

Recreation Facility Inventory, Recreation Use and Needs Assessment, and Reservoir Surface Area Assessment Study Update

PART 3 OF 3

Mongaup River Hydroelectric Projects:

Swinging Bridge Hydroelectric Project (No. 10482)

Mongaup Falls Hydroelectric Project (No. 10481)

Rio Hydroelectric Project (No. 9690)

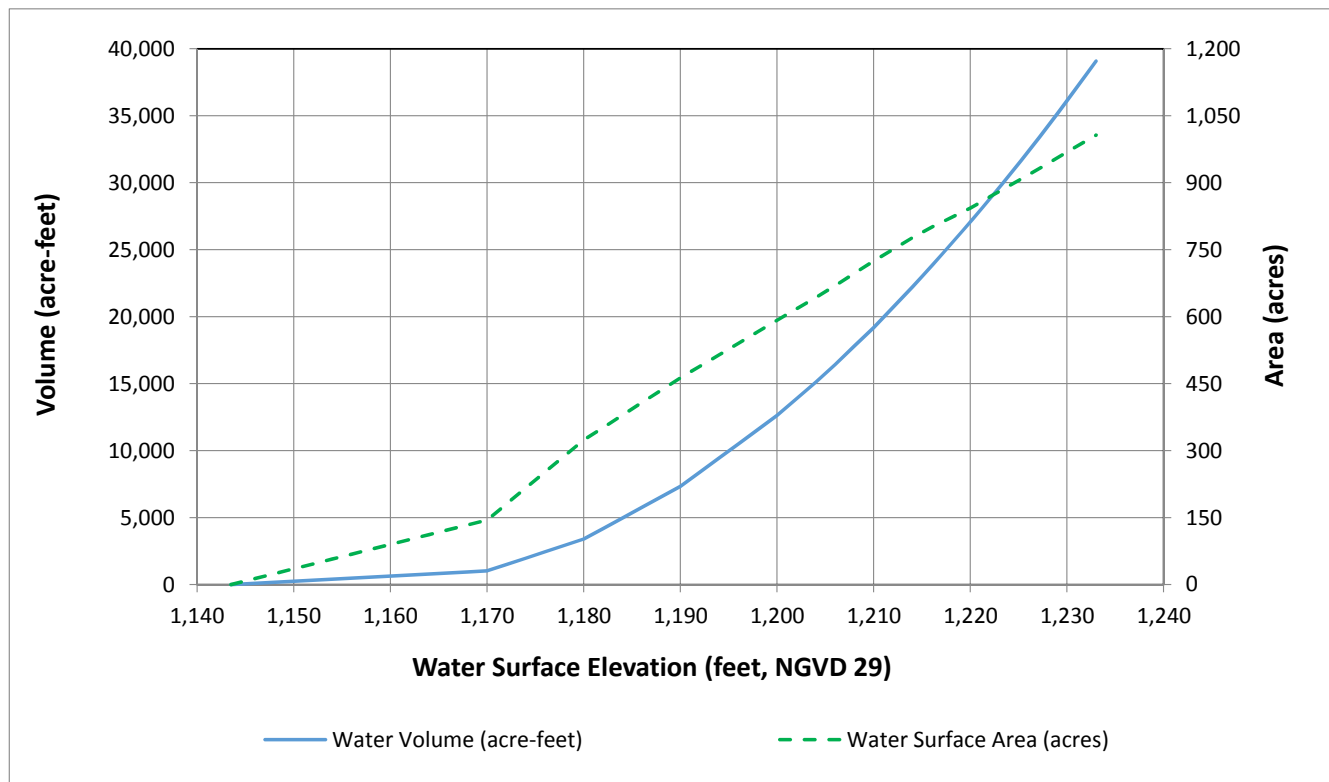
July 2019

ATTACHMENT 7
RESERVOIR STORAGE AND AREA CURVES AND TABLES

Toronto Reservoir Storage and Area Curves (ECRE, 2019a)

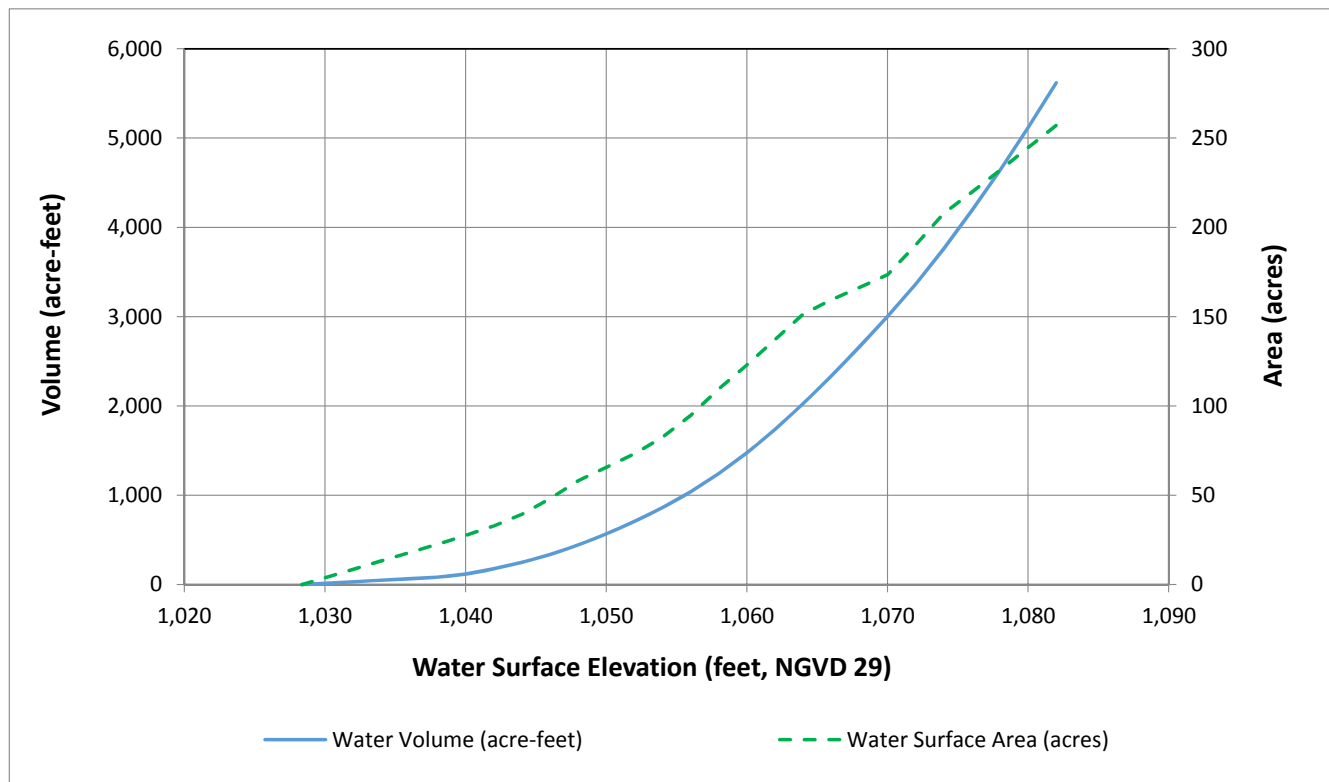
Data developed from bathymetry survey conducted in 2018, extended with GIS

DEM data for values above surveyed water surface elevation.



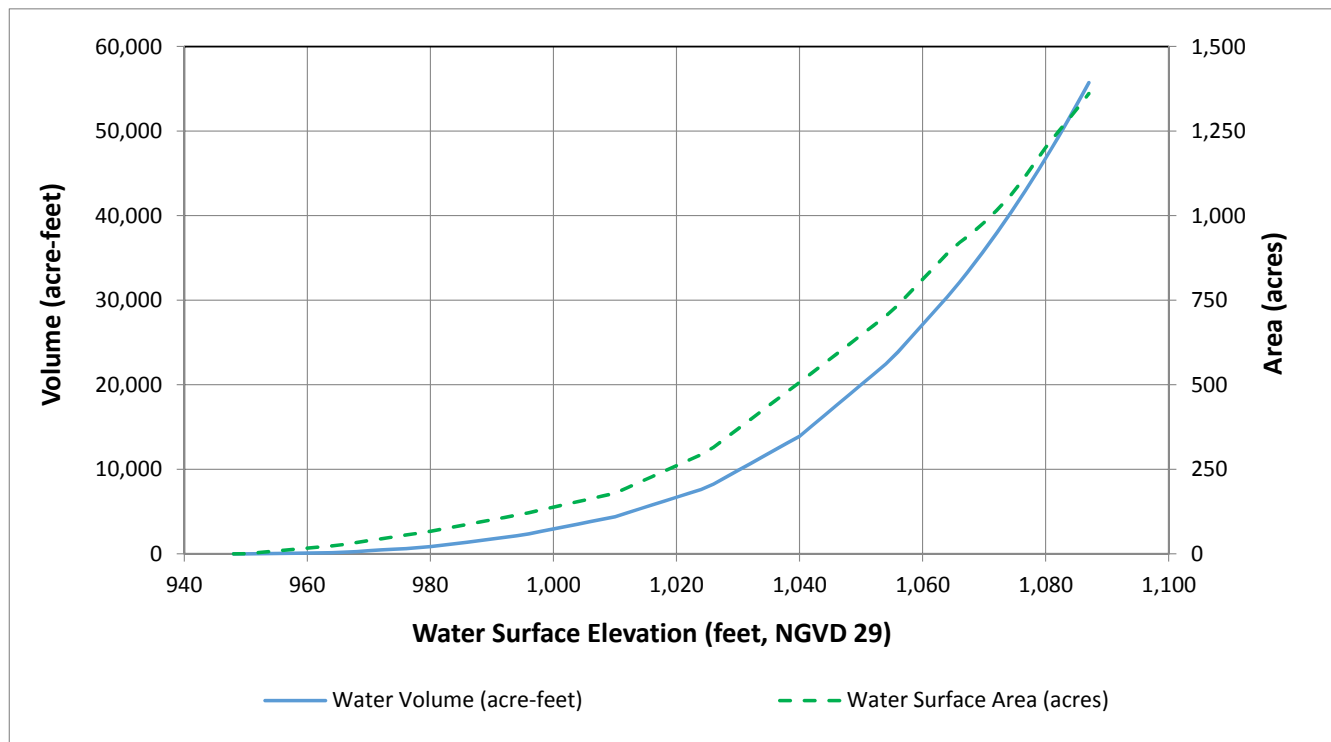
Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)	Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)
1,143.5	0.00	0.00	1,190.0	462.96	7,334.00
1,146.0	13.65	96.77	1,192.0	488.76	8,391.60
1,148.0	24.57	174.19	1,194.0	514.55	9,449.19
1,150.0	35.48	251.60	1,196.0	540.35	10,506.78
1,152.0	46.40	329.02	1,198.0	566.14	11,564.38
1,154.0	57.32	406.44	1,200.0	591.93	12,621.97
1,156.0	68.24	483.85	1,202.0	617.41	13,869.83
1,158.0	79.15	561.27	1,204.0	642.89	15,117.70
1,160.0	90.07	638.69	1,206.0	669.43	16,431.25
1,162.0	100.99	716.10	1,208.0	697.02	17,810.50
1,164.0	111.91	793.52	1,210.0	724.61	19,189.74
1,166.0	122.83	870.93	1,212.0	750.80	20,706.83
1,168.0	133.74	948.35	1,214.0	776.99	22,223.92
1,170.0	144.66	1,025.77	1,216.0	800.67	23,798.67
1,172.0	180.51	1,501.05	1,218.0	821.85	25,431.09
1,174.0	216.35	1,976.33	1,220.0	843.03	27,063.51
1,176.0	252.20	2,451.61	1,222.0	868.14	28,774.60
1,178.0	288.04	2,926.89	1,224.0	892.99	30,535.93
1,180.0	323.88	3,402.18	1,226.0	917.65	32,346.42
1,182.0	351.70	4,188.54	1,228.0	942.99	34,206.93
1,184.0	379.52	4,974.91	1,230.0	968.60	36,118.60
1,186.0	407.33	5,761.27	1,232.0	994.00	38,081.21
1,188.0	435.15	6,547.64	1,233.0	1,006.59	39,081.51

Cliff Lake Reservoir Storage and Area Curves (ECRE, 2019a)
 Data developed from bathymetry survey conducted in 2018, extended with GIS
 DEM data for values above surveyed water surface elevation.



Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)	Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)
1,028.35	0.00	0.00	1,056.0	94.72	1,039.61
1,030.0	3.86	14.18	1,058.0	109.60	1,243.78
1,032.0	8.55	31.41	1,060.0	123.02	1,476.52
1,034.0	13.25	48.63	1,062.0	137.15	1,736.48
1,036.0	17.94	65.86	1,064.0	151.38	2,026.10
1,038.0	22.63	83.09	1,066.0	159.46	2,336.73
1,040.0	27.61	118.06	1,068.0	166.35	2,662.26
1,042.0	32.82	178.36	1,070.0	173.55	3,002.36
1,044.0	39.34	250.15	1,072.0	190.08	3,362.50
1,046.0	48.13	337.21	1,074.0	207.87	3,761.70
1,048.0	58.18	444.50	1,076.0	219.74	4,189.58
1,050.0	65.69	568.12	1,078.0	232.00	4,640.86
1,052.0	73.19	707.21	1,080.0	244.69	5,117.71
1,054.0	82.51	862.55	1,082.0	257.14	5,619.39

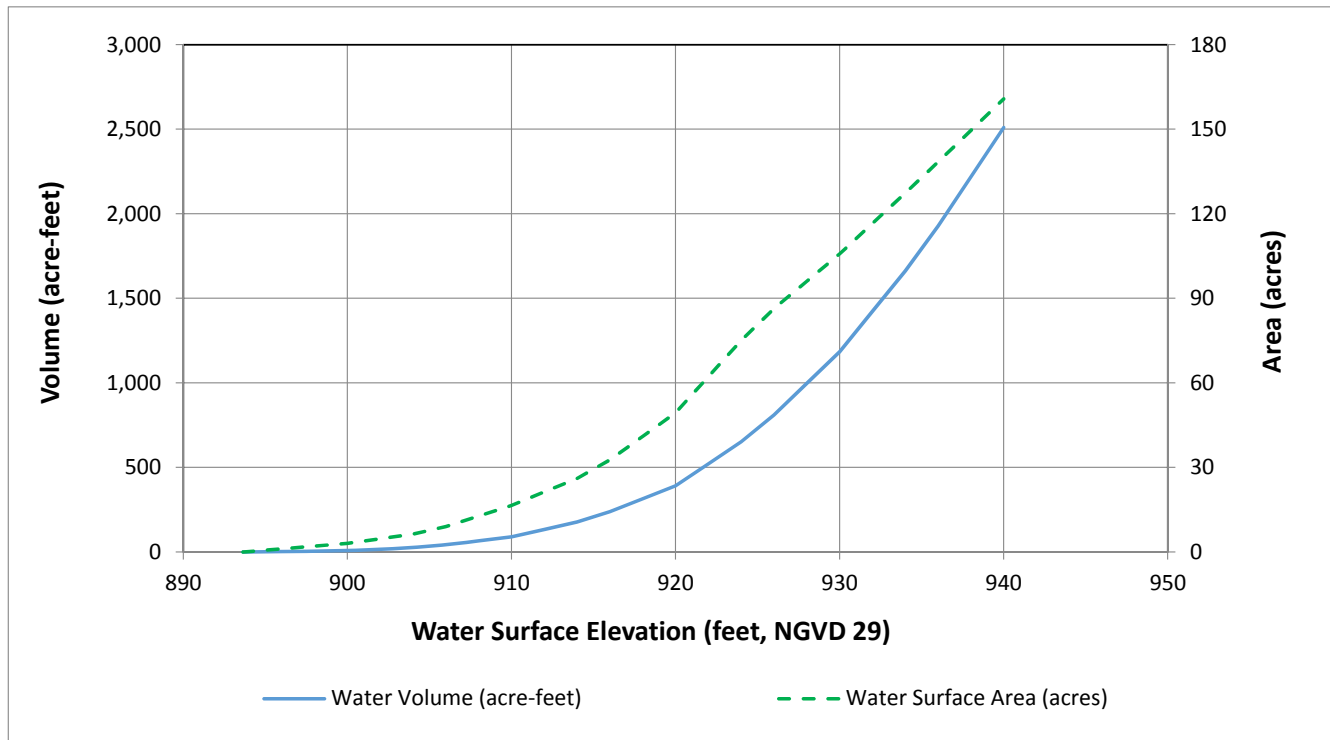
Swinging Bridge Reservoir Storage and Area Curves (ECRE, 2019a)
Data developed from bathymetry survey conducted in 2018, extended with GIS
DEM data for values above surveyed water surface elevation.



Swinging Bridge Reservoir

Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)	Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)
947.98	0.00	0.00	1,020.0	260.79	6,694.01
950.0	0.46	0.29	1,022.0	277.10	7,154.76
952.0	3.77	20.12	1,024.0	293.40	7,615.51
954.0	7.08	39.95	1,026.0	315.27	8,250.62
956.0	10.39	59.79	1,028.0	342.68	9,060.10
958.0	13.70	79.62	1,030.0	370.10	9,869.58
960.0	17.00	99.45	1,032.0	397.52	10,679.06
962.0	20.31	119.28	1,034.0	424.93	11,488.54
964.0	23.62	139.11	1,036.0	452.35	12,298.02
966.0	28.04	194.26	1,038.0	479.77	13,107.50
968.0	33.57	284.72	1,040.0	507.18	13,916.98
970.0	39.10	375.19	1,042.0	535.14	15,136.79
972.0	44.64	465.66	1,044.0	563.10	16,356.60
974.0	50.17	556.12	1,046.0	591.06	17,576.41
976.0	55.70	646.59	1,048.0	619.02	18,796.22
978.0	61.23	737.05	1,050.0	646.98	20,016.04
980.0	66.76	827.52	1,052.0	674.94	21,235.85
982.0	73.55	1,014.20	1,054.0	702.90	22,455.66
984.0	80.34	1,200.88	1,056.0	735.88	23,880.53
986.0	87.14	1,387.56	1,058.0	773.88	25,510.47
988.0	93.93	1,574.24	1,060.0	811.88	27,140.41
990.0	100.72	1,760.92	1,062.0	849.88	28,770.35
992.0	107.51	1,947.60	1,064.0	887.88	30,400.29
994.0	114.30	2,134.28	1,066.0	920.59	32,128.10
996.0	121.80	2,371.80	1,068.0	948.28	33,996.03
998.0	130.01	2,660.16	1,070.0	980.22	35,924.69
1,000.0	138.22	2,948.51	1,072.0	1,015.30	37,925.04
1,002.0	146.42	3,236.86	1,074.0	1,053.51	39,998.43
1,004.0	154.63	3,525.22	1,076.0	1,099.27	42,195.10
1,006.0	162.84	3,813.57	1,078.0	1,150.54	44,481.53
1,008.0	171.04	4,101.93	1,080.0	1,201.81	46,767.95
1,010.0	179.25	4,390.28	1,082.0	1,246.94	49,216.25
1,012.0	195.56	4,851.03	1,084.0	1,290.91	51,764.93
1,014.0	211.87	5,311.77	1,086.0	1,337.11	54,392.89
1,016.0	228.17	5,772.52	1,087.0	1,361.15	55,730.34
1,018.0	244.48	6,233.27			

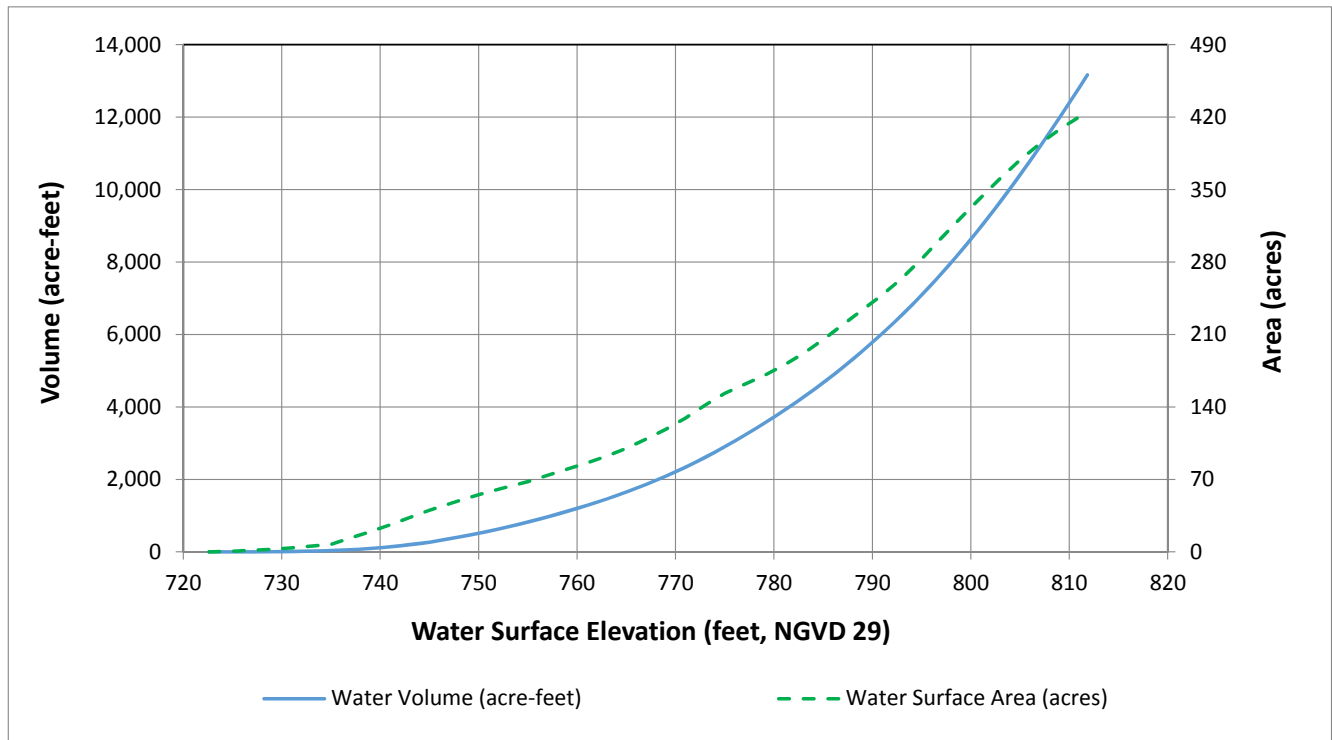
Mongaup Falls Reservoir Storage and Area Curves (ECRE, 2019a)
 Data developed from bathymetry survey conducted in 2018, extended with GIS
 DEM data for values above surveyed water surface elevation.



Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)	Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)
893.63	0.00	0.00	918.0	41.00	314.64
896.0	1.13	2.66	920.0	49.34	391.68
898.0	2.08	4.91	922.0	62.19	521.43
900.0	3.03	7.16	924.0	75.03	651.17
902.0	4.68	16.85	926.0	86.32	809.70
904.0	6.33	26.55	928.0	96.06	997.02
906.0	9.03	42.94	930.0	105.80	1,184.33
908.0	12.77	66.04	932.0	116.59	1,423.35
910.0	16.51	89.14	934.0	127.39	1,662.37
912.0	21.30	133.12	936.0	138.39	1,927.46
914.0	26.10	177.09	938.0	149.58	2,218.64
916.0	32.67	237.60	940.0	160.78	2,509.82

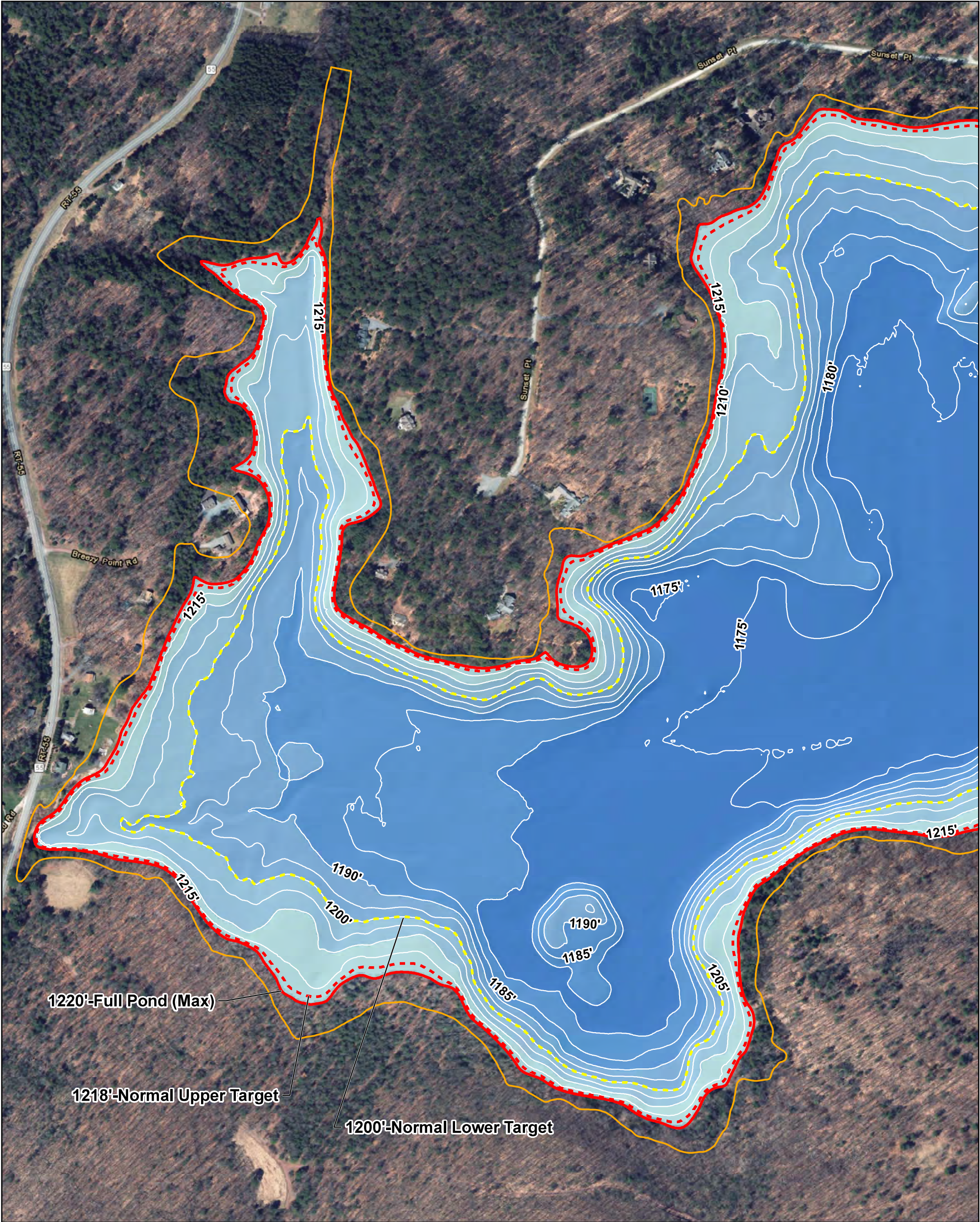
Rio Reservoir Storage and Area Curves (ECRE, 2019a)

Data developed from bathymetry survey conducted in 2018, extended with GIS DEM data for values above surveyed water surface elevation.



Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)	Water Surface Elevation (feet, NGVD 29)	Water Surface Area (acres)	Water Volume (acre-feet)
722.6	0.00	0.00	769.0	118.50	2,089.95
725.0	0.66	0.57	771.0	129.25	2,337.32
727.0	1.60	4.26	773.0	141.87	2,607.97
729.0	2.54	7.94	775.0	153.24	2,903.24
731.0	3.88	14.64	777.0	161.93	3,218.71
733.0	5.62	24.37	779.0	170.32	3,550.76
735.0	7.36	34.10	781.0	180.39	3,900.91
737.0	13.49	64.26	783.0	191.88	4,272.72
739.0	19.62	94.41	785.0	205.13	4,669.55
741.0	26.21	141.13	787.0	219.47	5,094.29
743.0	33.27	204.41	789.0	233.88	5,547.55
745.0	40.33	267.69	791.0	248.33	6,029.22
747.0	46.41	365.39	793.0	264.28	6,541.07
749.0	52.49	463.08	795.0	283.08	7,088.25
751.0	58.01	573.64	797.0	303.17	7,674.50
753.0	62.97	697.06	799.0	322.90	8,300.27
755.0	67.92	820.47	801.0	342.11	8,965.32
757.0	73.94	971.13	803.0	360.94	9,668.54
759.0	79.96	1,121.79	805.0	378.66	10,408.55
761.0	85.98	1,283.10	807.0	394.35	11,182.23
763.0	92.51	1,461.35	809.0	408.06	11,984.52
765.0	100.08	1,653.41	811.0	420.32	12,811.69
767.0	109.03	1,862.29	811.84	425.21	13,164.07

ATTACHMENT 8
**BATHYMETRIC MAPS SHOWING RELATIONSHIP BETWEEN RESERVOIR SURFACE AREA AND RESERVOIR
LEVELS**



LEGEND

Recreation Site

Recreation Trails

Contour (5 ft. Interval)

FERC Project Boundary

Key Reservoir Elevations
Contour (NGVD29 ft.)

1,220.0' - Full Pond (Max)

1,218.0 - Normal Upper Target

1,200.0' - Normal Lower Target

1,170.0' - Low Pond (Min)

Toronto Bathymetry
Elevation (NGVD29 ft.)

1,145.6' - 1,150.0'

1,150.0' - 1,160.0'

1,160.0' - 1,170.0'

1,170.0' - 1,180.0'

1,180.0' - 1,190.0'

1,190.0' - 1,200.0'

1,200.0' - 1,210.0'

1,210.0' - 1,220.0'

GENERAL LOCATION MAP

PATH: S:\1\PROJECTS\MONGAUE\EAGLE_CREEK_RELICENSING_PHASE_1\TORONTO_BATHYMETRY.MXD - USER: KFORSTER - DATE: 7/26/2019
MAP INFORMATION WAS COMPILED FROM THE BEST AVAILABLE PUBLIC SOURCES. NO WARRANTY IS MADE FOR ITS ACCURACY AND COMPLETENESS.



LEGEND

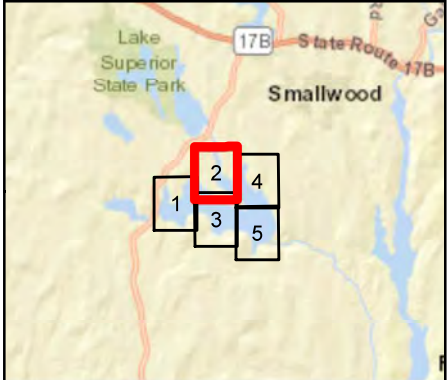
- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1,220.0' - Full Pond (Max)
 - 1,218.0 - Normal Upper Target
 - 1,200.0' - Normal Lower Target
 - 1,170.0' - Low Pond (Min)

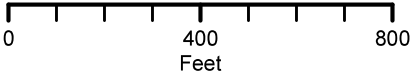
- Toronto Bathymetry
Elevation (NGVD29 ft.)
- 1,145.6' - 1,150.0'
 - 1,150.0' - 1,160.0'
 - 1,160.0' - 1,170.0'

- 1,170.0' - 1,180.0'
- 1,180.0' - 1,190.0'
- 1,190.0' - 1,200.0'
- 1,200.0' - 1,210.0'
- 1,210.0' - 1,220.0'

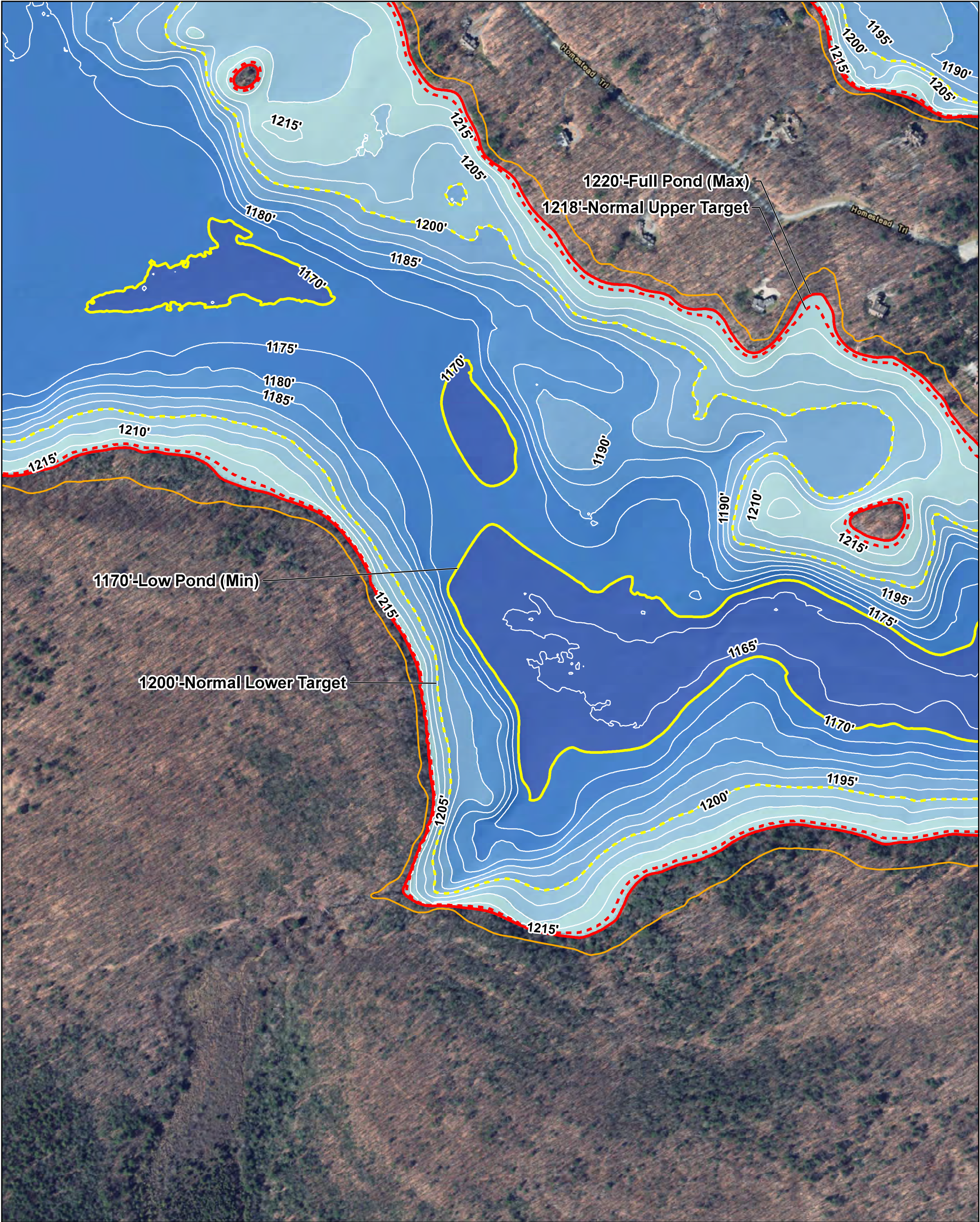
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



TORONTO RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 2 OF 5
(FERC NO. 10482)



LEGEND

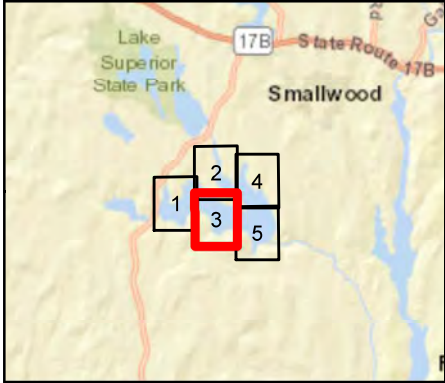
- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1,220.0' - Full Pond (Max)
 - 1,218.0 - Normal Upper Target
 - 1,200.0' - Normal Lower Target
 - 1,170.0' - Low Pond (Min)

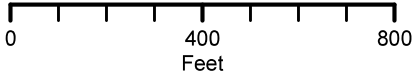
- Toronto Bathymetry
Elevation (NGVD29 ft.)
- 1,145.6' - 1,150.0'
 - 1,150.0' - 1,160.0'
 - 1,160.0' - 1,170.0'

- 1,170.0' - 1,180.0'
- 1,180.0' - 1,190.0'
- 1,190.0' - 1,200.0'
- 1,200.0' - 1,210.0'
- 1,210.0' - 1,220.0'

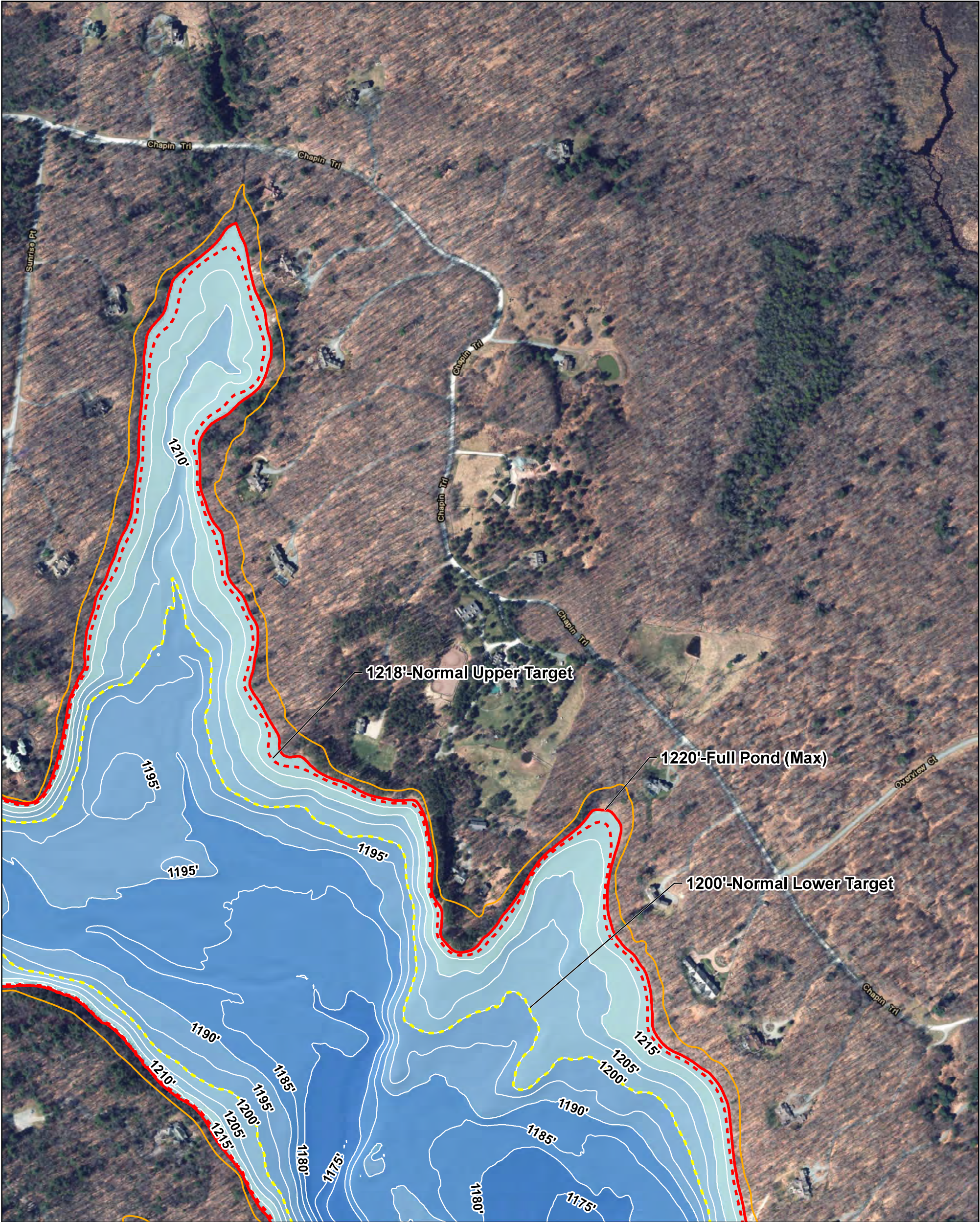
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



TORONTO RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 3 OF 5
(FERC NO. 10482)



LEGEND

- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

Key Reservoir Elevations
Contour (NGVD29 ft.)

1,220.0' - Full Pond (Max)

1,218.0 - Normal Upper Target

1,200.0' - Normal Lower Target

1,170.0' - Low Pond (Min)

Toronto Bathymetry
Elevation (NGVD29 ft.)

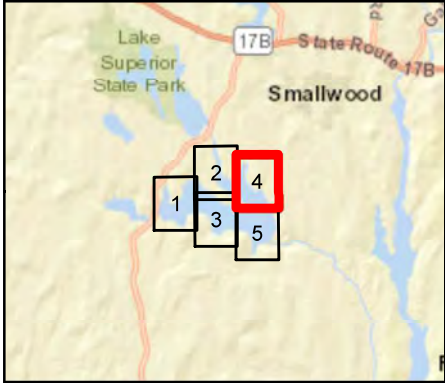
1,145.6' - 1,150.0'

1,150.0' - 1,160.0'

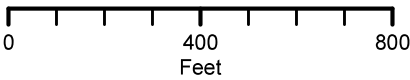
1,160.0' - 1,170.0'

- 1,170.0' - 1,180.0'
- 1,180.0' - 1,190.0'
- 1,190.0' - 1,200.0'
- 1,200.0' - 1,210.0'
- 1,210.0' - 1,220.0'

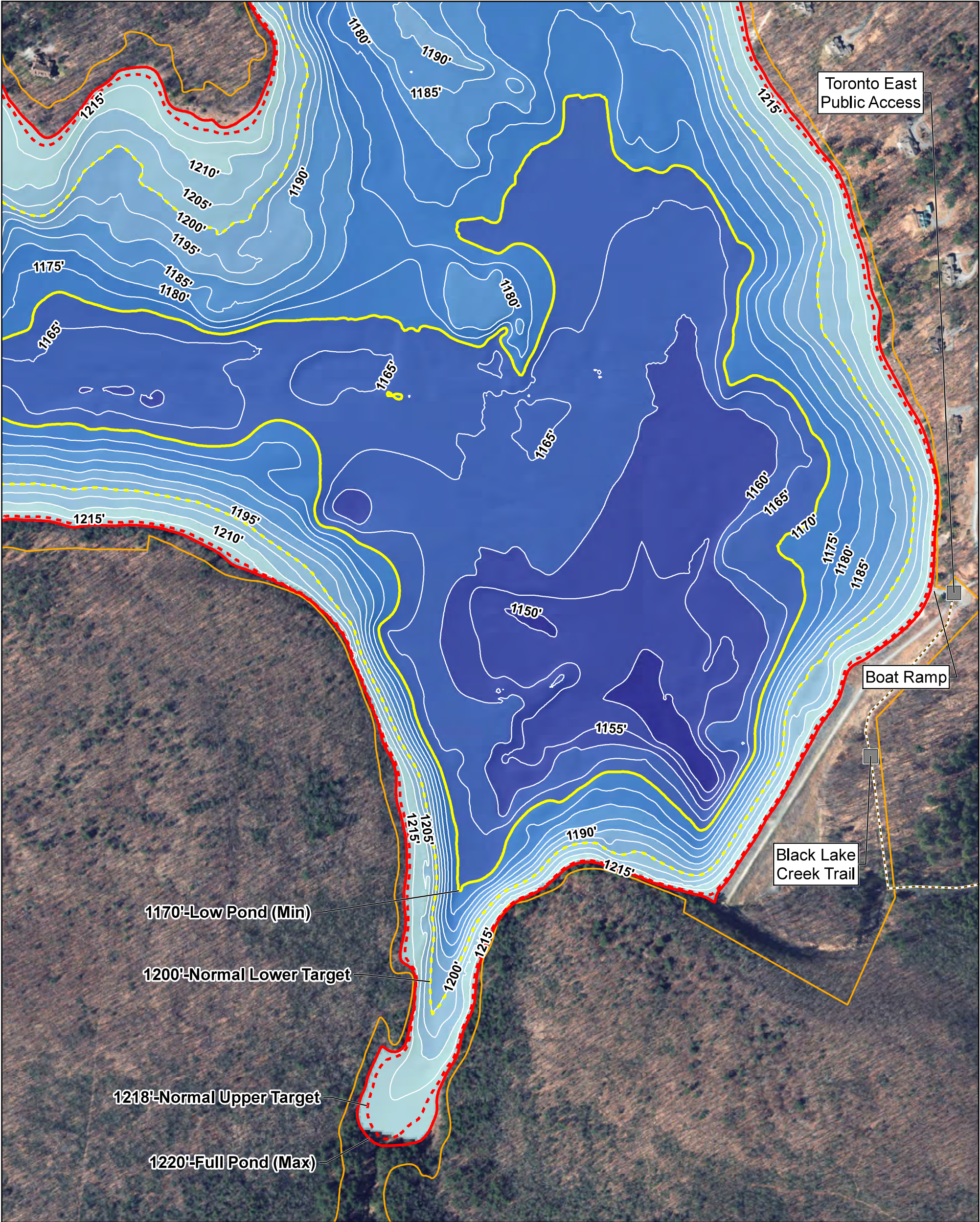
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



TORONTO RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 4 OF 5
(FERC NO. 10482)



LEGEND

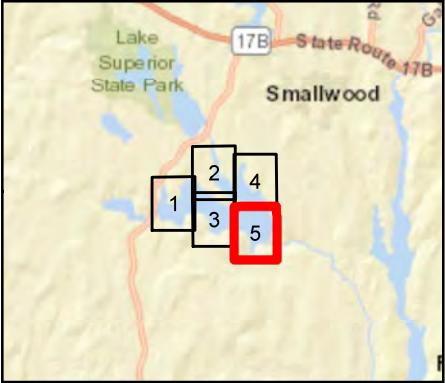
- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1,220.0' - Full Pond (Max)
 - 1,218.0 - Normal Upper Target
 - 1,200.0' - Normal Lower Target
 - 1,170.0' - Low Pond (Min)

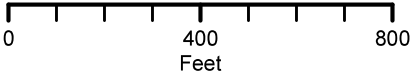
- Toronto Bathymetry
Elevation (NGVD29 ft.)
- 1,145.6' - 1,150.0'
 - 1,150.0' - 1,160.0'
 - 1,160.0' - 1,170.0'

- 1,170.0' - 1,180.0'
- 1,180.0' - 1,190.0'
- 1,190.0' - 1,200.0'
- 1,200.0' - 1,210.0'
- 1,210.0' - 1,220.0'

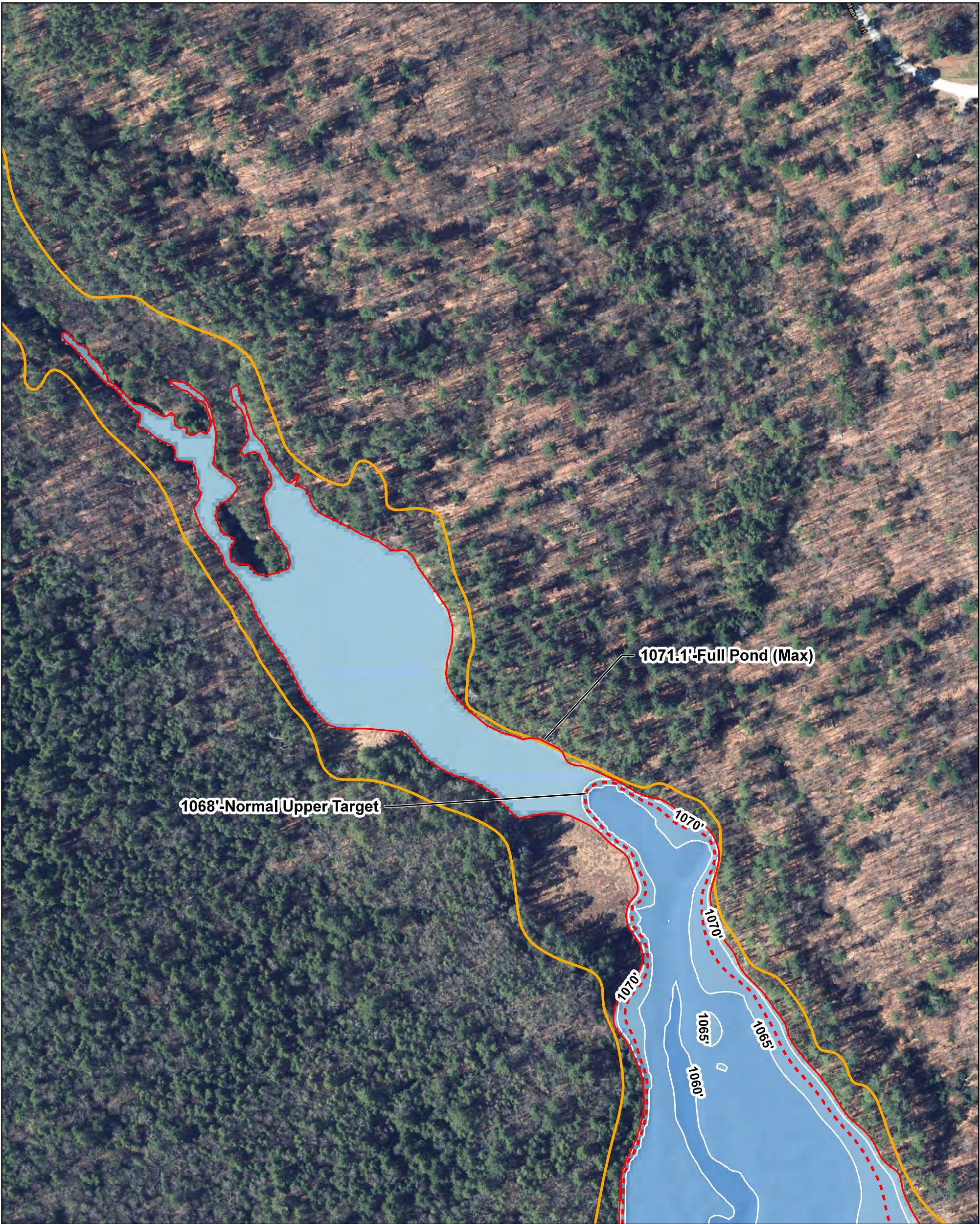
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



TORONTO RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 5 OF 5
(FERC NO. 10482)



LEGEND

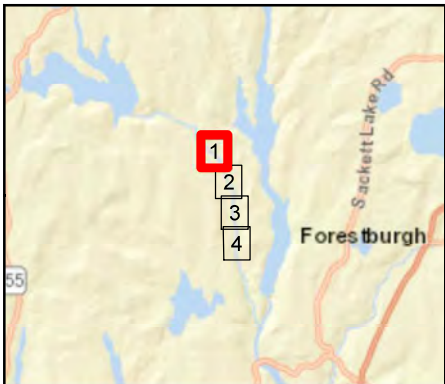
- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1071.1'- Full Pond (Max)
 - 1068.0'- Normal Upper Target
 - 1049.0'- Normal Lower Target
 - 1048.0'- Low Pond (Min)

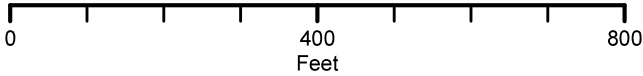
- Cliff Lake Bathymetry
Elevation (NGVD29 ft.)
- 1,028.3' - 1,030'
 - 1,030.0' - 1,035'
 - 1,035.0' - 1,040'
 - 1,040.0' - 1,045'
 - 1,045.0' - 1,050'

- 1,050.0' - 1,055'
- 1,055.0' - 1,060'
- 1,060.0' - 1,065'
- 1,065.0' - 1,070'
- 1,070.0' - 1,075'
- 1,075.0' - 1,080'

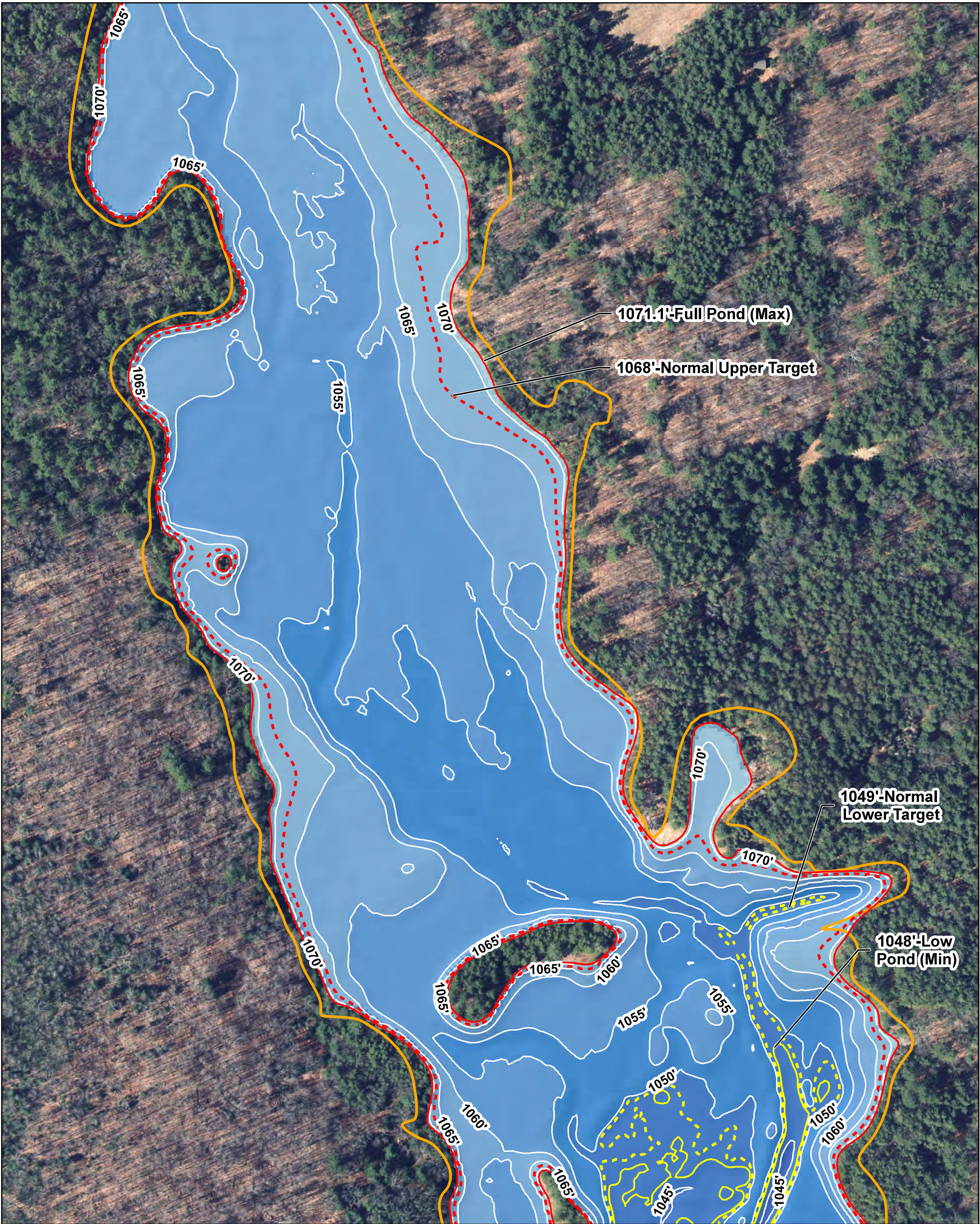
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



CLIFF LAKE RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 1 OF 4
(FERC NO. 10482)



LEGEND

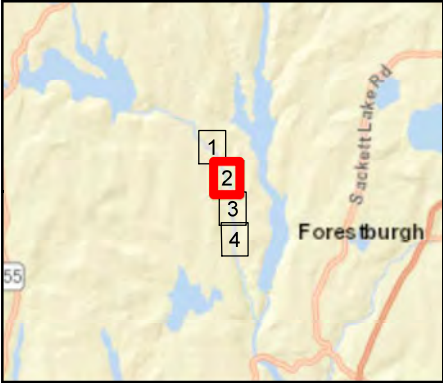
- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1071.1'- Full Pond (Max)
 - 1068.0'- Normal Upper Target
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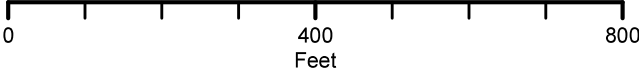
- Cliff Lake Bathymetry
Elevation (NGVD29 ft.)
- 1,028.3' - 1,030'
 - 1,030.0' - 1,035'
 - 1,035.0' - 1,040'
 - 1,040.0' - 1,045'
 - 1,045.0' - 1,050'

- 1,050.0' - 1,055'
- 1,055.0' - 1,060'
- 1,060.0' - 1,065'
- 1,065.0' - 1,070'
- 1,070.0' - 1,075'
- 1,075.0' - 1,080'

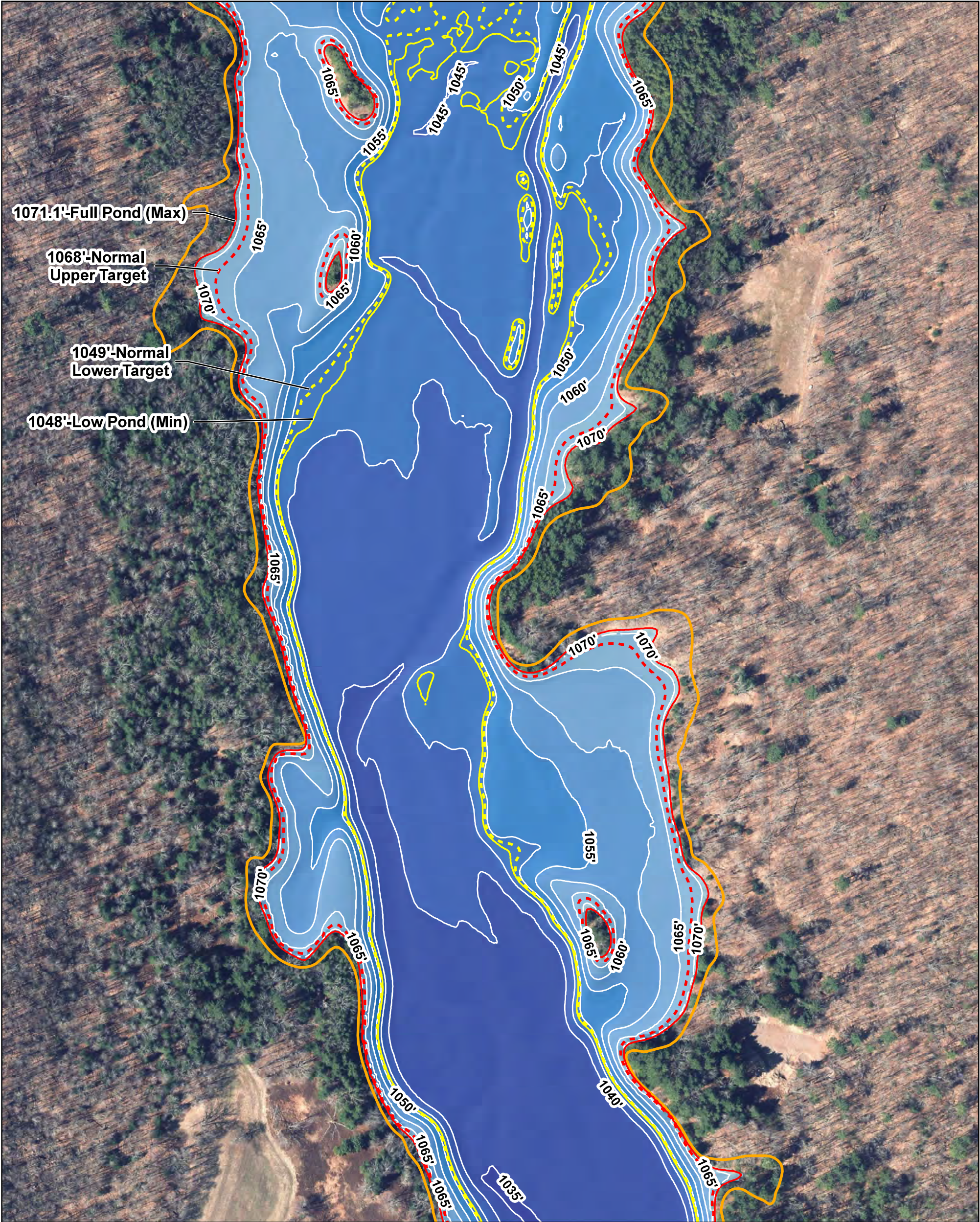
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



CLIFF LAKE RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 2 OF 4
(FERC NO. 10482)



LEGEND

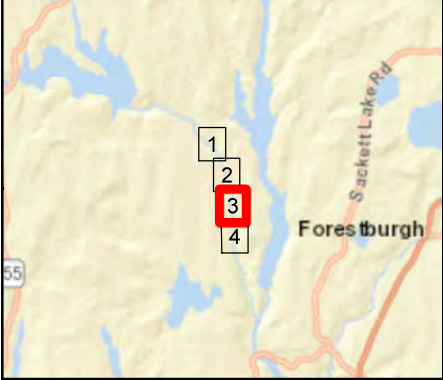
- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1071.1'- Full Pond (Max)
 - 1068.0'- Normal Upper Target
 - 1049.0'- Normal Lower Target
 - 1048.0'- Low Pond (Min)

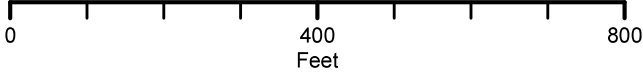
- Cliff Lake Bathymetry
Elevation (NGVD29 ft.)
- 1,028.3' - 1,030'
 - 1,030.0' - 1,035'
 - 1,035.0' - 1,040'
 - 1,040.0' - 1,045'
 - 1,045.0' - 1,050'

- 1,050.0' - 1,055'
- 1,055.0' - 1,060'
- 1,060.0' - 1,065'
- 1,065.0' - 1,070'
- 1,070.0' - 1,075'
- 1,075.0' - 1,080'

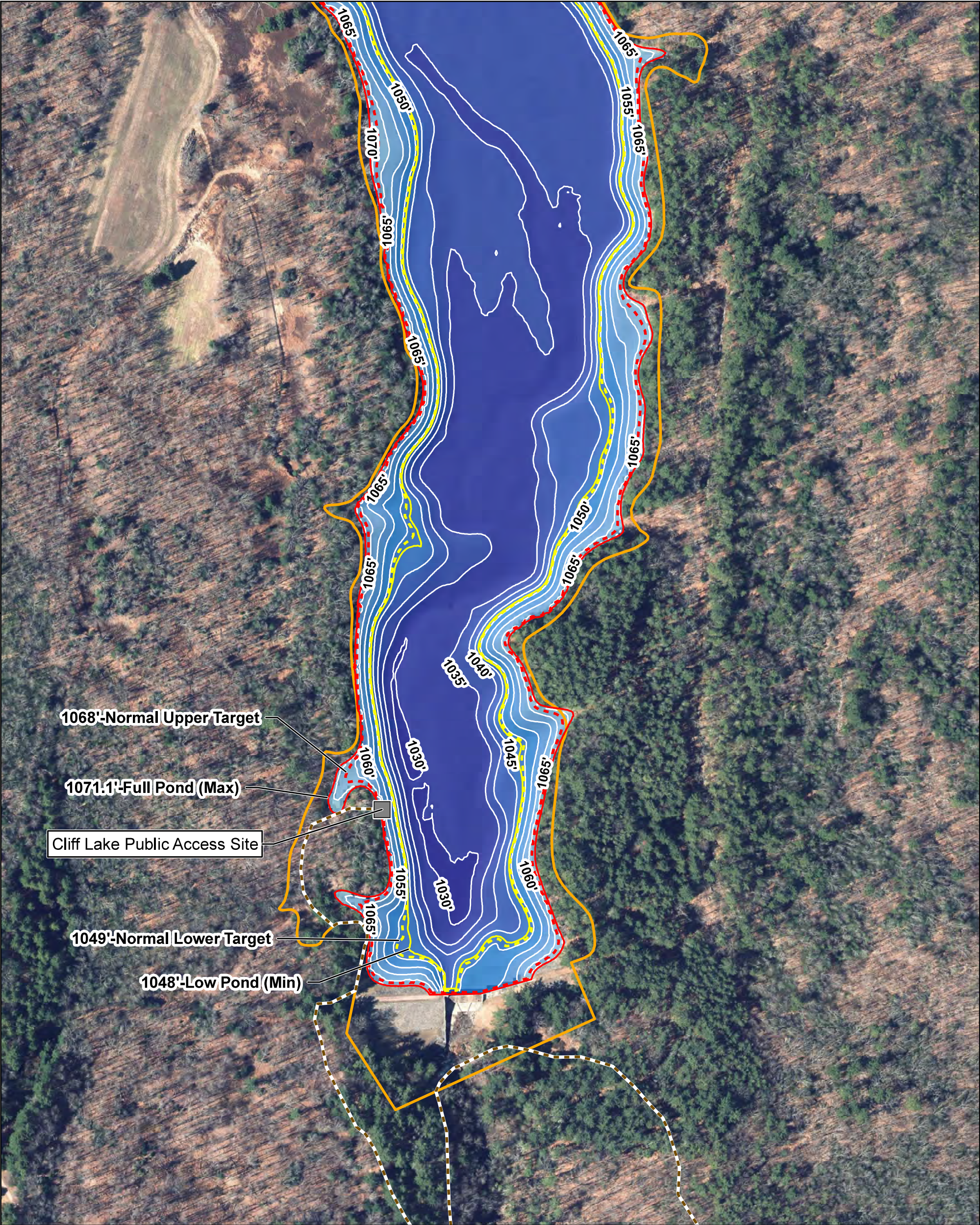
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



CLIFF LAKE RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 3 OF 4
(FERC NO. 10482)



LEGEND

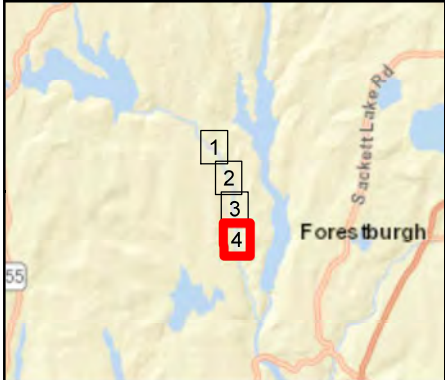
- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1071.1'- Full Pond (Max)
 - 1068.0'- Normal Upper Target
 - 1049.0'- Normal Lower Target
 - 1048.0'- Low Pond (Min)

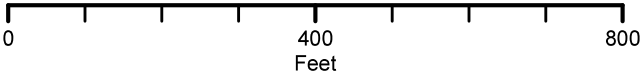
- Cliff Lake Bathymetry
Elevation (NGVD29 ft.)
- 1,028.3' - 1,030'
 - 1,030.0' - 1,035'
 - 1,035.0' - 1,040'
 - 1,040.0' - 1,045'
 - 1,045.0' - 1,050'

- 1,050.0' - 1,055'
- 1,055.0' - 1,060'
- 1,060.0' - 1,065'
- 1,065.0' - 1,070'
- 1,070.0' - 1,075'
- 1,075.0' - 1,080'

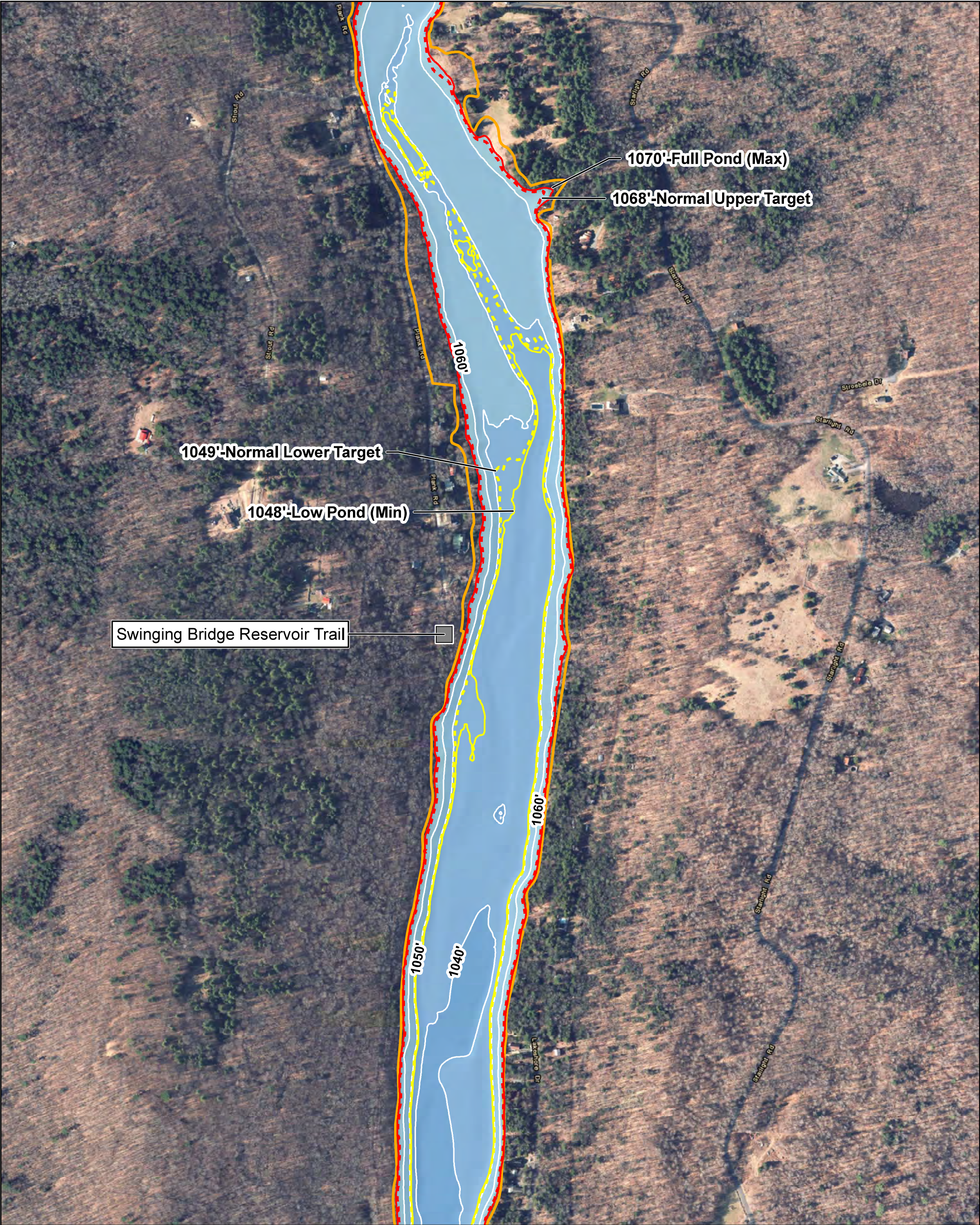
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



CLIFF LAKE RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 4 OF 4
(FERC NO. 10482)



LEGEND

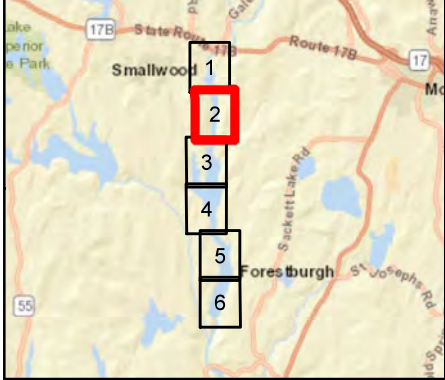
- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1070.0' - Full Pond (Max)
 - 1068.0' - Normal Upper Target
 - 1049.0' - Normal Lower Target
 - 1048.0' - Low Pond (Min)

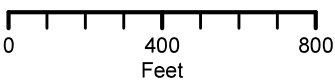
- Swinging Bridge Bathymetry
Elevation (NGVD29 ft.)
- 947.9' - 950.0'
 - 950.0' - 960.0'
 - 960.0' - 970.0'
 - 970.0' - 980.0'
 - 980.0' - 990.0'
 - 990.0' - 1,000.0'

- 1,000.0' - 1,010.0'
- 1,010.0' - 1,020.0'
- 1,020.0' - 1,030.0'
- 1,030.0' - 1,040.0'
- 1,040.0' - 1,050.0'
- 1,050.0' - 1,060.0'
- 1,060.0' - 1,070.0'
- 1,070.0' - 1,080.0'

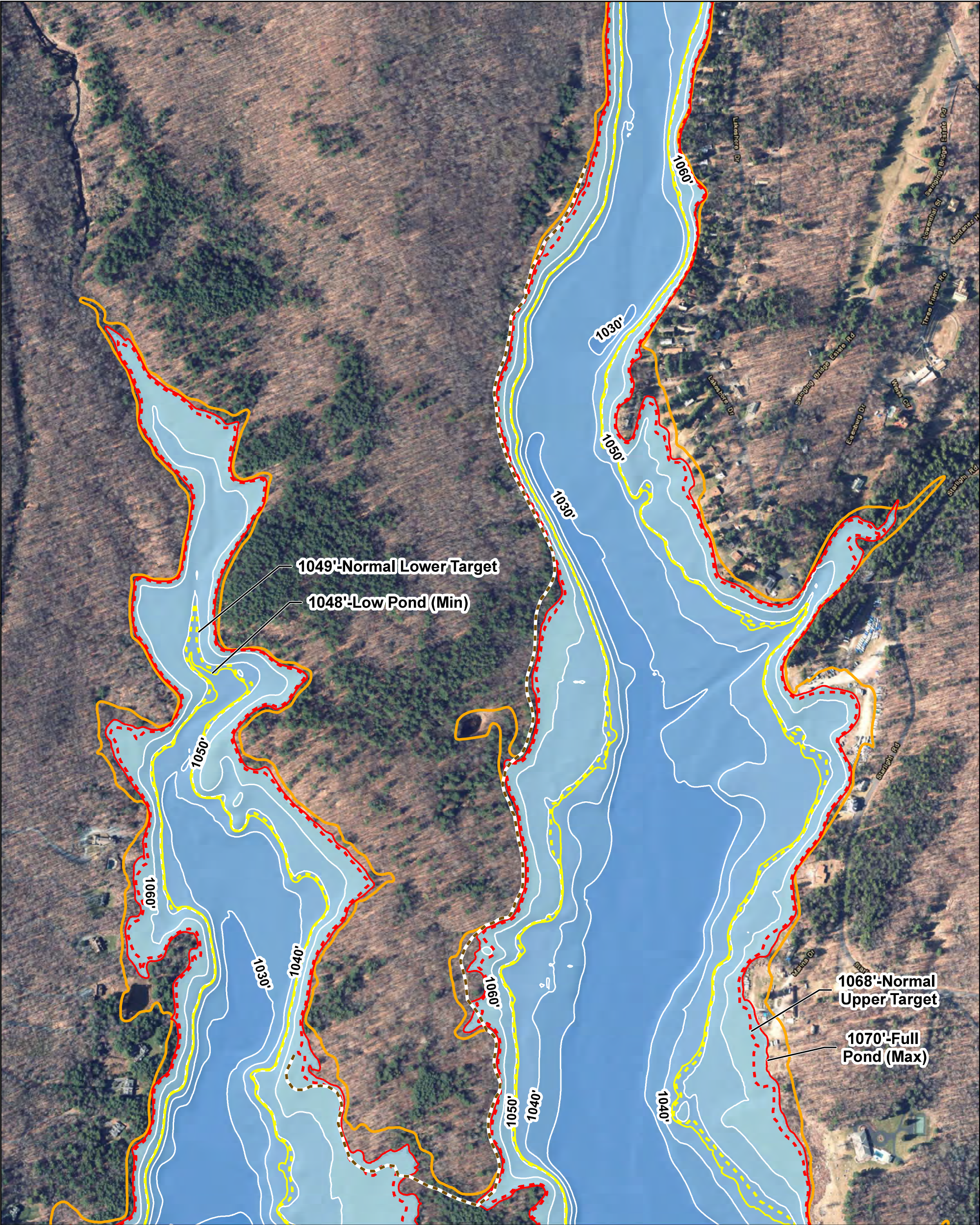
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



SWINGING BRIDGE RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 2 OF 6
(FERC NO. 10482)



LEGEND

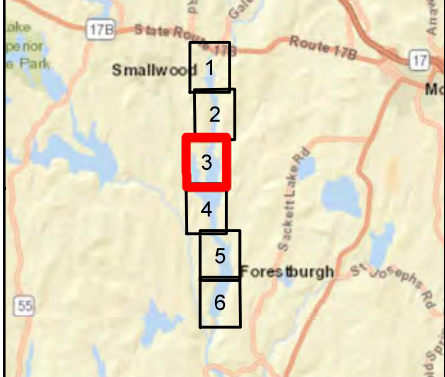
- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

Key Reservoir Elevations	
Contour (NGVD29 ft.)	
1070.0' - Full Pond (Max)	
1068.0' - Normal Upper Target	
1049.0' - Normal Lower Target	
1048.0' - Low Pond (Min)	

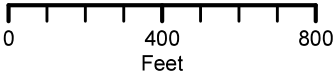
Swinging Bridge Bathymetry	
Elevation (NGVD29 ft.)	
947.9' - 950.0'	
950.0' - 960.0'	
960.0' - 970.0'	
970.0' - 980.0'	
980.0' - 990.0'	
990.0' - 1,000.0'	

	1,000.0' - 1,010.0'
	1,010.0' - 1,020.0'
	1,020.0' - 1,030.0'
	1,030.0' - 1,040.0'
	1,040.0' - 1,050.0'
	1,050.0' - 1,060.0'
	1,060.0' - 1,070.0'
	1,070.0' - 1,080.0'

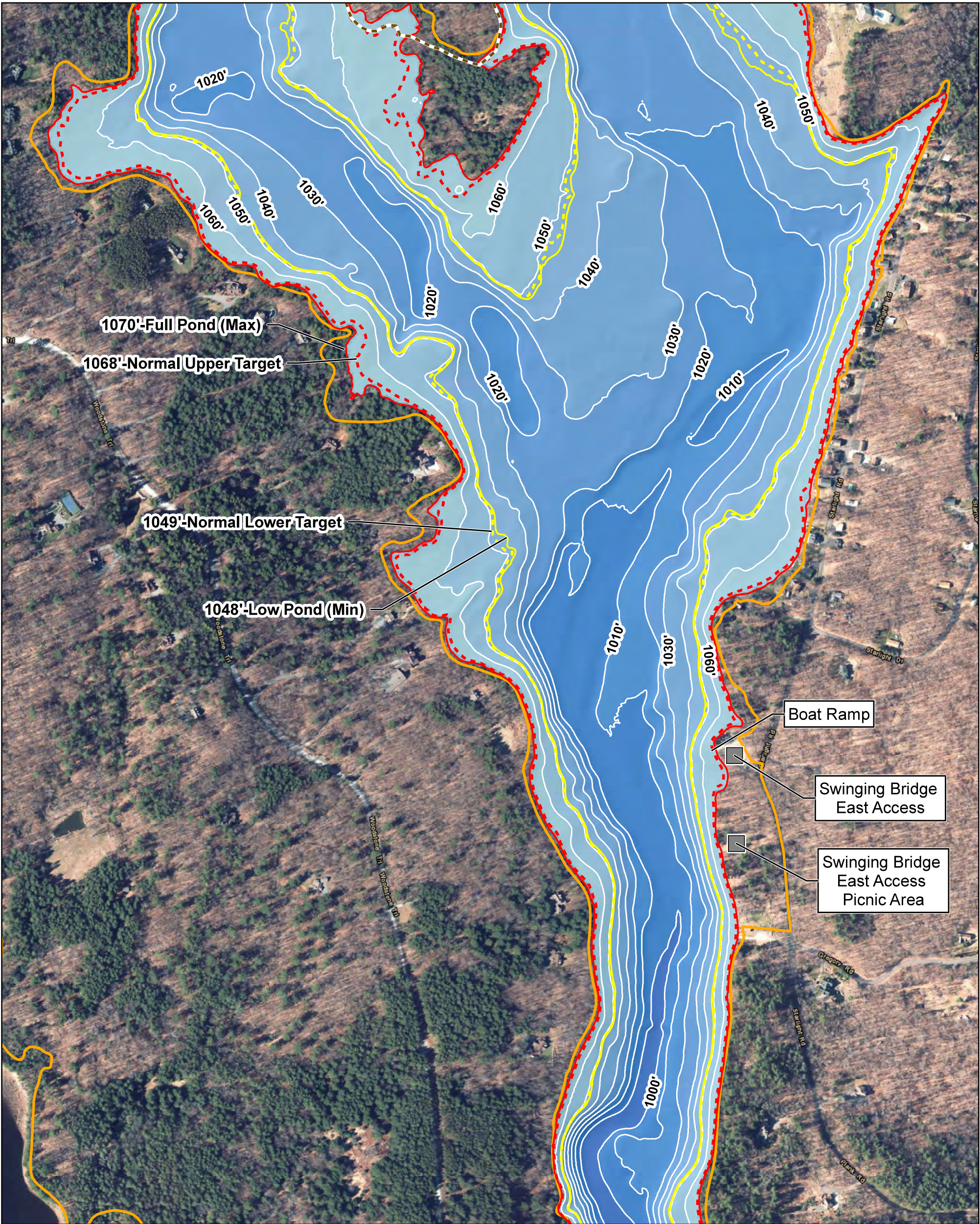
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



SWINGING BRIDGE RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 3 OF 6
(FERC NO. 10482)



LEGEND

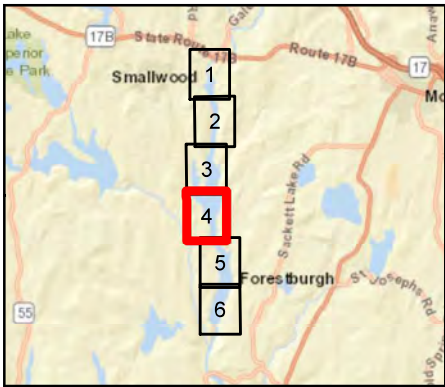
- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

Key Reservoir Elevations	
Contour (NGVD29 ft.)	
1070.0' - Full Pond (Max)	
1068.0' - Normal Upper Target	
1049.0' - Normal Lower Target	
1048.0' - Low Pond (Min)	

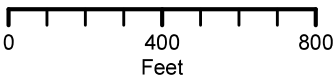
Swinging Bridge Bathymetry	
Elevation (NGVD29 ft.)	
947.9' - 950.0'	
950.0' - 960.0'	
960.0' - 970.0'	
970.0' - 980.0'	
980.0' - 990.0'	
990.0' - 1,000.0'	

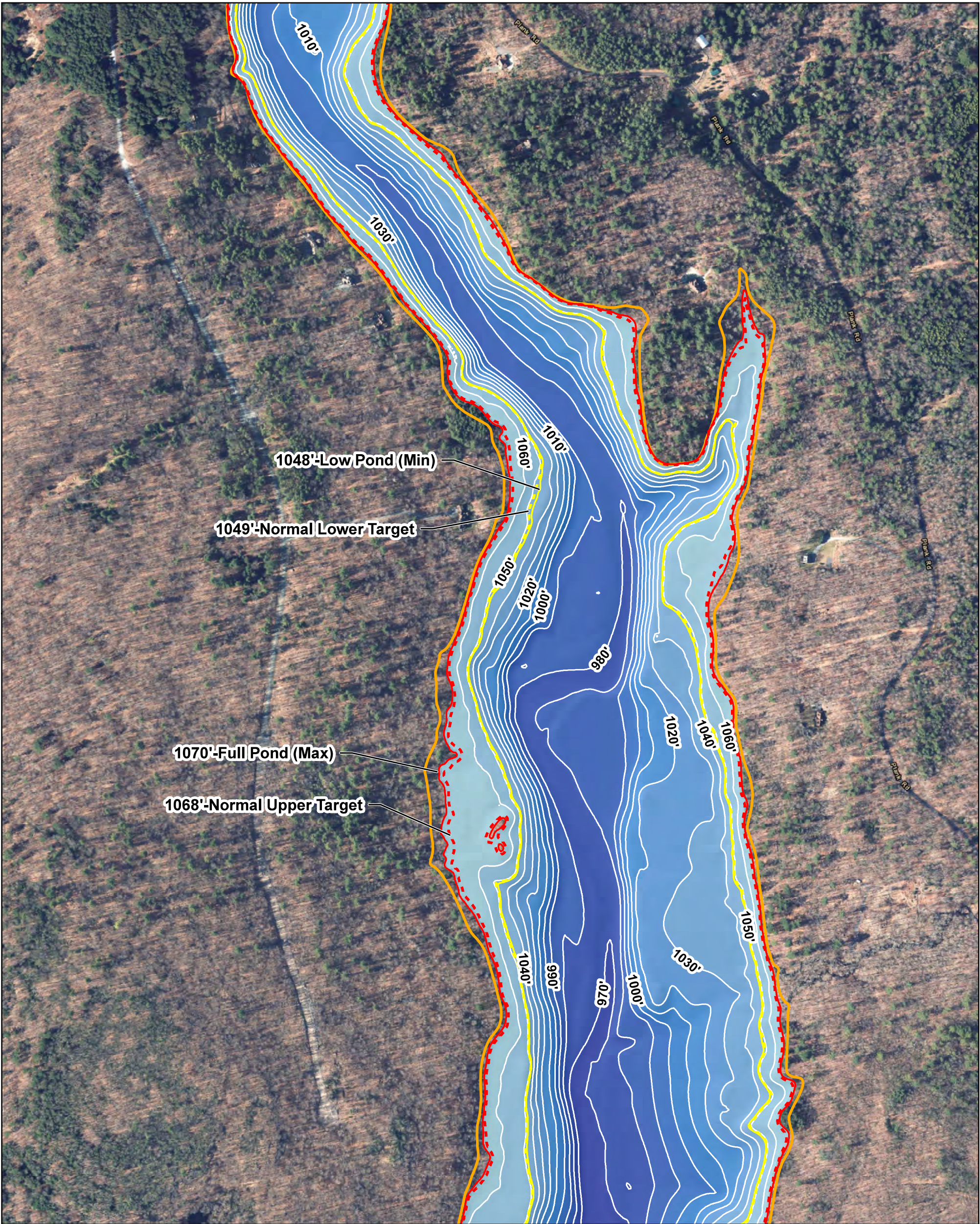
	1,000.0' - 1,010.0'
	1,010.0' - 1,020.0'
	1,020.0' - 1,030.0'
	1,030.0' - 1,040.0'
	1,040.0' - 1,050.0'
	1,050.0' - 1,060.0'
	1,060.0' - 1,070.0'
	1,070.0' - 1,080.0'

GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



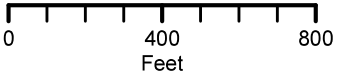
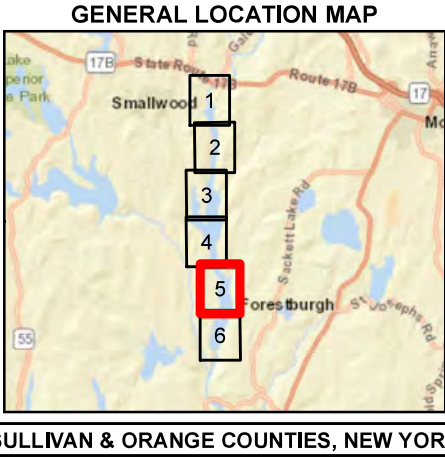


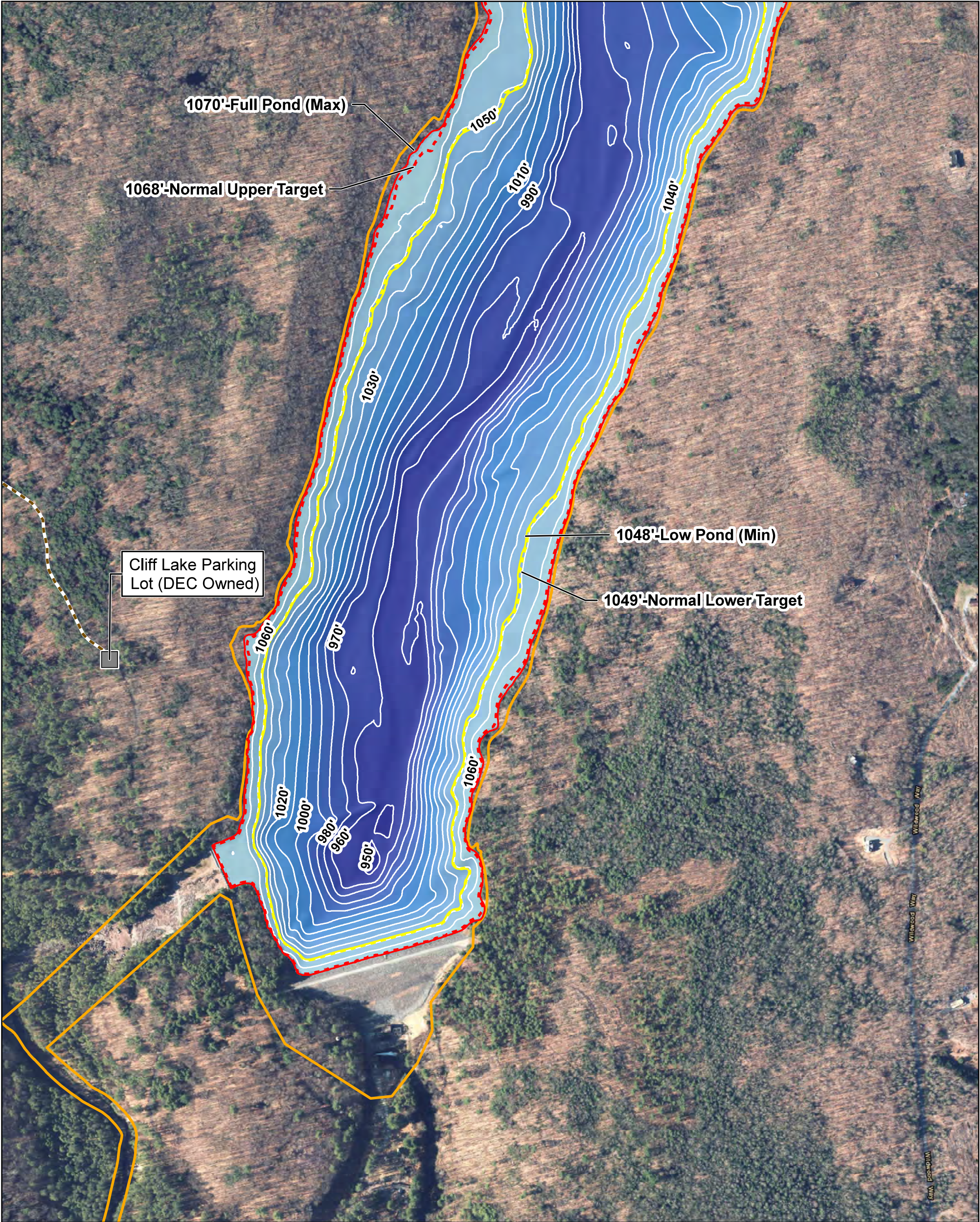
- LEGEND**
- Recreation Site
 - Recreation Trails
 - Contour (10 ft. Interval)
 - FERC Project Boundary

- Key Reservoir Elevations**
Contour (NGVD29 ft.)
- 1070.0' - Full Pond (Max)
 - 1068.0' - Normal Upper Target
 - 1049.0' - Normal Lower Target
 - 1048.0' - Low Pond (Min)

- Swinging Bridge Bathymetry**
Elevation (NGVD29 ft.)
- 947.9' - 950.0'
 - 950.0' - 960.0'
 - 960.0' - 970.0'
 - 970.0' - 980.0'
 - 980.0' - 990.0'
 - 990.0' - 1,000.0'

- 1,000.0' - 1,010.0'
- 1,010.0' - 1,020.0'
- 1,020.0' - 1,030.0'
- 1,030.0' - 1,040.0'
- 1,040.0' - 1,050.0'
- 1,050.0' - 1,060.0'
- 1,060.0' - 1,070.0'
- 1,070.0' - 1,080.0'





LEGEND

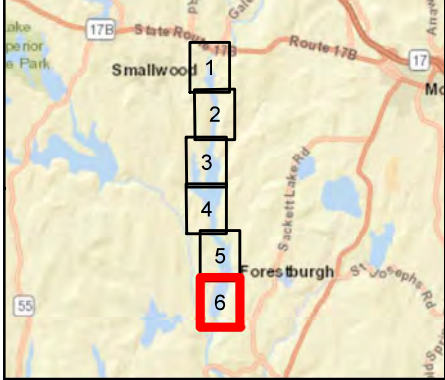
- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 1070.0' - Full Pond (Max)
 - 1068.0' - Normal Upper Target
 - 1049.0' - Normal Lower Target
 - 1048.0' - Low Pond (Min)

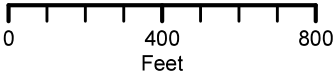
- Swinging Bridge Bathymetry
Elevation (NGVD29 ft.)
- 947.9' - 950.0'
 - 950.0' - 960.0'
 - 960.0' - 970.0'
 - 970.0' - 980.0'
 - 980.0' - 990.0'
 - 990.0' - 1,000.0'

- 1,000.0' - 1,010.0'
- 1,010.0' - 1,020.0'
- 1,020.0' - 1,030.0'
- 1,030.0' - 1,040.0'
- 1,040.0' - 1,050.0'
- 1,050.0' - 1,060.0'
- 1,060.0' - 1,070.0'
- 1,070.0' - 1,080.0'

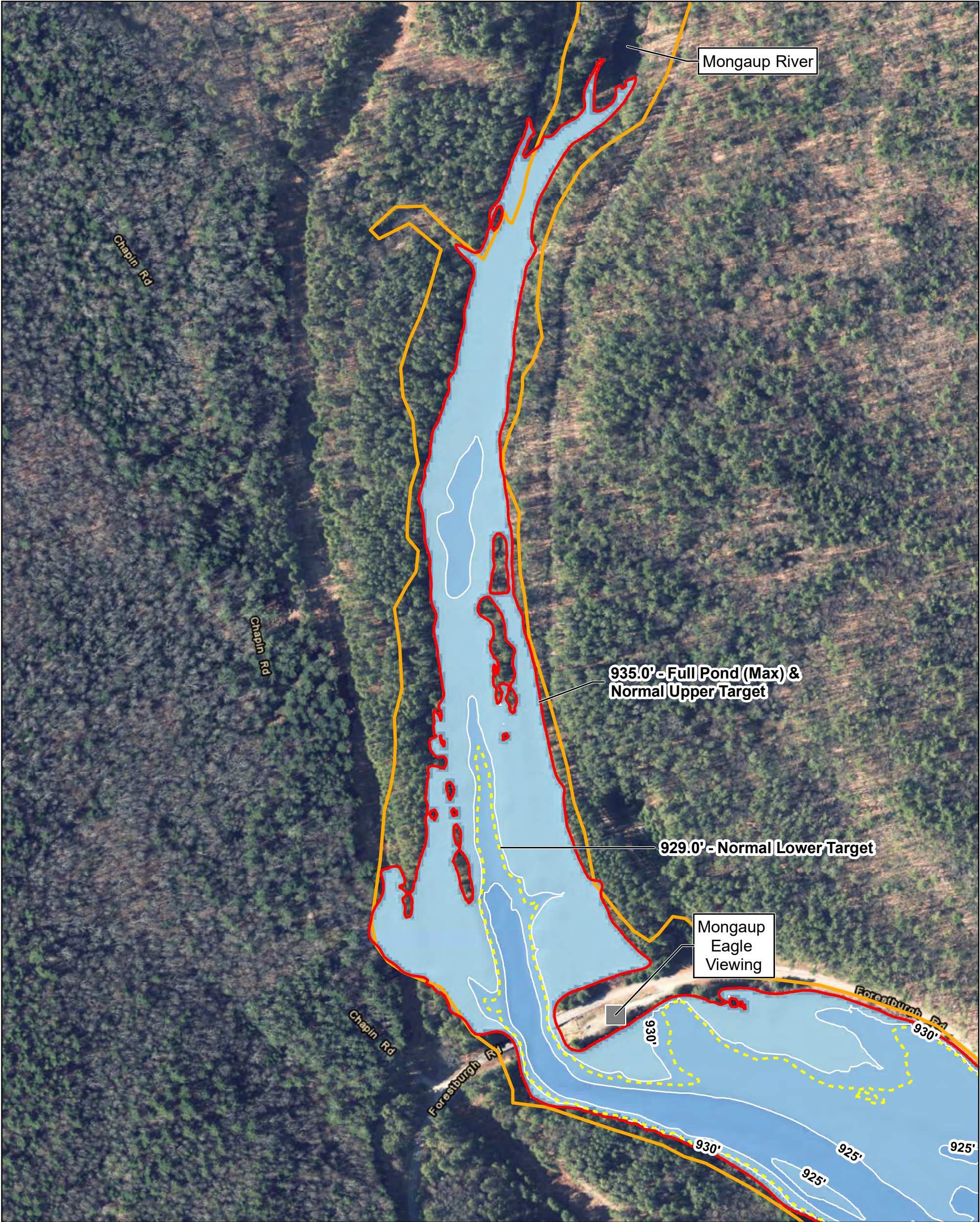
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



SWINGING BRIDGE RESERVOIR BATHYMETRY
SWINGING BRIDGE HYDROELECTRIC PROJECT
SHEET 6 OF 6
(FERC NO. 10482)



LEGEND

- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

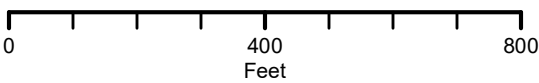
- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 935.0' - Full Pond (Max) & Normal Upper Target
 - 929.0' - Normal Lower Target
 - 910.0' - Low Pond (Min)

- Monpaup Bathymetry
Elevation (NGVD29 ft.)
- 910.0' - 915.0'
 - 915.0' - 920.0'
 - 920.0' - 925.0'
 - 925.0' - 930.0'
 - 930.0' - 935.0'
 - 893.6' - 895.0'
 - 895.0' - 900.0'
 - 900.0' - 905.0'
 - 905.0' - 910.0'

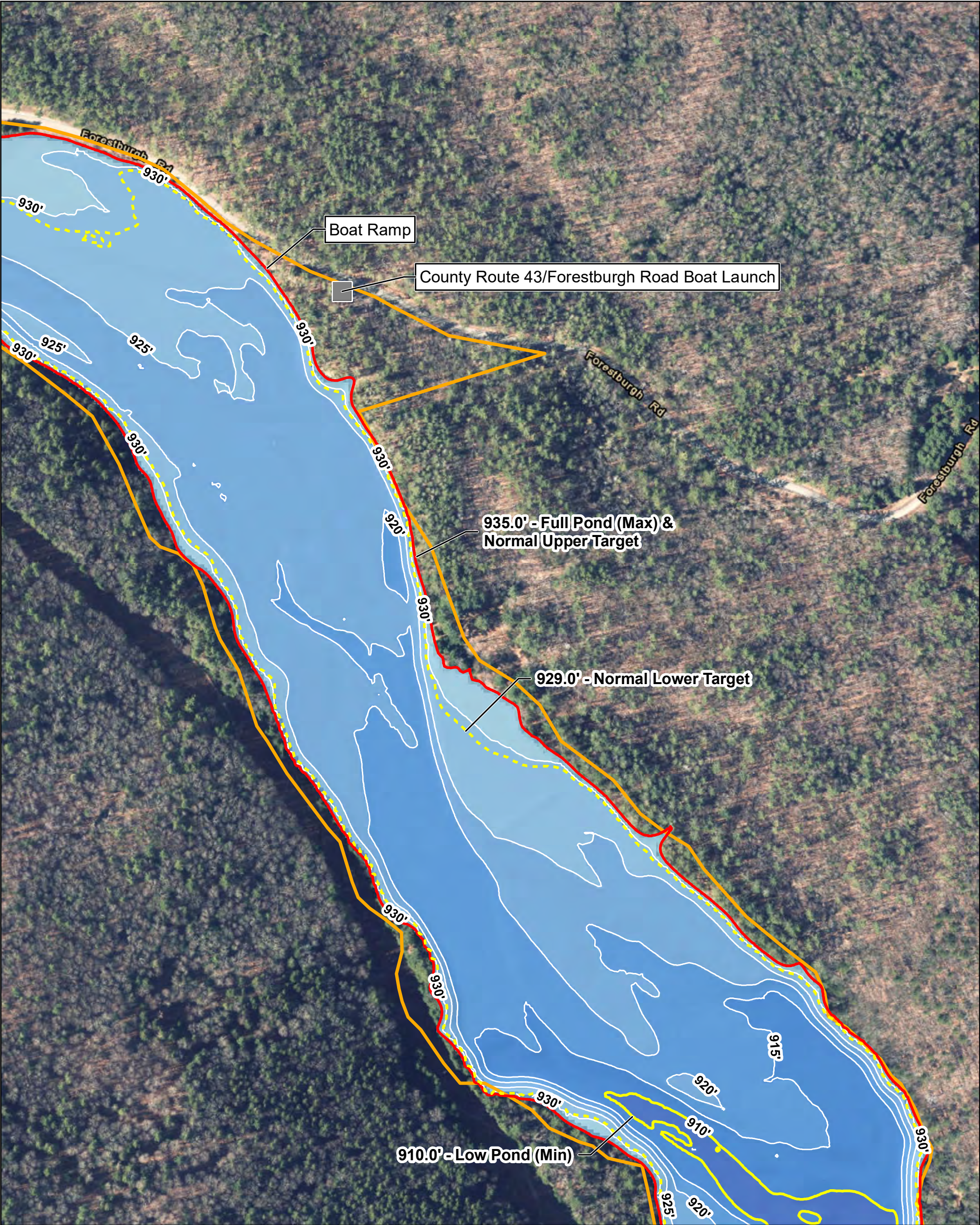
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



MONGAUP FALLS RESERVOIR BATHYMETRY
MONGAUP FALLS HYDROELECTRIC PROJECT
SHEET 1 OF 3
(FERC NO. 10481)



LEGEND

- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

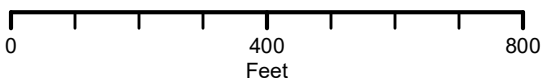
- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 935.0' - Full Pond (Max) & Normal Upper Target
 - 929.0' - Normal Lower Target
 - 910.0' - Low Pond (Min)

- Monpaup Bathymetry
Elevation (NGVD29 ft.)
- 910.0' - 915.0'
 - 915.0' - 920.0'
 - 920.0' - 925.0'
 - 925.0' - 930.0'
 - 930.0' - 935.0'
 - 893.6' - 895.0'
 - 895.0' - 900.0'
 - 900.0' - 905.0'
 - 905.0' - 910.0'

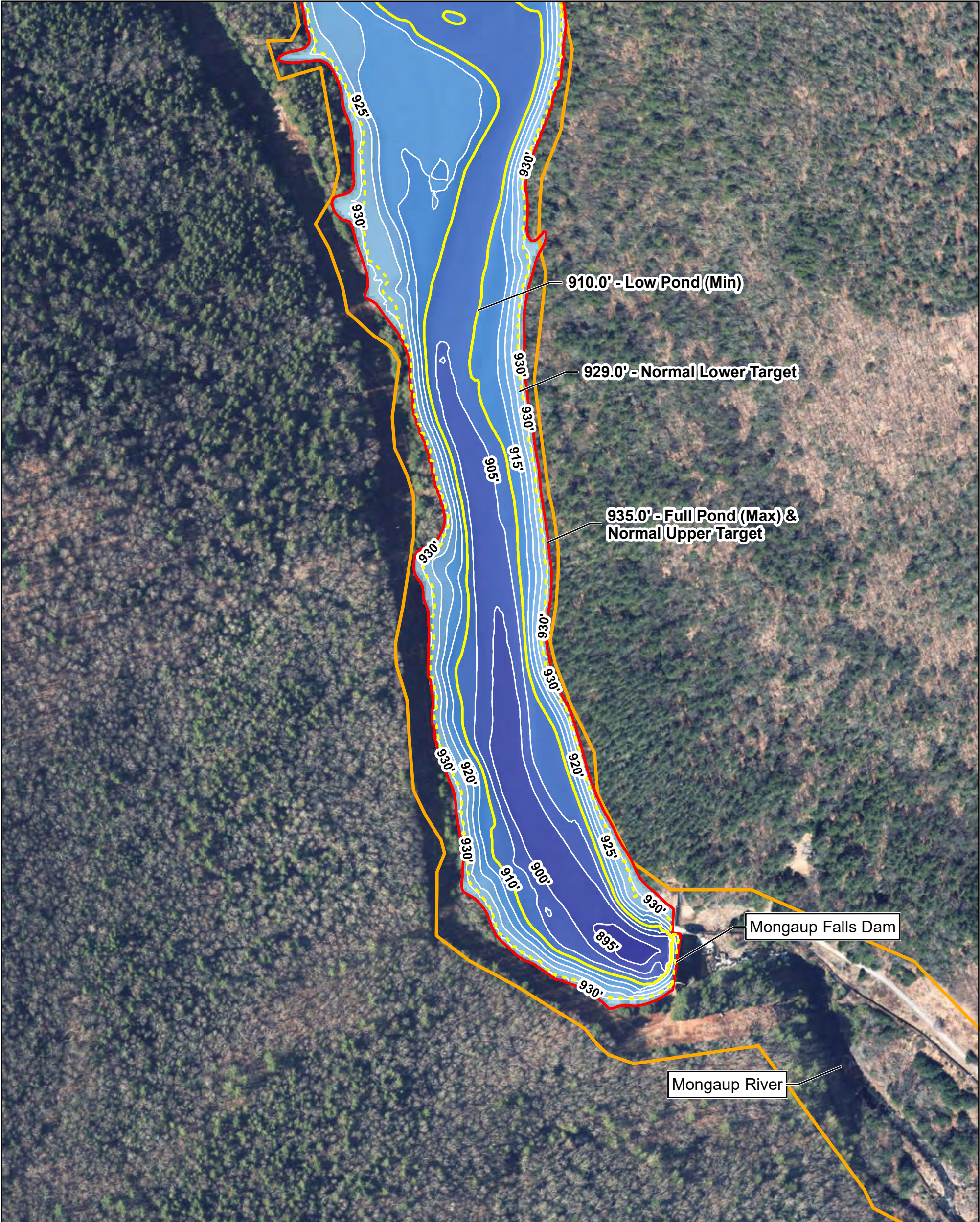
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



MONGAUP FALLS RESERVOIR BATHYMETRY
MONGAUP FALLS HYDROELECTRIC PROJECT
SHEET 2 OF 3
(FERC NO. 10481)



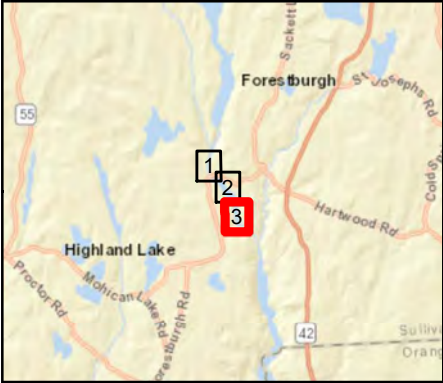
LEGEND

- Recreation Site
- Recreation Trails
- Contour (5 ft. Interval)
- FERC Project Boundary

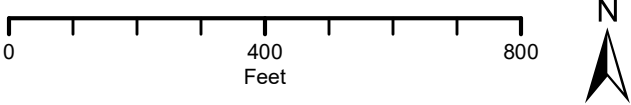
- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 935.0' - Full Pond (Max) & Normal Upper Target
 - 929.0' - Normal Lower Target
 - 910.0' - Low Pond (Min)

- Mongaup Bathymetry
Elevation (NGVD29 ft.)
- 910.0' - 915.0'
 - 915.0' - 920.0'
 - 920.0' - 925.0'
 - 925.0' - 930.0'
 - 930.0' - 935.0'
 - 893.6' - 895.0'
 - 895.0' - 900.0'
 - 900.0' - 905.0'
 - 905.0' - 910.0'

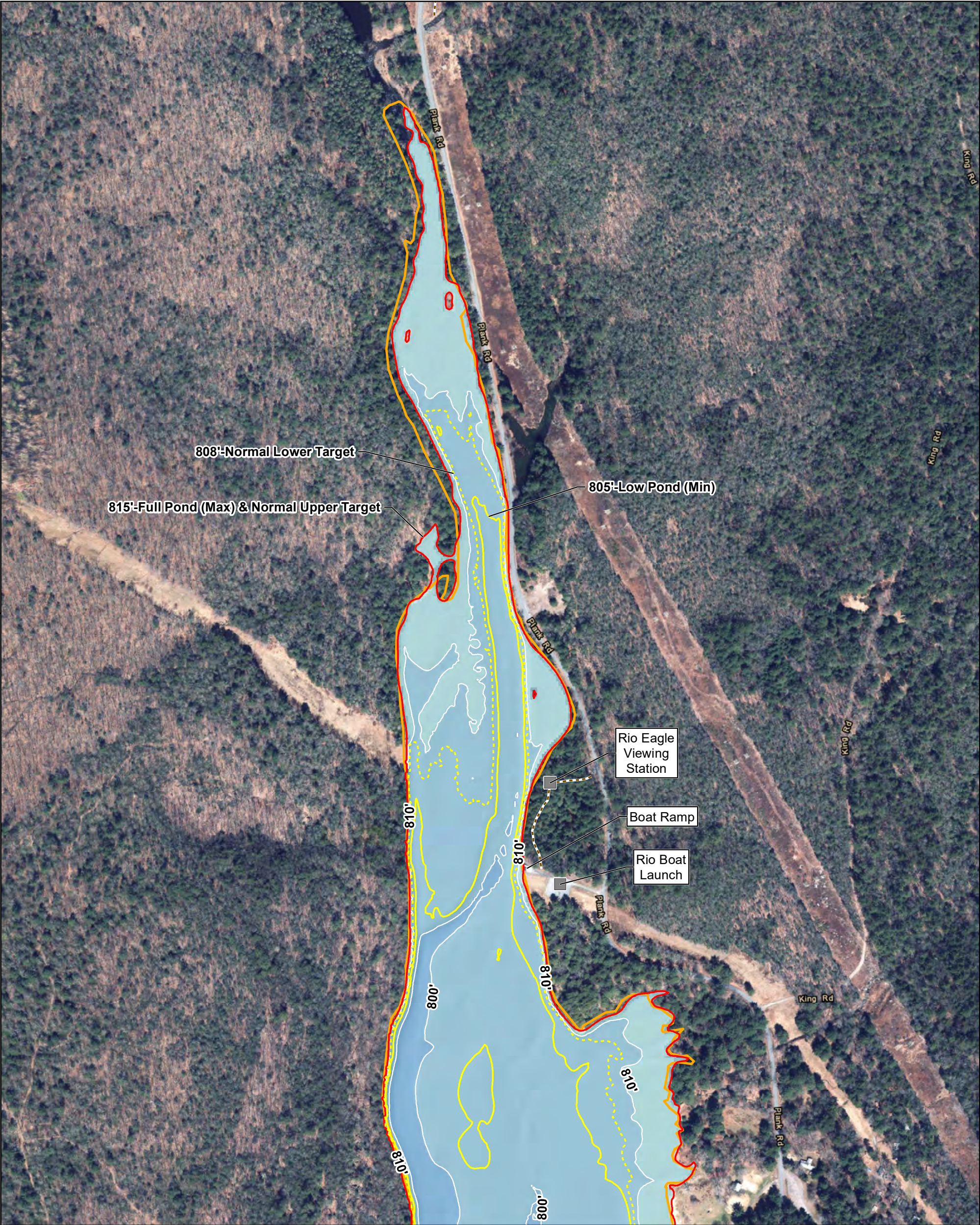
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



MONGAUP FALLS RESERVOIR BATHYMETRY
MONGAUP FALLS HYDROELECTRIC PROJECT
SHEET 3 OF 3
(FERC NO. 10481)



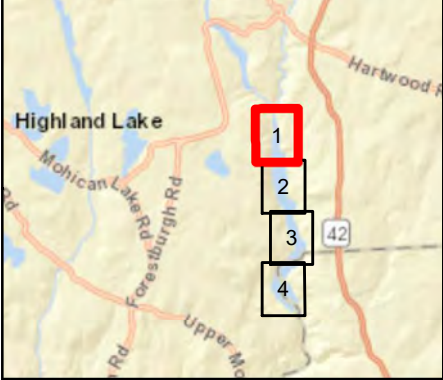
LEGEND

- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

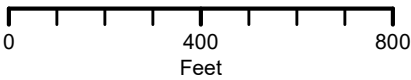
- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 815.0' - Full Pond (Max) & Normal Upper Target
 - 808.0' - Normal Lower Target
 - 805.0' - Low Pond (Min)

- Rio Bathymetry
Elevation (NGVD29 ft.)
- 723.1' - 730.0'
 - 730.0' - 740.0'
 - 740.0' - 750.0'
 - 750.0' - 760.0'
 - 760.0' - 770.0'
 - 770.0' - 780.0'
 - 780.0' - 790.0'
 - 790.0' - 800.0'
 - 800.0' - 810.0'
 - 810.0' - 820.0'

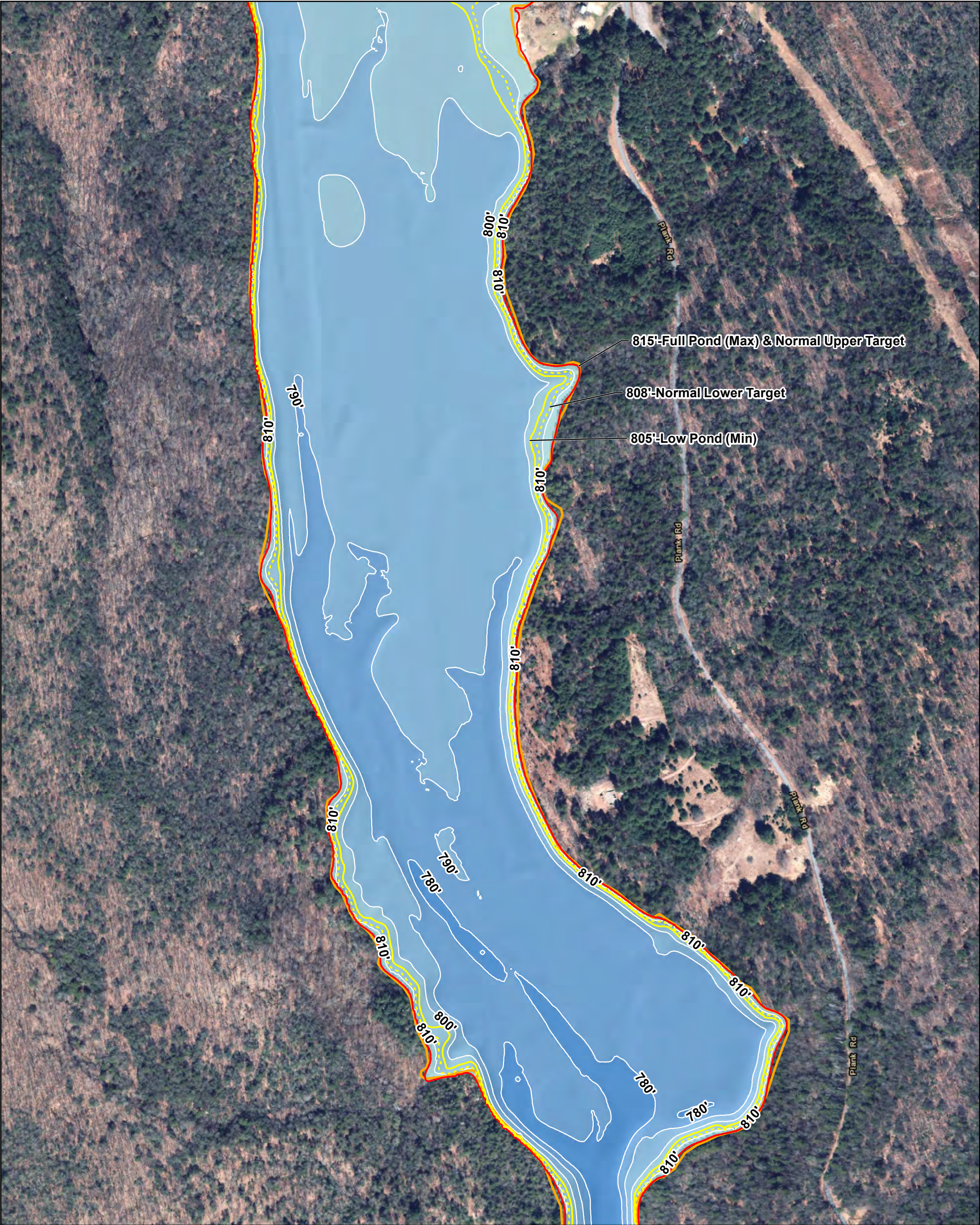
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



RIO RESERVOIR BATHYMETRY
RIO HYDROELECTRIC PROJECT
SHEET 1 OF 4 (FERC NO. 9690)



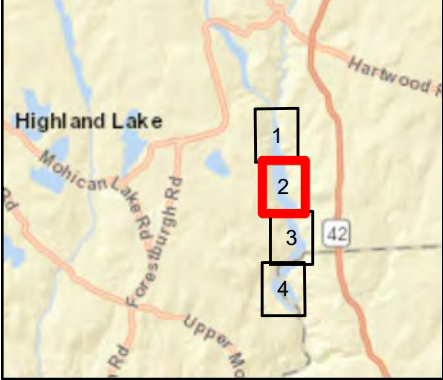
LEGEND

- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

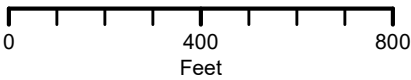
- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 815.0' - Full Pond (Max) & Normal Upper Target
 - 808.0' - Normal Lower Target
 - 805.0' - Low Pond (Min)

- Rio Bathymetry
Elevation (NGVD29 ft.)
- 760.0' - 770.0'
 - 770.0' - 780.0'
 - 780.0' - 790.0'
 - 790.0' - 800.0'
 - 800.0' - 810.0'
 - 810.0' - 820.0'

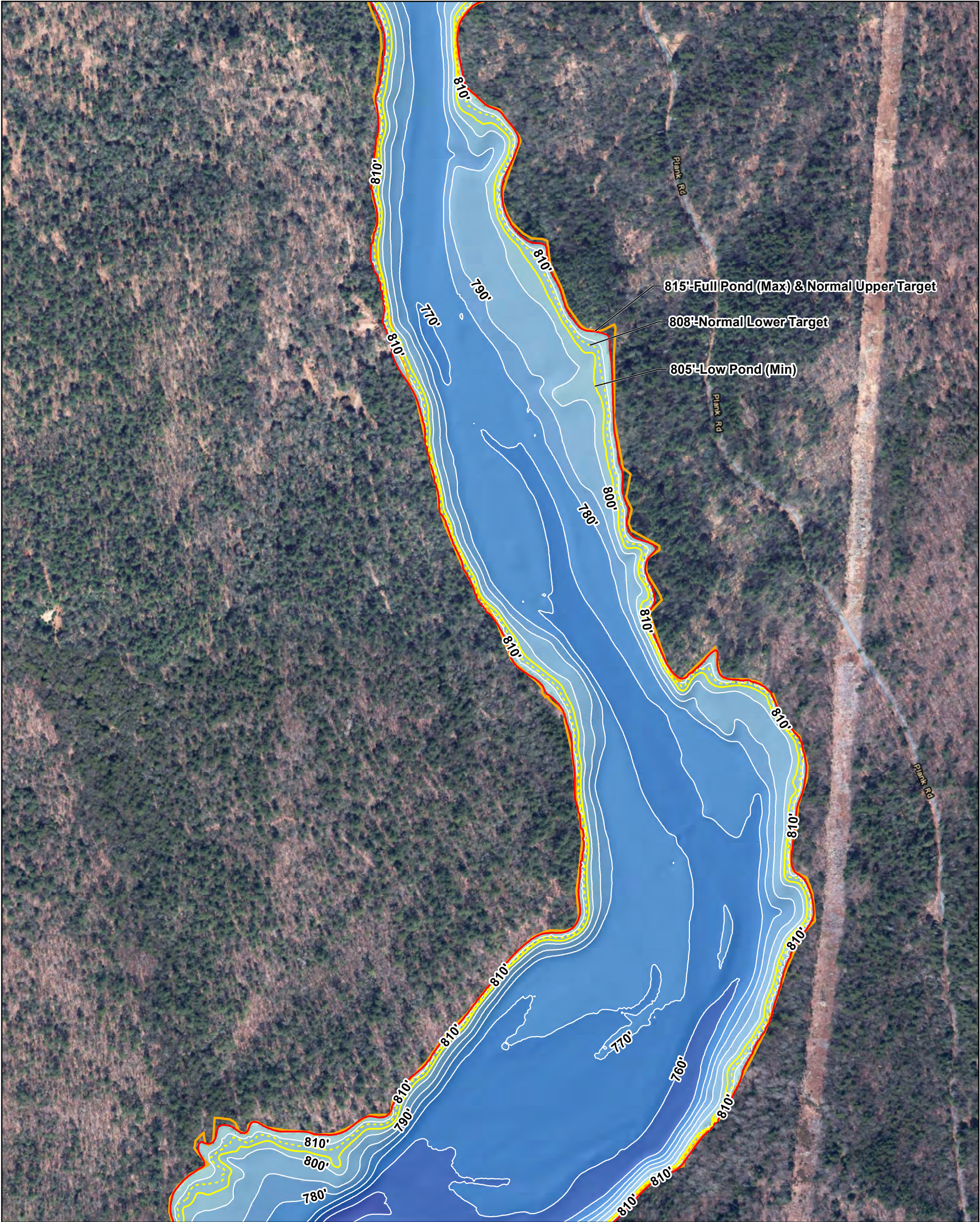
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



RIO RESERVOIR BATHYMETRY
RIO HYDROELECTRIC PROJECT
SHEET 2 OF 4 (FERC NO. 9690)



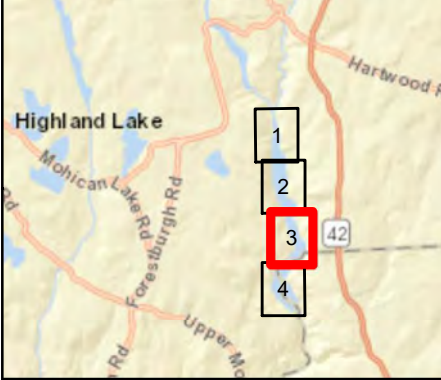
LEGEND

- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

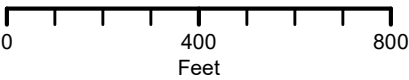
- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 815.0' - Full Pond (Max) & Normal Upper Target
 - 808.0' - Normal Lower Target
 - 805.0' - Low Pond (Min)

- Rio Bathymetry
Elevation (NGVD29 ft.)
- 723.1' - 730.0'
 - 730.0' - 740.0'
 - 740.0' - 750.0'
 - 750.0' - 760.0'
 - 760.0' - 770.0'
 - 770.0' - 780.0'
 - 780.0' - 790.0'
 - 790.0' - 800.0'
 - 800.0' - 810.0'
 - 810.0' - 820.0'

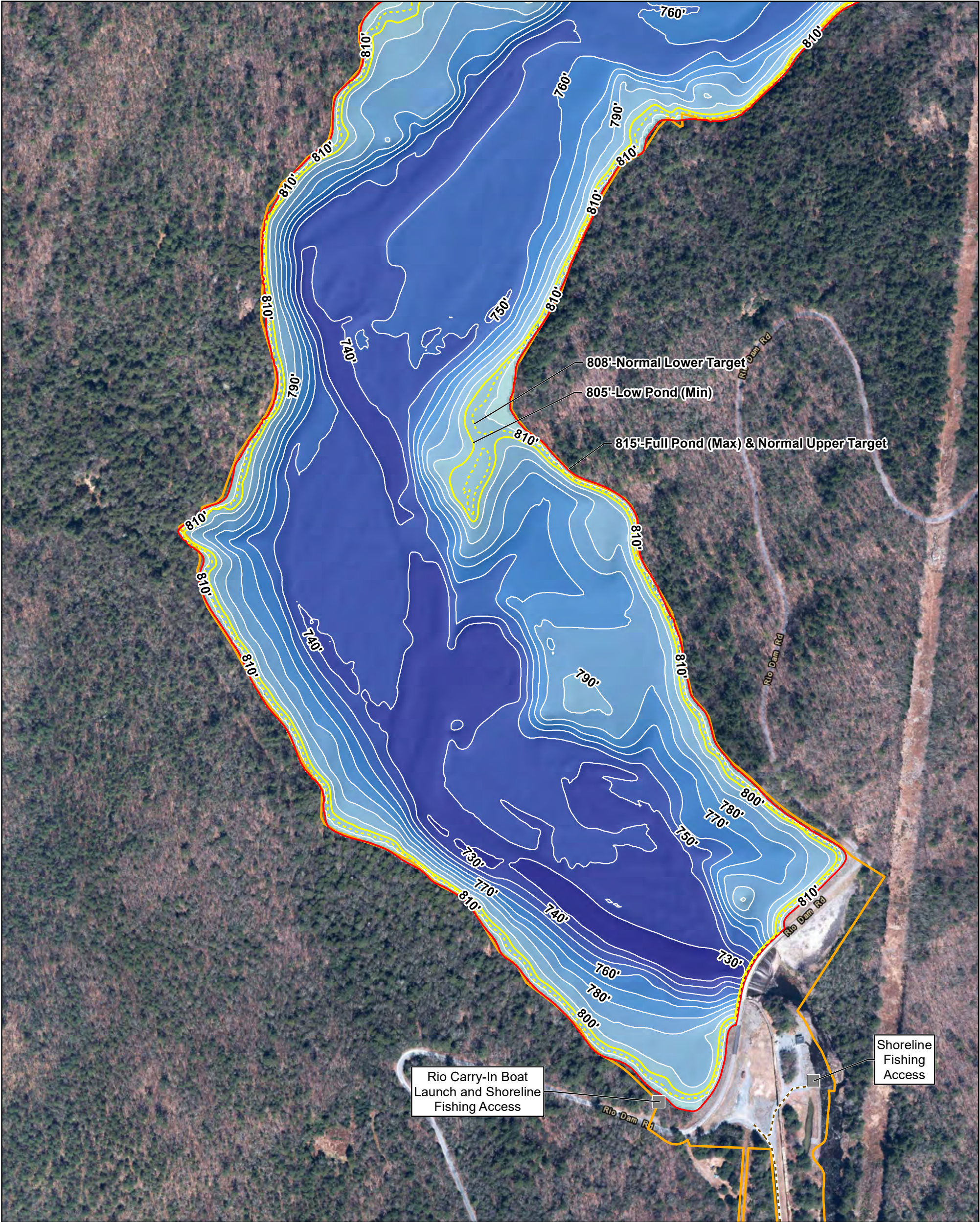
GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



RIO RESERVOIR BATHYMETRY
RIO HYDROELECTRIC PROJECT
SHEET 3 OF 4 (FERC NO. 9690)



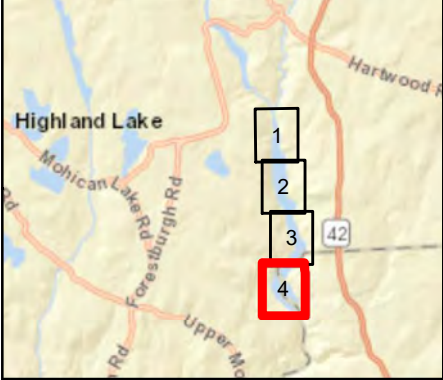
LEGEND

- Recreation Site
- Recreation Trails
- Contour (10 ft. Interval)
- FERC Project Boundary

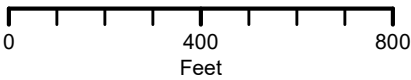
- Key Reservoir Elevations
Contour (NGVD29 ft.)
- 815.0' - Full Pond (Max) & Normal Upper Target
 - 808.0' - Normal Lower Target
 - 805.0' - Low Pond (Min)

- Rio Bathymetry
Elevation (NGVD29 ft.)
- 760.0' - 770.0'
 - 770.0' - 780.0'
 - 780.0' - 790.0'
 - 790.0' - 800.0'
 - 800.0' - 810.0'
 - 810.0' - 820.0'
 - 723.1' - 730.0'
 - 730.0' - 740.0'
 - 740.0' - 750.0'
 - 750.0' - 760.0'

GENERAL LOCATION MAP



SULLIVAN & ORANGE COUNTIES, NEW YORK



RIO RESERVOIR BATHYMETRY
RIO HYDROELECTRIC PROJECT
SHEET 4 OF 4 (FERC NO. 9690)