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RESILIENT NEW YORK FLOOD MITIGATION INITIATIVE

Gott Creek, New YORK

Prepared for:

Project Team:

IN NOVEMBER 2018, NEW YORK STATE GOVERNOR ANDREW CUOMO COMMITTED FUNDING TO UNDERTAKE ADVANCED MODELING TECHNIQUES AND FIELD ASSESSMENTS OF 48 FLOOD-PRONE STREAMS TO IDENTIFY PRIORITY PROJECTS AND ACTIONS TO REDUCE COMMUNITY FLOOD AND ICE JAM RISKS, WHILE IMPROVING HABITAT. THE OVERALL GOAL OF THE PROGRAM IS TO MAKE NEW YORK STATE MORE RESILIENT TO FUTURE FLOODING.

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

1-D	one-dimensional
2-D	two-dimensional
ACE	annual chance flood event
BCC	bird of conservation concern
BFE	base flood elevation
BIN	Bridge Identification Number
BRIC	Building Resilient Infrastructure and Communities
CDBG	Community Development Block Grants
CFA	Consolidated Funding Applications
CFR	Code of Federal Regulations
cfs	cubic feet per second
CIN	Culvert Identification Number
CMIP	Coupled Model Intercomparison Project
CRISSP	Comprehensive River Ice Simulation System Project
CRRA	Community Risk and Resiliency Act
CRREL	Cold Regions Research and Engineering Laboratory
CRS	Community Rating System
CSC	Climate Smart Communities
DEM	Digital Elevation Model
EWP	Emergency Watershed Protection
FDD	freezing degree-day
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMA	Flood Mitigation Assistance
ft	feet
GIS	Geographic Information Systems
GLS	Generalized Least-Squares
GSE	Gomez and Sullivan Engineers, D.P.C.
H&H	Hydrologic and Hydraulic
HEC	Hydrologic Engineering Center
HEC-RAS	Hydrologic Engineering Center's River Analysis System
Highland Planning	Highland Planning, LLC
HMGP	Hazard Mitigation Grant Program
IPaC	Information for Planning and Consultation
LiDAR	Light Detection and Ranging
LOMR	Letter of Map Revision
mi^2	square miles
MSC	Map Service Center
NAVD88	North American Vertical Datum of 1988
NCEI	National Centers for Environmental Information
NFIP	National Flood Insurance Program
NGVD29	National Geodetic Vertical Datum of 1929
NLCD	National Land Cover Database
NRCS	Natural Resources Conservation Service

NWI	National Wetlands Inventory
NYSDEC	New York State Department of Environmental Conservation
NYSDHSES	New York State Division of Homeland Security and Emergency Services
NYSDOT	New York State Department of Transportation
NYSERDA	New York State Energy Research and Development Authority
NYSGOSR	New York State Governors Office of Storm Recovery
NYSOEM	New York State Office of Emergency Management
NYSOGS	New York State Office of General Services
NYSOPRHP	New York State Office of Parks, Recreation, and Historic Places
OBG	O'Brien and Gere, Part of Ramboll
PDM	Pre-Disaster Mitigation
RCP	Representative Concentration Pathways
RAMBOLL	OBG, Part of Ramboll
R_c	Circularity Ratio
R_E	Elongation Ratio
R_F	Form Factor
RF	Radio Frequency
RL	Repetitive Loss
ROM	Rough Order of Magnitude
SFHA	Special Flood Hazard Area
SRL	Severe Repetitive Loss
USACE	United States Army Corps of Engineers
USDHS	United States Department of Homeland Security
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WCRP	World Climate Research Programme
WGCM	Working Group Coupled Modelling
WQIP	Water Quality Improvement Project

Introduction

Historical Initiatives

Flood mitigation has historically been an initiative in Western New York and in the Gott Creek watershed. Gott Creek flood mitigation efforts date as far back as 1900, when the State of New York cleared the channel in the Town of Amherst (FEMA, 2019a). Channel improvements were also made to Gott Creek within the Town of Amherst more recently according to a 2011 report (URS, 2011). Since 1977, the Town of Amherst floodplain regulations have required that all new construction be flood proofed to the elevation of the 1% annual chance flood event (ACE), commonly referred to as the 100-year flood (FEMA, 1992). Classification, visual assessment, streambank stability assessment, and potential bank stabilization recommendations, along Gott Creek was perfomed within the Town of Clarence (Frothingham, 2005).

Earthen berms (i.e. levees) line the banks on either side of the channel downstream of Casey Road. These embankments are not listed in the National Levee Database managed by the United States Army Corps of Engineers (USACE) and the Federal Emergency Management Agency (FEMA). As such, the effective FIRM shows areas behind these structures would be inundated during the 1- and 0.2% ACE events. The origin of these levees is unclear, but Town of Amherst staff indicates they were constructed over 40 years ago. The Town of Amherst performs minor maintenance (mowing and debris management) for the levees and creek within this area. They also address more significant issues, such as sloughs and sags for those sections of the levee on Town of Amherst property. The Town owns all of the property for levees to the west of Gott Creek downstream of Casey Road, as well as most of property for levees to the east and west of Gott Creek downstream of North French Road. The levees to the east of Gott Creek between Casey and North French Roads are privately owned. Landowners are responsible for the upkeep of levees on their property (Lucey, Tim, 2020).

The 2011 flood mitigation report recommended various measures included flood-proofing structures to two feet above the base flood elevation, implementation of a flood early warning system, open space and farmland conservation, purchase of repetitive loss structures, channel maintenance, updating town ordinances, developing a flood awareness/education program, and floodproofing evacuation routes (URS, 2011).

Floodplain Development

General recommendations for high risk floodplain development follow four basic strategies:

1. Remove the flood prone facilities from the floodplain
2. Adapt the facilities to be flood resilient under repetitive inundation scenarios
3. Develop nature-based mitigation measures (e.g., floodplain benches, constructed wetlands, etc.) to lower flood stages in effected areas
4. Up-size bridges and culverts to be more resilient to ice jams, high flow events, and projected future flood flows due to climate change in effected areas

In order to effectively mitigate flooding along substantial lengths of a watercourse corridor, floodplain management should restrict the encroachment on natural floodplain areas. Floodplains act to convey floodwaters downstream, mitigate damaging velocities, and provide areas for sediment to accumulate safely. The reduction in floodplain width of one reach of a stream, often leads to the increase in flooding upstream or downstream. During a flood event, a finite amount of water with an unchanging volume must

be conveyed and, as certain conveyance areas are encroached upon, floodwaters will often expand into other sensitive areas.

A critical evaluation of existing floodplain law and policies should be undertaken to evaluate the effectiveness of current practices and requirements within this watershed. Local floodplain regulations should be consistent with the National Flood Insurance Program (NFIP) and Federal Emergency Management Agency (FEMA) regulations since the Towns of Amherst and Clarence are participating communities in the NFIP and should involve a floodplain coordinator and a site plan review process for all proposed developments. This review should be in accordance with local regulations and the NFIP requirements, which require the community to determine if any future proposed development could adversely impact the floodplain or floodway resulting in higher flood stages and sequentially greater economic losses to the community.

Resilient NY Initiative

In November of 2018, New York State Governor Andrew Cuomo announced the Resilient NY program in response to devastating flooding in communities across the State in the preceding years. A total of 48 high-priority flood prone watersheds across New York State are being addressed through the Resilient NY program. Flood mitigation studies were commissioned using advanced modeling techniques and field assessments to identify priority projects in these 48 flood-prone watersheds, develop state-of-the-art studies to reduce flooding and ice jams, and improve ecological habitats in the watersheds (NYSGPO, 2018). The Gott Creek watershed was chosen as a study site for this initiative.

The New York State Department of Environmental Conservation (NYSDEC) is responsible for implementing the Resilient NY program with contractual assistance from the New York State Office of General Services (NYSOGS). High-priority watersheds were selected based on several factors, such as frequency and severity of flooding and ice jams, extent of previous flood damage, and susceptibility to future flooding and ice-jam formations (NYSGPO, 2018).

The Resilient NY flood studies will identify the causes of flooding within each watershed and develop effective and ecologically sustainable flood and ice-jam hazard mitigation projects. Potential flood mitigation measures will be evaluated using hydrologic and hydraulic (H&H) modeling to quantitatively determine flood mitigation strategies that would result in the greatest flood reduction benefits. In addition, the flood mitigation studies incorporate the latest climate change forecasts and assess open water and ice-jam hazards where future flood risks have been identified.

This report is not intended to address detailed design considerations for individual flood mitigation alternatives. The mitigation alternatives discussed are conceptual projects that have been initially developed and evaluated to determine their flood mitigation benefits. A more in-depth engineering design study would still be required for any mitigation alternative chosen to further define the engineering project details. However, the information contained within this study can inform such in-depth engineering design studies and be used in the application for state and federal funding and/or grant programs.

The goals of the Resilient NY Program are to:

1. Perform comprehensive flood and ice jam studies to identify known and potential flood risks in flood-prone watersheds

2. Incorporate climate change predictions into future flood models
3. Develop and evaluate flood hazard mitigation alternatives for each flood-prone stream area, with a focus on ice-jam hazards

The overarching purpose of the initiative is to evaluate a suite of flood and ice-jam mitigation projects that local municipalities can undertake to make their community more resilient to future floods. The projects should be affordable, attainable through grant funding programs, able to be implemented either individually or in combination in phases over the course of several years, achieve measurable improvement at the completion of each phase, and fit with the community way of life. The information developed under this initiative is intended to provide the community with a basis for assessing and selecting flood mitigation strategies to pursue; no recommendations are made as to which strategies the community should pursue.

The flood mitigation and resiliency study for Gott Creek began in September of 2019 and a final flood study report was issued in February of 2021.

Data Collection

Initial Data Collection

Hydrological and meteorological data were obtained from readily available state and federal government databases, including ortho-imagery, flood zone maps, streamflow, precipitation, flooding and ice jam reports. Historical flood reports, newspaper articles, social media posts, community engagement meeting notes, and geographic information system (GIS) mapping were used to identify stakeholder concerns, produce watershed maps, and identify current high-risk areas. New York State Community Risk and Resiliency Act (NYSDEC, 2018) draft guidelines, New York State Department of Transportation (NYSDOT) bridge and culvert standards, and United States Geologic Service (USGS) *FutureFlow Explorer* v1.5 (USGS, 2016) and *StreamStats* v4.4.0 (USGS, 2020) software were used to develop current and future potential discharges and bankfull widths and depths at various points along the stream channel. H&H modeling was performed previously, as part of the 1990 FEMA Flood Insurance Study (FIS) for the Town of Amherst and the 1996 FEMA FIS for the Town the Clarence.

Updated H&H modeling was performed in this study using the United States Army Corps of Engineers (USACE) Hydrologic Engineering Center's River Analysis System (HEC-RAS) v5.0.7 (USACE, 2019) software to compute water stage at current and potential future levels for high risk areas and to evaluate the effectiveness of potential flood mitigation strategies. These studies and data were obtained and used, all or in part, as part of this effort. Appendix A is a summary listing of data and reports collected for this study.

Public Outreach

An initial project kickoff meeting was held on September 19, 2019, with representatives of the NYSDEC, NYSOGS, OBG, Part of Ramboll (Ramboll), Gomez & Sullivan Engineers, D.P.C. (GSE), Highland Planning, USACE, the Counties of Erie, Genesee, and Niagara; the Towns of Amherst, Batavia, Clarence, Newstead, and Royalton; the Village of Alexander; and Buffalo Niagara Waterkeeper (Appendix B). At the project kickoff meeting, project specifics including background, purpose, funding, roles, and timelines were discussed. Discussions included a variety of topics, including:

- Firsthand accounts of past flooding events
- Identification of specific areas that flooded in each community, and the extent and severity of flood damage
- Information on post-flood mitigation efforts, such as temporary floodwalls

This outreach effort assisted in the identification of current high-risk areas to focus on during the future flood risk assessments. During this meeting questions were raised regarding the levees located along the downstream portions of Gott Creek, and whether they met FEMA requirements for providing flood protection. Various comments were also received regarding the Pines Subdivision, located immediately west of Gott Creek along Casey Road, and the need for pumping during high water events. It was also noted during this meeting that other, newer subdivisions did not experience residential flooding, but the homes become inaccessible due to street flooding.

Field Assessment

Following the initial data gathering and agency meetings, field staff from GSE undertook field data collection efforts with special attention given to high risk areas in the Towns of Amherst and Clarence, as identified in the initial data collection process. Initial field assessments of Gott Creek were conducted in

September 2019, with additional data collected in September 2020. Information collected during field investigations included the following:

- Rapid "windshield" river corridor inspection
- Photo documentation of inspected areas
- Measurement and rapid hydraulic assessment of bridges, culverts, and dams
- Geomorphic classification and assessment, including measurement of bankfull channel widths and depths at key cross sections
- Field identification of potential flood storage areas
- Wolman pebble counts
- Characterization of key stream bank failures, head cuts, bed erosion, aggradation areas, and other unstable stream channel features
- Preliminary identification of potential flood hazard mitigation alternatives, including those requiring further analysis

Included in Appendix C is a copy of the Stream Channel Classification Form, Field Observation Form for the inspection of bridges and culverts, and Wolman Pebble Count Form. Appendix D is a photo log of select locations within the river corridor. The collected field data was categorized, summarized, indexed, and geographically located within a GIS database. This GIS database will be made available to the NYSDEC and NYSOGS upon completion of the project.

All references to “right bank” and “left bank” in this report refer to "river right" and "river left," meaning the orientation assumes that the reader is standing in the river looking downstream.

Watershed Characteristics

Study Area

The Gott Creek watershed lies primarily within the Towns of Amherst and Clarence, in Erie County NY, with a portion of the headwaters extending into the Town of Lancaster in Erie County, NY. The creek originates in Spaulding Lake near the intersection of Main Street and Spaulding Drive in Clarence, NY, and generally flows from southeast to northwest into Ransom Creek in Amherst, NY. The creek has a total drainage area of 18.4 square miles at its confluence with Ransom Creek. Figure 1 depicts the location of the Gott Creek watershed.

Within the watershed, the Towns of Amherst and Clarence were chosen as the target study area due to the history of flooding in and along the creek and the amount of development along the creek. Figure 2 depicts the stationing of the creek for the watershed and identifies the study area. The portion of Gott Creek specifically included in this study extend from its confluence with Ransom Creek upstream to Roll Road in the Town of Clarence. Figure 3 depicts the stationing along Gott Creek within the Towns of Amherst and Clarence, as well as the locations where field data was collected for this study.

Figure 1. Gott Creek Watershed, Erie County, NY

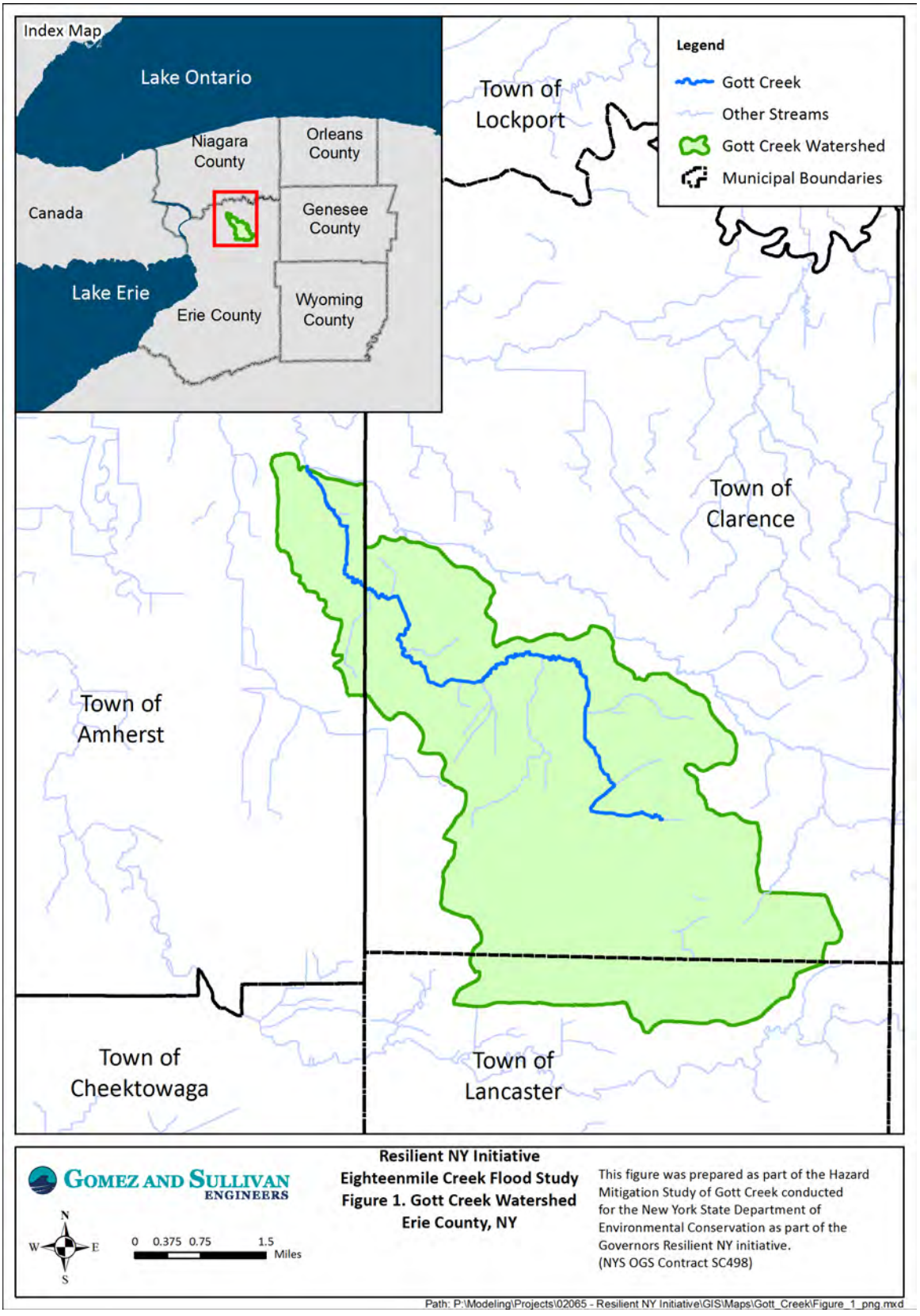


Figure 2. Gott Creek Stationing, Erie County, NY

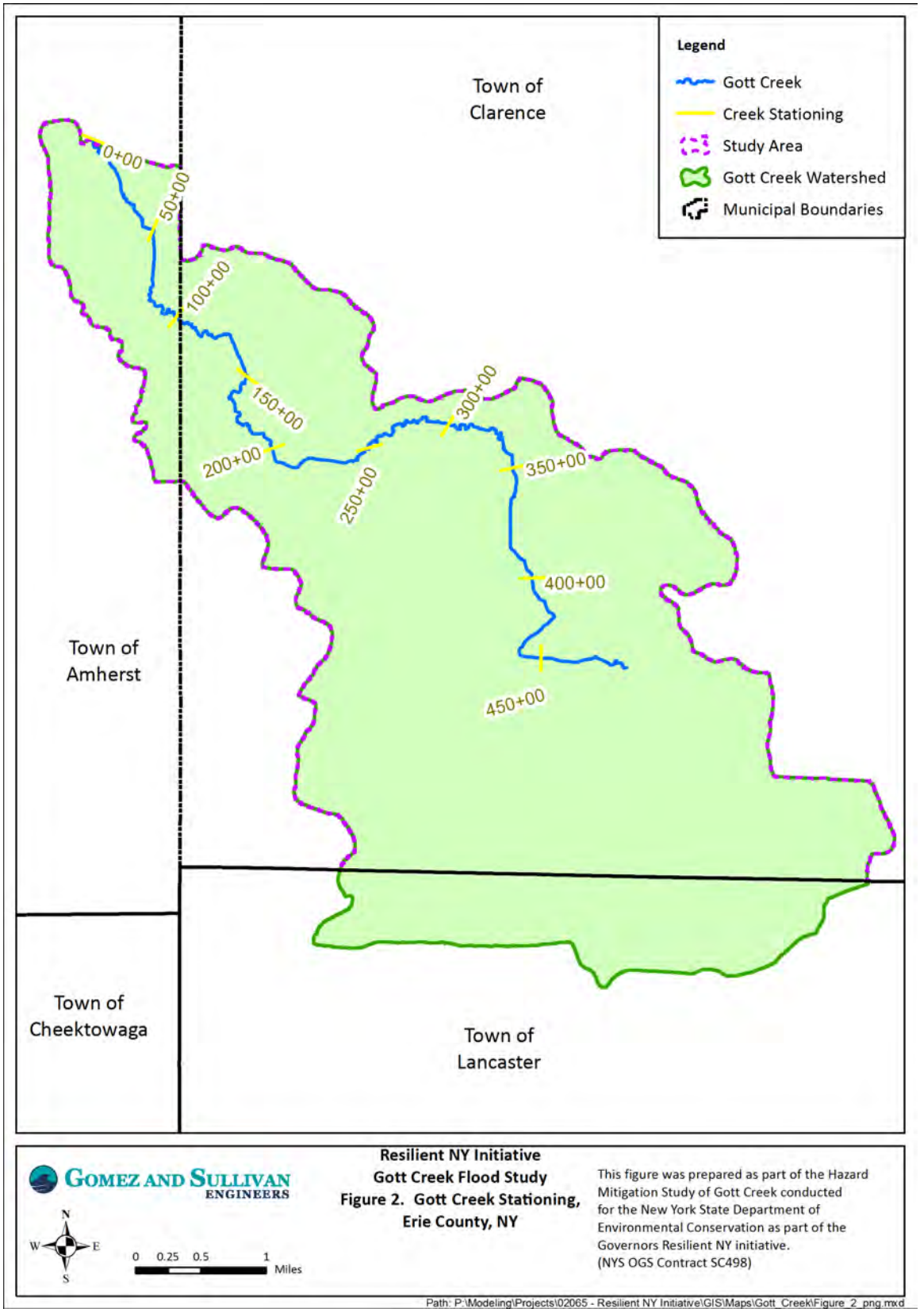
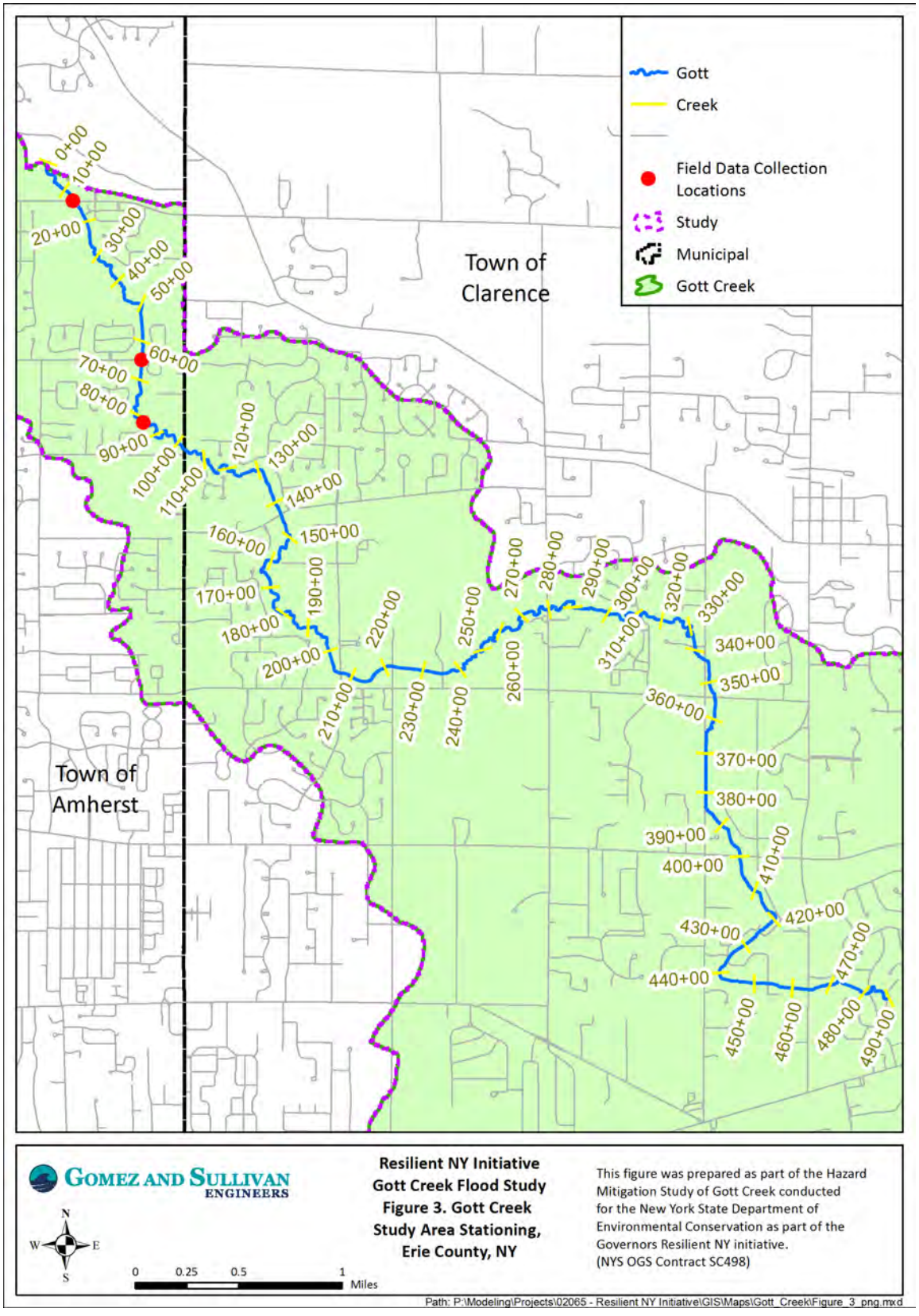


Figure 3. Gott Creek Study Area Stationing, Erie County, NY



Environmental Conditions

An overview of the environmental and cultural resources within the Gott Creek study area was compiled using the following online tools:

- Environmental Resource Mapper: The Environmental Resource Mapper is a tool used to identify mapped federal and state wetlands, state designated significant natural communities, and plants and animals identified as endangered or threatened by the NYSDEC (NYSDEC, 2020a) (https://gisservices.dec.ny.gov/gis/erm/)
- National Wetlands Inventory (NWI): The NWI is a digital map database available on the Environmental Resource Mapper that provides information on the "status, extent, characteristics and functions of wetlands, riparian, and deep-water habitats" (NYSDEC, 2020a)
- Information for Planning and Consultation (IPaC): The IPaC database provides information about endangered/threatened species and migratory birds regulated by the United States Fish and Wildlife Service (USFWS, 2020) (https://ecos.fws.gov/ipac/)
- National Register of Historic Places: The National Register of Historic Places lists historic places worthy of preservation, as authorized by the National Historic Preservation Act of 1966 (NPS, 2014) (https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466)

Wetlands

The State-Regulated Freshwater Wetlands database shows the approximate location of wetlands regulated by New York State. The check zone is a 100-foot buffer zone around the wetland in which the actual wetland may occur. According to the Environmental Resource Mapper, there are 15 NYSDEC wetlands within the Gott Creek study area (NYSDEC, 2020a).

The NWI was reviewed to identify national wetlands and surface waters (Figure 4). The Gott Creek study area includes 44 NWI wetlands categorized as freshwater emergent, freshwater forested/shrub, freshwater pond, lake, or riverine (NYSDEC, 2020a).

Sensitive Natural Resources

Areas designated as significant natural communities by the NYSDEC were mapped in the Gott Creek study area (Figure 5). The natural communities identified included the Clarence Escarpment calcareous talus slope woodland east of Goodrich Road and the Harris Hill oak opening east of Harris Hill Road, as mapped by the Environmental Resource Mapper (NYSDEC, 2020a). The large square significant natural community west of Youngs Road, shown on Figure 5 is the Hopkins Road Swamp silver maple-ash swamp (also known as NYSDEC Great Baehre Swamp Wildlife Management Area) is outside of the study area.

Endangered or Threatened Species

The Environmental Resource Mapper shows that rare plants and animals have been documented in the vicinity of the study area (Figure 5). The NYSDEC Regional Office should be contacted to determine the potential presence of the species identified (NYSDEC, 2020a).

The USFWS Information for Planning and Consultation (IPaC) does not list any rare, threatened, or endangered species within the study area.

No critical habitat has been designated for any species within the study area (USFWS, 2020).

The migratory bird species listed in Table 1 are birds of conservation concern (BCC) species that may pass over or nest within the project area.

Table 1. USFWS IPaC Listed Migratory Bird Species

Common Name	Scientific Name	Level of Concern	Breeding Season
Bald Eagle	*Haliaeetus leucocephalus*	BCC	Dec 1 to Aug 31
Black-billed Cuckoo	*Coccyzus erythrophthalmus*	BCC	May 15 to Oct 10
Bobolink	*Dolichonyx oryzivorus*	BCC	May 20 to Jul 31
Canada Warbler	*Cardellina canadensis*	BCC	May 20 to Aug 10
Dunlin	*Calidris alpina arcticola*	BCC	Breeds elsewhere
Golden-winged Warbler	*Vermivora chrysoptera*	BCC	May 1 to Jul 20
Lesser Yellowlegs	*Tringa flavipes*	BCC	Breeds elsewhere
Long-eared Owl	*Asio otus*	BCC	Mar 1 to Jul 15
Red-headed Woodpecker	*Melanerpes erythrocephalus*	BCC	May 10 to Sep 10
Semipalmated Sandpiper	*Calidris pusilla*	BCC	Breeds elsewhere
Short-billed Dowitcher	*Limnodromus griseus*	BCC	Breeds elsewhere
Snowy Owl	*Bubo scandiacus*	BCC	Breeds elsewhere
Wood Thrush	*Hylocichla mustelina*	BCC	May 10 to Aug 31

Source: (USFWS, 2020)

Cultural Resources

According to the National Register of Historic Places, there are no historic sites or districts within the study area.

Consultation with New York State Office of Parks, Recreation, and Historic Places (NYSOPRHP) should be performed to identify the potential presence of archeological resources and the subsequent need to perform a cultural resources investigation (NPS, 2014).

Figure 4. Gott Creek Study Area Wetlands and Hydrography, Erie County, NY

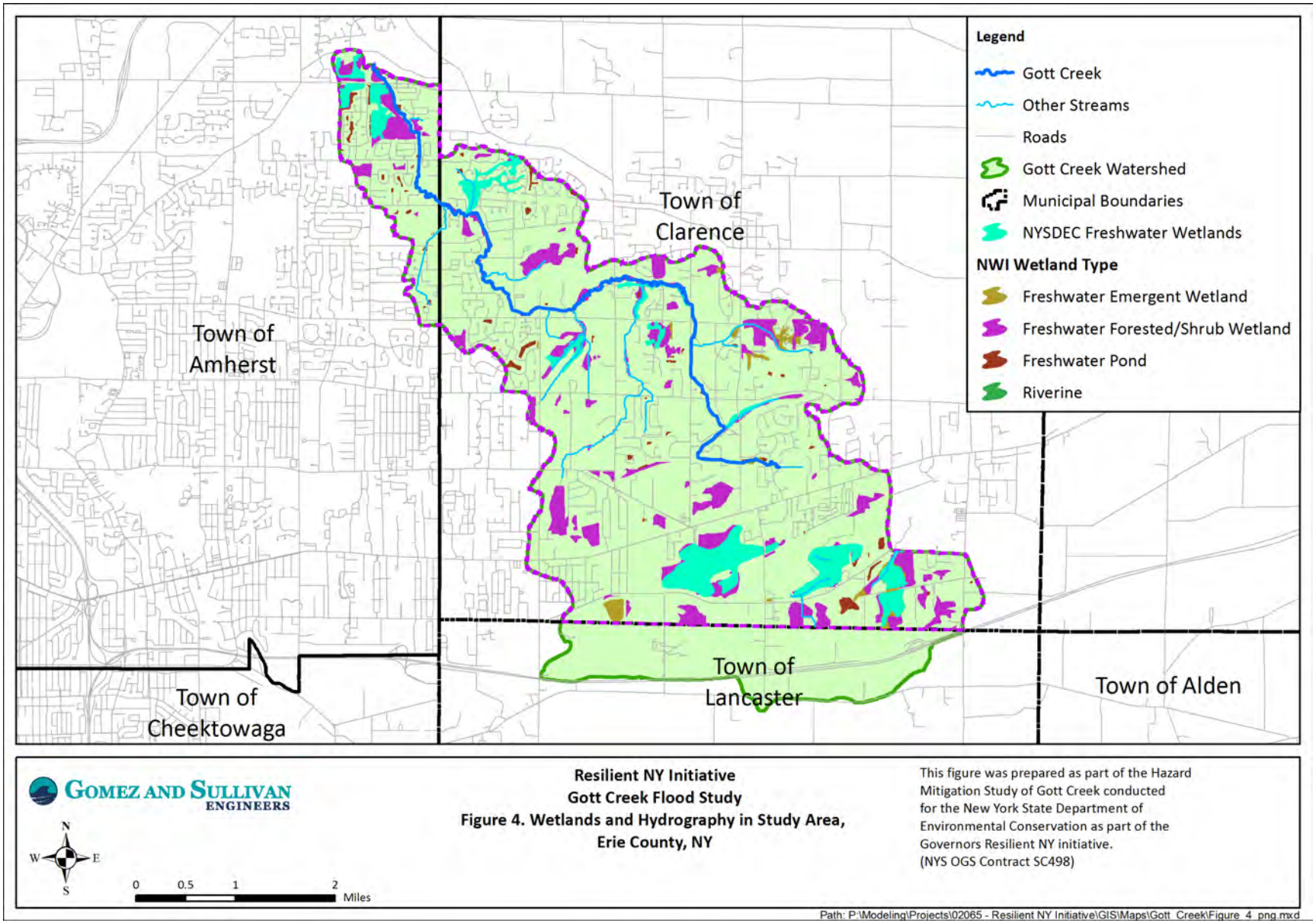
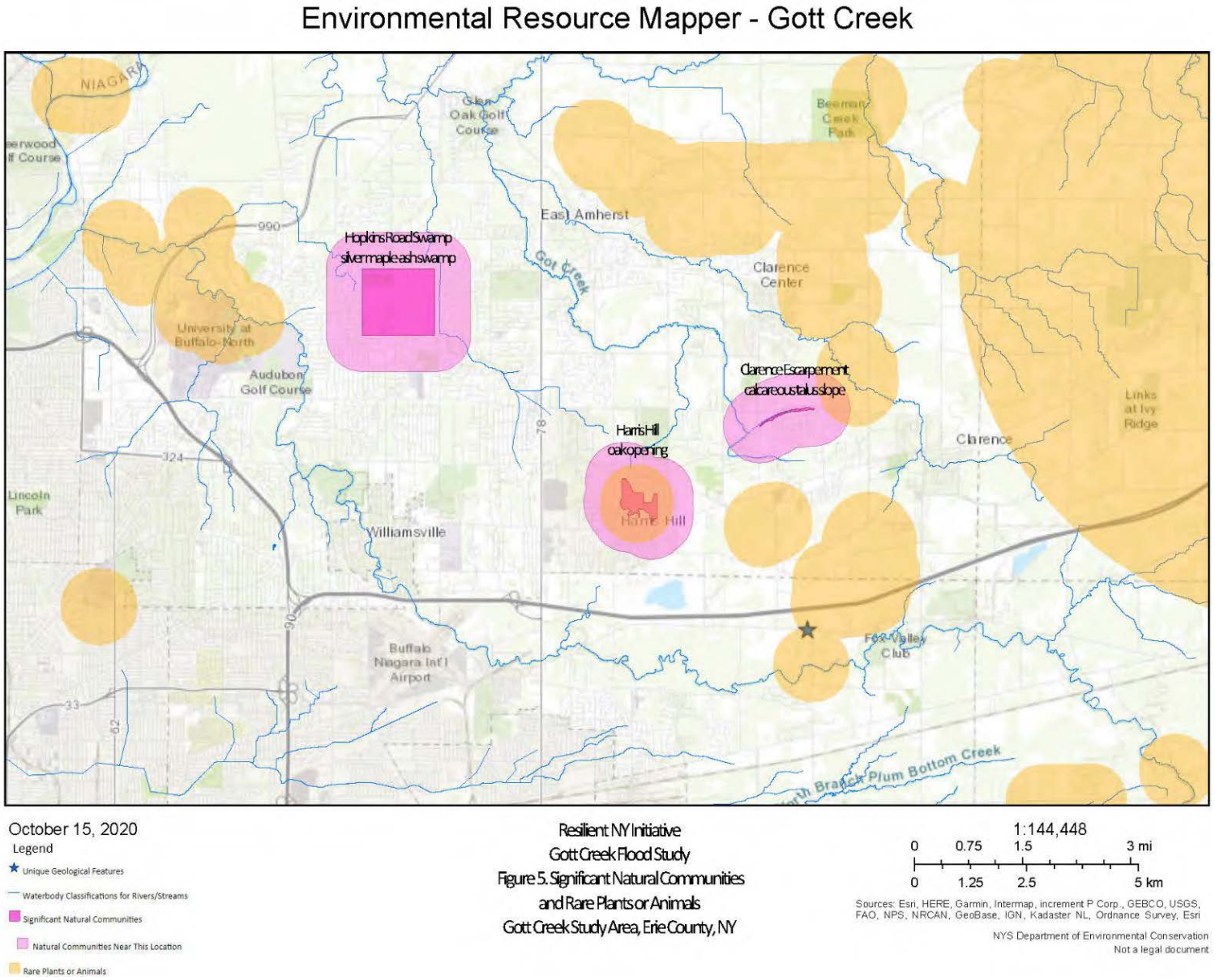


Figure 5. Significant Natural Communities and Rare Plants or Animals, Gott Creek Study Area, Erie County, NY



Floodplain Location

The FEMA Flood Map Service Center (MSC) (https://msc.fema.gov/portal/home) is a database that contains FEMA Flood Insurance Rate Maps (FIRMs) for areas that have had FEMA flood insurance studies completed throughout the United States. For the Towns of Amherst and Clarence, the current effective FEMA FIS was completed on June 7, 2019. According to the FIS, the hydrologic and hydraulic analyses completed included re-delineation of the original FEMA H&H studies and updated new detailed studies from the original H&H studies. The FEMA FIS included Gott Creek as a re-delineation (FEMA, 2019a).

Redelineation is the method of updating effective flood hazard boundaries to match current topographic data based on the computed water surface elevations from FEMA effective models. The results of a redelineation update are more accurate floodplain boundaries when compared to current ground conditions. Redelineation of floodplain boundaries can be applied to both riverine and coastal studies. No new engineering analyses are performed as part of the redelineation methodology; however, redelineation can be paired with new engineering studies as part of a larger update. For riverine studies, effective flood profiles and data tables from the Flood Insurance Study (FIS) report, Base Flood Elevations (BFEs) from the Flood Insurance Rate Maps (FIRMs), and supporting hydrologic and hydraulic analyses are used in conjunction with the updated topographic data to formulate new floodplain boundaries. The coastal redelineation method also typically involves no new analyses. This method combines effective information from the FIRM and FIS Report and the supporting analyses with new, more detailed, or more up to-date topographic data to redelineate coastal high hazard areas (FEMA, 2015a).

The FIRM for Gott Creek indicates Special Flood Hazard Areas (SFHAs), which are land areas covered by floodwaters during the 1% annual chance flood event (ACE), along the banks of the creek, for almost the entire length of the creek (FEMA, 2019b). Gott Creek is a Regulatory Floodway, which is defined as the watercourse channel and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than 1-foot over the 1% annual chance flood hazard water surface elevation, referred to as the Base Flood Elevation (BFE). In the regulatory floodway, communities must regulate encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway and demonstrate through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not increase flood levels within the community during the occurrence of the base flood. Development in the portions of the floodplain beyond the floodway, referred to as the floodway fringe, is allowed as long as it does not increase the BFE more than 1.0 foot (FEMA, 2000).

For watercourses where FEMA has provided BFEs, but no floodway has been designated, or where FEMA has not provided BFEs, the community must review floodplain development on a case-by-case basis to ensure that increases in water surface elevations do not occur or identify the need to adopt a floodway if adequate information is available. The flood zone indicated in the Gott Creek study area is Zone AE, where mandatory flood insurance purchase requirements apply. AE Zones are areas that have a 1% annual chance of flooding where BFEs are provided by FEMA (FEMA 2000). Figure 6 is a FIRM that includes a portion of Gott Creek in the Towns of Amherst and Clarence, NY (FEMA, 2019b).

Figure 6. FEMA FIRM, Gott Creek, Towns of Amherst and Clarence, Erie County, NY

Study Area Land Use

The National Land Cover Database (MRLC, 2019) shows that, within the Gott Creek study area, the Developed, Open Space land use cover type makes up 23.2% of the watershed. All developed land cover types total 43.4% of the watershed and all upland forest cover types total 21.6%. Further details of the distribution of land cover within the watershed are shown in Table 2. The headwaters of Gott Creek (southern portion of study area) are primarily agricultural, forested, and woody wetlands, with some developed areas, whereas the lower (northwestern) part of the watershed is dominated by developed areas with patches of woody wetlands.

Table 2. Land Use Cover Types in the Gott Creek Study Area

Land Use Cover Type	Acres	Percentage
Developed, Open Space	2,370	23.2%
Deciduous Forest	1,726	16.9%
Woody Wetlands	1,597	15.6%
Developed, Low Intensity	1,481	14.5%
Pasture/Hay	1,345	13.1%
Mixed Forest	479	4.7%
Developed, Medium Intensity	474	4.6%
Cultivated Crops	162	1.6%
Barren Land	138	1.4%
Grassland/Herbaceous	117	1.1%
Emergent Herbaceous Wetlands	117	1.1%
Developed, High Intensity	115	1.1%
Open Water	84	0.8%
Shrub/Scrub	24	0.2%
Evergreen Forest	7	0.1%
Total	**10,236**	**100%**

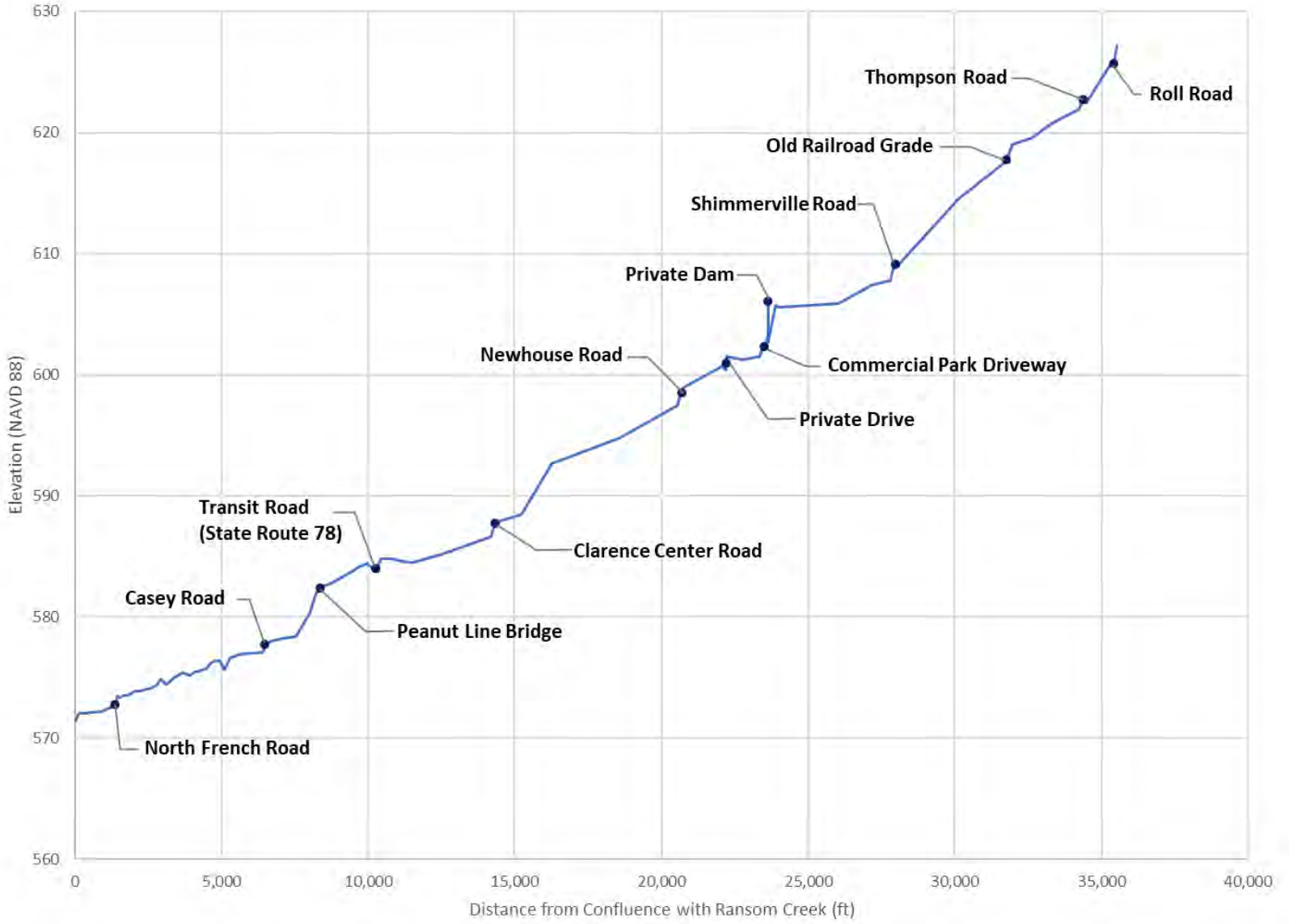
Source: (MRLC, 2019)

Geomorphology

Gott Creek resides in the Erie-Ontario Lowland physiographic province. The surficial geology in the headwaters consists of till, till moraine, and outwash sand and gravel. As Gott Creek flows downstream, the surficial geology transitions to lacustrine sand in the central and lower portion of the watershed. At the confluence with Ransom Creek, the surficial geology transitions to lacustrine silt and clay. The surficial geology suggests the presence of a proglacial lake in the central and lower portions of the Gott and Ransom Creek watersheds. The transition to lacustrine sand occurs approximately 2,000 feet upstream of Clarence Center Road, where the topography changes from somewhat hilly to very flat. With this transition in surficial geology and topography, the floodplain also transitions from generally narrow to relatively wide towards the confluence with Ransom Creek. Similarly, the channel slope transitions from approximately 10 feet per mile upstream of Clarence Center Road to approximately 6 feet per mile below Clarence Center Road. Figure 7 is a profile of stream bed elevation and channel distance within the study area based on the hydraulic model used for this study. The figure includes the location of all stream crossings included within the hydraulic model.

There are numerous locations where sediment depositional aggradation is occurring within the channel of Gott Creek. Aggradation is a natural fluvial process where sediment and other materials are deposited in a stream channel when the supply of sediment is greater than the amount of material that the system is able to transport. Over time, aggradation can lead to the development of sand and sediment bars within the stream channel. These sand and sediment bars may restrict flow by reducing the in-channel flow area and may act as catchpoints for ice pieces during ice breakup events, potentially increasing open water flood risks and ice jam formations (Mugade UR, Sapkale JB, 2015). A Wolman pebble count upstream of the Peanut Line Bridge indicates that greater than 50% of the substrate is silt/clay, with the remaining substrate consisting of larger gravel and smaller cobbles. The high presence of silt/clay indicates slow moving water, suggesting that the hydraulic constriction of the Peanut Line Bridge is causing aggradation.

Figure 7. Gott Creek Study Area Profile of Stream Bed Elevation and Channel Distance



Hydrology

Gott Creek is approximately 10.9 miles long and its watershed covers approximately 18.4 square miles (11,776 acres) beginning with groundwater in the Town of Clarence. The creek generally flows northwest and empties into Ransom Creek. Ransom Creek then flows northwest and empties into Tonawanda Creek, which then flows southwestward to its mouth at the Niagara River. Gott Creek has one significant tributary, Gott Creek Tributary, which is approximately 9 miles long with a drainage area of 9 square miles. The drainage area for Gott Creek Tributary accounts for approximately 49% of the drainage area of Gott Creek.

Table 3 is a summary of the basin characteristic formulas and calculated values for the Gott Creek watershed, where A is the drainage area of the basin in square miles (mi^2), B_L is the basin length in miles, and B_P is the basin perimeter in miles (USGS, 1978).

Table 3. Gott Creek Basin Characteristics Factors

Factor	Formula	Value
Form Factor (R_F)	A/B_L^2	0.09
Circularity Ratio (R_C)	$4\pi A/B_P^2$	0.22
Elongation Ratio (R_E)	$2(A/\pi)^{0.5}/B_L$	0.33

Form Factor (R_F) describes the shape of the basin (e.g., circular or elongated) and the intensity of peak discharges over a given duration of time. Circularity Ratio (R_C) gives an indication of topography where the higher the circularity ratio, the lower the relief and less disturbance to drainage systems by structures within the channel. Elongation Ratio (R_E) gives an indication of ground slope where values less than 0.7 correlate to steeper ground slopes and elongated basin shapes. Based on the basin characteristic factors, the Gott Creek basin would be categorized as a more elongated basin being more susceptible to erosion, and which would be expected to have lower peak discharges and longer duration high flow events than less elongated basins would (Parveen, Kumar, & Singh, 2012). The drainage system within the basin would be expected to be more influenced by structural disturbances and have high relief topography (Waikar & Nilawar, 2014).

There are currently no active or historic USGS stream gaging stations on Gott Creek.

An effective FEMA Flood Insurance Study (FIS) for Erie County was issued on June 7, 2019, which included a redelineation study for Gott Creek and included drainage area and discharge information for the portions of Gott Creek included in this study. Table 4 summarizes the FEMA FIS drainage area and peak discharges, in cubic feet per second (cfs), for Gott Creek within the study area (FEMA, 2019a).

Table 4. Gott Creek FEMA FIS Peak Discharges

Flooding Source and Location	Drainage Area (mi^2)	River Station (ft)	Peak Discharge (cfs)			
			10%	2%	1%	0.2%
At confluence with Ransom Creek	15.2	0+43	640	880	990	1,240
At Transit Road	14.4	102+50	620	840	950	1,210
At Newhouse Road	10.7	207+00	540	755	850	1,080
At confluence with Gott Creek Tributary	6.1	300+02	330	470	530	675

Source: (FEMA, 2019a)

According to the effective FEMA FIS, the hydrologic analysis of Gott Creek was not updated for the countywide effective FIS. The current hydrologic data for Gott Creek in the Town of Amherst is based on a flood management study of the Tonawanda Creek Watershed (USACE, 1978), while the current hydrologic data for Gott Creek in the Town of Clarence is based on a water resources and land management study of the Buffalo Metropolitan Area (USACE, 1990). Each of these source studies performed a regional regression analysis based on a log-Pearson Type III distribution of annual peak discharge data. General limitations of the FEMA FIS methodology are the age of the effective FIS H&H analysis and the age of the methodology. The H&H analysis for Gott Creek was completed in 1990 for the Town of Amherst and in 1993 for the Town of Clarence using regional regression methodology. During this study, detailed information regarding the regional regression analyses for Gott Creek were not found. Therefore, an assessment cannot be made as to which gages were used, how many years of data were included, and what methods were used to process the data, in order to determine whether the regression analyses meet the current state of practice. However, the age of the supporting studies would suggest that more recent data is available for inclusion within a regional regression analysis.

StreamStats v4.4.0 software (https://streamstats.usgs.gov/ss/) is a map-based web application that provides an assortment of analytical tools that are useful for water-resources planning and management, and engineering purposes. Developed by the USGS, the primary purpose of *StreamStats* is to provide estimates of streamflow statistics for user selected ungaged sites on streams and for USGS stream gages, which are locations where streamflow data are collected [(USGS, 2017); USGS 2017b)].

Methods for computing a peak discharge estimate for a selected recurrence interval at a specific site depend on whether the site is gaged or ungaged, and whether the drainage area lies within a single hydrologic region or crosses into an adjacent hydrologic region or State. Hydrologic regions refer to areas in which streamflow-gaging stations indicate a similarity of peak-discharge response that differs from the peak-discharge response in adjacent regions. These similarities and differences are defined by the regression residuals, which are the differences between the peak discharges calculated from station records and the values computed through the regression equation. There are currently six hydrologic regions in New York State [(USGS, 1991); (USGS, 2006)].

For ungaged sites, *StreamStats* relies on regional regression equations that were developed by statistically relating the streamflow statistics to the basin characteristics for a group of stream gages within a region. Estimates of streamflow statistics for an ungaged site can then be obtained by measuring its basin characteristics and inserting them into the regression equations (USGS, 2017). For example, the equation for estimating the 100-year flood for ungaged sites within Gott Creek's hydrologic region in New York is:

$$Q_{100} = 46.0 * (A)^{0.823} * (ST+0.5)^{-0.177} * (RUNF)^{0.505} * (EL12+1)^{0.166} * (SR)^{0.318}$$

Where,

A is the drainage area in square miles;

ST is the basin storage in percent;

RUNF is the mean annual runoff in inches;

EL12 is the drainage basin at or greater than 1,200 feet above sea level in percent; and

SR is the slope ratio (USGS, 2006).

StreamStats delineates the drainage basin boundary for a selected site by use of an evenly spaced grid of land-surface elevations, known as a Digital Elevation Model (DEM), and a digital representation of the stream network. Using this data, the application calculates multiple basin characteristics, including drainage area, basin storage, mean annual runoff, percent of basin at or greater than 1,200 feet above sea level, and the slope ratio. By using these characteristics in the calculation, the peak discharge values have increased accuracy and decreased standard errors by approximately 20% for a 1% annual chance interval (100-year recurrence) discharge when compared to the drainage-area only regression equation (USGS, 2017).

However, when one or more of the basin characteristics for an ungaged site are outside the given ranges, then the estimates are extrapolated. *StreamStats* provides warnings when extrapolation occurs. Although *StreamStats* does provide estimates of streamflow statistics in these circumstances, no error indicators are provided with them, as the errors associated with these estimates are unknown and may be very large (USGS, 2017).

In addition, estimates of streamflow statistics that are obtained from regression equations are based on the assumption of natural flow conditions at the ungaged site unless the reports that document the equations state otherwise. If human activities such as dam regulation and water withdrawals substantially affect the timing, magnitude, or duration of flows at a selected site, the regression-equation estimates provided by *StreamStats* should be adjusted by the user to account for those activities (USGS, 2017).

StreamStats was used to calculate the current peak discharges for Gott Creek and compared with the effective FIS peak discharges. Table 5 is the summary output of peak discharges calculated by the USGS *StreamStats* software for Gott Creek at the same locations as the FEMA FIS peak discharges.

Table 5. USGS *StreamStats* Peak Discharge for Gott Creek at the FEMA FIS Locations

Flooding Source and Location	Drainage Area (mi^2)	River Station (ft)	Peak Discharge (cfs)			
			10%	2%	1%	0.2%
At confluence with Ransom Creek	18.4	0+43	824	1,090	1,200	1,450
At Transit Road	16.9	102+50	799	1,060	1,160	1,410
At Newhouse Road	14.4	207+00	770	1,030	1,140	1,400
At confluence with Gott Creek Tributary	3.9	300+02	258	348	384	470

Source: (USGS, 2020)

The significant differences in peak discharges between the effective FIS and *Streamstats* are likely due to the difference in drainage area for each method. It appears that the difference in drainage area can be attributed to a change in the drainage divide between Gott and Ransom Creeks. The drainage area reported for Gott Creek in the FIS is 15.2 square miles compared to 18.4 square miles reported by *StreamStats*, which is 3.2 square miles larger than the drainage area reported in the FIS. The Ransom Creek drainage area upstream of the confluence with Gott Creek according to *StreamStats* is smaller than that in the FIS by a similar amount (2.4 square miles). The remaining difference is likely due to a slight adjustment in the drainage divide between Gott Creek and the small unnamed tributary to the west of Gott Creek, which flows into Ransom Creek downstream of Gott Creek. The Ransom and Gott Creek watersheds are characterized by relatively flat terrain with low drainage divides which results in the potential for ambiguity when determining drainage divides. The topographic data used to delineate drainage areas in the effective FEMA FIS likely dates to between 1965 and 1980 [(FEMA, 1992); (FEMA, 1996)]. *StreamStats* determines drainage-basin boundaries by use of digital elevation data from the USGS 3D Elevation Program. In most cases, the elevation data have been specially processed so that the elevation data conforms to the digital stream channels depicted in the high-resolution version of the National Hydrography Dataset and to the drainage-basin boundaries of the Watershed Boundary Dataset. Therefore, this elevation data is considered to be more accurate than the data utilized in the hydrologic studies which produced the effective FIS flows for Gott Creek.

Using the standard error calculations from the regression equation analysis in *StreamStats*, an acceptable range at the 95% confidence interval for peak discharge values at the 10%, 2%, 1%, and 0.2% annual chance flood hazards was determined. Standard error gives an indication of how accurate the calculated peak discharges are when compared to the actual peak discharges since approximately two-thirds (68.3%) of the calculated peak discharges would be within one standard error of the actual peak discharge, 95.4% would be within two standard errors, and almost all (99.7%) would be within three standard errors (McDonald, 2014). Table 6 is a summary table of the USGS *StreamStats* standard errors at each percent annual chance flood hazard for Region 6 in New York State.

Table 6. USGS *StreamStats* Standard Errors for Full Regression Equations

Parameter	Annual Chance of Exceedance (%)			
	10%	2%	1%	0.2%
Standard Error of Peak Discharge (%)	32.9	35.8	37.2	41.4

Source: (USGS, 2006)

FEMA FIS peak discharges were determined to generally be within an acceptable range (95% confidence interval) based on the *StreamStats* standard error calculations, however the *StreamStats* peak discharges are generally higher. As a result, the *StreamStats* peak discharge values were used in the hydraulic model simulations for this study because they are generally more conservative estimates and are based on more refined drainage area estimates.

In addition to peak discharges, the *StreamStats* software also calculates bankfull statistics by using stream survey data and discharge records from 281 cross-sections at 82 streamflow-gaging stations in a linear regression analysis to relate drainage area to bankfull discharge and bankfull-channel width, depth, and cross-sectional area for streams across New York State. These equations are intended to serve as a guide for streams in areas of the same hydrologic region, which contain similar hydrologic, climatic, and physiographic conditions (USGS, 2009).

Bankfull discharge is defined as the flow that reaches the transition between the channel and its flood plain. Bankfull discharge is considered to be the most effective flow for moving sediment, forming or removing bars, forming or changing bends and meanders, and generally doing work that results in the average morphological characteristics of channels (USGS, 2009). The bankfull width and depth of Gott Creek is important in understanding the distribution of available energy within the stream channel and the ability of various discharges occurring within the channel to erode, deposit, and move sediment (Rosgen & Silvey, 1996). Table 7 lists the estimated drainage area, bankfull discharge, width, and depth at select locations along Gott Creek as derived from the USGS *StreamStats* program.

Table 7. USGS *StreamStats* Estimated Drainage Area, Bankfull Discharge, Width, and Depth

Flooding Source and Location	Drainage Area (mi^2)	River Station (ft)	Bankfull Depth (ft)	Bankfull Width (ft)	Bankfull Streamflow (cfs)
At confluence with Ransom Creek	18.4	0+43	2.12	57.3	557
At Transit Road	16.9	102+50	2.07	55.3	519
At Newhouse Road	14.4	207+00	1.99	51.7	454
At confluence with Gott Creek Tributary	3.9	300+02	1.93	20.2	105

Source: (USGS, 2020)

Infrastructure

The effective FEMA FIS includes one dam located upstream of a commercial park driveway within the Town of Clarence. However, this dam is not listed within the NYSDEC inventory of dams. Table 8 summarizes pertinent information about the one NYSDOT owned bridge crossing Gott Creek within the study area. In addition to the NYSDOT infrastructure, Gott Creek is crossed by 20 bridges within the study area, which are owned and maintained by Erie County, local municipalities, and private owners as summarized in Table 9. Hydraulic capacity is the measure of the amount of water that can pass through a structure or watercourse. Hydraulic design is an essential function of structures in watersheds. Exceeding the capacity can result in damages or flooding to surrounding areas and infrastructure (USDOT, 2012). In assessing hydraulic capacity of the bridges along Gott Creek, the FEMA FIS profile of Gott Creek was used to determine the lowest annual chance flood elevation to flow under a culvert/the low chord of a bridge, without causing an appreciable backwater condition upstream (Table 8, Table 9). Bridge lengths and surface widths not provided by the NYSDOT database or the effective FIS were estimated using field collected data or aerial imagery. Figure 8 depicts the location of the infrastructure crossing Gott Creek within the study area.

Table 8. NYSDOT Bridges/Culverts Crossing Gott Creek

Roadway Carried (NY/US Route)	NYSDOT BIN	River Station (ft)	Bridge Length (ft)	Surface Width[1] (ft)	Hydraulic Capacity (% Annual Chance)
Transit Road (State Route 78)	1030300	102+50	60	66.9	>10

Notes:

1. Surface Width is measured parallel to creek flow and refers to the curb-to-curb width, which is the minimum distance between the curbs or the bridge railings (if there are no curbs), to the nearest 30 mm or tenth of a foot (NYSDOT, 2006).

Source: (NYSDOT, 2019a); (FEMA, 2019a)

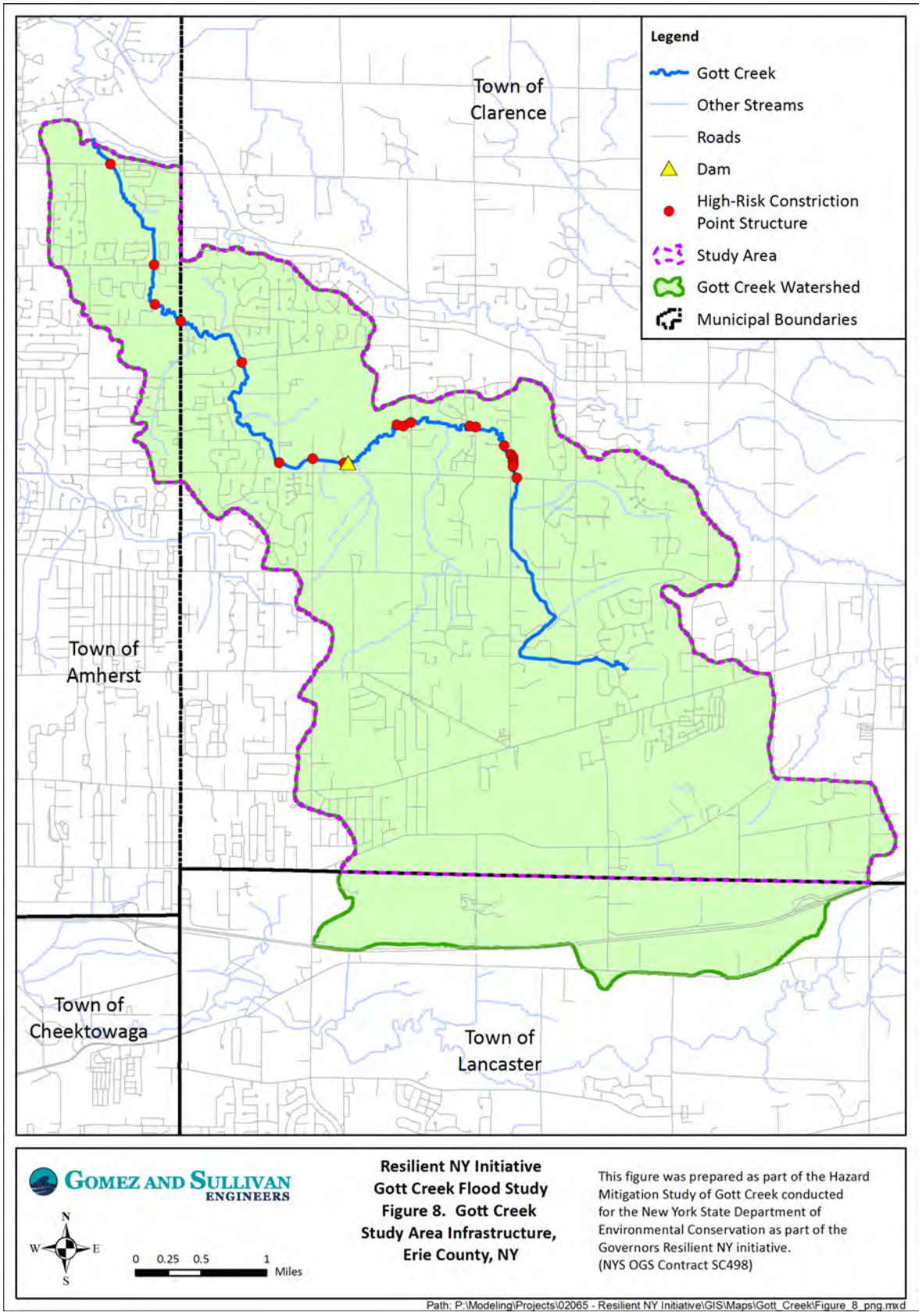
Table 9. Non-NYSDOT Bridges/Culverts Crossing Gott Creek

Roadway Carried	BIN/CIN	River Station (ft)	Owner	Bridge Length (ft)	Surface Width (ft)	Hydraulic Capacity (% Annual Chance)
North French Road	3326760	13+70	Erie County	57	38	0.2
Casey Road	3326720	64+90	Erie County	43	40	2
Peanut Line Bridge[1]	-	83+65	Town of Amherst	20	17	2
Clarence Center Road	3326430	143+30	Erie County	27	32.2	>10
Newhouse Road	3326660	207+00	Erie County	26	28.1	>10
Private Drive[1]	-	222+05	Private	18.9	18	>10
Commercial Park Driveway (Culvert)[1]	-	235+00	Private	53	32	0.2
Private Drive (Culvert)[1,2]	-	-	Private	20	10	-
Private Drive[1,2]	-	-	Private	30	22	-
Shimerville Road (Culvert)	3326650	279+60	Erie County	25	34.4	10
Dana Marie Parkway (Culvert)[1,2]	-	-	Town of Clarence	63	83	-
Old Railroad Grade (Culvert)[1]	-	317+50	Private	8	20	10
Thompsonwood Drive (Culvert)[1,2]	-	-	Town of Clarence	22	66	-
Thompson Road[1]	-	343+90	Erie County	20	27	>10
Private Drive[1,2]	-	-	Private	20	10	-
Private Drive[1,2]	-	-	Private	20	10	-
Private Drive[1,2]	-	-	Private	20	10	-
Private Drive[1,2]	-	-	Private	20	10	-
Private Drive[1,2]	-	-	Private	20	10	-
Roll Road[1]	-	354+20	Erie County	15	37	>10

Notes:
1. Structure not included in NYSDOT Bridge Database
2. Structure not included in hydraulic model

Source: (NYSDOT, 2019a); (FEMA, 2019a); (Google, 2020)

Figure 8. Gott Creek Study Area Infrastructure, Erie County, NY



In New York State, hydraulic and hydrologic regulations for bridges were developed by the NYSDOT. The NYSDOT guidelines require a factor of safety for bridges that cross waterways, known as freeboard. Freeboard is the additional capacity, usually expressed as a distance in feet, in a waterway above the calculated capacity required for a specified flood level, usually the base flood elevation. Freeboard compensates for the many unknown factors that could contribute to flood heights being greater than calculated, such as wave action, minor silt and debris deposits, the hydrological effect of urbanization of the watershed, etc. However, freeboard is not intended to compensate for higher floods expected under future climatic conditions, such as those due to sea-level rise or more extreme precipitation events (NYSDEC, 2018).

The term "bridge" shall apply to any structure whether single or multiple span construction with a clear span in excess of 20 feet when measurement is made horizontally along the center line of roadway from face to face of abutments or sidewalls immediately below the copings or fillets; or, if there are no copings or fillets, at 6 inches below the bridge seats or immediately under the top slab, in the case of frame structures. In the case of arches, the span shall be measured from spring line to spring line. All measurements shall include the widths of intervening piers or division walls, as well as the width of copings or fillets (NYSDOT, 2020).

According to the NYSDOT bridge manual (2019) for Region 5, which includes Niagara, Erie, Chautauqua, and Cattaraugus Counties, new and replacement bridges are required to meet certain standards, which include (NYSDOT, 2019b):

- The structure will not raise the water surface elevations anywhere when compared to the existing conditions for both the 2 and 1% ACE (50- and 100-year flood) flows.
- The proposed low chord shall not be lower than the existing low chord.
- A minimum of 2'-0" of freeboard for the projected 2% ACE (50-year flood) is required for the proposed structure. The freeboard shall be measured at the lowest point of the superstructure between the two edges of the bottom angle for all structures.
- The current 1% ACE (100-year flood), based on peak streamflow from the USGS *StreamStats* plus a 10% increase in flow, shall pass below the proposed low chord without touching it.
- The maximum skew of the pier to the flow shall not exceed 10 degrees.

In addition, current peak flows shall be increased to account for future projected peak flows based on the USGS *StreamStats* tool where current 2% ACE peak flows shall be increased by 10% in Region 5. For critical bridges, the minimum hydraulic design criteria is 3-feet of freeboard over the 2% annual chance flood elevation. A critical bridge is considered to be vital infrastructure that the incapacity or destruction of such would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters [(NYSDOT, 2019b); (USDHS, 2010)].

In an effort to improve flood resiliency of infrastructure in light of future climate change, New York State passed the Community Risk and Resiliency Act (CRRA) in 2014. In accordance with the guidelines of the CRRA, the NYSDEC released the *New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act* (2018) *draft* report. In the report, the NYSDEC outlined infrastructure guidelines, most notably that the new freeboard recommendation for normal bridges is 2-feet of freeboard over the elevation of a flood with a 1% chance of being equaled or exceeded in a given year (i.e. base flood elevation) and 3-feet for a critical structure (NYSDEC, 2018). When compared to current guidelines, the new CRRA climate change recommended freeboard is based on the 1% ACE water surface elevation, while the previous guidelines were based on the 2% ACE. This is a higher standard for

freeboard. Table 10 displays the 2% and 1% annual chance flood levels and their calculated difference at FEMA FIS infrastructure locations using the FIS profile for Gott Creek.

In New York State, hydraulic and hydrologic regulations for culverts were developed by the NYSDOT. The NYSDOT guidelines require culverts to be designed based upon an assessment of the likely damage to the highway and adjacent landowners from a given flow and the costs of the drainage facility. The design flood frequency for drainage structures and channels is typically the 2% (50-year) annual chance flood hazard for Interstates and other Freeways, Principal Arterials, and Minor Arterials, Collectors, Local Roads, and Streets. If the proposed highway is in an established regulatory floodway or floodplain then the 1% (100 year) annual chance flood hazard requirement must be checked (NYSDOT, 2018).

The term "culvert" is defined as any structure, whether of single- or multiple-span construction, with an interior width of 20 ft. or less when the measurement is made horizontally along the center line of the roadway from face-to-face of abutments or sidewalls (NYSDOT, 2020).

In assessing the hydraulic capacity of culverts, NYSDOT highway drainage standards require the determination of a design discharge (e.g. 50-year flood) through the use of flood frequencies. The design flood frequency is the recurrence interval that is expected to be accommodated without exceeding the design criteria for the culvert. There are four recommended methodologies: the Rational Method, the Modified Soil Cover Complex Method, historical data, and the regression equations. Each method should be assessed and the most appropriate method for the specific site should be used to calculate the design flood frequency and discharge (NYSDOT, 2018).

In addition, current NYSDOT standards require peak flows to be increased to account for future projected peak flows based on the USGS *StreamStats* tool where current 2% peak flows shall be increased by 10% in Region 5. According to the draft CRRA guidelines, for culverts the minimum hydraulic design criteria is 2-feet of freeboard over the 2% annual chance flood elevation. For critical culverts, the CRRA guidelines recommend 3-feet of freeboard over the 1% annual chance flood elevation. A critical culvert is considered to be vital infrastructure that the incapacity or destruction of such would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters [(NYSDEC, 2018); (NYSDOT, 2018); (USDHS, 2010)].

In an effort to improve flood resiliency of infrastructure in light of future climate change, New York State passed the Community Risk and Resiliency Act (CRRA) in 2014. In accordance with the guidelines of the CRRA, the NYSDEC released the *New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act* (2018) *draft* report. In the report, the NYSDEC outlined infrastructure guidelines, most notably the recommendation that culverts be able to fully pass the design flood without increasing headwater and that they provide at least 2-feet of roadway freeboard above the projected 1% (100-year) annual chance flood hazard. An additional 1-foot of roadway freeboard should be considered for culverts on critical roadways (NYSDEC, 2018). When compared to current guidelines, the new CRRA climate change recommendation of freeboard for culverts encourages building more flood resilient infrastructure. Table 10 displays the 2% and 1% annual chance flood levels and their calculated difference at FEMA FIS infrastructure locations using the FIS profile for Gott Creek.

Table 10. FEMA FIS Profile 2 and 1% Annual Chance Flood Hazard Levels with Differences at Infrastructure Locations

Bridge Crossing	River Station (ft)	2% Water Surface Elevation (ft NAVD88)	1% Water Surface Elevation (ft NAVD88)	Difference in Water Surface Elevations (ft NAVD88)
North French Road	13+70	582.5	582.8	0.3
Casey Road	64+90	585.5	585.9	0.4
Peanut Line Bridge	83+65	588.4	588.7	0.3
Transit Road (State Route 78)	102+50	591.9	592.2	0.3
Clarence Center Road	143+30	594.7	595.2	0.5
Newhouse Road	207+00	603.7	604.6	0.9
Private Drive[1]	222+05	607.9	608.1	0.2
Commercial Park Driveway (Culvert)[1]	235+00	608.8	609.0	0.2
Shimerville Road (Culvert)	279+60	615.6	615.7	0.1
Old Railroad Grade (Culvert)[1]	317+50	625.6	625.8	0.2
Thompson Road[1]	343+90	628.5	628.6	0.1
Roll Road[1]	354+20	633.5	633.6	0.1

Source: (FEMA, 2019a)

In assessing hydraulic capacity of the bridges/culverts located in the identified high-risk areas along Gott Creek, the FEMA FIS profile was used to determine the lowest annual chance flood elevation to flow under a culvert/the low chord of a bridge, without causing a significant backwater condition upstream (Table 8, Table 9). According to the FEMA FIS profiles, all four structures within the identified high-risk areas do not meet the NYSDOT guidelines for 2-feet of freeboard for bridges: North French Road, Casey Road, Peanut Line Bridge, and Transit Road. In addition, these structures do not meet the new draft CRRA climate change infrastructure guidelines as described above. The low chord elevation for three of these bridges is below the 1% ACE and they do not provide the recommended hydraulic capacity: Casey Road, Peanut Line Bridge, and Transit Road (FEMA, 2019a). Even though these structures may have hydraulic capacity restraints, the NYSDOT has to balance both physical constraints along with cost versus benefit of replacing existing bridges to meet the new draft CRRA guidelines.

The Casey Road and Transit Road bridges are highly trafficked roadways located in developed areas which may limit options for modifying these structures. Additionally, the North French Road and Casey Road bridges are located in close proximity to an existing levee system, which may impact modifications to these bridges. The Peanut Line Bridge is part of a defunct railroad line, and is located on property owned by the Town of Amherst. Of all four bridges with limited hydraulic capacity in the high-risk areas, the Peanut Line Bridge has the least physical constraints with regards to modification potential.

In addition to comparing the annual chance flood elevations and low chords for bridges/culverts that cross Gott Creek, the structure width and bankfull width were compared for each of these structures. The USGS *StreamStats* tool was used to calculate the bankfull widths and discharge for each structure along Gott Creek. Table 11 indicates that in Erie County, NY, all 21 structures within the study area that cross Gott

Creek have openings that are smaller than the bankfull widths. Of the bridges listed in Table 11, four are within the identified high risk areas: North French Road, Casey Road, Peanut Line Bridge, and Transit Road.

The structures with bankfull widths that are wider than or close to the structures width indicate that water velocities have to slow and contract in order to pass through the structures, which can cause sediment depositional aggradation and the accumulation of sediment and debris. Aggradation can lead to the development of sediment and sand bars, which can cause upstream water surfaces to rise, increasing the potential for overtopping banks or backwater flooding. Since the bankfull discharge required for water surface elevations to reach the bankfull width is low (e.g. 80% ACE), the likelihood of relatively low flow events causing backwater and potential flooding upstream of these structures is fairly high. Therefore, structures with widths less than or within five feet of the bankfull width are considered high-risk constriction point structures, as depicted in Figure 8.

Table 11. Hydraulic Capacity of Potential Constriction Point Bridges Crossing Gott Creek

Roadway Carried	Structure Type	River Station (ft)	Structure Width (ft)	Bankfull Width (ft)	Bankfull Discharge (cfs)	ACE Equivalent[1]
North French Road	Bridge	13+70	40.9	57.3	557	>20%
Casey Road	Bridge	64+90	40.7	57.3	557	>20%
Peanut Line Bridge	Bridge	83+65	20	57.3	557	>20%
Transit Road (State Route 78)	Bridge	102+50	41.2	55.3	519	>20%
Clarence Center Road	Bridge	143+30	24	55.3	519	>20%
Newhouse Road	Bridge	207+00	24	51.7	454	>20%
Private Drive[1]	Bridge	222+05	18.9	51.7	454	>50%
Commercial Park Driveway (Culvert)[1]	Culvert	235+00	27.5	51.7	454	>50%
Private Drive (Culvert)[1,2]	Culvert	-	12	51.7	454	>50%
Private Drive[1,2]	Bridge	-	30	51.7	454	>50%
Shimerville Road (Culvert)	Culvert	279+60	20	51.7	454	>50%
Dana Marie Parkway (Culvert)[1,2]	Culvert	-	15	20.2	105	80%
Old Railroad Grade (Culvert)[1]	Culvert	317+50	8	20.2	105	80%
Thompsonwood Drive (Culvert)[1,2]	Culvert	-	12.5	20.2	105	80%
Thompson Road[1]	Bridge	343+90	13.9	20.2	105	80%
Private Drive[1,2]	Bridge	-	20	20.2	105	80%
Private Drive[1,2]	Bridge	-	20	20.2	105	80%
Private Drive[1,2]	Bridge	-	20	20.2	105	80%
Private Drive[1,2]	Bridge	-	20	20.2	105	80%
Private Drive[1,2]	Bridge	-	20	20.2	105	80%
Roll Road[1]	Bridge	354+20	9.9	20.2	105	80%

Notes:

1. ACE Equivalent describes the equivalent ACE for the given bankfull discharge as calculated by the USGS *StreamStats* application. The 20% ACE is equal to a 5-year recurrence interval, while the 50% ACE is equal to a 2-year recurrence interval and the 80% ACE is equal to a 1.25-year recurrence interval.

Source: (NYSDOT, 2019a); (USGS, 2020); (FEMA, 2019a)

Climate Change Implications

Future Projected Stream Flow in Gott Creek

In New York State, climate change is expected to exacerbate flooding due to projected increases of 1-8% in total annual precipitation coupled with increases in the frequency, intensity, and duration of extreme precipitation events (events with more than 1, 2, or 4-inches of rainfall) (NYSERDA, 2011). In response to these projected changes in climate, New York State passed the CRRA in 2014 and provided draft guidelines for estimating projected future discharges in their 2018 report. In the report, two methods were discussed: an "end of design life multiplier", and the USGS *FutureFlow Explorer* map-based web application (NYSDEC, 2018).

The "end of design life multiplier" is described as an adjustment to current peak flow values by multiplying relevant peak flow parameters by a factor specific to the expected service life of the structure and geographic location of the project to estimate future peak flow conditions. For Western New York, the recommended design-flow multiplier is 10% for an end of design life of 2025-2100 (NYSDEC, 2018).

The USGS *FutureFlow* software is an extension of the *StreamStats* software where regionally specific peak flow regression equations are used to estimate the magnitude of future floods for any stream or river in New York State (excluding Long Island) and the Lake Champlain basin in Vermont. The *FutureFlow* software substitutes a new climate variable (either precipitation or runoff) to the peak flow regression equations. This climate variable is obtained from five climate models that were reviewed by the World Climate Research Programme's (WCRP) Working Group Coupled Modelling (WGCM) team during the 5th Phase of the Coupled Model Intercomparison Project (CMIP5). These five climate models were chosen because they best represent past trends in precipitation for the region (USGS, 2015).

With the USGS *FutureFlow* software, climate variable data is evaluated under two future scenarios, termed "Representative Concentration Pathways" (RCP) in CMIP5, that provide estimates of the extent to which greenhouse-gas concentrations in the atmosphere are likely to change through the 21st century. RCP refers to potential future emissions trajectories of greenhouse gases, such as carbon dioxide. Two scenarios, RCP 4.5 and RCP 8.5, were evaluated for each climate model in CMIP5. RCP 4.5 is considered a midrange-emissions scenario, and RCP 8.5 is a high-emissions scenario (Taylor, Stouffer, & Meehi, 2011).

Results of the climate models and the RCPs are averaged for three future periods, from 2025 to 2049, 2050 to 2074, and 2075 to 2099. The downscaled climate data for each model and the RCP scenario averaged over these 25-year periods were obtained from the developers of the USGS Climate Change Viewer (https://www.fs.usda.gov/ccrc/tools/national-climate-change-viewer). The USGS *FutureFlow* software calculates results based on all five climate models for any of the two greenhouse-gas scenarios, and the three time periods. These available results are meant to reflect a range of variations predicted from among the five models, and two greenhouse-gas scenarios (USGS, 2016). The predictions of future mean annual runoff, obtained from the USGS *FutureFlow* software were used with the USGS regional regression equations and the computed basin characteristics, described in previous sections, to compute the expected future peak flows. The USGS *FutureFlow* software provides five estimates of the mean annual runoff for each RCP and future time period, one corresponding to each of the five climate models used. Future flows were computed for each of the five models corresponding to RCP 8.5 and the 2075 to 2099 time period, and the mean computed from the five results are displayed (USGS, 2015). Table 12 is a summary of the USGS *FutureFlow* projected peak discharges at the FEMA FIS locations.

Table 12. Gott Creek Projected Peak Discharges

Flooding Source and Location	Drainage Area (mi^2)	River Station (ft)	Peak Discharge (cfs)			
			10%	2%	1%	0.2%
At confluence with Ransom Creek	18.4	0+43	875	1,150	1,258	1,522
At Transit Road	16.9	102+50	848	1,118	1,222	1,480
At Newhouse Road	14.4	207+00	816	1,088	1,198	1,460
At confluence with Gott Creek Tributary	3.9	300+02	272	364	401	489

Source: (USGS, 2016)

Appendix E contains the HEC-RAS simulation summary sheets for the current and projected future flow simulations. The HEC-RAS model simulation results for the future condition model parameters using the future projected discharge values are similar to the base-condition model output with the only difference being future projected water surface elevations are up to 1.9 feet higher at specific locations, generally upstream of bridges due to backwater, as a result of the increased discharges.

Table 13 provides a comparison of HEC-RAS base condition modeled water surface elevations at the FIS discharge locations, using the USGS *StreamStats* flows, and future condition, using the USGS *FutureFlow* flows.

Table 13. HEC-RAS Current and Projected Future Flow Water Surface Elevation Comparison

Flooding Source and Location	Drainage Area (mi^2)	River Station (ft)	Water Surface Elevation Change (ft)[1]			
			10%	2%	1%	0.2%
At confluence with Ransom Creek	18.4	0+43	0.11	0.13	0.13	0.15
At Transit Road	16.9	102+50	0.15	0.17	0.16	1.07
At Newhouse Road	14.4	207+00	0.10	0.28	0.10	0.10
At confluence with Gott Creek Tributary	3.9	300+02	0.19	0.09	0.11	0.06

Notes:
1. Positive changes in water surface elevation indicate the future conditions water surface elevation is higher than the base condition.

Source: (USGS, 2020); (USGS, 2016); (USACE, 2019)

Table 14 provides a comparison of the current 1% annual change peak stream flows calculated using the USGS *StreamStats* software and the mean predicted future discharge calculated using the USGS *FutureFlow* software at each of the discharge locations included in the effective FIS.

Table 14. Comparison of 1% Annual Chance Current and Future Discharges

Flooding Source and Location	Drainage Area (mi^2)	River Station (ft)	Current *StreamStats* Discharge (cfs)	Predicted Future Discharge (cfs)	Change (%)
At confluence with Ransom Creek	18.4	0+43	1,200	1,258	4.8%
At Transit Road	16.9	102+50	1,160	1,222	5.3%
At Newhouse Road	14.4	207+00	1,140	1,198	5.1%
At confluence with Gott Creek Tributary	3.9	300+02	384	401	4.4%

Source: (USGS, 2020); (USGS, 2016)

Flooding Characteristics

Flooding History

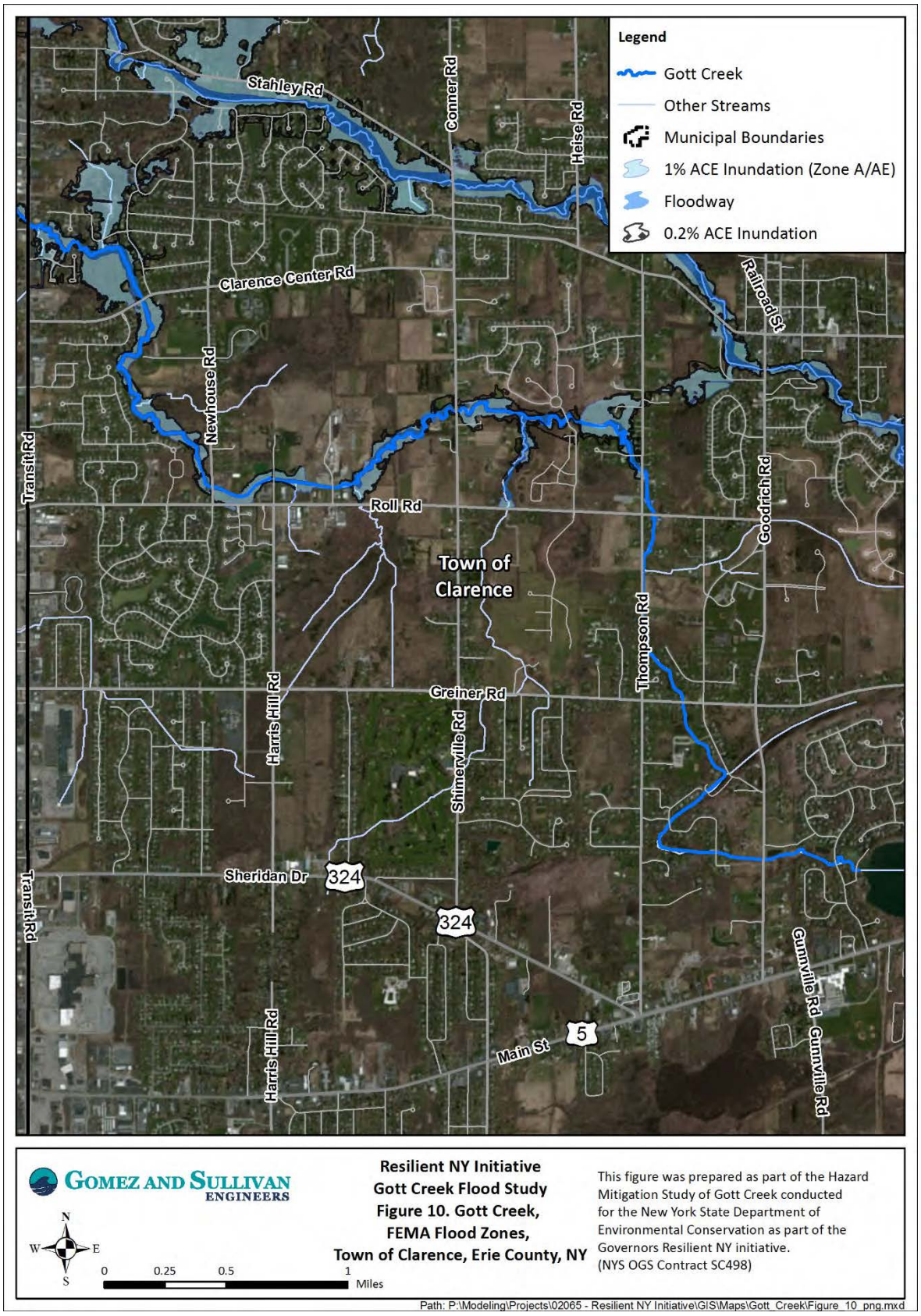
Flooding along Gott Creek typically occurs during late winter and early spring, due to snowmelt and moderate rainfall. Flooding is worst along the final approximately one-mile stretch of Gott Creek due to backwater from Ransom Creek. Drainage divides between Tonawanda Creek, Ransom Creek, and Gott Creek are low and their flood flows often merge together. High flows on Tonawanda Creek can cause backwater conditions up Ransom Creek all the way into the Gott Creek corridor. In addition, flows from Ransom Creek can not only backwater the lower portions of Gott Creek, but also overflow into Gott Creek higher up in the watershed in an area to the southwest of Clarence Center.

In March 1960, the flood of record occurred in the Towns of Amherst and Clarence. Floodwaters inundated a total area of approximately 3,220 acres, with a maximum width of approximately four miles across the Tonawanda, Ransom, Black, and Gott Creek watersheds. Most of the flood damage occurred on agricultural land. This flood corresponded to an approximately 5% ACE (FEMA, 2019a). Other historic major floods occurred in March 1902, March 1916, January 1929, March 1936, June 1937, March 1940, March 1954, March 1956, January 1957, January 1959, March 1963, March 1979, February 1985, January 1996, January 1998, and January 1999 [(FEMA, 1992); (FEMA, 1996); (URS, 2011)]. More recent flooding occurred in April 2017 which required pumping out of floodwaters from the Pines Subdivision in the Town of Amherst (WKBW, 2017). No history of ice jams was found along Gott Creek during the collection of background research, thus ice jams were not further investigated for this study.

FEMA FIRMs are available for Gott Creek, depicting the extent of the expected floodplain. Figure 9 and Figure 10 display the floodway and 1% and 0.2% ACE boundaries for Gott Creek as determined by FEMA for the Towns of Amherst and Clarence (FEMA, 2019b).

Figure 9. Gott Creek, FEMA Flood Zones, Town of Amherst, Erie County, NY

Figure 10. Gott Creek, FEMA Flood Zones, Town of Clarence, Erie County, NY



Flood Risk Assessment

Flood Mitigation Analysis

For this study of Gott Creek, standard hydrologic and hydraulic study methods were used to determine and evaluate flood hazard data. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10%, 2%, 1%, and 0.2% chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. The analyses reported herein reflect flooding potentials based on conditions existing in the county at the time of completion of the effective FIS (FEMA, 2019a).

Hydraulic analysis of Gott Creek was conducted using the HEC-RAS v5.0.7 program (USACE, 2019). The HEC-RAS computer program was written by the USACE Hydrologic Engineering Center (HEC) and is considered to be the industry standard for riverine flood analysis. The model is used to compute water surface profiles for one- and two-Dimensional (2-D), steady-state, or time-varied (unsteady) flow. In one-dimensional (1-D) solutions, the water surface profiles are computed from one cross section to the next by solving the one-dimensional St. Venant equations with an iterative procedure (i.e. standard step backwater method). Energy losses are evaluated by friction (Manning's Equation) and the contraction / expansion of flow through the channel. The momentum equation is used in situations where the water surface profile is rapidly varied, such as hydraulic jumps, mixed-flow regime calculations, hydraulics of dams and bridges, and evaluating profiles at a river confluence (USACE, 2016a).

Hydraulic and Hydrologic modeling of Gott Creek in the Towns of Amherst and Clarence was completed by FEMA in 1990 and 1993, respectively. Due to the age and format of the FIS study, an updated 1-D HEC-RAS model was developed using the following data and software:

- Erie County, NY bare earth classified LiDAR data set with 1.4-meter nominal point spacing (NOAA, 2008)
- New York State Digital Ortho-imagery Program imagery for Erie County (NYSOITS, 2017)
- National Land Cover Database (NLCD) data (MRLC, 2019)
- USGS *StreamStats* peak discharge data (USGS, 2020)
- RAS Mapper extension in HEC-RAS software
- ESRI ArcMap 10.7 with the HEC-GeoRAS extension GIS software (ESRI, 2019)

The hydraulic model was developed for Gott Creek beginning at the confluence with Ransom Creek (river station 0+43) and extending upstream to approximately 85 feet south (upstream) of Roll Road (river station 355+22).

Methodology of HEC-RAS Model Development

Hydraulic modeling of Gott Creek in the Town of Amherst was completed in 1990 using HEC-2 computer software. The Town of Amherst analysis extended from the confluence with Ransom Creek to just upstream of Transit Road for a total model length of approximately two miles (FEMA, 1992). Hydraulic modeling of Gott Creek in the Town of Clarence was completed in 1993 using HEC-2 computer software. The Town of Clarence analysis extended from Transit Road to just upstream of Roll Road for a total model

length of approximately 4.8 miles (FEMA, 1996). These HEC-2 models were converted to the most recent version of HEC-RAS (Version 5.0.7). Next, the two hydraulic models were combined and updated using the LiDAR data, orthoimagery, land cover data, and the RAS Mapper extension in the HEC-RAS software. These changes resulted in a base condition hydraulic model developed from the effective FEMA hydraulic model using the following methodology:

- HEC-2 models were imported and elevations were converted from NGVD29 to NAVD88 (NAVD88 = NGVD29 - 0.5 feet)
- Georeferenced stream centerline and cross sections using geographic information systems (GIS)
- Revised reach lengths between cross sections using GIS
- Adjusted cross-section geometry, for areas outside of the stream channel throughout the model using the LiDAR
- Updated Manning n-values to better reflect channel, bank, and floodplain roughness, based on field observations and ortho-imagery
- Updated structure geometry and channel elevations based on as-built drawings and field measurements for critical structures within high risk areas
- Adjusted ineffective flow areas to account for floodplain expansion and contraction at structures and due to terrain
- Revised expansion and contraction coefficients to correspond with hydraulic conditions near structures
- Adjusted downstream boundary condition to use a rating curve developed by interpolating and extrapolating the water surface elevations used for the downstream boundary condition in the hydraulic model from the effective FEMA FIS
- Adjusted left and right bank stations based on the adjusted cross section geometry and bankfull discharge
- Performed a 1-D steady flow simulation using the USGS *StreamStats* peak discharges

The base condition model water surface elevation results were then compared to the FEMA FIS water surface profiles and the effective FEMA FIS streambed elevation profiles to validate the model. After the base condition model was verified, it was then used to develop alternative condition models to simulate potential flood mitigation strategies. Generic renderings of various potential flood mitigation strategies are provided in Appendix F. The simulation results of the alternative conditions were evaluated based on their reduction in water surface elevations. As the potential flood mitigation strategies are, at this point, preliminary, inundation mapping was not developed from the computed water surface profiles for each potential mitigation alternative. Inundation shown on figures within this report reflects that of the effective FEMA FIS for Towns of Amherst and Clarence. The effectiveness of each potential mitigation strategy was evaluated based on reduction in water surface elevations. In addition to reduced water surface elevations at the inundated structures, some structures may be removed from the inundation area for a given annual chance exceedance (ACE) event by implementing the mitigation strategies.

The flood mitigation strategies that were modeled were:

Town of Amherst:

- Levee relocation between North French Road and Casey Road
- Remove Peanut Line Bridge
- Create flood benches downstream of Transit Road

Town of Clarence:

- Create flood benches upstream of Transit Road

Stationing references for the flood mitigation measures are based on the base condition hydraulic model for Gott Creek, which differs from the FEMA FIS stationing values.

Cost Estimate Analysis

Rough order of magnitude (ROM) cost estimates were prepared for each mitigation alternative. In order to reflect current construction market conditions, a semi-analogous cost estimating procedure was used by considering costs of a recently completed, similar scope construction project performed in Upstate New York. Phase I of the Sauquoit Creek Channel and Floodplain Restoration Project in Whitestown, NY contained many elements similar to those found in the potential mitigation alternatives.

Where recent construction cost data was not readily available, RSMeans CostWorks 2019 was used to determine accurate and timely information (Gordian, Inc., 2019). Costs were adjusted for inflation and verified against current market conditions and trends.

Infrastructure and hydrologic modifications will require permits and applications to the New York State and / or FEMA, including construction and environmental permits from the State and accreditation, Letter of Map Revision (LOMR), etc. applications to FEMA. Application and permit costs were not incorporated in the ROM costs estimates.

High Risk Areas

Based on the FEMA FIS, historical flood reports, and stakeholder input from engagement meetings, two areas along Gott Creek were identified as high-risk flood areas in the Towns of Amherst and Clarence.

High Risk Area #1: The Pines Subdivision (Station 13+70 to 64+90)

High Risk Area #1 extends along Gott Creek between North French Road and Casey Road in the Town of Amherst. As previously mentioned, levees line the banks on either side of the channel throughout this risk area, and are the responsibility of the landowners upon whose property they reside. These embankments are not part of the National Levee Database managed by the USACE and FEMA. As such, the effective FIRM shows areas behind these structures as inundated, if the ground elevation is below the computed 1% or 0.2% water surface elevation. A review of the effective FIRM for this area indicates that the Pines Subdivision is located within the 0.2% ACE floodplain. During public outreach, multiple comments were received regarding the need to pump water out of the Pines Subdivision at Casey Road during high water conditions. Available news coverage indicates that street flooding may cause accessibility issues, as pumping within the Pines Subdivision has been documented (WKBW, 2017). No repetitive loss properties are located within the risk area. Figure 11 depicts the extent of flooding within the risk area, while Figure 12 shows the water surface profiles within the risk area.

Figure 11. High Risk Area #1: The Pines Subdivision (Station 13+70 to 64+90)

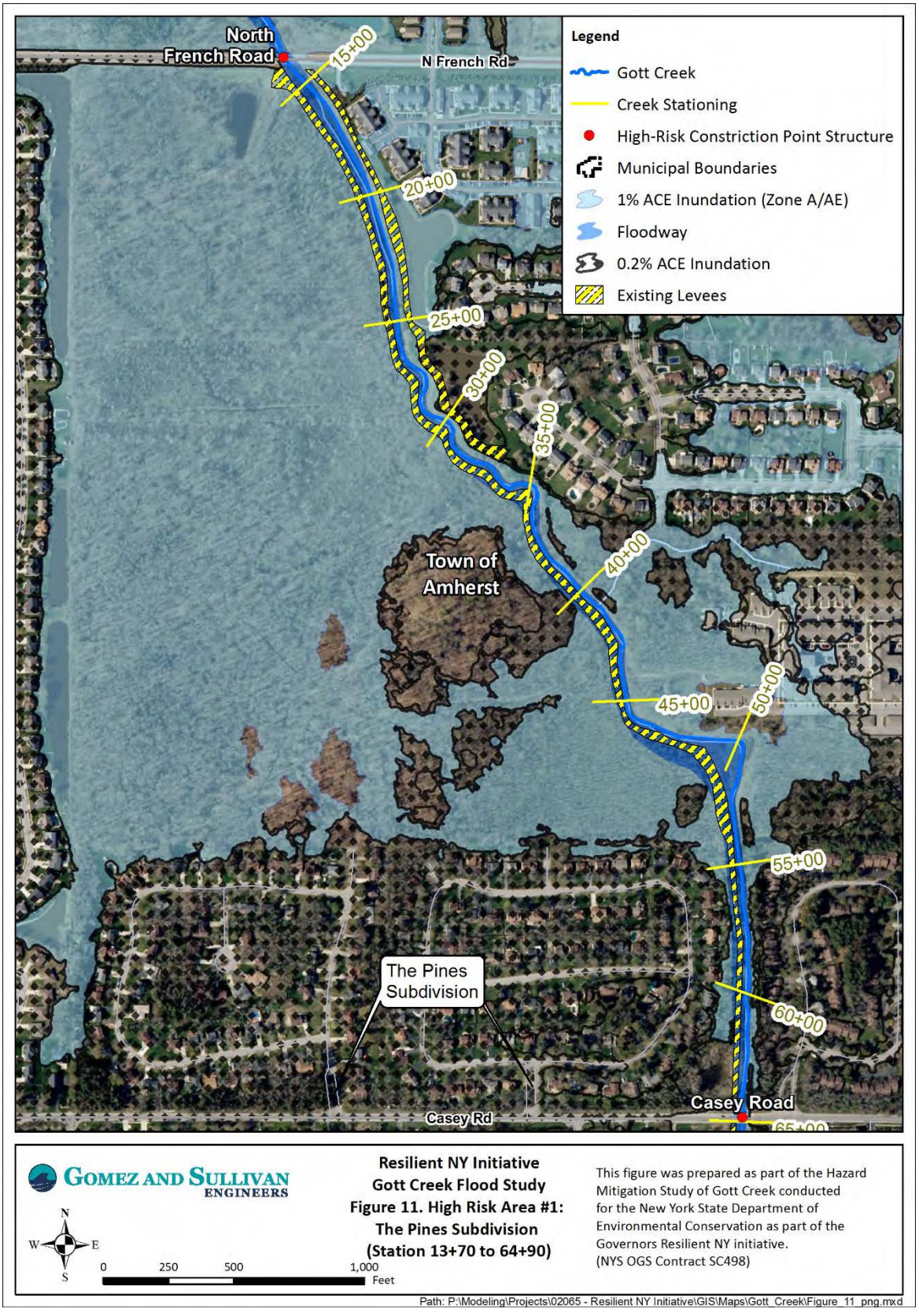
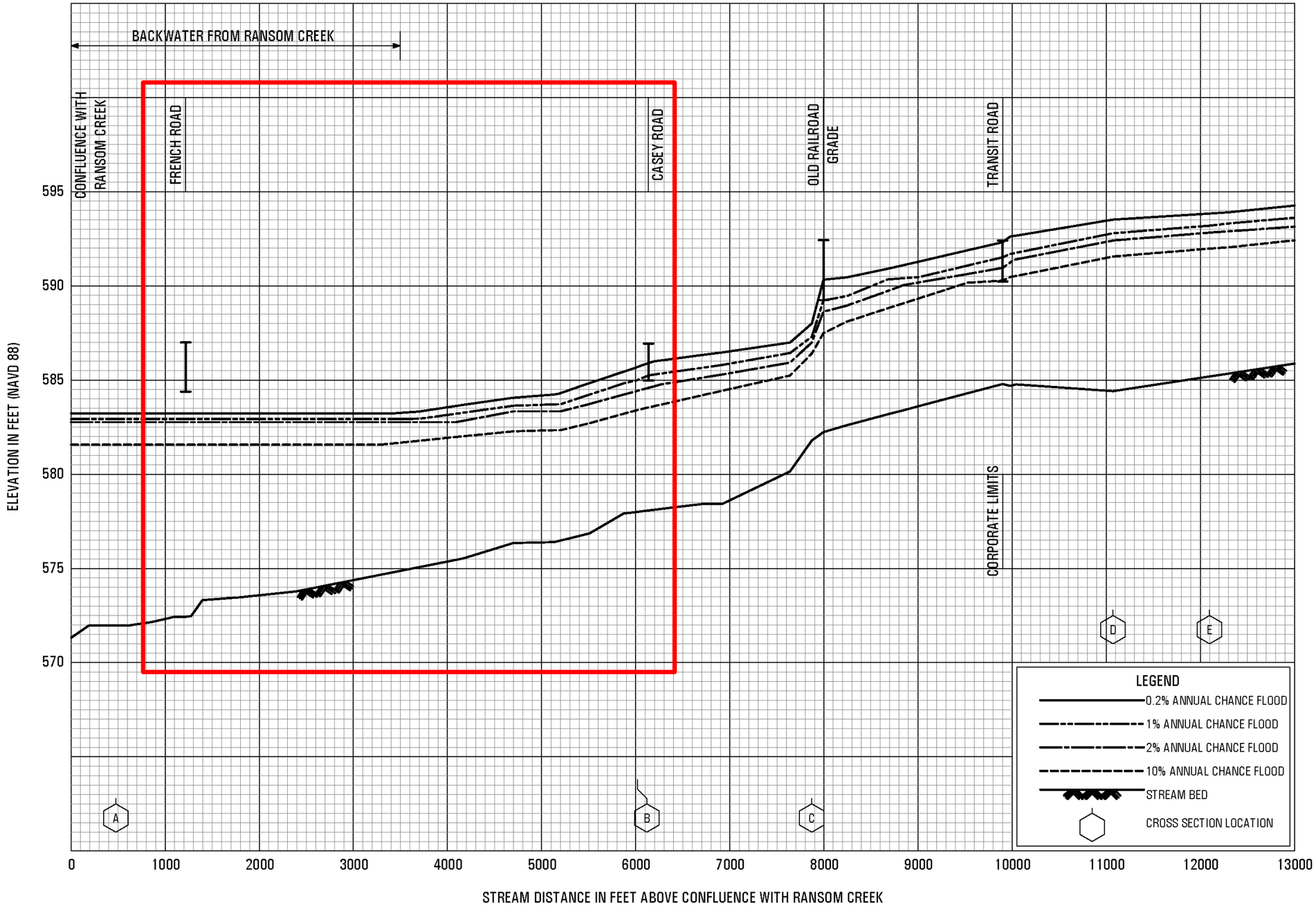


Figure 12. FEMA FIS Profile for Gott Creek in the Vicinity of High Risk Area #1



High Risk Area #2: Transit Road (Station 83+65 to 143+30)

High Risk Area #2 extends along Gott Creek between the Peanut Line Bridge in the Town of Amherst and Clarence Center Road in the Town of Clarence. A review of the effective FIRM identified that streets upstream of Transit Road (BIN 1030300) are inundated during the 0.2% ACE, which is consistent with accessibility issues due to street flooding mentioned during public outreach. The effective FIS profile suggests that the hydraulic constriction caused by the Peanut Line Bridge may be a major cause of upstream flooding. Further, a Wolman pebble count upstream of the Peanut Line Bridge indicates that greater than 50% of the substrate is silt/clay, with the remaining substrate consisting of larger gravel and smaller cobbles. The high presence of silt/clay indicates slow moving water, suggesting that the hydraulic constriction of the Peanut Line Bridge is causing aggradation. The Peanut Line Bridge and its embankments are owned by the Town of Amherst (Lucey, Tim, 2020). No repetitive loss properties are located within the risk area. Figure 13 depicts the extent of flooding within the risk area, while Figure 14 shows the water surface profiles within the risk area.

Figure 13. High Risk Area #2: Transit Road (Station 83+65 to 143+30)

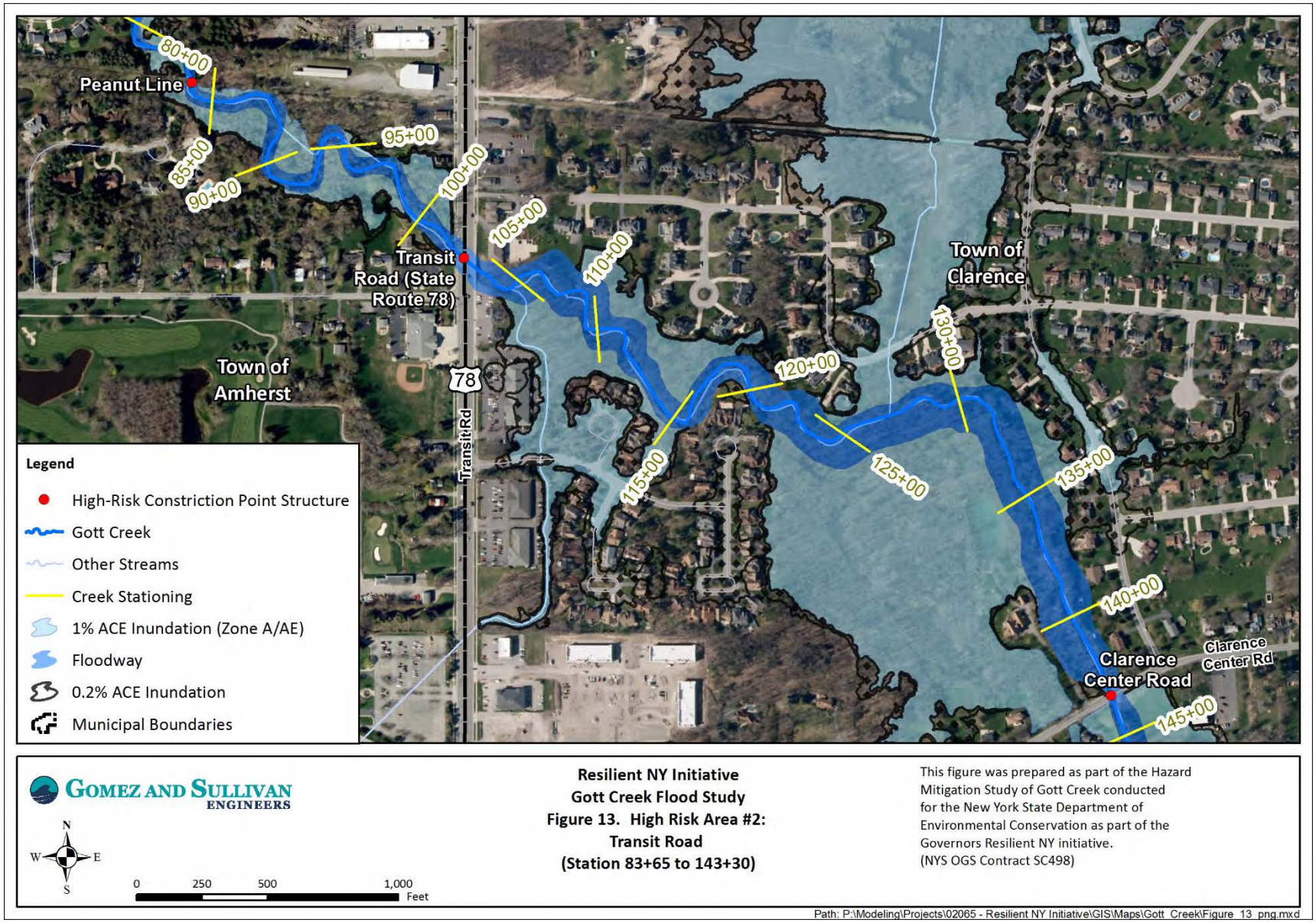
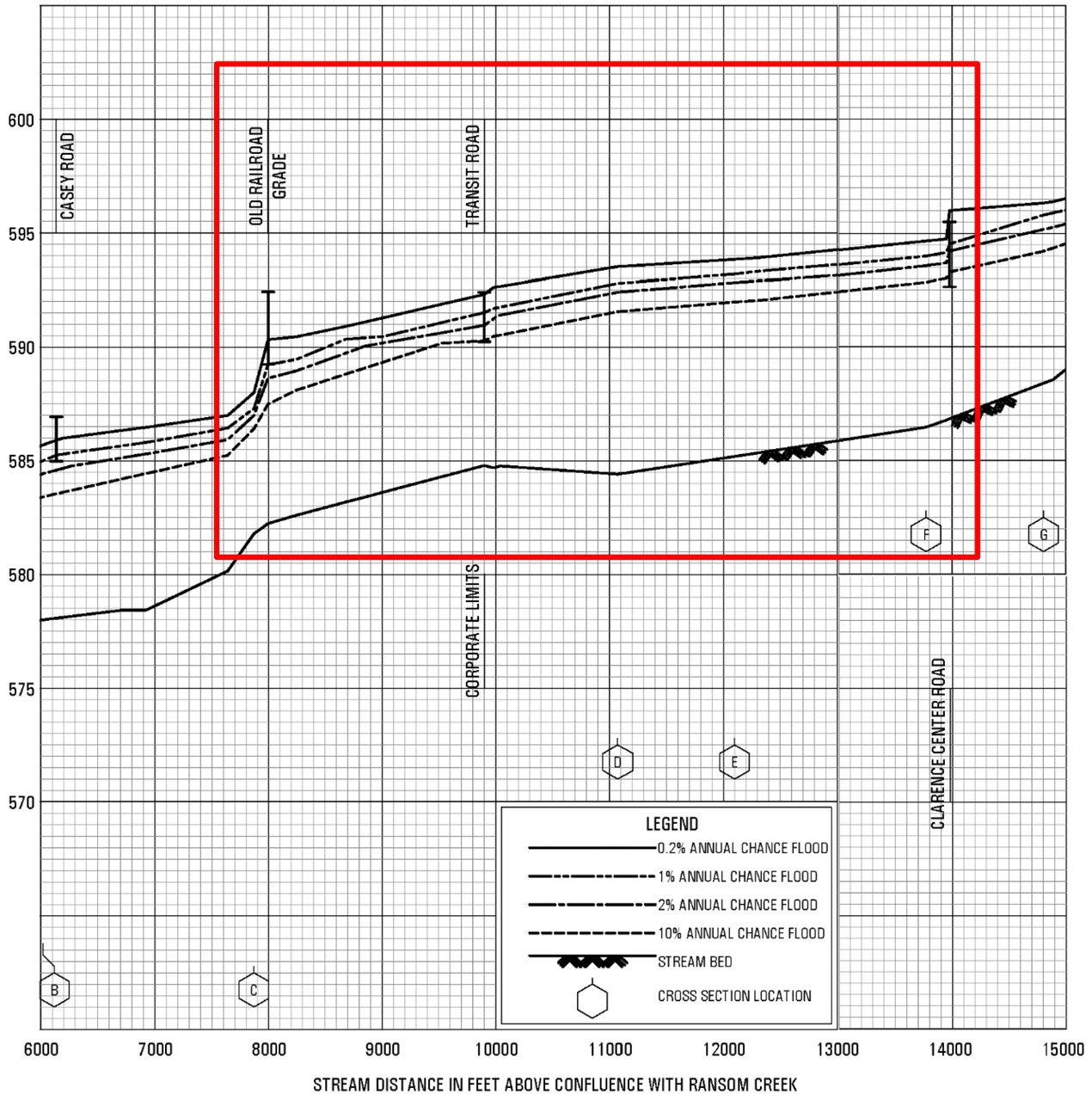


Figure 14. FEMA FIS Profile for Gott Creek in the Vicinity of High Risk Area #2



Mitigation Alternatives

The following flood mitigation alternatives that have the potential to reduce water surface elevations were evaluated for the identified high-risk areas along Gott Creek. These alternatives could potentially reduce flood related damages in areas adjacent to the creek. The Towns of Amherst and Clarence should evaluate each alternative and consider the potential effects to the community and the level of community buy-in for each before pursuing them further.

High Risk Area #1: The Pines Subdivision (Station 13+70 to 64+90)

Alternative #1-1: Levee Relocation between North French Road and Casey Road (Station 14+09 to 54+66)

The inundation extents for the effective FEMA FIRM indicate extensive residential and street flooding within the Pines Subdivision. Based on community input, this area requires the streets to be pumped during large storm events. Existing levees are located on both sides of Gott Creek between North French Road and Casey Road, which restrict the creek's access to the natural floodplain. North of the Pines Subdivision, there is an approximately 105-acre wetland area located behind the levee in the left overbank area. This wetland area is owned by the Town of Amherst.

Modeling results indicate that reconnecting Gott Creek with the adjacent wetlend results in water surface elevation reductions. However, significant residental flooding would still occur if the levee was simply removed. Therefore, this potential flood mitigation alternative is intended to provide additional flow area in the overbank by relocating the levee on the left overbank between North French Road and Casey Road by as much as 1,900 feet. This levee is on property owned by the Town of Amherst. Figure 15 depicts the conceptual extents of this alternative. In order to maximize the benefit of this alternative, the levee would need to be designed and constructed in accordance with FEMA guidelines and other applicable regulations. This would allow for structures protected by the levee to receive reduced FEMA flood insurance rates. Additionally, the levee would need to be inspected and maintained regularly to retain levee accreditation for reduced insurance rates. A lift station with a 10-inch pump was installed at the north end of the Pines Subdivision in the summer of 2020, however, this analysis did not include a pump in the modeling.

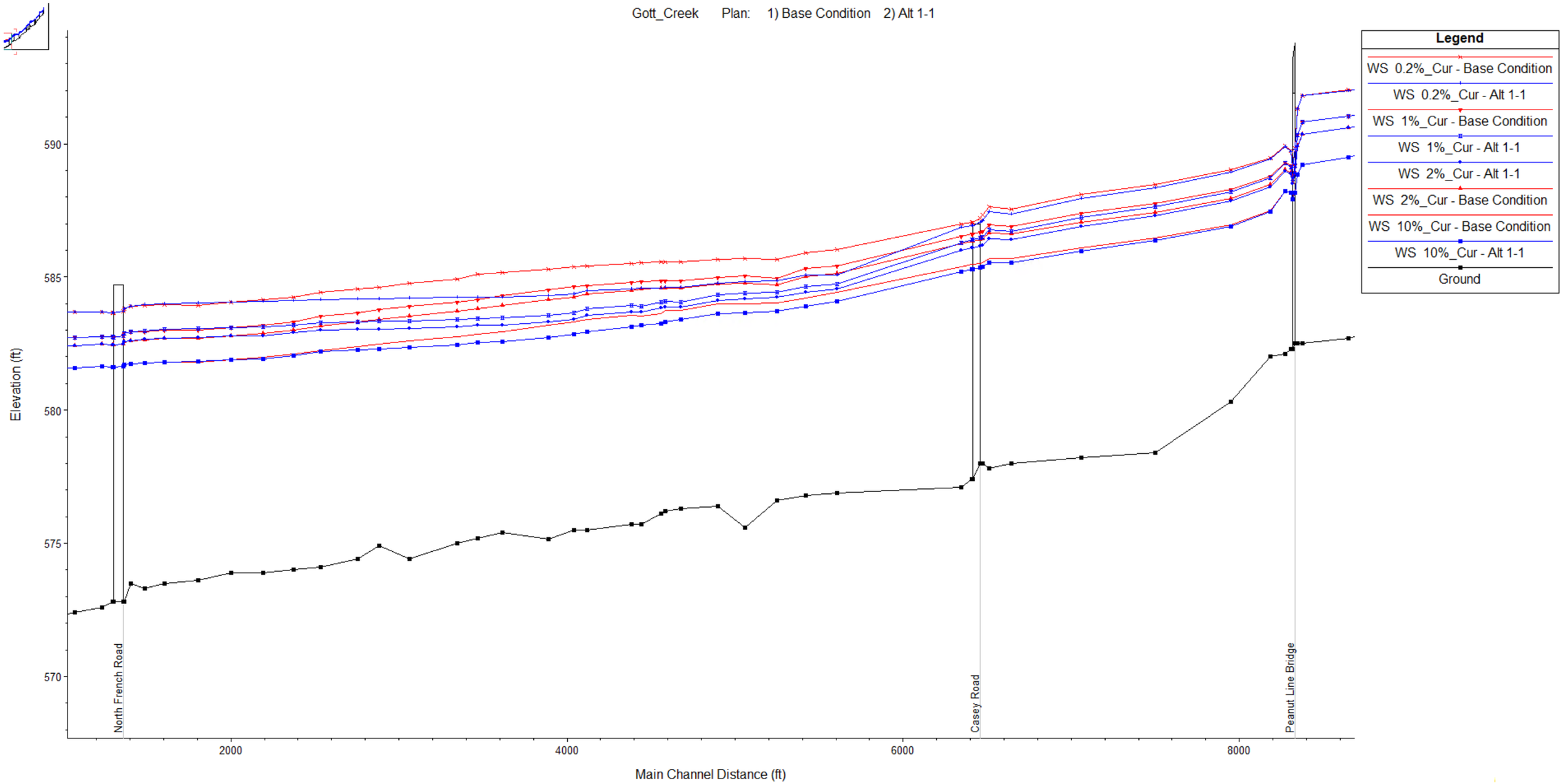
Figure 16 depicts the difference in modeled water surface elevations for existing flood conditions under the base condition and Alternative #1-1 conditions in the vicinity of this high risk area. The hydraulic analysis shows that this alternative generally results in water surface elevation reductions along approximately 6,100 feet of Gott Creek extending from 900 feet upstream of North French Road to the Peanut Line Bridge. Water surface elevation reductions under current discharges are computed to be as much as 0.5 ft for the 10% ACE discharge, 0.9 ft for the 2% ACE discharge, 1.0 ft for the 1% ACE discharge, and 1.0 ft for the 0.2% ACE discharge. Similar results, relative to the extent and magnitude of water surface elevation reductions, were found under this alternative for the projected future discharges. Reductions under projected future discharges are computed to be as much as 0.6 ft for the 10% ACE discharge, 0.9 ft for the 2% ACE discharge, 1.0 ft for the 1% ACE discharge, and 1.0 ft for the 0.2% ACE discharge. A slight rise in water surface elevations was observed from approximately 700 feet to 200 feet upstream of the North French Road Bridge. The levee's current configuration directs the majority of flows through the North French Road bridge, as the distance between the levees is approximately equal to the opening width of the North French Road bridge. Modeling indicates that moving the levees away from the channel results in slower flow velocity and minor increases in water surface elevation as the flow approaches the bridge, when compared to the baseline condition. If this alternative is pursued, additional hydraulic

modeling and design modifications may be necessary to minimize the computed increases in upstream water surface elevations and ensure that all federal, state, and local regulations are met relative to projects which may raise the regulatory water surface elevation. Otherwise the project may be rejected by the FEMA during the Conditional Letter of Map Revision process.

The Rough Order Magnitude cost is $7.0 million. No land acquisition would be required for this alternative. These costs do not consider activities required to meet and maintain FEMA levee accreditation standards necessary to receive reduced flood insurance rates for structures protected by the levee.

Figure 15. Location Map for Alternative #1-1

Figure 16. HEC-RAS Model Simulation Output Results for Alternative #1-1



High Risk Area #2: Transit Road (Station 83+65 to 143+30)

Alternative #2-1: Peanut Line Bridge Removal (Station 83+65)

The inundation extents for the effective FEMA FIRM indicate extensive street flooding in subdivisions upstream of Transit Road. Stakeholder input confirms that the houses in this area are not flooded, but street flooding causes accessibility issues. The hydraulic width of bridges throughout this area are less than the bankfull width, according to *StreamStats*. However, the Peanut Line Bridge is the narrowest bridge, and the effective FIS flood profile suggests that the Peanut Line Bridge may represent the most severe hydraulic constriction. While observations during storm events have not indicated that the Peanut Line Bridge is a hydraulic constriction, the magnitude of the observed events relative to those being modeled in this study is unknown. Finally, this bridge is part of a defunct railroad system.

This potential flood mitigation alternative is intended to provide additional flow area by removing the bridge and its associated embankment within the floodplain to a width of 200 feet. This section of the Peanut Line trail is owned by the Town of Amherst. Figure 17 depicts the conceptual extents of this alternative. This alternative does not include a replacement bridge for the Peanut Line Bridge in the model.

Figure 18 depicts the difference in modeled water surface elevations for existing flood conditions under the base condition and Alternative #2-1 conditions in the vicinity of this high risk area. The hydraulic analysis shows that this alternative generally results in water surface elevation reductions extending as much as 5,900 feet from the removed Peanut Line Bridge to just downstream of Clarence Center Road. However, water surface elevation reductions extend an additional 1,900 feet upstream of Clarence Center Road for the current 1% ACE discharge, as a result of the alternative reducing water levels to below the bridge low chord for this discharge. Water surface elevation reductions under current discharges are computed to be as computed to be much as 0.8 ft for the 10% ACE discharge, 1.2 ft for the 2% ACE discharge, 1.3 ft for the 1% ACE discharge, and 1.7 ft for the 0.2% ACE discharge. Similar results, relative to the extent and magnitude of water surface elevation reductions, were found under this alternative for the projected future discharges. However, water surface elevation reductions do not extend upstream of Clarence Center Road for any of the project future discharges. Reductions under projected future discharges are computed to be as much as 0.8 ft for the 10% ACE discharge, 1.3 ft for the 2% ACE discharge, 1.4 ft for the 1% ACE discharge, and 3.2 ft for the 0.2% ACE discharge. The modeled rate of effective flow expansion downstream of the Peanut Line bridge may not represent what would naturally occur under all flow conditions, as the width of effective flow is expected to vary with flow rate. Consequently, modeled removal of the bridged resulted in a computed water surface elevation downstream of the bridge which was slightly higher than the baseline under some conditions. The ineffective flow areas downstream of the bridge, for the baseline conditions model, were set to appropriately represent the natural expansion of flow under the current 1% ACE discharge. These results indicate that Transit Road is not a major constriction, as similar water surface elevations reductions were found upstream and downstream of Transit Road when the Peanut Line Bridge is removed.

While the removal of the Peanut Line Bridge provides significant benefits, there is currently recreational use of this bridge which must be considered. Additionally, community support exists to improve the existing Peanut Line trail and connect it to other trail systems (Licata, Dominic J., Date Unknown). This section of the Peanut Line trail is owned and maintained by the Town of Amherst. Therefore, replacement of the Peanut Line Bridge, with a structure that maintains trail connectivity and provides flood reduction benefits, should also be considered if this option is pursued further.

The Rough Order Magnitude cost is $200,000 to remove the bridge and embankments. No land acquisition would be required for this alternative. These costs do not consider the construction of a replacement bridge for recreational use or maintenance of the Peanut Line Trail.

Figure 17. Location Map for Alternative #2-1

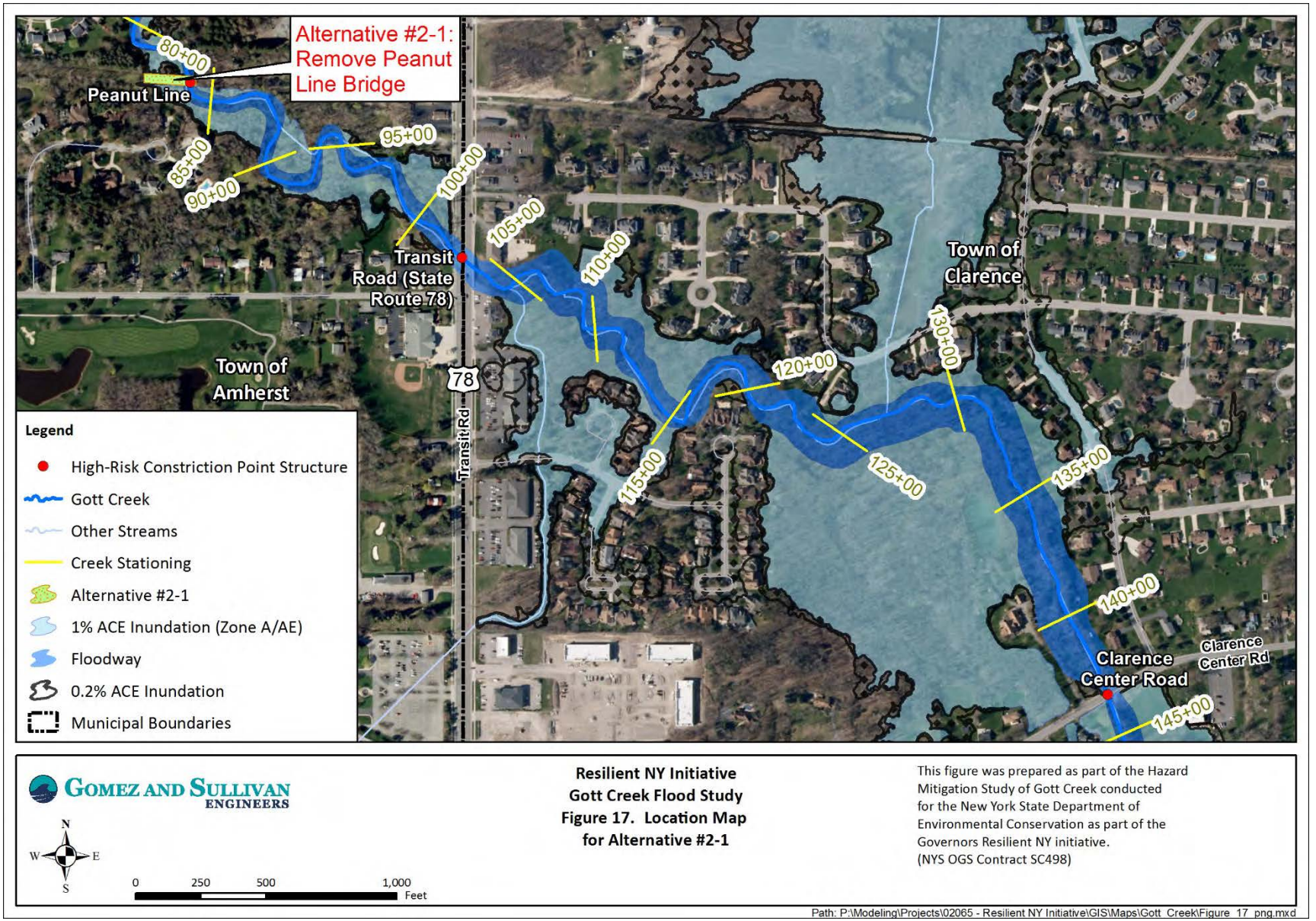
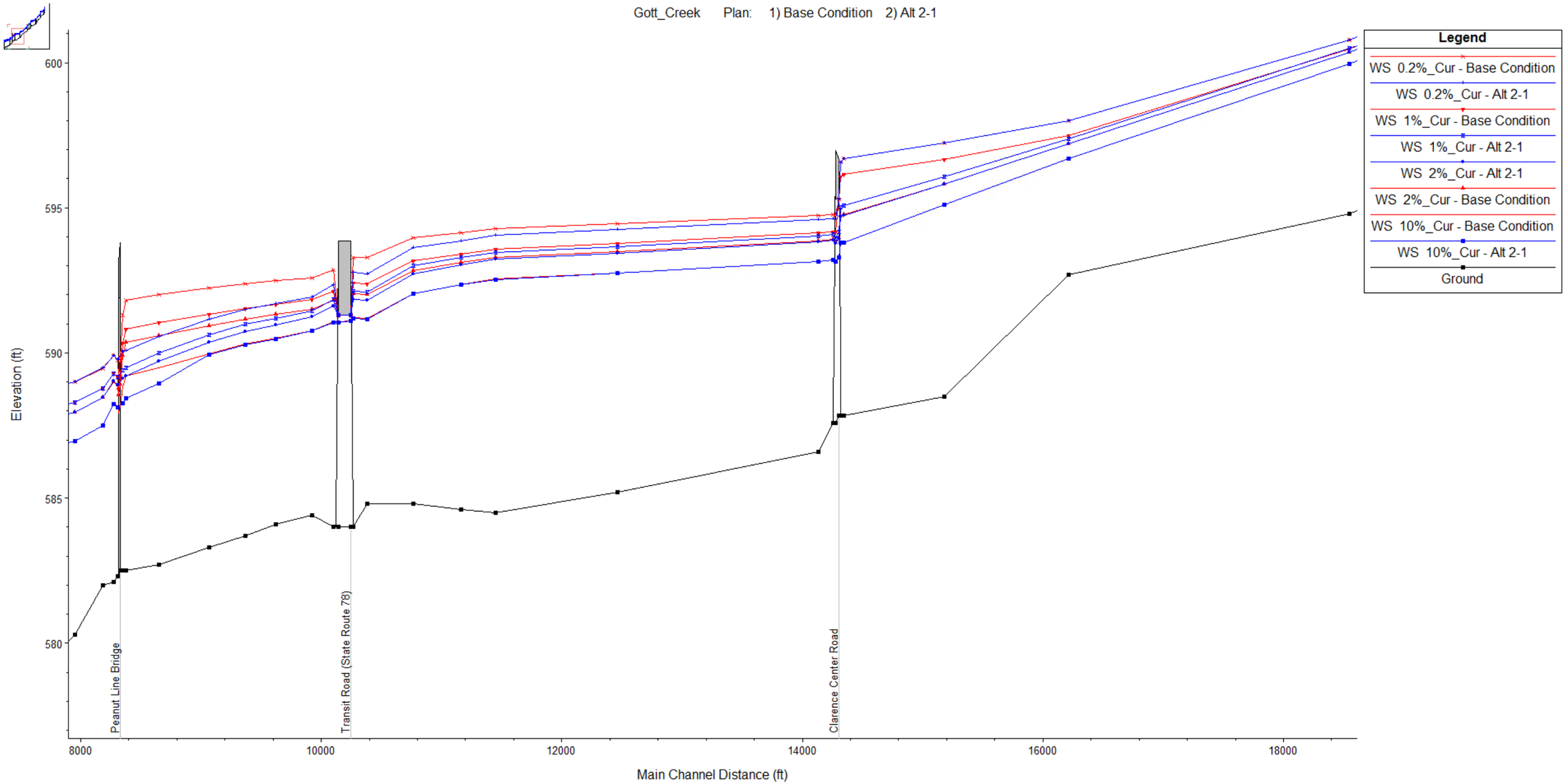


Figure 18. HEC-RAS Model Simulation Output Results for Alternative #2-1



Alternative #2-2: Flood Bench Creation Upstream of Transit Road (Station 85+00 to 10+147)

The inundation extents for the effective FEMA FIRM indicate extensive street flooding in subdivisions upstream of Transit Road. Stakeholder input confirms that the houses in this area are not flooded, but street flooding causes accessibility issues. The overbank area upstream of Transit Road is undeveloped land which generally sits at a higher elevation than the bankfull elevation of Gott Creek, according to the bankfull depth provided by *StreamStats*. Further, some of the stream channel in this area is considered entrenched, according to the entrenchment ratio (USDA, 2007).

This potential flood mitigation alternative is intended to provide additional flow area in the overbank through construction of multiple flood benches extending from approximately 400 feet upstream of Transit Road to approximately 1,500 feet upstream of Transit Road. The existing topography was lowered by approximately 1.4 ft for this alternative to an elevation between the approximate bankfull and 10% annual chance water surface elevations, resulting in the removal of approximately 5,260 cubic yards of material. The majority of this area is privately owned, with about 20% of the land impacted by the flood benches being owned by the East Amherst Fire Department. Figure 17 depicts the conceptual extents of this alternative.

Figure 18 depicts the difference in modeled water surface elevations for existing flood conditions under the base condition and Alternative #2-2 conditions in the vicinity of this high risk area. The hydraulic analysis shows that this alternative generally results in water surface elevation reductions extending from 550 feet upstream of Transit Road to Clarence Center Road. For the current 10% ACE and 2% ACE discharges, minor water surface elevation reductions extend an additional 500 feet upstream of Clarence Center Road. For the current 1% ACE discharge, water surface elevation reductions extend approximately 3,100 feet upstream of Clarence Center Road, with significant reduction being observed approximately 1,400 feet upstream of Clarence Center Road as a result of the alternative reducing the water surface elevation below the low chord of the bridge. Water surface elevation reductions under current discharges are computed to be as much as 0.3 ft for the 10% ACE discharge, 0.2 ft for the 2% ACE discharge, 1.1 ft for the 1% ACE discharge, and 0.1 ft for the 0.2% ACE discharge. The much higher reduction observed for the 1% ACE discharge was as a result of water surface elevations flowing below the low chord of the Clarence Center Road bridge as discussed above. The highest reduction for the 1% ACE discharge not associated with this anomaly is approximately 0.2 feet, which is consistent with the reductions seen for the 2% ACE discharge. Similar results, relative to the extent and magnitude of water surface elevation reductions, were found under this alternative for the projected future discharges. Reductions under projected future discharges are computed to be as much as 0.2 ft for the 10%, 2% and 1% ACE discharges, and 0.1 ft for the 0.2% ACE discharge. The significant reductions seen for the current 1% ACE discharge are not observed for any of the projected future discharges.

The Rough Order Magnitude cost is $990,000, which does not include land acquisition costs other than survey, appraisal, and engineering coordination.

Figure 19. Location Map for Alternative #2-2

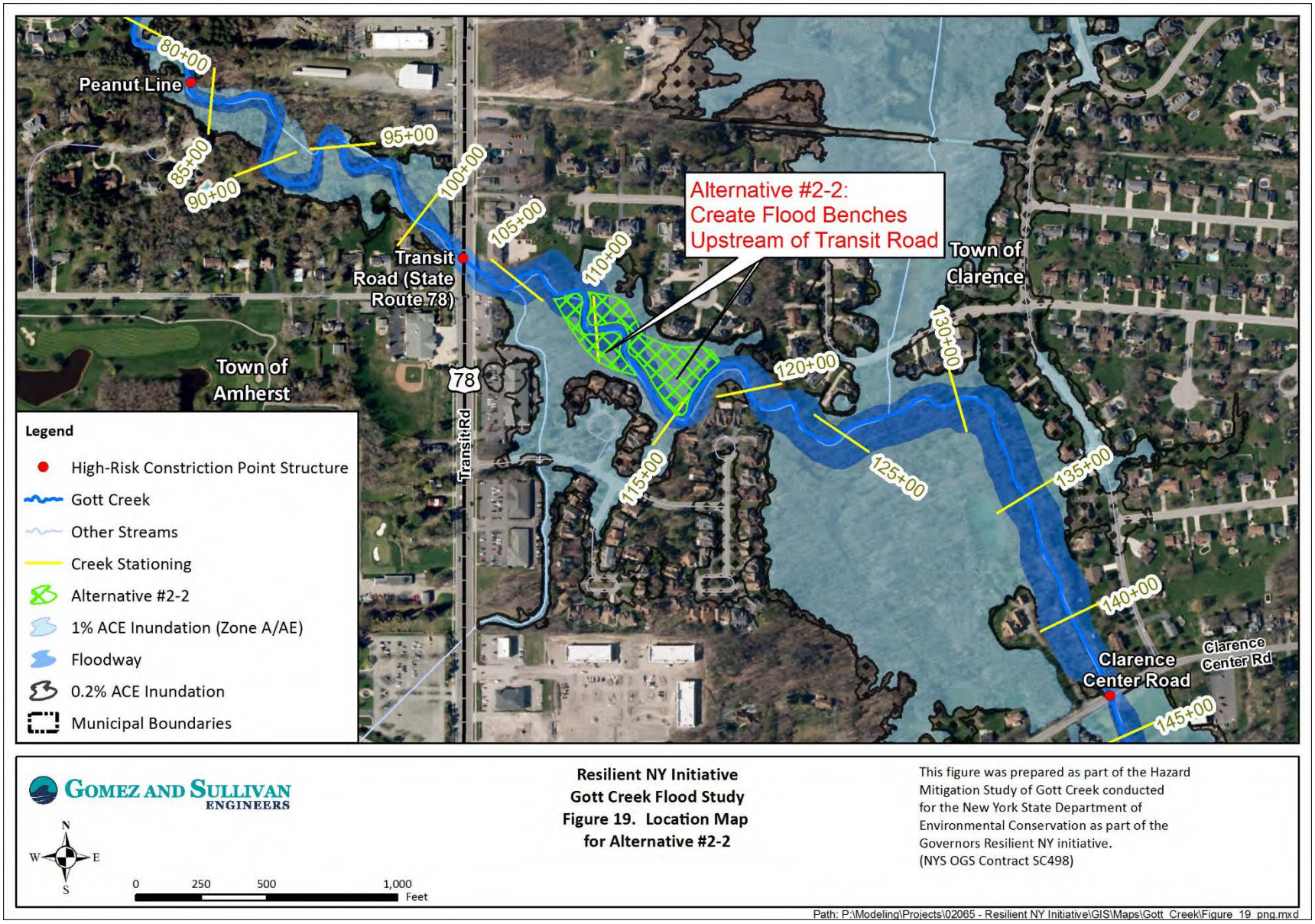
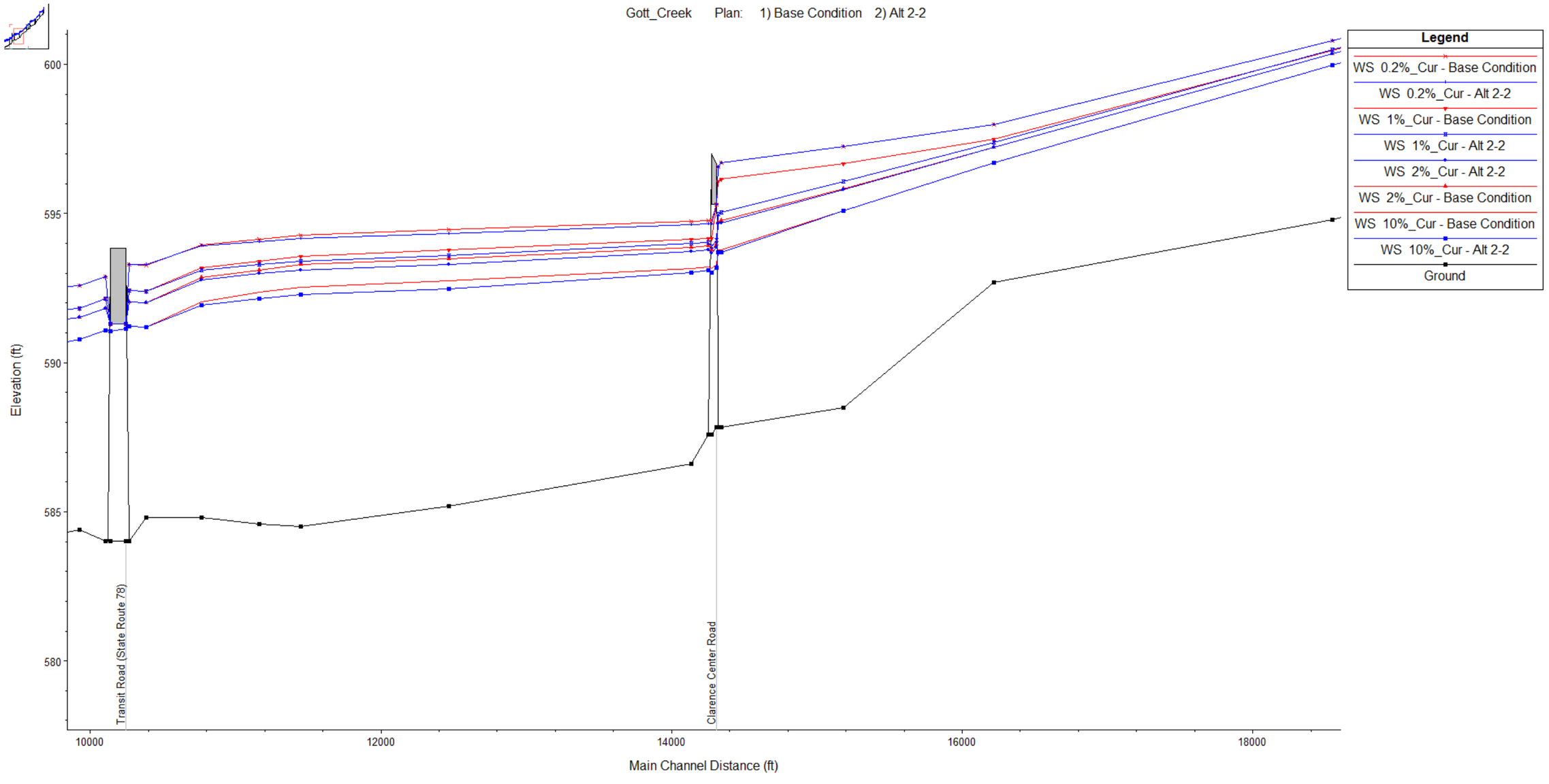


Figure 20. HEC-RAS Model Simulation Output Results for Alternative #2-2



Alternative #2-3: Flood Bench Creation Downstream of Transit Road (Station 10+310 to 11+830)

The inundation extents for the effective FEMA FIRM indicate extensive street flooding in subdivisions downstream of Transit Road. Stakeholder input confirms that the houses in this area are not flooded, but street flooding causes accessibility issues. The overbank area downstream of Transit Road is undeveloped land which generally sits at a higher elevation than the bankfull elevation of Gott Creek, according to the bankfull depth provided by *StreamStats*. Further, some of the stream channel in this area is considered slightly entrenched, according to the entrenchment ratio (USDA, 2007).

This potential flood mitigation alternative is intended to provide additional flow area in the overbank through construction of multiple flood benches extending approximately 1,700 feet downstream of Transit Road. The existing topography was lowered by approximately 1.0 feet for this alternative to an elevation between the approximate bankfull and 10% annual chance water surface elevations, resulting in the removal of approximately 4,400 cubic yards of material. All of this land is privately owned. Figure 17 depicts the conceptual extents of this alternative.

Figure 18 depicts the difference in modeled water surface elevations for existing flood conditions under the base condition and Alternative #2-3 conditions in the vicinity of this high risk area. The hydraulic analysis shows that this alternative generally results in water surface elevation reductions extending approximately 5,200 feet from approximately 750 feet upstream of the Peanut Line Bridge to just downstream of Clarence Center Road. However, water surface elevation reductions for approximately 3,100 feet downstream of Clarence Center Road are generally considered to be negligible (less than 0.05 ft). Water surface elevation reductions under current discharges are computed to be as much as 0.2 ft for the 10% ACE discharge, and 0.1 ft for the 2%, 1%, and 0.2% ACE discharges. Similar results, relative to the extent and magnitude of water surface elevation reductions, were found under this alternative for the projected future discharges. Reductions under projected future discharges are computed to be as much as 0.1 ft for the 10%, 2%, and 1% ACE discharges, and negligible (less than 0.05 ft) for the 0.2% ACE discharge.

The Rough Order Magnitude cost is $1.2 million, which does not include land acquisition costs other than survey, appraisal, and engineering coordination.

Figure 21. Location Map for Alternative #2-3

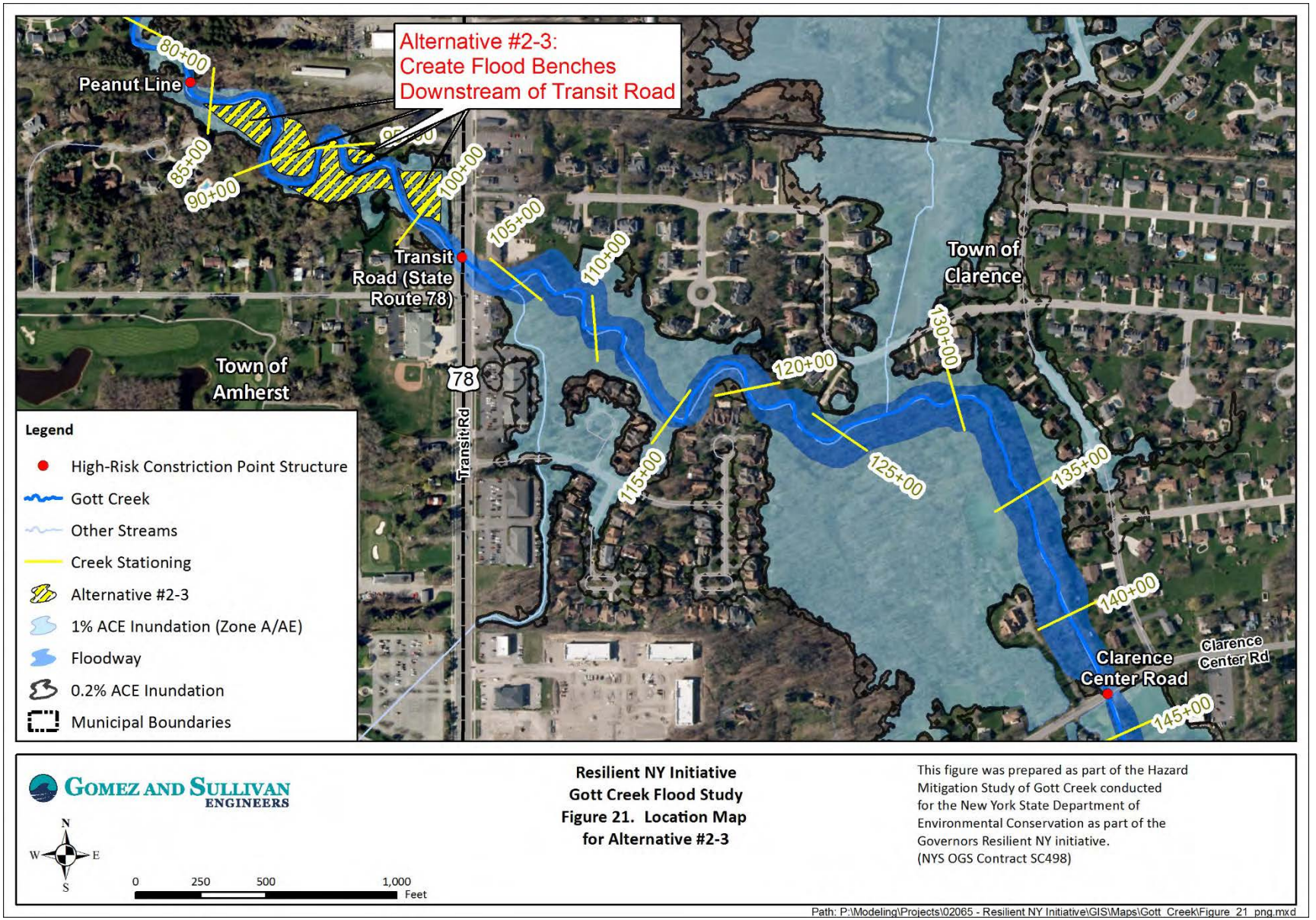
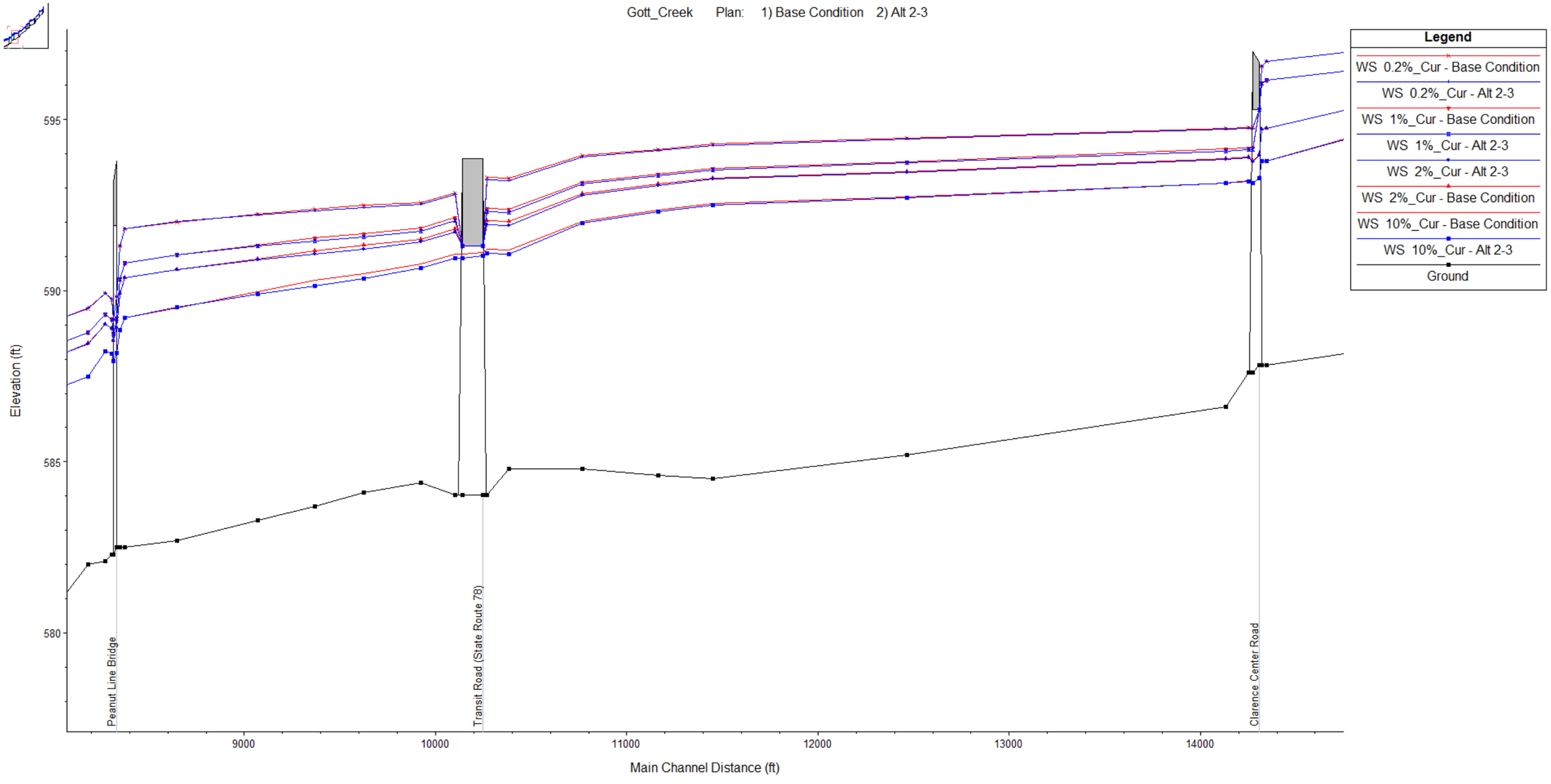


Figure 22. HEC-RAS Model Simulation Output Results for Alternative #2-3



Basin-wide Mitigation Alternatives

Non-structural measures attempt to avoid flood damages by modifying or removing properties currently located within flood-prone areas. These measures do not affect the frequency or level of flooding within the floodplain; rather, they affect floodplain activities. In considering the range of non-structural measures, the community needs to assess the type of flooding which occurs (depth of water, velocity, duration) prior to determining which measure best suits its needs (USACE, 2016b).

Alternative #3-1: Early Warning Flood Detection System

Early warning flood detection systems can be implemented, which can provide communities with more advanced warning of potential flood conditions. Early forecast and warning involve the identification of imminent flooding, implementation of a plan to warn the public, and assistance in evacuating persons and some personal property. A typical low-cost early warning flood detection system consists of commercially available off-the-shelf-components. The major components of an early warning flood detection system are a sensor connected to a data acquisition device with built-in power supply or backup, some type of notification or warning equipment, and a means of communication.

The system can be powered from an alternating current source via landline or by batteries that are recharged by solar panels. The notification process can incorporate standard telephone or cellular telephone. Transfer of data from the system can be achieved using standard or cellular telephone, radio frequency (RF) telemetry, wireless internet, or satellite transceivers. Emergency management notification techniques can be implemented through the use of radio, siren, individual notification, or a reverse 911 system. More elaborate means include remote sensors that detect water levels and automatically warn residents. These measures normally serve to reduce flood hazards to life, and damage to portable personal property (USACE, 2016b).

The Rough Order Magnitude cost for this strategy is approximately $120,000, not including annual maintenance and operational costs.

Alternative #3-2: Flood Buyout Programs

Buyouts allow state and municipal agencies the ability to purchase developed properties within areas vulnerable to flooding from willing owners. Buyouts are effective management tools in response to natural disasters to reduce or eliminate future losses of vulnerable or repetitive loss properties. Buyout programs include the acquisition of private property, demolition of existing structures, and conversion of land into public space or natural buffers. The land is maintained in an undeveloped state for public use in perpetuity. Buyout programs not only assist individual homeowners, but are also intended to improve the resiliency of the entire community in the following ways (Siders, 2013):

- Reduce exposure by limiting the people and infrastructure located in vulnerable areas
- Reduce future disaster response costs and flood insurance payments
- Restore natural buffers such as wetlands in order to reduce future flooding levels
- Reduce or eliminate the need to maintain and repair flood control structures
- Reduce or eliminate the need for public expenditures on emergency response, garbage collection and other municipal services in the area
- Provide open space for the community

Resilience achieved through buyouts can have real economic consequences in addition to improved social resilience. According to FEMA, voluntary buyouts cost $1 for every $2 saved in future insurance claims, an estimate which does not include money saved on flood recovery and response actions, such as local flood fighting, evacuation, and rescue, and recovery expenses that will not be incurred in the future. In order to achieve these goals, buyouts need to acquire a continuous swath of land, rather than individual homes in isolated areas, or only some of the homes within flood-prone areas (Siders, 2013).

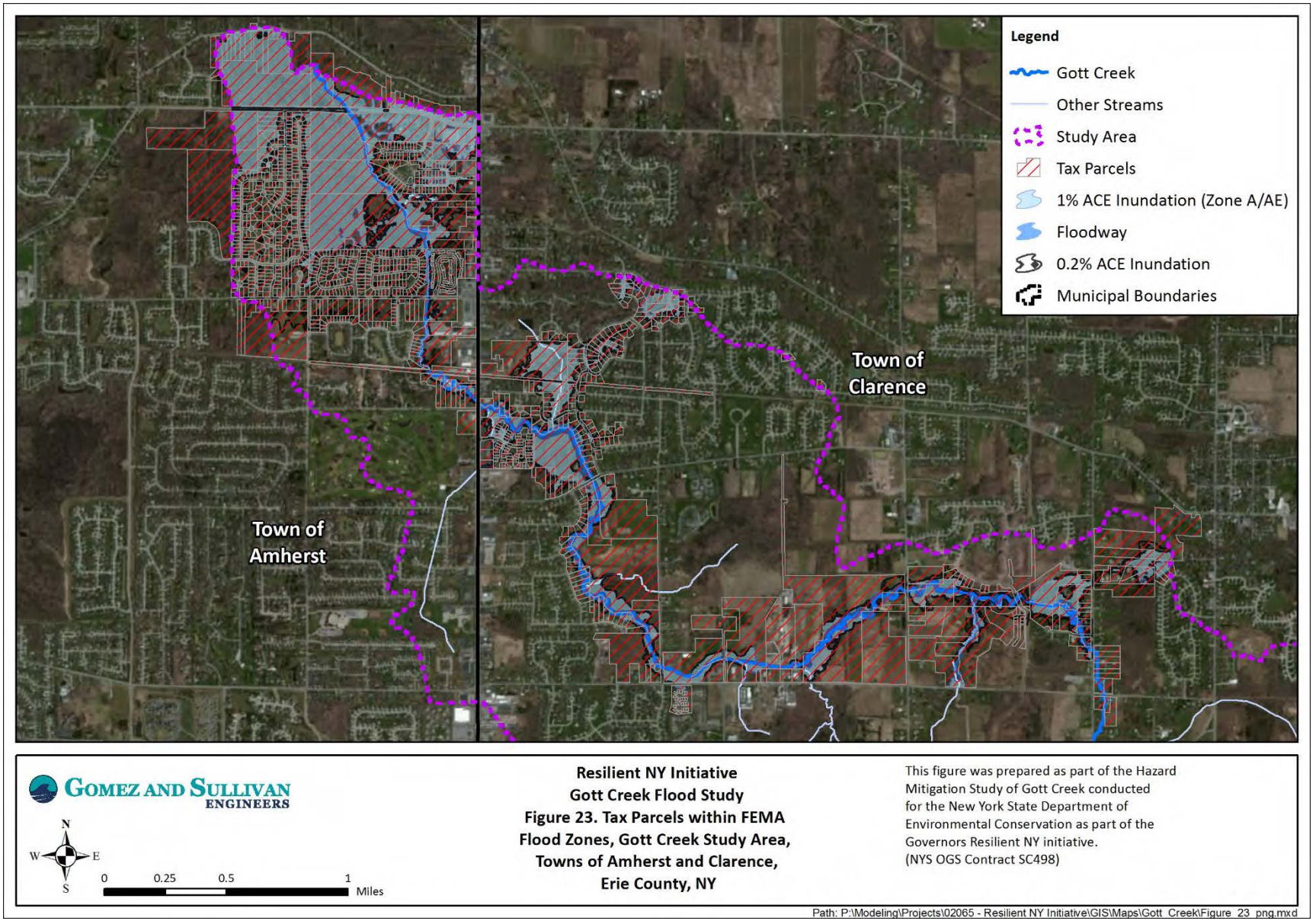
Buyout programs can be funded through a combination of federal, state or local funds, and are generally made available following a nationally recognized disaster. FEMA administers programs to help with buyouts under the Stafford Disaster Act, and the Department of Housing and Urban Development (HUD) administers another program through Community Development Block Grants (CDBG) [(FEMA, 2020), (NYSGOSR, 2019)]. These funding sources can reduce the economic burden on the local community. However, these funds also come with guidelines and regulations that may constrain policy makers' options on whether to pursue a buyout strategy and how to shape their programs. FEMA funds may be used to cover 75% of the expenses, but the remaining 25% must come from another non-federal source. In most cases, the buyout must be a cost-effective measure that will substantially reduce the risk of future flooding damage (Siders, 2013).

For homes in the special flood hazard area (SFHA), FEMA has developed precalculated benefits for property acquisition and structure elevation of buildings. Based on a national analysis that derived the average benefits for acquisition and elevation projects, FEMA has determined that acquisition projects that cost $276,000 or less, or elevation projects that costs $175,000 or less, and which are located in the 1% ACE (i.e. 100 year recurrence interval) floodplain are considered cost-effective and do not require a separate benefit-cost analysis. For projects that contain multiple structures, the average cost of all structures in the project must meet the stated criteria. If the cost to acquire or elevate a structure exceeds the amount of benefits listed above, then a traditional FEMA approved benefits-cost analysis must be completed (FEMA, 2015b).

In the Gott Creek watershed, there are approximately 1,170 tax parcels, primarily residential parcels, within the FEMA 1% and 0.2% annual chance flood hazard zones (Figure 23). In addition, there is one FEMA Repetitive Loss (RL)/Severe Repetitive Loss (SRL) property located within the Gott Creek watershed.

Due to the variable nature of buyout programs, no ROM cost estimate was produced for this study. It is recommended that any buyout program begin with a cost-benefit analysis for each property. After a substantial benefit has been established, a buyout strategy study should be developed that focuses on properties closest to Gott Creek in the highest-risk flood areas and progresses outwards from there to maximize flood damage reductions. In addition, structures located adjacent to flood prone infrastructure (i.e. bridges, culverts, etc.) should also be considered high-risk and prioritized in any buyout program strategy. A potential negative consequence of buyout programs is the permanent removal of properties from the floodplain, and resulting tax revenue, which would have long-term implications for local governments, and should be considered prior to implementing a buyout program.

Figure 23. Tax Parcels within FEMA Flood Zones, Gott Creek Study Area, Towns of Amherst and Clarence, Erie County, NY



Alternative #3-3: Floodproofing

Floodproofing is defined as any combination of structural or nonstructural adjustments, changes, or actions that reduce or eliminate flood damage to a building, contents, and attendant utilities and equipment (FEMA, 2000). Floodproofing can prevent damage to existing buildings and can be used to meet compliance requirements for new construction of residential and non-residential buildings.

The most effective flood mitigation methods are relocation (i.e. moving a home to higher ground outside of a high-risk flood area) and elevation (i.e. raising the entire structure above BFE). The relationship between the BFE and a structure's elevation determines the flood insurance premium. Buildings that are situated at or above the level of the BFE have lower flood risk than buildings below BFE and tend to have lower insurance premiums than buildings situated below the BFE (FEMA, 2015c).

In some communities, where non-structural flood mitigation alternatives are not feasible, structural alternatives such as flood proofing may be a viable alternative. The NFIP has specific rules related to flood proofing for residential and non-residential structures. These can be found in the Code of Federal Regulations (CFR) 44 CFR 60.3 (FEMA, 2000).

For existing residential structures, structures should be raised above the BFE or above the freeboard required by local regulations. Floodproofing is allowed for non-residential structures, with design guidelines outlined in FEMA P-936 – Floodproofing Non-Residential Structures [(FEMA, 2000); (FEMA, 2013)]. The local floodplain administrator should carefully review local ordinances, the CFR and available design guidelines before issuing a permit for structural flood proofing. Floodproofing strategies include:

Interior Modification/Retrofit Measures

Interior modification and retrofitting involve making changes to an existing building to protect it from flood damage. When the mitigation is properly completed in accordance with NFIP floodplain management requirements, interior modification / retrofit measures could achieve somewhat similar results as elevating a home above the BFE. Keep in mind, in areas where expected base flood depths are high, the flood protection techniques below may not provide protection on their own to the BFE or, where applicable, the locally required freeboard elevation (FEMA, 2015c).

Examples include:

- *Basement Infill*: This measure involves filling a basement located below the BFE to grade (ground level)
- *Abandon Lowest Floor*: This measure involves abandoning the lowest floor of a two or more story slab-on-grade residential building
- *Elevate Lowest Interior Floor*: This measure involves elevating the lowest interior floor within a residential building with high ceilings

Dry floodproofing

A combination of measures that results in a structure, including the attendant utilities and equipment, being watertight with all elements substantially impermeable to the entrance of floodwater and with structural components having the capacity to resist flood loads (FEMA, 2015c).

Although NFIP regulations require non-residential buildings to be watertight and protected only to the BFE for floodplain management purposes (to meet NFIP regulations), protection to a higher level is

necessary for dry floodproofing measures to be considered for NFIP flood insurance rating purposes. Because of the additional risk associated with dry floodproofed buildings, to receive an insurance rating based on 1% annual chance (100-year) flood protection, a building must be dry floodproofed to an elevation at least 1-foot above the BFE (FEMA, 2013).

In New York State, only non-residential buildings are allowed to be dry floodproofed and the building must be dry floodproofed to an elevation of at least 2 feet above the BFE. New York State has higher freeboard standards than federal regulations at 44 CFR Part 60.3. Care must be taken to check the New York State Building Code for more stringent guidelines.

Examples include:

- *Passive Dry Floodproofing System*: This measure involves installing a passive (works automatically without human assistance) dry floodproofing system around a home to protect the building from flood damage.
- *Elevation*: This measure involves raising an entire residential or non-residential building structure above the BFE or above the freeboard required by local regulations.

Wet floodproofing

The use of flood-damage-resistant materials and construction techniques to minimize flood damage to areas below the flood protection level of a structure, which is intentionally allowed to flood (FEMA, 2015c).

Examples include:

- *Flood Openings*: This measure involves installing openings in foundation and enclosure walls located below the BFE that allow automatic entry and exit of floodwaters to prevent collapse from the pressures of standing water.
- *Elevate Building Utilities*: This measure involves elevating all building utility systems and associated equipment (e.g., furnaces, septic tanks, and electric and gas meters) to protect utilities from damage or loss of function from flooding.
- *Floodproof Building Utilities*: This measure involves floodproofing all building utility systems and associated equipment to protect it from damage or loss of function from flooding.
- *Flood Damage-Resistant Materials*: This measure involves the use of flood damage-resistant materials such as non-paper-faced gypsum board and terrazzo tile flooring for building materials and furnishings located below the BFE to reduce structural and nonstructural damage and post-flood event cleanup.

Barrier Measures

Barriers, such as floodwalls and levees, can be built around single or multiple residential and non-residential buildings to contain or control floodwaters (FEMA, 2015c). Although floodwalls or levees can be used to keep floodwaters away from buildings, implementing these measures will not affect a building's flood insurance rating unless the flood control structure is accredited in accordance with NFIP requirements (44 CFR §65.10) and provides protection from at least the 1% annual chance (100-year) flood. Furthermore, floodwalls or levees as a retrofit measure will not bring the building into compliance with NFIP requirements for Substantial Improvement/Damage (FEMA, 2013). Barrier measures require ongoing maintenance (i.e. mowing, etc.) which should be factored into any cost analysis. In addition, barrier measures tend to create a false sense of security for the property owners and residents that are

protected by them. If a barrier structure is not properly constructed or maintained and fails, catastrophic damages to surrounding areas can occur.

- *Floodwall with Gates and Floodwall without Gates*: These two measures involve installing a reinforced concrete floodwall, which works automatically without human assistance, constructed to a maximum of four feet above grade (ground level). The floodwall with gates is built with passive flood gates that are designed to open or close automatically due to the hydrostatic pressure caused by the floodwater. The floodwall without gates is built using vehicle ramps or pedestrian stairs to avoid the need for passive flood gates.
- *Levee with Gates and Levee without Gates*: These two measures involve installing an earthen levee around a home, which works automatically without human assistance, with a clay or concrete core constructed to a maximum of six feet above grade (ground level). The levee with gates is built with passive flood gates that are designed to open or close automatically due to hydrostatic pressure caused by the floodwater. The levee without gates is built using vehicle access ramps to avoid the need for passive flood gates.

Modifying a residential or non-residential building to protect it from flood damage requires extreme care, will require permits, and may also require complex engineered designs. Therefore, the following process is recommended to ensure proper and timely completion of any floodproofing project (FEMA, 2015c):

- Consult a registered design professional (i.e. architect or engineer) who is qualified to deal with the specifics of a flood mitigation project
- Check your community's floodplain management ordinances
- Contact your insurance agent to find out how your flood insurance premium may be affected
- Check what financial assistance might be available
- Hire a qualified contractor
- Contact the local building department to learn about development and permit requirements and to obtain a building permit
- Determine whether the mitigation project will trigger a Substantial Improvement declaration
- See the project through to completion
- Obtain an elevation certificate and an engineering certificate (if necessary)

No cost estimates were prepared for this alternative due to the variable and case-by-case nature of the flood mitigation strategy. Local municipal leaders should contact residential and non-residential building owners that are currently at a high flood risk to inform them about floodproofing measures, the recommended process to complete a floodproofing project, and the associated costs and benefits.

Alternative #3-4: Area Preservation / Floodplain Ordinances

This alternative proposes that municipalities within the Gott Creek watershed consider watershed and floodplain management practices such as preservation and/or conservation of areas along with land use ordinances that could minimize future development of sensitive areas such as wetlands, forests, riparian areas, and other open spaces. It could also include areas in the floodplain that are currently free from development and are providing floodplain storage.

A watershed approach to planning and management is an important part of water protection and restoration efforts. New York State's watersheds are the basis for management, monitoring, and assessment activities. The New York State Open Space Conservation Plan, NYSDEC's Smart Growth

initiative and the Climate Smart Communities Program address land use within a watershed (NYSDEC, Date Unknown).

Natural floodplains provide flood risk reduction benefits by slowing runoff and storing flood water. They also provide other benefits of considerable economic, social, and environmental value that should be considered in local land-use decisions. Floodplains frequently contain wetlands and other important ecological areas which directly affect the quality of the local environment. Floodplain management is the operation of a community program of preventive and corrective measures to reduce the risk of current and future flooding, resulting in a more resilient community. These measures take a variety of forms, are carried out by multiple stakeholders with a vested interest in responsible floodplain management and generally include requirements for zoning, subdivision or building, building codes and special-purpose floodplain ordinances. While FEMA has minimum floodplain management standards for communities participating in the NFIP, best practices demonstrate that the adoption of higher standards will lead to safer, stronger, and more resilient communities (FEMA, 2006).

For floodplain ordinances, the NYSDEC has a sample of regulatory requirements for floodplain management that a community can adopt within their local flood damage prevention ordinance. If a community is interested in updating their local law to include regulatory language promoting floodplain management, it is recommended that they reach out to the NYSDEC through floodplain@dec.ny.gov or (518) 402-8185 for more information.

In addition, the Community Rating System (CRS) program through FEMA is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Participating communities are able to get discounted rates on the flood insurance premiums for residents in the community. Adopting these enhanced requirements and preserving open space for floodplain storage earns points in the CRS program, which can lead to discounted flood insurance premiums. For example, the Town of Amherst is already a participating community currently at a Class 8 and could be elevated an entire class through open space preservation.

Further hydrology and hydraulic model scenarios could be performed to illustrate how future watershed and floodplain management techniques could benefit the communities within the Gott Creek watershed.

Next Steps

Before selecting a flood mitigation strategy, securing funding or commencing an engineering design phase, Gomez and Sullivan recommends that additional modeling simulations and wetland investigations be performed.

Additional Data Modeling

Additional data collection and modeling would be necessary to more precisely model water surface elevations and the extent of potential flooding in overbank areas and the floodplain. 2-D unsteady flow modeling using the HEC-RAS program, would incorporate additional spatial information in model simulations producing more robust results with a higher degree of confidence than the currently modeled 1-D steady flow simulations.

State/Federal Wetlands Investigation

Any flood mitigation strategy that proposes using wetlands in any capacity, needs to be evaluated based on federal and state wetland criteria before that mitigation strategy can be pursued for consideration.

New York State Division of Homeland Security and Emergency Services (NYSDHSES)

The New York State Office of Emergency Management (NYSOEM), which is a part of the NYSDHSES, in conjunction with the United States Department of Homeland Security (USDHS) and FEMA, offers several funding opportunities through federal grant programs. Two primary programs are available through FEMA's Hazard Mitigation Grant Program (HMGP): Public Assistance, which includes post-disaster recovery grants enabled by Presidential declaration to reimburse for the emergency protective measures and the repair of eligible public facilities and infrastructure; and Hazard Mitigation, which includes pre-disaster project grants to eligible government sub-applicants to avoid or reduce the loss of life and property in future events. The NYSOEM would be the primary point of contact for all aspects of these programs.

Regional Economic Development Councils/Consolidated Funding Applications (CFA)

The CFA is a single application for state economic development resources from numerous state agencies. The ninth round of the CFA was offered in 2019.

Water Quality Improvement Project (WQIP) Program

The WQIP Program, administered through the NYSDEC, is a statewide reimbursement grant program to address documented water quality impairments. Eligible parties include local governments and not-for-profit corporations. Funding is available for construction/implementation projects; projects exclusively for planning are not eligible. Match for WQIP is a percentage of the award amount, not the total project cost. Deadlines are in accordance with the CFA application cycle.

Climate Smart Communities (CSC) Grant Program

The CSC Grant Program is a 50/50 matching grant program for municipalities under the New York State Environmental Protection Fund, offered through the CFA by the New York State Office of Climate Change. The purpose of the program is to fund climate change adaptation and mitigation projects and includes support for projects that are part of a strategy to become a Certified Climate Smart Community. The eligible project types that may be relevant include the following:

- The construction of natural resiliency measures, conservation or restoration of riparian areas and tidal marsh migration areas
- Nature-based solutions such as wetland protections to address physical climate risk due to water level rise, and/or storm surges and/or flooding
- Relocation or retrofit of facilities to address physical climate risk due to water level rise, and/or storm surges and/or flooding
- Flood risk reduction
- Climate change adaptation planning and supporting studies

Eligible projects include implementation and certification projects. Deadlines are in accordance with the CFA cycle.

NRCS Emergency Watershed Protection (EWP) Program

Through the EWP Program, the United States Department of Agriculture's (USDA) NRCS can assist communities in addressing watershed impairments that pose imminent threats to lives and property. Most EWP projects involve the protection of threatened infrastructure from continued stream erosion. Projects must have a project sponsor, defined as a legal subdivision of the State, such as a city, county, general improvement district, or conservation district, or an Indian Tribe or Tribal organization. Sponsors are responsible for providing land rights to do repair work, securing the necessary permits, furnishing the local cost share (25%), and performing any necessary operation and maintenance for a ten-year period. Through EWP, the NRCS may pay up to 75% of the construction costs of emergency measures, with up to 90% paid for projects in limited-resource areas. The remaining costs must come from local services. Eligible projects include, but are not limited to, debris-clogged stream channels, undermined and unstable streambanks, and jeopardized water control structures and public infrastructures.

FEMA Hazard Mitigation Grant Program (HMGP)

The HMGP, offered by FEMA and administered by the NYSDHSES, provides funding for creating/updating hazard mitigation plans and implementing hazard mitigation projects. The HMGP program consolidates the application process for FEMA's annual mitigation grant programs not tied to a State's Presidential disaster declaration. Funds are available under the Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA) Programs.

For flood mitigation measures that are being considered for funding through FEMA grant programs, a benefit-to-cost analysis will be required. In order to qualify for FEMA grants and/or funding, the benefit to cost ratio must be greater than one.

Building Resilient Infrastructure and Communities (BRIC) Program

Beginning in 2020, the BRIC grant program, which was created as part of Disaster Recovery Reform Act of 2018 (DRRA), replaced the existing Pre-Disaster Mitigation (PDM) program and is funded by a 6% set-aside from federal post-disaster grant expenditures. BRIC will support states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC aims to categorically shift the federal focus away from reactive disaster spending and toward research-supported, proactive investment in community resilience. Through BRIC, FEMA will invest in a wide variety of mitigation activities, including community-wide public infrastructure projects. Moreover, FEMA anticipates BRIC will fund projects that demonstrate innovative approaches to partnerships, such as shared funding mechanisms and/or project design.

Flood Mitigation Assistance (FMA) Program

The FMA Program provides resources to reduce or eliminate long-term risk of flood damage to structures insured under the NFIP. The FMA project funding categories include Community Flood Mitigation – Advance Assistance (up to $200,000 total federal share funding) and Community Flood Mitigation Projects (up to $10 million total). Federal funding is available for up to 75% of the eligible activity costs. FEMA may contribute up to 100% federal cost share for severe repetitive loss properties, and up to 90% cost share for repetitive loss properties. Eligible project activities include the following:

- Infrastructure protective measures
- Floodwater storage and diversion
- Utility protective measures
- Stormwater management
- Wetland restoration/creation
- Aquifer storage and recovery
- Localized flood control to protect critical facility
- Floodplain and stream restoration
- Water and sanitary sewer system protective measures

Summary

The Towns of Amherst and Clarence have had a history of flooding events along Gott Creek. Flooding in the Towns of Amherst and Clarence primarily occurs during the summer and winter months due to heavy rains by convective systems and snowmelt. In response to persistent flooding, the State of New York in conjunction with the Towns of Amherst and Clarence, and Erie County, are studying and evaluating potential flood mitigation projects for Gott Creek as part of the Resilient NY Initiative.

This study analyzed the historical and present day causes of flooding in the Gott Creek watershed. Hydraulic and hydrologic data was used to model potential flood mitigation measures. The model simulation results indicated that there are flood mitigation measures that have the potential to reduce water surface elevations along high-risk areas of Gott Creek, which could potentially reduce flood related damages in areas adjacent to the creek. Constructing multiple flood mitigation measures would increase the overall flood reduction potential along Gott Creek by combining the reduction potential of the mitigation measures being constructed.

Based on the flood mitigation analyses performed in this report, the mitigation measures that provided the greatest reductions in water surface elevations across the range of discharges analyzed were the levee relocation and the Peanut Line Bridge removal. There would be an overall greater effect in water surface elevations if multiple alternatives were built along Gott Creek in different phases, rather than a single mitigation project. For example, building multiple flood benches along a single reach would compound the flood mitigation benefits of each bench. Therefore, flood bench creation in the vicinity of Transit Road may provide greater benefit than this study has shown if constructed after removal of the Peanut Line Bridge.

While the levee relocation alternative provides significant flood reduction potential, the cost of this alternative may be too high to pursue further. Therefore, basin-wide mitigation alternatives may be more desirable alternatives in this high risk flood area. An early warning flood detection system may allow for better notification of when pumps are needed to evacuate water from streets. Similarly, The flood buyout programs, floodproofing, and area preservation / floodplain ordinances could be utilized as stand-alone flood mitigation measures or to enhance the effectiveness of reducing flood reduction impacts provided by other alternatives.

For flood mitigation measures that are being considered for funding through FEMA grant programs, a benefit-to-cost analysis will be required. In order to qualify for FEMA grants and / or funding, the benefit to cost ratio must be greater than one. Flood buyouts / property acquisitions can qualify for FEMA grant programs with a 75% match of funds. The remaining 25% of funds is the responsibility of state, county, and local governments. The case-by-case nature of buyouts and acquisitions requires widespread property owner participation to maximize flood risk reductions. An unintended consequence of buyout programs is the permanent removal of properties from the floodplain, including tax revenue, which would have long-term implications for local governments and should be considered prior to implementing a buyout program.

Floodproofing is an effective mitigation measure but requires a large financial investment in individual residential and non-residential buildings. Floodproofing can reduce the future risk and flood damage potential but leaves buildings in flood risk areas so that the potential for future flood damages remain. A benefit to floodproofing versus buyouts is that properties remain in the community and the tax base for

the local municipality remains intact. Table 15 is a summary of the potential flood mitigation measures, including modeled water surface elevation reductions and estimated ROM costs.

Table 15. Summary of Flood Mitigation Measures

Alternative No.	Description	Change in Water Surface Elevation (ft)		ROM cost ($U.S. dollars)
		Current Flows	Projected Flows	
1-1	Levee Relocation between North French Road and Casey Road	0.5 – 1.0	0.6 – 1.0	$7.0 million
2-1	Peanut Line Bridge Removal	0.8 – 1.7	0.8 – 3.2	$200,000
2-2	Flood Bench Creation Upstream of Transit Road	0.1 – 1.1	0.1 – 0.2	$990,000
2-3	Flood Bench Creation Downstream of Transit Road	0.1 – 0.2	0.0 – 0.1	$1.2 million
3-1	Early Flood Warning Detection System	N/A	N/A	$120,000 (not including annual operational costs)
3-2	Flood Buyouts Program	N/A	N/A	Variable (case-by-case)
3-3	Floodproofing	N/A	N/A	Variable (case-by-case)
3-4	Area Preservation/Floodplain Ordinances	N/A	N/A	Variable (case-by-case)

Conclusion

Municipalities affected by flooding along Gott Creek can use this report to support flood mitigation initiatives within their communities. This report is intended to be a high-level overview of potential flood mitigation strategies, their impacts on water surface elevations, and the associated ROM cost for each mitigation strategy. The research and analysis that went into each potential strategy should be considered preliminary, and additional research, field observations, and modeling are recommended before final mitigation strategies are chosen.

In order to implement the flood mitigation strategies presented in this report, communities should engage in a process that follows the following steps:

4. Obtain stakeholder and public input to assess the feasibility and public support of each mitigation strategy presented in this report.
5. Complete additional data collection and modeling efforts to assess the effectiveness of the potential flood mitigation strategies.
6. Develop a list of final flood mitigation strategies based on the additional data collection and modeling results.
7. Select a final flood mitigation strategy or series of strategies to be completed for Gott Creek based on feasibility, permitting, effectiveness, and available funding.
8. Develop a preliminary engineering design report and cost estimate for each selected mitigation strategy.
9. Assess funding sources for the selected flood mitigation strategy.

Once funding has been secured and the engineering design has been completed for the final mitigation strategy, construction and / or implementation of the measure should begin.

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Appendix A. Summary of Data and Reports Collected

Year	Type	Document Title	Author	Publisher
1966	Report	Flood Plain Information: Buffalo Creek, New York in the Towns of Elma and West Seneca	Buffalo District	USACE
1978	Report	National Handbook of Recommended Methods for Water-Data Acquisition	Office of Water Data Coordination	USGS
1978	Report	Buffalo Metropolitan Area, New York: Water Resources Management - Interim Report on Feasibility of Flood Management in the Tonowanda Creek Watershed, Final Feasibility Report	Buffalo District	USACE
1990	Report	Buffalo Metropolitan Area, New York: Water Resources Management - Final Report on Water Resources and Related Land Management - Supporting Documentation	Buffalo District	USACE
1991	Report	Regionalization of Flood Discharges for Rural, Unregulated Streams in New York, Excluding Long Island	Richard Lumia	USGS
1992	Report	Flood Insurance Study: Town of Amherst, New York – Erie County		FEMA
1995	Article	Numerical Simulation of River Ice Processes	H. T. Shen, D. S. Wang, and L. A. Wasantha,	Journal of Cold Region Engineering
1996	Book	Applied River Morphology, 2nd Edition	D. L. Rosgen and H. L. Silvey	Wildland Hydrology Books
1996	Report	Flood Insurance Study: Town of Clarence, New York – Erie County		FEMA

Year	Type	Document Title	Author	Publisher
2000	Code	Title 44: Emergency Management and Assistance, Chapter 1		FEMA
2002	Standard	National Conservation Practice Standard No. 638: Water and Sediment Control Basin		NRCS
2002	Report	Engineering Manual 1110-2-1612: Engineering and Design – Ice Engineering		USACE
2005	Report	Gott Creek, Clarence, New York: Stream System Background and Classification, Stream Visual Assessment Protocol (SVAP), and Stability Threshold Analysis (STA)	Buffalo State College Watershed Analysis Group Dr. K. Frothingham, Course Instructor	Buffalo State College
2005	Software	Comprehensive River Ice Simulation System Project (CRISSP)		CEATI
2006	Report	Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials		FEMA
2006	Report	Bridge Inventory Manual		NYSDOT
2006	Report	Magnitude and Frequency of Floods in New York	Richard Lumia, Douglas A. Freehafer, and Martyn J. Smith	USGS
2007	Book	Elevation Data for Floodplain Mapping		NRC
2007	Book	National Engineering Handbook, Part 654: Stream Restoration Design, Technical Supplement 3E: Rosgen Stream Classification Techniques - Supplemental Materials		USDA

Year	Type	Document Title	Author	Publisher
2008	Data	2008 FEMA Lidar: Erie County (NY) Point Cloud files with Orthometric Vertical Datum North American Vertical Datum of 1988 (NAVD88) using Geoid 12A	Office for Coastal Management	NOAA
2009	Report	Bankfull Discharge and Channel Characteristics of Streams in New York State	Christiane I. Mulvihill, Barry P. Baldigo, Sarah J. Miller, Douglas DeKoskie, and Joel DuBois	USGS
2010	Report	DHS Risk Lexicon		USDHS
2011	Report	Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation in New York State, Final Report		NYSERDA
2011	Article	A Unified Degree-Day Method for River Ice Cover Thickness Simulation	H. T. Shen and P. Yapa	Canadian Journal of Civil Engineering
2011	Article	An Overview of CMIP5 and the Experiment Design	K. E. Taylor, R. J. Stouffer, and G. A. Meehi	Bulletin of the American Meteorological Society
2011	Report	Town of Amherst Flood Mitigation Plan Report		URS Corporation
2012	Report	Hydraulic Design of Safe Bridges	L. W. Zevenbergen, L. A. Arneson, J.H. Hunt, and A.C. Miller	USDOT
2012	Article	Geomorphic Characterization of Upper South Koel Basin, Jharkhand: A Remove Sensing and GIS Approach	R. Parveen, U. Kumar, and V. K. Singh	Journal of Water Resource and Protection, 1042-1050
2013	Report	Floodproofing Non-Residential Buildings		FEMA
2013	Report	Removal of Woody Debris and Trash from Rivers and Streams		NYSDEC

Year	Type	Document Title	Author	Publisher
2013	Article	Anatomy of a Buyout Program – New York Post-Superstorm Sandy	A. R. Siders	Vermont Law School
2014	Book	Handbook of Biological Statistics, 3rd Edition	J. H. McDonald	Sparky House Publishing
2014	Report	National Register of Historical Places and National Historic Landmarks Program Records for New York State		NPS
2014	Article	Morphometric Analysis of a Drainage Basin Using Geographical Information System: A Case Study	M. L. Waikar and A. P. Nilawar	International Journal of Multidisciplinary and Current Research
2015	Report	Guidance for Flood Risk Analysis and Mapping: Redelineation Guidance		FEMA
2015	Report	Hazard Mitigation Assistance Program Digest, September 2015		FEMA
2015	Report	Reducing Flood Risk to Residential Buildings That Cannot Be Elevated		FEMA
2015	Article	Influence of Aggradation and Degradation on River Channels: A Review	U. R. Mugade and J. B. Sapkale	International Journal of Engineering and Technical Research
2015	Report	Development of Flood Regressions and Climate Change Scenarios to Explore Estimates of Future Peak Flows	Douglas A. Burns, Martyn J. Smith, and Douglas A. Freehafer	USGS
2016	Report	HEC-RAS: River Analysis System User's Manual, Version 5.0	HEC	USACE
2016	Report	Lexington Greene – Section 2015 of the 1948 Flood Control Act – Flood Risk Management	Buffalo District	USACE

Year	Type	Document Title	Author	Publisher
2016	Software	Application of Flood Regressions and Climate Change Scenarios to Explore Estimates of Future Peak Flows, Version 1.5 Web Application		USGS
2017	Data	New York State Digital Ortho-Imagery Program	GIS Program Office	NYSOITS
2017	Report	Fact Sheet 2017-3046: *StreamStats*, Version 4	Kernell G. Ries III, Jeremy K. Newsom, Martyn J. Smith, John D. Guthrie, Peter A. Steeves, Tiana L Haluska, Katharine R. Kolb, Ryan F. Thompson, Richard D. Santoro, and Hans W. Vraga	USGS
2017	News	Record rains cause flooding problems in Amherst, Olcott and Wilson		WKBW TV – Buffalo, NY
2018	Report	DRAFT New York State Flood Risk Management Guidance for Implementation of the Community Risk and Resiliency Act		NYSDEC
2018	Report	Highway Design Manual	Engineering Division, Office of Design	NYSDOT
2018	Article	Governor Cuomo Announces $3 Million for Studies to Reduce Community Flood Risk		NYSGPO
2019	Software	ArcGIS for Desktop 10		ESRI
2019	Data	2016 Land Cover: Conterminous United States	NLCD	MRLC
2019	Data	Bridge Point Locations and Select Attributes	Structures Division	NYSDOT
2019	Report	Bridge Manual	Structures Division	NYSDOT
2019	Data	CostsWorks 2019	RS Means Data Online	Gordian, Inc.

Year	Type	Document Title	Author	Publisher
2019	Software	Hydrologic Engineering Center's River Analysis System, Version 5.0.7	HEC	USACE
2019	Report	Flood Insurance Study: Erie County, NY (All Jurisdictions)		FEMA
2019	Data	Flood Insurance Rate Map: Erie County, New York (All Jurisdictions)		FEMA
2019	Report	Policy Manual: NY Rising Buyout and Acquisition Program, Version 7.0		NYSGOSR
2020	Data	Storm Events Database	NCEI	NOAA
2020	Software	Environmental Resource Mapper Web Application		NYSDEC
2020	Data	Inventory of Dams – New York State		NYSDEC
2020	Standard	Standard Specifications (US Customary Units), Volume 1	Engineering Division	NYSDOT
2020	Data	Ice Jam Database	CRREL	USACE
2020	Software	Information for Planning and Consultation Web Application	ECOS	USFWS
2020	Software	*StreamStats*, Version 4.4.0 Web Application		USGS
2020	Software	Google Earth Pro		Google
2020	Other	Phone Communication	Tim Lucey, General Crew Chief	Town of Amherst, Highway Department
2020	Website	Hazard Mitigation Grant Program (HMGP)		FEMA
Unk	Article	Watershed Management		NYSDEC

Appendix B. Agency and Stakeholder Meeting Attendees List

Initial Project Kickoff Meeting: September 19, 2019

Attendees	Affiliation
Thomas Lowe	Alexander, Village of
William Wagner	Alexander, Village of
Tim Lucey	Amherst, Town of
Paul Rubins	Amherst, Town of
Jeff Szatkowski	Amherst, Town of
Jim Zymanek	Amherst, Town of
Tom Lichtenthal	Batavia, Town of
Steve Mountain	Batavia, Town of
Katherine Winkler	Buffalo Niagara Waterkeeper
James Dussing	Clarence, Town of
Paul Englert	Clarence, Town of
Gregory Butcher	Erie County
Mark Gaston	Erie County
Joanna Panawiewicz	Erie County
J.T. Glass	Erie County
Molly Cassatt	Genesee County
Derik Kae	Genesee County
Bradley Mudrzynski	Genesee County
Damian Gomez	Gomez & Sullivan
Erin Redding	Gomez & Sullivan
Charvi Gupta	Highland Planning
Jen Topa	Highland Planning
Susan Hopkins	Highland Planning
Gary Baehr	Newstead, Town of
Norman Allen	Niagara County
Scott Collins	Niagara County
Stephany Antonov	NYSDEC
David Clarke	NYSDEC
Ted Myers	NYSDEC
Kerrie O'keeffe	NYSDEC
Thomas R. Snow Jr.	NYSDEC
Chad Staniszewski	NYSDEC
Ryan Tomko	NYSDEC
Kadir Goz	OBG
James Sparks	Royalton, Town of

Appendix C. Field Data Collection Forms

U.S. Department of Agriculture
Natural Resources Conservation Service

Stream Channel Classification (Level II)

Wisconsin Job Sheet 811

Natural Resources Conservation Service (NRCS) **Wisconsin**

Project: _____ Date: _____

County: _____ Stream: _____

Reach No.: _____ Logged By: _____

Horizontal Datum: NAD _____ Projection: ☐Transverse Mercator ☐Lambert Conformal Conical

Coordinate System: ☐_____ County Coordinates ☐WTM ☐State Plane Coordinates ☐UTM

Units: ☐Meters ☐Feet Horizontal Control: N or Lat. _____ E or Long. _____

Elevation: _____ ☐Assumed ☐DOT ☐NAVD (29 / 88) Units: ☐Meters ☐Feet

Fluvial Geomorphology Features (3 Cross Sections) for Stream Classification

				Average
Bankfull Width (W_{bkf}):	_____ ft.	_____ ft.	_____ ft.	0.00 ft.
Width of the stream channel, at bankfull stage elevation, in a riffle section.				
Mean Depth (d_{bkf}):	_____ ft.	_____ ft.	_____ ft.	0.00 ft.
Mean depth of the stream channel cross section, at bankfull stage elevation, in a riffle section. ($d_{bkf}=A_{bkf}/W_{bkf}$)				
Bankfull X-Section Area (A_{bkf}):	_____ sq. ft.	_____ sq. ft.	_____ sq. ft.	0.00 sq. ft.
Area of the stream channel cross section, at bankfull stage elevation, in a riffle section.				
Width / Depth Ratio (W_{bkf}/d_{bkf}):	_____ ft.	_____ ft.	_____ ft.	0.00 ft.
Bankfull width divided by bankfull mean depth, in a riffle section.				
Maximum Depth (d_{mbkf}):	_____ ft.	_____ ft.	_____ ft.	0.00 ft.
Maximum depth of the Bankfull channel cross section, or distance between the bankfull stage and thalweg elevations, in a riffle section.				
Width of Flood-Prone Area (W_{fpa}):	_____ ft.	_____ ft.	_____ ft.	0.00 ft.
Twice maximum depth, or (2 x d_{mbkf}) = the stage/elevation at which flood-prone area width is determined (riffle section).				
Entrenchment Ratio (ER):	_____ ft.	_____ ft.	_____ ft.	0.00 ft.
The ratio of flood-prone area width divided by bankfull channel width. (W_{fpa}/W_{bkf}) (riffle section)				

USDA-NRCS **January 2009** **Wisconsin Job Sheet 811**

Reach Characteristics

Channel Materials (Particle Size Index) D50: _____ mm

The D50 particle size index represents the median diameter of channel materials, as sampled from the channel surface, between the bankfull stage and thalweg elevations.

Water Surface Slope (S): _____ ft./ft.

Channel slope = "rise" over "run" for a reach approximately 20-30 bankfull channel widths in length, with the "riffle to riffle" water surface slope representing the gradient at bankfull stage.

Channel Sinuosity (K): _____.

Sinuosity is an index of channel pattern, determined from a ratio of stream length divided by valley length (SL/VL); or estimated from a ratio of valley slope divided by channel slope (VS/S).

Distance to Up-Stream Structures: _____.

Stream Type: _____ (For reference, note Stream Type Chart and Classification Key)

Dominant Channel Soils at an Eroding Bank Location

Bed Material: _____ Left Bank: _____ Right Bank: _____

Description of Soil Profiles (from base of bank to top):

Left: _____

_____

Right: _____

_____

Riparian Vegetation at an Eroding Bank Location

Left Bank: _____ Right Bank: _____

Percent Total Area (Mass): Left: _____ Right: _____

Percent Total Height with Roots: Left: _____ Right: _____

Other Bank Features at an Eroding Bank Location

Actual Bank Height: _____ Bankfull Height: _____

Bank Slope (Horizontal to Vertical):

Left:	Right:
☐ 0-20° (flat)	☐ 0-20° (flat)
☐ 21-60° (moderate)	☐ 21-60° (moderate)
☐ 61-80° (steep)	☐ 61-80° (steep)
☐ 81-90° (vertical)	☐ 81-90° (vertical)
☐ 90°+ (undercut)	☐ 90°+ (undercut)

Visible Seepage in Bank? ☐ Yes ☐ No Where? _____

Thalweg Location: ☐ Near 1/3 ☐ Mid 1/3 ☐ Far 1/3

NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

Pebble Count (Data Collection)

Wisconsin Job Sheet 810

Natural Resources Conservation Service (NRCS) **Wisconsin**

Project: _____ Date: _____

County: _____ Stream: _____

Reach No.: _____ Logged By: _____

Horizontal Datum: NAD _____ Projection: ☐ Transverse Mercator ☐ Lambert Conformal Conical

Coordinate System: ☐ _____ County Coordinates ☐ WTM ☐ State Plane Coordinates ☐ UTM

Units: ☐ Meters ☐ Feet Horizontal Control: N or Lat. _____ E or Long. _____

Elevation: _____ ☐ Assumed ☐ DOT ☐ NAVD (29 / 88) Units: ☐ Meters ☐ Feet

Inches	Millimeters	Particle	Particle Count			
			1	Total #	2	Total #
<.002	<.062	Silt/Clay				
.002 - .005	.062 - .125	Very Fine Sand				
.005 - .01	.125 - .25	Fine Sand				
.01 - .02	.25 - .50	Medium Sand				
.02 - .04	.50 - 1.0	Coarse Sand				
.04 - .08	1.0 - 2	Very Coarse Sand				
.08 - .16	2 - 4	Very Fine Gravel				
.16 - .22	4 - 5.7	Fine Gravel				
.22 - .31	5.7 - 8	Fine Gravel				
.31 - .44	8 - 11.3	Medium Gravel				
.44 - .63	11.3 - 16	Medium Gravel				
.63 - .89	16 - 22.6	Coarse Gravel				
.89 - 1.26	22.6 - 32	Coarse Gravel				
1.26 - 1.77	32 - 45	Very Coarse Gravel				
1.77 - 2.5	45 - 64	Very Coarse Gravel				
2.5 - 3.5	64 - 90	Small Cobbles				
3.5 - 5.0	90 - 128	Small Cobbles				
5.0 - 7.1	128 - 180	Large Cobbles				
7.1 - 10.1	180 - 256	Large Cobbles				
10.1 - 14.3	256 - 362	Small Boulders				
14.3 - 20	362 - 512	Small Boulders				
20 - 40	512 - 1024	Medium Boulders				
40 - 80	1024 - 2048	Large-Very Large Boulders				
		Bedrock				

The USDA is an equal opportunity provider and employer.

USDA-NRCS **March 2006** **Wisconsin Job Sheet 810**

GOMEZ AND SULLIVAN ENGINEERS

Resilient New York

Date:

Field crew:

Stream:

Road crossing:

Structure data: ☐ Bridge

Height at edge[1]: _____ Width at top of opening: _____

Height at deepest point: _____ Bank slope: Rise: _____ Run: _____

Piers _____ Pier shape: round triangle square

Span between piers: _____ Width of piers: _____

☐ Culvert (see data below)

Length in direction of flow:

Manning value: Top: Bottom:

Deck thickness:

Height of rail:

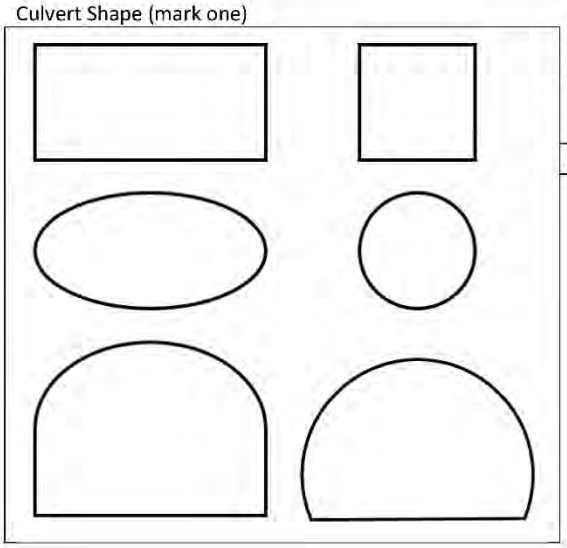
Type of rail:

Structure material:

Bottom substrate:

Description:

Culvert Shape (mark one)



Depth from top of opening to bottom of stream

at edge: _____

at deepest location: _____

Opening width: _____

[1] All measurements should be taken to 0.1 feet

P:\2065 - Resilient NY Initiative\Field Data Collections\Field_Template.docx

Appendix D. Photo Log

List of Additional Field Photos

Photo D-1. Downstream Face of North French Road Bridge

Photo D-2. Channel Downstream of North French Road

Photo D-3. Downstream Face of Casey Road Bridge

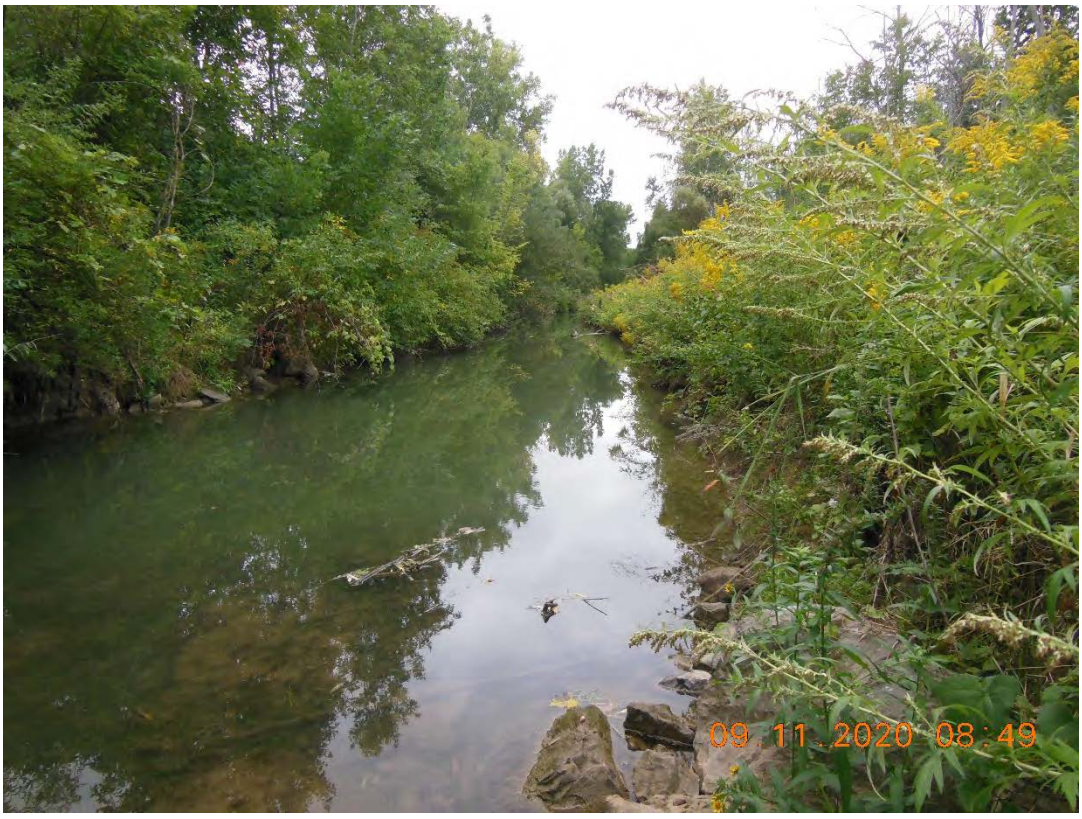


Photo D-4. Channel Upstream of Casey Road

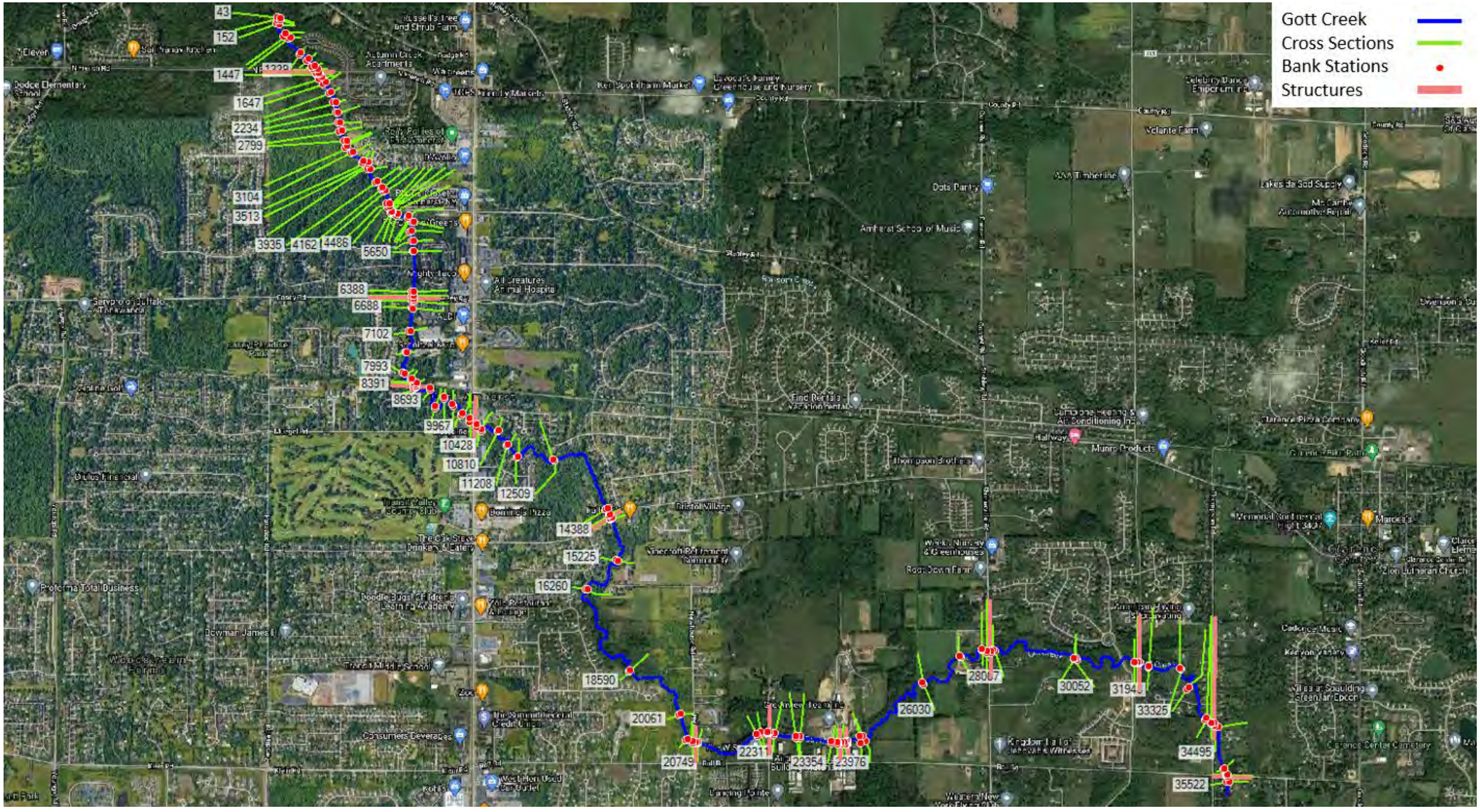
Photo D-5. Levee Upstream of North French Road along Left Overbank

Photo D-6. Levee Downstream of Casey Road along Left Overbank

Photo D-7. Upstream Face of Peanut Line Bridge

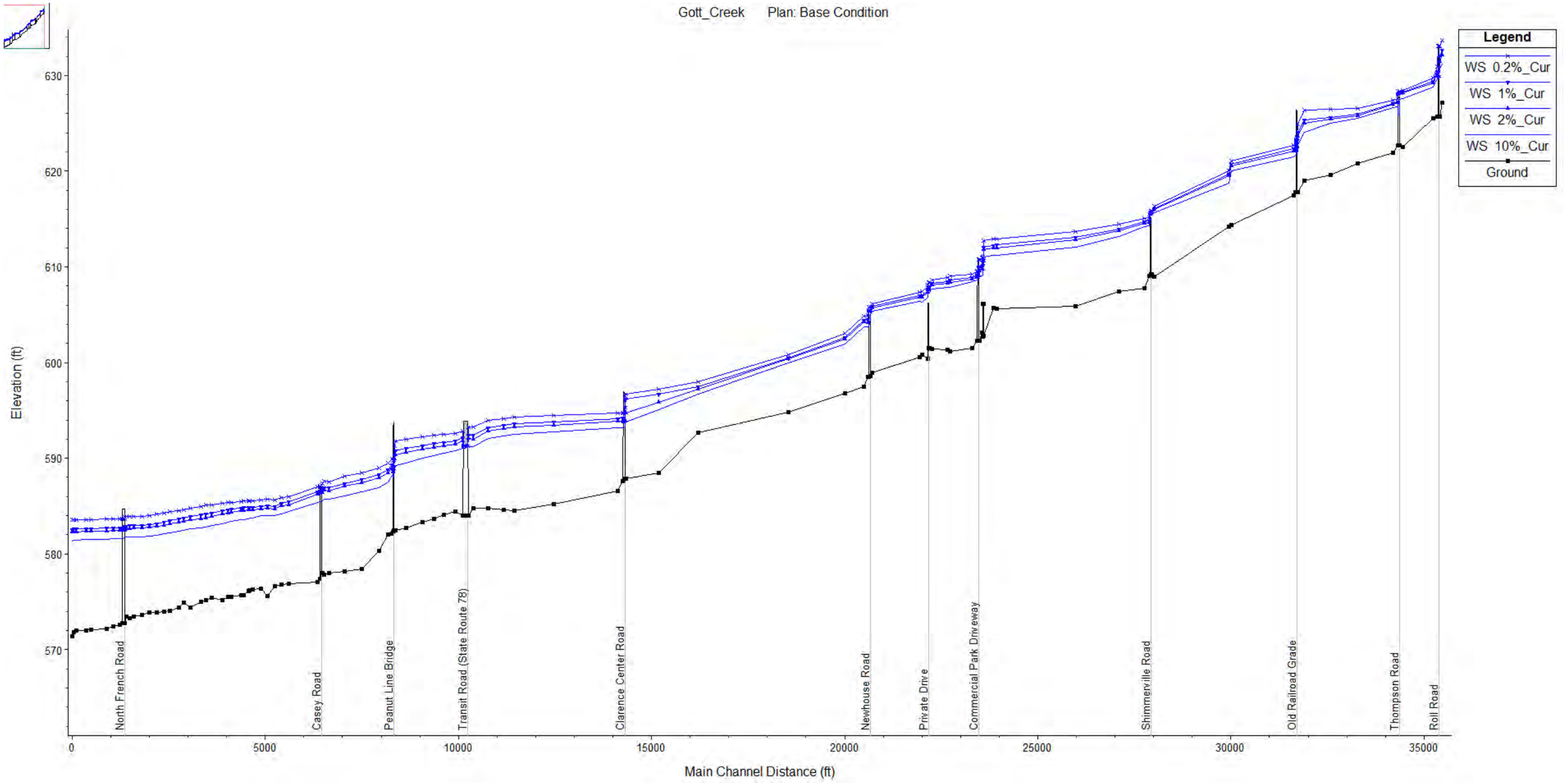
Photo D-8. Downstream Face of Peanut Line Bridge

Appendix E. HEC-RAS Simulation Output



Plan: Base Condition

Flows: Current



Plan: Base Condition

Flows: Current

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	35522	10%_Cur	258	627.2	631.26	629.45	631.38	0.001746	2.84	90.73	35.19	0.31
1	35522	2%_Cur	348	627.2	632.17	629.83	632.29	0.00129	2.71	137.38	77.87	0.28
1	35522	1%_Cur	384	627.2	632.68	629.96	632.77	0.000901	2.51	181.41	96.81	0.24
1	35522	0.2%_Cur	470	627.2	633.69	630.26	633.76	0.000511	2.24	310.32	184.8	0.19
1	35442	10%_Cur	258	625.73	630.65	628.48	631.06	0.005992	5.17	49.91	12.04	0.45
1	35442	2%_Cur	348	625.73	631.45	629.09	631.97	0.006338	5.77	60.53	14.22	0.48
1	35442	1%_Cur	384	625.73	632.01	629.31	632.51	0.005254	5.67	68.82	15.72	0.44
1	35442	0.2%_Cur	470	625.73	633.04	629.84	633.54	0.004191	5.72	88.27	22.02	0.41
1	35420		Bridge									
1	35396	10%_Cur	258	625.73	629.75	628.49	630.37	0.007799	6.29	41.04	12.82	0.61
1	35396	2%_Cur	348	625.73	630.24	629.18	631.08	0.009898	7.36	47.29	18.63	0.69
1	35396	1%_Cur	384	625.73	630.4	629.45	631.34	0.010472	7.77	49.46	20.73	0.72
1	35396	0.2%_Cur	470	625.73	630.94	630.04	631.81	0.012849	7.49	68.46	51.13	0.73
1	35278	10%_Cur	258	625.5	628.82	628.3	629.31	0.009237	5.62	45.96	22.83	0.69
1	35278	2%_Cur	348	625.5	629.25	628.72	629.86	0.00888	6.26	56.35	25.01	0.7
1	35278	1%_Cur	384	625.5	629.4	628.86	630.06	0.008896	6.51	60.14	25.76	0.7
1	35278	0.2%_Cur	470	625.5	629.74	629.16	630.51	0.008864	7.04	69.18	80.63	0.72
1	34495	10%_Cur	258	622.5	627.56		627.65	0.000831	2.44	155.05	178.04	0.23
1	34495	2%_Cur	348	622.5	628.15		628.24	0.000786	2.63	261.71	205.33	0.23
1	34495	1%_Cur	384	622.5	628.26		628.36	0.000838	2.76	283.18	208.18	0.23
1	34495	0.2%_Cur	470	622.5	628.44		628.56	0.000998	3.1	323.61	224.86	0.26
1	34420	10%_Cur	258	622.7	627.52	625.16	627.58	0.000757	2.04	138.29	326.66	0.2
1	34420	2%_Cur	348	622.7	628.11	625.62	628.18	0.000696	2.16	262.53	628.82	0.2
1	34420	1%_Cur	384	622.7	628.21	625.74	628.29	0.000737	2.26	290.45	705.84	0.21
1	34420	0.2%_Cur	470	622.7	628.39	626.01	628.48	0.000866	2.53	341.05	889.32	0.23
1	34390		Bridge									
1	34363	10%_Cur	258	622.7	626.75	624.9	627.05	0.003655	4.46	63.66	311.87	0.39
1	34363	2%_Cur	348	622.7	627.14	625.38	627.28	0.002235	3.71	244.12	391.82	0.31
1	34363	1%_Cur	384	622.7	627.27	625.58	627.41	0.002173	3.73	274.26	406.87	0.31
1	34363	0.2%_Cur	470	622.7	627.62	626	627.73	0.001914	3.67	354.44	649.91	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	34242	10%_Cur	258	621.9	626.62	624.41	626.69	0.001294	2.23	145.32	262.9	0.26
1	34242	2%_Cur	348	621.9	626.97	624.8	627.05	0.001164	2.32	236.89	358.32	0.25
1	34242	1%_Cur	384	621.9	627.11	624.94	627.18	0.001148	2.38	259.57	409.34	0.26
1	34242	0.2%_Cur	470	621.9	627.45	625.28	627.53	0.001107	2.53	337.16	507.93	0.26
1	33325	10%_Cur	258	620.8	625.53	623.46	625.61	0.001083	2.37	123.29	127.74	0.25
1	33325	2%_Cur	348	620.8	625.79	623.8	625.91	0.001384	2.84	161.34	197.66	0.29
1	33325	1%_Cur	384	620.8	625.92	623.91	626.05	0.001405	2.95	183.04	233.98	0.29
1	33325	0.2%_Cur	470	620.8	626.51	624.2	626.62	0.000981	2.76	302.34	460.41	0.25
1	32629	10%_Cur	258	619.6	624.99		625.03	0.00078	2.2	307.83	420.89	0.21
1	32629	2%_Cur	348	619.6	625.4		625.43	0.000491	1.89	503.85	531	0.17
1	32629	1%_Cur	384	619.6	625.65		625.66	0.000343	1.64	639.32	569.79	0.14
1	32629	0.2%_Cur	470	619.6	626.44		626.45	0.000117	1.08	1119.01	643.76	0.09
1	31948	10%_Cur	258	619	624.06		624.23	0.002119	3.54	151.13	240.05	0.34
1	31948	2%_Cur	348	619	625.01		625.06	0.000677	2.36	467.81	423.91	0.2
1	31948	1%_Cur	384	619	625.4		625.42	0.000423	1.97	644.48	494.94	0.16
1	31948	0.2%_Cur	470	619	626.35		626.36	0.000155	1.35	1173.71	591.21	0.1
1	31772	10%_Cur	258	617.78	622.69	620.95	623.36	0.010892	6.57	39.29	8	0.52
1	31772	2%_Cur	348	617.78	623.66	621.66	624.51	0.012474	7.4	47.04	8	0.54
1	31772	1%_Cur	384	617.78	624.03	621.92	624.95	0.013007	7.68	50.02	8	0.54
1	31772	0.2%_Cur	470	617.78	624.9	622.53	625.96	0.014061	8.25	56.99	8	0.54
1	31750		Culvert									
1	31720	10%_Cur	258	617.78	621.65	620.97	622.73	0.020367	8.33	30.99	8	0.75
1	31720	2%_Cur	348	617.78	622.12	621.68	623.68	0.027343	10.02	34.74	8	0.85
1	31720	1%_Cur	384	617.78	622.25	621.94	624.04	0.030922	10.75	35.73	8	0.9
1	31720	0.2%_Cur	470	617.78	622.52	622.52	624.91	0.039633	12.39	37.92	8	1
1	31676	10%_Cur	258	617.5	621.51	620.46	621.95	0.006324	5.31	48.62	17.69	0.56
1	31676	2%_Cur	348	617.5	622.12	620.97	622.64	0.006554	5.82	59.77	24.48	0.58
1	31676	1%_Cur	384	617.5	622.31	621.16	622.88	0.006602	6.04	63.62	28.21	0.59
1	31676	0.2%_Cur	470	617.5	622.73	621.57	623.4	0.006613	6.55	72.12	33.25	0.6
1	30052	10%_Cur	258	614.4	620.04		620.09	0.000429	2.06	219.28	142.27	0.17

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	30052	2%_Cur	348	614.4	620.55		620.61	0.000474	2.31	297.1	157.16	0.18
1	30052	1%_Cur	384	614.4	620.73		620.79	0.000488	2.4	325.43	159.95	0.18
1	30052	0.2%_Cur	470	614.4	621.09		621.17	0.000526	2.6	385.46	167.35	0.19
1	30002	10%_Cur	770	614.2	618.75	618.75	619.85	0.01026	8.73	131.48	144.58	0.8
1	30002	2%_Cur	1030	614.2	619.51	619.51	620.4	0.007418	8.41	256.92	288.18	0.7
1	30002	1%_Cur	1140	614.2	619.67	619.67	620.58	0.007428	8.62	289.45	304.77	0.71
1	30002	0.2%_Cur	1400	614.2	620.01	620.01	620.94	0.007544	9.1	360	326.76	0.72
1	28067	10%_Cur	770	609	615.64		615.7	0.000561	2.55	793.46	512.35	0.2
1	28067	2%_Cur	1030	609	616.01		616.09	0.000653	2.87	988.86	538.14	0.21
1	28067	1%_Cur	1140	609	616.12		616.2	0.000705	3.03	1050.03	543	0.22
1	28067	0.2%_Cur	1400	609	616.34		616.44	0.000835	3.38	1172.63	552.6	0.24
1	27998	10%_Cur	770	609.24	615.39	612.43	615.6	0.001442	3.92	311.23	316.37	0.31
1	27998	2%_Cur	1030	609.24	615.67	613.07	615.95	0.001861	4.62	419.75	426	0.35
1	27998	1%_Cur	1140	609.24	615.74	613.32	616.06	0.002104	4.96	449.11	449.74	0.38
1	27998	0.2%_Cur	1400	609.24	615.8	613.85	616.24	0.002965	5.92	475.3	474.96	0.45
1	27960		Culvert									
1	27931	10%_Cur	770	609.08	614.27	612.15	614.55	0.002268	4.43	282.67	434.39	0.38
1	27931	2%_Cur	1030	609.08	614.63	612.75	614.92	0.002367	4.78	474.07	584.09	0.39
1	27931	1%_Cur	1140	609.08	614.81	612.99	615.06	0.002152	4.67	579.95	606.08	0.38
1	27931	0.2%_Cur	1400	609.08	615.14	614.62	615.36	0.001911	4.61	795.64	689.02	0.36
1	27807	10%_Cur	770	607.8	614.17	612.64	614.27	0.0011	3.52	591.46	515.38	0.27
1	27807	2%_Cur	1030	607.8	614.57	613.24	614.64	0.000928	3.39	836.66	696.88	0.25
1	27807	1%_Cur	1140	607.8	614.75	614	614.81	0.000807	3.23	968.71	713.65	0.23
1	27807	0.2%_Cur	1400	607.8	615.1	614.06	615.15	0.000685	3.09	1217.61	750.69	0.22
1	27156	10%_Cur	770	607.4	613.17		613.4	0.002079	4.36	277.01	211.87	0.37
1	27156	2%_Cur	1030	607.4	613.74		613.94	0.001717	4.31	414.46	255.5	0.34
1	27156	1%_Cur	1140	607.4	613.99		614.18	0.001662	4.38	485.86	316.62	0.34
1	27156	0.2%_Cur	1400	607.4	614.49		614.64	0.001306	4.12	654.89	368.08	0.31
1	26030	10%_Cur	770	605.9	612.07		612.15	0.000697	2.72	598.84	290.08	0.22
1	26030	2%_Cur	1030	605.9	612.81		612.89	0.000617	2.81	825.66	327.62	0.21
1	26030	1%_Cur	1140	605.9	613.1		613.18	0.000587	2.84	923.66	347.34	0.21

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	26030	0.2%_Cur	1400	605.9	613.71		613.79	0.000536	2.9	1152.4	392.43	0.2
1	23976	10%_Cur	770	605.6	611.22	607.86	611.27	0.000306	1.73	448.15	381.13	0.15
1	23976	2%_Cur	1030	605.6	611.97	608.21	612.03	0.000322	1.98	534.56	419.18	0.15
1	23976	1%_Cur	1140	605.6	612.28	608.34	612.34	0.000323	2.06	576.88	444.52	0.16
1	23976	0.2%_Cur	1400	605.6	612.92	608.64	612.99	0.000326	2.23	682.18	496.67	0.16
1	23895	10%_Cur	770	605.7	611.21		611.24	0.000174	1.37	563.72	135.72	0.11
1	23895	2%_Cur	1030	605.7	611.97		612	0.000188	1.57	683.68	174.53	0.12
1	23895	1%_Cur	1140	605.7	612.27		612.31	0.000189	1.64	739.15	187.04	0.12
1	23895	0.2%_Cur	1400	605.7	612.92		612.96	0.000194	1.78	866.97	215.05	0.12
1	23638	10%_Cur	770	602.8	611.04		611.16	0.000543	2.79	296.6	118.45	0.19
1	23638	2%_Cur	1030	602.8	611.77		611.91	0.000616	3.19	422.11	205.68	0.2
1	23638	1%_Cur	1140	602.8	612.08		612.22	0.000603	3.24	490.14	227.53	0.2
1	23638	0.2%_Cur	1400	602.8	612.74		612.88	0.000557	3.28	652.3	263.14	0.2
1	23634	10%_Cur	770	606.1	610.15	609.66	610.95	0.008271	7.7	122.04	50.12	0.68
1	23634	2%_Cur	1030	606.1	610.61	610.22	611.64	0.009476	8.86	146.75	56.85	0.74
1	23634	1%_Cur	1140	606.1	610.7	610.46	611.9	0.010766	9.58	152.09	59.76	0.79
1	23634	0.2%_Cur	1400	606.1	611.1	611.05	612.49	0.011552	10.49	182.39	110.71	0.83
1	23633		Inl Struct									
1	23631	10%_Cur	770	606.1	609.68	609.68	610.85	0.013685	9.12	100.31	46.87	0.85
1	23631	2%_Cur	1030	606.1	610.24	610.24	611.57	0.013365	9.94	128.22	53.1	0.86
1	23631	1%_Cur	1140	606.1	610.49	610.49	611.84	0.01278	10.11	141.92	56.3	0.85
1	23631	0.2%_Cur	1400	606.1	610.91	610.91	612.46	0.013367	10.99	167.08	66.21	0.89
1	23626	10%_Cur	770	602.7	609.12		609.36	0.001293	3.92	202.27	43.94	0.29
1	23626	2%_Cur	1030	602.7	609.77		610.1	0.001587	4.67	232.39	49.09	0.33
1	23626	1%_Cur	1140	602.7	610.13		610.49	0.001593	4.85	251.15	53.51	0.33
1	23626	0.2%_Cur	1400	602.7	610.98		611.39	0.001559	5.2	302.34	71.34	0.33
1	23597	10%_Cur	770	603.1	609.08		609.32	0.001396	3.97	201.25	46.82	0.31
1	23597	2%_Cur	1030	603.1	609.72		610.05	0.001646	4.67	232.34	49.46	0.34
1	23597	1%_Cur	1140	603.1	610.09		610.44	0.001621	4.84	250.85	51.23	0.35
1	23597	0.2%_Cur	1400	603.1	610.94		611.34	0.001555	5.17	300.8	69.59	0.35

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	23536	10%_Cur	770	602.3	609	605.14	609.24	0.001202	3.9	203.34	38.17	0.27
1	23536	2%_Cur	1030	602.3	609.61	605.76	609.95	0.001578	4.74	227.66	41.84	0.31
1	23536	1%_Cur	1140	602.3	609.97	605.99	610.34	0.001631	4.97	243.08	45.37	0.32
1	23536	0.2%_Cur	1400	602.3	610.8	606.52	611.24	0.001676	5.41	288.22	61.79	0.33
1	23525	10%_Cur	770	602.3	608.99	605.65	609.22	0.001227	3.84	204.49	39.55	0.28
1	23525	2%_Cur	1030	602.3	609.6	606.24	609.93	0.001558	4.63	228.9	40.85	0.32
1	23525	1%_Cur	1140	602.3	609.96	606.44	610.32	0.001583	4.84	243.59	41.61	0.33
1	23525	0.2%_Cur	1400	602.3	610.79	606.96	611.21	0.001593	5.25	279.04	43.4	0.34
1	23500		Bridge									
1	23481	10%_Cur	770	602.3	608.64	605.65	608.9	0.001524	4.14	187.49	38.91	0.31
1	23481	2%_Cur	1030	602.3	608.95	606.24	609.38	0.002255	5.23	198.95	39.6	0.38
1	23481	1%_Cur	1140	602.3	609.17	606.46	609.65	0.002436	5.57	206.93	40.07	0.4
1	23481	0.2%_Cur	1400	602.3	609.61	606.95	610.23	0.0029	6.37	222.9	41.02	0.44
1	23465	10%_Cur	770	602.3	608.61	605.16	608.88	0.001495	4.19	186.14	33.66	0.3
1	23465	2%_Cur	1030	602.3	608.89	605.74	609.34	0.002292	5.34	196.01	34.87	0.37
1	23465	1%_Cur	1140	602.3	609.1	605.99	609.6	0.002526	5.73	203.19	35.68	0.39
1	23465	0.2%_Cur	1400	602.3	609.49	606.53	610.17	0.003122	6.62	217.71	37.35	0.44
1	23354	10%_Cur	770	601.5	608.47		608.71	0.001345	3.99	201.47	90.35	0.31
1	23354	2%_Cur	1030	601.5	608.68		609.08	0.002102	5.12	212.66	98.7	0.38
1	23354	1%_Cur	1140	601.5	608.87		609.32	0.002282	5.46	223.81	105.3	0.4
1	23354	0.2%_Cur	1400	601.5	609.23		609.82	0.002736	6.23	247.3	115.67	0.44
1	22771	10%_Cur	770	601.2	607.85	604.71	608.01	0.001008	3.37	318.93	426.88	0.26
1	22771	2%_Cur	1030	601.2	608.39	605.31	608.45	0.000492	2.52	1064.36	509.93	0.19
1	22771	1%_Cur	1140	601.2	608.59	605.56	608.65	0.000512	2.63	1177.93	544.01	0.19
1	22771	0.2%_Cur	1400	601.2	609.02	606.07	609.08	0.000505	2.74	1408.79	609.93	0.19
1	22710	10%_Cur	770	601.3	607.87	604.68	607.94	0.000512	2.54	634.76	381.76	0.19
1	22710	2%_Cur	1030	601.3	608.31	605.21	608.41	0.000634	2.98	762.98	424.58	0.22
1	22710	1%_Cur	1140	601.3	608.5	605.42	608.6	0.000681	3.16	824.52	463.06	0.23
1	22710	0.2%_Cur	1400	601.3	608.91	605.91	609.03	0.000734	3.43	976.62	540.9	0.24
1	22311	10%_Cur	770	601.42	607.67		607.73	0.000527	2.4	531.83	240.42	0.19
1	22311	2%_Cur	1030	601.42	608.08		608.16	0.000628	2.77	631.99	253.02	0.21

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	22311	1%_Cur	1140	601.42	608.25		608.34	0.000655	2.89	676.41	259.57	0.22
1	22311	0.2%_Cur	1400	601.42	608.65		608.75	0.000694	3.12	783.32	275	0.23
1	22232	10%_Cur	770	601.5	607.34	605.45	607.6	0.002336	4.82	353.88	255.81	0.35
1	22232	2%_Cur	1030	601.5	607.72	606.99	608	0.002639	5.34	459.55	300.54	0.38
1	22232	1%_Cur	1140	601.5	607.95	606.99	608.2	0.002358	5.17	529.09	305.48	0.36
1	22232	0.2%_Cur	1400	601.5	608.41	607.52	608.62	0.002095	5.11	674.64	353.86	0.34
1	22205		Bridge									
1	22191	10%_Cur	770	600.42	606.8	604.35	607.43	0.004531	6.42	141.79	164.91	0.46
1	22191	2%_Cur	1030	600.42	607.31	605.16	607.98	0.004895	7.03	281.92	215.5	0.48
1	22191	1%_Cur	1140	600.42	607.5	605.48	608.18	0.005006	7.24	323.67	225.39	0.49
1	22191	0.2%_Cur	1400	600.42	607.9	607.5	608.6	0.005208	7.68	421.02	262.26	0.5
1	22056	10%_Cur	770	600.8	606.35	604.91	606.8	0.003549	5.57	208.14	196.1	0.48
1	22056	2%_Cur	1030	600.8	606.85	605.83	607.31	0.003564	6.02	331.66	225.13	0.49
1	22056	1%_Cur	1140	600.8	607.02	606.08	607.51	0.003623	6.22	368.58	232.33	0.5
1	22056	0.2%_Cur	1400	600.8	607.4	606.42	607.92	0.003737	6.64	450.59	246.32	0.51
1	21988	10%_Cur	770	600.6	606.4		606.59	0.001163	3.58	308.85	199.24	0.28
1	21988	2%_Cur	1030	600.6	606.86		607.1	0.001407	4.17	405.67	222.34	0.32
1	21988	1%_Cur	1140	600.6	607.02		607.29	0.001495	4.38	443.21	226.97	0.33
1	21988	0.2%_Cur	1400	600.6	607.38		607.69	0.001684	4.85	524.83	235.34	0.35
1	20749	10%_Cur	770	598.9	605.36		605.45	0.000713	3.03	530.11	367.05	0.23
1	20749	2%_Cur	1030	598.9	605.71		605.8	0.000755	3.25	661.93	375.05	0.24
1	20749	1%_Cur	1140	598.9	605.84		605.94	0.000772	3.33	711.47	377.96	0.24
1	20749	0.2%_Cur	1400	598.9	606.17		606.26	0.000765	3.44	836.46	385.46	0.24
1	20719	10%_Cur	799	598.57	605.15	601.73	605.37	0.001252	3.93	263.32	269.66	0.29
1	20719	2%_Cur	1060	598.57	605.38	602.4	605.7	0.001729	4.75	330.25	301.2	0.34
1	20719	1%_Cur	1160	598.57	605.49	602.62	605.83	0.001831	4.95	365.38	330.94	0.35
1	20719	0.2%_Cur	1410	598.57	605.83	603.15	606.16	0.001836	5.13	494.85	421.9	0.35
1	20700		Bridge									
1	20654	10%_Cur	799	598.47	603.75	601.68	604.28	0.003681	5.88	145.83	193.23	0.46
1	20654	2%_Cur	1060	598.47	604.15	602.35	604.91	0.004873	7.12	164.38	238	0.53

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	20654	1%_Cur	1160	598.47	604.5	602.6	604.77	0.002275	5.06	430.76	287.21	0.37
1	20654	0.2%_Cur	1410	598.47	604.9	603.2	605.15	0.002119	5.11	556.33	336.96	0.36
1	20539	10%_Cur	799	597.5	603.73		603.82	0.001339	2.83	488.17	340.49	0.22
1	20539	2%_Cur	1060	597.5	604.25		604.33	0.001189	2.84	677.73	375.7	0.21
1	20539	1%_Cur	1160	597.5	604.42		604.5	0.001134	2.83	745.14	381.52	0.2
1	20539	0.2%_Cur	1410	597.5	604.83		604.9	0.001041	2.83	903.08	401.93	0.2
1	20061	10%_Cur	799	596.8	601.95	600.83	602.62	0.005564	6.55	124.28	112.95	0.59
1	20061	2%_Cur	1060	596.8	602.43	601.4	603.19	0.005794	7.23	211.36	130.56	0.62
1	20061	1%_Cur	1160	596.8	602.62	601.62	603.4	0.005735	7.4	237.51	145.42	0.62
1	20061	0.2%_Cur	1410	596.8	603.01	602.53	603.85	0.005766	7.85	300.24	176.06	0.63
1	18590	10%_Cur	799	594.8	599.97		600.03	0.000799	2.69	796.51	435.38	0.23
1	18590	2%_Cur	1060	594.8	600.36		600.43	0.000861	2.96	969.67	449.42	0.24
1	18590	1%_Cur	1160	594.8	600.47		600.54	0.000911	3.1	1018.31	453.15	0.25
1	18590	0.2%_Cur	1410	594.8	600.79		600.87	0.000966	3.33	1169.13	477.36	0.26
1	16260	10%_Cur	799	592.7	596.71	596.14	596.98	0.003263	4.8	362.66	296.37	0.45
1	16260	2%_Cur	1060	592.7	597.21		597.45	0.002779	4.84	514.68	310.78	0.43
1	16260	1%_Cur	1160	592.7	597.5		597.71	0.002275	4.59	606.46	314.99	0.39
1	16260	0.2%_Cur	1410	592.7	597.99		598.17	0.001908	4.52	761.54	319.82	0.37
1	15225	10%_Cur	799	588.5	595.1		595.28	0.001008	3.57	393.41	340.77	0.26
1	15225	2%_Cur	1060	588.5	595.82		595.99	0.000909	3.66	650.12	378.92	0.25
1	15225	1%_Cur	1160	588.5	596.68		596.77	0.000508	2.97	991.12	410.64	0.19
1	15225	0.2%_Cur	1410	588.5	597.25		597.34	0.00048	3.03	1230.09	425.24	0.19
1	14388	10%_Cur	799	587.83	593.79		594.09	0.00211	4.62	220.88	280.68	0.37
1	14388	2%_Cur	1060	587.83	594.75		595.01	0.001551	4.47	325.24	352.89	0.33
1	14388	1%_Cur	1160	587.83	596.15		596.29	0.000667	3.4	476.94	425.5	0.22
1	14388	0.2%_Cur	1410	587.83	596.7		596.86	0.000705	3.67	536.12	442.29	0.23
1	14364	10%_Cur	799	587.83	593.8	590.9	594.01	0.001286	3.74	225.01	245.21	0.3
1	14364	2%_Cur	1060	587.83	594.72	591.57	594.97	0.001233	4.11	274.03	292.07	0.3
1	14364	1%_Cur	1160	587.83	596.07	591.76	596.26	0.000712	3.59	345.28	377.9	0.24
1	14364	0.2%_Cur	1410	587.83	596.57	592.15	596.81	0.00083	4.05	371.9	397.02	0.26
1	14330		Bridge									

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	14298	10%_Cur	799	587.6	593.22	590.67	593.54	0.00193	4.54	179.32	108.04	0.36
1	14298	2%_Cur	1060	587.6	593.91	591.27	594.34	0.002183	5.27	207.48	168.41	0.39
1	14298	1%_Cur	1160	587.6	594.18	591.47	594.64	0.002234	5.5	218.4	195.55	0.4
1	14298	0.2%_Cur	1410	587.6	594.76	591.92	595.32	0.002404	6.07	242.03	288.59	0.42
1	14176	10%_Cur	799	586.6	593.15	589.31	593.31	0.000831	3.16	277.35	277.41	0.24
1	14176	2%_Cur	1060	586.6	593.86	589.83	594.06	0.000932	3.63	349.68	331.16	0.26
1	14176	1%_Cur	1160	586.6	594.13	590.05	594.35	0.000945	3.76	378.91	346.62	0.26
1	14176	0.2%_Cur	1410	586.6	594.74	590.49	594.98	0.000991	4.09	444.5	376.14	0.27
1	12509	10%_Cur	799	585.2	592.74	590.02	592.75	0.000173	1.53	1617.55	640.86	0.11
1	12509	2%_Cur	1060	585.2	593.49	590.4	593.5	0.000161	1.59	2127.87	716.31	0.11
1	12509	1%_Cur	1160	585.2	593.77	590.52	593.78	0.000161	1.64	2336.07	764.99	0.11
1	12509	0.2%_Cur	1410	585.2	594.46	590.77	594.47	0.000132	1.58	2869.6	804.43	0.1
1	11492	10%_Cur	799	584.5	592.54		592.57	0.000222	1.94	1077.71	520.28	0.13
1	11492	2%_Cur	1060	584.5	593.29		593.33	0.000224	2.08	1335.14	550.07	0.13
1	11492	1%_Cur	1160	584.5	593.58		593.61	0.000222	2.11	1433.24	555.77	0.13
1	11492	0.2%_Cur	1410	584.5	594.29		594.32	0.000212	2.18	1678.83	573.09	0.13
1	11208	10%_Cur	799	584.6	592.35		592.47	0.000677	3.13	556.49	520.31	0.22
1	11208	2%_Cur	1060	584.6	593.11		593.23	0.000645	3.3	766.33	592.27	0.22
1	11208	1%_Cur	1160	584.6	593.4		593.52	0.000618	3.32	851.43	616.03	0.22
1	11208	0.2%_Cur	1410	584.6	594.13		594.24	0.000545	3.32	1072.68	817.52	0.21
1	10810	10%_Cur	799	584.8	592.04		592.17	0.001039	3.63	565.75	473.17	0.27
1	10810	2%_Cur	1060	584.8	592.84		592.96	0.000879	3.65	815.95	599.06	0.25
1	10810	1%_Cur	1160	584.8	593.17		593.27	0.000764	3.52	944.31	653.03	0.24
1	10810	0.2%_Cur	1410	584.8	593.96		594.04	0.000566	3.26	1257.59	854.96	0.21
1	10428	10%_Cur	799	584.8	591.19		591.45	0.004634	4.17	201.02	77.96	0.35
1	10428	2%_Cur	1060	584.8	592.01		592.33	0.004475	4.6	252.9	148.75	0.36
1	10428	1%_Cur	1160	584.8	592.39		592.71	0.004174	4.66	281.26	167.34	0.35
1	10428	0.2%_Cur	1410	584.8	593.28		593.6	0.003513	4.72	357.89	279.56	0.33
1	10310	10%_Cur	799	584.02	591.21	586.2	591.27	0.000275	2	406.98	78.56	0.14
1	10310	2%_Cur	1060	584.02	592.04	586.63	592.12	0.000311	2.31	470.49	85.08	0.16
1	10310	1%_Cur	1160	584.02	592.42	586.79	592.5	0.00031	2.39	499.75	92.14	0.16

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	10310	0.2%_Cur	1410	584.02	593.3	587.15	593.41	0.000306	2.57	569.69	147.94	0.16
1	10250		Bridge									
1	10147	10%_Cur	824	584.02	591.07	586.25	591.14	0.000309	2.12	405.8	266.85	0.15
1	10147	2%_Cur	1090	584.02	591.82	586.69	591.91	0.000359	2.47	471.64	302.74	0.17
1	10147	1%_Cur	1200	584.02	592.14	586.86	592.24	0.00037	2.58	500.1	327.33	0.17
1	10147	0.2%_Cur	1450	584.02	592.87	587.23	592.99	0.00038	2.79	564.95	387.49	0.18
1	9967	10%_Cur	824	584.4	590.78	588.2	590.99	0.001486	3.98	308.47	222.69	0.32
1	9967	2%_Cur	1090	584.4	591.51	588.76	591.75	0.001464	4.34	394.71	230.11	0.32
1	9967	1%_Cur	1200	584.4	591.83	588.96	592.08	0.001409	4.41	433.63	241.4	0.32
1	9967	0.2%_Cur	1450	584.4	592.58	589.38	592.83	0.001267	4.53	525.6	312.32	0.31
1	9667	10%_Cur	824	584.1	590.5	588.11	590.62	0.00092	3.32	515.84	260.21	0.26
1	9667	2%_Cur	1090	584.1	591.32	588.95	591.41	0.0007	3.19	745.08	302.05	0.23
1	9667	1%_Cur	1200	584.1	591.68	589.12	591.76	0.000625	3.13	856.55	329.99	0.22
1	9667	0.2%_Cur	1450	584.1	592.5	589.48	592.57	0.000443	2.86	1142.51	375.33	0.19
1	9411	10%_Cur	824	583.7	590.3	587.87	590.4	0.00093	3.1	595.73	269.68	0.25
1	9411	2%_Cur	1090	583.7	591.17	589.01	591.25	0.000702	3.02	833.85	279.58	0.22
1	9411	1%_Cur	1200	583.7	591.54	589.17	591.62	0.000624	2.97	938.19	285.04	0.21
1	9411	0.2%_Cur	1450	583.7	592.39	589.43	592.46	0.000508	2.92	1204.61	383.45	0.2
1	9112	10%_Cur	824	583.3	589.98	587.35	590.12	0.001057	3.3	465.45	234.34	0.27
1	9112	2%_Cur	1090	583.3	590.94	588.03	591.05	0.000763	3.17	703.89	291.01	0.24
1	9112	1%_Cur	1200	583.3	591.33	588.24	591.44	0.000691	3.16	825.5	330.42	0.23
1	9112	0.2%_Cur	1450	583.3	592.24	589.11	592.33	0.000498	2.94	1146.72	375.68	0.2
1	8693	10%_Cur	824	582.7	589.5	587	589.66	0.001177	3.67	450.62	193.28	0.28
1	8693	2%_Cur	1090	582.7	590.61	587.69	590.73	0.000807	3.46	668.21	199.18	0.24
1	8693	1%_Cur	1200	582.7	591.04	587.95	591.16	0.000715	3.41	754.68	200.84	0.23
1	8693	0.2%_Cur	1450	582.7	592.01	588.43	592.11	0.000563	3.31	952.18	205.78	0.21
1	8419	10%_Cur	824	582.5	589.22		589.38	0.000917	3.43	372.86	245.99	0.26
1	8419	2%_Cur	1090	582.5	590.37		590.52	0.000721	3.45	521.57	270.69	0.24
1	8419	1%_Cur	1200	582.5	590.82		590.96	0.000668	3.47	578.93	279.11	0.23
1	8419	0.2%_Cur	1450	582.5	591.81		591.95	0.000569	3.49	707.14	301.42	0.22

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	8391	10%_Cur	824	582.5	588.85	586.29	589.26	0.002385	5.19	170.72	215.98	0.39
1	8391	2%_Cur	1090	582.5	589.91	586.95	590.39	0.00221	5.63	226.47	264.39	0.39
1	8391	1%_Cur	1200	582.5	590.34	587.21	590.83	0.00212	5.75	251.77	278.17	0.38
1	8391	0.2%_Cur	1450	582.5	591.31	587.73	591.82	0.001889	5.93	311.45	376.89	0.37
1	8365		Bridge									
1	8349	10%_Cur	824	582.3	588.17	586.01	588.58	0.002667	5.15	169.31	117.1	0.41
1	8349	2%_Cur	1090	582.3	588.91	586.61	589.43	0.002846	5.85	205.53	195.08	0.44
1	8349	1%_Cur	1200	582.3	589.17	586.84	589.74	0.002931	6.12	219.5	267.56	0.45
1	8349	0.2%_Cur	1450	582.3	589.74	587.3	590.41	0.003078	6.68	252.78	321.19	0.47
1	8318	10%_Cur	824	582.1	588.23	585.81	588.41	0.001219	3.46	329.12	158.11	0.29
1	8318	2%_Cur	1090	582.1	589.02	586.26	589.21	0.001136	3.72	443.68	191.15	0.29
1	8318	1%_Cur	1200	582.1	589.3	586.46	589.5	0.001145	3.87	491.91	223.81	0.29
1	8318	0.2%_Cur	1450	582.1	589.92	586.9	590.13	0.001064	4	613.9	259.33	0.28
1	8227	10%_Cur	824	582	587.5	585.97	588.17	0.004523	6.79	183.56	128.59	0.54
1	8227	2%_Cur	1090	582	588.46		589.01	0.003325	6.56	311.86	166.12	0.48
1	8227	1%_Cur	1200	582	588.79		589.31	0.003082	6.54	355.65	224.71	0.46
1	8227	0.2%_Cur	1450	582	589.47		589.96	0.002675	6.53	448.97	311.34	0.44
1	7993	10%_Cur	824	580.3	586.96		587.36	0.002245	5.22	216.64	88.5	0.4
1	7993	2%_Cur	1090	580.3	587.95		588.37	0.002024	5.54	318.26	128.59	0.39
1	7993	1%_Cur	1200	580.3	588.29		588.71	0.001929	5.6	363.05	131.16	0.38
1	7993	0.2%_Cur	1450	580.3	589.02		589.43	0.001757	5.72	460.07	136.55	0.37
1	7542	10%_Cur	824	578.4	586.46		586.68	0.00094	3.79	238.4	60.86	0.26
1	7542	2%_Cur	1090	578.4	587.43		587.71	0.001003	4.29	310.66	93.14	0.28
1	7542	1%_Cur	1200	578.4	587.76		588.06	0.001028	4.47	342.32	97.27	0.28
1	7542	0.2%_Cur	1450	578.4	588.47		588.81	0.001068	4.83	414.56	107.8	0.29
1	7102	10%_Cur	824	578.2	586.08		586.27	0.000907	3.6	301.89	88.45	0.26
1	7102	2%_Cur	1090	578.2	587.06		587.28	0.000889	3.94	391.6	95.02	0.26
1	7102	1%_Cur	1200	578.2	587.39		587.62	0.000903	4.09	423.22	97.38	0.26
1	7102	0.2%_Cur	1450	578.2	588.09		588.35	0.00093	4.41	493.37	105	0.27
1	6688	10%_Cur	824	578	585.69	581.56	585.9	0.000887	3.7	240.11	109.55	0.25
1	6688	2%_Cur	1090	578	586.61	582.19	586.88	0.00099	4.26	286.27	300.09	0.27

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	6688	1%_Cur	1200	578	586.9	582.43	587.21	0.001049	4.49	302.14	451.8	0.28
1	6688	0.2%_Cur	1450	578	587.54	582.91	587.91	0.001163	4.98	338.42	642.2	0.3
1	6557	10%_Cur	824	577.8	585.7	580.7	585.79	0.000368	2.47	352.15	309.05	0.17
1	6557	2%_Cur	1090	577.8	586.66	581.22	586.76	0.000357	2.66	501.53	600.18	0.17
1	6557	1%_Cur	1200	577.8	586.97	581.43	587.08	0.000364	2.76	543.46	729.18	0.17
1	6557	0.2%_Cur	1450	577.8	587.64	581.85	587.75	0.000372	2.94	640.2	901	0.18
1	6514	10%_Cur	824	578	585.53	582.03	585.73	0.001007	3.62	233.96	208.43	0.27
1	6514	2%_Cur	1090	578	586.43	582.63	586.69	0.001058	4.09	280.02	731.18	0.28
1	6514	1%_Cur	1200	578	586.72	582.86	587	0.001104	4.3	295.97	769.92	0.29
1	6514	0.2%_Cur	1450	578	587.33	583.32	587.66	0.001183	4.71	331.53	992.94	0.3
1	6490		Bridge									
1	6455	10%_Cur	824	577.4	585.46	581.92	585.66	0.001019	3.63	231.53	672.95	0.27
1	6455	2%_Cur	1090	577.4	586.34	582.55	586.61	0.001084	4.12	273.7	726.06	0.28
1	6455	1%_Cur	1200	577.4	586.62	582.77	586.91	0.001138	4.34	287.14	832.37	0.29
1	6455	0.2%_Cur	1450	577.4	587.06	583.23	587.43	0.001333	4.9	308.75	1089.2	0.32
1	6388	10%_Cur	824	577.1	585.38	581.36	585.59	0.000947	3.77	231.09	277.77	0.26
1	6388	2%_Cur	1090	577.1	586.24	582.02	586.53	0.001058	4.34	273.54	379.21	0.28
1	6388	1%_Cur	1200	577.1	586.51	582.27	586.82	0.001128	4.59	287.66	421.59	0.29
1	6388	0.2%_Cur	1450	577.1	587	582.81	587.33	0.001167	4.86	369.77	636.33	0.3
1	5650	10%_Cur	824	576.9	584.41	581.07	584.72	0.001485	4.5	196.94	125.84	0.32
1	5650	2%_Cur	1090	576.9	585.14	581.76	585.54	0.001702	5.19	245.06	295.84	0.35
1	5650	1%_Cur	1200	576.9	585.43	582.02	585.82	0.001648	5.25	318.09	373.42	0.35
1	5650	0.2%_Cur	1450	576.9	586.02	582.54	586.37	0.001466	5.22	437.1	522.19	0.33
1	5466	10%_Cur	824	576.8	584.22	580.87	584.45	0.001253	3.93	261.58	380.6	0.29
1	5466	2%_Cur	1090	576.8	585.02	581.62	585.23	0.001104	4.04	372.93	475.73	0.28
1	5466	1%_Cur	1200	576.8	585.32	581.93	585.53	0.001052	4.06	414.73	530.03	0.28
1	5466	0.2%_Cur	1450	576.8	585.9	582.42	586.1	0.00099	4.17	497.02	622.04	0.27
1	5293	10%_Cur	824	576.6	584.01	580.53	584.24	0.001135	3.88	227.93	342.37	0.28
1	5293	2%_Cur	1090	576.6	584.7	581.21	585.01	0.001347	4.56	265.64	492.04	0.32
1	5293	1%_Cur	1200	576.6	584.95	581.47	585.3	0.001429	4.82	280.82	617.54	0.33
1	5293	0.2%_Cur	1450	576.6	585.67	581.92	585.92	0.001051	4.42	595.37	773.91	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	5103	10%_Cur	824	575.6	584	580.4	584.07	0.000415	2.34	414.59	595.68	0.17
1	5103	2%_Cur	1090	575.6	584.76	580.82	584.82	0.00035	2.34	758.66	951.61	0.16
1	5103	1%_Cur	1200	575.6	585.03	580.97	585.1	0.000351	2.41	822.05	980.87	0.16
1	5103	0.2%_Cur	1450	575.6	585.7	581.31	585.77	0.000335	2.5	980.2	1007.17	0.16
1	4940	10%_Cur	824	576.4	583.98	579.9	584.02	0.000271	1.87	493.4	624.82	0.14
1	4940	2%_Cur	1090	576.4	584.72	580.27	584.78	0.000292	2.11	637.2	937.44	0.15
1	4940	1%_Cur	1200	576.4	584.99	580.41	585.06	0.000297	2.19	698.9	993.05	0.15
1	4940	0.2%_Cur	1450	576.4	585.66	580.7	585.73	0.000287	2.3	851.93	1055.51	0.15
1	4720	10%_Cur	824	576.3	583.76	579.57	583.92	0.000716	3.26	269.48	1002.23	0.23
1	4720	2%_Cur	1090	576.3	584.59	580.15	584.7	0.000496	2.94	577.82	1454.55	0.19
1	4720	1%_Cur	1200	576.3	584.87	580.36	584.97	0.000477	2.96	640.48	1487.65	0.19
1	4720	0.2%_Cur	1450	576.3	585.56	580.85	585.65	0.000409	2.91	796.56	1551.15	0.18
1	4626	10%_Cur	824	576.2	583.75	580.22	583.84	0.000553	2.74	517.62	1200.9	0.2
1	4626	2%_Cur	1090	576.2	584.58	580.83	584.64	0.000379	2.48	797.23	1742.99	0.17
1	4626	1%_Cur	1200	576.2	584.86	581.03	584.92	0.000343	2.43	894.66	1826.2	0.16
1	4626	0.2%_Cur	1450	576.2	585.56	581.49	585.61	0.000255	2.23	1314.64	1897.06	0.14
1	4601	10%_Cur	824	576.1	583.62	580.18	583.81	0.000961	3.55	254.81	1314.29	0.26
1	4601	2%_Cur	1090	576.1	584.57	580.79	584.63	0.000382	2.48	910.11	1808.52	0.17
1	4601	1%_Cur	1200	576.1	584.86	581.03	584.91	0.000343	2.42	1028.53	1833.81	0.16
1	4601	0.2%_Cur	1450	576.1	585.58	581.46	585.59	0.000125	1.56	2753.88	1880.95	0.1
1	4486	10%_Cur	824	575.7	583.54	579.43	583.71	0.000761	3.34	261.78	1589.1	0.24
1	4486	2%_Cur	1090	575.7	584.54	580.04	584.59	0.000311	2.36	1031.92	1877.91	0.15
1	4486	1%_Cur	1200	575.7	584.83	580.27	584.88	0.000286	2.32	1156.64	1926.47	0.15
1	4486	0.2%_Cur	1450	575.7	585.53	580.78	585.57	0.000227	2.2	1465.59	1992.84	0.13
1	4426	10%_Cur	824	575.7	583.55	579.55	583.65	0.000553	2.85	656.04	1939.87	0.2
1	4426	2%_Cur	1090	575.7	584.5	580.18	584.57	0.000404	2.68	1068.9	2148.51	0.18
1	4426	1%_Cur	1200	575.7	584.79	580.42	584.86	0.000382	2.67	1196.24	2167.03	0.17
1	4426	0.2%_Cur	1450	575.7	585.5	580.9	585.56	0.00032	2.6	1512.05	2235.27	0.16
1	4162	10%_Cur	824	575.5	583.39	580.04	583.5	0.000635	2.86	586.49	1535.44	0.21
1	4162	2%_Cur	1090	575.5	584.38	580.63	584.46	0.000467	2.73	943.27	2087.31	0.19
1	4162	1%_Cur	1200	575.5	584.67	580.83	584.75	0.000442	2.74	1053.18	2160.43	0.19

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	4162	0.2%_Cur	1450	575.5	585.4	581.21	585.47	0.00037	2.68	1326.56	2202.55	0.17
1	4085	10%_Cur	824	575.5	583.31	578.7	583.45	0.000553	2.95	291.38	1848.94	0.2
1	4085	2%_Cur	1090	575.5	584.23	579.25	584.41	0.00062	3.41	345.24	2142.04	0.22
1	4085	1%_Cur	1200	575.5	584.65	579.5	584.72	0.000304	2.48	1126.13	2192.8	0.16
1	4085	0.2%_Cur	1450	575.5	585.38	579.97	585.44	0.000273	2.49	1392.95	2234.28	0.15
1	3935	10%_Cur	824	575.16	583.18	579.64	583.35	0.000832	3.33	356.01	1492.1	0.25
1	3935	2%_Cur	1090	575.16	584.16	580.22	584.3	0.000655	3.29	670.26	2086.16	0.22
1	3935	1%_Cur	1200	575.16	584.52	580.45	584.65	0.000588	3.23	881.94	2210.2	0.21
1	3935	0.2%_Cur	1450	575.16	585.3	580.86	585.39	0.000407	2.88	1634.98	2395.64	0.18
1	3657	10%_Cur	824	575.4	582.95	579.18	583.12	0.000793	3.29	283.87	1615.48	0.24
1	3657	2%_Cur	1090	575.4	583.93	579.78	584.11	0.000732	3.51	477.07	1846.19	0.24
1	3657	1%_Cur	1200	575.4	584.29	580.01	584.47	0.000694	3.54	563.68	1938.33	0.23
1	3657	0.2%_Cur	1450	575.4	585.17	580.45	585.27	0.000441	3.05	1617.87	2223.79	0.19
1	3513	10%_Cur	824	575.2	582.84		583.01	0.000773	3.25	276.92	1807.26	0.24
1	3513	2%_Cur	1090	575.2	583.79		583.99	0.000789	3.64	361.14	2056.52	0.25
1	3513	1%_Cur	1200	575.2	584.16	579.85	584.36	0.000774	3.73	591.09	2133.21	0.25
1	3513	0.2%_Cur	1450	575.2	585.11		585.21	0.000408	2.95	1867.99	2241.14	0.18
1	3388	10%_Cur	824	575	582.75		582.91	0.000729	3.2	283.34	1926.87	0.23
1	3388	2%_Cur	1090	575	583.7		583.9	0.00075	3.58	374.41	2058.77	0.24
1	3388	1%_Cur	1200	575	584.06		584.27	0.000752	3.71	419.32	2078.79	0.24
1	3388	0.2%_Cur	1450	575	584.92	580.06	585.13	0.000704	3.87	549.24	2115.26	0.24
1	3104	10%_Cur	824	574.4	582.6		582.72	0.00055	2.82	310.77	1883.72	0.2
1	3104	2%_Cur	1090	574.4	583.54		583.7	0.000583	3.2	376.57	1910.06	0.21
1	3104	1%_Cur	1200	574.4	583.9		584.07	0.000596	3.34	404.02	1946.62	0.22
1	3104	0.2%_Cur	1450	574.4	584.75		584.94	0.000579	3.55	546.43	2037.96	0.22
1	2926	10%_Cur	824	574.9	582.47		582.61	0.000663	3	292.35	1840.72	0.22
1	2926	2%_Cur	1090	574.9	583.41		583.58	0.00069	3.38	361.29	1939.6	0.23
1	2926	1%_Cur	1200	574.9	583.76		583.95	0.000698	3.52	391.8	1999.97	0.23
1	2926	0.2%_Cur	1450	574.9	584.6	579.76	584.83	0.000706	3.82	576.5	2138.04	0.24
1	2799	10%_Cur	824	574.4	582.38		582.53	0.000657	3.07	289.28	1641.43	0.22
1	2799	2%_Cur	1090	574.4	583.31		583.5	0.000696	3.47	359.68	1863.08	0.23

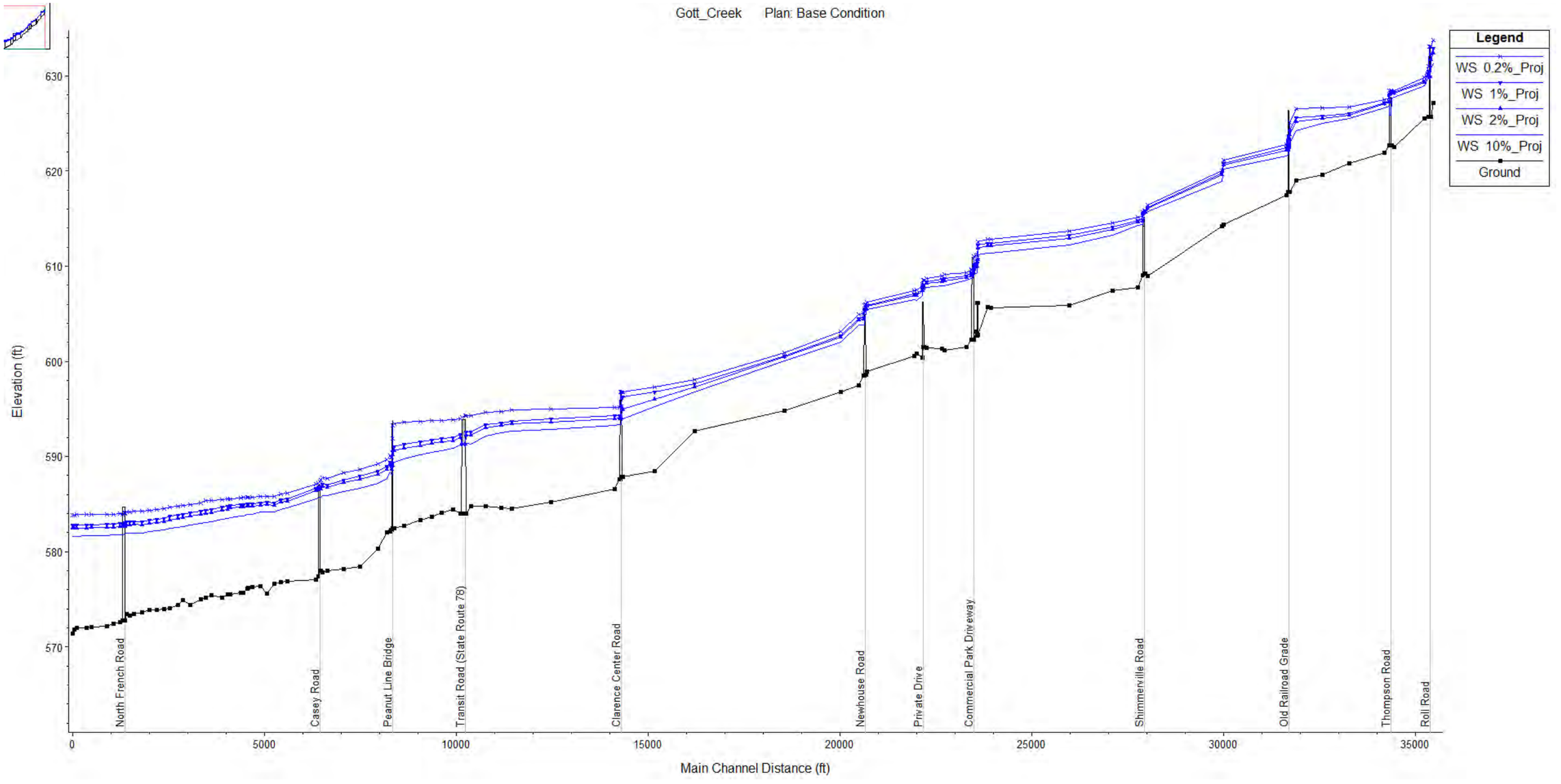
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2799	1%_Cur	1200	574.4	583.65		583.86	0.000731	3.68	395.4	1883.33	0.24
1	2799	0.2%_Cur	1450	574.4	584.54		584.73	0.000625	3.67	668.73	1892.19	0.23
1	2576	10%_Cur	824	574.1	582.24		582.38	0.000657	3.1	309.75	1373.3	0.22
1	2576	2%_Cur	1090	574.1	583.17		583.34	0.000667	3.43	463.11	1523.51	0.23
1	2576	1%_Cur	1200	574.1	583.52		583.69	0.000654	3.5	543.89	1568.45	0.22
1	2576	0.2%_Cur	1450	574.1	584.43		584.59	0.000565	3.51	820.43	1638.6	0.21
1	2418	10%_Cur	824	574	582.09		582.27	0.000777	3.34	263.4	1177.64	0.24
1	2418	2%_Cur	1090	574	583		583.22	0.000844	3.82	319.25	1509.76	0.25
1	2418	1%_Cur	1200	574	583.32		583.57	0.00089	4.04	347.01	1564.8	0.26
1	2418	0.2%_Cur	1450	574	584.24		584.48	0.00077	4.07	567.69	1665.86	0.25
1	2234	10%_Cur	824	573.9	581.98		582.13	0.000662	3.12	279.32	1292.48	0.22
1	2234	2%_Cur	1090	573.9	582.87		583.07	0.00073	3.58	332.61	1636.57	0.24
1	2234	1%_Cur	1200	573.9	583.19		583.41	0.000759	3.76	353.33	1668.16	0.24
1	2234	0.2%_Cur	1450	573.9	584.15		584.34	0.000617	3.68	950.72	1740.68	0.22
1	2044	10%_Cur	824	573.9	581.9		582.01	0.000471	2.67	322.32	1302.28	0.19
1	2044	2%_Cur	1090	573.9	582.79		582.93	0.000525	3.07	378.97	1404.02	0.2
1	2044	1%_Cur	1200	573.9	583.11		583.27	0.000548	3.23	400.41	1415.44	0.21
1	2044	0.2%_Cur	1450	573.9	584.05		584.23	0.000536	3.46	492.79	1451.9	0.21
1	1850	10%_Cur	824	573.6	581.81		581.92	0.000476	2.71	319.11	1173.07	0.19
1	1850	2%_Cur	1090	573.6	582.68		582.83	0.000536	3.13	375.42	1420.52	0.2
1	1850	1%_Cur	1200	573.6	582.99		583.16	0.000561	3.29	396.73	1431.63	0.21
1	1850	0.2%_Cur	1450	573.6	583.94		584.12	0.000545	3.51	553.5	1466.4	0.21
1	1647	10%_Cur	824	573.5	581.8		581.84	0.000167	1.69	500.88	1029.23	0.11
1	1647	2%_Cur	1090	573.5	582.68		582.74	0.000193	1.98	578.51	1206.99	0.13
1	1647	1%_Cur	1200	573.5	583		583.07	0.000204	2.09	607.7	1222.38	0.13
1	1647	0.2%_Cur	1450	573.5	583.96		584.03	0.000196	2.21	857.07	1260.66	0.13
1	1529	10%_Cur	824	573.3	581.77		581.82	0.000219	1.89	454.73	881.52	0.13
1	1529	2%_Cur	1090	573.3	582.64		582.72	0.00025	2.19	530.66	1116.82	0.14
1	1529	1%_Cur	1200	573.3	582.95		583.04	0.000264	2.32	575.93	1172.41	0.15
1	1529	0.2%_Cur	1450	573.3	583.91		584	0.000245	2.41	783.83	1306.54	0.14
1	1447	10%_Cur	824	573.5	581.74	576.41	581.8	0.000241	1.94	449.61	1098.81	0.14

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	1447	2%_Cur	1090	573.5	582.62	576.89	582.69	0.000271	2.24	533.19	1287.46	0.15
1	1447	1%_Cur	1200	573.5	582.93	577.08	583.01	0.000284	2.36	568.8	1363.47	0.15
1	1447	0.2%_Cur	1450	573.5	583.89	577.47	583.98	0.000268	2.49	688.63	1580.55	0.15
1	1409	10%_Cur	824	572.8	581.71	576.65	581.79	0.000298	2.27	365.38	434.3	0.15
1	1409	2%_Cur	1090	572.8	582.56	577.08	582.67	0.000353	2.67	412.14	541.7	0.17
1	1409	1%_Cur	1200	572.8	582.87	577.25	582.99	0.000376	2.83	429.19	580.28	0.18
1	1409	0.2%_Cur	1450	572.8	583.81	577.59	583.95	0.00038	3.06	483.12	814.09	0.18
1	1370		Bridge									
1	1339	10%_Cur	824	572.8	581.63	576.64	581.73	0.000349	2.55	322.58	306.13	0.17
1	1339	2%_Cur	1090	572.8	582.45	577.1	582.6	0.000424	3.03	359.73	406.39	0.19
1	1339	1%_Cur	1200	572.8	582.74	577.26	582.91	0.000456	3.22	372.86	426.93	0.2
1	1339	0.2%_Cur	1450	572.8	583.67	577.65	583.86	0.000469	3.5	414.33	590.33	0.2
1	1279	10%_Cur	824	572.6	581.63	576.21	581.69	0.00024	1.92	506.05	268.91	0.14
1	1279	2%_Cur	1090	572.6	582.47	576.73	582.54	0.000268	2.2	593.41	310.63	0.15
1	1279	1%_Cur	1200	572.6	582.76	576.93	582.84	0.00028	2.32	624.38	322.3	0.15
1	1279	0.2%_Cur	1450	572.6	583.7	577.33	583.78	0.000268	2.45	721.92	322.3	0.15
1	1113	10%_Cur	824	572.4	581.59		581.65	0.000246	2.03	633.6	405.55	0.14
1	1113	2%_Cur	1090	572.4	582.43		582.49	0.000248	2.21	860.86	416.2	0.14
1	1113	1%_Cur	1200	572.4	582.73		582.8	0.000251	2.28	941.35	416.2	0.14
1	1113	0.2%_Cur	1450	572.4	583.67		583.74	0.000216	2.28	1196.67	416.2	0.14
1	938	10%_Cur	824	572.2	581.56		581.6	0.000231	1.95	819.69	377.15	0.13
1	938	2%_Cur	1090	572.2	582.4		582.45	0.000233	2.12	1035.59	385.88	0.14
1	938	1%_Cur	1200	572.2	582.7		582.75	0.000238	2.2	1113.81	392.44	0.14
1	938	0.2%_Cur	1450	572.2	583.65		583.7	0.000209	2.22	1387.52	421.03	0.13
1	537	10%_Cur	824	572.1	581.49		581.52	0.000165	1.63	1340.09	1109.52	0.11
1	537	2%_Cur	1090	572.1	582.35		582.37	0.000141	1.63	1800.49	1125.36	0.1
1	537	1%_Cur	1200	572.1	582.65		582.67	0.000136	1.64	1963.42	1131.24	0.1
1	537	0.2%_Cur	1450	572.1	583.61		583.63	0.000105	1.56	2494.02	1147.75	0.09
1	411	10%_Cur	824	572	581.48	575.74	581.5	0.000112	1.34	1519.75	1297.51	0.09
1	411	2%_Cur	1090	572	582.34	576.27	582.35	0.000097	1.35	2073.87	1306.7	0.09
1	411	1%_Cur	1200	572	582.64	576.47	582.65	0.000094	1.36	2269.3	1306.7	0.09

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	411	0.2%_Cur	1450	572	583.6	576.88	583.62	0.000072	1.29	2897.6	1306.7	0.08
1	152	10%_Cur	824	572	581.43		581.46	0.000192	1.78	1305.71	1040.68	0.12
1	152	2%_Cur	1090	572	582.3		582.32	0.000135	1.62	2103	1059.7	0.1
1	152	1%_Cur	1200	572	582.61		582.63	0.000123	1.58	2383.37	1059.7	0.1
1	152	0.2%_Cur	1450	572	583.59		583.6	0.00008	1.38	3284.73	1059.7	0.08
1	88	10%_Cur	824	571.8	581.41		581.45	0.000195	1.86	1221.17	1005.73	0.12
1	88	2%_Cur	1090	571.8	582.29		582.32	0.000139	1.7	2057.65	1031.89	0.1
1	88	1%_Cur	1200	571.8	582.59		582.62	0.000127	1.66	2350.82	1034.91	0.1
1	88	0.2%_Cur	1450	571.8	583.58		583.59	0.000084	1.45	3307.52	1077.42	0.08
1	43	10%_Cur	824	571.4	581.39	575.96	581.44	0.000229	2	1167.86	1090.82	0.13
1	43	2%_Cur	1090	571.4	582.28	576.57	582.31	0.000151	1.75	2093.51	1126.4	0.11
1	43	1%_Cur	1200	571.4	582.59	576.77	582.61	0.000133	1.69	2416.89	1126.4	0.1
1	43	0.2%_Cur	1450	571.4	583.58	577.28	583.59	0.000081	1.42	3453.24	1126.4	0.08

Plan: Base Condition

Flows: Projected Future



Plan: Base Condition

Flows: Projected Future

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	35522	10%_Proj	272	627.2	631.4	629.5	631.53	0.001671	2.84	95.82	36.05	0.31
1	35522	2%_Proj	364	627.2	632.39	629.88	632.5	0.001099	2.62	155.53	85.79	0.26
1	35522	1%_Proj	401	627.2	632.92	630.02	633.01	0.000762	2.42	206.64	106.54	0.22
1	35522	0.2%_Proj	489	627.2	633.78	630.32	633.85	0.000508	2.26	325.13	198.13	0.19
1	35442	10%_Proj	272	625.73	630.76	628.58	631.2	0.006207	5.29	51.37	12.36	0.46
1	35442	2%_Proj	364	625.73	631.7	629.19	632.21	0.005823	5.72	64.09	14.89	0.46
1	35442	1%_Proj	401	625.73	632.28	629.42	632.77	0.004814	5.61	73.29	17.4	0.43
1	35442	0.2%_Proj	489	625.73	633.09	629.96	633.62	0.0044	5.89	89.45	22.28	0.42
1	35420		Bridge									
1	35396	10%_Proj	272	625.73	629.84	628.59	630.49	0.008135	6.46	42.08	13.79	0.62
1	35396	2%_Proj	364	625.73	630.31	629.31	631.2	0.010177	7.54	48.29	19.6	0.71
1	35396	1%_Proj	401	625.73	630.47	629.58	631.45	0.010721	7.96	50.43	21.64	0.73
1	35396	0.2%_Proj	489	625.73	631.01	630.17	631.9	0.012884	7.6	72.79	75.01	0.73
1	35278	10%_Proj	272	625.5	628.97	628.38	629.45	0.008089	5.51	49.51	23.6	0.65
1	35278	2%_Proj	364	625.5	629.32	628.77	629.95	0.008884	6.37	58.05	25.35	0.7
1	35278	1%_Proj	401	625.5	629.47	628.91	630.15	0.008883	6.62	61.96	35.86	0.71
1	35278	0.2%_Proj	489	625.5	629.81	629.24	630.6	0.00888	7.15	71.09	83.3	0.72
1	34495	10%_Proj	272	622.5	627.72		627.81	0.000851	2.54	175.48	190.99	0.23
1	34495	2%_Proj	364	622.5	628.2		628.3	0.000809	2.68	271.57	206.64	0.23
1	34495	1%_Proj	401	622.5	628.3		628.4	0.000869	2.83	291.56	210.4	0.24
1	34495	0.2%_Proj	489	622.5	628.48		628.6	0.001033	3.17	331.89	227.16	0.26
1	34420	10%_Proj	272	622.7	627.67	625.25	627.74	0.000761	2.07	150.64	361.96	0.21
1	34420	2%_Proj	364	622.7	628.16	625.67	628.23	0.000714	2.2	275.41	664.81	0.2
1	34420	1%_Proj	401	622.7	628.25	625.8	628.33	0.000762	2.32	301.24	742.64	0.21
1	34420	0.2%_Proj	489	622.7	628.43	626.05	628.52	0.000895	2.59	351.09	930.4	0.23
1	34390		Bridge									
1	34363	10%_Proj	272	622.7	626.81	624.98	627.14	0.003832	4.61	65.22	340.16	0.4
1	34363	2%_Proj	364	622.7	627.2	625.47	627.34	0.002203	3.71	257.69	398.46	0.31
1	34363	1%_Proj	401	622.7	627.34	625.66	627.47	0.002154	3.75	288.33	425.6	0.31
1	34363	0.2%_Proj	489	622.7	627.69	626.12	627.81	0.001858	3.66	372.8	693.04	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	34242	10%_Proj	272	621.9	626.68	624.47	626.76	0.001304	2.26	152.83	285.14	0.26
1	34242	2%_Proj	364	621.9	627.03	624.87	627.11	0.001156	2.35	247.05	365.69	0.25
1	34242	1%_Proj	401	621.9	627.17	625.01	627.24	0.001138	2.41	272.25	433.46	0.25
1	34242	0.2%_Proj	489	621.9	627.53	625.33	627.61	0.001063	2.52	357.36	526.82	0.25
1	33325	10%_Proj	272	620.8	625.57	623.49	625.66	0.001139	2.45	128.55	142.22	0.26
1	33325	2%_Proj	364	620.8	625.85	623.86	625.97	0.001394	2.89	170.94	214.29	0.29
1	33325	1%_Proj	401	620.8	626.01	623.97	626.13	0.00137	2.96	197.56	260.82	0.29
1	33325	0.2%_Proj	489	620.8	626.69	624.25	626.78	0.000848	2.64	343.78	491.38	0.23
1	32629	10%_Proj	272	619.6	625.04		625.08	0.000762	2.2	327.1	428	0.21
1	32629	2%_Proj	364	619.6	625.5		625.52	0.000437	1.81	558.19	554.35	0.16
1	32629	1%_Proj	401	619.6	625.78		625.79	0.000283	1.53	716.3	585.34	0.13
1	32629	0.2%_Proj	489	619.6	626.64		626.64	0.000094	1	1247.48	660.72	0.08
1	31948	10%_Proj	272	619	624.21		624.34	0.001774	3.33	187.44	253.69	0.31
1	31948	2%_Proj	364	619	625.18		625.22	0.000545	2.17	542.34	454.91	0.18
1	31948	1%_Proj	401	619	625.58		625.6	0.000337	1.81	738.13	525.42	0.14
1	31948	0.2%_Proj	489	619	626.57		626.57	0.000128	1.26	1301.58	605.22	0.09
1	31772	10%_Proj	272	617.78	622.84	621.07	623.54	0.011178	6.71	40.52	8	0.53
1	31772	2%_Proj	364	617.78	623.83	621.77	624.71	0.012719	7.53	48.37	8	0.54
1	31772	1%_Proj	401	617.78	624.21	622.06	625.15	0.013239	7.8	51.41	8	0.54
1	31772	0.2%_Proj	489	617.78	625.09	622.64	626.18	0.014271	8.36	58.49	8	0.55
1	31750		Culvert									
1	31720	10%_Proj	272	617.78	621.73	621.08	622.88	0.021479	8.61	31.6	8	0.76
1	31720	2%_Proj	364	617.78	622.18	621.79	623.84	0.028885	10.34	35.21	8	0.87
1	31720	1%_Proj	401	617.78	622.29	622.06	624.21	0.032865	11.11	36.08	8	0.92
1	31720	0.2%_Proj	489	617.78	622.67	622.67	625.1	0.039561	12.5	39.12	8	1
1	31676	10%_Proj	272	617.5	621.6	620.54	622.06	0.006422	5.41	50.25	17.92	0.57
1	31676	2%_Proj	364	617.5	622.2	621.06	622.75	0.006637	5.93	61.43	26.03	0.59
1	31676	1%_Proj	401	617.5	622.4	621.26	622.98	0.006615	6.15	65.29	29.56	0.59
1	31676	0.2%_Proj	489	617.5	622.82	621.66	623.5	0.006635	6.66	73.92	37.05	0.61
1	30052	10%_Proj	272	614.4	620.17		620.22	0.00042	2.07	238.71	151.42	0.16
1	30052	2%_Proj	364	614.4	620.64		620.71	0.000473	2.34	312.27	158.62	0.18

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	30052	1%_Proj	401	614.4	620.81		620.88	0.000491	2.43	339.45	161.98	0.18
1	30052	0.2%_Proj	489	614.4	621.17		621.25	0.000533	2.64	398.48	169.41	0.19
1	30002	10%_Proj	816	614.2	618.94	618.94	619.99	0.009313	8.61	157.56	207.61	0.77
1	30002	2%_Proj	1088	614.2	619.6	619.6	620.5	0.007395	8.51	274.77	295.37	0.7
1	30002	1%_Proj	1198	614.2	619.78	619.78	620.67	0.007216	8.63	312.11	314.54	0.7
1	30002	0.2%_Proj	1460	614.2	620.07	620.07	621.02	0.007615	9.23	374.1	332.51	0.73
1	28067	10%_Proj	816	609	615.72		615.79	0.000569	2.59	838.42	522.78	0.2
1	28067	2%_Proj	1088	609	616.06		616.15	0.000683	2.96	1019.54	540.59	0.22
1	28067	1%_Proj	1198	609	616.17		616.26	0.000734	3.11	1078.79	545.27	0.23
1	28067	0.2%_Proj	1460	609	616.4		616.5	0.000859	3.45	1202.48	555.1	0.25
1	27998	10%_Proj	816	609.24	615.46	612.55	615.69	0.001491	4.03	336.7	352.74	0.31
1	27998	2%_Proj	1088	609.24	615.7	613.2	616	0.002005	4.81	432.43	434.65	0.37
1	27998	1%_Proj	1198	609.24	615.76	613.44	616.1	0.002259	5.15	459.75	461.49	0.39
1	27998	0.2%_Proj	1460	609.24	615.8	613.96	616.28	0.003211	6.17	477.71	476.78	0.47
1	27960		Culvert									
1	27931	10%_Proj	816	609.08	614.34	612.27	614.63	0.002314	4.52	315.22	483.26	0.38
1	27931	2%_Proj	1088	609.08	614.73	612.87	615	0.002235	4.71	532.34	595.56	0.38
1	27931	1%_Proj	1198	609.08	614.88	613.11	615.13	0.002098	4.66	625.49	615.34	0.37
1	27931	0.2%_Proj	1460	609.08	615.21	614.68	615.42	0.001862	4.59	842.75	702.77	0.36
1	27807	10%_Proj	816	607.8	614.25	612.77	614.35	0.001056	3.48	634.99	562.59	0.26
1	27807	2%_Proj	1088	607.8	614.67	613.25	614.74	0.000853	3.29	910.19	707.23	0.24
1	27807	1%_Proj	1198	607.8	614.83	614.01	614.89	0.000779	3.2	1023.09	718.83	0.23
1	27807	0.2%_Proj	1460	607.8	615.16	614.08	615.21	0.000675	3.09	1268.61	781.15	0.22
1	27156	10%_Proj	816	607.4	613.28		613.51	0.002024	4.38	301.99	233.63	0.37
1	27156	2%_Proj	1088	607.4	613.88		614.08	0.001701	4.36	451.37	300.69	0.34
1	27156	1%_Proj	1198	607.4	614.11		614.29	0.001561	4.3	523.82	326	0.33
1	27156	0.2%_Proj	1460	607.4	614.54		614.7	0.001358	4.23	675.85	372.16	0.31
1	26030	10%_Proj	816	605.9	612.21		612.3	0.000684	2.74	640.35	299.45	0.22
1	26030	2%_Proj	1088	605.9	612.96		613.04	0.000601	2.83	876.99	337.61	0.21
1	26030	1%_Proj	1198	605.9	613.25		613.33	0.000573	2.85	976.96	360.08	0.21
1	26030	0.2%_Proj	1460	605.9	613.71		613.79	0.000585	3.03	1151.15	392.23	0.21

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23976	10%_Proj	816	605.6	611.36	607.92	611.41	0.000308	1.78	463.96	384.04	0.15
1	23976	2%_Proj	1088	605.6	612.13	608.28	612.19	0.000323	2.02	556.24	432.03	0.15
1	23976	1%_Proj	1198	605.6	612.44	608.41	612.5	0.000322	2.09	601.17	468.55	0.16
1	23976	0.2%_Proj	1460	605.6	612.81	608.7	612.89	0.00038	2.37	662.28	491.06	0.17
1	23895	10%_Proj	816	605.7	611.36		611.39	0.000177	1.41	584.43	152.27	0.11
1	23895	2%_Proj	1088	605.7	612.13		612.17	0.000189	1.61	712.48	181.08	0.12
1	23895	1%_Proj	1198	605.7	612.43		612.48	0.000189	1.66	769.86	192.88	0.12
1	23895	0.2%_Proj	1460	605.7	612.81		612.86	0.000225	1.89	843.21	209.38	0.13
1	23638	10%_Proj	816	602.8	611.18		611.3	0.000568	2.9	314.87	144	0.19
1	23638	2%_Proj	1088	602.8	611.93		612.08	0.000612	3.22	456.84	221.17	0.2
1	23638	1%_Proj	1198	602.8	612.24		612.39	0.000588	3.24	528.75	235.16	0.2
1	23638	0.2%_Proj	1460	602.8	612.59		612.76	0.000677	3.58	613.23	254.45	0.22
1	23634	10%_Proj	816	606.1	610.25	609.77	611.09	0.008326	7.86	127.56	51.41	0.68
1	23634	2%_Proj	1088	606.1	610.66	610.33	611.78	0.0101	9.23	149.91	58.46	0.76
1	23634	1%_Proj	1198	606.1	610.72	610.56	612.03	0.011677	10.01	153.43	60.55	0.82
1	23634	0.2%_Proj	1460	606.1	612.03	611.05	612.62	0.004725	7.52	358.55	225.28	0.55
1	23633		Inl Struct									
1	23631	10%_Proj	816	606.1	609.8	609.8	610.99	0.013471	9.25	105.81	48.09	0.85
1	23631	2%_Proj	1088	606.1	610.39	610.39	611.71	0.012897	10	136.1	55.02	0.85
1	23631	1%_Proj	1198	606.1	610.61	610.61	611.97	0.01265	10.24	148.43	57.74	0.85
1	23631	0.2%_Proj	1460	606.1	610.99	610.99	612.59	0.013566	11.2	172.52	68.5	0.9
1	23626	10%_Proj	816	602.7	609.28		609.53	0.001319	4.03	209.41	45.32	0.29
1	23626	2%_Proj	1088	602.7	609.96		610.31	0.001595	4.77	241.92	51.35	0.33
1	23626	1%_Proj	1198	602.7	610.32		610.69	0.001592	4.94	261.4	55.83	0.33
1	23626	0.2%_Proj	1460	602.7	611.19		611.6	0.001535	5.25	318.38	99.91	0.33
1	23597	10%_Proj	816	603.1	609.24		609.49	0.001406	4.07	208.85	47.49	0.31
1	23597	2%_Proj	1088	603.1	609.91		610.26	0.001636	4.76	241.89	50.17	0.35
1	23597	1%_Proj	1198	603.1	610.28		610.64	0.001612	4.92	260.65	53.24	0.35
1	23597	0.2%_Proj	1460	603.1	611.15		611.55	0.001516	5.2	315.64	73.65	0.34
1	23536	10%_Proj	816	602.3	609.16	605.26	609.41	0.001244	4.03	209.4	39.13	0.27
1	23536	2%_Proj	1088	602.3	609.79	605.88	610.16	0.001611	4.87	235.47	43.48	0.32
1	23536	1%_Proj	1198	602.3	610.15	606.11	610.54	0.001653	5.09	251.53	47.38	0.32

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23536	0.2%_Proj	1460	602.3	611	606.65	611.45	0.001664	5.48	301.2	66.74	0.33
1	23525	10%_Proj	816	602.3	609.15	605.76	609.39	0.001257	3.96	210.73	39.89	0.29
1	23525	2%_Proj	1088	602.3	609.78	606.36	610.13	0.001576	4.75	236.47	41.25	0.33
1	23525	1%_Proj	1198	602.3	610.14	606.58	610.51	0.001593	4.95	251.23	42.01	0.33
1	23525	0.2%_Proj	1460	602.3	610.99	607.06	611.42	0.001581	5.33	287.82	43.83	0.34
1	23500		Bridge									
1	23481	10%_Proj	816	602.3	608.76	605.76	609.04	0.001592	4.29	191.79	39.17	0.32
1	23481	2%_Proj	1088	602.3	609.07	606.35	609.52	0.002356	5.41	203.08	39.84	0.39
1	23481	1%_Proj	1198	602.3	609.27	606.57	609.79	0.002541	5.75	210.66	40.29	0.41
1	23481	0.2%_Proj	1460	602.3	609.7	607.06	610.36	0.003001	6.54	226.4	41.22	0.45
1	23465	10%_Proj	816	602.3	608.72	605.26	609.01	0.001578	4.35	190.01	34.15	0.31
1	23465	2%_Proj	1088	602.3	609	605.88	609.47	0.002422	5.55	199.67	35.29	0.38
1	23465	1%_Proj	1198	602.3	609.19	606.12	609.73	0.002659	5.93	206.57	36.06	0.4
1	23465	0.2%_Proj	1460	602.3	609.58	606.65	610.3	0.003257	6.81	220.92	37.72	0.45
1	23354	10%_Proj	816	601.5	608.58		608.84	0.001407	4.14	207.1	93.57	0.31
1	23354	2%_Proj	1088	601.5	608.77		609.2	0.002207	5.31	218.2	102.1	0.39
1	23354	1%_Proj	1198	601.5	608.95		609.44	0.002386	5.64	229.13	107.85	0.41
1	23354	0.2%_Proj	1460	601.5	609.31		609.93	0.002832	6.39	252.75	117.87	0.45
1	22771	10%_Proj	816	601.2	607.93	604.84	608.1	0.001063	3.5	328.64	428.48	0.27
1	22771	2%_Proj	1088	601.2	608.5	605.43	608.56	0.000495	2.56	1110.83	525.23	0.19
1	22771	1%_Proj	1198	601.2	608.69	605.67	608.75	0.000511	2.66	1230.98	551.36	0.19
1	22771	0.2%_Proj	1460	601.2	609.11	606.17	609.18	0.000502	2.76	1461.52	620.06	0.19
1	22710	10%_Proj	816	601.3	607.95	604.78	608.03	0.000535	2.63	657.61	387.84	0.2
1	22710	2%_Proj	1088	601.3	608.41	605.32	608.51	0.000662	3.08	794.67	446.21	0.22
1	22710	1%_Proj	1198	601.3	608.59	605.53	608.7	0.000693	3.22	858.56	473.46	0.23
1	22710	0.2%_Proj	1460	601.3	609	606.04	609.13	0.000756	3.51	1022.64	561.99	0.24
1	22311	10%_Proj	816	601.42	607.74		607.81	0.000547	2.47	549.86	242.42	0.2
1	22311	2%_Proj	1088	601.42	608.17		608.25	0.000643	2.83	655.28	256.25	0.22
1	22311	1%_Proj	1198	601.42	608.34		608.43	0.000666	2.94	700.45	263.29	0.22
1	22311	0.2%_Proj	1460	601.42	608.74		608.84	0.0007	3.16	807.74	278.03	0.23
1	22232	10%_Proj	816	601.5	607.41	605.63	607.68	0.002413	4.93	371.27	268.14	0.36

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22232	2%_Proj	1088	601.5	607.85	606.99	608.11	0.00248	5.25	496.74	303.19	0.37
1	22232	1%_Proj	1198	601.5	608.07	606.99	608.3	0.002238	5.1	564.49	308.74	0.35
1	22232	0.2%_Proj	1460	601.5	608.52	607.55	608.71	0.001981	5.02	714	364.46	0.34
1	22205		Bridge									
1	22191	10%_Proj	816	600.42	606.9	604.5	607.58	0.004781	6.66	148.46	188.58	0.47
1	22191	2%_Proj	1088	600.42	607.41	605.32	608.08	0.00496	7.15	303.91	220.53	0.49
1	22191	1%_Proj	1198	600.42	607.6	605.64	608.28	0.005047	7.34	345.71	231.09	0.49
1	22191	0.2%_Proj	1460	600.42	607.98	607.58	608.7	0.005297	7.8	443.55	276.49	0.51
1	22056	10%_Proj	816	600.8	606.43	605.01	606.91	0.003742	5.79	219.58	203.52	0.5
1	22056	2%_Proj	1088	600.8	606.94	606.01	607.42	0.003598	6.13	351.14	228.82	0.5
1	22056	1%_Proj	1198	600.8	607.11	606.21	607.61	0.003642	6.31	388.05	236.1	0.5
1	22056	0.2%_Proj	1460	600.8	607.47	606.42	608	0.003762	6.73	468.48	249.01	0.52
1	21988	10%_Proj	816	600.6	606.49		606.69	0.001212	3.69	326.45	205.71	0.29
1	21988	2%_Proj	1088	600.6	606.95		607.2	0.001455	4.29	425.52	224.8	0.32
1	21988	1%_Proj	1198	600.6	607.11		607.38	0.001536	4.49	462.85	229.07	0.33
1	21988	0.2%_Proj	1460	600.6	607.45		607.77	0.001726	4.95	542.39	237.07	0.36
1	20749	10%_Proj	816	598.9	605.45		605.53	0.000696	3.03	563.96	369.49	0.22
1	20749	2%_Proj	1088	598.9	605.79		605.88	0.000755	3.28	691.78	376.78	0.24
1	20749	1%_Proj	1198	598.9	605.88		605.98	0.000808	3.42	726.55	378.88	0.24
1	20749	0.2%_Proj	1460	598.9	606.26		606.35	0.000748	3.43	870.12	386.71	0.24
1	20719	10%_Proj	848	598.57	605.22	601.86	605.46	0.001311	4.06	283.27	275.74	0.29
1	20719	2%_Proj	1118	598.57	605.45	602.53	605.78	0.00179	4.87	350.66	316.15	0.35
1	20719	1%_Proj	1222	598.57	605.48	602.77	605.86	0.002066	5.25	360.57	326.13	0.37
1	20719	0.2%_Proj	1480	598.57	605.94	603.28	606.25	0.001769	5.09	540.04	435.18	0.35
1	20700		Bridge									
1	20654	10%_Proj	848	598.47	603.85	601.82	604.42	0.003841	6.09	150.73	196.02	0.47
1	20654	2%_Proj	1118	598.47	604.43	602.5	604.71	0.002298	5.05	410.93	270.97	0.37
1	20654	1%_Proj	1222	598.47	604.6	602.75	604.87	0.002238	5.08	461.57	305.66	0.37
1	20654	0.2%_Proj	1480	598.47	605	603.57	605.25	0.002088	5.13	592.37	352.76	0.36
1	20539	10%_Proj	848	597.5	603.86		603.94	0.001289	2.82	533.18	360.65	0.21
1	20539	2%_Proj	1118	597.5	604.35		604.43	0.001155	2.83	717.34	378.89	0.2

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	20539	1%_Proj	1222	597.5	604.53		604.6	0.001107	2.82	785.47	385.52	0.2
1	20539	0.2%_Proj	1480	597.5	604.93		605	0.001039	2.86	945.38	415.05	0.2
1	20061	10%_Proj	848	596.8	602.05	600.92	602.76	0.005763	6.78	127.8	118.28	0.6
1	20061	2%_Proj	1118	596.8	602.53	601.53	603.31	0.005845	7.37	224.18	137.64	0.62
1	20061	1%_Proj	1222	596.8	602.72	601.74	603.51	0.005772	7.54	252.03	150.21	0.62
1	20061	0.2%_Proj	1480	596.8	603.1	602.67	603.96	0.005824	7.99	316.46	183.91	0.63
1	18590	10%_Proj	848	594.8	600.05		600.11	0.000814	2.75	829.58	437.34	0.23
1	18590	2%_Proj	1118	594.8	600.44		600.51	0.000876	3.02	1004.5	452.07	0.25
1	18590	1%_Proj	1222	594.8	600.55		600.63	0.000924	3.15	1055.81	463.35	0.25
1	18590	0.2%_Proj	1480	594.8	600.88		600.97	0.00097	3.38	1212.27	481.4	0.26
1	16260	10%_Proj	848	592.7	596.81	596.24	597.08	0.00315	4.8	392.44	299.25	0.45
1	16260	2%_Proj	1118	592.7	597.31		597.55	0.002707	4.86	545.74	312.43	0.42
1	16260	1%_Proj	1222	592.7	597.62		597.82	0.002193	4.59	642.73	316.17	0.39
1	16260	0.2%_Proj	1480	592.7	598.09		598.27	0.001895	4.57	792.93	320.77	0.37
1	15225	10%_Proj	848	588.5	595.24		595.42	0.000996	3.6	440.37	346.21	0.26
1	15225	2%_Proj	1118	588.5	595.98		596.14	0.000871	3.64	711.14	382.35	0.25
1	15225	1%_Proj	1222	588.5	596.81		596.9	0.000507	3	1043.65	414.34	0.19
1	15225	0.2%_Proj	1480	588.5	597.33		597.42	0.000496	3.1	1265.11	425.91	0.19
1	14388	10%_Proj	848	587.83	593.97		594.27	0.001994	4.6	240.55	289.79	0.36
1	14388	2%_Proj	1118	587.83	594.96		595.21	0.001455	4.44	347.9	365.78	0.32
1	14388	1%_Proj	1222	587.83	596.27		596.41	0.000689	3.49	489.24	428.8	0.23
1	14388	0.2%_Proj	1480	587.83	596.75		596.92	0.000755	3.81	541.38	444.07	0.24
1	14364	10%_Proj	848	587.83	593.97	591.02	594.19	0.001282	3.82	234.23	261.57	0.3
1	14364	2%_Proj	1118	587.83	594.91	591.68	595.17	0.001225	4.18	284.16	303.81	0.3
1	14364	1%_Proj	1222	587.83	596.17	591.85	596.37	0.000752	3.72	350.74	381.62	0.24
1	14364	0.2%_Proj	1480	587.83	596.76	592.27	597.01	0.00084	4.14	382	410.05	0.26
1	14330		Bridge									
1	14298	10%_Proj	848	587.6	593.35	590.78	593.69	0.001994	4.7	184.52	113.32	0.37
1	14298	2%_Proj	1118	587.6	594.04	591.4	594.5	0.002241	5.42	213.02	180.58	0.4
1	14298	1%_Proj	1222	587.6	594.31	591.59	594.81	0.002293	5.66	224.02	216.18	0.41
1	14298	0.2%_Proj	1480	587.6	595.19	592.04	595.74	0.002123	5.96	259.85	320.36	0.4

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	14176	10%_Proj	848	586.6	593.28	589.42	593.45	0.000859	3.26	290.45	287.32	0.24
1	14176	2%_Proj	1118	586.6	594	589.96	594.21	0.000953	3.72	364.34	340.69	0.26
1	14176	1%_Proj	1222	586.6	594.28	590.15	594.5	0.000965	3.86	394.16	351.97	0.27
1	14176	0.2%_Proj	1480	586.6	595.2	590.62	595.42	0.000856	3.96	496.11	402.7	0.26
1	12509	10%_Proj	848	585.2	592.88	590.11	592.89	0.000169	1.54	1708.73	669.07	0.11
1	12509	2%_Proj	1118	585.2	593.64	590.51	593.66	0.000156	1.59	2240	731.82	0.11
1	12509	1%_Proj	1222	585.2	593.93	590.56	593.94	0.000155	1.63	2459.62	770.12	0.11
1	12509	0.2%_Proj	1480	585.2	595.01	590.83	595.02	0.000099	1.43	3301.43	946.03	0.09
1	11492	10%_Proj	848	584.5	592.68		592.71	0.000224	1.97	1125.44	524.12	0.13
1	11492	2%_Proj	1118	584.5	593.45		593.49	0.000224	2.1	1389.51	553.28	0.13
1	11492	1%_Proj	1222	584.5	593.74		593.78	0.000221	2.14	1489.83	559.14	0.13
1	11492	0.2%_Proj	1480	584.5	594.87		594.9	0.000169	2.03	1883.63	635.42	0.12
1	11208	10%_Proj	848	584.6	592.49		592.61	0.000685	3.2	593	533.8	0.22
1	11208	2%_Proj	1118	584.6	593.27		593.39	0.000634	3.32	812.99	599.45	0.22
1	11208	1%_Proj	1222	584.6	593.57		593.68	0.000606	3.34	900.92	658.06	0.22
1	11208	0.2%_Proj	1480	584.6	594.76		594.84	0.000396	2.98	1268.78	911.5	0.18
1	10810	10%_Proj	848	584.8	592.19		592.31	0.000999	3.62	606.89	477.79	0.27
1	10810	2%_Proj	1118	584.8	593.02		593.13	0.000818	3.59	886.5	627.11	0.25
1	10810	1%_Proj	1222	584.8	593.35		593.45	0.000716	3.47	1015.87	678.36	0.23
1	10810	0.2%_Proj	1480	584.8	594.65		594.7	0.00037	2.8	1534.45	879.02	0.17
1	10428	10%_Proj	848	584.8	591.34		591.62	0.004644	4.27	209.58	83.99	0.35
1	10428	2%_Proj	1118	584.8	592.21		592.54	0.004353	4.66	267.58	159.19	0.35
1	10428	1%_Proj	1222	584.8	592.59		592.92	0.004066	4.7	297.44	175.35	0.35
1	10428	0.2%_Proj	1480	584.8	594.29		594.45	0.001671	3.58	675.76	541.27	0.23
1	10310	10%_Proj	848	584.02	591.36	586.29	591.42	0.000284	2.06	418.46	79.67	0.15
1	10310	2%_Proj	1118	584.02	592.24	586.72	592.33	0.000313	2.37	486.1	86.99	0.16
1	10310	1%_Proj	1222	584.02	592.61	586.88	592.71	0.000313	2.45	515.38	96.06	0.16
1	10310	0.2%_Proj	1480	584.02	594.27	587.25	594.35	0.000213	2.31	857.77	446.55	0.13
1	10250		Bridge									
1	10147	10%_Proj	875	584.02	591.22	586.34	591.29	0.000321	2.19	418.23	278.92	0.16
1	10147	2%_Proj	1150	584.02	591.99	586.79	592.09	0.000366	2.53	486.77	318.25	0.17
1	10147	1%_Proj	1258	584.02	592.3	586.93	592.41	0.000375	2.64	514.55	333.63	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	10147	0.2%_Proj	1522	584.02	593.93	587.32	593.98	0.00017	2.03	1585.32	588.59	0.12
1	9967	10%_Proj	875	584.4	590.91	588.3	591.14	0.001493	4.07	324.68	223.96	0.32
1	9967	2%_Proj	1150	584.4	591.68	588.87	591.93	0.00144	4.39	415.16	232.4	0.32
1	9967	1%_Proj	1258	584.4	592	589.07	592.25	0.001384	4.46	453.59	281.06	0.32
1	9967	0.2%_Proj	1522	584.4	593.87	589.54	593.93	0.000371	2.76	1435.32	476.92	0.17
1	9667	10%_Proj	875	584.1	590.66	588.54	590.77	0.00088	3.31	556.62	269.04	0.25
1	9667	2%_Proj	1150	584.1	591.51	589.05	591.6	0.000647	3.13	804.02	313.29	0.22
1	9667	1%_Proj	1258	584.1	591.86	589.19	591.94	0.000577	3.07	918.03	335.05	0.21
1	9667	0.2%_Proj	1522	584.1	593.82	589.59	593.85	0.000186	2.07	1678.65	443.13	0.13
1	9411	10%_Proj	875	583.7	590.46	588.44	590.56	0.000882	3.09	640.16	271.17	0.25
1	9411	2%_Proj	1150	583.7	591.37	589.04	591.45	0.000658	2.99	890.36	282.46	0.22
1	9411	1%_Proj	1258	583.7	591.73	589.23	591.81	0.000606	2.98	992.16	300.04	0.21
1	9411	0.2%_Proj	1522	583.7	593.76	589.48	593.8	0.000257	2.35	1845.11	513.85	0.14
1	9112	10%_Proj	875	583.3	590.16	587.53	590.29	0.000992	3.28	508.72	237.48	0.26
1	9112	2%_Proj	1150	583.3	591.14	588.15	591.26	0.00074	3.2	766.58	317.53	0.23
1	9112	1%_Proj	1258	583.3	591.53	588.47	591.64	0.000646	3.12	893.4	348.57	0.22
1	9112	0.2%_Proj	1522	583.3	593.69	589.2	593.74	0.000218	2.21	1805.7	575.51	0.13
1	8693	10%_Proj	875	582.7	589.72	587.17	589.87	0.001083	3.62	493.5	195.05	0.27
1	8693	2%_Proj	1150	582.7	590.84	587.84	590.96	0.000759	3.44	713.86	199.94	0.24
1	8693	1%_Proj	1258	582.7	591.26	588.07	591.37	0.000678	3.39	798.57	202	0.23
1	8693	0.2%_Proj	1522	582.7	593.58	588.56	593.64	0.000277	2.63	1286.36	221.51	0.15
1	8419	10%_Proj	875	582.5	589.45		589.61	0.000868	3.43	402.87	252.97	0.25
1	8419	2%_Proj	1150	582.5	590.6		590.75	0.000694	3.46	551.81	274.74	0.23
1	8419	1%_Proj	1258	582.5	591.04		591.19	0.000646	3.48	607.66	284.18	0.23
1	8419	0.2%_Proj	1522	582.5	593.46		593.56	0.000298	2.86	920.41	335.53	0.16
1	8391	10%_Proj	875	582.5	589.06	586.44	589.49	0.002351	5.29	181	220.97	0.39
1	8391	2%_Proj	1150	582.5	590.13	587.08	590.62	0.002175	5.71	239.55	271.78	0.39
1	8391	1%_Proj	1258	582.5	590.55	587.33	591.05	0.002083	5.82	264.68	310.28	0.38
1	8391	0.2%_Proj	1522	582.5	593.24	587.88	593.55	0.000909	4.75	430.08	594.5	0.27
1	8365		Bridge									
1	8349	10%_Proj	875	582.3	588.32	586.15	588.77	0.002748	5.37	165	126.11	0.42

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8349	2%_Proj	1150	582.3	589.01	586.72	589.6	0.003077	6.2	188.47	210.81	0.46
1	8349	1%_Proj	1258	582.3	589.24	586.93	589.89	0.003221	6.51	196.35	276.52	0.47
1	8349	0.2%_Proj	1522	582.3	589.77	587.43	590.58	0.003529	7.22	214.53	322.2	0.5
1	8318	10%_Proj	875	582.1	588.38	585.9	588.59	0.001382	3.76	263.07	166.36	0.31
1	8318	2%_Proj	1150	582.1	589.11	586.34	589.37	0.001417	4.2	317.66	199.52	0.32
1	8318	1%_Proj	1258	582.1	589.36	586.51	589.64	0.001443	4.37	336.24	228.71	0.33
1	8318	0.2%_Proj	1522	582.1	589.94	586.91	590.27	0.00149	4.74	379.45	261.29	0.34
1	8227	10%_Proj	875	582	587.67	586.12	588.34	0.004387	6.84	207.41	141.24	0.53
1	8227	2%_Proj	1150	582	588.64		589.16	0.00317	6.53	355.71	187.38	0.47
1	8227	1%_Proj	1258	582	588.95		589.44	0.002907	6.46	424.87	244.25	0.45
1	8227	0.2%_Proj	1522	582	589.66		590.09	0.002439	6.35	633.02	334.47	0.42
1	7993	10%_Proj	875	580.3	587.15		587.55	0.002207	5.29	233.22	90.63	0.4
1	7993	2%_Proj	1150	580.3	588.12		588.55	0.001993	5.6	340.78	130	0.39
1	7993	1%_Proj	1258	580.3	588.45		588.88	0.001904	5.65	383.98	132.23	0.38
1	7993	0.2%_Proj	1522	580.3	589.19		589.61	0.001745	5.79	483.42	137.9	0.37
1	7542	10%_Proj	875	578.4	586.64		586.87	0.000966	3.91	249.3	64.35	0.27
1	7542	2%_Proj	1150	578.4	587.59		587.89	0.001028	4.41	325.87	95.21	0.28
1	7542	1%_Proj	1258	578.4	587.91		588.22	0.00105	4.58	356.81	99.22	0.29
1	7542	0.2%_Proj	1522	578.4	588.63		588.98	0.001094	4.94	431.67	109.94	0.3
1	7102	10%_Proj	875	578.2	586.25		586.45	0.000919	3.69	316.97	89.43	0.26
1	7102	2%_Proj	1150	578.2	587.21		587.44	0.00091	4.04	406.3	96.13	0.26
1	7102	1%_Proj	1258	578.2	587.53		587.77	0.000922	4.18	436.96	98.5	0.27
1	7102	0.2%_Proj	1522	578.2	588.23		588.51	0.000955	4.52	508.99	107.01	0.28
1	6688	10%_Proj	875	578	585.84	581.67	586.06	0.000926	3.83	247.38	128.76	0.26
1	6688	2%_Proj	1150	578	586.74	582.32	587.03	0.001039	4.41	293.11	373.88	0.28
1	6688	1%_Proj	1258	578	587.02	582.54	587.35	0.001093	4.63	308.63	484.83	0.29
1	6688	0.2%_Proj	1522	578	587.65	583.05	588.05	0.001219	5.15	345.76	689.48	0.31
1	6557	10%_Proj	875	577.8	585.85	580.81	585.95	0.000383	2.56	363.36	338.82	0.17
1	6557	2%_Proj	1150	577.8	586.79	581.34	586.9	0.000368	2.73	519.76	689	0.17
1	6557	1%_Proj	1258	577.8	587.09	581.51	587.21	0.000374	2.82	560.88	765.2	0.17
1	6557	0.2%_Proj	1522	577.8	587.76	581.96	587.89	0.000383	3.01	660.33	1013.7	0.18
1	6514	10%_Proj	875	578	585.68	582.14	585.89	0.001041	3.74	240.98	321.45	0.27

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6514	2%_Proj	1150	578	586.55	582.77	586.82	0.001105	4.23	286.62	762.88	0.29
1	6514	1%_Proj	1258	578	586.83	582.97	587.12	0.001146	4.43	302.24	791.93	0.3
1	6514	0.2%_Proj	1522	578	587.43	583.42	587.79	0.001237	4.86	337.87	1040.59	0.31
1	6490		Bridge									
1	6455	10%_Proj	875	577.4	585.6	582.06	585.82	0.001058	3.76	237.99	695.56	0.27
1	6455	2%_Proj	1150	577.4	586.46	582.68	586.74	0.001136	4.27	279.22	762.82	0.29
1	6455	1%_Proj	1258	577.4	586.72	582.9	587.03	0.001188	4.48	292	884.41	0.3
1	6455	0.2%_Proj	1522	577.4	587.13	583.37	587.53	0.001421	5.09	312.1	1126.34	0.33
1	6388	10%_Proj	875	577.1	585.51	581.49	585.74	0.000993	3.92	237.4	304.93	0.27
1	6388	2%_Proj	1150	577.1	586.35	582.16	586.65	0.001119	4.5	279.08	393.35	0.29
1	6388	1%_Proj	1258	577.1	586.6	582.41	586.94	0.001186	4.74	292.75	440.36	0.3
1	6388	0.2%_Proj	1522	577.1	587.06	582.94	587.42	0.00124	5.04	375.64	683.11	0.31
1	5650	10%_Proj	875	576.9	584.47	581.21	584.81	0.001614	4.72	200.42	142.99	0.33
1	5650	2%_Proj	1150	576.9	585.14	581.9	585.58	0.001895	5.48	245.01	295.66	0.37
1	5650	1%_Proj	1258	576.9	585.43	582.13	585.86	0.001804	5.5	318.92	373.82	0.36
1	5650	0.2%_Proj	1522	576.9	585.9	582.69	586.32	0.001785	5.7	412.56	486.69	0.36
1	5466	10%_Proj	875	576.8	584.27	581.02	584.51	0.001355	4.11	268.19	382.49	0.31
1	5466	2%_Proj	1150	576.8	585	581.8	585.24	0.001248	4.28	370.32	474.03	0.3
1	5466	1%_Proj	1258	576.8	585.31	582.04	585.54	0.001165	4.27	413.35	528.51	0.29
1	5466	0.2%_Proj	1522	576.8	585.75	582.56	586	0.001213	4.55	476.37	587.15	0.3
1	5293	10%_Proj	875	576.6	584.03	580.67	584.29	0.001266	4.11	228.85	344.21	0.3
1	5293	2%_Proj	1150	576.6	584.63	581.35	584.99	0.001554	4.86	261.76	453.88	0.34
1	5293	1%_Proj	1258	576.6	584.89	581.58	585.29	0.001618	5.1	277.31	605.24	0.35
1	5293	0.2%_Proj	1522	576.6	585.47	582.04	585.78	0.001323	4.87	556.1	751.22	0.32
1	5103	10%_Proj	875	575.6	584.02	580.49	584.1	0.000463	2.48	416.59	601.99	0.18
1	5103	2%_Proj	1150	575.6	584.7	580.91	584.77	0.000406	2.5	744.65	925.29	0.17
1	5103	1%_Proj	1258	575.6	584.98	581.06	585.06	0.000399	2.55	810.63	978.65	0.17
1	5103	0.2%_Proj	1522	575.6	585.5	581.39	585.58	0.000417	2.74	932.56	1003.92	0.18
1	4940	10%_Proj	875	576.4	583.99	579.97	584.05	0.000303	1.98	495.33	640.06	0.15
1	4940	2%_Proj	1150	576.4	584.66	580.35	584.72	0.000339	2.26	622.2	929.06	0.16
1	4940	1%_Proj	1258	576.4	584.94	580.48	585.01	0.000337	2.32	686.55	987.45	0.16
1	4940	0.2%_Proj	1522	576.4	585.45	580.8	585.53	0.000358	2.52	803.97	1052.76	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	4720	10%_Proj	875	576.3	583.75	579.69	583.93	0.000813	3.47	268.67	987.96	0.24
1	4720	2%_Proj	1150	576.3	584.49	580.27	584.62	0.000599	3.21	556.43	1434.75	0.21
1	4720	1%_Proj	1258	576.3	584.79	580.48	584.91	0.000558	3.18	623.29	1480.8	0.21
1	4720	0.2%_Proj	1522	576.3	585.31	580.99	585.43	0.00054	3.27	741.2	1514.39	0.21
1	4626	10%_Proj	875	576.2	583.74	580.34	583.84	0.000636	2.93	512.15	1191.41	0.22
1	4626	2%_Proj	1150	576.2	584.48	580.95	584.56	0.000469	2.73	763.15	1707.36	0.19
1	4626	1%_Proj	1258	576.2	584.79	581.15	584.85	0.000408	2.62	867.58	1808.3	0.18
1	4626	0.2%_Proj	1522	576.2	585.35	581.6	585.38	0.000215	2.01	1835.37	1876.17	0.13
1	4601	10%_Proj	875	576.1	583.59	580.31	583.81	0.001108	3.79	252.43	1294.11	0.28
1	4601	2%_Proj	1150	576.1	584.47	580.93	584.54	0.000476	2.74	867.59	1789.48	0.19
1	4601	1%_Proj	1258	576.1	584.78	581.14	584.84	0.00041	2.62	995.18	1823.7	0.18
1	4601	0.2%_Proj	1522	576.1	585.31	581.58	585.37	0.000357	2.57	1217.79	1857.31	0.17
1	4486	10%_Proj	875	575.7	583.49	579.56	583.69	0.000882	3.58	259.03	1551.49	0.25
1	4486	2%_Proj	1150	575.7	584.43	580.17	584.5	0.000386	2.6	984.12	1868.33	0.17
1	4486	1%_Proj	1258	575.7	584.74	580.39	584.8	0.000341	2.52	1119.31	1915.36	0.16
1	4486	0.2%_Proj	1522	575.7	585.28	580.91	585.33	0.000309	2.51	1353.48	1977.9	0.16
1	4426	10%_Proj	875	575.7	583.5	579.68	583.62	0.000655	3.09	634.84	1917.64	0.22
1	4426	2%_Proj	1150	575.7	584.38	580.31	584.47	0.0005	2.94	1015.96	2134.35	0.19
1	4426	1%_Proj	1258	575.7	584.69	580.54	584.78	0.000454	2.89	1154.89	2162.27	0.19
1	4426	0.2%_Proj	1522	575.7	585.23	581.03	585.31	0.000431	2.95	1392.95	2232.56	0.18
1	4162	10%_Proj	875	575.5	583.31	580.17	583.43	0.000778	3.13	558.67	1453.58	0.24
1	4162	2%_Proj	1150	575.5	584.22	580.73	584.33	0.000595	3.04	886.01	2026.55	0.21
1	4162	1%_Proj	1258	575.5	584.55	580.91	584.65	0.000536	2.98	1008.97	2135.17	0.2
1	4162	0.2%_Proj	1522	575.5	585.09	581.33	585.18	0.000509	3.06	1212.12	2192.69	0.2
1	4085	10%_Proj	875	575.5	583.22	578.82	583.37	0.000656	3.18	286.19	1797.19	0.22
1	4085	2%_Proj	1150	575.5	584.06	579.4	584.26	0.000748	3.69	334.3	2093.37	0.24
1	4085	1%_Proj	1258	575.5	584.35	579.62	584.58	0.00078	3.86	353.41	2167.25	0.25
1	4085	0.2%_Proj	1522	575.5	585.07	580.09	585.15	0.000368	2.82	1278.68	2229.53	0.17
1	3935	10%_Proj	875	575.16	583.05	579.75	583.25	0.001042	3.67	322.51	1412.76	0.27
1	3935	2%_Proj	1150	575.16	583.95	580.33	584.14	0.000868	3.7	600.49	2001.45	0.26
1	3935	1%_Proj	1258	575.16	584.28	580.53	584.45	0.000793	3.66	709.91	2121.85	0.25
1	3935	0.2%_Proj	1522	575.16	584.95	580.96	585.08	0.000592	3.37	1395.88	2350.07	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	3657	10%_Proj	875	575.4	582.76	579.32	582.96	0.000993	3.61	265.96	1559.8	0.27
1	3657	2%_Proj	1150	575.4	583.65	579.91	583.88	0.000976	3.94	414.82	1768.71	0.27
1	3657	1%_Proj	1258	575.4	583.97	580.13	584.2	0.000945	4.01	487.61	1855.03	0.27
1	3657	0.2%_Proj	1522	575.4	584.66	580.57	584.88	0.000833	4.01	893.83	2064.77	0.26
1	3513	10%_Proj	875	575.2	582.62	579.17	582.82	0.000995	3.6	261.53	1750.17	0.27
1	3513	2%_Proj	1150	575.2	583.48	579.77	583.73	0.001044	4.05	329.77	1962.95	0.28
1	3513	1%_Proj	1258	575.2	583.79	579.98	584.06	0.001054	4.2	360.65	2055.56	0.28
1	3513	0.2%_Proj	1522	575.2	584.54	580.43	584.76	0.000843	4.03	1012.37	2182.91	0.26
1	3388	10%_Proj	875	575	582.5	578.87	582.7	0.000953	3.56	265.34	1807.54	0.26
1	3388	2%_Proj	1150	575	583.36	579.48	583.6	0.001007	4.01	337.16	2039.01	0.28
1	3388	1%_Proj	1258	575	583.67	579.7	583.93	0.001017	4.16	370.09	2051.9	0.28
1	3388	0.2%_Proj	1522	575	584.34	580.2	584.63	0.001044	4.48	458.45	2089.25	0.29
1	3104	10%_Proj	875	574.4	582.29	578.46	582.45	0.00074	3.16	291.22	1850.7	0.23
1	3104	2%_Proj	1150	574.4	583.14	579.01	583.33	0.000799	3.6	347.17	1898.93	0.25
1	3104	1%_Proj	1258	574.4	583.44	579.21	583.65	0.000818	3.75	368.9	1906.89	0.25
1	3104	0.2%_Proj	1522	574.4	584.09	579.66	584.35	0.000875	4.12	420.45	1977.22	0.26
1	2926	10%_Proj	875	574.9	582.12	578.57	582.3	0.000929	3.4	269.6	1783.15	0.26
1	2926	2%_Proj	1150	574.9	582.95	579.19	583.17	0.000986	3.85	324.94	1867.5	0.27
1	2926	1%_Proj	1258	574.9	583.24	579.42	583.49	0.001003	4.01	347.8	1907.74	0.28
1	2926	0.2%_Proj	1522	574.9	583.89	579.89	584.18	0.001055	4.38	403.45	2017.24	0.29
1	2799	10%_Proj	875	574.4	581.99	578.33	582.18	0.000934	3.5	263.14	1605.85	0.26
1	2799	2%_Proj	1150	574.4	582.8	578.93	583.05	0.001013	3.99	319.55	1813.79	0.28
1	2799	1%_Proj	1258	574.4	583.1	579.14	583.36	0.001036	4.15	342.3	1857.88	0.28
1	2799	0.2%_Proj	1522	574.4	583.71	579.63	584.04	0.001136	4.61	414.12	1883.82	0.3
1	2576	10%_Proj	875	574.1	581.77	577.9	581.97	0.00098	3.59	264.42	1255.23	0.26
1	2576	2%_Proj	1150	574.1	582.57	578.51	582.82	0.001054	4.06	351.82	1438.88	0.28
1	2576	1%_Proj	1258	574.1	582.86	578.73	583.12	0.001072	4.22	401.99	1498.5	0.28
1	2576	0.2%_Proj	1522	574.1	583.49	579.3	583.78	0.001069	4.46	537.59	1562.86	0.29
1	2418	10%_Proj	875	574	581.55	578.15	581.79	0.001203	3.91	233.65	603.31	0.29
1	2418	2%_Proj	1150	574	582.31	578.79	582.62	0.001342	4.5	276.09	1334.66	0.32
1	2418	1%_Proj	1258	574	582.59	579	582.93	0.001385	4.7	292.91	1412.45	0.32
1	2418	0.2%_Proj	1522	574	583.16	579.53	583.57	0.001521	5.2	330.09	1538.76	0.34

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2234	10%_Proj	875	573.9	581.36	577.8	581.58	0.001065	3.69	245.66	528.78	0.28
1	2234	2%_Proj	1150	573.9	582.1	578.42	582.38	0.001208	4.27	286.19	1406.08	0.3
1	2234	1%_Proj	1258	573.9	582.37	578.65	582.67	0.001252	4.47	301.91	1568.96	0.31
1	2234	0.2%_Proj	1522	573.9	582.91	579.15	583.29	0.001394	4.97	335.26	1639.44	0.33
1	2044	10%_Proj	875	573.9	581.23	577.29	581.39	0.000778	3.18	282.17	769.09	0.24
1	2044	2%_Proj	1150	573.9	581.95	577.86	582.16	0.000893	3.69	325.42	1332.08	0.26
1	2044	1%_Proj	1258	573.9	582.22	578.08	582.45	0.000929	3.87	342.02	1386.81	0.27
1	2044	0.2%_Proj	1522	573.9	582.75	578.54	583.03	0.001044	4.32	376.25	1402.73	0.28
1	1850	10%_Proj	875	573.6	581.07	577.22	581.23	0.000816	3.26	275.13	483.16	0.24
1	1850	2%_Proj	1150	573.6	581.76	577.78	581.98	0.000951	3.81	316.14	1100	0.27
1	1850	1%_Proj	1258	573.6	582.01	578	582.26	0.000994	4	332.06	1337.97	0.27
1	1850	0.2%_Proj	1522	573.6	582.51	578.47	582.82	0.001132	4.48	364.27	1400.4	0.3
1	1647	10%_Proj	875	573.5	581.05	576.12	581.11	0.00028	2.03	438.36	478.34	0.15
1	1647	2%_Proj	1150	573.5	581.75	576.54	581.83	0.000334	2.38	496.24	954.41	0.16
1	1647	1%_Proj	1258	573.5	582.01	576.7	582.1	0.000352	2.51	518.48	1148.82	0.17
1	1647	0.2%_Proj	1522	573.5	582.51	577.07	582.64	0.000406	2.82	563.23	1194.74	0.18
1	1529	10%_Proj	875	573.3	580.99	576.4	581.07	0.00038	2.29	391.94	387.45	0.17
1	1529	2%_Proj	1150	573.3	581.68	576.85	581.79	0.000448	2.68	447.18	824.05	0.19
1	1529	1%_Proj	1258	573.3	581.93	577.02	582.05	0.00047	2.81	468.57	942.02	0.19
1	1529	0.2%_Proj	1522	573.3	582.42	577.41	582.58	0.000539	3.16	511.28	1097.68	0.21
1	1447	10%_Proj	875	573.5	580.95	576.5	581.04	0.00043	2.37	381.09	604.6	0.18
1	1447	2%_Proj	1150	573.5	581.63	576.99	581.75	0.000501	2.76	439.26	1017.64	0.2
1	1447	1%_Proj	1258	573.5	581.88	577.18	582.01	0.000522	2.9	462.21	1143.48	0.2
1	1447	0.2%_Proj	1522	573.5	582.37	577.6	582.53	0.000595	3.25	508.38	1247.78	0.22
1	1409	10%_Proj	875	572.8	580.91	576.74	581.01	0.000506	2.63	334.32	266.97	0.19
1	1409	2%_Proj	1150	572.8	581.57	577.17	581.72	0.000615	3.12	373.07	407.08	0.21
1	1409	1%_Proj	1258	572.8	581.81	577.33	581.98	0.000652	3.29	387.56	443.36	0.22
1	1409	0.2%_Proj	1522	572.8	582.27	577.69	582.49	0.000767	3.72	415.14	523.13	0.24
1	1370		Bridge									
1	1339	10%_Proj	875	572.8	580.8	576.75	580.9	0.000471	2.55	342.87	211.52	0.19
1	1339	2%_Proj	1150	572.8	581.41	577.22	581.56	0.000582	3.03	379.23	295.17	0.21

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1339	1%_Proj	1258	572.8	581.64	577.39	581.8	0.00062	3.2	392.6	308.82	0.22
1	1339	0.2%_Proj	1522	572.8	582.05	577.75	582.26	0.000744	3.65	416.85	390	0.24
1	1279	10%_Proj	875	572.6	580.78	576.31	580.86	0.000444	2.36	444.77	217.17	0.18
1	1279	2%_Proj	1150	572.6	581.4	576.84	581.51	0.000515	2.74	518.49	254.21	0.2
1	1279	1%_Proj	1258	572.6	581.62	577.03	581.74	0.000537	2.87	545.67	268.49	0.2
1	1279	0.2%_Proj	1522	572.6	582.04	577.46	582.19	0.000622	3.22	595	287.1	0.22
1	1113	10%_Proj	875	572.4	580.67	576.34	580.78	0.000521	2.67	406.79	215.05	0.2
1	1113	2%_Proj	1150	572.4	581.27	576.91	581.41	0.000605	3.08	533.87	360.85	0.22
1	1113	1%_Proj	1258	572.4	581.5	577.13	581.64	0.000629	3.21	589.95	403.56	0.22
1	1113	0.2%_Proj	1522	572.4	581.93	577.58	582.08	0.00064	3.38	850.17	411.19	0.22
1	938	10%_Proj	875	572.2	580.57	576.59	580.68	0.000621	2.87	527.01	332.59	0.21
1	938	2%_Proj	1150	572.2	581.17	577.18	581.3	0.00066	3.17	710.48	373.61	0.22
1	938	1%_Proj	1258	572.2	581.4	577.41	581.53	0.000656	3.23	784.84	375.65	0.22
1	938	0.2%_Proj	1522	572.2	581.82	577.93	581.96	0.000691	3.46	923.36	379.7	0.23
1	537	10%_Proj	875	572.1	580.36	576.41	580.44	0.00053	2.57	787.49	691.24	0.19
1	537	2%_Proj	1150	572.1	580.98	577.06	581.06	0.000485	2.64	1282.46	1084.74	0.19
1	537	1%_Proj	1258	572.1	581.22	577.26	581.29	0.000472	2.67	1507.43	1102.6	0.19
1	537	0.2%_Proj	1522	572.1	581.68	577.78	581.73	0.000399	2.57	1948.95	1112.49	0.17
1	411	10%_Proj	875	572	580.32	575.85	580.38	0.000367	2.12	766.16	779.69	0.16
1	411	2%_Proj	1150	572	580.94	576.39	581	0.000361	2.26	1225.19	1227.81	0.16
1	411	1%_Proj	1258	572	581.18	576.57	581.24	0.000339	2.25	1441.29	1270.72	0.16
1	411	0.2%_Proj	1522	572	581.66	577	581.69	0.000231	1.95	2520.6	1300.81	0.13
1	152	10%_Proj	875	572	580.08	576.11	580.24	0.000817	3.16	331.61	492.37	0.24
1	152	2%_Proj	1150	572	580.67	576.71	580.85	0.000882	3.52	533.97	824.55	0.25
1	152	1%_Proj	1258	572	580.91	576.92	581.09	0.00087	3.59	616.89	944.29	0.25
1	152	0.2%_Proj	1522	572	581.51	577.4	581.6	0.000508	2.91	1635.79	1042.13	0.2
1	88	10%_Proj	875	571.8	580.05	575.56	580.18	0.000654	2.97	419.28	334.02	0.21
1	88	2%_Proj	1150	571.8	580.63	576.19	580.8	0.000758	3.4	552.89	552.71	0.23
1	88	1%_Proj	1258	571.8	580.87	576.4	581.04	0.000785	3.55	615.43	722.62	0.24
1	88	0.2%_Proj	1522	571.8	581.44	576.93	581.56	0.000604	3.28	1359.53	1008.72	0.21
1	43	10%_Proj	875	571.4	580.01	576.08	580.15	0.000763	3.14	397.97	213.62	0.23
1	43	2%_Proj	1150	571.4	580.58	576.69	580.76	0.000881	3.6	523.82	475.59	0.25

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	43	1%_Proj	1258	571.4	580.81	576.9	581	0.000907	3.74	590.79	792.86	0.26
1	43	0.2%_Proj	1522	571.4	581.38	577.4	581.53	0.00071	3.51	1306.84	1090.26	0.23

Plan: Alt 1-1

Flows: Current and Projected Future

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	35522	10%_Cur	258	627.2	631.26	629.45	631.38	0.001746	2.84	90.72	35.18	0.31
1	35522	2%_Cur	348	627.2	632.17	629.83	632.29	0.001291	2.71	137.33	77.58	0.28
1	35522	1%_Cur	384	627.2	632.68	629.96	632.77	0.000902	2.51	181.36	96.75	0.24
1	35522	0.2%_Cur	470	627.2	633.69	630.25	633.76	0.000512	2.24	309.84	184.18	0.19
1	35522	10%_Proj	272	627.2	631.4	629.52	631.53	0.001671	2.84	95.82	36.04	0.31
1	35522	2%_Proj	364	627.2	632.39	629.88	632.5	0.0011	2.62	155.46	85.93	0.26
1	35522	1%_Proj	401	627.2	632.92	630.02	633.01	0.000762	2.42	206.57	106.47	0.22
1	35522	0.2%_Proj	489	627.2	633.78	630.32	633.85	0.000508	2.26	324.98	197.83	0.19
1	35442	10%_Cur	258	625.73	630.65	628.48	631.06	0.005992	5.17	49.91	12.04	0.45
1	35442	2%_Cur	348	625.73	631.45	629.1	631.97	0.006338	5.77	60.53	14.22	0.48
1	35442	1%_Cur	384	625.73	632.01	629.32	632.51	0.005254	5.67	68.82	15.72	0.44
1	35442	0.2%_Cur	470	625.73	633.03	629.83	633.54	0.004198	5.72	88.21	22	0.41
1	35442	10%_Proj	272	625.73	630.76	628.59	631.2	0.006207	5.29	51.37	12.36	0.46
1	35442	2%_Proj	364	625.73	631.7	629.2	632.21	0.005823	5.72	64.09	14.89	0.46
1	35442	1%_Proj	401	625.73	632.28	629.43	632.77	0.004814	5.61	73.29	17.4	0.43
1	35442	0.2%_Proj	489	625.73	633.09	629.96	633.62	0.0044	5.89	89.45	22.28	0.42
1	35420		Bridge									
1	35396	10%_Cur	258	625.73	629.75	628.49	630.37	0.007799	6.29	41.04	12.82	0.61
1	35396	2%_Cur	348	625.73	630.24	629.18	631.08	0.009898	7.36	47.29	18.63	0.69
1	35396	1%_Cur	384	625.73	630.4	629.45	631.34	0.010472	7.77	49.46	20.73	0.72
1	35396	0.2%_Cur	470	625.73	630.94	630.04	631.81	0.012849	7.49	68.46	51.13	0.73
1	35396	10%_Proj	272	625.73	629.84	628.59	630.49	0.008135	6.46	42.08	13.79	0.62
1	35396	2%_Proj	364	625.73	630.31	629.31	631.2	0.010177	7.54	48.29	19.6	0.71
1	35396	1%_Proj	401	625.73	630.47	629.58	631.45	0.010721	7.96	50.43	21.64	0.73
1	35396	0.2%_Proj	489	625.73	631.01	630.17	631.9	0.012884	7.6	72.79	75.01	0.73
1	35278	10%_Cur	258	625.5	628.82	628.3	629.31	0.009237	5.62	45.96	22.83	0.69
1	35278	2%_Cur	348	625.5	629.25	628.72	629.86	0.00888	6.26	56.35	25.01	0.7
1	35278	1%_Cur	384	625.5	629.4	628.86	630.06	0.008896	6.51	60.14	25.76	0.7
1	35278	0.2%_Cur	470	625.5	629.74	629.16	630.51	0.008864	7.04	69.18	80.63	0.72
1	35278	10%_Proj	272	625.5	628.97	628.38	629.45	0.008089	5.51	49.51	23.6	0.65
1	35278	2%_Proj	364	625.5	629.32	628.77	629.95	0.008884	6.37	58.05	25.35	0.7
1	35278	1%_Proj	401	625.5	629.47	628.91	630.15	0.008883	6.62	61.96	35.86	0.71
1	35278	0.2%_Proj	489	625.5	629.81	629.24	630.6	0.00888	7.15	71.09	83.3	0.72

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	34495	10%_Cur	258	622.5	627.56		627.65	0.000831	2.44	155.05	178.04	0.23
1	34495	2%_Cur	348	622.5	628.15		628.24	0.000786	2.63	261.71	205.33	0.23
1	34495	1%_Cur	384	622.5	628.26		628.36	0.000838	2.76	283.18	208.18	0.23
1	34495	0.2%_Cur	470	622.5	628.44		628.56	0.000998	3.1	323.61	224.86	0.26
1	34495	10%_Proj	272	622.5	627.72		627.81	0.000851	2.54	175.48	190.99	0.23
1	34495	2%_Proj	364	622.5	628.2		628.3	0.000809	2.68	271.57	206.64	0.23
1	34495	1%_Proj	401	622.5	628.3		628.4	0.000869	2.83	291.56	210.4	0.24
1	34495	0.2%_Proj	489	622.5	628.48		628.6	0.001033	3.17	331.89	227.16	0.26
1	34420	10%_Cur	258	622.7	627.52	625.16	627.58	0.000757	2.04	138.29	326.66	0.2
1	34420	2%_Cur	348	622.7	628.11	625.62	628.18	0.000696	2.16	262.53	628.82	0.2
1	34420	1%_Cur	384	622.7	628.21	625.74	628.29	0.000737	2.26	290.45	705.84	0.21
1	34420	0.2%_Cur	470	622.7	628.39	626.01	628.48	0.000866	2.53	341.05	889.32	0.23
1	34420	10%_Proj	272	622.7	627.67	625.25	627.74	0.000761	2.07	150.64	361.96	0.21
1	34420	2%_Proj	364	622.7	628.16	625.67	628.23	0.000714	2.2	275.41	664.81	0.2
1	34420	1%_Proj	401	622.7	628.25	625.8	628.33	0.000762	2.32	301.24	742.64	0.21
1	34420	0.2%_Proj	489	622.7	628.43	626.05	628.52	0.000895	2.59	351.09	930.4	0.23
1	34390		Bridge									
1	34363	10%_Cur	258	622.7	626.75	624.9	627.05	0.003655	4.46	63.66	311.87	0.39
1	34363	2%_Cur	348	622.7	627.14	625.38	627.28	0.002235	3.71	244.12	391.82	0.31
1	34363	1%_Cur	384	622.7	627.27	625.58	627.41	0.002173	3.73	274.26	406.87	0.31
1	34363	0.2%_Cur	470	622.7	627.62	626	627.73	0.001914	3.67	354.44	649.91	0.29
1	34363	10%_Proj	272	622.7	626.81	624.98	627.14	0.003832	4.61	65.22	340.16	0.4
1	34363	2%_Proj	364	622.7	627.2	625.47	627.34	0.002203	3.71	257.69	398.46	0.31
1	34363	1%_Proj	401	622.7	627.34	625.66	627.47	0.002154	3.75	288.33	425.6	0.31
1	34363	0.2%_Proj	489	622.7	627.69	626.12	627.81	0.001858	3.66	372.8	693.04	0.29
1	34242	10%_Cur	258	621.9	626.62	624.41	626.69	0.001294	2.23	145.32	262.9	0.26
1	34242	2%_Cur	348	621.9	626.97	624.8	627.05	0.001164	2.32	236.89	358.32	0.25
1	34242	1%_Cur	384	621.9	627.11	624.94	627.18	0.001148	2.38	259.57	409.34	0.26
1	34242	0.2%_Cur	470	621.9	627.45	625.28	627.53	0.001107	2.53	337.16	507.93	0.26
1	34242	10%_Proj	272	621.9	626.68	624.47	626.76	0.001304	2.26	152.83	285.14	0.26
1	34242	2%_Proj	364	621.9	627.03	624.87	627.11	0.001156	2.35	247.05	365.69	0.25
1	34242	1%_Proj	401	621.9	627.17	625.01	627.24	0.001138	2.41	272.25	433.46	0.25
1	34242	0.2%_Proj	489	621.9	627.53	625.33	627.61	0.001063	2.52	357.36	526.82	0.25
1	33325	10%_Cur	258	620.8	625.53	623.46	625.61	0.001083	2.37	123.29	127.74	0.25
1	33325	2%_Cur	348	620.8	625.79	623.8	625.91	0.001384	2.84	161.34	197.66	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	33325	1%_Cur	384	620.8	625.92	623.91	626.05	0.001405	2.95	183.04	233.98	0.29
1	33325	0.2%_Cur	470	620.8	626.51	624.2	626.62	0.000981	2.76	302.34	460.41	0.25
1	33325	10%_Proj	272	620.8	625.57	623.49	625.66	0.001139	2.45	128.55	142.22	0.26
1	33325	2%_Proj	364	620.8	625.85	623.86	625.97	0.001394	2.89	170.94	214.29	0.29
1	33325	1%_Proj	401	620.8	626.01	623.97	626.13	0.00137	2.96	197.56	260.82	0.29
1	33325	0.2%_Proj	489	620.8	626.69	624.25	626.78	0.000848	2.64	343.78	491.38	0.23
1	32629	10%_Cur	258	619.6	624.99		625.03	0.00078	2.2	307.83	420.89	0.21
1	32629	2%_Cur	348	619.6	625.4		625.43	0.000491	1.89	503.85	531	0.17
1	32629	1%_Cur	384	619.6	625.65		625.66	0.000343	1.64	639.32	569.79	0.14
1	32629	0.2%_Cur	470	619.6	626.44		626.45	0.000117	1.08	1119.01	643.76	0.09
1	32629	10%_Proj	272	619.6	625.04		625.08	0.000762	2.2	327.1	428	0.21
1	32629	2%_Proj	364	619.6	625.5		625.52	0.000437	1.81	558.19	554.35	0.16
1	32629	1%_Proj	401	619.6	625.78		625.79	0.000283	1.53	716.3	585.34	0.13
1	32629	0.2%_Proj	489	619.6	626.64		626.64	0.000094	1	1247.48	660.72	0.08
1	31948	10%_Cur	258	619	624.06		624.23	0.002119	3.54	151.13	240.05	0.34
1	31948	2%_Cur	348	619	625.01		625.06	0.000677	2.36	467.81	423.91	0.2
1	31948	1%_Cur	384	619	625.4		625.42	0.000423	1.97	644.48	494.94	0.16
1	31948	0.2%_Cur	470	619	626.35		626.36	0.000155	1.35	1173.71	591.21	0.1
1	31948	10%_Proj	272	619	624.21		624.34	0.001774	3.33	187.44	253.69	0.31
1	31948	2%_Proj	364	619	625.18		625.22	0.000545	2.17	542.34	454.91	0.18
1	31948	1%_Proj	401	619	625.58		625.6	0.000337	1.81	738.13	525.42	0.14
1	31948	0.2%_Proj	489	619	626.57		626.57	0.000128	1.26	1301.58	605.22	0.09
1	31772	10%_Cur	258	617.78	622.69	620.95	623.36	0.010892	6.57	39.29	8	0.52
1	31772	2%_Cur	348	617.78	623.66	621.66	624.51	0.012474	7.4	47.04	8	0.54
1	31772	1%_Cur	384	617.78	624.03	621.92	624.95	0.013007	7.68	50.02	8	0.54
1	31772	0.2%_Cur	470	617.78	624.9	622.53	625.96	0.014061	8.25	56.99	8	0.54
1	31772	10%_Proj	272	617.78	622.84	621.07	623.54	0.011178	6.71	40.52	8	0.53
1	31772	2%_Proj	364	617.78	623.83	621.77	624.71	0.012719	7.53	48.37	8	0.54
1	31772	1%_Proj	401	617.78	624.21	622.06	625.15	0.013239	7.8	51.41	8	0.54
1	31772	0.2%_Proj	489	617.78	625.09	622.64	626.18	0.014271	8.36	58.49	8	0.55
1	31750		Culvert									
1	31720	10%_Cur	258	617.78	621.65	620.97	622.73	0.020367	8.33	30.99	8	0.75
1	31720	2%_Cur	348	617.78	622.12	621.68	623.68	0.027343	10.02	34.74	8	0.85
1	31720	1%_Cur	384	617.78	622.25	621.94	624.04	0.030922	10.75	35.73	8	0.9
1	31720	0.2%_Cur	470	617.78	622.52	622.52	624.91	0.039633	12.39	37.92	8	1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	31720	10%_Proj	272	617.78	621.73	621.08	622.88	0.021479	8.61	31.6	8	0.76
1	31720	2%_Proj	364	617.78	622.18	621.79	623.84	0.028885	10.34	35.21	8	0.87
1	31720	1%_Proj	401	617.78	622.29	622.06	624.21	0.032865	11.11	36.08	8	0.92
1	31720	0.2%_Proj	489	617.78	622.67	622.67	625.1	0.039561	12.5	39.12	8	1
1	31676	10%_Cur	258	617.5	621.51	620.46	621.95	0.006324	5.31	48.62	17.69	0.56
1	31676	2%_Cur	348	617.5	622.12	620.97	622.64	0.006554	5.82	59.77	24.48	0.58
1	31676	1%_Cur	384	617.5	622.31	621.16	622.88	0.006602	6.04	63.62	28.21	0.59
1	31676	0.2%_Cur	470	617.5	622.73	621.57	623.4	0.006613	6.55	72.12	33.25	0.6
1	31676	10%_Proj	272	617.5	621.6	620.54	622.06	0.006422	5.41	50.25	17.92	0.57
1	31676	2%_Proj	364	617.5	622.2	621.06	622.75	0.006637	5.93	61.43	26.03	0.59
1	31676	1%_Proj	401	617.5	622.4	621.26	622.98	0.006615	6.15	65.29	29.56	0.59
1	31676	0.2%_Proj	489	617.5	622.82	621.66	623.5	0.006635	6.66	73.92	37.05	0.61
1	30052	10%_Cur	258	614.4	620.04		620.09	0.000429	2.06	219.28	142.27	0.17
1	30052	2%_Cur	348	614.4	620.55		620.61	0.000474	2.31	297.1	157.16	0.18
1	30052	1%_Cur	384	614.4	620.73		620.79	0.000488	2.4	325.43	159.95	0.18
1	30052	0.2%_Cur	470	614.4	621.09		621.17	0.000526	2.6	385.46	167.35	0.19
1	30052	10%_Proj	272	614.4	620.17		620.22	0.00042	2.07	238.71	151.42	0.16
1	30052	2%_Proj	364	614.4	620.64		620.71	0.000473	2.34	312.27	158.62	0.18
1	30052	1%_Proj	401	614.4	620.81		620.88	0.000491	2.43	339.45	161.98	0.18
1	30052	0.2%_Proj	489	614.4	621.17		621.25	0.000533	2.64	398.48	169.41	0.19
1	30002	10%_Cur	770	614.2	618.75	618.75	619.85	0.01026	8.73	131.48	144.58	0.8
1	30002	2%_Cur	1030	614.2	619.51	619.51	620.4	0.007418	8.41	256.92	288.18	0.7
1	30002	1%_Cur	1140	614.2	619.67	619.67	620.58	0.007428	8.62	289.45	304.77	0.71
1	30002	0.2%_Cur	1400	614.2	620.01	620.01	620.94	0.007544	9.1	360	326.76	0.72
1	30002	10%_Proj	816	614.2	618.94	618.94	619.99	0.009313	8.61	157.56	207.61	0.77
1	30002	2%_Proj	1088	614.2	619.6	619.6	620.5	0.007395	8.51	274.77	295.37	0.7
1	30002	1%_Proj	1198	614.2	619.78	619.78	620.67	0.007216	8.63	312.11	314.54	0.7
1	30002	0.2%_Proj	1460	614.2	620.07	620.07	621.02	0.007615	9.23	374.1	332.51	0.73
1	28067	10%_Cur	770	609	615.64		615.7	0.000561	2.55	793.46	512.35	0.2
1	28067	2%_Cur	1030	609	616.01		616.09	0.000653	2.87	988.86	538.14	0.21
1	28067	1%_Cur	1140	609	616.12		616.2	0.000705	3.03	1050.03	543	0.22
1	28067	0.2%_Cur	1400	609	616.34		616.44	0.000835	3.38	1172.63	552.6	0.24
1	28067	10%_Proj	816	609	615.72		615.79	0.000569	2.59	838.42	522.78	0.2
1	28067	2%_Proj	1088	609	616.06		616.15	0.000683	2.96	1019.54	540.59	0.22
1	28067	1%_Proj	1198	609	616.17		616.26	0.000734	3.11	1078.79	545.27	0.23
1	28067	0.2%_Proj	1460	609	616.4		616.5	0.000859	3.45	1202.48	555.1	0.25

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	27998	10%_Cur	770	609.24	615.39	612.43	615.6	0.001442	3.92	311.23	316.37	0.31
1	27998	2%_Cur	1030	609.24	615.67	613.07	615.95	0.001861	4.62	419.75	426	0.35
1	27998	1%_Cur	1140	609.24	615.74	613.32	616.06	0.002104	4.96	449.11	449.74	0.38
1	27998	0.2%_Cur	1400	609.24	615.8	613.85	616.24	0.002965	5.92	475.3	474.96	0.45
1	27998	10%_Proj	816	609.24	615.46	612.55	615.69	0.001491	4.03	336.7	352.74	0.31
1	27998	2%_Proj	1088	609.24	615.7	613.2	616	0.002005	4.81	432.43	434.65	0.37
1	27998	1%_Proj	1198	609.24	615.76	613.44	616.1	0.002259	5.15	459.75	461.49	0.39
1	27998	0.2%_Proj	1460	609.24	615.8	613.96	616.28	0.003211	6.17	477.71	476.78	0.47
1	27960		Culvert									
1	27931	10%_Cur	770	609.08	614.27	612.15	614.55	0.002268	4.43	282.67	434.39	0.38
1	27931	2%_Cur	1030	609.08	614.63	612.75	614.92	0.002367	4.78	474.07	584.09	0.39
1	27931	1%_Cur	1140	609.08	614.81	612.99	615.06	0.002152	4.67	579.95	606.08	0.38
1	27931	0.2%_Cur	1400	609.08	615.14	614.62	615.36	0.001911	4.61	795.64	689.02	0.36
1	27931	10%_Proj	816	609.08	614.34	612.27	614.63	0.002314	4.52	315.22	483.26	0.38
1	27931	2%_Proj	1088	609.08	614.73	612.87	615	0.002235	4.71	532.34	595.56	0.38
1	27931	1%_Proj	1198	609.08	614.88	613.11	615.13	0.002098	4.66	625.49	615.34	0.37
1	27931	0.2%_Proj	1460	609.08	615.21	614.68	615.42	0.001862	4.59	842.75	702.77	0.36
1	27807	10%_Cur	770	607.8	614.17	612.64	614.27	0.0011	3.52	591.46	515.38	0.27
1	27807	2%_Cur	1030	607.8	614.57	613.24	614.64	0.000928	3.39	836.66	696.88	0.25
1	27807	1%_Cur	1140	607.8	614.75	614	614.81	0.000807	3.23	968.71	713.65	0.23
1	27807	0.2%_Cur	1400	607.8	615.1	614.06	615.15	0.000685	3.09	1217.61	750.69	0.22
1	27807	10%_Proj	816	607.8	614.25	612.77	614.35	0.001056	3.48	634.99	562.59	0.26
1	27807	2%_Proj	1088	607.8	614.67	613.25	614.74	0.000853	3.29	910.19	707.23	0.24
1	27807	1%_Proj	1198	607.8	614.83	614.01	614.89	0.000779	3.2	1023.09	718.83	0.23
1	27807	0.2%_Proj	1460	607.8	615.16	614.08	615.21	0.000675	3.09	1268.61	781.15	0.22
1	27156	10%_Cur	770	607.4	613.17		613.4	0.002079	4.36	277.01	211.87	0.37
1	27156	2%_Cur	1030	607.4	613.74		613.94	0.001717	4.31	414.46	255.5	0.34
1	27156	1%_Cur	1140	607.4	613.99		614.18	0.001662	4.38	485.86	316.62	0.34
1	27156	0.2%_Cur	1400	607.4	614.49		614.64	0.001306	4.12	654.89	368.08	0.31
1	27156	10%_Proj	816	607.4	613.28		613.51	0.002024	4.38	301.99	233.63	0.37
1	27156	2%_Proj	1088	607.4	613.88		614.08	0.001701	4.36	451.37	300.69	0.34
1	27156	1%_Proj	1198	607.4	614.11		614.29	0.001561	4.3	523.82	326	0.33
1	27156	0.2%_Proj	1460	607.4	614.54		614.7	0.001358	4.23	675.85	372.16	0.31
1	26030	10%_Cur	770	605.9	612.07		612.15	0.000697	2.72	598.84	290.08	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	26030	2%_Cur	1030	605.9	612.81		612.89	0.000617	2.81	825.66	327.62	0.21
1	26030	1%_Cur	1140	605.9	613.1		613.18	0.000587	2.84	923.66	347.34	0.21
1	26030	0.2%_Cur	1400	605.9	613.71		613.79	0.000536	2.9	1152.4	392.43	0.2
1	26030	10%_Proj	816	605.9	612.21		612.3	0.000684	2.74	640.35	299.45	0.22
1	26030	2%_Proj	1088	605.9	612.96		613.04	0.000601	2.83	876.99	337.61	0.21
1	26030	1%_Proj	1198	605.9	613.25		613.33	0.000573	2.85	976.96	360.08	0.21
1	26030	0.2%_Proj	1460	605.9	613.71		613.79	0.000585	3.03	1151.15	392.23	0.21
1	23976	10%_Cur	770	605.6	611.22	607.86	611.27	0.000306	1.73	448.15	381.13	0.15
1	23976	2%_Cur	1030	605.6	611.97	608.21	612.03	0.000322	1.98	534.56	419.18	0.15
1	23976	1%_Cur	1140	605.6	612.28	608.34	612.34	0.000323	2.06	576.88	444.52	0.16
1	23976	0.2%_Cur	1400	605.6	612.92	608.64	612.99	0.000326	2.23	682.18	496.67	0.16
1	23976	10%_Proj	816	605.6	611.36	607.92	611.41	0.000308	1.78	463.96	384.04	0.15
1	23976	2%_Proj	1088	605.6	612.13	608.28	612.19	0.000323	2.02	556.24	432.03	0.15
1	23976	1%_Proj	1198	605.6	612.44	608.41	612.5	0.000322	2.09	601.17	468.55	0.16
1	23976	0.2%_Proj	1460	605.6	612.81	608.7	612.89	0.00038	2.37	662.28	491.06	0.17
1	23895	10%_Cur	770	605.7	611.21		611.24	0.000174	1.37	563.72	135.72	0.11
1	23895	2%_Cur	1030	605.7	611.97		612	0.000188	1.57	683.68	174.53	0.12
1	23895	1%_Cur	1140	605.7	612.27		612.31	0.000189	1.64	739.15	187.04	0.12
1	23895	0.2%_Cur	1400	605.7	612.92		612.96	0.000194	1.78	866.97	215.05	0.12
1	23895	10%_Proj	816	605.7	611.36		611.39	0.000177	1.41	584.43	152.27	0.11
1	23895	2%_Proj	1088	605.7	612.13		612.17	0.000189	1.61	712.48	181.08	0.12
1	23895	1%_Proj	1198	605.7	612.43		612.48	0.000189	1.66	769.86	192.88	0.12
1	23895	0.2%_Proj	1460	605.7	612.81		612.86	0.000225	1.89	843.21	209.38	0.13
1	23638	10%_Cur	770	602.8	611.04		611.16	0.000543	2.79	296.6	118.45	0.19
1	23638	2%_Cur	1030	602.8	611.77		611.91	0.000616	3.19	422.11	205.68	0.2
1	23638	1%_Cur	1140	602.8	612.08		612.22	0.000603	3.24	490.14	227.53	0.2
1	23638	0.2%_Cur	1400	602.8	612.74		612.88	0.000557	3.28	652.3	263.14	0.2
1	23638	10%_Proj	816	602.8	611.18		611.3	0.000568	2.9	314.87	144	0.19
1	23638	2%_Proj	1088	602.8	611.93		612.08	0.000612	3.22	456.84	221.17	0.2
1	23638	1%_Proj	1198	602.8	612.24		612.39	0.000588	3.24	528.75	235.16	0.2
1	23638	0.2%_Proj	1460	602.8	612.59		612.76	0.000677	3.58	613.23	254.45	0.22
1	23634	10%_Cur	770	606.1	610.15	609.66	610.95	0.008271	7.7	122.04	50.12	0.68
1	23634	2%_Cur	1030	606.1	610.61	610.22	611.64	0.009476	8.86	146.75	56.85	0.74
1	23634	1%_Cur	1140	606.1	610.7	610.46	611.9	0.010766	9.58	152.09	59.76	0.79
1	23634	0.2%_Cur	1400	606.1	611.1	611.05	612.49	0.011552	10.49	182.39	110.71	0.83
1	23634	10%_Proj	816	606.1	610.25	609.77	611.09	0.008326	7.86	127.56	51.41	0.68

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23634	2%_Proj	1088	606.1	610.66	610.33	611.78	0.0101	9.23	149.91	58.46	0.76
1	23634	1%_Proj	1198	606.1	610.72	610.56	612.03	0.011677	10.01	153.43	60.55	0.82
1	23634	0.2%_Proj	1460	606.1	612.03	611.05	612.62	0.004725	7.52	358.55	225.28	0.55
1	23633		Inl Struct									
1	23631	10%_Cur	770	606.1	609.68	609.68	610.85	0.013685	9.12	100.31	46.87	0.85
1	23631	2%_Cur	1030	606.1	610.24	610.24	611.57	0.013365	9.94	128.22	53.1	0.86
1	23631	1%_Cur	1140	606.1	610.49	610.49	611.84	0.01278	10.11	141.92	56.3	0.85
1	23631	0.2%_Cur	1400	606.1	610.91	610.91	612.46	0.013367	10.99	167.08	66.21	0.89
1	23631	10%_Proj	816	606.1	609.8	609.8	610.99	0.013471	9.25	105.81	48.09	0.85
1	23631	2%_Proj	1088	606.1	610.39	610.39	611.71	0.012897	10	136.1	55.02	0.85
1	23631	1%_Proj	1198	606.1	610.61	610.61	611.97	0.01265	10.24	148.43	57.74	0.85
1	23631	0.2%_Proj	1460	606.1	610.99	610.99	612.59	0.013566	11.2	172.52	68.5	0.9
1	23626	10%_Cur	770	602.7	609.12		609.36	0.001293	3.92	202.27	43.94	0.29
1	23626	2%_Cur	1030	602.7	609.77		610.1	0.001587	4.67	232.39	49.09	0.33
1	23626	1%_Cur	1140	602.7	610.13		610.49	0.001593	4.85	251.15	53.51	0.33
1	23626	0.2%_Cur	1400	602.7	610.98		611.39	0.001559	5.2	302.34	71.34	0.33
1	23626	10%_Proj	816	602.7	609.28		609.53	0.001319	4.03	209.41	45.32	0.29
1	23626	2%_Proj	1088	602.7	609.96		610.31	0.001595	4.77	241.92	51.35	0.33
1	23626	1%_Proj	1198	602.7	610.32		610.69	0.001592	4.94	261.4	55.83	0.33
1	23626	0.2%_Proj	1460	602.7	611.19		611.6	0.001535	5.25	318.38	99.91	0.33
1	23597	10%_Cur	770	603.1	609.08		609.32	0.001396	3.97	201.25	46.82	0.31
1	23597	2%_Cur	1030	603.1	609.72		610.05	0.001646	4.67	232.34	49.46	0.34
1	23597	1%_Cur	1140	603.1	610.09		610.44	0.001621	4.84	250.85	51.23	0.35
1	23597	0.2%_Cur	1400	603.1	610.94		611.34	0.001555	5.17	300.8	69.59	0.35
1	23597	10%_Proj	816	603.1	609.24		609.49	0.001406	4.07	208.85	47.49	0.31
1	23597	2%_Proj	1088	603.1	609.91		610.26	0.001636	4.76	241.89	50.17	0.35
1	23597	1%_Proj	1198	603.1	610.28		610.64	0.001612	4.92	260.65	53.24	0.35
1	23597	0.2%_Proj	1460	603.1	611.15		611.55	0.001516	5.2	315.64	73.65	0.34
1	23536	10%_Cur	770	602.3	609	605.14	609.24	0.001202	3.9	203.34	38.17	0.27
1	23536	2%_Cur	1030	602.3	609.61	605.76	609.95	0.001578	4.74	227.66	41.84	0.31
1	23536	1%_Cur	1140	602.3	609.97	605.99	610.34	0.001631	4.97	243.08	45.37	0.32
1	23536	0.2%_Cur	1400	602.3	610.8	606.52	611.24	0.001676	5.41	288.22	61.79	0.33
1	23536	10%_Proj	816	602.3	609.16	605.26	609.41	0.001244	4.03	209.4	39.13	0.27
1	23536	2%_Proj	1088	602.3	609.79	605.88	610.16	0.001611	4.87	235.47	43.48	0.32
1	23536	1%_Proj	1198	602.3	610.15	606.11	610.54	0.001653	5.09	251.53	47.38	0.32

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23536	0.2%_Proj	1460	602.3	611	606.65	611.45	0.001664	5.48	301.2	66.74	0.33
1	23525	10%_Cur	770	602.3	608.99	605.65	609.22	0.001227	3.84	204.49	39.55	0.28
1	23525	2%_Cur	1030	602.3	609.6	606.24	609.93	0.001558	4.63	228.9	40.85	0.32
1	23525	1%_Cur	1140	602.3	609.96	606.44	610.32	0.001583	4.84	243.59	41.61	0.33
1	23525	0.2%_Cur	1400	602.3	610.79	606.96	611.21	0.001593	5.25	279.04	43.4	0.34
1	23525	10%_Proj	816	602.3	609.15	605.76	609.39	0.001257	3.96	210.73	39.89	0.29
1	23525	2%_Proj	1088	602.3	609.78	606.36	610.13	0.001576	4.75	236.47	41.25	0.33
1	23525	1%_Proj	1198	602.3	610.14	606.58	610.51	0.001593	4.95	251.23	42.01	0.33
1	23525	0.2%_Proj	1460	602.3	610.99	607.06	611.42	0.001581	5.33	287.82	43.83	0.34
1	23500		Bridge									
1	23481	10%_Cur	770	602.3	608.64	605.65	608.9	0.001524	4.14	187.49	38.91	0.31
1	23481	2%_Cur	1030	602.3	608.95	606.24	609.38	0.002255	5.23	198.95	39.6	0.38
1	23481	1%_Cur	1140	602.3	609.17	606.46	609.65	0.002436	5.57	206.93	40.07	0.4
1	23481	0.2%_Cur	1400	602.3	609.61	606.95	610.23	0.0029	6.37	222.9	41.02	0.44
1	23481	10%_Proj	816	602.3	608.76	605.76	609.04	0.001592	4.29	191.79	39.17	0.32
1	23481	2%_Proj	1088	602.3	609.07	606.35	609.52	0.002356	5.41	203.08	39.84	0.39
1	23481	1%_Proj	1198	602.3	609.27	606.57	609.79	0.002541	5.75	210.66	40.29	0.41
1	23481	0.2%_Proj	1460	602.3	609.7	607.06	610.36	0.003001	6.54	226.4	41.22	0.45
1	23465	10%_Cur	770	602.3	608.61	605.16	608.88	0.001495	4.19	186.14	33.66	0.3
1	23465	2%_Cur	1030	602.3	608.89	605.74	609.34	0.002292	5.34	196.01	34.87	0.37
1	23465	1%_Cur	1140	602.3	609.1	605.99	609.6	0.002526	5.73	203.19	35.68	0.39
1	23465	0.2%_Cur	1400	602.3	609.49	606.53	610.17	0.003122	6.62	217.71	37.35	0.44
1	23465	10%_Proj	816	602.3	608.72	605.26	609.01	0.001578	4.35	190.01	34.15	0.31
1	23465	2%_Proj	1088	602.3	609	605.88	609.47	0.002422	5.55	199.67	35.29	0.38
1	23465	1%_Proj	1198	602.3	609.19	606.12	609.73	0.002659	5.93	206.57	36.06	0.4
1	23465	0.2%_Proj	1460	602.3	609.58	606.65	610.3	0.003257	6.81	220.92	37.72	0.45
1	23354	10%_Cur	770	601.5	608.47		608.71	0.001345	3.99	201.47	90.35	0.31
1	23354	2%_Cur	1030	601.5	608.68		609.08	0.002102	5.12	212.66	98.7	0.38
1	23354	1%_Cur	1140	601.5	608.87		609.32	0.002282	5.46	223.81	105.3	0.4
1	23354	0.2%_Cur	1400	601.5	609.23		609.82	0.002736	6.23	247.3	115.67	0.44
1	23354	10%_Proj	816	601.5	608.58		608.84	0.001407	4.14	207.1	93.57	0.31
1	23354	2%_Proj	1088	601.5	608.77		609.2	0.002207	5.31	218.2	102.1	0.39
1	23354	1%_Proj	1198	601.5	608.95		609.44	0.002386	5.64	229.13	107.85	0.41
1	23354	0.2%_Proj	1460	601.5	609.31		609.93	0.002832	6.39	252.75	117.87	0.45

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22771	10%_Cur	770	601.2	607.85	604.71	608.01	0.001008	3.37	318.93	426.88	0.26
1	22771	2%_Cur	1030	601.2	608.39	605.31	608.45	0.000492	2.52	1064.36	509.93	0.19
1	22771	1%_Cur	1140	601.2	608.59	605.56	608.65	0.000512	2.63	1177.93	544.01	0.19
1	22771	0.2%_Cur	1400	601.2	609.02	606.07	609.08	0.000505	2.74	1408.79	609.93	0.19
1	22771	10%_Proj	816	601.2	607.93	604.84	608.1	0.001063	3.5	328.64	428.48	0.27
1	22771	2%_Proj	1088	601.2	608.5	605.43	608.56	0.000495	2.56	1110.83	525.23	0.19
1	22771	1%_Proj	1198	601.2	608.69	605.67	608.75	0.000511	2.66	1230.98	551.36	0.19
1	22771	0.2%_Proj	1460	601.2	609.11	606.17	609.18	0.000502	2.76	1461.52	620.06	0.19
1	22710	10%_Cur	770	601.3	607.87	604.68	607.94	0.000512	2.54	634.76	381.76	0.19
1	22710	2%_Cur	1030	601.3	608.31	605.21	608.41	0.000634	2.98	762.98	424.58	0.22
1	22710	1%_Cur	1140	601.3	608.5	605.42	608.6	0.000681	3.16	824.52	463.06	0.23
1	22710	0.2%_Cur	1400	601.3	608.91	605.91	609.03	0.000734	3.43	976.62	540.9	0.24
1	22710	10%_Proj	816	601.3	607.95	604.78	608.03	0.000535	2.63	657.61	387.84	0.2
1	22710	2%_Proj	1088	601.3	608.41	605.32	608.51	0.000662	3.08	794.67	446.21	0.22
1	22710	1%_Proj	1198	601.3	608.59	605.53	608.7	0.000693	3.22	858.56	473.46	0.23
1	22710	0.2%_Proj	1460	601.3	609	606.04	609.13	0.000756	3.51	1022.64	561.99	0.24
1	22311	10%_Cur	770	601.42	607.67		607.73	0.000527	2.4	531.83	240.42	0.19
1	22311	2%_Cur	1030	601.42	608.08		608.16	0.000628	2.77	631.99	253.02	0.21
1	22311	1%_Cur	1140	601.42	608.25		608.34	0.000655	2.89	676.41	259.57	0.22
1	22311	0.2%_Cur	1400	601.42	608.65		608.75	0.000694	3.12	783.32	275	0.23
1	22311	10%_Proj	816	601.42	607.74		607.81	0.000547	2.47	549.86	242.42	0.2
1	22311	2%_Proj	1088	601.42	608.17		608.25	0.000643	2.83	655.28	256.25	0.22
1	22311	1%_Proj	1198	601.42	608.34		608.43	0.000666	2.94	700.45	263.29	0.22
1	22311	0.2%_Proj	1460	601.42	608.74		608.84	0.0007	3.16	807.74	278.03	0.23
1	22232	10%_Cur	770	601.5	607.34	605.45	607.6	0.002336	4.82	353.88	255.81	0.35
1	22232	2%_Cur	1030	601.5	607.72	606.99	608	0.002639	5.34	459.55	300.54	0.38
1	22232	1%_Cur	1140	601.5	607.95	606.99	608.2	0.002358	5.17	529.09	305.48	0.36
1	22232	0.2%_Cur	1400	601.5	608.41	607.52	608.62	0.002095	5.11	674.64	353.86	0.34
1	22232	10%_Proj	816	601.5	607.41	605.63	607.68	0.002413	4.93	371.27	268.14	0.36
1	22232	2%_Proj	1088	601.5	607.85	606.99	608.11	0.00248	5.25	496.74	303.19	0.37
1	22232	1%_Proj	1198	601.5	608.07	606.99	608.3	0.002238	5.1	564.49	308.74	0.35
1	22232	0.2%_Proj	1460	601.5	608.52	607.55	608.71	0.001981	5.02	714	364.46	0.34
1	22205		Bridge									
1	22191	10%_Cur	770	600.42	606.8	604.35	607.43	0.004531	6.42	141.79	164.91	0.46
1	22191	2%_Cur	1030	600.42	607.31	605.16	607.98	0.004895	7.03	281.92	215.5	0.48

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22191	1%_Cur	1140	600.42	607.5	605.48	608.18	0.005006	7.24	323.67	225.39	0.49
1	22191	0.2%_Cur	1400	600.42	607.9	607.5	608.6	0.005208	7.68	421.02	262.26	0.5
1	22191	10%_Proj	816	600.42	606.9	604.5	607.58	0.004781	6.66	148.46	188.58	0.47
1	22191	2%_Proj	1088	600.42	607.41	605.32	608.08	0.00496	7.15	303.91	220.53	0.49
1	22191	1%_Proj	1198	600.42	607.6	605.64	608.28	0.005047	7.34	345.71	231.09	0.49
1	22191	0.2%_Proj	1460	600.42	607.98	607.58	608.7	0.005297	7.8	443.55	276.49	0.51
1	22056	10%_Cur	770	600.8	606.35	604.91	606.8	0.003549	5.57	208.14	196.1	0.48
1	22056	2%_Cur	1030	600.8	606.85	605.83	607.31	0.003564	6.02	331.66	225.13	0.49
1	22056	1%_Cur	1140	600.8	607.02	606.08	607.51	0.003623	6.22	368.58	232.33	0.5
1	22056	0.2%_Cur	1400	600.8	607.4	606.42	607.92	0.003737	6.64	450.59	246.32	0.51
1	22056	10%_Proj	816	600.8	606.43	605.01	606.91	0.003742	5.79	219.58	203.52	0.5
1	22056	2%_Proj	1088	600.8	606.94	606.01	607.42	0.003598	6.13	351.14	228.82	0.5
1	22056	1%_Proj	1198	600.8	607.11	606.21	607.61	0.003642	6.31	388.05	236.1	0.5
1	22056	0.2%_Proj	1460	600.8	607.47	606.42	608	0.003762	6.73	468.48	249.01	0.52
1	21988	10%_Cur	770	600.6	606.4		606.59	0.001163	3.58	308.85	199.24	0.28
1	21988	2%_Cur	1030	600.6	606.86		607.1	0.001407	4.17	405.67	222.34	0.32
1	21988	1%_Cur	1140	600.6	607.02		607.29	0.001495	4.38	443.21	226.97	0.33
1	21988	0.2%_Cur	1400	600.6	607.38		607.69	0.001684	4.85	524.83	235.34	0.35
1	21988	10%_Proj	816	600.6	606.49		606.69	0.001212	3.69	326.45	205.71	0.29
1	21988	2%_Proj	1088	600.6	606.95		607.2	0.001455	4.29	425.52	224.8	0.32
1	21988	1%_Proj	1198	600.6	607.11		607.38	0.001536	4.49	462.85	229.07	0.33
1	21988	0.2%_Proj	1460	600.6	607.45		607.77	0.001726	4.95	542.39	237.07	0.36
1	20749	10%_Cur	770	598.9	605.36		605.45	0.000713	3.03	530.11	367.05	0.23
1	20749	2%_Cur	1030	598.9	605.71		605.8	0.000755	3.25	661.93	375.05	0.24
1	20749	1%_Cur	1140	598.9	605.84		605.94	0.000772	3.33	711.47	377.96	0.24
1	20749	0.2%_Cur	1400	598.9	606.17		606.26	0.000765	3.44	836.46	385.46	0.24
1	20749	10%_Proj	816	598.9	605.45		605.53	0.000696	3.03	563.96	369.49	0.22
1	20749	2%_Proj	1088	598.9	605.79		605.88	0.000755	3.28	691.78	376.78	0.24
1	20749	1%_Proj	1198	598.9	605.88		605.98	0.000808	3.42	726.55	378.88	0.24
1	20749	0.2%_Proj	1460	598.9	606.26		606.35	0.000748	3.43	870.12	386.71	0.24
1	20719	10%_Cur	799	598.57	605.15	601.73	605.37	0.001252	3.93	263.32	269.66	0.29
1	20719	2%_Cur	1060	598.57	605.38	602.4	605.7	0.001729	4.75	330.25	301.2	0.34
1	20719	1%_Cur	1160	598.57	605.49	602.62	605.83	0.001831	4.95	365.38	330.94	0.35
1	20719	0.2%_Cur	1410	598.57	605.83	603.15	606.16	0.001836	5.13	494.85	421.9	0.35
1	20719	10%_Proj	848	598.57	605.22	601.86	605.46	0.001311	4.06	283.27	275.74	0.29
1	20719	2%_Proj	1118	598.57	605.45	602.53	605.78	0.00179	4.87	350.66	316.15	0.35

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	20719	1%_Proj	1222	598.57	605.48	602.77	605.86	0.002066	5.25	360.57	326.13	0.37
1	20719	0.2%_Proj	1480	598.57	605.94	603.28	606.25	0.001769	5.09	540.04	435.18	0.35
1	20700		Bridge									
1	20654	10%_Cur	799	598.47	603.75	601.68	604.28	0.003681	5.88	145.83	193.23	0.46
1	20654	2%_Cur	1060	598.47	604.15	602.35	604.91	0.004873	7.12	164.38	238	0.53
1	20654	1%_Cur	1160	598.47	604.5	602.6	604.77	0.002275	5.06	430.76	287.21	0.37
1	20654	0.2%_Cur	1410	598.47	604.9	603.2	605.15	0.002119	5.11	556.33	336.96	0.36
1	20654	10%_Proj	848	598.47	603.85	601.82	604.42	0.003841	6.09	150.73	196.02	0.47
1	20654	2%_Proj	1118	598.47	604.43	602.5	604.71	0.002298	5.05	410.93	270.97	0.37
1	20654	1%_Proj	1222	598.47	604.6	602.75	604.87	0.002238	5.08	461.57	305.66	0.37
1	20654	0.2%_Proj	1480	598.47	605	603.57	605.25	0.002088	5.13	592.37	352.76	0.36
1	20539	10%_Cur	799	597.5	603.73		603.82	0.001339	2.83	488.17	340.49	0.22
1	20539	2%_Cur	1060	597.5	604.25		604.33	0.001189	2.84	677.76	375.7	0.21
1	20539	1%_Cur	1160	597.5	604.42		604.5	0.001134	2.83	745.14	381.52	0.2
1	20539	0.2%_Cur	1410	597.5	604.83		604.9	0.001041	2.83	903.06	401.93	0.2
1	20539	10%_Proj	848	597.5	603.86		603.94	0.001289	2.82	533.18	360.65	0.21
1	20539	2%_Proj	1118	597.5	604.35		604.43	0.001155	2.83	717.34	378.89	0.2
1	20539	1%_Proj	1222	597.5	604.53		604.6	0.001107	2.82	785.47	385.52	0.2
1	20539	0.2%_Proj	1480	597.5	604.93		605	0.001039	2.86	945.38	415.05	0.2
1	20061	10%_Cur	799	596.8	601.95	600.83	602.62	0.005564	6.55	124.28	112.95	0.59
1	20061	2%_Cur	1060	596.8	602.43	601.4	603.19	0.005794	7.23	211.36	130.56	0.62
1	20061	1%_Cur	1160	596.8	602.62	601.62	603.4	0.005735	7.4	237.51	145.42	0.62
1	20061	0.2%_Cur	1410	596.8	603.01	602.53	603.85	0.005767	7.86	300.22	176.05	0.63
1	20061	10%_Proj	848	596.8	602.05	600.92	602.76	0.005763	6.78	127.8	118.28	0.6
1	20061	2%_Proj	1118	596.8	602.53	601.53	603.31	0.005845	7.37	224.18	137.64	0.62
1	20061	1%_Proj	1222	596.8	602.72	601.74	603.51	0.005772	7.54	252.03	150.21	0.62
1	20061	0.2%_Proj	1480	596.8	603.1	602.67	603.96	0.005824	7.99	316.46	183.91	0.63
1	18590	10%_Cur	799	594.8	599.97		600.03	0.000799	2.69	796.51	435.38	0.23
1	18590	2%_Cur	1060	594.8	600.36		600.43	0.000861	2.96	969.64	449.42	0.24
1	18590	1%_Cur	1160	594.8	600.47		600.54	0.000911	3.1	1018.31	453.15	0.25
1	18590	0.2%_Cur	1410	594.8	600.79		600.87	0.000966	3.33	1169.19	477.36	0.26
1	18590	10%_Proj	848	594.8	600.05		600.11	0.000814	2.75	829.58	437.34	0.23
1	18590	2%_Proj	1118	594.8	600.44		600.51	0.000876	3.02	1004.5	452.07	0.25
1	18590	1%_Proj	1222	594.8	600.55		600.63	0.000924	3.15	1055.81	463.35	0.25
1	18590	0.2%_Proj	1480	594.8	600.88		600.97	0.00097	3.38	1212.27	481.4	0.26

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	16260	10%_Cur	799	592.7	596.71	596.14	596.98	0.003263	4.8	362.66	296.37	0.45
1	16260	2%_Cur	1060	592.7	597.21		597.45	0.002779	4.84	514.7	310.78	0.43
1	16260	1%_Cur	1160	592.7	597.5		597.71	0.002275	4.59	606.46	314.99	0.39
1	16260	0.2%_Cur	1410	592.7	597.99		598.17	0.001908	4.52	761.52	319.82	0.37
1	16260	10%_Proj	848	592.7	596.81	596.24	597.08	0.00315	4.8	392.44	299.25	0.45
1	16260	2%_Proj	1118	592.7	597.31		597.55	0.002707	4.86	545.74	312.43	0.42
1	16260	1%_Proj	1222	592.7	597.62		597.82	0.002193	4.59	642.73	316.17	0.39
1	16260	0.2%_Proj	1480	592.7	598.09		598.27	0.001895	4.57	792.93	320.77	0.37
1	15225	10%_Cur	799	588.5	595.1		595.28	0.001008	3.57	393.41	340.77	0.26
1	15225	2%_Cur	1060	588.5	595.82		595.99	0.000909	3.66	650.05	378.91	0.25
1	15225	1%_Cur	1160	588.5	596.68		596.77	0.000508	2.97	991.12	410.64	0.19
1	15225	0.2%_Cur	1410	588.5	597.25		597.34	0.00048	3.03	1229.94	425.24	0.19
1	15225	10%_Proj	848	588.5	595.24		595.42	0.000996	3.6	440.37	346.21	0.26
1	15225	2%_Proj	1118	588.5	595.98		596.14	0.000872	3.64	711.07	382.35	0.25
1	15225	1%_Proj	1222	588.5	596.81		596.9	0.000507	3	1043.65	414.34	0.19
1	15225	0.2%_Proj	1480	588.5	597.33		597.42	0.000496	3.1	1265.11	425.91	0.19
1	14388	10%_Cur	799	587.83	593.79		594.09	0.00211	4.62	220.89	280.68	0.37
1	14388	2%_Cur	1060	587.83	594.75		595.01	0.001552	4.48	325.17	352.86	0.33
1	14388	1%_Cur	1160	587.83	596.15		596.29	0.000667	3.4	476.94	425.5	0.22
1	14388	0.2%_Cur	1410	587.83	596.7		596.85	0.000705	3.67	536.06	442.27	0.23
1	14388	10%_Proj	848	587.83	593.97		594.27	0.001995	4.6	240.53	289.79	0.36
1	14388	2%_Proj	1118	587.83	594.96		595.21	0.001456	4.44	347.86	365.76	0.32
1	14388	1%_Proj	1222	587.83	596.27		596.41	0.000689	3.49	489.24	428.8	0.23
1	14388	0.2%_Proj	1480	587.83	596.75		596.92	0.000755	3.81	541.38	444.07	0.24
1	14364	10%_Cur	799	587.83	593.8	590.9	594.01	0.001286	3.74	225.01	245.24	0.3
1	14364	2%_Cur	1060	587.83	594.72	591.57	594.97	0.001233	4.11	274	292.06	0.3
1	14364	1%_Cur	1160	587.83	596.07	591.76	596.26	0.000712	3.59	345.28	377.9	0.24
1	14364	0.2%_Cur	1410	587.83	596.57	592.15	596.81	0.000831	4.05	371.88	397	0.26
1	14364	10%_Proj	848	587.83	593.97	591.02	594.19	0.001282	3.82	234.22	261.57	0.3
1	14364	2%_Proj	1118	587.83	594.91	591.68	595.17	0.001225	4.18	284.14	303.78	0.3
1	14364	1%_Proj	1222	587.83	596.17	591.85	596.37	0.000752	3.72	350.74	381.62	0.24
1	14364	0.2%_Proj	1480	587.83	596.76	592.27	597.01	0.00084	4.14	382	410.05	0.26
1	14330		Bridge									
1	14298	10%_Cur	799	587.6	593.22	590.67	593.54	0.00193	4.54	179.31	108.03	0.36

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	14298	2%_Cur	1060	587.6	593.91	591.27	594.34	0.002184	5.27	207.45	168.35	0.39
1	14298	1%_Cur	1160	587.6	594.18	591.47	594.64	0.002236	5.5	218.36	195.44	0.4
1	14298	0.2%_Cur	1410	587.6	594.75	591.92	595.32	0.002405	6.07	241.98	288.54	0.42
1	14298	10%_Proj	848	587.6	593.35	590.78	593.69	0.001995	4.7	184.51	113.31	0.37
1	14298	2%_Proj	1118	587.6	594.04	591.4	594.5	0.002241	5.42	213.01	180.56	0.4
1	14298	1%_Proj	1222	587.6	594.31	591.59	594.81	0.002293	5.66	224.02	216.18	0.41
1	14298	0.2%_Proj	1480	587.6	595.19	592.04	595.74	0.002123	5.96	259.85	320.36	0.4
1	14176	10%_Cur	799	586.6	593.15	589.31	593.31	0.000831	3.16	277.33	277.4	0.24
1	14176	2%_Cur	1060	586.6	593.86	589.83	594.06	0.000933	3.63	349.57	331.13	0.26
1	14176	1%_Cur	1160	586.6	594.13	590.05	594.35	0.000946	3.76	378.81	346.58	0.26
1	14176	0.2%_Cur	1410	586.6	594.74	590.49	594.98	0.000992	4.09	444.36	376.06	0.27
1	14176	10%_Proj	848	586.6	593.28	589.42	593.45	0.00086	3.26	290.42	287.3	0.24
1	14176	2%_Proj	1118	586.6	594	589.96	594.21	0.000953	3.72	364.3	340.67	0.26
1	14176	1%_Proj	1222	586.6	594.28	590.15	594.5	0.000965	3.86	394.17	351.97	0.27
1	14176	0.2%_Proj	1480	586.6	595.2	590.62	595.42	0.000856	3.96	496.11	402.7	0.26
1	12509	10%_Cur	799	585.2	592.74	590.02	592.75	0.000173	1.53	1617.36	640.79	0.11
1	12509	2%_Cur	1060	585.2	593.49	590.4	593.5	0.000161	1.59	2126.78	716.17	0.11
1	12509	1%_Cur	1160	585.2	593.77	590.52	593.78	0.000161	1.64	2334.95	764.95	0.11
1	12509	0.2%_Cur	1410	585.2	594.46	590.77	594.47	0.000133	1.58	2868.32	804.22	0.1
1	12509	10%_Proj	848	585.2	592.88	590.11	592.89	0.000169	1.54	1708.48	669.03	0.11
1	12509	2%_Proj	1118	585.2	593.64	590.51	593.65	0.000156	1.59	2239.55	731.76	0.11
1	12509	1%_Proj	1222	585.2	593.93	590.56	593.95	0.000155	1.63	2459.71	770.12	0.11
1	12509	0.2%_Proj	1480	585.2	595.01	590.83	595.02	0.000099	1.43	3301.43	946.03	0.09
1	11492	10%_Cur	799	584.5	592.54		592.57	0.000222	1.94	1077.58	520.27	0.13
1	11492	2%_Cur	1060	584.5	593.29		593.33	0.000224	2.08	1334.57	550.03	0.13
1	11492	1%_Cur	1160	584.5	593.58		593.61	0.000222	2.11	1432.65	555.73	0.13
1	11492	0.2%_Cur	1410	584.5	594.29		594.32	0.000212	2.18	1678.19	572.96	0.13
1	11492	10%_Proj	848	584.5	592.68		592.71	0.000224	1.97	1125.3	524.11	0.13
1	11492	2%_Proj	1118	584.5	593.45		593.48	0.000224	2.1	1389.25	553.26	0.13
1	11492	1%_Proj	1222	584.5	593.74		593.78	0.000221	2.14	1489.87	559.14	0.13
1	11492	0.2%_Proj	1480	584.5	594.87		594.9	0.000169	2.03	1883.63	635.42	0.12
1	11208	10%_Cur	799	584.6	592.35		592.47	0.000677	3.13	556.39	520.27	0.22
1	11208	2%_Cur	1060	584.6	593.11		593.23	0.000646	3.31	765.79	592.19	0.22
1	11208	1%_Cur	1160	584.6	593.4		593.52	0.000619	3.32	850.85	615.69	0.22
1	11208	0.2%_Cur	1410	584.6	594.13		594.23	0.000546	3.33	1072.08	817.37	0.21
1	11208	10%_Proj	848	584.6	592.49		592.61	0.000685	3.2	592.86	533.75	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	11208	2%_Proj	1118	584.6	593.27		593.39	0.000634	3.33	812.76	599.42	0.22
1	11208	1%_Proj	1222	584.6	593.57		593.68	0.000606	3.34	900.96	658.09	0.22
1	11208	0.2%_Proj	1480	584.6	594.76		594.84	0.000396	2.98	1268.78	911.5	0.18
1	10810	10%_Cur	799	584.8	592.03		592.17	0.00104	3.63	565.6	473.16	0.27
1	10810	2%_Cur	1060	584.8	592.84		592.96	0.000882	3.66	814.98	598.67	0.26
1	10810	1%_Cur	1160	584.8	593.17		593.27	0.000766	3.52	943.36	652.8	0.24
1	10810	0.2%_Cur	1410	584.8	593.96		594.03	0.000567	3.26	1256.7	854.67	0.21
1	10810	10%_Proj	848	584.8	592.18		592.31	0.001	3.62	606.7	477.76	0.27
1	10810	2%_Proj	1118	584.8	593.02		593.13	0.000819	3.59	886.1	626.97	0.25
1	10810	1%_Proj	1222	584.8	593.35		593.45	0.000716	3.47	1015.95	678.38	0.23
1	10810	0.2%_Proj	1480	584.8	594.65		594.7	0.00037	2.8	1534.46	879.02	0.17
1	10428	10%_Cur	799	584.8	591.19		591.45	0.004638	4.18	200.97	77.94	0.35
1	10428	2%_Cur	1060	584.8	592.01		592.33	0.004489	4.61	252.58	148.56	0.36
1	10428	1%_Cur	1160	584.8	592.38		592.71	0.004185	4.66	280.95	167.15	0.35
1	10428	0.2%_Cur	1410	584.8	593.27		593.6	0.00352	4.72	357.62	278.04	0.33
1	10428	10%_Proj	848	584.8	591.34		591.62	0.004648	4.28	209.52	83.87	0.35
1	10428	2%_Proj	1118	584.8	592.21		592.54	0.004357	4.66	267.47	159.11	0.35
1	10428	1%_Proj	1222	584.8	592.59		592.92	0.004064	4.7	297.5	175.41	0.35
1	10428	0.2%_Proj	1480	584.8	594.29		594.45	0.00167	3.58	675.88	541.32	0.23
1	10310	10%_Cur	799	584.02	591.21	586.2	591.27	0.000275	2	406.89	78.56	0.14
1	10310	2%_Cur	1060	584.02	592.04	586.63	592.12	0.000311	2.31	470.14	85.05	0.16
1	10310	1%_Cur	1160	584.02	592.41	586.79	592.5	0.000311	2.4	499.42	92.09	0.16
1	10310	0.2%_Cur	1410	584.02	593.3	587.15	593.4	0.000307	2.57	569.42	147.75	0.16
1	10310	10%_Proj	848	584.02	591.36	586.29	591.42	0.000284	2.06	418.34	79.65	0.15
1	10310	2%_Proj	1118	584.02	592.24	586.72	592.33	0.000313	2.37	485.95	86.92	0.16
1	10310	1%_Proj	1222	584.02	592.61	586.88	592.71	0.000313	2.45	515.4	96.08	0.16
1	10310	0.2%_Proj	1480	584.02	594.27	587.25	594.35	0.000213	2.31	857.76	446.55	0.13
1	10250		Bridge									
1	10147	10%_Cur	824	584.02	591.07	586.25	591.14	0.000309	2.12	405.71	266.76	0.15
1	10147	2%_Cur	1090	584.02	591.82	586.69	591.91	0.00036	2.47	471.26	302.47	0.17
1	10147	1%_Cur	1200	584.02	592.14	586.86	592.24	0.00037	2.58	499.75	327.08	0.17
1	10147	0.2%_Cur	1450	584.02	592.87	587.23	592.98	0.000381	2.79	564.68	387.19	0.18
1	10147	10%_Proj	875	584.02	591.22	586.34	591.29	0.000322	2.2	418.09	278.59	0.16
1	10147	2%_Proj	1150	584.02	591.99	586.79	592.09	0.000367	2.53	486.62	318.15	0.17
1	10147	1%_Proj	1258	584.02	592.3	586.93	592.41	0.000375	2.64	514.58	333.64	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	10147	0.2%_Proj	1522	584.02	593.93	587.32	593.98	0.00017	2.03	1585.32	588.59	0.12
1	9967	10%_Cur	824	584.4	590.77	588.2	590.99	0.001488	3.98	308.31	222.68	0.32
1	9967	2%_Cur	1090	584.4	591.5	588.76	591.75	0.00147	4.34	394.07	230.05	0.32
1	9967	1%_Cur	1200	584.4	591.83	588.96	592.08	0.001414	4.42	433.04	241.1	0.32
1	9967	0.2%_Cur	1450	584.4	592.58	589.38	592.83	0.00127	4.53	525.13	311.73	0.31
1	9967	10%_Proj	875	584.4	590.91	588.3	591.14	0.001496	4.07	324.44	223.94	0.32
1	9967	2%_Proj	1150	584.4	591.67	588.87	591.92	0.001442	4.39	414.92	232.37	0.32
1	9967	1%_Proj	1258	584.4	592	589.07	592.25	0.001384	4.46	453.63	281.19	0.32
1	9967	0.2%_Proj	1522	584.4	593.87	589.54	593.93	0.000371	2.76	1435.32	476.92	0.17
1	9667	10%_Cur	824	584.1	590.5	588.11	590.62	0.000921	3.32	515.35	260.02	0.26
1	9667	2%_Cur	1090	584.1	591.31	588.95	591.41	0.000705	3.2	742.93	301.9	0.23
1	9667	1%_Cur	1200	584.1	591.67	589.12	591.76	0.000628	3.14	854.6	329.83	0.22
1	9667	0.2%_Cur	1450	584.1	592.5	589.48	592.56	0.000444	2.86	1140.97	374.84	0.19
1	9667	10%_Proj	875	584.1	590.65	588.54	590.77	0.000883	3.31	555.83	268.95	0.25
1	9667	2%_Proj	1150	584.1	591.51	589.05	591.6	0.000648	3.13	803.24	313.06	0.22
1	9667	1%_Proj	1258	584.1	591.86	589.19	591.94	0.000577	3.07	918.13	335.06	0.21
1	9667	0.2%_Proj	1522	584.1	593.82	589.59	593.85	0.000186	2.07	1678.65	443.13	0.13
1	9411	10%_Cur	824	583.7	590.3	587.87	590.4	0.000932	3.11	595.09	269.65	0.25
1	9411	2%_Cur	1090	583.7	591.16	589.01	591.24	0.000707	3.02	831.55	279.46	0.22
1	9411	1%_Cur	1200	583.7	591.54	589.17	591.61	0.000627	2.97	936.34	284.8	0.21
1	9411	0.2%_Cur	1450	583.7	592.39	589.43	592.46	0.00051	2.93	1202.91	381.99	0.2
1	9411	10%_Proj	875	583.7	590.46	588.44	590.56	0.000885	3.1	639.19	271.14	0.25
1	9411	2%_Proj	1150	583.7	591.37	589.04	591.45	0.00066	2.99	889.6	282.42	0.22
1	9411	1%_Proj	1258	583.7	591.73	589.23	591.81	0.000606	2.98	992.29	300.08	0.21
1	9411	0.2%_Proj	1522	583.7	593.76	589.48	593.8	0.000257	2.35	1845.11	513.85	0.14
1	9112	10%_Cur	824	583.3	589.98	587.35	590.11	0.001061	3.31	464.64	234.27	0.27
1	9112	2%_Cur	1090	583.3	590.93	588.03	591.04	0.00077	3.18	700.96	289.75	0.24
1	9112	1%_Cur	1200	583.3	591.32	588.24	591.43	0.000695	3.17	822.91	329.7	0.23
1	9112	0.2%_Cur	1450	583.3	592.24	589.11	592.32	0.0005	2.95	1144.83	375.58	0.2
1	9112	10%_Proj	875	583.3	590.16	587.53	590.29	0.000997	3.29	507.53	237.4	0.26
1	9112	2%_Proj	1150	583.3	591.14	588.15	591.25	0.000742	3.21	765.5	317.38	0.23
1	9112	1%_Proj	1258	583.3	591.53	588.47	591.64	0.000646	3.12	893.59	348.59	0.22
1	9112	0.2%_Proj	1522	583.3	593.69	589.2	593.74	0.000218	2.21	1805.7	575.51	0.13
1	8693	10%_Cur	824	582.7	589.5	587	589.65	0.001184	3.68	449.46	193.21	0.29
1	8693	2%_Cur	1090	582.7	590.59	587.69	590.72	0.000816	3.47	665.51	199.13	0.24

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8693	1%_Cur	1200	582.7	591.03	587.95	591.15	0.00072	3.41	752.67	200.78	0.23
1	8693	0.2%_Cur	1450	582.7	592.01	588.43	592.11	0.000565	3.31	950.98	205.75	0.21
1	8693	10%_Proj	875	582.7	589.71	587.17	589.86	0.00109	3.63	491.92	194.99	0.28
1	8693	2%_Proj	1150	582.7	590.83	587.84	590.95	0.000761	3.44	712.97	199.93	0.24
1	8693	1%_Proj	1258	582.7	591.26	588.07	591.37	0.000678	3.39	798.7	202	0.23
1	8693	0.2%_Proj	1522	582.7	593.58	588.56	593.64	0.000277	2.63	1286.36	221.51	0.15
1	8419	10%_Cur	824	582.5	589.21		589.37	0.000922	3.43	371.86	245.8	0.26
1	8419	2%_Cur	1090	582.5	590.35		590.51	0.000728	3.46	519.56	270.44	0.24
1	8419	1%_Cur	1200	582.5	590.8		590.95	0.000672	3.47	577.47	278.88	0.23
1	8419	0.2%_Cur	1450	582.5	591.8		591.95	0.000571	3.5	706.3	301.27	0.22
1	8419	10%_Proj	875	582.5	589.44		589.6	0.000874	3.44	401.58	252.67	0.25
1	8419	2%_Proj	1150	582.5	590.6		590.75	0.000697	3.47	551.16	274.63	0.23
1	8419	1%_Proj	1258	582.5	591.04		591.19	0.000645	3.48	607.76	284.21	0.23
1	8419	0.2%_Proj	1522	582.5	593.46		593.56	0.000298	2.86	920.41	335.53	0.16
1	8391	10%_Cur	824	582.5	588.84	586.29	589.25	0.002399	5.2	170.3	215.79	0.39
1	8391	2%_Cur	1090	582.5	589.89	586.94	590.37	0.002234	5.65	225.35	263.73	0.39
1	8391	1%_Cur	1200	582.5	590.32	587.21	590.82	0.002136	5.77	250.94	277.82	0.39
1	8391	0.2%_Cur	1450	582.5	591.3	587.73	591.81	0.001896	5.93	310.97	376.54	0.37
1	8391	10%_Proj	875	582.5	589.05	586.44	589.48	0.002368	5.3	180.41	220.71	0.39
1	8391	2%_Proj	1150	582.5	590.13	587.09	590.62	0.002183	5.72	239.18	271.57	0.39
1	8391	1%_Proj	1258	582.5	590.55	587.33	591.05	0.002081	5.82	264.74	310.57	0.38
1	8391	0.2%_Proj	1522	582.5	593.24	587.88	593.55	0.000909	4.75	430.08	594.5	0.27
1	8365		Bridge									
1	8349	10%_Cur	824	582.3	588.16	586.02	588.57	0.002696	5.17	168.62	113.81	0.42
1	8349	2%_Cur	1090	582.3	588.86	586.61	589.39	0.002925	5.9	203.27	185.71	0.44
1	8349	1%_Cur	1200	582.3	589.13	586.83	589.71	0.002994	6.16	217.6	257.37	0.45
1	8349	0.2%_Cur	1450	582.3	589.71	587.3	590.39	0.003126	6.71	250.73	319.6	0.47
1	8349	10%_Proj	875	582.3	588.31	586.16	588.74	0.002732	5.31	175.66	125.62	0.42
1	8349	2%_Proj	1150	582.3	589.01	586.74	589.57	0.002959	6.04	211.23	212.37	0.45
1	8349	1%_Proj	1258	582.3	589.27	586.96	589.87	0.003031	6.3	225.01	279.49	0.46
1	8349	0.2%_Proj	1522	582.3	589.9	587.44	590.59	0.003106	6.82	262.97	326.36	0.47
1	8318	10%_Cur	824	582.1	588.22	585.81	588.39	0.001235	3.48	327.1	157.33	0.29
1	8318	2%_Cur	1090	582.1	588.98	586.25	589.17	0.001173	3.76	437	187.62	0.29
1	8318	1%_Cur	1200	582.1	589.26	586.46	589.47	0.001173	3.9	485.48	221.56	0.29
1	8318	0.2%_Cur	1450	582.1	589.89	586.9	590.1	0.001088	4.03	607.7	256.34	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8318	10%_Proj	875	582.1	588.38	585.89	588.56	0.001214	3.53	349.11	166.6	0.29
1	8318	2%_Proj	1150	582.1	589.14	586.35	589.34	0.001161	3.82	463.19	203.31	0.29
1	8318	1%_Proj	1258	582.1	589.41	586.59	589.62	0.001171	3.96	513.26	232.16	0.29
1	8318	0.2%_Proj	1522	582.1	590.09	587.03	590.3	0.001042	4.03	647.23	277.34	0.28
1	8227	10%_Cur	824	582	587.46	585.97	588.15	0.004683	6.87	178.84	125.22	0.55
1	8227	2%_Cur	1090	582	588.38		588.96	0.003582	6.74	300.18	154.74	0.49
1	8227	1%_Cur	1200	582	588.73		589.27	0.00324	6.66	347.29	210.67	0.47
1	8227	0.2%_Cur	1450	582	589.43		589.92	0.002767	6.61	442.57	304.64	0.44
1	8227	10%_Proj	875	582	587.64	586.12	588.32	0.004473	6.88	202.04	137.9	0.54
1	8227	2%_Proj	1150	582	588.57		589.13	0.003368	6.68	326.96	180.43	0.48
1	8227	1%_Proj	1258	582	588.9		589.43	0.003107	6.64	370.33	234.83	0.47
1	8227	0.2%_Proj	1522	582	589.65		590.13	0.0026	6.55	473.43	333.08	0.43
1	7993	10%_Cur	824	580.3	586.9		587.31	0.00235	5.29	211.03	85.87	0.4
1	7993	2%_Cur	1090	580.3	587.85		588.28	0.002099	5.58	299.79	120.41	0.39
1	7993	1%_Cur	1200	580.3	588.21		588.65	0.002032	5.7	336.55	130.58	0.39
1	7993	0.2%_Cur	1450	580.3	588.93		589.38	0.001889	5.89	413.87	135.85	0.38
1	7993	10%_Proj	875	580.3	587.09		587.51	0.002298	5.36	228.28	90.07	0.4
1	7993	2%_Proj	1150	580.3	588.05		588.49	0.00207	5.66	320.08	129.36	0.39
1	7993	1%_Proj	1258	580.3	588.38		588.82	0.001991	5.74	355.24	131.77	0.39
1	7993	0.2%_Proj	1522	580.3	589.18		589.61	0.001805	5.88	440.41	137.79	0.38
1	7542	10%_Cur	824	578.4	586.37		586.6	0.000987	3.85	232.95	59.13	0.27
1	7542	2%_Cur	1090	578.4	587.3		587.59	0.001069	4.38	298.56	86.43	0.28
1	7542	1%_Cur	1200	578.4	587.64		587.96	0.001091	4.56	330.73	95.83	0.29
1	7542	0.2%_Cur	1450	578.4	588.36		588.71	0.001127	4.92	402.39	106.19	0.3
1	7542	10%_Proj	875	578.4	586.56		586.8	0.001005	3.96	244.46	62.72	0.27
1	7542	2%_Proj	1150	578.4	587.49		587.79	0.001083	4.48	316.16	93.96	0.29
1	7542	1%_Proj	1258	578.4	587.82		588.14	0.0011	4.65	347.57	97.91	0.29
1	7542	0.2%_Proj	1522	578.4	588.62		588.97	0.0011	4.95	430.44	109.79	0.3
1	7102	10%_Cur	824	578.2	585.96		586.16	0.000979	3.69	291.36	87.74	0.27
1	7102	2%_Cur	1090	578.2	586.89		587.12	0.000978	4.06	375.44	93.78	0.27
1	7102	1%_Cur	1200	578.2	587.24		587.48	0.000979	4.2	408.54	96.3	0.27
1	7102	0.2%_Cur	1450	578.2	587.94		588.22	0.000995	4.5	478.73	103.05	0.28
1	7102	10%_Proj	875	578.2	586.15		586.36	0.000979	3.77	308.06	88.85	0.27
1	7102	2%_Proj	1150	578.2	587.08		587.32	0.000977	4.14	393.82	95.19	0.27
1	7102	1%_Proj	1258	578.2	587.41		587.66	0.00098	4.27	425.4	97.54	0.28
1	7102	0.2%_Proj	1522	578.2	588.22		588.5	0.000962	4.53	507.52	106.83	0.28

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6688	10%_Cur	824	578	585.54	581.56	585.76	0.000959	3.79	233.05	96.25	0.26
1	6688	2%_Cur	1090	578	586.39	582.19	586.69	0.001094	4.39	275.17	242.93	0.28
1	6688	1%_Cur	1200	578	586.71	582.43	587.04	0.001143	4.62	291.88	354.22	0.29
1	6688	0.2%_Cur	1450	578	587.36	582.91	587.75	0.001255	5.1	327.7	578.22	0.31
1	6688	10%_Proj	875	578	585.71	581.67	585.95	0.000987	3.91	241.35	112.72	0.27
1	6688	2%_Proj	1150	578	586.57	582.32	586.88	0.00112	4.51	284.48	293.67	0.29
1	6688	1%_Proj	1258	578	586.87	582.54	587.21	0.001169	4.73	300.42	442.72	0.3
1	6688	0.2%_Proj	1522	578	587.64	583.05	588.04	0.001228	5.16	344.66	685.32	0.31
1	6557	10%_Cur	824	577.8	585.55	580.7	585.64	0.000399	2.54	341.5	267.98	0.17
1	6557	2%_Cur	1090	577.8	586.42	581.22	586.55	0.000446	2.91	408.2	493.25	0.19
1	6557	1%_Cur	1200	577.8	586.78	581.43	586.89	0.000405	2.86	517.33	682.39	0.18
1	6557	0.2%_Cur	1450	577.8	587.46	581.85	587.58	0.000409	3.04	613.08	852.24	0.18
1	6557	10%_Proj	875	577.8	585.72	580.81	585.83	0.000409	2.62	354.13	314.34	0.18
1	6557	2%_Proj	1150	577.8	586.63	581.34	586.74	0.000404	2.83	497.72	588.2	0.18
1	6557	1%_Proj	1258	577.8	586.94	581.51	587.06	0.000406	2.91	540.03	726.19	0.18
1	6557	0.2%_Proj	1522	577.8	587.75	581.96	587.87	0.000387	3.03	657.58	991.01	0.18
1	6514	10%_Cur	824	578	585.37	582.03	585.58	0.001113	3.73	226.11	168.91	0.28
1	6514	2%_Cur	1090	578	586.2	582.63	586.48	0.001199	4.25	267.58	685.83	0.3
1	6514	1%_Cur	1200	578	586.51	582.86	586.81	0.001232	4.45	284.13	761.61	0.3
1	6514	0.2%_Cur	1450	578	587.13	583.32	587.48	0.001306	4.86	319.74	896.93	0.32
1	6514	10%_Proj	875	578	585.54	582.14	585.76	0.001131	3.84	234.27	210.77	0.28
1	6514	2%_Proj	1150	578	586.37	582.77	586.66	0.001216	4.36	276.71	713.31	0.3
1	6514	1%_Proj	1258	578	586.66	582.97	586.98	0.00125	4.55	292.74	766.98	0.31
1	6514	0.2%_Proj	1522	578	587.41	583.42	587.77	0.001249	4.88	336.72	1035.96	0.31
1	6490		Bridge									
1	6455	10%_Cur	824	577.4	585.29	581.92	585.51	0.001131	3.74	223.78	631.65	0.28
1	6455	2%_Cur	1090	577.4	586.1	582.55	586.39	0.001234	4.29	261.97	710.92	0.3
1	6455	1%_Cur	1200	577.4	586.4	582.77	586.71	0.001274	4.49	276.49	746.26	0.31
1	6455	0.2%_Cur	1450	577.4	586.94	583.23	587.32	0.001414	4.99	302.83	1001.03	0.33
1	6455	10%_Proj	875	577.4	585.46	582.06	585.69	0.001151	3.85	231.39	672.13	0.29
1	6455	2%_Proj	1150	577.4	586.27	582.68	586.57	0.001255	4.4	270.08	719.03	0.3
1	6455	1%_Proj	1258	577.4	586.55	582.9	586.87	0.001297	4.6	283.68	802.17	0.31
1	6455	0.2%_Proj	1522	577.4	587.11	583.37	587.51	0.001433	5.1	311.23	1118.99	0.33
1	6388	10%_Cur	824	577.1	585.2	581.36	585.43	0.001045	3.89	222.88	237.97	0.27

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6388	2%_Cur	1090	577.1	585.99	582.02	586.3	0.001199	4.51	260.68	361.09	0.3
1	6388	1%_Cur	1200	577.1	586.28	582.27	586.62	0.00126	4.75	275.38	383.93	0.31
1	6388	0.2%_Cur	1450	577.1	586.87	582.81	587.22	0.001254	4.98	358.31	552.81	0.31
1	6388	10%_Proj	875	577.1	585.36	581.49	585.61	0.001077	4.02	230.37	275.06	0.28
1	6388	2%_Proj	1150	577.1	586.15	582.16	586.48	0.001231	4.64	268.84	371.1	0.3
1	6388	1%_Proj	1258	577.1	586.42	582.41	586.78	0.001293	4.87	282.9	402.29	0.31
1	6388	0.2%_Proj	1522	577.1	587.04	582.94	587.4	0.001253	5.05	373.96	669.76	0.31
1	5650	10%_Cur	824	576.9	584.07	581.07	584.42	0.001812	4.79	179.77	69.95	0.35
1	5650	2%_Cur	1090	576.9	584.56	581.76	585.07	0.002383	5.79	205.35	160.22	0.41
1	5650	1%_Cur	1200	576.9	584.72	582.02	585.3	0.002612	6.17	215.72	183.49	0.43
1	5650	0.2%_Cur	1450	576.9	585.09	582.54	585.8	0.003077	6.95	240.68	260.22	0.47
1	5650	10%_Proj	875	576.9	584.17	581.21	584.55	0.001924	4.99	184.22	90.53	0.36
1	5650	2%_Proj	1150	576.9	584.66	581.9	585.2	0.002499	5.99	211.44	174.4	0.42
1	5650	1%_Proj	1258	576.9	584.8	582.13	585.41	0.002751	6.38	220.27	192.8	0.44
1	5650	0.2%_Proj	1522	576.9	585.21	582.69	585.97	0.003175	7.14	251.42	327.41	0.48
1	5466	10%_Cur	824	576.8	583.89	580.87	584.1	0.001326	3.88	276.32	344.06	0.3
1	5466	2%_Cur	1090	576.8	584.43	581.62	584.66	0.001358	4.2	371.65	406.69	0.31
1	5466	1%_Cur	1200	576.8	584.63	581.91	584.86	0.001365	4.3	405.93	440.11	0.31
1	5466	0.2%_Cur	1450	576.8	585.08	582.84	585.31	0.001325	4.45	484.3	482.4	0.31
1	5466	10%_Proj	875	576.8	584	581.02	584.21	0.001345	3.97	295.08	351.18	0.3
1	5466	2%_Proj	1150	576.8	584.55	581.8	584.78	0.001351	4.24	392.09	428.41	0.31
1	5466	1%_Proj	1258	576.8	584.71	582.03	584.95	0.001388	4.38	420.38	449.35	0.31
1	5466	0.2%_Proj	1522	576.8	585.23	582.98	585.46	0.001276	4.44	511.62	515.98	0.3
1	5293	10%_Cur	824	576.6	583.72	580.53	583.89	0.000994	3.51	410.76	354.87	0.26
1	5293	2%_Cur	1090	576.6	584.24	581.21	584.44	0.001133	3.98	507.69	412.49	0.29
1	5293	1%_Cur	1200	576.6	584.42	581.46	584.63	0.00119	4.16	542.65	445.64	0.29
1	5293	0.2%_Cur	1450	576.6	584.85	582.12	585.08	0.001268	4.49	624.3	616.02	0.31
1	5293	10%_Proj	875	576.6	583.82	580.67	583.99	0.001027	3.61	429.57	371.18	0.27
1	5293	2%_Proj	1150	576.6	584.35	581.35	584.55	0.001155	4.07	528.89	433.37	0.29
1	5293	1%_Proj	1258	576.6	584.49	581.59	584.72	0.001236	4.28	556.57	455.45	0.3
1	5293	0.2%_Proj	1522	576.6	585	582.31	585.24	0.001253	4.53	654.38	642.3	0.31
1	5103	10%_Cur	824	575.6	583.66	580.4	583.73	0.000496	2.46	453.22	508.57	0.19
1	5103	2%_Cur	1090	575.6	584.17	580.82	584.25	0.000584	2.83	563.37	720.2	0.21
1	5103	1%_Cur	1200	575.6	584.38	580.97	584.45	0.000511	2.71	843.07	834.77	0.19
1	5103	0.2%_Cur	1450	575.6	584.82	581.31	584.89	0.000515	2.85	1044.44	984.12	0.2
1	5103	10%_Proj	875	575.6	583.76	580.49	583.83	0.000517	2.54	471.17	531.63	0.19

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	5103	2%_Proj	1150	575.6	584.28	580.91	584.37	0.000597	2.9	596.23	781.79	0.21
1	5103	1%_Proj	1258	575.6	584.46	581.06	584.53	0.000526	2.77	876.02	861.65	0.2
1	5103	0.2%_Proj	1522	575.6	584.98	581.39	585.05	0.000495	2.84	1120.98	1002.14	0.19
1	4940	10%_Cur	824	576.4	583.62	579.9	583.68	0.000346	2.02	456.52	370.4	0.16
1	4940	2%_Cur	1090	576.4	584.13	580.27	584.19	0.000418	2.37	603.3	784.68	0.18
1	4940	1%_Cur	1200	576.4	584.33	580.41	584.39	0.000435	2.47	681.23	891.32	0.18
1	4940	0.2%_Cur	1450	576.4	584.76	580.7	584.83	0.000449	2.63	902.91	971.43	0.19
1	4940	10%_Proj	875	576.4	583.72	579.97	583.78	0.000363	2.1	477.8	447.61	0.16
1	4940	2%_Proj	1150	576.4	584.24	580.35	584.3	0.000428	2.43	645.71	844.8	0.18
1	4940	1%_Proj	1258	576.4	584.4	580.48	584.47	0.00045	2.53	726.07	912.9	0.18
1	4940	0.2%_Proj	1522	576.4	584.93	580.8	584.99	0.000435	2.64	984.2	1008.81	0.18
1	4720	10%_Cur	824	576.3	583.4	579.57	583.56	0.000776	3.27	403.63	605.91	0.23
1	4720	2%_Cur	1090	576.3	583.85	580.15	584.05	0.000936	3.76	563.9	1110.02	0.26
1	4720	1%_Cur	1200	576.3	584.05	580.36	584.25	0.000953	3.88	638.28	1293.86	0.26
1	4720	0.2%_Cur	1450	576.3	584.62	580.85	584.72	0.00057	3.16	1116.12	1458.22	0.21
1	4720	10%_Proj	875	576.3	583.49	579.69	583.65	0.000818	3.38	428.97	672.5	0.24
1	4720	2%_Proj	1150	576.3	583.96	580.27	584.16	0.000947	3.83	604.36	1212.96	0.26
1	4720	1%_Proj	1258	576.3	584.11	580.48	584.31	0.000994	3.98	661.25	1321.78	0.27
1	4720	0.2%_Proj	1522	576.3	584.8	580.99	584.89	0.000522	3.08	1211.93	1480.58	0.2
1	4626	10%_Cur	824	576.2	583.32	580.22	583.48	0.000957	3.42	482.48	969.81	0.26
1	4626	2%_Cur	1090	576.2	583.87	580.83	583.94	0.000582	2.84	993.36	1289.35	0.21
1	4626	1%_Cur	1200	576.2	584.07	581.03	584.14	0.000527	2.77	1134.14	1488.49	0.2
1	4626	0.2%_Cur	1450	576.2	584.61	581.49	584.66	0.000389	2.52	1499.37	1753.84	0.17
1	4626	10%_Proj	875	576.2	583.41	580.34	583.57	0.00098	3.49	517.92	1015.31	0.26
1	4626	2%_Proj	1150	576.2	583.98	580.95	584.05	0.000551	2.8	1070.34	1421.04	0.2
1	4626	1%_Proj	1258	576.2	584.14	581.15	584.21	0.000531	2.8	1177.69	1510.28	0.2
1	4626	0.2%_Proj	1522	576.2	584.79	581.8	584.83	0.000349	2.43	1620.98	1796.09	0.16
1	4601	10%_Cur	824	576.1	583.26	580.18	583.45	0.001106	3.64	366.35	1064.75	0.28
1	4601	2%_Cur	1090	576.1	583.82	580.79	583.92	0.000711	3.12	943.33	1486.38	0.23
1	4601	1%_Cur	1200	576.1	584.04	581.03	584.13	0.000628	3.01	1113.05	1638.32	0.22
1	4601	0.2%_Cur	1450	576.1	584.59	581.46	584.65	0.000432	2.64	1548.48	1823.5	0.18
1	4601	10%_Proj	875	576.1	583.33	580.31	583.53	0.001168	3.77	395.92	1135.5	0.29
1	4601	2%_Proj	1150	576.1	583.94	580.93	584.03	0.000668	3.07	1035.48	1588.21	0.22
1	4601	1%_Proj	1258	576.1	584.1	581.14	584.19	0.000628	3.03	1164.46	1668.84	0.22
1	4601	0.2%_Proj	1522	576.1	584.78	581.57	584.82	0.000381	2.53	1691.5	1833.51	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	4486	10%_Cur	824	575.7	583.18	579.43	583.33	0.000784	3.26	491.68	1378.14	0.24
1	4486	2%_Cur	1090	575.7	583.69	580.04	583.84	0.000798	3.47	784.54	1674.82	0.24
1	4486	1%_Cur	1200	575.7	583.9	580.27	584.04	0.000762	3.47	912.43	1766.79	0.24
1	4486	0.2%_Cur	1450	575.7	584.57	580.78	584.61	0.000293	2.29	2024.41	1878.43	0.15
1	4486	10%_Proj	875	575.7	583.25	579.56	583.41	0.000825	3.37	531.38	1434.14	0.24
1	4486	2%_Proj	1150	575.7	583.8	580.17	583.95	0.00078	3.48	853.89	1732.98	0.24
1	4486	1%_Proj	1258	575.7	584.07	580.39	584.13	0.000417	2.61	1544.88	1805.56	0.18
1	4486	0.2%_Proj	1522	575.7	584.75	580.91	584.79	0.00026	2.2	2202.07	1912.87	0.14
1	4426	10%_Cur	824	575.7	583.11	579.55	583.28	0.000888	3.44	502.83	1567.71	0.25
1	4426	2%_Cur	1090	575.7	583.7	580.18	583.78	0.000538	2.86	1353.16	2008.76	0.2
1	4426	1%_Cur	1200	575.7	583.92	580.42	583.99	0.000483	2.77	1591.65	2049.82	0.19
1	4426	0.2%_Cur	1450	575.7	584.55	580.93	584.59	0.000313	2.37	2273.04	2150.78	0.15
1	4426	10%_Proj	875	575.7	583.24	579.68	583.35	0.000669	3.03	880.54	1665.04	0.22
1	4426	2%_Proj	1150	575.7	583.82	580.31	583.89	0.000506	2.81	1482.8	2033.95	0.19
1	4426	1%_Proj	1258	575.7	584.04	580.54	584.1	0.000449	2.7	1723.09	2061.4	0.18
1	4426	0.2%_Proj	1522	575.7	584.74	581.08	584.77	0.000278	2.27	2475.28	2163.72	0.15
1	4162	10%_Cur	824	575.5	582.95	580.04	583.05	0.000745	2.92	764.22	1130.14	0.23
1	4162	2%_Cur	1090	575.5	583.56	580.63	583.63	0.000555	2.72	1320.8	1663.81	0.2
1	4162	1%_Cur	1200	575.5	583.8	580.82	583.86	0.000501	2.66	1570.53	1804.39	0.19
1	4162	0.2%_Cur	1450	575.5	584.47	581.26	584.51	0.000303	2.22	2322.37	2122.72	0.15
1	4162	10%_Proj	875	575.5	583.07	580.17	583.17	0.00072	2.92	862.5	1252.29	0.23
1	4162	2%_Proj	1150	575.5	583.69	580.74	583.76	0.000516	2.67	1457.12	1735.2	0.2
1	4162	1%_Proj	1258	575.5	583.93	580.92	583.98	0.000461	2.59	1715.2	1886.04	0.19
1	4162	0.2%_Proj	1522	575.5	584.67	581.36	584.7	0.000266	2.12	2540.04	2163.84	0.14
1	4085	10%_Cur	824	575.5	582.85	578.7	582.99	0.000668	3.09	374.3	1243.14	0.22
1	4085	2%_Cur	1090	575.5	583.42	579.25	583.58	0.000723	3.41	676.75	1882.7	0.23
1	4085	1%_Cur	1200	575.5	583.65	579.5	583.8	0.000709	3.45	832.78	1969.6	0.23
1	4085	0.2%_Cur	1450	575.5	584.37	579.97	584.47	0.000508	3.12	1343.42	2166.98	0.2
1	4085	10%_Proj	875	575.5	582.96	578.82	583.11	0.000694	3.19	412.06	1453.13	0.23
1	4085	2%_Proj	1150	575.5	583.54	579.4	583.7	0.000716	3.44	761.02	1938.18	0.23
1	4085	1%_Proj	1258	575.5	583.78	579.62	583.93	0.000678	3.42	927.19	1999.22	0.23
1	4085	0.2%_Proj	1522	575.5	584.64	580.09	584.68	0.000264	2.3	2290.16	2188.58	0.14
1	3935	10%_Cur	824	575.16	582.72	579.64	582.87	0.000932	3.33	486.9	1140.74	0.26
1	3935	2%_Cur	1090	575.16	583.31	580.21	583.45	0.000869	3.46	813.73	1597.07	0.25
1	3935	1%_Cur	1200	575.16	583.55	580.46	583.68	0.00081	3.43	986.81	1793.09	0.25
1	3935	0.2%_Cur	1450	575.16	584.31	580.9	584.39	0.000495	2.9	1562.23	2114.76	0.2

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	3935	10%_Proj	875	575.16	582.83	579.75	582.99	0.000931	3.38	540.81	1250.68	0.26
1	3935	2%_Proj	1150	575.16	583.44	580.36	583.58	0.000848	3.47	905.61	1749.54	0.25
1	3935	1%_Proj	1258	575.16	583.7	580.58	583.82	0.000755	3.36	1094.05	1857.33	0.24
1	3935	0.2%_Proj	1522	575.16	584.56	581.03	584.63	0.000419	2.73	1754.13	2203.73	0.18
1	3657	10%_Cur	824	575.4	582.56	579.18	582.65	0.000588	2.71	835.93	1490.03	0.21
1	3657	2%_Cur	1090	575.4	583.19	579.78	583.26	0.000457	2.57	1357.44	1663.64	0.18
1	3657	1%_Cur	1200	575.4	583.45	580.01	583.51	0.000407	2.49	1600.48	1708.89	0.18
1	3657	0.2%_Cur	1450	575.4	584.25	580.48	584.28	0.000244	2.09	2444.44	1909.68	0.14
1	3657	10%_Proj	875	575.4	582.69	579.32	582.77	0.000562	2.69	928.82	1525.96	0.2
1	3657	2%_Proj	1150	575.4	583.33	579.91	583.39	0.000433	2.54	1486.98	1690.58	0.18
1	3657	1%_Proj	1258	575.4	583.6	580.13	583.65	0.000374	2.43	1749.55	1747.38	0.17
1	3657	0.2%_Proj	1522	575.4	584.51	580.61	584.54	0.000212	2	2750.94	1995	0.13
1	3513	10%_Cur	824	575.2	582.53		582.57	0.000361	2.14	1357.88	1733.88	0.16
1	3513	2%_Cur	1090	575.2	583.18		583.2	0.00024	1.88	2157.47	1876.21	0.13
1	3513	1%_Cur	1200	575.2	583.44		583.46	0.000206	1.79	2481.13	1947.66	0.12
1	3513	0.2%_Cur	1450	575.2	584.24		584.25	0.000121	1.49	3495.24	2122.67	0.1
1	3513	10%_Proj	875	575.2	582.66		582.7	0.000331	2.08	1514.8	1773.99	0.15
1	3513	2%_Proj	1150	575.2	583.32		583.34	0.000221	1.83	2331.74	1910.23	0.13
1	3513	1%_Proj	1258	575.2	583.59		583.61	0.000187	1.74	2673.5	2005.03	0.12
1	3513	0.2%_Proj	1522	575.2	584.5		584.51	0.000103	1.41	3827.29	2162.23	0.09
1	3388	10%_Cur	824	575	582.46		582.52	0.000432	2.38	1173.96	1788.99	0.18
1	3388	2%_Cur	1090	575	583.14		583.17	0.000266	2.01	2046.05	2010.88	0.14
1	3388	1%_Cur	1200	575	583.41		583.43	0.000228	1.92	2403.47	2039.74	0.13
1	3388	0.2%_Cur	1450	575	584.23		584.24	0.000125	1.54	3527.48	2079.3	0.1
1	3388	10%_Proj	875	575	582.6		582.65	0.00039	2.3	1344.02	1862.7	0.17
1	3388	2%_Proj	1150	575	583.28		583.31	0.000243	1.96	2239.37	2030.38	0.14
1	3388	1%_Proj	1258	575	583.56		583.59	0.000204	1.84	2616.78	2045.32	0.12
1	3388	0.2%_Proj	1522	575	584.49		584.5	0.000105	1.44	3894.49	2088.59	0.09
1	3104	10%_Cur	824	574.4	582.35		582.41	0.000366	2.24	1216.42	1862.63	0.16
1	3104	2%_Cur	1090	574.4	583.08		583.11	0.000206	1.82	2294.16	1894.42	0.13
1	3104	1%_Cur	1200	574.4	583.35		583.38	0.000171	1.7	2704.77	1900.59	0.12
1	3104	0.2%_Cur	1450	574.4	584.2		584.21	0.000095	1.37	3971.59	1987.54	0.09
1	3104	10%_Proj	875	574.4	582.5		582.55	0.000324	2.14	1436.5	1879.6	0.15
1	3104	2%_Proj	1150	574.4	583.23		583.25	0.000186	1.75	2517.11	1897.63	0.12
1	3104	1%_Proj	1258	574.4	583.52		583.54	0.000153	1.64	2947.8	1905.15	0.11
1	3104	0.2%_Proj	1522	574.4	584.47		584.47	0.00008	1.28	4405.72	2001.11	0.08

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2926	10%_Cur	824	574.9	582.29		582.35	0.000393	2.26	1253.46	1818.73	0.17
1	2926	2%_Cur	1090	574.9	583.05		583.07	0.000202	1.77	2391.4	1874.25	0.12
1	2926	1%_Cur	1200	574.9	583.33		583.35	0.000166	1.65	2816.65	1918.41	0.11
1	2926	0.2%_Cur	1450	574.9	584.18		584.19	0.000089	1.31	4118.84	2067.69	0.08
1	2926	10%_Proj	875	574.9	582.45		582.49	0.000339	2.14	1490.22	1836.17	0.16
1	2926	2%_Proj	1150	574.9	583.2		583.22	0.000182	1.7	2622.55	1888.72	0.12
1	2926	1%_Proj	1258	574.9	583.49		583.51	0.000147	1.58	3068.03	1966.73	0.11
1	2926	0.2%_Proj	1522	574.9	584.45		584.46	0.000075	1.23	4534.51	2108.58	0.08
1	2799	10%_Cur	824	574.4	582.27		582.3	0.000251	1.87	1629.53	1639.05	0.14
1	2799	2%_Cur	1090	574.4	583.03		583.05	0.000147	1.56	2646.04	1863.01	0.11
1	2799	1%_Cur	1200	574.4	583.31		583.33	0.000127	1.48	3024.56	1868.98	0.1
1	2799	0.2%_Cur	1450	574.4	584.17		584.18	0.000075	1.24	4301.39	1890.76	0.08
1	2799	10%_Proj	875	574.4	582.43		582.45	0.00022	1.79	1841.61	1660.53	0.13
1	2799	2%_Proj	1150	574.4	583.18		583.2	0.000136	1.51	2851.8	1866.27	0.1
1	2799	1%_Proj	1258	574.4	583.48		583.49	0.000115	1.44	3248.27	1874.11	0.09
1	2799	0.2%_Proj	1522	574.4	584.45		584.45	0.000064	1.17	4726.13	1892.1	0.07
1	2576	10%_Cur	824	574.1	582.2	577.78	582.24	0.000278	2.01	1449.35	1365.64	0.14
1	2576	2%_Cur	1090	574.1	582.99	578.39	583.01	0.000165	1.68	2429.88	1502.07	0.11
1	2576	1%_Cur	1200	574.1	583.28	578.62	583.3	0.000142	1.6	2802.44	1532.49	0.1
1	2576	0.2%_Cur	1450	574.1	584.16	579.16	584.17	0.000085	1.33	3985.7	1618.61	0.08
1	2576	10%_Proj	875	574.1	582.37	577.9	582.4	0.000245	1.92	1650.66	1385.72	0.13
1	2576	2%_Proj	1150	574.1	583.15	578.51	583.17	0.000152	1.63	2631.67	1515.64	0.11
1	2576	1%_Proj	1258	574.1	583.45	578.75	583.47	0.000129	1.54	3026.15	1551.23	0.1
1	2576	0.2%_Proj	1522	574.1	584.43	579.3	584.44	0.000073	1.26	4367.58	1623.47	0.08
1	2418	10%_Cur	824	574	582.03		582.17	0.000669	3.08	574.4	1116.14	0.22
1	2418	2%_Cur	1090	574	582.9		582.97	0.000412	2.64	1353.65	1496.59	0.18
1	2418	1%_Cur	1200	574	583.2		583.26	0.000343	2.48	1649.64	1550.89	0.16
1	2418	0.2%_Cur	1450	574	584.12		584.14	0.000184	1.97	2665.95	1646.23	0.12
1	2418	10%_Proj	875	574	582.22		582.34	0.000609	3	718.86	1266.75	0.21
1	2418	2%_Proj	1150	574	583.06		583.13	0.000372	2.55	1515.3	1529.35	0.17
1	2418	1%_Proj	1258	574	583.38		583.43	0.000309	2.39	1837.01	1581.22	0.16
1	2418	0.2%_Proj	1522	574	584.4		584.42	0.000153	1.84	2991.8	1694.11	0.11
1	2234	10%_Cur	824	573.9	581.91		582.05	0.00064	3.05	427.24	1204.41	0.22
1	2234	2%_Cur	1090	573.9	582.79		582.89	0.000453	2.8	1110.32	1626.44	0.19
1	2234	1%_Cur	1200	573.9	583.12		583.19	0.000383	2.65	1383.55	1656.24	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2234	0.2%_Cur	1450	573.9	584.07		584.11	0.000209	2.13	2361.31	1717.07	0.13
1	2234	10%_Proj	875	573.9	582.09		582.22	0.000617	3.05	535.14	1398.07	0.21
1	2234	2%_Proj	1150	573.9	582.97		583.05	0.000413	2.72	1259.58	1637.57	0.18
1	2234	1%_Proj	1258	573.9	583.31		583.37	0.000343	2.56	1542.85	1666.55	0.16
1	2234	0.2%_Proj	1522	573.9	584.36		584.39	0.000174	1.98	2694.44	1738.82	0.12
1	2044	10%_Cur	824	573.9	581.88		581.94	0.000306	2.14	936.98	1287.81	0.15
1	2044	2%_Cur	1090	573.9	582.77		582.81	0.000217	1.97	1558.38	1398.85	0.13
1	2044	1%_Cur	1200	573.9	583.1		583.13	0.000196	1.93	1783.01	1409.88	0.12
1	2044	0.2%_Cur	1450	573.9	584.05		584.07	0.000132	1.72	2477.6	1441.04	0.1
1	2044	10%_Proj	875	573.9	582.07		582.12	0.000287	2.12	1065.44	1360.3	0.15
1	2044	2%_Proj	1150	573.9	582.95		582.99	0.000205	1.95	1681.04	1404.51	0.13
1	2044	1%_Proj	1258	573.9	583.28		583.31	0.000183	1.9	1914.56	1415.51	0.12
1	2044	0.2%_Proj	1522	573.9	584.34		584.36	0.000118	1.66	2710.21	1500.18	0.1
1	1850	10%_Cur	824	573.6	581.83	577.12	581.88	0.000282	2.09	908.09	1191.06	0.15
1	1850	2%_Cur	1090	573.6	582.73	577.68	582.77	0.000228	2.05	1383.31	1414.13	0.13
1	1850	1%_Cur	1200	573.6	583.05	577.9	583.09	0.000211	2.03	1558.2	1424.78	0.13
1	1850	0.2%_Cur	1450	573.6	584.02	578.35	584.04	0.000152	1.87	2082.59	1453.77	0.11
1	1850	10%_Proj	875	573.6	582.02	577.23	582.07	0.00027	2.08	1001.24	1332.03	0.14
1	1850	2%_Proj	1150	573.6	582.9	577.78	582.94	0.000219	2.04	1478.76	1420.47	0.13
1	1850	1%_Proj	1258	573.6	583.24	578	583.28	0.0002	2.01	1660.88	1430.39	0.13
1	1850	0.2%_Proj	1522	573.6	584.31	578.47	584.34	0.000138	1.82	2242.59	1467.74	0.11
1	1647	10%_Cur	824	573.5	581.81	576.02	581.84	0.000122	1.45	967.27	1033.81	0.1
1	1647	2%_Cur	1090	573.5	582.7	576.46	582.73	0.000122	1.57	1261.9	1196.58	0.1
1	1647	1%_Cur	1200	573.5	583.02	576.62	583.06	0.000123	1.62	1370.45	1209.68	0.1
1	1647	0.2%_Cur	1450	573.5	583.99	576.96	584.02	0.000107	1.63	1698.47	1245.41	0.1
1	1647	10%_Proj	875	573.5	582	576.1	582.03	0.000121	1.47	1028.13	1138.63	0.1
1	1647	2%_Proj	1150	573.5	582.88	576.55	582.91	0.000123	1.6	1321.06	1206.9	0.1
1	1647	1%_Proj	1258	573.5	583.21	576.7	583.24	0.000121	1.64	1434.48	1213.85	0.1
1	1647	0.2%_Proj	1522	573.5	584.28	577.05	584.31	0.000102	1.63	1798.75	1264.94	0.09
1	1529	10%_Cur	824	573.3	581.78		581.82	0.000175	1.69	715.96	875.91	0.12
1	1529	2%_Cur	1090	573.3	582.67		582.71	0.000183	1.88	897.99	1101.88	0.12
1	1529	1%_Cur	1200	573.3	582.99		583.04	0.000187	1.96	965.72	1156.91	0.12
1	1529	0.2%_Cur	1450	573.3	583.95		584	0.000168	2.01	1174.61	1290.71	0.12
1	1529	10%_Proj	875	573.3	581.97		582.01	0.000176	1.73	753.48	943.25	0.12
1	1529	2%_Proj	1150	573.3	582.84		582.89	0.000185	1.92	934.71	1127.74	0.12
1	1529	1%_Proj	1258	573.3	583.17		583.23	0.000186	1.98	1006.22	1194.63	0.12

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1529	0.2%_Proj	1522	573.3	584.24		584.29	0.000162	2.01	1238.8	1299.05	0.12
1	1447	10%_Cur	824	573.5	581.74	576.4	581.8	0.000241	1.94	449.6	1098.81	0.14
1	1447	2%_Cur	1090	573.5	582.62	576.9	582.69	0.000271	2.24	533.18	1287.47	0.15
1	1447	1%_Cur	1200	573.5	582.93	577.08	583.01	0.000284	2.36	568.79	1363.47	0.15
1	1447	0.2%_Cur	1450	573.5	583.89	577.48	583.98	0.000268	2.49	688.62	1580.55	0.15
1	1447	10%_Proj	875	573.5	581.93	576.5	581.99	0.000247	2	466.37	1164	0.14
1	1447	2%_Proj	1150	573.5	582.79	576.99	582.87	0.000278	2.31	551.97	1340.11	0.15
1	1447	1%_Proj	1258	573.5	583.11	577.18	583.2	0.000286	2.41	592	1420.8	0.15
1	1447	0.2%_Proj	1522	573.5	584.18	577.6	584.27	0.00026	2.51	725.17	1596.71	0.15
1	1409	10%_Cur	824	572.8	581.71	576.66	581.79	0.000298	2.27	365.37	434.3	0.15
1	1409	2%_Cur	1090	572.8	582.56	577.08	582.67	0.000353	2.67	412.13	541.7	0.17
1	1409	1%_Cur	1200	572.8	582.87	577.24	582.99	0.000376	2.83	429.18	580.28	0.18
1	1409	0.2%_Cur	1450	572.8	583.81	577.59	583.95	0.00038	3.06	483.11	814.09	0.18
1	1409	10%_Proj	875	572.8	581.89	576.75	581.97	0.000308	2.35	375.14	458.35	0.16
1	1409	2%_Proj	1150	572.8	582.73	577.17	582.85	0.000366	2.76	421.41	561.93	0.17
1	1409	1%_Proj	1258	572.8	583.05	577.32	583.18	0.000384	2.9	439.41	645.11	0.18
1	1409	0.2%_Proj	1522	572.8	584.1	577.69	584.24	0.000377	3.11	500	844.63	0.18
1	1370		Bridge									
1	1339	10%_Cur	824	572.8	581.63	576.64	581.73	0.000349	2.55	322.58	306.13	0.17
1	1339	2%_Cur	1090	572.8	582.45	577.1	582.6	0.000424	3.03	359.73	406.39	0.19
1	1339	1%_Cur	1200	572.8	582.74	577.26	582.91	0.000456	3.22	372.86	426.93	0.2
1	1339	0.2%_Cur	1450	572.8	583.67	577.65	583.86	0.000469	3.5	414.33	590.33	0.2
1	1339	10%_Proj	875	572.8	581.8	576.74	581.91	0.000363	2.65	330.44	338.88	0.17
1	1339	2%_Proj	1150	572.8	582.61	577.18	582.76	0.000442	3.13	366.89	414.31	0.19
1	1339	1%_Proj	1258	572.8	582.92	577.35	583.09	0.000467	3.3	380.74	435.28	0.2
1	1339	0.2%_Proj	1522	572.8	583.95	577.75	584.15	0.000467	3.56	427.08	638.06	0.2
1	1279	10%_Cur	824	572.6	581.63	576.21	581.69	0.00024	1.92	506.06	268.91	0.14
1	1279	2%_Cur	1090	572.6	582.47	576.73	582.54	0.000268	2.2	593.42	310.63	0.15
1	1279	1%_Cur	1200	572.6	582.76	576.93	582.84	0.00028	2.32	624.39	322.3	0.15
1	1279	0.2%_Cur	1450	572.6	583.7	577.34	583.78	0.000268	2.45	721.93	322.3	0.15
1	1279	10%_Proj	875	572.6	581.81	576.31	581.87	0.000245	1.97	524.5	277.16	0.14
1	1279	2%_Proj	1150	572.6	582.63	576.83	582.7	0.000275	2.27	610.3	317.02	0.15
1	1279	1%_Proj	1258	572.6	582.94	577.02	583.02	0.000283	2.36	642.97	322.3	0.15
1	1279	0.2%_Proj	1522	572.6	583.98	577.45	584.07	0.000262	2.48	751.87	322.3	0.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1113	10%_Cur	824	572.4	581.59		581.65	0.000246	2.03	633.59	405.55	0.14
1	1113	2%_Cur	1090	572.4	582.43		582.49	0.000248	2.21	860.86	416.2	0.14
1	1113	1%_Cur	1200	572.4	582.73		582.8	0.000251	2.28	941.34	416.2	0.14
1	1113	0.2%_Cur	1450	572.4	583.67		583.74	0.000216	2.28	1196.66	416.2	0.14
1	1113	10%_Proj	875	572.4	581.77		581.83	0.000246	2.06	681.68	408.45	0.14
1	1113	2%_Proj	1150	572.4	582.59		582.66	0.00025	2.25	904.71	416.2	0.14
1	1113	1%_Proj	1258	572.4	582.91		582.98	0.000248	2.3	989.84	416.2	0.14
1	1113	0.2%_Proj	1522	572.4	583.96		584.02	0.000204	2.26	1274.99	416.2	0.13
1	938	10%_Cur	824	572.2	581.56		581.6	0.000231	1.95	819.7	377.15	0.13
1	938	2%_Cur	1090	572.2	582.4		582.45	0.000233	2.12	1035.6	385.88	0.14
1	938	1%_Cur	1200	572.2	582.7		582.75	0.000238	2.2	1113.82	392.44	0.14
1	938	0.2%_Cur	1450	572.2	583.65		583.7	0.000209	2.22	1387.53	421.03	0.13
1	938	10%_Proj	875	572.2	581.74		581.78	0.00023	1.98	864.83	378.85	0.13
1	938	2%_Proj	1150	572.2	582.56		582.61	0.000236	2.16	1078.04	388.14	0.14
1	938	1%_Proj	1258	572.2	582.88		582.93	0.000238	2.23	1162.47	399.63	0.14
1	938	0.2%_Proj	1522	572.2	583.94		583.99	0.000197	2.21	1474.16	422.44	0.13
1	537	10%_Cur	824	572.1	581.49		581.52	0.000165	1.63	1340.09	1109.52	0.11
1	537	2%_Cur	1090	572.1	582.35		582.37	0.000141	1.63	1800.49	1125.36	0.1
1	537	1%_Cur	1200	572.1	582.65		582.67	0.000136	1.64	1963.42	1131.24	0.1
1	537	0.2%_Cur	1450	572.1	583.61		583.63	0.000105	1.56	2494.02	1147.75	0.09
1	537	10%_Proj	875	572.1	581.68		581.7	0.000158	1.62	1437.63	1112.48	0.11
1	537	2%_Proj	1150	572.1	582.51		582.53	0.000138	1.64	1889.21	1128.56	0.1
1	537	1%_Proj	1258	572.1	582.83		582.85	0.000131	1.64	2062.55	1133.96	0.1
1	537	0.2%_Proj	1522	572.1	583.91		583.92	0.000097	1.53	2658.1	1149.8	0.09
1	411	10%_Cur	824	572	581.48	575.74	581.5	0.000112	1.34	1519.73	1297.51	0.09
1	411	2%_Cur	1090	572	582.34	576.27	582.35	0.000097	1.35	2073.85	1306.7	0.09
1	411	1%_Cur	1200	572	582.64	576.47	582.65	0.000094	1.36	2269.28	1306.7	0.09
1	411	0.2%_Cur	1450	572	583.6	576.88	583.62	0.000072	1.29	2897.58	1306.7	0.08
1	411	10%_Proj	875	572	581.66	575.85	581.68	0.000108	1.33	1636.67	1300.95	0.09
1	411	2%_Proj	1150	572	582.5	576.39	582.52	0.000095	1.36	2180.34	1306.7	0.09
1	411	1%_Proj	1258	572	582.82	576.57	582.84	0.00009	1.36	2387.87	1306.7	0.09
1	411	0.2%_Proj	1522	572	583.9	576.98	583.91	0.000066	1.27	3090.08	1306.7	0.07
1	152	10%_Cur	824	572	581.43		581.46	0.000192	1.78	1305.71	1040.68	0.12
1	152	2%_Cur	1090	572	582.3		582.32	0.000135	1.62	2102.99	1059.7	0.1
1	152	1%_Cur	1200	572	582.61		582.63	0.000123	1.58	2383.36	1059.7	0.1
1	152	0.2%_Cur	1450	572	583.59		583.6	0.00008	1.38	3284.72	1059.7	0.08

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	152	10%_Proj	875	572	581.61		581.65	0.000176	1.73	1474.99	1043.75	0.12
1	152	2%_Proj	1150	572	582.47		582.49	0.000128	1.6	2255.84	1059.7	0.1
1	152	1%_Proj	1258	572	582.79		582.81	0.000115	1.55	2553.73	1059.7	0.1
1	152	0.2%_Proj	1522	572	583.88		583.9	0.000071	1.33	3559.42	1059.7	0.08
1	88	10%_Cur	824	571.8	581.41		581.45	0.000195	1.86	1221.18	1005.73	0.12
1	88	2%_Cur	1090	571.8	582.29		582.32	0.000139	1.7	2057.67	1031.89	0.1
1	88	1%_Cur	1200	571.8	582.59		582.62	0.000127	1.66	2350.83	1034.91	0.1
1	88	0.2%_Cur	1450	571.8	583.58		583.59	0.000084	1.45	3307.54	1077.42	0.08
1	88	10%_Proj	875	571.8	581.6		581.63	0.000182	1.83	1398.52	1023.69	0.12
1	88	2%_Proj	1150	571.8	582.46		582.48	0.000132	1.68	2217.41	1033.5	0.1
1	88	1%_Proj	1258	571.8	582.78		582.8	0.000118	1.62	2529.5	1036.79	0.1
1	88	0.2%_Proj	1522	571.8	583.88		583.89	0.000074	1.4	3609.1	1085.8	0.08
1	43	10%_Cur	824	571.4	581.39	575.96	581.44	0.000229	2	1167.85	1090.82	0.13
1	43	2%_Cur	1090	571.4	582.28	576.57	582.31	0.000151	1.75	2093.5	1126.4	0.11
1	43	1%_Cur	1200	571.4	582.59	576.77	582.61	0.000133	1.69	2416.89	1126.4	0.1
1	43	0.2%_Cur	1450	571.4	583.58	577.28	583.59	0.000081	1.42	3453.24	1126.4	0.08
1	43	10%_Proj	875	571.4	581.58	576.08	581.62	0.000208	1.94	1363.24	1107.42	0.13
1	43	2%_Proj	1150	571.4	582.45	576.69	582.47	0.000141	1.72	2269.87	1126.4	0.11
1	43	1%_Proj	1258	571.4	582.78	576.9	582.8	0.000123	1.64	2613.25	1126.4	0.1
1	43	0.2%_Proj	1522	571.4	583.88	577.4	583.89	0.000071	1.36	3768.22	1126.4	0.08

Plan: Alt 2-1

Flows: Current and Projected Future

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	35522	10%_Cur	258	627.2	631.26	629.45	631.38	0.001746	2.84	90.73	35.19	0.31
1	35522	2%_Cur	348	627.2	632.17	629.83	632.29	0.00129	2.71	137.38	77.87	0.28
1	35522	1%_Cur	384	627.2	632.68	629.96	632.77	0.000901	2.51	181.41	96.81	0.24
1	35522	0.2%_Cur	470	627.2	633.69	630.26	633.76	0.000511	2.24	310.32	184.8	0.19
1	35522	10%_Proj	272	627.2	631.4	629.5	631.53	0.001671	2.84	95.82	36.05	0.31
1	35522	2%_Proj	364	627.2	632.39	629.88	632.5	0.001099	2.62	155.53	85.79	0.26
1	35522	1%_Proj	401	627.2	632.92	630.02	633.01	0.000762	2.42	206.64	106.54	0.22
1	35522	0.2%_Proj	489	627.2	633.78	630.32	633.85	0.000508	2.26	325.13	198.13	0.19
1	35442	10%_Cur	258	625.73	630.65	628.48	631.06	0.005992	5.17	49.91	12.04	0.45
1	35442	2%_Cur	348	625.73	631.45	629.09	631.97	0.006338	5.77	60.53	14.22	0.48
1	35442	1%_Cur	384	625.73	632.01	629.31	632.51	0.005254	5.67	68.82	15.72	0.44
1	35442	0.2%_Cur	470	625.73	633.04	629.84	633.54	0.004191	5.72	88.27	22.02	0.41
1	35442	10%_Proj	272	625.73	630.76	628.58	631.2	0.006207	5.29	51.37	12.36	0.46
1	35442	2%_Proj	364	625.73	631.7	629.19	632.21	0.005823	5.72	64.09	14.89	0.46
1	35442	1%_Proj	401	625.73	632.28	629.42	632.77	0.004814	5.61	73.29	17.4	0.43
1	35442	0.2%_Proj	489	625.73	633.09	629.96	633.62	0.0044	5.89	89.45	22.28	0.42
1	35420		Bridge									
1	35396	10%_Cur	258	625.73	629.75	628.49	630.37	0.007799	6.29	41.04	12.82	0.61
1	35396	2%_Cur	348	625.73	630.24	629.18	631.08	0.009898	7.36	47.29	18.63	0.69
1	35396	1%_Cur	384	625.73	630.4	629.45	631.34	0.010472	7.77	49.46	20.73	0.72
1	35396	0.2%_Cur	470	625.73	630.94	630.04	631.81	0.012849	7.49	68.46	51.13	0.73
1	35396	10%_Proj	272	625.73	629.84	628.59	630.49	0.008135	6.46	42.08	13.79	0.62
1	35396	2%_Proj	364	625.73	630.31	629.31	631.2	0.010177	7.54	48.29	19.6	0.71
1	35396	1%_Proj	401	625.73	630.47	629.58	631.45	0.010721	7.96	50.43	21.64	0.73
1	35396	0.2%_Proj	489	625.73	631.01	630.17	631.9	0.012884	7.6	72.79	75.01	0.73
1	35278	10%_Cur	258	625.5	628.82	628.3	629.31	0.009237	5.62	45.96	22.83	0.69
1	35278	2%_Cur	348	625.5	629.25	628.72	629.86	0.00888	6.26	56.35	25.01	0.7
1	35278	1%_Cur	384	625.5	629.4	628.86	630.06	0.008896	6.51	60.14	25.76	0.7
1	35278	0.2%_Cur	470	625.5	629.74	629.16	630.51	0.008864	7.04	69.18	80.63	0.72
1	35278	10%_Proj	272	625.5	628.97	628.38	629.45	0.008089	5.51	49.51	23.6	0.65
1	35278	2%_Proj	364	625.5	629.32	628.77	629.95	0.008884	6.37	58.05	25.35	0.7
1	35278	1%_Proj	401	625.5	629.47	628.91	630.15	0.008883	6.62	61.96	35.86	0.71
1	35278	0.2%_Proj	489	625.5	629.81	629.24	630.6	0.00888	7.15	71.09	83.3	0.72

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	34495	10%_Cur	258	622.5	627.56		627.65	0.000831	2.44	155.05	178.04	0.23
1	34495	2%_Cur	348	622.5	628.15		628.24	0.000786	2.63	261.71	205.33	0.23
1	34495	1%_Cur	384	622.5	628.26		628.36	0.000838	2.76	283.18	208.18	0.23
1	34495	0.2%_Cur	470	622.5	628.44		628.56	0.000998	3.1	323.61	224.86	0.26
1	34495	10%_Proj	272	622.5	627.72		627.81	0.000851	2.54	175.48	190.99	0.23
1	34495	2%_Proj	364	622.5	628.2		628.3	0.000809	2.68	271.57	206.64	0.23
1	34495	1%_Proj	401	622.5	628.3		628.4	0.000869	2.83	291.56	210.4	0.24
1	34495	0.2%_Proj	489	622.5	628.48		628.6	0.001033	3.17	331.89	227.16	0.26
1	34420	10%_Cur	258	622.7	627.52	625.16	627.58	0.000757	2.04	138.29	326.66	0.2
1	34420	2%_Cur	348	622.7	628.11	625.62	628.18	0.000696	2.16	262.53	628.82	0.2
1	34420	1%_Cur	384	622.7	628.21	625.74	628.29	0.000737	2.26	290.45	705.84	0.21
1	34420	0.2%_Cur	470	622.7	628.39	626.01	628.48	0.000866	2.53	341.05	889.32	0.23
1	34420	10%_Proj	272	622.7	627.67	625.25	627.74	0.000761	2.07	150.64	361.96	0.21
1	34420	2%_Proj	364	622.7	628.16	625.67	628.23	0.000714	2.2	275.41	664.81	0.2
1	34420	1%_Proj	401	622.7	628.25	625.8	628.33	0.000762	2.32	301.24	742.64	0.21
1	34420	0.2%_Proj	489	622.7	628.43	626.05	628.52	0.000895	2.59	351.09	930.4	0.23
1	34390		Bridge									
1	34363	10%_Cur	258	622.7	626.75	624.9	627.05	0.003655	4.46	63.66	311.87	0.39
1	34363	2%_Cur	348	622.7	627.14	625.38	627.28	0.002235	3.71	244.12	391.82	0.31
1	34363	1%_Cur	384	622.7	627.27	625.58	627.41	0.002173	3.73	274.26	406.87	0.31
1	34363	0.2%_Cur	470	622.7	627.62	626	627.73	0.001914	3.67	354.44	649.91	0.29
1	34363	10%_Proj	272	622.7	626.81	624.98	627.14	0.003832	4.61	65.22	340.16	0.4
1	34363	2%_Proj	364	622.7	627.2	625.47	627.34	0.002203	3.71	257.69	398.46	0.31
1	34363	1%_Proj	401	622.7	627.34	625.66	627.47	0.002154	3.75	288.33	425.6	0.31
1	34363	0.2%_Proj	489	622.7	627.69	626.12	627.81	0.001858	3.66	372.8	693.04	0.29
1	34242	10%_Cur	258	621.9	626.62	624.41	626.69	0.001294	2.23	145.32	262.9	0.26
1	34242	2%_Cur	348	621.9	626.97	624.8	627.05	0.001164	2.32	236.89	358.32	0.25
1	34242	1%_Cur	384	621.9	627.11	624.94	627.18	0.001148	2.38	259.57	409.34	0.26
1	34242	0.2%_Cur	470	621.9	627.45	625.28	627.53	0.001107	2.53	337.16	507.93	0.26
1	34242	10%_Proj	272	621.9	626.68	624.47	626.76	0.001304	2.26	152.83	285.14	0.26
1	34242	2%_Proj	364	621.9	627.03	624.87	627.11	0.001156	2.35	247.05	365.69	0.25
1	34242	1%_Proj	401	621.9	627.17	625.01	627.24	0.001138	2.41	272.25	433.46	0.25
1	34242	0.2%_Proj	489	621.9	627.53	625.33	627.61	0.001063	2.52	357.36	526.82	0.25
1	33325	10%_Cur	258	620.8	625.53	623.46	625.61	0.001083	2.37	123.29	127.74	0.25
1	33325	2%_Cur	348	620.8	625.79	623.8	625.91	0.001384	2.84	161.34	197.66	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	33325	1%_Cur	384	620.8	625.92	623.91	626.05	0.001405	2.95	183.04	233.98	0.29
1	33325	0.2%_Cur	470	620.8	626.51	624.2	626.62	0.000981	2.76	302.34	460.41	0.25
1	33325	10%_Proj	272	620.8	625.57	623.49	625.66	0.001139	2.45	128.55	142.22	0.26
1	33325	2%_Proj	364	620.8	625.85	623.86	625.97	0.001394	2.89	170.94	214.29	0.29
1	33325	1%_Proj	401	620.8	626.01	623.97	626.13	0.00137	2.96	197.56	260.82	0.29
1	33325	0.2%_Proj	489	620.8	626.69	624.25	626.78	0.000848	2.64	343.78	491.38	0.23
1	32629	10%_Cur	258	619.6	624.99		625.03	0.00078	2.2	307.83	420.89	0.21
1	32629	2%_Cur	348	619.6	625.4		625.43	0.000491	1.89	503.85	531	0.17
1	32629	1%_Cur	384	619.6	625.65		625.66	0.000343	1.64	639.32	569.79	0.14
1	32629	0.2%_Cur	470	619.6	626.44		626.45	0.000117	1.08	1119.01	643.76	0.09
1	32629	10%_Proj	272	619.6	625.04		625.08	0.000762	2.2	327.1	428	0.21
1	32629	2%_Proj	364	619.6	625.5		625.52	0.000437	1.81	558.19	554.35	0.16
1	32629	1%_Proj	401	619.6	625.78		625.79	0.000283	1.53	716.3	585.34	0.13
1	32629	0.2%_Proj	489	619.6	626.64		626.64	0.000094	1	1247.48	660.72	0.08
1	31948	10%_Cur	258	619	624.06		624.23	0.002119	3.54	151.13	240.05	0.34
1	31948	2%_Cur	348	619	625.01		625.06	0.000677	2.36	467.81	423.91	0.2
1	31948	1%_Cur	384	619	625.4		625.42	0.000423	1.97	644.48	494.94	0.16
1	31948	0.2%_Cur	470	619	626.35		626.36	0.000155	1.35	1173.71	591.21	0.1
1	31948	10%_Proj	272	619	624.21		624.34	0.001774	3.33	187.44	253.69	0.31
1	31948	2%_Proj	364	619	625.18		625.22	0.000545	2.17	542.34	454.91	0.18
1	31948	1%_Proj	401	619	625.58		625.6	0.000337	1.81	738.13	525.42	0.14
1	31948	0.2%_Proj	489	619	626.57		626.57	0.000128	1.26	1301.58	605.22	0.09
1	31772	10%_Cur	258	617.78	622.69	620.95	623.36	0.010892	6.57	39.29	8	0.52
1	31772	2%_Cur	348	617.78	623.66	621.66	624.51	0.012474	7.4	47.04	8	0.54
1	31772	1%_Cur	384	617.78	624.03	621.92	624.95	0.013007	7.68	50.02	8	0.54
1	31772	0.2%_Cur	470	617.78	624.9	622.53	625.96	0.014061	8.25	56.99	8	0.54
1	31772	10%_Proj	272	617.78	622.84	621.07	623.54	0.011178	6.71	40.52	8	0.53
1	31772	2%_Proj	364	617.78	623.83	621.77	624.71	0.012719	7.53	48.37	8	0.54
1	31772	1%_Proj	401	617.78	624.21	622.06	625.15	0.013239	7.8	51.41	8	0.54
1	31772	0.2%_Proj	489	617.78	625.09	622.64	626.18	0.014271	8.36	58.49	8	0.55
1	31750		Culvert									
1	31720	10%_Cur	258	617.78	621.65	620.97	622.73	0.020367	8.33	30.99	8	0.75
1	31720	2%_Cur	348	617.78	622.12	621.68	623.68	0.027343	10.02	34.74	8	0.85
1	31720	1%_Cur	384	617.78	622.25	621.94	624.04	0.030922	10.75	35.73	8	0.9
1	31720	0.2%_Cur	470	617.78	622.52	622.52	624.91	0.039633	12.39	37.92	8	1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	31720	10%_Proj	272	617.78	621.73	621.08	622.88	0.021479	8.61	31.6	8	0.76
1	31720	2%_Proj	364	617.78	622.18	621.79	623.84	0.028885	10.34	35.21	8	0.87
1	31720	1%_Proj	401	617.78	622.29	622.06	624.21	0.032865	11.11	36.08	8	0.92
1	31720	0.2%_Proj	489	617.78	622.67	622.67	625.1	0.039561	12.5	39.12	8	1
1	31676	10%_Cur	258	617.5	621.51	620.46	621.95	0.006324	5.31	48.62	17.69	0.56
1	31676	2%_Cur	348	617.5	622.12	620.97	622.64	0.006554	5.82	59.77	24.48	0.58
1	31676	1%_Cur	384	617.5	622.31	621.16	622.88	0.006602	6.04	63.62	28.21	0.59
1	31676	0.2%_Cur	470	617.5	622.73	621.57	623.4	0.006613	6.55	72.12	33.25	0.6
1	31676	10%_Proj	272	617.5	621.6	620.54	622.06	0.006422	5.41	50.25	17.92	0.57
1	31676	2%_Proj	364	617.5	622.2	621.06	622.75	0.006637	5.93	61.43	26.03	0.59
1	31676	1%_Proj	401	617.5	622.4	621.26	622.98	0.006615	6.15	65.29	29.56	0.59
1	31676	0.2%_Proj	489	617.5	622.82	621.66	623.5	0.006635	6.66	73.92	37.05	0.61
1	30052	10%_Cur	258	614.4	620.04		620.09	0.000429	2.06	219.28	142.27	0.17
1	30052	2%_Cur	348	614.4	620.55		620.61	0.000474	2.31	297.1	157.16	0.18
1	30052	1%_Cur	384	614.4	620.73		620.79	0.000488	2.4	325.43	159.95	0.18
1	30052	0.2%_Cur	470	614.4	621.09		621.17	0.000526	2.6	385.46	167.35	0.19
1	30052	10%_Proj	272	614.4	620.17		620.22	0.00042	2.07	238.71	151.42	0.16
1	30052	2%_Proj	364	614.4	620.64		620.71	0.000473	2.34	312.27	158.62	0.18
1	30052	1%_Proj	401	614.4	620.81		620.88	0.000491	2.43	339.45	161.98	0.18
1	30052	0.2%_Proj	489	614.4	621.17		621.25	0.000533	2.64	398.48	169.41	0.19
1	30002	10%_Cur	770	614.2	618.75	618.75	619.85	0.01026	8.73	131.48	144.58	0.8
1	30002	2%_Cur	1030	614.2	619.51	619.51	620.4	0.007418	8.41	256.92	288.18	0.7
1	30002	1%_Cur	1140	614.2	619.67	619.67	620.58	0.007428	8.62	289.45	304.77	0.71
1	30002	0.2%_Cur	1400	614.2	620.01	620.01	620.94	0.007544	9.1	360	326.76	0.72
1	30002	10%_Proj	816	614.2	618.94	618.94	619.99	0.009313	8.61	157.56	207.61	0.77
1	30002	2%_Proj	1088	614.2	619.6	619.6	620.5	0.007395	8.51	274.77	295.37	0.7
1	30002	1%_Proj	1198	614.2	619.78	619.78	620.67	0.007216	8.63	312.11	314.54	0.7
1	30002	0.2%_Proj	1460	614.2	620.07	620.07	621.02	0.007615	9.23	374.1	332.51	0.73
1	28067	10%_Cur	770	609	615.64		615.7	0.000561	2.55	793.46	512.35	0.2
1	28067	2%_Cur	1030	609	616.01		616.09	0.000653	2.87	988.86	538.14	0.21
1	28067	1%_Cur	1140	609	616.12		616.2	0.000705	3.03	1050.03	543	0.22
1	28067	0.2%_Cur	1400	609	616.34		616.44	0.000835	3.38	1172.63	552.6	0.24
1	28067	10%_Proj	816	609	615.72		615.79	0.000569	2.59	838.42	522.78	0.2
1	28067	2%_Proj	1088	609	616.06		616.15	0.000683	2.96	1019.54	540.59	0.22
1	28067	1%_Proj	1198	609	616.17		616.26	0.000734	3.11	1078.79	545.27	0.23
1	28067	0.2%_Proj	1460	609	616.4		616.5	0.000859	3.45	1202.48	555.1	0.25

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	27998	10%_Cur	770	609.24	615.39	612.43	615.6	0.001442	3.92	311.23	316.37	0.31
1	27998	2%_Cur	1030	609.24	615.67	613.07	615.95	0.001861	4.62	419.75	426	0.35
1	27998	1%_Cur	1140	609.24	615.74	613.32	616.06	0.002104	4.96	449.11	449.74	0.38
1	27998	0.2%_Cur	1400	609.24	615.8	613.85	616.24	0.002965	5.92	475.3	474.96	0.45
1	27998	10%_Proj	816	609.24	615.46	612.55	615.69	0.001491	4.03	336.7	352.74	0.31
1	27998	2%_Proj	1088	609.24	615.7	613.2	616	0.002005	4.81	432.43	434.65	0.37
1	27998	1%_Proj	1198	609.24	615.76	613.44	616.1	0.002259	5.15	459.75	461.49	0.39
1	27998	0.2%_Proj	1460	609.24	615.8	613.96	616.28	0.003211	6.17	477.71	476.78	0.47
1	27960		Culvert									
1	27931	10%_Cur	770	609.08	614.27	612.15	614.55	0.002268	4.43	282.67	434.39	0.38
1	27931	2%_Cur	1030	609.08	614.63	612.75	614.92	0.002367	4.78	474.07	584.09	0.39
1	27931	1%_Cur	1140	609.08	614.81	612.99	615.06	0.002152	4.67	579.95	606.08	0.38
1	27931	0.2%_Cur	1400	609.08	615.14	614.62	615.36	0.001911	4.61	795.64	689.02	0.36
1	27931	10%_Proj	816	609.08	614.34	612.27	614.63	0.002314	4.52	315.22	483.26	0.38
1	27931	2%_Proj	1088	609.08	614.73	612.87	615	0.002235	4.71	532.34	595.56	0.38
1	27931	1%_Proj	1198	609.08	614.88	613.11	615.13	0.002098	4.66	625.49	615.34	0.37
1	27931	0.2%_Proj	1460	609.08	615.21	614.68	615.42	0.001862	4.59	842.75	702.77	0.36
1	27807	10%_Cur	770	607.8	614.17	612.64	614.27	0.0011	3.52	591.46	515.38	0.27
1	27807	2%_Cur	1030	607.8	614.57	613.24	614.64	0.000928	3.39	836.66	696.88	0.25
1	27807	1%_Cur	1140	607.8	614.75	614	614.81	0.000807	3.23	968.71	713.65	0.23
1	27807	0.2%_Cur	1400	607.8	615.1	614.06	615.15	0.000685	3.09	1217.61	750.69	0.22
1	27807	10%_Proj	816	607.8	614.25	612.77	614.35	0.001056	3.48	634.99	562.59	0.26
1	27807	2%_Proj	1088	607.8	614.67	613.25	614.74	0.000853	3.29	910.19	707.23	0.24
1	27807	1%_Proj	1198	607.8	614.83	614.01	614.89	0.000779	3.2	1023.09	718.83	0.23
1	27807	0.2%_Proj	1460	607.8	615.16	614.08	615.21	0.000675	3.09	1268.61	781.15	0.22
1	27156	10%_Cur	770	607.4	613.17		613.4	0.002079	4.36	277.01	211.87	0.37
1	27156	2%_Cur	1030	607.4	613.74		613.94	0.001717	4.31	414.46	255.5	0.34
1	27156	1%_Cur	1140	607.4	613.99		614.18	0.001662	4.38	485.86	316.62	0.34
1	27156	0.2%_Cur	1400	607.4	614.49		614.64	0.001306	4.12	654.89	368.08	0.31
1	27156	10%_Proj	816	607.4	613.28		613.51	0.002024	4.38	301.99	233.63	0.37
1	27156	2%_Proj	1088	607.4	613.88		614.08	0.001701	4.36	451.37	300.69	0.34
1	27156	1%_Proj	1198	607.4	614.11		614.29	0.001561	4.3	523.82	326	0.33
1	27156	0.2%_Proj	1460	607.4	614.54		614.7	0.001358	4.23	675.85	372.16	0.31
1	26030	10%_Cur	770	605.9	612.07		612.15	0.000697	2.72	598.84	290.08	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	26030	2%_Cur	1030	605.9	612.81		612.89	0.000617	2.81	825.66	327.62	0.21
1	26030	1%_Cur	1140	605.9	613.1		613.18	0.000587	2.84	923.66	347.34	0.21
1	26030	0.2%_Cur	1400	605.9	613.71		613.79	0.000536	2.9	1152.4	392.43	0.2
1	26030	10%_Proj	816	605.9	612.21		612.3	0.000684	2.74	640.35	299.45	0.22
1	26030	2%_Proj	1088	605.9	612.96		613.04	0.000601	2.83	876.99	337.61	0.21
1	26030	1%_Proj	1198	605.9	613.25		613.33	0.000573	2.85	976.96	360.08	0.21
1	26030	0.2%_Proj	1460	605.9	613.71		613.79	0.000585	3.03	1151.15	392.23	0.21
1	23976	10%_Cur	770	605.6	611.22	607.86	611.27	0.000306	1.73	448.15	381.13	0.15
1	23976	2%_Cur	1030	605.6	611.97	608.21	612.03	0.000322	1.98	534.56	419.18	0.15
1	23976	1%_Cur	1140	605.6	612.28	608.34	612.34	0.000323	2.06	576.88	444.52	0.16
1	23976	0.2%_Cur	1400	605.6	612.92	608.64	612.99	0.000326	2.23	682.18	496.67	0.16
1	23976	10%_Proj	816	605.6	611.36	607.92	611.41	0.000308	1.78	463.96	384.04	0.15
1	23976	2%_Proj	1088	605.6	612.13	608.28	612.19	0.000323	2.02	556.24	432.03	0.15
1	23976	1%_Proj	1198	605.6	612.44	608.41	612.5	0.000322	2.09	601.17	468.55	0.16
1	23976	0.2%_Proj	1460	605.6	612.81	608.7	612.89	0.00038	2.37	662.28	491.06	0.17
1	23895	10%_Cur	770	605.7	611.21		611.24	0.000174	1.37	563.72	135.72	0.11
1	23895	2%_Cur	1030	605.7	611.97		612	0.000188	1.57	683.68	174.53	0.12
1	23895	1%_Cur	1140	605.7	612.27		612.31	0.000189	1.64	739.15	187.04	0.12
1	23895	0.2%_Cur	1400	605.7	612.92		612.96	0.000194	1.78	866.97	215.05	0.12
1	23895	10%_Proj	816	605.7	611.36		611.39	0.000177	1.41	584.43	152.27	0.11
1	23895	2%_Proj	1088	605.7	612.13		612.17	0.000189	1.61	712.48	181.08	0.12
1	23895	1%_Proj	1198	605.7	612.43		612.48	0.000189	1.66	769.86	192.88	0.12
1	23895	0.2%_Proj	1460	605.7	612.81		612.86	0.000225	1.89	843.21	209.38	0.13
1	23638	10%_Cur	770	602.8	611.04		611.16	0.000543	2.79	296.6	118.45	0.19
1	23638	2%_Cur	1030	602.8	611.77		611.91	0.000616	3.19	422.11	205.68	0.2
1	23638	1%_Cur	1140	602.8	612.08		612.22	0.000603	3.24	490.14	227.53	0.2
1	23638	0.2%_Cur	1400	602.8	612.74		612.88	0.000557	3.28	652.3	263.14	0.2
1	23638	10%_Proj	816	602.8	611.18		611.3	0.000568	2.9	314.87	144	0.19
1	23638	2%_Proj	1088	602.8	611.93		612.08	0.000612	3.22	456.84	221.17	0.2
1	23638	1%_Proj	1198	602.8	612.24		612.39	0.000588	3.24	528.75	235.16	0.2
1	23638	0.2%_Proj	1460	602.8	612.59		612.76	0.000677	3.58	613.23	254.45	0.22
1	23634	10%_Cur	770	606.1	610.15	609.66	610.95	0.008271	7.7	122.04	50.12	0.68
1	23634	2%_Cur	1030	606.1	610.61	610.22	611.64	0.009476	8.86	146.75	56.85	0.74
1	23634	1%_Cur	1140	606.1	610.7	610.46	611.9	0.010766	9.58	152.09	59.76	0.79
1	23634	0.2%_Cur	1400	606.1	611.1	611.05	612.49	0.011552	10.49	182.39	110.71	0.83
1	23634	10%_Proj	816	606.1	610.25	609.77	611.09	0.008326	7.86	127.56	51.41	0.68

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23634	2%_Proj	1088	606.1	610.66	610.33	611.78	0.0101	9.23	149.91	58.46	0.76
1	23634	1%_Proj	1198	606.1	610.72	610.56	612.03	0.011677	10.01	153.43	60.55	0.82
1	23634	0.2%_Proj	1460	606.1	612.03	611.05	612.62	0.004725	7.52	358.55	225.28	0.55
1	23633		Inl Struct									
1	23631	10%_Cur	770	606.1	609.68	609.68	610.85	0.013685	9.12	100.31	46.87	0.85
1	23631	2%_Cur	1030	606.1	610.24	610.24	611.57	0.013365	9.94	128.22	53.1	0.86
1	23631	1%_Cur	1140	606.1	610.49	610.49	611.84	0.01278	10.11	141.92	56.3	0.85
1	23631	0.2%_Cur	1400	606.1	610.91	610.91	612.46	0.013367	10.99	167.08	66.21	0.89
1	23631	10%_Proj	816	606.1	609.8	609.8	610.99	0.013471	9.25	105.81	48.09	0.85
1	23631	2%_Proj	1088	606.1	610.39	610.39	611.71	0.012897	10	136.1	55.02	0.85
1	23631	1%_Proj	1198	606.1	610.61	610.61	611.97	0.01265	10.24	148.43	57.74	0.85
1	23631	0.2%_Proj	1460	606.1	610.99	610.99	612.59	0.013566	11.2	172.52	68.5	0.9
1	23626	10%_Cur	770	602.7	609.12		609.36	0.001293	3.92	202.27	43.94	0.29
1	23626	2%_Cur	1030	602.7	609.77		610.1	0.001587	4.67	232.39	49.09	0.33
1	23626	1%_Cur	1140	602.7	610.13		610.49	0.001593	4.85	251.15	53.51	0.33
1	23626	0.2%_Cur	1400	602.7	610.98		611.39	0.001559	5.2	302.34	71.34	0.33
1	23626	10%_Proj	816	602.7	609.28		609.53	0.001319	4.03	209.41	45.32	0.29
1	23626	2%_Proj	1088	602.7	609.96		610.31	0.001595	4.77	241.92	51.35	0.33
1	23626	1%_Proj	1198	602.7	610.32		610.69	0.001592	4.94	261.4	55.83	0.33
1	23626	0.2%_Proj	1460	602.7	611.19		611.6	0.001535	5.25	318.38	99.91	0.33
1	23597	10%_Cur	770	603.1	609.08		609.32	0.001396	3.97	201.25	46.82	0.31
1	23597	2%_Cur	1030	603.1	609.72		610.05	0.001646	4.67	232.34	49.46	0.34
1	23597	1%_Cur	1140	603.1	610.09		610.44	0.001621	4.84	250.85	51.23	0.35
1	23597	0.2%_Cur	1400	603.1	610.94		611.34	0.001555	5.17	300.8	69.59	0.35
1	23597	10%_Proj	816	603.1	609.24		609.49	0.001406	4.07	208.85	47.49	0.31
1	23597	2%_Proj	1088	603.1	609.91		610.26	0.001636	4.76	241.89	50.17	0.35
1	23597	1%_Proj	1198	603.1	610.28		610.64	0.001612	4.92	260.65	53.24	0.35
1	23597	0.2%_Proj	1460	603.1	611.15		611.55	0.001516	5.2	315.64	73.65	0.34
1	23536	10%_Cur	770	602.3	609	605.14	609.24	0.001202	3.9	203.34	38.17	0.27
1	23536	2%_Cur	1030	602.3	609.61	605.76	609.95	0.001578	4.74	227.66	41.84	0.31
1	23536	1%_Cur	1140	602.3	609.97	605.99	610.34	0.001631	4.97	243.08	45.37	0.32
1	23536	0.2%_Cur	1400	602.3	610.8	606.52	611.24	0.001676	5.41	288.22	61.79	0.33
1	23536	10%_Proj	816	602.3	609.16	605.26	609.41	0.001244	4.03	209.4	39.13	0.27
1	23536	2%_Proj	1088	602.3	609.79	605.88	610.16	0.001611	4.87	235.47	43.48	0.32
1	23536	1%_Proj	1198	602.3	610.15	606.11	610.54	0.001653	5.09	251.53	47.38	0.32

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23536	0.2%_Proj	1460	602.3	611	606.65	611.45	0.001664	5.48	301.2	66.74	0.33
1	23525	10%_Cur	770	602.3	608.99	605.65	609.22	0.001227	3.84	204.49	39.55	0.28
1	23525	2%_Cur	1030	602.3	609.6	606.24	609.93	0.001558	4.63	228.9	40.85	0.32
1	23525	1%_Cur	1140	602.3	609.96	606.44	610.32	0.001583	4.84	243.59	41.61	0.33
1	23525	0.2%_Cur	1400	602.3	610.79	606.96	611.21	0.001593	5.25	279.04	43.4	0.34
1	23525	10%_Proj	816	602.3	609.15	605.76	609.39	0.001257	3.96	210.73	39.89	0.29
1	23525	2%_Proj	1088	602.3	609.78	606.36	610.13	0.001576	4.75	236.47	41.25	0.33
1	23525	1%_Proj	1198	602.3	610.14	606.58	610.51	0.001593	4.95	251.23	42.01	0.33
1	23525	0.2%_Proj	1460	602.3	610.99	607.06	611.42	0.001581	5.33	287.82	43.83	0.34
1	23500		Bridge									
1	23481	10%_Cur	770	602.3	608.64	605.65	608.9	0.001524	4.14	187.49	38.91	0.31
1	23481	2%_Cur	1030	602.3	608.95	606.24	609.38	0.002255	5.23	198.95	39.6	0.38
1	23481	1%_Cur	1140	602.3	609.17	606.46	609.65	0.002436	5.57	206.93	40.07	0.4
1	23481	0.2%_Cur	1400	602.3	609.61	606.95	610.23	0.0029	6.37	222.9	41.02	0.44
1	23481	10%_Proj	816	602.3	608.76	605.76	609.04	0.001592	4.29	191.79	39.17	0.32
1	23481	2%_Proj	1088	602.3	609.07	606.35	609.52	0.002356	5.41	203.08	39.84	0.39
1	23481	1%_Proj	1198	602.3	609.27	606.57	609.79	0.002541	5.75	210.66	40.29	0.41
1	23481	0.2%_Proj	1460	602.3	609.7	607.06	610.36	0.003001	6.54	226.4	41.22	0.45
1	23465	10%_Cur	770	602.3	608.61	605.16	608.88	0.001495	4.19	186.14	33.66	0.3
1	23465	2%_Cur	1030	602.3	608.89	605.74	609.34	0.002292	5.34	196.01	34.87	0.37
1	23465	1%_Cur	1140	602.3	609.1	605.99	609.6	0.002526	5.73	203.19	35.68	0.39
1	23465	0.2%_Cur	1400	602.3	609.49	606.53	610.17	0.003122	6.62	217.71	37.35	0.44
1	23465	10%_Proj	816	602.3	608.72	605.26	609.01	0.001578	4.35	190.01	34.15	0.31
1	23465	2%_Proj	1088	602.3	609	605.88	609.47	0.002422	5.55	199.67	35.29	0.38
1	23465	1%_Proj	1198	602.3	609.19	606.12	609.73	0.002659	5.93	206.57	36.06	0.4
1	23465	0.2%_Proj	1460	602.3	609.58	606.65	610.3	0.003257	6.81	220.92	37.72	0.45
1	23354	10%_Cur	770	601.5	608.47		608.71	0.001345	3.99	201.47	90.35	0.31
1	23354	2%_Cur	1030	601.5	608.68		609.08	0.002102	5.12	212.66	98.7	0.38
1	23354	1%_Cur	1140	601.5	608.87		609.32	0.002282	5.46	223.81	105.3	0.4
1	23354	0.2%_Cur	1400	601.5	609.23		609.82	0.002736	6.23	247.3	115.67	0.44
1	23354	10%_Proj	816	601.5	608.58		608.84	0.001407	4.14	207.1	93.57	0.31
1	23354	2%_Proj	1088	601.5	608.77		609.2	0.002207	5.31	218.2	102.1	0.39
1	23354	1%_Proj	1198	601.5	608.95		609.44	0.002386	5.64	229.13	107.85	0.41
1	23354	0.2%_Proj	1460	601.5	609.31		609.93	0.002832	6.39	252.75	117.87	0.45

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22771	10%_Cur	770	601.2	607.85	604.71	608.01	0.001008	3.37	318.93	426.88	0.26
1	22771	2%_Cur	1030	601.2	608.39	605.31	608.45	0.000492	2.52	1064.36	509.93	0.19
1	22771	1%_Cur	1140	601.2	608.59	605.56	608.65	0.000512	2.63	1177.93	544.01	0.19
1	22771	0.2%_Cur	1400	601.2	609.02	606.07	609.08	0.000505	2.74	1408.79	609.93	0.19
1	22771	10%_Proj	816	601.2	607.93	604.84	608.1	0.001063	3.5	328.64	428.48	0.27
1	22771	2%_Proj	1088	601.2	608.5	605.43	608.56	0.000495	2.56	1110.83	525.23	0.19
1	22771	1%_Proj	1198	601.2	608.69	605.67	608.75	0.000511	2.66	1230.98	551.36	0.19
1	22771	0.2%_Proj	1460	601.2	609.11	606.17	609.18	0.000502	2.76	1461.52	620.06	0.19
1	22710	10%_Cur	770	601.3	607.87	604.68	607.94	0.000512	2.54	634.76	381.76	0.19
1	22710	2%_Cur	1030	601.3	608.31	605.21	608.41	0.000634	2.98	762.98	424.58	0.22
1	22710	1%_Cur	1140	601.3	608.5	605.42	608.6	0.000681	3.16	824.52	463.06	0.23
1	22710	0.2%_Cur	1400	601.3	608.91	605.91	609.03	0.000734	3.43	976.62	540.9	0.24
1	22710	10%_Proj	816	601.3	607.95	604.78	608.03	0.000535	2.63	657.61	387.84	0.2
1	22710	2%_Proj	1088	601.3	608.41	605.32	608.51	0.000662	3.08	794.67	446.21	0.22
1	22710	1%_Proj	1198	601.3	608.59	605.53	608.7	0.000693	3.22	858.56	473.46	0.23
1	22710	0.2%_Proj	1460	601.3	609	606.04	609.13	0.000756	3.51	1022.64	561.99	0.24
1	22311	10%_Cur	770	601.42	607.67		607.73	0.000527	2.4	531.83	240.42	0.19
1	22311	2%_Cur	1030	601.42	608.08		608.16	0.000628	2.77	631.99	253.02	0.21
1	22311	1%_Cur	1140	601.42	608.25		608.34	0.000655	2.89	676.41	259.57	0.22
1	22311	0.2%_Cur	1400	601.42	608.65		608.75	0.000694	3.12	783.32	275	0.23
1	22311	10%_Proj	816	601.42	607.74		607.81	0.000547	2.47	549.86	242.42	0.2
1	22311	2%_Proj	1088	601.42	608.17		608.25	0.000643	2.83	655.28	256.25	0.22
1	22311	1%_Proj	1198	601.42	608.34		608.43	0.000666	2.94	700.45	263.29	0.22
1	22311	0.2%_Proj	1460	601.42	608.74		608.84	0.0007	3.16	807.74	278.03	0.23
1	22232	10%_Cur	770	601.5	607.34	605.45	607.6	0.002336	4.82	353.88	255.81	0.35
1	22232	2%_Cur	1030	601.5	607.72	606.99	608	0.002639	5.34	459.55	300.54	0.38
1	22232	1%_Cur	1140	601.5	607.95	606.99	608.2	0.002358	5.17	529.09	305.48	0.36
1	22232	0.2%_Cur	1400	601.5	608.41	607.52	608.62	0.002095	5.11	674.64	353.86	0.34
1	22232	10%_Proj	816	601.5	607.41	605.63	607.68	0.002413	4.93	371.26	268.13	0.36
1	22232	2%_Proj	1088	601.5	607.85	606.99	608.11	0.00248	5.25	496.74	303.19	0.37
1	22232	1%_Proj	1198	601.5	608.07	606.99	608.3	0.002238	5.1	564.49	308.74	0.35
1	22232	0.2%_Proj	1460	601.5	608.52	607.55	608.71	0.001981	5.02	714	364.46	0.34
1	22205		Bridge									
1	22191	10%_Cur	770	600.42	606.8	604.35	607.43	0.004531	6.42	141.79	164.91	0.46
1	22191	2%_Cur	1030	600.42	607.31	605.16	607.98	0.004895	7.03	281.92	215.5	0.48

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22191	1%_Cur	1140	600.42	607.5	605.48	608.18	0.005006	7.24	323.67	225.39	0.49
1	22191	0.2%_Cur	1400	600.42	607.9	607.5	608.6	0.005208	7.68	421.02	262.26	0.5
1	22191	10%_Proj	816	600.42	606.9	604.5	607.58	0.004781	6.66	148.46	188.57	0.47
1	22191	2%_Proj	1088	600.42	607.41	605.32	608.08	0.00496	7.15	303.91	220.53	0.49
1	22191	1%_Proj	1198	600.42	607.6	605.64	608.28	0.005047	7.34	345.71	231.09	0.49
1	22191	0.2%_Proj	1460	600.42	607.98	607.58	608.7	0.005297	7.8	443.55	276.49	0.51
1	22056	10%_Cur	770	600.8	606.35	604.91	606.8	0.003549	5.57	208.14	196.1	0.48
1	22056	2%_Cur	1030	600.8	606.85	605.83	607.31	0.003564	6.02	331.66	225.13	0.49
1	22056	1%_Cur	1140	600.8	607.02	606.08	607.51	0.003623	6.22	368.58	232.33	0.5
1	22056	0.2%_Cur	1400	600.8	607.4	606.42	607.92	0.003737	6.64	450.59	246.32	0.51
1	22056	10%_Proj	816	600.8	606.43	605.01	606.91	0.003742	5.79	219.58	203.51	0.5
1	22056	2%_Proj	1088	600.8	606.94	606.01	607.42	0.003598	6.13	351.14	228.82	0.5
1	22056	1%_Proj	1198	600.8	607.11	606.21	607.61	0.003642	6.31	388.05	236.1	0.5
1	22056	0.2%_Proj	1460	600.8	607.47	606.42	608	0.003762	6.73	468.48	249.01	0.52
1	21988	10%_Cur	770	600.6	606.4		606.59	0.001163	3.58	308.85	199.24	0.28
1	21988	2%_Cur	1030	600.6	606.86		607.1	0.001407	4.17	405.67	222.34	0.32
1	21988	1%_Cur	1140	600.6	607.02		607.29	0.001495	4.38	443.21	226.97	0.33
1	21988	0.2%_Cur	1400	600.6	607.38		607.69	0.001684	4.85	524.83	235.34	0.35
1	21988	10%_Proj	816	600.6	606.49		606.69	0.001212	3.69	326.44	205.71	0.29
1	21988	2%_Proj	1088	600.6	606.95		607.2	0.001455	4.29	425.52	224.8	0.32
1	21988	1%_Proj	1198	600.6	607.11		607.38	0.001536	4.49	462.85	229.07	0.33
1	21988	0.2%_Proj	1460	600.6	607.45		607.77	0.001726	4.95	542.39	237.07	0.36
1	20749	10%_Cur	770	598.9	605.36		605.45	0.000713	3.03	530.11	367.05	0.23
1	20749	2%_Cur	1030	598.9	605.71		605.8	0.000755	3.25	661.93	375.05	0.24
1	20749	1%_Cur	1140	598.9	605.84		605.94	0.000772	3.33	711.49	377.96	0.24
1	20749	0.2%_Cur	1400	598.9	606.17		606.26	0.000765	3.44	836.46	385.46	0.24
1	20749	10%_Proj	816	598.9	605.45		605.53	0.000696	3.03	563.93	369.49	0.22
1	20749	2%_Proj	1088	598.9	605.79		605.88	0.000755	3.28	691.78	376.78	0.24
1	20749	1%_Proj	1198	598.9	605.88		605.98	0.000808	3.43	726.51	378.87	0.24
1	20749	0.2%_Proj	1460	598.9	606.26		606.35	0.000748	3.43	870.12	386.71	0.24
1	20719	10%_Cur	799	598.57	605.15	601.73	605.37	0.001252	3.93	263.32	269.66	0.29
1	20719	2%_Cur	1060	598.57	605.38	602.4	605.7	0.001729	4.75	330.25	301.2	0.34
1	20719	1%_Cur	1160	598.57	605.49	602.62	605.83	0.001831	4.95	365.46	331	0.35
1	20719	0.2%_Cur	1410	598.57	605.83	603.15	606.16	0.001836	5.13	494.85	421.9	0.35
1	20719	10%_Proj	848	598.57	605.22	601.86	605.46	0.001311	4.06	283.24	275.73	0.29
1	20719	2%_Proj	1118	598.57	605.45	602.53	605.78	0.00179	4.87	350.66	316.15	0.35

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	20719	1%_Proj	1222	598.57	605.48	602.77	605.86	0.002067	5.25	360.51	326.09	0.37
1	20719	0.2%_Proj	1480	598.57	605.94	603.28	606.25	0.001769	5.09	540.04	435.18	0.35
1	20700		Bridge									
1	20654	10%_Cur	799	598.47	603.75	601.68	604.28	0.003681	5.88	145.83	193.23	0.46
1	20654	2%_Cur	1060	598.47	604.15	602.35	604.91	0.004873	7.12	164.38	238	0.53
1	20654	1%_Cur	1160	598.47	604.5	602.6	604.77	0.002273	5.06	430.9	287.32	0.37
1	20654	0.2%_Cur	1410	598.47	604.9	603.2	605.15	0.002119	5.11	556.33	336.96	0.36
1	20654	10%_Proj	848	598.47	603.85	601.82	604.42	0.003841	6.09	150.73	196.02	0.47
1	20654	2%_Proj	1118	598.47	604.43	602.5	604.71	0.002298	5.05	410.93	270.97	0.37
1	20654	1%_Proj	1222	598.47	604.6	602.75	604.87	0.002238	5.08	461.55	305.65	0.37
1	20654	0.2%_Proj	1480	598.47	605	603.57	605.25	0.002088	5.13	592.37	352.76	0.36
1	20539	10%_Cur	799	597.5	603.73		603.82	0.001339	2.83	488.17	340.49	0.22
1	20539	2%_Cur	1060	597.5	604.25		604.33	0.001189	2.84	677.73	375.7	0.21
1	20539	1%_Cur	1160	597.5	604.43		604.5	0.001134	2.83	745.3	381.53	0.2
1	20539	0.2%_Cur	1410	597.5	604.83		604.9	0.001041	2.83	903.08	401.93	0.2
1	20539	10%_Proj	848	597.5	603.86		603.94	0.001289	2.82	533.16	360.65	0.21
1	20539	2%_Proj	1118	597.5	604.35		604.43	0.001155	2.83	717.34	378.89	0.2
1	20539	1%_Proj	1222	597.5	604.53		604.6	0.001107	2.82	785.44	385.52	0.2
1	20539	0.2%_Proj	1480	597.5	604.93		605	0.001039	2.86	945.38	415.05	0.2
1	20061	10%_Cur	799	596.8	601.95	600.83	602.62	0.005563	6.55	124.29	112.96	0.59
1	20061	2%_Cur	1060	596.8	602.43	601.4	603.19	0.005794	7.23	211.35	130.56	0.62
1	20061	1%_Cur	1160	596.8	602.59	601.62	603.39	0.005869	7.46	234.14	144.67	0.62
1	20061	0.2%_Cur	1410	596.8	603.01	602.53	603.85	0.005767	7.86	300.21	176.04	0.63
1	20061	10%_Proj	848	596.8	602.05	600.92	602.76	0.005765	6.78	127.79	118.26	0.6
1	20061	2%_Proj	1118	596.8	602.53	601.53	603.31	0.005843	7.37	224.23	137.71	0.62
1	20061	1%_Proj	1222	596.8	602.72	601.74	603.51	0.005772	7.54	252.03	150.21	0.62
1	20061	0.2%_Proj	1480	596.8	603.1	602.67	603.96	0.005824	7.99	316.46	183.91	0.63
1	18590	10%_Cur	799	594.8	599.97		600.03	0.000799	2.69	796.46	435.38	0.23
1	18590	2%_Cur	1060	594.8	600.36		600.43	0.000861	2.96	969.73	449.42	0.24
1	18590	1%_Cur	1160	594.8	600.5		600.57	0.000883	3.06	1030.76	455.73	0.25
1	18590	0.2%_Cur	1410	594.8	600.79		600.87	0.000966	3.33	1169.24	477.37	0.26
1	18590	10%_Proj	848	594.8	600.05		600.11	0.000814	2.75	829.77	437.36	0.23
1	18590	2%_Proj	1118	594.8	600.44		600.51	0.000877	3.02	1004.3	452.06	0.25
1	18590	1%_Proj	1222	594.8	600.55		600.63	0.000924	3.15	1055.78	463.34	0.25
1	18590	0.2%_Proj	1480	594.8	600.88		600.97	0.00097	3.38	1212.27	481.4	0.26

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	16260	10%_Cur	799	592.7	596.71	596.14	596.98	0.003263	4.8	362.66	296.37	0.45
1	16260	2%_Cur	1060	592.7	597.21		597.45	0.002779	4.84	514.68	310.78	0.43
1	16260	1%_Cur	1160	592.7	597.38		597.62	0.002657	4.87	567.96	313.61	0.42
1	16260	0.2%_Cur	1410	592.7	597.99		598.17	0.00191	4.52	761.3	319.81	0.37
1	16260	10%_Proj	848	592.7	596.81	596.24	597.08	0.003149	4.8	392.49	299.25	0.45
1	16260	2%_Proj	1118	592.7	597.31		597.55	0.002708	4.86	545.59	312.42	0.42
1	16260	1%_Proj	1222	592.7	597.62		597.82	0.002193	4.59	642.79	316.17	0.39
1	16260	0.2%_Proj	1480	592.7	598.09		598.27	0.001895	4.57	792.93	320.77	0.37
1	15225	10%_Cur	799	588.5	595.1		595.28	0.001008	3.57	393.35	340.76	0.26
1	15225	2%_Cur	1060	588.5	595.81		595.98	0.000916	3.67	647.16	378.64	0.25
1	15225	1%_Cur	1160	588.5	596.08		596.24	0.000856	3.64	749.68	386.7	0.25
1	15225	0.2%_Cur	1410	588.5	597.25		597.33	0.000481	3.03	1229.31	425.23	0.19
1	15225	10%_Proj	848	588.5	595.24		595.42	0.000998	3.6	439.86	346.1	0.26
1	15225	2%_Proj	1118	588.5	595.97		596.13	0.000883	3.66	705.66	382.1	0.25
1	15225	1%_Proj	1222	588.5	596.81		596.9	0.000506	3	1043.78	414.35	0.19
1	15225	0.2%_Proj	1480	588.5	597.33		597.42	0.000496	3.1	1265.11	425.91	0.19
1	14388	10%_Cur	799	587.83	593.79		594.09	0.002112	4.62	220.77	280.62	0.37
1	14388	2%_Cur	1060	587.83	594.73		594.99	0.001581	4.51	322.72	351.7	0.33
1	14388	1%_Cur	1160	587.83	595.08		595.32	0.001433	4.46	360.13	372.68	0.32
1	14388	0.2%_Cur	1410	587.83	596.7		596.85	0.000706	3.67	535.84	442.21	0.23
1	14388	10%_Proj	848	587.83	593.96		594.26	0.00201	4.61	239.69	289.42	0.37
1	14388	2%_Proj	1118	587.83	594.93		595.18	0.001493	4.48	344.46	363.68	0.32
1	14388	1%_Proj	1222	587.83	596.27		596.41	0.000689	3.49	489.28	428.81	0.23
1	14388	0.2%_Proj	1480	587.83	596.75		596.92	0.000755	3.81	541.38	444.07	0.24
1	14364	10%_Cur	799	587.83	593.8	590.9	594.01	0.001287	3.74	224.95	244.69	0.3
1	14364	2%_Cur	1060	587.83	594.7	591.57	594.95	0.00125	4.13	272.81	291.62	0.3
1	14364	1%_Cur	1160	587.83	595.02	591.76	595.29	0.001242	4.26	289.59	313.62	0.3
1	14364	0.2%_Cur	1410	587.83	596.57	592.15	596.81	0.000831	4.05	371.76	396.89	0.26
1	14364	10%_Proj	848	587.83	593.96	591.02	594.18	0.001288	3.83	233.82	261.27	0.3
1	14364	2%_Proj	1118	587.83	594.88	591.68	595.15	0.001246	4.21	282.56	301.17	0.3
1	14364	1%_Proj	1222	587.83	596.17	591.85	596.37	0.000752	3.72	350.76	381.64	0.24
1	14364	0.2%_Proj	1480	587.83	596.76	592.27	597.01	0.00084	4.14	382	410.05	0.26
1	14330		Bridge									
1	14298	10%_Cur	799	587.6	593.22	590.67	593.54	0.001932	4.54	179.26	107.98	0.36

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	14298	2%_Cur	1060	587.6	593.87	591.27	594.31	0.002228	5.3	206.1	166.11	0.39
1	14298	1%_Cur	1160	587.6	594.09	591.47	594.57	0.00235	5.58	214.85	186.56	0.41
1	14298	0.2%_Cur	1410	587.6	594.61	591.92	595.21	0.002593	6.21	236.2	263.18	0.43
1	14298	10%_Proj	848	587.6	593.34	590.78	593.68	0.002008	4.71	184.09	112.89	0.37
1	14298	2%_Proj	1118	587.6	594	591.4	594.46	0.002302	5.47	211.16	176.45	0.4
1	14298	1%_Proj	1222	587.6	594.24	591.59	594.75	0.002387	5.73	221.12	207.27	0.41
1	14298	0.2%_Proj	1480	587.6	594.74	592.04	595.37	0.002664	6.38	241.58	284.78	0.44
1	14176	10%_Cur	799	586.6	593.15	589.31	593.31	0.000832	3.16	277.19	277.3	0.24
1	14176	2%_Cur	1060	586.6	593.82	589.83	594.02	0.000953	3.65	345.87	330.04	0.26
1	14176	1%_Cur	1160	586.6	594.04	590.05	594.26	0.000999	3.83	369.01	342.96	0.27
1	14176	0.2%_Cur	1410	586.6	594.59	590.49	594.85	0.001078	4.2	427.71	366.39	0.28
1	14176	10%_Proj	848	586.6	593.27	589.42	593.44	0.000866	3.27	289.3	286.51	0.24
1	14176	2%_Proj	1118	586.6	593.95	589.96	594.16	0.000981	3.76	359.19	335.64	0.27
1	14176	1%_Proj	1222	586.6	594.2	590.15	594.43	0.001009	3.91	386.02	349.16	0.27
1	14176	0.2%_Proj	1480	586.6	594.72	590.62	594.99	0.0011	4.3	442.98	375.23	0.29
1	12509	10%_Cur	799	585.2	592.74	590.02	592.75	0.000173	1.53	1615.83	640.26	0.11
1	12509	2%_Cur	1060	585.2	593.43	590.4	593.44	0.000169	1.63	2087.28	709.16	0.11
1	12509	1%_Cur	1160	585.2	593.67	590.52	593.68	0.000164	1.64	2259.94	737.92	0.11
1	12509	0.2%_Cur	1410	585.2	594.25	590.77	594.26	0.000157	1.69	2703.47	775.08	0.11
1	12509	10%_Proj	848	585.2	592.86	590.11	592.87	0.000172	1.55	1696.25	667.28	0.11
1	12509	2%_Proj	1118	585.2	593.57	590.51	593.58	0.000166	1.63	2185.65	723.95	0.11
1	12509	1%_Proj	1222	585.2	593.81	590.56	593.83	0.000172	1.7	2370.04	766.39	0.11
1	12509	0.2%_Proj	1480	585.2	594.4	590.83	594.42	0.000153	1.69	2823.44	794.56	0.11
1	11492	10%_Cur	799	584.5	592.54		592.57	0.000223	1.94	1076.61	520.19	0.13
1	11492	2%_Cur	1060	584.5	593.23		593.26	0.000235	2.11	1312.27	548.16	0.13
1	11492	1%_Cur	1160	584.5	593.47		593.5	0.000239	2.17	1394.95	553.58	0.13
1	11492	0.2%_Cur	1410	584.5	594.04		594.08	0.000244	2.3	1594.6	566.12	0.14
1	11492	10%_Proj	848	584.5	592.66		592.69	0.000228	1.98	1117.84	523.51	0.13
1	11492	2%_Proj	1118	584.5	593.36		593.4	0.000238	2.15	1359.46	551.6	0.13
1	11492	1%_Proj	1222	584.5	593.61		593.64	0.000241	2.21	1443.26	556.33	0.13
1	11492	0.2%_Proj	1480	584.5	594.2		594.24	0.000245	2.33	1648.8	570.05	0.14
1	11208	10%_Cur	799	584.6	592.35		592.47	0.000679	3.14	555.53	519.94	0.22
1	11208	2%_Cur	1060	584.6	593.04		593.16	0.000686	3.38	744.09	588.53	0.23
1	11208	1%_Cur	1160	584.6	593.28		593.4	0.000681	3.45	813.83	599.56	0.23
1	11208	0.2%_Cur	1410	584.6	593.86		593.98	0.000664	3.58	987.43	765.76	0.23
1	11208	10%_Proj	848	584.6	592.47		592.59	0.000701	3.23	585.89	532.15	0.23

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	11208	2%_Proj	1118	584.6	593.17		593.3	0.000686	3.42	783.51	594.94	0.23
1	11208	1%_Proj	1222	584.6	593.42		593.54	0.00068	3.49	854.98	618.17	0.23
1	11208	0.2%_Proj	1480	584.6	594.02		594.14	0.000652	3.6	1036.66	808.46	0.23
1	10810	10%_Cur	799	584.8	592.03		592.16	0.001045	3.63	564.26	473.04	0.27
1	10810	2%_Cur	1060	584.8	592.73		592.87	0.000984	3.82	772.7	577.36	0.27
1	10810	1%_Cur	1160	584.8	593		593.12	0.000898	3.75	878.48	624.31	0.26
1	10810	0.2%_Cur	1410	584.8	593.63		593.73	0.000745	3.63	1125.92	699.91	0.24
1	10810	10%_Proj	848	584.8	592.15		592.28	0.00104	3.68	596.23	476.49	0.27
1	10810	2%_Proj	1118	584.8	592.89		593.01	0.000937	3.79	832.81	606.97	0.26
1	10810	1%_Proj	1222	584.8	593.15		593.27	0.000862	3.73	937.85	651.52	0.25
1	10810	0.2%_Proj	1480	584.8	593.8		593.9	0.000711	3.6	1193.71	773.2	0.23
1	10428	10%_Cur	799	584.8	591.18		591.44	0.004675	4.19	200.42	77.81	0.35
1	10428	2%_Cur	1060	584.8	591.8		592.16	0.005174	4.82	238.43	137.01	0.38
1	10428	1%_Cur	1160	584.8	592.09		592.46	0.005101	4.96	258.13	152.48	0.38
1	10428	0.2%_Cur	1410	584.8	592.74		593.15	0.004912	5.26	310.14	184.74	0.38
1	10428	10%_Proj	848	584.8	591.26		591.55	0.00493	4.35	205.15	79.46	0.36
1	10428	2%_Proj	1118	584.8	591.96		592.33	0.005164	4.91	249.13	145.86	0.38
1	10428	1%_Proj	1222	584.8	592.23		592.62	0.005131	5.07	269.16	160.27	0.38
1	10428	0.2%_Proj	1480	584.8	592.92		593.33	0.004829	5.32	325.65	203.88	0.38
1	10310	10%_Cur	799	584.02	591.2	586.2	591.26	0.000276	2	406.14	78.49	0.14
1	10310	2%_Cur	1060	584.02	591.83	586.63	591.92	0.000345	2.39	454.43	83.43	0.16
1	10310	1%_Cur	1160	584.02	592.12	586.79	592.21	0.000358	2.5	476.47	85.7	0.17
1	10310	0.2%_Cur	1410	584.02	592.77	587.15	592.89	0.000388	2.76	527.8	103.37	0.18
1	10310	10%_Proj	848	584.02	591.28	586.29	591.35	0.000297	2.09	412.62	79.05	0.15
1	10310	2%_Proj	1118	584.02	591.99	586.72	592.08	0.000354	2.46	466.63	84.69	0.17
1	10310	1%_Proj	1222	584.02	592.27	586.88	592.37	0.000369	2.58	488.11	87.92	0.17
1	10310	0.2%_Proj	1480	584.02	592.95	587.25	593.07	0.000394	2.83	541.96	113.68	0.18
1	10250		Bridge									
1	10147	10%_Cur	824	584.02	591.06	586.25	591.13	0.000311	2.12	404.81	266.4	0.15
1	10147	2%_Cur	1090	584.02	591.62	586.69	591.72	0.0004	2.55	453.66	292.56	0.17
1	10147	1%_Cur	1200	584.02	591.85	586.86	591.96	0.000429	2.7	474.42	307.21	0.18
1	10147	0.2%_Cur	1450	584.02	592.35	587.23	592.49	0.000486	3.02	518.94	335.54	0.2
1	10147	10%_Proj	875	584.02	591.14	586.34	591.21	0.000337	2.23	411.11	271.41	0.16
1	10147	2%_Proj	1150	584.02	591.75	586.79	591.85	0.000416	2.64	465.16	298.2	0.18
1	10147	1%_Proj	1258	584.02	591.97	586.93	592.08	0.000444	2.78	484.66	316.86	0.19

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	10147	0.2%_Proj	1522	584.02	592.48	587.32	592.63	0.000502	3.1	530.54	341.06	0.2
1	9967	10%_Cur	824	584.4	590.76	588.2	590.98	0.001505	4	306.72	222.55	0.32
1	9967	2%_Cur	1090	584.4	591.24	588.76	591.53	0.001782	4.63	363.6	227.17	0.35
1	9967	1%_Cur	1200	584.4	591.46	588.96	591.76	0.001837	4.83	389.09	229.54	0.36
1	9967	0.2%_Cur	1450	584.4	591.92	589.38	592.27	0.001929	5.22	445.03	254.82	0.37
1	9967	10%_Proj	875	584.4	590.81	588.3	591.05	0.001631	4.19	312.18	222.98	0.33
1	9967	2%_Proj	1150	584.4	591.36	588.87	591.66	0.001811	4.74	377.73	228.44	0.36
1	9967	1%_Proj	1258	584.4	591.56	589.07	591.88	0.00187	4.93	401.56	230.81	0.36
1	9967	0.2%_Proj	1522	584.4	592.04	589.54	592.4	0.001961	5.33	459.58	293.44	0.38
1	9667	10%_Cur	824	584.1	590.48	588.11	590.6	0.00094	3.34	510.33	258.05	0.26
1	9667	2%_Cur	1090	584.1	590.97	588.95	591.1	0.000975	3.62	642.42	276.26	0.27
1	9667	1%_Cur	1200	584.1	591.2	589.12	591.33	0.000961	3.69	707.95	299.41	0.27
1	9667	0.2%_Cur	1450	584.1	591.71	589.48	591.83	0.000886	3.74	866.52	330.82	0.26
1	9667	10%_Proj	875	584.1	590.5	588.54	590.63	0.001041	3.53	514.96	259.87	0.27
1	9667	2%_Proj	1150	584.1	591.09	589.05	591.22	0.000971	3.66	677.45	293.31	0.27
1	9667	1%_Proj	1258	584.1	591.31	589.19	591.44	0.000939	3.69	742.96	301.9	0.27
1	9667	0.2%_Proj	1522	584.1	591.84	589.59	591.96	0.000861	3.74	911.29	334.5	0.26
1	9411	10%_Cur	824	583.7	590.27	587.87	590.37	0.000957	3.14	588.39	269.39	0.25
1	9411	2%_Cur	1090	583.7	590.75	589.01	590.86	0.001031	3.47	717.63	273.91	0.27
1	9411	1%_Cur	1200	583.7	590.98	589.17	591.1	0.001006	3.53	781.84	277.13	0.27
1	9411	0.2%_Cur	1450	583.7	591.51	589.43	591.62	0.000937	3.62	928.1	284.38	0.26
1	9411	10%_Proj	875	583.7	590.26	588.44	590.38	0.001091	3.34	585.63	269.27	0.27
1	9411	2%_Proj	1150	583.7	590.87	589.04	590.99	0.001018	3.5	752.8	275.72	0.27
1	9411	1%_Proj	1258	583.7	591.1	589.23	591.22	0.000993	3.56	814.88	278.65	0.27
1	9411	0.2%_Proj	1522	583.7	591.64	589.48	591.76	0.000935	3.67	966.25	289.4	0.26
1	9112	10%_Cur	824	583.3	589.94	587.35	590.08	0.001099	3.35	456.33	230.63	0.27
1	9112	2%_Cur	1090	583.3	590.37	588.03	590.54	0.001262	3.8	558.21	241.15	0.3
1	9112	1%_Cur	1200	583.3	590.61	588.24	590.79	0.001223	3.86	617.73	247.6	0.3
1	9112	0.2%_Cur	1450	583.3	591.15	589.11	591.33	0.001169	4.03	768.94	317.87	0.29
1	9112	10%_Proj	875	583.3	589.86	587.53	590.03	0.001346	3.66	438.1	227.49	0.3
1	9112	2%_Proj	1150	583.3	590.5	588.15	590.68	0.001241	3.84	590.74	243.78	0.3
1	9112	1%_Proj	1258	583.3	590.74	588.47	590.91	0.001204	3.89	649.44	267.02	0.29
1	9112	0.2%_Proj	1522	583.3	591.29	589.2	591.47	0.001143	4.05	814.02	326.78	0.29
1	8693	10%_Cur	824	582.7	588.94	587	589.36	0.002882	5.32	182.26	183.66	0.44
1	8693	2%_Cur	1090	582.7	589.71	587.69	589.95	0.001692	4.52	492	194.99	0.34

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8693	1%_Cur	1200	582.7	589.99	587.95	590.22	0.001615	4.57	545.1	196.59	0.34
1	8693	0.2%_Cur	1450	582.7	590.58	588.43	590.8	0.001458	4.64	662.79	199.07	0.33
1	8693	10%_Proj	875	582.7	589.13	587.17	589.37	0.001918	4.46	378.95	190.05	0.36
1	8693	2%_Proj	1150	582.7	589.86	587.84	590.1	0.001648	4.55	521.34	196.09	0.34
1	8693	1%_Proj	1258	582.7	590.12	588.07	590.35	0.001579	4.59	572.21	197.17	0.34
1	8693	0.2%_Proj	1522	582.7	590.73	588.56	590.96	0.001433	4.67	693.16	199.62	0.33
1	8419	10%_Cur	824	582.5	588.45		588.71	0.001725	4.26	274.2	206.84	0.34
1	8419	2%_Cur	1090	582.5	589.21		589.49	0.001619	4.55	377.58	245.78	0.34
1	8419	1%_Cur	1200	582.5	589.48		589.77	0.001602	4.67	416.25	253.75	0.34
1	8419	0.2%_Cur	1450	582.5	590.09		590.39	0.00152	4.87	506.39	265.56	0.34
1	8419	10%_Proj	875	582.5	588.61		588.88	0.001691	4.31	295.67	218.97	0.34
1	8419	2%_Proj	1150	582.5	589.36		589.64	0.001608	4.62	398.88	250.15	0.34
1	8419	1%_Proj	1258	582.5	589.62		589.91	0.001591	4.73	436.47	256.73	0.34
1	8419	0.2%_Proj	1522	582.5	590.24		590.54	0.001515	4.93	529.17	268.18	0.34
1	8391	10%_Cur	824	582.5	588.28		588.64	0.002706	5.14	274.6	190.11	0.41
1	8391	2%_Cur	1090	582.5	589.13		589.44	0.002129	5.07	422.37	222.17	0.37
1	8391	1%_Cur	1200	582.5	589.42		589.72	0.002003	5.09	475.92	228.9	0.37
1	8391	0.2%_Cur	1450	582.5	590.05		590.33	0.001761	5.1	595.98	269.14	0.35
1	8391	10%_Proj	875	582.5	588.46		588.81	0.002555	5.12	305.3	197.19	0.4
1	8391	2%_Proj	1150	582.5	589.29		589.59	0.002053	5.08	452.27	225.13	0.37
1	8391	1%_Proj	1258	582.5	589.56		589.86	0.001948	5.1	503.13	244.54	0.36
1	8391	0.2%_Proj	1522	582.5	590.21		590.49	0.001727	5.13	625.96	274.25	0.35
1	8349	10%_Cur	824	582.3	588.14	586.02	588.53	0.002631	5.09	198.37	110.56	0.41
1	8349	2%_Cur	1090	582.3	588.89	586.61	589.33	0.002514	5.49	290.02	193.69	0.41
1	8349	1%_Cur	1200	582.3	589.17	586.83	589.61	0.002476	5.63	326.99	267.2	0.41
1	8349	0.2%_Cur	1450	582.3	589.78	587.36	590.23	0.002329	5.83	424.87	322.42	0.41
1	8349	10%_Proj	875	582.3	588.3	586.16	588.7	0.002608	5.18	216.44	125.16	0.41
1	8349	2%_Proj	1150	582.3	589.05	586.74	589.48	0.00249	5.56	310.17	225	0.41
1	8349	1%_Proj	1258	582.3	589.3	586.96	589.75	0.002453	5.69	347.32	282.86	0.41
1	8349	0.2%_Proj	1522	582.3	589.92	587.47	590.38	0.002346	5.94	450.04	327.98	0.41
1	8318	10%_Cur	824	582.1	588.24	585.81	588.41	0.001185	3.42	351.15	158.47	0.28
1	8318	2%_Cur	1090	582.1	589.02	586.25	589.2	0.001081	3.63	488.71	191.65	0.28
1	8318	1%_Cur	1200	582.1	589.3	586.46	589.48	0.001082	3.76	545.18	223.74	0.28
1	8318	0.2%_Cur	1450	582.1	589.92	586.93	590.11	0.000984	3.85	691.29	259.47	0.27
1	8318	10%_Proj	875	582.1	588.41	585.89	588.58	0.00116	3.46	378.26	167.99	0.28
1	8318	2%_Proj	1150	582.1	589.18	586.35	589.36	0.001073	3.69	519.3	207.14	0.28

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8318	1%_Proj	1258	582.1	589.44	586.58	589.63	0.001076	3.81	577.19	232.49	0.28
1	8318	0.2%_Proj	1522	582.1	590.07	587.03	590.26	0.00097	3.88	726.76	276.52	0.27
1	8227	10%_Cur	824	582	587.5	585.97	588.17	0.004545	6.8	183.81	128.42	0.54
1	8227	2%_Cur	1090	582	588.47		589.01	0.003299	6.53	325.55	166.51	0.47
1	8227	1%_Cur	1200	582	588.79		589.3	0.003014	6.47	388.41	225.26	0.46
1	8227	0.2%_Cur	1450	582	589.48		589.94	0.002602	6.45	575.91	312.25	0.43
1	8227	10%_Proj	875	582	587.68	586.12	588.34	0.004339	6.82	209.05	141.44	0.53
1	8227	2%_Proj	1150	582	588.65		589.17	0.003133	6.5	358.22	189.42	0.46
1	8227	1%_Proj	1258	582	588.96		589.45	0.002889	6.45	426.82	246.3	0.45
1	8227	0.2%_Proj	1522	582	589.68		590.1	0.002395	6.3	639.59	337.85	0.42
1	7993	10%_Cur	824	580.3	586.96		587.36	0.002245	5.22	216.64	88.5	0.4
1	7993	2%_Cur	1090	580.3	587.95		588.37	0.002024	5.54	318.26	128.59	0.39
1	7993	1%_Cur	1200	580.3	588.29		588.71	0.001929	5.6	363.03	131.16	0.38
1	7993	0.2%_Cur	1450	580.3	589.02		589.43	0.001757	5.72	460.07	136.55	0.37
1	7993	10%_Proj	875	580.3	587.17		587.57	0.002177	5.26	234.95	90.82	0.39
1	7993	2%_Proj	1150	580.3	588.14		588.57	0.001965	5.57	343.45	130.15	0.38
1	7993	1%_Proj	1258	580.3	588.46		588.89	0.001888	5.64	385.68	132.31	0.38
1	7993	0.2%_Proj	1522	580.3	589.21		589.63	0.001718	5.76	486.95	138.1	0.37
1	7542	10%_Cur	824	578.4	586.46		586.68	0.00094	3.79	238.4	60.86	0.26
1	7542	2%_Cur	1090	578.4	587.43		587.71	0.001003	4.29	310.66	93.14	0.28
1	7542	1%_Cur	1200	578.4	587.76		588.06	0.001028	4.47	342.31	97.26	0.28
1	7542	0.2%_Cur	1450	578.4	588.47		588.81	0.001068	4.83	414.56	107.8	0.29
1	7542	10%_Proj	875	578.4	586.66		586.9	0.000952	3.89	250.99	64.92	0.26
1	7542	2%_Proj	1150	578.4	587.62		587.91	0.001014	4.39	328.52	95.55	0.28
1	7542	1%_Proj	1258	578.4	587.93		588.24	0.001041	4.56	358.54	99.5	0.28
1	7542	0.2%_Proj	1522	578.4	588.66		589.01	0.001077	4.92	435.45	110.38	0.29
1	7102	10%_Cur	824	578.2	586.08		586.27	0.000907	3.6	301.89	88.45	0.26
1	7102	2%_Cur	1090	578.2	587.06		587.28	0.000889	3.94	391.6	95.02	0.26
1	7102	1%_Cur	1200	578.2	587.39		587.62	0.000903	4.09	423.2	97.38	0.26
1	7102	0.2%_Cur	1450	578.2	588.09		588.35	0.00093	4.41	493.37	105	0.27
1	7102	10%_Proj	875	578.2	586.28		586.48	0.0009	3.67	320.01	89.63	0.26
1	7102	2%_Proj	1150	578.2	587.25		587.47	0.000893	4.01	409.65	96.38	0.26
1	7102	1%_Proj	1258	578.2	587.55		587.79	0.000912	4.17	439.1	98.69	0.27
1	7102	0.2%_Proj	1522	578.2	588.27		588.55	0.000936	4.49	513.52	108.69	0.27
1	6688	10%_Cur	824	578	585.69	581.56	585.9	0.000887	3.7	240.11	109.55	0.25

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6688	2%_Cur	1090	578	586.61	582.19	586.88	0.00099	4.26	286.27	300.09	0.27
1	6688	1%_Cur	1200	578	586.9	582.43	587.21	0.001049	4.49	302.13	451.77	0.28
1	6688	0.2%_Cur	1450	578	587.54	582.91	587.91	0.001163	4.98	338.42	642.2	0.3
1	6688	10%_Proj	875	578	585.88	581.67	586.1	0.000906	3.81	249.41	131.25	0.26
1	6688	2%_Proj	1150	578	586.78	582.32	587.07	0.001019	4.38	295.42	395.15	0.28
1	6688	1%_Proj	1258	578	587.05	582.54	587.37	0.00108	4.62	310.15	490.28	0.29
1	6688	0.2%_Proj	1522	578	587.71	583.05	588.1	0.001192	5.11	349.17	710.06	0.31
1	6557	10%_Cur	824	577.8	585.7	580.7	585.79	0.000368	2.47	352.15	309.07	0.17
1	6557	2%_Cur	1090	577.8	586.66	581.22	586.76	0.000357	2.66	501.53	600.18	0.17
1	6557	1%_Cur	1200	577.8	586.97	581.43	587.08	0.000364	2.76	543.43	729.16	0.17
1	6557	0.2%_Cur	1450	577.8	587.64	581.85	587.75	0.000372	2.94	640.2	901	0.18
1	6557	10%_Proj	875	577.8	585.89	580.81	585.99	0.000375	2.54	366.49	346.92	0.17
1	6557	2%_Proj	1150	577.8	586.84	581.34	586.94	0.000359	2.71	525.65	704.66	0.17
1	6557	1%_Proj	1258	577.8	587.12	581.51	587.23	0.000368	2.81	564.73	776.99	0.17
1	6557	0.2%_Proj	1522	577.8	587.82	581.96	587.94	0.000372	2.98	668.75	1060.94	0.18
1	6514	10%_Cur	824	578	585.53	582.03	585.73	0.001007	3.62	233.97	208.45	0.27
1	6514	2%_Cur	1090	578	586.43	582.63	586.69	0.001058	4.09	280.02	731.18	0.28
1	6514	1%_Cur	1200	578	586.72	582.86	587	0.001104	4.3	295.96	769.9	0.29
1	6514	0.2%_Cur	1450	578	587.33	583.32	587.66	0.001183	4.71	331.53	992.94	0.3
1	6514	10%_Proj	875	578	585.72	582.14	585.93	0.001013	3.71	243.23	369.46	0.27
1	6514	2%_Proj	1150	578	586.6	582.77	586.87	0.001078	4.2	289.27	764.67	0.29
1	6514	1%_Proj	1258	578	586.86	582.97	587.15	0.001129	4.4	303.97	797.19	0.29
1	6514	0.2%_Proj	1522	578	587.49	583.42	587.84	0.001202	4.82	341.42	1052.32	0.31
1	6490		Bridge									
1	6455	10%_Cur	824	577.4	585.46	581.92	585.66	0.001019	3.63	231.54	672.96	0.27
1	6455	2%_Cur	1090	577.4	586.34	582.55	586.61	0.001084	4.12	273.7	726.06	0.28
1	6455	1%_Cur	1200	577.4	586.62	582.77	586.91	0.001138	4.34	287.13	832.28	0.29
1	6455	0.2%_Cur	1450	577.4	587.06	583.25	587.43	0.001333	4.9	308.75	1089.2	0.32
1	6455	10%_Proj	875	577.4	585.65	582.06	585.86	0.001029	3.73	240.2	702.47	0.27
1	6455	2%_Proj	1150	577.4	586.51	582.68	586.78	0.001107	4.23	281.63	782.25	0.29
1	6455	1%_Proj	1258	577.4	586.75	582.9	587.05	0.00117	4.46	293.51	892.31	0.3
1	6455	0.2%_Proj	1522	577.4	587.19	583.36	587.57	0.001385	5.05	314.76	1136.73	0.33
1	6388	10%_Cur	824	577.1	585.38	581.36	585.59	0.000947	3.77	231.1	277.78	0.26
1	6388	2%_Cur	1090	577.1	586.24	582.02	586.53	0.001058	4.34	273.56	379.23	0.28
1	6388	1%_Cur	1200	577.1	586.51	582.26	586.82	0.001128	4.59	287.66	421.58	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6388	0.2%_Cur	1450	577.1	587	582.8	587.33	0.001167	4.86	369.78	636.33	0.3
1	6388	10%_Proj	875	577.1	585.56	581.47	585.79	0.000967	3.89	239.76	315.58	0.26
1	6388	2%_Proj	1150	577.1	586.4	582.15	586.7	0.001091	4.47	281.85	399.47	0.29
1	6388	1%_Proj	1258	577.1	586.64	582.41	586.97	0.001167	4.72	294.56	461.22	0.3
1	6388	0.2%_Proj	1522	577.1	587.12	582.94	587.47	0.001201	4.98	380.84	723.01	0.31
1	5650	10%_Cur	824	576.9	584.41	581.07	584.72	0.001484	4.5	196.96	125.89	0.32
1	5650	2%_Cur	1090	576.9	585.14	581.76	585.54	0.001702	5.19	245.08	295.9	0.35
1	5650	1%_Cur	1200	576.9	585.43	582.02	585.82	0.001647	5.25	318.12	373.43	0.35
1	5650	0.2%_Cur	1450	576.9	586.02	582.53	586.37	0.001465	5.22	437.13	522.2	0.33
1	5650	10%_Proj	875	576.9	584.57	581.21	584.9	0.001521	4.64	206.31	162.39	0.33
1	5650	2%_Proj	1150	576.9	585.32	581.9	585.71	0.001657	5.21	296.38	362.94	0.35
1	5650	1%_Proj	1258	576.9	585.59	582.13	585.97	0.001582	5.22	350.18	391.22	0.34
1	5650	0.2%_Proj	1522	576.9	586.16	582.7	586.5	0.00143	5.22	467.24	547	0.33
1	5466	10%_Cur	824	576.8	584.22	580.87	584.45	0.001253	3.93	261.61	380.61	0.29
1	5466	2%_Cur	1090	576.8	585.02	581.62	585.23	0.001104	4.04	372.95	475.74	0.28
1	5466	1%_Cur	1200	576.8	585.32	581.91	585.53	0.001052	4.06	414.74	530.04	0.28
1	5466	0.2%_Cur	1450	576.8	585.9	582.41	586.1	0.00099	4.17	497.03	622.05	0.27
1	5466	10%_Proj	875	576.8	584.4	581.02	584.62	0.001211	3.95	286.03	395.59	0.29
1	5466	2%_Proj	1150	576.8	585.21	581.8	585.42	0.001055	4.02	399.25	511.59	0.28
1	5466	1%_Proj	1258	576.8	585.48	582.03	585.68	0.001019	4.06	437.67	548.31	0.27
1	5466	0.2%_Proj	1522	576.8	586.03	582.56	586.25	0.000987	4.21	517.02	651.23	0.27
1	5293	10%_Cur	824	576.6	584.01	580.53	584.24	0.001135	3.88	227.93	342.39	0.28
1	5293	2%_Cur	1090	576.6	584.7	581.21	585.01	0.001347	4.56	265.64	492.18	0.32
1	5293	1%_Cur	1200	576.6	584.95	581.45	585.3	0.001429	4.82	280.82	617.55	0.33
1	5293	0.2%_Cur	1450	576.6	585.67	581.92	585.92	0.001051	4.42	595.41	773.91	0.29
1	5293	10%_Proj	875	576.6	584.17	580.67	584.41	0.001168	4.01	236.06	360.86	0.29
1	5293	2%_Proj	1150	576.6	584.86	581.36	585.19	0.001374	4.68	275.49	599.36	0.32
1	5293	1%_Proj	1258	576.6	585.09	581.59	585.46	0.001461	4.94	289.69	637.4	0.33
1	5293	0.2%_Proj	1522	576.6	585.81	582.05	586.06	0.001063	4.5	621.33	777.5	0.29
1	5103	10%_Cur	824	575.6	584	580.4	584.07	0.000415	2.34	414.63	595.77	0.17
1	5103	2%_Cur	1090	575.6	584.76	580.82	584.82	0.00035	2.34	758.71	951.66	0.16
1	5103	1%_Cur	1200	575.6	585.03	580.97	585.1	0.000351	2.41	822.07	980.87	0.16
1	5103	0.2%_Cur	1450	575.6	585.7	581.32	585.77	0.000335	2.5	980.26	1007.17	0.16
1	5103	10%_Proj	875	575.6	584.16	580.49	584.24	0.000419	2.4	432.93	680.89	0.17
1	5103	2%_Proj	1150	575.6	584.94	580.91	585	0.000344	2.36	799.74	975.98	0.16
1	5103	1%_Proj	1258	575.6	585.19	581.06	585.25	0.000349	2.43	857.66	986.76	0.16

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	5103	0.2%_Proj	1522	575.6	585.84	581.39	585.9	0.00034	2.55	1013.16	1009.73	0.16
1	4940	10%_Cur	824	576.4	583.98	579.9	584.02	0.000271	1.87	493.4	625.45	0.14
1	4940	2%_Cur	1090	576.4	584.72	580.28	584.78	0.000292	2.11	637.16	937.33	0.15
1	4940	1%_Cur	1200	576.4	584.99	580.41	585.06	0.000297	2.19	698.83	993.08	0.15
1	4940	0.2%_Cur	1450	576.4	585.66	580.72	585.73	0.000287	2.3	851.87	1055.51	0.15
1	4940	10%_Proj	875	576.4	584.14	579.97	584.19	0.000274	1.92	514.4	747.9	0.14
1	4940	2%_Proj	1150	576.4	584.9	580.36	584.96	0.000289	2.14	677.28	981.03	0.15
1	4940	1%_Proj	1258	576.4	585.15	580.48	585.21	0.000296	2.22	733.43	1008.96	0.15
1	4940	0.2%_Proj	1522	576.4	585.8	580.79	585.86	0.000291	2.35	883.14	1057.15	0.15
1	4720	10%_Cur	824	576.3	583.76	579.56	583.92	0.000716	3.26	269.43	1002.97	0.23
1	4720	2%_Cur	1090	576.3	584.59	580.15	584.7	0.000496	2.94	577.82	1454.95	0.19
1	4720	1%_Cur	1200	576.3	584.87	580.36	584.97	0.000477	2.96	640.45	1487.67	0.19
1	4720	0.2%_Cur	1450	576.3	585.56	580.84	585.65	0.000409	2.91	796.54	1551.1	0.18
1	4720	10%_Proj	875	576.3	583.91	579.68	584.08	0.000743	3.37	278.4	1168.99	0.23
1	4720	2%_Proj	1150	576.3	584.77	580.27	584.88	0.000473	2.92	619.23	1477.84	0.19
1	4720	1%_Proj	1258	576.3	585.03	580.48	585.13	0.000462	2.95	675.76	1490.29	0.19
1	4720	0.2%_Proj	1522	576.3	585.7	580.98	585.79	0.000408	2.94	827.59	1561.51	0.18
1	4626	10%_Cur	824	576.2	583.75	580.22	583.84	0.000553	2.74	517.51	1201.31	0.2
1	4626	2%_Cur	1090	576.2	584.58	580.83	584.64	0.000379	2.48	797.15	1742.94	0.17
1	4626	1%_Cur	1200	576.2	584.86	581.05	584.92	0.000343	2.43	894.5	1826.08	0.16
1	4626	0.2%_Cur	1450	576.2	585.56	581.47	585.61	0.000255	2.23	1314.56	1897.04	0.14
1	4626	10%_Proj	875	576.2	583.92	580.35	584	0.000512	2.68	572.06	1325.86	0.19
1	4626	2%_Proj	1150	576.2	584.77	580.95	584.82	0.000347	2.42	861.56	1804.49	0.16
1	4626	1%_Proj	1258	576.2	585.02	581.16	585.08	0.000323	2.39	949.54	1856.13	0.16
1	4626	0.2%_Proj	1522	576.2	585.7	581.59	585.74	0.000247	2.22	1408.65	1898.92	0.14
1	4601	10%_Cur	824	576.1	583.62	580.18	583.81	0.000961	3.55	254.82	1314.99	0.26
1	4601	2%_Cur	1090	576.1	584.57	580.79	584.63	0.000382	2.48	910.31	1808.43	0.17
1	4601	1%_Cur	1200	576.1	584.86	581.03	584.91	0.000343	2.42	1028.67	1833.58	0.16
1	4601	0.2%_Cur	1450	576.1	585.58	581.46	585.59	0.000125	1.56	2754	1880.99	0.1
1	4601	10%_Proj	875	576.1	583.9	580.31	583.99	0.000541	2.75	631.01	1533.92	0.2
1	4601	2%_Proj	1150	576.1	584.76	580.93	584.82	0.000348	2.41	988.83	1821.62	0.16
1	4601	1%_Proj	1258	576.1	585.02	581.13	585.07	0.000322	2.38	1095.16	1843.97	0.16
1	4601	0.2%_Proj	1522	576.1	585.72	581.56	585.73	0.000121	1.55	2891.66	1885.05	0.1
1	4486	10%_Cur	824	575.7	583.54	579.43	583.71	0.00076	3.34	261.79	1589.32	0.24
1	4486	2%_Cur	1090	575.7	584.54	580.04	584.59	0.000311	2.36	1031.71	1878.01	0.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	4486	1%_Cur	1200	575.7	584.83	580.28	584.88	0.000287	2.32	1156.4	1926.46	0.15
1	4486	0.2%_Cur	1450	575.7	585.53	580.78	585.57	0.000227	2.2	1465.39	1992.87	0.13
1	4486	10%_Proj	875	575.7	583.72	579.56	583.9	0.000775	3.44	272.21	1689.54	0.24
1	4486	2%_Proj	1150	575.7	584.73	580.17	584.78	0.000288	2.31	1114.75	1914.96	0.15
1	4486	1%_Proj	1258	575.7	584.99	580.39	585.04	0.000272	2.29	1226.56	1945.51	0.15
1	4486	0.2%_Proj	1522	575.7	585.71	580.91	585.72	0.000076	1.29	4024.86	1998.37	0.08
1	4426	10%_Cur	824	575.7	583.55	579.55	583.65	0.000553	2.85	655.75	1939.69	0.2
1	4426	2%_Cur	1090	575.7	584.5	580.17	584.57	0.000404	2.68	1068.67	2148.4	0.18
1	4426	1%_Cur	1200	575.7	584.79	580.41	584.86	0.000382	2.67	1195.95	2166.86	0.17
1	4426	0.2%_Cur	1450	575.7	585.5	580.91	585.56	0.00032	2.6	1511.79	2235.29	0.16
1	4426	10%_Proj	875	575.7	583.75	579.68	583.84	0.00052	2.82	737.89	2013.85	0.2
1	4426	2%_Proj	1150	575.7	584.69	580.32	584.76	0.00038	2.64	1153.87	2162.06	0.17
1	4426	1%_Proj	1258	575.7	584.95	580.55	585.02	0.000368	2.66	1267.75	2175.55	0.17
1	4426	0.2%_Proj	1522	575.7	585.65	581.04	585.71	0.000317	2.62	1578.86	2237.55	0.16
1	4162	10%_Cur	824	575.5	583.39	580.04	583.5	0.000634	2.86	586.46	1534.89	0.21
1	4162	2%_Cur	1090	575.5	584.38	580.63	584.46	0.000467	2.73	943.27	2087.3	0.19
1	4162	1%_Cur	1200	575.5	584.67	580.83	584.75	0.000442	2.74	1053.13	2160.35	0.19
1	4162	0.2%_Cur	1450	575.5	585.4	581.22	585.47	0.00037	2.68	1326.55	2202.55	0.17
1	4162	10%_Proj	875	575.5	583.6	580.15	583.7	0.000591	2.82	654.53	1666.41	0.21
1	4162	2%_Proj	1150	575.5	584.58	580.73	584.65	0.000439	2.7	1017.96	2139.56	0.18
1	4162	1%_Proj	1258	575.5	584.84	580.91	584.91	0.000425	2.73	1115.38	2177.88	0.18
1	4162	0.2%_Proj	1522	575.5	585.55	581.33	585.62	0.000366	2.7	1383.39	2204	0.17
1	4085	10%_Cur	824	575.5	583.31	578.71	583.45	0.000553	2.95	291.34	1848.74	0.2
1	4085	2%_Cur	1090	575.5	584.23	579.27	584.41	0.00062	3.41	345.23	2141.89	0.22
1	4085	1%_Cur	1200	575.5	584.65	579.5	584.72	0.000304	2.48	1126.07	2192.78	0.16
1	4085	0.2%_Cur	1450	575.5	585.38	579.97	585.44	0.000273	2.49	1392.93	2234.29	0.15
1	4085	10%_Proj	875	575.5	583.5	578.82	583.65	0.000566	3.04	301.81	1923.2	0.21
1	4085	2%_Proj	1150	575.5	584.41	579.4	584.6	0.000635	3.5	357.33	2179.21	0.22
1	4085	1%_Proj	1258	575.5	584.82	579.62	584.88	0.000298	2.48	1186.52	2198.37	0.15
1	4085	0.2%_Proj	1522	575.5	585.58	580.09	585.59	0.000046	1.03	5924.88	2240.32	0.06
1	3935	10%_Cur	824	575.16	583.18	579.65	583.35	0.000832	3.33	356.17	1492.51	0.25
1	3935	2%_Cur	1090	575.16	584.16	580.21	584.3	0.000655	3.29	670.53	2085.96	0.22
1	3935	1%_Cur	1200	575.16	584.52	580.44	584.65	0.000588	3.23	882.12	2210.33	0.21
1	3935	0.2%_Cur	1450	575.16	585.3	580.86	585.39	0.000407	2.88	1635.41	2395.6	0.18
1	3935	10%_Proj	875	575.16	583.38	579.75	583.54	0.000809	3.36	413.7	1694.27	0.24
1	3935	2%_Proj	1150	575.16	584.35	580.33	584.49	0.00063	3.29	755.3	2150.9	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	3935	1%_Proj	1258	575.16	584.7	580.54	584.82	0.000544	3.15	1018.08	2281.7	0.21
1	3935	0.2%_Proj	1522	575.16	585.5	580.97	585.57	0.000363	2.76	1884.61	2418.44	0.17
1	3657	10%_Cur	824	575.4	582.95	579.18	583.12	0.000793	3.29	283.81	1615.15	0.24
1	3657	2%_Cur	1090	575.4	583.93	579.78	584.11	0.000732	3.51	476.81	1846.12	0.24
1	3657	1%_Cur	1200	575.4	584.29	580.01	584.47	0.000695	3.54	563.4	1937.75	0.23
1	3657	0.2%_Cur	1450	575.4	585.17	580.45	585.27	0.000441	3.05	1617.45	2223.93	0.19
1	3657	10%_Proj	875	575.4	583.15	579.31	583.32	0.000785	3.35	318.21	1662.11	0.24
1	3657	2%_Proj	1150	575.4	584.13	579.91	584.3	0.000712	3.53	523.71	1883.68	0.24
1	3657	1%_Proj	1258	575.4	584.47	580.12	584.64	0.000684	3.57	695.97	2000.19	0.23
1	3657	0.2%_Proj	1522	575.4	585.38	580.56	585.46	0.000379	2.88	1930.21	2309.99	0.18
1	3513	10%_Cur	824	575.2	582.84		583.01	0.000773	3.25	276.93	1807.25	0.24
1	3513	2%_Cur	1090	575.2	583.79		583.99	0.000789	3.64	361.16	2056.53	0.25
1	3513	1%_Cur	1200	575.2	584.15	579.85	584.36	0.000774	3.73	590.87	2133.19	0.25
1	3513	0.2%_Cur	1450	575.2	585.11		585.21	0.000408	2.95	1868.01	2241.14	0.18
1	3513	10%_Proj	875	575.2	583.04		583.21	0.000776	3.33	291.68	1849.6	0.24
1	3513	2%_Proj	1150	575.2	583.99	579.76	584.19	0.000794	3.72	382.06	2108.57	0.25
1	3513	1%_Proj	1258	575.2	584.37		584.55	0.00068	3.57	863.93	2161.26	0.23
1	3513	0.2%_Proj	1522	575.2	585.34		585.41	0.000331	2.7	2268.05	2250.32	0.17
1	3388	10%_Cur	824	575	582.75		582.91	0.000729	3.2	283.32	1926.86	0.23
1	3388	2%_Cur	1090	575	583.7		583.9	0.00075	3.58	374.4	2058.77	0.24
1	3388	1%_Cur	1200	575	584.06		584.27	0.000752	3.71	419.29	2078.78	0.24
1	3388	0.2%_Cur	1450	575	584.92	580.06	585.13	0.000704	3.87	549.23	2115.26	0.24
1	3388	10%_Proj	875	575	582.95		583.11	0.000733	3.28	299.21	1965.64	0.23
1	3388	2%_Proj	1150	575	583.89		584.09	0.000752	3.65	397.52	2064.27	0.24
1	3388	1%_Proj	1258	575	584.24		584.45	0.000749	3.77	445.15	2085.95	0.24
1	3388	0.2%_Proj	1522	575	585.15	580.19	585.34	0.000646	3.78	1032.38	2125.97	0.23
1	3104	10%_Cur	824	574.4	582.6		582.72	0.00055	2.82	310.76	1883.72	0.2
1	3104	2%_Cur	1090	574.4	583.54		583.7	0.000583	3.2	376.56	1910.06	0.21
1	3104	1%_Cur	1200	574.4	583.9		584.07	0.000596	3.34	404.01	1946.6	0.22
1	3104	0.2%_Cur	1450	574.4	584.75		584.94	0.000579	3.55	546.43	2037.96	0.22
1	3104	10%_Proj	875	574.4	582.79		582.92	0.000556	2.9	323.73	1890.83	0.2
1	3104	2%_Proj	1150	574.4	583.73		583.89	0.000592	3.28	390.93	1916.45	0.22
1	3104	1%_Proj	1258	574.4	584.08		584.26	0.000602	3.41	419.16	1974.51	0.22
1	3104	0.2%_Proj	1522	574.4	584.97	579.65	585.17	0.000587	3.64	592.63	2069.4	0.22
1	2926	10%_Cur	824	574.9	582.47		582.61	0.000664	3	292.35	1840.71	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2926	2%_Cur	1090	574.9	583.41		583.58	0.00069	3.38	361.29	1939.6	0.23
1	2926	1%_Cur	1200	574.9	583.76		583.95	0.000698	3.52	391.8	1999.96	0.23
1	2926	0.2%_Cur	1450	574.9	584.6	579.76	584.83	0.000706	3.82	576.39	2138.03	0.24
1	2926	10%_Proj	875	574.9	582.67		582.81	0.000667	3.08	305.4	1848.11	0.22
1	2926	2%_Proj	1150	574.9	583.6		583.78	0.000697	3.46	377.16	1981.09	0.23
1	2926	1%_Proj	1258	574.9	583.94		584.14	0.000701	3.59	408.82	2027.07	0.24
1	2926	0.2%_Proj	1522	574.9	584.88		585.06	0.000592	3.58	1106.6	2170.48	0.22
1	2799	10%_Cur	824	574.4	582.38		582.53	0.000657	3.07	289.29	1641.42	0.22
1	2799	2%_Cur	1090	574.4	583.31		583.5	0.000696	3.47	359.69	1863.08	0.23
1	2799	1%_Cur	1200	574.4	583.65		583.86	0.000731	3.68	395.39	1883.33	0.24
1	2799	0.2%_Cur	1450	574.4	584.54		584.73	0.000625	3.67	668.7	1892.19	0.23
1	2799	10%_Proj	875	574.4	582.58		582.73	0.000664	3.15	302.9	1741.74	0.22
1	2799	2%_Proj	1150	574.4	583.5		583.69	0.000706	3.56	375.12	1869.5	0.23
1	2799	1%_Proj	1258	574.4	583.84		584.05	0.000721	3.71	452.68	1884.93	0.24
1	2799	0.2%_Proj	1522	574.4	584.8		584.98	0.000589	3.64	748.61	1896.24	0.22
1	2576	10%_Cur	824	574.1	582.24		582.38	0.000657	3.1	309.76	1373.29	0.22
1	2576	2%_Cur	1090	574.1	583.17		583.34	0.000667	3.42	463.13	1523.51	0.23
1	2576	1%_Cur	1200	574.1	583.52		583.69	0.000654	3.5	543.89	1568.44	0.22
1	2576	0.2%_Cur	1450	574.1	584.43		584.59	0.000565	3.51	820.23	1638.6	0.21
1	2576	10%_Proj	875	574.1	582.43		582.58	0.000662	3.17	332.03	1406.12	0.22
1	2576	2%_Proj	1150	574.1	583.36		583.53	0.000664	3.48	504.68	1544.81	0.23
1	2576	1%_Proj	1258	574.1	583.71		583.89	0.000641	3.52	593.64	1587.83	0.22
1	2576	0.2%_Proj	1522	574.1	584.71		584.85	0.000502	3.38	1155.94	1641.26	0.2
1	2418	10%_Cur	824	574	582.09		582.27	0.000777	3.34	263.42	1177.64	0.24
1	2418	2%_Cur	1090	574	583		583.22	0.000844	3.82	319.26	1509.76	0.25
1	2418	1%_Cur	1200	574	583.32		583.57	0.00089	4.04	347.01	1564.8	0.26
1	2418	0.2%_Cur	1450	574	584.24		584.48	0.00077	4.07	567.68	1665.85	0.25
1	2418	10%_Proj	875	574	582.28		582.46	0.000789	3.44	274.41	1321.26	0.24
1	2418	2%_Proj	1150	574	583.17		583.41	0.000861	3.92	331.39	1541.03	0.26
1	2418	1%_Proj	1258	574	583.51		583.76	0.000882	4.09	389.19	1585.28	0.26
1	2418	0.2%_Proj	1522	574	584.52		584.75	0.000723	4.03	643.09	1714.46	0.24
1	2234	10%_Cur	824	573.9	581.98		582.13	0.000662	3.12	279.35	1292.55	0.22
1	2234	2%_Cur	1090	573.9	582.87		583.07	0.00073	3.58	332.64	1636.57	0.24
1	2234	1%_Cur	1200	573.9	583.19		583.41	0.000759	3.76	353.35	1668.16	0.24
1	2234	0.2%_Cur	1450	573.9	584.15		584.34	0.000617	3.68	950.68	1740.67	0.22
1	2234	10%_Proj	875	573.9	582.17		582.32	0.000674	3.21	290.04	1480.51	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2234	2%_Proj	1150	573.9	583.05		583.25	0.000746	3.68	343.83	1654.14	0.24
1	2234	1%_Proj	1258	573.9	583.38		583.6	0.000765	3.84	365.85	1682.58	0.25
1	2234	0.2%_Proj	1522	573.9	584.47		584.61	0.000493	3.37	1316.51	1752.86	0.2
1	2044	10%_Cur	824	573.9	581.9		582.01	0.000471	2.67	322.33	1302.28	0.19
1	2044	2%_Cur	1090	573.9	582.79		582.93	0.000525	3.07	378.99	1404.03	0.2
1	2044	1%_Cur	1200	573.9	583.11		583.27	0.000548	3.23	400.43	1415.44	0.21
1	2044	0.2%_Cur	1450	573.9	584.05		584.23	0.000536	3.46	492.81	1451.9	0.21
1	2044	10%_Proj	875	573.9	582.09		582.2	0.000481	2.75	333.86	1367.64	0.19
1	2044	2%_Proj	1150	573.9	582.96		583.12	0.000538	3.16	390.61	1409.9	0.21
1	2044	1%_Proj	1258	573.9	583.29		583.46	0.000554	3.3	413.25	1421.7	0.21
1	2044	0.2%_Proj	1522	573.9	584.33		584.51	0.000525	3.5	615.26	1513.4	0.21
1	1850	10%_Cur	824	573.6	581.81		581.92	0.000476	2.71	319.12	1173.15	0.19
1	1850	2%_Cur	1090	573.6	582.68		582.83	0.000536	3.13	375.43	1420.51	0.2
1	1850	1%_Cur	1200	573.6	582.99		583.16	0.000561	3.29	396.73	1431.63	0.21
1	1850	0.2%_Cur	1450	573.6	583.94		584.12	0.000545	3.51	553.51	1466.4	0.21
1	1850	10%_Proj	875	573.6	581.99		582.11	0.000487	2.79	330.54	1325.93	0.19
1	1850	2%_Proj	1150	573.6	582.85		583.01	0.00055	3.22	386.97	1427.28	0.21
1	1850	1%_Proj	1258	573.6	583.18		583.35	0.000567	3.37	409.53	1437.66	0.21
1	1850	0.2%_Proj	1522	573.6	584.23		584.41	0.000506	3.46	715.21	1478.92	0.21
1	1647	10%_Cur	824	573.5	581.8		581.84	0.000167	1.69	500.87	1029.23	0.11
1	1647	2%_Cur	1090	573.5	582.68		582.74	0.000193	1.98	578.5	1206.99	0.13
1	1647	1%_Cur	1200	573.5	583		583.07	0.000204	2.09	607.69	1222.38	0.13
1	1647	0.2%_Cur	1450	573.5	583.96		584.03	0.000196	2.21	857.07	1260.66	0.13
1	1647	10%_Proj	875	573.5	581.99		582.03	0.000172	1.75	516.71	1146.33	0.12
1	1647	2%_Proj	1150	573.5	582.85		582.92	0.000199	2.04	594.34	1218.82	0.13
1	1647	1%_Proj	1258	573.5	583.18		583.25	0.000207	2.14	625.32	1229.86	0.13
1	1647	0.2%_Proj	1522	573.5	584.25		584.32	0.000188	2.21	957.22	1278.08	0.13
1	1529	10%_Cur	824	573.3	581.77		581.82	0.000219	1.89	454.73	881.52	0.13
1	1529	2%_Cur	1090	573.3	582.64		582.72	0.00025	2.19	530.66	1116.82	0.14
1	1529	1%_Cur	1200	573.3	582.95		583.04	0.000264	2.32	575.93	1172.41	0.15
1	1529	0.2%_Cur	1450	573.3	583.91		584	0.000245	2.41	783.83	1306.54	0.14
1	1529	10%_Proj	875	573.3	581.95		582.01	0.000225	1.95	470.18	948.9	0.13
1	1529	2%_Proj	1150	573.3	582.81		582.89	0.000257	2.26	546.51	1143.25	0.14
1	1529	1%_Proj	1258	573.3	583.14		583.23	0.000266	2.36	615.99	1209.84	0.15
1	1529	0.2%_Proj	1522	573.3	584.21		584.29	0.000236	2.42	847.98	1313.44	0.14

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1447	10%_Cur	824	573.5	581.74	576.4	581.8	0.000241	1.94	449.6	1098.81	0.14
1	1447	2%_Cur	1090	573.5	582.62	576.9	582.69	0.000271	2.24	533.18	1287.47	0.15
1	1447	1%_Cur	1200	573.5	582.93	577.08	583.01	0.000284	2.36	568.79	1363.47	0.15
1	1447	0.2%_Cur	1450	573.5	583.89	577.48	583.98	0.000268	2.49	688.62	1580.55	0.15
1	1447	10%_Proj	875	573.5	581.93	576.5	581.99	0.000247	2	466.37	1164	0.14
1	1447	2%_Proj	1150	573.5	582.79	576.99	582.87	0.000278	2.31	551.97	1340.11	0.15
1	1447	1%_Proj	1258	573.5	583.11	577.18	583.2	0.000286	2.41	592	1420.8	0.15
1	1447	0.2%_Proj	1522	573.5	584.18	577.6	584.27	0.00026	2.51	725.17	1596.71	0.15
1	1409	10%_Cur	824	572.8	581.71	576.66	581.79	0.000298	2.27	365.37	434.3	0.15
1	1409	2%_Cur	1090	572.8	582.56	577.08	582.67	0.000353	2.67	412.13	541.7	0.17
1	1409	1%_Cur	1200	572.8	582.87	577.24	582.99	0.000376	2.83	429.18	580.28	0.18
1	1409	0.2%_Cur	1450	572.8	583.81	577.59	583.95	0.00038	3.06	483.11	814.09	0.18
1	1409	10%_Proj	875	572.8	581.89	576.75	581.97	0.000308	2.35	375.14	458.35	0.16
1	1409	2%_Proj	1150	572.8	582.73	577.17	582.85	0.000366	2.76	421.41	561.93	0.17
1	1409	1%_Proj	1258	572.8	583.05	577.32	583.18	0.000384	2.9	439.41	645.11	0.18
1	1409	0.2%_Proj	1522	572.8	584.1	577.69	584.24	0.000377	3.11	500	844.63	0.18
1	1370		Bridge									
1	1339	10%_Cur	824	572.8	581.63	576.64	581.73	0.000349	2.55	322.58	306.13	0.17
1	1339	2%_Cur	1090	572.8	582.45	577.1	582.6	0.000424	3.03	359.73	406.39	0.19
1	1339	1%_Cur	1200	572.8	582.74	577.26	582.91	0.000456	3.22	372.86	426.93	0.2
1	1339	0.2%_Cur	1450	572.8	583.67	577.65	583.86	0.000469	3.5	414.33	590.33	0.2
1	1339	10%_Proj	875	572.8	581.8	576.74	581.91	0.000363	2.65	330.44	338.88	0.17
1	1339	2%_Proj	1150	572.8	582.61	577.18	582.76	0.000442	3.13	366.89	414.31	0.19
1	1339	1%_Proj	1258	572.8	582.92	577.35	583.09	0.000467	3.3	380.74	435.28	0.2
1	1339	0.2%_Proj	1522	572.8	583.95	577.75	584.15	0.000467	3.56	427.08	638.06	0.2
1	1279	10%_Cur	824	572.6	581.63	576.21	581.69	0.00024	1.92	506.06	268.91	0.14
1	1279	2%_Cur	1090	572.6	582.47	576.73	582.54	0.000268	2.2	593.42	310.63	0.15
1	1279	1%_Cur	1200	572.6	582.76	576.93	582.84	0.00028	2.32	624.39	322.3	0.15
1	1279	0.2%_Cur	1450	572.6	583.7	577.34	583.78	0.000268	2.45	721.93	322.3	0.15
1	1279	10%_Proj	875	572.6	581.81	576.31	581.87	0.000245	1.97	524.5	277.16	0.14
1	1279	2%_Proj	1150	572.6	582.63	576.83	582.7	0.000275	2.27	610.3	317.02	0.15
1	1279	1%_Proj	1258	572.6	582.94	577.02	583.02	0.000283	2.36	642.97	322.3	0.15
1	1279	0.2%_Proj	1522	572.6	583.98	577.45	584.07	0.000262	2.48	751.87	322.3	0.15
1	1113	10%_Cur	824	572.4	581.59		581.65	0.000246	2.03	633.59	405.55	0.14
1	1113	2%_Cur	1090	572.4	582.43		582.49	0.000248	2.21	860.86	416.2	0.14

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1113	1%_Cur	1200	572.4	582.73		582.8	0.000251	2.28	941.34	416.2	0.14
1	1113	0.2%_Cur	1450	572.4	583.67		583.74	0.000216	2.28	1196.66	416.2	0.14
1	1113	10%_Proj	875	572.4	581.77		581.83	0.000246	2.06	681.68	408.45	0.14
1	1113	2%_Proj	1150	572.4	582.59		582.66	0.00025	2.25	904.71	416.2	0.14
1	1113	1%_Proj	1258	572.4	582.91		582.98	0.000248	2.3	989.84	416.2	0.14
1	1113	0.2%_Proj	1522	572.4	583.96		584.02	0.000204	2.26	1274.99	416.2	0.13
1	938	10%_Cur	824	572.2	581.56		581.6	0.000231	1.95	819.7	377.15	0.13
1	938	2%_Cur	1090	572.2	582.4		582.45	0.000233	2.12	1035.6	385.88	0.14
1	938	1%_Cur	1200	572.2	582.7		582.75	0.000238	2.2	1113.82	392.44	0.14
1	938	0.2%_Cur	1450	572.2	583.65		583.7	0.000209	2.22	1387.53	421.03	0.13
1	938	10%_Proj	875	572.2	581.74		581.78	0.00023	1.98	864.83	378.85	0.13
1	938	2%_Proj	1150	572.2	582.56		582.61	0.000236	2.16	1078.04	388.14	0.14
1	938	1%_Proj	1258	572.2	582.88		582.93	0.000238	2.23	1162.47	399.63	0.14
1	938	0.2%_Proj	1522	572.2	583.94		583.99	0.000197	2.21	1474.16	422.44	0.13
1	537	10%_Cur	824	572.1	581.49		581.52	0.000165	1.63	1340.09	1109.52	0.11
1	537	2%_Cur	1090	572.1	582.35		582.37	0.000141	1.63	1800.49	1125.36	0.1
1	537	1%_Cur	1200	572.1	582.65		582.67	0.000136	1.64	1963.42	1131.24	0.1
1	537	0.2%_Cur	1450	572.1	583.61		583.63	0.000105	1.56	2494.02	1147.75	0.09
1	537	10%_Proj	875	572.1	581.68		581.7	0.000158	1.62	1437.63	1112.48	0.11
1	537	2%_Proj	1150	572.1	582.51		582.53	0.000138	1.64	1889.21	1128.56	0.1
1	537	1%_Proj	1258	572.1	582.83		582.85	0.000131	1.64	2062.55	1133.96	0.1
1	537	0.2%_Proj	1522	572.1	583.91		583.92	0.000097	1.53	2658.1	1149.8	0.09
1	411	10%_Cur	824	572	581.48	575.74	581.5	0.000112	1.34	1519.73	1297.51	0.09
1	411	2%_Cur	1090	572	582.34	576.27	582.35	0.000097	1.35	2073.85	1306.7	0.09
1	411	1%_Cur	1200	572	582.64	576.47	582.65	0.000094	1.36	2269.28	1306.7	0.09
1	411	0.2%_Cur	1450	572	583.6	576.88	583.62	0.000072	1.29	2897.58	1306.7	0.08
1	411	10%_Proj	875	572	581.66	575.85	581.68	0.000108	1.33	1636.67	1300.95	0.09
1	411	2%_Proj	1150	572	582.5	576.39	582.52	0.000095	1.36	2180.34	1306.7	0.09
1	411	1%_Proj	1258	572	582.82	576.57	582.84	0.00009	1.36	2387.87	1306.7	0.09
1	411	0.2%_Proj	1522	572	583.9	576.98	583.91	0.000066	1.27	3090.08	1306.7	0.07
1	152	10%_Cur	824	572	581.43		581.46	0.000192	1.78	1305.71	1040.68	0.12
1	152	2%_Cur	1090	572	582.3		582.32	0.000135	1.62	2102.99	1059.7	0.1
1	152	1%_Cur	1200	572	582.61		582.63	0.000123	1.58	2383.36	1059.7	0.1
1	152	0.2%_Cur	1450	572	583.59		583.6	0.00008	1.38	3284.72	1059.7	0.08
1	152	10%_Proj	875	572	581.61		581.65	0.000176	1.73	1474.99	1043.75	0.12
1	152	2%_Proj	1150	572	582.47		582.49	0.000128	1.6	2255.84	1059.7	0.1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	152	1%_Proj	1258	572	582.79		582.81	0.000115	1.55	2553.73	1059.7	0.1
1	152	0.2%_Proj	1522	572	583.88		583.9	0.000071	1.33	3559.42	1059.7	0.08
1	88	10%_Cur	824	571.8	581.41		581.45	0.000195	1.86	1221.18	1005.73	0.12
1	88	2%_Cur	1090	571.8	582.29		582.32	0.000139	1.7	2057.67	1031.89	0.1
1	88	1%_Cur	1200	571.8	582.59		582.62	0.000127	1.66	2350.83	1034.91	0.1
1	88	0.2%_Cur	1450	571.8	583.58		583.59	0.000084	1.45	3307.54	1077.42	0.08
1	88	10%_Proj	875	571.8	581.6		581.63	0.000182	1.83	1398.52	1023.69	0.12
1	88	2%_Proj	1150	571.8	582.46		582.48	0.000132	1.68	2217.41	1033.5	0.1
1	88	1%_Proj	1258	571.8	582.78		582.8	0.000118	1.62	2529.5	1036.79	0.1
1	88	0.2%_Proj	1522	571.8	583.88		583.89	0.000074	1.4	3609.1	1085.8	0.08
1	43	10%_Cur	824	571.4	581.39	575.96	581.44	0.000229	2	1167.85	1090.82	0.13
1	43	2%_Cur	1090	571.4	582.28	576.57	582.31	0.000151	1.75	2093.5	1126.4	0.11
1	43	1%_Cur	1200	571.4	582.59	576.77	582.61	0.000133	1.69	2416.89	1126.4	0.1
1	43	0.2%_Cur	1450	571.4	583.58	577.28	583.59	0.000081	1.42	3453.24	1126.4	0.08
1	43	10%_Proj	875	571.4	581.58	576.08	581.62	0.000208	1.94	1363.24	1107.42	0.13
1	43	2%_Proj	1150	571.4	582.45	576.69	582.47	0.000141	1.72	2269.87	1126.4	0.11
1	43	1%_Proj	1258	571.4	582.78	576.9	582.8	0.000123	1.64	2613.25	1126.4	0.1
1	43	0.2%_Proj	1522	571.4	583.88	577.4	583.89	0.000071	1.36	3768.22	1126.4	0.08

Plan: Alt 2-2

Flows: Current and Projected Future

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	35522	10%_Cur	258	627.2	631.26	629.45	631.38	0.001746	2.84	90.73	35.19	0.31
1	35522	2%_Cur	348	627.2	632.17	629.83	632.29	0.00129	2.71	137.38	77.87	0.28
1	35522	1%_Cur	384	627.2	632.68	629.96	632.77	0.000901	2.51	181.41	96.81	0.24
1	35522	0.2%_Cur	470	627.2	633.69	630.26	633.76	0.000511	2.24	310.32	184.8	0.19
1	35522	10%_Proj	272	627.2	631.4	629.5	631.53	0.001671	2.84	95.82	36.05	0.31
1	35522	2%_Proj	364	627.2	632.39	629.88	632.5	0.001099	2.62	155.53	85.79	0.26
1	35522	1%_Proj	401	627.2	632.92	630.02	633.01	0.000762	2.42	206.64	106.54	0.22
1	35522	0.2%_Proj	489	627.2	633.78	630.32	633.85	0.000508	2.26	325.13	198.13	0.19
1	35442	10%_Cur	258	625.73	630.65	628.48	631.06	0.005992	5.17	49.91	12.04	0.45
1	35442	2%_Cur	348	625.73	631.45	629.09	631.97	0.006338	5.77	60.53	14.22	0.48
1	35442	1%_Cur	384	625.73	632.01	629.31	632.51	0.005254	5.67	68.82	15.72	0.44
1	35442	0.2%_Cur	470	625.73	633.04	629.84	633.54	0.004191	5.72	88.27	22.02	0.41
1	35442	10%_Proj	272	625.73	630.76	628.58	631.2	0.006207	5.29	51.37	12.36	0.46
1	35442	2%_Proj	364	625.73	631.7	629.19	632.21	0.005823	5.72	64.09	14.89	0.46
1	35442	1%_Proj	401	625.73	632.28	629.42	632.77	0.004814	5.61	73.29	17.4	0.43
1	35442	0.2%_Proj	489	625.73	633.09	629.96	633.62	0.0044	5.89	89.45	22.28	0.42
1	35420		Bridge									
1	35396	10%_Cur	258	625.73	629.75	628.49	630.37	0.007799	6.29	41.04	12.82	0.61
1	35396	2%_Cur	348	625.73	630.24	629.18	631.08	0.009898	7.36	47.29	18.63	0.69
1	35396	1%_Cur	384	625.73	630.4	629.45	631.34	0.010472	7.77	49.46	20.73	0.72
1	35396	0.2%_Cur	470	625.73	630.94	630.04	631.81	0.012849	7.49	68.46	51.13	0.73
1	35396	10%_Proj	272	625.73	629.84	628.59	630.49	0.008135	6.46	42.08	13.79	0.62
1	35396	2%_Proj	364	625.73	630.31	629.31	631.2	0.010177	7.54	48.29	19.6	0.71
1	35396	1%_Proj	401	625.73	630.47	629.58	631.45	0.010721	7.96	50.43	21.64	0.73
1	35396	0.2%_Proj	489	625.73	631.01	630.17	631.9	0.012884	7.6	72.79	75.01	0.73
1	35278	10%_Cur	258	625.5	628.82	628.3	629.31	0.009237	5.62	45.96	22.83	0.69
1	35278	2%_Cur	348	625.5	629.25	628.72	629.86	0.00888	6.26	56.35	25.01	0.7
1	35278	1%_Cur	384	625.5	629.4	628.86	630.06	0.008896	6.51	60.14	25.76	0.7
1	35278	0.2%_Cur	470	625.5	629.74	629.16	630.51	0.008864	7.04	69.18	80.63	0.72
1	35278	10%_Proj	272	625.5	628.97	628.38	629.45	0.008089	5.51	49.51	23.6	0.65
1	35278	2%_Proj	364	625.5	629.32	628.77	629.95	0.008884	6.37	58.05	25.35	0.7
1	35278	1%_Proj	401	625.5	629.47	628.91	630.15	0.008883	6.62	61.96	35.86	0.71
1	35278	0.2%_Proj	489	625.5	629.81	629.24	630.6	0.00888	7.15	71.09	83.3	0.72

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	34495	10%_Cur	258	622.5	627.56		627.65	0.000831	2.44	155.05	178.04	0.23
1	34495	2%_Cur	348	622.5	628.15		628.24	0.000786	2.63	261.71	205.33	0.23
1	34495	1%_Cur	384	622.5	628.26		628.36	0.000838	2.76	283.18	208.18	0.23
1	34495	0.2%_Cur	470	622.5	628.44		628.56	0.000998	3.1	323.61	224.86	0.26
1	34495	10%_Proj	272	622.5	627.72		627.81	0.000851	2.54	175.48	190.99	0.23
1	34495	2%_Proj	364	622.5	628.2		628.3	0.000809	2.68	271.57	206.64	0.23
1	34495	1%_Proj	401	622.5	628.3		628.4	0.000869	2.83	291.56	210.4	0.24
1	34495	0.2%_Proj	489	622.5	628.48		628.6	0.001033	3.17	331.89	227.16	0.26
1	34420	10%_Cur	258	622.7	627.52	625.16	627.58	0.000757	2.04	138.29	326.66	0.2
1	34420	2%_Cur	348	622.7	628.11	625.62	628.18	0.000696	2.16	262.53	628.82	0.2
1	34420	1%_Cur	384	622.7	628.21	625.74	628.29	0.000737	2.26	290.45	705.84	0.21
1	34420	0.2%_Cur	470	622.7	628.39	626.01	628.48	0.000866	2.53	341.05	889.32	0.23
1	34420	10%_Proj	272	622.7	627.67	625.25	627.74	0.000761	2.07	150.64	361.96	0.21
1	34420	2%_Proj	364	622.7	628.16	625.67	628.23	0.000714	2.2	275.41	664.81	0.2
1	34420	1%_Proj	401	622.7	628.25	625.8	628.33	0.000762	2.32	301.24	742.64	0.21
1	34420	0.2%_Proj	489	622.7	628.43	626.05	628.52	0.000895	2.59	351.09	930.4	0.23
1	34390		Bridge									
1	34363	10%_Cur	258	622.7	626.75	624.9	627.05	0.003655	4.46	63.66	311.87	0.39
1	34363	2%_Cur	348	622.7	627.14	625.38	627.28	0.002235	3.71	244.12	391.82	0.31
1	34363	1%_Cur	384	622.7	627.27	625.58	627.41	0.002173	3.73	274.26	406.87	0.31
1	34363	0.2%_Cur	470	622.7	627.62	626	627.73	0.001914	3.67	354.44	649.91	0.29
1	34363	10%_Proj	272	622.7	626.81	624.98	627.14	0.003832	4.61	65.22	340.16	0.4
1	34363	2%_Proj	364	622.7	627.2	625.47	627.34	0.002203	3.71	257.69	398.46	0.31
1	34363	1%_Proj	401	622.7	627.34	625.66	627.47	0.002154	3.75	288.33	425.6	0.31
1	34363	0.2%_Proj	489	622.7	627.69	626.12	627.81	0.001858	3.66	372.8	693.04	0.29
1	34242	10%_Cur	258	621.9	626.62	624.41	626.69	0.001294	2.23	145.32	262.9	0.26
1	34242	2%_Cur	348	621.9	626.97	624.8	627.05	0.001164	2.32	236.89	358.32	0.25
1	34242	1%_Cur	384	621.9	627.11	624.94	627.18	0.001148	2.38	259.57	409.34	0.26
1	34242	0.2%_Cur	470	621.9	627.45	625.28	627.53	0.001107	2.53	337.16	507.93	0.26
1	34242	10%_Proj	272	621.9	626.68	624.47	626.76	0.001304	2.26	152.83	285.14	0.26
1	34242	2%_Proj	364	621.9	627.03	624.87	627.11	0.001156	2.35	247.05	365.69	0.25
1	34242	1%_Proj	401	621.9	627.17	625.01	627.24	0.001138	2.41	272.25	433.46	0.25
1	34242	0.2%_Proj	489	621.9	627.53	625.33	627.61	0.001063	2.52	357.36	526.82	0.25
1	33325	10%_Cur	258	620.8	625.53	623.46	625.61	0.001083	2.37	123.29	127.74	0.25
1	33325	2%_Cur	348	620.8	625.79	623.8	625.91	0.001384	2.84	161.34	197.66	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	33325	1%_Cur	384	620.8	625.92	623.91	626.05	0.001405	2.95	183.04	233.98	0.29
1	33325	0.2%_Cur	470	620.8	626.51	624.2	626.62	0.000981	2.76	302.34	460.41	0.25
1	33325	10%_Proj	272	620.8	625.57	623.49	625.66	0.001139	2.45	128.55	142.22	0.26
1	33325	2%_Proj	364	620.8	625.85	623.86	625.97	0.001394	2.89	170.94	214.29	0.29
1	33325	1%_Proj	401	620.8	626.01	623.97	626.13	0.00137	2.96	197.56	260.82	0.29
1	33325	0.2%_Proj	489	620.8	626.69	624.25	626.78	0.000848	2.64	343.78	491.38	0.23
1	32629	10%_Cur	258	619.6	624.99		625.03	0.00078	2.2	307.83	420.89	0.21
1	32629	2%_Cur	348	619.6	625.4		625.43	0.000491	1.89	503.85	531	0.17
1	32629	1%_Cur	384	619.6	625.65		625.66	0.000343	1.64	639.32	569.79	0.14
1	32629	0.2%_Cur	470	619.6	626.44		626.45	0.000117	1.08	1119.01	643.76	0.09
1	32629	10%_Proj	272	619.6	625.04		625.08	0.000762	2.2	327.1	428	0.21
1	32629	2%_Proj	364	619.6	625.5		625.52	0.000437	1.81	558.19	554.35	0.16
1	32629	1%_Proj	401	619.6	625.78		625.79	0.000283	1.53	716.3	585.34	0.13
1	32629	0.2%_Proj	489	619.6	626.64		626.64	0.000094	1	1247.48	660.72	0.08
1	31948	10%_Cur	258	619	624.06		624.23	0.002119	3.54	151.13	240.05	0.34
1	31948	2%_Cur	348	619	625.01		625.06	0.000677	2.36	467.81	423.91	0.2
1	31948	1%_Cur	384	619	625.4		625.42	0.000423	1.97	644.48	494.94	0.16
1	31948	0.2%_Cur	470	619	626.35		626.36	0.000155	1.35	1173.71	591.21	0.1
1	31948	10%_Proj	272	619	624.21		624.34	0.001774	3.33	187.44	253.69	0.31
1	31948	2%_Proj	364	619	625.18		625.22	0.000545	2.17	542.34	454.91	0.18
1	31948	1%_Proj	401	619	625.58		625.6	0.000337	1.81	738.13	525.42	0.14
1	31948	0.2%_Proj	489	619	626.57		626.57	0.000128	1.26	1301.58	605.22	0.09
1	31772	10%_Cur	258	617.78	622.69	620.95	623.36	0.010892	6.57	39.29	8	0.52
1	31772	2%_Cur	348	617.78	623.66	621.66	624.51	0.012474	7.4	47.04	8	0.54
1	31772	1%_Cur	384	617.78	624.03	621.92	624.95	0.013007	7.68	50.02	8	0.54
1	31772	0.2%_Cur	470	617.78	624.9	622.53	625.96	0.014061	8.25	56.99	8	0.54
1	31772	10%_Proj	272	617.78	622.84	621.07	623.54	0.011178	6.71	40.52	8	0.53
1	31772	2%_Proj	364	617.78	623.83	621.77	624.71	0.012719	7.53	48.37	8	0.54
1	31772	1%_Proj	401	617.78	624.21	622.06	625.15	0.013239	7.8	51.41	8	0.54
1	31772	0.2%_Proj	489	617.78	625.09	622.64	626.18	0.014271	8.36	58.49	8	0.55
1	31750		Culvert									
1	31720	10%_Cur	258	617.78	621.65	620.97	622.73	0.020367	8.33	30.99	8	0.75
1	31720	2%_Cur	348	617.78	622.12	621.68	623.68	0.027343	10.02	34.74	8	0.85
1	31720	1%_Cur	384	617.78	622.25	621.94	624.04	0.030922	10.75	35.73	8	0.9
1	31720	0.2%_Cur	470	617.78	622.52	622.52	624.91	0.039633	12.39	37.92	8	1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	31720	10%_Proj	272	617.78	621.73	621.08	622.88	0.021479	8.61	31.6	8	0.76
1	31720	2%_Proj	364	617.78	622.18	621.79	623.84	0.028885	10.34	35.21	8	0.87
1	31720	1%_Proj	401	617.78	622.29	622.06	624.21	0.032865	11.11	36.08	8	0.92
1	31720	0.2%_Proj	489	617.78	622.67	622.67	625.1	0.039561	12.5	39.12	8	1
1	31676	10%_Cur	258	617.5	621.51	620.46	621.95	0.006324	5.31	48.62	17.69	0.56
1	31676	2%_Cur	348	617.5	622.12	620.97	622.64	0.006554	5.82	59.77	24.48	0.58
1	31676	1%_Cur	384	617.5	622.31	621.16	622.88	0.006602	6.04	63.62	28.21	0.59
1	31676	0.2%_Cur	470	617.5	622.73	621.57	623.4	0.006613	6.55	72.12	33.25	0.6
1	31676	10%_Proj	272	617.5	621.6	620.54	622.06	0.006422	5.41	50.25	17.92	0.57
1	31676	2%_Proj	364	617.5	622.2	621.06	622.75	0.006637	5.93	61.43	26.03	0.59
1	31676	1%_Proj	401	617.5	622.4	621.26	622.98	0.006615	6.15	65.29	29.56	0.59
1	31676	0.2%_Proj	489	617.5	622.82	621.66	623.5	0.006635	6.66	73.92	37.05	0.61
1	30052	10%_Cur	258	614.4	620.04		620.09	0.000429	2.06	219.28	142.27	0.17
1	30052	2%_Cur	348	614.4	620.55		620.61	0.000474	2.31	297.1	157.16	0.18
1	30052	1%_Cur	384	614.4	620.73		620.79	0.000488	2.4	325.43	159.95	0.18
1	30052	0.2%_Cur	470	614.4	621.09		621.17	0.000526	2.6	385.46	167.35	0.19
1	30052	10%_Proj	272	614.4	620.17		620.22	0.00042	2.07	238.71	151.42	0.16
1	30052	2%_Proj	364	614.4	620.64		620.71	0.000473	2.34	312.27	158.62	0.18
1	30052	1%_Proj	401	614.4	620.81		620.88	0.000491	2.43	339.45	161.98	0.18
1	30052	0.2%_Proj	489	614.4	621.17		621.25	0.000533	2.64	398.48	169.41	0.19
1	30002	10%_Cur	770	614.2	618.75	618.75	619.85	0.01026	8.73	131.48	144.58	0.8
1	30002	2%_Cur	1030	614.2	619.51	619.51	620.4	0.007418	8.41	256.92	288.18	0.7
1	30002	1%_Cur	1140	614.2	619.67	619.67	620.58	0.007428	8.62	289.45	304.77	0.71
1	30002	0.2%_Cur	1400	614.2	620.01	620.01	620.94	0.007544	9.1	360	326.76	0.72
1	30002	10%_Proj	816	614.2	618.94	618.94	619.99	0.009313	8.61	157.56	207.61	0.77
1	30002	2%_Proj	1088	614.2	619.6	619.6	620.5	0.007395	8.51	274.77	295.37	0.7
1	30002	1%_Proj	1198	614.2	619.78	619.78	620.67	0.007216	8.63	312.11	314.54	0.7
1	30002	0.2%_Proj	1460	614.2	620.07	620.07	621.02	0.007615	9.23	374.1	332.51	0.73
1	28067	10%_Cur	770	609	615.64		615.7	0.000561	2.55	793.46	512.35	0.2
1	28067	2%_Cur	1030	609	616.01		616.09	0.000653	2.87	988.86	538.14	0.21
1	28067	1%_Cur	1140	609	616.12		616.2	0.000705	3.03	1050.03	543	0.22
1	28067	0.2%_Cur	1400	609	616.34		616.44	0.000835	3.38	1172.63	552.6	0.24
1	28067	10%_Proj	816	609	615.72		615.79	0.000569	2.59	838.42	522.78	0.2
1	28067	2%_Proj	1088	609	616.06		616.15	0.000683	2.96	1019.54	540.59	0.22
1	28067	1%_Proj	1198	609	616.17		616.26	0.000734	3.11	1078.79	545.27	0.23
1	28067	0.2%_Proj	1460	609	616.4		616.5	0.000859	3.45	1202.48	555.1	0.25

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	27998	10%_Cur	770	609.24	615.39	612.43	615.6	0.001442	3.92	311.23	316.37	0.31
1	27998	2%_Cur	1030	609.24	615.67	613.07	615.95	0.001861	4.62	419.75	426	0.35
1	27998	1%_Cur	1140	609.24	615.74	613.32	616.06	0.002104	4.96	449.11	449.74	0.38
1	27998	0.2%_Cur	1400	609.24	615.8	613.85	616.24	0.002965	5.92	475.3	474.96	0.45
1	27998	10%_Proj	816	609.24	615.46	612.55	615.69	0.001491	4.03	336.7	352.74	0.31
1	27998	2%_Proj	1088	609.24	615.7	613.2	616	0.002005	4.81	432.43	434.65	0.37
1	27998	1%_Proj	1198	609.24	615.76	613.44	616.1	0.002259	5.15	459.75	461.49	0.39
1	27998	0.2%_Proj	1460	609.24	615.8	613.96	616.28	0.003211	6.17	477.71	476.78	0.47
1	27960		Culvert									
1	27931	10%_Cur	770	609.08	614.27	612.15	614.55	0.002268	4.43	282.67	434.39	0.38
1	27931	2%_Cur	1030	609.08	614.63	612.75	614.92	0.002367	4.78	474.07	584.09	0.39
1	27931	1%_Cur	1140	609.08	614.81	612.99	615.06	0.002152	4.67	579.95	606.08	0.38
1	27931	0.2%_Cur	1400	609.08	615.14	614.62	615.36	0.001911	4.61	795.64	689.02	0.36
1	27931	10%_Proj	816	609.08	614.34	612.27	614.63	0.002314	4.52	315.22	483.26	0.38
1	27931	2%_Proj	1088	609.08	614.73	612.87	615	0.002235	4.71	532.34	595.56	0.38
1	27931	1%_Proj	1198	609.08	614.88	613.11	615.13	0.002098	4.66	625.49	615.34	0.37
1	27931	0.2%_Proj	1460	609.08	615.21	614.68	615.42	0.001862	4.59	842.75	702.77	0.36
1	27807	10%_Cur	770	607.8	614.17	612.64	614.27	0.0011	3.52	591.46	515.38	0.27
1	27807	2%_Cur	1030	607.8	614.57	613.24	614.64	0.000928	3.39	836.66	696.88	0.25
1	27807	1%_Cur	1140	607.8	614.75	614	614.81	0.000807	3.23	968.71	713.65	0.23
1	27807	0.2%_Cur	1400	607.8	615.1	614.06	615.15	0.000685	3.09	1217.61	750.69	0.22
1	27807	10%_Proj	816	607.8	614.25	612.77	614.35	0.001056	3.48	634.99	562.59	0.26
1	27807	2%_Proj	1088	607.8	614.67	613.25	614.74	0.000853	3.29	910.19	707.23	0.24
1	27807	1%_Proj	1198	607.8	614.83	614.01	614.89	0.000779	3.2	1023.09	718.83	0.23
1	27807	0.2%_Proj	1460	607.8	615.16	614.08	615.21	0.000675	3.09	1268.61	781.15	0.22
1	27156	10%_Cur	770	607.4	613.17		613.4	0.002079	4.36	277.01	211.87	0.37
1	27156	2%_Cur	1030	607.4	613.74		613.94	0.001717	4.31	414.46	255.5	0.34
1	27156	1%_Cur	1140	607.4	613.99		614.18	0.001662	4.38	485.86	316.62	0.34
1	27156	0.2%_Cur	1400	607.4	614.49		614.64	0.001306	4.12	654.89	368.08	0.31
1	27156	10%_Proj	816	607.4	613.28		613.51	0.002024	4.38	301.99	233.63	0.37
1	27156	2%_Proj	1088	607.4	613.88		614.08	0.001701	4.36	451.37	300.69	0.34
1	27156	1%_Proj	1198	607.4	614.11		614.29	0.001561	4.3	523.82	326	0.33
1	27156	0.2%_Proj	1460	607.4	614.54		614.7	0.001358	4.23	675.85	372.16	0.31
1	26030	10%_Cur	770	605.9	612.07		612.15	0.000697	2.72	598.84	290.08	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	26030	2%_Cur	1030	605.9	612.81		612.89	0.000617	2.81	825.66	327.62	0.21
1	26030	1%_Cur	1140	605.9	613.1		613.18	0.000587	2.84	923.66	347.34	0.21
1	26030	0.2%_Cur	1400	605.9	613.71		613.79	0.000536	2.9	1152.4	392.43	0.2
1	26030	10%_Proj	816	605.9	612.21		612.3	0.000684	2.74	640.35	299.45	0.22
1	26030	2%_Proj	1088	605.9	612.96		613.04	0.000601	2.83	876.99	337.61	0.21
1	26030	1%_Proj	1198	605.9	613.25		613.33	0.000573	2.85	976.96	360.08	0.21
1	26030	0.2%_Proj	1460	605.9	613.71		613.79	0.000585	3.03	1151.15	392.23	0.21
1	23976	10%_Cur	770	605.6	611.22	607.86	611.27	0.000306	1.73	448.15	381.13	0.15
1	23976	2%_Cur	1030	605.6	611.97	608.21	612.03	0.000322	1.98	534.56	419.18	0.15
1	23976	1%_Cur	1140	605.6	612.28	608.34	612.34	0.000323	2.06	576.88	444.52	0.16
1	23976	0.2%_Cur	1400	605.6	612.92	608.64	612.99	0.000326	2.23	682.18	496.67	0.16
1	23976	10%_Proj	816	605.6	611.36	607.92	611.41	0.000308	1.78	463.96	384.04	0.15
1	23976	2%_Proj	1088	605.6	612.13	608.28	612.19	0.000323	2.02	556.24	432.03	0.15
1	23976	1%_Proj	1198	605.6	612.44	608.41	612.5	0.000322	2.09	601.17	468.55	0.16
1	23976	0.2%_Proj	1460	605.6	612.81	608.7	612.89	0.00038	2.37	662.28	491.06	0.17
1	23895	10%_Cur	770	605.7	611.21		611.24	0.000174	1.37	563.72	135.72	0.11
1	23895	2%_Cur	1030	605.7	611.97		612	0.000188	1.57	683.68	174.53	0.12
1	23895	1%_Cur	1140	605.7	612.27		612.31	0.000189	1.64	739.15	187.04	0.12
1	23895	0.2%_Cur	1400	605.7	612.92		612.96	0.000194	1.78	866.97	215.05	0.12
1	23895	10%_Proj	816	605.7	611.36		611.39	0.000177	1.41	584.43	152.27	0.11
1	23895	2%_Proj	1088	605.7	612.13		612.17	0.000189	1.61	712.48	181.08	0.12
1	23895	1%_Proj	1198	605.7	612.43		612.48	0.000189	1.66	769.86	192.88	0.12
1	23895	0.2%_Proj	1460	605.7	612.81		612.86	0.000225	1.89	843.21	209.38	0.13
1	23638	10%_Cur	770	602.8	611.04		611.16	0.000543	2.79	296.6	118.45	0.19
1	23638	2%_Cur	1030	602.8	611.77		611.91	0.000616	3.19	422.11	205.68	0.2
1	23638	1%_Cur	1140	602.8	612.08		612.22	0.000603	3.24	490.14	227.53	0.2
1	23638	0.2%_Cur	1400	602.8	612.74		612.88	0.000557	3.28	652.3	263.14	0.2
1	23638	10%_Proj	816	602.8	611.18		611.3	0.000568	2.9	314.87	144	0.19
1	23638	2%_Proj	1088	602.8	611.93		612.08	0.000612	3.22	456.84	221.17	0.2
1	23638	1%_Proj	1198	602.8	612.24		612.39	0.000588	3.24	528.75	235.16	0.2
1	23638	0.2%_Proj	1460	602.8	612.59		612.76	0.000677	3.58	613.23	254.45	0.22
1	23634	10%_Cur	770	606.1	610.15	609.66	610.95	0.008271	7.7	122.04	50.12	0.68
1	23634	2%_Cur	1030	606.1	610.61	610.22	611.64	0.009476	8.86	146.75	56.85	0.74
1	23634	1%_Cur	1140	606.1	610.7	610.46	611.9	0.010766	9.58	152.09	59.76	0.79
1	23634	0.2%_Cur	1400	606.1	611.1	611.05	612.49	0.011552	10.49	182.39	110.71	0.83
1	23634	10%_Proj	816	606.1	610.25	609.77	611.09	0.008326	7.86	127.56	51.41	0.68

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23634	2%_Proj	1088	606.1	610.66	610.33	611.78	0.0101	9.23	149.91	58.46	0.76
1	23634	1%_Proj	1198	606.1	610.72	610.56	612.03	0.011677	10.01	153.43	60.55	0.82
1	23634	0.2%_Proj	1460	606.1	612.03	611.05	612.62	0.004725	7.52	358.55	225.28	0.55
1	23633		Inl Struct									
1	23631	10%_Cur	770	606.1	609.68	609.68	610.85	0.013685	9.12	100.31	46.87	0.85
1	23631	2%_Cur	1030	606.1	610.24	610.24	611.57	0.013365	9.94	128.22	53.1	0.86
1	23631	1%_Cur	1140	606.1	610.49	610.49	611.84	0.01278	10.11	141.92	56.3	0.85
1	23631	0.2%_Cur	1400	606.1	610.91	610.91	612.46	0.013367	10.99	167.08	66.21	0.89
1	23631	10%_Proj	816	606.1	609.8	609.8	610.99	0.013471	9.25	105.81	48.09	0.85
1	23631	2%_Proj	1088	606.1	610.39	610.39	611.71	0.012897	10	136.1	55.02	0.85
1	23631	1%_Proj	1198	606.1	610.61	610.61	611.97	0.01265	10.24	148.43	57.74	0.85
1	23631	0.2%_Proj	1460	606.1	610.99	610.99	612.59	0.013566	11.2	172.52	68.5	0.9
1	23626	10%_Cur	770	602.7	609.12		609.36	0.001293	3.92	202.27	43.94	0.29
1	23626	2%_Cur	1030	602.7	609.77		610.1	0.001587	4.67	232.39	49.09	0.33
1	23626	1%_Cur	1140	602.7	610.13		610.49	0.001593	4.85	251.15	53.51	0.33
1	23626	0.2%_Cur	1400	602.7	610.98		611.39	0.001559	5.2	302.34	71.34	0.33
1	23626	10%_Proj	816	602.7	609.28		609.53	0.001319	4.03	209.41	45.32	0.29
1	23626	2%_Proj	1088	602.7	609.96		610.31	0.001595	4.77	241.92	51.35	0.33
1	23626	1%_Proj	1198	602.7	610.32		610.69	0.001592	4.94	261.4	55.83	0.33
1	23626	0.2%_Proj	1460	602.7	611.19		611.6	0.001535	5.25	318.38	99.91	0.33
1	23597	10%_Cur	770	603.1	609.08		609.32	0.001396	3.97	201.25	46.82	0.31
1	23597	2%_Cur	1030	603.1	609.72		610.05	0.001646	4.67	232.34	49.46	0.34
1	23597	1%_Cur	1140	603.1	610.09		610.44	0.001621	4.84	250.85	51.23	0.35
1	23597	0.2%_Cur	1400	603.1	610.94		611.34	0.001555	5.17	300.8	69.59	0.35
1	23597	10%_Proj	816	603.1	609.24		609.49	0.001406	4.07	208.85	47.49	0.31
1	23597	2%_Proj	1088	603.1	609.91		610.26	0.001636	4.76	241.89	50.17	0.35
1	23597	1%_Proj	1198	603.1	610.28		610.64	0.001612	4.92	260.65	53.24	0.35
1	23597	0.2%_Proj	1460	603.1	611.15		611.55	0.001516	5.2	315.64	73.65	0.34
1	23536	10%_Cur	770	602.3	609	605.14	609.24	0.001202	3.9	203.34	38.17	0.27
1	23536	2%_Cur	1030	602.3	609.61	605.76	609.95	0.001578	4.74	227.66	41.84	0.31
1	23536	1%_Cur	1140	602.3	609.97	605.99	610.34	0.001631	4.97	243.08	45.37	0.32
1	23536	0.2%_Cur	1400	602.3	610.8	606.52	611.24	0.001676	5.41	288.22	61.79	0.33
1	23536	10%_Proj	816	602.3	609.16	605.26	609.41	0.001244	4.03	209.4	39.13	0.27
1	23536	2%_Proj	1088	602.3	609.79	605.88	610.16	0.001611	4.87	235.47	43.48	0.32
1	23536	1%_Proj	1198	602.3	610.15	606.11	610.54	0.001653	5.09	251.53	47.38	0.32

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23536	0.2%_Proj	1460	602.3	611	606.65	611.45	0.001664	5.48	301.2	66.74	0.33
1	23525	10%_Cur	770	602.3	608.99	605.65	609.22	0.001227	3.84	204.49	39.55	0.28
1	23525	2%_Cur	1030	602.3	609.6	606.24	609.93	0.001558	4.63	228.9	40.85	0.32
1	23525	1%_Cur	1140	602.3	609.96	606.44	610.32	0.001583	4.84	243.59	41.61	0.33
1	23525	0.2%_Cur	1400	602.3	610.79	606.96	611.21	0.001593	5.25	279.04	43.4	0.34
1	23525	10%_Proj	816	602.3	609.15	605.76	609.39	0.001257	3.96	210.73	39.89	0.29
1	23525	2%_Proj	1088	602.3	609.78	606.36	610.13	0.001576	4.75	236.47	41.25	0.33
1	23525	1%_Proj	1198	602.3	610.14	606.58	610.51	0.001593	4.95	251.23	42.01	0.33
1	23525	0.2%_Proj	1460	602.3	610.99	607.06	611.42	0.001581	5.33	287.82	43.83	0.34
1	23500		Bridge									
1	23481	10%_Cur	770	602.3	608.64	605.65	608.9	0.001524	4.14	187.49	38.91	0.31
1	23481	2%_Cur	1030	602.3	608.95	606.24	609.38	0.002255	5.23	198.95	39.6	0.38
1	23481	1%_Cur	1140	602.3	609.17	606.46	609.65	0.002436	5.57	206.93	40.07	0.4
1	23481	0.2%_Cur	1400	602.3	609.61	606.95	610.23	0.0029	6.37	222.9	41.02	0.44
1	23481	10%_Proj	816	602.3	608.76	605.76	609.04	0.001592	4.29	191.79	39.17	0.32
1	23481	2%_Proj	1088	602.3	609.07	606.35	609.52	0.002356	5.41	203.08	39.84	0.39
1	23481	1%_Proj	1198	602.3	609.27	606.57	609.79	0.002541	5.75	210.66	40.29	0.41
1	23481	0.2%_Proj	1460	602.3	609.7	607.06	610.36	0.003001	6.54	226.4	41.22	0.45
1	23465	10%_Cur	770	602.3	608.61	605.16	608.88	0.001495	4.19	186.14	33.66	0.3
1	23465	2%_Cur	1030	602.3	608.89	605.74	609.34	0.002292	5.34	196.01	34.87	0.37
1	23465	1%_Cur	1140	602.3	609.1	605.99	609.6	0.002526	5.73	203.19	35.68	0.39
1	23465	0.2%_Cur	1400	602.3	609.49	606.53	610.17	0.003122	6.62	217.71	37.35	0.44
1	23465	10%_Proj	816	602.3	608.72	605.26	609.01	0.001578	4.35	190.01	34.15	0.31
1	23465	2%_Proj	1088	602.3	609	605.88	609.47	0.002422	5.55	199.67	35.29	0.38
1	23465	1%_Proj	1198	602.3	609.19	606.12	609.73	0.002659	5.93	206.57	36.06	0.4
1	23465	0.2%_Proj	1460	602.3	609.58	606.65	610.3	0.003257	6.81	220.92	37.72	0.45
1	23354	10%_Cur	770	601.5	608.47		608.71	0.001345	3.99	201.47	90.35	0.31
1	23354	2%_Cur	1030	601.5	608.68		609.08	0.002102	5.12	212.66	98.7	0.38
1	23354	1%_Cur	1140	601.5	608.87		609.32	0.002282	5.46	223.81	105.3	0.4
1	23354	0.2%_Cur	1400	601.5	609.23		609.82	0.002736	6.23	247.3	115.67	0.44
1	23354	10%_Proj	816	601.5	608.58		608.84	0.001407	4.14	207.1	93.57	0.31
1	23354	2%_Proj	1088	601.5	608.77		609.2	0.002207	5.31	218.2	102.1	0.39
1	23354	1%_Proj	1198	601.5	608.95		609.44	0.002386	5.64	229.13	107.85	0.41
1	23354	0.2%_Proj	1460	601.5	609.31		609.93	0.002832	6.39	252.75	117.87	0.45

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22771	10%_Cur	770	601.2	607.85	604.71	608.01	0.001008	3.37	318.93	426.88	0.26
1	22771	2%_Cur	1030	601.2	608.39	605.31	608.45	0.000492	2.52	1064.36	509.93	0.19
1	22771	1%_Cur	1140	601.2	608.59	605.56	608.65	0.000512	2.63	1177.93	544.01	0.19
1	22771	0.2%_Cur	1400	601.2	609.02	606.07	609.08	0.000505	2.74	1408.79	609.93	0.19
1	22771	10%_Proj	816	601.2	607.93	604.84	608.1	0.001063	3.5	328.64	428.48	0.27
1	22771	2%_Proj	1088	601.2	608.5	605.43	608.56	0.000495	2.56	1110.83	525.23	0.19
1	22771	1%_Proj	1198	601.2	608.69	605.67	608.75	0.000511	2.66	1230.98	551.36	0.19
1	22771	0.2%_Proj	1460	601.2	609.11	606.17	609.18	0.000502	2.76	1461.52	620.06	0.19
1	22710	10%_Cur	770	601.3	607.87	604.68	607.94	0.000512	2.54	634.76	381.76	0.19
1	22710	2%_Cur	1030	601.3	608.31	605.21	608.41	0.000634	2.98	762.98	424.58	0.22
1	22710	1%_Cur	1140	601.3	608.5	605.42	608.6	0.000681	3.16	824.52	463.06	0.23
1	22710	0.2%_Cur	1400	601.3	608.91	605.91	609.03	0.000734	3.43	976.62	540.9	0.24
1	22710	10%_Proj	816	601.3	607.95	604.78	608.03	0.000535	2.63	657.61	387.84	0.2
1	22710	2%_Proj	1088	601.3	608.41	605.32	608.51	0.000662	3.08	794.67	446.21	0.22
1	22710	1%_Proj	1198	601.3	608.59	605.53	608.7	0.000693	3.22	858.56	473.46	0.23
1	22710	0.2%_Proj	1460	601.3	609	606.04	609.13	0.000756	3.51	1022.64	561.99	0.24
1	22311	10%_Cur	770	601.42	607.67		607.73	0.000527	2.4	531.83	240.42	0.19
1	22311	2%_Cur	1030	601.42	608.08		608.16	0.000628	2.77	631.99	253.02	0.21
1	22311	1%_Cur	1140	601.42	608.25		608.34	0.000655	2.89	676.41	259.57	0.22
1	22311	0.2%_Cur	1400	601.42	608.65		608.75	0.000694	3.12	783.32	275	0.23
1	22311	10%_Proj	816	601.42	607.74		607.81	0.000547	2.47	549.86	242.42	0.2
1	22311	2%_Proj	1088	601.42	608.17		608.25	0.000643	2.83	655.28	256.25	0.22
1	22311	1%_Proj	1198	601.42	608.34		608.43	0.000666	2.94	700.45	263.29	0.22
1	22311	0.2%_Proj	1460	601.42	608.74		608.84	0.0007	3.16	807.74	278.03	0.23
1	22232	10%_Cur	770	601.5	607.34	605.45	607.6	0.002336	4.82	353.88	255.81	0.35
1	22232	2%_Cur	1030	601.5	607.72	606.99	608	0.002639	5.34	459.55	300.54	0.38
1	22232	1%_Cur	1140	601.5	607.95	606.99	608.2	0.002358	5.17	529.09	305.48	0.36
1	22232	0.2%_Cur	1400	601.5	608.41	607.52	608.62	0.002095	5.11	674.64	353.86	0.34
1	22232	10%_Proj	816	601.5	607.41	605.63	607.68	0.002413	4.93	371.27	268.14	0.36
1	22232	2%_Proj	1088	601.5	607.85	606.99	608.11	0.00248	5.25	496.74	303.19	0.37
1	22232	1%_Proj	1198	601.5	608.07	606.99	608.3	0.002238	5.1	564.49	308.74	0.35
1	22232	0.2%_Proj	1460	601.5	608.52	607.55	608.71	0.001981	5.02	714	364.46	0.34
1	22205		Bridge									
1	22191	10%_Cur	770	600.42	606.8	604.35	607.43	0.004531	6.42	141.79	164.91	0.46
1	22191	2%_Cur	1030	600.42	607.31	605.16	607.98	0.004895	7.03	281.92	215.5	0.48

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22191	1%_Cur	1140	600.42	607.5	605.48	608.18	0.005006	7.24	323.67	225.39	0.49
1	22191	0.2%_Cur	1400	600.42	607.9	607.5	608.6	0.005208	7.68	421.02	262.26	0.5
1	22191	10%_Proj	816	600.42	606.9	604.5	607.58	0.004781	6.66	148.46	188.58	0.47
1	22191	2%_Proj	1088	600.42	607.41	605.32	608.08	0.00496	7.15	303.91	220.53	0.49
1	22191	1%_Proj	1198	600.42	607.6	605.64	608.28	0.005047	7.34	345.71	231.09	0.49
1	22191	0.2%_Proj	1460	600.42	607.98	607.58	608.7	0.005297	7.8	443.55	276.49	0.51
1	22056	10%_Cur	770	600.8	606.35	604.91	606.8	0.003549	5.57	208.14	196.1	0.48
1	22056	2%_Cur	1030	600.8	606.85	605.83	607.31	0.003564	6.02	331.66	225.13	0.49
1	22056	1%_Cur	1140	600.8	607.02	606.08	607.51	0.003623	6.22	368.58	232.33	0.5
1	22056	0.2%_Cur	1400	600.8	607.4	606.42	607.92	0.003737	6.64	450.59	246.32	0.51
1	22056	10%_Proj	816	600.8	606.43	605.01	606.91	0.003742	5.79	219.58	203.52	0.5
1	22056	2%_Proj	1088	600.8	606.94	606.01	607.42	0.003598	6.13	351.14	228.82	0.5
1	22056	1%_Proj	1198	600.8	607.11	606.21	607.61	0.003642	6.31	388.05	236.1	0.5
1	22056	0.2%_Proj	1460	600.8	607.47	606.42	608	0.003762	6.73	468.48	249.01	0.52
1	21988	10%_Cur	770	600.6	606.4		606.59	0.001163	3.58	308.85	199.24	0.28
1	21988	2%_Cur	1030	600.6	606.86		607.1	0.001407	4.17	405.67	222.34	0.32
1	21988	1%_Cur	1140	600.6	607.02		607.29	0.001495	4.38	443.21	226.97	0.33
1	21988	0.2%_Cur	1400	600.6	607.38		607.69	0.001684	4.85	524.83	235.34	0.35
1	21988	10%_Proj	816	600.6	606.49		606.69	0.001212	3.69	326.45	205.71	0.29
1	21988	2%_Proj	1088	600.6	606.95		607.2	0.001455	4.29	425.52	224.8	0.32
1	21988	1%_Proj	1198	600.6	607.11		607.38	0.001536	4.49	462.85	229.07	0.33
1	21988	0.2%_Proj	1460	600.6	607.45		607.77	0.001726	4.95	542.39	237.07	0.36
1	20749	10%_Cur	770	598.9	605.36		605.45	0.000713	3.03	530.11	367.05	0.23
1	20749	2%_Cur	1030	598.9	605.71		605.8	0.000755	3.25	661.93	375.05	0.24
1	20749	1%_Cur	1140	598.9	605.84		605.94	0.000772	3.33	711.49	377.96	0.24
1	20749	0.2%_Cur	1400	598.9	606.17		606.26	0.000765	3.44	836.46	385.46	0.24
1	20749	10%_Proj	816	598.9	605.45		605.53	0.000696	3.03	563.87	369.48	0.22
1	20749	2%_Proj	1088	598.9	605.79		605.88	0.000755	3.28	691.78	376.78	0.24
1	20749	1%_Proj	1198	598.9	605.88		605.98	0.000808	3.42	726.55	378.88	0.24
1	20749	0.2%_Proj	1460	598.9	606.26		606.35	0.000748	3.43	870.12	386.71	0.24
1	20719	10%_Cur	799	598.57	605.15	601.73	605.37	0.001252	3.93	263.32	269.66	0.29
1	20719	2%_Cur	1060	598.57	605.38	602.4	605.7	0.001729	4.75	330.25	301.2	0.34
1	20719	1%_Cur	1160	598.57	605.49	602.62	605.83	0.001831	4.95	365.46	331	0.35
1	20719	0.2%_Cur	1410	598.57	605.83	603.15	606.16	0.001836	5.13	494.85	421.9	0.35
1	20719	10%_Proj	848	598.57	605.22	601.86	605.46	0.001311	4.06	283.21	275.72	0.29
1	20719	2%_Proj	1118	598.57	605.45	602.53	605.78	0.00179	4.87	350.66	316.15	0.35

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	20719	1%_Proj	1222	598.57	605.48	602.77	605.86	0.002066	5.25	360.57	326.13	0.37
1	20719	0.2%_Proj	1480	598.57	605.94	603.28	606.25	0.001769	5.09	540.04	435.18	0.35
1	20700		Bridge									
1	20654	10%_Cur	799	598.47	603.75	601.68	604.28	0.003681	5.88	145.83	193.23	0.46
1	20654	2%_Cur	1060	598.47	604.15	602.35	604.91	0.004873	7.12	164.38	238	0.53
1	20654	1%_Cur	1160	598.47	604.5	602.6	604.77	0.002273	5.06	430.9	287.32	0.37
1	20654	0.2%_Cur	1410	598.47	604.9	603.2	605.15	0.002119	5.11	556.33	336.96	0.36
1	20654	10%_Proj	848	598.47	603.85	601.82	604.42	0.003841	6.09	150.72	196.01	0.47
1	20654	2%_Proj	1118	598.47	604.43	602.5	604.71	0.002298	5.05	410.91	270.96	0.37
1	20654	1%_Proj	1222	598.47	604.6	602.75	604.87	0.002238	5.08	461.57	305.66	0.37
1	20654	0.2%_Proj	1480	598.47	605	603.57	605.25	0.002088	5.13	592.37	352.76	0.36
1	20539	10%_Cur	799	597.5	603.73		603.82	0.001339	2.83	488.15	340.48	0.22
1	20539	2%_Cur	1060	597.5	604.25		604.33	0.001189	2.84	677.73	375.7	0.21
1	20539	1%_Cur	1160	597.5	604.43		604.5	0.001134	2.83	745.32	381.54	0.2
1	20539	0.2%_Cur	1410	597.5	604.83		604.9	0.001041	2.83	903.08	401.93	0.2
1	20539	10%_Proj	848	597.5	603.86		603.94	0.001289	2.82	533.07	360.64	0.21
1	20539	2%_Proj	1118	597.5	604.35		604.43	0.001155	2.83	717.31	378.89	0.2
1	20539	1%_Proj	1222	597.5	604.53		604.6	0.001107	2.82	785.47	385.52	0.2
1	20539	0.2%_Proj	1480	597.5	604.93		605	0.001039	2.86	945.38	415.05	0.2
1	20061	10%_Cur	799	596.8	601.95	600.83	602.62	0.005566	6.55	124.27	112.92	0.59
1	20061	2%_Cur	1060	596.8	602.43	601.4	603.19	0.005797	7.23	211.29	130.56	0.62
1	20061	1%_Cur	1160	596.8	602.59	601.62	603.39	0.005869	7.46	234.13	144.67	0.62
1	20061	0.2%_Cur	1410	596.8	603.01	602.53	603.85	0.005766	7.85	300.24	176.06	0.63
1	20061	10%_Proj	848	596.8	602.05	600.92	602.76	0.00577	6.78	127.75	118.2	0.6
1	20061	2%_Proj	1118	596.8	602.53	601.53	603.31	0.005839	7.37	224.32	137.86	0.62
1	20061	1%_Proj	1222	596.8	602.72	601.74	603.51	0.005772	7.54	252.03	150.21	0.62
1	20061	0.2%_Proj	1480	596.8	603.1	602.67	603.96	0.005824	7.99	316.46	183.91	0.63
1	18590	10%_Cur	799	594.8	599.97		600.03	0.000801	2.69	795.72	435.34	0.23
1	18590	2%_Cur	1060	594.8	600.36		600.43	0.000861	2.96	969.92	449.43	0.24
1	18590	1%_Cur	1160	594.8	600.5		600.57	0.000883	3.06	1030.7	455.71	0.25
1	18590	0.2%_Cur	1410	594.8	600.79		600.87	0.000966	3.33	1169.13	477.36	0.26
1	18590	10%_Proj	848	594.8	600.05		600.11	0.000813	2.75	830.17	437.39	0.23
1	18590	2%_Proj	1118	594.8	600.44		600.51	0.000877	3.03	1003.95	452.03	0.25
1	18590	1%_Proj	1222	594.8	600.55		600.63	0.000924	3.15	1055.81	463.35	0.25
1	18590	0.2%_Proj	1480	594.8	600.88		600.97	0.00097	3.38	1212.24	481.4	0.26

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	16260	10%_Cur	799	592.7	596.71	596.14	596.98	0.003256	4.79	363.07	296.42	0.45
1	16260	2%_Cur	1060	592.7	597.21		597.45	0.00278	4.84	514.64	310.78	0.43
1	16260	1%_Cur	1160	592.7	597.38		597.62	0.002659	4.87	567.75	313.6	0.42
1	16260	0.2%_Cur	1410	592.7	597.99		598.17	0.001908	4.52	761.54	319.82	0.37
1	16260	10%_Proj	848	592.7	596.81	596.24	597.08	0.003144	4.8	392.84	299.29	0.45
1	16260	2%_Proj	1118	592.7	597.31		597.55	0.00271	4.86	545.45	312.42	0.42
1	16260	1%_Proj	1222	592.7	597.62		597.82	0.002194	4.59	642.66	316.16	0.39
1	16260	0.2%_Proj	1480	592.7	598.09		598.27	0.001893	4.57	793.11	320.78	0.37
1	15225	10%_Cur	799	588.5	595.09		595.27	0.001021	3.59	388.82	340.52	0.26
1	15225	2%_Cur	1060	588.5	595.79		595.97	0.00093	3.69	640.7	378.02	0.25
1	15225	1%_Cur	1160	588.5	596.07		596.23	0.000866	3.66	744.7	385.77	0.25
1	15225	0.2%_Cur	1410	588.5	597.25		597.34	0.00048	3.03	1230.07	425.24	0.19
1	15225	10%_Proj	848	588.5	595.22		595.41	0.001011	3.62	435.2	345.03	0.26
1	15225	2%_Proj	1118	588.5	595.95		596.11	0.000897	3.68	699.18	381.79	0.25
1	15225	1%_Proj	1222	588.5	596.81		596.9	0.000507	3	1043.32	414.31	0.19
1	15225	0.2%_Proj	1480	588.5	597.33		597.42	0.000496	3.1	1265.68	425.92	0.19
1	14388	10%_Cur	799	587.83	593.69		594.02	0.002327	4.78	210.14	269.74	0.39
1	14388	2%_Cur	1060	587.83	594.68		594.95	0.001654	4.58	316.92	348.99	0.34
1	14388	1%_Cur	1160	587.83	595.04		595.3	0.001471	4.5	356.54	370.76	0.32
1	14388	0.2%_Cur	1410	587.83	596.7		596.86	0.000705	3.67	536.11	442.28	0.23
1	14388	10%_Proj	848	587.83	593.88		594.2	0.002173	4.75	230.85	285.48	0.38
1	14388	2%_Proj	1118	587.83	594.88		595.15	0.001551	4.54	339.33	360.58	0.33
1	14388	1%_Proj	1222	587.83	596.27		596.41	0.00069	3.49	489.12	428.77	0.23
1	14388	0.2%_Proj	1480	587.83	596.75		596.92	0.000754	3.81	541.58	444.14	0.24
1	14364	10%_Cur	799	587.83	593.7	590.9	593.92	0.001376	3.82	220.01	224.24	0.31
1	14364	2%_Cur	1060	587.83	594.65	591.57	594.91	0.001291	4.17	270.03	290.58	0.31
1	14364	1%_Cur	1160	587.83	594.98	591.76	595.26	0.001265	4.29	287.92	310.67	0.31
1	14364	0.2%_Cur	1410	587.83	596.57	592.15	596.81	0.00083	4.05	371.9	397.02	0.26
1	14364	10%_Proj	848	587.83	593.88	591.02	594.11	0.00136	3.89	229.69	258.32	0.31
1	14364	2%_Proj	1118	587.83	594.84	591.68	595.11	0.001278	4.24	280.29	296.69	0.31
1	14364	1%_Proj	1222	587.83	596.17	591.85	596.37	0.000752	3.72	350.68	381.58	0.24
1	14364	0.2%_Proj	1480	587.83	596.76	592.27	597.01	0.000839	4.14	382.11	410.66	0.26
1	14330		Bridge									
1	14298	10%_Cur	799	587.6	593.09	590.67	593.43	0.002108	4.66	174.16	99.96	0.37

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	14298	2%_Cur	1060	587.6	593.8	591.27	594.24	0.002338	5.38	202.87	149.4	0.4
1	14298	1%_Cur	1160	587.6	594.04	591.47	594.53	0.002418	5.63	212.86	180.34	0.41
1	14298	0.2%_Cur	1410	587.6	594.66	591.92	595.25	0.002524	6.16	238.26	272.44	0.43
1	14298	10%_Proj	848	587.6	593.23	590.78	593.59	0.002159	4.81	179.71	108.44	0.38
1	14298	2%_Proj	1118	587.6	593.93	591.4	594.41	0.002392	5.53	208.51	170.23	0.41
1	14298	1%_Proj	1222	587.6	594.21	591.59	594.72	0.002427	5.76	219.92	200.84	0.42
1	14298	0.2%_Proj	1480	587.6	595.12	592.04	595.68	0.002197	6.02	257.03	314.22	0.41
1	14176	10%_Cur	799	586.6	593.02	589.31	593.18	0.00091	3.25	264.15	260.73	0.25
1	14176	2%_Cur	1060	586.6	593.74	589.83	593.95	0.001005	3.72	337.02	327.44	0.27
1	14176	1%_Cur	1160	586.6	593.99	590.05	594.21	0.001031	3.87	363.44	340.25	0.27
1	14176	0.2%_Cur	1410	586.6	594.64	590.49	594.89	0.001046	4.16	433.65	369.82	0.28
1	14176	10%_Proj	848	586.6	593.15	589.42	593.33	0.000935	3.35	277.48	277.52	0.25
1	14176	2%_Proj	1118	586.6	593.88	589.96	594.1	0.001024	3.81	351.84	331.86	0.27
1	14176	1%_Proj	1222	586.6	594.17	590.15	594.4	0.001028	3.94	382.65	347.93	0.27
1	14176	0.2%_Proj	1480	586.6	595.12	590.62	595.36	0.000888	4.01	487.87	398.82	0.26
1	12509	10%_Cur	799	585.2	592.48	590.02	592.5	0.000226	1.7	1458.51	603.37	0.12
1	12509	2%_Cur	1060	585.2	593.29	590.4	593.3	0.000193	1.71	1987.7	693.83	0.12
1	12509	1%_Cur	1160	585.2	593.59	590.52	593.6	0.000176	1.68	2199.81	726.16	0.11
1	12509	0.2%_Cur	1410	585.2	594.33	590.77	594.34	0.000148	1.65	2764.07	781.49	0.1
1	12509	10%_Proj	848	585.2	592.65	590.11	592.67	0.000213	1.69	1561.01	623.91	0.12
1	12509	2%_Proj	1118	585.2	593.46	590.51	593.47	0.000184	1.7	2104.93	712.18	0.11
1	12509	1%_Proj	1222	585.2	593.76	590.56	593.78	0.00018	1.73	2331.17	764.81	0.11
1	12509	0.2%_Proj	1480	585.2	594.92	590.83	594.93	0.000105	1.46	3231.78	926.27	0.09
1	11492	10%_Cur	799	584.5	592.28		592.31	0.000198	1.79	1159.72	515.92	0.12
1	11492	2%_Cur	1060	584.5	593.1		593.13	0.000194	1.9	1439.16	544.95	0.12
1	11492	1%_Cur	1160	584.5	593.41		593.44	0.00019	1.93	1544.63	552.49	0.12
1	11492	0.2%_Cur	1410	584.5	594.17		594.19	0.000179	1.99	1805.68	569.1	0.12
1	11492	10%_Proj	848	584.5	592.46		592.48	0.000196	1.8	1218.41	518.53	0.12
1	11492	2%_Proj	1118	584.5	593.27		593.3	0.000192	1.92	1497.78	549.52	0.12
1	11492	1%_Proj	1222	584.5	593.59		593.61	0.000189	1.95	1605.49	555.93	0.12
1	11492	0.2%_Proj	1480	584.5	594.8		594.82	0.000142	1.85	2027.11	631.25	0.11
1	11208	10%_Cur	799	584.6	592.15		592.23	0.00052	2.69	696.63	511.92	0.19
1	11208	2%_Cur	1060	584.6	592.98		593.05	0.000486	2.83	920.49	585.09	0.19
1	11208	1%_Cur	1160	584.6	593.29		593.36	0.000466	2.86	1010.33	600.1	0.19
1	11208	0.2%_Cur	1410	584.6	594.06		594.12	0.000416	2.88	1241.56	811.7	0.18
1	11208	10%_Proj	848	584.6	592.33		592.4	0.00051	2.71	742.13	522.87	0.19

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	11208	2%_Proj	1118	584.6	593.15		593.22	0.000478	2.85	969.96	594	0.19
1	11208	1%_Proj	1222	584.6	593.47		593.54	0.000457	2.87	1062.85	627.67	0.19
1	11208	0.2%_Proj	1480	584.6	594.72		594.77	0.000303	2.6	1448.49	906.44	0.16
1	10810	10%_Cur	799	584.8	591.94		592.01	0.000732	3.01	669.68	468.71	0.23
1	10810	2%_Cur	1060	584.8	592.78		592.86	0.000674	3.17	920.55	584.35	0.22
1	10810	1%_Cur	1160	584.8	593.11		593.18	0.000593	3.08	1052.43	644.55	0.21
1	10810	0.2%_Cur	1410	584.8	593.92		593.97	0.000452	2.91	1372.59	845.25	0.19
1	10810	10%_Proj	848	584.8	592.1		592.19	0.000752	3.11	715.83	475.07	0.23
1	10810	2%_Proj	1118	584.8	592.96		593.04	0.000631	3.13	993.47	618.51	0.22
1	10810	1%_Proj	1222	584.8	593.3		593.37	0.000559	3.05	1126.6	664.77	0.21
1	10810	0.2%_Proj	1480	584.8	594.63		594.67	0.000301	2.52	1657.73	878.8	0.16
1	10428	10%_Cur	799	584.8	591.19		591.45	0.004634	4.17	201.02	77.96	0.35
1	10428	2%_Cur	1060	584.8	592.01		592.33	0.004477	4.6	252.86	148.72	0.36
1	10428	1%_Cur	1160	584.8	592.39		592.71	0.004175	4.66	281.23	167.32	0.35
1	10428	0.2%_Cur	1410	584.8	593.28		593.6	0.003511	4.72	357.98	279.88	0.33
1	10428	10%_Proj	848	584.8	591.34		591.62	0.004644	4.27	209.58	83.99	0.35
1	10428	2%_Proj	1118	584.8	592.21		592.54	0.004347	4.65	267.74	159.3	0.35
1	10428	1%_Proj	1222	584.8	592.59		592.92	0.004055	4.7	297.77	175.51	0.34
1	10428	0.2%_Proj	1480	584.8	594.29		594.45	0.001671	3.58	675.76	541.27	0.23
1	10310	10%_Cur	799	584.02	591.21	586.2	591.27	0.000275	2	406.98	78.56	0.14
1	10310	2%_Cur	1060	584.02	592.04	586.63	592.12	0.000311	2.31	470.44	85.08	0.16
1	10310	1%_Cur	1160	584.02	592.41	586.79	592.5	0.00031	2.39	499.72	92.13	0.16
1	10310	0.2%_Cur	1410	584.02	593.3	587.15	593.41	0.000306	2.57	569.77	148	0.16
1	10310	10%_Proj	848	584.02	591.36	586.29	591.42	0.000284	2.06	418.46	79.67	0.15
1	10310	2%_Proj	1118	584.02	592.24	586.72	592.33	0.000313	2.37	486.26	87.06	0.16
1	10310	1%_Proj	1222	584.02	592.62	586.88	592.71	0.000313	2.45	515.7	96.31	0.16
1	10310	0.2%_Proj	1480	584.02	594.27	587.25	594.35	0.000213	2.31	857.77	446.55	0.13
1	10250		Bridge									
1	10147	10%_Cur	824	584.02	591.07	586.25	591.14	0.000309	2.12	405.8	266.85	0.15
1	10147	2%_Cur	1090	584.02	591.82	586.69	591.91	0.00036	2.47	471.59	302.71	0.17
1	10147	1%_Cur	1200	584.02	592.14	586.86	592.24	0.00037	2.58	500.08	327.31	0.17
1	10147	0.2%_Cur	1450	584.02	592.87	587.23	592.99	0.00038	2.79	565.04	387.59	0.18
1	10147	10%_Proj	875	584.02	591.22	586.34	591.29	0.000321	2.19	418.23	278.92	0.16
1	10147	2%_Proj	1150	584.02	591.99	586.79	592.09	0.000366	2.53	486.95	318.37	0.17
1	10147	1%_Proj	1258	584.02	592.31	586.93	592.41	0.000374	2.64	514.89	333.76	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	10147	0.2%_Proj	1522	584.02	593.93	587.32	593.98	0.00017	2.03	1585.32	588.59	0.12
1	9967	10%_Cur	824	584.4	590.78	588.2	590.99	0.001486	3.98	308.47	222.69	0.32
1	9967	2%_Cur	1090	584.4	591.5	588.76	591.75	0.001464	4.34	394.63	230.11	0.32
1	9967	1%_Cur	1200	584.4	591.83	588.96	592.08	0.001409	4.41	433.58	241.37	0.32
1	9967	0.2%_Cur	1450	584.4	592.58	589.38	592.83	0.001266	4.53	525.74	312.51	0.31
1	9967	10%_Proj	875	584.4	590.91	588.3	591.14	0.001493	4.07	324.68	223.96	0.32
1	9967	2%_Proj	1150	584.4	591.68	588.87	591.93	0.001438	4.38	415.47	232.43	0.32
1	9967	1%_Proj	1258	584.4	592	589.07	592.25	0.00138	4.45	454.17	283	0.32
1	9967	0.2%_Proj	1522	584.4	593.87	589.54	593.93	0.000371	2.76	1435.32	476.92	0.17
1	9667	10%_Cur	824	584.1	590.5	588.11	590.62	0.00092	3.32	515.84	260.21	0.26
1	9667	2%_Cur	1090	584.1	591.32	588.95	591.41	0.000701	3.19	744.79	302.03	0.23
1	9667	1%_Cur	1200	584.1	591.68	589.12	591.76	0.000625	3.13	856.41	329.98	0.22
1	9667	0.2%_Cur	1450	584.1	592.5	589.48	592.57	0.000442	2.86	1142.98	375.48	0.19
1	9667	10%_Proj	875	584.1	590.66	588.54	590.77	0.00088	3.31	556.62	269.04	0.25
1	9667	2%_Proj	1150	584.1	591.52	589.05	591.6	0.000645	3.13	805.04	313.6	0.22
1	9667	1%_Proj	1258	584.1	591.87	589.19	591.95	0.000574	3.06	919.93	335.21	0.21
1	9667	0.2%_Proj	1522	584.1	593.82	589.59	593.85	0.000186	2.07	1678.65	443.13	0.13
1	9411	10%_Cur	824	583.7	590.3	587.87	590.4	0.00093	3.1	595.73	269.68	0.25
1	9411	2%_Cur	1090	583.7	591.17	589.01	591.25	0.000703	3.02	833.53	279.56	0.22
1	9411	1%_Cur	1200	583.7	591.54	589.17	591.62	0.000624	2.97	938.07	285.02	0.21
1	9411	0.2%_Cur	1450	583.7	592.39	589.43	592.46	0.000508	2.92	1205.11	383.89	0.2
1	9411	10%_Proj	875	583.7	590.46	588.44	590.56	0.000882	3.09	640.16	271.17	0.25
1	9411	2%_Proj	1150	583.7	591.37	589.04	591.46	0.000656	2.99	891.38	282.51	0.22
1	9411	1%_Proj	1258	583.7	591.74	589.23	591.82	0.000603	2.98	994.04	300.69	0.21
1	9411	0.2%_Proj	1522	583.7	593.76	589.48	593.8	0.000257	2.35	1845.11	513.85	0.14
1	9112	10%_Cur	824	583.3	589.98	587.35	590.12	0.001057	3.3	465.45	234.34	0.27
1	9112	2%_Cur	1090	583.3	590.93	588.03	591.05	0.000764	3.18	703.47	290.81	0.24
1	9112	1%_Cur	1200	583.3	591.33	588.24	591.44	0.000691	3.16	825.32	330.38	0.23
1	9112	0.2%_Cur	1450	583.3	592.24	589.11	592.33	0.000497	2.94	1147.28	375.71	0.2
1	9112	10%_Proj	875	583.3	590.16	587.53	590.29	0.000992	3.28	508.72	237.48	0.26
1	9112	2%_Proj	1150	583.3	591.15	588.15	591.26	0.000737	3.2	767.97	317.73	0.23
1	9112	1%_Proj	1258	583.3	591.54	588.47	591.64	0.000642	3.12	896.01	348.83	0.22
1	9112	0.2%_Proj	1522	583.3	593.69	589.2	593.74	0.000218	2.21	1805.7	575.51	0.13
1	8693	10%_Cur	824	582.7	589.5	587	589.66	0.001177	3.67	450.62	193.28	0.28
1	8693	2%_Cur	1090	582.7	590.61	587.69	590.73	0.000808	3.46	667.82	199.18	0.24

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8693	1%_Cur	1200	582.7	591.04	587.95	591.15	0.000715	3.41	754.54	200.83	0.23
1	8693	0.2%_Cur	1450	582.7	592.01	588.43	592.11	0.000563	3.31	952.56	205.78	0.21
1	8693	10%_Proj	875	582.7	589.72	587.17	589.87	0.001083	3.62	493.5	195.05	0.27
1	8693	2%_Proj	1150	582.7	590.84	587.84	590.96	0.000755	3.43	714.99	199.96	0.24
1	8693	1%_Proj	1258	582.7	591.27	588.07	591.38	0.000674	3.38	800.45	202.05	0.23
1	8693	0.2%_Proj	1522	582.7	593.58	588.56	593.64	0.000277	2.63	1286.36	221.51	0.15
1	8419	10%_Cur	824	582.5	589.22		589.38	0.000917	3.43	372.85	245.98	0.26
1	8419	2%_Cur	1090	582.5	590.37		590.52	0.000722	3.45	521.28	270.65	0.24
1	8419	1%_Cur	1200	582.5	590.81		590.96	0.000668	3.47	578.83	279.09	0.23
1	8419	0.2%_Cur	1450	582.5	591.81		591.96	0.000569	3.49	707.38	301.47	0.22
1	8419	10%_Proj	875	582.5	589.45		589.61	0.000868	3.43	402.87	252.97	0.25
1	8419	2%_Proj	1150	582.5	590.61		590.76	0.000692	3.46	552.66	274.88	0.23
1	8419	1%_Proj	1258	582.5	591.05		591.19	0.000642	3.47	609.01	284.48	0.23
1	8419	0.2%_Proj	1522	582.5	593.46		593.56	0.000298	2.86	920.41	335.53	0.16
1	8391	10%_Cur	824	582.5	588.85	586.29	589.26	0.002385	5.19	170.71	215.98	0.39
1	8391	2%_Cur	1090	582.5	589.91	586.95	590.39	0.002214	5.63	226.31	264.29	0.39
1	8391	1%_Cur	1200	582.5	590.34	587.21	590.83	0.002121	5.75	251.72	278.14	0.39
1	8391	0.2%_Cur	1450	582.5	591.31	587.73	591.82	0.001886	5.92	311.6	376.99	0.37
1	8391	10%_Proj	875	582.5	589.06	586.44	589.49	0.002351	5.29	181	220.97	0.39
1	8391	2%_Proj	1150	582.5	590.14	587.08	590.63	0.002166	5.7	240.03	272.05	0.39
1	8391	1%_Proj	1258	582.5	590.56	587.33	591.06	0.002069	5.8	265.46	312.31	0.38
1	8391	0.2%_Proj	1522	582.5	593.24	587.88	593.55	0.000909	4.75	430.08	594.5	0.27
1	8365		Bridge									
1	8349	10%_Cur	824	582.3	588.17	586.02	588.58	0.002668	5.15	169.3	117.1	0.41
1	8349	2%_Cur	1090	582.3	588.9	586.61	589.42	0.002857	5.86	205.2	194.33	0.44
1	8349	1%_Cur	1200	582.3	589.17	586.83	589.74	0.002934	6.12	219.39	267.26	0.45
1	8349	0.2%_Cur	1450	582.3	589.75	587.3	590.42	0.003062	6.67	253.39	321.49	0.47
1	8349	10%_Proj	875	582.3	588.33	586.16	588.76	0.002692	5.29	176.65	126.51	0.42
1	8349	2%_Proj	1150	582.3	589.05	586.74	589.6	0.002898	6	213.02	225.58	0.44
1	8349	1%_Proj	1258	582.3	589.3	586.96	589.9	0.002972	6.26	226.85	282.66	0.45
1	8349	0.2%_Proj	1522	582.3	589.91	587.44	590.61	0.003075	6.8	264.16	327.76	0.47
1	8318	10%_Cur	824	582.1	588.23	585.81	588.41	0.001219	3.46	329.1	158.11	0.29
1	8318	2%_Cur	1090	582.1	589.01	586.25	589.2	0.001141	3.73	442.69	190.43	0.29
1	8318	1%_Cur	1200	582.1	589.3	586.46	589.5	0.001147	3.87	491.56	223.7	0.29
1	8318	0.2%_Cur	1450	582.1	589.93	586.9	590.14	0.001058	3.99	615.68	260.2	0.28

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8318	10%_Proj	875	582.1	588.4	585.89	588.58	0.001193	3.51	352.01	167.68	0.29
1	8318	2%_Proj	1150	582.1	589.17	586.35	589.37	0.001135	3.79	468.79	206.37	0.29
1	8318	1%_Proj	1258	582.1	589.44	586.59	589.65	0.001142	3.93	519.73	232.55	0.29
1	8318	0.2%_Proj	1522	582.1	590.11	587.03	590.31	0.00103	4.01	650.66	278.13	0.28
1	8227	10%_Cur	824	582	587.5	585.97	588.17	0.004524	6.79	183.56	128.59	0.54
1	8227	2%_Cur	1090	582	588.45		589	0.00336	6.58	310.21	164.03	0.48
1	8227	1%_Cur	1200	582	588.78		589.31	0.00309	6.55	355.21	224.43	0.46
1	8227	0.2%_Cur	1450	582	589.49		589.97	0.00265	6.51	450.8	312.65	0.44
1	8227	10%_Proj	875	582	587.68	586.12	588.34	0.004323	6.8	207.58	141.47	0.53
1	8227	2%_Proj	1150	582	588.64		589.17	0.003198	6.55	335.42	187.64	0.47
1	8227	1%_Proj	1258	582	588.95		589.46	0.002975	6.54	377.86	244.59	0.46
1	8227	0.2%_Proj	1522	582	589.68		590.15	0.002556	6.51	476.83	337.45	0.43
1	7993	10%_Cur	824	580.3	586.96		587.36	0.002244	5.22	216.65	88.5	0.4
1	7993	2%_Cur	1090	580.3	587.95		588.37	0.001988	5.49	309.69	128.61	0.38
1	7993	1%_Cur	1200	580.3	588.29		588.71	0.00192	5.59	345.72	131.17	0.38
1	7993	0.2%_Cur	1450	580.3	589.01		589.44	0.001798	5.79	422.94	136.52	0.37
1	7993	10%_Proj	875	580.3	587.17		587.57	0.002177	5.27	234.94	90.82	0.39
1	7993	2%_Proj	1150	580.3	588.14		588.56	0.001944	5.54	330	130.16	0.38
1	7993	1%_Proj	1258	580.3	588.46		588.89	0.001891	5.64	363.84	132.31	0.38
1	7993	0.2%_Proj	1522	580.3	589.21		589.64	0.001771	5.84	444.09	138.06	0.37
1	7542	10%_Cur	824	578.4	586.46		586.68	0.00094	3.79	238.4	60.86	0.26
1	7542	2%_Cur	1090	578.4	587.43		587.71	0.001003	4.29	310.66	93.14	0.28
1	7542	1%_Cur	1200	578.4	587.76		588.06	0.001028	4.47	342.31	97.26	0.28
1	7542	0.2%_Cur	1450	578.4	588.47		588.81	0.001068	4.83	414.56	107.8	0.29
1	7542	10%_Proj	875	578.4	586.66		586.9	0.000952	3.89	250.99	64.92	0.26
1	7542	2%_Proj	1150	578.4	587.62		587.91	0.001014	4.39	328.52	95.55	0.28
1	7542	1%_Proj	1258	578.4	587.93		588.24	0.001041	4.56	358.54	99.5	0.28
1	7542	0.2%_Proj	1522	578.4	588.66		589.01	0.001077	4.92	435.45	110.38	0.29
1	7102	10%_Cur	824	578.2	586.08		586.27	0.000907	3.6	301.89	88.45	0.26
1	7102	2%_Cur	1090	578.2	587.06		587.28	0.000889	3.94	391.6	95.02	0.26
1	7102	1%_Cur	1200	578.2	587.39		587.62	0.000903	4.09	423.2	97.38	0.26
1	7102	0.2%_Cur	1450	578.2	588.09		588.35	0.00093	4.41	493.37	105	0.27
1	7102	10%_Proj	875	578.2	586.28		586.48	0.0009	3.67	320.01	89.63	0.26
1	7102	2%_Proj	1150	578.2	587.25		587.47	0.000893	4.01	409.65	96.38	0.26
1	7102	1%_Proj	1258	578.2	587.55		587.79	0.000912	4.17	439.1	98.69	0.27
1	7102	0.2%_Proj	1522	578.2	588.27		588.55	0.000936	4.49	513.52	108.69	0.27

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6688	10%_Cur	824	578	585.69	581.56	585.9	0.000887	3.7	240.11	109.55	0.25
1	6688	2%_Cur	1090	578	586.61	582.19	586.88	0.00099	4.26	286.27	300.09	0.27
1	6688	1%_Cur	1200	578	586.9	582.43	587.21	0.001049	4.49	302.13	451.77	0.28
1	6688	0.2%_Cur	1450	578	587.54	582.91	587.91	0.001163	4.98	338.42	642.2	0.3
1	6688	10%_Proj	875	578	585.88	581.67	586.1	0.000906	3.81	249.41	131.25	0.26
1	6688	2%_Proj	1150	578	586.78	582.32	587.07	0.001019	4.38	295.42	395.15	0.28
1	6688	1%_Proj	1258	578	587.05	582.54	587.37	0.00108	4.62	310.15	490.28	0.29
1	6688	0.2%_Proj	1522	578	587.71	583.05	588.1	0.001192	5.11	349.17	710.06	0.31
1	6557	10%_Cur	824	577.8	585.7	580.7	585.79	0.000368	2.47	352.15	309.07	0.17
1	6557	2%_Cur	1090	577.8	586.66	581.22	586.76	0.000357	2.66	501.53	600.18	0.17
1	6557	1%_Cur	1200	577.8	586.97	581.43	587.08	0.000364	2.76	543.43	729.16	0.17
1	6557	0.2%_Cur	1450	577.8	587.64	581.85	587.75	0.000372	2.94	640.2	901	0.18
1	6557	10%_Proj	875	577.8	585.89	580.81	585.99	0.000375	2.54	366.49	346.92	0.17
1	6557	2%_Proj	1150	577.8	586.84	581.34	586.94	0.000359	2.71	525.65	704.66	0.17
1	6557	1%_Proj	1258	577.8	587.12	581.51	587.23	0.000368	2.81	564.73	776.99	0.17
1	6557	0.2%_Proj	1522	577.8	587.82	581.96	587.94	0.000372	2.98	668.75	1060.94	0.18
1	6514	10%_Cur	824	578	585.53	582.03	585.73	0.001007	3.62	233.97	208.45	0.27
1	6514	2%_Cur	1090	578	586.43	582.63	586.69	0.001058	4.09	280.02	731.18	0.28
1	6514	1%_Cur	1200	578	586.72	582.86	587	0.001104	4.3	295.96	769.9	0.29
1	6514	0.2%_Cur	1450	578	587.33	583.32	587.66	0.001183	4.71	331.53	992.94	0.3
1	6514	10%_Proj	875	578	585.72	582.14	585.93	0.001013	3.71	243.23	369.46	0.27
1	6514	2%_Proj	1150	578	586.6	582.77	586.87	0.001078	4.2	289.27	764.67	0.29
1	6514	1%_Proj	1258	578	586.86	582.97	587.15	0.001129	4.4	303.97	797.19	0.29
1	6514	0.2%_Proj	1522	578	587.49	583.42	587.84	0.001202	4.82	341.42	1052.32	0.31
1	6490		Bridge									
1	6455	10%_Cur	824	577.4	585.46	581.92	585.66	0.001019	3.63	231.54	672.96	0.27
1	6455	2%_Cur	1090	577.4	586.34	582.55	586.61	0.001084	4.12	273.7	726.06	0.28
1	6455	1%_Cur	1200	577.4	586.62	582.77	586.91	0.001138	4.34	287.13	832.28	0.29
1	6455	0.2%_Cur	1450	577.4	587.06	583.25	587.43	0.001333	4.9	308.75	1089.2	0.32
1	6455	10%_Proj	875	577.4	585.65	582.06	585.86	0.001029	3.73	240.2	702.47	0.27
1	6455	2%_Proj	1150	577.4	586.51	582.68	586.78	0.001107	4.23	281.63	782.25	0.29
1	6455	1%_Proj	1258	577.4	586.75	582.9	587.05	0.00117	4.46	293.51	892.31	0.3
1	6455	0.2%_Proj	1522	577.4	587.19	583.36	587.57	0.001385	5.05	314.76	1136.73	0.33
1	6388	10%_Cur	824	577.1	585.38	581.36	585.59	0.000947	3.77	231.1	277.78	0.26

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6388	2%_Cur	1090	577.1	586.24	582.02	586.53	0.001058	4.34	273.56	379.23	0.28
1	6388	1%_Cur	1200	577.1	586.51	582.26	586.82	0.001128	4.59	287.66	421.58	0.29
1	6388	0.2%_Cur	1450	577.1	587	582.8	587.33	0.001167	4.86	369.78	636.33	0.3
1	6388	10%_Proj	875	577.1	585.56	581.47	585.79	0.000967	3.89	239.76	315.58	0.26
1	6388	2%_Proj	1150	577.1	586.4	582.15	586.7	0.001091	4.47	281.85	399.47	0.29
1	6388	1%_Proj	1258	577.1	586.64	582.41	586.97	0.001167	4.72	294.56	461.22	0.3
1	6388	0.2%_Proj	1522	577.1	587.12	582.94	587.47	0.001201	4.98	380.84	723.01	0.31
1	5650	10%_Cur	824	576.9	584.41	581.07	584.72	0.001484	4.5	196.96	125.89	0.32
1	5650	2%_Cur	1090	576.9	585.14	581.76	585.54	0.001702	5.19	245.08	295.9	0.35
1	5650	1%_Cur	1200	576.9	585.43	582.02	585.82	0.001647	5.25	318.12	373.43	0.35
1	5650	0.2%_Cur	1450	576.9	586.02	582.53	586.37	0.001465	5.22	437.13	522.2	0.33
1	5650	10%_Proj	875	576.9	584.57	581.21	584.9	0.001521	4.64	206.31	162.39	0.33
1	5650	2%_Proj	1150	576.9	585.32	581.9	585.71	0.001657	5.21	296.38	362.94	0.35
1	5650	1%_Proj	1258	576.9	585.59	582.13	585.97	0.001582	5.22	350.18	391.22	0.34
1	5650	0.2%_Proj	1522	576.9	586.16	582.7	586.5	0.00143	5.22	467.24	547	0.33
1	5466	10%_Cur	824	576.8	584.22	580.87	584.45	0.001253	3.93	261.61	380.61	0.29
1	5466	2%_Cur	1090	576.8	585.02	581.62	585.23	0.001104	4.04	372.95	475.74	0.28
1	5466	1%_Cur	1200	576.8	585.32	581.91	585.53	0.001052	4.06	414.74	530.04	0.28
1	5466	0.2%_Cur	1450	576.8	585.9	582.41	586.1	0.00099	4.17	497.03	622.05	0.27
1	5466	10%_Proj	875	576.8	584.4	581.02	584.62	0.001211	3.95	286.03	395.59	0.29
1	5466	2%_Proj	1150	576.8	585.21	581.8	585.42	0.001055	4.02	399.25	511.59	0.28
1	5466	1%_Proj	1258	576.8	585.48	582.03	585.68	0.001019	4.06	437.67	548.31	0.27
1	5466	0.2%_Proj	1522	576.8	586.03	582.56	586.25	0.000987	4.21	517.02	651.23	0.27
1	5293	10%_Cur	824	576.6	584.01	580.53	584.24	0.001135	3.88	227.93	342.39	0.28
1	5293	2%_Cur	1090	576.6	584.7	581.21	585.01	0.001347	4.56	265.64	492.18	0.32
1	5293	1%_Cur	1200	576.6	584.95	581.45	585.3	0.001429	4.82	280.82	617.55	0.33
1	5293	0.2%_Cur	1450	576.6	585.67	581.92	585.92	0.001051	4.42	595.41	773.91	0.29
1	5293	10%_Proj	875	576.6	584.17	580.67	584.41	0.001168	4.01	236.06	360.86	0.29
1	5293	2%_Proj	1150	576.6	584.86	581.36	585.19	0.001374	4.68	275.49	599.36	0.32
1	5293	1%_Proj	1258	576.6	585.09	581.59	585.46	0.001461	4.94	289.69	637.4	0.33
1	5293	0.2%_Proj	1522	576.6	585.81	582.05	586.06	0.001063	4.5	621.33	777.5	0.29
1	5103	10%_Cur	824	575.6	584	580.4	584.07	0.000415	2.34	414.63	595.77	0.17
1	5103	2%_Cur	1090	575.6	584.76	580.82	584.82	0.00035	2.34	758.71	951.66	0.16
1	5103	1%_Cur	1200	575.6	585.03	580.97	585.1	0.000351	2.41	822.07	980.87	0.16
1	5103	0.2%_Cur	1450	575.6	585.7	581.32	585.77	0.000335	2.5	980.26	1007.17	0.16
1	5103	10%_Proj	875	575.6	584.16	580.49	584.24	0.000419	2.4	432.93	680.89	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	5103	2%_Proj	1150	575.6	584.94	580.91	585	0.000344	2.36	799.74	975.98	0.16
1	5103	1%_Proj	1258	575.6	585.19	581.06	585.25	0.000349	2.43	857.66	986.76	0.16
1	5103	0.2%_Proj	1522	575.6	585.84	581.39	585.9	0.00034	2.55	1013.16	1009.73	0.16
1	4940	10%_Cur	824	576.4	583.98	579.9	584.02	0.000271	1.87	493.4	625.45	0.14
1	4940	2%_Cur	1090	576.4	584.72	580.28	584.78	0.000292	2.11	637.16	937.33	0.15
1	4940	1%_Cur	1200	576.4	584.99	580.41	585.06	0.000297	2.19	698.83	993.08	0.15
1	4940	0.2%_Cur	1450	576.4	585.66	580.72	585.73	0.000287	2.3	851.87	1055.51	0.15
1	4940	10%_Proj	875	576.4	584.14	579.97	584.19	0.000274	1.92	514.4	747.9	0.14
1	4940	2%_Proj	1150	576.4	584.9	580.36	584.96	0.000289	2.14	677.28	981.03	0.15
1	4940	1%_Proj	1258	576.4	585.15	580.48	585.21	0.000296	2.22	733.43	1008.96	0.15
1	4940	0.2%_Proj	1522	576.4	585.8	580.79	585.86	0.000291	2.35	883.14	1057.15	0.15
1	4720	10%_Cur	824	576.3	583.76	579.56	583.92	0.000716	3.26	269.43	1002.97	0.23
1	4720	2%_Cur	1090	576.3	584.59	580.15	584.7	0.000496	2.94	577.82	1454.95	0.19
1	4720	1%_Cur	1200	576.3	584.87	580.36	584.97	0.000477	2.96	640.45	1487.67	0.19
1	4720	0.2%_Cur	1450	576.3	585.56	580.84	585.65	0.000409	2.91	796.54	1551.1	0.18
1	4720	10%_Proj	875	576.3	583.91	579.68	584.08	0.000743	3.37	278.4	1168.99	0.23
1	4720	2%_Proj	1150	576.3	584.77	580.27	584.88	0.000473	2.92	619.23	1477.84	0.19
1	4720	1%_Proj	1258	576.3	585.03	580.48	585.13	0.000462	2.95	675.76	1490.29	0.19
1	4720	0.2%_Proj	1522	576.3	585.7	580.98	585.79	0.000408	2.94	827.59	1561.51	0.18
1	4626	10%_Cur	824	576.2	583.75	580.22	583.84	0.000553	2.74	517.51	1201.31	0.2
1	4626	2%_Cur	1090	576.2	584.58	580.83	584.64	0.000379	2.48	797.15	1742.94	0.17
1	4626	1%_Cur	1200	576.2	584.86	581.05	584.92	0.000343	2.43	894.5	1826.08	0.16
1	4626	0.2%_Cur	1450	576.2	585.56	581.47	585.61	0.000255	2.23	1314.56	1897.04	0.14
1	4626	10%_Proj	875	576.2	583.92	580.35	584	0.000512	2.68	572.06	1325.86	0.19
1	4626	2%_Proj	1150	576.2	584.77	580.95	584.82	0.000347	2.42	861.56	1804.49	0.16
1	4626	1%_Proj	1258	576.2	585.02	581.16	585.08	0.000323	2.39	949.54	1856.13	0.16
1	4626	0.2%_Proj	1522	576.2	585.7	581.59	585.74	0.000247	2.22	1408.65	1898.92	0.14
1	4601	10%_Cur	824	576.1	583.62	580.18	583.81	0.000961	3.55	254.82	1314.99	0.26
1	4601	2%_Cur	1090	576.1	584.57	580.79	584.63	0.000382	2.48	910.31	1808.43	0.17
1	4601	1%_Cur	1200	576.1	584.86	581.03	584.91	0.000343	2.42	1028.67	1833.58	0.16
1	4601	0.2%_Cur	1450	576.1	585.58	581.46	585.59	0.000125	1.56	2754	1880.99	0.1
1	4601	10%_Proj	875	576.1	583.9	580.31	583.99	0.000541	2.75	631.01	1533.92	0.2
1	4601	2%_Proj	1150	576.1	584.76	580.93	584.82	0.000348	2.41	988.83	1821.62	0.16
1	4601	1%_Proj	1258	576.1	585.02	581.13	585.07	0.000322	2.38	1095.16	1843.97	0.16
1	4601	0.2%_Proj	1522	576.1	585.72	581.56	585.73	0.000121	1.55	2891.66	1885.05	0.1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	4486	10%_Cur	824	575.7	583.54	579.43	583.71	0.00076	3.34	261.79	1589.32	0.24
1	4486	2%_Cur	1090	575.7	584.54	580.04	584.59	0.000311	2.36	1031.71	1878.01	0.15
1	4486	1%_Cur	1200	575.7	584.83	580.28	584.88	0.000287	2.32	1156.4	1926.46	0.15
1	4486	0.2%_Cur	1450	575.7	585.53	580.78	585.57	0.000227	2.2	1465.39	1992.87	0.13
1	4486	10%_Proj	875	575.7	583.72	579.56	583.9	0.000775	3.44	272.21	1689.54	0.24
1	4486	2%_Proj	1150	575.7	584.73	580.17	584.78	0.000288	2.31	1114.75	1914.96	0.15
1	4486	1%_Proj	1258	575.7	584.99	580.39	585.04	0.000272	2.29	1226.56	1945.51	0.15
1	4486	0.2%_Proj	1522	575.7	585.71	580.91	585.72	0.000076	1.29	4024.86	1998.37	0.08
1	4426	10%_Cur	824	575.7	583.55	579.55	583.65	0.000553	2.85	655.75	1939.69	0.2
1	4426	2%_Cur	1090	575.7	584.5	580.17	584.57	0.000404	2.68	1068.67	2148.4	0.18
1	4426	1%_Cur	1200	575.7	584.79	580.41	584.86	0.000382	2.67	1195.95	2166.86	0.17
1	4426	0.2%_Cur	1450	575.7	585.5	580.91	585.56	0.00032	2.6	1511.79	2235.29	0.16
1	4426	10%_Proj	875	575.7	583.75	579.68	583.84	0.00052	2.82	737.89	2013.85	0.2
1	4426	2%_Proj	1150	575.7	584.69	580.32	584.76	0.00038	2.64	1153.87	2162.06	0.17
1	4426	1%_Proj	1258	575.7	584.95	580.55	585.02	0.000368	2.66	1267.75	2175.55	0.17
1	4426	0.2%_Proj	1522	575.7	585.65	581.04	585.71	0.000317	2.62	1578.86	2237.55	0.16
1	4162	10%_Cur	824	575.5	583.39	580.04	583.5	0.000634	2.86	586.46	1534.89	0.21
1	4162	2%_Cur	1090	575.5	584.38	580.63	584.46	0.000467	2.73	943.27	2087.3	0.19
1	4162	1%_Cur	1200	575.5	584.67	580.83	584.75	0.000442	2.74	1053.13	2160.35	0.19
1	4162	0.2%_Cur	1450	575.5	585.4	581.22	585.47	0.00037	2.68	1326.55	2202.55	0.17
1	4162	10%_Proj	875	575.5	583.6	580.15	583.7	0.000591	2.82	654.53	1666.41	0.21
1	4162	2%_Proj	1150	575.5	584.58	580.73	584.65	0.000439	2.7	1017.96	2139.56	0.18
1	4162	1%_Proj	1258	575.5	584.84	580.91	584.91	0.000425	2.73	1115.38	2177.88	0.18
1	4162	0.2%_Proj	1522	575.5	585.55	581.33	585.62	0.000366	2.7	1383.39	2204	0.17
1	4085	10%_Cur	824	575.5	583.31	578.71	583.45	0.000553	2.95	291.34	1848.74	0.2
1	4085	2%_Cur	1090	575.5	584.23	579.27	584.41	0.00062	3.41	345.23	2141.89	0.22
1	4085	1%_Cur	1200	575.5	584.65	579.5	584.72	0.000304	2.48	1126.07	2192.78	0.16
1	4085	0.2%_Cur	1450	575.5	585.38	579.97	585.44	0.000273	2.49	1392.93	2234.29	0.15
1	4085	10%_Proj	875	575.5	583.5	578.82	583.65	0.000566	3.04	301.81	1923.2	0.21
1	4085	2%_Proj	1150	575.5	584.41	579.4	584.6	0.000635	3.5	357.33	2179.21	0.22
1	4085	1%_Proj	1258	575.5	584.82	579.62	584.88	0.000298	2.48	1186.52	2198.37	0.15
1	4085	0.2%_Proj	1522	575.5	585.58	580.09	585.59	0.000046	1.03	5924.88	2240.32	0.06
1	3935	10%_Cur	824	575.16	583.18	579.65	583.35	0.000832	3.33	356.17	1492.51	0.25
1	3935	2%_Cur	1090	575.16	584.16	580.21	584.3	0.000655	3.29	670.53	2085.96	0.22
1	3935	1%_Cur	1200	575.16	584.52	580.44	584.65	0.000588	3.23	882.12	2210.33	0.21
1	3935	0.2%_Cur	1450	575.16	585.3	580.86	585.39	0.000407	2.88	1635.41	2395.6	0.18

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	3935	10%_Proj	875	575.16	583.38	579.75	583.54	0.000809	3.36	413.7	1694.27	0.24
1	3935	2%_Proj	1150	575.16	584.35	580.33	584.49	0.00063	3.29	755.3	2150.9	0.22
1	3935	1%_Proj	1258	575.16	584.7	580.54	584.82	0.000544	3.15	1018.08	2281.7	0.21
1	3935	0.2%_Proj	1522	575.16	585.5	580.97	585.57	0.000363	2.76	1884.61	2418.44	0.17
1	3657	10%_Cur	824	575.4	582.95	579.18	583.12	0.000793	3.29	283.81	1615.15	0.24
1	3657	2%_Cur	1090	575.4	583.93	579.78	584.11	0.000732	3.51	476.81	1846.12	0.24
1	3657	1%_Cur	1200	575.4	584.29	580.01	584.47	0.000695	3.54	563.4	1937.75	0.23
1	3657	0.2%_Cur	1450	575.4	585.17	580.45	585.27	0.000441	3.05	1617.45	2223.93	0.19
1	3657	10%_Proj	875	575.4	583.15	579.31	583.32	0.000785	3.35	318.21	1662.11	0.24
1	3657	2%_Proj	1150	575.4	584.13	579.91	584.3	0.000712	3.53	523.71	1883.68	0.24
1	3657	1%_Proj	1258	575.4	584.47	580.12	584.64	0.000684	3.57	695.97	2000.19	0.23
1	3657	0.2%_Proj	1522	575.4	585.38	580.56	585.46	0.000379	2.88	1930.21	2309.99	0.18
1	3513	10%_Cur	824	575.2	582.84		583.01	0.000773	3.25	276.93	1807.25	0.24
1	3513	2%_Cur	1090	575.2	583.79		583.99	0.000789	3.64	361.16	2056.53	0.25
1	3513	1%_Cur	1200	575.2	584.15	579.85	584.36	0.000774	3.73	590.87	2133.19	0.25
1	3513	0.2%_Cur	1450	575.2	585.11		585.21	0.000408	2.95	1868.01	2241.14	0.18
1	3513	10%_Proj	875	575.2	583.04		583.21	0.000776	3.33	291.68	1849.6	0.24
1	3513	2%_Proj	1150	575.2	583.99	579.76	584.19	0.000794	3.72	382.06	2108.57	0.25
1	3513	1%_Proj	1258	575.2	584.37		584.55	0.00068	3.57	863.93	2161.26	0.23
1	3513	0.2%_Proj	1522	575.2	585.34		585.41	0.000331	2.7	2268.05	2250.32	0.17
1	3388	10%_Cur	824	575	582.75		582.91	0.000729	3.2	283.32	1926.86	0.23
1	3388	2%_Cur	1090	575	583.7		583.9	0.00075	3.58	374.4	2058.77	0.24
1	3388	1%_Cur	1200	575	584.06		584.27	0.000752	3.71	419.29	2078.78	0.24
1	3388	0.2%_Cur	1450	575	584.92	580.06	585.13	0.000704	3.87	549.23	2115.26	0.24
1	3388	10%_Proj	875	575	582.95		583.11	0.000733	3.28	299.21	1965.64	0.23
1	3388	2%_Proj	1150	575	583.89		584.09	0.000752	3.65	397.52	2064.27	0.24
1	3388	1%_Proj	1258	575	584.24		584.45	0.000749	3.77	445.15	2085.95	0.24
1	3388	0.2%_Proj	1522	575	585.15	580.19	585.34	0.000646	3.78	1032.38	2125.97	0.23
1	3104	10%_Cur	824	574.4	582.6		582.72	0.00055	2.82	310.76	1883.72	0.2
1	3104	2%_Cur	1090	574.4	583.54		583.7	0.000583	3.2	376.56	1910.06	0.21
1	3104	1%_Cur	1200	574.4	583.9		584.07	0.000596	3.34	404.01	1946.6	0.22
1	3104	0.2%_Cur	1450	574.4	584.75		584.94	0.000579	3.55	546.43	2037.96	0.22
1	3104	10%_Proj	875	574.4	582.79		582.92	0.000556	2.9	323.73	1890.83	0.2
1	3104	2%_Proj	1150	574.4	583.73		583.89	0.000592	3.28	390.93	1916.45	0.22
1	3104	1%_Proj	1258	574.4	584.08		584.26	0.000602	3.41	419.16	1974.51	0.22
1	3104	0.2%_Proj	1522	574.4	584.97	579.65	585.17	0.000587	3.64	592.63	2069.4	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2926	10%_Cur	824	574.9	582.47		582.61	0.000664	3	292.35	1840.71	0.22
1	2926	2%_Cur	1090	574.9	583.41		583.58	0.00069	3.38	361.29	1939.6	0.23
1	2926	1%_Cur	1200	574.9	583.76		583.95	0.000698	3.52	391.8	1999.96	0.23
1	2926	0.2%_Cur	1450	574.9	584.6	579.76	584.83	0.000706	3.82	576.39	2138.03	0.24
1	2926	10%_Proj	875	574.9	582.67		582.81	0.000667	3.08	305.4	1848.11	0.22
1	2926	2%_Proj	1150	574.9	583.6		583.78	0.000697	3.46	377.16	1981.09	0.23
1	2926	1%_Proj	1258	574.9	583.94		584.14	0.000701	3.59	408.82	2027.07	0.24
1	2926	0.2%_Proj	1522	574.9	584.88		585.06	0.000592	3.58	1106.6	2170.48	0.22
1	2799	10%_Cur	824	574.4	582.38		582.53	0.000657	3.07	289.29	1641.42	0.22
1	2799	2%_Cur	1090	574.4	583.31		583.5	0.000696	3.47	359.69	1863.08	0.23
1	2799	1%_Cur	1200	574.4	583.65		583.86	0.000731	3.68	395.39	1883.33	0.24
1	2799	0.2%_Cur	1450	574.4	584.54		584.73	0.000625	3.67	668.7	1892.19	0.23
1	2799	10%_Proj	875	574.4	582.58		582.73	0.000664	3.15	302.9	1741.74	0.22
1	2799	2%_Proj	1150	574.4	583.5		583.69	0.000706	3.56	375.12	1869.5	0.23
1	2799	1%_Proj	1258	574.4	583.84		584.05	0.000721	3.71	452.68	1884.93	0.24
1	2799	0.2%_Proj	1522	574.4	584.8		584.98	0.000589	3.64	748.61	1896.24	0.22
1	2576	10%_Cur	824	574.1	582.24		582.38	0.000657	3.1	309.76	1373.29	0.22
1	2576	2%_Cur	1090	574.1	583.17		583.34	0.000667	3.42	463.13	1523.51	0.23
1	2576	1%_Cur	1200	574.1	583.52		583.69	0.000654	3.5	543.89	1568.44	0.22
1	2576	0.2%_Cur	1450	574.1	584.43		584.59	0.000565	3.51	820.23	1638.6	0.21
1	2576	10%_Proj	875	574.1	582.43		582.58	0.000662	3.17	332.03	1406.12	0.22
1	2576	2%_Proj	1150	574.1	583.36		583.53	0.000664	3.48	504.68	1544.81	0.23
1	2576	1%_Proj	1258	574.1	583.71		583.89	0.000641	3.52	593.64	1587.83	0.22
1	2576	0.2%_Proj	1522	574.1	584.71		584.85	0.000502	3.38	1155.94	1641.26	0.2
1	2418	10%_Cur	824	574	582.09		582.27	0.000777	3.34	263.42	1177.64	0.24
1	2418	2%_Cur	1090	574	583		583.22	0.000844	3.82	319.26	1509.76	0.25
1	2418	1%_Cur	1200	574	583.32		583.57	0.00089	4.04	347.01	1564.8	0.26
1	2418	0.2%_Cur	1450	574	584.24		584.48	0.00077	4.07	567.68	1665.85	0.25
1	2418	10%_Proj	875	574	582.28		582.46	0.000789	3.44	274.41	1321.26	0.24
1	2418	2%_Proj	1150	574	583.17		583.41	0.000861	3.92	331.39	1541.03	0.26
1	2418	1%_Proj	1258	574	583.51		583.76	0.000882	4.09	389.19	1585.28	0.26
1	2418	0.2%_Proj	1522	574	584.52		584.75	0.000723	4.03	643.09	1714.46	0.24
1	2234	10%_Cur	824	573.9	581.98		582.13	0.000662	3.12	279.35	1292.55	0.22
1	2234	2%_Cur	1090	573.9	582.87		583.07	0.00073	3.58	332.64	1636.57	0.24
1	2234	1%_Cur	1200	573.9	583.19		583.41	0.000759	3.76	353.35	1668.16	0.24

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2234	0.2%_Cur	1450	573.9	584.15		584.34	0.000617	3.68	950.68	1740.67	0.22
1	2234	10%_Proj	875	573.9	582.17		582.32	0.000674	3.21	290.04	1480.51	0.22
1	2234	2%_Proj	1150	573.9	583.05		583.25	0.000746	3.68	343.83	1654.14	0.24
1	2234	1%_Proj	1258	573.9	583.38		583.6	0.000765	3.84	365.85	1682.58	0.25
1	2234	0.2%_Proj	1522	573.9	584.47		584.61	0.000493	3.37	1316.51	1752.86	0.2
1	2044	10%_Cur	824	573.9	581.9		582.01	0.000471	2.67	322.33	1302.28	0.19
1	2044	2%_Cur	1090	573.9	582.79		582.93	0.000525	3.07	378.99	1404.03	0.2
1	2044	1%_Cur	1200	573.9	583.11		583.27	0.000548	3.23	400.43	1415.44	0.21
1	2044	0.2%_Cur	1450	573.9	584.05		584.23	0.000536	3.46	492.81	1451.9	0.21
1	2044	10%_Proj	875	573.9	582.09		582.2	0.000481	2.75	333.86	1367.64	0.19
1	2044	2%_Proj	1150	573.9	582.96		583.12	0.000538	3.16	390.61	1409.9	0.21
1	2044	1%_Proj	1258	573.9	583.29		583.46	0.000554	3.3	413.25	1421.7	0.21
1	2044	0.2%_Proj	1522	573.9	584.33		584.51	0.000525	3.5	615.26	1513.4	0.21
1	1850	10%_Cur	824	573.6	581.81		581.92	0.000476	2.71	319.12	1173.15	0.19
1	1850	2%_Cur	1090	573.6	582.68		582.83	0.000536	3.13	375.43	1420.51	0.2
1	1850	1%_Cur	1200	573.6	582.99		583.16	0.000561	3.29	396.73	1431.63	0.21
1	1850	0.2%_Cur	1450	573.6	583.94		584.12	0.000545	3.51	553.51	1466.4	0.21
1	1850	10%_Proj	875	573.6	581.99		582.11	0.000487	2.79	330.54	1325.93	0.19
1	1850	2%_Proj	1150	573.6	582.85		583.01	0.00055	3.22	386.97	1427.28	0.21
1	1850	1%_Proj	1258	573.6	583.18		583.35	0.000567	3.37	409.53	1437.66	0.21
1	1850	0.2%_Proj	1522	573.6	584.23		584.41	0.000506	3.46	715.21	1478.92	0.21
1	1647	10%_Cur	824	573.5	581.8		581.84	0.000167	1.69	500.87	1029.23	0.11
1	1647	2%_Cur	1090	573.5	582.68		582.74	0.000193	1.98	578.5	1206.99	0.13
1	1647	1%_Cur	1200	573.5	583		583.07	0.000204	2.09	607.69	1222.38	0.13
1	1647	0.2%_Cur	1450	573.5	583.96		584.03	0.000196	2.21	857.07	1260.66	0.13
1	1647	10%_Proj	875	573.5	581.99		582.03	0.000172	1.75	516.71	1146.33	0.12
1	1647	2%_Proj	1150	573.5	582.85		582.92	0.000199	2.04	594.34	1218.82	0.13
1	1647	1%_Proj	1258	573.5	583.18		583.25	0.000207	2.14	625.32	1229.86	0.13
1	1647	0.2%_Proj	1522	573.5	584.25		584.32	0.000188	2.21	957.22	1278.08	0.13
1	1529	10%_Cur	824	573.3	581.77		581.82	0.000219	1.89	454.73	881.52	0.13
1	1529	2%_Cur	1090	573.3	582.64		582.72	0.00025	2.19	530.66	1116.82	0.14
1	1529	1%_Cur	1200	573.3	582.95		583.04	0.000264	2.32	575.93	1172.41	0.15
1	1529	0.2%_Cur	1450	573.3	583.91		584	0.000245	2.41	783.83	1306.54	0.14
1	1529	10%_Proj	875	573.3	581.95		582.01	0.000225	1.95	470.18	948.9	0.13
1	1529	2%_Proj	1150	573.3	582.81		582.89	0.000257	2.26	546.51	1143.25	0.14
1	1529	1%_Proj	1258	573.3	583.14		583.23	0.000266	2.36	615.99	1209.84	0.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1529	0.2%_Proj	1522	573.3	584.21		584.29	0.000236	2.42	847.98	1313.44	0.14
1	1447	10%_Cur	824	573.5	581.74	576.4	581.8	0.000241	1.94	449.6	1098.81	0.14
1	1447	2%_Cur	1090	573.5	582.62	576.9	582.69	0.000271	2.24	533.18	1287.47	0.15
1	1447	1%_Cur	1200	573.5	582.93	577.08	583.01	0.000284	2.36	568.79	1363.47	0.15
1	1447	0.2%_Cur	1450	573.5	583.89	577.48	583.98	0.000268	2.49	688.62	1580.55	0.15
1	1447	10%_Proj	875	573.5	581.93	576.5	581.99	0.000247	2	466.37	1164	0.14
1	1447	2%_Proj	1150	573.5	582.79	576.99	582.87	0.000278	2.31	551.97	1340.11	0.15
1	1447	1%_Proj	1258	573.5	583.11	577.18	583.2	0.000286	2.41	592	1420.8	0.15
1	1447	0.2%_Proj	1522	573.5	584.18	577.6	584.27	0.00026	2.51	725.17	1596.71	0.15
1	1409	10%_Cur	824	572.8	581.71	576.66	581.79	0.000298	2.27	365.37	434.3	0.15
1	1409	2%_Cur	1090	572.8	582.56	577.08	582.67	0.000353	2.67	412.13	541.7	0.17
1	1409	1%_Cur	1200	572.8	582.87	577.24	582.99	0.000376	2.83	429.18	580.28	0.18
1	1409	0.2%_Cur	1450	572.8	583.81	577.59	583.95	0.00038	3.06	483.11	814.09	0.18
1	1409	10%_Proj	875	572.8	581.89	576.75	581.97	0.000308	2.35	375.14	458.35	0.16
1	1409	2%_Proj	1150	572.8	582.73	577.17	582.85	0.000366	2.76	421.41	561.93	0.17
1	1409	1%_Proj	1258	572.8	583.05	577.32	583.18	0.000384	2.9	439.41	645.11	0.18
1	1409	0.2%_Proj	1522	572.8	584.1	577.69	584.24	0.000377	3.11	500	844.63	0.18
1	1370		Bridge									
1	1339	10%_Cur	824	572.8	581.63	576.64	581.73	0.000349	2.55	322.58	306.13	0.17
1	1339	2%_Cur	1090	572.8	582.45	577.1	582.6	0.000424	3.03	359.73	406.39	0.19
1	1339	1%_Cur	1200	572.8	582.74	577.26	582.91	0.000456	3.22	372.86	426.93	0.2
1	1339	0.2%_Cur	1450	572.8	583.67	577.65	583.86	0.000469	3.5	414.33	590.33	0.2
1	1339	10%_Proj	875	572.8	581.8	576.74	581.91	0.000363	2.65	330.44	338.88	0.17
1	1339	2%_Proj	1150	572.8	582.61	577.18	582.76	0.000442	3.13	366.89	414.31	0.19
1	1339	1%_Proj	1258	572.8	582.92	577.35	583.09	0.000467	3.3	380.74	435.28	0.2
1	1339	0.2%_Proj	1522	572.8	583.95	577.75	584.15	0.000467	3.56	427.08	638.06	0.2
1	1279	10%_Cur	824	572.6	581.63	576.21	581.69	0.00024	1.92	506.06	268.91	0.14
1	1279	2%_Cur	1090	572.6	582.47	576.73	582.54	0.000268	2.2	593.42	310.63	0.15
1	1279	1%_Cur	1200	572.6	582.76	576.93	582.84	0.00028	2.32	624.39	322.3	0.15
1	1279	0.2%_Cur	1450	572.6	583.7	577.34	583.78	0.000268	2.45	721.93	322.3	0.15
1	1279	10%_Proj	875	572.6	581.81	576.31	581.87	0.000245	1.97	524.5	277.16	0.14
1	1279	2%_Proj	1150	572.6	582.63	576.83	582.7	0.000275	2.27	610.3	317.02	0.15
1	1279	1%_Proj	1258	572.6	582.94	577.02	583.02	0.000283	2.36	642.97	322.3	0.15
1	1279	0.2%_Proj	1522	572.6	583.98	577.45	584.07	0.000262	2.48	751.87	322.3	0.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1113	10%_Cur	824	572.4	581.59		581.65	0.000246	2.03	633.59	405.55	0.14
1	1113	2%_Cur	1090	572.4	582.43		582.49	0.000248	2.21	860.86	416.2	0.14
1	1113	1%_Cur	1200	572.4	582.73		582.8	0.000251	2.28	941.34	416.2	0.14
1	1113	0.2%_Cur	1450	572.4	583.67		583.74	0.000216	2.28	1196.66	416.2	0.14
1	1113	10%_Proj	875	572.4	581.77		581.83	0.000246	2.06	681.68	408.45	0.14
1	1113	2%_Proj	1150	572.4	582.59		582.66	0.00025	2.25	904.71	416.2	0.14
1	1113	1%_Proj	1258	572.4	582.91		582.98	0.000248	2.3	989.84	416.2	0.14
1	1113	0.2%_Proj	1522	572.4	583.96		584.02	0.000204	2.26	1274.99	416.2	0.13
1	938	10%_Cur	824	572.2	581.56		581.6	0.000231	1.95	819.7	377.15	0.13
1	938	2%_Cur	1090	572.2	582.4		582.45	0.000233	2.12	1035.6	385.88	0.14
1	938	1%_Cur	1200	572.2	582.7		582.75	0.000238	2.2	1113.82	392.44	0.14
1	938	0.2%_Cur	1450	572.2	583.65		583.7	0.000209	2.22	1387.53	421.03	0.13
1	938	10%_Proj	875	572.2	581.74		581.78	0.00023	1.98	864.83	378.85	0.13
1	938	2%_Proj	1150	572.2	582.56		582.61	0.000236	2.16	1078.04	388.14	0.14
1	938	1%_Proj	1258	572.2	582.88		582.93	0.000238	2.23	1162.47	399.63	0.14
1	938	0.2%_Proj	1522	572.2	583.94		583.99	0.000197	2.21	1474.16	422.44	0.13
1	537	10%_Cur	824	572.1	581.49		581.52	0.000165	1.63	1340.09	1109.52	0.11
1	537	2%_Cur	1090	572.1	582.35		582.37	0.000141	1.63	1800.49	1125.36	0.1
1	537	1%_Cur	1200	572.1	582.65		582.67	0.000136	1.64	1963.42	1131.24	0.1
1	537	0.2%_Cur	1450	572.1	583.61		583.63	0.000105	1.56	2494.02	1147.75	0.09
1	537	10%_Proj	875	572.1	581.68		581.7	0.000158	1.62	1437.63	1112.48	0.11
1	537	2%_Proj	1150	572.1	582.51		582.53	0.000138	1.64	1889.21	1128.56	0.1
1	537	1%_Proj	1258	572.1	582.83		582.85	0.000131	1.64	2062.55	1133.96	0.1
1	537	0.2%_Proj	1522	572.1	583.91		583.92	0.000097	1.53	2658.1	1149.8	0.09
1	411	10%_Cur	824	572	581.48	575.74	581.5	0.000112	1.34	1519.73	1297.51	0.09
1	411	2%_Cur	1090	572	582.34	576.27	582.35	0.000097	1.35	2073.85	1306.7	0.09
1	411	1%_Cur	1200	572	582.64	576.47	582.65	0.000094	1.36	2269.28	1306.7	0.09
1	411	0.2%_Cur	1450	572	583.6	576.88	583.62	0.000072	1.29	2897.58	1306.7	0.08
1	411	10%_Proj	875	572	581.66	575.85	581.68	0.000108	1.33	1636.67	1300.95	0.09
1	411	2%_Proj	1150	572	582.5	576.39	582.52	0.000095	1.36	2180.34	1306.7	0.09
1	411	1%_Proj	1258	572	582.82	576.57	582.84	0.00009	1.36	2387.87	1306.7	0.09
1	411	0.2%_Proj	1522	572	583.9	576.98	583.91	0.000066	1.27	3090.08	1306.7	0.07
1	152	10%_Cur	824	572	581.43		581.46	0.000192	1.78	1305.71	1040.68	0.12
1	152	2%_Cur	1090	572	582.3		582.32	0.000135	1.62	2102.99	1059.7	0.1
1	152	1%_Cur	1200	572	582.61		582.63	0.000123	1.58	2383.36	1059.7	0.1
1	152	0.2%_Cur	1450	572	583.59		583.6	0.00008	1.38	3284.72	1059.7	0.08

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	152	10%_Proj	875	572	581.61		581.65	0.000176	1.73	1474.99	1043.75	0.12
1	152	2%_Proj	1150	572	582.47		582.49	0.000128	1.6	2255.84	1059.7	0.1
1	152	1%_Proj	1258	572	582.79		582.81	0.000115	1.55	2553.73	1059.7	0.1
1	152	0.2%_Proj	1522	572	583.88		583.9	0.000071	1.33	3559.42	1059.7	0.08
1	88	10%_Cur	824	571.8	581.41		581.45	0.000195	1.86	1221.18	1005.73	0.12
1	88	2%_Cur	1090	571.8	582.29		582.32	0.000139	1.7	2057.67	1031.89	0.1
1	88	1%_Cur	1200	571.8	582.59		582.62	0.000127	1.66	2350.83	1034.91	0.1
1	88	0.2%_Cur	1450	571.8	583.58		583.59	0.000084	1.45	3307.54	1077.42	0.08
1	88	10%_Proj	875	571.8	581.6		581.63	0.000182	1.83	1398.52	1023.69	0.12
1	88	2%_Proj	1150	571.8	582.46		582.48	0.000132	1.68	2217.41	1033.5	0.1
1	88	1%_Proj	1258	571.8	582.78		582.8	0.000118	1.62	2529.5	1036.79	0.1
1	88	0.2%_Proj	1522	571.8	583.88		583.89	0.000074	1.4	3609.1	1085.8	0.08
1	43	10%_Cur	824	571.4	581.39	575.96	581.44	0.000229	2	1167.85	1090.82	0.13
1	43	2%_Cur	1090	571.4	582.28	576.57	582.31	0.000151	1.75	2093.5	1126.4	0.11
1	43	1%_Cur	1200	571.4	582.59	576.77	582.61	0.000133	1.69	2416.89	1126.4	0.1
1	43	0.2%_Cur	1450	571.4	583.58	577.28	583.59	0.000081	1.42	3453.24	1126.4	0.08
1	43	10%_Proj	875	571.4	581.58	576.08	581.62	0.000208	1.94	1363.24	1107.42	0.13
1	43	2%_Proj	1150	571.4	582.45	576.69	582.47	0.000141	1.72	2269.87	1126.4	0.11
1	43	1%_Proj	1258	571.4	582.78	576.9	582.8	0.000123	1.64	2613.25	1126.4	0.1
1	43	0.2%_Proj	1522	571.4	583.88	577.4	583.89	0.000071	1.36	3768.22	1126.4	0.08

Plan: Alt 2-3

Flows: Current and Projected Future

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	35522	10%_Cur	258	627.2	631.26	629.45	631.38	0.001746	2.84	90.73	35.19	0.31
1	35522	2%_Cur	348	627.2	632.17	629.83	632.29	0.00129	2.71	137.38	77.87	0.28
1	35522	1%_Cur	384	627.2	632.68	629.96	632.77	0.000901	2.51	181.41	96.81	0.24
1	35522	0.2%_Cur	470	627.2	633.69	630.26	633.76	0.000511	2.24	310.32	184.8	0.19
1	35522	10%_Proj	272	627.2	631.4	629.5	631.53	0.001671	2.84	95.82	36.05	0.31
1	35522	2%_Proj	364	627.2	632.39	629.88	632.5	0.001099	2.62	155.53	85.79	0.26
1	35522	1%_Proj	401	627.2	632.92	630.02	633.01	0.000762	2.42	206.64	106.54	0.22
1	35522	0.2%_Proj	489	627.2	633.78	630.32	633.85	0.000508	2.26	325.13	198.13	0.19
1	35442	10%_Cur	258	625.73	630.65	628.48	631.06	0.005992	5.17	49.91	12.04	0.45
1	35442	2%_Cur	348	625.73	631.45	629.09	631.97	0.006338	5.77	60.53	14.22	0.48
1	35442	1%_Cur	384	625.73	632.01	629.31	632.51	0.005254	5.67	68.82	15.72	0.44
1	35442	0.2%_Cur	470	625.73	633.04	629.84	633.54	0.004191	5.72	88.27	22.02	0.41
1	35442	10%_Proj	272	625.73	630.76	628.58	631.2	0.006207	5.29	51.37	12.36	0.46
1	35442	2%_Proj	364	625.73	631.7	629.19	632.21	0.005823	5.72	64.09	14.89	0.46
1	35442	1%_Proj	401	625.73	632.28	629.42	632.77	0.004814	5.61	73.29	17.4	0.43
1	35442	0.2%_Proj	489	625.73	633.09	629.96	633.62	0.0044	5.89	89.45	22.28	0.42
1	35420		Bridge									
1	35396	10%_Cur	258	625.73	629.75	628.49	630.37	0.007799	6.29	41.04	12.82	0.61
1	35396	2%_Cur	348	625.73	630.24	629.18	631.08	0.009898	7.36	47.29	18.63	0.69
1	35396	1%_Cur	384	625.73	630.4	629.45	631.34	0.010472	7.77	49.46	20.73	0.72
1	35396	0.2%_Cur	470	625.73	630.94	630.04	631.81	0.012849	7.49	68.46	51.13	0.73
1	35396	10%_Proj	272	625.73	629.84	628.59	630.49	0.008135	6.46	42.08	13.79	0.62
1	35396	2%_Proj	364	625.73	630.31	629.31	631.2	0.010177	7.54	48.29	19.6	0.71
1	35396	1%_Proj	401	625.73	630.47	629.58	631.45	0.010721	7.96	50.43	21.64	0.73
1	35396	0.2%_Proj	489	625.73	631.01	630.17	631.9	0.012884	7.6	72.79	75.01	0.73
1	35278	10%_Cur	258	625.5	628.82	628.3	629.31	0.009237	5.62	45.96	22.83	0.69
1	35278	2%_Cur	348	625.5	629.25	628.72	629.86	0.00888	6.26	56.35	25.01	0.7
1	35278	1%_Cur	384	625.5	629.4	628.86	630.06	0.008896	6.51	60.14	25.76	0.7
1	35278	0.2%_Cur	470	625.5	629.74	629.16	630.51	0.008864	7.04	69.18	80.63	0.72
1	35278	10%_Proj	272	625.5	628.97	628.38	629.45	0.008089	5.51	49.51	23.6	0.65
1	35278	2%_Proj	364	625.5	629.32	628.77	629.95	0.008884	6.37	58.05	25.35	0.7
1	35278	1%_Proj	401	625.5	629.47	628.91	630.15	0.008883	6.62	61.96	35.86	0.71
1	35278	0.2%_Proj	489	625.5	629.81	629.24	630.6	0.00888	7.15	71.09	83.3	0.72

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	34495	10%_Cur	258	622.5	627.56		627.65	0.000831	2.44	155.05	178.04	0.23
1	34495	2%_Cur	348	622.5	628.15		628.24	0.000786	2.63	261.71	205.33	0.23
1	34495	1%_Cur	384	622.5	628.26		628.36	0.000838	2.76	283.18	208.18	0.23
1	34495	0.2%_Cur	470	622.5	628.44		628.56	0.000998	3.1	323.61	224.86	0.26
1	34495	10%_Proj	272	622.5	627.72		627.81	0.000851	2.54	175.48	190.99	0.23
1	34495	2%_Proj	364	622.5	628.2		628.3	0.000809	2.68	271.57	206.64	0.23
1	34495	1%_Proj	401	622.5	628.3		628.4	0.000869	2.83	291.56	210.4	0.24
1	34495	0.2%_Proj	489	622.5	628.48		628.6	0.001033	3.17	331.89	227.16	0.26
1	34420	10%_Cur	258	622.7	627.52	625.16	627.58	0.000757	2.04	138.29	326.66	0.2
1	34420	2%_Cur	348	622.7	628.11	625.62	628.18	0.000696	2.16	262.53	628.82	0.2
1	34420	1%_Cur	384	622.7	628.21	625.74	628.29	0.000737	2.26	290.45	705.84	0.21
1	34420	0.2%_Cur	470	622.7	628.39	626.01	628.48	0.000866	2.53	341.05	889.32	0.23
1	34420	10%_Proj	272	622.7	627.67	625.25	627.74	0.000761	2.07	150.64	361.96	0.21
1	34420	2%_Proj	364	622.7	628.16	625.67	628.23	0.000714	2.2	275.41	664.81	0.2
1	34420	1%_Proj	401	622.7	628.25	625.8	628.33	0.000762	2.32	301.24	742.64	0.21
1	34420	0.2%_Proj	489	622.7	628.43	626.05	628.52	0.000895	2.59	351.09	930.4	0.23
1	34390		Bridge									
1	34363	10%_Cur	258	622.7	626.75	624.9	627.05	0.003655	4.46	63.66	311.87	0.39
1	34363	2%_Cur	348	622.7	627.14	625.38	627.28	0.002235	3.71	244.12	391.82	0.31
1	34363	1%_Cur	384	622.7	627.27	625.58	627.41	0.002173	3.73	274.26	406.87	0.31
1	34363	0.2%_Cur	470	622.7	627.62	626	627.73	0.001914	3.67	354.44	649.91	0.29
1	34363	10%_Proj	272	622.7	626.81	624.98	627.14	0.003832	4.61	65.22	340.16	0.4
1	34363	2%_Proj	364	622.7	627.2	625.47	627.34	0.002203	3.71	257.69	398.46	0.31
1	34363	1%_Proj	401	622.7	627.34	625.66	627.47	0.002154	3.75	288.33	425.6	0.31
1	34363	0.2%_Proj	489	622.7	627.69	626.12	627.81	0.001858	3.66	372.8	693.04	0.29
1	34242	10%_Cur	258	621.9	626.62	624.41	626.69	0.001294	2.23	145.32	262.9	0.26
1	34242	2%_Cur	348	621.9	626.97	624.8	627.05	0.001164	2.32	236.89	358.32	0.25
1	34242	1%_Cur	384	621.9	627.11	624.94	627.18	0.001148	2.38	259.57	409.34	0.26
1	34242	0.2%_Cur	470	621.9	627.45	625.28	627.53	0.001107	2.53	337.16	507.93	0.26
1	34242	10%_Proj	272	621.9	626.68	624.47	626.76	0.001304	2.26	152.83	285.14	0.26
1	34242	2%_Proj	364	621.9	627.03	624.87	627.11	0.001156	2.35	247.05	365.69	0.25
1	34242	1%_Proj	401	621.9	627.17	625.01	627.24	0.001138	2.41	272.25	433.46	0.25
1	34242	0.2%_Proj	489	621.9	627.53	625.33	627.61	0.001063	2.52	357.36	526.82	0.25
1	33325	10%_Cur	258	620.8	625.53	623.46	625.61	0.001083	2.37	123.29	127.74	0.25
1	33325	2%_Cur	348	620.8	625.79	623.8	625.91	0.001384	2.84	161.34	197.66	0.29

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	33325	1%_Cur	384	620.8	625.92	623.91	626.05	0.001405	2.95	183.04	233.98	0.29
1	33325	0.2%_Cur	470	620.8	626.51	624.2	626.62	0.000981	2.76	302.34	460.41	0.25
1	33325	10%_Proj	272	620.8	625.57	623.49	625.66	0.001139	2.45	128.55	142.22	0.26
1	33325	2%_Proj	364	620.8	625.85	623.86	625.97	0.001394	2.89	170.94	214.29	0.29
1	33325	1%_Proj	401	620.8	626.01	623.97	626.13	0.00137	2.96	197.56	260.82	0.29
1	33325	0.2%_Proj	489	620.8	626.69	624.25	626.78	0.000848	2.64	343.78	491.38	0.23
1	32629	10%_Cur	258	619.6	624.99		625.03	0.00078	2.2	307.83	420.89	0.21
1	32629	2%_Cur	348	619.6	625.4		625.43	0.000491	1.89	503.85	531	0.17
1	32629	1%_Cur	384	619.6	625.65		625.66	0.000343	1.64	639.32	569.79	0.14
1	32629	0.2%_Cur	470	619.6	626.44		626.45	0.000117	1.08	1119.01	643.76	0.09
1	32629	10%_Proj	272	619.6	625.04		625.08	0.000762	2.2	327.1	428	0.21
1	32629	2%_Proj	364	619.6	625.5		625.52	0.000437	1.81	558.19	554.35	0.16
1	32629	1%_Proj	401	619.6	625.78		625.79	0.000283	1.53	716.3	585.34	0.13
1	32629	0.2%_Proj	489	619.6	626.64		626.64	0.000094	1	1247.48	660.72	0.08
1	31948	10%_Cur	258	619	624.06		624.23	0.002119	3.54	151.13	240.05	0.34
1	31948	2%_Cur	348	619	625.01		625.06	0.000677	2.36	467.81	423.91	0.2
1	31948	1%_Cur	384	619	625.4		625.42	0.000423	1.97	644.48	494.94	0.16
1	31948	0.2%_Cur	470	619	626.35		626.36	0.000155	1.35	1173.71	591.21	0.1
1	31948	10%_Proj	272	619	624.21		624.34	0.001774	3.33	187.44	253.69	0.31
1	31948	2%_Proj	364	619	625.18		625.22	0.000545	2.17	542.34	454.91	0.18
1	31948	1%_Proj	401	619	625.58		625.6	0.000337	1.81	738.13	525.42	0.14
1	31948	0.2%_Proj	489	619	626.57		626.57	0.000128	1.26	1301.58	605.22	0.09
1	31772	10%_Cur	258	617.78	622.69	620.95	623.36	0.010892	6.57	39.29	8	0.52
1	31772	2%_Cur	348	617.78	623.66	621.66	624.51	0.012474	7.4	47.04	8	0.54
1	31772	1%_Cur	384	617.78	624.03	621.92	624.95	0.013007	7.68	50.02	8	0.54
1	31772	0.2%_Cur	470	617.78	624.9	622.53	625.96	0.014061	8.25	56.99	8	0.54
1	31772	10%_Proj	272	617.78	622.84	621.07	623.54	0.011178	6.71	40.52	8	0.53
1	31772	2%_Proj	364	617.78	623.83	621.77	624.71	0.012719	7.53	48.37	8	0.54
1	31772	1%_Proj	401	617.78	624.21	622.06	625.15	0.013239	7.8	51.41	8	0.54
1	31772	0.2%_Proj	489	617.78	625.09	622.64	626.18	0.014271	8.36	58.49	8	0.55
1	31750		Culvert									
1	31720	10%_Cur	258	617.78	621.65	620.97	622.73	0.020367	8.33	30.99	8	0.75
1	31720	2%_Cur	348	617.78	622.12	621.68	623.68	0.027343	10.02	34.74	8	0.85
1	31720	1%_Cur	384	617.78	622.25	621.94	624.04	0.030922	10.75	35.73	8	0.9
1	31720	0.2%_Cur	470	617.78	622.52	622.52	624.91	0.039633	12.39	37.92	8	1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	31720	10%_Proj	272	617.78	621.73	621.08	622.88	0.021479	8.61	31.6	8	0.76
1	31720	2%_Proj	364	617.78	622.18	621.79	623.84	0.028885	10.34	35.21	8	0.87
1	31720	1%_Proj	401	617.78	622.29	622.06	624.21	0.032865	11.11	36.08	8	0.92
1	31720	0.2%_Proj	489	617.78	622.67	622.67	625.1	0.039561	12.5	39.12	8	1
1	31676	10%_Cur	258	617.5	621.51	620.46	621.95	0.006324	5.31	48.62	17.69	0.56
1	31676	2%_Cur	348	617.5	622.12	620.97	622.64	0.006554	5.82	59.77	24.48	0.58
1	31676	1%_Cur	384	617.5	622.31	621.16	622.88	0.006602	6.04	63.62	28.21	0.59
1	31676	0.2%_Cur	470	617.5	622.73	621.57	623.4	0.006613	6.55	72.12	33.25	0.6
1	31676	10%_Proj	272	617.5	621.6	620.54	622.06	0.006422	5.41	50.25	17.92	0.57
1	31676	2%_Proj	364	617.5	622.2	621.06	622.75	0.006637	5.93	61.43	26.03	0.59
1	31676	1%_Proj	401	617.5	622.4	621.26	622.98	0.006615	6.15	65.29	29.56	0.59
1	31676	0.2%_Proj	489	617.5	622.82	621.66	623.5	0.006635	6.66	73.92	37.05	0.61
1	30052	10%_Cur	258	614.4	620.04		620.09	0.000429	2.06	219.28	142.27	0.17
1	30052	2%_Cur	348	614.4	620.55		620.61	0.000474	2.31	297.1	157.16	0.18
1	30052	1%_Cur	384	614.4	620.73		620.79	0.000488	2.4	325.43	159.95	0.18
1	30052	0.2%_Cur	470	614.4	621.09		621.17	0.000526	2.6	385.46	167.35	0.19
1	30052	10%_Proj	272	614.4	620.17		620.22	0.00042	2.07	238.71	151.42	0.16
1	30052	2%_Proj	364	614.4	620.64		620.71	0.000473	2.34	312.27	158.62	0.18
1	30052	1%_Proj	401	614.4	620.81		620.88	0.000491	2.43	339.45	161.98	0.18
1	30052	0.2%_Proj	489	614.4	621.17		621.25	0.000533	2.64	398.48	169.41	0.19
1	30002	10%_Cur	770	614.2	618.75	618.75	619.85	0.01026	8.73	131.48	144.58	0.8
1	30002	2%_Cur	1030	614.2	619.51	619.51	620.4	0.007418	8.41	256.92	288.18	0.7
1	30002	1%_Cur	1140	614.2	619.67	619.67	620.58	0.007428	8.62	289.45	304.77	0.71
1	30002	0.2%_Cur	1400	614.2	620.01	620.01	620.94	0.007544	9.1	360	326.76	0.72
1	30002	10%_Proj	816	614.2	618.94	618.94	619.99	0.009313	8.61	157.56	207.61	0.77
1	30002	2%_Proj	1088	614.2	619.6	619.6	620.5	0.007395	8.51	274.77	295.37	0.7
1	30002	1%_Proj	1198	614.2	619.78	619.78	620.67	0.007216	8.63	312.11	314.54	0.7
1	30002	0.2%_Proj	1460	614.2	620.07	620.07	621.02	0.007615	9.23	374.1	332.51	0.73
1	28067	10%_Cur	770	609	615.64		615.7	0.000561	2.55	793.46	512.35	0.2
1	28067	2%_Cur	1030	609	616.01		616.09	0.000653	2.87	988.86	538.14	0.21
1	28067	1%_Cur	1140	609	616.12		616.2	0.000705	3.03	1050.03	543	0.22
1	28067	0.2%_Cur	1400	609	616.34		616.44	0.000835	3.38	1172.63	552.6	0.24
1	28067	10%_Proj	816	609	615.72		615.79	0.000569	2.59	838.42	522.78	0.2
1	28067	2%_Proj	1088	609	616.06		616.15	0.000683	2.96	1019.54	540.59	0.22
1	28067	1%_Proj	1198	609	616.17		616.26	0.000734	3.11	1078.79	545.27	0.23
1	28067	0.2%_Proj	1460	609	616.4		616.5	0.000859	3.45	1202.48	555.1	0.25

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	27998	10%_Cur	770	609.24	615.39	612.43	615.6	0.001442	3.92	311.23	316.37	0.31
1	27998	2%_Cur	1030	609.24	615.67	613.07	615.95	0.001861	4.62	419.75	426	0.35
1	27998	1%_Cur	1140	609.24	615.74	613.32	616.06	0.002104	4.96	449.11	449.74	0.38
1	27998	0.2%_Cur	1400	609.24	615.8	613.85	616.24	0.002965	5.92	475.3	474.96	0.45
1	27998	10%_Proj	816	609.24	615.46	612.55	615.69	0.001491	4.03	336.7	352.74	0.31
1	27998	2%_Proj	1088	609.24	615.7	613.2	616	0.002005	4.81	432.43	434.65	0.37
1	27998	1%_Proj	1198	609.24	615.76	613.44	616.1	0.002259	5.15	459.75	461.49	0.39
1	27998	0.2%_Proj	1460	609.24	615.8	613.96	616.28	0.003211	6.17	477.71	476.78	0.47
1	27960		Culvert									
1	27931	10%_Cur	770	609.08	614.27	612.15	614.55	0.002268	4.43	282.67	434.39	0.38
1	27931	2%_Cur	1030	609.08	614.63	612.75	614.92	0.002367	4.78	474.07	584.09	0.39
1	27931	1%_Cur	1140	609.08	614.81	612.99	615.06	0.002152	4.67	579.95	606.08	0.38
1	27931	0.2%_Cur	1400	609.08	615.14	614.62	615.36	0.001911	4.61	795.64	689.02	0.36
1	27931	10%_Proj	816	609.08	614.34	612.27	614.63	0.002314	4.52	315.22	483.26	0.38
1	27931	2%_Proj	1088	609.08	614.73	612.87	615	0.002235	4.71	532.34	595.56	0.38
1	27931	1%_Proj	1198	609.08	614.88	613.11	615.13	0.002098	4.66	625.49	615.34	0.37
1	27931	0.2%_Proj	1460	609.08	615.21	614.68	615.42	0.001862	4.59	842.75	702.77	0.36
1	27807	10%_Cur	770	607.8	614.17	612.64	614.27	0.0011	3.52	591.46	515.38	0.27
1	27807	2%_Cur	1030	607.8	614.57	613.24	614.64	0.000928	3.39	836.66	696.88	0.25
1	27807	1%_Cur	1140	607.8	614.75	614	614.81	0.000807	3.23	968.71	713.65	0.23
1	27807	0.2%_Cur	1400	607.8	615.1	614.06	615.15	0.000685	3.09	1217.61	750.69	0.22
1	27807	10%_Proj	816	607.8	614.25	612.77	614.35	0.001056	3.48	634.99	562.59	0.26
1	27807	2%_Proj	1088	607.8	614.67	613.25	614.74	0.000853	3.29	910.19	707.23	0.24
1	27807	1%_Proj	1198	607.8	614.83	614.01	614.89	0.000779	3.2	1023.09	718.83	0.23
1	27807	0.2%_Proj	1460	607.8	615.16	614.08	615.21	0.000675	3.09	1268.61	781.15	0.22
1	27156	10%_Cur	770	607.4	613.17		613.4	0.002079	4.36	277.01	211.87	0.37
1	27156	2%_Cur	1030	607.4	613.74		613.94	0.001717	4.31	414.46	255.5	0.34
1	27156	1%_Cur	1140	607.4	613.99		614.18	0.001662	4.38	485.86	316.62	0.34
1	27156	0.2%_Cur	1400	607.4	614.49		614.64	0.001306	4.12	654.89	368.08	0.31
1	27156	10%_Proj	816	607.4	613.28		613.51	0.002024	4.38	301.99	233.63	0.37
1	27156	2%_Proj	1088	607.4	613.88		614.08	0.001701	4.36	451.37	300.69	0.34
1	27156	1%_Proj	1198	607.4	614.11		614.29	0.001561	4.3	523.82	326	0.33
1	27156	0.2%_Proj	1460	607.4	614.54		614.7	0.001358	4.23	675.85	372.16	0.31
1	26030	10%_Cur	770	605.9	612.07		612.15	0.000697	2.72	598.84	290.08	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	26030	2%_Cur	1030	605.9	612.81		612.89	0.000617	2.81	825.66	327.62	0.21
1	26030	1%_Cur	1140	605.9	613.1		613.18	0.000587	2.84	923.66	347.34	0.21
1	26030	0.2%_Cur	1400	605.9	613.71		613.79	0.000536	2.9	1152.4	392.43	0.2
1	26030	10%_Proj	816	605.9	612.21		612.3	0.000684	2.74	640.35	299.45	0.22
1	26030	2%_Proj	1088	605.9	612.96		613.04	0.000601	2.83	876.99	337.61	0.21
1	26030	1%_Proj	1198	605.9	613.25		613.33	0.000573	2.85	976.96	360.08	0.21
1	26030	0.2%_Proj	1460	605.9	613.71		613.79	0.000585	3.03	1151.15	392.23	0.21
1	23976	10%_Cur	770	605.6	611.22	607.86	611.27	0.000306	1.73	448.15	381.13	0.15
1	23976	2%_Cur	1030	605.6	611.97	608.21	612.03	0.000322	1.98	534.56	419.18	0.15
1	23976	1%_Cur	1140	605.6	612.28	608.34	612.34	0.000323	2.06	576.88	444.52	0.16
1	23976	0.2%_Cur	1400	605.6	612.92	608.64	612.99	0.000326	2.23	682.18	496.67	0.16
1	23976	10%_Proj	816	605.6	611.36	607.92	611.41	0.000308	1.78	463.96	384.04	0.15
1	23976	2%_Proj	1088	605.6	612.13	608.28	612.19	0.000323	2.02	556.24	432.03	0.15
1	23976	1%_Proj	1198	605.6	612.44	608.41	612.5	0.000322	2.09	601.17	468.55	0.16
1	23976	0.2%_Proj	1460	605.6	612.81	608.7	612.89	0.00038	2.37	662.28	491.06	0.17
1	23895	10%_Cur	770	605.7	611.21		611.24	0.000174	1.37	563.72	135.72	0.11
1	23895	2%_Cur	1030	605.7	611.97		612	0.000188	1.57	683.68	174.53	0.12
1	23895	1%_Cur	1140	605.7	612.27		612.31	0.000189	1.64	739.15	187.04	0.12
1	23895	0.2%_Cur	1400	605.7	612.92		612.96	0.000194	1.78	866.97	215.05	0.12
1	23895	10%_Proj	816	605.7	611.36		611.39	0.000177	1.41	584.43	152.27	0.11
1	23895	2%_Proj	1088	605.7	612.13		612.17	0.000189	1.61	712.48	181.08	0.12
1	23895	1%_Proj	1198	605.7	612.43		612.48	0.000189	1.66	769.86	192.88	0.12
1	23895	0.2%_Proj	1460	605.7	612.81		612.86	0.000225	1.89	843.21	209.38	0.13
1	23638	10%_Cur	770	602.8	611.04		611.16	0.000543	2.79	296.6	118.45	0.19
1	23638	2%_Cur	1030	602.8	611.77		611.91	0.000616	3.19	422.11	205.68	0.2
1	23638	1%_Cur	1140	602.8	612.08		612.22	0.000603	3.24	490.14	227.53	0.2
1	23638	0.2%_Cur	1400	602.8	612.74		612.88	0.000557	3.28	652.3	263.14	0.2
1	23638	10%_Proj	816	602.8	611.18		611.3	0.000568	2.9	314.87	144	0.19
1	23638	2%_Proj	1088	602.8	611.93		612.08	0.000612	3.22	456.84	221.17	0.2
1	23638	1%_Proj	1198	602.8	612.24		612.39	0.000588	3.24	528.75	235.16	0.2
1	23638	0.2%_Proj	1460	602.8	612.59		612.76	0.000677	3.58	613.23	254.45	0.22
1	23634	10%_Cur	770	606.1	610.15	609.66	610.95	0.008271	7.7	122.04	50.12	0.68
1	23634	2%_Cur	1030	606.1	610.61	610.22	611.64	0.009476	8.86	146.75	56.85	0.74
1	23634	1%_Cur	1140	606.1	610.7	610.46	611.9	0.010766	9.58	152.09	59.76	0.79
1	23634	0.2%_Cur	1400	606.1	611.1	611.05	612.49	0.011552	10.49	182.39	110.71	0.83
1	23634	10%_Proj	816	606.1	610.25	609.77	611.09	0.008326	7.86	127.56	51.41	0.68

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23634	2%_Proj	1088	606.1	610.66	610.33	611.78	0.0101	9.23	149.91	58.46	0.76
1	23634	1%_Proj	1198	606.1	610.72	610.56	612.03	0.011677	10.01	153.43	60.55	0.82
1	23634	0.2%_Proj	1460	606.1	612.03	611.05	612.62	0.004725	7.52	358.55	225.28	0.55
1	23633		Inl Struct									
1	23631	10%_Cur	770	606.1	609.68	609.68	610.85	0.013685	9.12	100.31	46.87	0.85
1	23631	2%_Cur	1030	606.1	610.24	610.24	611.57	0.013365	9.94	128.22	53.1	0.86
1	23631	1%_Cur	1140	606.1	610.49	610.49	611.84	0.01278	10.11	141.92	56.3	0.85
1	23631	0.2%_Cur	1400	606.1	610.91	610.91	612.46	0.013367	10.99	167.08	66.21	0.89
1	23631	10%_Proj	816	606.1	609.8	609.8	610.99	0.013471	9.25	105.81	48.09	0.85
1	23631	2%_Proj	1088	606.1	610.39	610.39	611.71	0.012897	10	136.1	55.02	0.85
1	23631	1%_Proj	1198	606.1	610.61	610.61	611.97	0.01265	10.24	148.43	57.74	0.85
1	23631	0.2%_Proj	1460	606.1	610.99	610.99	612.59	0.013566	11.2	172.52	68.5	0.9
1	23626	10%_Cur	770	602.7	609.12		609.36	0.001293	3.92	202.27	43.94	0.29
1	23626	2%_Cur	1030	602.7	609.77		610.1	0.001587	4.67	232.39	49.09	0.33
1	23626	1%_Cur	1140	602.7	610.13		610.49	0.001593	4.85	251.15	53.51	0.33
1	23626	0.2%_Cur	1400	602.7	610.98		611.39	0.001559	5.2	302.34	71.34	0.33
1	23626	10%_Proj	816	602.7	609.28		609.53	0.001319	4.03	209.41	45.32	0.29
1	23626	2%_Proj	1088	602.7	609.96		610.31	0.001595	4.77	241.92	51.35	0.33
1	23626	1%_Proj	1198	602.7	610.32		610.69	0.001592	4.94	261.4	55.83	0.33
1	23626	0.2%_Proj	1460	602.7	611.19		611.6	0.001535	5.25	318.38	99.91	0.33
1	23597	10%_Cur	770	603.1	609.08		609.32	0.001396	3.97	201.25	46.82	0.31
1	23597	2%_Cur	1030	603.1	609.72		610.05	0.001646	4.67	232.34	49.46	0.34
1	23597	1%_Cur	1140	603.1	610.09		610.44	0.001621	4.84	250.85	51.23	0.35
1	23597	0.2%_Cur	1400	603.1	610.94		611.34	0.001555	5.17	300.8	69.59	0.35
1	23597	10%_Proj	816	603.1	609.24		609.49	0.001406	4.07	208.85	47.49	0.31
1	23597	2%_Proj	1088	603.1	609.91		610.26	0.001636	4.76	241.89	50.17	0.35
1	23597	1%_Proj	1198	603.1	610.28		610.64	0.001612	4.92	260.65	53.24	0.35
1	23597	0.2%_Proj	1460	603.1	611.15		611.55	0.001516	5.2	315.64	73.65	0.34
1	23536	10%_Cur	770	602.3	609	605.14	609.24	0.001202	3.9	203.34	38.17	0.27
1	23536	2%_Cur	1030	602.3	609.61	605.76	609.95	0.001578	4.74	227.66	41.84	0.31
1	23536	1%_Cur	1140	602.3	609.97	605.99	610.34	0.001631	4.97	243.08	45.37	0.32
1	23536	0.2%_Cur	1400	602.3	610.8	606.52	611.24	0.001676	5.41	288.22	61.79	0.33
1	23536	10%_Proj	816	602.3	609.16	605.26	609.41	0.001244	4.03	209.4	39.13	0.27
1	23536	2%_Proj	1088	602.3	609.79	605.88	610.16	0.001611	4.87	235.47	43.48	0.32
1	23536	1%_Proj	1198	602.3	610.15	606.11	610.54	0.001653	5.09	251.53	47.38	0.32

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	23536	0.2%_Proj	1460	602.3	611	606.65	611.45	0.001664	5.48	301.2	66.74	0.33
1	23525	10%_Cur	770	602.3	608.99	605.65	609.22	0.001227	3.84	204.49	39.55	0.28
1	23525	2%_Cur	1030	602.3	609.6	606.24	609.93	0.001558	4.63	228.9	40.85	0.32
1	23525	1%_Cur	1140	602.3	609.96	606.44	610.32	0.001583	4.84	243.59	41.61	0.33
1	23525	0.2%_Cur	1400	602.3	610.79	606.96	611.21	0.001593	5.25	279.04	43.4	0.34
1	23525	10%_Proj	816	602.3	609.15	605.76	609.39	0.001257	3.96	210.73	39.89	0.29
1	23525	2%_Proj	1088	602.3	609.78	606.36	610.13	0.001576	4.75	236.47	41.25	0.33
1	23525	1%_Proj	1198	602.3	610.14	606.58	610.51	0.001593	4.95	251.23	42.01	0.33
1	23525	0.2%_Proj	1460	602.3	610.99	607.06	611.42	0.001581	5.33	287.82	43.83	0.34
1	23500		Bridge									
1	23481	10%_Cur	770	602.3	608.64	605.65	608.9	0.001524	4.14	187.49	38.91	0.31
1	23481	2%_Cur	1030	602.3	608.95	606.24	609.38	0.002255	5.23	198.95	39.6	0.38
1	23481	1%_Cur	1140	602.3	609.17	606.46	609.65	0.002436	5.57	206.93	40.07	0.4
1	23481	0.2%_Cur	1400	602.3	609.61	606.95	610.23	0.0029	6.37	222.9	41.02	0.44
1	23481	10%_Proj	816	602.3	608.76	605.76	609.04	0.001592	4.29	191.79	39.17	0.32
1	23481	2%_Proj	1088	602.3	609.07	606.35	609.52	0.002356	5.41	203.08	39.84	0.39
1	23481	1%_Proj	1198	602.3	609.27	606.57	609.79	0.002541	5.75	210.66	40.29	0.41
1	23481	0.2%_Proj	1460	602.3	609.7	607.06	610.36	0.003001	6.54	226.4	41.22	0.45
1	23465	10%_Cur	770	602.3	608.61	605.16	608.88	0.001495	4.19	186.14	33.66	0.3
1	23465	2%_Cur	1030	602.3	608.89	605.74	609.34	0.002292	5.34	196.01	34.87	0.37
1	23465	1%_Cur	1140	602.3	609.1	605.99	609.6	0.002526	5.73	203.19	35.68	0.39
1	23465	0.2%_Cur	1400	602.3	609.49	606.53	610.17	0.003122	6.62	217.71	37.35	0.44
1	23465	10%_Proj	816	602.3	608.72	605.26	609.01	0.001578	4.35	190.01	34.15	0.31
1	23465	2%_Proj	1088	602.3	609	605.88	609.47	0.002422	5.55	199.67	35.29	0.38
1	23465	1%_Proj	1198	602.3	609.19	606.12	609.73	0.002659	5.93	206.57	36.06	0.4
1	23465	0.2%_Proj	1460	602.3	609.58	606.65	610.3	0.003257	6.81	220.92	37.72	0.45
1	23354	10%_Cur	770	601.5	608.47		608.71	0.001345	3.99	201.47	90.35	0.31
1	23354	2%_Cur	1030	601.5	608.68		609.08	0.002102	5.12	212.66	98.7	0.38
1	23354	1%_Cur	1140	601.5	608.87		609.32	0.002282	5.46	223.81	105.3	0.4
1	23354	0.2%_Cur	1400	601.5	609.23		609.82	0.002736	6.23	247.3	115.67	0.44
1	23354	10%_Proj	816	601.5	608.58		608.84	0.001407	4.14	207.1	93.57	0.31
1	23354	2%_Proj	1088	601.5	608.77		609.2	0.002207	5.31	218.2	102.1	0.39
1	23354	1%_Proj	1198	601.5	608.95		609.44	0.002386	5.64	229.13	107.85	0.41
1	23354	0.2%_Proj	1460	601.5	609.31		609.93	0.002832	6.39	252.75	117.87	0.45

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22771	10%_Cur	770	601.2	607.85	604.71	608.01	0.001008	3.37	318.93	426.88	0.26
1	22771	2%_Cur	1030	601.2	608.39	605.31	608.45	0.000492	2.52	1064.36	509.93	0.19
1	22771	1%_Cur	1140	601.2	608.59	605.56	608.65	0.000512	2.63	1177.93	544.01	0.19
1	22771	0.2%_Cur	1400	601.2	609.02	606.07	609.08	0.000505	2.74	1408.79	609.93	0.19
1	22771	10%_Proj	816	601.2	607.93	604.84	608.1	0.001063	3.5	328.64	428.48	0.27
1	22771	2%_Proj	1088	601.2	608.5	605.43	608.56	0.000495	2.56	1110.83	525.23	0.19
1	22771	1%_Proj	1198	601.2	608.69	605.67	608.75	0.000511	2.66	1230.98	551.36	0.19
1	22771	0.2%_Proj	1460	601.2	609.11	606.17	609.18	0.000502	2.76	1461.52	620.06	0.19
1	22710	10%_Cur	770	601.3	607.87	604.68	607.94	0.000512	2.54	634.76	381.76	0.19
1	22710	2%_Cur	1030	601.3	608.31	605.21	608.41	0.000634	2.98	762.98	424.58	0.22
1	22710	1%_Cur	1140	601.3	608.5	605.42	608.6	0.000681	3.16	824.52	463.06	0.23
1	22710	0.2%_Cur	1400	601.3	608.91	605.91	609.03	0.000734	3.43	976.62	540.9	0.24
1	22710	10%_Proj	816	601.3	607.95	604.78	608.03	0.000535	2.63	657.61	387.84	0.2
1	22710	2%_Proj	1088	601.3	608.41	605.32	608.51	0.000662	3.08	794.67	446.21	0.22
1	22710	1%_Proj	1198	601.3	608.59	605.53	608.7	0.000693	3.22	858.56	473.46	0.23
1	22710	0.2%_Proj	1460	601.3	609	606.04	609.13	0.000756	3.51	1022.64	561.99	0.24
1	22311	10%_Cur	770	601.42	607.67		607.73	0.000527	2.4	531.83	240.42	0.19
1	22311	2%_Cur	1030	601.42	608.08		608.16	0.000628	2.77	631.99	253.02	0.21
1	22311	1%_Cur	1140	601.42	608.25		608.34	0.000655	2.89	676.41	259.57	0.22
1	22311	0.2%_Cur	1400	601.42	608.65		608.75	0.000694	3.12	783.32	275	0.23
1	22311	10%_Proj	816	601.42	607.74		607.81	0.000547	2.47	549.86	242.42	0.2
1	22311	2%_Proj	1088	601.42	608.17		608.25	0.000643	2.83	655.28	256.25	0.22
1	22311	1%_Proj	1198	601.42	608.34		608.43	0.000666	2.94	700.45	263.29	0.22
1	22311	0.2%_Proj	1460	601.42	608.74		608.84	0.0007	3.16	807.74	278.03	0.23
1	22232	10%_Cur	770	601.5	607.34	605.45	607.6	0.002336	4.82	353.88	255.81	0.35
1	22232	2%_Cur	1030	601.5	607.72	606.99	608	0.002639	5.34	459.55	300.54	0.38
1	22232	1%_Cur	1140	601.5	607.95	606.99	608.2	0.002358	5.17	529.09	305.48	0.36
1	22232	0.2%_Cur	1400	601.5	608.41	607.52	608.62	0.002095	5.11	674.64	353.86	0.34
1	22232	10%_Proj	816	601.5	607.41	605.63	607.68	0.002413	4.93	371.26	268.13	0.36
1	22232	2%_Proj	1088	601.5	607.85	606.99	608.11	0.00248	5.25	496.74	303.19	0.37
1	22232	1%_Proj	1198	601.5	608.07	606.99	608.3	0.002238	5.1	564.49	308.74	0.35
1	22232	0.2%_Proj	1460	601.5	608.52	607.55	608.71	0.001981	5.02	714	364.46	0.34
1	22205		Bridge									
1	22191	10%_Cur	770	600.42	606.8	604.35	607.43	0.004531	6.42	141.79	164.91	0.46
1	22191	2%_Cur	1030	600.42	607.31	605.16	607.98	0.004895	7.03	281.92	215.5	0.48

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	22191	1%_Cur	1140	600.42	607.5	605.48	608.18	0.005006	7.24	323.67	225.39	0.49
1	22191	0.2%_Cur	1400	600.42	607.9	607.5	608.6	0.005208	7.68	421.02	262.26	0.5
1	22191	10%_Proj	816	600.42	606.9	604.5	607.58	0.004781	6.66	148.46	188.57	0.47
1	22191	2%_Proj	1088	600.42	607.41	605.32	608.08	0.00496	7.15	303.91	220.53	0.49
1	22191	1%_Proj	1198	600.42	607.6	605.64	608.28	0.005047	7.34	345.71	231.09	0.49
1	22191	0.2%_Proj	1460	600.42	607.98	607.58	608.7	0.005297	7.8	443.55	276.49	0.51
1	22056	10%_Cur	770	600.8	606.35	604.91	606.8	0.003549	5.57	208.14	196.1	0.48
1	22056	2%_Cur	1030	600.8	606.85	605.83	607.31	0.003564	6.02	331.66	225.13	0.49
1	22056	1%_Cur	1140	600.8	607.02	606.08	607.51	0.003623	6.22	368.58	232.33	0.5
1	22056	0.2%_Cur	1400	600.8	607.4	606.42	607.92	0.003737	6.64	450.59	246.32	0.51
1	22056	10%_Proj	816	600.8	606.43	605.01	606.91	0.003742	5.79	219.58	203.51	0.5
1	22056	2%_Proj	1088	600.8	606.94	606.01	607.42	0.003598	6.13	351.14	228.82	0.5
1	22056	1%_Proj	1198	600.8	607.11	606.21	607.61	0.003642	6.31	388.05	236.1	0.5
1	22056	0.2%_Proj	1460	600.8	607.47	606.42	608	0.003762	6.73	468.48	249.01	0.52
1	21988	10%_Cur	770	600.6	606.4		606.59	0.001163	3.58	308.85	199.24	0.28
1	21988	2%_Cur	1030	600.6	606.86		607.1	0.001407	4.17	405.67	222.34	0.32
1	21988	1%_Cur	1140	600.6	607.02		607.29	0.001495	4.38	443.21	226.97	0.33
1	21988	0.2%_Cur	1400	600.6	607.38		607.69	0.001684	4.85	524.83	235.34	0.35
1	21988	10%_Proj	816	600.6	606.49		606.69	0.001212	3.69	326.44	205.71	0.29
1	21988	2%_Proj	1088	600.6	606.95		607.2	0.001455	4.29	425.52	224.8	0.32
1	21988	1%_Proj	1198	600.6	607.11		607.38	0.001536	4.49	462.85	229.07	0.33
1	21988	0.2%_Proj	1460	600.6	607.45		607.77	0.001726	4.95	542.39	237.07	0.36
1	20749	10%_Cur	770	598.9	605.36		605.45	0.000713	3.03	530.11	367.05	0.23
1	20749	2%_Cur	1030	598.9	605.71		605.8	0.000755	3.25	661.93	375.05	0.24
1	20749	1%_Cur	1140	598.9	605.84		605.94	0.000772	3.33	711.47	377.96	0.24
1	20749	0.2%_Cur	1400	598.9	606.17		606.26	0.000765	3.44	836.46	385.46	0.24
1	20749	10%_Proj	816	598.9	605.45		605.53	0.000696	3.03	563.93	369.49	0.22
1	20749	2%_Proj	1088	598.9	605.79		605.88	0.000755	3.28	691.78	376.78	0.24
1	20749	1%_Proj	1198	598.9	605.88		605.98	0.000808	3.43	726.51	378.87	0.24
1	20749	0.2%_Proj	1460	598.9	606.26		606.35	0.000748	3.43	870.12	386.71	0.24
1	20719	10%_Cur	799	598.57	605.15	601.73	605.37	0.001252	3.93	263.32	269.66	0.29
1	20719	2%_Cur	1060	598.57	605.38	602.4	605.7	0.001729	4.75	330.25	301.2	0.34
1	20719	1%_Cur	1160	598.57	605.49	602.62	605.83	0.001831	4.95	365.38	330.94	0.35
1	20719	0.2%_Cur	1410	598.57	605.83	603.15	606.16	0.001836	5.13	494.85	421.9	0.35
1	20719	10%_Proj	848	598.57	605.22	601.86	605.46	0.001311	4.06	283.24	275.73	0.29
1	20719	2%_Proj	1118	598.57	605.45	602.53	605.78	0.00179	4.87	350.66	316.15	0.35

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	20719	1%_Proj	1222	598.57	605.48	602.77	605.86	0.002067	5.25	360.51	326.09	0.37
1	20719	0.2%_Proj	1480	598.57	605.94	603.28	606.25	0.001769	5.09	540.04	435.18	0.35
1	20700		Bridge									
1	20654	10%_Cur	799	598.47	603.75	601.68	604.28	0.003681	5.88	145.83	193.23	0.46
1	20654	2%_Cur	1060	598.47	604.15	602.35	604.91	0.004873	7.12	164.38	238	0.53
1	20654	1%_Cur	1160	598.47	604.5	602.6	604.77	0.002275	5.06	430.76	287.21	0.37
1	20654	0.2%_Cur	1410	598.47	604.9	603.2	605.15	0.002119	5.11	556.33	336.96	0.36
1	20654	10%_Proj	848	598.47	603.85	601.82	604.42	0.003841	6.09	150.73	196.02	0.47
1	20654	2%_Proj	1118	598.47	604.43	602.5	604.71	0.002298	5.05	410.93	270.97	0.37
1	20654	1%_Proj	1222	598.47	604.6	602.75	604.87	0.002238	5.08	461.55	305.65	0.37
1	20654	0.2%_Proj	1480	598.47	605	603.57	605.25	0.002088	5.13	592.37	352.76	0.36
1	20539	10%_Cur	799	597.5	603.73		603.82	0.001339	2.83	488.17	340.49	0.22
1	20539	2%_Cur	1060	597.5	604.25		604.33	0.001189	2.84	677.73	375.7	0.21
1	20539	1%_Cur	1160	597.5	604.42		604.5	0.001134	2.83	745.14	381.52	0.2
1	20539	0.2%_Cur	1410	597.5	604.83		604.9	0.001041	2.83	903.06	401.93	0.2
1	20539	10%_Proj	848	597.5	603.86		603.94	0.001289	2.82	533.16	360.65	0.21
1	20539	2%_Proj	1118	597.5	604.35		604.43	0.001155	2.83	717.34	378.89	0.2
1	20539	1%_Proj	1222	597.5	604.53		604.6	0.001107	2.82	785.44	385.52	0.2
1	20539	0.2%_Proj	1480	597.5	604.93		605	0.001039	2.86	945.38	415.05	0.2
1	20061	10%_Cur	799	596.8	601.95	600.83	602.62	0.005563	6.55	124.29	112.96	0.59
1	20061	2%_Cur	1060	596.8	602.43	601.4	603.19	0.005794	7.23	211.35	130.56	0.62
1	20061	1%_Cur	1160	596.8	602.62	601.62	603.4	0.005735	7.4	237.51	145.42	0.62
1	20061	0.2%_Cur	1410	596.8	603.01	602.53	603.85	0.005767	7.86	300.22	176.05	0.63
1	20061	10%_Proj	848	596.8	602.05	600.92	602.76	0.005766	6.78	127.78	118.24	0.6
1	20061	2%_Proj	1118	596.8	602.53	601.53	603.31	0.005845	7.37	224.18	137.64	0.62
1	20061	1%_Proj	1222	596.8	602.72	601.74	603.51	0.005772	7.54	252.03	150.21	0.62
1	20061	0.2%_Proj	1480	596.8	603.1	602.67	603.96	0.005824	7.99	316.46	183.91	0.63
1	18590	10%_Cur	799	594.8	599.97		600.03	0.000799	2.69	796.43	435.38	0.23
1	18590	2%_Cur	1060	594.8	600.36		600.43	0.000861	2.96	969.73	449.42	0.24
1	18590	1%_Cur	1160	594.8	600.47		600.54	0.000911	3.1	1018.31	453.15	0.25
1	18590	0.2%_Cur	1410	594.8	600.79		600.87	0.000966	3.33	1169.19	477.36	0.26
1	18590	10%_Proj	848	594.8	600.05		600.11	0.000813	2.75	829.88	437.37	0.23
1	18590	2%_Proj	1118	594.8	600.44		600.51	0.000876	3.02	1004.47	452.07	0.25
1	18590	1%_Proj	1222	594.8	600.55		600.63	0.000924	3.15	1055.75	463.34	0.25
1	18590	0.2%_Proj	1480	594.8	600.88		600.97	0.00097	3.38	1212.27	481.4	0.26

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	16260	10%_Cur	799	592.7	596.71	596.14	596.98	0.003262	4.8	362.71	296.38	0.45
1	16260	2%_Cur	1060	592.7	597.21		597.45	0.002779	4.84	514.68	310.78	0.43
1	16260	1%_Cur	1160	592.7	597.5		597.71	0.002275	4.59	606.46	314.99	0.39
1	16260	0.2%_Cur	1410	592.7	597.99		598.17	0.001908	4.52	761.52	319.82	0.37
1	16260	10%_Proj	848	592.7	596.81	596.24	597.08	0.003149	4.8	392.51	299.25	0.45
1	16260	2%_Proj	1118	592.7	597.31		597.55	0.002707	4.86	545.68	312.43	0.42
1	16260	1%_Proj	1222	592.7	597.62		597.82	0.002192	4.59	642.89	316.17	0.39
1	16260	0.2%_Proj	1480	592.7	598.09		598.27	0.001895	4.57	792.93	320.77	0.37
1	15225	10%_Cur	799	588.5	595.1		595.28	0.001009	3.57	392.83	340.73	0.26
1	15225	2%_Cur	1060	588.5	595.82		595.98	0.000913	3.67	648.62	378.77	0.25
1	15225	1%_Cur	1160	588.5	596.68		596.77	0.000508	2.97	991.12	410.64	0.19
1	15225	0.2%_Cur	1410	588.5	597.25		597.34	0.00048	3.03	1229.96	425.24	0.19
1	15225	10%_Proj	848	588.5	595.24		595.42	0.000998	3.61	439.65	346.05	0.26
1	15225	2%_Proj	1118	588.5	595.97		596.13	0.000876	3.65	709.16	382.26	0.25
1	15225	1%_Proj	1222	588.5	596.81		596.9	0.000506	3	1044.13	414.37	0.19
1	15225	0.2%_Proj	1480	588.5	597.33		597.42	0.000496	3.1	1265.11	425.91	0.19
1	14388	10%_Cur	799	587.83	593.78		594.09	0.002133	4.63	219.71	280.02	0.37
1	14388	2%_Cur	1060	587.83	594.74		595	0.001566	4.49	323.94	352.28	0.33
1	14388	1%_Cur	1160	587.83	596.15		596.29	0.000667	3.4	476.94	425.5	0.22
1	14388	0.2%_Cur	1410	587.83	596.7		596.85	0.000705	3.67	536.07	442.27	0.23
1	14388	10%_Proj	848	587.83	593.96		594.26	0.002016	4.62	239.34	289.28	0.37
1	14388	2%_Proj	1118	587.83	594.95		595.2	0.001471	4.46	346.43	364.89	0.32
1	14388	1%_Proj	1222	587.83	596.27		596.41	0.000688	3.49	489.42	428.85	0.23
1	14388	0.2%_Proj	1480	587.83	596.75		596.92	0.000755	3.81	541.38	444.07	0.24
1	14364	10%_Cur	799	587.83	593.79	590.9	594	0.001295	3.75	224.46	240.76	0.3
1	14364	2%_Cur	1060	587.83	594.71	591.57	594.96	0.001242	4.12	273.41	291.84	0.3
1	14364	1%_Cur	1160	587.83	596.07	591.76	596.26	0.000712	3.59	345.28	377.9	0.24
1	14364	0.2%_Cur	1410	587.83	596.57	592.15	596.81	0.00083	4.05	371.88	397	0.26
1	14364	10%_Proj	848	587.83	593.96	591.02	594.18	0.001291	3.83	233.66	261.15	0.3
1	14364	2%_Proj	1118	587.83	594.9	591.68	595.16	0.001234	4.19	283.48	302.69	0.3
1	14364	1%_Proj	1222	587.83	596.17	591.85	596.37	0.000751	3.72	350.83	381.68	0.24
1	14364	0.2%_Proj	1480	587.83	596.76	592.27	597.01	0.00084	4.14	382	410.05	0.26
1	14330		Bridge									
1	14298	10%_Cur	799	587.6	593.2	590.67	593.53	0.001948	4.55	178.76	107.47	0.36

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	14298	2%_Cur	1060	587.6	593.89	591.27	594.32	0.002206	5.29	206.78	167.24	0.39
1	14298	1%_Cur	1160	587.6	594.13	591.47	594.6	0.002298	5.55	216.41	190.79	0.4
1	14298	0.2%_Cur	1410	587.6	594.73	591.92	595.3	0.002431	6.09	241.15	283.48	0.42
1	14298	10%_Proj	848	587.6	593.33	590.78	593.67	0.002014	4.71	183.93	112.72	0.37
1	14298	2%_Proj	1118	587.6	594.03	591.4	594.48	0.002266	5.44	212.24	178.86	0.4
1	14298	1%_Proj	1222	587.6	594.29	591.59	594.79	0.002319	5.68	223.22	213.51	0.41
1	14298	0.2%_Proj	1480	587.6	595.19	592.04	595.73	0.00213	5.96	259.59	319.78	0.4
1	14176	10%_Cur	799	586.6	593.14	589.31	593.29	0.000839	3.17	275.85	276.33	0.24
1	14176	2%_Cur	1060	586.6	593.84	589.83	594.04	0.000943	3.64	347.74	330.58	0.26
1	14176	1%_Cur	1160	586.6	594.08	590.05	594.3	0.000975	3.8	373.36	344.71	0.27
1	14176	0.2%_Cur	1410	586.6	594.71	590.49	594.96	0.001004	4.11	441.95	374.61	0.27
1	14176	10%_Proj	848	586.6	593.27	589.42	593.43	0.000868	3.27	288.86	286.19	0.24
1	14176	2%_Proj	1118	586.6	593.98	589.96	594.19	0.000965	3.74	362.15	339.62	0.26
1	14176	1%_Proj	1222	586.6	594.26	590.15	594.48	0.000977	3.87	391.93	351.22	0.27
1	14176	0.2%_Proj	1480	586.6	595.19	590.62	595.42	0.000858	3.97	495.35	402.39	0.26
1	12509	10%_Cur	799	585.2	592.71	590.02	592.73	0.000177	1.55	1601.47	635.26	0.11
1	12509	2%_Cur	1060	585.2	593.46	590.4	593.47	0.000165	1.61	2107.28	712.64	0.11
1	12509	1%_Cur	1160	585.2	593.73	590.52	593.74	0.000156	1.61	2305.41	754.67	0.11
1	12509	0.2%_Cur	1410	585.2	594.43	590.77	594.44	0.000136	1.6	2845.3	797.79	0.1
1	12509	10%_Proj	848	585.2	592.85	590.11	592.87	0.000174	1.55	1691.37	666.58	0.11
1	12509	2%_Proj	1118	585.2	593.61	590.51	593.62	0.00016	1.61	2217.13	728.86	0.11
1	12509	1%_Proj	1222	585.2	593.9	590.56	593.91	0.000159	1.65	2435.42	769.51	0.11
1	12509	0.2%_Proj	1480	585.2	595	590.83	595.01	0.000099	1.43	3295.05	944.98	0.09
1	11492	10%_Cur	799	584.5	592.51		592.54	0.000228	1.95	1067.37	519.44	0.13
1	11492	2%_Cur	1060	584.5	593.26		593.29	0.000229	2.09	1323.61	549.11	0.13
1	11492	1%_Cur	1160	584.5	593.54		593.57	0.000228	2.13	1419.23	554.98	0.13
1	11492	0.2%_Cur	1410	584.5	594.25		594.29	0.000216	2.2	1666.64	571.42	0.13
1	11492	10%_Proj	848	584.5	592.65		592.68	0.00023	1.99	1114.88	523.27	0.13
1	11492	2%_Proj	1118	584.5	593.41		593.45	0.00023	2.12	1376.84	552.57	0.13
1	11492	1%_Proj	1222	584.5	593.71		593.74	0.000226	2.16	1477.33	558.44	0.13
1	11492	0.2%_Proj	1480	584.5	594.86		594.89	0.00017	2.03	1880.61	634.93	0.12
1	11208	10%_Cur	799	584.6	592.32		592.44	0.000697	3.17	547.28	516.64	0.22
1	11208	2%_Cur	1060	584.6	593.07		593.19	0.000665	3.34	755.1	590.46	0.22
1	11208	1%_Cur	1160	584.6	593.36		593.47	0.00064	3.37	837.72	607.6	0.22
1	11208	0.2%_Cur	1410	584.6	594.09		594.2	0.00056	3.36	1060.51	814.52	0.21
1	11208	10%_Proj	848	584.6	592.46		592.58	0.000707	3.24	583.12	531.49	0.23

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	11208	2%_Proj	1118	584.6	593.23		593.35	0.000655	3.37	800.61	597.7	0.22
1	11208	1%_Proj	1222	584.6	593.53		593.64	0.000625	3.38	888.63	639.09	0.22
1	11208	0.2%_Proj	1480	584.6	594.75		594.83	0.000399	2.99	1265.85	910.34	0.18
1	10810	10%_Cur	799	584.8	591.98		592.12	0.001102	3.71	550.89	471.8	0.28
1	10810	2%_Cur	1060	584.8	592.79		592.91	0.00093	3.73	794.46	587.09	0.26
1	10810	1%_Cur	1160	584.8	593.11		593.22	0.000809	3.6	920.76	644.4	0.25
1	10810	0.2%_Cur	1410	584.8	593.91		593.99	0.000587	3.31	1239.29	843.55	0.21
1	10810	10%_Proj	848	584.8	592.13		592.27	0.001057	3.7	591.98	475.98	0.27
1	10810	2%_Proj	1118	584.8	592.97		593.08	0.000864	3.67	864.51	619.33	0.25
1	10810	1%_Proj	1222	584.8	593.3		593.4	0.000751	3.53	995.45	664.8	0.24
1	10810	0.2%_Proj	1480	584.8	594.64		594.69	0.000373	2.8	1530.34	878.91	0.17
1	10428	10%_Cur	799	584.8	591.07		591.36	0.00508	4.29	194.68	76.41	0.37
1	10428	2%_Cur	1060	584.8	591.91		592.25	0.0048	4.71	245.75	143.04	0.37
1	10428	1%_Cur	1160	584.8	592.28		592.62	0.004475	4.76	272.98	162.93	0.36
1	10428	0.2%_Cur	1410	584.8	593.21		593.54	0.003664	4.78	351.54	254.37	0.33
1	10428	10%_Proj	848	584.8	591.23		591.52	0.005055	4.39	203.32	78.79	0.37
1	10428	2%_Proj	1118	584.8	592.11		592.45	0.004652	4.75	260.1	153.76	0.36
1	10428	1%_Proj	1222	584.8	592.5		592.84	0.004306	4.79	290.18	171.85	0.35
1	10428	0.2%_Proj	1480	584.8	594.27		594.43	0.001698	3.61	669.78	540.76	0.23
1	10310	10%_Cur	799	584.02	591.09	586.2	591.16	0.000293	2.04	398.48	77.74	0.15
1	10310	2%_Cur	1060	584.02	591.94	586.63	592.03	0.000327	2.35	462.68	84.28	0.16
1	10310	1%_Cur	1160	584.02	592.31	586.79	592.4	0.000326	2.43	491.68	89.56	0.16
1	10310	0.2%_Cur	1410	584.02	593.23	587.15	593.34	0.000316	2.59	564.29	142.07	0.16
1	10310	10%_Proj	848	584.02	591.25	586.29	591.32	0.000302	2.1	410.23	78.84	0.15
1	10310	2%_Proj	1118	584.02	592.14	586.72	592.23	0.000329	2.4	478.39	85.89	0.16
1	10310	1%_Proj	1222	584.02	592.53	586.88	592.62	0.000326	2.48	508.55	93.37	0.16
1	10310	0.2%_Proj	1480	584.02	594.26	587.25	594.34	0.000215	2.32	851.14	443.09	0.14
1	10250		Bridge									
1	10147	10%_Cur	824	584.02	590.95	586.25	591.03	0.000331	2.17	395.59	254.97	0.16
1	10147	2%_Cur	1090	584.02	591.72	586.69	591.82	0.000379	2.51	462.91	296.61	0.17
1	10147	1%_Cur	1200	584.02	592.04	586.86	592.14	0.000389	2.62	491.23	321.17	0.17
1	10147	0.2%_Cur	1450	584.02	592.8	587.23	592.92	0.000393	2.82	558.79	378.72	0.18
1	10147	10%_Proj	875	584.02	591.1	586.34	591.18	0.000343	2.24	408.19	268.96	0.16
1	10147	2%_Proj	1150	584.02	591.89	586.79	591.99	0.000385	2.57	478.23	311.45	0.17
1	10147	1%_Proj	1258	584.02	592.22	586.93	592.33	0.000391	2.67	507.06	330.79	0.18

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	10147	0.2%_Proj	1522	584.02	593.91	587.32	593.96	0.000173	2.05	1569.35	581.7	0.12
1	9967	10%_Cur	824	584.4	590.66	588.16	590.88	0.001423	4.04	329	221.62	0.31
1	9967	2%_Cur	1090	584.4	591.42	588.72	591.66	0.001395	4.39	418.36	229.1	0.32
1	9967	1%_Cur	1200	584.4	591.74	588.92	591.98	0.001355	4.48	456.77	234.07	0.32
1	9967	0.2%_Cur	1450	584.4	592.52	589.08	592.77	0.001212	4.58	552.52	300.98	0.3
1	9967	10%_Proj	875	584.4	590.8	588.3	591.03	0.001428	4.13	345.86	222.94	0.32
1	9967	2%_Proj	1150	584.4	591.59	588.82	591.83	0.001375	4.44	439	231.2	0.32
1	9967	1%_Proj	1258	584.4	591.92	589.02	592.17	0.00132	4.51	478.86	255.5	0.31
1	9967	0.2%_Proj	1522	584.4	593.84	589.08	593.91	0.000357	2.79	1483.56	472.08	0.17
1	9667	10%_Cur	824	584.1	590.34	588.13	590.48	0.001091	3.54	475.7	250.37	0.28
1	9667	2%_Cur	1090	584.1	591.21	588.95	591.31	0.000784	3.33	711.28	299.61	0.24
1	9667	1%_Cur	1200	584.1	591.57	589.12	591.67	0.000665	3.2	823.33	318.97	0.22
1	9667	0.2%_Cur	1450	584.1	592.43	589.47	592.5	0.000468	2.92	1117.8	367.77	0.19
1	9667	10%_Proj	875	584.1	590.51	588.53	590.64	0.001032	3.51	517.19	260.83	0.27
1	9667	2%_Proj	1150	584.1	591.41	589.05	591.5	0.000716	3.26	771.27	303.98	0.23
1	9667	1%_Proj	1258	584.1	591.77	589.2	591.86	0.000627	3.17	888.29	332.58	0.22
1	9667	0.2%_Proj	1522	584.1	593.79	589.59	593.82	0.000189	2.08	1668.23	442.58	0.13
1	9411	10%_Cur	824	583.7	590.15	587.87	590.24	0.000892	3.08	623.89	266.75	0.25
1	9411	2%_Cur	1090	583.7	591.07	588.88	591.14	0.000657	2.97	874.31	278.21	0.22
1	9411	1%_Cur	1200	583.7	591.45	588.99	591.52	0.000584	2.92	980.92	283.57	0.21
1	9411	0.2%_Cur	1450	583.7	592.33	589.22	592.4	0.000476	2.88	1252.55	365	0.19
1	9411	10%_Proj	875	583.7	590.32	588.6	590.41	0.000842	3.07	670.89	269.91	0.24
1	9411	2%_Proj	1150	583.7	591.27	588.94	591.35	0.000616	2.94	932.04	281.08	0.21
1	9411	1%_Proj	1258	583.7	591.65	589.06	591.72	0.000554	2.91	1038.55	289.93	0.2
1	9411	0.2%_Proj	1522	583.7	593.74	589.28	593.78	0.000245	2.33	1903.94	513.27	0.14
1	9112	10%_Cur	824	583.3	589.9	587.35	590	0.000848	2.92	573.42	245.59	0.24
1	9112	2%_Cur	1090	583.3	590.89	588.47	590.97	0.000604	2.81	832.7	296.65	0.21
1	9112	1%_Cur	1200	583.3	591.3	588.63	591.37	0.000533	2.76	957.2	326.97	0.2
1	9112	0.2%_Cur	1450	583.3	592.22	588.89	592.28	0.000397	2.63	1281.9	375.28	0.18
1	9112	10%_Proj	875	583.3	590.1	587.53	590.19	0.000789	2.9	621.59	253.6	0.23
1	9112	2%_Proj	1150	583.3	591.11	588.55	591.19	0.000565	2.79	899.15	316.11	0.2
1	9112	1%_Proj	1258	583.3	591.51	588.69	591.58	0.000499	2.74	1028.45	347.79	0.19
1	9112	0.2%_Proj	1522	583.3	593.69	588.95	593.72	0.000183	2.02	1943.89	575.24	0.12
1	8693	10%_Cur	824	582.7	589.52		589.64	0.000951	3.31	518.14	193.49	0.26
1	8693	2%_Cur	1090	582.7	590.62		590.72	0.000679	3.18	734.36	199.23	0.22

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8693	1%_Cur	1200	582.7	591.05		591.14	0.000609	3.15	820.84	200.89	0.21
1	8693	0.2%_Cur	1450	582.7	592.02		592.11	0.00049	3.09	1018.49	205.82	0.2
1	8693	10%_Proj	875	582.7	589.74		589.85	0.000882	3.28	560.79	195.16	0.25
1	8693	2%_Proj	1150	582.7	590.85		590.95	0.000639	3.16	781.39	200	0.22
1	8693	1%_Proj	1258	582.7	591.28		591.37	0.000577	3.13	866.64	202.1	0.21
1	8693	0.2%_Proj	1522	582.7	593.58		593.63	0.000249	2.49	1351.57	221.55	0.14
1	8419	10%_Cur	824	582.5	589.22		589.38	0.000917	3.43	372.85	245.98	0.26
1	8419	2%_Cur	1090	582.5	590.37		590.52	0.000722	3.45	521.28	270.65	0.24
1	8419	1%_Cur	1200	582.5	590.81		590.96	0.000668	3.47	578.83	279.09	0.23
1	8419	0.2%_Cur	1450	582.5	591.81		591.96	0.000569	3.49	707.38	301.47	0.22
1	8419	10%_Proj	875	582.5	589.45		589.61	0.000868	3.43	402.87	252.97	0.25
1	8419	2%_Proj	1150	582.5	590.61		590.76	0.000692	3.46	552.66	274.88	0.23
1	8419	1%_Proj	1258	582.5	591.05		591.19	0.000642	3.47	609.01	284.48	0.23
1	8419	0.2%_Proj	1522	582.5	593.46		593.56	0.000298	2.86	920.41	335.53	0.16
1	8391	10%_Cur	824	582.5	588.85	586.29	589.26	0.002385	5.19	170.71	215.98	0.39
1	8391	2%_Cur	1090	582.5	589.91	586.95	590.39	0.002214	5.63	226.31	264.29	0.39
1	8391	1%_Cur	1200	582.5	590.34	587.21	590.83	0.002121	5.75	251.72	278.14	0.39
1	8391	0.2%_Cur	1450	582.5	591.31	587.73	591.82	0.001886	5.92	311.6	376.99	0.37
1	8391	10%_Proj	875	582.5	589.06	586.44	589.49	0.002351	5.29	181	220.97	0.39
1	8391	2%_Proj	1150	582.5	590.14	587.08	590.63	0.002166	5.7	240.03	272.05	0.39
1	8391	1%_Proj	1258	582.5	590.56	587.33	591.06	0.002069	5.8	265.46	312.31	0.38
1	8391	0.2%_Proj	1522	582.5	593.24	587.88	593.55	0.000909	4.75	430.08	594.5	0.27
1	8365		Bridge									
1	8349	10%_Cur	824	582.3	588.17	586.02	588.58	0.002668	5.15	169.3	117.1	0.41
1	8349	2%_Cur	1090	582.3	588.9	586.61	589.42	0.002857	5.86	205.2	194.33	0.44
1	8349	1%_Cur	1200	582.3	589.17	586.83	589.74	0.002934	6.12	219.39	267.26	0.45
1	8349	0.2%_Cur	1450	582.3	589.75	587.3	590.42	0.003062	6.67	253.39	321.49	0.47
1	8349	10%_Proj	875	582.3	588.33	586.16	588.76	0.002692	5.29	176.65	126.51	0.42
1	8349	2%_Proj	1150	582.3	589.05	586.74	589.6	0.002898	6	213.02	225.58	0.44
1	8349	1%_Proj	1258	582.3	589.3	586.96	589.9	0.002972	6.26	226.85	282.66	0.45
1	8349	0.2%_Proj	1522	582.3	589.91	587.44	590.61	0.003075	6.8	264.16	327.76	0.47
1	8318	10%_Cur	824	582.1	588.23	585.81	588.41	0.001219	3.46	329.1	158.11	0.29
1	8318	2%_Cur	1090	582.1	589.01	586.25	589.2	0.001141	3.73	442.69	190.43	0.29
1	8318	1%_Cur	1200	582.1	589.3	586.46	589.5	0.001147	3.87	491.56	223.7	0.29
1	8318	0.2%_Cur	1450	582.1	589.93	586.9	590.14	0.001058	3.99	615.68	260.2	0.28

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	8318	10%_Proj	875	582.1	588.4	585.89	588.58	0.001193	3.51	352.01	167.68	0.29
1	8318	2%_Proj	1150	582.1	589.17	586.35	589.37	0.001135	3.79	468.79	206.37	0.29
1	8318	1%_Proj	1258	582.1	589.44	586.59	589.65	0.001142	3.93	519.73	232.55	0.29
1	8318	0.2%_Proj	1522	582.1	590.11	587.03	590.31	0.00103	4.01	650.66	278.13	0.28
1	8227	10%_Cur	824	582	587.5	585.97	588.17	0.004524	6.79	183.56	128.59	0.54
1	8227	2%_Cur	1090	582	588.45		589	0.00336	6.58	310.21	164.03	0.48
1	8227	1%_Cur	1200	582	588.78		589.31	0.00309	6.55	355.21	224.43	0.46
1	8227	0.2%_Cur	1450	582	589.49		589.97	0.00265	6.51	450.8	312.65	0.44
1	8227	10%_Proj	875	582	587.68	586.12	588.34	0.004323	6.8	207.58	141.47	0.53
1	8227	2%_Proj	1150	582	588.64		589.17	0.003198	6.55	335.42	187.64	0.47
1	8227	1%_Proj	1258	582	588.95		589.46	0.002975	6.54	377.86	244.59	0.46
1	8227	0.2%_Proj	1522	582	589.68		590.15	0.002556	6.51	476.83	337.45	0.43
1	7993	10%_Cur	824	580.3	586.96		587.36	0.002244	5.22	216.65	88.5	0.4
1	7993	2%_Cur	1090	580.3	587.95		588.37	0.001988	5.49	309.69	128.61	0.38
1	7993	1%_Cur	1200	580.3	588.29		588.71	0.00192	5.59	345.72	131.17	0.38
1	7993	0.2%_Cur	1450	580.3	589.01		589.44	0.001798	5.79	422.94	136.52	0.37
1	7993	10%_Proj	875	580.3	587.17		587.57	0.002177	5.27	234.94	90.82	0.39
1	7993	2%_Proj	1150	580.3	588.14		588.56	0.001944	5.54	330	130.16	0.38
1	7993	1%_Proj	1258	580.3	588.46		588.89	0.001891	5.64	363.84	132.31	0.38
1	7993	0.2%_Proj	1522	580.3	589.21		589.64	0.001771	5.84	444.09	138.06	0.37
1	7542	10%_Cur	824	578.4	586.46		586.68	0.00094	3.79	238.4	60.86	0.26
1	7542	2%_Cur	1090	578.4	587.43		587.71	0.001003	4.29	310.66	93.14	0.28
1	7542	1%_Cur	1200	578.4	587.76		588.06	0.001028	4.47	342.31	97.26	0.28
1	7542	0.2%_Cur	1450	578.4	588.47		588.81	0.001068	4.83	414.56	107.8	0.29
1	7542	10%_Proj	875	578.4	586.66		586.9	0.000952	3.89	250.99	64.92	0.26
1	7542	2%_Proj	1150	578.4	587.62		587.91	0.001014	4.39	328.52	95.55	0.28
1	7542	1%_Proj	1258	578.4	587.93		588.24	0.001041	4.56	358.54	99.5	0.28
1	7542	0.2%_Proj	1522	578.4	588.66		589.01	0.001077	4.92	435.45	110.38	0.29
1	7102	10%_Cur	824	578.2	586.08		586.27	0.000907	3.6	301.89	88.45	0.26
1	7102	2%_Cur	1090	578.2	587.06		587.28	0.000889	3.94	391.6	95.02	0.26
1	7102	1%_Cur	1200	578.2	587.39		587.62	0.000903	4.09	423.2	97.38	0.26
1	7102	0.2%_Cur	1450	578.2	588.09		588.35	0.00093	4.41	493.37	105	0.27
1	7102	10%_Proj	875	578.2	586.28		586.48	0.0009	3.67	320.01	89.63	0.26
1	7102	2%_Proj	1150	578.2	587.25		587.47	0.000893	4.01	409.65	96.38	0.26
1	7102	1%_Proj	1258	578.2	587.55		587.79	0.000912	4.17	439.1	98.69	0.27
1	7102	0.2%_Proj	1522	578.2	588.27		588.55	0.000936	4.49	513.52	108.69	0.27

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6688	10%_Cur	824	578	585.69	581.56	585.9	0.000887	3.7	240.11	109.55	0.25
1	6688	2%_Cur	1090	578	586.61	582.19	586.88	0.00099	4.26	286.27	300.09	0.27
1	6688	1%_Cur	1200	578	586.9	582.43	587.21	0.001049	4.49	302.13	451.77	0.28
1	6688	0.2%_Cur	1450	578	587.54	582.91	587.91	0.001163	4.98	338.42	642.2	0.3
1	6688	10%_Proj	875	578	585.88	581.67	586.1	0.000906	3.81	249.41	131.25	0.26
1	6688	2%_Proj	1150	578	586.78	582.32	587.07	0.001019	4.38	295.42	395.15	0.28
1	6688	1%_Proj	1258	578	587.05	582.54	587.37	0.00108	4.62	310.15	490.28	0.29
1	6688	0.2%_Proj	1522	578	587.71	583.05	588.1	0.001192	5.11	349.17	710.06	0.31
1	6557	10%_Cur	824	577.8	585.7	580.7	585.79	0.000368	2.47	352.15	309.07	0.17
1	6557	2%_Cur	1090	577.8	586.66	581.22	586.76	0.000357	2.66	501.53	600.18	0.17
1	6557	1%_Cur	1200	577.8	586.97	581.43	587.08	0.000364	2.76	543.43	729.16	0.17
1	6557	0.2%_Cur	1450	577.8	587.64	581.85	587.75	0.000372	2.94	640.2	901	0.18
1	6557	10%_Proj	875	577.8	585.89	580.81	585.99	0.000375	2.54	366.49	346.92	0.17
1	6557	2%_Proj	1150	577.8	586.84	581.34	586.94	0.000359	2.71	525.65	704.66	0.17
1	6557	1%_Proj	1258	577.8	587.12	581.51	587.23	0.000368	2.81	564.73	776.99	0.17
1	6557	0.2%_Proj	1522	577.8	587.82	581.96	587.94	0.000372	2.98	668.75	1060.94	0.18
1	6514	10%_Cur	824	578	585.53	582.03	585.73	0.001007	3.62	233.97	208.45	0.27
1	6514	2%_Cur	1090	578	586.43	582.63	586.69	0.001058	4.09	280.02	731.18	0.28
1	6514	1%_Cur	1200	578	586.72	582.86	587	0.001104	4.3	295.96	769.9	0.29
1	6514	0.2%_Cur	1450	578	587.33	583.32	587.66	0.001183	4.71	331.53	992.94	0.3
1	6514	10%_Proj	875	578	585.72	582.14	585.93	0.001013	3.71	243.23	369.46	0.27
1	6514	2%_Proj	1150	578	586.6	582.77	586.87	0.001078	4.2	289.27	764.67	0.29
1	6514	1%_Proj	1258	578	586.86	582.97	587.15	0.001129	4.4	303.97	797.19	0.29
1	6514	0.2%_Proj	1522	578	587.49	583.42	587.84	0.001202	4.82	341.42	1052.32	0.31
1	6490		Bridge									
1	6455	10%_Cur	824	577.4	585.46	581.92	585.66	0.001019	3.63	231.54	672.96	0.27
1	6455	2%_Cur	1090	577.4	586.34	582.55	586.61	0.001084	4.12	273.7	726.06	0.28
1	6455	1%_Cur	1200	577.4	586.62	582.77	586.91	0.001138	4.34	287.13	832.28	0.29
1	6455	0.2%_Cur	1450	577.4	587.06	583.25	587.43	0.001333	4.9	308.75	1089.2	0.32
1	6455	10%_Proj	875	577.4	585.65	582.06	585.86	0.001029	3.73	240.2	702.47	0.27
1	6455	2%_Proj	1150	577.4	586.51	582.68	586.78	0.001107	4.23	281.63	782.25	0.29
1	6455	1%_Proj	1258	577.4	586.75	582.9	587.05	0.00117	4.46	293.51	892.31	0.3
1	6455	0.2%_Proj	1522	577.4	587.19	583.36	587.57	0.001385	5.05	314.76	1136.73	0.33
1	6388	10%_Cur	824	577.1	585.38	581.36	585.59	0.000947	3.77	231.1	277.78	0.26

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	6388	2%_Cur	1090	577.1	586.24	582.02	586.53	0.001058	4.34	273.56	379.23	0.28
1	6388	1%_Cur	1200	577.1	586.51	582.26	586.82	0.001128	4.59	287.66	421.58	0.29
1	6388	0.2%_Cur	1450	577.1	587	582.8	587.33	0.001167	4.86	369.78	636.33	0.3
1	6388	10%_Proj	875	577.1	585.56	581.47	585.79	0.000967	3.89	239.76	315.58	0.26
1	6388	2%_Proj	1150	577.1	586.4	582.15	586.7	0.001091	4.47	281.85	399.47	0.29
1	6388	1%_Proj	1258	577.1	586.64	582.41	586.97	0.001167	4.72	294.56	461.22	0.3
1	6388	0.2%_Proj	1522	577.1	587.12	582.94	587.47	0.001201	4.98	380.84	723.01	0.31
1	5650	10%_Cur	824	576.9	584.41	581.07	584.72	0.001484	4.5	196.96	125.89	0.32
1	5650	2%_Cur	1090	576.9	585.14	581.76	585.54	0.001702	5.19	245.08	295.9	0.35
1	5650	1%_Cur	1200	576.9	585.43	582.02	585.82	0.001647	5.25	318.12	373.43	0.35
1	5650	0.2%_Cur	1450	576.9	586.02	582.53	586.37	0.001465	5.22	437.13	522.2	0.33
1	5650	10%_Proj	875	576.9	584.57	581.21	584.9	0.001521	4.64	206.31	162.39	0.33
1	5650	2%_Proj	1150	576.9	585.32	581.9	585.71	0.001657	5.21	296.38	362.94	0.35
1	5650	1%_Proj	1258	576.9	585.59	582.13	585.97	0.001582	5.22	350.18	391.22	0.34
1	5650	0.2%_Proj	1522	576.9	586.16	582.7	586.5	0.00143	5.22	467.24	547	0.33
1	5466	10%_Cur	824	576.8	584.22	580.87	584.45	0.001253	3.93	261.61	380.61	0.29
1	5466	2%_Cur	1090	576.8	585.02	581.62	585.23	0.001104	4.04	372.95	475.74	0.28
1	5466	1%_Cur	1200	576.8	585.32	581.91	585.53	0.001052	4.06	414.74	530.04	0.28
1	5466	0.2%_Cur	1450	576.8	585.9	582.41	586.1	0.00099	4.17	497.03	622.05	0.27
1	5466	10%_Proj	875	576.8	584.4	581.02	584.62	0.001211	3.95	286.03	395.59	0.29
1	5466	2%_Proj	1150	576.8	585.21	581.8	585.42	0.001055	4.02	399.25	511.59	0.28
1	5466	1%_Proj	1258	576.8	585.48	582.03	585.68	0.001019	4.06	437.67	548.31	0.27
1	5466	0.2%_Proj	1522	576.8	586.03	582.56	586.25	0.000987	4.21	517.02	651.23	0.27
1	5293	10%_Cur	824	576.6	584.01	580.53	584.24	0.001135	3.88	227.93	342.39	0.28
1	5293	2%_Cur	1090	576.6	584.7	581.21	585.01	0.001347	4.56	265.64	492.18	0.32
1	5293	1%_Cur	1200	576.6	584.95	581.45	585.3	0.001429	4.82	280.82	617.55	0.33
1	5293	0.2%_Cur	1450	576.6	585.67	581.92	585.92	0.001051	4.42	595.41	773.91	0.29
1	5293	10%_Proj	875	576.6	584.17	580.67	584.41	0.001168	4.01	236.06	360.86	0.29
1	5293	2%_Proj	1150	576.6	584.86	581.36	585.19	0.001374	4.68	275.49	599.36	0.32
1	5293	1%_Proj	1258	576.6	585.09	581.59	585.46	0.001461	4.94	289.69	637.4	0.33
1	5293	0.2%_Proj	1522	576.6	585.81	582.05	586.06	0.001063	4.5	621.33	777.5	0.29
1	5103	10%_Cur	824	575.6	584	580.4	584.07	0.000415	2.34	414.63	595.77	0.17
1	5103	2%_Cur	1090	575.6	584.76	580.82	584.82	0.00035	2.34	758.71	951.66	0.16
1	5103	1%_Cur	1200	575.6	585.03	580.97	585.1	0.000351	2.41	822.07	980.87	0.16
1	5103	0.2%_Cur	1450	575.6	585.7	581.32	585.77	0.000335	2.5	980.26	1007.17	0.16
1	5103	10%_Proj	875	575.6	584.16	580.49	584.24	0.000419	2.4	432.93	680.89	0.17

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	5103	2%_Proj	1150	575.6	584.94	580.91	585	0.000344	2.36	799.74	975.98	0.16
1	5103	1%_Proj	1258	575.6	585.19	581.06	585.25	0.000349	2.43	857.66	986.76	0.16
1	5103	0.2%_Proj	1522	575.6	585.84	581.39	585.9	0.00034	2.55	1013.16	1009.73	0.16
1	4940	10%_Cur	824	576.4	583.98	579.9	584.02	0.000271	1.87	493.4	625.45	0.14
1	4940	2%_Cur	1090	576.4	584.72	580.28	584.78	0.000292	2.11	637.16	937.33	0.15
1	4940	1%_Cur	1200	576.4	584.99	580.41	585.06	0.000297	2.19	698.83	993.08	0.15
1	4940	0.2%_Cur	1450	576.4	585.66	580.72	585.73	0.000287	2.3	851.87	1055.51	0.15
1	4940	10%_Proj	875	576.4	584.14	579.97	584.19	0.000274	1.92	514.4	747.9	0.14
1	4940	2%_Proj	1150	576.4	584.9	580.36	584.96	0.000289	2.14	677.28	981.03	0.15
1	4940	1%_Proj	1258	576.4	585.15	580.48	585.21	0.000296	2.22	733.43	1008.96	0.15
1	4940	0.2%_Proj	1522	576.4	585.8	580.79	585.86	0.000291	2.35	883.14	1057.15	0.15
1	4720	10%_Cur	824	576.3	583.76	579.56	583.92	0.000716	3.26	269.43	1002.97	0.23
1	4720	2%_Cur	1090	576.3	584.59	580.15	584.7	0.000496	2.94	577.82	1454.95	0.19
1	4720	1%_Cur	1200	576.3	584.87	580.36	584.97	0.000477	2.96	640.45	1487.67	0.19
1	4720	0.2%_Cur	1450	576.3	585.56	580.84	585.65	0.000409	2.91	796.54	1551.1	0.18
1	4720	10%_Proj	875	576.3	583.91	579.68	584.08	0.000743	3.37	278.4	1168.99	0.23
1	4720	2%_Proj	1150	576.3	584.77	580.27	584.88	0.000473	2.92	619.23	1477.84	0.19
1	4720	1%_Proj	1258	576.3	585.03	580.48	585.13	0.000462	2.95	675.76	1490.29	0.19
1	4720	0.2%_Proj	1522	576.3	585.7	580.98	585.79	0.000408	2.94	827.59	1561.51	0.18
1	4626	10%_Cur	824	576.2	583.75	580.22	583.84	0.000553	2.74	517.51	1201.31	0.2
1	4626	2%_Cur	1090	576.2	584.58	580.83	584.64	0.000379	2.48	797.15	1742.94	0.17
1	4626	1%_Cur	1200	576.2	584.86	581.05	584.92	0.000343	2.43	894.5	1826.08	0.16
1	4626	0.2%_Cur	1450	576.2	585.56	581.47	585.61	0.000255	2.23	1314.56	1897.04	0.14
1	4626	10%_Proj	875	576.2	583.92	580.35	584	0.000512	2.68	572.06	1325.86	0.19
1	4626	2%_Proj	1150	576.2	584.77	580.95	584.82	0.000347	2.42	861.56	1804.49	0.16
1	4626	1%_Proj	1258	576.2	585.02	581.16	585.08	0.000323	2.39	949.54	1856.13	0.16
1	4626	0.2%_Proj	1522	576.2	585.7	581.59	585.74	0.000247	2.22	1408.65	1898.92	0.14
1	4601	10%_Cur	824	576.1	583.62	580.18	583.81	0.000961	3.55	254.82	1314.99	0.26
1	4601	2%_Cur	1090	576.1	584.57	580.79	584.63	0.000382	2.48	910.31	1808.43	0.17
1	4601	1%_Cur	1200	576.1	584.86	581.03	584.91	0.000343	2.42	1028.67	1833.58	0.16
1	4601	0.2%_Cur	1450	576.1	585.58	581.46	585.59	0.000125	1.56	2754	1880.99	0.1
1	4601	10%_Proj	875	576.1	583.9	580.31	583.99	0.000541	2.75	631.01	1533.92	0.2
1	4601	2%_Proj	1150	576.1	584.76	580.93	584.82	0.000348	2.41	988.83	1821.62	0.16
1	4601	1%_Proj	1258	576.1	585.02	581.13	585.07	0.000322	2.38	1095.16	1843.97	0.16
1	4601	0.2%_Proj	1522	576.1	585.72	581.56	585.73	0.000121	1.55	2891.66	1885.05	0.1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	4486	10%_Cur	824	575.7	583.54	579.43	583.71	0.00076	3.34	261.79	1589.32	0.24
1	4486	2%_Cur	1090	575.7	584.54	580.04	584.59	0.000311	2.36	1031.71	1878.01	0.15
1	4486	1%_Cur	1200	575.7	584.83	580.28	584.88	0.000287	2.32	1156.4	1926.46	0.15
1	4486	0.2%_Cur	1450	575.7	585.53	580.78	585.57	0.000227	2.2	1465.39	1992.87	0.13
1	4486	10%_Proj	875	575.7	583.72	579.56	583.9	0.000775	3.44	272.21	1689.54	0.24
1	4486	2%_Proj	1150	575.7	584.73	580.17	584.78	0.000288	2.31	1114.75	1914.96	0.15
1	4486	1%_Proj	1258	575.7	584.99	580.39	585.04	0.000272	2.29	1226.56	1945.51	0.15
1	4486	0.2%_Proj	1522	575.7	585.71	580.91	585.72	0.000076	1.29	4024.86	1998.37	0.08
1	4426	10%_Cur	824	575.7	583.55	579.55	583.65	0.000553	2.85	655.75	1939.69	0.2
1	4426	2%_Cur	1090	575.7	584.5	580.17	584.57	0.000404	2.68	1068.67	2148.4	0.18
1	4426	1%_Cur	1200	575.7	584.79	580.41	584.86	0.000382	2.67	1195.95	2166.86	0.17
1	4426	0.2%_Cur	1450	575.7	585.5	580.91	585.56	0.00032	2.6	1511.79	2235.29	0.16
1	4426	10%_Proj	875	575.7	583.75	579.68	583.84	0.00052	2.82	737.89	2013.85	0.2
1	4426	2%_Proj	1150	575.7	584.69	580.32	584.76	0.00038	2.64	1153.87	2162.06	0.17
1	4426	1%_Proj	1258	575.7	584.95	580.55	585.02	0.000368	2.66	1267.75	2175.55	0.17
1	4426	0.2%_Proj	1522	575.7	585.65	581.04	585.71	0.000317	2.62	1578.86	2237.55	0.16
1	4162	10%_Cur	824	575.5	583.39	580.04	583.5	0.000634	2.86	586.46	1534.89	0.21
1	4162	2%_Cur	1090	575.5	584.38	580.63	584.46	0.000467	2.73	943.27	2087.3	0.19
1	4162	1%_Cur	1200	575.5	584.67	580.83	584.75	0.000442	2.74	1053.13	2160.35	0.19
1	4162	0.2%_Cur	1450	575.5	585.4	581.22	585.47	0.00037	2.68	1326.55	2202.55	0.17
1	4162	10%_Proj	875	575.5	583.6	580.15	583.7	0.000591	2.82	654.53	1666.41	0.21
1	4162	2%_Proj	1150	575.5	584.58	580.73	584.65	0.000439	2.7	1017.96	2139.56	0.18
1	4162	1%_Proj	1258	575.5	584.84	580.91	584.91	0.000425	2.73	1115.38	2177.88	0.18
1	4162	0.2%_Proj	1522	575.5	585.55	581.33	585.62	0.000366	2.7	1383.39	2204	0.17
1	4085	10%_Cur	824	575.5	583.31	578.71	583.45	0.000553	2.95	291.34	1848.74	0.2
1	4085	2%_Cur	1090	575.5	584.23	579.27	584.41	0.00062	3.41	345.23	2141.89	0.22
1	4085	1%_Cur	1200	575.5	584.65	579.5	584.72	0.000304	2.48	1126.07	2192.78	0.16
1	4085	0.2%_Cur	1450	575.5	585.38	579.97	585.44	0.000273	2.49	1392.93	2234.29	0.15
1	4085	10%_Proj	875	575.5	583.5	578.82	583.65	0.000566	3.04	301.81	1923.2	0.21
1	4085	2%_Proj	1150	575.5	584.41	579.4	584.6	0.000635	3.5	357.33	2179.21	0.22
1	4085	1%_Proj	1258	575.5	584.82	579.62	584.88	0.000298	2.48	1186.52	2198.37	0.15
1	4085	0.2%_Proj	1522	575.5	585.58	580.09	585.59	0.000046	1.03	5924.88	2240.32	0.06
1	3935	10%_Cur	824	575.16	583.18	579.65	583.35	0.000832	3.33	356.17	1492.51	0.25
1	3935	2%_Cur	1090	575.16	584.16	580.21	584.3	0.000655	3.29	670.53	2085.96	0.22
1	3935	1%_Cur	1200	575.16	584.52	580.44	584.65	0.000588	3.23	882.12	2210.33	0.21
1	3935	0.2%_Cur	1450	575.16	585.3	580.86	585.39	0.000407	2.88	1635.41	2395.6	0.18

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	3935	10%_Proj	875	575.16	583.38	579.75	583.54	0.000809	3.36	413.7	1694.27	0.24
1	3935	2%_Proj	1150	575.16	584.35	580.33	584.49	0.00063	3.29	755.3	2150.9	0.22
1	3935	1%_Proj	1258	575.16	584.7	580.54	584.82	0.000544	3.15	1018.08	2281.7	0.21
1	3935	0.2%_Proj	1522	575.16	585.5	580.97	585.57	0.000363	2.76	1884.61	2418.44	0.17
1	3657	10%_Cur	824	575.4	582.95	579.18	583.12	0.000793	3.29	283.81	1615.15	0.24
1	3657	2%_Cur	1090	575.4	583.93	579.78	584.11	0.000732	3.51	476.81	1846.12	0.24
1	3657	1%_Cur	1200	575.4	584.29	580.01	584.47	0.000695	3.54	563.4	1937.75	0.23
1	3657	0.2%_Cur	1450	575.4	585.17	580.45	585.27	0.000441	3.05	1617.45	2223.93	0.19
1	3657	10%_Proj	875	575.4	583.15	579.31	583.32	0.000785	3.35	318.21	1662.11	0.24
1	3657	2%_Proj	1150	575.4	584.13	579.91	584.3	0.000712	3.53	523.71	1883.68	0.24
1	3657	1%_Proj	1258	575.4	584.47	580.12	584.64	0.000684	3.57	695.97	2000.19	0.23
1	3657	0.2%_Proj	1522	575.4	585.38	580.56	585.46	0.000379	2.88	1930.21	2309.99	0.18
1	3513	10%_Cur	824	575.2	582.84		583.01	0.000773	3.25	276.93	1807.25	0.24
1	3513	2%_Cur	1090	575.2	583.79		583.99	0.000789	3.64	361.16	2056.53	0.25
1	3513	1%_Cur	1200	575.2	584.15	579.85	584.36	0.000774	3.73	590.87	2133.19	0.25
1	3513	0.2%_Cur	1450	575.2	585.11		585.21	0.000408	2.95	1868.01	2241.14	0.18
1	3513	10%_Proj	875	575.2	583.04		583.21	0.000776	3.33	291.68	1849.6	0.24
1	3513	2%_Proj	1150	575.2	583.99	579.76	584.19	0.000794	3.72	382.06	2108.57	0.25
1	3513	1%_Proj	1258	575.2	584.37		584.55	0.00068	3.57	863.93	2161.26	0.23
1	3513	0.2%_Proj	1522	575.2	585.34		585.41	0.000331	2.7	2268.05	2250.32	0.17
1	3388	10%_Cur	824	575	582.75		582.91	0.000729	3.2	283.32	1926.86	0.23
1	3388	2%_Cur	1090	575	583.7		583.9	0.00075	3.58	374.4	2058.77	0.24
1	3388	1%_Cur	1200	575	584.06		584.27	0.000752	3.71	419.29	2078.78	0.24
1	3388	0.2%_Cur	1450	575	584.92	580.06	585.13	0.000704	3.87	549.23	2115.26	0.24
1	3388	10%_Proj	875	575	582.95		583.11	0.000733	3.28	299.21	1965.64	0.23
1	3388	2%_Proj	1150	575	583.89		584.09	0.000752	3.65	397.52	2064.27	0.24
1	3388	1%_Proj	1258	575	584.24		584.45	0.000749	3.77	445.15	2085.95	0.24
1	3388	0.2%_Proj	1522	575	585.15	580.19	585.34	0.000646	3.78	1032.38	2125.97	0.23
1	3104	10%_Cur	824	574.4	582.6		582.72	0.00055	2.82	310.76	1883.72	0.2
1	3104	2%_Cur	1090	574.4	583.54		583.7	0.000583	3.2	376.56	1910.06	0.21
1	3104	1%_Cur	1200	574.4	583.9		584.07	0.000596	3.34	404.01	1946.6	0.22
1	3104	0.2%_Cur	1450	574.4	584.75		584.94	0.000579	3.55	546.43	2037.96	0.22
1	3104	10%_Proj	875	574.4	582.79		582.92	0.000556	2.9	323.73	1890.83	0.2
1	3104	2%_Proj	1150	574.4	583.73		583.89	0.000592	3.28	390.93	1916.45	0.22
1	3104	1%_Proj	1258	574.4	584.08		584.26	0.000602	3.41	419.16	1974.51	0.22
1	3104	0.2%_Proj	1522	574.4	584.97	579.65	585.17	0.000587	3.64	592.63	2069.4	0.22

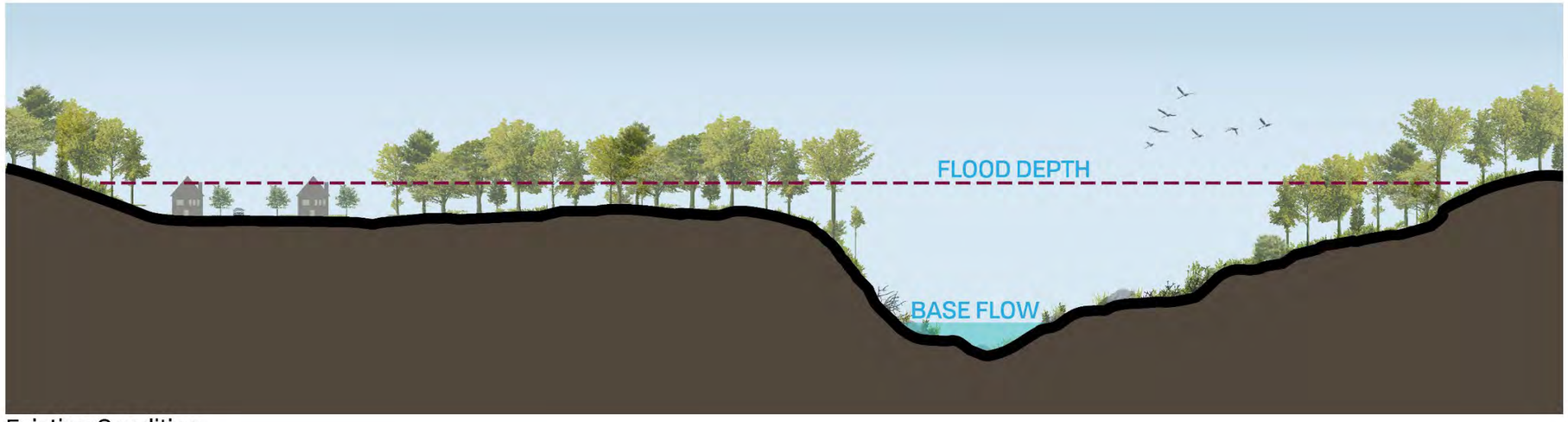
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2926	10%_Cur	824	574.9	582.47		582.61	0.000664	3	292.35	1840.71	0.22
1	2926	2%_Cur	1090	574.9	583.41		583.58	0.00069	3.38	361.29	1939.6	0.23
1	2926	1%_Cur	1200	574.9	583.76		583.95	0.000698	3.52	391.8	1999.96	0.23
1	2926	0.2%_Cur	1450	574.9	584.6	579.76	584.83	0.000706	3.82	576.39	2138.03	0.24
1	2926	10%_Proj	875	574.9	582.67		582.81	0.000667	3.08	305.4	1848.11	0.22
1	2926	2%_Proj	1150	574.9	583.6		583.78	0.000697	3.46	377.16	1981.09	0.23
1	2926	1%_Proj	1258	574.9	583.94		584.14	0.000701	3.59	408.82	2027.07	0.24
1	2926	0.2%_Proj	1522	574.9	584.88		585.06	0.000592	3.58	1106.6	2170.48	0.22
1	2799	10%_Cur	824	574.4	582.38		582.53	0.000657	3.07	289.29	1641.42	0.22
1	2799	2%_Cur	1090	574.4	583.31		583.5	0.000696	3.47	359.69	1863.08	0.23
1	2799	1%_Cur	1200	574.4	583.65		583.86	0.000731	3.68	395.39	1883.33	0.24
1	2799	0.2%_Cur	1450	574.4	584.54		584.73	0.000625	3.67	668.7	1892.19	0.23
1	2799	10%_Proj	875	574.4	582.58		582.73	0.000664	3.15	302.9	1741.74	0.22
1	2799	2%_Proj	1150	574.4	583.5		583.69	0.000706	3.56	375.12	1869.5	0.23
1	2799	1%_Proj	1258	574.4	583.84		584.05	0.000721	3.71	452.68	1884.93	0.24
1	2799	0.2%_Proj	1522	574.4	584.8		584.98	0.000589	3.64	748.61	1896.24	0.22
1	2576	10%_Cur	824	574.1	582.24		582.38	0.000657	3.1	309.76	1373.29	0.22
1	2576	2%_Cur	1090	574.1	583.17		583.34	0.000667	3.42	463.13	1523.51	0.23
1	2576	1%_Cur	1200	574.1	583.52		583.69	0.000654	3.5	543.89	1568.44	0.22
1	2576	0.2%_Cur	1450	574.1	584.43		584.59	0.000565	3.51	820.23	1638.6	0.21
1	2576	10%_Proj	875	574.1	582.43		582.58	0.000662	3.17	332.03	1406.12	0.22
1	2576	2%_Proj	1150	574.1	583.36		583.53	0.000664	3.48	504.68	1544.81	0.23
1	2576	1%_Proj	1258	574.1	583.71		583.89	0.000641	3.52	593.64	1587.83	0.22
1	2576	0.2%_Proj	1522	574.1	584.71		584.85	0.000502	3.38	1155.94	1641.26	0.2
1	2418	10%_Cur	824	574	582.09		582.27	0.000777	3.34	263.42	1177.64	0.24
1	2418	2%_Cur	1090	574	583		583.22	0.000844	3.82	319.26	1509.76	0.25
1	2418	1%_Cur	1200	574	583.32		583.57	0.00089	4.04	347.01	1564.8	0.26
1	2418	0.2%_Cur	1450	574	584.24		584.48	0.00077	4.07	567.68	1665.85	0.25
1	2418	10%_Proj	875	574	582.28		582.46	0.000789	3.44	274.41	1321.26	0.24
1	2418	2%_Proj	1150	574	583.17		583.41	0.000861	3.92	331.39	1541.03	0.26
1	2418	1%_Proj	1258	574	583.51		583.76	0.000882	4.09	389.19	1585.28	0.26
1	2418	0.2%_Proj	1522	574	584.52		584.75	0.000723	4.03	643.09	1714.46	0.24
1	2234	10%_Cur	824	573.9	581.98		582.13	0.000662	3.12	279.35	1292.55	0.22
1	2234	2%_Cur	1090	573.9	582.87		583.07	0.00073	3.58	332.64	1636.57	0.24
1	2234	1%_Cur	1200	573.9	583.19		583.41	0.000759	3.76	353.35	1668.16	0.24

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	2234	0.2%_Cur	1450	573.9	584.15		584.34	0.000617	3.68	950.68	1740.67	0.22
1	2234	10%_Proj	875	573.9	582.17		582.32	0.000674	3.21	290.04	1480.51	0.22
1	2234	2%_Proj	1150	573.9	583.05		583.25	0.000746	3.68	343.83	1654.14	0.24
1	2234	1%_Proj	1258	573.9	583.38		583.6	0.000765	3.84	365.85	1682.58	0.25
1	2234	0.2%_Proj	1522	573.9	584.47		584.61	0.000493	3.37	1316.51	1752.86	0.2
1	2044	10%_Cur	824	573.9	581.9		582.01	0.000471	2.67	322.33	1302.28	0.19
1	2044	2%_Cur	1090	573.9	582.79		582.93	0.000525	3.07	378.99	1404.03	0.2
1	2044	1%_Cur	1200	573.9	583.11		583.27	0.000548	3.23	400.43	1415.44	0.21
1	2044	0.2%_Cur	1450	573.9	584.05		584.23	0.000536	3.46	492.81	1451.9	0.21
1	2044	10%_Proj	875	573.9	582.09		582.2	0.000481	2.75	333.86	1367.64	0.19
1	2044	2%_Proj	1150	573.9	582.96		583.12	0.000538	3.16	390.61	1409.9	0.21
1	2044	1%_Proj	1258	573.9	583.29		583.46	0.000554	3.3	413.25	1421.7	0.21
1	2044	0.2%_Proj	1522	573.9	584.33		584.51	0.000525	3.5	615.26	1513.4	0.21
1	1850	10%_Cur	824	573.6	581.81		581.92	0.000476	2.71	319.12	1173.15	0.19
1	1850	2%_Cur	1090	573.6	582.68		582.83	0.000536	3.13	375.43	1420.51	0.2
1	1850	1%_Cur	1200	573.6	582.99		583.16	0.000561	3.29	396.73	1431.63	0.21
1	1850	0.2%_Cur	1450	573.6	583.94		584.12	0.000545	3.51	553.51	1466.4	0.21
1	1850	10%_Proj	875	573.6	581.99		582.11	0.000487	2.79	330.54	1325.93	0.19
1	1850	2%_Proj	1150	573.6	582.85		583.01	0.00055	3.22	386.97	1427.28	0.21
1	1850	1%_Proj	1258	573.6	583.18		583.35	0.000567	3.37	409.53	1437.66	0.21
1	1850	0.2%_Proj	1522	573.6	584.23		584.41	0.000506	3.46	715.21	1478.92	0.21
1	1647	10%_Cur	824	573.5	581.8		581.84	0.000167	1.69	500.87	1029.23	0.11
1	1647	2%_Cur	1090	573.5	582.68		582.74	0.000193	1.98	578.5	1206.99	0.13
1	1647	1%_Cur	1200	573.5	583		583.07	0.000204	2.09	607.69	1222.38	0.13
1	1647	0.2%_Cur	1450	573.5	583.96		584.03	0.000196	2.21	857.07	1260.66	0.13
1	1647	10%_Proj	875	573.5	581.99		582.03	0.000172	1.75	516.71	1146.33	0.12
1	1647	2%_Proj	1150	573.5	582.85		582.92	0.000199	2.04	594.34	1218.82	0.13
1	1647	1%_Proj	1258	573.5	583.18		583.25	0.000207	2.14	625.32	1229.86	0.13
1	1647	0.2%_Proj	1522	573.5	584.25		584.32	0.000188	2.21	957.22	1278.08	0.13
1	1529	10%_Cur	824	573.3	581.77		581.82	0.000219	1.89	454.73	881.52	0.13
1	1529	2%_Cur	1090	573.3	582.64		582.72	0.00025	2.19	530.66	1116.82	0.14
1	1529	1%_Cur	1200	573.3	582.95		583.04	0.000264	2.32	575.93	1172.41	0.15
1	1529	0.2%_Cur	1450	573.3	583.91		584	0.000245	2.41	783.83	1306.54	0.14
1	1529	10%_Proj	875	573.3	581.95		582.01	0.000225	1.95	470.18	948.9	0.13
1	1529	2%_Proj	1150	573.3	582.81		582.89	0.000257	2.26	546.51	1143.25	0.14
1	1529	1%_Proj	1258	573.3	583.14		583.23	0.000266	2.36	615.99	1209.84	0.15

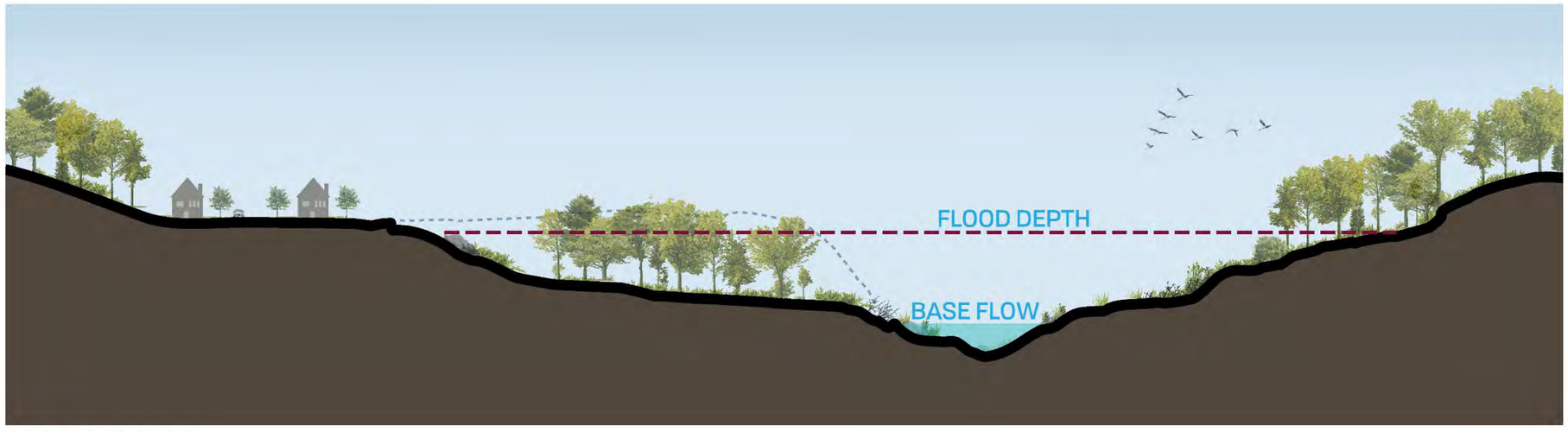
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1529	0.2%_Proj	1522	573.3	584.21		584.29	0.000236	2.42	847.98	1313.44	0.14
1	1447	10%_Cur	824	573.5	581.74	576.4	581.8	0.000241	1.94	449.6	1098.81	0.14
1	1447	2%_Cur	1090	573.5	582.62	576.9	582.69	0.000271	2.24	533.18	1287.47	0.15
1	1447	1%_Cur	1200	573.5	582.93	577.08	583.01	0.000284	2.36	568.79	1363.47	0.15
1	1447	0.2%_Cur	1450	573.5	583.89	577.48	583.98	0.000268	2.49	688.62	1580.55	0.15
1	1447	10%_Proj	875	573.5	581.93	576.5	581.99	0.000247	2	466.37	1164	0.14
1	1447	2%_Proj	1150	573.5	582.79	576.99	582.87	0.000278	2.31	551.97	1340.11	0.15
1	1447	1%_Proj	1258	573.5	583.11	577.18	583.2	0.000286	2.41	592	1420.8	0.15
1	1447	0.2%_Proj	1522	573.5	584.18	577.6	584.27	0.00026	2.51	725.17	1596.71	0.15
1	1409	10%_Cur	824	572.8	581.71	576.66	581.79	0.000298	2.27	365.37	434.3	0.15
1	1409	2%_Cur	1090	572.8	582.56	577.08	582.67	0.000353	2.67	412.13	541.7	0.17
1	1409	1%_Cur	1200	572.8	582.87	577.24	582.99	0.000376	2.83	429.18	580.28	0.18
1	1409	0.2%_Cur	1450	572.8	583.81	577.59	583.95	0.00038	3.06	483.11	814.09	0.18
1	1409	10%_Proj	875	572.8	581.89	576.75	581.97	0.000308	2.35	375.14	458.35	0.16
1	1409	2%_Proj	1150	572.8	582.73	577.17	582.85	0.000366	2.76	421.41	561.93	0.17
1	1409	1%_Proj	1258	572.8	583.05	577.32	583.18	0.000384	2.9	439.41	645.11	0.18
1	1409	0.2%_Proj	1522	572.8	584.1	577.69	584.24	0.000377	3.11	500	844.63	0.18
1	1370		Bridge									
1	1339	10%_Cur	824	572.8	581.63	576.64	581.73	0.000349	2.55	322.58	306.13	0.17
1	1339	2%_Cur	1090	572.8	582.45	577.1	582.6	0.000424	3.03	359.73	406.39	0.19
1	1339	1%_Cur	1200	572.8	582.74	577.26	582.91	0.000456	3.22	372.86	426.93	0.2
1	1339	0.2%_Cur	1450	572.8	583.67	577.65	583.86	0.000469	3.5	414.33	590.33	0.2
1	1339	10%_Proj	875	572.8	581.8	576.74	581.91	0.000363	2.65	330.44	338.88	0.17
1	1339	2%_Proj	1150	572.8	582.61	577.18	582.76	0.000442	3.13	366.89	414.31	0.19
1	1339	1%_Proj	1258	572.8	582.92	577.35	583.09	0.000467	3.3	380.74	435.28	0.2
1	1339	0.2%_Proj	1522	572.8	583.95	577.75	584.15	0.000467	3.56	427.08	638.06	0.2
1	1279	10%_Cur	824	572.6	581.63	576.21	581.69	0.00024	1.92	506.06	268.91	0.14
1	1279	2%_Cur	1090	572.6	582.47	576.73	582.54	0.000268	2.2	593.42	310.63	0.15
1	1279	1%_Cur	1200	572.6	582.76	576.93	582.84	0.00028	2.32	624.39	322.3	0.15
1	1279	0.2%_Cur	1450	572.6	583.7	577.34	583.78	0.000268	2.45	721.93	322.3	0.15
1	1279	10%_Proj	875	572.6	581.81	576.31	581.87	0.000245	1.97	524.5	277.16	0.14
1	1279	2%_Proj	1150	572.6	582.63	576.83	582.7	0.000275	2.27	610.3	317.02	0.15
1	1279	1%_Proj	1258	572.6	582.94	577.02	583.02	0.000283	2.36	642.97	322.3	0.15
1	1279	0.2%_Proj	1522	572.6	583.98	577.45	584.07	0.000262	2.48	751.87	322.3	0.15

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	1113	10%_Cur	824	572.4	581.59		581.65	0.000246	2.03	633.59	405.55	0.14
1	1113	2%_Cur	1090	572.4	582.43		582.49	0.000248	2.21	860.86	416.2	0.14
1	1113	1%_Cur	1200	572.4	582.73		582.8	0.000251	2.28	941.34	416.2	0.14
1	1113	0.2%_Cur	1450	572.4	583.67		583.74	0.000216	2.28	1196.66	416.2	0.14
1	1113	10%_Proj	875	572.4	581.77		581.83	0.000246	2.06	681.68	408.45	0.14
1	1113	2%_Proj	1150	572.4	582.59		582.66	0.00025	2.25	904.71	416.2	0.14
1	1113	1%_Proj	1258	572.4	582.91		582.98	0.000248	2.3	989.84	416.2	0.14
1	1113	0.2%_Proj	1522	572.4	583.96		584.02	0.000204	2.26	1274.99	416.2	0.13
1	938	10%_Cur	824	572.2	581.56		581.6	0.000231	1.95	819.7	377.15	0.13
1	938	2%_Cur	1090	572.2	582.4		582.45	0.000233	2.12	1035.6	385.88	0.14
1	938	1%_Cur	1200	572.2	582.7		582.75	0.000238	2.2	1113.82	392.44	0.14
1	938	0.2%_Cur	1450	572.2	583.65		583.7	0.000209	2.22	1387.53	421.03	0.13
1	938	10%_Proj	875	572.2	581.74		581.78	0.00023	1.98	864.83	378.85	0.13
1	938	2%_Proj	1150	572.2	582.56		582.61	0.000236	2.16	1078.04	388.14	0.14
1	938	1%_Proj	1258	572.2	582.88		582.93	0.000238	2.23	1162.47	399.63	0.14
1	938	0.2%_Proj	1522	572.2	583.94		583.99	0.000197	2.21	1474.16	422.44	0.13
1	537	10%_Cur	824	572.1	581.49		581.52	0.000165	1.63	1340.09	1109.52	0.11
1	537	2%_Cur	1090	572.1	582.35		582.37	0.000141	1.63	1800.49	1125.36	0.1
1	537	1%_Cur	1200	572.1	582.65		582.67	0.000136	1.64	1963.42	1131.24	0.1
1	537	0.2%_Cur	1450	572.1	583.61		583.63	0.000105	1.56	2494.02	1147.75	0.09
1	537	10%_Proj	875	572.1	581.68		581.7	0.000158	1.62	1437.63	1112.48	0.11
1	537	2%_Proj	1150	572.1	582.51		582.53	0.000138	1.64	1889.21	1128.56	0.1
1	537	1%_Proj	1258	572.1	582.83		582.85	0.000131	1.64	2062.55	1133.96	0.1
1	537	0.2%_Proj	1522	572.1	583.91		583.92	0.000097	1.53	2658.1	1149.8	0.09
1	411	10%_Cur	824	572	581.48	575.74	581.5	0.000112	1.34	1519.73	1297.51	0.09
1	411	2%_Cur	1090	572	582.34	576.27	582.35	0.000097	1.35	2073.85	1306.7	0.09
1	411	1%_Cur	1200	572	582.64	576.47	582.65	0.000094	1.36	2269.28	1306.7	0.09
1	411	0.2%_Cur	1450	572	583.6	576.88	583.62	0.000072	1.29	2897.58	1306.7	0.08
1	411	10%_Proj	875	572	581.66	575.85	581.68	0.000108	1.33	1636.67	1300.95	0.09
1	411	2%_Proj	1150	572	582.5	576.39	582.52	0.000095	1.36	2180.34	1306.7	0.09
1	411	1%_Proj	1258	572	582.82	576.57	582.84	0.00009	1.36	2387.87	1306.7	0.09
1	411	0.2%_Proj	1522	572	583.9	576.98	583.91	0.000066	1.27	3090.08	1306.7	0.07
1	152	10%_Cur	824	572	581.43		581.46	0.000192	1.78	1305.71	1040.68	0.12
1	152	2%_Cur	1090	572	582.3		582.32	0.000135	1.62	2102.99	1059.7	0.1
1	152	1%_Cur	1200	572	582.61		582.63	0.000123	1.58	2383.36	1059.7	0.1
1	152	0.2%_Cur	1450	572	583.59		583.6	0.00008	1.38	3284.72	1059.7	0.08

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	152	10%_Proj	875	572	581.61		581.65	0.000176	1.73	1474.99	1043.75	0.12
1	152	2%_Proj	1150	572	582.47		582.49	0.000128	1.6	2255.84	1059.7	0.1
1	152	1%_Proj	1258	572	582.79		582.81	0.000115	1.55	2553.73	1059.7	0.1
1	152	0.2%_Proj	1522	572	583.88		583.9	0.000071	1.33	3559.42	1059.7	0.08
1	88	10%_Cur	824	571.8	581.41		581.45	0.000195	1.86	1221.18	1005.73	0.12
1	88	2%_Cur	1090	571.8	582.29		582.32	0.000139	1.7	2057.67	1031.89	0.1
1	88	1%_Cur	1200	571.8	582.59		582.62	0.000127	1.66	2350.83	1034.91	0.1
1	88	0.2%_Cur	1450	571.8	583.58		583.59	0.000084	1.45	3307.54	1077.42	0.08
1	88	10%_Proj	875	571.8	581.6		581.63	0.000182	1.83	1398.52	1023.69	0.12
1	88	2%_Proj	1150	571.8	582.46		582.48	0.000132	1.68	2217.41	1033.5	0.1
1	88	1%_Proj	1258	571.8	582.78		582.8	0.000118	1.62	2529.5	1036.79	0.1
1	88	0.2%_Proj	1522	571.8	583.88		583.89	0.000074	1.4	3609.1	1085.8	0.08
1	43	10%_Cur	824	571.4	581.39	575.96	581.44	0.000229	2	1167.85	1090.82	0.13
1	43	2%_Cur	1090	571.4	582.28	576.57	582.31	0.000151	1.75	2093.5	1126.4	0.11
1	43	1%_Cur	1200	571.4	582.59	576.77	582.61	0.000133	1.69	2416.89	1126.4	0.1
1	43	0.2%_Cur	1450	571.4	583.58	577.28	583.59	0.000081	1.42	3453.24	1126.4	0.08
1	43	10%_Proj	875	571.4	581.58	576.08	581.62	0.000208	1.94	1363.24	1107.42	0.13
1	43	2%_Proj	1150	571.4	582.45	576.69	582.47	0.000141	1.72	2269.87	1126.4	0.11
1	43	1%_Proj	1258	571.4	582.78	576.9	582.8	0.000123	1.64	2613.25	1126.4	0.1
1	43	0.2%_Proj	1522	571.4	583.88	577.4	583.89	0.000071	1.36	3768.22	1126.4	0.08

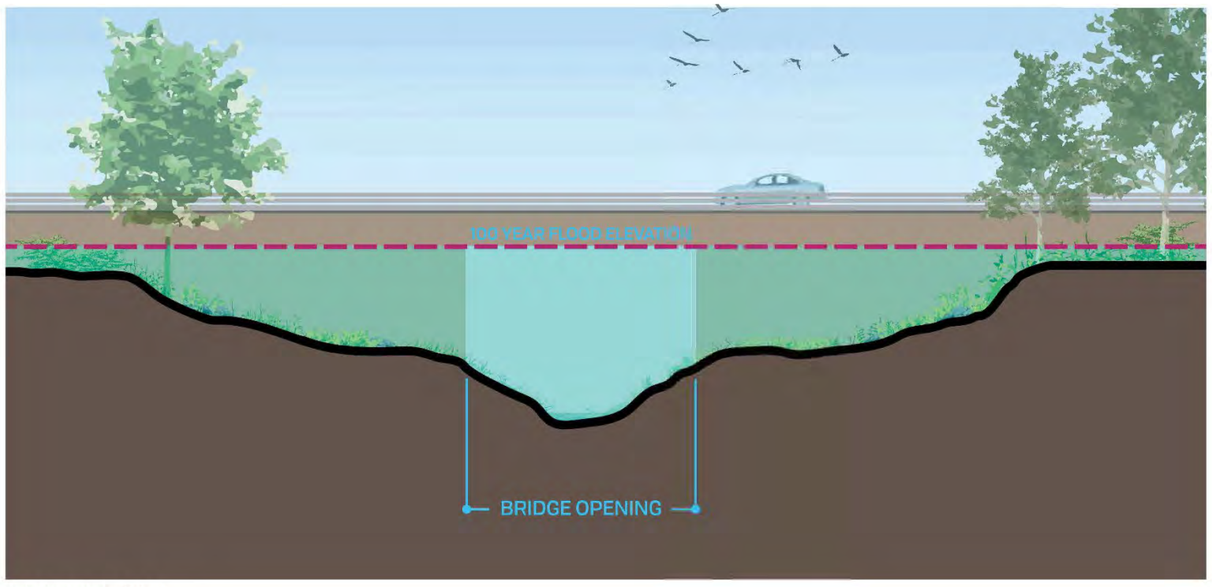


Existing Condition



Future Condition

FLOODPLAIN BENCH



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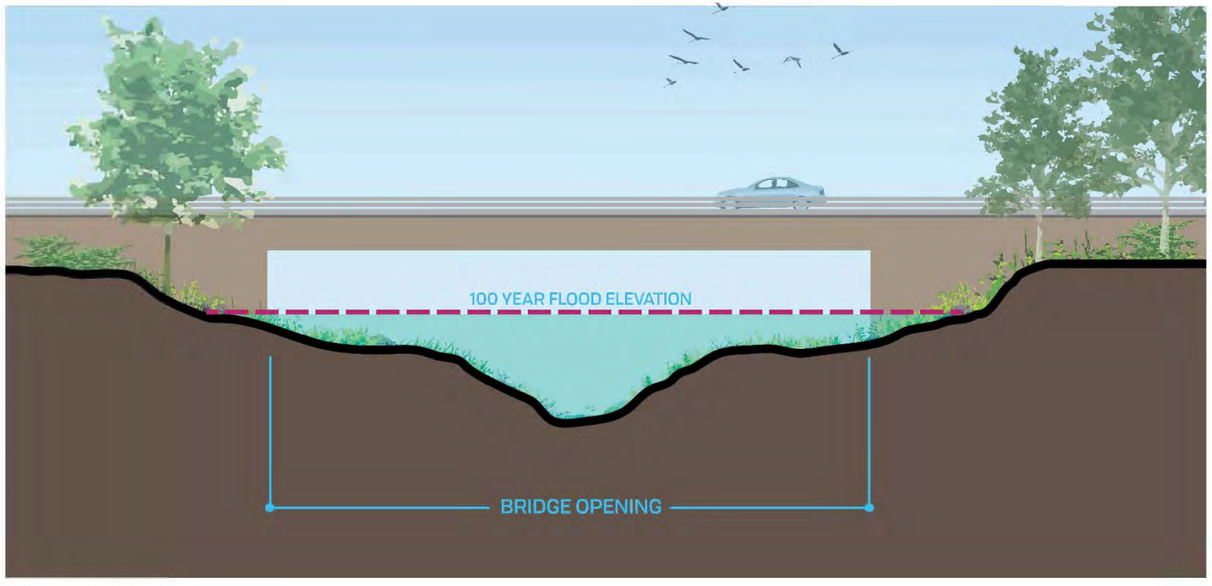
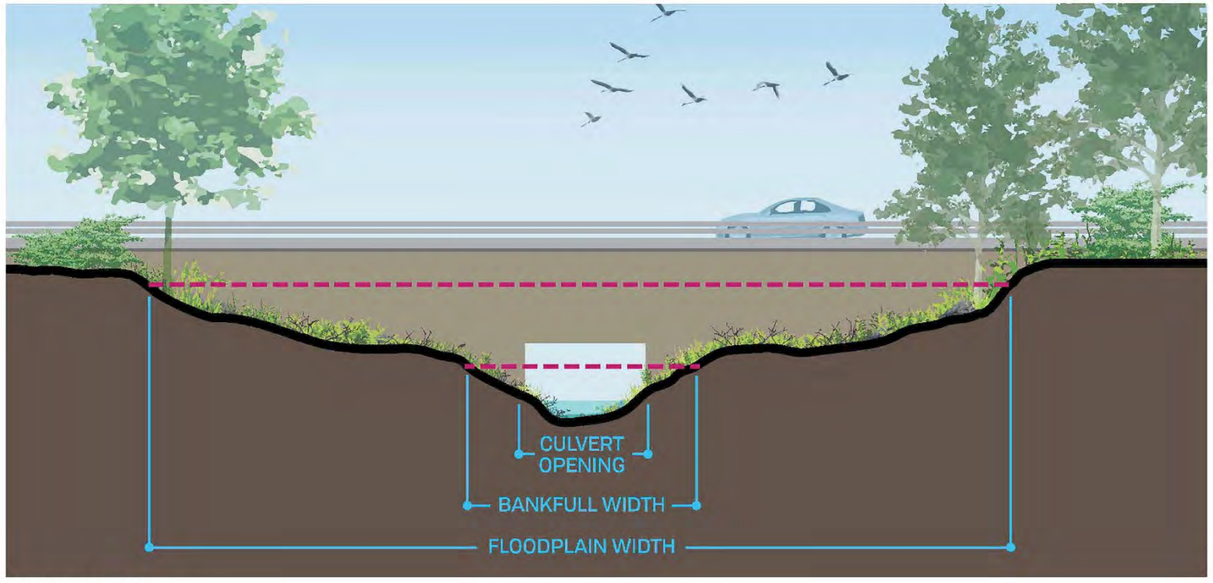


Future Condition

EXPANDED BRIDGE OPENING



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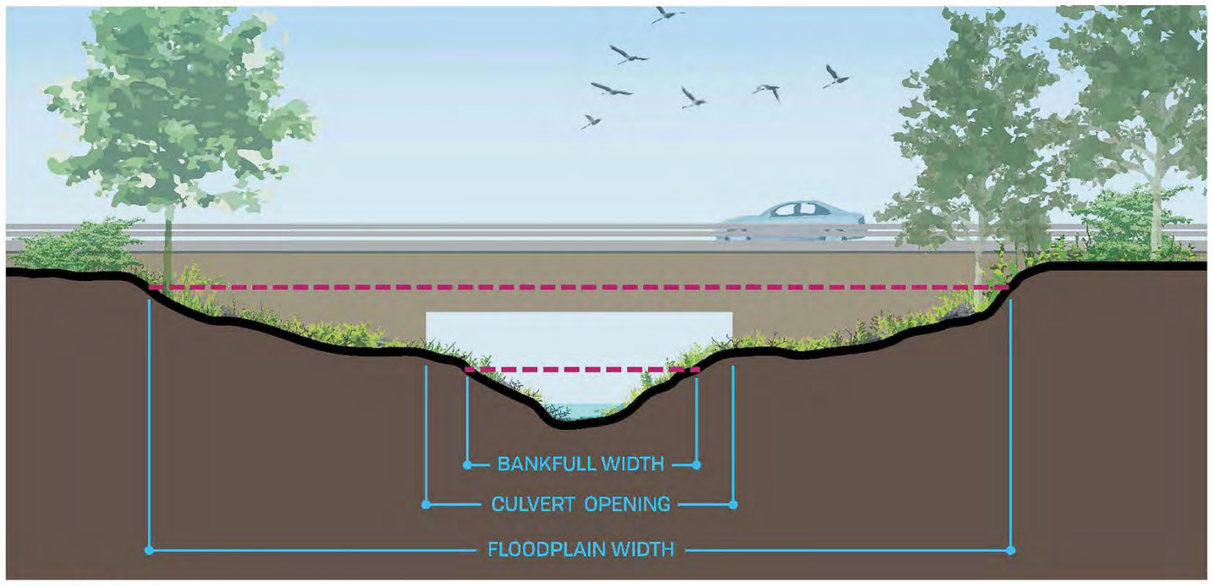
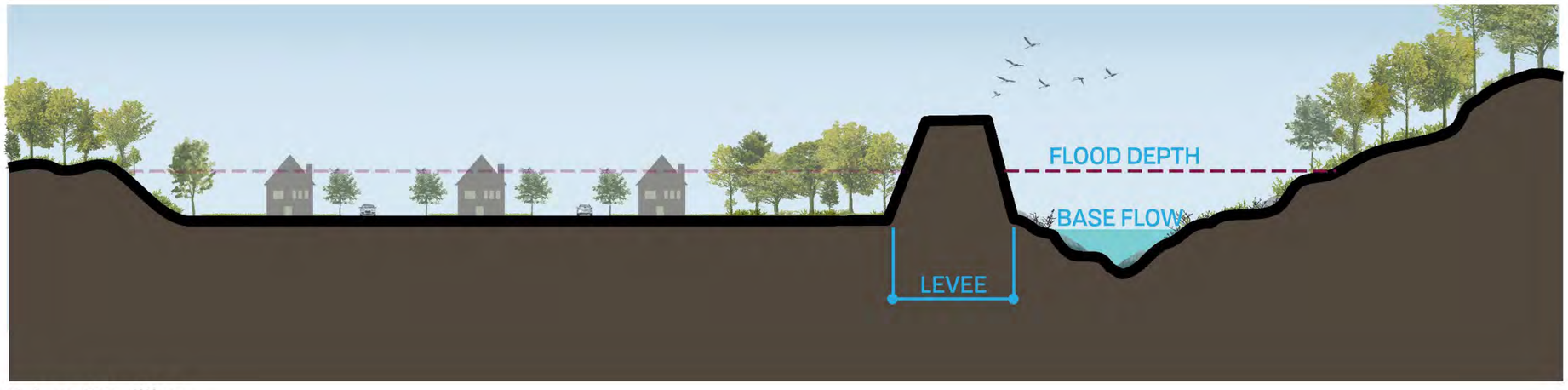


Future Condition

EXPANDED CULVERT OPENING

Existing Condition



Future Condition

PROTECTIVE LEVEE