Lockport-Batavia Line #112

Rebuild Project

Appendix G

Stormwater Pollution Prevention Plan

Part 6 of 8

Summary for Pond 78P: Culvert 033

[58] Hint: Peaked 0.07' above defined flood level

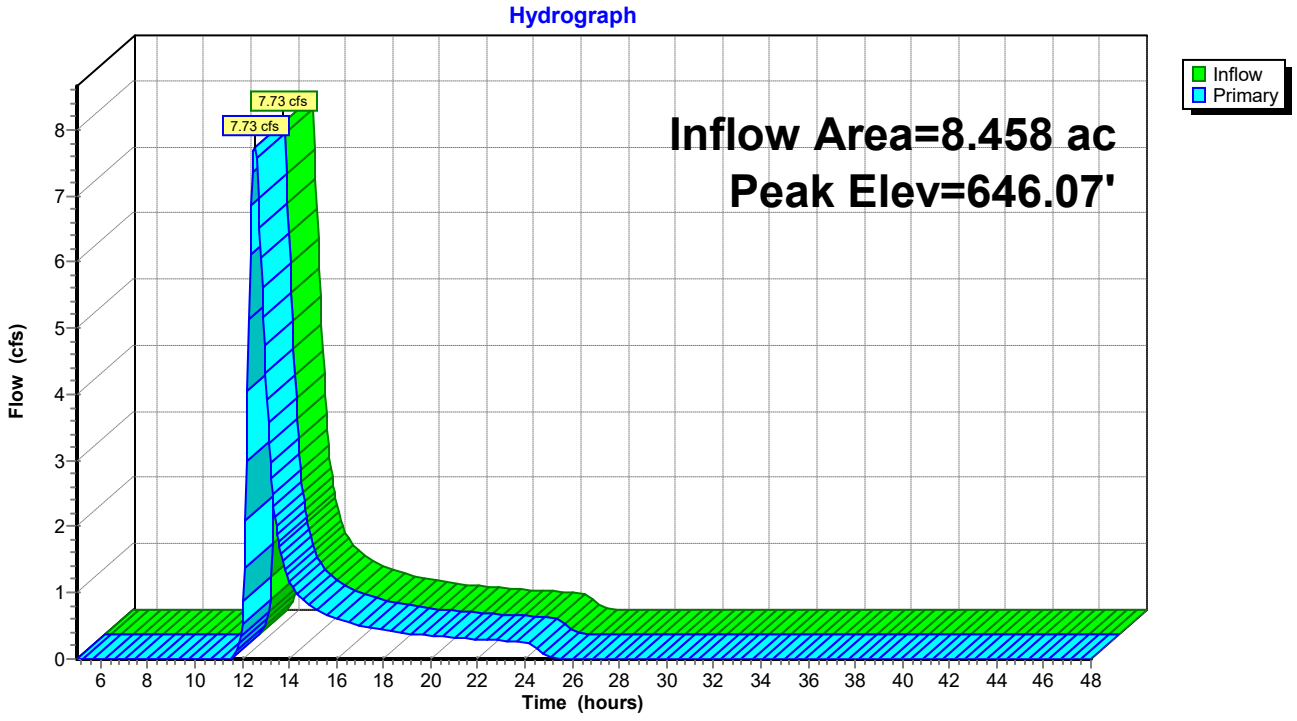
Inflow Area = 8.458 ac, 0.00% Impervious, Inflow Depth = 1.43" for 100-yr event
Inflow = 7.73 cfs @ 12.54 hrs, Volume= 1.010 af
Outflow = 7.73 cfs @ 12.54 hrs, Volume= 1.010 af, Atten= 0%, Lag= 0.0 min
Primary = 7.73 cfs @ 12.54 hrs, Volume= 1.010 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 646.07' @ 12.54 hrs
Flood Elev= 646.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	645.20'	**18.0" Round Culvert 001 w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 645.00' / 644.22' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.63 sf
#2	Primary	646.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=7.71 cfs @ 12.54 hrs HW=646.07' (Free Discharge)
└─**1=Culvert 001** (Inlet Controls 2.80 cfs @ 2.32 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 4.91 cfs @ 0.71 fps)

Pond 78P: Culvert 033



Summary for Pond 79P: Culvert 034

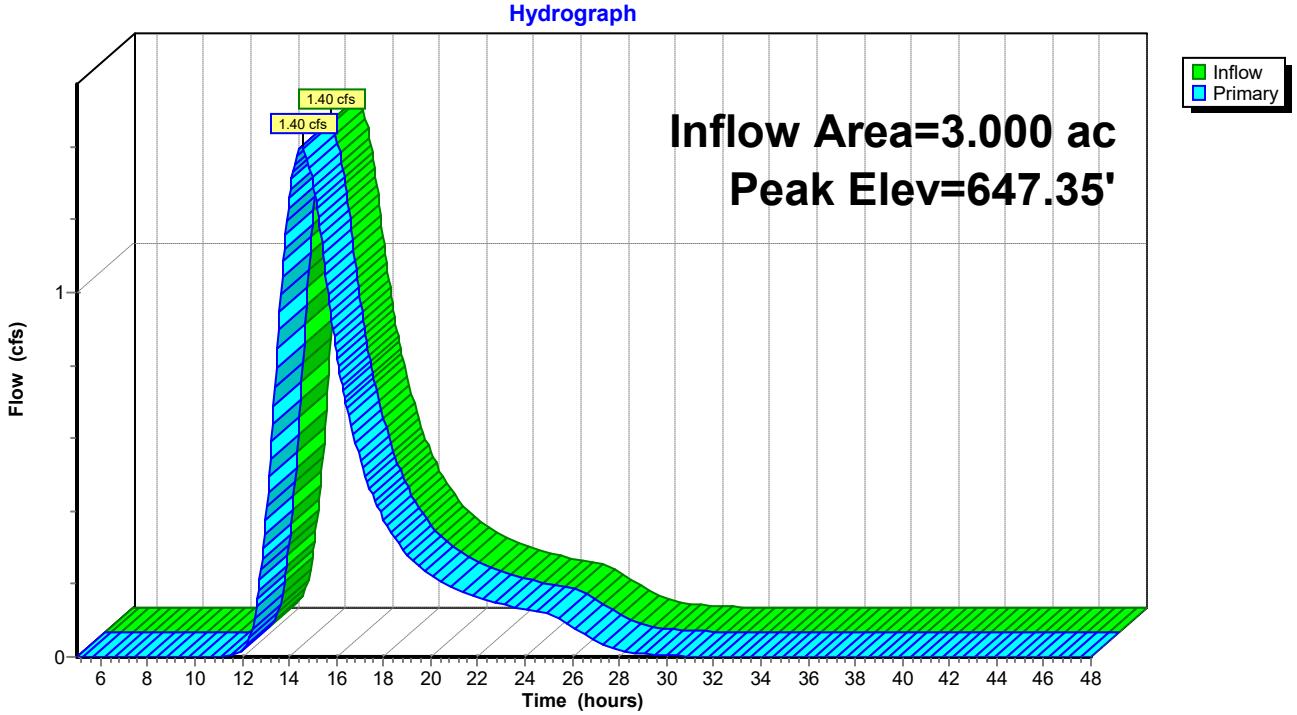
Inflow Area = 3.000 ac, 0.00% Impervious, Inflow Depth = 2.03" for 100-yr event
Inflow = 1.40 cfs @ 14.54 hrs, Volume= 0.507 af
Outflow = 1.40 cfs @ 14.54 hrs, Volume= 0.507 af, Atten= 0%, Lag= 0.0 min
Primary = 1.40 cfs @ 14.54 hrs, Volume= 0.507 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 647.35' @ 14.54 hrs
Flood Elev= 647.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	646.75'	**15.0" Round Culvert 001 w/ 3.0" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 646.50' / 645.72' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.05 sf
#2	Primary	647.50'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.40 cfs @ 14.54 hrs HW=647.35' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 1.40 cfs @ 1.95 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 79P: Culvert 034



Summary for Pond 80P: Culvert 036

[58] Hint: Peaked 0.09' above defined flood level

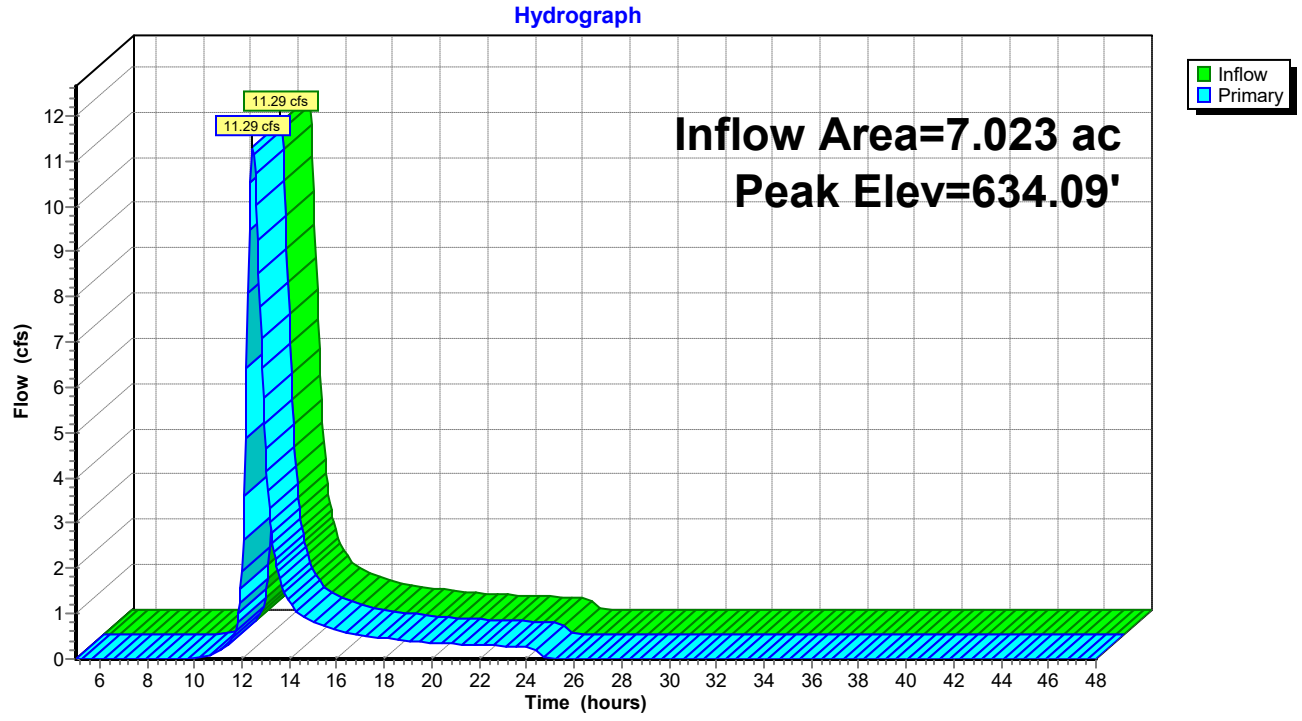
Inflow Area = 7.023 ac, 21.33% Impervious, Inflow Depth = 2.19" for 100-yr event
Inflow = 11.29 cfs @ 12.45 hrs, Volume= 1.280 af
Outflow = 11.29 cfs @ 12.45 hrs, Volume= 1.280 af, Atten= 0%, Lag= 0.0 min
Primary = 11.29 cfs @ 12.45 hrs, Volume= 1.280 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 634.09' @ 12.45 hrs
Flood Elev= 634.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	633.00'	**18.0" Round Culvert 001 w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 632.80' / 632.02' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.63 sf
#2	Primary	634.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=11.28 cfs @ 12.45 hrs HW=634.09' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 3.93 cfs @ 2.66 fps)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 7.35 cfs @ 0.81 fps)

Pond 80P: Culvert 036



Summary for Pond 81P: Culvert 037

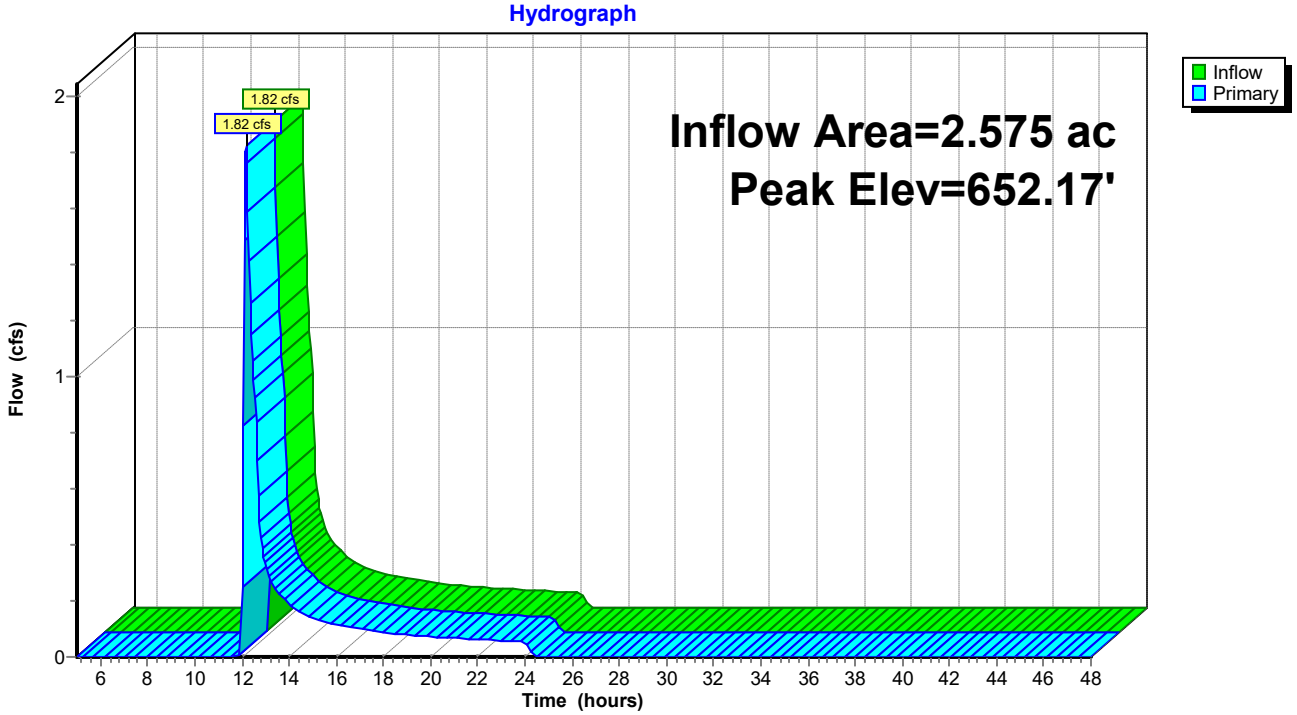
Inflow Area = 2.575 ac, 0.00% Impervious, Inflow Depth = 0.81" for 100-yr event
Inflow = 1.82 cfs @ 12.17 hrs, Volume= 0.173 af
Outflow = 1.82 cfs @ 12.17 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min
Primary = 1.82 cfs @ 12.17 hrs, Volume= 0.173 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 652.17' @ 12.17 hrs
Flood Elev= 652.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	651.51'	**18.0" Round Culvert 001 w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 651.31' / 650.53' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.63 sf
#2	Primary	652.31'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.78 cfs @ 12.17 hrs HW=652.16' (Free Discharge)
└─**1=Culvert 001** (Inlet Controls 1.78 cfs @ 1.99 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 81P: Culvert 037



Summary for Pond 82P: Culvert 038

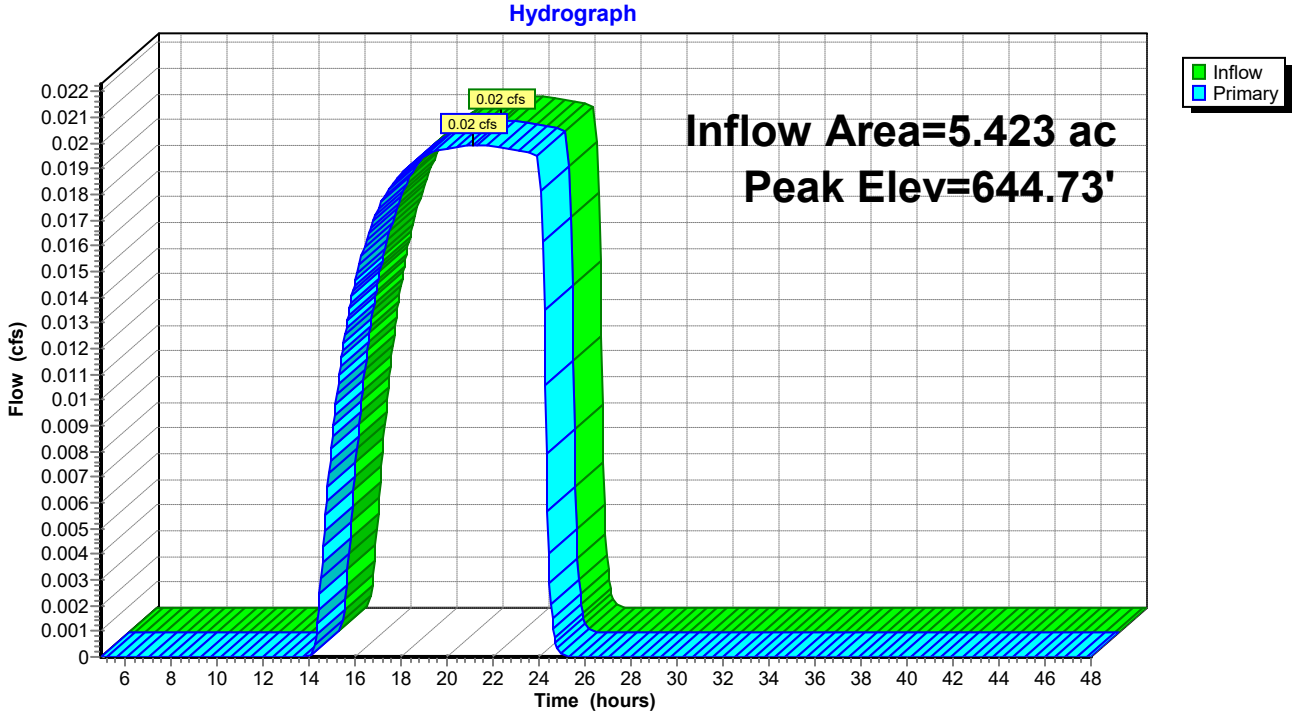
Inflow Area = 5.423 ac, 0.00% Impervious, Inflow Depth = 0.03" for 100-yr event
Inflow = 0.02 cfs @ 21.18 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 21.18 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 21.18 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 644.73' @ 21.18 hrs
Flood Elev= 645.44'

Device	Routing	Invert	Outlet Devices
#1	Primary	644.69'	**15.0" Round Culvert 001 w/ 3.0" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 644.44' / 643.66' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.05 sf
#2	Primary	645.44'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.02 cfs @ 21.18 hrs HW=644.73' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 0.02 cfs @ 0.50 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 82P: Culvert 038



Summary for Pond 83P: Culvert 039

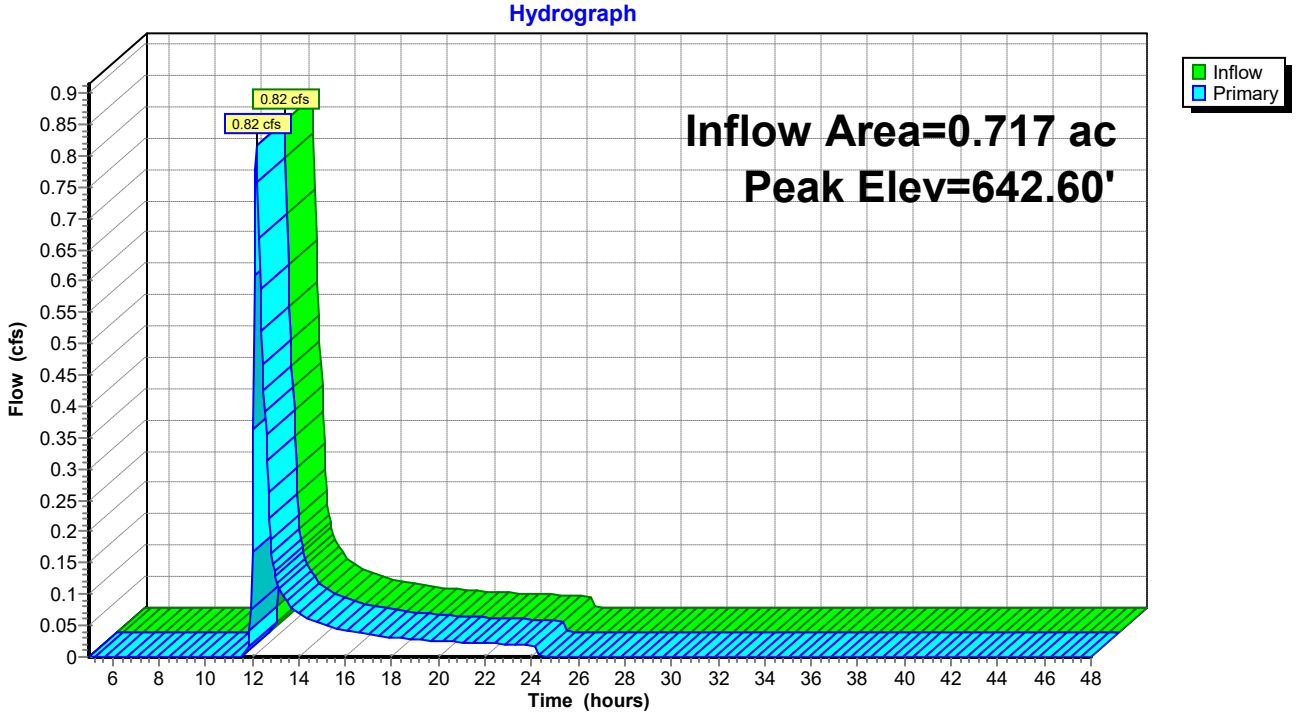
Inflow Area = 0.717 ac, 0.00% Impervious, Inflow Depth = 1.17" for 100-yr event
Inflow = 0.82 cfs @ 12.19 hrs, Volume= 0.070 af
Outflow = 0.82 cfs @ 12.19 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.19 hrs, Volume= 0.070 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 642.60' @ 12.19 hrs
Flood Elev= 642.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	642.17'	**15.0" Round Culvert 001 w/ 3.0" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 641.92' / 641.14' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.05 sf
#2	Primary	642.92'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.81 cfs @ 12.19 hrs HW=642.59' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 0.81 cfs @ 1.62 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 83P: Culvert 039



Summary for Pond 84P: Culvert 040

[58] Hint: Peaked 0.16' above defined flood level

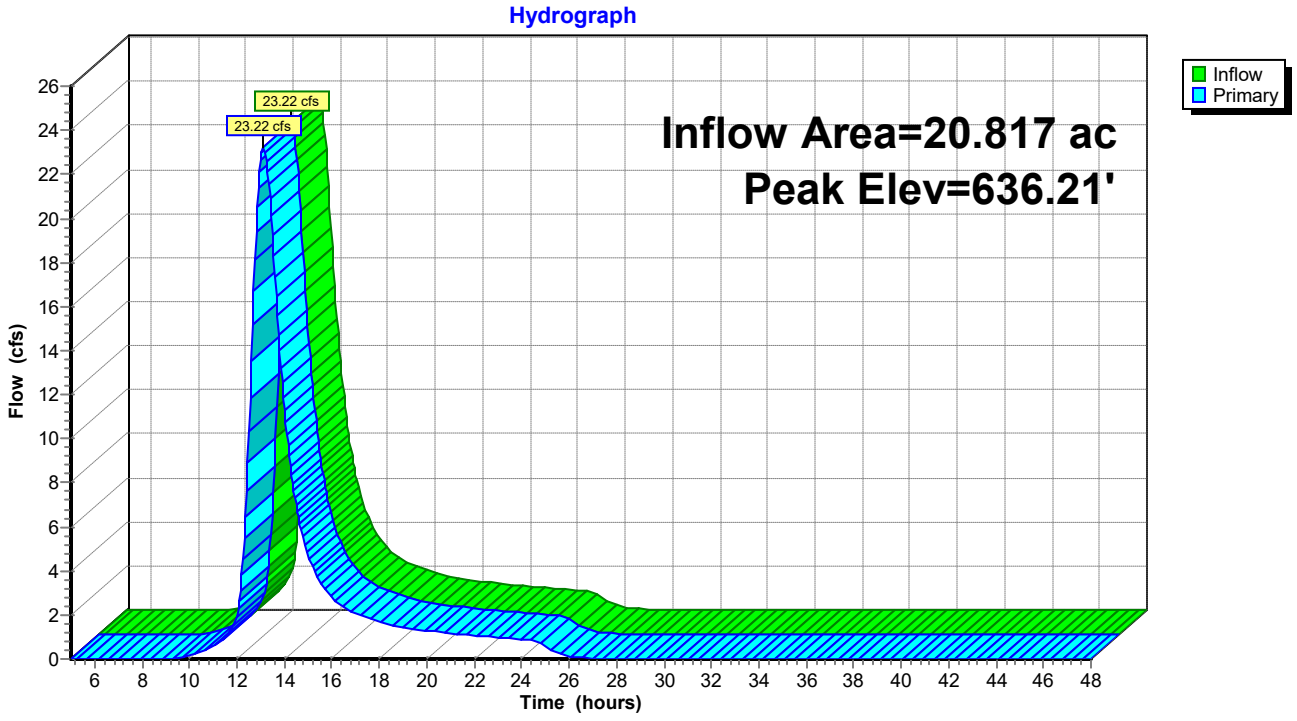
Inflow Area = 20.817 ac, 2.01% Impervious, Inflow Depth = 2.61" for 100-yr event
Inflow = 23.22 cfs @ 13.11 hrs, Volume= 4.528 af
Outflow = 23.22 cfs @ 13.11 hrs, Volume= 4.528 af, Atten= 0%, Lag= 0.0 min
Primary = 23.22 cfs @ 13.11 hrs, Volume= 4.528 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 636.21' @ 13.11 hrs
Flood Elev= 636.05'

Device	Routing	Invert	Outlet Devices
#1	Primary	635.25'	**36.0" Round Culvert 001 w/ 2.4" inside fill** L= 36.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 635.05' / 634.27' S= 0.0217 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 6.87 sf
#2	Primary	636.05'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=23.15 cfs @ 13.11 hrs HW=636.21' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 5.48 cfs @ 2.35 fps)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 17.66 cfs @ 1.08 fps)

Pond 84P: Culvert 040



Summary for Pond 86P: Culvert 041

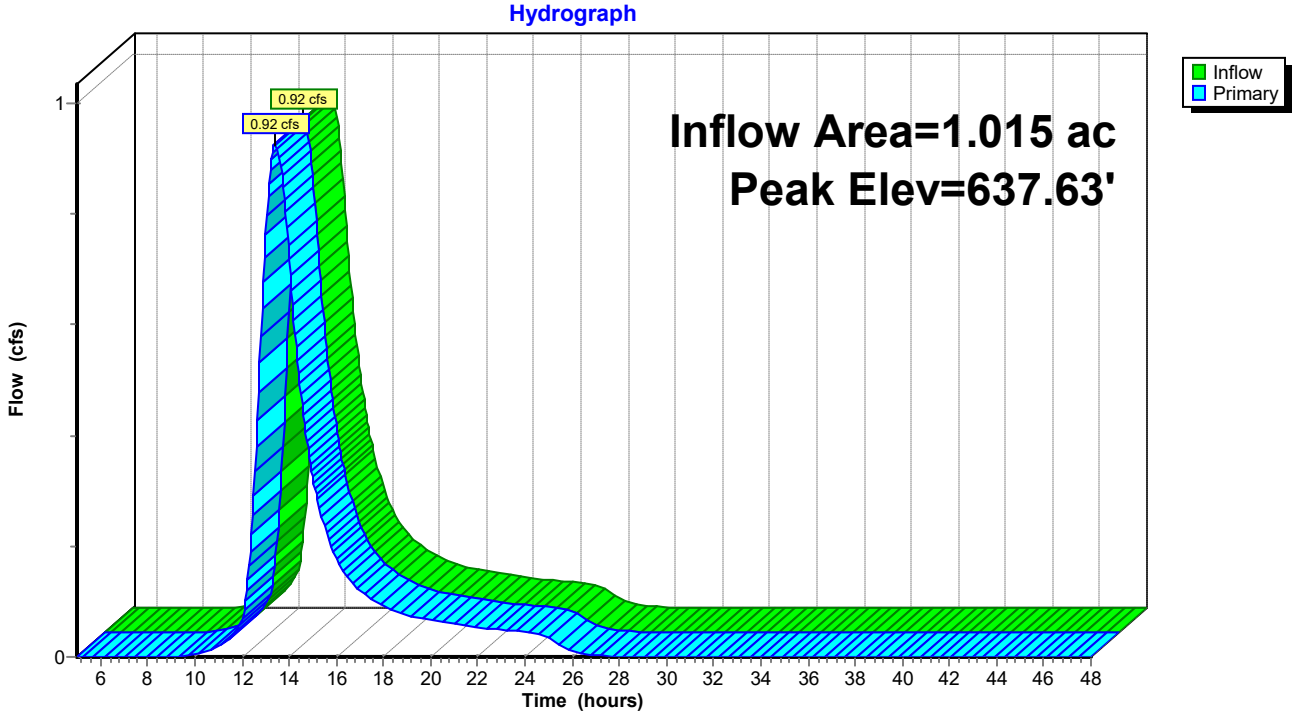
Inflow Area = 1.015 ac, 0.00% Impervious, Inflow Depth = 2.61" for 100-yr event
Inflow = 0.92 cfs @ 13.39 hrs, Volume= 0.221 af
Outflow = 0.92 cfs @ 13.39 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min
Primary = 0.92 cfs @ 13.39 hrs, Volume= 0.221 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 637.63' @ 13.39 hrs
Flood Elev= 638.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	637.20'	**18.0" Round Culvert 001 w/ 2.4" inside fill** L= 36.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 637.00' / 636.22' S= 0.0217 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.63 sf
#2	Primary	638.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.92 cfs @ 13.39 hrs HW=637.63' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 0.92 cfs @ 1.62 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 86P: Culvert 041



Summary for Pond 87P: Culvert 045

[58] Hint: Peaked 0.09' above defined flood level

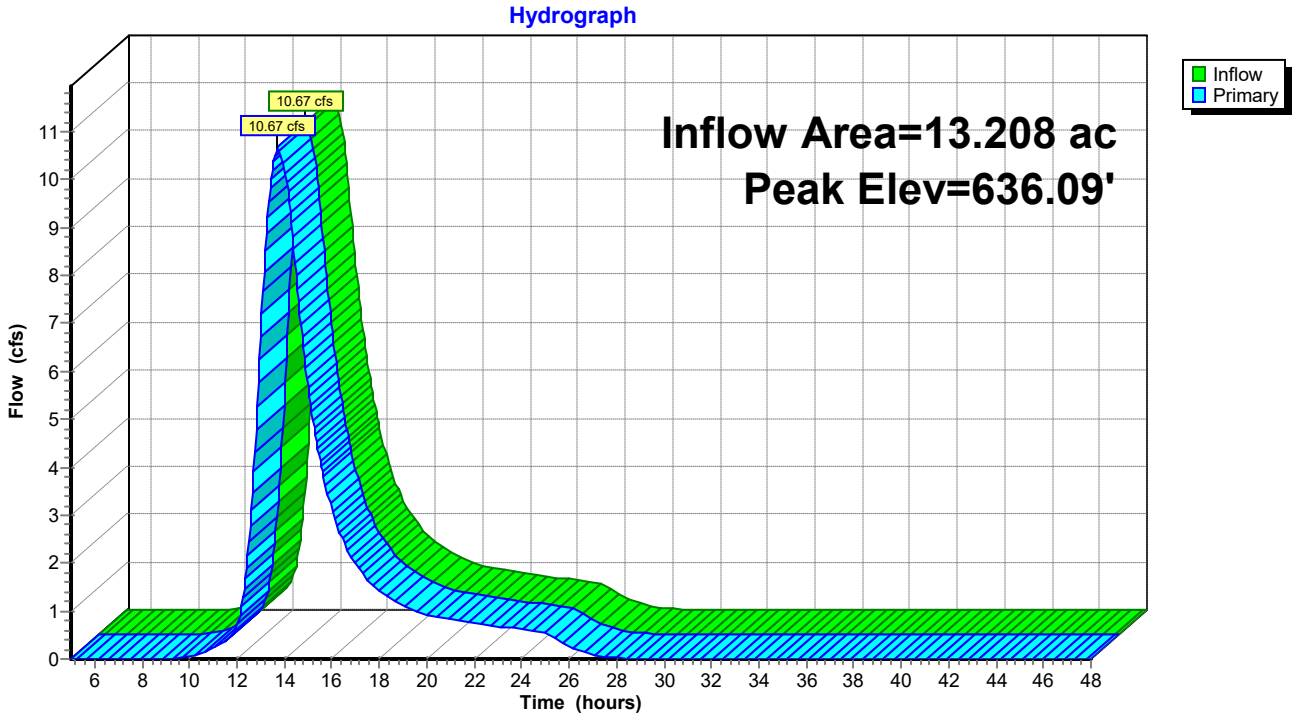
Inflow Area = 13.208 ac, 0.00% Impervious, Inflow Depth = 2.70" for 100-yr event
Inflow = 10.67 cfs @ 13.71 hrs, Volume= 2.970 af
Outflow = 10.67 cfs @ 13.71 hrs, Volume= 2.970 af, Atten= 0%, Lag= 0.0 min
Primary = 10.67 cfs @ 13.71 hrs, Volume= 2.970 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 636.09' @ 13.71 hrs
Flood Elev= 636.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	635.20'	**18.0" Round Culvert 001 w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 635.00' / 634.22' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 1.63 sf
#2	Primary	636.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=10.65 cfs @ 13.71 hrs HW=636.09' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 2.92 cfs @ 2.36 fps)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 7.73 cfs @ 0.82 fps)

Pond 87P: Culvert 045



Summary for Pond 89P: Culvert 048

[58] Hint: Peaked 0.19' above defined flood level

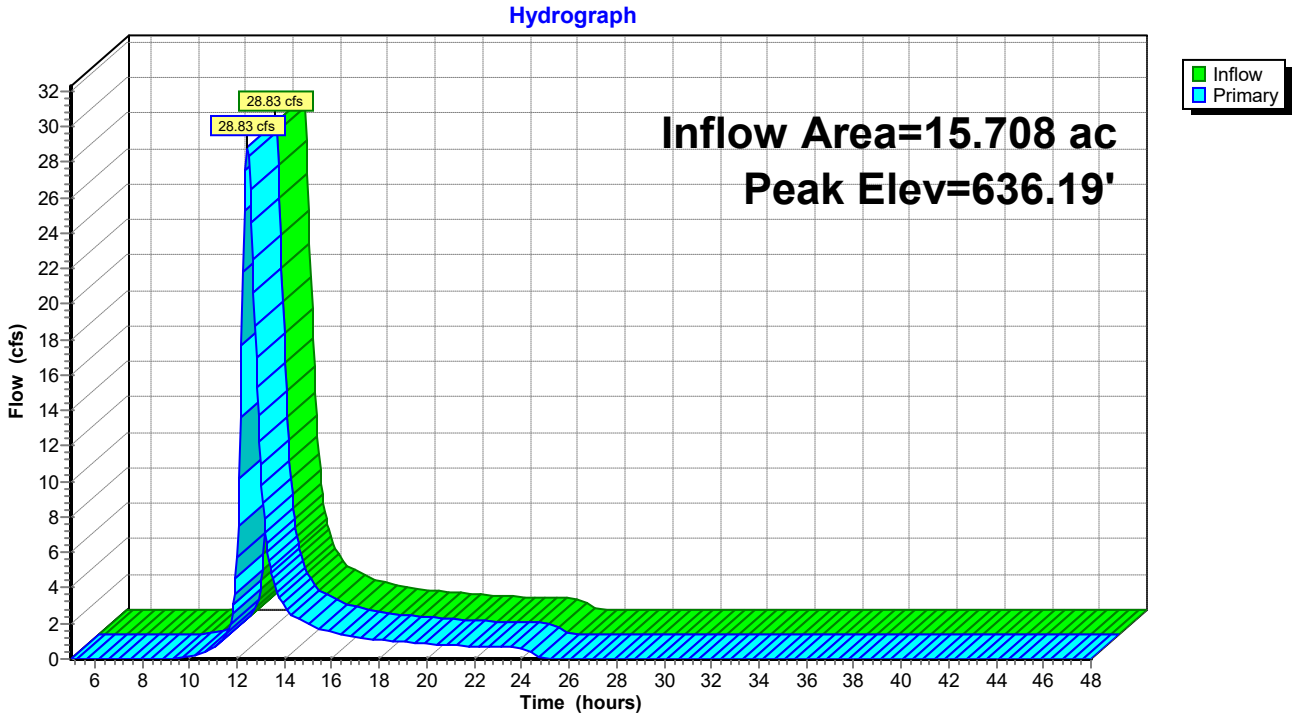
Inflow Area = 15.708 ac, 5.41% Impervious, Inflow Depth = 2.44" for 100-yr event
Inflow = 28.83 cfs @ 12.43 hrs, Volume= 3.190 af
Outflow = 28.83 cfs @ 12.43 hrs, Volume= 3.190 af, Atten= 0%, Lag= 0.0 min
Primary = 28.83 cfs @ 12.43 hrs, Volume= 3.190 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 636.19' @ 12.43 hrs
Flood Elev= 636.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	635.20'	**36.0" Round Culvert w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 635.00' / 634.22' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 6.87 sf
#2	Primary	636.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=28.67 cfs @ 12.43 hrs HW=636.19' (Free Discharge)
└─**1=Culvert** (Inlet Controls 5.78 cfs @ 2.39 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 22.89 cfs @ 1.18 fps)

Pond 89P: Culvert 048



Summary for Pond 91P: Culvert 049

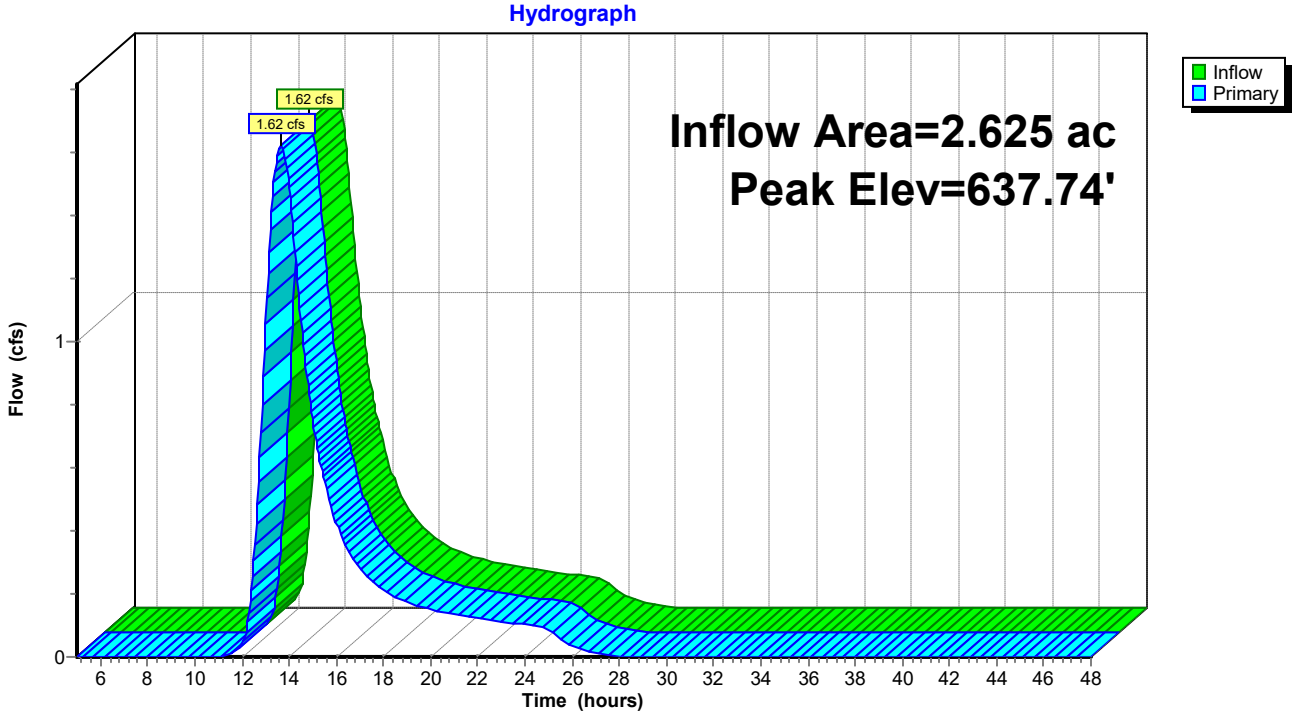
Inflow Area = 2.625 ac, 0.00% Impervious, Inflow Depth = 1.95" for 100-yr event
Inflow = 1.62 cfs @ 13.62 hrs, Volume= 0.426 af
Outflow = 1.62 cfs @ 13.62 hrs, Volume= 0.426 af, Atten= 0%, Lag= 0.0 min
Primary = 1.62 cfs @ 13.62 hrs, Volume= 0.426 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 637.74' @ 13.62 hrs
Flood Elev= 638.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	637.20'	**24.0" Round Culvert 001 w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 637.00' / 636.22' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 2.98 sf
#2	Primary	638.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.62 cfs @ 13.62 hrs HW=637.74' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 1.62 cfs @ 1.79 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 91P: Culvert 049



Summary for Pond 92P: Culvert 050

[58] Hint: Peaked 0.02' above defined flood level

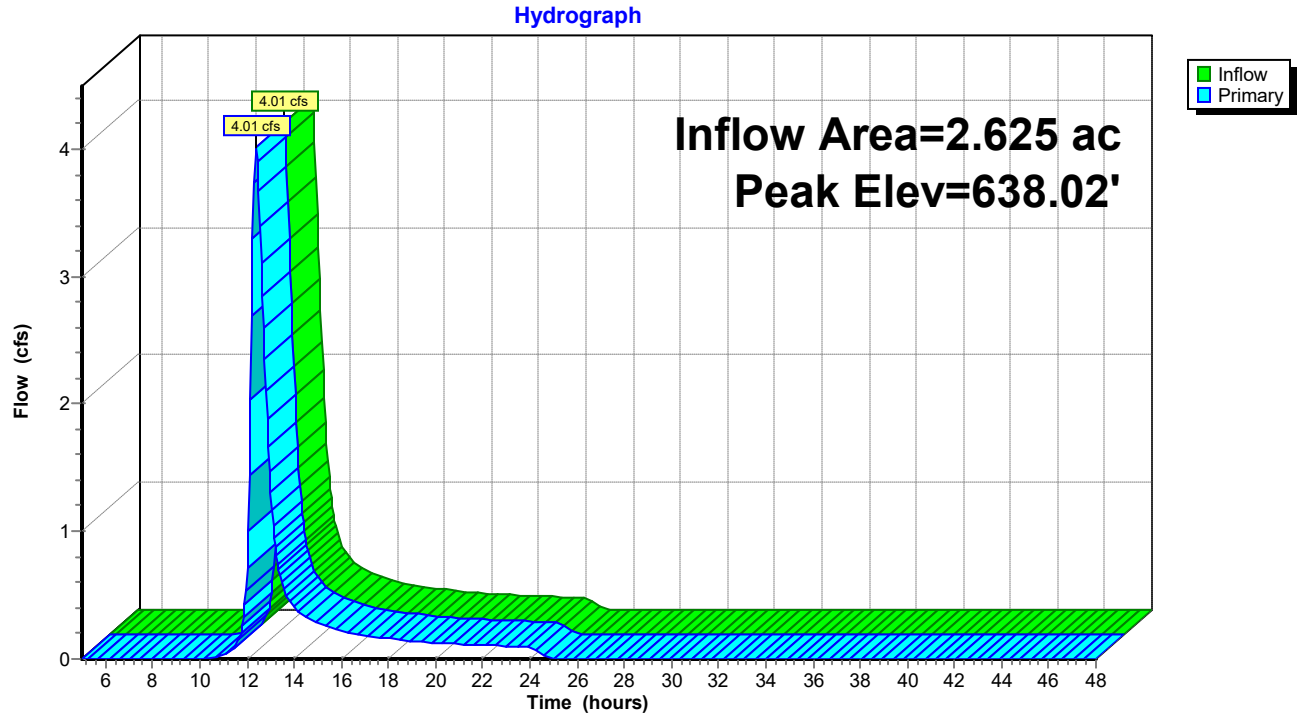
Inflow Area = 2.625 ac, 0.00% Impervious, Inflow Depth = 1.95" for 100-yr event
Inflow = 4.01 cfs @ 12.39 hrs, Volume= 0.426 af
Outflow = 4.01 cfs @ 12.39 hrs, Volume= 0.426 af, Atten= 0%, Lag= 0.0 min
Primary = 4.01 cfs @ 12.39 hrs, Volume= 0.426 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 638.02' @ 12.39 hrs
Flood Elev= 638.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	637.20'	**24.0" Round Culvert 039 w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 637.00' / 636.22' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 2.98 sf
#2	Primary	638.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.94 cfs @ 12.39 hrs HW=638.02' (Free Discharge)
└**1=Culvert 039** (Inlet Controls 3.19 cfs @ 2.20 fps)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.75 cfs @ 0.38 fps)

Pond 92P: Culvert 050



Summary for Pond 93P: Culvert 054

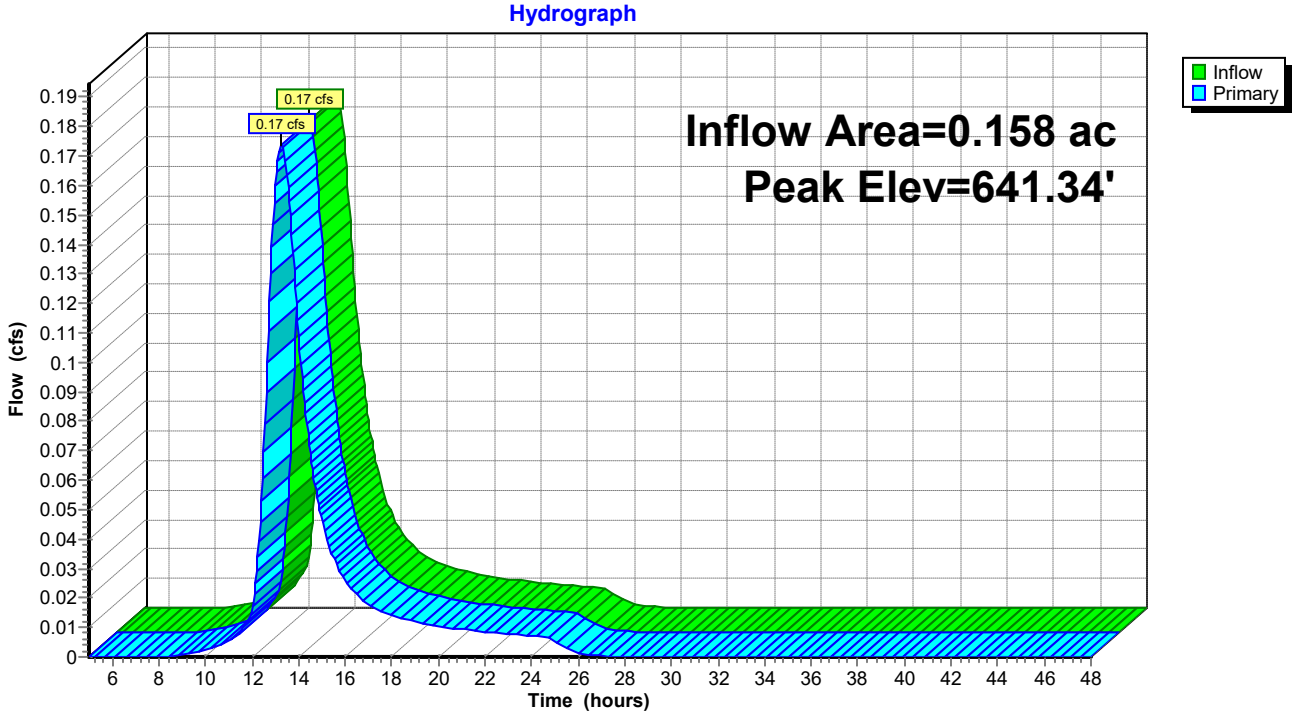
Inflow Area = 0.158 ac, 0.00% Impervious, Inflow Depth = 2.88" for 100-yr event
Inflow = 0.17 cfs @ 13.23 hrs, Volume= 0.038 af
Outflow = 0.17 cfs @ 13.23 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 13.23 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 641.34' @ 13.23 hrs
Flood Elev= 642.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	641.20'	**24.0" Round Culvert 001 w/ 2.4" inside fill** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 641.00' / 640.22' S= 0.0260 '/' Cc= 0.900 n= 0.012 Steel, smooth, Flow Area= 2.98 sf
#2	Primary	642.00'	**100.0' long + 3.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.17 cfs @ 13.23 hrs HW=641.34' (Free Discharge)
└**1=Culvert 001** (Inlet Controls 0.17 cfs @ 0.93 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 93P: Culvert 054



Culvert Analysis Report
Culvert 10

Analysis Component			
Storm Event	Check	Discharge	81.86 cfs

Peak Discharge Method: User-Specified			
Design Discharge	48.51 cfs	Check Discharge	81.86 cfs

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	1-6 x 4 ft Box	81.88 cfs	623.07 ft	9.86 ft/s
Weir	Roadway (Constant Elevation)	0.00 cfs	623.07 ft	N/A
Total	----------	81.88 cfs	623.07 ft	N/A

Culvert Analysis Report
Culvert 10

Component:Culvert-1

Culvert Summary					
Computed Headwater Elevation	623.07	ft	Discharge	81.88	cfs
Inlet Control HW Elev.	622.79	ft	Tailwater Elevation	N/A	ft
Outlet Control HW Elev.	623.07	ft	Control Type	Entrance Control	
Headwater Depth/Height	0.83				

Grades					
Upstream Invert	619.75	ft	Downstream Invert	619.25	ft
Length	45.50	ft	Constructed Slope	0.010989	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	1.38	ft
Slope Type	Steep		Normal Depth	1.24	ft
Flow Regime	Supercritical		Critical Depth	1.80	ft
Velocity Downstream	9.86	ft/s	Critical Slope	0.003787	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	6.00	ft
Section Size	6 x 4 ft		Rise	4.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	623.07	ft	Upstream Velocity Head	0.90	ft
Ke	0.70		Entrance Loss	0.63	ft

Inlet Control Properties					
Inlet Control HW Elev.	622.79	ft	Flow Control	N/A	
Inlet Type	0° wingwall flares		Area Full	24.0	ft²
K	0.06100		HDS 5 Chart	8	
M	0.75000		HDS 5 Scale	3	
C	0.04230		Equation Form	1	
Y	0.82000				

Culvert Analysis Report
Culvert 10

Component:Weir

Hydraulic Component(s): Roadway (Constant Elevation)					
Discharge	0.00	cfs	Allowable HW Elevation	623.07	ft
Roadway Width	20.00	ft	Overtopping Coefficient	2.50	US
Length	200.00	ft	Crest Elevation	625.25	ft
Headwater Elevation	N/A	ft	Discharge Coefficient (Cr)	2.50	
Submergence Factor (Kt)	1.00				

Sta (ft)	Elev. (ft)
0.00	625.25
200.00	625.25

Culvert Analysis Report
Culvert 17

Analysis Component			
Storm Event	Check	Discharge	110.55 cfs

Peak Discharge Method: User-Specified			
Design Discharge	62.97 cfs	Check Discharge	110.55 cfs

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	1-8 x 4 ft Box	110.57 cfs	621.70 ft	7.63 ft/s
Weir	Roadway (Constant Elevation)	0.00 cfs	621.70 ft	N/A
Total	----------	110.57 cfs	621.70 ft	N/A

Culvert Analysis Report
Culvert 17

Component:Culvert-1

Culvert Summary					
Computed Headwater Elevation	621.70	ft	Discharge	110.57	cfs
Inlet Control HW Elev.	621.48	ft	Tailwater Elevation	N/A	ft
Outlet Control HW Elev.	621.70	ft	Control Type	Outlet Control	
Headwater Depth/Height	0.83				

Grades					
Upstream Invert	618.40	ft	Downstream Invert	618.30	ft
Length	34.50	ft	Constructed Slope	0.002899	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	1.81	ft
Slope Type	Mild		Normal Depth	1.90	ft
Flow Regime	Subcritical		Critical Depth	1.81	ft
Velocity Downstream	7.63	ft/s	Critical Slope	0.003324	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	8.00	ft
Section Size	8 x 4 ft		Rise	4.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	621.70	ft	Upstream Velocity Head	0.83	ft
Ke	0.70		Entrance Loss	0.58	ft

Inlet Control Properties					
Inlet Control HW Elev.	621.48	ft	Flow Control	N/A	
Inlet Type	0° wingwall flares		Area Full	32.0	ft²
K	0.06100		HDS 5 Chart	8	
M	0.75000		HDS 5 Scale	3	
C	0.04230		Equation Form	1	
Y	0.82000				

Culvert Analysis Report
Culvert 17

Component:Weir

Hydraulic Component(s): Roadway (Constant Elevation)					
Discharge	0.00	cfs	Allowable HW Elevation	621.70	ft
Roadway Width	20.00	ft	Overtopping Coefficient	2.50	US
Length	200.00	ft	Crest Elevation	623.90	ft
Headwater Elevation	N/A	ft	Discharge Coefficient (Cr)	2.50	
Submergence Factor (Kt)	1.00				

Sta (ft)	Elev. (ft)
0.00	623.90
200.00	623.90

Culvert Analysis Report
Culvert 30

Analysis Component			
Storm Event	Design	Discharge	72.60 cfs

Peak Discharge Method: User-Specified			
Design Discharge	72.60 cfs	Check Discharge	87.20 cfs

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	1-8 x 4 ft Box	72.60 cfs	608.41 ft	6.63 ft/s
Weir	Roadway (Constant Elevation)	0.00 cfs	608.41 ft	N/A
Total	----------	72.60 cfs	608.41 ft	N/A

Culvert Analysis Report
Culvert 30

Component:Culvert-1

Culvert Summary					
Computed Headwater Elevation	608.41	ft	Discharge	72.60	cfs
Inlet Control HW Elev.	608.28	ft	Tailwater Elevation	N/A	ft
Outlet Control HW Elev.	608.41	ft	Control Type	Outlet Control	
Headwater Depth/Height	0.61				

Grades					
Upstream Invert	605.96	ft	Downstream Invert	605.87	ft
Length	74.00	ft	Constructed Slope	0.001216	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	1.37	ft
Slope Type	Mild		Normal Depth	1.92	ft
Flow Regime	Subcritical		Critical Depth	1.37	ft
Velocity Downstream	6.63	ft/s	Critical Slope	0.003284	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	8.00	ft
Section Size	8 x 4 ft		Rise	4.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	608.41	ft	Upstream Velocity Head	0.46	ft
Ke	0.70		Entrance Loss	0.32	ft

Inlet Control Properties					
Inlet Control HW Elev.	608.28	ft	Flow Control	Unsubmerged	
Inlet Type	0° wingwall flares		Area Full	32.0	ft²
K	0.06100		HDS 5 Chart	8	
M	0.75000		HDS 5 Scale	3	
C	0.04230		Equation Form	1	
Y	0.82000				

Culvert Analysis Report
Culvert 30

Component:Weir

Hydraulic Component(s): Roadway (Constant Elevation)					
Discharge	0.00	cfs	Allowable HW Elevation	608.41	ft
Roadway Width	20.00	ft	Overtopping Coefficient	2.50	US
Length	200.00	ft	Crest Elevation	611.46	ft
Headwater Elevation	N/A	ft	Discharge Coefficient (Cr)	2.50	
Submergence Factor (Kt)	1.00				

Sta (ft)	Elev. (ft)
0.00	611.46
200.00	611.46

Culvert Analysis Report
Culvert 35

Analysis Component			
Storm Event	Design	Discharge	15.44 cfs

Peak Discharge Method: User-Specified			
Design Discharge	15.44 cfs	Check Discharge	25.35 cfs

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	N/A ft

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	1-8 x 4 ft Box	15.45 cfs	634.55 ft	3.96 ft/s
Weir	Roadway (Constant Elevation)	0.00 cfs	634.55 ft	N/A
Total	----------	15.45 cfs	634.55 ft	N/A

Culvert Analysis Report
Culvert 35

Component:Culvert-1

Culvert Summary					
Computed Headwater Elevation	634.55	ft	Discharge	15.45	cfs
Inlet Control HW Elev.	634.48	ft	Tailwater Elevation	N/A	ft
Outlet Control HW Elev.	634.55	ft	Control Type	Outlet Control	
Headwater Depth/Height	0.22				

Grades					
Upstream Invert	633.67	ft	Downstream Invert	633.64	ft
Length	37.00	ft	Constructed Slope	0.000811	ft/ft

Hydraulic Profile					
Profile	M2		Depth, Downstream	0.49	ft
Slope Type	Mild		Normal Depth	0.79	ft
Flow Regime	Subcritical		Critical Depth	0.49	ft
Velocity Downstream	3.96	ft/s	Critical Slope	0.003647	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	8.00	ft
Section Size	8 x 4 ft		Rise	4.00	ft
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	634.55	ft	Upstream Velocity Head	0.14	ft
Ke	0.70		Entrance Loss	0.10	ft

Inlet Control Properties					
Inlet Control HW Elev.	634.48	ft	Flow Control	N/A	
Inlet Type	0° wingwall flares		Area Full	32.0	ft²
K	0.06100		HDS 5 Chart	8	
M	0.75000		HDS 5 Scale	3	
C	0.04230		Equation Form	1	
Y	0.82000				

Culvert Analysis Report
Culvert 35

Component:Weir

Hydraulic Component(s): Roadway (Constant Elevation)					
Discharge	0.00	cfs	Allowable HW Elevation	634.55	ft
Roadway Width	20.00	ft	Overtopping Coefficient	2.50	US
Length	200.00	ft	Crest Elevation	639.17	ft
Headwater Elevation	N/A	ft	Discharge Coefficient (Cr)	2.50	
Submergence Factor (Kt)	1.00				

Sta (ft)	Elev. (ft)
0.00	639.17
200.00	639.17

Appendix R
Wetland/Watercourse Delineation Report

PREPARED FOR:

nationalgrid

NIAGARA MOHAWK POWER CORPORATION
(D/B/A NATIONAL GRID)
300 ERIE BOULEVARD, WEST
SYRACUSE, NY 13202

LOCKPORT-BATAVIA #112 REBUILD PROJECT

TOWNS OF LOCKPORT AND ROYALTON, NIAGARA COUNTY, AND
TOWN OF ALABAMA, GENESEE COUNTY,
NEW YORK

WETLAND AND WATERCOURSE DELINEATION REPORT

JANUARY 2020
UPDATED FEBRUARY 2021

PREPARED BY:

FISHER ASSOCIATES

180 CHARLOTTE STREET
ROCHESTER, NEW YORK 14607
FISHER ASSOCIATES PROJECT NO. 190176.00

EXECUTIVE SUMMARY

On behalf of Niagara Mohawk Power Corporation (d/b/a National Grid), Fisher Associates' Environmental Scientists conducted field delineations between August 6 and October 2, 2019, June 16, 2020, and November 12 and 13, 2020 to identify potential jurisdictional federal Waters of the U.S. (WOTUS) and potential jurisdictional state waters, including wetlands and watercourses within the Project Study Limits defined to support the Lockport-Batavia #112 Rebuild Project (Project). The original Project Study Limits consisted of a 445.14-acre area. An additional field delineation was performed on June 16, 2020 to look at an additional section of the Lockport-Batavia #112 line between Structure 211 and Structure 213. A second additional field delineation was performed on November 12 and November 13, 2020 to look at additional areas within the proposed reroute location along Lewiston Road, an area between Structure 168 and Structure 169, and an extension of the Project Study Limits at Structure 213. The overall Project Study Limits consist of a 468.42-acre area, which encompasses potential construction and limits of disturbance required for the Project. The Project Study Limits are depicted on the attached Wetland and Watercourse Delineation mapping.

The Project Study Limits are located within an existing right-of-way (ROW) for multiple overhead electrical transmission lines and the area includes commercial, residential, agricultural, and rural residential areas. The Project Study Limits are generally confined to the existing maintained ROW for the Lockport-Batavia #112 overhead transmission line, between Structure 1.3 to Structure 213. In the eastern portion of the Project, the Project Study Limits cross the Tonawanda Wildlife Management Area (WMA) and John White WMA. The Project Study Limits are generally bounded by NYS Route 77 to the north; the Erie Canal to the west; NYS Route 98 to the east; and NYS Route 93 to the south. They are located within the Niagara (HUC 04120104) and Oak Orchard-Twelvemile (HUC 04130001) watersheds. The western and central portion of the Project is drained by multiple unnamed tributaries of Mud Creek which flow south into Mud Creek and eventually into Tonawanda Creek. The Tonawanda WMA is comprised of a series of ditches and streams which flow into impounded wetlands/ waterbodies where water levels are manually facilitated. There are three (3) New York State Department of Environmental Conservation (NYSDEC) mapped streams within Tonawanda WMA that flow into Oak Orchard Creek to the north beyond the Project Study Limits. The outflow from the Tonawanda WMA drains into Tonawanda Creek to the south beyond the Project Study Limits.

The Project Study Limits were delineated based upon the methodology outlined in the *1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (Regional Supplement 2012), and the *1995 New York State Freshwater Wetlands Delineation Manual*. Using these methodologies, preliminary delineation mapping was produced and is included along with the attached investigation description and discussion. Twenty-eight (28) wetlands, totaling 153.59-acres, were delineated within the Project Study Limits. There were twenty-seven (27) PEM wetland components totaling 145.75-acres, four (4) PSS wetland components totaling 4.63-acres, three (3) PFO wetland components totaling 2.65-acres, and one (1) open-water (PUB) system totaling 0.56-acres were delineated within the Project Study Limits. Ten (10) stream reaches, totaling 3,575-linear feet, were delineated within the Project Study Limits. This included the New York State (NYS) Barge Canal (Class C), one (1) unnamed tributary to Tonawanda Creek (Class B), three (3) unnamed tributaries to Mud Creek (Class C), Mud Creek (Class C), and four (4) unmapped tributaries to Mud Creek (Class D) were delineated within the Project Study Limits. Twenty-five (25) ditches, totaling 4,643-linear feet, were delineated within the Project Study Limits.

Based on conditions observed, the USACE will likely invoke jurisdiction over the ten (10) delineated streams due to their perennial and intermittent flow regime, as well as their connection to a US Traditional

Navigable Water. Additionally, delineated Stream 001 is a section of the NYS Barge Canal (Erie Canal) system and is listed as a navigable waterway under Section 10 of the Rivers and Harbors Act of 1899. The USACE will also likely take jurisdiction over eighteen (18) of the twenty-eight (28) delineated wetlands because they are adjacent wetlands to other WOTUS. The USACE is anticipated to take jurisdiction over Ditch 010 because it flows through a jurisdictional adjacent wetland.

It is anticipated that the New York State Department of Environmental Conservation (NYSDEC) will invoke jurisdiction over Wetland 005 (PEM) (associated with NYSDEC Wetland LP-23), Wetland 016 (PEM & PSS) (associated with NYSDEC Wetland GA-22), Wetlands 017 (PEM & PFO) and 018 (PEM) (associated with NYSDEC Wetland GA-21), Wetland 020 (PEM) (associated with NYSDEC Wetland GA-6), Wetland 023 (PEM & PSS) (associated with NYSDEC Wetland AK-2, AK-3, and AK-4), and Wetland 027 (PEM & PFO) (associated with NYSDEC Wetland MD-1) under Article 24: Freshwater wetlands of the Environmental Conservation Law (ECL). Also, the NYSDEC may invoke jurisdiction over delineated Wetland 022 (PEM) because it is located within the John White WMA which has been owned and managed by the NYSDEC since 1945. It is expected that the NYSDEC will not invoke jurisdiction over the remaining delineated wetland systems throughout the Project Study Limits as they are not within close proximity (i.e., less than 50 meters) of mapped NYSDEC wetlands and their regulated 100-foot adjacent areas.

Additionally, it is anticipated that the NYSDEC will invoke jurisdiction over delineated Stream 002, an Unnamed Tributary to Tonawanda Creek, under Article 15: Protected Waters Program of the ECL, as it is a mapped NYSDEC Class B stream. It is also possible that the NYSDEC will invoke jurisdictional over delineated Stream 009 due to its location within the Tonawanda WMA which is managed by the NYSDEC as well as Stream 001, the Erie Canal, as it operated by the NYS Canal Corporation. It is expected that the NYSDEC will not invoke jurisdiction over the remaining seven (7) stream reaches identified within the Project Study Limits as they are recognized as either Class C or D stream reaches. It is expected that the NYSDEC will not invoke jurisdiction over the delineated ditches since NYSDEC typically does not regulate ditches.

WETLAND AND WATERCOURSE DELINEATION REPORT
LOCKPORT-BATAVIA #112 REBUILD PROJECT

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PROJECT INFORMATION SHEET

General

Project Name:	Lockport-Batavia #112 Rebuild Project
State:	New York
County:	Niagara and Genesee County
Town:	Towns of Lockport, Royalton, and Alabama
Latitude:	43.139915 North
Longitude:	-78.54395 West
Project Study Limit Size:	468.42-acres
HUC Code:	04120104 (Niagara Watershed) & 04130001 (Oak Orchard-Twelvemile)
Waterbodies (TNW):	NYS Barge Canal, unnamed tributaries to Tonawanda Creek, unnamed tributaries to Mud Creek; and associated palustrine emergent (PEM), palustrine scrub-shrub (PSS) and palustrine forested (PFO) wetlands

Corresponding Information

USGS Quad Map:	Akron, Gasport, Lockport, Medina, Oakfield
USDA Soils Map:	Niagara and Genesee County

Owner/Applicant

Name:	Niagara Mohawk Power Corporation (d/b/a National Grid)
Address:	300 Erie Boulevard, West Syracuse, NY 13202
Contact:	Mary Bitka: (716) 831-7206

Consultant

Name:	Fisher Associates
Address:	180 Charlotte Street Rochester, NY 14607
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1.0 INTRODUCTION

On behalf of Niagara Mohawk Power Corporation (d/b/a National Grid), Fisher Associates' Environmental Scientists conducted field delineations between August 6 and October 2, 2019, June 16, 2020, an November 12 and 13, 2020 to identify potential jurisdictional federal Waters of the U.S. (WOTUS) and potential jurisdictional state waters, including wetlands and watercourses within the Project Study Limits defined to support the Lockport-Batavia #112 Rebuild Project (Project). The original Project Study Limits consisted of a 445.14-acre area. An additional field delineation was performed on June 16, 2020 to look at an additional section of the Lockport-Batavia #112 line between Structure 211 and Structure 213. A second additional field delineation was performed on November 12 and November 13, 2020 to look at additional areas within the proposed reroute location along Lewiston Road, an area between Structure 168 and Structure 169, and an extension of the Project Study Limits at Structure 213. The overall Project Study Limits consist of a 468.42-acre area, which encompasses potential construction and limits of disturbance required for the Project. The Project Study Limits are depicted on the attached Wetland and Watercourse Delineation mapping.

2.0 SITE INFORMATION

2.1 Site Location

The Project Study Limits are located in the Towns of Lockport and Royalton in Niagara County, and the Town of Alabama in Genesee County, New York (see Figure 1: Project Vicinity and Index Map). The Project Study Limits are generally confined to the existing maintained right-of-way (ROW) for the Lockport-Batavia #112 overhead transmission line, between Structure 1.3 to Structure 213. They are located within the Niagara (HUC 04120104) and Oak Orchard-Twelvemile (HUC 04130001) watersheds. The western and central portion of the Project is drained by multiple unnamed tributaries of Mud Creek which flow south into Mud Creek and eventually into Tonawanda Creek. A majority of the eastern portion of the Project is located within the Tonawanda Wildlife Management Area (WMA) and the John White WMA. The Project is in the Ontario-Erie Plain and Finger Lakes Region of the Lake States Fruit, Truck, and Dairy Region.

2.2 Site Description

The Project Study Limits are located within an existing right-of-way (ROW) for multiple overhead electrical transmission lines and the area includes commercial, residential, agricultural, and rural residential areas. In the eastern portion of the Project, the Project Study Limits cross the Tonawanda Wildlife Management Area (WMA) and John White WMA. The Tonawanda WMA is comprised of a series of ditches and streams which flow into impounded wetlands/ waterbodies where water levels are manually facilitated. There are three (3) NYSDEC mapped streams within the Tonawanda WMA that flow into Oak Orchard Creek to the north beyond the Project Study Limits. The outflow from the Tonawanda WMA drains into Tonawanda Creek to the south beyond the Project Study Limits. The Project Study Limits are generally bounded by NYS Route 77 to the north; the Erie Canal to the west; NYS Route 98 to the east; and NYS Route 93 to the south (see *Figure 2: Wetland and Watercourse Delineation Map*).

3.0 REGULATORY INFORMATION

Both New York State and the U.S. federal government have rules and regulations that must be followed when it comes to defining wetlands and watercourses and which features are determined to be regulated.

3.1 Regulatory Definitions

A "tributary" is defined by the USACE as a water that contributes flow, either directly or through another water (including an impoundment) to a water that is characterized by the presence of the physical indicators of a bed and bank and an OHWM. Watercourse flow regimes of either perennial, intermittent or ephemeral were noted for each channel based on the U.S. Environmental Protect Agency's (EPA) stream definitions (U.S. EPA, 2013) as noted below.

- Perennial (year-round) – Those streams that typically have flowing water in them year-round. Most of the water comes from smaller upstream waters or groundwater while runoff from rainfall or other precipitation is supplemental.
- Intermittent (seasonal) – Those streams that flow during certain time of the year when smaller upstream waters are flowing and when groundwater provides enough water for stream flow. Runoff from rainfall or other precipitation supplements the flow of a seasonal stream. During dry periods, seasonal streams may not have flowing surface water.
- Ephemeral (precipitation dependent) – Those streams which only flow after precipitation. Runoff from rainfall is the primary source of water for these streams.

Additionally, these definitions are based on the understanding of conditions in a "typical year". Which is the normal periodic range of precipitation and other climactic variables for a waterbody. "Typical year" is a term that ensures agencies are considering normal (i.e. typical) hydrologic flows or surface water connections that occur under normal conditions rather that making jurisdictional determinations based on conditions that are abnormally wet or dry.

Under the Navigable Waters Protection Rule (effective June 22, 2020), the definition of a "ditch" is a constructed or excavated channel used to convey water.

3.2 Federal Agency Regulations

In accordance with the Navigable Waters Protection Rule (effective June 22, 2020), and the Clean Water Act, WOTUS that are regulated and jurisdictional by the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) are outlined in the below four (4) categories.

- Territorial seas and traditional navigable waters (TNWs) –
    - According to the USACE (33 CFR Part 329), a traditional navigable water are "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce."
    - This also includes large rivers and lakes, such as the Mississippi River, the Great Lakes, Chesapeake Bay, and the Erie Canal.
- Tributaries –
    - Tributaries that are jurisdictional are perennial and intermittent rivers and streams that contribute surface flow to traditional navigable waters in a typical year.
    - They must be naturally occurring surface water channels that flow more often than just after a single precipitation event.
    - Tributaries can connect to a traditional navigable water or territorial seas in a typical year either directly or through other WOTUS, through channelized non-jurisdictional surface waters, through artificial features (including culverts), or through natural features (including boulder fields).
    - Ditches are considered tributaries only if:

        - They satisfy the flow conditions of a perennial or intermittent tributary definition;
        - And either:
            - were constructed in or relocate a tributary; or
            - were constructed in an adjacent wetland and contribute perennial or intermittent flow to a traditional navigable water.
        - Fully upland ditches, regardless of flow, do not fall within the scope of the Clean Water Act.
- Lakes, ponds and impoundments of jurisdictional waters –
    - Lakes, ponds, and impoundments of jurisdictional waters are jurisdictional where they contribute surface water flow to a traditional navigable water or territorial seas in a typical year either directly or through other WOTUS, through channelized non-jurisdictional surface waters, through artificial features (culverts), or through natural features (boulder fields).
    - These are also jurisdictional where they are flooded by a WOTUS in a typical year, such as certain oxbow lakes.
    - Artificial lakes and ponds, including water storage reservoirs and farm irrigation, stock watering and log cleaning ponds, constructed or excavated in upland or non-jurisdictional waters are excluded from federal jurisdiction.
- Adjacent wetlands –
    - Wetlands that typically touch other WOTUS.
    - Wetlands separated by a WOTUS by only a natural berm, bank or dune.
    - Wetlands inundated by flooding from a WOTUS in a typical year.
    - Wetlands that are physically separated from a jurisdictional water by an artificial dike, barrier or similar structure as long as the structure allows for direct hydrologic surface connection.
    - Adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetlands, so long as the structure allows for a direct hydrologic surface connection through or over it in a typical year.

3.3 New York State Department of Environmental Conservation Regulations

The NYSDEC has separate regulations when it comes to determining jurisdiction of wetlands and watercourses within the states borders.

3.3.1 Freshwater Wetlands

Under Article 24: Freshwater Wetlands Act of the NYS Environmental Conservation Law (ECL) (6NYCRR Part 663, Part 664 and Part 665), the NYSDEC is charged with preventing despoliation and destruction of freshwater wetlands. NYSDEC defines freshwater wetlands as lands and submerged lands, commonly called marshes, swamps, sloughs, bogs, and flats, supporting aquatic or semi-aquatic vegetation. NYSDEC has classified regulated wetlands according to their respective functions, values and benefits into Class I, II, III or IV. Class I wetlands are the most valuable. Except in the Adirondack Park, a freshwater wetland would be regulated by the NYSDEC if it is at least 12.4-acres or an already mapped NYSDEC wetland (see Section 5.1.1). Additionally, upland areas within a 100-feet of a NYSDEC jurisdictional wetland are also regulated.

3.3.2 State Protected Waterways

Under Article 15: Protection of Waters Program of the NYS ECL (6NYCRR Part 608), the NYSDEC is charged with preserving and protecting the states lakes, rivers, streams and ponds. All waters of the state are provided a class and standard designation based on existing or expected best usage of each water or waterway segment. These are:

- Classification AA or A is assigned to waters used as a source of drinking water.
- Classification B indicates a best usage for swimming and other contact recreation, but not for drinking water.
- Classification C is for waters supporting fisheries and suitable for non-contact activities.
- The lowest Classification and standard is D.

Waters with Classifications A, B, and C may also have a standard designation of (T), indicating that it may support trout population, or (TS) indicating that it may support trout spawning. Small waterbodies (ponds and lakes) with a surface are of less than 10-acres, located within the stream course are considered part of the stream and subject to regulation. Streams and small waterbodies with a Classification of AA, A or B, or with a Classification C with a standard designation of (T) or (TS) are collectively referred to as "protected streams" and are subject to the stream protection provisions of the Protection of Waters regulation.

4.0 METHODOLOGY

4.1 Preliminary Offsite Investigation/ Data Review

A review of publicly available resources was performed prior to the onsite field investigation in order to determine if there is the potential for jurisdictional areas, and if present, the extent of these areas located within the Project Study Limits. These mapping resources are represented on *Figure 2: Wetland and Watercourse Delineation Map* and generally include but are not limited to:

- New York State Freshwater Wetlands Mapping (NYSFW);
- New York State Protection of Waters Regulatory Program Streams Mapping (NYSS);
- U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) Database;
- U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soils Database; and
- United States Geographical Survey (USGS) Mapping.

4.2 Wetland Field Investigations

Wetland boundaries were field delineated according to the routine onsite methodology described in the *1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual*, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (2012 Regional Supplement), and the *1995 New York State Freshwater Wetlands Delineation Manual*.

Wetlands were identified based on the presence of hydric soils; a vegetative community dominated by hydrophytes, and inundated or saturated conditions, and/or indicators of hydrologic patterns. Wetlands within the Project Study Limits were classified according to the USFWS *Classification of Wetland and Deepwater Habitats of the United States*. Wetland classifications were based on vegetation type and dominance: palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and palustrine open-water (POW). A project-specific identification number was given to the delineated wetland. Wetland delineation data relative to vegetation, hydrology, soils and general observations was documented on routine wetland data forms consistent with the guidance of the 2012 Regional Supplement.

The wetland boundaries were recorded with a sub-meter accuracy global positioning system (GPS) unit to further clarify their locations. Wetland field data points were established within close proximity to wetland boundaries in order to document upland/ dryland and wetland conditions existing along wetland boundaries.

Mapping depicting the location of the delineated wetlands within the Project Study Limits are provided as an attachment (see *Figure 2: Wetland and Watercourse Delineation Map*). Photographs were taken at the field data points to document conditions along the delineation boundary. Supporting wetland determination data forms are provided in *Appendix A.* Representative site photographs are provided in *Appendix D.*

4.3 Watercourse Field Investigations

Watercourses such as stream channels, tributaries, ditches and linear conveyance features were identified based on the recognition of field indicators of bed, bank, and an ordinary high-water mark (OHWM) coupled with an evaluation of flow type (perennial, intermittent or ephemeral) and connectivity.

If observed, Fisher Associates' environmental scientists delineated and flagged watercourse boundaries in the field and the flagged locations were recorded with a sub-meter accuracy GPS unit to further clarify their locations. Top of Bank widths as well as OHWM widths were recorded throughout the length of the watercourse. Mapping depicting the location of the delineated watercourses, including streams and ditches, identified within the Project Study Limits are provided as an appendix (see *Figure 2: Wetland and Watercourse Delineation Map*).

Any ditches observed within the Project Study Limits were flagged in the field and mapped. Jurisdiction of diches were determined during post-processing of field data based on their connectivity to other WOTUS. Observed watercourse characteristics were recorded on supporting stream and ditch data forms and are provided in *Appendix B and C,* respectively. Representative site photographs are provided in *Appendix D.*

5.0 DELINEATION FINDINGS

5.1 Preliminary Offsite Investigation/ Data Review Findings

5.1.1 NYS Freshwater Wetland Mapping

The NYSFW maps were developed by the NYSDEC pursuant to Article 24: Freshwater Wetlands of the ECL. These maps depict the approximate boundaries of freshwater wetlands regulated by the NYSDEC. In most instances, the State-mapped boundaries are based on aerial photographs and soil survey interpretation and, therefore, require site-specific field verification. Freshwater wetland mapping information identified for the Project Study Limits was obtained from online Geographic Information System (GIS) mapping resources made available by the NYSDEC (NYSDEC, 2021). Based on reviewed mapping information, eight (8) NYSDEC Wetlands or their mapped 100-foot upland adjacent areas were mapped within the Project Study Limits. These consist of NYSDEC Wetlands LP-23 (Class 2), GA-22 (Class 3), GA-21 (Class 3), GA-6 (Class 2), MD-1 (Class 1), AK-2 (Class 2), AK-3 (Class 2), and AK-4 (Class 2).

5.1.2 NYS Streams Mapping

The NYSS maps were developed by the NYSDEC pursuant to Article 15: Protection of Waters Program of the ECL. These maps depict the approximate locations of streams mapped by NYSDEC and identify their respective state water quality classification and standard designations based on existing or expected best usage of each water segment. These stream layers are available through the NYSDEC Environmental Resource Mapper (ERM) and the NYS Clearinghouse. In most instances, the mapped stream locations are based on aerial photographs and topographic map interpretation and, therefore, require site-specific field verification. Stream mapping information identified for the Project Study Limits was obtained from online GIS mapping resources made available by the NYSDEC (NYSDEC, 2021). Based on reviewed mapping information publicly available through the ERM, eleven (11) NYSS are mapped within the Project Study Limits. NYS Barge Canal (Class C), an unnamed tributary to Tonawanda Creek (Class B), an unnamed

tributary to Tonawanda Creek (Class C), three (3) unnamed tributaries to Mud Creek (Class C), Mud Creek (Class C), and three (3) unnamed tributaries to Oak Orchard Creek (Class C) are mapped within the Project Study Limits.

5.1.3 National Wetlands Inventory Mapping

NWI mapping information for the Project Study Limits was obtained from online GIS mapping resources made available by the USFWS (USFWS, 2021). A review of this information was completed which indicated that seventy-nine (79) mapped NWI wetlands are mapped within the Project Study Limits. However, it is understood that this mapping is provided as a reference and is not necessarily indicative of the presence or absence of wetlands in an area. Below is a list of the Cowardin Classifications of the NWI wetlands that are mapped within the Project Study Limits.

Cowardin Classification Code Descriptions for NWIs within the Project Study Limits	
Classification Code	**Description**
L1UBHh	Lacustrine (L), Limnetic (1), Unconsolidated Bottom (UB), Permanently Flooded (H), Diked/Impounded (h)
L1UBHx	Lacustrine (L), Limnetic (1), Unconsolidated Bottom (UB), Permanently Flooded (H), Excavated (x)
PEM1/SS1B	Palustrine (P), Emergent (EM), Persistent (1)/ Scrub-Shrub (SS), Broad-Leaved Deciduous (1), Seasonally Saturated (B)
PEM1/UBFh	Palustrine (P), Emergent (EM), Persistent (1), Unconsolidated Bottom (UB), Semi Permanently Flooded (F), Diked/Impounded (h)
PEM1B	Palustrine (P), Emergent (EM), Persistent (1), Seasonally Saturated (B)
PEM1E	Palustrine (P), Emergent (EM), Persistent (1), Seasonally Flooded/Saturated (E)
PEM1Eh	Palustrine (P), Emergent (EM), Persistent (1), Seasonally Flooded/Saturated (E), Diked/Impounded (h)
PEM1Fh	Palustrine(P), Emergent (EM), Persistent (1), Semi Permanently Flooded (F), Diked/Impounded (h)
PEM1K	Palustrine (P), Emergent (EM), Persistent (1), Artificially Flooded (K)
PFO1/SS1E	Palustrine(P), Forested (FO), Broad-Leaved Deciduous (1)/ Scrub-Shrub (SS), Broad Leaved Deciduous (1), Seasonally Flooded/Saturated (E)
PFO1A	Palustrine (P), Forested (FO), Broad-Leaved Deciduous (1), Temporary Flooded (A)
PFO1B	Palustrine (P), Forested (FO), Broad- Leaved Deciduous, Seasonally Saturated (B)
PFO1Bd	Palustrine (P), Forested (FO), Broad- Leaved Deciduous, Seasonally Saturated (B), Partially Drained/Ditched (d)
PFO1E	Palustrine (P), Forested (FO), Broad-Leaved Deciduous (1), Seasonally Flooded/Saturated (E)
PFO1Eh	Palustrine (P), Forested (FO), Broad-Leaved Deciduous (1), Seasonally Flooded/Saturated (E), Diked/Impounded (h)
PSS1/EM1E	Palustrine (P), Scrub-Shrub (SS), Broad-Leaved Deciduous (1)/ Emergent (EM), Persistent (1), Seasonally Flooded/Saturated (E)
PUB/EM1Fh	Palustrine (P), Unconsolidated Bottom (UB), Emergent (EM), Persistent (1), Semi-Permanently Flooded (F), Diked/Impounded (h)
PUBFx	Palustrine (P), Unconsolidated Bottom, Semi Permanently Flooded (F), Excavated (x)
PUBHh	Palustrine (P), Unconsolidated Bottom (UB), Permanently Flooded (H), Diked/Impounded (h)

Cowardin Classification Code Descriptions for NWIs within the Project Study Limits	
Classification Code	**Description**
R2UBHx	Riverine (R), Lower Perennial (2), Unconsolidated Bottom (UB), Permanently Flooded (H), Excavated (x)
R4SBA	Riverine (R), Intermittant (4), Streambed (SB), Temporary Flooded
R4SBC	Riverine (R), Intermittent (4), Streambed (SB), Seasonally Flooded (C)
R4SBCx	Riverine (R), Intermittent (4), Streambed (SB), Seasonally Flooded (C), Excavated (x)

5.1.4 Soils Mapping

Soil types identified for the Project Study Limits were obtained from online GIS mapping resources made available by the NRCS (USDA-NRCS, 2021). A review of this information was completed to evaluate the soil types within the Project Study Limits to determine the possible presence of hydric soils.

Soil types of predominantly hydric soils were identified within the Project Study Limits and are listed below. Percent hydric ratings are determined by NRCS according to the percentage of map unit components for a soil that meet NRCS' hydric soils definition. The mapped soils at each wetland location, including instances where there may be more than one (1) soil map unit identified at a given wetland location, are described in *Table 1: Wetland Delineation Summary*. Mapped soils present within the Project Study Limits are depicted on *Figure 2: Wetland and Watercourse Delineation Map*.

List of NRCS Soil Types within the Project Study Limits		
Map Unit Symbol	**Map Unit Name**	**Percent Hydric**
ApA	Appleton silt loam, 0 to 3 percent slopes	4
ArB	Arkport very fine sandy loam, 0 to 6 percent slopes	0
AsA	Arkport fine sandy loam, gravelly substratum, 0 to 2 percent slopes	0
Ca	Canandaigua silt loam	86
CaA	Canandaigua silt loam, 0 to 2 percent slopes	95
Cb	Canandaigua silty clay loam	92
CbA	Canandiagua mucky silt loam, 0 to 2 percent slopes	95
CeB	Cazenovia silt loam, 3 to 8 percent slopes	0
ClA	Churchville silt loam, 0 to 2 percent slopes	8
ClB	Churchville silt loam, 2 to 6 percent slopes	4
CnB	Collamer silt loam, 2 to 6 percent slopes	4
Cu	Cut and fill land	5
DuB	Dunkirk silt loam, 2 to 6 percent slopes	0
ElB	Elnora loamy fine sand, 2 to 6 percent slopes	0
Fo	Fonda mucky silt loam	96
FpA	Fredon gravelly loam, 0 to 3 percent slopes	10
GnB	Galen very fine sandy loam, 2 to 6 percent slopes	0
HlA	Hilton silt loam, 0 to 3 percent slopes	0
HlB	Hilton silt loam, 3 to 8 percent slopes	0
HmA	Hilton and Cayuga soils, 0 to 3 percent slopes, bedrock substratum	0

List of NRCS Soil Types within the Project Study Limits		
Map Unit Symbol	**Map Unit Name**	**Percent Hydric**
HoB	Howard gravelly loam, 3 to 8 percent slopes	0
HsB	Hudson silt loam, 2 to 6 percent slopes	0
La	Lakemont silty clay loam, 0 to 3 percent slopes	95
Lc	Lakemont silty clay loam, 0 to 3 percent slopes	95
Ld	Lamson very fine sandy loam	92
Lg	Lamson fine sandy loam, gravelly substratum	92
LmB	Lima silt loam, 3 to 8 percent slopes	1
Ma	Madalin silt loam, 0 to 3 percent slopes	93
Md	Madalin silt loam, loamy subsoil variant	82
Mf	Massena fine sandy loam	57
MnA	Minoa very fine sandy loam, 0 to 2 percent slopes	5
NaA	Niagara silt loam, 0 to 2 percent slopes	4
NgA	Niagara silt loam, 0 to 2 percent slopes	5
OdA	Odessa silty clay loam, 0 to 3 percent slopes	5
OdB	Odessa silty clay loam, 3 to 8 percent slopes	4
OnB	Ontario loam, 3 to 8 percent slopes	0
OnC	Ontario loam, 8 to 15 percent slopes	0
OvA	Ovid silt loam, 0 to 2 percent slopes	4
OvB	Ovid silt loam, 2 to 6 percent slopes	2
OwA	Ovid silt loam, limestone substratum, 0 to 3 percent slopes	5
Pd	Palms muck	100
PsA	Phelps gravelly loam, 0 to 5 percent slopes	0
PsB	Phelps gravelly loam, 3 to 8 percent slopes	0
RbA	Rhinebeck silt loam, 0 to 2 percent slopes	8
RoA	Rock land, nearly level	0
RsA	Romulus silt loam, 0 to 3 percent slopes	85
SeB	Schoharie silt loam, 1 to 6 percent slopes	0
SmB	Scio silt loam, 2 to 8 percent slopes	0
W	Water	0
Wy	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	90

5.2 Wetland Field Investigation Findings

5.2.1 Wetland Area Summary

The onsite delineation verified the presence of wetlands and confirmed the presence of hydric soils depicted on the NRCS soils mapping. Twenty-eight (28) wetlands, totaling 153.59-acres, were delineated within the Project Study Limits. There were twenty-seven (27) PEM wetland components totaling 145.75-acres, four (4) PSS wetland components totaling 4.63-acres, three (3) PFO wetland components totaling 2.65-acres, and one (1) open-water (PUB) system totaling 0.56-acres were delineated within the Project Study Limits. Of the delineated wetlands Wetland 005 (PEM) is associated with NYSDEC Wetland LP-23, Wetland 016 (PEM & PSS) is associated with NYSDEC Wetland GA-22, Wetlands 017 (PEM & PFO) and 018 (PEM)

are associated with NYSDEC Wetland GA-21, and Wetland 020 (PEM) is associated with NYSDEC Wetland GA-6.

Additionally Wetlands 023 (PEM, PSS, and PFO) (associated with NYSDEC Wetland AK-2, AK-3, and AK-4) and Wetland 027 (PEM & PFO) (associated with NYSDEC Wetland MD-1) were delineated within the Tonawanda WMA. However, the ROW for the existing utility line is primarily located on an upland berm running through the center of the WMA with wetlands on either side of the berm. Also, Wetland 022 (PEM) was delineated within the southeastern portion of the John White WMA. A summary of the wetlands identified, the location (latitude/longitude), presumed jurisdiction and total wetland area delineated within the Project Study Limits is provided in Table 1: Wetland Delineation Summary. The location and size of wetlands delineated onsite are shown on Figure 2: Wetland and Watercourse Delineation Map.

5.2.2 Wetland Vegetation

The criterion for wetland vegetation is a dominance of hydrophytic species. A species is considered hydrophytic per USACE (1987 and 2012) if it is classified either as obligate (OBL), facultative wet (FACW), or facultative (FAC) in *The National Wetland Plant List, version 3.4 (USACE, 2018)*. A dominance of hydrophytes requires that more than 50% of the vegetative species in an area are classified as hydrophytic.

The delineated wetlands consist of PEM, PSS, and PFO wetlands that exist in a ROW with multiple overhead transmission lines running throughout. The vegetation was consistent throughout the Project within the wetland types and saw little variance. The PEM wetlands generally consisted of Phragmites (*Phragmites australis*), Purple Loosestrife (*Lythrum salicaria*), Narrow Leaved Cattail (*Typha angustifolia*), and Boneset (*Euptorium perfoliatum*). The PSS wetlands generally consisted of Gray Dogwood (*Cornus racemosa*), Morrow's Honeysuckle (*Lonicera morrowii*), and Black Willow (*Salix nigra*). The PFO wetland consisted of Silver Maple (*Acer saccharinum*). The wetland determination data forms which provide expanded detail of the wetlands identified within the Project Study Limits can be found in *Appendix A*. Wetland vegetation community types observed at each wetland are summarized in *Table 1: Wetland Delineation Summary*.

5.2.3 Wetland Hydrology

The Project Study Limits were examined for field indicators of wetland hydrology. According to USACE (1987 and 2012), wetland hydrology consists of permanent or periodic inundation, or soil saturation to the surface during the growing season. If these indicators were present within the sample plots, the hydrology criterion was met.

Generally, wetlands identified within the Project Study Limits in the western and central portions of the Project receive hydrologic input from surface water runoff. Specifically, in the eastern portion of the Project the ROW cuts through commercial and residential areas where surface runoff from the adjacent roads and parking lots flow into the low areas of the ROW and pool creating standing water and wetlands. In the central portion the runoff is coming from the surrounding agricultural fields and shared surfaces with farm drainage ditches that cut throughout the ROW. In the eastern portion of the Project the majority of the wetlands were observed within the Tonawanda WMA, where they receive hydrological input from a series of feeder ditches and streams that flow throughout the WMA. Additionally, water is stored in the WMA in a series of diked ponds and are artificially controlled through a series of water control structures. In general, the hydrological indicators observed throughout the Project were Drainage Patterns (B10), Geomorphic Positions (D2), Microtopographic Relief (D4), and FAC-Neutral Test (D5). Hydrologic indicators observed at each delineated wetland were recorded on the wetland determination data forms presented in *Appendix A*.

5.2.4 Wetland Soils

Soil physical characteristics were evaluated during the field delineations by excavating to a depth appropriate to evaluate potential hydric soil indicators below ground surface. Soil color was evaluated using *Munsell Soil Color Charts* (Munsell, 2000). Soils that exhibited hydric soil indicators, such as low chroma colors and/or evidence of reducing conditions met the hydric soil criterion per USACE (1987 and 2012).

Wetland soils observed during the excavations within the Project Study Limits generally consisted of Soil samples within wetland areas were a silty clay loam texture possessing a dark brown (10 YR 3/1) matrix with reddish (7.5 YR 5/8) redox concentrations. This soil profile was common throughout the whole Project. The Redox Dark Surface (F6) and Depleted Matrix were the two (2) hydric soil indicator conditions observed within the soil profiles throughout the Project. Characteristics observed at each data point are summarized in the wetland determination data forms included in *Appendix A.*

5.3 Watercourse Field Investigation Findings

5.3.1 Stream Summary

Ten (10) stream reaches, totaling 3,575-linear feet, were delineated within the Project Study Limits. The NYS State Barge Canal (Stream 001), also known as the Erie Canal, was observed within the far western portion of the Project and is a NYSDEC mapped Class C stream. Stream 001, NYS Barge Canal (Erie Canal), is listed as a navigable waterway under Section 10 of the Rivers and Harbors Act of 1899 and is also managed by the NYS Canal Corporation. Stream 002 is a unnamed minor tributary to Tonawanda Creek and is a NYSDEC mapped Class B stream. Stream 009, an unnamed tributary to Tonawanda Creek, is a NYSDEC mapped Class C stream, and is also located in the Tonawanda WMA. Streams 007 and 008 are Unnamed Tributaries to Mud Creek and are NYSDEC mapped Class C streams. Mud Creek (Stream 010) observed in the central portion of the Project, is a NYSDEC mapped Class C stream. The remaining four (4) streams (Stream 003, 004, 005, and 006) are Class D streams because they are intermittent stream channels and are not previously mapped NYSDEC streams. Additionally, the three (3) NYSDEC mapped unnamed tributaries to Oak Orchard that are shown on the NYSDEC ERM flowing through the Tonowanda WMA were not observed during the field delineation, because channels were not observed. These areas have been constricted by berms creating impounded waters with wetland characteristics now rather than stream channels and have been mapped as wetlands instead.

Generally, the streams observed throughout the Project flow south and eventually flow into Tonawanda Creek which flows into the Niagara River, and the Erie Canal flows west and flows into Lake Erie beyond the Project Study Limits. Thus, since all of the delineated streams either flow into Lake Erie, the Erie Canal or Tonawanda Creek they are considered to be WOTUS.

A summary of the streams identified within the Project Study Limits is provided in *Table 2: Stream Delineation Summary*. The location of streams delineated onsite is shown on *Figure 2: Wetland and Watercourse Delineation Map.*

5.3.2 Ditch Summary

Twenty-five (25) ditches, totaling 4,643-linear feet, were delineated within the Project Study Limits. Of these, six (6) were intermittent and the remaining 19 were ephemeral ditches. The majority of the ditches observed were non-jurisdictional roadside ditches or man-made agricultural ditches draining adjacent agricultural fields. One (1) ditch, Ditch 010, is considered to be a jurisdictional ditch as it flows south and is adjacent to NYSDEC Wetland GA-22 outside the Project Study Limits and has a intermittent flow regime.

A summary of the ditches identified within the Project Study Limits is provided in *Table 3: Ditch Delineation Summary* and on the data forms provided in *Appendix C*. The locations of ditches delineated onsite are shown on *Figure 2: Wetland and Watercourse Delineation Map*.

5.4 Upland/ Dryland Area Summary

During the field investigation of the Project Study Limits, approximately 314.83-acres of upland/ dryland or non-jurisdictional areas were identified. The majority of the identified upland/ dryland areas are partially maintained existing utility ROWs and agricultural fields that extend into the Project Study Limits. Upland/ dryland vegetation generally consisted of a mix of Queen Ann's lace (*Daucus carota*), cutleaf teasel (*Dipsacus laciniatus*), spotted knapweed (*Centaura stoebe*), Canada goldenrod (*Solidago Canadensis*), and perennial rye (*Lolium perenne*). Upland/ dryland soils were predominantly dark brown (10YR 3/2) and were consistent throughout the soil profile down to twenty (20) inches below the ground surface. Generally, no indicators of wetland hydrology were observed within the upland/ dryland areas. The location and size of upland/ dryland areas are depicted on Figure 2: Wetland and Watercourse Delineation Map.

6.0 SUMMARY AND CONCLUSIONS

Fisher Associates conducted wetland and watercourse field delineations associated with the Project between August 6 and October 2, 2019, on June 16, 2020, and November 12 and November 13, 2020. Twenty-eight (28) wetlands, totaling 153.59-acres, were delineated within the Project Study Limits. There were twenty-seven (27) PEM wetland components totaling 145.75-acres, four (4) PSS wetland components totaling 4.63-acres, three (3) PFO wetland components totaling 2.65-acres, and one (1) open-water (PUB) system totaling 0.56-acres were delineated within the Project Study Limits. Ten (10) stream reaches, totaling 3,575-linear feet, were delineated within the Project Study Limits. This included the NYS Barge Canal (Class C), one (1) unnamed tributary to Tonawanda Creek (Class B), three (3) unnamed tributaries to Mud Creek (Class C), Mud Creek (Class C), and four (4) unmapped tributaries to Mud Creek (Class D) were delineated within the Project Study Limits. Twenty-five (25) ditches were observed within the Project Study Limits. Twenty-five (25) ditches, totaling 4,643-linear feet, were delineated within the Project Study Limits.

A summary of the presumed jurisdiction of features identified within the Project Study Limits is provided in their respective tables (*Table 1: Wetland Delineation Summary; Table 2: Stream Delineation Summary; Table 3: Ditch Delineation Summary Table).* Based on conditions observed, the USACE will likely invoke jurisdiction over the ten (10) delineated streams due to their perennial and intermittent flow regime as well as their connection to a Traditional Navigable Water. The USACE will also likely take jurisdiction over eighteen (18) of the twenty-eight (28) delineated wetlands because they are adjacent wetlands as defined by the USACE. Additionally, the USACE is anticipated to take jurisdiction over Ditch 010 due to its intermittent flow and it is flowing through an adjacent wetland. Additionally, delineated Stream 001 is a section of the NYS Barge Canal (Erie Canal) system and is listed as a navigable waterway under Section 10 of the Rivers and Harbors Act of 1899.

It is anticipated that the New York State Department of Environmental Conservation (NYSDEC) will invoke jurisdiction over Wetland 005 (PEM) (associated with NYSDEC Wetland LP-23), Wetland 016 (PEM & PSS) (associated with NYSDEC Wetland GA-22), Wetlands 017 (PEM & PFO) and 018 (PEM) (associated with NYSDEC Wetland GA-21), Wetland 020 (PEM) (associated with NYSDEC Wetland GA-6), Wetland 023 (PEM & PSS) (associated with NYSDEC Wetland AK-2, AK-3, and AK-4), and Wetland 027 (PEM & PFO) (associated with NYSDEC Wetland MD-1) under Article 24: Freshwater wetlands of the Environmental Conservation Law (ECL). Also, the NYSDEC may invoke jurisdiction over delineated Wetland 022 (PEM) because it is located within the John White WMA which has been owned and managed by the NYSDEC since 1945. It is expected that the NYSDEC will not invoke jurisdiction over the remaining

delineated wetland systems throughout the Project Study Limits as they are not within close proximity (i.e., less than 50 meters) of mapped NYSDEC wetlands and their regulated 100-foot adjacent areas.

Additionally, it is anticipated that the NYSDEC will invoke jurisdiction over delineated Stream 002, an Unnamed Tributary to Tonawanda Creek, under Article 15: Protected Waters Program of the ECL, as it is a mapped NYSDEC Class B stream. It is also possible that the NYSDEC will invoke jurisdictional over delineated Stream 009 due to its location within the Tonawanda WMA, which is managed by the NYSDEC as well as Stream 001, the Erie Canal, as it operated by the NYS Canal Corporation. It is expected that the NYSDEC will not invoke jurisdiction over the remaining seven (7) stream reaches identified within the Project Study Limits as they are recognized as either Class C or D stream reaches. It is expected that the NYSDEC will not invoke jurisdiction over the delineated ditches since NYSDEC typically does not regulate ditches.

7.0 STATEMENT OF LIMITATIONS

This investigation was limited to the Project Study Limits defined for this Project and which are depicted on *Figure 1: Project Vicinity and Index Map* and *Figure 2: Wetland and Watercourse Delineation Map.* Fisher Associates' did not examine areas outside of the Project Study Limits, thus no information is provided regarding the presence or absence of regulated or non-regulated wetlands and watercourses outside of the Project Study Limits.

Permission was obtained from the NYSDEC in order to access the Tonawanda and John White WMAs. Heidi Kennedy, Wildlife Biologist from the NYSDEC, was the contact person for the Project and was notified each time access to the WMAs was needed.

The wetland and watercourse field delineation/investigation was conducted between August 6 and October 2, 2019, on June 16, 2020, and November 12 and 13, 2020 by Fisher Associate's environmental scientists. Human-induced or natural changes at the site may occur after this date which may cause changes in the presence and extent of regulated and non-regulated wetlands and watercourses.

8.0 SIGNATURES

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9.0 REFERENCES

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FIGURES

Lockport-Batavia #112 Line Segments

1. Structure 1.1 - Structure 6
2. Structure 6 - Structure 119
3. Structure 119 - Structure 146
4 Existing. Structure 142 - Structure 160
4 Relocation. Structure 142 - Structure 160
5. Structure 160 - Structure 175
6. Structure 175 to Structure 188
7. Structure 188 - Structure 211

OAK ORCHARD-TWELVEMILE WATERSHED (HUC 04130001)

NIAGARA WATERSHED (HUC 04120104)

Map Unit Symbol	Map Unit Name	Percent Hydric	Map Unit Symbol	Map Unit Name	Percent Hydric
ApA	Appleton silt loam, 0 to 3 percent slopes	4	Lg	Lamson fine sandy loam, gravelly substratum	92
ArB	Arkport very fine sandy loam, 0 to 6 percent slopes	0	LmB	Lima silt loam, 3 to 8 percent slopes	1
AsA	Arkport fine sandy loam, gravelly substratum, 0 to 2 percent slopes	0	Ma	Madalin silt loam, 0 to 3 percent slopes	93
Ca	Canandaigua silt loam	86	Md	Madalin silt loam, loamy subsoil variant	82
CaA	Canandaigua silt loam, 0 to 2 percent slopes	95	Mf	Massena fine sandy loam	57
Cb	Canandaigua silty clay loam	92	MnA	Minoa very fine sandy loam, 0 to 2 percent slopes	5
CbA	Canandiagua mucky silt loam, 0 to 2 percent slopes	95	NaA	Niagara silt loam, 0 to 2 percent slopes	4
CcB	Cayuga and Cazenovia silt loams, 2 to 6 percent slopes	0	NgA	Niagara silt loam, 0 to 2 percent slopes	5
CeB	Cazenovia silt loam, 3 to 8 percent slopes	0	OdA	Odessa silty clay loam, 0 to 3 percent slopes	5
ClA	Churchville silt loam, 0 to 2 percent slopes	8	OdB	Odessa silty clay loam, 3 to 8 percent slopes	4
ClB	Churchville silt loam, 2 to 6 percent slopes	4	OnB	Ontario loam, 3 to 8 percent slopes	0
CnB	Collamer silt loam, 2 to 6 percent slopes	4	OnC	Ontario loam, 8 to 15 percent slopes	0
Cu	Cut and fill land	5	OvA	Ovid silt loam, 0 to 2 percent slopes	4
DuB	Dunkirk silt loam, 2 to 6 percent slopes	0	OvB	Ovid silt loam, 2 to 6 percent slopes	2
ElB	Elnora loamy fine sand, 2 to 6 percent slopes	0	OwA	Ovid silt loam, limestone substratum, 0 to 3 percent slopes	5
Fo	Fonda mucky silt loam	96	Pd	Palms muck	100
FpA	Fredon gravelly loam, 0 to 3 percent slopes	10	PsA	Phelps gravelly loam, 0 to 5 percent slopes	0
GnB	Galen very fine sandy loam, 2 to 6 percent slopes	0	PsB	Phelps gravelly loam, 3 to 8 percent slopes	0
HlA	Hilton silt loam, 0 to 3 percent slopes	0	RhA	Rhinebeck silt loam, 0 to 2 percent slopes	8
HlB	Hilton silt loam, 3 to 8 percent slopes	0	RoA	Rock land, nearly level	0
HmA	Hilton and Cayuga soils, 0 to 3 percent slopes, bedrock substratum	0	RsA	Romulus silt loam, 0 to 3 percent slopes	85
HoB	Howard gravelly loam, 3 to 8 percent slopes	0	SeB	Schoharie silt loam, 1 to 6 percent slopes	0
HsB	Hudson silt loam, 2 to 6 percent slopes	0	SmB	Scio silt loam, 2 to 8 percent slopes	0
La	Lakemont silty clay loam, 0 to 3 percent slopes	95	W	Water	0
Lc	Lakemont silty clay loam, 0 to 3 percent slopes	95	Wy	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	90
Ld	Lamson very fine sandy loam	92			

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NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 1: PROJECT VICINITY AND INDEX MAP

- NYSDEC Streams
- NYSDEC Wetland
- NWI Wetlands
- Watershed Boundary
- Mapsheet

Project USGS Quad(s):

Akron, Gasport, Lockport, Medina, Oakfield

Project Watershed(s):

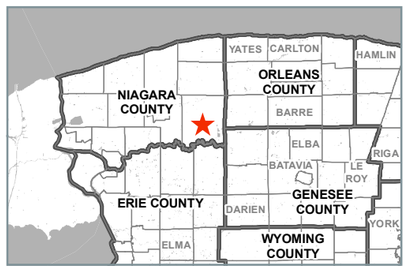
Niagara (HUC 04120104)
Oak Orchard - Twelvemile (HUC 04130001)

Map Revision Date: 1/7/2021 | Map Author: MFA

0 0.75 1.5 Miles

Project Study Limits:
468.42 Acres

Center of Project Study Limits:
43.139915 N, 78.54395 W
North American Datum 1983



Data Sources:

United States Geological Survey 24k Topo Quad Map - usgs.gov
Aerial Photography: ESRI World Imagery - arcgis.com
Wetlands: National Wetland Inventory (5/1/2014) - fws.gov/wetlands/
Soils: NRCS Soil Survey (8/24/2015) - gdg.sc.egov.usda.gov
Watersheds: USGS NHD (3/9/2015) - nhd.usgs.gov
Contours: US Geological Survey (4/14/2008) - http://nationalmap.gov/elevation.html

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NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

- Data Point
- Field Observed NG Structure Location
- Observed 2019 Habitat
- Existing Structure
- Proposed Structure
- Remove Structure
- Gate
- Fence
- Treeline
- NYSDEC Stream
- Transmission Line
- Transmission Line Reroute
- Underground Fiber Optic Line
- Road
- 10' Contour
- Delineated Jurisdictional Ditch
- Delineated Non-Jurisdictional Ditch
- Delineated Continuation Line
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- Delineated Perennial Stream
- Delineated Waterbody
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- Delineated PSS Wetland
- Delineated PUB Wetland
- Delineated Natural Drainage
- NYSDEC Wetland
- NYSDEC Wetland 100' Adjacent
- NRCS Soil Complex Boundary
- Project Study Limits
- Wildlife Management Area (WMA)
- Matchline

Map Revision Date: 1/19/2021 | Aerial Date: 2017

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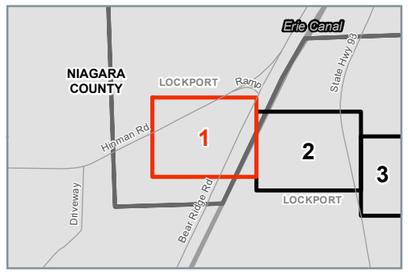

SHEET 1 OF 94

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NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

STREAM 001
PERENNIAL
NYSDEC CLASS: C

WETLAND 004
PEM

WETLAND 005
PEM
NYSDEC FWW LP-23

WETLAND 003
PEM

WETLAND 005
PEM
NYSDEC FWW LP-23

NYSDEC
WETLAND
LP-23

NYS Barge Canal (portion 1) (C,ND)

DP-005
DP-006
DP-007
DP-008
DP-009
DP-010

FO

STATE HWY 93

SHEET 1
SHEET 3

Cu
W
RhA
PsA
Cb
Ca

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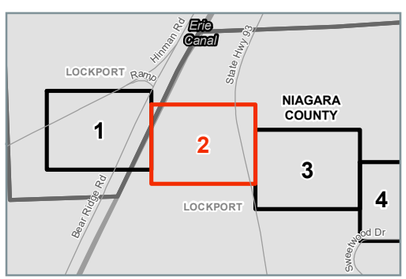

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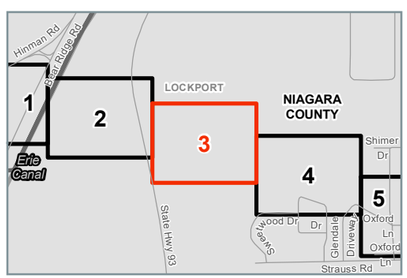

SHEET 3 OF 94

SHEET 2

SHEET 4

PsA

ShB

OdB

PsA

Lc

600

NaA

CnB

Ca

NYSDEC WETLAND LP-23

Lg

WETLAND 005
PEM
NYSDEC FWW LP-23

Mf

CnB

Cb

590

600

610

STATE HWY 93

Minor Tribs to Tonawanda Creek (C-)

FO

6

6

FO

FO

7

7

FO

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LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

WETLAND 005
PEM
NYSDEC FWW LP-23

WETLAND 006
PEM

DP-011

DP-012

CnB

ShB

OdB

OdA

Mf

ArB

AsA

OnB

SWEETWOOD DR

GLENDALE DR

DRIVEWAY

SHEET 3

SHEET 5

600

610

620

FO

8

8-1

9

10

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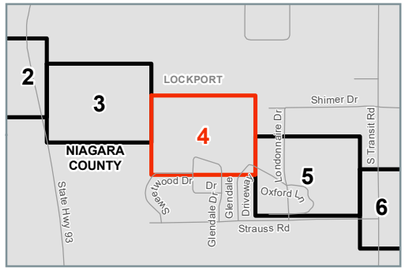

SHEET 4 OF 94

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LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

OdB
OdB
OvA
CcB
OvA
OdA
HIB
Lc
OvA
SHEET 4
SHEET 6
WETLAND 007
PEM
DP-013
DP-014
10
11
11
12
12
630
FO
DRIVEWAY
LONDONAIRE DR
OXFORD LN
UNNAMED STREET
STRAUSS RD

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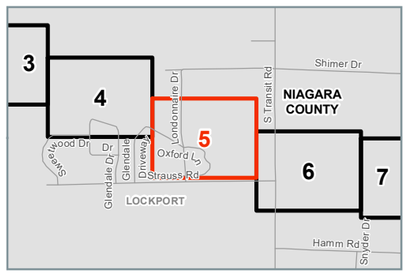

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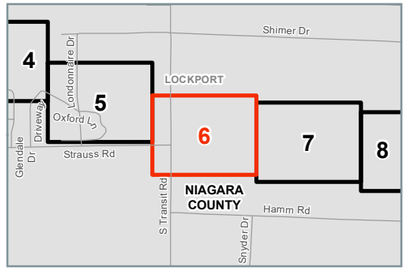

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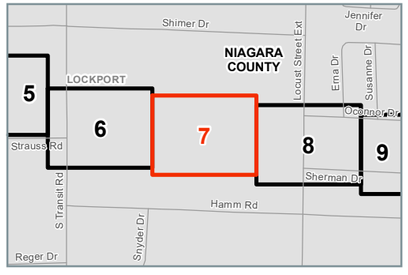
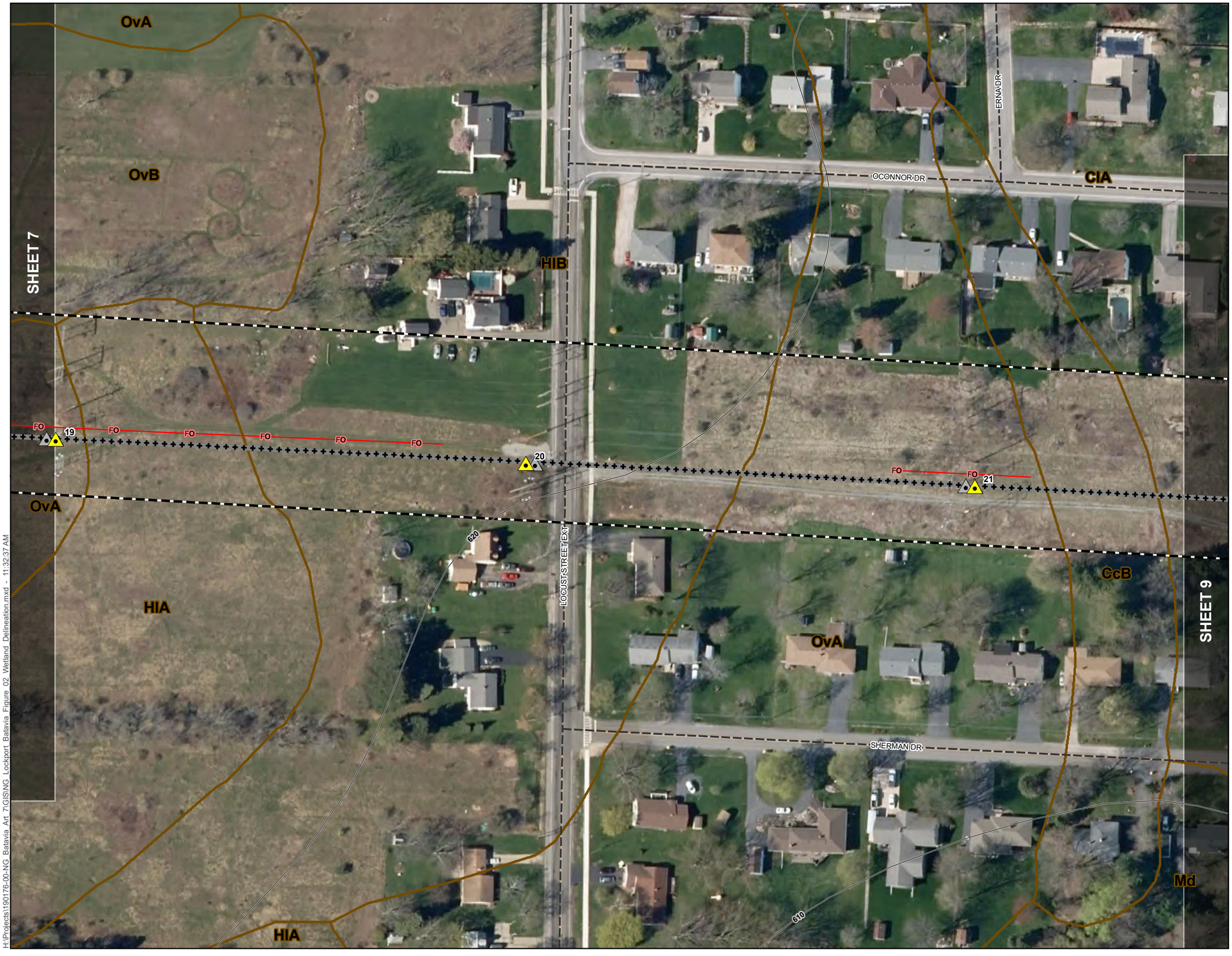


FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP



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Map Revision Date: 1/19/2021 | Aerial Date: 2017

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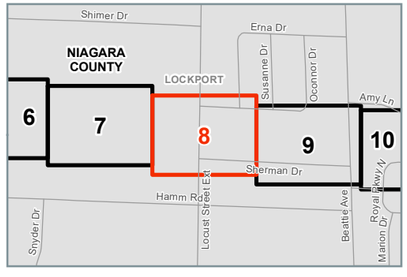

SHEET 8 OF 94

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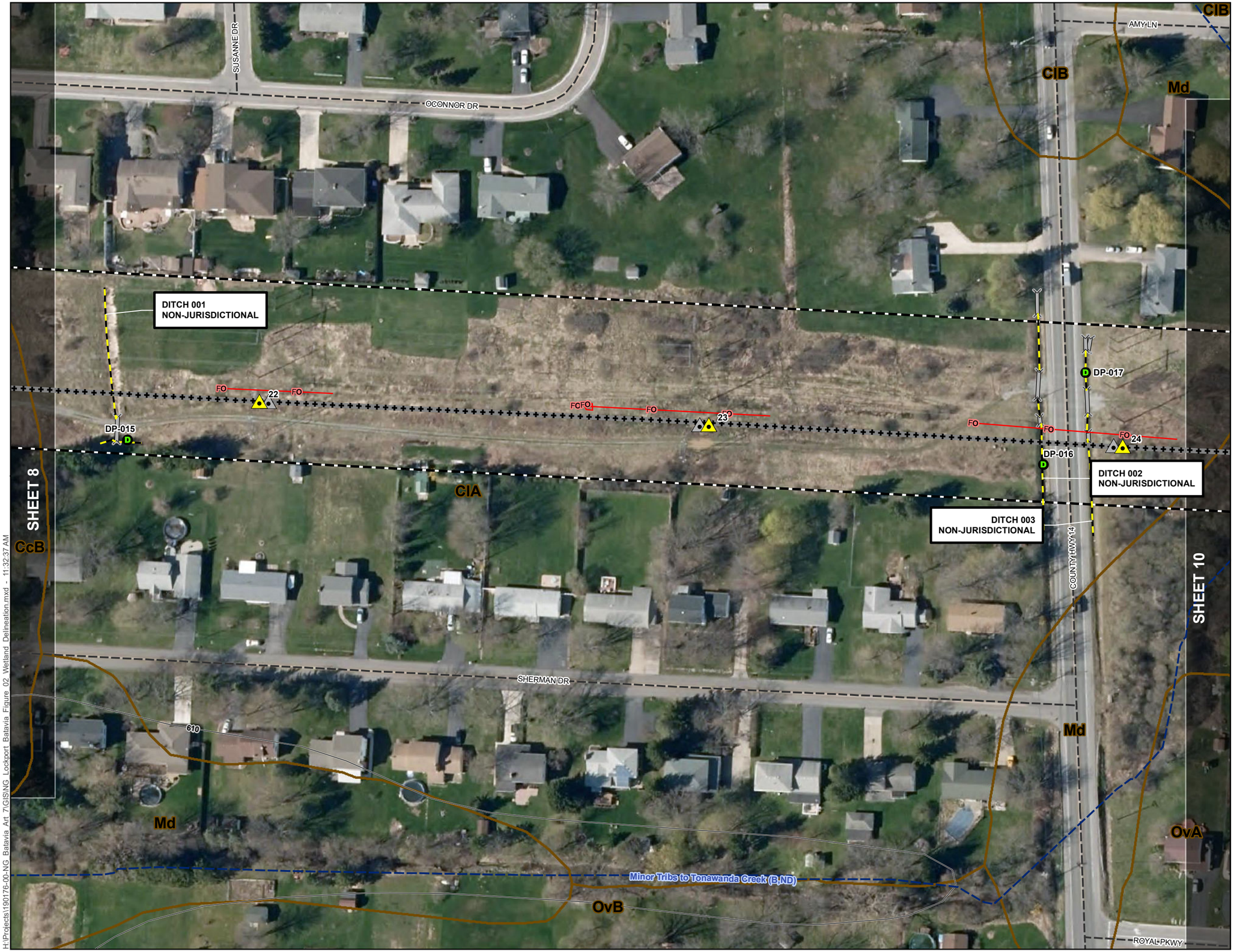
NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP



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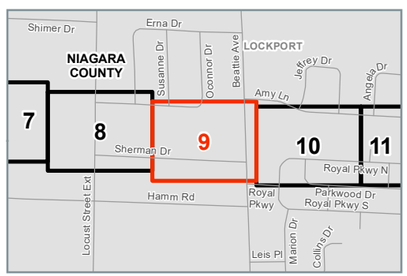

SHEET 9 OF 94

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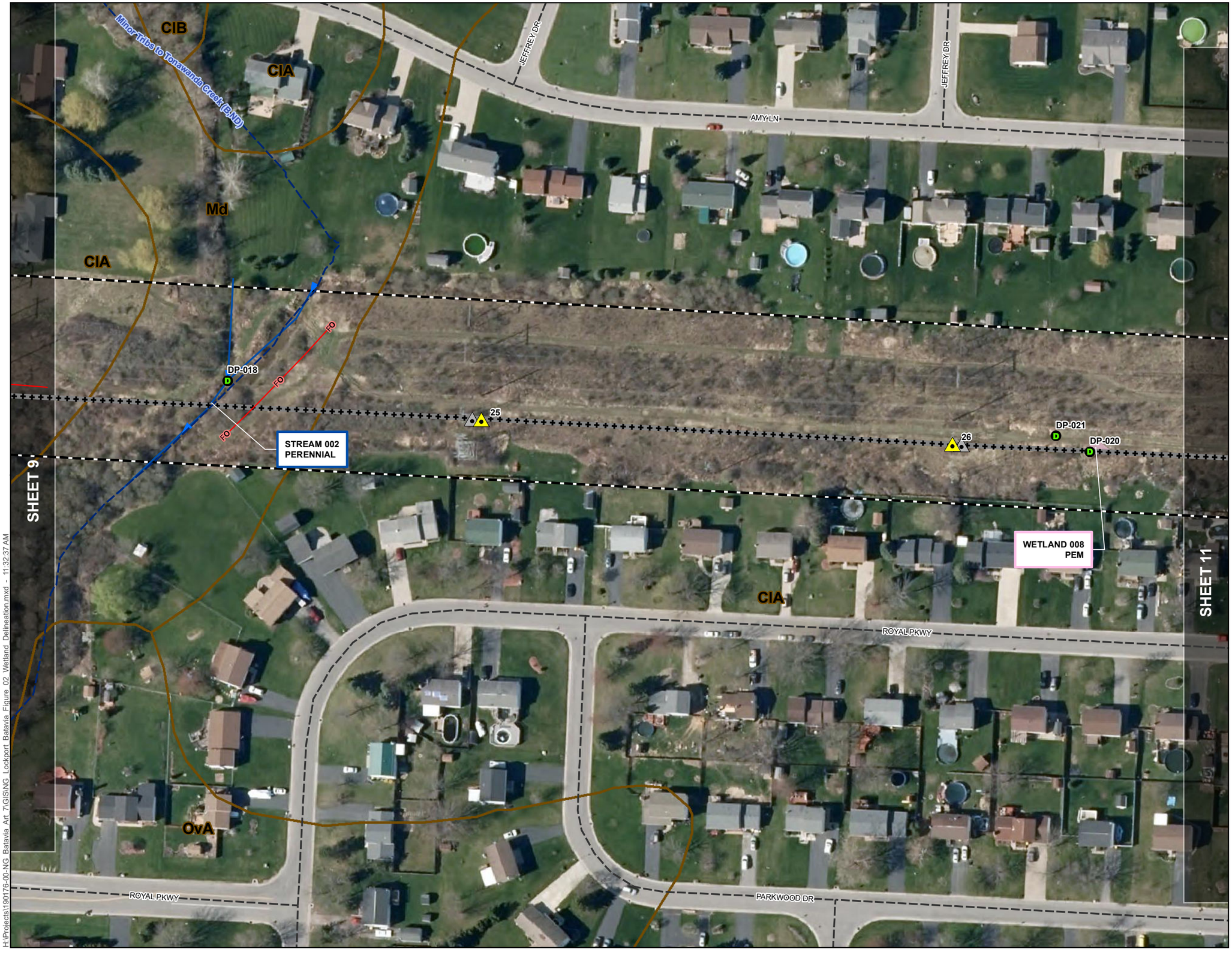
FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP



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- Observed 2019 Habitat
- Existing Structure
- Proposed Structure
- Remove Structure
- Gate
- Fence
- Treeline
- NYSDEC Stream
- Transmission Line
- Transmission Line Reroute
- Underground Fiber Optic Line
- Road
- 10' Contour
- Delineated Jurisdictional Ditch
- Delineated Non-Jurisdictional Ditch
- Delineated Continuation Line
- Delineated Culvert
- Delineated Intermittent Stream
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- Delineated PUB Wetland
- Delineated Natural Drainage
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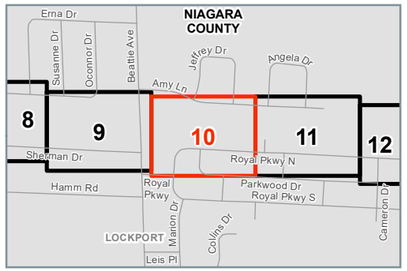
- NYSDEC Wetland 100' Adjacent
- NRCS Soil Complex Boundary
- Project Study Limits
- Wildlife Management Area (WMA)
- Matchline

Map Revision Date: 1/19/2021 | Aerial Date: 2017

0 50 100 Feet



SHEET 10 OF 94

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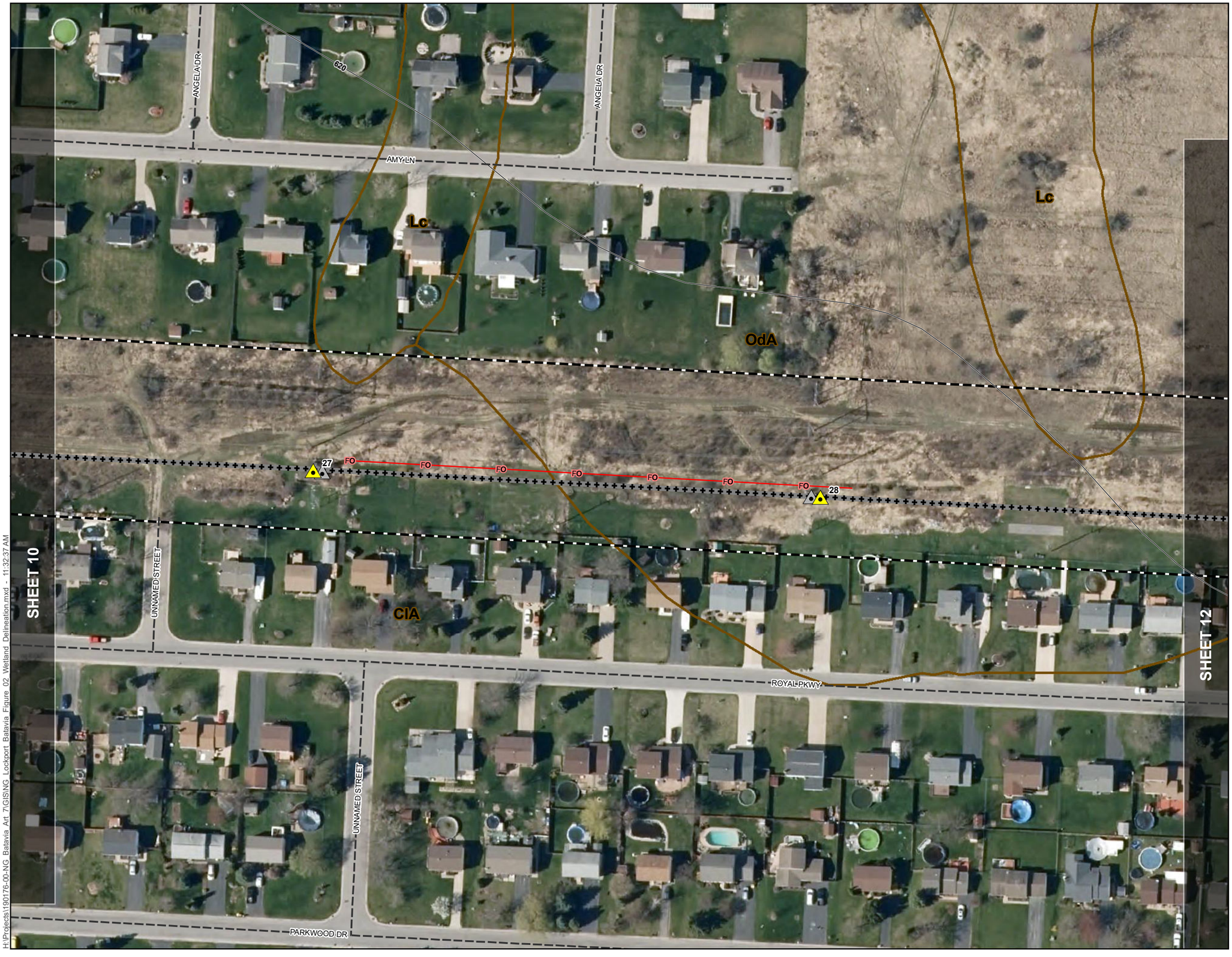
FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP



- Data Point
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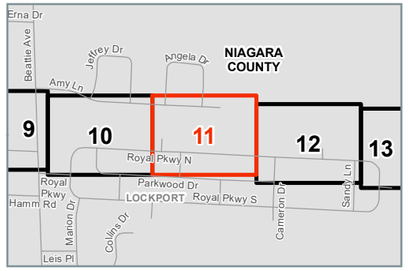

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NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

SHEET 11

SHEET 13

OvA
CIA
OdA
Lc
Lc
STREAM 003
INTERMITTENT
DP-022
FO
29
FO
FO
30
FO
FO
31
FO
620
UNNAMED STREET
ROYAL PKWY
CAMERON DR
PARKWOOD DR
SANDY LN
CIA
OdA
OvA
OvA
CIA
Md

- Data Point
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Map Revision Date: 1/19/2021 | Aerial Date: 2017

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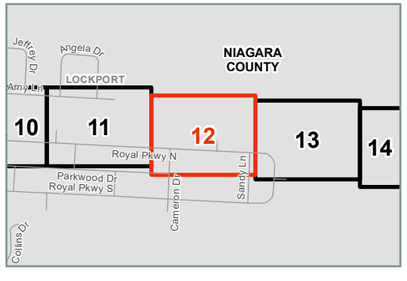

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

STREAM 003
INTERMITTENT

Lc

CIA

OvA

ROYAL PKWY

UNNAMED STREET

SHEET 12

SHEET 14

FO

31

32

33

- Data Point
- Field Observed NG Structure Location
- Observed 2019 Habitat
- Existing Structure
- Proposed Structure
- Remove Structure
- Gate
- Fence
- Treeline
- NYSDEC Stream
- Transmission Line
- Transmission Line Reroute
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- NYSDEC Wetland 100' Adjacent
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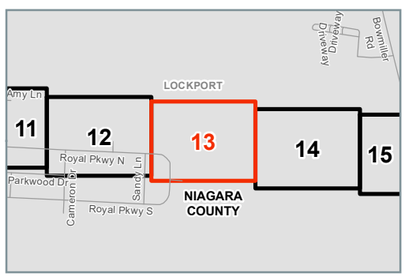
- Project Study Limits
- Wildlife Management Area (WMA)
- Matchline

Map Revision Date: 1/19/2021 | Aerial Date: 2017

0 50 100 Feet



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NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

Lc
OdA
OvA
OdA
SHEET 13
SHEET 15
630
FO
34
35

- Data Point
- Field Observed NG Structure Location
- Observed 2019 Habitat
- Existing Structure
- Proposed Structure
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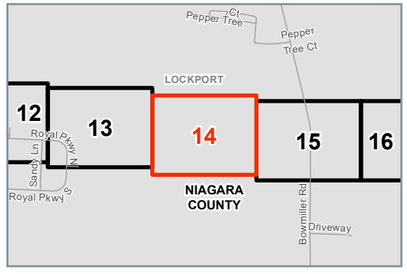

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

OvA

OdA

CIA

STREAM 004
INTERMITTENT

DITCH 005
NON-JURISDICTIONAL

DITCH 004
NON-JURISDICTIONAL

DP-024

DP-019

FO 36 FO FO

FO FO 37 37

FO FO

BOWMILLER RD

SHEET 14

SHEET 16

- Data Point
- Field Observed NG Structure Location
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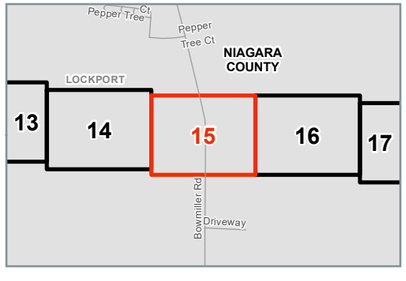
Map Revision Date: 1/19/2021 | Aerial Date: 2017

0 50 100 Feet



SHEET 15 OF 94

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

- Data Point
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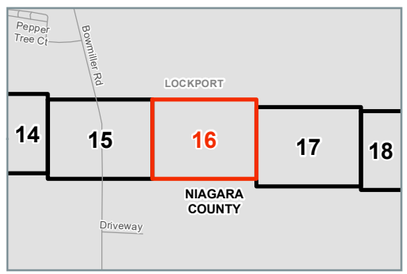
- Wildlife Management Area (WMA)
- Matchline

Map Revision Date: 1/19/2021 | Aerial Date: 2017

0 50 100 Feet



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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

- Data Point
- Field Observed NG Structure Location
- Observed 2019 Habitat
- Existing Structure
- Proposed Structure
- Remove Structure
- Gate
- Fence
- Treeline
- NYSDEC Stream
- Transmission Line
- Transmission Line Reroute
- FO Underground Fiber Optic Line
- Road
- 10' Contour
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- Delineated Non-Jurisdictional Ditch
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- Delineated Natural Drainage
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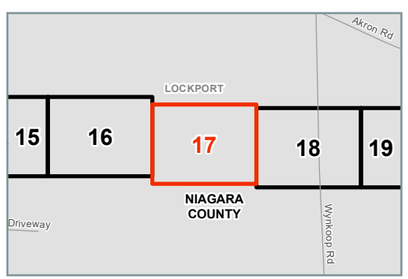
- NYSDEC Wetland 100' Adjacent
- NRCS Soil Complex Boundary
- Project Study Limits
- Wildlife Management Area (WMA)
- Matchline

Map Revision Date: 1/19/2021 | Aerial Date: 2017

0 50 100 Feet



SHEET 17 OF 94

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

SHEET 17

SHEET 19

620

620

CIA

WYNKOOP RD

STREAM 005
INTERMITTENT

FO

43

44

45

DP-031

DP-032

WETLAND 011
PEM

Lc

OdA

Md

- Data Point
- Field Observed NG Structure Location
- Observed 2019 Habitat
- Existing Structure
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- Remove Structure
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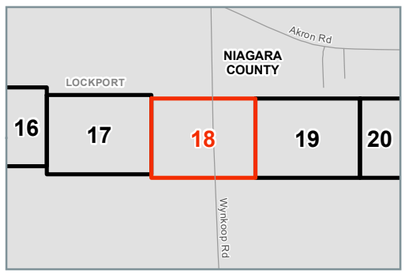
- Project Study Limits
- Wildlife Management Area (WMA)
- Matchline

Map Revision Date: 1/19/2021 | Aerial Date: 2017

0 50 100 Feet



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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

SHEET 18

SHEET 20

CIA

STREAM 005
INTERMITTENT

DP-030

DP-029

DP-028

WETLAND 010
PEM

FO 46 FO

FO 47 47

FO 48 FO

Md

OdA

OvA

ApA

Sw

610

- Data Point
- Field Observed NG Structure Location
- Observed 2019 Habitat
- Existing Structure
- Proposed Structure
- Remove Structure
- Gate
- Fence
- Treeline
- NYSDEC Stream
- Transmission Line
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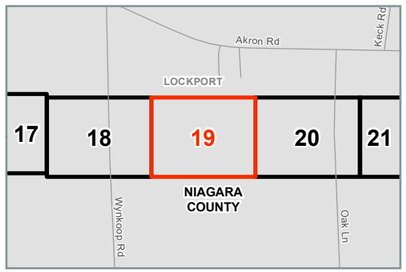

SHEET 19 OF 94

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

CIA
CIA
ApA
HIA
SHEET 19
SHEET 21
OAKLN
DP-033
DITCH 007
NON-JURISDICTIONAL
DP-025
FO
49
49
FO
FO
50
FO
DP-027
DP-026
STATION
DITCH 006
NON-JURISDICTIONAL
WETLAND 009
PEM
WETLAND 009
PSS
WETLAND 012
PEM
610
Md
OvA
ApA
Sw
OvA
Lc

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Map Revision Date: 1/19/2021 | Aerial Date: 2017

N

0 50 100 Feet

Akron Rd
Keck Rd
NIAGARA COUNTY
LOCKPORT
18 19 20 21 22
Wynkoop Rd
Oak Ln

SHEET 20 OF 94

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NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

ApA
HIA
Md
OvA
Lc
OvA

WETLAND 012
PEM

STREAM 006
INTERMITTENT

DP-035
DP-034

51 51
52
53

FO

SHEET 20
SHEET 22

- Data Point
- Field Observed NG Structure Location
- Observed 2019 Habitat
- Existing Structure
- Proposed Structure
- Remove Structure
- Gate
- Fence
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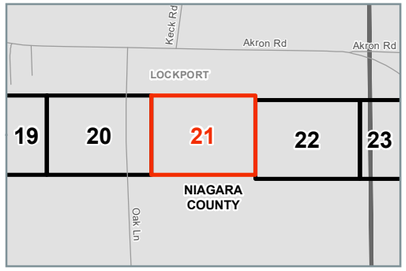

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FISHER ASSOCIATES

NATIONAL GRID
LOCKPORT-BATAVIA #112 REBUILD PROJECT
FIGURE 2: WETLAND AND WATERCOURSE DELINEATION MAP

SHEET 21

SHEET 23

OvA

OdA

Lc

STREAM 006
INTERMITTENT

WETLAND 014
PEM
NYSDEC FWW LP-22

DP-036

DP-040

DP-041

53

54

55

FO

NYSDEC WETLAND LP-22

NYSDEC WETLAND LP-22

- Data Point
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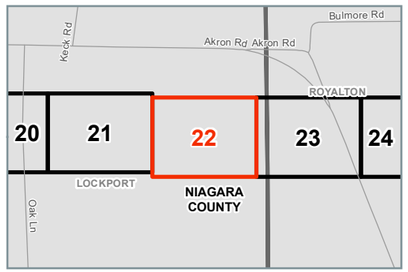

H:\Projects\190176-00-NG Batavia Art 7\GIS\NG Lockport Batavia Figure 02 Wetland Delineation.mxd - 11:32:37 AM

TABLES

Table 1
Wetland Delineation Summary

Wetland ID	Map Sheet #	Associated Data Point #	Associated Photo #	Cowardin Classification	Presumed Federal / State Jurisdiction[2]	Coordinates		Wetland Area within Study Limits		Soils	
						Latitude	Longitude	Square Feet	Acres	Soil Symbol	Hydric Component Percentage
001	1	DP-001 & DP-002	1 thru 4	PEM	Federal	43.147959	-78.717049	231	0.01	Cu	5
								4,338	0.10	HmA	0
								12,723	0.29	OwA	5
002	1	DP-003 & DP-004	5 thru 8	PEM	Federal	43.147508	-78.718378	13,653	0.31	HmA	0
								9,968	0.23	OwA	5
003	2	DP-006 & DP-007	9 thru 12	PEM	Federal	43.147437	-78.715828	8,937	0.21	Cu	5
004	2	DP-008 & DP-009	13 thru 16	PEM	Federal	43.147641	-78.714981	13,177	0.30	Cb	92
								454	0.01	Cu	5
005	2	DP-009 & DP-010	15 thru 18	PEM	Federal & State (NYSDEC LP-33)	43.147011	-78.711786	135,235	3.10	Ca	86
								84,904	1.95	Cb	92
								31,051	0.71	CnB	4
								48,509	1.11	Lg	92
								54,247	1.25	Mf	57
								61,790	1.42	NaA	4
								55,303	1.27	PsA	0
006	4	DP-011 & DP-012	19 thru 22	PEM	---	43.144911	-78.703301	14,369	0.33	OdB	4
007	5	DP-013 & DP-014	23 thru 26	PEM	---	43.144030	-78.699466	2,100	0.05	CcB	0
								33,165	0.76	HlB	0
								42,712	0.98	OdA	5
								1,641	0.04	OvA	4
008	10	DP-020 & DP-021	42 thru 45	PEM	---	43.141885	-78.674831	214	0.00	ClA	8
009	20	DP-026 & DP-027	53 thru 61	PEM	---	43.140342	-78.629717	13,358	0.31	HlA	0
								5,098	0.12	Md	82
				PSS		43.140252	-78.629628	3,506	0.08	HlA	0
								1,515	0.03	Md	82
010	19	DP-029 & DP-030	65 thru 68	PEM	---	43.140324	-78.635340	8,488	0.19	ClA	8
011	18	DP-031 & DP-032	69 thru 72	PEM	Federal	43.140451	-78.638277	31,006	0.71	ClA	8
012	20 & 21	DP-034 & DP-035	76 thru 79	PEM	Federal	43.140640	-78.628782	6,472	0.15	HlA	0
								56,035	1.29	Lc	95
								90,184	2.07	Md	82
								12,157	0.28	OvA	4
013	23	DP-038 & DP-039	86 thru 89	PEM	---	43.140350	-78.616630	92,819	2.13	OdA	5
								26,101	0.60	OvA	4
014	22 & 23	DP-040 & DP-041	90 thru 93	PEM	Federal	43.140153	-78.621078	11,907	0.27	Lc	95
								165,811	3.81	OdA	5
015	23 & 24	DP-044 & DP-045	100 thru 103	PEM	---	43.140268	-78.610288	6,463	0.15	OdA	5
								146,229	3.36	OvA	4

Table 1
Wetland Delineation Summary

Wetland ID	Map Sheet #	Associated Data Point #	Associated Photo #	Cowardin Classification	Presumed Federal / State Jurisdiction[2]	Coordinates		Wetland Area within Study Limits		Soils	
						Latitude	Longitude	Square Feet	Acres	Soil Symbol	Hydric Component Percentage
016	25, 26, & 27	DP-046, DP-047, DP-048	104 thru 109	PEM	Federal & State (NYSDEC GA-22)	43.140223	-78.606831	269,256	6.18	Lc	95
								11,071	0.25	OdA	5
				PFO		43.139959	-78.601419	676	0.02	Lc	95
								233	0.01	OdA	5
				PSS		43.140387	-78.607865	87,681	2.01	Lc	95
								2,763	0.06	OdA	5
017	27	DP-051 & DP-052	113 thru 116	PEM	Federal & State (NYSDEC GA-21)	43.140196	-78.597451	127,355	2.92	OdA	5
								4,827	0.11	OvA	4
018	27 thru 32	DP-054 & DP-055	120 thru 123	PEM	Federal & State (NYSDEC GA-21)	43.140361	-78.591266	29,568	0.68	ClA	8
								292,467	6.71	Lc	95
								55,135	1.27	NaA	4
								712,834	16.36	OdA	5
019	36	DP-061 & DP-062	139 thru 142	PEM	Federal	43.139899	-78.557668	874	0.02	ApA	4
								11,600	0.27	Lc	95
								57,091	1.31	OdA	5
020	36	DP-064 & DP-065	146 thru 149	PEM	Federal & State (NYSDEC GA-6)	43.139729	-78.553800	158,890	3.65	Lc	95
								88,781	2.04	OdA	5
021	41 & 42	DP-068 & DP-069	156 thru 159	PEM	---	43.141932	-78.530627	13,612	0.31	OdA	5
022	86 & 87	DP-071 & DP-072	163 thru 166	PEM	State (John White WMA)	43.076192	-78.382543	62,009	1.42	OdA	5
								30,177	0.69	SeB	0
								7,885	0.18	W	0
				PUB		43.075732	-78.381871	666	0.02	OdA	5
								23,558	0.54	W	0
023	59 thru 77	DP-073, DP-074, DP-085, DP-086, DP-098 thru DP-105	167 thru 170 & 174 thru 177 & 225 thru 249	PEM	Federal & State (NYSDEC AK-2, AK-3, AK-4, & Tonawanda WMA)	43.124258	-78.456573	6,805	0.16	ApA	4
								69,848	1.60	ArB	0
								5,503	0.13	CaA	95
								1,002,090	23.00	CbA	95
								59,027	1.36	ElB	0
								115,575	2.65	Fo	96
								58	0.001	FpA	10
								62,972	1.45	GnB	0
								193	0.00	HlB	0
								170,288	3.91	Ld	92
								582,089	13.36	Ma	93
								18	0.0004	MnA	5
								278,272	6.39	Pd	100
								7,259	0.17	PsB	0
								17,185	0.39	RoA	0
								172,109	3.95	W	0
								48,782	1.12	Wy	90

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Wetland Delineation Summary

Wetland ID	Map Sheet #	Associated Data Point #	Associated Photo #	Cowardin Classification	Presumed Federal / State Jurisdiction[2]	Coordinates		Wetland Area within Study Limits		Soils	
						Latitude	Longitude	Square Feet	Acres	Soil Symbol	Hydric Component Percentage
23 (cont.)	59 thru 77	DP-073, DP-074, DP-085, DP-086, DP-098 thru DP-105	167 thru 170 & 174 thru 177 & 225 thru 249	PFO	Federal & State (NYSDEC AK-2, AK-3, AK-4 & Tonawanda WMA)	43.118017	-78.444531	9,063	0.21	ArB	0
								95	0.002	CbA	95
								10,057	0.23	Ld	92
				PSS		43.124194	-78.462039	1,155	0.03	CaA	95
								23,618	0.54	CbA	95
								1,980	0.05	RoA	0
								17,783	0.41	Wy	90
024	42 & 43	DP-076 & DP-077	178 thru 181	PEM	Federal	43.142470	-78.525944	26,474	0.61	Lc	95
								57,870	1.33	OdA	5
025	44	DP-080 & DP-081	188 thru 191	PEM	Federal	43.143351	-78.519898	43,019	0.99	Ma	93
								11,806	0.27	RbA	8
026	46	DP-082 & DP-083	192 thru 195	PEM	---	43.145012	-78.508843	102,129	2.34	OdA	5
								745	0.02	OvA	4
027	54, 55, & 56	DP-087, DP-088, DP-089	199 thru 204	PEM	Federal & State (NYSDEC MD-1 Tonawanda WMA)	43.132951	-78.475908	7,354	0.17	Lc	95
								250,180	5.74	Ma	93
								17,118	0.39	OdA	5
				PFO		43.131006	-78.472454	50,527	1.16	Ma	93
								44,784	1.03	OdA	5
028	80 & 81	DP-090 & DP-091	205 thru 208	PSS	Federal	43.097575	-78.417185	61,572	1.41	CaA	95
							Total	**6,690,281**	**153.59**		

Notes:

1. A field delineation was performed by Fisher Associates between August 6 and October 2, 2019; June 16, 2020; and November 12 and 13, 2020
2. Federal / State Jurisdiction and Connectivity classifications provided represent the professional opinion of Fisher Associates and the interpretation of the U.S. Navigable Waters Protection Rule under the Clean Water Act and NYS ECL Article 24: Freshwater Wetlands Program. For approval of these classifications, a request for Jurisdictional Determination should be made to the US Army Corps of Engineers and/or the NYS Department of Environmental Conservation.