

# **2011 SCHOHARIE CREEK BASIN FLOODING**

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## **Site Reconnaissance and Flood Evaluation**

*Prepared for:*  
New York Power Authority

*Prepared by:*  
Gomez and Sullivan Engineers, P.C.  
288 Genesee Street  
Utica, NY 13502

**May 2012**

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- Field Reconnaissance Survey (D.L. Mowers Land Surveyors, September-November 2011)
- Survey Photographs
- GIS Shapefile for Meteorology Data
- Report (Including Figures in Low Resolution Format for Printing)

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## INTRODUCTION/BACKGROUND

Following Tropical Storm Irene, Gomez and Sullivan Engineers, P.C. was hired by the New York Power Authority (NYPA) to perform a post-flood assessment of the Blenheim-Gilboa Lower Reservoir Dam and the Vischer Ferry Dam, which were previously provided to NYPA under separate letters dated September 7, 2011.

Additionally, NYPA requested that a flood reconnaissance study be performed for the Schoharie Creek. A similar study was performed following historic flooding that occurred along the Schoharie Creek in January 1996. The 1996 Report (*Site Reconnaissance and Flood Evaluation* by Acres, October 1996) presented a description of the flooding and photographs of the high water marks that had been observed in North Blenheim, Boucks Island, Middleburgh, Schoharie, Central Bridge and Priddle Camp.

A larger area was investigated for this 2011 field reconnaissance study. The 2011 flooding was more significant than the flooding experienced in 1996 and impacted the New York State Canal Corporation (NYSCC) Lock Structures located between the confluence of the Schoharie Creek with the Mohawk River (near Fort Hunter, NY) and the confluence of the Mohawk River with the Hudson River (near Cohoes, NY). The 2011 field reconnaissance study investigated the flooding that occurred along the Schoharie Creek from Hunter, NY (the upstream limit of the study) downstream to its confluence with the Mohawk River. The 2011 study also investigated three major tributaries to the Schoharie Creek upstream of the Blenheim-Gilboa Power Plant (Batavia Kill, East Kill and West Kill) and the reach of the Mohawk River between Fort Hunter, NY and Cohoes, NY.

Additionally, advancements in GPS survey technology over the past 15 years have allowed for large amounts of survey data over a greater area to be captured more efficiently. For the 1996 study, identified high water marks were photographed and the elevations were presented in the study based on local landmarks (i.e. – high water elevation estimates were presented relative to top of road or first floor elevation of a residence). For this 2011 field reconnaissance study, the identified high water marks were located horizontally and vertically during the survey (horizontal datum: NAD 1983, NYS Plane, East Zone; vertical datum: NAVD 1988). The survey is provided as an AutoCAD file on the CD-ROM included with this report (Appendix A). The Appendix A CD-ROM also includes survey photographs, an electronic copy of this report (\*.pdf format), a copy of the figures in low resolution format for easier printing and the meteorology shapefile. A description of each survey point recorded for this study is included in Appendix B.

Common high water locations between the 1996 and 2011 flooding were located in Middleburgh, Schoharie and Esperance. The high water level in Middleburgh was approximately 3.8 feet higher during the 2011 flooding than the 1996 flooding. In Esperance, the 2011 flood high water was estimated to be 6.8 feet higher than during the 1996 flooding. The flooding in Schoharie was at least 5 feet higher in 2011 than in 1996, based on the high water marks estimated at Lassell Hall.

## **HYDROLOGIC INFORMATION**

### **General Hydrologic Information for the Blenheim-Gilboa Dam**

The Blenheim-Gilboa Lower Reservoir dam is located on the Schoharie Creek near Blenheim, NY. The Schoharie Creek flows north through the Catskill Mountains to its confluence with the Mohawk River near Fort Hunter, NY. The Schoharie Creek is one of the major rivers in the Catskill Mountain Region.

The Blenheim-Gilboa Lower Reservoir drainage basin is approximately 355.6 square miles in area. Figure 1 presents the drainage basin with points of interest highlighted.

### **Hurricane/Tropical Storm Irene**

#### **General**

Hurricane Irene was the first major hurricane of the 2011 Atlantic hurricane season. The hurricane initially made landfall on August 21 at Category I strength in Puerto Rico. Irene made landfall in the continental United States on August 27, in North Carolina. During its course through the Bahamas, North Carolina, back out to sea and then into New Jersey, New York and across New England. Irene strengthened to Category III status then weakened in degrees to Category I, tropical storm and then extratropical cyclone. The extratropical cyclone continued northeast over Labrador and into the Labrador Sea.

Tropical Storm Irene heavily impacted the northeast, but particularly New York and Vermont. Many roads were completely washed away, leaving sudden drop-offs where extensive areas of bank were eroded by the flood waters. In New York State, historic flooding occurred along the Schoharie Creek and its tributaries (West Kill, East Kill, Batavia Kill), causing extensive flood damage in several communities along these streams. Over the 84 hour period studied, an average of 8.4 inches of rain accumulated over the Blenheim-Gilboa Lower Reservoir drainage basin.

#### **Meteorological Study**

For this study, precipitation data was obtained from the National Weather Service (NWS) River Forecast Center (RFC). The precipitation data is described as “quality-controlled, multi-sensor (radar and rain gauge) precipitation estimates” on the NWS webpage. The data is presented in the Hydrologic Rainfall Analysis Project (HRAP) grid coordinate system, which is a polar stereographic projection true at 60°N latitude, 105°W longitude. Grid cells were estimated based on the location of the grid coordinates, approximately 2.6 miles by 2.6 miles. Estimated rainfall information from each point was assumed to be applicable over the grid cell assumed for each point. The dataset provides evenly spaced hourly precipitation estimates which are derived from radar based rainfall data with adjustments made based on rain gauge data. This dataset has a much finer spatial resolution than the rain gauges themselves provide, therefore providing a better estimate of the spatial variability of the precipitation.

Hourly rainfall data was available for each point. For the review of the meteorology for this study, hourly rainfall was reviewed from 12PM GMT (midnight) August 25, 2011 through

12AM (noon) August 29, 2011 (84 hours). A hyetograph for the Blenheim-Gilboa Lower Reservoir drainage basin from 12PM August 25 through 12AM August 29 was developed from the RFC information collected. The hyetograph presented in Figure 2 and Table 1 was developed based on a weighted average of the rainfall during each hour over the basin.

As noted above, the rainfall points obtained are configured in a gridded pattern spaced 2.6 miles apart (in both directions). Using a Thiessen polygon method, each point was found to have a square area of influence, which is 2.6 miles on each side and centered around the rainfall point.

The Blenheim-Gilboa Lower Reservoir drainage basin contains portions of the influence area for seventy-five (75) of the rainfall points. Weighting for each of the rainfall points was performed based on the ratio of the area of influence contained in the drainage basin area, compared to the entire drainage basin area.

Figure 3 presents the total rainfall over the basin during the 84 hours investigated for this study. The figure presents the location of each of the grid coordinates used in this meteorological study and the rainfall estimated at each location. The weighted average rainfall computed over the entire basin was 8.4 inches. The highest estimated rainfall was on the eastern edge of the basin, near Windham, NY. The total rainfall estimated at that point was 16.44 inches over the 84 hours studied.

Figures 4 through 7 present the rainfall data for each point on the dates of August 26<sup>th</sup>, 27<sup>th</sup>, 28<sup>th</sup> and 29<sup>th</sup>, respectively (considered between midnight and midnight, with the exception of August 29<sup>th</sup>, which only includes rainfall between midnight and noon). The figures indicate that a majority of the rainfall for the storm occurred on August 28<sup>th</sup>. The maximum estimated point rainfall on August 28<sup>th</sup> occurred on the eastern edge of the basin, near Windham, NY (estimated to be 15.87 inches over 24 hours). The weighted rainfall over the drainage basin for each of the days studied was <0.1 inches, 0.2 inches, 8.2 inches and <0.1 inches, respectively.

## **RECORD OF FLOODING**

Gomez and Sullivan Engineers teamed with D.L. Mowers Land Surveyors, LLC to locate high water marks observed along the Schoharie Creek following the Tropical Storm Irene flooding. The Power Authority provided the services of John Wingfield to the reconnaissance team. John is a resident of Middleburgh, NY and was involved in the 1996 Site Reconnaissance and Flood Evaluation study. John's knowledge of the area was invaluable in being able to promptly locate and chronicle high water marks before they could be lost.

The initial reconnaissance field visits occurred between August 30 and September 6, 2011. The goal of these initial site visits was to quickly identify apparent high water marks from the flooding and chronicle them to allow the surveyor to return later and capture the horizontal and vertical locations of the marks. High water marks were generally estimated based on mud lines observed on buildings, lines of debris (sticks, mud) observed on the ground (typically fields, yards, roadways) and areas where depressed vegetation was observed. At the locks on the Mohawk River, approximate high water marks during the 2011 flooding were noted with a black marker on the lock buildings. These noted high water marks appeared to be reasonable based on other observations made in the area of the locks, and were therefore assumed to be the approximate high water marks at the locks for this study. Additionally, we were able to speak to several local residents during our field reconnaissance visits, many who were able to confirm the approximate high water marks. The high water marks discussed in this report should not be considered as precise high water elevations, but rather approximations of the high water levels that had occurred during the August 2011 flooding.

During the initial reconnaissance field visits, the elevation of the observed high water marks were correlated relative to a more permanent marker (either benchmarks located in the area or PK nails driven into pavement or telephone poles were typically used). D.L. Mowers Land Surveyors returned to the area in September, October and November 2011 to survey the more permanent markers. The purpose of the survey was to have the approximated high water marks along the flooded waterways all in one datum to allow for a broader view of the extent of the flooding that occurred in the study area and for potential future reproducibility and comparison.

The flood reconnaissance field visits extended from the headwaters of the Schoharie Creek downstream to its confluence with the Mohawk River at Cohoes, NY. As there was historic flooding upstream of the Blenheim-Gilboa Pumped Storage Project, the study was extended upstream to locate high water marks along the major tributaries into the Schoharie Creek (Batavia Kill, East Kill and West Kill) upstream of the Blenheim-Gilboa Pumped Storage Project.

Figure 8 presents the location of the general areas where high water marks were located during the 2011 flood study. Figures 9 through 14 present larger scale mapping in areas where more high water marks were identified. Photographs were taken throughout the field reconnaissance and survey at different identified high water locations and benchmarks. Representative photographs are presented throughout this report (numbered P01 through P75). The photographs are provided following the text for each town/village visited. Each photograph presented in this report is listed in the Photograph Summary Table below.

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## **Upstream of the Blenheim-Gilboa Project**

As noted above, the 2011 flood reconnaissance study extended upstream of the Blenheim-Gilboa Pumped Storage Project. The study also included the three major tributaries upstream of the project (Batavia Kill, West Kill and East Kill). General locations of the high water marks surveyed are presented in Figure 9. Photographs 1 through 13 show the locations described in the text below.

### **Schoharie Creek (Upstream of the Blenheim-Gilboa Project)**

High water marks were identified at five general locations along the Schoharie Creek upstream of the Blenheim-Gilboa Project; the NYS Route 990V bridge, Prattsville, Mosquito Point Bridge, Lexington and Hunter.

### **NYS Route 990V Bridge**

NYS Route 990V crosses the Schoharie Creek between the Gilboa Dam and the Blenheim-Gilboa Lower Reservoir, near Gilboa, NY (the bridge is approximately 0.5 miles downstream of the Gilboa Dam). A debris line was observed upstream of the bridge, on the left bank. The elevation of the debris line was surveyed at El. 977.9 (Survey Point 557).

### **Prattsville**

In Prattsville, high water marks were identified near two residences (128 County Route 7 and 14686 NYS Route 23). Additional high water marks identified approximately 1 mile southeast of Prattsville are included in this section. These high water marks were located at the confluence of the Batavia Kill with the Schoharie Creek. This is near the intersection of NYS Routes 23 and 23A. Figure 10 presents an overview of the survey points recorded in Prattsville.

#### **128 County Route 7**

Three high water marks were observed in the vicinity of the residence at 128 County Route 7. The most prominent estimated high water mark was the mud line observed on the outside of the home (recorded with Survey Point 1002). Debris lines were observed on trees and a utility pole across the road from the residence, which were assumed to represent the approximate high water level (Survey Points 1004 and 1005).

Survey Point 1002 represents a mud line that was observed around the outside of the residence at 128 County Route 7. The mud line was surveyed at El. 1151.1, approximately 5.0 feet above the first floor elevation of the home.

Survey Point 1005 represents a “debris” line (a line along some trees where bark had been removed/damaged, assumedly by debris from the flooding) that was observed on trees located across the road from 128 County Route 7. The debris line was surveyed at El. 1150.0.

Survey Point 1004 represents a debris line that was observed on a utility pole located across the road from 128 County Route 7. The debris line was surveyed at El. 1150.7.

### 14686 NYS Route 23

A mud line was observed on the outside of the residence at 14686 NYS Route 23. This residence was located across the road from a concrete foundation slab where a garage had been lost during the flooding. The mud line was surveyed at El. 1152.6, approximately 6.2 feet above the concrete slab (where the garage had been). The elevation of the mud line and the top of the concrete slab were recorded with Survey Points 1010 and 548, respectively.

### NYS Routes 23 and 23A Intersection

The intersection of NYS Routes 23 and 23A is located near the confluence of the Batavia Kill with the Schoharie Creek. A park with athletic fields and woods is located near the intersection. In this area, a debris line was seen along the embankment of the road and debris was observed in some trees. A benchmark disk was located on the northeast abutment of the NYS Route 23A bridge over Batavia Kill. The elevation of the debris line observed on the road embankment was surveyed at El. 1178.75 (Survey Point 1011), approximately 9.2 feet below the benchmark disk. The elevation of the debris in the tree was surveyed at El. 1177.2 (Survey Point 1012), approximately 10.7 feet below the benchmark disk.

### **Mosquito Point Bridge**

A mud line was observed on a concrete pier behind the residence at 12293 NYS Route 23A, immediately downstream of the Mosquito Point Bridge (County Route 2 over the Schoharie Creek), approximately 2.5 miles west of Lexington, NY. The elevation of the mud line was surveyed at El. 1267.0 (Survey Point 1033).

### **Lexington**

Three approximate high water marks were located in Lexington, NY; at the United Methodist Church, at the Mountain Meadow Inn and at the Bay Ridge Farm. The confluence of the West Kill into the Schoharie Creek is in Lexington, and the high water mark identified at the Bay Ridge Farm is on the West Kill (and is presented in the West Kill section of this report). A description of the high water marks at the United Methodist Church and the Mountain Meadow Inn are presented below.

#### United Methodist Church, County Route 13A, Lexington-Westkill

A mud line was observed on the Lexington-West Kill United Methodist Church, County Route 13A in Lexington, NY. The mud line was approximately 17 inches above the floor inside the building. The elevation of the mud line was surveyed at El. 1323.6 (Survey Point 571).

#### Mountain Meadow Inn, Lexington

A debris line was observed on the right bank of the Schoharie Creek across the road from the Mountain Meadow Inn (11548 NYS Route 23A), in Lexington, NY. The elevation of the debris line was surveyed at El. 1314.7 (Survey Point 1034).

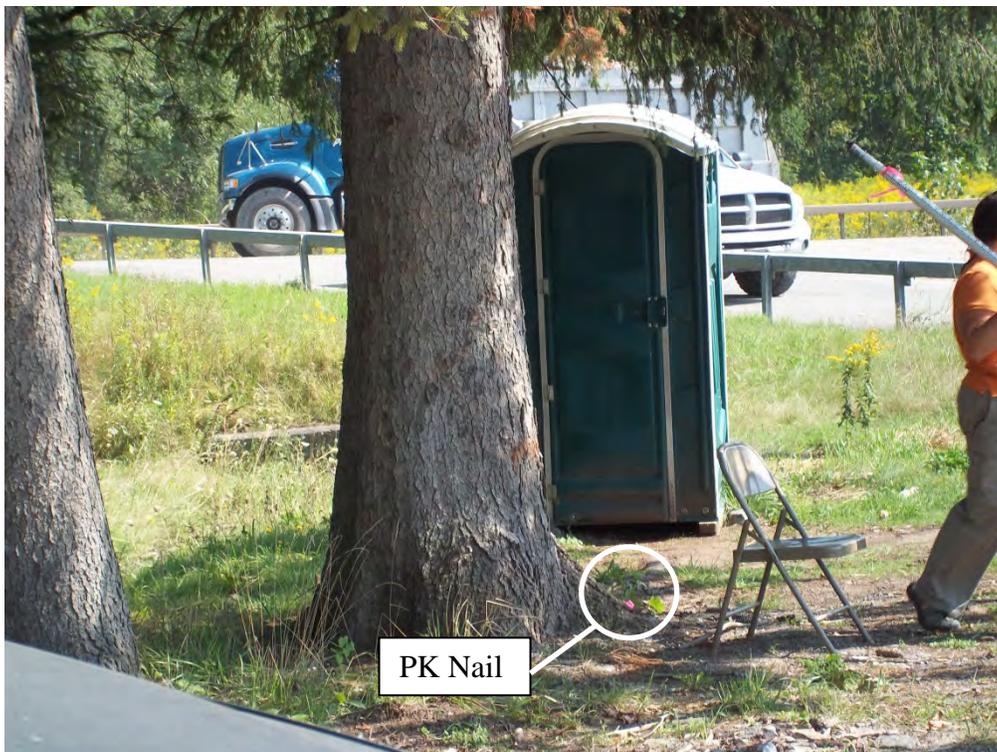
### **Hunter**

County Route 214 crosses the Schoharie Creek in Hunter, NY. A debris line was observed on the left bank, downstream of the bridge. The elevation of the debris line was surveyed at El.

1674.8 (Survey Point 1040), approximately 11.9 feet below the bridge deck. This was the furthest upstream high water mark surveyed for this study on the Schoharie Creek.



P01 (Survey Point 557) – Left bank of Schoharie Creek, upstream of NYS Route 990V bridge. High water mark estimated by depressed vegetation in field (Photo taken 9/2/2011)



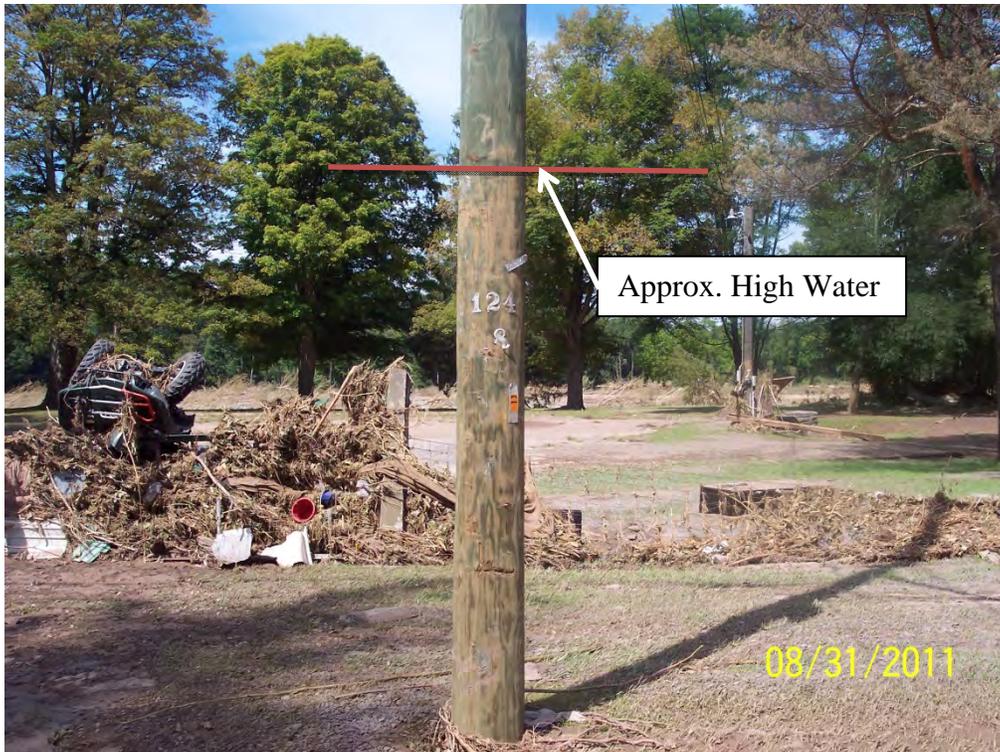
P02 (Survey Point 557) – PK nail driven into tree to locate high water mark (see photo above). NYS Route 990V in background (Photo taken 9/2/2011)



P03 (Survey Point 1002) – Mud line observed on outside of 128 County Route 7 in Prattsville. Mud line approximately 5.0 feet above first floor/porch. (Photo taken 8/31/2011)



P04 (Survey Point 1004) – Trees located across road from 128 County Route 7. Note line across trees where bark has been damaged/removed. (Photo taken 8/31/2011)



P05 (Survey Point 1005) – Utility pole located across road from 128 County Route 7. Note discoloration on lower portion of the pole, assumedly due to high water and debris (Photo taken 8/31/2011)



P06 (Survey Point 1010) – 14686 NYS Route 23 in Prattsville. Mud line on home approximately 9 inches above the first floor/porch elevation. (Photo taken 8/31/2011)



P07 (Survey Point 548) – Concrete foundation slab of garage lost during flooding. Across the road from 14868 NYS Route 23. High water estimated to have been 6.2± feet above slab. (Photo taken 8/31/2011)



P08 (Survey Point 1011) – Debris line observed along embankment of NYS Route 23, near intersection with NYS Route 23A. (Photo taken 8/31/2011)



P09 (Survey Point 1012), left – Debris observed in trees near confluence of Batavia Kill with Schoharie Creek. (Photo taken 8/31/2011)

P10 (Survey Point 1033), below – Mud line observed on concrete pier behind residence at 12293 NYS Route 23A, approximately 2.5 miles west of Lexington, NY. Note Mosquito Point bridge in background. (Photo taken 9/2/2011)





P11 (Survey Point 571), left – United Methodist Church, Lexington-Westkill. Mud line observed approximately 17 inches above floor inside. (Photo taken 9/2/2011)

P12 (Survey Point 1034), below – Debris line observed on right bank of Schoharie Creek, across road from Mountain Meadow Inn, Lexington. Surveyor standing at approximate location (Photo taken 12/15/2011)





P13 (Survey Point 1040) – County Route 214 bridge over Schoharie Creek in Hunter, NY (photo taken from right side). Debris line was observed on left bank of creek near bridge, approximately 11.9 feet below bridge deck. (Photo taken 9/2/2011)

### **Batavia Kill**

The Batavia Kill is a tributary to the Schoharie Creek. The Batavia Kill generally flows east to west, with its confluence into the Schoharie Creek located just south of Prattsville, NY. For this study, high water marks for the Batavia Kill were identified in Ashland, Windham and Maplecrest. Photographs 14 through 19 show the location described in the text below.

### **Ashland**

Two high water marks were identified in Ashland; one in the driveway of a residence (13291 NYS Route 23) and one in a field near Diamond Landscaping. A debris line was observed in the driveway at 13291 NYS Route 23 and a PK nail was driven into the pavement to mark this estimated high water level. The elevation of the estimated high water mark was El. 1333.0 (Survey Point 562).

The high water mark near the Diamond Landscaping (12017 NYS Route 23) was estimated based on depressed vegetation in a field near the stream. A PK nail (Survey Point 561) was driven into the road to provide a more permanent marker for the survey (the PK nail was 18.7 feet above the approximate location of the depressed vegetation). The estimated high water mark near Diamond Landscaping was surveyed at El. 1415.4 (Survey Point 1044).

### **Windham**

Two high water marks were identified in Windham; one estimated based on a debris line on the upstream face of the South Street bridge (over the Batavia Kill) and the other based on the mud line observed on the exterior of the Ulster Savings Bank building (5494 NYS Route 23).

The debris line on the upstream face of the bridge extended along the embankment on either side of the bridge. A benchmark was located on the bridge (El. 1487.9, Survey Point 563), and the debris line was measured to be approximately 4.5 feet below the benchmark (El. 1483.4, Survey Point 1043).

The mud line observed on the Ulster Savings Building in Windham was approximately 4.2 feet above the sidewalk in front of the building. The mud line was surveyed at El. 1501.8 (Survey Point 1042).

### **Maplecrest**

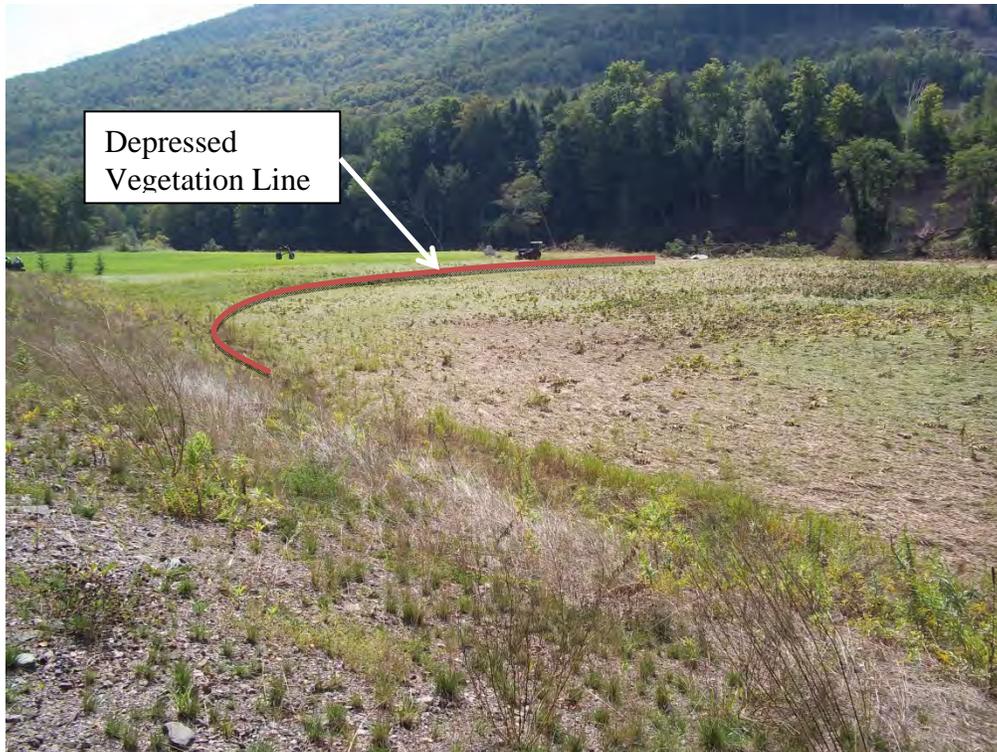
One high water mark was identified in Maplecrest, at the residence at 470 County Route 40. A definitive high water mark was not apparent, but we spoke to the resident who had noted that the water had reached just below the side window of her home, approximately 2.2 feet above the bottom of the siding. The estimated high water level was surveyed at El. 1748.1 (Survey Point 1041).



P14 (Survey Point 562) - Debris line observed at entrance to 13291 NYS Route 23 in Ashland. PK nail driven into pavement to identify elevation of debris line (Photo taken 9/2/2011)



P15 (Survey Point 561) – Sign outside of Diamond Landscaping Building in Ashland (12017 NYS Route 23). High water was approximated based on depressed vegetation in nearby field (Photo taken 9/2/2011)



P16 (Survey Point 1044) – Field behind Diamond Landscaping Building. High water approximately by elevation of depressed vegetation (Photo taken 9/2/2011)

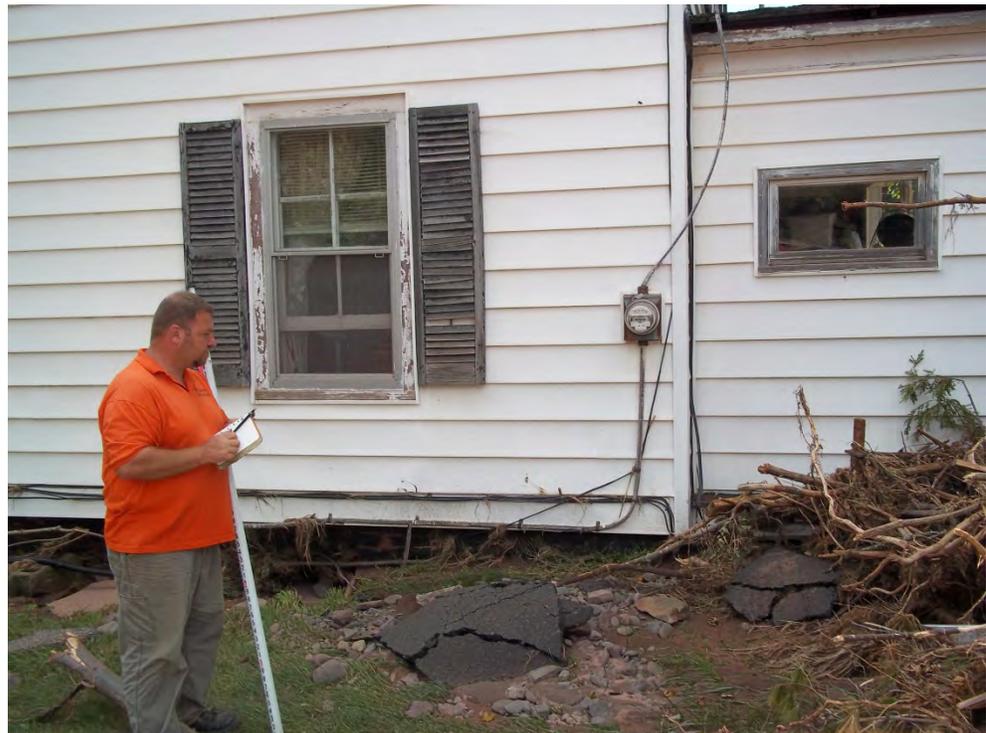


P17 (Survey Point 1043) – Upstream face of South Street bridge in Windham. High water elevation estimated based on elevation of debris on bridge pier and on banks. (Photo taken 9/2/2011)



P18 (Survey Point 1042), left – Mud line observed on Ulster Savings Building in Windham. Mud line was approximately 4.2 feet above sidewalk, was more visible inside building (Photo taken 9/2/2011)

P19 (Survey Point 1041), below – Residence at 470 County Route 40 in Maplecrest. Mud line not observed, but resident approximated high water was just below side window of home, approximately 2.2 feet above the bottom of the siding (Photo taken 9/2/2011)



### **West Kill**

The West Kill is a tributary to the Schoharie Creek. The West Kill generally flows east to west, with its confluence into the Schoharie Creek located approximately 0.5 miles west of Lexington, NY. For this study, two high water marks for the West Kill were identified; one near the Village of West Kill, NY near the County Route 6 bridge and one near Lexington (approximately 600 feet upstream of the West Kill confluence) at the Bay Ridge Farm. Photographs 20 through 22 show the location described in the text below.

### **County Route 6 Bridge**

The high water mark in this area was estimated based on a debris line observed on the left bank of the West Kill, just downstream of the County Route 6 bridge over the stream. The elevation of the debris line was surveyed at El. 1517.8 (Survey Point 1035).

### **Bay Ridge Farm**

A mud/debris line was observed on buildings at the Bay Ridge Farm on NYS Route 42 near Lexington, NY. The mud/debris line was approximately 11 inches below the porch on the south side of the building. The mud line was also observed above the middle step on the west side of the building. The elevations of the mud/debris line at the locations described above were surveyed at El 1322.1 (Survey Point 573) and El. 1322.2 (Survey Point 574), respectively.



P20 (Survey Point 1035), left – Downstream face of County Route 6 bridge in West Kill. Debris line observed on left bank. (Photo taken 9/2/2011)

P21 (Survey Point 573), below – Porch on south side of building at Bay Ridge Farm. Debris/mud line observed approximately 11 inches below porch. (Photo taken 9/2/2011)





P22 (Survey Point 574), left – Stone steps on west side of building at Bay Ridge Farm in Lexington, NY. Debris and mud were observed on middle step, but not top step. (Photo taken 9/2/2011)

### **East Kill**

The East Kill is a tributary to the Schoharie Creek. The East Kill generally flows east to west, with its confluence into the Schoharie Creek located in Jewett Center, NY. For this study, high water marks for the East Kill were identified in East Jewett, Jewett and Jewett Center. Photographs 23 through 26 show the locations described in the text below.

### **East Jewett**

A debris line was observed behind the residence at 1363 County Route 23C in East Jewett. The residence is located just downstream of the County Route 23C bridge over the East Kill. The estimated high water level was measured to be approximately 11.7 feet below the road (a PK nail was driven into the pavement to mark the elevation). The elevation of the debris line and the PK nail were surveyed at El. 1910.0 and El. 1921.7, respectively (Survey Points 1039 and 566, respectively).

### **Jewett**

An area of depressed vegetation and debris was identified on the left bank of the East Kill near the Cloose Road bridge over the stream. At the time of the initial field visit (9/2/2011), we observed flagging at these estimated high water marks, which appeared to have been flagged by USGS. The estimated high water level was surveyed at El. 1477.4 (Survey Point 1038). This high water level is higher than the top of the upstream left bridge abutment (El. 1472.3, Survey Point 565), which was also surveyed.

### **Jewett Center**

A debris line was observed along the left bank of the East Kill in Jewett Center, just downstream of the NYS Route 23A bridge. The bridge is located approximately 350 feet upstream of the East Kill confluence with the Schoharie Creek. The debris line was surveyed at El. 1396.2 (Survey Point 1037), approximately 10 feet below the road.



P23 (Survey Point 1039) – Area of depressed vegetation observed behind residence at 1363 County Route 23C in East Jewett, located immediately downstream of bridge over East Kill (Photo taken 9/2/2011)



P24 (Survey Point 1038) – Area of erosion and depressed vegetation near the Cloose Road bridge over the East Kill. Pink flagging assumed to be USGS high water marker. (Photo taken 9/2/2011)



P25 (Survey Point 565) – Close Road bridge over East Kill in Jewett, NY, from left bank. Estimated high water elevation was measured in relation to elevation of left upstream abutment (Photo taken 9/2/2011)



P26 (Survey Point 1037) – NYS Route 23A bridge over East Kill in Jewett Center, looking toward right bank. Debris line observed on left bank, downstream of bridge. (Photo taken 12/15/2011)

## **Blenheim/North Blenheim**

In Blenheim and North Blenheim, high water marks were identified at the firehouse/post office building, at the Royal Oak Farm and three residences (103 Bear Ladder Road, 1933 NYS Route 30 and 1976 NYS Route 30). Figure 11 presents the location of these survey points. Photographs 27 through 33 show the locations described in the text below.

### **Blenheim Post Office and Firehouse**

The Blenheim post office and firehouse share a building at 1748 NYS Route 30. Three high water marks were identified at the building. Survey points 1030, 1031 and 1032 were taken in this area during the September-November 2011 field survey by D.L. Mowers Land Surveyors. Estimated high water elevations of El. 812.0, 813.1 and 811.4 were recorded at each of these points, respectively.

Survey Point 1030 represents a mud line that was observed on the southerly (rear) door of the post office/firehouse building. The mud line was surveyed at El. 812.0, approximately 2.2 feet above the door sill.

Survey Point 1031 represents a mud line that was observed on the westerly (side) door of the post office/firehouse building. The mudline was surveyed at El. 813.1, approximately 3.0 feet above the door sill.

Survey Point 1032 represents a mud line that was observed along an interior wall at the post office. The mud line was surveyed at El. 811.4, approximately 1.8 feet above the first floor of the building.

### **Royal Oak Farm**

The Royal Oak Farm is located at 1829 NYS Route 30 in Blenheim, NY. The farm is located on the opposite side of NYS Route 30 from Schoharie Creek. High water elevations were estimated in this area based on an observed line of depressed vegetation in a field. The estimated high water mark was chronicled with a PK nail driven into a utility pole (pole number NM244, MT CO. 20-1) in the field. An elevation of El. 801.7 was recorded for this PK nail during the field survey (Survey Point 553).

### **103 Bear Ladder Road**

A prominent mud line was observed on the outside of the residence at 103 Bear Ladder Road. This residence is located just north of the NYS Route 30 bridge over the Schoharie Creek. The mud line was approximately 6.5 feet above the ground level at the residence. An elevation of El. 793.5 was recorded for this mud line during the September-November 2011 field survey (Survey Point 1029).

### **1933 NYS Route 30**

The high water elevation near this residence was estimated based on the location of debris and depressed vegetation, which was located at the base of a 2" diameter oak tree. The residence is located just downstream of the NYS Route 30 bridge over the Schoharie Creek, on the right bank

(Survey Point 549). An elevation of El. 792.6 was surveyed for the estimated high water elevation at this location.

**1976 NYS Route 30**

The high water elevation near this residence was estimated based on the location of debris and erosion. The debris line was approximately level with the southwest corner of the red barn at this residence, which is located approximately 0.35 miles downstream of the NYS Route 30 bridge over the Schoharie Creek. An elevation of El. 786.8 was recorded for the estimated high water elevation at this location (Survey Point 550).



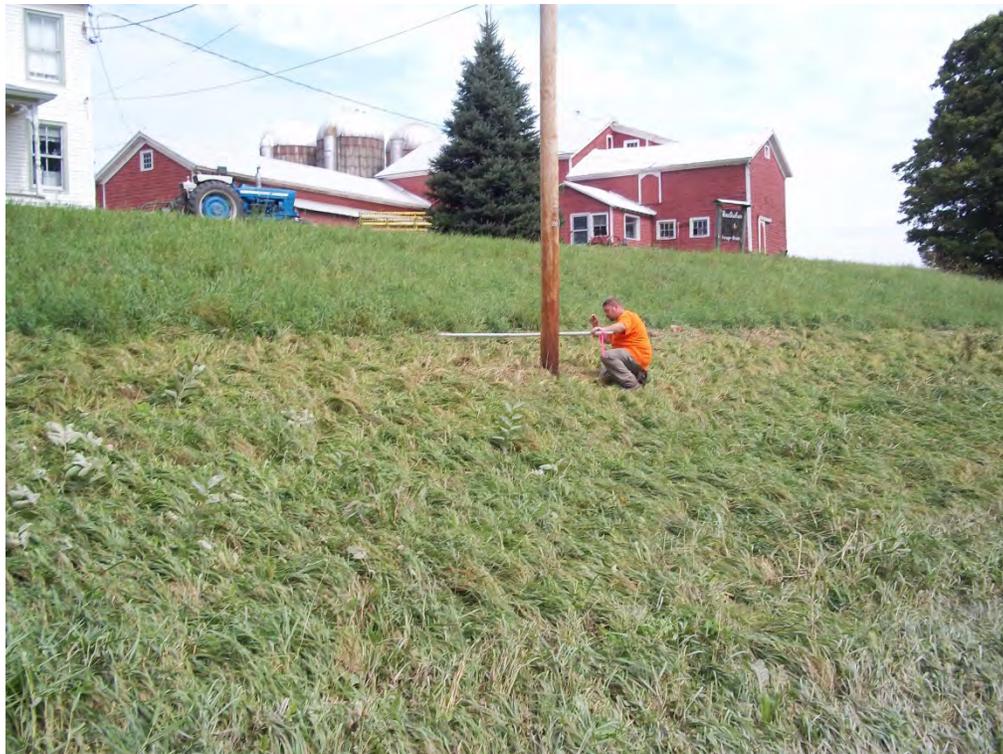
P27 (Survey Point 1030) – South (back) door of firehouse/post office in Blenheim, NY. Mud line observed approximately 2.2 feet above door sill (Photo taken 12/15/2011)



P28 (Survey Point 1031) – West (side) door of firehouse/post office building in Blenheim, NY. Mud line observed approximately 3.0 feet above door sill (Photo taken 12/15/2011).



P29 (Survey Point 1032) – Mud line observed on an interior wall at the Blenheim post office. Mud line was approximately 1.8 feet above the floor of the building. (Photo taken 8/30/2011)



P30 (Survey Point 553) – High water estimated by depressed grass in field. PK nail driven into utility pole at estimated high water level. Royal Oaks Farm in background (Photo taken 9/1/2011)



P31 (Survey Point 1029) – Mud line at 103 Bear Ladder Road, Blenheim. Surveyor is pointing to mud line with right hand. (Photo taken 9/1/2011)



P32 (Survey Point 549) – Downstream side of NYS Route 30 bridge in Blenheim. Debris line observed on right bank, near surveyor in photo. (Photo taken 12/15/2011)



P33 (Survey Point 550) – Southwest corner of red barn at 1976 NYS Route 30 in Blenheim. Debris line indicates the base of the barn at this corner is the approximate high water level. (Photo taken 9/1/2011)

## **Breakabeen**

Estimated high water marks were located at the NYS Route 30 bridge in Breakabeen. The high water marks were estimated based on debris lines observed on the left bank both upstream (south) and downstream (north) of the bridge (Survey Points 1028 and 1027, respectively). High water elevations were surveyed at El. 705.7 and 704.6 upstream and downstream, respectively.

During the field visit, a USGS survey disc was located on the northeast abutment of the NYS Route 30 bridge in Breakabeen. This disc was also surveyed (Survey Point 545) and the upstream and downstream high water elevations were located relative to the disc (7.9 feet and 9.0 feet below the disc, respectively). Photographs 34 through 36 show the locations described in the text above.



P34 (Survey Point 1028) – Debris line located south (upstream) of the NYS Route 30 bridge in Breakabeen, left bank. (Photo taken 9/1/2011)



P35 (Survey Point 1027) – Debris observed in tree north (downstream) of the NYS Route 30 bridge in Breakabeen, left bank. (Photo taken 9/1/2011)



P36 (Survey Point 545) – USGS survey disc located on northeast abutment of NYS Route 30 bridge in Breakabeen (Photo taken 9/1/2011)

## **Boucks Island**

An estimated high water mark was identified at the residence owned by Jim Shaul on Redling Road on Boucks Island. A mud line was observed on the interior of the home, approximately 2.35 feet above the first floor elevation. A PK nail was driven into a tree outside the home to chronicle the high water mark observed at the residence (Survey Point 1026). The mud line elevation was surveyed at El. 687.8 (Survey Point 1025). Photographs 37 and 38 show the locations described in the text above.



P37 (Survey Point 1026) – Mud line observed inside Shaul residence, Boucks Island. Approximately 2.35 feet above first floor elevation. (Photo taken 9/1/2011)



P38 (Survey Point 1025) – Tree outside Shaul residence, Boucks Island. PK nail driven into tree at elevation of mud line from home interior, note blue ribbon. (Photo taken 9/1/2011)

## Watsonville

An estimated high water mark was identified at the Sue Pendergrast residence on NYS Route 30 in Watsonville. A mud line was observed on the interior of the home, approximately 0.9 feet above the first floor elevation. The mud line was surveyed at El. 655.2 (Survey Point 1024).



P39 (Survey Point 1024) – Mud line observed inside Pendergrast residence, Watsonville. Approximately 0.9 feet above first floor elevation. (Photo taken 9/1/2011)

## **Middleburgh**

Estimated high water marks were located and surveyed in three areas in Middleburgh. Prominent mud lines were observed on two residences in the town (106 and 168 River Street) and a debris line was observed near the entrance of the Middleburgh Rod and Gun Club. Figure 12 presents the location of the Middleburgh survey points described below. Photographs 40 through 43 show the locations described below.

### **106 River Street**

A mud line was observed on the exterior of the residence at 106 River Road in Middleburgh. The high water mark at this residence was surveyed at El. 636.6, approximately 3.8 feet above the ground at the residence (Survey Point 1021).

The January 1996 Acres Report identifies a tree on the right bank of the Schoharie Creek, approximately 200 feet downstream of the (NYS) Route 30 bridge in Middleburgh (Photo Nos. 15 and 16 in the 1996 Report). This tree was located during the 2011 study, approximately 130 feet away from the 106 River Street residence. The 1996 high water mark (identified by a PK nail) was surveyed at El. 632.78 (Survey Point 1022), approximately 3.8 feet below the high water level estimated during the 2011 flooding.

### **168 River Street**

A prominent mud line was observed on the exterior and interior of the residence at 168 River Street in Middleburgh. The mud line at this residence was surveyed at El. 636.7 (Survey Point 1023), approximately 4.1 feet above the first floor elevation of the home.

It should be noted that this residence was also identified in the 1996 Acres Study (shown in Photos 12 and 13 of the 1996 Report). The home was identified in that report as being located on Middlefort Road. The 1996 report identifies debris on the porch of the home from flooding, indicating that the high water during the 1996 flood was at least slightly above the first floor/porch level of the home.

### **Middleburgh Rod and Gun Club**

A debris line was identified in the field east of the entrance gate to the Middleburgh Rod and Gun Club. The debris line was approximately 57 feet beyond the entrance gate on Middle Fort Road. The estimated high water elevation based on the location of the debris in the field is El. 634.1 (Survey Point 541). It should be noted that this debris line is located approximately 3,500 feet to the right of the right bank of the Schoharie Creek.



P40 (Survey Point 1021) – Mud line on exterior of residence at 106 River Street in Middleburgh. Mud line approximately 3.8 feet above ground level. (Photo taken 9/1/2011)



P41 (Survey Point 1022) – High water mark from 1996 flood (blue ribbon was added during 2011 survey). 2011 flood level approximately 3.8 feet above estimated 1996 high water level in area. (Photo taken 9/1/2011)



P42 (Survey Point 1023) – Mud line on interior of residence at 168 River Street in Middleburgh. Approximately 4.1 feet above the first floor elevation of home. (Photo taken 8/30/2011)



P43 (Survey Point 541) – Debris line located past entrance to Middleburgh Rod and Gun Club, near surveyor in photo. (Photo taken 9/1/2011)

## **Schoharie**

Estimated high water marks were located and surveyed in three areas in Schoharie. Prominent mud lines were observed at a residence (110 Hilgert Parkway) and at two other buildings in town (Lassell Hall and the Scho-Wright Ambulance Building). Figure 13 presents the location of the Schoharie survey points described below. Photographs 44 through 47 show the locations described below.

### **110 Hilgert Parkway**

A mud line was observed on the exterior of the residence at 110 Hilgert Parkway in Schoharie, approximately 4.5 feet above the first floor elevation of the home. A PK nail was driven into the roadway pavement nearby to chronicle the estimated high water level (the elevation of the PK nail was approximately 8.4 feet below the mud line elevation). The surveyed elevation of the mud line at the residence is El. 614.4 (Survey Point 540).

### **Lassell Hall**

Lassell Hall was identified in the 1996 Acres Report. The 1996 report notes that the floodwaters during the 1996 flooding had reached the base of the building.

During the 2011 field survey, a mud line was observed on the exterior columns of Lassell Hall, approximately 4.9 feet above the porch elevation. This indicates that the flooding at Lassell Hall during the 2011 flooding was at least 4.9 feet higher than the flooding in 1996. The estimated high water level was surveyed at El. 614.3 (Survey Point 537).

### **Scho-Wright Ambulance Building**

The Scho-Wright Ambulance Building is located at 388 Main Street (NYS Route 30) in Schoharie. A mud line was observed on the interior of the building, approximately 2.3 feet above the first floor elevation. The estimated high water level at the building was surveyed at El. 613.2 (Survey Point 539).



P44 (Survey Point 540) – Residence at 110 Hilgert Parkway, Schoharie. Mud line approximately 4.5 feet above porch, just above window sill. (Photo taken 9/1/2011)



P45 (Survey Point 537) – Lassell Hall, Schoharie. Mud line approximately 4.9 feet above porch elevation. (Photo taken 9/1/2011)



P46 (Survey Point 537) – Column in front of Lassell Hall, Schoharie. Mud line estimated approximately 4.9 feet above porch elevation. (Photo taken 9/1/2011).



P47 (Survey Point 539) – Interior of Scho-Wright Ambulance Building (388 Main Street, Schoharie). Mud line was observed 2.3 feet above floor. (Photo taken 9/1/2011)

## **Central Bridge**

Three high water marks were identified in Central Bridge. (The area near County Route 27/Junction Road was considered “Central Bridge”, although it is actually between Central Bridge and Esperance.) It should be noted that other mapping referred to the road as “Zichia Road”. A bridge was identified at this location in the 1996 Acres Report (the bridge has been removed and replaced since the 1996 report). The bridge is identified as County Bridge 28 in the 1996 Report.

Two of the three high water marks were located at the bridge. The third was located approximately 2,400 feet downstream of the bridge at a red barn at 2716 Creek Road in Esperance. The Central Bridge survey points described here are presented in Figure 14. Photographs 48 through 50 show the locations described below.

### **Junction Road Bridge**

High water elevations at the Junction Road Bridge were identified based on the water line observed on the girders above the bridge deck and a debris line observed along Junction Road, south of the bridge. The water line observed on the girders was surveyed at El. 596.3, approximately 10.1 feet above the deck of the bridge (Survey Point 535). The debris line observed along the road south of the bridge was surveyed at El. 596.4 (Survey Point 536). A PK nail was driven into the pavement at the debris line. This debris line was located approximately 1,500 feet beyond the river bank.

### **2716 Creek Road**

A mud line was observed on the south exterior wall of the red barn at 2716 Creek Road in Esperance (the building is locally known as the “Pumpkin Patch”). The elevation of the mud line was surveyed at El. 596.2 (Survey Point 1020).



P48 (Survey Point 535) – Junction Road bridge over Schoharie Creek near Central Bridge. High water estimated to have been approximately 10.1 feet over bridge deck (Photo taken 9/1/2011)



P49 (Survey Point 536) – Debris line on Junction Road south of bridge. PK nail driven into pavement at debris line, blue ribbon near stake on left side of photo. (Photo taken 9/1/2011)



P50 (Survey Point 1020) – Red barn at the “Pumpkin Patch” near Central Bridge, NY. High water mark identified at white sign near surveyor’s hand (Photo taken 12/15/2011)

## **Esperance**

A high water mark was identified at 102 Charleston Road in Esperance. This residence is located approximately 400 feet downstream of the NYS Route 20 bridge over the Schoharie Creek. Photographs 51 and 52 show the locations described in the text below.

### **102 Charleston Road**

A mud line was observed on the exterior of the home at 102 Charleston Road, approximately 2.4 feet above the sill of the foundation. The elevation of the mud line was surveyed at El. 585.6 (Survey Point 1018).

At the time of the 2011 survey, the resident at the home was able to provide an estimated high water level from the flooding in 1996. This estimated flood level was surveyed at El. 578.8 (Survey Point 1019). An elevation was also taken on a set of limestone steps east of the residence (El. 575.3, Survey Point 534), to establish an elevation of a more permanent feature. (The estimated high water levels during the 1996 and 2011 flooding were 3.5 feet and 10.3 feet above the top of the limestone steps, respectively).



P51 (Survey Point 1018) – Residence at 102 Charleston Road in Esperance. Mud line observed approximately 2.4 feet above sill of foundation, near surveyor’s right hand. (Photo taken 12/15/2011)



P52 (Survey Point 1019) – 102 Charleston Road, Esperance. Surveyor standing at approximate location of flooding during 1996 flood (as estimated by resident, Photo taken 12/15/2011).

## Priddle Camp

A mud line was observed on the residence at 38 Priddle Road in Priddle Camp. The resident was present during the survey and was able to confirm the elevation of the high water on his home, approximately 2.6 feet above the first floor of the residential portion of the home. The home had been raised approximately 10 feet following the 1996 flooding in the area.

The elevation of the mud line was surveyed at El. 556.2 (Survey Point 532). A spike had been observed in a nearby telephone pole. This was also surveyed, as it appeared to be a more permanent benchmark (El. 547.3, approximately 8.9 feet below the mud line, Survey Point 533).



P53 (Survey Point 532) –38 Priddle Road, Priddle Camp. Mud line observed approximately 2.6 feet above residential floor elevation, above siding. (Photo taken 9/1/2011)

## Burtonsville

A debris line was observed near the County Highway 160 bridge over the Schoharie Creek in Burtonsville. A PK nail was driven into the road pavement at the approximate elevation of the debris line. The estimated high water elevation was surveyed at El. 516.8 (Survey Point 531).



P54 (Survey Point 531) – PK nail driven into road (blue ribbon on white stripe) at approximate elevation of debris line. (Photo taken 9/6/2011)

## **Fort Hunter**

High water marks were located in two areas in Fort Hunter, NY. Fort Hunter is near the confluence of the Schoharie Creek with the Mohawk River, and is the farthest downstream area of the Schoharie Creek surveyed for this study. Photographs 55 through 57 show the locations described in the text below.

A faint water line was observed on the upstream railing of the NYS Route 5S bridge over the Schoharie Creek, and an approximate debris line was observed on the right bank, upstream of the bridge. The elevation of each of these high water marks was surveyed at El. 298.2 (Survey Points 1016 and 1015, respectively).

Approximately 1,800 feet downstream of the Route 5S bridge, a debris line was observed on the right bank, near the stone laid aqueduct pier. The pier appeared to have suffered recent damage, assumed to have been from the 2011 flooding. The debris line was surveyed at El. 291.8 (Survey Point 1014).



P55 (Survey Point 1016) – Upstream face of NYS Route 5S bridge over the Schoharie Creek in Fort Hunter. Water line observed on upstream railings (Photo taken 9/6/2011)



P56 (Survey Point 1015) – Debris line observed on right bank of NYS Route 5S bridge over Schoharie Creek. (Photo taken 9/6/2011)



P57 (Survey Point 1014) – Stone laid aqueduct pier in Schoharie Creek. Debris line observed on right bank near pier, recent damage observed on pier. (Photo taken 9/6/2011)

## **Mohawk River**

High water elevations were surveyed along the Mohawk River between the Schoharie Creek confluence (near Fort Hunter) and Cohoes (near the confluence of the Mohawk River with the Hudson River). The high water marks surveyed along the Mohawk River were limited to areas at or near the New York State Canal Corporation (NYSCC) lock structures. Photographs 58 through 75 show the locations described in the text below. Except where noted, all elevations are in NAVD 88.

### **Lock 11**

NYSCC Lock 11 is located near Amsterdam, NY. The lock is located on the north (left) side of the river. Three high water marks were observed in this location; two which had been marked by the NYSCC on their lock buildings and one at the Anything Automotive garage in Amsterdam.

NYSCC had drawn lines on their west (upstream) and east (downstream) lock houses to mark the high water levels during the 2011 flooding. The water in the west lock house was 132 inches above the floor (El. 280.8, Survey Point 501) and the water in the east lock house was 84 inches above the floor (El. 276.45, Survey Point 502). A bench mark disc was located at the east lock house and was included in the survey (El. 269.46, Survey Point 503).

A mud line was observed on the exterior of the Anything Automotive garage at 369 West Main Street in Amsterdam. The mud line was approximately 4.25 feet above the floor of the garage (mud line at El. 280.8, Survey Point 1013)

### **Lock 10**

NYSCC Lock 10 is located approximately 2.5 miles east of Amsterdam, NY. The lock is located on the south (right) side of the river. Two high water marks were observed at this location, both had been marked by the NYSCC on their lock buildings.

NYSCC had drawn lines on their west (upstream) and east (downstream) lock houses to mark the high water levels during the 2011 flooding. The water in the west lock house was 154 inches above the floor (El. 270.3, Survey Point 506). The water in the east lock house was 84 inches above the floor (El. 264.5, Survey Point 505).

### **Lock 9**

NYSCC Lock 9 is located near Rotterdam Junction, NY. The lock is located on the north (left) side of the river. Two high water marks were observed at this location, both had been marked by the NYSCC on their lock buildings.

NYSCC had drawn lines on their west (upstream) and east (downstream) lock house to mark the high water levels during the 2011 flooding. The water in the west lock house was 133 inches above the floor (El. 253.4, Survey Point 1009). The water in the east lock house was 97 inches above the floor (El. 250.3, Survey Point 510).

### **Lock 8**

NYSCC Lock 8 is located near Schenectady, NY, on the southwest (right) side of the river. Two high water marks were observed at this location, both had been marked by the NYSCC on their lock houses.

NYSCC had drawn lines on their west (upstream) and east (downstream) lock houses to mark the high water levels during the 2011 flooding. The water in the west lock house was 108 inches above the floor (El. 236.6, Survey Point 516). The water in the east lock house was 58 inches above the floor (El. 232.4, Survey Point 517).

### **Lock 7**

NYSCC Lock 7 is located at the Vischer Ferry Dam, near Niskayuna, NY, on the southwest (right) side of the river. Two high water marks were observed at this location; a mud line on the right bank of the reservoir upstream of the lock structures and a mud line on the lower lock wall downstream of the lock.

The observed mud line on the right bank of the reservoir was surveyed at El. 216.5 (Survey Point 1017). During the 2011 flooding, NYPA had provided fulltime staff to the site to monitor the situation, which included recording the reservoir level using the staff gage on the lock wall. The peak reservoir level observed during this monitoring was approximately El. 216.7 (NAVD), which is comparable to the elevation of the observed mud line.

The observed mud line on the lower lock wall was surveyed at El. 196.6 (Survey Point 522).

### **Guard Gate No. 2 (Upstream of Lock 6)**

NYSCC Lock 6 is located near Colonie, NY, on the northeast (left) side of the river. A high water mark from the 2011 flooding was observed near Guard Gate No. 2. The high water mark was observed on the face of the steel gate in the canal. The water mark was surveyed at El. 189.8 (Survey Point 524). It should be noted that there is a nearby staff gage in Barge Canal vertical datum (BCD). The high water level observed on the steel gate correlated to an elevation of 191.5± (BCD) on the staff gage.

### **New York State Dam**

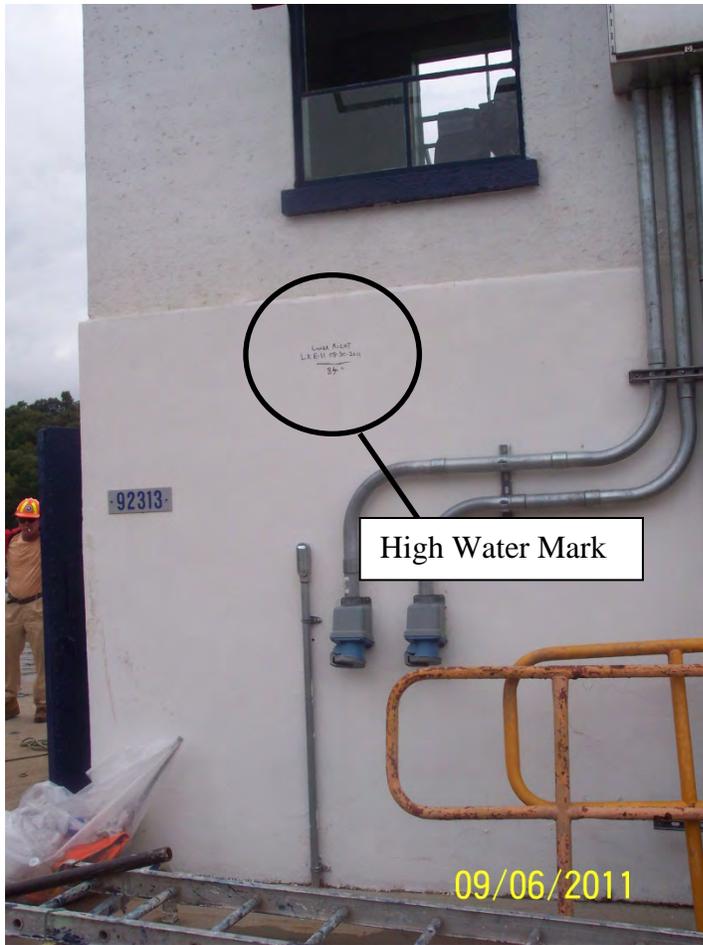
New York State Dam is located in Cohoes, NY, approximately 500 feet downstream of the Saratoga Street bridge over the Mohawk River. A high water mark (mud line) was observed on the steel sheet piling on the right (south) bank of the river, immediately upstream of the dam. The mud line was measured approximately 56 inches below the top of the sheet piling. The elevation of the mud line was surveyed at El. 60.0 (Survey Point 526).



P58 (Survey Point 501), above – West (upstream) lock building at Lock 11. (Photo taken 9/6/2011)

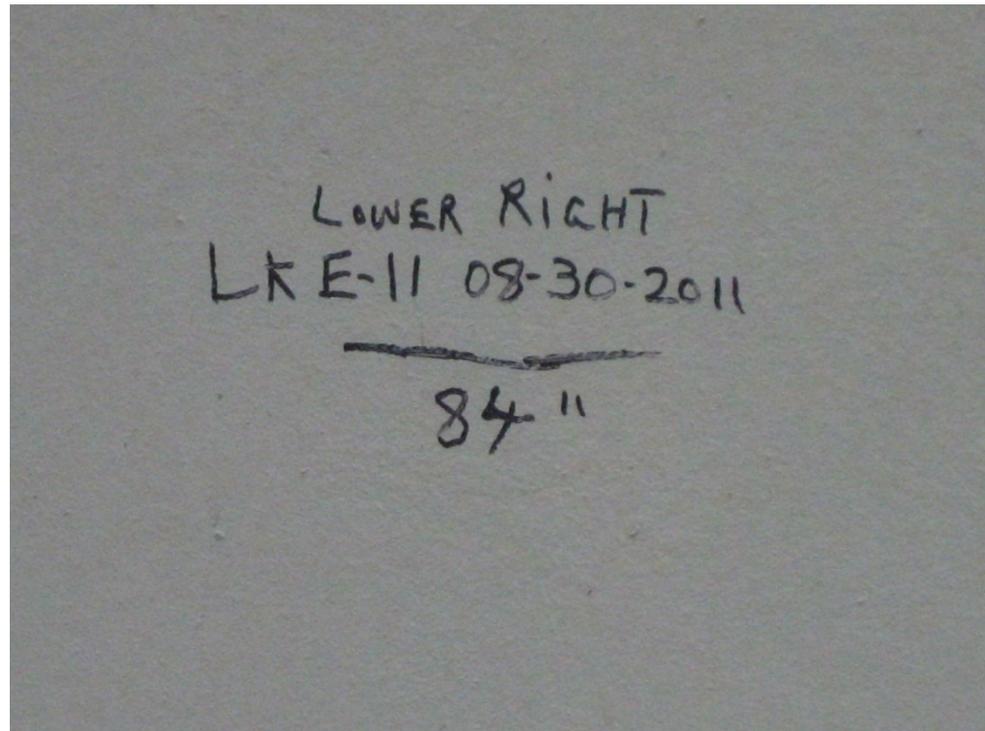


P59 (Survey Point 501), left – High water mark observed on west lock house (Lock 11) during 2011 flood reconnaissance (Photo taken 9/6/2011)



P60 (Survey Point 502), left – East lock house, Lock 11. High water mark from 2011 flooding located on exterior wall (Photo taken 9/6/2011)

P61 (Survey Point 502), below – Close up of high water marker shown in above photo. (Photo taken 9/6/2011)





P62 (Survey Point 1013) – Anything Automotive garage in Amsterdam, NY. Mud line was observed approximately 4.25 feet above garage floor. (Photo taken 9/6/2011)



P63 (Survey Point 506) – High water mark identified inside west (upstream) lock building, Lock 10. (Photo taken 9/6/2011)



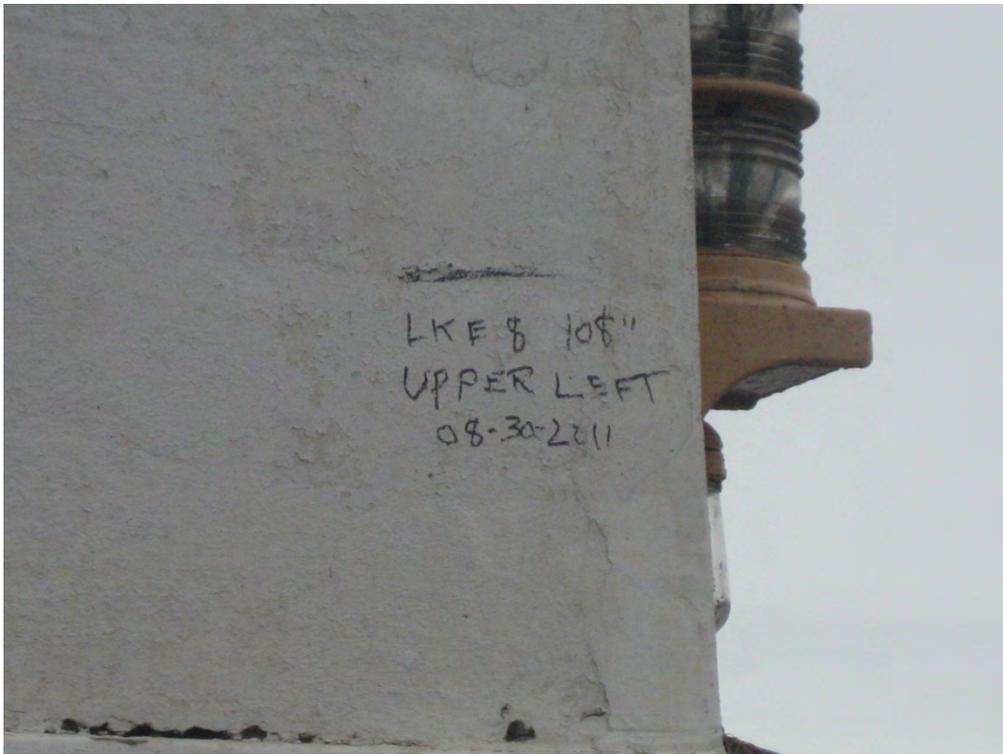
P64 (Survey Point 505) – High water mark identified inside east (downstream) lock building, Lock 10. (Photo taken 9/6/2011).



P65 (Survey Point 1009) – High water mark identified inside west (upstream) lock building, Lock 9. (Photo taken 9/6/2011)



P66 (Survey Point 510) – High water mark identified inside east (downstream) lock building, Lock 9.  
(Photo taken 9/6/2011)



P67 (Survey Point 516) – High water mark identified outside west (upstream) lock building, Lock 8.  
(Photo taken 9/6/2011)



P68 (Survey Point 517) – High water mark identified outside of east (downstream) lock building, Lock 8. (Photo taken 9/6/2011)



P69 (Survey Point 1017) – Right bank upstream of Lock 7 (Vischer Ferry Project). High water elevation surveyed based on mudline beyond. (Photo taken 9/6/2011)



P70 (Survey Point 522), left – Downstream face of lower lock wall at Lock 7 – Vischer Ferry (Photo taken 9/6/2011)

P71 (Survey Point 522), below – Close up lower lock wall from photo above. (Photo taken 9/6/2011)





P72 (Survey Point 524), left – Staff gage (in Barge Canal Datum) located near Guard Gate No. 2. High water during 2011 flooding was approximately at El. 191.5, BCD (Photo taken 9/6/2011)

P73 (Survey Point 524), below – Gate (beyond concrete piers). Water line observed, approximately at El. 191.5 BCD (El. 189.77 NAVD) from staff gage in photo above. Staff gage located beyond left side of photo. (Photo taken 9/6/2011)



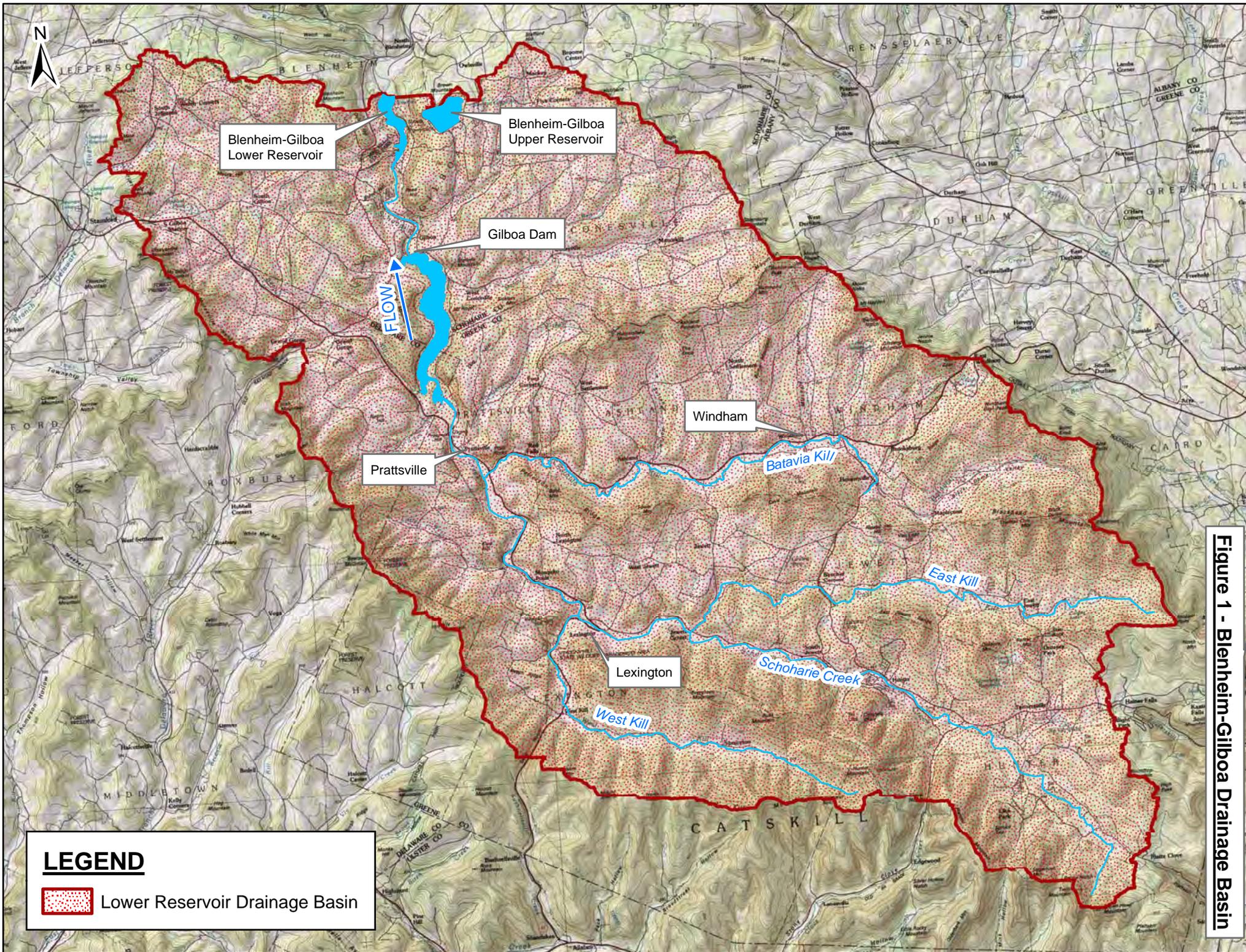


P74 (Survey Point 526) – New York State Dam in Cohoes, NY. Sheet piling located immediately upstream of the dam, right bank. (Photo taken 9/6/2011)



P75 (Survey Point 526) – Reservoir side of sheet piling from photo above. Note water line, approximately 56 inches below top of sheet piling (Photo taken 9/6/2011).

# **FIGURES AND TABLES**

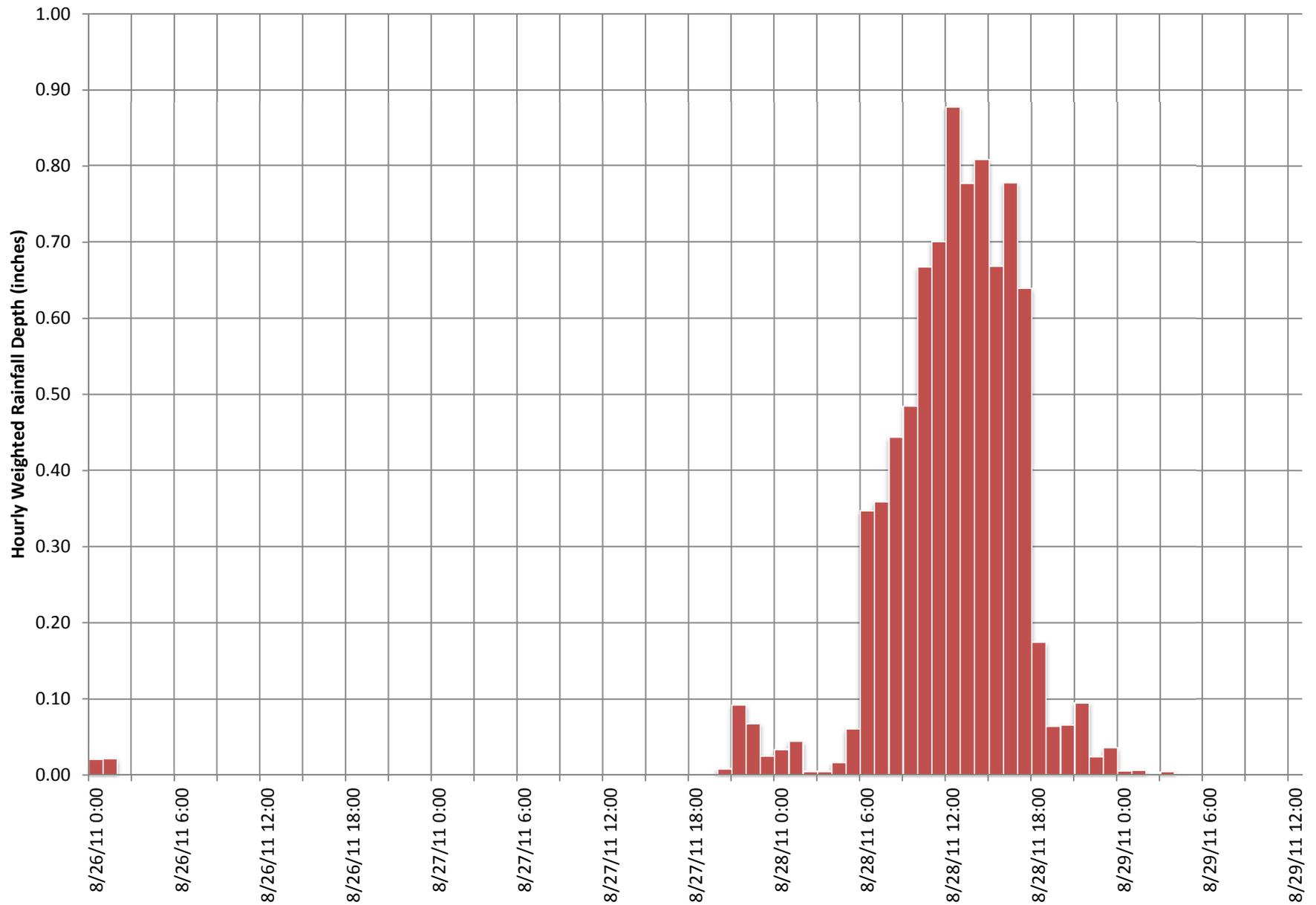


**LEGEND**

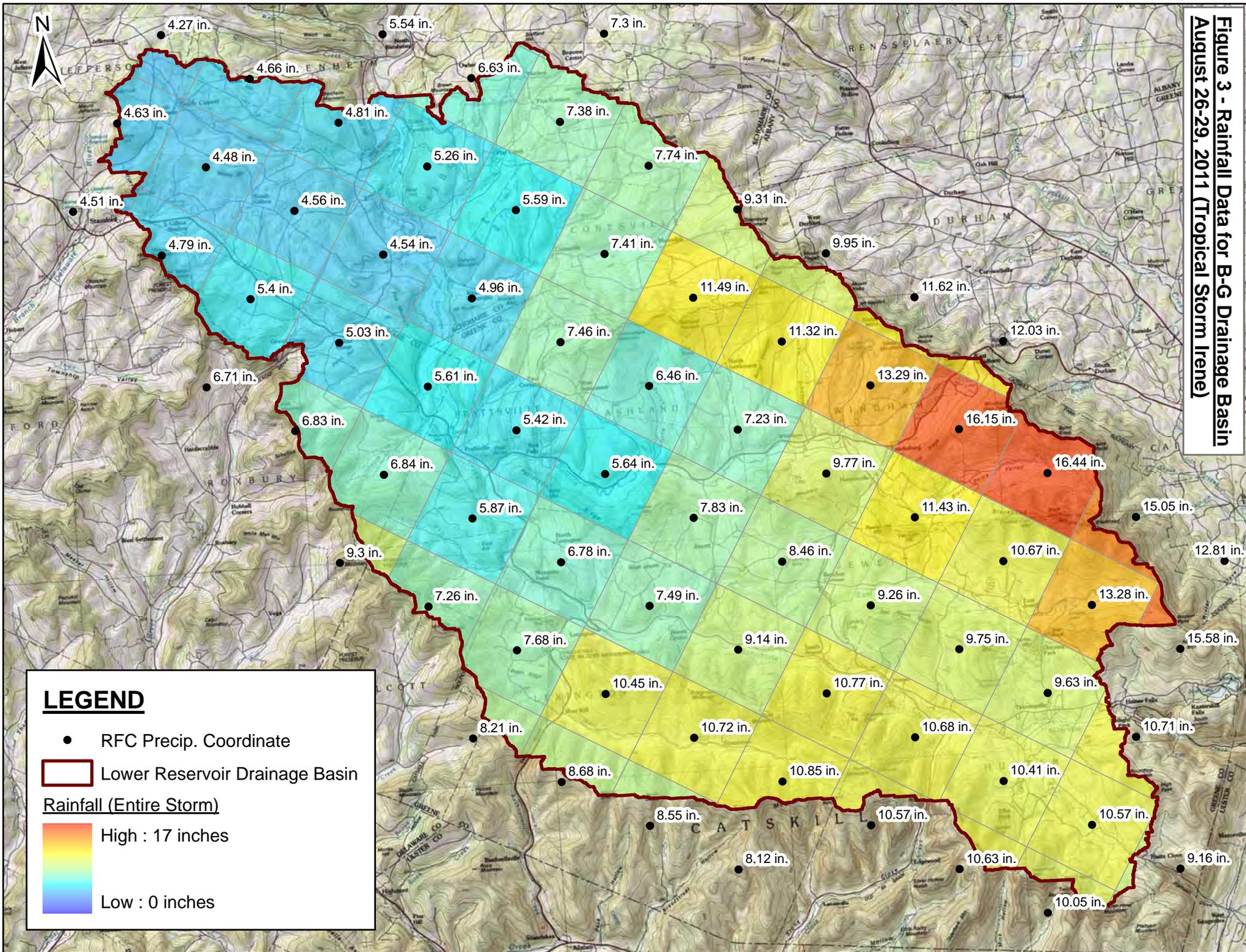
 Lower Reservoir Drainage Basin

Figure 1 - Blenheim-Gilboa Drainage Basin

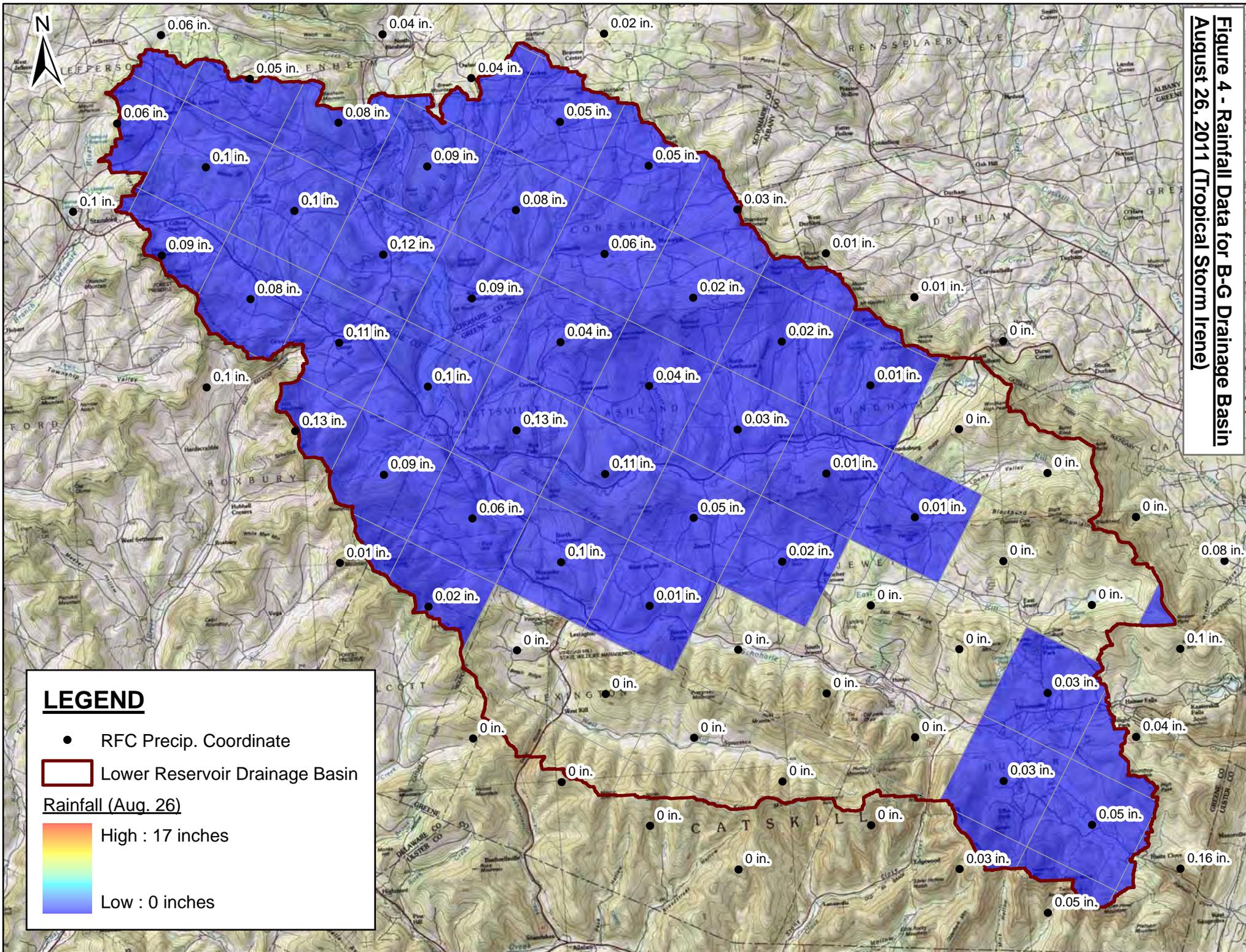
**Figure 2 - Hyetograph for the Blenheim-Gilboa Drainage Basin, August 26-29, 2011**



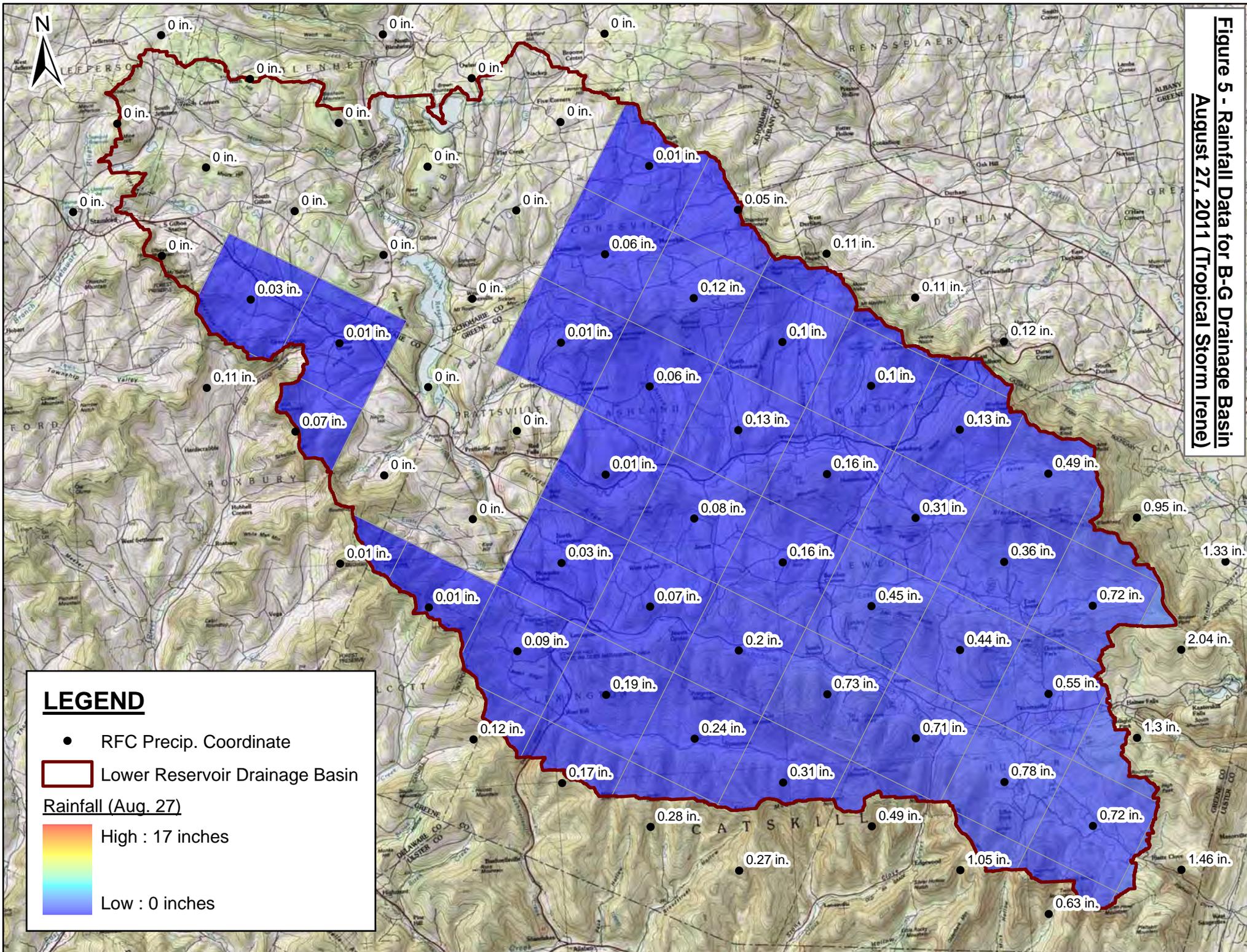
**Figure 3 - Rainfall Data for B-G Drainage Basin  
August 26-29, 2011 (Tropical Storm Irene)**



**Figure 4 - Rainfall Data for B-G Drainage Basin  
August 26, 2011 (Tropical Storm Irene)**



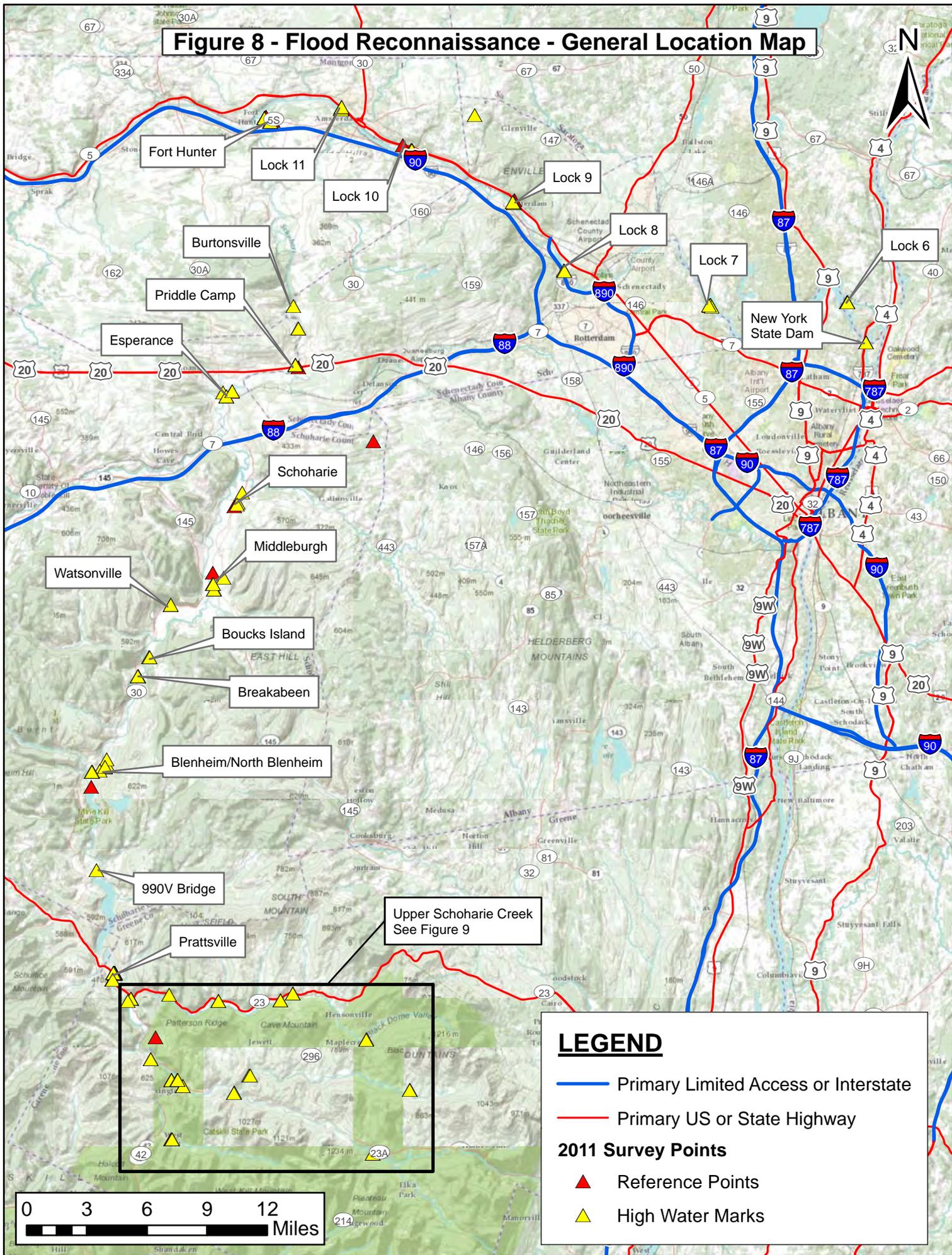
**Figure 5 - Rainfall Data for B-G Drainage Basin  
August 27, 2011 (Tropical Storm Irene)**





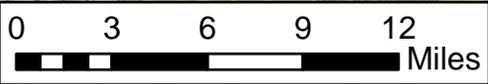


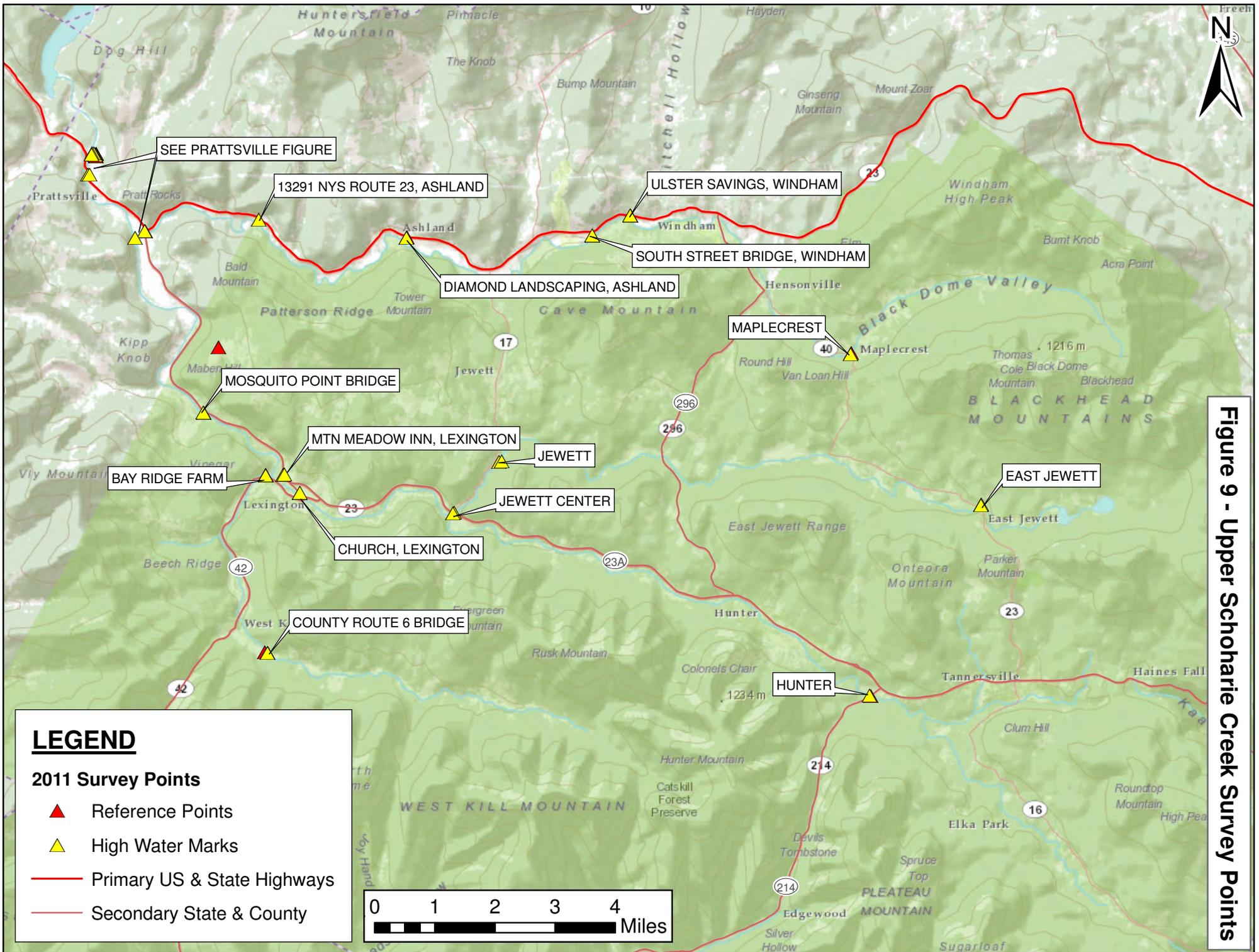
**Figure 8 - Flood Reconnaissance - General Location Map**



**LEGEND**

- Primary Limited Access or Interstate
- Primary US or State Highway
- 2011 Survey Points**
- ▲ Reference Points
- ▲ High Water Marks





**Figure 9 - Upper Schoharie Creek Survey Points**

SEE PRATTSVILLE FIGURE

13291 NYS ROUTE 23, ASHLAND

ULSTER SAVINGS, WINDHAM

SOUTH STREET BRIDGE, WINDHAM

DIAMOND LANDSCAPING, ASHLAND

MAPLECREST

MOSQUITO POINT BRIDGE

MTN MEADOW INN, LEXINGTON

JEWETT

BAY RIDGE FARM

JEWETT CENTER

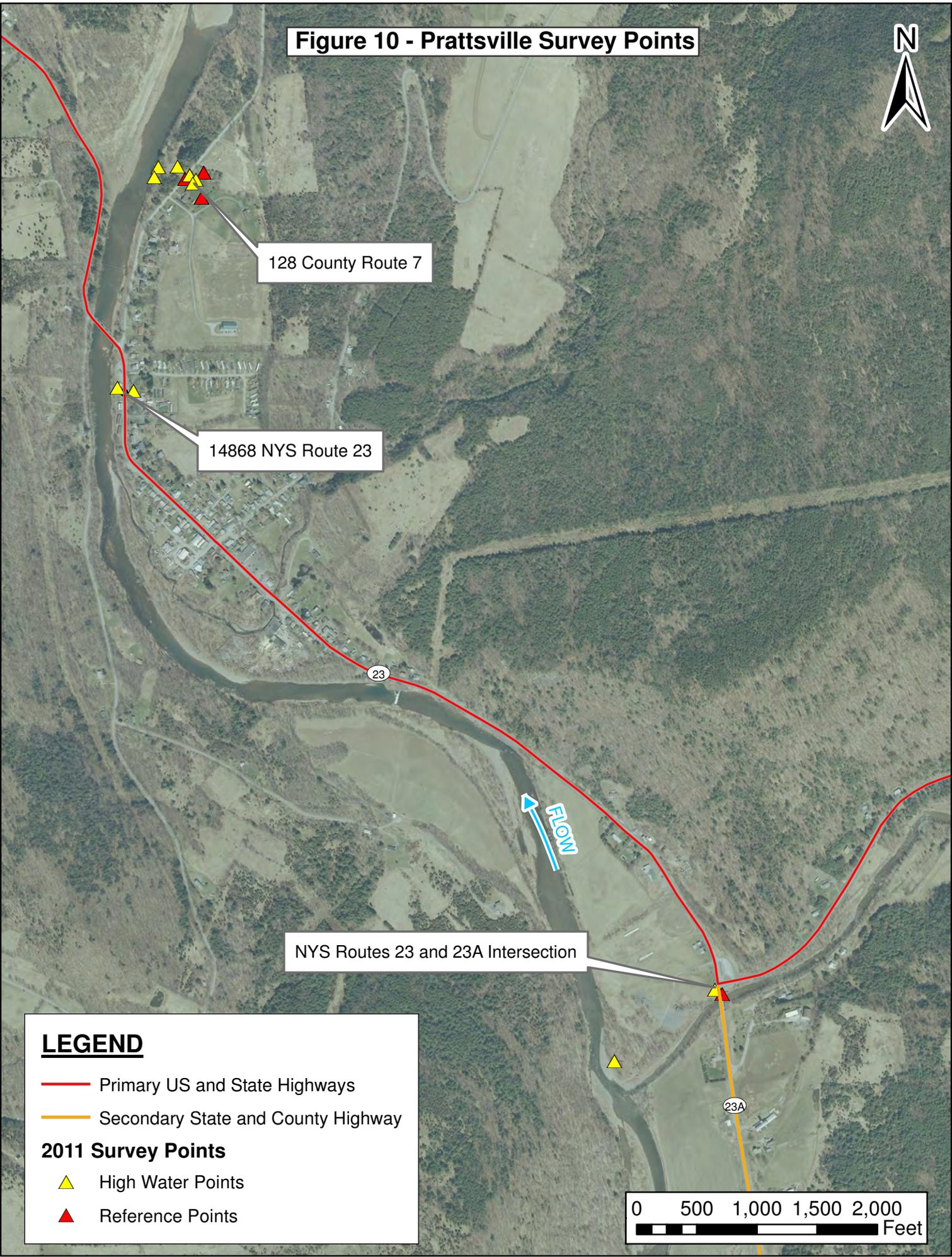
CHURCH, LEXINGTON

EAST JEWETT

COUNTY ROUTE 6 BRIDGE

HUNTER

Figure 10 - Prattsville Survey Points

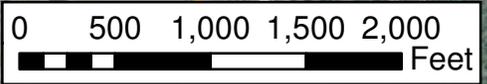


**LEGEND**

- Primary US and State Highways
- Secondary State and County Highway

**2011 Survey Points**

- ▲ High Water Points
- ▲ Reference Points



**Figure 11 - Blenheim/North Blenheim Survey Points**



Figure 12 - Middleburgh Survey Points



R & G Club

168 River Street

106 River Street

**LEGEND**

- Primary US and State Highways
- Secondary State and County Highway

**2011 Survey Points**

- Reference Points
- High Water Marks

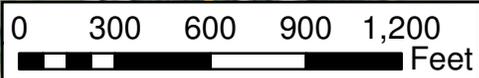


Figure 13 - Schoharie Survey Points



Scho-Wright Ambulance Building

110 Hilgert Parkway

Lassell Hall

**LEGEND**

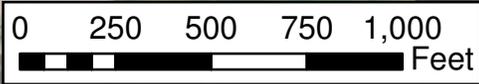
- Primary US and State Highways
- Secondary State and County Highway

**2011 Survey Points**

- Reference Points
- High Water Marks

0 250 500 750 1,000 Feet

Figure 14 - Central Bridge Survey Points



**LEGEND**

- Primary US and State Highways
- Secondary State and County Highway

**2011 Survey Points**

- High Water Marks
- Reference Points

**TABLE 1 - Hyetograph for Blenheim-Gilboa Drainage Basin, August 26-29, 2011**

Rainfall Values Presented Below Represent Weighted Average Over Entire Basin

Date and Time	Hourly Rainfall
GMT	(inches)

8/26/11 12:00 AM	0.021
8/26/11 1:00 AM	0.022
8/26/11 2:00 AM	0.000
8/26/11 3:00 AM	0.000
8/26/11 4:00 AM	0.000
8/26/11 5:00 AM	0.000
8/26/11 6:00 AM	0.000
8/26/11 7:00 AM	0.000
8/26/11 8:00 AM	0.000
8/26/11 9:00 AM	0.000
8/26/11 10:00 AM	0.000
8/26/11 11:00 AM	0.000
8/26/11 12:00 PM	0.000
8/26/11 1:00 PM	0.000
8/26/11 2:00 PM	0.000
8/26/11 3:00 PM	0.000
8/26/11 4:00 PM	0.000
8/26/11 5:00 PM	0.000
8/26/11 6:00 PM	0.000
8/26/11 7:00 PM	0.000
8/26/11 8:00 PM	0.000
8/26/11 9:00 PM	0.000
8/26/11 10:00 PM	0.000
8/26/11 11:00 PM	0.000
8/27/11 12:00 AM	0.000
8/27/11 1:00 AM	0.000
8/27/11 2:00 AM	0.000
8/27/11 3:00 AM	0.000
8/27/11 4:00 AM	0.000
8/27/11 5:00 AM	0.000
8/27/11 6:00 AM	0.000
8/27/11 7:00 AM	0.000
8/27/11 8:00 AM	0.000
8/27/11 9:00 AM	0.000
8/27/11 10:00 AM	0.000
8/27/11 11:00 AM	0.000
8/27/11 12:00 PM	0.000
8/27/11 1:00 PM	0.000
8/27/11 2:00 PM	0.000
8/27/11 3:00 PM	0.000
8/27/11 4:00 PM	0.000
8/27/11 5:00 PM	0.000
8/27/11 6:00 PM	0.000

Date and Time	Hourly Rainfall
GMT	(inches)

8/27/11 7:00 PM	0.000
8/27/11 8:00 PM	0.009
8/27/11 9:00 PM	0.093
8/27/11 10:00 PM	0.068
8/27/11 11:00 PM	0.026
8/28/11 12:00 AM	0.035
8/28/11 1:00 AM	0.045
8/28/11 2:00 AM	0.006
8/28/11 3:00 AM	0.006
8/28/11 4:00 AM	0.017
8/28/11 5:00 AM	0.061
8/28/11 6:00 AM	0.347
8/28/11 7:00 AM	0.359
8/28/11 8:00 AM	0.444
8/28/11 9:00 AM	0.485
8/28/11 10:00 AM	0.668
8/28/11 11:00 AM	0.701
8/28/11 12:00 PM	0.877
8/28/11 1:00 PM	0.777
8/28/11 2:00 PM	0.808
8/28/11 3:00 PM	0.669
8/28/11 4:00 PM	0.778
8/28/11 5:00 PM	0.640
8/28/11 6:00 PM	0.175
8/28/11 7:00 PM	0.065
8/28/11 8:00 PM	0.067
8/28/11 9:00 PM	0.096
8/28/11 10:00 PM	0.025
8/28/11 11:00 PM	0.037
8/29/11 12:00 AM	0.006
8/29/11 1:00 AM	0.007
8/29/11 2:00 AM	0.000
8/29/11 3:00 AM	0.005
8/29/11 4:00 AM	0.000
8/29/11 5:00 AM	0.000
8/29/11 6:00 AM	0.000
8/29/11 7:00 AM	0.000
8/29/11 8:00 AM	0.000
8/29/11 9:00 AM	0.000
8/29/11 10:00 AM	0.000
8/29/11 11:00 AM	0.000
8/29/11 12:00 PM	0.000

# **APPENDIX A**

Additional Information  
(Electronic Files, CD-ROM)

# **APPENDIX B**

Survey Point and Photograph Spreadsheet

Point Number	Northing	Easting	Elevation	Photo Number	Description
51	1271361.4724	510172.2361	1142.33		PRATTSVILLE (CONTROL POINT)
52	1271153.3350	510154.5870	1143.29		PRATTSVILLE (CONTROL POINT)
53	1271310.3218	510017.5283	1143.75		PRATTSVILLE (CONTROL POINT)
1002	1271304.8775	510107.9888	1151.10	1002	MUD LINE HOUSE. #128, CR 7, PRATTSVILLE
1004	1271412.1743	509953.6556	1150.70	1004-A	DEBRIS LINE ON UTILITY POLE
1005	1271407.3547	509793.5279	1150.00	1005	DEBRIS LINE ON TREE, RIGHT BANK SCHOHARIE CREEK
501	1498776.9327	569630.6507	269.85	501-A	LOCK 11 LOCK HOUSE, UP STREAM TOP CONC. WALK, GUY PARK MANOR
			280.85	501-B	MUD LINE ON UPSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, LEFT BANK
502	1498550.6844	569889.4280	269.45	502-A	LOCK 11 LOCK HOUSE, DOWN STREAM TOP CONC. WALK, GUY PARK MANOR
			276.45	502-B & 502-C	MUD LINE ON DOWNSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, LEFT BANK
1013	1499146.0000	569905.0000	276.51	1013	FF "ANYTHING AUTOMOTIVE" OPP ACCESS RD TO LOCK 11, AMSTERDAM
			280.80	1013	MUD LINE ON BUILDING FRONT "ANYTHING AUTOMOTIVE" NYS RT 5 OPPOSITE LOCK 11
503	1498543.9389	569893.7942	269.46		271.0 CANAL DISK AT LOCK 11
504	1499000.7356	569861.4874	277.38		TOP SLY TRACK AT ACCESS RD TO LOCK 11
505	1487840.6232	588455.5425	257.31	505-A	LOCK 10 LOWER HOUSE TOP CONC., PATTERSONVILLE
			264.50	505-B	MUD LINE ON DOWNSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, RIGHT BANK
506	1487983.4154	588179.9947	257.40	506	LOCK 10 UPPER HOUSE TOP CONC., PATTERSONVILLE
			270.30		MUD LINE ON UPSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, RIGHT BANK
507	1487819.6343	588416.7378	257.30	507	LOCK 10 LOCK HOUSE ASPHALT
508	1473943.8154	615332.6875	233.75		108 BY OTHERS (CONTROL POINT)

Point Number	Northing	Easting	Elevation	Photo Number	Description
509	1473982.6944	615248.7397	242.22		543 BY OTHERS (CONTROL POINT)
510	1473985.4793	615246.3376	242.21	510	LOCK 9 LOWER HOUSE FF, ROTTERDAM JUNCTION
			250.30	510	MUD LINE ON DOWNSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, LEFT BANK
1009	1474214.0000	614961.0000	242.38	1009-A	LOCK 9 UPPER HOUSE FF, ROTTERDAM JUNCTION
			253.40	1009-B	MUD LINE ON UPSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, LEFT BANK
					NOTE: SEPTEMBER 2011 STORM DESTROYED UPPER HOUSE AND SURROUNDING AREA
511	1474699.4456	615404.6485	285.41		STEWARTS (CONTROL POINT)
512	1495677.5154	551667.0868	305.51		FORT HUNTER NYS RT 5S (CONTROL POINT)
1007	1495330.0384	551051.1572	296.09		TBM NE ABUTMENT (TOP) NYS RT 5S BRIDGE OVER SCHOHARIE CREEK
513	1495589.9298	551352.3319	301.36		FORT HUNTER NYS RT 5S
1015	1495307.0000	551124.0000	298.20	1015	DEBRIS LINE ON RIGHT BANK SCHOHARIE CREEK, JUST UPSTREAM FROM NYS RT 5S BRIDGE
1016	1495255.0000	550984.0000	298.20	1016	MUD LINE ON DOWNSTREAM GUIDE RAIL OF NYS RT 5S BRIDGE DECK OVER SCHOHARIE CREEK
514	1496513.2480	549718.0584	289.45	514	FT. HUNTER CL OLD AQUEDUCT (CONTROL POINT)
1014	1496231.0000	549520.0000	291.80		DEBRIS LINE ON RIGHT BANK SCHOHARIE CREEK AT OLD AQUEDUCT CROSSING
515	1496632.1610	549956.3816	289.49		FT. HUNTER PK AT EP (CONTROL POINT)
1008	1496243.8340	549493.4185	291.58		TBM TOP OF OLD LAID STONE ABUTMENT FOR OLD AQUEDUCT CROSSING RIGHT BANK SCHOHARIE CREEK
516	1456281.0398	628434.8722	227.59	516	LOCK 8 UPPER HOUSE FF TOP CONC., SCOTIA
			236.60	516	MUD LINE ON UPSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, RIGHT BANK
517	1456004.9175	628631.3293	227.54	517	LOCK 8 LOWER HOUSE FF CONC., SCOTIA
			232.40	517	MUD LINE ON DOWNSTREAM LOCK HOUSE NYS BARGE/ERIE CANAL, RIGHT BANK

Point Number	Northing	Easting	Elevation	Photo Number	Description
518	1446937.1028	666891.5205	217.27		CONTROL POINT AT LOCK 7, VISCHER FERRY
1017	1447005.0000	666687.0000	216.50	1017	MUD LINE ON BANK OF BACKWATER/LAGOON, NYS BARGE/ERIE CANAL, RIGHT BANK
519	1446950.3119	666858.1168	218.06		TOP BURM FOR BACKWATER/LAGOON, (WATER DID NOT EXCEED)
520	1447019.1065	666955.7939	218.30		TOP BURM FOR BACKWATER/LAGOON, (WATER DID NOT EXCEED)
521	1447149.5387	667144.6980	215.83		TOP CONC. WALL BOT STEPS LEADING INTO UPSTREAM PORTION OF LOCK 7 (FLOOD LEVEL UNKNOWN)
					NOTE: (NO APPARENT FLOODING ON UPPER OR LOWER LOCK HOUSE)
522	1446718.4587	667433.8900	188.48	522-A	LOCK 7 DOWNSTREAM OF LOCK GATE OF DOWNSTREAM LOCK USE NYS BARGE/ERIE CANAL, RIGHT BANK
			196.60	522-B	MUD LINE DOWNSTREAM OF LOCK GATE, AGAINST CONC. STEPS/TOP OF CONC. WALK/WALL
523	1447838.9317	703037.5309	189.47		LOCK 6 GUARD GATE 2 (CONTROL POINT)
524	1447815.6903	703144.2318	192.26	524	LOCK 6 GUARD GATE 2 TOP CONC. BULKHEAD (FLIGHT RD. WATERFORD)
			189.77	524	HIGH-WATER OBSERVATION FROM LOCK MASTER ON STAFF GAUGE, MIDDLE PIER
525	1447815.7523	703144.2303	192.28	525	LOCK 6 GUARD GATE 2 TOP CONC. BULKHEAD
526	1437233.7689	708047.2271	64.67	526-B	STATE DAM TOP SHEET PILES
			60.00	526-A	MUD LINE ON SHEET PILES, LEFT BANK MOHAWK RIVER JUST ABOVE "STATE DAM". CONC. BARRIER AT JUNCTION OF MOHAWK AND HUDSON RIVERS
527	1437233.7395	708047.2214	64.65		STATE DAM TOP SHEET PILES (CHECK)
528	1430747.9623	558539.8271	604.71		ESPERANCE (CONTROL POINT)
529	1394213.7247	541623.1380	607.80		SCHOHARIE (CONTROL POINT)
530	1376714.5670	535970.0556	628.30		MIDDLEBURG (CONTROL POINT)
531	1446871.1996	557205.1536	516.79	531-A	BURTONSVILLE SET PK NEAR WEST END NEW BRIDGE
			510.20	531-B	DEBRIS LINE ON EP BRAMAN CORNERS RD. BETWEEN NEW AND OLD BRIDGE, LEFT BANK SCHOHARIE CREEK, RIGHT BANK SIDE CHAN.

Point Number	Northing	Easting	Elevation	Photo Number	Description
532	1440917.9927	558550.3491	556.16	532-A	FF PORCH HOUSE. #262 (formerly #38) PRIDDLE RD (ESPERANCE)
			558.80	532-B	FLOOD LINE AT HOUSE #262 (formerly #38) (MIKE FOGG OWNER) PRIDDLE ROAD, LEFT BANK SCHOHARIE CREEK
533	1440877.9803	558461.5358	547.33	533	SPIKE IN UTILITY POLE NG 17/NYT 1, INTERSECTION PRIDDLE RD AND MEMORY LANE (ESPERANCE)
534	1431220.2424	557762.4287	575.29	534	HOUSE #102 CHARLESTON ST. (O'CONNER RESIDENCE) ESPERANCE
1018	1431283.0000	557681.0000	585.60	1018	MUD LINE AT HOUSE #102 CHARLESTON ST., LEFT BANK SCHOHARIE CREEK JUST DOWN STREAM NYS RT 20 BRIDGE, ESPERANCE
1019	1431265.0000	557729.0000	578.80	1019	1996 FLOOD LINE MARKED BY OWNER (O'CONNER RESIDENCE)
535	1424111.3359	538630.0042	586.28		SE COR. BRIDGE DECK JUNCTION RD/CR 10 (ZICHA RD) NEAR NYS RT 30A INTERSECTION
			596.30	535	MUD LINE ON STEEL WEBBING ABOVE BRIDGE DECK FOR JUNCTION RD/CR 10 (ZICHA RD )OVER SCHOHARIE CREEK
536	1423051.3800	539520.8140	596.44	536-A	PK H2O LINE JUNCTION RD/CR 10 (ZICHA RD)
			596.40	536-B	DEBRIS LINE ON EP JUNCTION RD/CR 10 (ZICHA RD) RIGHT BANK SCHOHARIE CREEK
537	1395095.8627	542551.9401	608.10	537-A	POINT IN FRONT LASSELL HOUSE
			614.30	537-B	FLOOD LINE, LASSELL HALL, MAIN STREET (NYS RT 30),VILLAGE OF SCHOHARIE
538	1394584.4921	542601.2631	614.51	538-A & 538-B	DEBRIS LINE (PK SET) AT EP LOCATED OPPOSITE HOUSE #124 HILGERT PARKWAY, VILLAGE OF SCHOHARIE
539	1397771.0741	543719.2419	610.90	539-A	SCHO-WRIGHT AMBULANCE FF
			613.20	539-B	FLOOD LINE, SCHO-WRIGHT AMBULANCE BLDG. #388 MAIN STREET (NYS RT 30), VILLAGE OF SCHOHARIE
540	1394658.8386	542317.1254	606.04	540-A	110 HILGERT PARKWAY DRIVEWAY CL WALK
			614.40	540-B	FLOOD LINE, HOUSE #110 HILGERT PARKWAY, VILLAGE OF SCHOHARIE
541	1375301.0012	538811.6114	634.08	541	CL ACCESS ROAD MIDDLEBURGH ROD AND GUN CLUB
			634.00	541	DEBRIS LINE ON ACCESS ROAD TO MIDDLEBURGH ROD AND GUN CLUB, LOCATED 57' EAST OF GATE
542	1372228.0286	536305.3614	631.60		HYDRANT CAP NUT FACING RIVER ST ACROSS #106

Point Number	Northing	Easting	Elevation	Photo Number	Description
1021	1372165.0000	536336.0000	636.60	1021-A & 1021-B	FLOOD LINE, HOUSE #106 RIVER STREET (NYS RT 30) RIGHT BANK SCHOHARIE CREEK, MIDDLEBURGH
1022	1372246.0000	536235.0000	632.78	1022-A & 1022-B	NAIL/BLUE IN TREE SET FROM 1996 FLOOD (HIGH WATER) RIGHT BANK SCHOHARIE CREEK, OPPOSITE HOUSE #106 RIVER STREET (NYS RT 30), MIDDLEBURGH
543	1373670.8517	535925.5911	629.14		RIVER STREET 168 CURB OPP HYDRANT
544	1373680.6992	535932.7532	631.33		RIVER STREET/RT 30 MIDDLEBURGH OPP. HOUSE #168 HYDRANT CAP NUT
1023	1373700.0000	536031.0000	636.70	1023-A, 1023-B & 1023-C	FLOOD LINE, HOUSE #168 RIVER STREET (NYS RT 30) RIGHT BANK SCHOHARIE CREEK, MIDDLEBURGH
545	1349384.1716	516278.6350	713.62	545	USGS MONUMENT NE BRIDGE ABUT BREAKABEEN BRIDGE, NYS RT 30
1027	1349381.0000	516317.0000	704.60	1027	DEBRIS LINE AT 3 BOLE SYCAMORE, LEFT BANK SCHOHARIE CREEK 60' DOWN STREAM FROM BREAKABEEN BRIDGE, NYS RT 30
1028	1349369.0000	515178.0000	705.70	1028	DEBRIS LINE, LEFT BANK SCHOHARIE CREEK, AT BREAKABEEN BRIDGE, NYS RT 30
546	1354350.7795	519232.4884	682.30		JIM SHAUL PROP (CONTROL POINT)
1025	1354436.0000	519341.0000	687.80	1025	WATER LINE INSIDE "JIM SHAUL HOUSE" BOUCK ISLAND, OFF NYS RT 30, HOUSE# 153 REDLING RD.
1026	1354420.0000	519393.0000	687.79	1026	PK SET IN FACE OF 28" OAK TREE AT FLOOD LINE, NEAR REAR PORCH "JIM SHAUL HOUSE" BOUCK ISLAND, HOUSE. #153 REDLING RD. OFF NYS RT 30,
1045	1354428.0000	519125.0000	681.86	1045-A & 1045-B	TBM, PK SET IN ROOT OF 30" OAK TREE, RIGHT SIDE ROAD NEAR PRIVATE BRIDGE TO "JIM SHAUL HOUSE" BOUCK ISLAND, HOUSE. #153 REDLING RD OFF NYS RT 30,
547	1368088.2726	524813.1589	650.67	547	PENDERGAST HOUSE NYS RT 30 WATSONVILLE
1024	1368201.0000	524869.0000	655.20	1024	WATER LINE INSIDE "THE PENDERGAST HOUSE" NYS RT 30, WATSONVILLE
548	1269575.1210	509454.1460	1146.38	548	CONC. FOUND PRATTSVILLE GAS STATION
1010	1269548.0000	509587.0000	1152.60	1010	MUD LINE HOUSE. #14686 MAIN ST./NYS RT. 23
549	1326130.7889	508121.5289	792.56	549-A	NORTH BLENHEIM NEAR HOUSE NO.1933 2" OAK
			792.60	549-B	DEBRIS LINE, RIGHT BANK SCHOHARIE CREEK ADJACENT TO HOUSE #1933 AT BASE OF 2" OAK
550	1327499.6169	508002.7338	786.78	550	WL-SOUTHWEST COR. RED BARN #1976 NYS RT 30, NORTH BLENHEIM
			786.80	550	DEBRIS LINE AT SOUTHWEST COR. RED BARN #1976 NYS RT 30, NORTH BLENHEIM

Point Number	Northing	Easting	Elevation	Photo Number	Description
551	1325520.4590	507524.5234	786.99	551	BEAR LADDER ROAD #103 NORTH BLENHEIM
1029	1325571.0000	507554.0000	793.50	1029	MUD LINE HOUSE. #103 BEAR LADDER RD/NYS RT. 30
552	1325480.8367	507611.8116	795.76		NYS DOT-9E172 CONTROL MONUMENT AT INTERSECTION BEAR LADDER RD/NYS RT. 30
553	1324587.4421	506188.7974	801.74	553-A	PK NAIL SET AT DEBRIS LINE IN UTILITY POLE NM 244-1, MT CO 20-1
			801.70	553-B	DEBRIS LINE IN FRONT "ROYAL OAK FARM" #1829 NYS RT. 30 BLENHEIM,
554	1324247.0928	504125.1653	809.81	1030	POST OFFICE BLENHEIM REAR DOOR WL-2.2
1030	1324266.0000	504140.0000	812.00	1030	MUD LINE IN SOUTHERLY (REAR) DOOR "BLENHEIM FIRE HOUSE/POST OFFICE" #1748 NYS RT. 30 BLENHEIM,
555	1324319.3352	504056.3574	813.06		POST OFFICE - BLACKTOP DRIVE=FF SOUTH DOOR WL=3.0
1031	1324303.0000	504091.0000	813.10	1031	MUD LINE IN WESTERLY (SIDE) DOOR "BLENHEIM FIRE HOUSE/POST OFFICE" #1748 NYS RT. 30 BLENHEIM,
1032	1324301.0000	504195.0000	811.40	1032	MUD LINE IN NORTHERLY INSIDE OF "BLENHEIM FIRE HOUSE/POST OFFICE" #1748 NYS RT. 30 BLENHEIM
557	1298482.8039	505318.5307	977.92	557-B	GILBOA EDGE OF DEBRIS LINE 990V BRIDGE
			977.90	557-A	DEBRIS LINE INSIDE GATE 18 DEP GILBOA RES. AT NYS990V NEAR BRIDGE, LEFT SIDE SCHOHARIE CREEK
558	1227565.5426	524967.2207	1517.86	1035	RT 6 BRIDGE OVER WEST KILL
1035	1227532.0000	525231.0000	1517.80	1035	DEBRIS LINE LOCATED AT LEFT BANK "WEST KILL", JUST DOWNSTREAM OF CR 6 BRIDGE
1036	1227503.0000	525217.0000	1521.81		TBM, RR SPIKE IN UTILITY POLE UHER 5358/ NYT 38 LEFT BANK "WEST KILL", DOWNSTREAM OF CR 6 BRIDGE
559	1223737.6655	578176.9452	1686.69	559	RM 60 AT HUNTER RT 214 BRIDGE TOP ABUTMENT
1040	1223777.0000	578060.0000	1674.80	1040	DEBRIS LINE LOCATED AT LEFT BANK "SCHOHARIE CREEK", JUST DOWNSTREAM OF CR 214 BRIDGE
560	1253872.2118	576457.3450	1746.68	1041	MAPLECREST CR 40 HOUSE #470
1041	1253779.0000	576395.0000	1748.10	1041	MUD LINE ON HOUSE #470, CR 40 IN MAPLECREST, RIGHT BANK "BATAVIA KILL"
561	1264059.7861	537455.4939	1434.17	561	ASHLAND DIAMOND LANDSCAPE PK AT EP

Point Number	Northing	Easting	Elevation	Photo Number	Description
1044	1264003.0000	537414.0000	1415.40	1044-A & 1044-B	DEBRIS LINE IN FIELD, NEAR RIGHT BANK "BATAVIA KILL" LOCATED AT "DIAMOND LANDSCAPES" NYS RT 23, ASHLAND
562	1265623.8525	524448.6271	1333.00	562-A & 562-B	DEBRIS LINE ON PRIVATE ASPHALT DRIVE, RIGHT BANK "BATAVIA KILL" HSE#13291, NYS RT 23, ASHLAND
563	1264155.6811	553747.9461	1487.94		RM 12 TOP ABUTMENT SOUTH STREET/CR 12 BRIDGE
1043	1264190.0000	553732.0000	1483.40	1043-A & 1043-B	DEBRIS LINE ON RIGHT BANK "BATAVIA KILL" LOCATED AT UPSTREAM SIDE SOUTH STREET BRIDGE (CR 12) WINDHAM
564	1265911.8202	557069.4569	1497.49	564	ULSTER SAVINGS BANK
1042	1265961.0000	557036.0000	1501.80	1042	MUD LINE ON "ULSTER SAVINGS BANK" #5494 NYS RT 23, WINDHAM RIGHT SIDE "BATAVIA KILL"
565	1244279.3031	545527.6931	1472.32	565	BRIDGE ABUT. WHALEY RD/CLOOSE RD OVER EAST KILL
1038	1244356.0000	545778.0000	1477.40	1038	DEBRIS LINE/NAIL LABELED "U.S.G.S." SET IN A HEMLOCK AND A DECIDUOUS TREE, LEFT BANK "EAST KILL", JUST UPSTREAM OF CLOOSE/WHALEY RD. BRIDGE (SPUR TO CR 17) JEWETT
566	1240559.7498	587882.5577	1921.66	566	EAST JEWETT EAST KILL, RT 23C HOUSE 1363
1039	1240479.0000	587838.0000	1910.00	1039	DEBRIS LINE LOCATED AT RIGHT BANK "EAST KILL", DOWNSTREAM OF NYS RT 23C BRIDGE BEHIND HOUSE #1363
567	1248571.0337	519613.1617	1279.68	567	MOSQUITO POINT BRIDGE WING WALL 23A SIDE TOP WALL
1033	1248653.0000	519573.0000	1267.00	1033-A & 1033-B	WATER LINE SCHOHARIE CREEK, RIGHT BANK ON PIER OF BACK DECK HOUSE #12293 NYS RT 23A AND CR 2
568	1243193.2999	526694.9446	1320.04	568	PK IN POLE CHGE CUSTOMER #31423, LOCATED AT "MOUNTAIN MEADOW INN"
569	1243218.9535	526639.6134	1318.17		MT MEADOW B&B RT 23A SHOT ON EP
1034	1243147.0000	526579.0000	1314.70	1034	DEBRIS LINE SCHOHARIE CREEK, RIGHT BANK OPPOSITE "MOUNTAIN MEADOW INN" #11548 NYS RT 23A
570	1241558.6463	528027.4995	1322.63	570	BM- SPIKE IN UTILITY POLE VZ 4, CHGE 109014 OPPOSITE "LEXINGTON-WEST KILL METHODIST CHURCH"
571	1241611.4164	528052.7167	1323.61	571-B	FF CHURCH
			1325.80	571-A	MUD LINE "LEXINGTON-WEST KILL UNITED METHODIST CHURCH" CR 13A, RIGHT SIDE SCHOHARIE CREEK,
572	1239812.5605	541606.2159	1406.31	572	RM 8 AT RT 23A BRIDGE EAST KILL
1037	1239762.0000	541499.0000	1396.20	1037-A & 1037-B	DEBRIS LINE LOCATED AT LEFT BANK "EAST KILL", DOWNSTREAM OF NYS RT 23A BRIDGE

Point Number	Northing	Easting	Elevation	Photo Number	Description
573	1243061.2661	525053.7078	1321.23	573-A	BAY RIDGE FARM, NYS RT 42, FRONT SW CORNER PORCH AT GROUND
			1322.10	573-B	DEBRIS LINE "BAY RIDGE FARM" NYS RT 42, SW PORCH CORNER- SOUTH (ROAD) SIDE HOUSE,
574	1243112.7208	525036.3779	1321.33	574	STONE PATIO REAR
			1322.20	574	MUD LINE "BAY RIDGE FARM" NYS RT 42, MIDDLE OF SECOND STEP- WEST SIDE HOUSE
575	1243112.8953	525038.9049	1323.08	574	STONE PATIO REAR TOP STEP
576	1424247.7213	541002.4446	597.80		CONTROL POINT AT PUMPKIN PATCH, 2716 CREEK ROAD ESPERENCE
1020	1424344.0000	541035.0000	596.20	1020-A & 1020-B	MUD LINE (SOUTHERLY FACE, SECOND STORY) OF RED BARN, COMMONLY KNOWN AS "THE PUMPKIN PATCH"
RM36	1264543.3670	514481.1670	1187.91	RM36-A & RM36-B	NYSDEC FLOOD PLANE DISK ON NE ABUT. NYS RT 23A BRIDGE OVER BATAVIA KILL
1011	1264576.0000	514419.0000	1178.75	1011	DEBRIS LINE WEST BANK NYS RT 23A, RIGHT SIDE BATAVIA KILL
1012	1263983.0000	513584.0000	1177.20	1012-A & 1012-B	DEBRIS LINE RIGHT BANK SCHOHARIE CREEK, 100' +/- DOWNSTREAM FROM BATAVIA KILL JUNCTION
GILBOA CBN	1320359.5476	503965.5209	827.55		(CONTROL POINT)
LEXINGTON	1254360.2472	520909.6800	1777.86		(CONTROL POINT)
T444	1489154.7679	586035.8186	277.80		(CONTROL POINT)
WRIGHT	1411264.6086	578273.7352	1344.38		(CONTROL POINT)
ZEICA RD	1423051.3799	539520.8140	596.42		(CONTROL POINT)