia CSOs from the system has a negligible, essentially non-measurable effect on the DO conditions downstream of Philadelphia. Modeled daily average DO concentrations were largely unimpacted by excluding CSO flows from the model. The maximum daily difference in DO between the simulations with and without CSO discharge throughout the 2012 and 2013 simulations is shown in Figure D-1. The figure demonstrates that the maximum daily average DO difference between the simulations with and without CSO in any location in the model domain during either the 2012 or 2013 simulation is less than 0.1 mg/L over the entire simulation year.

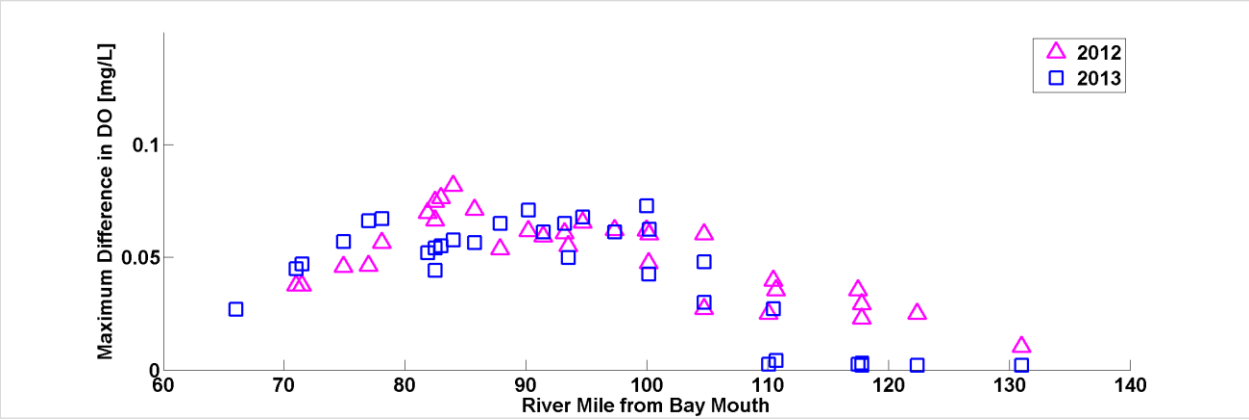

Figure D- 1: Simulated maximum difference in daily average DO over the course of a year along the Delaware River in 2012 and 2013

Table D-2 summarizes the impacts of CSOs on modeled daily average DO during the summer, July 1 - September 15, for 2012 and 2013 respectively. Model output locations included in the table cover a section of river spanning Philadelphia itself and the observed DO sag in the river. The maximum difference in average daily DO during the summer of 2012 (dryer than typical) is 0.03 mg/L and during the summer of 2013 (wetter than typical) is 0.02 mg/L.

Table D-2: Summary of DO Model Results for 2012 and 2013 During Summer

Location	River Mile	2012 Difference in Summer Mean Daily DO [mg/L]	2012 Difference in Summer Minimum Daily DO [mg/L]	2013 Difference in Summer Mean Daily DO [mg/L]	2013 Difference in Summer Minimum Daily DO [mg/L]
PWDR08190	82	0.03	0.02	0.02	0.01
PWDR08575	86	0.03	0.01	0.02	0.03
PWDR09023	90	0.03	0.01	0.01	0.03
DCDR09320	93	0.03	0.00	0.01	0.02
PWDR09472	95	0.03	0.00	0.01	0.02
DCDR10020	100	0.02	0.01	0.01	0.02
PWDR10475	105	0.02	0.00	0.00	0.00

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Appendix E

Supplemental Information for Assessment of Program Performance

1.0 Introduction

A set of subsurface long-term performance plots for SMPs included in the dataset for Section 3.5.7 in Section 3: Assessment of Program Performance are available for reference below. As described in Section 3, some trends in performance over time have been observed, but the systems are still effectively managing runoff as expected and there has not been any evidence of consistent deterioration of performance.

2.0 Long-term performance plots

The stormwater management practices (SMPs) depicted here have received long-term continuous water level (CWL) monitoring. They represent a variety of SMP types, configurations, areas of the city, and eras of construction. Some of these SMPs show consistently high performance. Others show consistently low performance. Most are somewhere in the middle. Some SMPs, including SMPs in the long-term CWL monitoring program, have been investigated for performance anomalies. These SMPs undergo reactive maintenance, and potentially receive retrofits to correct problematic behavior. Monitoring is an essential part of the process in the lifecycle assessment of those SMPs, too. For transparency's sake, some of those SMPs are reproduced here to illustrate the range in potential performance of Philadelphia's monitored green stormwater infrastructure.

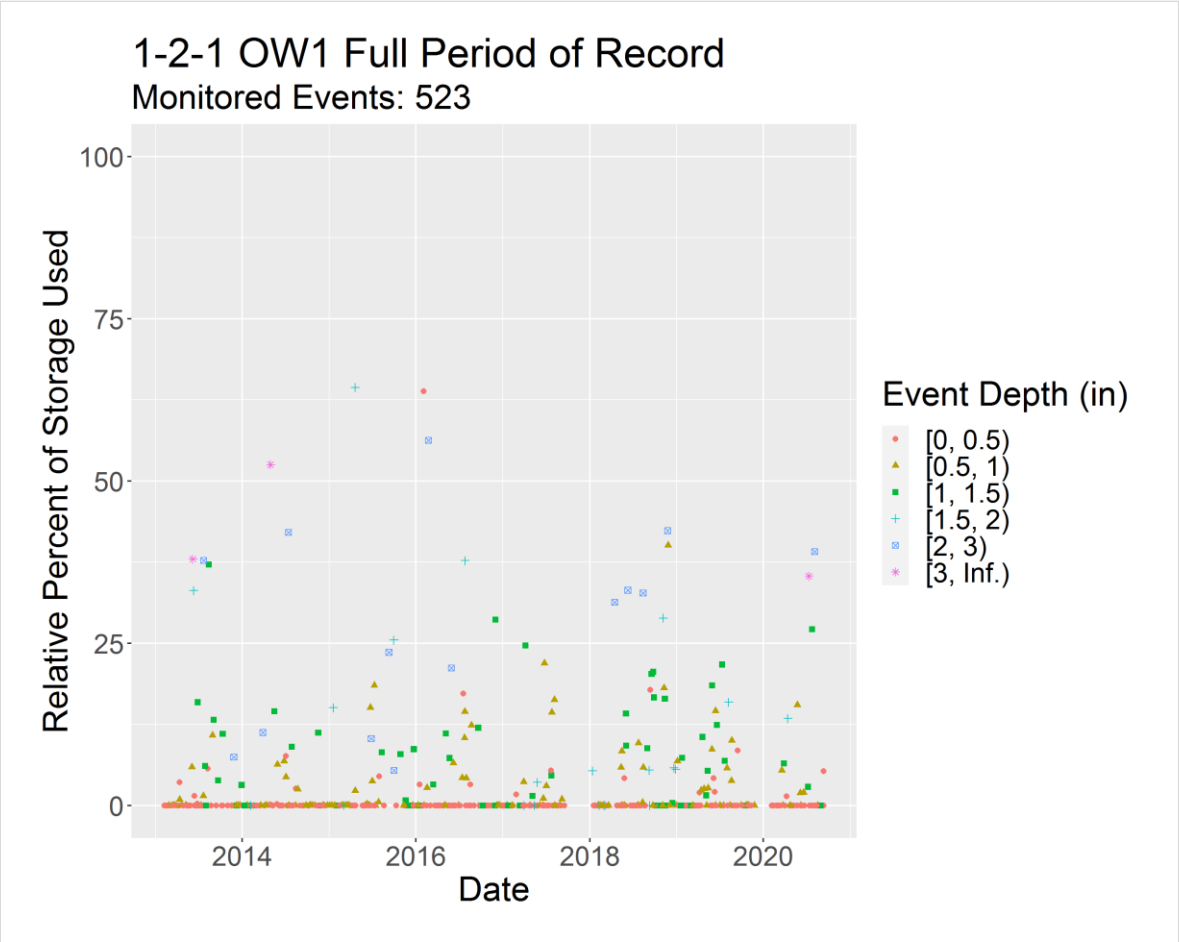

Figure E- 1: Long-term performance for SMP 1-2-1 – RPSU over time

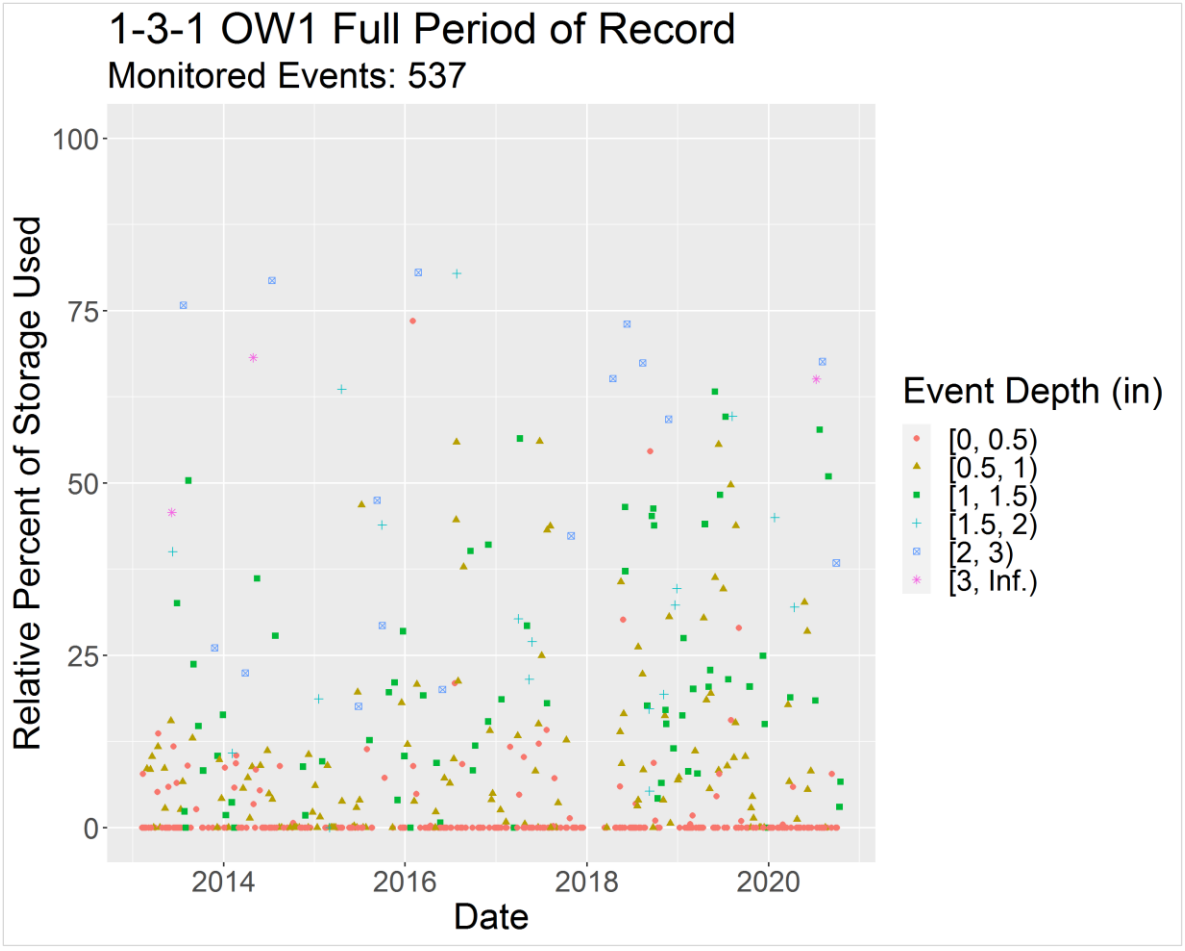

Figure E- 2: Long-term performance for SMP 1-3-1 – RPSU over time

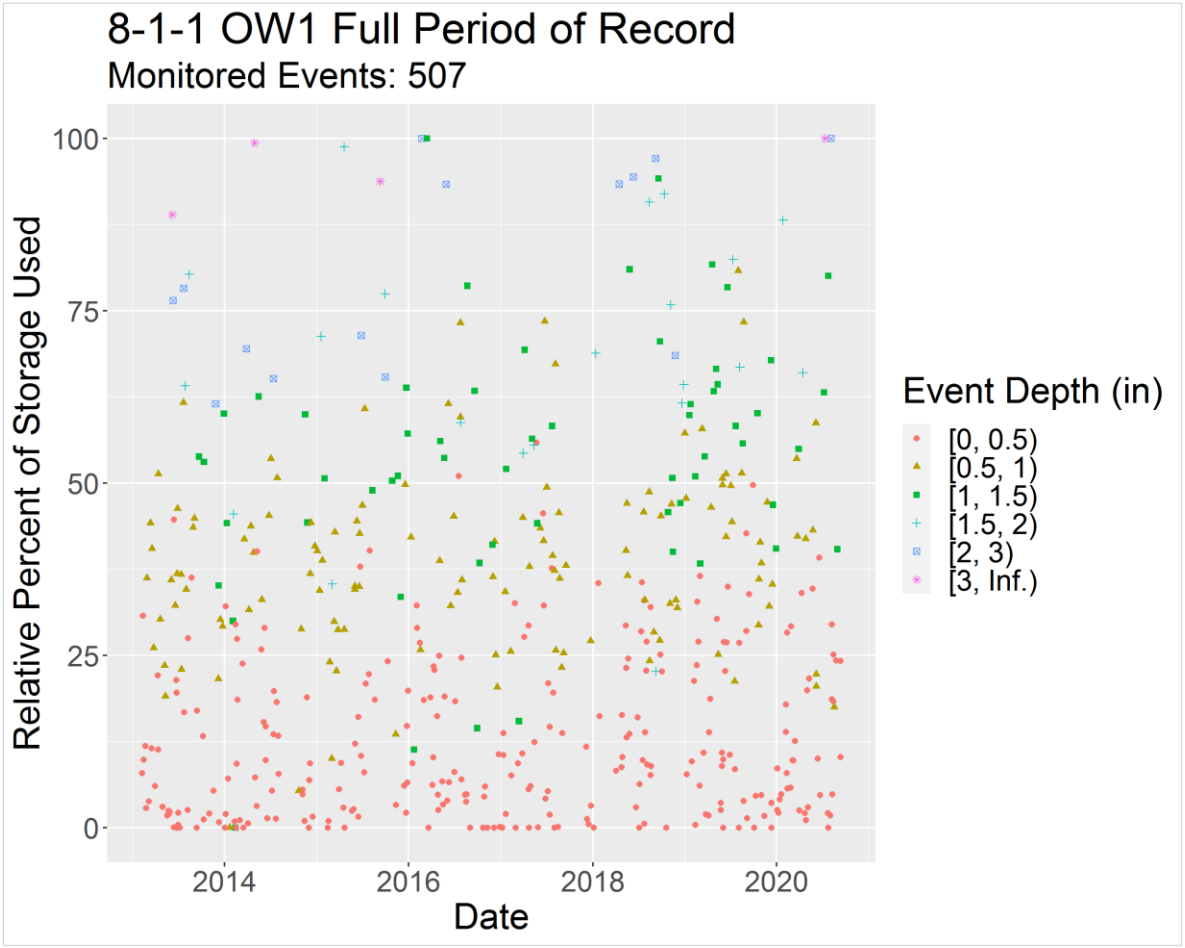

Figure E- 3: Long-term performance for SMP 8-1-1 – RPSU over time

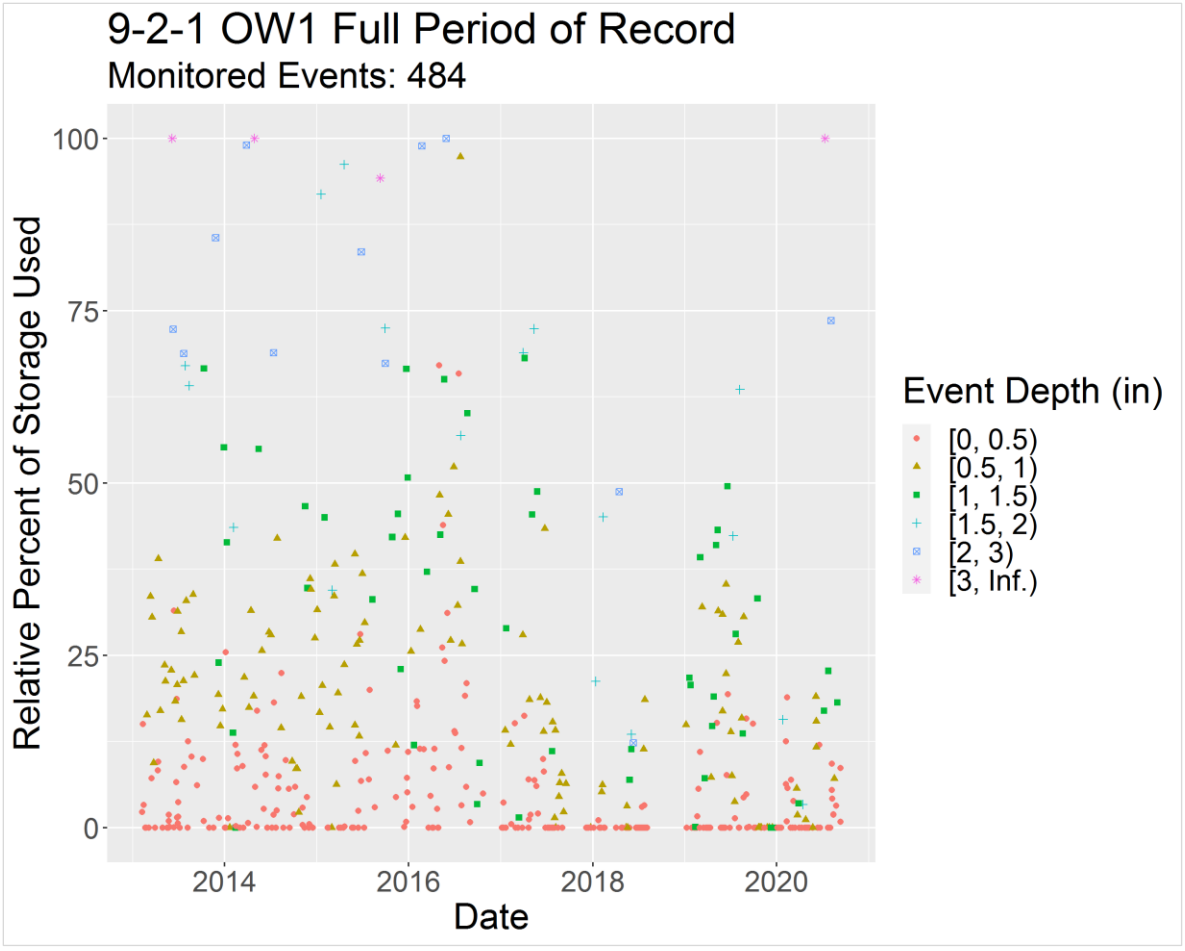

Figure E- 4: Long-term performance for SMP 9-2-1 – RPSU over time

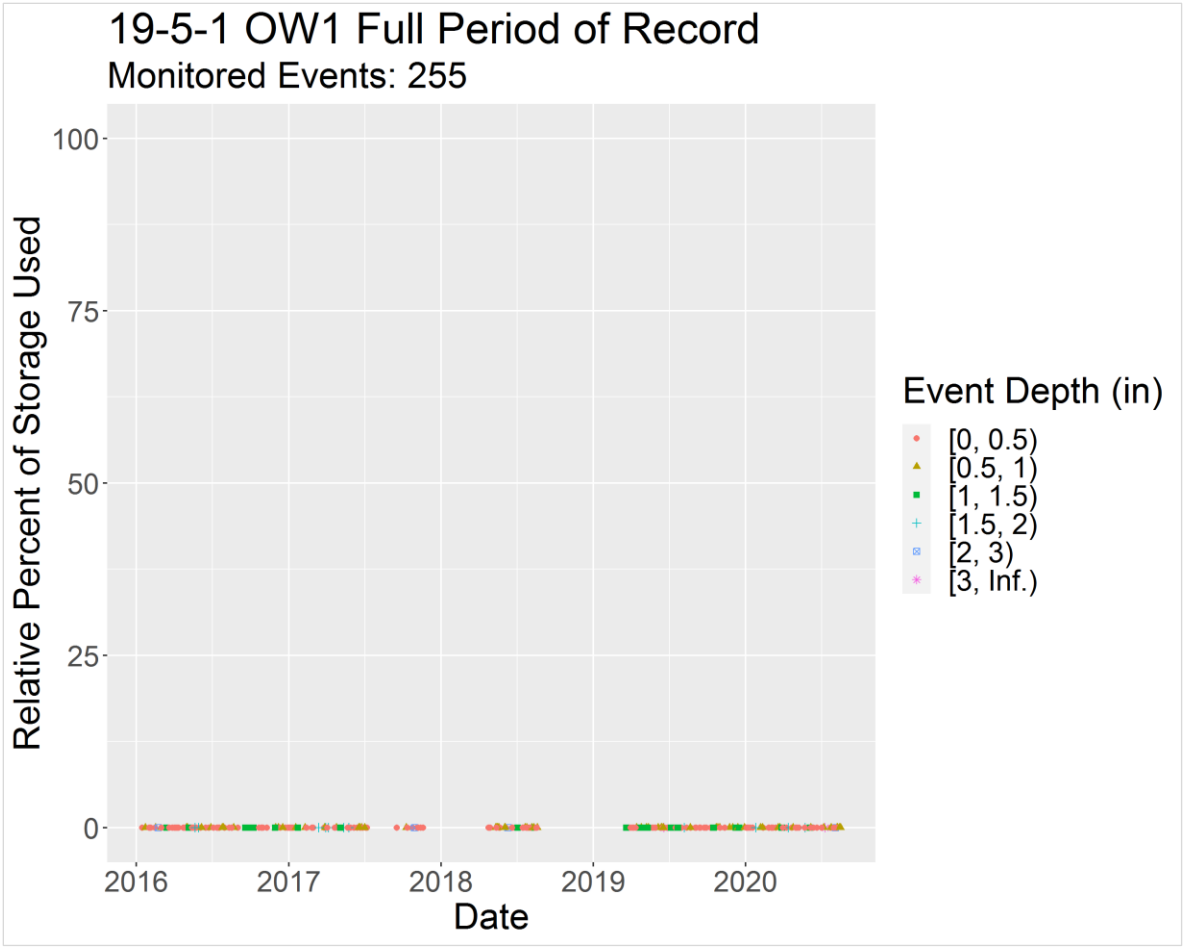

Figure E- 5: Long-term performance for SMP 19-5-1 – RPSU over time

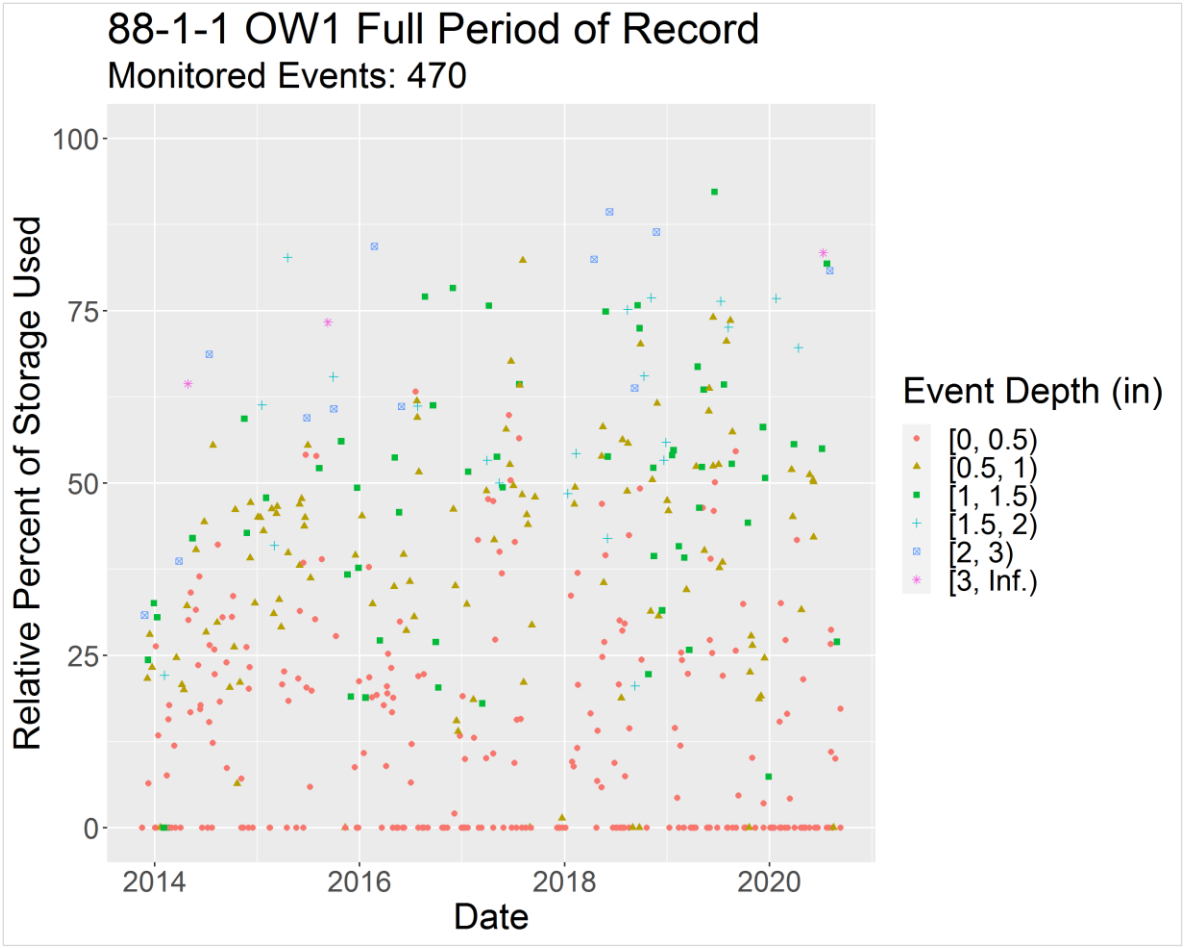

Figure E- 6: Long-term performance for SMP 88-1-1 – RPSU over time

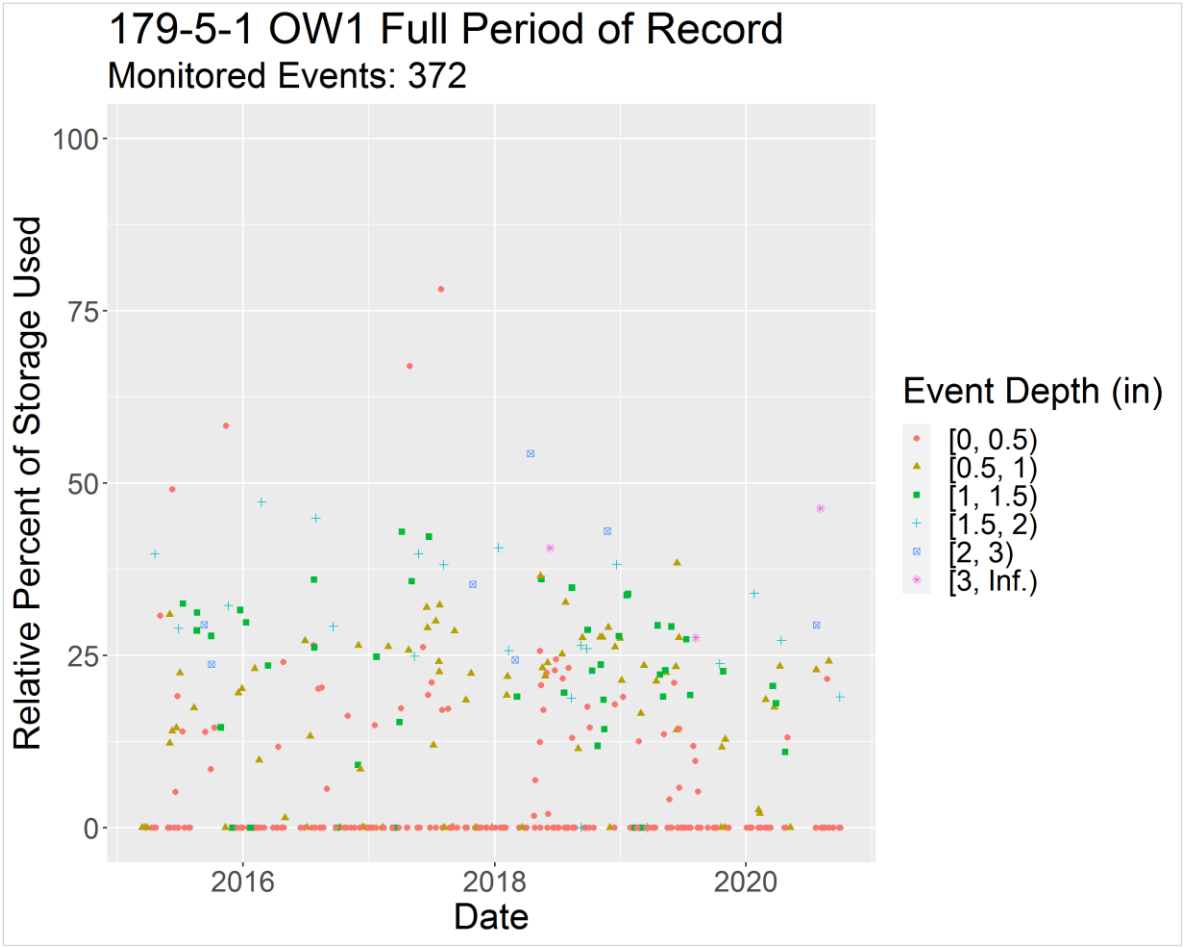

Figure E- 7: Long-term performance for SMP 179-5-1 – RPSU over time

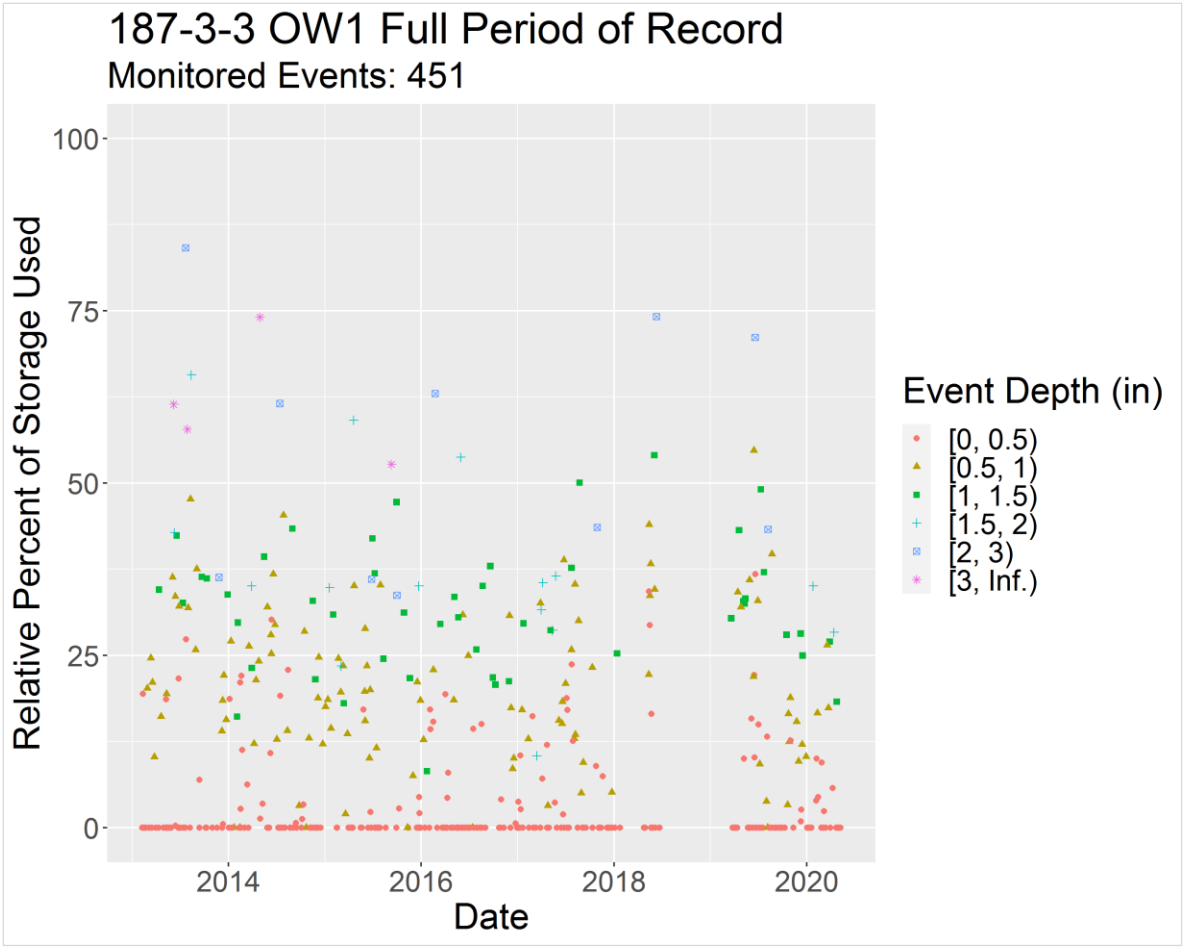

Figure E- 8: Long-term performance for SMP 187-3-3 – RPSU over time

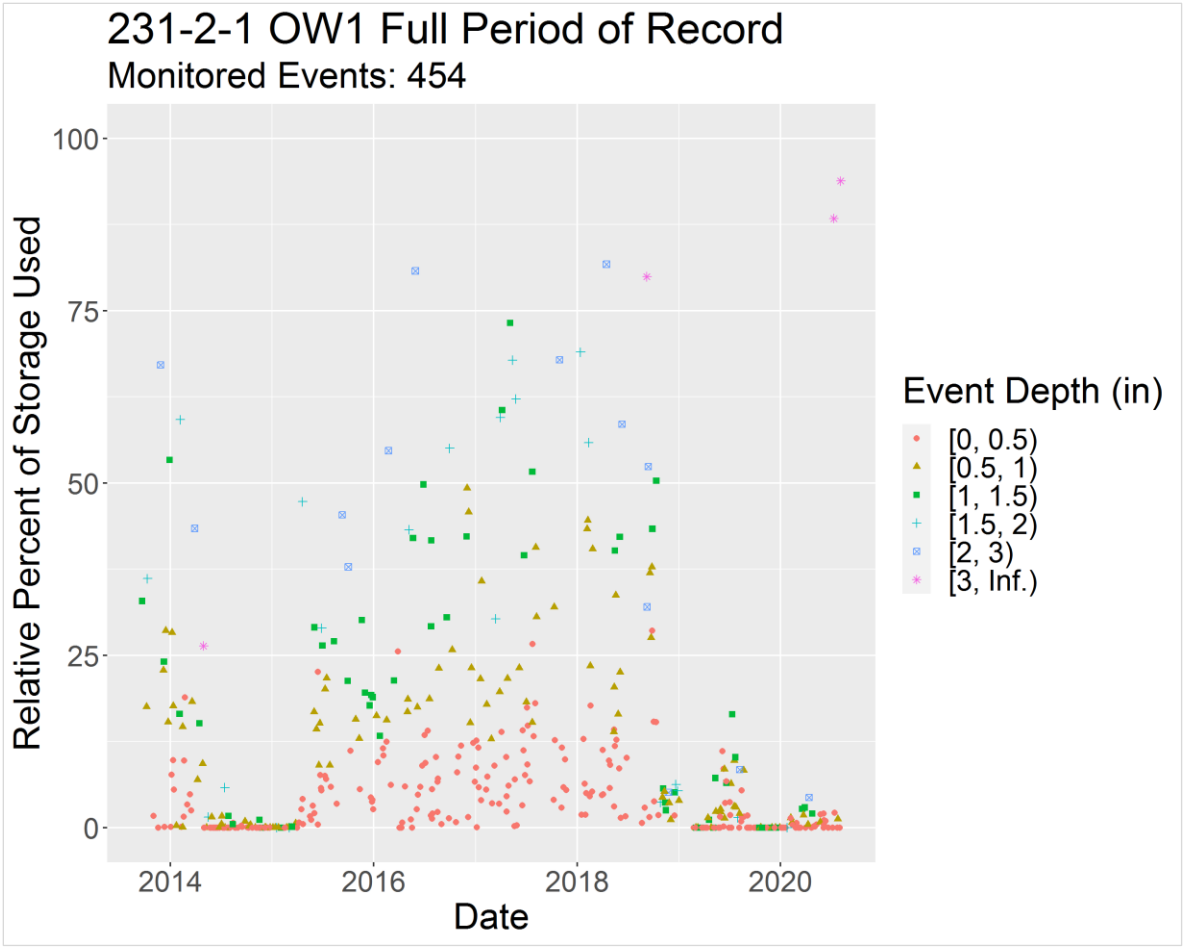

Figure E- 9: Long-term performance for SMP 231-2-1 – RPSU over time

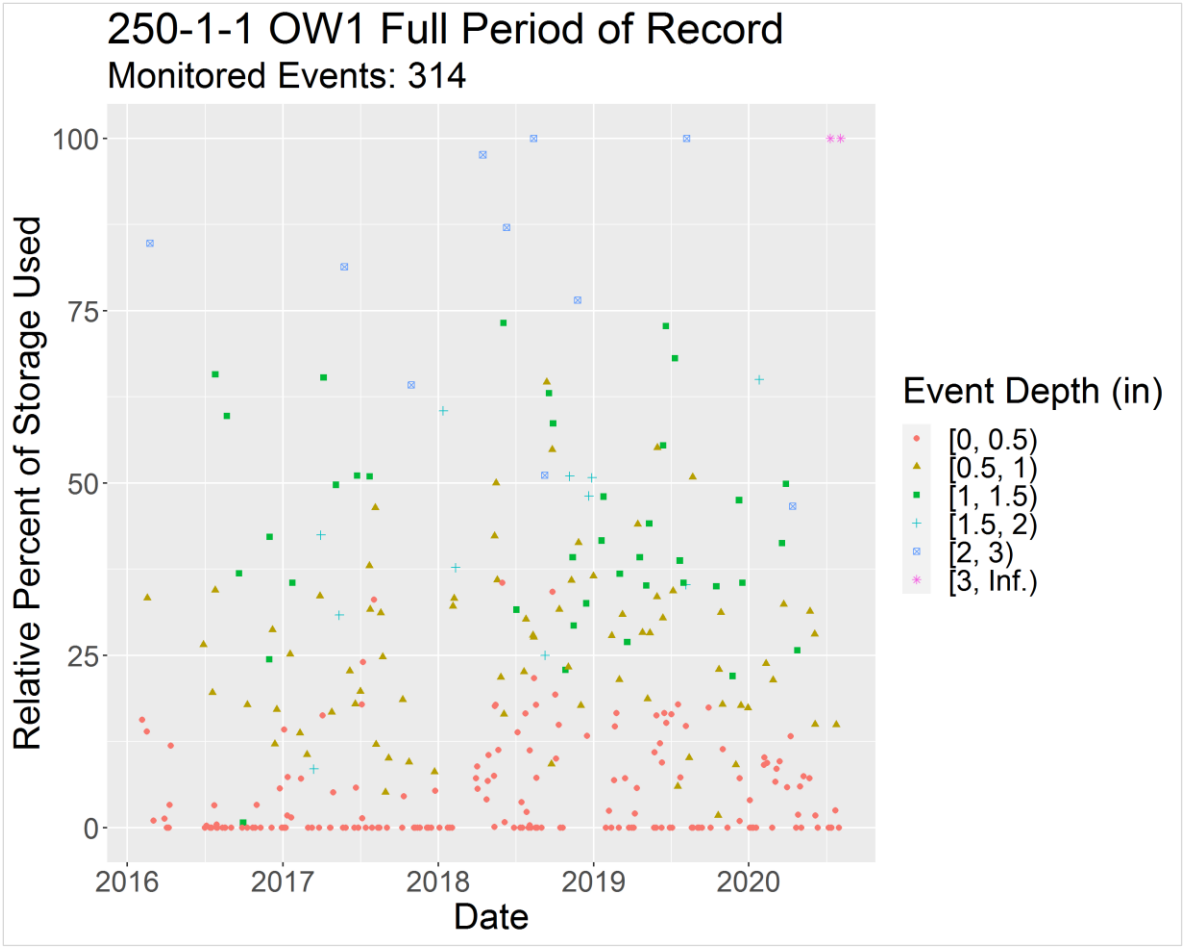

Figure E- 10: Long-term performance for SMP 250-1-1 – RPSU over time

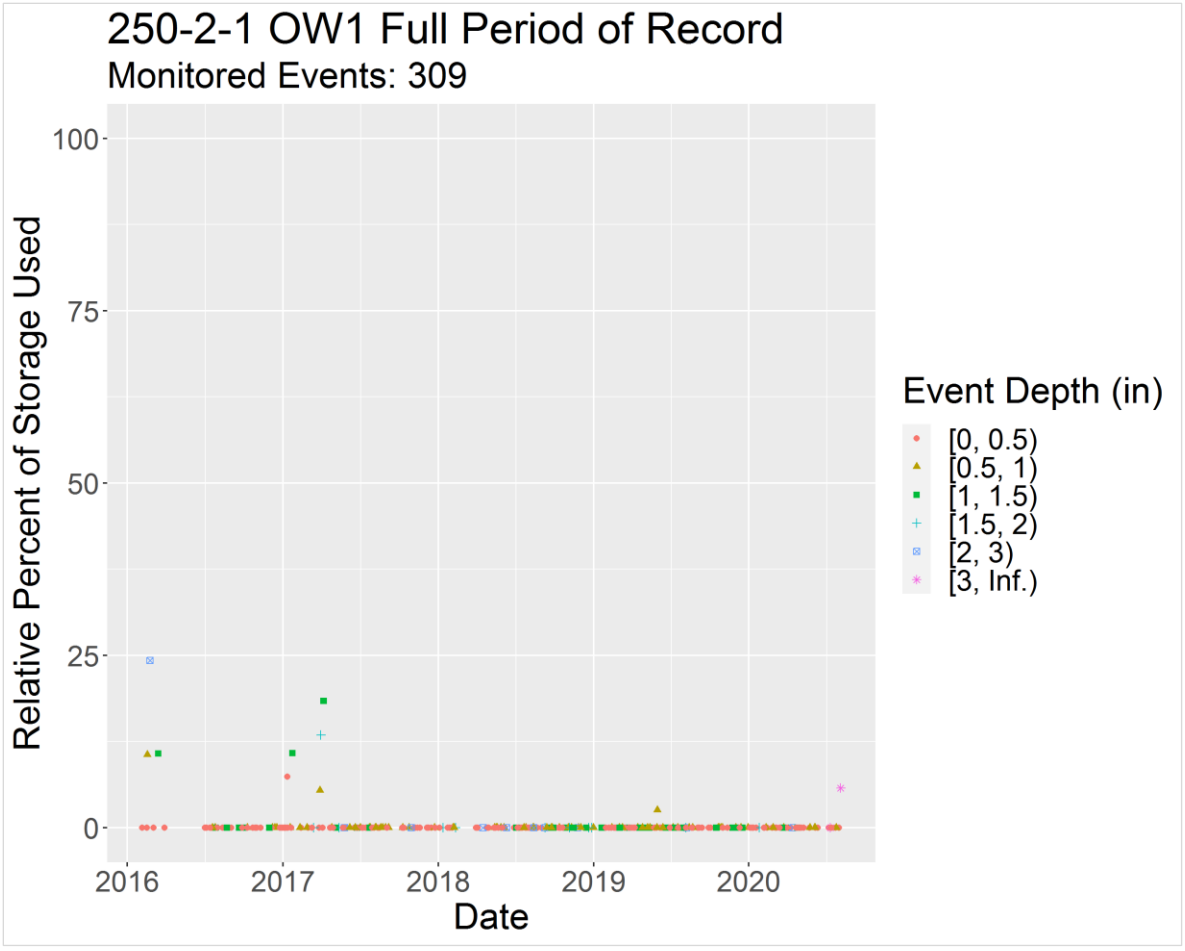

Figure E- 11: Long-term performance for SMP 250-2-1 – RPSU over time

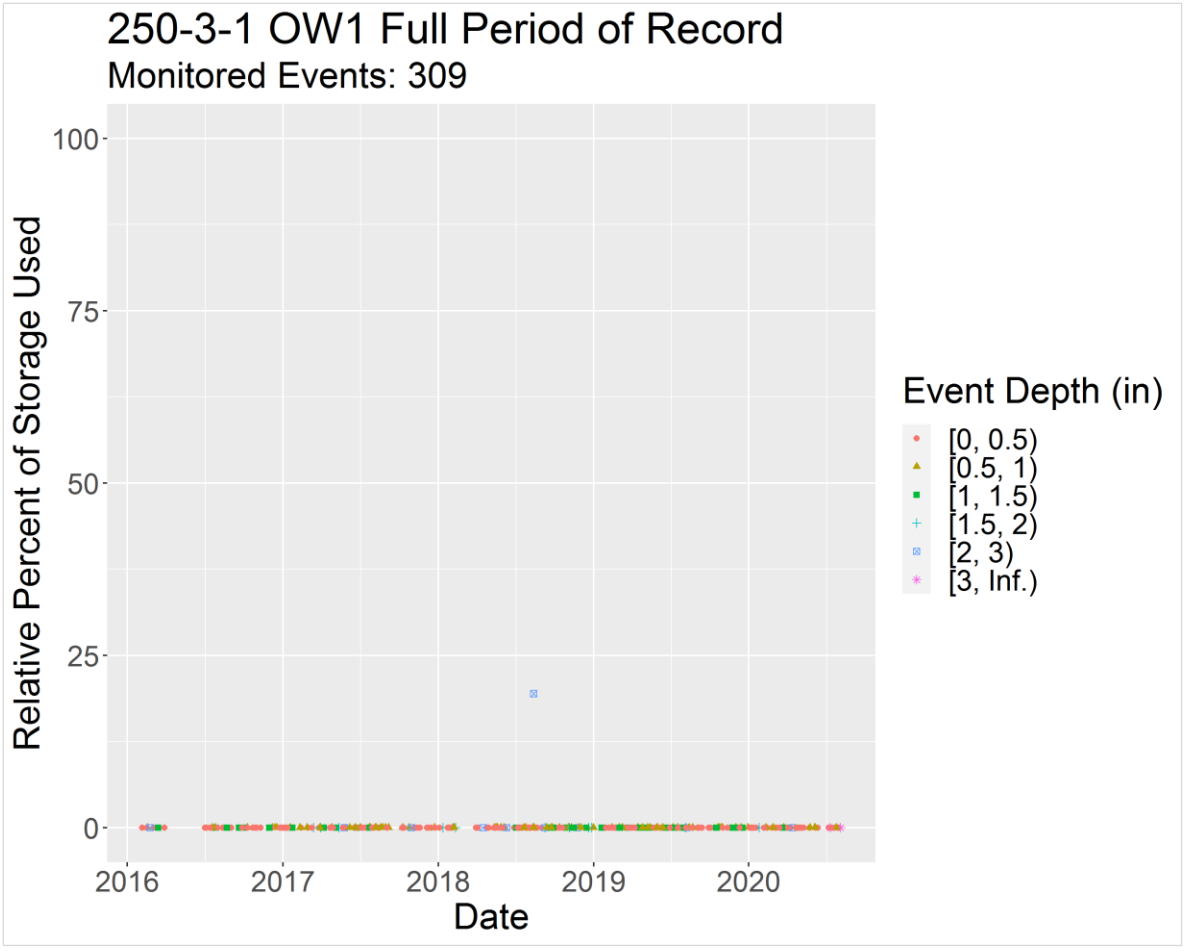

Figure E- 12: Long-term performance for SMP 250-3-1 – RPSU over time

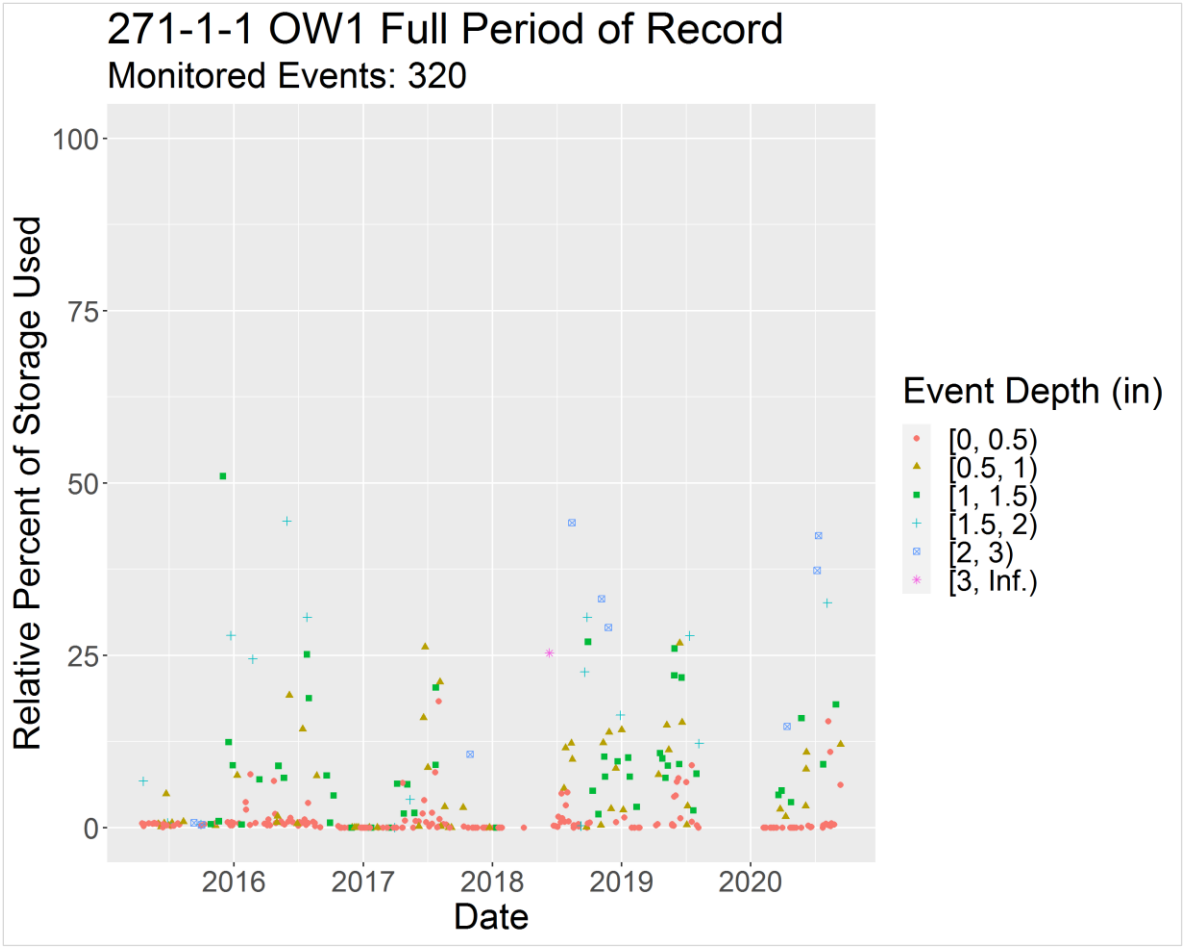

Figure E- 13: Long-term performance for SMP 271-1-1 – RPSU over time

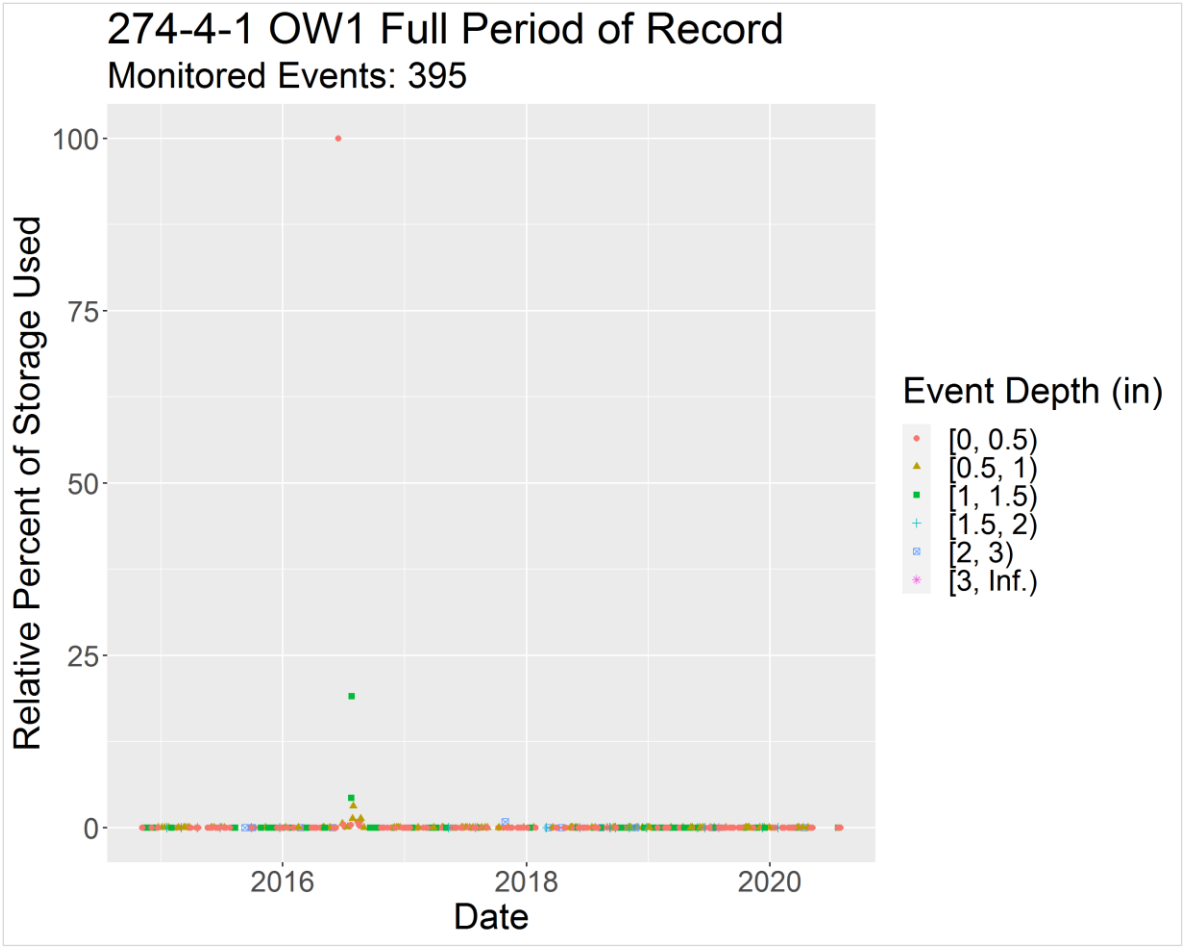

Figure E- 14: Long-term performance for SMP 274-4-1 – RPSU over time

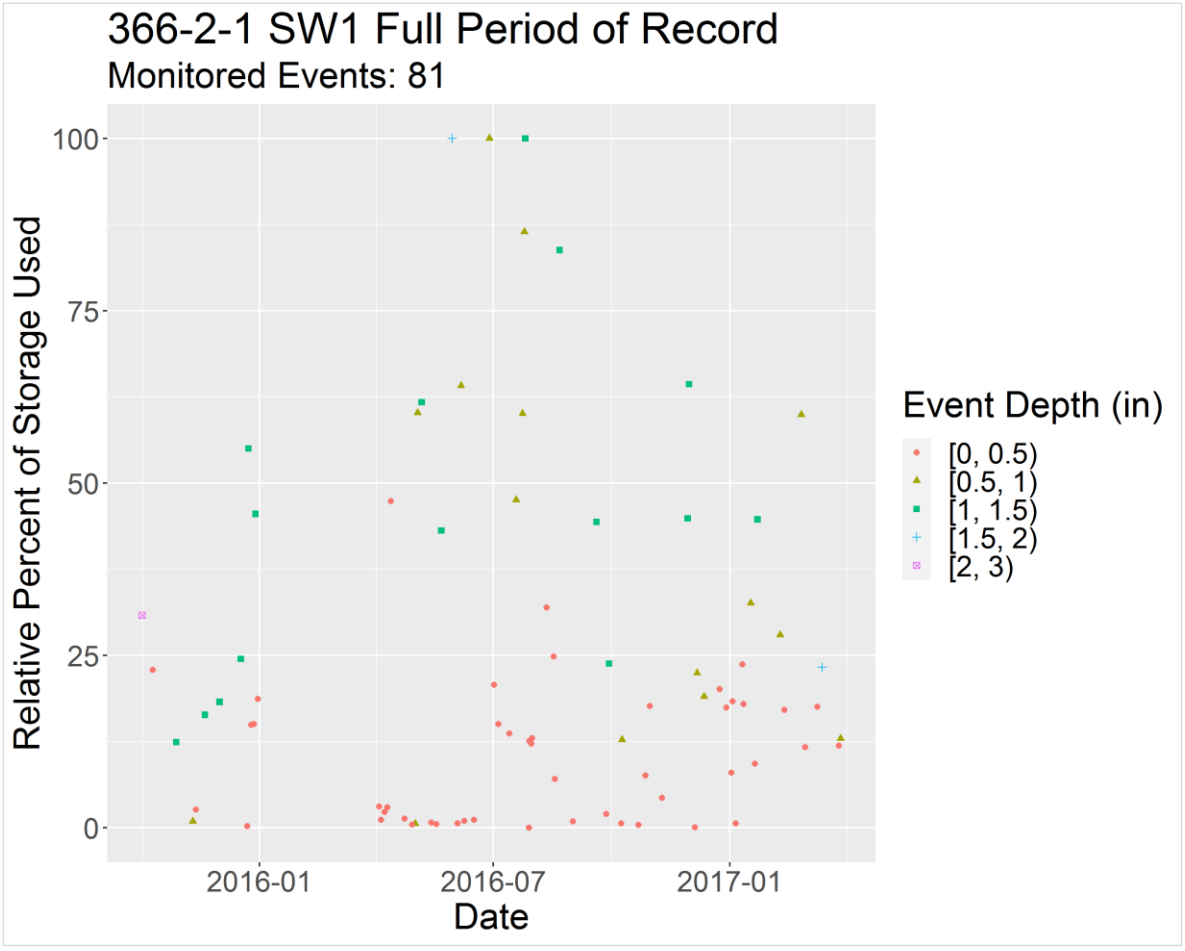

Figure E- 15: Long-term performance for SMP 366-2-1 – RPSU over time

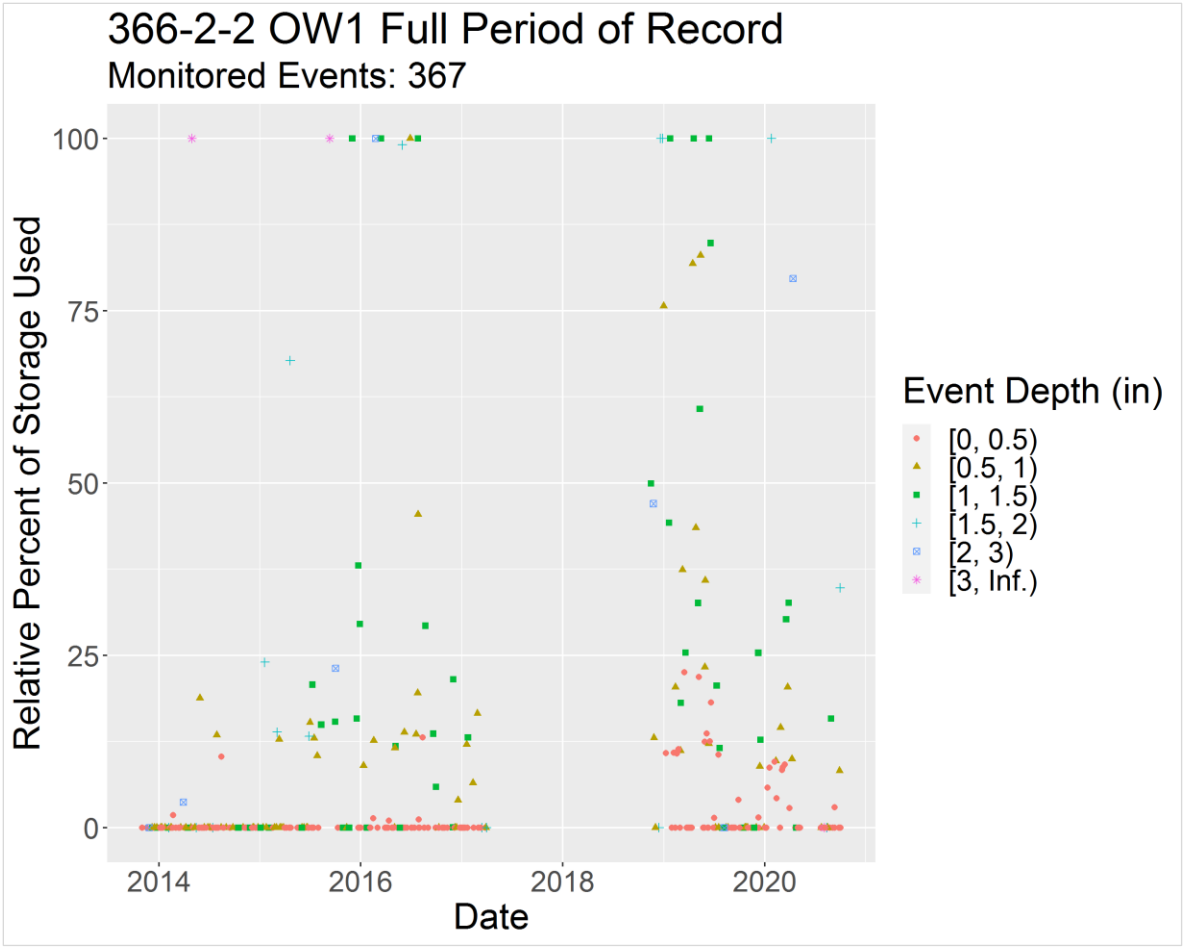

Figure E- 16: Long-term performance for SMP 366-2-2 – RPSU over time

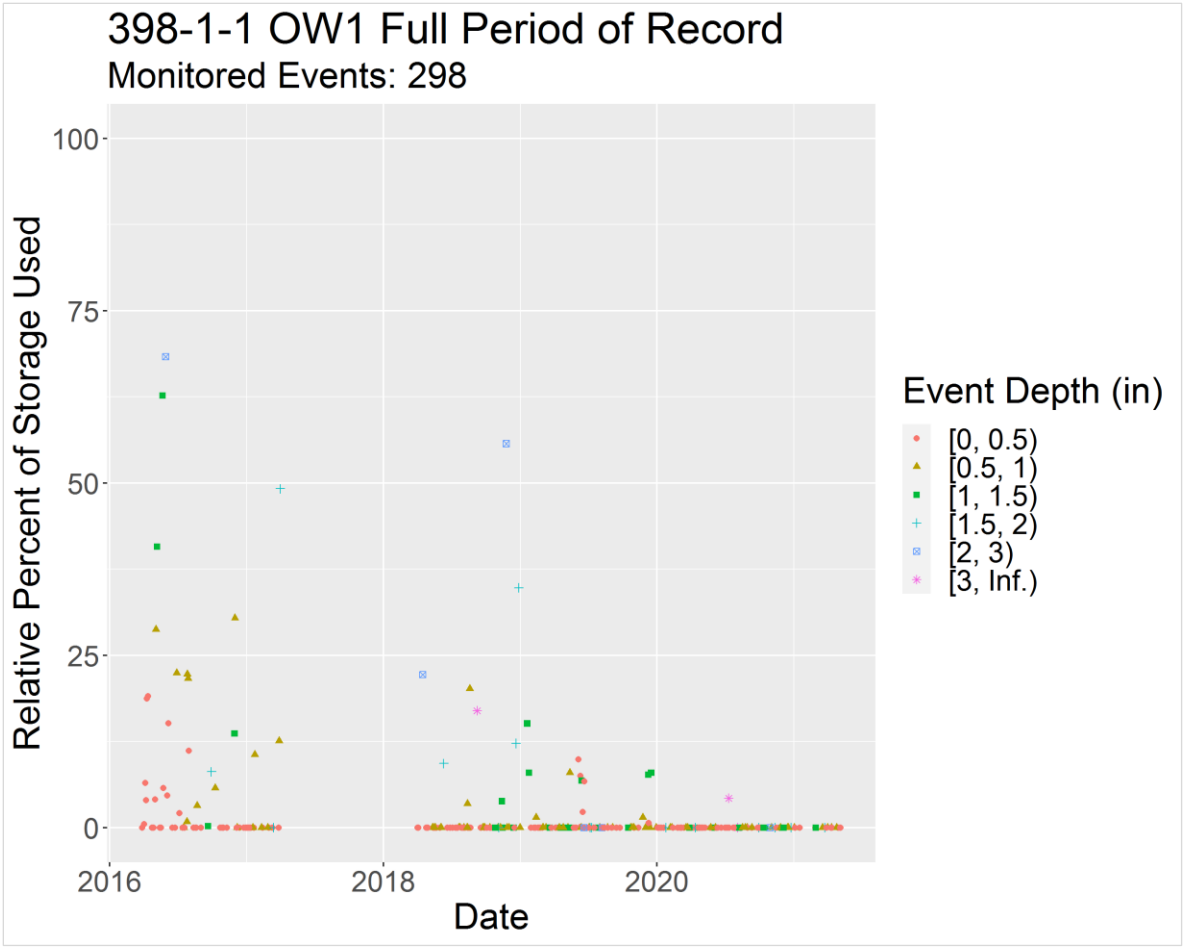

Figure E- 17: Long-term performance for SMP 398-1-1 – RPSU over time