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## PETTICOAT CREEK DIGITAL FLOODLINE MAPPING STUDY

### SUMMARY REPORT

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## 1.0 INTRODUCTION

Planning & Engineering Initiatives Ltd. (PEIL) was retained by the Toronto and Region Conservation Authority to prepare the digital floodline mapping for Petticoat Creek in Durham Region. Modelling of floodplain hydraulics is important in order to determine the Regional Storm and event storm flood elevations for the Petticoat Creek watercourse, and the TRCA is currently updating floodplain mapping to digital standards.

As indicated in the Terms of Reference, the flood elevations for Petticoat Creek will be determined from the outlet at Lake Ontario northward to the rural areas in the Region of Durham that mark the origins of the creek in the study area. In addition to determining Regional Storm flood elevations, the analysis will also consider the flood frequencies of identified structures within the floodplain (including culverts/road crossings, buildings, and structures). As per TRCA policy and provincial guidelines, flood flows are assumed to be based on future conditions as discussed further in Section 6.0. The use of future conditions flood flows and floodlines will allow Engineers, Biologists, Geomorphologists, and Planners to understand the ultimate effects on the creek system and make allowances for these flows and associated flooding depths.

The following PEIL staff members were involved in this project under the direction of **Ryan Ness, M.Sc., P.Eng.** and **Michael Heralall, B.A.Sc.** of the TRCA:

- **Andy Kroess, M.Eng., P.Eng.**, Project Manager, modelling
- **Elita Chan, B.Sc., E.I.T.**, fieldwork, modelling
- **Mike Webb, B.Sc., G.I.T.**, fieldwork
- **Emir Ceric**, drafting
- **Andrew Telford**, surveying

The project Terms of Reference are included in **Appendix A**. The draft version of the floodline mapping was peer-reviewed by the TRCA and a consultant and subsequently, the total number of map sheets was modified to ten from eleven. An additional structure (14A) on the main branch was also added following the review.

## 2.0 HYDRAULIC MODELLING BACKGROUND

The original HEC-2 based analog floodline mapping was completed for the main branch of Petticoat Creek from the outlet at Lake Ontario upstream to Taunton Road. This mapping included a total of four floodline map sheets.

The revised steady-state hydraulic modelling conducted for the main branch of Petticoat Creek and its major tributaries was completed using the HEC-RAS version 3.1.3 (Hydraulic Engineering Centre River Analysis System) model developed by the U.S. Army Corps of Engineers (May 2005). The HEC family of software is the standard tool used to calculate flood elevations throughout North America and the Province of Ontario (including areas within the TRCA watersheds) and it is therefore appropriate to apply the HEC-RAS program to the Petticoat Creek watershed. A total of ten map sheets provided by the TRCA have been updated as identified in **Figure 1**.

The model requires fairly detailed cross sections of the creek and valley areas (floodplain) in order to accurately determine flood elevations. Cross sections were constructed based on the results of field measurements, a total station GPS survey, and digital topographic data provided by the TRCA. The locations of HEC-RAS cross sections on Petticoat Creek used for the analysis are shown on **Maps 1 to 10**. Summary output sheets for all cross-sections are provided with the model output (**Appendix D**).

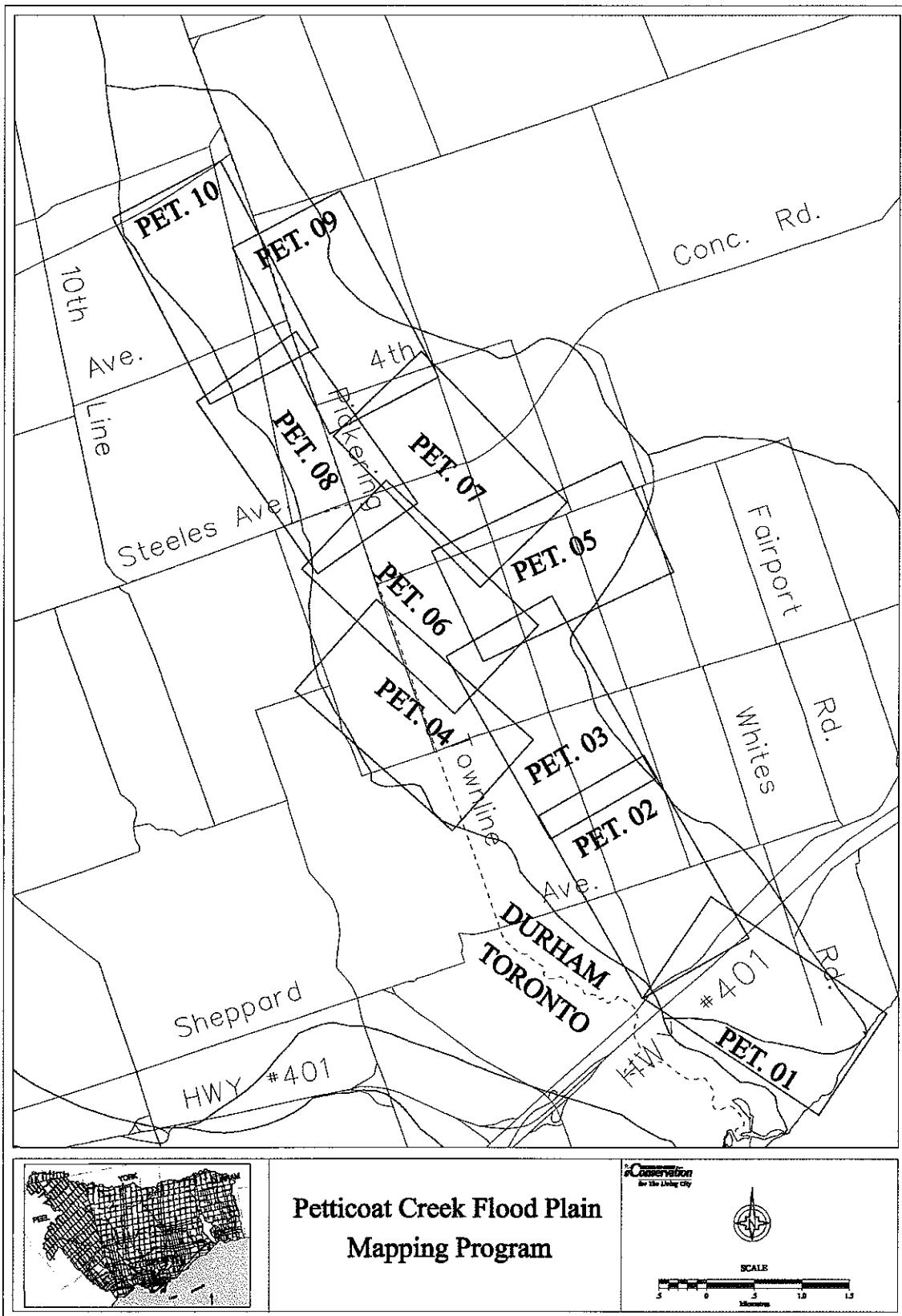


Figure 1: Study Area (adapted from TRCA)

The water surface elevation for Lake Ontario was used as the downstream boundary condition for all events. It is assumed that any fluctuations in water level in Lake Ontario will not significantly impact the floodlines for Petticoat Creek.

### **3.0 PREVIOUS HYDRAULIC MODELLING**

As noted above, the previous hydraulic modelling for the main branch of Petticoat Creek was completed using HEC-2. Although the original HEC-2 model was used as a reference, all cross-sections were newly created based on the updated topographical information available. The HEC-2 model was also used for the coding of structures where gaps existed in the drawing information and information collected during site visits.

### **4.0 FIELDWORK**

Each of the 33 structures were photographed, measured, and inventoried in the field in October to December 2004 by PEIL, and a total station GPS survey conducted in December 2004 by PEIL. In the course of the field investigations and subsequent analyses, there were no apparent discrepancies in elevations or related data from the contour layer when compared with field surveys. Therefore, we have confidence that the quality of mapping produced by PEIL meets all appropriate standards.

### **5.0 HYDRAULIC MODEL DEVELOPMENT**

#### **5.1 Model Configuration**

All branches of Petticoat Creek were modelled as one project file in HEC-RAS, making use of junctions to identify confluence locations. The model included the main branch of Petticoat Creek and nine tributary branches. This allows for the hydraulic interaction of confluences to be accurately modelled, and avoids an iterative approach that would be required if branches were modelled separately. The model is geo-referenced using the NAD83 coordinate system.

#### **5.2 Model Boundary Conditions**

The starting Lake Ontario water surface elevation used for all events as a downstream boundary condition was 75.2m. This boundary condition applies to the downstream limit of the main branch of Petticoat Creek. All tributary branches have downstream boundary conditions defined as junction nodes with their respective downstream receiving watercourses.

#### **5.3 Channel Cross-Sections**

To develop the hydraulic model, the creek and tributaries were defined by a series of cross sections to represent the form of the creek channel and floodplain for the step-backwater calculations performed by the modelling software. Cross-sections were developed along the creeks at regular, representative locations as well as at locations where significant changes to the form of the channels or floodplains occurred. Cross-sections extended across the entire floodplain and were established to be perpendicular to the estimated flow path. Cross-sections were developed primarily using TRCA digital topographic and digital elevation model (DEM) files. Total station survey and fieldwork data were used to supplement the TRCA data and provide additional detail at key locations such as hydraulic structures. The cross-sections were created using the BOSS-RMS program, and then exported to HEC-RAS.

Cross sections (river stations) were numbered based on the upstream chainage in metres for each branch. A decimal extension was added to each section to designate the subcatchment the section

is located in. The format is therefore chainage in metres followed by a decimal point followed by the catchment number. For example, river station 125.38 is located 125m from the downstream end of the reach located in subcatchment 38. Each reach starts at station zero at the downstream limit. This format allows for the chainage to contain up to five digits (tens of kilometres) as well as the subcatchment number, while remaining within the eight digit limit for HEC-RAS. The format will also guarantee a unique identification number for each cross section since the start of each reach will be located in a different subcatchment and will therefore have a different decimal extension.

#### 5.4 Channel and Floodplain Characteristics

The roughness characteristics of the channels and floodplains were determined through a combination of field reconnaissance and air photo analysis. Manning's roughness coefficients for channel and over bank areas were determined using typical values provided by the TRCA, based on vegetation patterns as seen on air photos, and observed channel bed configurations.

#### 5.5 Channel Structures

All structures, including culverts and bridges along the creeks were measured during the field survey of the study area. The survey results and field reconnaissance were used to define structure geometry and dimensions, configuration of inlet and outlet, invert elevations, slopes, and top of road and embankment profiles in the HEC-RAS model. Data sheets characterizing all of the channel structures are included in **Appendix B**. A total of 32 culverts and one bridge were defined in the modelling. Additional road deck information was obtained using a GPS topographical survey.

During the TRCA review of the draft modelling and mapping, it was determined that a structure on the main branch was not included in the original list of structures. TRCA staff subsequently conducted a field survey of the structure (Site 14A) and it was included in the final version of the modelling.

#### 5.6 Lateral Structures

Two spill locations on Finch Avenue from tributary 4 and tributary 7 were modelled as lateral structures in the model. The lateral structure function available in HEC-RAS was utilized to model the two spill locations (with the optimization routine selected). Abstracted flows were coded to re-enter the model at the first river station downstream of Finch Avenue. This allows for accurate flows for the modelling of the confluence locations, while still allowing spill flows to re-enter the model further downstream. Several other minor spill locations in the modelling were not considered to be significant, and are identified on the floodplain mapping.

### 6.0 HYDROLOGY

Calibrated peak flows from the recently completed hydrologic modelling were provided by the TRCA. Flow interpolation results are provided in **Appendix C**, and are based on a maximum 10 percent flow change between any two river stations (weighted based on distance). The hydrology used in the HEC-RAS model is based on the 'future ultimate' scenario for the event storms (2 through 100 year) and the 'future committed' scenario for the Regional storm.

### 7.0 MODELLING RESULTS

Flow profiles were calculated in HEC-RAS for the 2 through 100-year design storm events and the Regional Storm using flows determined in the hydrologic analysis provided by the TRCA. The hydrological modelling scenario used to determine flood flows for floodline mapping does not include embankment storage. Results for the 2, 5, 10, 25, 50 and 100 year events and for the Regional

storm event are presented in tabular form in **Appendix D**.

After the HEC-RAS model was de-bugged, final modelling results were used to generate floodlines for the main branch of Petticoat and the nine defined tributaries. Floodlines were generated using the BOSS-RMS program based on output imported from HEC-RAS. The generated floodline was then exported to the digital map sheets.

### 7.1 Previous Model Comparison

The cross sections of the current modelling have been compared to those created in the previous HEC-2 modelling as shown in **Appendix E**. A total of three comparisons have been completed for each of the four old map sheets.

Since the updated modelling was prepared with new cross sections from updated topographical information, the new and old cross section locations and stations will not coincide. Therefore, new and old cross sections have been selected that closely line up along the creek and have similar cross-section shapes. Additionally, the original HEC-2 sections were coded left to right looking upstream which is the opposite of the revised cross-sections. Therefore, HEC-2 stationing has been reversed left to right and creek centrelines were adjusted to match HEC-RAS stationing format. In general, the new and old sections compared favourably.

Revised HEC-RAS floodline elevations have been compared to HEC-2 floodline elevations, and in most cases floodlines have increased in elevation. New cross-sections near crossing locations have been selected to that coincide as closely as possible with HEC-2 cross sections. This will allow for a meaningful comparison in floodline elevations.

In all cases, increases in flood elevations were a result of the higher peak flows associated with the updated HEC-RAS modelling. Decreases in flood elevations can be attributed to larger structures installed since the previous modelling. However, it should be noted that these changes may also be attributable to changes in modelling algorithms between HEC-2 and HEC-RAS, differences in cross section locations, and differences in Manning's 'n' values. **Table 1** summarizes the changes in floodline elevations at key locations throughout the watercourse.

**Table 1: HEC-RAS vs. HEC-2 Flood Elevations**

Location	Sheet Number	Cross-Section Numbers	Flood Level Change	Description
1. Petticoat Conservation Area (u/s)	Old: 1 New: 1	Old: 3.12 New: 673.38	Old= 83.68m New= 83.81m $\Delta$ = 0.13m	Flow increase from 148.4 m <sup>3</sup> /s to 188.83 m <sup>3</sup> /s.
2. CN Railway Crossing (u/s)	Old: 1 New: 1	Old: 3.22 New: 1242.35	Old= 88.77m New= 93.76m $\Delta$ = 4.99m	Flow increase from 144.5 m <sup>3</sup> /s to 173.05 m <sup>3</sup> /s.
3. Rosebank Road (u/s)	Old: 1 New: 1	Old: 3.34 New: 2141.26	Old= 91.42m New= 93.81m $\Delta$ = 2.39m	Flow increase from 136.7 m <sup>3</sup> /s to 169.31 m <sup>3</sup> /s.
5. Highway 401 (u/s)	Old: 1 New: 2	Old: 3.39 New: 2421.26	Old= 97.61m New= 96.90m $\Delta$ = -0.71m	Flow increase from 136.7 m <sup>3</sup> /s to 169.31 m <sup>3</sup> /s. Slight drop in elevation result of new larger structure.
6. Kingston Road (u/s)	Old: 1 New: 2	Old: 3.43 New: 2699.24	Old= 98.37m New= 97.97m $\Delta$ = -0.40m	Flow increase from 132.8 m <sup>3</sup> /s to 160.98 m <sup>3</sup> /s. Slight drop in elevation results from reduced backwater impact from Hwy 401.
8. Sheppard Avenue (d/s)	Old: 2 New: 2	Old: 3.52 New: 3827.24	Old= 103.23m New= 104.34m $\Delta$ = 1.11m	Flow increase from 125.0 m <sup>3</sup> /s to 160.08 m <sup>3</sup> /s.
9. CN Rail Crossing (u/s)	Old: 2 New: 2	Old: 3.61 New: 4013.24	Old= 113.05m New= 115.68m $\Delta$ = 2.63m	Flow increase from 121.1 m <sup>3</sup> /s to 159.73 m <sup>3</sup> /s.
11. Altona Road @ Strouds (u/s)	Old: 2 New: 2	Old: 3.70 New: 4604.23	Old= 119.12m New= 119.46m $\Delta$ = 0.34m	Flow increase from 117.2 m <sup>3</sup> /s to 154.45 m <sup>3</sup> /s.
13. Altona Road @ Grove (u/s)	Old: 3 New: 3	Old: 3.89 New: 5607.23	Old= 128.20m New= 129.98m $\Delta$ = 1.78m	Flow increase from 113.2 m <sup>3</sup> /s to 154.45 m <sup>3</sup> /s.
14. Finch Avenue (u/s)	Old: 3 New: 3	Old: 3.110 New: 6711.21	Old= 137.53m New= 137.84m $\Delta$ = 0.31m	Flow increase from 105.4 m <sup>3</sup> /s to 141.88 m <sup>3</sup> /s.
15. CP Rail Crossing (u/s)	Old: 3 New: 3	Old: 1.05 New: 7234.08	Old= 142.51m New= 141.88m $\Delta$ = -0.63m	Flow increase from 48.7 m <sup>3</sup> /s to 57.07 m <sup>3</sup> /s. New CSP arch encased within old concrete box culvert.
15a. Sideroad 34 (u/s)	Old: 4 New: 6	Old: 1.39 New: 10048.06	Old= 168.02m New= 170.51m $\Delta$ = 2.49m	Flow increase from 40.1 m <sup>3</sup> /s to 43.63 m <sup>3</sup> /s.
27. Taunton Road (u/s)	Old: 4 New: 8	Old: 1.60 New: 11240.05	Old= 178.88m New= 178.79 $\Delta$ = -0.09m	Flow increase from 34.1 m <sup>3</sup> /s to 43.63 m <sup>3</sup> /s. Slight drop may be a result of differences in modelling algorithms.

## 8.0 FLOODING FREQUENCY

A summary of structures within the floodplain and their frequency of flooding are provided in **Appendix F**. Of the 34 structures modelled, five are not overtopped, 23 are overtopped during the Regulatory storm, two are overtopped during the 50 year storm, one is overtopped during the 25 year storm, and two are overtopped during the 2 year storm. Buildings in the floodplain are identified on **Maps 1 to 10**.

## 9.0 FLOODLINE MAPPING

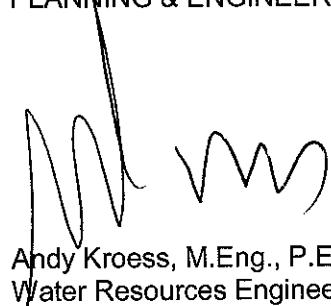
Based on the results of the HEC-RAS hydraulic model, the Regional Storm floodline elevations for Petticoat Creek have been determined using the TRCA digital topographic data. **Maps 1** through **10** delineate the Regulatory floodline for the creek and its tributaries and are included in **Appendix G**. Floodline elevations are displayed to the nearest centimeter for the Regional and 100 year storms.

## 10.0 SUMMARY

Based on the results of the updated geo-referenced HEC-RAS hydraulic model, the Regional Storm and events floodline elevations for Petticoat Creek have been determined using the TRCA digital topographic data. **Maps 1** through **10** delineate the Regional storm floodline for Petticoat Creek and its tributaries.

All of which is respectfully submitted.

PLANNING & ENGINEERING INITIATIVES LTD.



Andy Kroess, M.Eng., P.Eng.  
Water Resources Engineer

## **APPENDIX A**

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### **TERMS OF REFERENCE**

# **Request for Proposal**

**SEALED PROPOSALS**, clearly marked as to contents, will be received by the Toronto and Region Conservation Authority, 5 Shoreham Drive, Downsview, Ontario M3N 1S4 until 3:00 pm, July 22, 2004.

Proposals received after 3:00 pm will be rejected and returned to the bidder.

Requirements for:

## **Consulting Services for the Preparation of Digital Floodline Mapping for the Petticoat Creek Watershed**

All proposals are subject to the terms and conditions of the Request for Proposal and Terms of Reference.

The TRCA reserves the right to accept or reject any proposal. The TRCA also reserves the right to withdraw, at its discretion, this proposal at any time and shall not be liable for any expense, cost, loss or damage incurred or suffered by any bidder as a result of such withdrawal.

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- Appendix 2 Extent of New DTM Mapping and Existing and Proposed Map Sheets
- Appendix 3 TRCA Hydraulic Structure Inventory Sheet

## **1.0 INTRODUCTION**

The TRCA has recently undertaken a work program to convert its watershed hydraulic models from HEC-2 to HEC-RAS and to move from analog to digital floodline mapping. As part of this program, the need to update and extend the hydraulic modelling and floodline mapping for Petticoat Creek watershed.

## **2.0 PURPOSE**

The purpose of this RFP is to update and extend the floodline mapping for the Petticoat Creek watershed. This will involve the conversion of the existing HEC-2 hydraulic model to HEC-RAS, as well as the preparation of revised floodline mapping.

## **3.0 STUDY AREA**

The attached index map (Appendix A) indicates the extent of the existing floodline mapping coverage of the Petticoat Creek watershed. For reference purposes, reductions of the existing analogue map sheets to be updated are also included in the Appendix A.

New DTM mapping is currently being prepared for the entire watershed up to the 125 ha drainage area limit for all tributaries. The floodline mapping assignment requires the updating of four (4) existing sheets, and the preparation of approximately seven (7) new sheets, using the new DTM mapping. The attached study area map (Appendix B) illustrates the extent of the new mapping, as well as the coverage of the existing analogue map sheets and the preliminary proposed coverage for new map sheets.

## **4.0 STUDY APPROACH**

The major components of the project will consist of extending the hydraulic modelling to the 125 ha drainage area limit for Petticoat Creek by constructing a new georeferenced HEC-RAS model (version 3.1.1), and generating updated digital floodline mapping. For reference purposes, the existing HEC-2 model is provided on the attached disk.

## **5.0 TASKS**

The consultant will:

- 5.1 Construct a geo-referenced HEC-RAS (version 3.1.1) model representing Petticoat Creek and all tributaries up to the 125 ha drainage area limit. The existing HEC-2 model may be used as a guide for model structure and cross-section spacing but it is expected that new cross-section cut lines will be utilized in all areas to reflect the updated topography. All cross-sections are to be coded using the DTM mapping, and are to be provided at representative locations throughout each watercourse, as well as locations of changes in discharge, slope, shape or roughness, and as required for representation of hydraulic structures. Low flow channel characteristics are to be referenced/derived as required from existing information where available, and/or field measurements (see

5.2 below). Confluences are to be modelled in HEC-RAS as stream junctions using the appropriate functions. The centerline of the low flow channel at each cross-section as well as the cross-section vertices are to be geo-referenced in the HEC-RAS model using 6-degree adjustment UTM projection in NAD 83. A geo-referenced background image (air photo) of the Petticoat Creek watershed is also to be incorporated into the HEC-RAS model geometry file.

- 5.2 Code all hydraulic structures on the modelled watercourses based on existing HEC-2 model information, new digital mapping, and/or information to be provided by the TRCA (eg. detailed design and/or as-built drawings, detailed field survey, etc, where available). A field reconnaissance should be undertaken to confirm the information provided. It is expected that adequate as-built or other information is available to model structures appropriately. However, should data be unavailable or if field reconnaissance indicates a discrepancy between the data available and the characteristics of the existing structure, geodetic field surveys (elevations of invert, obverts, road deck, etc.) may be required. **In the proposal, the consultant should provide a separate item outlining the procedure and cost for field surveys on a per-structure basis.** TRCA Hydraulic Structure Inventory Sheets (Appendix C) are to be completed for all structures. Digital photographs are to be taken of the upstream and downstream face of each structure as well as of the upstream and downstream channel from the roadway. Note that there are approximately 30 structures within the anticipated coverage of the new HEC-RAS model, of which approximately 20 are included in the existing HEC-2 model.
- 5.3 Measure the watercourse channel (bottom width, top width, depth) upstream and downstream of all structures as part of field reconnaissance in areas where low flow channel data is not available. The measurements are to be used to provide low flow channel detail in the HEC-RAS model.
- 5.4 Update Manning's 'n' values at all cross-sections to represent ultimate re-vegetation potential as per TRCA standard coefficients for watershed hydraulic modelling. Note that overbank areas characterized by several 'n' values should be input separately (i.e. not weighted).
- 5.5 Input flows as per the updated flow table to be provided by the TRCA. Review all flow change locations and add additional flow points as required. Prepare a return period (i.e., 2-100 year) and Regional Storm flow point spreadsheet in Microsoft Excel format. The spreadsheet should cross-reference cross-section numbering contained in the HEC-RAS model. Interpolated flow points should be included in the spreadsheet and represented as a formula linked to provided upstream and downstream flow values. Flow change locations in the updated HEC-RAS model should be reviewed by the Consultant and revised as necessary to ensure no greater than 10% increase/decrease in flow change with the exception of tributary confluences where actual flow values have been provided. Calculations between interpolated flow points should be based on linear channel distance between cross-sections.
- 5.6 Provide the updated HEC-RAS model for Petticoat Creek and tributaries. Detailed comments should be provided at all hydraulic structures, as per TRCA standards for HEC model comment cards. Comments should include any assumptions made in respect to the modelling approach.

- 5.7 Provide draft floodline maps in both digital and paper formats. All maps should be prepared according to TRCA floodline mapping standards, and referenced using 6-degree adjustment UTM projection in NAD 83. Referenced match lines are required on all map sheets. Digital floodlines are also to be provided in NAD 27 UTM projection as a separate file. While the preference of the TRCA is that the floodlines be delivered in Microstation format (.dgn), version J, AutoCad format (.dwg) is acceptable. The TRCA title block for floodline mapping will be provided, as well as a sample digital floodline map demonstrating formatting standards.
- 5.8 Provide a summary table comparing existing and updated Regional storm flood elevations for all cross-sections, with comments describing the reasons for significant increases or decreases in flood levels (eg., flow changes, differences in base mapping, modelling approach, etc.).
- 5.9 Revise the HEC-RAS model and floodline maps based on TRCA review and comments, and provide final version of each product, as well as a project report.

## **6.0 PRODUCTS**

### **The consultant will provide:**

- 6.1 An updated geo-referenced HEC-RAS (version 3.1.1) model for the Petticoat Creek watershed extending to the 125 ha drainage area limit of Petticoat Creek and all tributary watercourses.
- 6.2 Digital and hard (paper) copies of draft and final updated floodline maps as per TRCA floodline mapping standards. Please note the final paper prints will represent the original document and so should be signed/stamped/dated by a professional engineer. (TRCA will then produce mylars from these signed originals and archive the originals.)
- 6.3 Summary tables as noted above.
- 6.4 A project report outlining details of the work, summarizing findings, documenting all assumptions/revisions and including all summary tables and Hydraulic Structure Inventory Sheets. The report and appended material are to be provided in digital (Corel WordPerfect or Microsoft Word) and hard (paper) formats.
- 6.5 Photographs of structures from field reconnaissance (as described above) in digital format.

## **7.0 MEETINGS:**

The consultant will attend the following meetings with TRCA staff:

- i) one start-up meeting;

- ii) one meeting to review draft revised floodlines (work should be staged to allow for interim reviews)

## **8.0 INFORMATION TO BE PROVIDED BY TRCA**

- 8.1 Paper prints of existing analog maps.
- 8.2 Existing HEC-2 models.
- 8.3 Detailed design and/or as-built drawings of hydraulic structures (where available) and digital photos/inventory forms (where available).
- 8.4 Digital base mapping for the subject area, including digitized cross-section locations where available.
- 8.5 An updated flow table in Microsoft Excel format reflecting the results of current hydrologic modelling.
- 8.6 Digital orthophotos, Standard Manning's Roughness Coefficients for TRCA Watershed Hydraulic Modelling table to assist with Manning's 'n' update, and TRCA Standards for HEC Model Comment Cards.
- 8.7 TRCA Floodline Mapping title block and sample floodline map.

**Please note:** The Consultant will be provided with base topographic and planimetric data which is under an existing data sharing agreement and will be expected to sign an agreement stating that the data provided will be used solely for the purposes of this assignment.

## **9.0 PROPOSED SCHEDULE**

June 30, 2004	Proposal call out
July 22, 2004	Proposals due
August 6, 2004	TRCA Executive Committee approval
October 15, 2004	Complete Draft Product
<b>November 26, 2004</b>	<b>Final Product</b>

## **10.0 CONSULTANT SELECTION PROCESS**

A short list of Consultants has been prepared, based upon their previous involvement in similar projects and general expertise in this field. Consultants are invited to submit a proposal (maximum of six (6) pages, excluding CVs, company information, etc.) which will provide the

basis for selection of the successful candidate. If the information provided in the proposals is not sufficient to make a decision, then the TRCA will arrange for interviews with the candidates.

## **11.0 GENERAL**

- 11.1 The Consultant will be required to assume responsibility for all services offered in its proposal regardless of whether or not the consultant performs them in-house. The consultant will be fully responsible for adherence by sub-consultants to all provisions of the contract. The consultant will be the sole point of contact for contractual matters, including payment of any or all charges resulting from the contract.
- 11.2 All consultants will be informed of the response to this proposal call.
- 11.3 All proposals submitted in response to this request will become the property of the TRCA.
- 11.4 The successful bidder will be expected to commence work on this project immediately following receipt of formal notification of the award.

## **12.0 PROPOSAL REQUIREMENTS**

Proposal documents should contain the following information:

- Consultant's understanding of the assignment and relevant previous experience;
- proposed approach and methodology for the assignment including:
  - i) an assessment of any anticipated difficulties and the proposed approach / solution(s);
  - ii) coordination of this project's planning with input to be provided by agency staff.
- proposed schedule and work plan;
- qualifications and applicable skills of project team members;
- fee breakdown including estimated person hours and charge-out rates for team members by project component and estimated disbursements;
- qualifications of individual team members

## **13.0 TERMS AND CONDITIONS**

- 13.1 The TRCA reserves the right to accept or reject any or all of the proposals submitted in response to this request for proposal and to award the work to other than the lowest bidder. The undertaking of this project is subject to Authority approval.
- 13.2 The consultant will be expected to enter into a standard agreement with the TRCA pertaining to the products expected and the total upset cost of the work.

13.3 The TRCA will not bear any cost involved in the preparation or submission of proposals received as a result of this request.

#### **14.0 PROPOSAL DEADLINE**

Proposals must be received by the Toronto and Region Conservation Authority, 5 Shoreham Drive, Downsview, Ontario, M3N 1S4. Four copies of the proposal are to be delivered by 3:00 pm, **July 22, 2004** to:

Ryan Ness, P.Eng.  
Coordinator, Water Management  
The Toronto and Region Conservation Authority  
5 Shoreham Drive  
Downsview, Ontario  
M3N 1S4

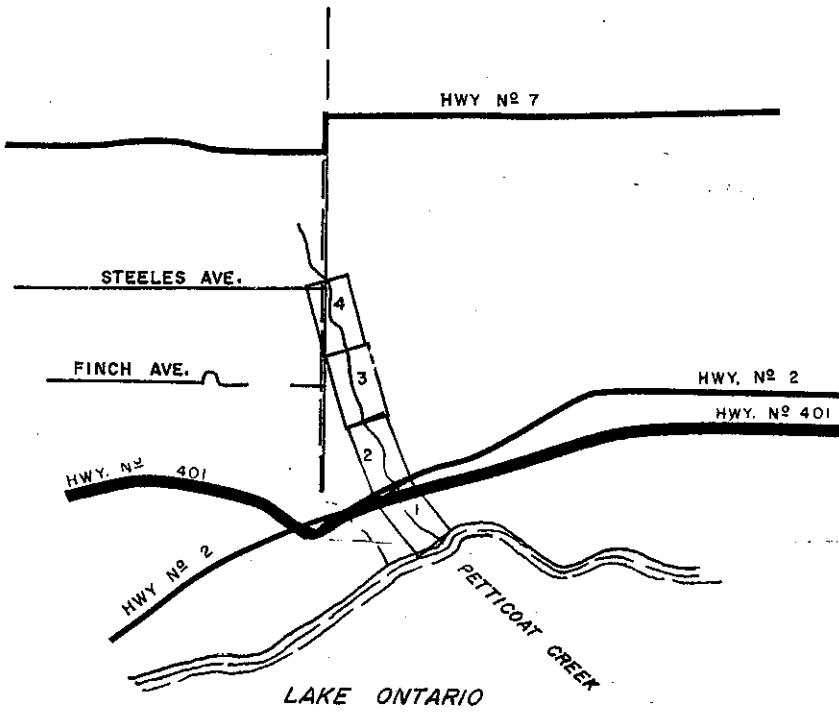
All technical inquiries should be directed to the attention of Ryan Ness at the TRCA, (416) 661-6600 ext. 5615.

#### **15.0 UPSET LIMIT**

An upset limit of **\$18,000** (excluding GST) has been established for the cost of consultant services. Should costs exceed this limit, some elements of the project may be deleted. The upset limit shall not be exceeded without prior written approval from the TRCA. **Note that the upset limit does not include the cost for field surveys of structures, which should be included in the proposal as a separate cost item.**

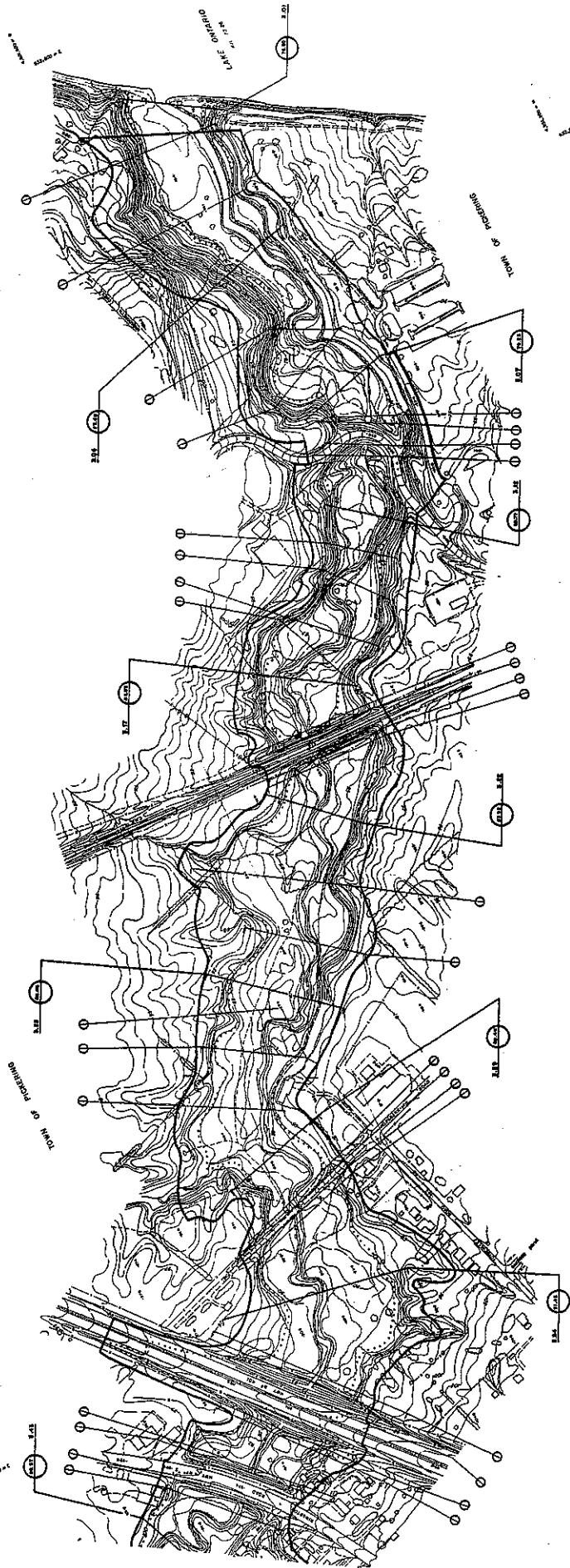
# **Appendix A**

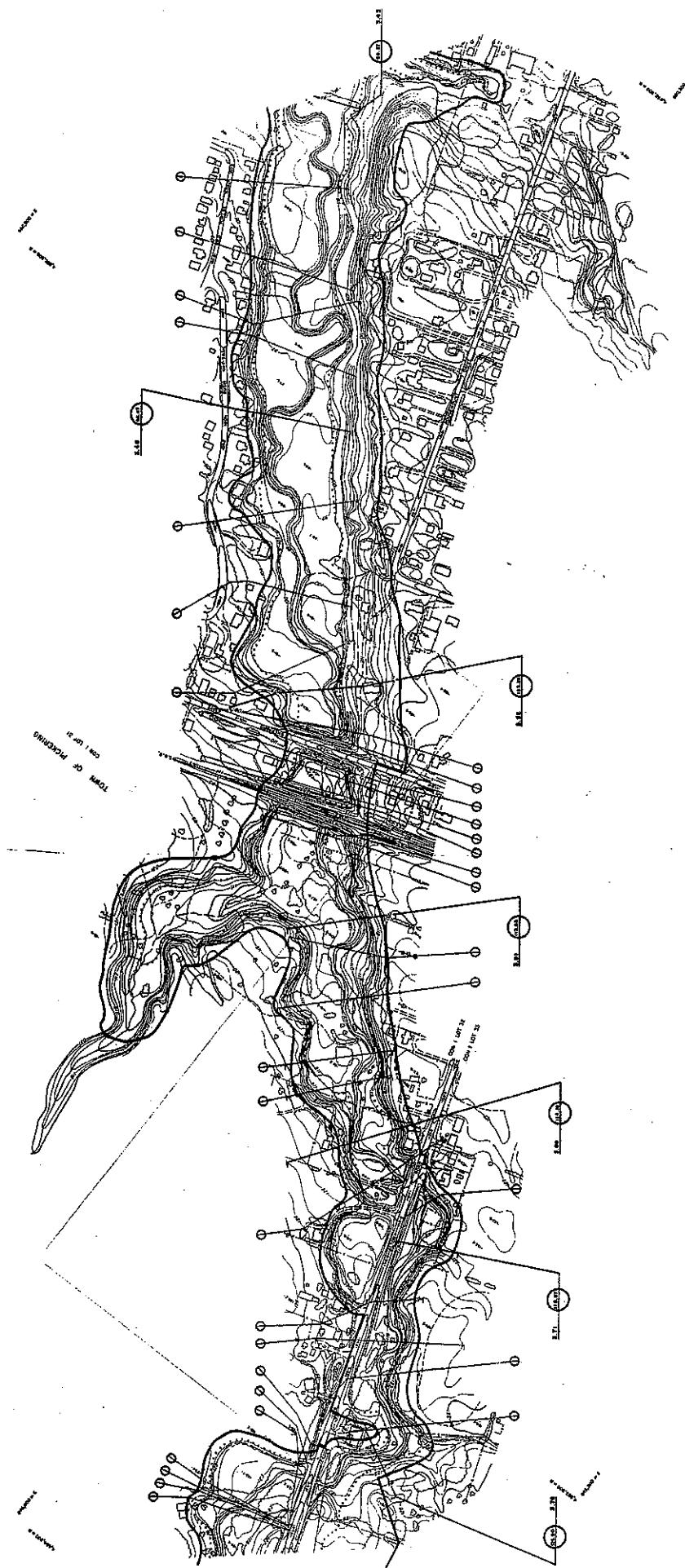
## **Floodplain Mapping Index and Original Analog Floodline Mapping**

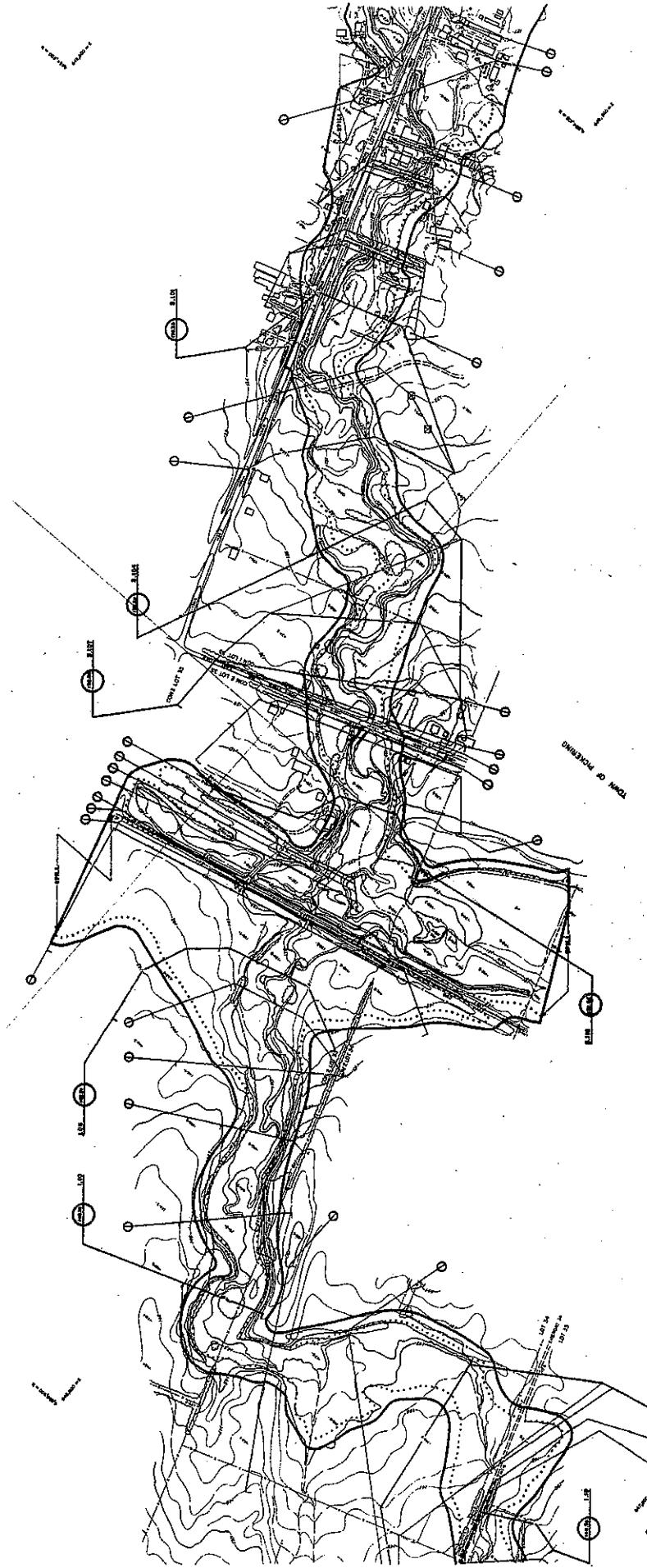


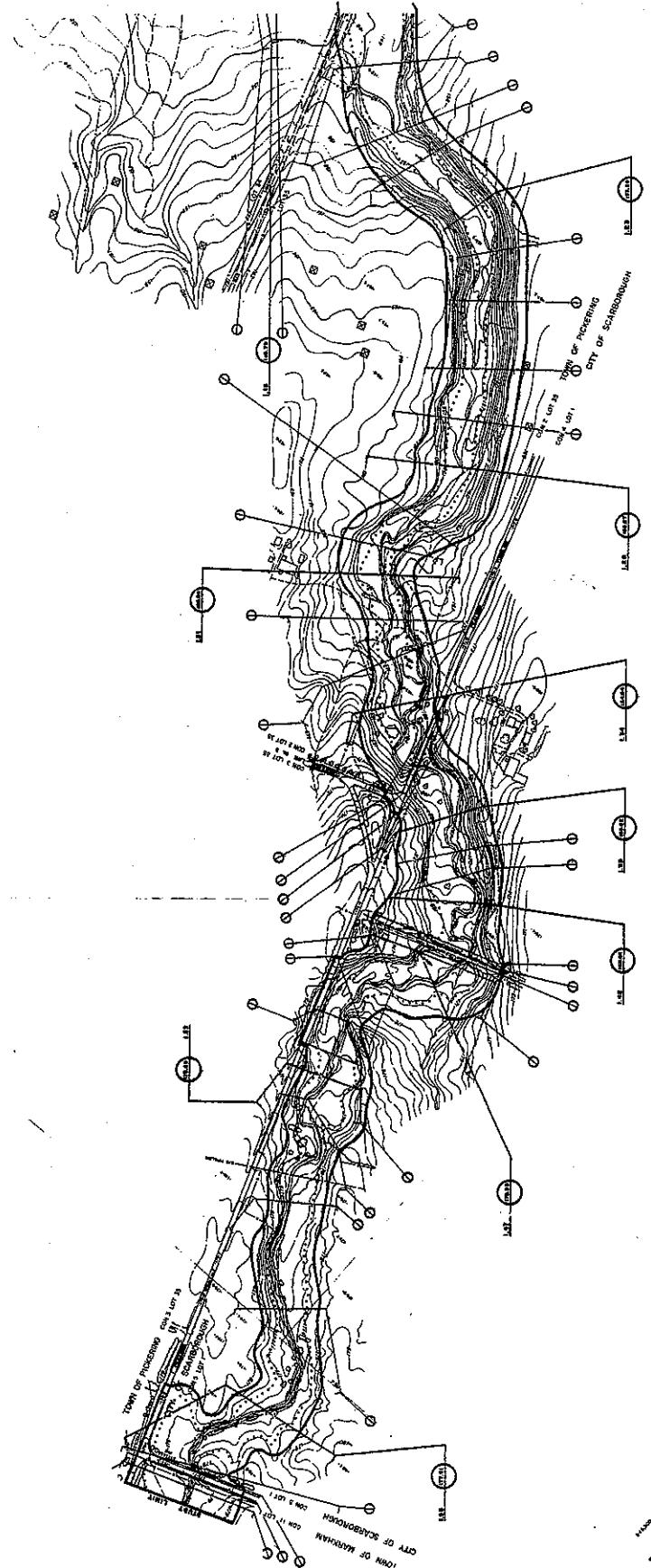
### PETTICOAT CREEK

REVISIONS SHEET NO. 201	INDEX : 1/2000 SCALE MAP SHEETS FLOOD PLAIN AND FILL REGULATION LINE MAPPING	the metropolitan toronto and region conservation authority • Etobicoke, Ontario, Ontario K2B 1G2
ONTARIO REGULATION No. _____ SCHEDULE No. _____		



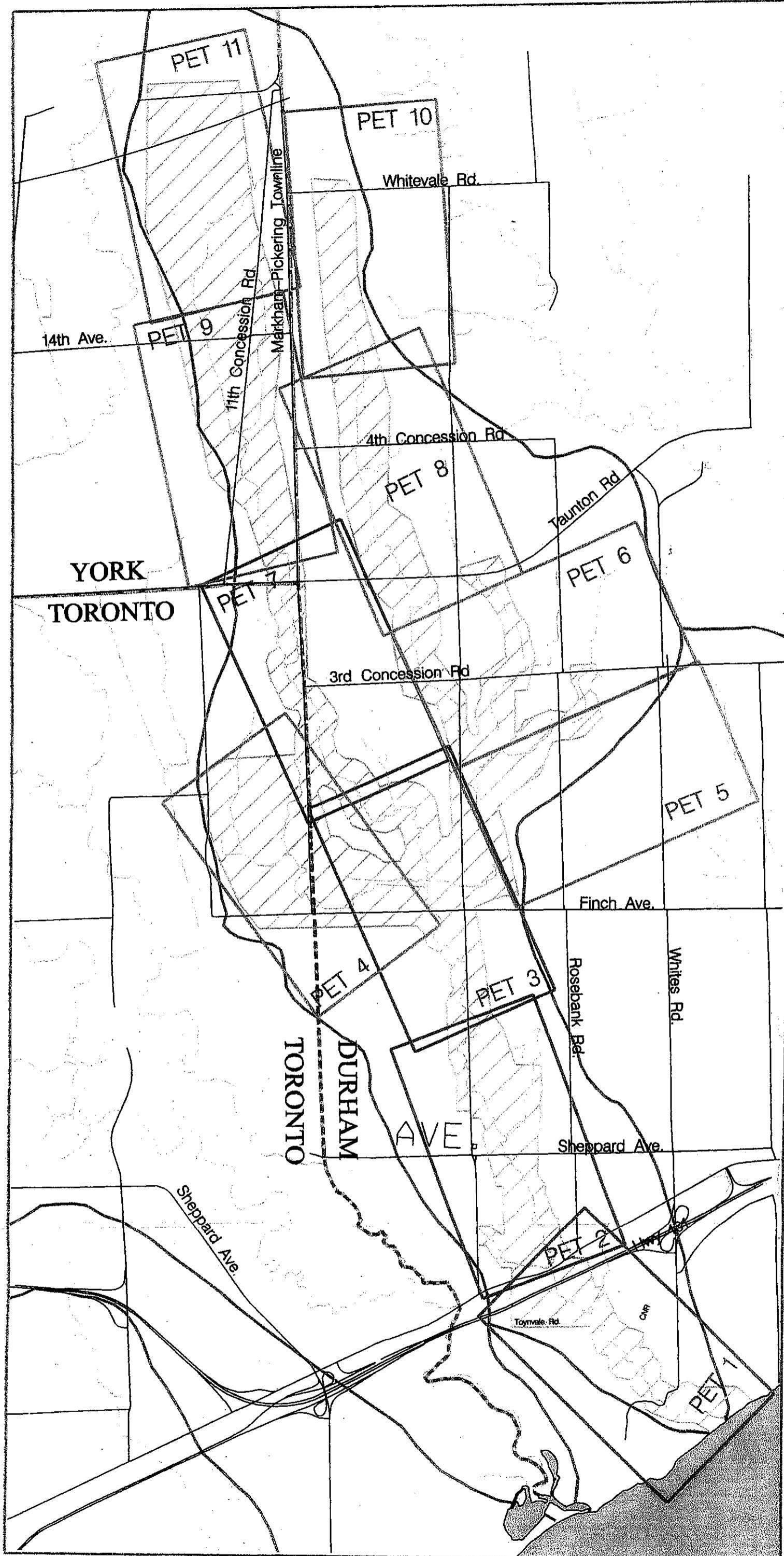






# **Appendix B**

**Extent of New DTM Mapping and Existing  
and Proposed Map Sheets**



# **Appendix C**

## **Hydraulic Structure Inventory Sheet**

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	Structure Type (Culvert/Bridge):			Flow Present (Y/N):	
Field Crew:	Number of Cells:	Open Footing (Yes/No):		Approx. Depth (mm):	
Watershed Name:	Material (Concrete/Steel):			Approx. Velocity (m/s):	
Subcatchment Area No:	Height (m) x Width (m) or Diameter (m):			Upstream Erosion (Y/N):	
Tributary Name:	Length (m):			Downstream Erosion (Y/N):	
Floodplain Map Sheet No.:	U/S Invert Elev. (m):	U/S Obvert Elev. (m):		Additional Flow Information:	
Cross Section Range:	D/S Invert Elev. (m):	D/S Obvert Elev. (m):			
Municipality:	Inlet Type (Projecting/Mitered/Headwall):				
Location (Road Name/Intersection):	Skew Angle of Crossing (Degrees):				
	Height from Obvert to Top of Road (m):				
	Depth of Siltation (mm):				
Site Photograph and Additional Field Notes:					
Additional Field Notes:					
Site Sketch:					
Description of Photograph:					

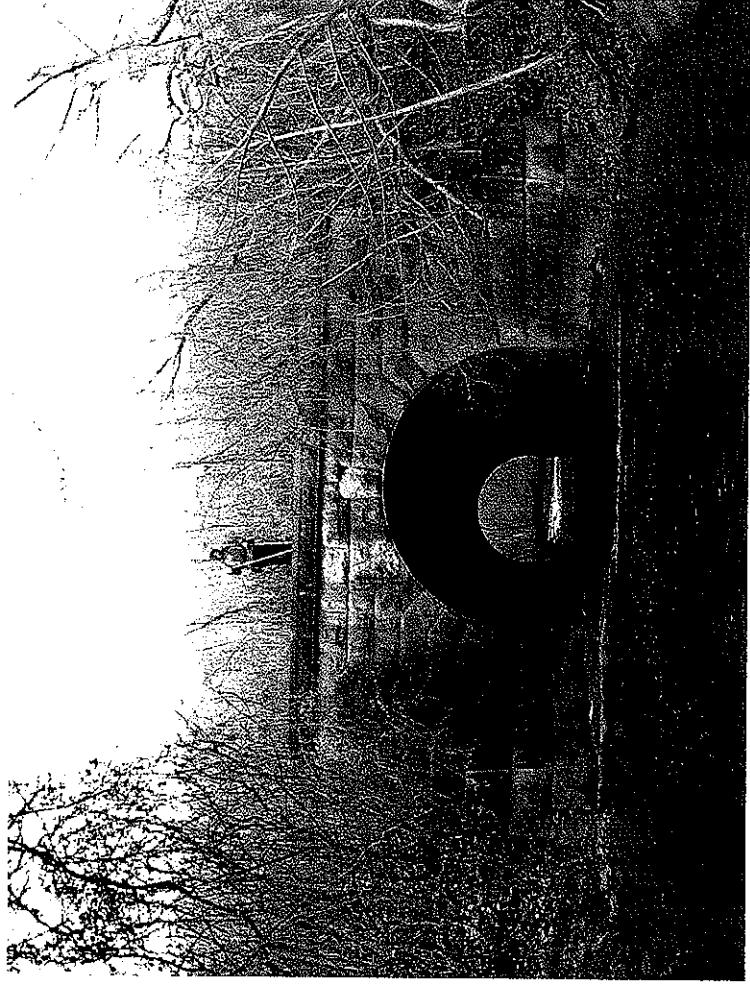
**Place Photograph Here**

## **APPENDIX B**

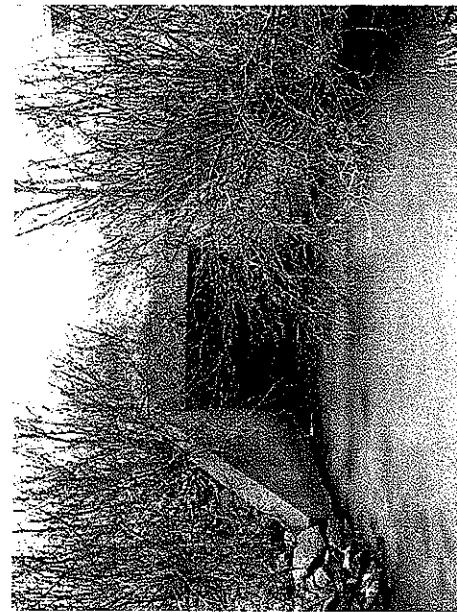
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### **STRUCTURE INVENTORY SHEETS**

HYDRAULIC STRUCTURE INVENTORY SHEET		Current Flow Information	
Watershed and Location Information		Structure Configuration and Dimensions	
Date (mm/dd/yy):	12/19/04	Structure Type (Culvert/Bridge):	Box Culvert
Field Crew:	EC, JY	Number of Cells:	1
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete
Subcatchment Area No:	38	Height (m) x Width (m) or Diameter (m):	2.8m (min) x 5.5m
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	28.8m
Floodplain Map Sheet No.:	1	U/S Invert Elev. (m):	77.35m
Cross Section Range:	640.38 to 645.38	D/S Invert Elev. (m):	80.15m
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls
Location (Road Name/Intersection):	Petticoat Creek Conservation Area (Structure 1)	Skew Angle of Crossing (Degrees):	0°
		Height from Obvert to Top of Road (m):	2.87m
		Depth of Siltation (mm):	0mm
<b>Site Photograph and Additional Field Notes</b>			
Additional Field Notes:		<ul style="list-style-type: none"> <li>- U/S channel substrate mostly gravel with cobble</li> <li>- max culvert height = 3.5m</li> </ul>	
Site Sketch:			
		Description of Photograph: Upstream inlet	

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	12/03/04	Structure Type (Culvert/Bridge): Arch Culvert		Flow Present (Y/N): Y	
Field Crew:	EC, AT	Number of Cells:	1	Open Footing (Yes/No):	No
Watershed Name:	Petticoat Creek	Material (Concrete/Steel): Concrete		Approx. Depth (mm): 100m	
Subcatchment Area No:	38	Height (m) x Width (m) or Diameter (m): 4.00m x 5.50m		Approx. Velocity (m/s): 0.3m/s	
Tributary Name:	Petticoat Creek (Main Branch)	Length (m): 33.4m		Upstream Erosion (Y/N): Y	
Floodplain Map Sheet No.: 1		US Invert Elev. (m):	81.77m	US Obvert Elev. (m):	85.77m
Cross Section Range: 1195.38 to 1237.35		DS Invert Elev. (m):	81.67m	DS Obvert Elev. (m):	85.67m
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall): Wingwalls		Additional Flow Information:	
Location (Road Name/Intersection):	CN Rail, along north border of Petticoat Creek Conservation Area (Structure 2)	Skew Angle of Crossing (Degrees): 0°		<ul style="list-style-type: none"> <li>- erosion long U/S banks</li> <li>- U/S pool depth = 0.75m</li> <li>- D/S channel banks eroding at multiple locations</li> </ul>	
		Height from Obvert to Top of Road (m): 8.19m			
		Depth of Siltation (mm): 0mm			
<b>Site Photograph and Additional Field Notes</b> <b>Additional Field Notes:</b> <ul style="list-style-type: none"> <li>- culvert bottom is concrete lined</li> <li>- U/S channel substrate: pools – stone, gravel, silt rifflies - riverstone</li> <li>- D/S channel substrate: 80% gravel/silt 20% stone</li> </ul>					
<b>Site Sketch:</b>					
<b>Description of Photograph:</b> Downstream outlet					

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	12/16/04	Structure Type (Culvert/Bridge):	Bridge		
Field Crew:	EC, AG	Number of Cells:	1	Open Footing (Yes/No):	Yes
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete (Reinforced)		
Subcatchment Area No:	26	Height (m) x Width (m) or Diameter (m):	1.25m x 12.2m		
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	10.90m		
Floodplain Map Sheet No.: 3		U/S Invert Elev. (m):	87.6m		
Cross Section Range: 1973.26 to 1986.26		D/S Invert Elev. (m):	87.6m		
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Headwall		
Location (Road Name/Intersection):	Rosebank Road and Granite Court (structure 3)	Skew Angle of Crossing (Degrees):	0°		
		Height from Obvert to Top of Road (m):	0.85m		
		Depth of Siltation (mm):	0mm		
<b>Site Photograph and Additional Field Notes</b>					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- channel substrate mostly silt and sand with some cobble</li> </ul> <p><b>Site Sketch:</b></p>					
<p><b>Description of Photograph:</b> Downstream outlet</p>					

Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information				
Date (mm/dd/yy):	12/16/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	Y			
Field Crew:	E.C, AG	Number of Cells:	1	Open Footing (Yes/No):	No			
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Depth (mm):	350mm			
Subcatchment Area No:	34	Height (m) x Width (m):	U/S: 1.829m x 1.829 m; D/S: 1.80m x 2.4m	Approx. Velocity (m/s):	0.15m/s			
Tributary Name:	Petticoat Creek (Tributary 1)	Length (m):	74.0m (U/S) + 72.9m (D/S) = 146.9m (total)	Upstream Erosion (Y/N):	Y			
Floodplain Map Sheet No.:	1	U/S Invert Elev. (m):	92.25m	U/S Overt Elev. (m):	94.08m			
Cross Section Range:	101.34 to 251.34	D/S Invert Elev. (m):	88.55m	D/S Overt Elev. (m):	90.35m			
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls					
Location (Road Name/Intersection):	Granite Cr., between Rossbank Rd and Sandstone Mn (Structure 4)	Skew Angle of Crossing (Degrees):	0°					
		Height from Overt to Top of Road (m):						
		Depth of Silication (mm):	0mm					
<b>Site Photograph and Additional Field Notes</b>								
<b>Additional Field Notes:</b>								
<ul style="list-style-type: none"> <li>- U/S channel substrate: cobbles and fines</li> <li>- D/S channel substrate: pool at outlet is fines</li> </ul>								
<b>Site Sketch:</b>								
								
								
								
<b>Description of Photograph:</b> Left - Upstream inlet; Right - Downstream outlet								

## HYDRAULIC STRUCTURE INVENTORY SHEET

### Structure Configuration and Dimensions

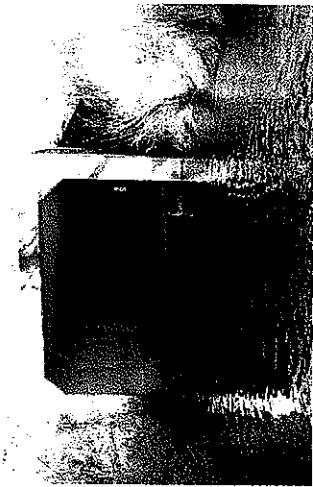
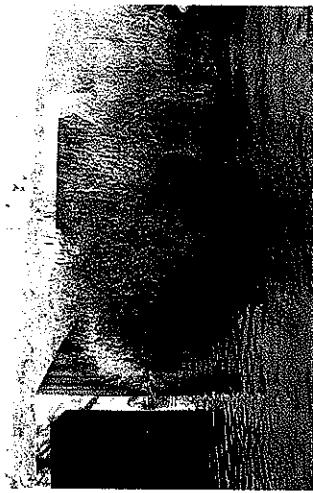
Watershed and Location Information		Structure Type (Culvert/Bridge): Box Culverts		Current Flow Information	
Date (mm/dd/yy):	12/03/04	Number of Cells:	2	Open Footing:	No.1=Y; No.1A=N
Field Crew:	EC, AT	Material (Concrete/Steel):	Concrete	Flow Present (Y/N):	Y
Watershed Name:	Petticoat Creek	Height (m) x Width (m) or Diameter (m):	No. 1 and 1A: 3.05m x 4.88m	Approx. Depth (mm):	500mm (No. 1)
Subcatchment Area No:	26	Length (m):	No. 1 = 130m (estimated from drawings); No. 1A = 128m	Approx. Velocity (m/s):	0.15m/s (No. 1)
TrIBUTARY NAME:	Petticoat Creek (Main Branch)	U/S Inv Elev:	#1=89.99m; #1A=90.14m	Upstream Erosion (Y/N):	Y
Floodplain Map Sheet No.:	1	D/S Inv Elev:	#1=89.36m; #1A=89.51m	Downstream Erosion (Y/N):	Y
Cross Section Range:	2265.26 to 2399.26	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls	Additional Flow Information:	
Municipality:	Regional Municipality of Durham	Skew Angle of Crossing (Degrees):	No. 1 = 26° ; No. 1A = 11°		
Location (Road Name/Intersection):	Hwy 401, between Rougemont Dr and Rosebank Rd (Structure 5)	Height from Obvert to Top of Road (m):	3.81m		
		Depth of Siltation (mm):			

### Site Photograph and Additional Field Notes

#### Additional Field Notes:

- Majority of flow traverses through the west culvert (Culvert No. 1)
- West culvert = Culvert No. 1
- East culvert = Culvert No. 1A (according to drawings)

#### Site Sketch:

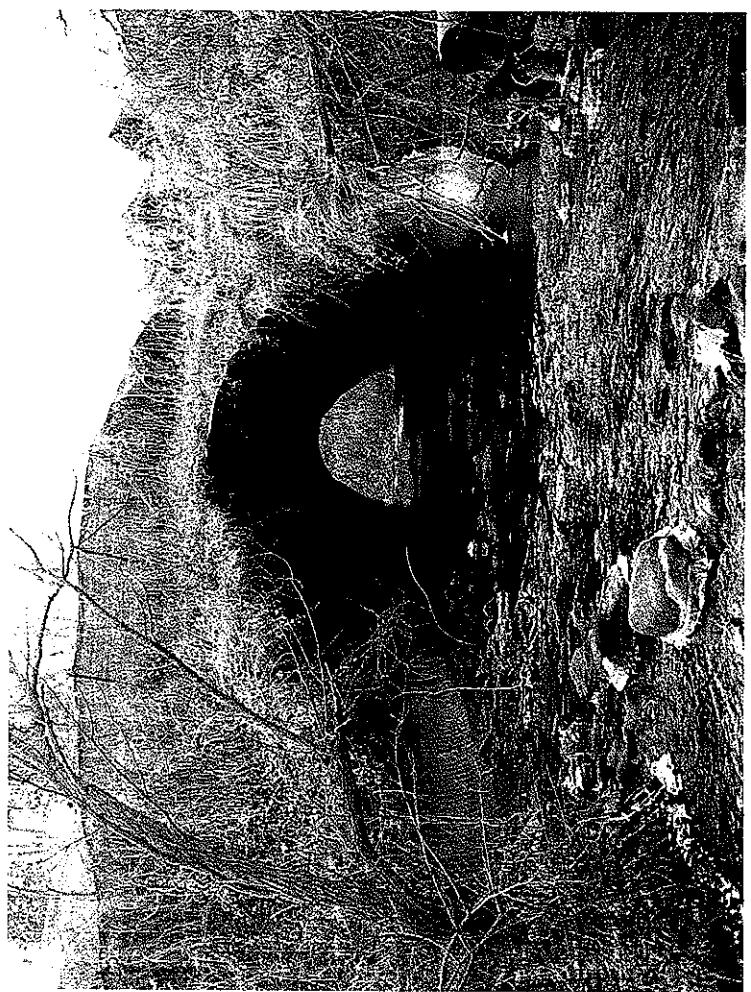


Photographs: Top - Upstream inlets ; Bottom left - No. 1 outlet ; Bottom right - No. 1A outlet (behind brush)

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	12/03/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	Y
Field Crew:	EC, AT	Number of Cells:	1	Approx. Depth (mm):	500mm
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Velocity (m/s):	0.1m/s
Subcatchment Area No:	34	Height (m) x Width (m) or Diameter (m):	2.42m x 6.15m	Upstream Erosion (Y/N):	Y
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	42.57m	Downstream Erosion (Y/N):	Y
Floodplain Map Sheet No.: 2		U/S Invert Elev. (m):	90.48m	Additional Flow Information:	
Cross Section Range: 2438.26 to 2486.24		D/S Invert Elev. (m):	90.25m		
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls		
Location (Road Name/Intersection):	Kingston Rd, between Rougemont Dr and Rosebank Rd (Structure 6)	Skew Angle of Crossing (Degrees):	0°		
		Height from Obvert to Top of Road (m):	4.13m		
		Depth of Siltation (mm):	0mm (entrance) – 650mm (exit)		
<b>Site Photograph and Additional Field Notes</b>					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- sections of U/S channel banks are being undercut</li> <li>- U/S channel substrate: mostly silt and detritus</li> <li>- D/S channel substrate: riverstone (approx. 50%), silt</li> </ul> <p><b>Site Sketch:</b></p>					
<p><b>Description of Photograph:</b> Upstream inlet</p>					

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	12/03/04.	Structure Type (Culvert/Bridge):	Circular Culvert	Flow Present (Y/N):	Y
Field Crew:	EC, AT	Number of Cells:	1	Approx. Depth (mm):	100mm
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Velocity (m/s):	0.15m/s
Subcatchment Area No:	25	Height (m) x Width (m) or Diameter (m):	U/S = 1.6m; D/S=1.5m	Upstream Erosion (Y/N):	N/A
Tributary Name:	Petticoat Creek (Tributary 2)	Length (m):	150.46m	Downstream Erosion (Y/N):	Y
Floodplain Map Sheet No.:	2	U/S Invert Elev. (m):	103.52m	Additional Flow Information:	
Cross Section Range:	249.25 to 401.25	D/S Invert Elev. (m):	99.39m	D/S Obvert Elev. (m):	100.94m
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Headwall		
Location (Road Name/Intersection):	Rougemount Dr, under Rougemount Plaza (Structure 7)	Skew Angle of Crossing (Degrees):	N/A		
		Height from Obvert to Top of Road (m):	2.4m (at Rougemount Dr)		
		Depth of Siltation (mm):	0mm		
<b>Site Photograph and Additional Field Notes</b>					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- Unable to access U/S inlet</li> <li>- a lot of undercutting of D/S channel banks</li> <li>- culvert outlet is perched</li> <li>- D/S channel substrate: detritus, silt, some stones/boulders</li> </ul> <p><b>Site Sketch:</b></p>					
<p><b>Description of Photograph:</b> Downstream outlet</p>					

Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information			
Date (mm/dd/yy):	12/02/04	Structure Type (Culvert/Bridge):	Arch Culvert	Flow Present (Y/N):	Y		
Field Crew:	EC, AT	Number of Cells:	1	Open Footing (Yes/No):	No		
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Depth (mm):	200mm		
Subcatchment Area No:	24	Height (m) x Width (m):	3.8m x 6.4m	Approx. Velocity (m/s):	0.35m/s		
TrIBUTARY NAME:	Petticoat Creek (Main Branch)	Length (m):	39.71 m	Upstream Erosion (Y/N):	Y		
Floodplain Map Sheet No.:	2	U/S Invert Elev. (m):	103.23m	Downstream Erosion (Y/N):	Y		
Cross Section Range:	389.24 to 390.124	D/S Invert Elev. (m):	102.53m	Additional Flow Information:			
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Mitered				
Location (Road Name/Intersection):		Skew Angle of Crossing (Degrees):	0°				
		Height from Obvert to Top of Road (m):	6.23m				
		Depth of Siltation (mm):	0mm				
<b>Site Photograph and Additional Notes</b>							
Additional Field Notes:							
<ul style="list-style-type: none"> <li>- bottom of culvert is concrete lined</li> <li>- U/S channel substrate: riverstone and silt</li> <li>D/S channel: banks lined with stone (refer to drawings)</li> </ul>							
Site Sketch:							
							
Description of Photograph: Upstream inlet							

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	12/16/04	Structure Type (Culvert/Bridge):	Arch Culvert	Flow Present (Y/N):	Y
Field Crew:	EC, AG	Number of Cells:	1	Open Footing (Yes/No):	No
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Depth (mm):	500mm pools
Subcatchment Area No:	23	Height (m) x Width (m) or Diameter (m):	4.1m x 5.8m	Approx. Velocity (m/s):	0.3m/s
TrIBUTARY NAME:	Petticoat Creek (Main Branch)	Length (m):	29.2m	Upstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	2	U/S Invert Elev. (m):	112.61m	Downstream Erosion (Y/N):	Y
Cross Section Range:	4556.23 to 4594.23	D/S Invert Elev. (m):	112.78m	Additional Flow Information:	
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Mitered		
Location (Road Name/Intersection):	Altona Rd at Strouds La (Structure 11)	Skew Angle of Crossing (Degrees):	25°		
		Height from Obvert to Top of Road (m):	2.69m		
		Depth of Siltation (mm):	180mm		
Site Photograph and Additional Field Notes					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- U/S inlet – sandbar along north side</li> <li>- D/S outlet – cobbles, gravel and sand across whole opening</li> <li>- This structure appears to be newer (and different) than the one shown in the 1964 design drawings</li> </ul> <p><b>Site Sketch:</b></p>					
<p><b>Description of Photograph:</b> Downstream outlet</p>					

## HYDRAULIC STRUCTURE INVENTORY SHEET

### Structure Configuration and Dimensions

Watershed and Location Information		Current Flow Information	
Date (mm/dd/yy):	12/16/04	Flow Present (Y/N):	Y
Field Crew:	EC, AG	Approx. Depth (mm):	400mm
Watershed Name:	Petticoat Creek	Approx. Velocity (m/s):	0.25m/s
Subcatchment Area No.:	23	Upstream Erosion (Y/N):	Y
Tributary Name:	Petticoat Creek (Main Branch)	Downstream Erosion (Y/N):	Y
Floodplain Map Sheet No.:	2	Additional Flow Information:	
Cross Section Range:	5140.23 to 5166.23	U/S Invert Elev. (m):	124.73m
Municipality:	Regional Municipality of Durham	D/S Invert Elev. (m):	120.63m
Location (Road Name/Intersection):	Altona Rd, between Pine Grove Av and Strouds La (Structure 12)	Inlet Type (Projecting/Mitered/Headwall):	Mitered
		Skew Angle of Crossing (Degrees):	0°
		Height from Obvert to Top of Road (m):	0.34m
		Depth of Siltation (mm):	0mm

### Site Photograph and Additional Field Notes

#### Additional Field Notes:

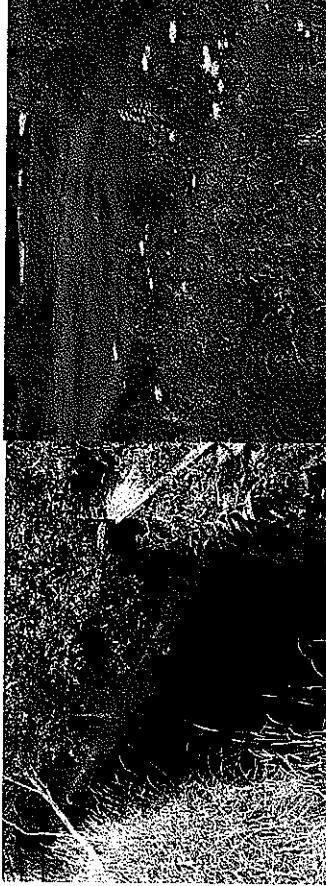
- This structure appears to be newer (and different) than the one shown in the 1964 design drawings

Site Sketch:



Description of Photograph: Left – Upstream inlet; Right – Downstream outlet

Watershed and Location Information		Structure Inventory Sheet		Current Flow Information							
		Structure Configuration and Dimensions									
Date (mm/dd/yy):	12/16/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	Y						
Field Crew:	EC, AG	Number of Cells:	3	Open Footing:	SW & NE=No; C=Yes						
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Depth (mm):	300mm						
Subcatchment Area No:	23	Height (m) x Width (m):	SW & NE=2.75mx3.05m; C=3.05mx3.05m	Approx. Velocity (m/s):	0.35m/s						
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	69m	Upstream Erosion (Y/N):	N						
Floodplain Map Sheet No.:	3	U/S Invert Elev. (m): SW=124.96m;C=124.95m;NE=124.94m.	U/S Obvert Elev. (m): SW=127.70m;C=127.32m;NE=127.36m	Downstream Erosion (Y/N):	Y						
Cross Section Range:	5432.23 to 5510.23	D/S Invert Elev. (m): SW=124.23m;C=123.84m;NE=124.20m.	D/S Obvert Elev. (m): SW=126.96m;C=127.13m;NE=126.96m	Additional Flow Information:							
Municipality:	Regional Municipality of Durham	Inlet 1 Type (Projecting/Mitered/Headwall):	Gabion Wingwalls								
Location (Road Name/Intersection):	Altona Rd at Pine Grove Av (Structure 13)	Skew Angle of Crossing (Degrees):	40°								
		Height from Obvert to Top of Road (m):	1.03m								
		Depth of Siltation (mm):	0mm								
Site Photograph and Additional Field Notes											
Additional Field Notes:											
<ul style="list-style-type: none"> <li>- The culvert has been replaced since the 1964 design drawings</li> <li>- "SW" and "NE" refer to the outside culverts. "C" refers to the culvert in the centre.</li> </ul>											
Site Sketch:											
											
											
											
<p>Description of Photograph: Left - Upstream inlet; Right - Downstream outlet</p>											

HYDRAULIC STRUCTURE INVENTORY SHEET							
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information			
Date (mm/dd/yy):	07/28/06	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	Y		
Field Crew:	RN, MH	Number of Cells:	3	Open Footing (Yes/No):	No		
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Depth (mm):			
Subcatchment Area No.:	21	Height (m) x Width (m) or Diameter (m):	1.50m x 3.50m	Approx. Velocity (m/s):			
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	19.30m	Upstream Erosion (Y/N):	N		
Floodplain Map Sheet No.:	3	U/S Invert Elev. (m):	136.05m	Downstream Erosion (Y/N):	N		
Cross Section Range:	6961.21 to 6985.21	D/S Invert Elev. (m):	135.96m	Additional Flow Information:			
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Projecting				
Location (Road Name/Intersection):		Skew Angle of Crossing (Degrees):	0°				
Abandoned Railway Line, Upstream of Finch Ave. (Structure 14A)		Height from Obvert to Top of Road (m):					
		Depth of Siltation (mm):	0mm				
<b>Site Photography and Additional Field Notes</b>							
Additional Field Notes:							
Field inventory completed by TRCA staff.							
Site Sketch:							
							
							
Description of Photograph: Top Left - Upstream inlet; Top Right - Upstream Channel; Bottom Left - Downstream outlet; Bottom Right - Downstream channel							

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	12/02/04	Structure Type (Culvert/Bridge):	Arch Culvert	Flow Present (Y/N):	Y
Field Crew:	EC, AT	Number of Cells:	1	Open Footing (Yes/No):	No
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Depth (mm):	500mm
Subcatchment Area No:	8	Height (m) x Width (m) or Diameter (m):	2.05m x 2.00m	Approx. Velocity (m/s):	0.2m/s
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	14.57m	Upstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	3	U/S Invert Elev. (m):	136.75m	Downstream Erosion (Y/N):	N
Cross Section Range:	7027.08 to 7045.08	D/S Invert Elev. (m):	136.72m	Additional Flow Information:	
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Projecting	U/S Obvert Elev. (m):	138.78m
Location (Road Name/Intersection):	CP Rail, between Scarborough-Pickering Townline and Altona Rd (Structure 15)	Skew Angle of Crossing (Degrees):	0°	D/S Obvert Elev. (m):	138.72m
		Height from Obvert to Top of Road (m):	2.86m		
		Depth of Siltation (mm):	0mm		
<b>Site Photograph and Additional Field Notes</b>					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- The arch culvert is encased within an old concrete box culvert with wingwalls</li> </ul>					
<p><b>Site Sketch:</b></p> 					
<p><b>Description of Photograph:</b> Downstream outlet</p>					

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	10/29/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	N
Field Crew:	EC, EG, NG	Number of Cells:	1	Open Footing (Yes/No):	Yes
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Depth (mm):	0mm
Subcatchment Area No:	6	Height (m) x Width (m) or Diameter (m):	1.83m x 4.88m	Approx. Velocity (m/s):	0m/s
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	17.68m	Upstream Erosion (Y/N):	Y
Floodplain Map Sheet No.:	6	U/S Invert Elev. (m):	145.61m	Downstream Erosion (Y/N):	Y
Cross Section Range:	8589.06 to 8669.06	D/S Invert Elev. (m):	145.96m	Additional Flow Information:	
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Projecting		
Location (Road Name/Intersection):		Skew Angle of Crossing (Degrees):	30°		
Sideline 34 (Structure 15A)		Height from Obvert to Top of Road (m):	0.48m		
		Depth of Siltation (mm):	0mm (south edge) to 0.6m (north edge)		
Site Photograph and Additional Field Notes					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- Large amounts of sediment within the culvert along the north side</li> </ul>					
<p><b>Site Sketch:</b></p>					
<p><b>Description of Photograph:</b> Downstream outlet</p>					

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	10/29/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	Y
Field Crew:	EC, EG, NG	Number of Cells:	1	Open Footing (Yes/No):	Yes
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Depth (mm):	300mm
Subcatchment Area No:	11	Height (m) x Width (m) or Diameter (m):	1.524m x 3.048m	Approx. Velocity (m/s):	negligible
Tributary Name:	Petticoat Creek (Tributary 7)	Length (m):	18.29m	Upstream Erosion (Y/N):	Y
Floodplain Map Sheet No.:	4	U/S Invert Elev. (m):	139.55m	Downstream Erosion (Y/N):	N
Cross Section Range:	1056.11 to 1076.11	D/S Invert Elev. (m):	139.73m	Additional Flow Information:	
Municipality:	City of Toronto	Inlet Type (Projecting/Mitered/Headwall):	Projecting		
Location (Road Name/Intersection):	Scarborough-Pickering Townline, between 3 <sup>rd</sup> Concession Rd and Finch Av E (Structure 16)	Skew Angle of Crossing (Degrees):	5°		
Site Photograph and Additional Field Notes:					
<p>Additional Field Notes:</p> <p>Site Sketch:</p>					
Description of Photograph: Downstream outlet					

## HYDRAULIC STRUCTURE INVENTORY SHEET

### Structure Configuration and Dimensions

Watershed and Location Information		Current Flow Information	
Date (mm/dd/yy):	12/02/04	Flow Present (Y/N):	Y
Field Crew:	EC, AT	Approx. Depth (mm):	650mm (D/S pool)
Watershed Name:	Petticoat Creek	Approx. Velocity (m/s):	0m/s
Subcatchment Area No:	11	Upstream Erosion (Y/N):	Y
Tributary Name:	Petticoat Creek (Tributary 7)	Downstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	4	Additional Flow Information:	
Cross Section Range:	1464.11 to 1480.11	Depth in U/S pool = 750mm	
Municipality:	City of Toronto	D/S Invert Elev. (m):	140.18m
Location (Road Name/Intersection):	CP Rail, between Beare Rd and Scarborough-Pickering Townline (Structure 17)	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls
		Skew Angle of Crossing (Degrees):	0°
		Height from Obvert to Top of Road (m):	3.2m
		Depth of Siltation (mm):	unable to determine

### Site Photograph and Additional Field Notes

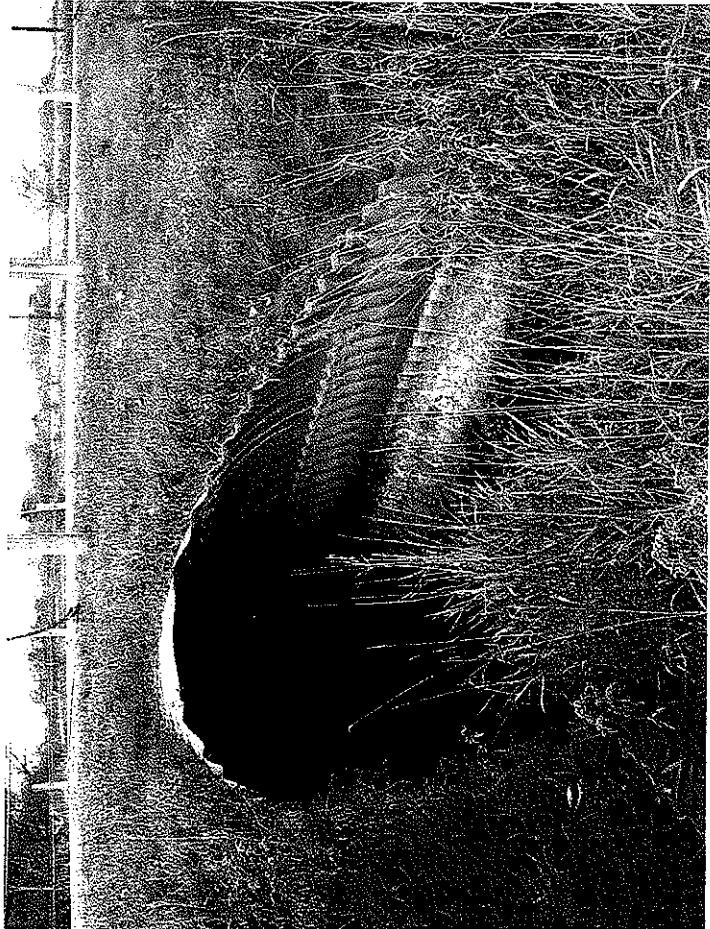
#### Additional Field Notes:

- A log, approximately 3m within the culvert at the upstream end, is lodged and creating backwater
- The upstream area is a designated "Sensitive Nature Reserve" and marsh

#### Site Sketch:



Description of Photograph: Left – Downstream outlet; Right – Upstream inlet

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	10/29/04	Structure Type (Culvert/Bridge):	Arch Culvert	Flow Present (Y/N):	N
Field Crew:	EC, EG, NG	Number of Cells:	1	Open Footing (Y/N/No):	N
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Depth (mm):	0mm
Subcatchment Area No:	20	Height (m) x Width (m) or Diameter (m):	2.9m x 4.12m	Approx. Velocity (m/s):	0m/s
Tributary Name:	Petticoat Creek (Tributary 4)	Length (m):	23.79m	Upstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	3	U/S Invert Elev. (m):	138.46m	Downstream Erosion (Y/N):	N
Cross Section Range:	316.20 to 338.20	D/S Invert Elev. (m):	138.30m	Additional Flow Information:	
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Mitered		
Location (Road Name/Intersection):	Altona Rd, between 3 <sup>rd</sup> Concession Rd and Finch Ave (Structure 18)	Skew Angle of Crossing (Degrees):	0°		
		Height from Obvert to Top of Road (m):	0.75m		
		Depth of Siltation (mm):	200mm		
<b>Site Photograph and Additional Field Notes:</b>					
<p><b>Site Sketch:</b></p> <p>Additional Field Notes:</p> <p>Description of Photograph: Upstream inlet</p>					

## HYDRAULIC STRUCTURE INVENTORY SHEET

### Structure Configuration and Dimensions

#### Watershed and Location Information

Date (mm/dd/yy):	10/29/04	Structure Type (Culvert/Bridge):	Box Culvert	Current Flow Information:
Field Crew:	EC, EG, NG	Number of Cells:	1	Open Footing (Yes/No): N
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Flow Present (Y/N): N
Subcatchment Area No:	20	Height (m) x Width (m) or Diameter (m):	1.5m (min) x 3.1m	Approx. Depth (mm): 0mm
Tributary Name:	Petticoat Creek (Tributary 4)	Length (m):	6m	Approx. Velocity (m/s): 0m/s
Floodplain Map Sheet No.:	3	U/S Invert Elev. (m):	139.73m*	Upstream Erosion (Y/N): N
Cross Section Range:	535.20 to 545.20	D/S Invert Elev. (m):	139.73m*	Downstream Erosion (Y/N): N
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls	Additional Flow Information:
Location (Road Name/Intersection):	CP Rail, between Altona Rd and Rosebank Rd (Structure 19)	Skew Angle of Crossing (Degrees):	0°	
		Height from Obvert to Top of Road (m):	1.15m	
		Depth of Siltation (mm):	0mm	

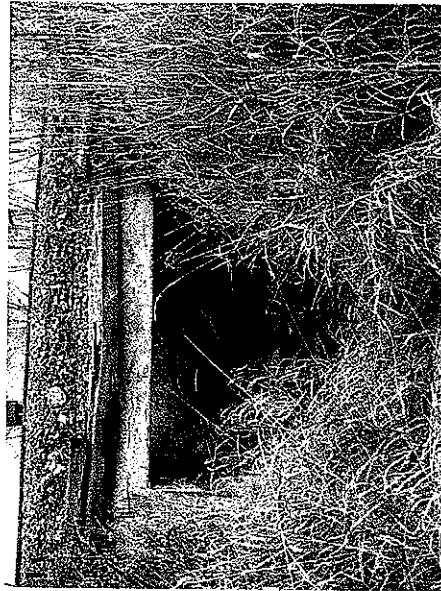
#### Site Photograph and Additional Field Notes

##### Additional Field Notes:

- Culvert bottom is parabolic (Height = 1.84m max)

\* Invert elevations do not account for the parabolic shape

##### Site Sketch:



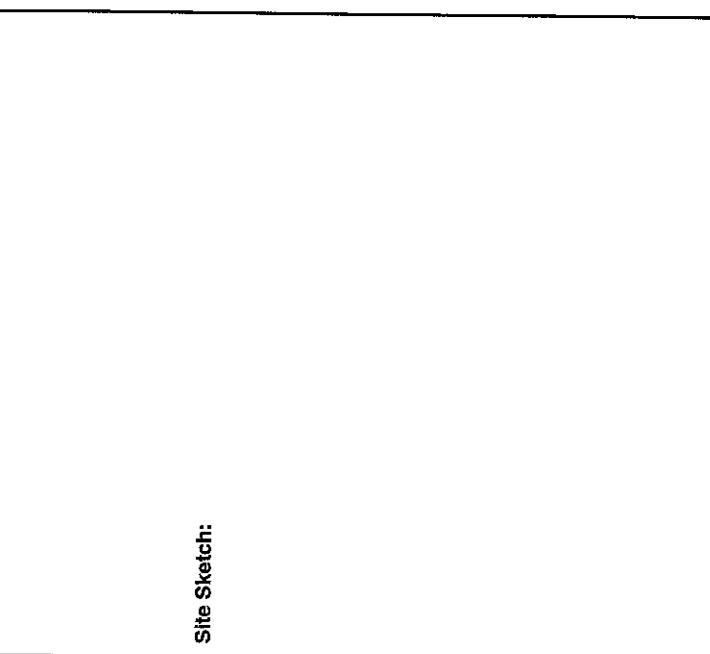
Description of Photograph: Left - Upstream inlet; Right - Downstream outlet

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	10/29/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	N
Field Crew:	EC, EG, NG	Number of Cells:	1	Approx. Depth (mm):	0mm
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Velocity (m/s):	0m/s
Subcatchment Area No:	13	Height (m) x Width (m) or Diameter (m):	1.52m (min) x 4.88m	Upstream Erosion (Y/N):	N
Tributary Name:	Petticoat Creek (Tributary 4)	Length (m):	25.62m	Downstream Erosion (Y/N):	N
Floodplain Map Sheet No.: 5		US Invert Elev. (m):	143.65m	Additional Flow Information:	
Cross Section Range: 1690.13 to 1722.13		Dis Invert Elev. (m):	143.56m	Dis Obvert Elev. (m):	145.08m
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls		
Location (Road Name/Intersection):	Altona Rd, between 3 <sup>rd</sup> Concession Rd and Finch Ave (Structure 20)	Skew Angle of Crossing (Degrees):	0°		
		Height from Obvert to Top of Road (m):	1.08m		
		Depth of Siltation (mm):	500mm (max)		
<b>Site Photograph and Additional Field Notes</b>					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- Depth of silt varies from 50cm along the north edge of the culvert to 8cm along the south edge</li> </ul>					
				Site Sketch:	
<p>Description of Photograph: Upstream inlet</p>					

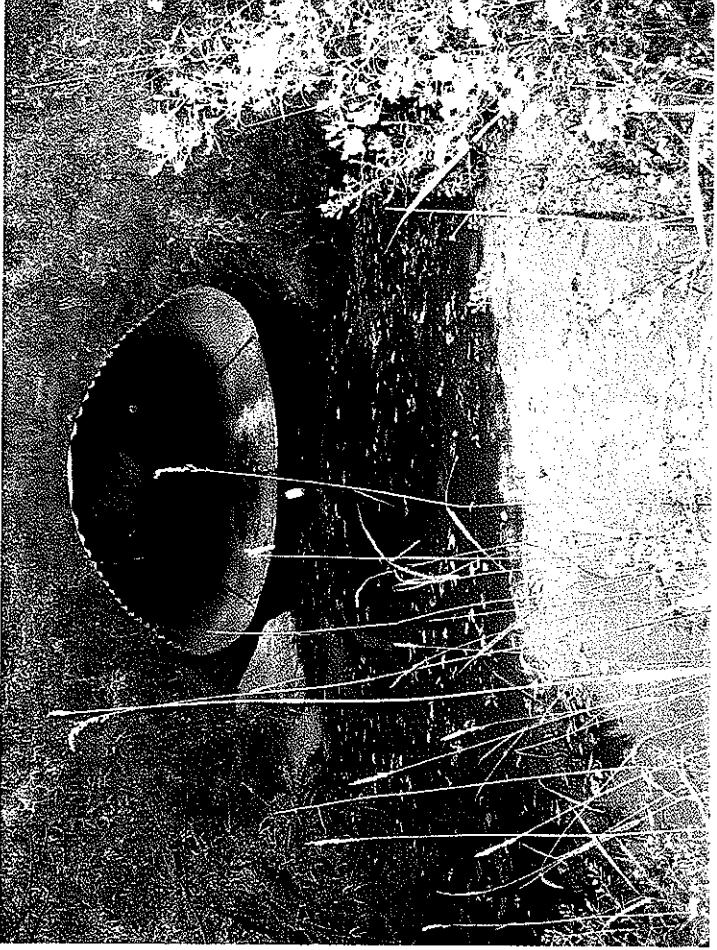
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	9/02/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	N (isolated pools)
Field Crew:	EC, MW	Number of Cells:	1	Approx. Depth (mm):	100mm pool
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Velocity (m/s):	0m/s
Subcatchment Area No:	18	Height (m) x Width (m) or Diameter (m):	1.5m x 3.2m	Upstream Erosion (Y/N):	N
Tributary Name:	Petticoat Creek (Tributary 6)	Length (m):	7.6m	Downstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	5	U/S Invert Elev. (m):	153.08m	Additional Flow Information:	
Cross Section Range:	677.18 to 687.18	D/S Invert Elev. (m):	153.08m		
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Headwall		
Location (Road Name/Intersection):	Rosebank Rd, between 3 <sup>rd</sup> Concession Rd and Finch Ave (Structure 21)	Skew Angle of Crossing (Degrees):	15°		
		Height from Obvert to Top of Road (m):	0.47m		
		Depth of Siltation (mm):	0mm		
<b>Site Photograph and Additional Notes</b>					
Additional Field Notes:		<ul style="list-style-type: none"> <li>- Channel bed is armoured at inlet and outlet</li> <li>- Concrete is degrading with exposed rebar</li> </ul>			
Site Sketch:					
		Description of Photograph: Upstream inlet			

Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	9/02/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	N (isolated pools)
Field Crew:	EC, MW	Number of Cells:	1	Approx. Depth (mm):	370mm pool
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Velocity (m/s):	0m/s
Subcatchment Area No:	18	Height (m) x Width (m) or Diameter (m):	0.93m x 1.83m	Upstream Erosion (Y/N):	N
Tributary Name:	Petticoat Creek (Tributary 6)	Length (m):	12.15m	Downstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	7	U/S Invert Elev. (m):	154.66m	Additional Flow Information:	
Cross Section Range:	1361.17 to 1375.17	D/S Invert Elev. (m):	154.98m		
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Mitered		
Location (Road Name/Intersection):	3rd Concession Rd, between Rosebank Rd and Whites Rd (Structure 22)	Skew Angle of Crossing (Degrees):	45°		
		Height from Obvert to Top of Road (m):	0.55m		
		Depth of Siltation (mm):	0mm		
<b>Site Photograph and Additional Field Notes</b>		 			
Additional Field Notes:		<ul style="list-style-type: none"> <li>- Culvert height measurement (0.93m) is taken from the top of the footing to invert</li> <li>- The U/S invert elevation is the surveyed bottom of channel at the inlet</li> </ul>			
Site Sketch:					
		Description of Photograph: Downstream outlet			

HYDRAULIC STRUCTURE INVENTORY SHEET			
Structure Configuration and Dimensions			
		Current Flow Information	
Date (mm/dd/yy):	9/02/04	Flow Present (Y/N):	N
Field Crew: EC, MW		Approx. Depth (mm):	0mm
Watershed Name: Petticoat Creek		Approx. Velocity (m/s):	0m/s
Subcatchment Area No: 17		Upstream Erosion (Y/N):	N
Tributary Name: Petticoat Creek (Tributary 5)		Downstream Erosion (Y/N):	Y
Floodplain Map Sheet No.: 5		Additional Flow Information:	
Cross Section Range: 1330.18 to 1392.16	U/S Invert Elev. (m): 154.05m	D/S Invert Elev. (m):	154.92m
Municipality: Regional Municipality of Durham	D/S Invert Elev. (m): 154.10m	Inlet Type (Projecting/Mitered/Headwall):	Headwall (aluminium)
Location (Road Name/Intersection): 3 <sup>rd</sup> Concession Rd, between Altona Rd and Rosebank Rd (Structure 23)	Skew Angle of Crossing (Degrees): 25°	Height from Obvert to Top of Road (m): 0.71m	
	Depth of Silting (mm): 0mm		
Site Photograph and Additional Field Notes			
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- Downstream channel bed armoured' with rip rap</li> </ul>			
<p><b>Site Sketch:</b></p>			
<p><b>Description of Photograph:</b> Downstream outlet</p>			

Watershed and Location Information		Hydraulic Structure Inventory Sheet		Current Flow Information
		Structure Configuration and Dimensions		
Date (mm/dd/yy):	10/29/04	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N): Y
Field Crew:	EC, EG, NG	Number of Cells:	1	Approx. Depth (mm): 20mm
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Velocity (m/s): 0.3m/s
Subcatchment Area No:	13	Height (m) x Width (m) or Diameter (m):	1.54m x 3.67m	Upstream Erosion (Y/N): N
Tributary Name:	Petticoat Creek (Tributary 4)	Length (m):	15.9m	Downstream Erosion (Y/N): N
Floodplain Map Sheet No.:	5	U/S Invert Elev. (m):	147.21m	Additional Flow Information:
Cross Section Range:	2174.13 to 2205.13	D/S Invert Elev. (m):	146.98m	
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Projecting	
Location (Road Name/Intersection):		Skew Angle of Crossing (Degrees):	0°	
		Height from Obvert to Top of Road (m):	0.26m	
		Depth of Siltation (mm):	350mm	
<b>Site Photograph and Additional Field Notes</b>				
Additional Field Notes:		<p>Site Sketch:</p> 		
Description of Photograph: Upstream inlet				

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	10/29/04.	Structure Type (Culvert/Bridge):	Box Culvert	Flow Present (Y/N):	N (isolate pools)
Field Crew:	EC, EG, NG	Number of Cells:	1	Approx. Depth (mm):	0mm
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Concrete	Approx. Velocity (m/s):	0m/s
Subcatchment Area No:	13	Height (m) x Width (m) or Diameter (m):	1.77m x 2.45m	Upstream Erosion (Y/N):	Y
Tributary Name:	Petticoat Creek (Tributary 4)	Length (m):	10.1m	Downstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	5	U/S Invert Elev. (m):	155.12m	Additional Flow Information:	
Cross Section Range:	2690.13 to 2700.13	D/S Invert Elev. (m):	155.35m	U/S Obvert Elev. (m):	156.72m
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Wingwalls	D/S Obvert Elev. (m):	156.72m
Location (Road Name/Intersection):	3rd Concession Rd, between Sideline 34 and Altona Rd (Structure 25)	Skew Angle of Crossing (Degrees):	0°		
		Height from Obvert to Top of Road (m):	2.2m		
		Depth of Siltation (mm):	0mm		
<b>Site Photograph and Additional Field Notes</b>					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- Presence of fish and frogs at time of site visit in culvert pool</li> </ul>					
<p><b>Site Sketch:</b></p> 					
<p><b>Description of Photograph:</b> Upstream inlet</p>					

Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	10/29/04	Structure Type (Culvert/Bridge):	Arch Culvert	Flow Present (Y/N):	N
Field Crew:	EC, EG, NG	Number of Cells:	1	Open Footing (Yes/No):	N
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Depth (mm):	0mm
Subcatchment Area No:	6	Height (m) x Width (m) or Diameter (m):	3.73m x 2.28m	Approx. Velocity (m/s):	0m/s
Tributary Name:	Petticoat Creek (Main Branch)	Length (m):	30m	Upstream Erosion (Y/N):	Y
Floodplain Map Sheet No.:	6	U/S Invert Elev. (m):	166.51m	Downstream Erosion (Y/N):	N
Cross Section Range:	9933.06 to 9938.06	D/S Invert Elev. (m):	163.68m	Additional Flow Information:	
Municipality:	City of Toronto	Inlet Type (Projecting/Mitered/Headwall):	Mitered		
Location (Road Name/Intersection):	Scarborough-Pickering Townline, between 3 <sup>rd</sup> Concession Rd and Finch Ave (Structure 26)	Skew Angle of Crossing (Degrees):	23°		
<b>Site Photograph and Additional Field Notes</b> <b>Additional Field Notes:</b> - Perched outlet (see photograph)					
<b>Site Sketch:</b> 					
<b>Description of Photograph:</b> Downstream outlet					

HYDRAULIC STRUCTURE INVENTORY SHEET											
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information							
Date (mm/dd/yy):	9/02/04	Structure Type (Culvert/Bridge):	Arch Culvert	Flow Present (Y/N):	N						
Field Crew:	EC, MW	Number of Cells:	1	Open Footing (Yes/No):	N						
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Depth (mm):	0mm						
Subcatchment Area No:	on the border of 12 and 12-1	Height (m) x Width (m) or Diameter (m):	0.95m x 1.46m	Approx. Velocity (m/s):	0m/s						
Tributary Name:	Petticoat Creek (Tributary 4)	Length (m):	8.7m	Upstream Erosion (Y/N):	N						
Floodplain Map Sheet No.:	9	U/S Invert Elev. (m):	182.86m	Downstream Erosion (Y/N):	N						
Cross Section Range:	4980.121 to 4994.12	D/S Invert Elev. (m):	182.71m	Additional Flow Information:							
Municipality:	Regional Municipality of Durham	Inlet Type (Projecting/Mitered/Headwall):	Projecting								
Location (Road Name/Intersection):		Skew Angle of Crossing (Degrees):	0°								
4 <sup>th</sup> Concession Rd, between Markham-Pickering Townline and Altona Rd		Height from Obvert to Top of Road (m):	0.11m								
(Structure 31)		Depth of Siltation (mm):	0mm								
<b>Site Photograph and Additional Field Notes</b>											
<b>Additional Field Notes:</b>											
<ul style="list-style-type: none"> <li>- Upstream area of culvert is a marsh with no distinct channel</li> </ul>											
<p><b>Site Sketch:</b></p> 											
<p><b>Description of Photograph:</b> Left – Upstream inlet; Right – Downstream outlet</p>  											

Watershed and Location Information		Hydraulic Structure Inventory Sheet		Current Flow Information
		Structure Configuration and Dimensions		
Date (mm/dd/yy):	9/02/04	Structure Type (Culvert/Bridge): Arch Culvert		Flow Present (Y/N): N (isolated pools)
Field Crew:	EC, MW	Number of Cells:	2	Open Footing (Yes/No): N
Watershed Name:	Petticoat Creek	Material (Concrete/Steel): Steel		Approx. Depth (mm): 80mm pool
Subcatchment Area No:	5	Height (m) x Width (m) or Diameter (m): 1.2m x 2.15m		Approx. Velocity (m/s): 0m/s
Tributary Name:	Petticoat Creek (Main Branch)	Length (m): 12.2m		Upstream Erosion (Y/N): N
Floodplain Map Sheet No.:	8	US Inv Elev: N=180.04m; S=179.94m	US Ob Elev: N=181.40m; S=181.33m	Downstream Erosion (Y/N): N
Cross Section Range:	12389.05 to 12403.05	D/S Inv Elev: N=180.18m; S=180.12m	D/S Ob Elev: N=181.33m; S=181.33m	Additional Flow Information:
Municipality:	Regional Municipality of York	Inlet Type (Projecting/Mitered/Headwall): Projecting		
Location (Road Name/Intersection):	11 <sup>th</sup> Concession Rd, between Steeles Av E and 14 <sup>th</sup> Ave (Structure 32)	Skew Angle of Crossing (Degrees): 0°		
		Height from Obvert to Top of Road (m): 0.57m		
		Depth of Siltation (mm): 40mm		
<b>Site Photograph and Additional Field Notes</b>		   		
<b>Additional Field Notes:</b>		<p>- Well vegetated area</p> <p>Site Sketch:</p>		
		<p>Photograph: Top left – North inlet; Top right – South inlet; Bottom left – North outlet; Bottom right – South outlet</p>		

## HYDRAULIC STRUCTURE INVENTORY SHEET

### Structure Configuration and Dimensions

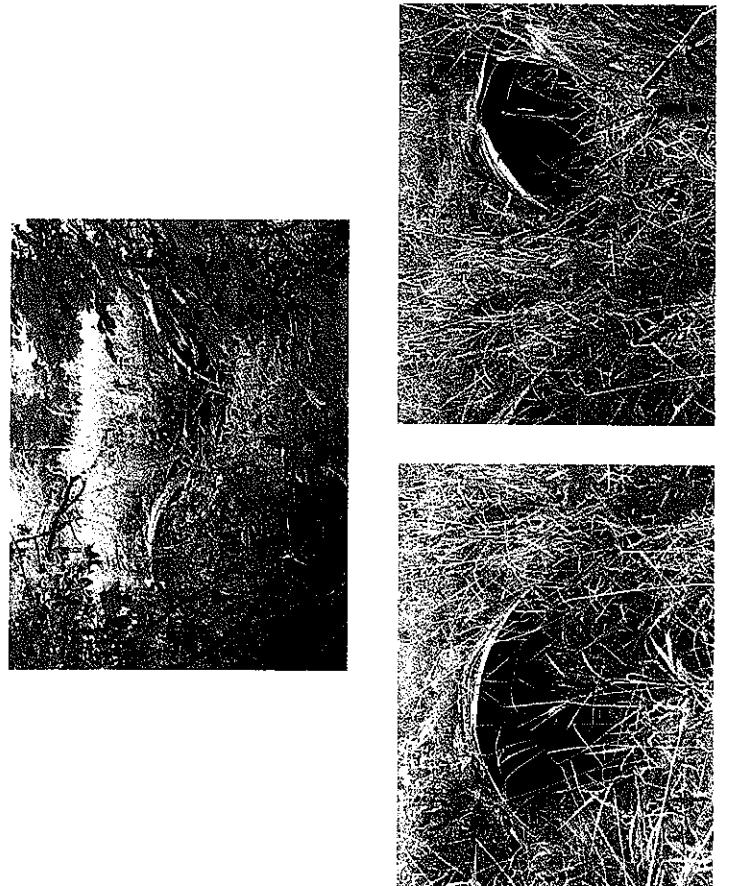
Watershed and Location Information		Current Flow Information	
Date (mm/dd/yy):	9/02/04	Flow Present (Y/N):	N (isolated pools)
Field Crew: EC, MW		Approx. Depth (mm):	120mm
Watershed Name: Petticoat Creek		Approx. Velocity (m/s):	0m/s
Subcatchment Area No: 3		Upstream Erosion (Y/N):	N
Tributary Name: Petticoat Creek (Main Branch)		Downstream Erosion (Y/N):	N
Floodplain Map Sheet No.: 10		Additional Flow Information:	
Cross Section Range: 13730.03 to 13748.03	U/S Inv Elev: E=185.67m; W=185.75m	D/S Inv Elev: E=186.89m; W=186.90m	
Municipality: Regional Municipality of York	D/S Inv Elev: E=185.79m; W=185.67m	D/S Ob Elev: E=186.88m; W=186.90m	
Location (Road Name/Intersection): 14 <sup>th</sup> Av, between Reesor Rd and 11 <sup>th</sup> Concession Rd (Structure 33)	Inlet Type (Projecting/Mitered/Headwall): Projecting	Skew Angle of Crossing (Degrees): 0°	
	Height from Obvert to Top of Road (m): 0.83m	Depth of Siltation (mm): 100mm	

### Site Photograph and Additional Field Notes

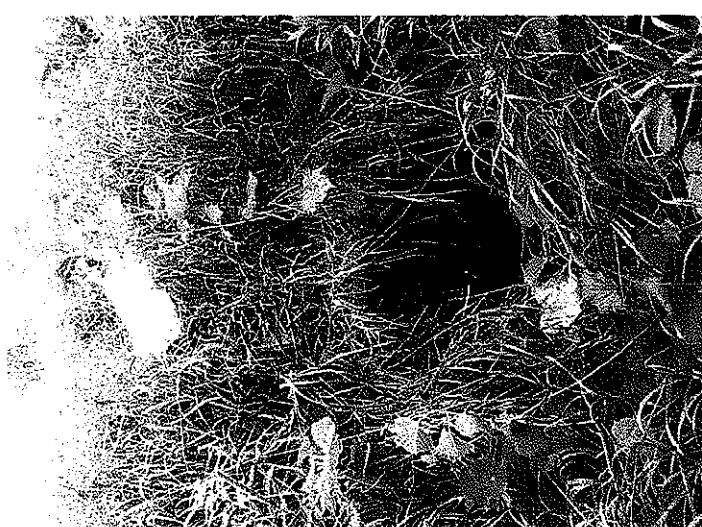
#### Additional Field Notes:

- Well vegetated area

### Site Sketch:



Description of Photograph: Top – E and W culvert inlets; Bottom Left – W outlet; Bottom Right – E outlet

HYDRAULIC STRUCTURE INVENTORY SHEET					
Watershed and Location Information		Structure Configuration and Dimensions		Current Flow Information	
Date (mm/dd/yy):	9/02/04	Structure Type (Culvert/Bridge):	Circular Culvert	Flow Present (Y/N):	N
Field Crew:	EC, MW	Number of Cells:	1	Approx. Depth (mm):	0mm
Watershed Name:	Petticoat Creek	Material (Concrete/Steel):	Steel	Approx. Velocity (m/s):	0m/s
Subcatchment Area No:	4	Height (m) x Width (m) or Diameter (m):	0.60m	Upstream Erosion (Y/N):	N
Tributary Name:	Petticoat Creek (Tributary 9)	Length (m):	12.3m	Downstream Erosion (Y/N):	N
Floodplain Map Sheet No.:	10	U/S Invert Elev. (m):	189.65m	Additional Flow Information:	
Cross Section Range:	956.04 to 971.04	D/S Invert Elev. (m):	189.53m		
Municipality:	Regional Municipality of York	Inlet Type (Projecting/Mitered/Headwall):	Projecting		
Location (Road Name/Intersection):		Skew Angle of Crossing (Degrees):	0°		
		Height from Obvert to Top of Road (m):	1.11m		
		Depth of Siltation (mm):	50mm		
Site Photograph and Additional Field Notes					
<p><b>Additional Field Notes:</b></p> <ul style="list-style-type: none"> <li>- Area well vegetated</li> </ul>					
				Site Sketch:	
 					
<p>Description of Photograph: Left – Upstream inlet; Right – Downstream outlet</p>					

## **APPENDIX C**

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### **FLOW INTERPOLATION**

## KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation

## Reach 1

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG		
			Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%
35.38	15	11.986	1.000	19.190	1.000	24.709	1.000	32.382	1.000	38.559	1.000	45.146	1.000	50.679	1.000	56.679	1.000	62.679	1.000	68.679	1.000	74.679	1.000
170.38	150	11.982	0.995	19.116	0.996	24.622	0.996	32.269	0.996	38.429	0.996	44.990	0.996	49.990	0.996	54.990	0.996	59.990	0.996	64.990	0.996	69.990	0.996
244.38	224	11.903	0.993	19.076	0.994	24.574	0.994	32.208	0.994	38.358	0.994	44.905	0.994	49.905	0.994	54.905	0.994	59.905	0.994	64.905	0.994	69.905	0.994
415.38	415	11.826	0.986	18.972	0.986	24.450	0.989	32.049	0.989	38.174	0.989	44.885	0.989	49.885	0.989	54.885	0.989	59.885	0.989	64.885	0.989	69.885	0.989
500.38	480	11.800	0.984	18.837	0.986	24.408	0.987	31.965	0.988	38.112	0.988	44.610	0.988	49.610	0.988	54.610	0.988	59.610	0.988	64.610	0.988	69.610	0.988
571.38	551	11.772	0.982	18.888	0.984	24.362	0.986	31.936	0.986	38.043	0.986	44.529	0.986	49.529	0.986	54.529	0.986	59.529	0.986	64.529	0.986	69.529	0.986
614.38	594	11.755	0.980	18.875	0.983	24.334	0.984	31.901	0.985	38.002	0.985	44.479	0.985	49.479	0.985	54.479	0.985	59.479	0.985	64.479	0.985	69.479	0.985
640.38	620	11.744	0.979	18.861	0.982	24.318	0.984	31.875	0.984	37.985	0.984	44.449	0.984	49.449	0.984	54.449	0.984	59.449	0.984	64.449	0.984	69.449	0.984
650.38	630	11.740	0.979	18.855	0.982	24.311	0.983	31.871	0.984	37.967	0.984	44.438	0.984	49.438	0.984	54.438	0.984	59.438	0.984	64.438	0.984	69.438	0.984
673.38	653	11.731	0.978	18.843	0.981	24.286	0.983	31.852	0.983	37.945	0.984	44.411	0.983	49.411	0.983	54.411	0.983	59.411	0.983	64.411	0.983	69.411	0.983
685.38	665	11.726	0.978	18.836	0.981	24.288	0.983	31.842	0.983	37.934	0.983	44.397	0.983	49.397	0.983	54.397	0.983	59.397	0.983	64.397	0.983	69.397	0.983
783.38	763	11.687	0.975	18.783	0.978	24.225	0.980	31.760	0.980	37.838	0.981	44.285	0.981	49.285	0.981	54.285	0.981	59.285	0.981	64.285	0.981	69.285	0.981
849.38	829	11.661	0.972	18.747	0.977	24.182	0.978	31.705	0.979	37.776	0.978	44.209	0.979	49.209	0.979	54.209	0.979	59.209	0.979	64.209	0.979	69.209	0.979
912.38	892	11.636	0.970	18.713	0.975	24.141	0.977	31.653	0.977	37.715	0.978	44.136	0.978	49.136	0.978	54.136	0.978	59.136	0.978	64.136	0.978	69.136	0.978
978.39	956	11.609	0.969	18.677	0.973	24.099	0.975	31.598	0.975	37.652	0.976	44.060	0.976	49.060	0.976	54.060	0.976	59.060	0.976	64.060	0.976	69.060	0.976
1052.38	1032	11.560	0.966	18.657	0.971	24.051	0.973	31.537	0.974	37.581	0.974	43.975	0.974	48.975	0.974	53.975	0.974	58.975	0.974	63.975	0.974	68.975	0.974
1116.38	1096	11.554	0.964	18.602	0.969	24.009	0.971	31.483	0.972	37.519	0.973	43.901	0.973	48.901	0.973	53.901	0.973	58.901	0.973	63.901	0.973	68.901	0.973
1175.38	1155	11.531	0.962	18.570	0.967	23.971	0.970	31.434	0.970	37.483	0.971	43.833	0.971	48.833	0.971	53.833	0.971	58.833	0.971	63.833	0.971	68.833	0.971
1195.38	1175	11.523	0.961	18.559	0.967	23.958	0.969	31.418	0.970	37.443	0.971	43.810	0.970	48.810	0.970	53.810	0.970	58.810	0.970	63.810	0.970	68.810	0.970
1210.38	1190	11.517	0.960	18.551	0.966	23.948	0.969	31.405	0.969	37.429	0.970	43.793	0.970	48.793	0.970	53.793	0.970	58.793	0.970	63.793	0.970	68.793	0.970
1242.35	5	11.498	0.999	18.526	0.999	23.919	1.000	31.369	1.000	37.387	1.000	43.744	1.000	49.744	1.000	54.744	1.000	59.744	1.000	64.744	1.000	69.744	1.000
1260.35	23	11.471	0.997	18.490	0.997	23.877	0.998	31.319	0.998	37.330	0.998	43.680	0.998	49.680	0.998	54.680	0.998	59.680	0.998	64.680	0.998	69.680	0.998
1321.35	84	11.377	0.989	18.366	0.991	23.744	0.992	31.148	0.993	37.136	0.993	43.464	0.993	49.464	0.993	54.464	0.993	59.464	0.993	64.464	0.993	69.464	0.993
1415.35	178	11.233	0.976	18.177	0.981	23.514	0.983	30.866	0.984	36.858	0.985	43.130	0.986	49.130	0.986	54.130	0.986	59.130	0.986	64.130	0.986	69.130	0.986
1553.35	316	11.021	0.958	17.988	0.966	23.180	0.969	30.501	0.972	36.388	0.973	42.640	0.974	48.640	0.974	54.640	0.974	59.640	0.974	64.640	0.974	69.640	0.974
1643.35	406	10.883	0.946	17.717	0.956	22.979	0.960	30.249	0.964	36.114	0.966	42.321	0.967	48.321	0.967	54.321	0.967	59.321	0.967	64.321	0.967	69.321	0.967
1728.35	492	10.751	0.934	17.543	0.946	22.778	0.952	30.009	0.956	35.841	0.958	42.016	0.956	48.016	0.956	54.016	0.956	59.016	0.956	64.016	0.956	69.016	0.956
1838.35	601	10.584	0.920	17.323	0.935	22.522	0.941	29.705	0.947	34.494	0.949	41.629	0.951	47.629	0.951	53.629	0.951	59.629	0.951	64.629	0.951	69.629	0.951
1867.26	14	10.550	0.999	17.278	0.999	22.469	0.999	29.641	0.999	35.422	0.999	41.548	0.999	47.548	0.999	53.548	0.999	59.548	0.999	64.548	0.999	69.548	0.999
1918.26	65	10.509	0.995	17.222	0.996	22.404	0.996	29.561	0.997	35.332	0.997	41.447	0.997	47.447	0.997	53.447	0.997	59.447	0.997	64.447	0.997	69.447	0.997
1950.26	120	10.464	0.991	17.161	0.992	22.333	0.993	29.493	0.994	35.233	0.994	41.339	0.994	47.339	0.994	53.339	0.994	59.339	0.994	64.339	0.994	69.339	0.994
1980.26	127	10.459	0.990	17.154	0.992	22.324	0.993	29.464	0.993	35.223	0.994	41.325	0.994	47.325	0.994	53.325	0.994	59.325	0.994	64.325	0.994	69.325	0.994
1986.26	133	10.454	0.980	17.147	0.992	22.316	0.992	29.455	0.993	35.213	0.993	41.313	0.994	47.313	0.994	53.313	0.994	59.313	0.994	64.313	0.994	69.313	0.994
2000.26	147	10.443	0.989	17.132	0.991	22.298	0.992	29.433	0.992	35.188	0.993	41.285	0.993	47.285	0.993	53.285	0.993	59.285	0.993	64.285	0.993	69.285	0.993
2018.26	165	10.428	0.987	17.112	0.990	22.275	0.991	29.405	0.991	35.156	0.992	41.250	0.992	47.250	0.992	53.250	0.992	59.250	0.992	64.250	0.992	69.250	0.992
2141.26	288	10.329	0.978	16.977	0.982	22.118	0.984	29.213	0.985	34.939	0.986	41.139	0.986	47.139	0.986	53.139	0.986	59.139	0.986	64.139	0.986	69.139	0.986
2228.26	376	10.258	0.971	16.880	0.976	22.005	0.979	29.075	0.980	34.784	0.981	40.832	0.982	46.832	0.982	52.832	0.982	58.832	0.982	64.832	0.982	69.832	0.982
2295.26	412	10.229	0.969	16.841	0.974	21.958	0.976	29.019	0.978	34.721	0.980	40.761	0.980	46.761	0.980	52.761	0.980	58.761	0.980	64.761	0.980	69.761	0.980
2300.26	447	10.201	0.966	16.802	0.972	21.914	0.974	28.964	0.976	34.659	0.978	40.692	0.979	46.692	0.979	52.692	0.979	58.692	0.979	64.692	0.979	69.692	0.979
2399.26	546	10.121	0.955	16.694	0.965	21.787	0.968	28.809	0.971	34.484	0.973	40.496	0.974	46.496	0.974	52.496	0.974	58.496	0.974	64.496	0.974	69.496	0.974
2406.26	553	10.115	0.958	16.686	0.965	21.778	0.968	28.798	0.971	34.472	0.972	40.482	0.974	46.482	0.974	52.482	0.974	58.482	0.974	64.482	0.974	6	

2693-24	213		9.960	0.991	16.489	0.992	21.516	0.993	28.475	0.993	34.102	0.993	40.059	0.993	468.018	0.992
2869-24	383		9.888	0.984	16.366	0.986	21.390	0.987	28.318	0.988	33.918	0.988	39.847	0.988	166.990	0.985
3092-24	606		9.793	0.974	16.231	0.978	21.224	0.979	28.111	0.980	33.678	0.981	39.570	0.981	165.843	0.978
3141-24	655		9.772	0.972	16.201	0.976	21.187	0.977	28.066	0.979	33.626	0.979	39.509	0.980	165.346	0.977
3264-24	778		9.720	0.967	16.127	0.972	21.095	0.973	27.951	0.975	33.493	0.976	39.355	0.976	164.503	0.972
3421-24	935		9.653	0.960	16.032	0.966	20.978	0.968	27.806	0.970	33.324	0.971	39.160	0.971	163.854	0.967
3610-24	1124		9.573	0.952	15.917	0.959	20.883	0.961	27.631	0.964	33.120	0.965	38.925	0.965	162.512	0.960
3715-24	1229		9.528	0.948	15.854	0.955	20.759	0.958	27.533	0.960	33.007	0.961	38.794	0.962	161.877	0.956
3827-24	1341		9.480	0.943	15.756	0.951	20.676	0.954	27.429	0.957	32.887	0.958	38.655	0.959	161.201	0.952
3849-24	1353		9.471	0.942	15.773	0.950	20.680	0.953	27.409	0.956	32.863	0.957	38.627	0.958	161.068	0.951
3875-24	1358		9.460	0.941	15.757	0.949	20.640	0.952	27.385	0.955	32.835	0.956	38.595	0.957	160.910	0.950
3901-24	1415		9.449	0.940	15.741	0.948	20.621	0.951	27.361	0.954	32.807	0.956	38.562	0.956	160.753	0.949
3908-24	1422		9.446	0.940	15.737	0.948	20.616	0.951	27.354	0.954	32.799	0.955	38.554	0.956	160.711	0.949
3928-24	1442		9.437	0.939	15.725	0.947	20.601	0.950	27.336	0.953	32.778	0.955	38.529	0.955	160.580	0.949
3936-24	1450		9.434	0.939	15.720	0.947	20.595	0.950	27.328	0.953	32.769	0.955	38.519	0.955	160.542	0.948
3950-24	1464		9.429	0.938	15.712	0.945	20.584	0.950	27.315	0.953	32.754	0.954	38.501	0.955	160.457	0.948
3988-24	1502		9.412	0.936	15.689	0.945	20.556	0.948	27.280	0.951	32.713	0.953	38.454	0.954	160.228	0.946
3992-24	1506		9.410	0.936	15.686	0.945	20.553	0.948	27.276	0.951	32.709	0.953	38.449	0.954	160.203	0.946
4013-24	1527		9.401	0.935	15.674	0.944	20.537	0.948	27.257	0.951	32.686	0.952	38.423	0.953	160.076	0.945
4020-24	1532		9.399	0.935	15.663	0.944	20.521	0.948	27.238	0.951	32.666	0.952	38.398	0.953	159.940	0.944
4197-23	127		9.340	0.996	15.589	0.997	20.435	0.997	27.130	0.997	32.537	0.997	38.255	0.997	159.343	0.996
4264-23	194		9.320	0.994	15.562	0.995	20.403	0.996	27.080	0.996	32.491	0.996	38.204	0.996	159.138	0.996
4372-23	302		9.286	0.991	15.520	0.992	20.352	0.993	27.027	0.994	32.416	0.994	38.122	0.994	158.807	0.994
4422-23	352		9.273	0.989	15.500	0.991	20.328	0.992	26.998	0.992	32.381	0.993	38.084	0.993	158.554	0.993
4474-23	404		9.258	0.987	15.479	0.990	20.304	0.991	26.968	0.991	32.345	0.991	38.045	0.992	158.495	0.992
4535-23	455		9.240	0.985	15.455	0.988	20.275	0.989	26.932	0.990	32.303	0.990	37.998	0.991	158.308	0.991
4556-23	486		9.234	0.985	15.447	0.988	20.265	0.989	26.920	0.990	32.288	0.990	37.982	0.990	158.244	0.991
4575-23	505		9.228	0.984	15.440	0.987	20.256	0.988	26.903	0.989	32.275	0.989	37.968	0.989	158.186	0.990
4594-23	524		9.223	0.984	15.432	0.987	20.247	0.988	26.891	0.989	32.262	0.989	37.954	0.989	158.128	0.990
4604-23	534		9.220	0.983	15.428	0.987	20.242	0.988	26.891	0.989	32.255	0.989	37.946	0.989	158.097	0.989
4665-23	595		9.202	0.981	15.404	0.985	20.213	0.986	26.856	0.987	32.213	0.987	37.900	0.988	157.910	0.989
4738-23	669		9.180	0.979	15.375	0.983	20.178	0.985	26.812	0.986	32.161	0.986	37.843	0.987	157.684	0.987
4822-23	752		9.156	0.976	15.342	0.981	20.139	0.983	26.764	0.984	32.104	0.984	37.800	0.985	157.430	0.986
4908-23	838		9.131	0.974	15.308	0.979	20.098	0.981	26.714	0.982	32.044	0.982	37.715	0.983	157.166	0.984
4992-23	922		9.106	0.971	15.275	0.977	20.058	0.979	26.664	0.980	31.986	0.980	37.651	0.982	156.809	0.982
5066-23	998		9.084	0.969	15.245	0.975	20.022	0.977	26.620	0.979	31.933	0.979	37.593	0.980	156.677	0.981
5121-23	1058		9.066	0.967	15.221	0.974	19.994	0.975	26.586	0.977	31.892	0.978	37.547	0.979	156.493	0.980
5140-23	1070		9.052	0.966	15.216	0.973	19.988	0.975	26.578	0.977	31.883	0.977	37.538	0.978	156.456	0.979
5155-23	1090		9.059	0.966	15.212	0.973	19.983	0.975	26.552	0.977	31.876	0.977	37.531	0.979	156.426	0.979
5166-23	1066		9.055	0.966	15.206	0.972	19.976	0.975	26.533	0.976	31.865	0.977	37.519	0.978	156.377	0.979
5177-23	1107		9.051	0.965	15.202	0.972	19.970	0.974	26.506	0.976	31.853	0.976	37.510	0.978	156.343	0.979
5218-23	1148		9.039	0.964	15.186	0.971	19.951	0.973	26.532	0.975	31.829	0.976	37.479	0.977	156.217	0.978
5268-23	1196		9.025	0.962	15.167	0.970	19.928	0.972	26.504	0.974	31.796	0.975	37.443	0.976	156.070	0.977
5344-23	1284		8.989	0.960	15.132	0.968	19.887	0.970	26.453	0.972	31.735	0.973	37.376	0.975	155.801	0.975
5414-23	1344		8.992	0.958	15.108	0.966	19.858	0.969	26.417	0.971	31.693	0.971	37.330	0.973	155.617	0.974
5432-23	1362		8.976	0.957	15.100	0.966	19.830	0.969	26.407	0.971	31.681	0.971	37.316	0.973	155.562	0.974
5477-23	1401		8.965	0.956	15.086	0.965	19.831	0.968	26.384	0.970	31.654	0.970	37.287	0.972	155.443	0.973
5510-23	1440		8.954	0.955	15.070	0.964	19.813	0.967	26.361	0.969	31.627	0.969	37.257	0.971	155.323	0.972
5520-23	1450		8.951	0.955	15.066	0.963	19.808	0.966	26.345	0.969	31.620	0.969	37.249	0.971	155.283	0.972
5607-23	1537		8.925	0.952	15.032	0.961	19.787	0.964	26.304	0.967	31.560	0.967	37.183	0.970	155.026	0.970
5703-23	1633		8.897	0.949	14.934	0.959	19.721	0.962	26.248	0.965	31.493	0.965	37.110	0.968	154.733	0.969
5759-21	164	8870	14958	14958	14958	14958	14958	14958	26195	26195	37030	37030	37030	37030	154.154	154.154
5917-21	76		8.549	0.964	14.411	0.963	18.957	0.963	20.274	0.963	30.274	0.963	35.678	0.963	148.816	0.963
6024-21	1281		8.058	0.913	13.641	0.912	21.792	0.912	23.618	0.912	31.031	0.911	32.647	0.911	140.878	0.912
6120-21	250		7.946	0.882	12.871	0.880	19.827	0.881	21.554	0.880	27.020	0.880	31.860	0.880	139.940	0.881
6207-21	1131		7.867	0.859	12.771	0.858	19.781	0.858	21.454	0.858	27.000	0.858	31.821	0.858	138.816	0.858
6340-21	546		6.566	0.740	11.028	0.737	14.498	0.737	14.267	0.737	23.127	0.736	27.249	0.736	133.949	0.738



10277_06	20331		2.844	0.911	4.702	0.910	6.148	0.908	8.126	0.906	9.720	0.905	11.425	0.904	46.472	0.890	YES
10342_06	2098		2.835	0.909	4.687	0.907	6.128	0.905	8.099	0.903	9.687	0.902	11.386	0.901	46.288	0.886	YES
10430_06	2186		2.823	0.905	4.666	0.903	6.101	0.901	8.062	0.899	9.643	0.898	11.333	0.897	46.040	0.882	YES
10466_06	2222		2.818	0.903	4.658	0.901	6.090	0.900	8.047	0.897	9.625	0.895	11.312	0.895	45.938	0.880	YES
10532_06	2289		2.809	0.900	4.643	0.898	6.070	0.897	8.020	0.894	9.592	0.893	11.272	0.892	45.751	0.876	YES
10606_06	2362		2.799	0.897	4.626	0.895	6.047	0.893	7.989	0.891	9.554	0.889	11.228	0.888	45.542	0.872	YES
10724_06	2480		2.783	0.890	4.599	0.890	6.011	0.888	7.940	0.885	9.495	0.884	11.158	0.883	45.209	0.866	YES
10788_06	2554		2.773	0.889	4.582	0.886	5.989	0.885	7.900	0.882	9.458	0.880	11.113	0.879	45.000	0.862	YES
10919_06	2675		2.757	0.884	4.554	0.881	5.952	0.879	7.859	0.876	9.397	0.873	11.041	0.874	44.658	0.855	YES
11016_06	2772		2.743	0.879	4.532	0.877	5.922	0.875	7.818	0.872	9.348	0.870	10.983	0.869	44.384	0.850	YES
11152_06	2909		2.725	0.873	4.500	0.871	5.880	0.869	7.762	0.865	9.279	0.864	10.902	0.862	44.000	0.843	YES
11173_06	2829		2.722	0.872	4.496	0.870	5.874	0.868	7.753	0.864	9.259	0.863	10.859	0.861	43.941	0.842	YES
11200_06	2956		2.719	0.871	4.489	0.869	5.866	0.866	7.742	0.863	9.255	0.861	10.873	0.860	43.864	0.840	YES
11240_06	22		2.691	0.994	4.444	0.994	5.805	0.994	7.661	0.994	9.158	0.994	10.759	0.994	43.358	0.994	
11308_05	90		2.641	0.976	4.362	0.976	5.698	0.976	7.520	0.976	8.980	0.976	10.561	0.976	42.526	0.975	
11387_05	169		2.584	0.995	4.267	0.995	5.574	0.995	7.356	0.994	8.794	0.995	10.330	0.994	41.559	0.995	
11448_05	230		2.539	0.988	4.194	0.988	5.478	0.988	7.229	0.986	8.643	0.986	10.152	0.986	40.812	0.935	
11529_05	312		2.477	0.955	4.022	0.955	5.355	0.955	7.103	0.953	8.503	0.953	9.912	0.952	39.552	0.952	
11597_05	379		2.431	0.898	4.015	0.898	5.244	0.898	6.919	0.898	8.274	0.898	9.718	0.898	38.989	0.894	YES
11677_05	459		2.373	0.876	3.919	0.877	5.118	0.876	6.753	0.876	8.075	0.877	9.484	0.876	38.009	0.871	YES
11883_05	675		2.215	0.818	3.660	0.819	4.779	0.818	6.304	0.818	7.540	0.818	8.655	0.818	35.366	0.811	YES
11978_05	760		2.153	0.786	3.558	0.786	4.645	0.785	6.127	0.785	7.330	0.786	8.607	0.795	34.326	0.787	YES
12035_05	817		2.112	0.780	3.490	0.781	4.555	0.780	6.009	0.780	7.188	0.780	8.441	0.780	33.628	0.777	YES
12224_05	1006		1.974	0.729	3.263	0.730	4.258	0.729	5.616	0.729	6.720	0.729	7.869	0.729	31.315	0.718	YES
12288_05	1070		1.927	0.712	3.187	0.713	4.158	0.712	5.483	0.711	6.561	0.712	7.703	0.712	30.532	0.700	YES
12369_05	1171		1.854	0.685	3.066	0.686	3.999	0.685	5.273	0.684	6.311	0.685	7.408	0.684	29.296	0.672	YES
12386_05	1178		1.849	0.683	3.057	0.684	3.988	0.683	5.258	0.682	6.284	0.683	7.388	0.683	29.210	0.670	YES
12403_05	1185		1.843	0.681	3.049	0.682	3.977	0.681	5.244	0.680	6.226	0.681	7.367	0.681	29.124	0.668	YES
12426_05	1208		1.827	0.675	3.021	0.676	3.941	0.675	5.196	0.674	6.219	0.675	7.300	0.675	28.843	0.661	YES
12456_05	1250		1.774	0.655	2.952	0.655	3.853	0.655	5.125	0.655	6.193	0.655	7.244	0.655	27.730	0.655	
12636_05	1418		1.674	0.618	2.769	0.620	3.611	0.618	4.759	0.618	5.659	0.619	6.688	0.618	26.273	0.602	YES
12723_05	1505		1.610	0.595	2.665	0.596	3.474	0.595	4.518	0.594	5.483	0.595	6.434	0.594	25.208	0.578	YES
12883_05	1621		1.531	0.574	2.514	0.574	2.514	0.574	3.278	0.574	4.320	0.574	5.174	0.574	24.125	0.574	
12902_03	99		1.518	0.978	2.514	0.979	2.514	0.979	3.278	0.979	5.174	0.979	6.070	0.979	23.660	0.977	
13009_03	205		1.482	0.955	2.456	0.956	3.202	0.956	4.221	0.957	5.075	0.956	5.930	0.956	23.051	0.951	
13110_03	287		1.424	0.955	2.351	0.955	3.100	0.955	4.121	0.955	5.069	0.955	5.869	0.955	22.055	0.955	
13281_03	478		1.390	0.895	2.306	0.898	3.008	0.898	3.967	0.899	4.748	0.899	5.568	0.898	21.482	0.887	YES
13391_03	588		1.352	0.871	2.245	0.874	2.929	0.875	3.885	0.876	4.625	0.875	5.423	0.874	20.850	0.861	YES
13474_03	671		1.324	0.853	2.199	0.856	2.870	0.857	3.788	0.858	4.531	0.857	5.313	0.857	20.373	0.841	YES
13599_03	661		1.258	0.810	2.091	0.814	2.731	0.816	3.605	0.817	4.311	0.816	5.054	0.815	19.246	0.794	YES
13670_03	867		1.243	0.801	2.067	0.805	2.689	0.806	3.564	0.808	4.282	0.806	4.905	0.806	18.993	0.784	YES
13714_03	911		1.237	0.791	2.058	0.801	2.688	0.803	3.549	0.804	4.244	0.803	4.974	0.802	18.901	0.780	
13750_03	927		1.234	0.795	2.053	0.798	2.681	0.801	3.540	0.802	4.233	0.801	4.961	0.800	18.844	0.778	YES
13748_03	945		1.231	0.793	2.048	0.797	2.675	0.799	3.533	0.801	4.224	0.799	4.950	0.798	18.798	0.776	YES
13753_03	950		1.229	0.792	2.046	0.796	2.672	0.798	3.528	0.800	4.218	0.798	4.944	0.797	18.769	0.775	YES
13813_03	1010		1.209	0.779	2.013	0.783	2.629	0.785	3.472	0.787	4.151	0.785	4.864	0.784	18.424	0.760	YES
13865_03	1082		1.185	0.763	1.973	0.768	2.578	0.770	3.405	0.772	4.070	0.770	4.769	0.769	18.010	0.743	YES
13940_03	1121		1.122	0.723	1.871	0.728	2.446	0.731	3.233	0.733	3.862	0.731	4.524	0.730	16.947	0.699	YES
14070_03	1267		1.084	0.698	1.809	0.704	2.366	0.707	3.129	0.709	3.736	0.707	4.376	0.706	16.303	0.673	YES
14182_03	1379		1.064	0.698	1.809	0.704	2.355	0.707	3.024	0.709	3.711	0.707	4.376	0.706	16.303	0.673	YES

KF1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation

Reach 2

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG		
			Q	INT	%	Q	INT	%															
3234	164	3227	5.213			5.232			6.232			7.776			8.327			8.434			9.017	0.951	
5934	27		3.795	0.967		5.115	0.968		6.041	0.969		7.353	0.971		8.207	0.971		9.216	0.972		10.145		
3234	47		31693	0.942		41991	0.945		5900	0.947		71188	0.949		8125	0.950		9017	0.951		10224	0.957	
9234	61		3.630	0.924		4.904	0.929		5.802	0.931		7.073	0.934		7.997	0.935		8.818			18.080		
10134	69		31591	0.914		41884	0.919		5745	0.922		7007	0.925		7.924	0.926		8779	0.928		17.340	0.937	
2534	219		2.860	0.728		3123	0.743		4.689	0.762		51788	0.751		6154	0.765		7139	0.771		15321	0.800	YES
2535	220		2355	0.720		3109	0.736		4.637	0.749		5102	0.753		6103	0.761		7129	0.765		15351	0.795	YES
33934	307		2.432	0.619		3.376	0.639		4.086	0.652		5.042	0.666		5.750	0.672		6.456	0.679		13.784	0.720	YES
31734	14		2.16			2.473			3.22			4.142			4.712			5.386			12.25		

10%

change?

## KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation

## Reach 3      No Interpolation

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG		
			Q	INT	%																		
172.25	10	1150	1.740	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
50.25	33	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
93.25	43	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
158.25	65	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
234.25	76	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
249.25	15	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
300.25	51	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
401.25	101	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
406.25	5	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
485.25	79	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
512.25	27	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
534.25	22	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
590.25	56	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
645.25	55	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
684.25	39	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
717.25	33	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
746.25	29	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720
775.25	25	1.740	2.390	2.390	2.390	2.870	2.870	2.870	3.490	4.170	4.170	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720	4.720

10%  
change ?

**KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation**

**Reach 4**

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG		
			Q	INT	%																		
113.27	6	0.137	0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000		1.691	1.000	
158.27	39	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
184.27	65	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
218.27	99	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
243.27	124	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
276.27	157	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
310.27	201	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
36.27	242	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
42.27	302	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
47.27	353	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
549.27	430	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
597.27	478	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
636.27	513	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
72.27	602	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
758.27	639	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
775.27	656	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
800.27	681	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
841.27	722	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	
881.27	772	0.137	1.000			0.237	1.000		0.317	1.000		0.568	1.000		0.827	1.000		1.103	1.000		1.401	1.000	

**KF1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation**

**Reach 5**

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG		
			Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%
212.20	68	4.248	0.972	7.098	9.319	0.972	12.349	0.972	14.828	0.972	17.451	0.972	21.202	0.972	22.308	0.973	22.308	0.973	22.308	0.973	22.308	0.973	
93.20	131	4.134	0.946	6.909	0.946	9.071	0.946	12.022	0.946	14.434	0.946	16.987	0.946	20.426	0.946	20.426	0.946	20.426	0.946	20.426	0.946		
156.20	184	4.039	0.924	6.750	0.924	8.863	0.924	11.746	0.925	14.103	0.925	16.597	0.925	19.842	0.926	20.842	0.926	20.842	0.926	20.842	0.926		
209.20	184	4.039	0.924	6.750	0.924	8.591	0.896	11.387	0.896	13.672	0.896	16.089	0.896	19.888	0.896	20.888	0.896	20.888	0.896	20.888	0.896		
278.20	253	3.915	0.896	6.543	0.896	8.442	0.881	11.190	0.881	13.434	0.881	15.809	0.881	19.564	0.883	20.564	0.883	20.564	0.883	20.564	0.883		
316.20	291	3.847	0.880	6.429	0.880	8.406	0.877	10.406	0.877	13.378	0.877	15.743	0.877	19.377	0.879	20.377	0.879	20.377	0.879	20.377	0.879		
335.20	300	3.831	0.877	6.402	0.877	8.355	0.872	11.075	0.872	13.297	0.872	15.647	0.872	19.698	0.874	20.698	0.874	20.698	0.874	20.698	0.874		
338.20	313	3.807	0.871	6.363	0.871	8.320	0.868	11.028	0.868	13.241	0.868	15.581	0.868	19.720	0.871	20.720	0.871	20.720	0.871	20.720	0.871		
347.20	322	3.791	0.868	6.336	0.868	8.306	0.838	10.654	0.839	12.791	0.839	15.051	0.838	19.569	0.842	20.569	0.842	20.569	0.842	20.569	0.842		
419.20	394	3.662	0.838	6.120	0.838	7.773	0.811	10.306	0.811	12.372	0.811	14.558	0.811	18.568	0.815	19.568	0.815	19.568	0.815	19.568	0.815		
486.20	461	3.541	0.810	5.920	0.810	7.580	0.791	10.051	0.791	12.066	0.791	14.198	0.791	18.104	0.795	19.104	0.795	19.104	0.795	19.104	0.795		
535.20	510	3.453	0.790	5.773	0.790	7.578	0.788	10.025	0.789	12.034	0.789	14.161	0.789	18.954	0.793	19.954	0.793	19.954	0.793	19.954	0.793		
540.20	515	3.444	0.789	5.758	0.789	7.550	0.788	10.025	0.789	12.034	0.789	14.161	0.789	18.954	0.793	19.954	0.793	19.954	0.793	19.954	0.793		
545.20	520	3.435	0.786	5.743	0.786	7.541	0.787	9.999	0.787	12.003	0.787	14.124	0.787	18.805	0.791	19.805	0.791	19.805	0.791	19.805	0.791		
552.20	527	3.423	0.783	5.722	0.784	7.513	0.784	9.962	0.784	11.959	0.784	14.072	0.784	18.596	0.788	19.596	0.788	19.596	0.788	19.596	0.788		
628.20	603	3.286	0.752	5.494	0.752	7.214	0.752	9.567	0.753	11.484	0.753	13.513	0.753	17.326	0.758	18.326	0.758	18.326	0.758	18.326	0.758		
693.20	668	3.169	0.725	5.289	0.726	6.958	0.726	9.229	0.727	11.078	0.726	13.035	0.726	16.384	0.732	17.384	0.732	17.384	0.732	17.384	0.732		
820.20	795	2.941	0.673	4.918	0.674	6.458	0.674	8.569	0.675	10.284	0.674	12.100	0.674	15.590	0.681	17.590	0.681	17.590	0.681	17.590	0.681		
934.20	909	2.736	0.626	4.576	0.627	6.010	0.627	7.976	0.628	9.572	0.628	11.261	0.627	14.718	0.625	16.718	0.625	16.718	0.625	16.718	0.625		
1023.20	998	2.576	0.589	4.309	0.590	5.660	0.590	7.513	0.591	9.016	0.591	10.606	0.591	14.526	0.599	16.526	0.599	16.526	0.599	16.526	0.599		
1127.20	1102	2.389	0.547	3.987	0.547	5.250	0.548	6.972	0.549	8.366	0.548	9.841	0.548	11.419	0.557	13.484	0.557	14.484	0.557	14.484	0.557		
1263.20	1258	2.108	0.482	3.529	0.483	4.636	0.484	6.161	0.485	7.391	0.485	8.693	0.484	10.759	0.485	12.759	0.485	13.759	0.485	13.759	0.485		
1414.20	1387	1.877	0.429	3.143	0.430	4.129	0.431	5.490	0.432	6.584	0.432	7.743	0.431	9.431	0.433	11.905	0.433	13.905	0.433	13.905	0.433		
1488.20	1463	1.740	0.398	2.915	0.399	3.830	0.399	5.094	0.401	6.109	0.401	7.184	0.400	8.400	0.400	10.365	0.412	12.365	0.412	12.365	0.412		
1523.20	1498	1.677	0.384	2.810	0.385	3.692	0.385	4.912	0.387	5.891	0.386	6.926	0.386	8.386	0.386	10.386	0.386	12.386	0.386	12.386	0.386		
1680.13	114	1.569	0.982	2.629	0.982	3.454	0.982	4.597	0.982	5.512	0.981	6.480	0.981	7.742	0.981	9.742	0.981	11.742	0.981	13.742	0.981		
1690.13	123	1.567	0.980	2.625	0.980	3.449	0.980	4.591	0.980	5.504	0.980	6.471	0.980	7.730	0.980	9.730	0.980	11.730	0.980	13.730	0.980		
1700.13	133	1.564	0.979	2.621	0.979	3.444	0.979	4.583	0.978	5.495	0.978	6.460	0.978	7.723	0.978	9.723	0.978	11.723	0.978	13.723	0.978		
1722.13	155	1.559	0.975	2.611	0.975	3.431	0.975	4.566	0.975	5.475	0.975	6.436	0.975	7.710	0.974	9.710	0.974	11.710	0.974	13.710	0.974		
1754.13	187	1.551	0.970	2.598	0.970	3.413	0.970	4.542	0.970	5.454	0.970	6.402	0.970	7.699	0.969	9.699	0.969	11.699	0.969	13.699	0.969		
1853.13	286	1.526	0.955	2.555	0.955	3.357	0.954	4.467	0.954	5.355	0.954	6.296	0.953	7.296	0.953	9.296	0.953	11.296	0.953	13.296	0.953		
1918.13	351	1.509	0.944	2.527	0.944	3.320	0.943	4.418	0.943	5.296	0.943	6.226	0.943	7.226	0.943	9.226	0.943	11.226	0.943	13.226	0.943		
1959.13	392	1.499	0.938	2.510	0.937	3.297	0.937	4.387	0.936	5.258	0.936	6.181	0.936	7.181	0.936	9.181	0.936	11.181	0.936	13.181	0.936		
2012.13	445	1.485	0.929	2.487	0.929	3.267	0.928	4.346	0.928	5.210	0.928	6.124	0.928	7.124	0.928	9.124	0.928	11.124	0.928	13.124	0.928		
2067.13	500	1.471	0.921	2.463	0.920	3.236	0.919	4.305	0.919	5.160	0.919	6.065	0.919	7.065	0.919	9.065	0.919	11.065	0.919	13.065	0.919		
2095.13	505	1.464	0.904	2.418	0.903	3.175	0.902	4.223	0.902	5.062	0.901	5.950	0.901	6.950	0.901	8.950	0.901	10.950	0.901	12.950	0.901		
2174.13	607	1.444	0.904	2.418	0.903	3.175	0.902	4.211	0.909	5.048	0.909	5.933	0.909	6.933	0.909	8.933	0.909	10.933	0.909	12.933	0.909		
2190.13	623	1.440	0.901	2.411	0.900	3.166	0.900	4.204	0.898	5.034	0.896	5.917	0.896	6.917	0.896	8.917	0.896	10.917	0.896	12.917	0.896		
2205.13	638	1.436	0.899	2.404	0.898	3.157	0.897	4.200	0.897	5.024	0.895	5.903	0.895	6.903	0.895	8.903	0.895	10.903	0.895	12.903	0.895		
2264.13	697	1.421	0.889	2.379	0.888	3.124	0.888	4.155	0.887	4.980	0.887	5.853	0.886	6.853	0.886	8.853	0.886	10.853	0.886	12.853	0.886		
2321.13	754	1.407	0.880	2.355	0.879	3.092	0.879	4.112	0.878	4.928	0.877	5.792	0.877	6.792	0.877	8.792	0.877	10.792	0.877	12.792	0.877		
2342.13	775	1.402	0.877	2.345	0.876	3.080	0.875	4.096	0.874	4.909	0.874	5.770	0.874	6.770	0.874	8.770	0.874	10.770	0.874	12.770	0.874		
2388.13	822	1.390	0.870	2.325	0.868	3.053	0.868	4.080	0.867	4.866	0.866	5.719	0.866	6.719	0.866	8.719	0.866	10.719	0.866	12.719	0.866		
2431.13	864	1.379	0.863	2.307	0.862	3.029	0.861	4.028	0.860	4.828	0.860	5.674	0.869	6.674	0.869	8.674	0.869	10.674	0.869	12.674	0.869		
2478.13	911	1.367	0.856	2.287	0.854	3.003	0.853	3.983	0.852	4.828	0.852	5.623	0.852	6.623	0.852	8.623	0.852	10.623	0.852	12.623	0.852		
2534.13	967	1.353	0.847	2.263	0.845	2.971	0.844	3.950	0.843	4.734	0.843	5.563	0.8										

2640.13	1073		1.326	0.830	2.218	0.928	2.911	0.927	3.870	0.826	4.637	0.826	5.449	0.925	23.241	0.822	YES
2679.13	1112		1.316	0.824	2.201	0.822	2.869	0.821	3.840	0.820	4.601	0.819	5.407	0.819	23.058	0.815	YES
2680.13	1123		1.313	0.822	2.196	0.820	2.883	0.819	3.832	0.818	4.591	0.818	5.385	0.817	23.007	0.814	YES
2700.13	1133		1.311	0.820	2.192	0.818	2.877	0.818	3.824	0.816	4.582	0.816	5.385	0.815	22.960	0.812	YES
2704.13	1137		1.310	0.820	2.190	0.818	2.875	0.817	3.821	0.816	4.579	0.815	5.380	0.815	22.941	0.811	YES
2756.13	1189		1.297	0.811	2.168	0.810	2.845	0.809	3.782	0.807	4.531	0.807	5.324	0.806	22.697	0.803	YES
2797.13	1230		1.286	0.805	2.150	0.803	2.822	0.802	3.751	0.801	4.494	0.800	5.280	0.800	22.504	0.796	YES
2861.13	1284		1.273	0.796	2.127	0.794	2.791	0.793	3.710	0.792	4.444	0.791	5.222	0.791	22.251	0.787	YES
2914.13	1347		1.257	0.786	2.100	0.784	2.756	0.783	3.662	0.782	4.340	0.781	5.154	0.781	21.955	0.776	YES
2966.13	1399		1.243	0.778	2.079	0.776	2.726	0.775	3.622	0.773	4.306	0.773	5.098	0.772	21.711	0.768	YES
3029.13	1462		1.228	0.768	2.051	0.766	2.680	0.765	3.575	0.763	4.282	0.762	5.031	0.762	21.416	0.757	YES
3110.13	1543		1.207	0.755	2.016	0.753	2.645	0.751	3.513	0.750	4.208	0.749	4.944	0.749	21.036	0.744	YES
3196.13	1629		1.185	0.742	1.979	0.739	2.596	0.738	3.448	0.736	4.130	0.735	4.851	0.735	20.632	0.730	YES
3237.13	1693		1.170	0.732	1.933	0.729	2.542	0.728	3.392	0.726	4.070	0.725	4.751	0.725	20.245	0.720	YES
3317.13	1750		1.155	0.723	1.927	0.720	2.527	0.718	3.356	0.717	4.019	0.716	4.721	0.715	20.054	0.710	YES
3408.13	1841		1.131	0.708	1.888	0.705	2.476	0.704	3.287	0.702	3.936	0.701	4.623	0.700	19.637	0.694	YES
3442.13	1875		1.125	0.703	1.874	0.700	2.456	0.698	3.261	0.696	3.905	0.695	4.587	0.695	19.477	0.689	YES
3487.13	1920		1.111	0.696	1.854	0.692	2.431	0.691	3.227	0.689	3.864	0.688	4.538	0.687	19.266	0.681	YES
3541.13	1974		1.098	0.687	1.831	0.684	2.400	0.682	3.186	0.681	3.815	0.679	4.480	0.678	19.013	0.672	YES
3609.13	2042		1.081	0.676	1.802	0.673	2.382	0.671	3.135	0.669	3.753	0.668	4.407	0.667	18.692	0.661	YES
3618.13	2051		1.078	0.675	1.798	0.671	2.357	0.670	3.128	0.668	3.745	0.667	4.397	0.666	18.651	0.660	YES
3650.13	2083		1.070	0.670	1.784	0.666	2.338	0.665	3.103	0.663	3.715	0.662	4.359	0.661	18.501	0.654	YES
3701.13	2117		1.053	0.997	1.756	0.997	2.304	0.997	3.053	0.997	3.655	0.997	4.292	0.997	18.184	0.996	YES
3713.12	11		1.041	0.985	1.735	0.985	2.274	0.985	3.017	0.985	3.612	0.985	4.240	0.985	17.931	0.982	YES
3751.12	49		1.013	0.958	1.688	0.958	2.211	0.958	2.984	0.958	3.511	0.957	4.122	0.957	17.352	0.950	YES
3838.12	136		0.995	0.942	1.658	0.941	2.172	0.941	2.882	0.940	3.448	0.940	4.041	0.940	16.986	0.939	YES
3893.12	191		0.979	0.926	1.631	0.925	2.135	0.925	2.833	0.925	3.389	0.924	3.978	0.924	16.647	0.912	YES
3944.12	242		0.952	0.907	1.607	0.906	2.097	0.906	2.787	0.905	3.332	0.905	3.926	0.905	16.312	0.903	YES
4024.12	322		0.953	0.902	1.587	0.901	2.077	0.900	2.756	0.900	3.297	0.899	3.869	0.898	16.114	0.893	YES
4085.12	383		0.933	0.883	1.554	0.882	2.034	0.881	2.698	0.881	3.227	0.880	3.736	0.879	15.709	0.860	YES
4127.12	425		0.920	0.870	1.531	0.869	2.003	0.868	2.658	0.868	3.179	0.867	3.729	0.866	15.429	0.845	YES
4207.12	505		0.894	0.846	1.488	0.844	1.946	0.843	2.582	0.843	3.086	0.841	3.620	0.841	14.897	0.816	YES
4300.12	598		0.864	0.817	1.437	0.816	1.876	0.814	2.493	0.814	3.079	0.812	3.494	0.811	14.278	0.782	YES
4356.12	654		0.846	0.800	1.407	0.798	1.839	0.796	2.439	0.796	2.915	0.795	3.418	0.794	13.905	0.762	YES
4425.12	723		0.824	0.779	1.389	0.777	1.789	0.775	2.373	0.775	2.835	0.773	3.324	0.772	13.446	0.736	YES
4500.12	782		0.797	0.751	1.320	0.749	1.722	0.747	2.271	0.747	2.807	0.746	3.261	0.745	13.025	0.725	YES
4599.12	897		0.767	0.726	1.275	0.723	1.664	0.721	2.207	0.720	2.635	0.718	3.087	0.717	12.288	0.673	YES
4669.12	967		0.745	0.705	1.237	0.702	1.614	0.699	2.140	0.699	2.554	0.696	2.992	0.695	11.823	0.648	YES
4714.12	1012		0.730	0.691	1.212	0.688	1.581	0.685	2.097	0.685	2.502	0.682	2.931	0.680	11.523	0.631	YES
4772.12	1091		0.702	0.672	1.173	0.670	1.527	0.669	2.053	0.669	2.435	0.669	2.852	0.668	11.122	0.622	YES
4893.12	5		0.673	0.636	1.115	0.633	1.453	0.629	1.926	0.629	2.286	0.626	2.687	0.624	10.332	0.566	YES
4959.12	1257		0.651	0.616	1.079	0.612	1.405	0.609	1.822	0.605	2.220	0.603	2.593	0.603	9.893	0.542	YES
4980.12	1278		0.645	0.610	1.068	0.606	1.390	0.602	1.843	0.602	2.196	0.599	2.569	0.596	9.753	0.534	YES
4990.12	1288		0.641	0.607	1.062	0.603	1.383	0.599	1.834	0.599	2.185	0.596	2.555	0.593	9.687	0.531	YES
4998.12	1191		0.640	0.600	1.060	0.600	1.380	0.600	1.830	0.600	2.180	0.600	2.550	0.600	9.660	1.000	YES
5070.12	76		0.640	0.600	1.060	0.600	1.380	0.600	1.830	0.600	2.180	0.600	2.550	0.600	9.660	1.000	YES
5170.12	176		0.640	0.600	1.060	0.600	1.380	0.600	1.830	0.600	2.180	0.600	2.550	0.600	9.660	1.000	YES
5243.12	249		0.640	0.600	1.060	0.600	1.380	0.600	1.830	0.600	2.180	0.600	2.550	0.600	9.660	1.000	YES
5313.12	319		0.640	0.600	1.060	0.600	1.380	0.600	1.830	0.600	2.180	0.600	2.550	0.600	9.660	1.000	YES
5371.12	391		0.640	0.600	1.060	0.600	1.380	0.600	1.830	0.600	2.180	0.600	2.550	0.600	9.660	1.000	YES

## KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation

## Reach 6

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG																																																																																																																																																																																																																																																																																																																																																																																																																																																																
			Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%																																																																																																																																																																																																																																																																																																																																																																																																																																																														
2819	124	2.607	4.396	5.815		7.712	9.243		10.871			43.263																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
3019	52	2.489	0.955	4.196	0.954	5.548	0.954	7.360	0.954	8.822	0.954	10.375	0.954	11.314	0.955																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
22319	196	2.164	0.850	3.645	0.829	4.815	0.828	6.092	0.829	7.662	0.829	9.012	0.829	10.353	0.831	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
24119	219	2.109	0.809	3.552	0.808	4.692	0.807	6.229	0.808	7.468	0.808	8.783	0.808	9.054	0.810	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
22719	249	2.042	0.783	3.437	0.782	4.538	0.780	6.026	0.781	7.225	0.782	8.497	0.782	9.784	0.784	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
33519	325	1.869	0.717	3.144	0.715	4.148	0.713	5.512	0.715	6.609	0.715	7.772	0.715	8.718	0.718	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
40119	278	1.754	0.673	2.947	0.670	3.888	0.668	5.169	0.670	6.195	0.670	7.286	0.670	8.168	0.672	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
43119	463	1.556	0.592	2.612	0.591	3.240	0.592	4.177	0.591	5.451	0.592	6.456	0.592	7.510	0.593	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
52119	497	1.479	0.567	2.481	0.564	3.265	0.562	4.347	0.564	5.214	0.564	6.132	0.564	7.453	0.569	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
53317	119	1.102	0.313	3.051	0.312	3.817	0.312	4.938	0.312	5.303	0.312	5.735	0.312	6.235	0.312	6.735	0.312	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
62617	69	1.345	0.960	2.255	0.960	2.966	0.960	3.950	0.959	4.739	0.959	5.573	0.960	6.240	0.961	6.959	0.961	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
63117	128	1.295	0.925	2.156	0.925	2.822	0.926	3.632	0.926	4.355	0.926	5.129	0.926	5.925	0.926	6.625	0.926	7.325	0.926	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
76117	202	1.236	0.882	2.071	0.881	2.725	0.881	3.629	0.881	4.355	0.882	5.121	0.882	5.921	0.882	6.721	0.882	7.521	0.882	8.321	0.882	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																															
82817	272	1.172	0.835	1.953	0.835	2.585	0.835	3.455	0.835	4.159	0.835	4.859	0.835	5.559	0.835	6.259	0.835	7.059	0.835	7.859	0.835	8.659	0.835	9.459	0.835	10.259	0.835	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																									
90517	346	1.118	0.797	1.873	0.797	2.463	0.797	3.281	0.797	3.938	0.797	4.631	0.797	5.338	0.797	6.038	0.797	6.738	0.797	7.438	0.797	8.138	0.797	8.838	0.797	9.538	0.797	10.238	0.797	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																							
94117	382	1.088	0.776	1.823	0.776	2.398	0.776	3.193	0.776	3.834	0.776	4.508	0.776	5.173	0.776	5.873	0.776	6.573	0.776	7.273	0.776	7.973	0.776	8.673	0.776	9.373	0.776	10.073	0.776	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																							
99617	140	1.024	0.732	1.723	0.732	2.329	0.732	3.032	0.732	3.706	0.732	4.376	0.732	5.036	0.732	5.706	0.732	6.376	0.732	7.036	0.732	7.706	0.732	8.376	0.732	9.036	0.732	9.706	0.732	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																							
104517	486	1.003	0.715	1.680	0.715	2.209	0.715	2.942	0.715	3.533	0.715	4.155	0.715	4.715	0.715	5.333	0.715	5.915	0.715	6.515	0.715	7.115	0.715	7.715	0.715	8.315	0.715	8.915	0.715	9.515	0.715	10.215	0.715	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																			
12417	586	0.938	0.689	1.571	0.689	2.166	0.689	2.757	0.689	3.301	0.689	3.869	0.689	4.436	0.689	5.006	0.689	5.569	0.689	6.136	0.689	6.736	0.689	7.306	0.689	7.876	0.689	8.446	0.689	9.016	0.689	9.586	0.689	10.216	0.689	YES																																																																																																																																																																																																																																																																																																																																																																																																																																																	
120317	644	0.873	0.623	1.462	0.622	1.923	0.622	2.550	0.622	3.077	0.622	3.623	0.622	4.147	0.622	4.617	0.622	5.187	0.622	5.757	0.622	6.327	0.622	6.897	0.622	7.467	0.622	8.037	0.622	8.587	0.622	9.157	0.622	9.727	0.622	10.297	0.622	YES																																																																																																																																																																																																																																																																																																																																																																																																																																															
12917	223	0.824	0.533	1.329	0.533	1.839	0.533	2.359	0.533	2.879	0.533	3.399	0.533	3.919	0.533	4.439	0.533	4.959	0.533	5.479	0.533	5.999	0.533	6.519	0.533	7.039	0.533	7.559	0.533	8.079	0.533	8.599	0.533	9.119	0.533	9.639	0.533	10.209	0.533	YES																																																																																																																																																																																																																																																																																																																																																																																																																																													
134617	787	0.755	0.539	1.265	0.538	1.663	0.538	2.214	0.538	2.663	0.538	3.130	0.538	3.610	0.538	4.080	0.538	4.550	0.538	5.020	0.538	5.490	0.538	5.960	0.538	6.430	0.538	6.890	0.538	7.360	0.538	7.830	0.538	8.300	0.538	8.770	0.538	9.240	0.538	9.710	0.538	10.180	0.538	10.650	0.538	11.120	0.538	11.590	0.538	12.060	0.538	12.530	0.538	13.000	0.538	13.470	0.538	13.940	0.538	14.410	0.538	14.880	0.538	15.350	0.538	15.820	0.538	16.290	0.538	16.760	0.538	17.230	0.538	17.700	0.538	18.170	0.538	18.640	0.538	19.110	0.538	19.580	0.538	20.050	0.538	20.520	0.538	20.990	0.538	21.460	0.538	21.930	0.538	22.400	0.538	22.870	0.538	23.340	0.538	23.810	0.538	24.280	0.538	24.750	0.538	25.220	0.538	25.690	0.538	26.160	0.538	26.630	0.538	27.100	0.538	27.570	0.538	28.040	0.538	28.510	0.538	28.980	0.538	29.450	0.538	29.920	0.538	30.390	0.538	30.860	0.538	31.330	0.538	31.800	0.538	32.270	0.538	32.740	0.538	33.210	0.538	33.680	0.538	34.150	0.538	34.620	0.538	35.090	0.538	35.560	0.538	36.030	0.538	36.500	0.538	36.970	0.538	37.440	0.538	37.910	0.538	38.380	0.538	38.850	0.538	39.320	0.538	39.790	0.538	40.260	0.538	40.730	0.538	41.200	0.538	41.670	0.538	42.140	0.538	42.610	0.538	43.080	0.538	43.550	0.538	44.020	0.538	44.490	0.538	44.960	0.538	45.430	0.538	45.900	0.538	46.370	0.538	46.840	0.538	47.310	0.538	47.780	0.538	48.250	0.538	48.720	0.538	49.190	0.538	49.660	0.538	50.130	0.538	50.600	0.538	51.070	0.538	51.540	0.538	52.010	0.538	52.480	0.538	52.950	0.538	53.420	0.538	53.890	0.538	54.360	0.538	54.830	0.538	55.300	0.538	55.770	0.538	56.240	0.538	56.710	0.538	57.180	0.538	57.650	0.538	58.120	0.538	58.590	0.538	59.060	0.538	59.530	0.538	60.000	0.538	60.470	0.538	60.940	0.538	61.410	0.538	61.880	0.538	62.350	0.538	62.820	0.538	63.290	0.538	63.760	0.538	64.230	0.538	64.700	0.538	65.170	0.538	65.640	0.538	66.110	0.538	66.580	0.538	67.050	0.538	67.520	0.538	67.990	0.538	68.460	0.538	68.930	0.538	69.400	0.538	69.870	0.538	70.340	0.538	70.810	0.538	71.280	0.538	71.750	0.538	72.220	0.538	72.690	0.538	73.160	0.538	73.630	0.538	74.100	0.538	74.570	0.538	75.040	0.538	75.510	0.538	75.980	0.538	76.450	0.538	76.920	0.538	77.390	0.538	77.860	0.538	78.330	0.538	78.800	0.538	79.270	0.538	79.740	0.538	80.210	0.538	80.680	0.538	81.150	0.538	81.620	0.538	82.090	0.538	82.560	0.538	83.030	0.538	83.500	0.538	83.970	0.538	84.440	0.538	84.910	0.538	85.380	0.538	85.850	0.538	86.320	0.538	86.790	0.538	87.260	0.538	87.730	0.538	88.200	0.538	88.670	0.538	89.140	0.538	89.610	0.538	90.080	0.538	90.550	0.538	91.020	0.538	91.490	0.538	91.960	0.538	92.430	0.538	92.900	0.538	93.370	0.538	93.840	0.538	94.310	0.538	94.780	0.538	95.250	0.538	95.720	0.538	96.190	0.538	96.660	0.538	97.130	0.538	97.600	0.538	98.070	0.538	98.540	0.538	99.010	0.538	99.480	0.538	99.950	0.538	100.420	0.538	100.890	0.538	101.360	0.538	101.830	0.538	102.300	0.538	102.770	0.538	103.240	0.538	103.710	0.538	104.180	0.538	104.650	0.538	105.120	0.538	105.590	0.538	106.060	0.538	106.530	0.538	106.990	0.538	107.460	0.538	107.930	0.538	108.400	0.538	108.870	0.538	109.340	0.538	109.810	0.538	110.280	0.53

**KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation**

**Reach 7**

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG			
			Q	INT	%																			
0.18	11	11	1.139	0.982	1.933	0.981	2.566	0.981	3.388	0.981	4.090	0.981	4.777	0.981	5.493	0.981	6.210	0.981	6.927	0.981	7.644	0.981	8.361	0.981
75.18	61					1.121	0.967	1.903	0.966	2.525	0.965	3.335	0.966	3.996	0.966	4.702	0.966	5.435	0.966	6.237	0.966	7.007	0.966	
125.18	111					1.156	0.959	1.876	0.952	2.499	0.951	3.297	0.952	3.959	0.952	4.635	0.952	5.392	0.952	6.153	0.952	6.933	0.952	
175.18	156					1.078	0.930	1.829	0.928	2.425	0.927	3.205	0.928	3.899	0.928	4.518	0.928	5.245	0.928	6.025	0.928	6.803	0.928	
248.18	234					1.068	0.921	1.811	0.919	2.400	0.918	3.173	0.919	3.801	0.919	4.473	0.919	5.217	0.919	5.997	0.919	6.773	0.919	
278.18	264					1.052	0.915	1.783	0.910	2.365	0.909	3.131	0.910	3.767	0.910	4.422	0.910	5.157	0.910	5.837	0.910	6.597	0.910	
354.18	340					1.042	0.898	1.765	0.896	2.338	0.894	3.082	0.895	3.704	0.895	4.358	0.895	5.095	0.895	5.838	0.895	6.593	0.895	
379.18	365					1.033	0.890	1.750	0.888	2.318	0.886	3.035	0.888	3.672	0.887	4.321	0.887	5.062	0.887	5.801	0.887	6.559	0.887	
417.18	403					1.020	0.879	1.727	0.877	2.287	0.874	3.025	0.876	3.624	0.876	4.264	0.876	4.987	0.876	5.727	0.876	6.487	0.876	
475.18	461					0.999	0.862	1.692	0.859	2.239	0.856	2.954	0.858	3.550	0.858	4.177	0.858	4.860	0.858	5.552	0.858	6.260	0.858	
493.18	479					0.993	0.856	1.681	0.854	2.225	0.850	2.944	0.853	3.521	0.852	4.150	0.852	4.837	0.852	5.539	0.852	6.237	0.852	
538.18	521					0.979	0.844	1.656	0.841	2.190	0.837	2.900	0.840	3.473	0.839	4.087	0.839	4.791	0.839	5.491	0.839	6.191	0.839	
543.18	529					0.976	0.841	1.651	0.838	2.184	0.835	2.891	0.837	3.463	0.837	4.075	0.837	4.751	0.837	5.451	0.837	6.151	0.837	
584.18	570					0.961	0.829	1.627	0.826	2.150	0.822	2.848	0.825	3.411	0.824	4.013	0.824	4.702	0.824	5.404	0.824	6.104	0.824	
614.18	600					0.930	0.802	1.572	0.798	2.077	0.794	2.792	0.797	3.296	0.797	3.878	0.796	4.575	0.796	5.275	0.796	5.975	0.796	
677.18	663					0.929	0.801	1.571	0.797	2.074	0.793	2.749	0.796	3.292	0.796	3.874	0.796	4.578	0.796	5.278	0.796	5.978	0.796	
680.18	666					0.928	0.800	1.569	0.796	2.072	0.792	2.746	0.795	3.288	0.795	3.869	0.795	4.571	0.795	5.271	0.795	5.971	0.795	
687.18	673					0.926	0.798	1.565	0.794	2.066	0.790	2.758	0.793	3.279	0.793	3.859	0.792	4.562	0.792	5.262	0.792	5.962	0.792	
693.18	679					0.923	0.796	1.561	0.792	2.061	0.788	2.732	0.791	3.272	0.791	3.849	0.791	4.558	0.791	5.258	0.791	5.958	0.791	
785.18	769					0.892	0.769	1.507	0.765	1.988	0.760	2.637	0.764	3.157	0.763	3.714	0.763	4.459	0.770	5.159	0.770	5.859	0.770	
827.18	813					0.877	0.756	1.480	0.751	1.952	0.746	2.590	0.750	3.101	0.749	3.648	0.749	4.271	0.757	4.971	0.757	5.671	0.757	
887.18	873					0.856	0.738	1.444	0.733	1.903	0.727	2.526	0.732	3.024	0.731	3.558	0.731	4.232	0.731	4.932	0.731	5.632	0.731	
917.18	902					0.832	0.722	1.409	0.717	1.859	0.713	2.457	0.713	2.957	0.713	3.593	0.713	4.293	0.713	4.993	0.713	5.693	0.713	
991.18	977					0.820	0.707	1.382	0.701	1.818	0.695	2.416	0.700	2.892	0.699	3.402	0.699	4.094	0.699	4.794	0.699	5.494	0.699	
1096.18	1082					0.783	0.675	1.318	0.669	1.732	0.662	2.304	0.667	2.758	0.666	3.244	0.666	3.751	0.666	4.256	0.666	4.756	0.666	
1166.18	1152					0.759	0.654	1.276	0.648	1.675	0.640	2.230	0.646	2.668	0.645	3.139	0.645	3.645	0.645	4.145	0.645	4.645	0.645	
1221.18	1203					0.733	0.632	1.229	0.623	1.630	0.615	2.105	0.615	2.556	0.614	3.052	0.614	3.552	0.614	4.052	0.614	4.552	0.614	
1330.18	1316					0.702	0.605	1.177	0.598	1.541	0.589	2.056	0.595	2.459	0.594	2.893	0.594	3.394	0.594	3.894	0.594	4.394	0.594	
1360.18	1346					0.691	0.596	1.159	0.588	1.516	0.580	2.024	0.586	2.421	0.585	2.848	0.585	3.348	0.585	3.848	0.585	4.348	0.585	
1392.18	1376					0.682	0.590	1.140	0.580	1.492	0.570	1.930	0.570	2.380	0.570	2.800	0.570	3.300	0.570	3.800	0.570	4.300	0.570	

KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation

Reach 8

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG		
			Q	INT	%	Q	INT	%															
211.11		1113	0.918	0.968		1.551	0.968		2.040	0.968		2.722	0.968		3.272	0.968		3.854	0.968		18.447	0.968	
119.11	78		0.892	0.941		1.506	0.939		1.980	0.939		2.643	0.940		3.178	0.940		3.743	0.940		17.911	0.940	
187.11	146		0.857	0.891		1.329	0.891		1.800	0.891		2.257	0.892		2.698	0.892		3.222	0.892		7.742	0.892	
230.11	228		0.841	0.887		1.417	0.884		1.864	0.884		2.489	0.885		2.992	0.885		3.525	0.885		16.864	0.885	YES
320.11	279		0.829	0.874		1.396	0.871		1.836	0.871		2.452	0.872		2.948	0.872		3.472	0.872		16.612	0.872	YES
352.11	311		0.793	0.836		1.333	0.832		1.754	0.832		2.343	0.833		2.817	0.833		3.318	0.833		15.872	0.833	YES
446.11	405		0.774	0.816		1.300	0.811		1.711	0.812		2.286	0.813		2.748	0.813		3.238	0.813		15.488	0.812	YES
495.11	454		0.745	0.799		1.253	0.794		1.629	0.794		2.159	0.795		2.629	0.795		3.125	0.795		14.922	0.795	
518.11	525		0.722	0.766		1.195	0.766		1.565	0.766		2.075	0.767		2.535	0.767		3.035	0.767		14.535	0.767	YES
592.11	581		0.586	0.619		0.974	0.608		1.283	0.609		1.718	0.611		2.067	0.611		2.437	0.612		11.636	0.610	YES
1047.11	1006		0.562	0.583		0.932	0.581		1.228	0.583		1.645	0.585		1.979	0.585		2.334	0.586		11.140	0.584	YES
1056.11	1015		0.559	0.589		0.926	0.578		1.221	0.579		1.634	0.581		1.967	0.582		2.319	0.582		11.069	0.581	YES
1065.11	1024		0.555	0.586		0.920	0.574		1.213	0.575		1.624	0.577		1.954	0.578		2.304	0.579		10.998	0.577	YES
1076.11	1035		0.551	0.581		0.913	0.569		1.203	0.571		1.611	0.573		1.939	0.573		2.286	0.574		10.912	0.572	YES
1102.11	1025		0.545	0.574		0.907	0.571		1.194	0.571		1.602	0.572		1.929	0.572		2.276	0.572		10.866	0.570	YES
1135.11	1094		0.528	0.557		0.873	0.545		1.151	0.546		1.542	0.548		1.857	0.549		2.190	0.550		10.447	0.548	YES
1160.11	1119		0.519	0.547		0.857	0.534		1.130	0.536		1.513	0.538		1.822	0.539		2.149	0.540		10.250	0.538	YES
1234.11	1193		0.490	0.517		0.807	0.504		1.065	0.505		1.427	0.507		1.719	0.508		2.027	0.509		9.668	0.507	YES
1252.11	1223		0.473	0.502		0.793	0.501		1.023	0.501		1.405	0.502		1.693	0.502		2.003	0.502		9.263	0.501	YES
1325.11	1284		0.456	0.481		0.747	0.466		0.985	0.467		1.322	0.470		1.592	0.471		1.878	0.472		8.951	0.470	YES
1356.11	1315		0.444	0.468		0.726	0.453		0.958	0.455		1.286	0.457		1.549	0.458		1.827	0.459		8.707	0.457	YES
1391.11	1350		0.430	0.454		0.703	0.438		0.928	0.440		1.245	0.443		1.500	0.444		1.770	0.445		8.431	0.442	YES
1450.11	1409		0.408	0.430		0.663	0.414		0.876	0.416		1.177	0.418		1.418	0.419		1.673	0.420		7.967	0.418	YES
1464.11	1423		0.402	0.424		0.654	0.408		0.864	0.410		1.160	0.412		1.398	0.414		1.650	0.414		7.857	0.412	YES
1475.11	1434		0.398	0.420		0.647	0.403		0.854	0.405		1.147	0.408		1.383	0.409		1.632	0.410		7.770	0.408	YES
1480.11	1439		0.396	0.418		0.643	0.401		0.850	0.403		1.142	0.406		1.376	0.407		1.624	0.408		7.731	0.406	YES
1488.11	1442		0.385	0.417		0.641	0.400		0.847	0.402		1.138	0.403		1.372	0.403		1.619	0.404		7.701	0.404	YES
1635.11	1562		0.329	0.361		0.524	0.329		0.627	0.329		1.028	0.332		1.333	0.332		1.631	0.332		5.723	0.332	YES
1735.11	1694		0.298	0.315		0.473	0.295		0.627	0.297		0.846	0.301		1.021	0.302		1.206	0.303		5.723	0.300	YES
1800.11	1711		0.250	0.271		0.430	0.250		0.570	0.250		0.770	0.250		0.930	0.250		1.100	0.250		5.211	0.250	
1861.10	61		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
1897.10	97		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
1949.10	149		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
1995.10	195		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2040.10	240		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2078.10	278		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2138.10	338		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2223.10	423		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2254.10	454		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2274.10	474		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2294.10	494		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2324.10	524		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2356.10	556		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2416.10	616		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2474.10	674		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2512.10	712		0.250			0.430			0.570			0.770			0.930			1.100			5.211		
2530.10	751		0.250			0.430			0.570			0.770			0.930			1.100			5.211		

**KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation**

**Reach 9**

**No Interpolation**

Station	$\Delta$	Flow Node	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	Q	INT	%	REG	INT	%
121.09	18	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
221.09	58	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
287.09	66	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
296.09	9	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
329.09	33	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
347.09	18	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
369.09	22	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
415.09	46	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
474.09	59	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
534.09	60	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
622.09	88	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
712.09	90	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
799.09	87	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									
828.09	85	0.580	0.980	1.010	1.010	1.300	1.730	2.000	2.450	2.450	10.379									

**KE1624 - Petticoat Creek Floodline Mapping Study - Flow Interpolation**

**Reach 10**

**No Interpolation**

Station	$\Delta$	Flow Node	2			5			10			25			50			100			REG	10% change ?
			Q	INT	%																	
138.04	46	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
206.04	68	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
230.04	24	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
273.04	43	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
383.04	110	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
490.04	107	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
549.04	59	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
556.04	7	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
611.04	55	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
714.04	103	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
807.04	93	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
941.04	134	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
956.04	15	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
960.04	4	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
977.04	11	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
977.04	6	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
1021.04	44	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
1051.04	30	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
1142.04	51	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1
1245.04	10	0.770	1.280	1.680		0.770	2.220		0.770	2.650		0.770	3.110		0.770	3.110		0.770	3.110		11.344	1

## **APPENDIX D**

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### **MODEL SUMMARY OUTPUT**

HEC-RAS Plan: 0706NS

River	Reach	River Sta.	Profile	Q.Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl
Reach #9	Tributary 8	1273.09	2 Year	0.68	157.00	157.03	157.02	157.03	0.029957	0.48	2.70	91.00	0.88
Reach #9	Tributary 8	1273.09	5 Year	0.98	157.00	157.04	157.02	157.04	0.032183	0.60	3.62	91.34	0.96
Reach #9	Tributary 8	1273.09	10 Year	1.30	157.00	157.06	157.03	157.07	0.013038	0.51	5.64	92.09	0.66
Reach #9	Tributary 8	1273.09	25 Year	1.73	157.00	157.07	157.04	157.08	0.014207	0.59	6.53	92.41	0.70
Reach #9	Tributary 8	1273.09	50 Year	2.08	157.00	157.08	157.04	157.08	0.015412	0.65	7.13	92.63	0.74
Reach #9	Tributary 8	1273.09	100 Year	2.45	157.00	157.08	157.04	157.09	0.017690	0.72	7.56	92.79	0.80
Reach #9	Tributary 8	1273.09	Regulatory	10.38	157.00	157.20	157.12	157.22	0.017737	1.28	18.25	96.61	0.93
Reach #9	Tributary 8	1188.09	2 Year	0.58	155.00	155.06	155.03	155.06	0.018448	0.57	2.29	43.25	0.77
Reach #9	Tributary 8	1188.09	5 Year	0.98	155.00	155.08	155.04	155.08	0.017284	0.69	3.25	45.20	0.78
Reach #9	Tributary 8	1188.09	10 Year	1.30	155.00	155.07	155.05	155.08	0.026333	1.07	2.73	44.18	1.33
Reach #9	Tributary 8	1188.09	25 Year	1.73	155.00	155.08	155.06	155.10	0.043767	1.14	3.48	45.63	1.26
Reach #9	Tributary 8	1188.09	50 Year	2.08	155.00	155.10	155.07	155.11	0.038475	1.17	4.08	46.78	1.21
Reach #9	Tributary 8	1188.09	100 Year	2.45	155.00	155.11	155.08	155.13	0.031017	1.17	4.86	48.22	1.12
Reach #9	Tributary 8	1188.09	Regulatory	10.38	155.00	155.26	155.20	155.30	0.029292	1.99	12.93	61.21	1.25
Reach #9	Tributary 8	1123.09	2 Year	0.58	154.00	154.06	154.03	154.06	0.013160	0.50	2.52	43.74	0.66
Reach #9	Tributary 8	1123.09	5 Year	0.98	154.00	154.06	154.04	154.09	0.013883	0.63	3.43	45.07	0.71
Reach #9	Tributary 8	1123.09	10 Year	1.30	154.00	154.12	154.06	154.12	0.008859	0.57	5.13	47.44	0.53
Reach #9	Tributary 8	1123.09	25 Year	1.73	154.00	154.14	154.06	154.14	0.007356	0.65	6.02	48.64	0.56
Reach #9	Tributary 8	1123.09	50 Year	2.08	154.00	154.16	154.07	154.16	0.007722	0.71	6.65	49.48	0.59
Reach #9	Tributary 8	1123.09	100 Year	2.45	154.00	154.16	154.08	154.17	0.008707	0.76	7.13	50.10	0.63
Reach #9	Tributary 8	1123.09	Regulatory	10.38	154.00	154.37	154.20	154.39	0.008319	1.33	18.86	63.48	0.70
Reach #9	Tributary 8	1024.09	2 Year	0.58	153.00	153.18	153.12	153.19	0.008147	0.71	2.42	26.03	0.54
Reach #9	Tributary 8	1024.09	5 Year	0.98	153.00	153.22	153.15	153.23	0.005637	0.79	3.79	32.56	0.53
Reach #9	Tributary 8	1024.09	10 Year	1.30	153.00	153.22	153.17	153.24	0.011604	1.11	3.56	31.58	0.76
Reach #9	Tributary 8	1024.09	25 Year	1.73	153.00	153.25	153.20	153.27	0.010287	1.15	4.67	36.17	0.73
Reach #9	Tributary 8	1024.09	50 Year	2.08	153.00	153.27	153.21	153.29	0.009376	1.17	5.60	39.59	0.71
Reach #9	Tributary 8	1024.09	100 Year	2.45	153.00	153.30	153.22	153.32	0.008065	1.16	6.75	43.45	0.67
Reach #9	Tributary 8	1024.09	Regulatory	10.38	153.00	153.53		153.56	0.008053	1.69	20.62	75.96	0.74
Reach #9	Tributary 8	884.09	2 Year	0.58	151.70	151.92	151.88	151.97	0.013137	1.05	0.65	2.93	0.77
Reach #9	Tributary 8	884.09	5 Year	0.98	151.70	151.99	151.95	152.07	0.013346	1.25	0.78	3.18	0.81
Reach #9	Tributary 8	884.09	10 Year	1.30	151.70	152.05	152.05	152.09	0.006109	0.97	3.68	58.69	0.56
Reach #9	Tributary 8	884.09	25 Year	1.73	151.70	152.07	152.07	152.11	0.008814	1.07	4.76	59.82	0.60
Reach #9	Tributary 8	884.09	50 Year	2.08	151.70	152.08	152.08	152.12	0.007479	1.15	5.46	60.53	0.63
Reach #9	Tributary 8	884.09	100 Year	2.45	151.70	152.09	152.09	152.13	0.008844	1.26	5.88	60.97	0.69
Reach #9	Tributary 8	884.09	Regulatory	10.38	151.70	152.26	152.22	152.32	0.009768	1.76	17.64	71.91	0.78
Reach #9	Tributary 8	799.09	2 Year	0.58	150.70	151.03	151.02	151.07	0.008542	1.01	0.83	17.81	0.64
Reach #9	Tributary 8	799.09	5 Year	0.98	150.70	151.07	151.07	151.13	0.009178	1.17	1.83	20.22	0.68
Reach #9	Tributary 8	799.09	10 Year	1.30	150.70	151.10	151.10	151.16	0.009418	1.28	2.43	21.69	0.70
Reach #9	Tributary 8	799.09	25 Year	1.73	150.70	151.14	151.13	151.19	0.008661	1.30	3.31	23.67	0.68
Reach #9	Tributary 8	799.09	50 Year	2.08	150.70	151.17	151.15	151.22	0.008303	1.34	3.98	25.07	0.68
Reach #9	Tributary 8	799.09	100 Year	2.45	150.70	151.20	151.17	151.25	0.007723	1.35	4.73	26.54	0.66
Reach #9	Tributary 8	799.09	Regulatory	10.38	150.70	151.50		151.56	0.008089	1.97	14.93	41.74	0.74
Reach #9	Tributary 8	712.09	2 Year	0.58	149.70	150.08		150.12	0.014723	1.25	1.25	15.29	0.73
Reach #9	Tributary 8	712.09	5 Year	0.98	149.70	150.13	150.12	150.17	0.012809	1.30	2.10	17.49	0.70
Reach #9	Tributary 8	712.09	10 Year	1.30	149.70	150.16	150.14	150.20	0.013569	1.40	2.50	18.63	0.73
Reach #9	Tributary 8	712.09	25 Year	1.73	149.70	150.18	150.17	150.23	0.015352	1.56	3.10	19.75	0.79
Reach #9	Tributary 8	712.09	50 Year	2.08	149.70	150.20	150.18	150.25	0.016600	1.67	3.47	20.53	0.82
Reach #9	Tributary 8	712.09	100 Year	2.45	149.70	150.22	150.20	150.27	0.018733	1.81	3.76	21.12	0.88
Reach #9	Tributary 8	712.09	Regulatory	10.38	149.70	150.50	150.42	150.57	0.018428	2.51	11.37	33.04	0.95
Reach #9	Tributary 8	622.09	2 Year	0.58	148.70	149.06	149.06	149.09	0.009738	1.04	1.70	24.15	0.62
Reach #9	Tributary 8	622.09	5 Year	0.98	148.70	149.10		149.13	0.011439	1.21	2.49	25.38	0.68
Reach #9	Tributary 8	622.09	10 Year	1.30	148.70	149.12		149.15	0.011075	1.25	3.16	26.37	0.68
Reach #9	Tributary 8	622.09	25 Year	1.73	148.70	149.16		149.18	0.010039	1.27	4.06	27.67	0.65
Reach #9	Tributary 8	622.09	50 Year	2.08	148.70	149.18		149.21	0.009443	1.28	4.78	28.62	0.64
Reach #9	Tributary 8	622.09	100 Year	2.45	148.70	149.21		149.23	0.008580	1.27	5.55	29.67	0.62
Reach #9	Tributary 8	622.09	Regulatory	10.38	148.70	149.49		149.53	0.008846	1.81	15.50	40.59	0.68
Reach #9	Tributary 8	534.09	2 Year	0.58	147.70	148.05	148.05	148.08	0.008231	0.96	2.11	34.85	0.57
Reach #9	Tributary 8	534.09	5 Year	0.98	147.70	148.07	148.07	148.11	0.012993	1.25	2.72	35.59	0.72
Reach #9	Tributary 8	534.09	10 Year	1.30	147.70	148.09	148.09	148.12	0.013799	1.34	3.32	36.22	0.75
Reach #9	Tributary 8	534.09	25 Year	1.73	147.70	148.10	148.10	148.14	0.015910	1.48	3.90	38.81	0.81
Reach #9	Tributary 8	534.09	50 Year	2.08	147.70	148.12	148.12	148.16	0.017672	1.59	4.30	37.21	0.86
Reach #9	Tributary 8	534.09	100 Year	2.45	147.70	148.12	148.12	148.17	0.020773	1.76	4.57	37.47	0.93
Reach #9	Tributary 8	534.09	Regulatory	10.38	147.70	148.29	148.26	148.37	0.025853	2.53	11.50	43.82	1.11
Reach #9	Tributary 8	474.09	2 Year	0.58	146.70	147.25		147.26	0.001236	0.55	2.59	15.65	0.25
Reach #9	Tributary 8	474.09	5 Year	0.98	146.70	147.30		147.32	0.002005	0.75	3.43	18.24	0.33
Reach #9	Tributary 8	474.09	10 Year	1.30	146.70	147.35		147.37	0.002200	0.83	4.29	20.56	0.36
Reach #9	Tributary 8	474.09	25 Year	1.73	146.70	147.40		147.42	0.002337	0.91	5.42	23.26	0.36
Reach #9	Tributary 8	474.09	50 Year	2.08	146.70	147.43		147.45	0.002533	0.97	6.17	24.89	0.38
Reach #9	Tributary 8	474.09	100 Year	2.45	146.70	147.46		147.49	0.002643	1.03	6.99	26.57	0.39
Reach #9	Tributary 8	474.09	Regulatory	10.38	146.70	147.82		147.86	0.003868	1.65	19.89	45.33	0.51
Reach #9	Tributary 8	415.09	2 Year	0.58	146.70	146.98	146.96	147.06	0.022565	1.41	0.41	2.04	1.00
Reach #9	Tributary 8	415.09	5 Year	0.98	146.70	147.07	147.07	147.11	0.008311	1.09	2.25	28.11	0.64
Reach #9	Tributary 8	415.09	10 Year	1.30	146.70	147.09	147.09	147.13	0.008588	1.19	2.88	29.08	0.68
Reach #9	Tributary 8	415.09	25 Year	1.73	146.70	147.11	147.11	147.16	0.010827	1.36	3.44	28.91	0.76
Reach #9	Tributary 8	415.09	50 Year	2.08	146.70	147.13	147.13	147.18	0.010760	1.41	4.04	30.78	0.78
Reach #9	Tributary 8	415.09	100 Year	2.45	146.70	147.14	147.14	147.20	0.011580</				

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit. W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel. Chnl. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl.
Reach #8	Tributary 8	369.09	2 Year	0.58	145.70	146.17		146.20	0.005655	0.94	1.48	10.96	0.47
Reach #9	Tributary 8	369.09	5 Year	0.98	145.70	146.22		146.26	0.007505	1.18	2.11	13.30	0.56
Reach #9	Tributary 8	369.09	10 Year	1.30	145.70	146.26		146.30	0.008524	1.32	2.58	14.76	0.60
Reach #9	Tributary 8	369.09	25 Year	1.73	145.70	146.30		146.35	0.009574	1.47	3.17	16.37	0.64
Reach #9	Tributary 8	369.09	50 Year	2.08	145.70	146.32		146.38	0.010200	1.56	3.62	17.53	0.67
Reach #9	Tributary 8	369.09	100 Year	2.45	145.70	146.35		146.40	0.010765	1.65	4.07	18.61	0.69
Reach #9	Tributary 8	369.09	Regulatory	10.38	145.70	146.64		146.74	0.015802	2.63	11.42	31.32	0.80
Reach #9	Tributary 8	347.09	2 Year	0.58	145.70	146.12		146.13	0.001842	0.53	3.50	31.49	0.29
Reach #9	Tributary 8	347.09	5 Year	0.98	145.70	146.16		146.17	0.002410	0.65	4.78	34.40	0.34
Reach #9	Tributary 8	347.09	10 Year	1.30	145.70	146.18		146.19	0.002732	0.72	5.67	36.29	0.37
Reach #9	Tributary 8	347.09	25 Year	1.73	145.70	146.21		146.22	0.003008	0.80	6.80	38.56	0.39
Reach #9	Tributary 8	347.09	50 Year	2.08	145.70	146.23		146.24	0.003328	0.86	7.53	39.98	0.41
Reach #9	Tributary 8	347.09	100 Year	2.45	145.70	146.25		146.26	0.003576	0.92	8.29	41.37	0.43
Reach #9	Tributary 8	347.09	Regulatory	10.38	145.70	146.49		146.52	0.005629	1.55	20.44	59.48	0.59
Reach #9	Tributary 8	329.09	2 Year	0.58	145.70	146.04		146.07	0.007528	0.93	2.11	45.54	0.58
Reach #9	Tributary 8	329.09	5 Year	0.98	145.70	146.06		146.08	0.008807	1.07	3.25	46.89	0.64
Reach #9	Tributary 8	329.09	10 Year	1.30	145.70	146.08		146.11	0.010317	1.19	3.86	47.58	0.70
Reach #9	Tributary 8	329.09	25 Year	1.73	145.70	146.09		146.13	0.013240	1.38	4.39	48.20	0.79
Reach #9	Tributary 8	329.09	50 Year	2.08	145.70	146.10		146.14	0.015578	1.44	5.01	48.89	0.81
Reach #9	Tributary 8	329.09	100 Year	2.45	145.70	146.11		146.15	0.016515	1.52	5.52	49.45	0.84
Reach #9	Tributary 8	329.09	Regulatory	10.38	145.70	146.24		146.32	0.028430	2.63	12.18	56.31	1.24
Reach #9	Tributary 8	296.09	2 Year	0.58	144.70	145.13		145.14	0.002691	0.63	2.61	22.63	0.34
Reach #9	Tributary 8	296.09	5 Year	0.98	144.70	145.18		145.19	0.002818	0.72	4.00	26.42	0.36
Reach #9	Tributary 8	296.09	10 Year	1.30	144.70	145.22		145.23	0.002805	0.76	5.04	28.95	0.36
Reach #9	Tributary 8	296.09	25 Year	1.73	144.70	145.26		145.27	0.002852	0.82	6.27	31.67	0.37
Reach #9	Tributary 8	296.09	50 Year	2.08	144.70	145.29		145.30	0.002920	0.85	7.22	33.62	0.38
Reach #9	Tributary 8	296.09	100 Year	2.45	144.70	145.32		145.33	0.002868	0.89	8.14	35.40	0.39
Reach #9	Tributary 8	296.09	Regulatory	10.38	144.70	145.68		145.70	0.002809	1.22	25.52	59.83	0.41
Reach #9	Tributary 8	287.09	2 Year	0.58	144.70	145.13		145.14	0.002691	0.63	2.61	22.63	0.34
Reach #9	Tributary 8	287.09	5 Year	0.98	144.70	145.18		145.19	0.002818	0.72	4.00	26.42	0.36
Reach #9	Tributary 8	287.09	10 Year	1.30	144.70	145.22		145.23	0.002805	0.76	5.04	28.95	0.36
Reach #9	Tributary 8	287.09	25 Year	1.73	144.70	145.26		145.27	0.002852	0.82	6.27	31.67	0.37
Reach #9	Tributary 8	287.09	50 Year	2.08	144.70	145.29		145.30	0.002920	0.85	7.22	33.62	0.38
Reach #9	Tributary 8	287.09	100 Year	2.45	144.70	145.32		145.33	0.002868	0.89	8.14	35.40	0.39
Reach #9	Tributary 8	287.09	Regulatory	10.38	144.70	145.57		145.65	0.008930	2.15	12.79	30.41	0.77
Reach #9	Tributary 8	221.09	2 Year	0.58	143.70	143.89		143.97	0.023335	1.29	0.45	2.66	1.00
Reach #9	Tributary 8	221.09	5 Year	0.98	143.70	143.96		144.08	0.021422	1.50	0.65	2.88	1.00
Reach #9	Tributary 8	221.09	10 Year	1.30	143.70	144.02		144.15	0.019334	1.60	0.83	4.17	0.98
Reach #9	Tributary 8	221.09	25 Year	1.73	143.70	144.08		144.22	0.016869	1.71	1.11	4.96	0.94
Reach #9	Tributary 8	221.09	50 Year	2.08	143.70	144.12		144.26	0.015768	1.79	1.34	5.51	0.93
Reach #9	Tributary 8	221.09	100 Year	2.45	143.70	144.16		144.33	0.014774	1.86	1.59	6.06	0.92
Reach #9	Tributary 8	221.09	Regulatory	10.38	143.70	144.69		144.99	0.010913	2.76	6.59	12.82	0.90
Reach #9	Tributary 8	163.09	2 Year	0.58	142.70	143.05		143.07	0.007850	0.91	2.30	44.88	0.56
Reach #9	Tributary 8	163.09	5 Year	0.98	142.70	143.06		143.09	0.011001	1.12	3.13	45.15	0.67
Reach #9	Tributary 8	163.09	10 Year	1.30	142.70	143.08		143.11	0.012545	1.24	3.71	45.35	0.72
Reach #9	Tributary 8	163.09	25 Year	1.73	142.70	143.09		143.12	0.016299	1.44	4.17	45.50	0.83
Reach #9	Tributary 8	163.09	50 Year	2.08	142.70	143.10		143.14	0.016753	1.50	4.72	45.68	0.85
Reach #9	Tributary 8	163.09	100 Year	2.45	142.70	143.11		143.15	0.018360	1.60	5.13	45.81	0.89
Reach #9	Tributary 8	163.09	Regulatory	10.38	142.70	143.44		143.46	0.004387	1.25	21.24	50.81	0.49
Reach #9	Tributary 7B	2568.10	2 Year	0.25	159.70	160.05		160.08	0.023304	0.98	0.53	8.60	0.85
Reach #9	Tributary 7B	2568.10	5 Year	0.43	159.70	160.08		160.12	0.025849	1.17	0.77	9.18	0.93
Reach #9	Tributary 7B	2568.10	10 Year	0.57	159.70	160.09		160.14	0.030863	1.35	0.90	9.46	1.02
Reach #9	Tributary 7B	2568.10	25 Year	0.77	159.70	160.11		160.17	0.032298	1.49	1.10	9.90	1.07
Reach #9	Tributary 7B	2568.10	50 Year	0.93	159.70	160.13		160.19	0.029330	1.51	1.31	10.33	1.04
Reach #9	Tributary 7B	2568.10	100 Year	1.10	159.70	160.15		160.21	0.030751	1.61	1.45	10.82	1.07
Reach #9	Tributary 7B	2568.10	Regulatory	5.21	159.70	160.37		160.51	0.034716	2.69	4.33	15.28	1.27
Reach #8	Tributary 7B	2512.10	2 Year	0.25	157.70	157.98		158.09	0.031228	1.46	0.17	0.82	1.02
Reach #8	Tributary 7B	2512.10	5 Year	0.43	157.70	158.06		158.16	0.030977	0.99	1.32	20.84	0.60
Reach #8	Tributary 7B	2512.10	10 Year	0.57	157.70	158.07		158.10	0.012635	1.15	1.53	20.87	0.68
Reach #8	Tributary 7B	2512.10	25 Year	0.77	157.70	158.09		158.12	0.013364	1.23	1.92	21.47	0.71
Reach #8	Tributary 7B	2512.10	50 Year	0.93	157.70	158.10		158.13	0.014829	1.32	2.15	21.81	0.75
Reach #8	Tributary 7B	2512.10	100 Year	1.10	157.70	158.11		158.15	0.016325	1.42	2.36	22.12	0.79
Reach #8	Tributary 7B	2512.10	Regulatory	5.21	157.70	158.25		158.33	0.032258	2.52	5.75	26.64	1.18
Reach #8	Tributary 7B	2471.10	2 Year	0.25	155.70	155.98		155.98	0.030967	1.45	0.17	0.84	1.02
Reach #8	Tributary 7B	2471.10	5 Year	0.43	155.70	156.07		156.07	0.010783	1.07	1.01	12.83	0.64
Reach #8	Tributary 7B	2471.10	10 Year	0.57	155.70	156.09		156.13	0.013588	1.24	1.19	13.38	0.72
Reach #8	Tributary 7B	2471.10	25 Year	0.77	155.70	156.11		156.16	0.014380	1.35	1.54	14.38	0.75
Reach #8	Tributary 7B	2471.10	50 Year	0.93	155.70	156.13		156.18	0.014781	1.41	1.79	15.04	0.77
Reach #8	Tributary 7B	2471.10	100 Year	1.10	155.70	156.14		156.20	0.015805	1.50	2.01	15.61	0.80
Reach #8	Tributary 7B	2471.10	Regulatory	5.21	155.70	156.33		156.33	0.027372	2.60	5.58	22.99	1.12
Reach #8	Tributary 7B	2418.10	2 Year	0.25	153.70	153.93		153.93	0.03402	1.34	0.18	1.04	1.01
Reach #8	Tributary 7B	2418.10	5 Year	0.43	153.70	154.05		154.05	0.008436	0.97	1.15	19.70	0.59
Reach #8	Tributary 7B	2418.10	10 Year	0.57	153.70	154.06		154.10	0.009853	1.08	1.44	20.08	0.64
Reach #8	Tributary 7B	2418.10	25 Year	0.77	153.70	154.08		154.12	0.010399	1.17	1.87	20.63	0.67
Reach #8	Tributary 7B	2418.10	50 Year	0.93	153.70	154.09		154.14	0.011782	1.27	2.09	20.91	0.72
Reach #8	Tributary 7B	2418.10	100 Year	1.10	153.70	154.11		154.15	0.012326	1.33	2.36	21.25	0.74

HEC-RAS Plan: 0708NS (Continued)

River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel.Chn. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chn.
Reach #8	Tributary 7B	2416.10	Regulatory	5.21	153.70	154.26	154.28	154.36	0.024010	2.40	5.98	25.32	1.10
Reach #8	Tributary 7B	2356.10	2 Year	0.26	151.70	151.96	151.96	152.06	0.029771	1.43	0.18	0.85	1.00
Reach #8	Tributary 7B	2356.10	5 Year	0.43	151.70	152.07	152.07	152.11	0.010497	1.08	0.62	10.82	0.62
Reach #8	Tributary 7B	2356.10	10 Year	0.57	151.70	152.09	152.09	152.14	0.012860	1.24	1.10	11.27	0.70
Reach #8	Tributary 7B	2356.10	25 Year	0.77	151.70	152.12	152.12	152.17	0.013429	1.34	1.43	12.03	0.72
Reach #8	Tributary 7B	2356.10	50 Year	0.93	151.70	152.13	152.13	152.19	0.014131	1.42	1.65	12.52	0.75
Reach #8	Tributary 7B	2356.10	100 Year	1.10	151.70	152.15	152.15	152.21	0.015494	1.53	1.83	12.91	0.79
Reach #8	Tributary 7B	2356.10	Regulatory	5.21	151.70	152.36	152.36	152.48	0.025805	2.64	5.17	18.63	1.09
Reach #8	Tributary 7B	2324.10	2 Year	0.25	150.70	151.08		151.09	0.000748	0.33	1.81	18.38	0.10
Reach #8	Tributary 7B	2324.10	5 Year	0.43	150.70	151.14		151.15	0.000760	0.37	2.92	20.00	0.20
Reach #8	Tributary 7B	2324.10	10 Year	0.57	150.70	151.16		151.17	0.000936	0.43	3.38	20.64	0.22
Reach #8	Tributary 7B	2324.10	25 Year	0.77	150.70	151.20		151.20	0.001064	0.49	4.09	21.58	0.24
Reach #8	Tributary 7B	2324.10	50 Year	0.93	150.70	151.22		151.23	0.001171	0.53	4.57	22.20	0.25
Reach #8	Tributary 7B	2324.10	100 Year	1.10	150.70	151.24		151.25	0.001263	0.57	5.05	22.80	0.27
Reach #8	Tributary 7B	2324.10	Regulatory	5.21	150.70	151.53		151.55	0.002360	1.08	12.84	30.96	0.40
Reach #8	Tributary 7B	2294.10	2 Year	0.25	150.70	151.04		151.05	0.001946	0.48	1.11	18.30	0.30
Reach #8	Tributary 7B	2294.10	5 Year	0.43	150.70	151.11		151.12	0.001318	0.46	2.40	20.02	0.25
Reach #8	Tributary 7B	2294.10	10 Year	0.57	150.70	151.12		151.13	0.001852	0.56	2.65	20.33	0.30
Reach #8	Tributary 7B	2294.10	25 Year	0.77	150.70	151.15		151.16	0.002100	0.62	3.23	21.04	0.33
Reach #8	Tributary 7B	2294.10	50 Year	0.93	150.70	151.17		151.18	0.002382	0.68	3.57	21.45	0.35
Reach #8	Tributary 7B	2294.10	100 Year	1.10	150.70	151.18		151.20	0.002607	0.73	3.93	21.87	0.37
Reach #8	Tributary 7B	2294.10	Regulatory	5.21	150.70	151.41		151.45	0.005487	1.43	9.55	27.65	0.57
Reach #8	Tributary 7B	2274.10	2 Year	0.25	150.70	150.88	150.88	150.95	0.025304	1.16	0.21	1.46	1.00
Reach #8	Tributary 7B	2274.10	5 Year	0.43	150.70	150.85	150.85	151.04	0.023458	1.36	0.32	1.67	1.00
Reach #8	Tributary 7B	2274.10	10 Year	0.57	150.70	151.04	151.04	151.07	0.006271	0.67	1.82	36.99	0.54
Reach #8	Tributary 7B	2274.10	25 Year	0.77	150.70	151.05	151.05	151.09	0.007765	1.00	2.28	37.54	0.61
Reach #8	Tributary 7B	2274.10	50 Year	0.93	150.70	151.06	151.06	151.10	0.007871	1.04	2.75	38.09	0.62
Reach #8	Tributary 7B	2274.10	100 Year	1.10	150.70	151.07	151.07	151.11	0.008528	1.10	3.10	38.50	0.65
Reach #8	Tributary 7B	2274.10	Regulatory	5.21	150.70	151.19	151.19	151.26	0.018294	2.01	7.86	43.67	1.00
Reach #8	Tributary 7B	2254.10	2 Year	0.25	149.70	149.92	149.92	150.00	0.025902	1.28	0.20	1.20	1.01
Reach #8	Tributary 7B	2254.10	5 Year	0.43	149.70	150.04	150.04	150.07	0.007808	0.92	1.19	23.82	0.59
Reach #8	Tributary 7B	2254.10	10 Year	0.57	149.70	150.05	150.05	150.09	0.008639	1.01	1.55	24.07	0.62
Reach #8	Tributary 7B	2254.10	25 Year	0.77	149.70	150.07	150.07	150.11	0.009356	1.10	2.00	24.38	0.66
Reach #8	Tributary 7B	2254.10	50 Year	0.93	149.70	150.08	150.08	150.12	0.010303	1.18	2.27	24.56	0.69
Reach #8	Tributary 7B	2254.10	100 Year	1.10	149.70	150.09	150.09	150.13	0.011727	1.28	2.47	24.70	0.74
Reach #8	Tributary 7B	2254.10	Regulatory	5.21	149.70	150.23	150.23	150.33	0.023624	2.34	6.08	26.98	1.12
Reach #8	Tributary 7B	2223.10	2 Year	0.25	148.70	149.02	149.02	149.04	0.006042	0.74	1.06	36.79	0.48
Reach #8	Tributary 7B	2223.10	5 Year	0.43	148.70	149.04	149.04	149.06	0.007542	0.87	1.76	37.19	0.54
Reach #8	Tributary 7B	2223.10	10 Year	0.57	148.70	149.05	149.05	149.08	0.008846	0.97	2.12	37.39	0.59
Reach #8	Tributary 7B	2223.10	25 Year	0.77	148.70	149.06	149.06	149.09	0.011449	1.13	2.46	37.58	0.68
Reach #8	Tributary 7B	2223.10	50 Year	0.93	148.70	149.07	149.07	149.10	0.011934	1.18	2.82	37.78	0.69
Reach #8	Tributary 7B	2223.10	100 Year	1.10	148.70	149.08	149.08	149.11	0.012055	1.25	3.11	37.94	0.73
Reach #8	Tributary 7B	2223.10	Regulatory	5.21	148.70	149.18	149.18	149.24	0.029279	2.27	6.98	40.03	1.15
Reach #8	Tributary 7B	2138.10	2 Year	0.25	146.70	146.93	146.93	146.98	0.010358	0.87	0.29	1.61	0.66
Reach #8	Tributary 7B	2138.10	5 Year	0.43	146.70	149.04	149.04	149.06	0.007542	0.87	1.76	33.82	0.53
Reach #8	Tributary 7B	2138.10	10 Year	0.57	146.70	149.05	149.05	149.07	0.008848	1.04	1.04	17.59	0.65
Reach #8	Tributary 7B	2138.10	25 Year	0.77	146.70	149.06	149.06	149.09	0.011449	1.13	1.83	19.93	0.63
Reach #8	Tributary 7B	2138.10	50 Year	0.93	146.70	149.07	149.07	149.10	0.011934	1.18	2.22	21.01	0.66
Reach #8	Tributary 7B	2138.10	100 Year	1.10	146.70	149.10	149.10	149.15	0.010116	1.26	2.16	21.81	0.71
Reach #8	Tributary 7B	2138.10	Regulatory	5.21	146.70	147.27	147.27	147.37	0.015668	2.11	7.25	35.07	0.95
Reach #8	Tributary 7B	2078.10	2 Year	0.25	145.70	145.92	145.92	146.01	0.026290	1.31	0.19	1.10	1.00
Reach #8	Tributary 7B	2078.10	5 Year	0.43	145.70	146.04	146.04	146.06	0.006675	0.85	1.59	33.82	0.53
Reach #8	Tributary 7B	2078.10	10 Year	0.57	145.70	146.05	146.05	146.08	0.007712	0.94	1.99	34.35	0.58
Reach #8	Tributary 7B	2078.10	25 Year	0.77	145.70	146.06	146.06	146.09	0.009252	1.07	2.42	34.62	0.64
Reach #8	Tributary 7B	2078.10	50 Year	0.93	145.70	146.07	146.07	146.11	0.011366	1.20	2.61	35.16	0.71
Reach #8	Tributary 7B	2078.10	100 Year	1.10	145.70	146.08	146.08	146.12	0.011249	1.22	3.02	35.69	0.71
Reach #8	Tributary 7B	2078.10	Regulatory	5.21	145.70	146.19	146.19	146.26	0.024098	2.20	7.29	40.78	1.09
Reach #8	Tributary 7B	2040.10	2 Year	0.25	144.70	144.97		145.03	0.016647	1.13	0.22	1.05	0.79
Reach #8	Tributary 7B	2040.10	5 Year	0.43	144.70	145.04	145.04	145.07	0.007105	0.87	1.66	34.61	0.53
Reach #8	Tributary 7B	2040.10	10 Year	0.57	144.70	145.05	145.05	145.08	0.008222	0.96	2.04	35.20	0.58
Reach #8	Tributary 7B	2040.10	25 Year	0.77	144.70	145.06	145.06	145.09	0.011070	1.14	2.35	35.65	0.67
Reach #8	Tributary 7B	2040.10	50 Year	0.93	144.70	145.07	145.07	145.10	0.010807	1.16	2.79	36.30	0.67
Reach #8	Tributary 7B	2040.10	100 Year	1.10	144.70	145.08	145.08	145.11	0.011930	1.24	3.08	36.71	0.70
Reach #8	Tributary 7B	2040.10	Regulatory	5.21	144.70	145.20	145.19	145.25	0.022148	2.08	7.74	42.88	1.01
Reach #8	Tributary 7B	1995.10	2 Year	0.25	143.70	143.96	143.96	144.06	0.029557	1.42	0.18	0.87	1.00
Reach #8	Tributary 7B	1995.10	5 Year	0.43	143.70	144.05	144.05	144.07	0.008229	0.91	1.63	31.71	0.55
Reach #8	Tributary 7B	1995.10	10 Year	0.57	143.70	144.06	144.06	144.08	0.010003	1.02	1.94	32.22	0.61
Reach #8	Tributary 7B	1995.10	25 Year	0.77	143.70	144.07	144.07	144.10	0.011414	1.13	2.38	32.94	0.66
Reach #8	Tributary 7B	1995.10	50 Year	0.93	143.70	144.07	144.07	144.11	0.014661	1.29	2.51	33.15	0.75
Reach #8	Tributary 7B	1995.10	100 Year	1.10	143.70	144.09	144.09	144.12	0.013985	1.29	2.92	33.81	0.73
Reach #8	Tributary 7B	1995.10	Regulatory	5.21	143.70	144.21	144.19	144.26	0.022111	2.04	7.70	40.67	0.98
Reach #8	Tributary 7B	1949.10	2 Year	0.25	142.70	143.06		143.10	0.004896	0.73	0.74	8.65	0.42
Reach #8	Tributary 7B	1949.10	5 Year	0.43	142.70	143.11		143.14	0.007564	0.97	1.05	10.05	0.53
Reach #8	Tributary 7B	1949.10	10 Year	0.57	142.70	143.13		143.17	0.009142	1.11	1.27	10.92	0.59
Reach #8	Tributary 7B	1949.10	25 Year	0.77	142.70	143.16		143.20	0.010313	1.24	1.58	12.11	0.64
Reach #8	Tributary 7B	194											

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River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl
Reach #8	Tributary 7B	1849.10	100 Year	1.10	142.70	143.20		143.25	0.011757	1.41	2.07	13.69	0.68
Reach #8	Tributary 7B	1849.10	Regulatory	5.21	142.70	143.46		143.53	0.013686	2.09	7.12	24.81	0.81
Reach #8	Tributary 7B	1887.10	2 Year	0.25	142.70	143.05		143.05	0.000316	0.21	4.51	79.39	0.12
Reach #8	Tributary 7B	1887.10	5 Year	0.43	142.70	143.07		143.08	0.000438	0.26	6.31	81.11	0.15
Reach #8	Tributary 7B	1887.10	10 Year	0.57	142.70	143.09		143.09	0.000516	0.29	7.41	82.15	0.16
Reach #8	Tributary 7B	1887.10	25 Year	0.77	142.70	143.10		143.10	0.000662	0.34	8.48	83.14	0.18
Reach #8	Tributary 7B	1887.10	50 Year	0.93	142.70	143.11		143.11	0.000751	0.37	9.32	83.91	0.20
Reach #8	Tributary 7B	1887.10	100 Year	1.10	142.70	143.12		143.12	0.000835	0.39	10.14	84.66	0.21
Reach #8	Tributary 7B	1887.10	Regulatory	5.21	142.70	143.46		143.46	0.000287	0.36	43.23	110.65	0.14
Reach #8	Tributary 7B	1861.10	2 Year	0.25	142.70	142.92	143.01	142.95	0.026886	1.29	0.19	1.14	1.00
Reach #8	Tributary 7B	1861.10	5 Year	0.43	142.70	143.02	143.02	143.03	0.005708	0.73	3.19	146.85	0.48
Reach #8	Tributary 7B	1861.10	10 Year	0.57	142.70	143.02	143.04	143.04	0.006823	0.81	3.88	147.02	0.53
Reach #8	Tributary 7B	1861.10	25 Year	0.77	142.70	143.03	143.03	143.05	0.008255	0.80	5.23	147.36	0.51
Reach #8	Tributary 7B	1861.10	50 Year	0.93	142.70	143.04	143.04	143.05	0.006292	0.81	6.06	147.56	0.51
Reach #8	Tributary 7B	1861.10	100 Year	1.10	142.70	143.04	143.04	143.05	0.007697	0.80	6.38	147.64	0.57
Reach #8	Tributary 7B	1861.10	Regulatory	5.21	142.70	143.45		143.45	0.000103	0.20	70.38	162.77	0.08
Reach #8	Tributary 7B	1800.10	2 Year	0.25	142.30	142.35		142.35	0.000190	0.05	4.65	92.50	0.08
Reach #8	Tributary 7B	1800.10	5 Year	0.43	142.30	142.36		142.37	0.000246	0.07	5.97	92.56	0.09
Reach #8	Tributary 7B	1800.10	10 Year	0.57	142.30	142.37		142.37	0.000273	0.08	6.85	92.59	0.10
Reach #8	Tributary 7B	1800.10	25 Year	0.77	142.30	142.39		142.39	0.000300	0.10	7.98	92.64	0.10
Reach #8	Tributary 7B	1800.10	50 Year	0.93	142.30	142.40		142.40	0.000310	0.11	8.86	92.68	0.11
Reach #8	Tributary 7B	1800.10	100 Year	1.10	142.30	142.41		142.41	0.000313	0.11	9.76	92.72	0.11
Reach #8	Tributary 7B	1800.10	Regulatory	5.21	142.30	143.45		143.45	0.000092	0.04	168.77	234.67	0.01
Reach #8	Tributary 7B	1735.11	2 Year	0.25	142.30	142.34		142.34	0.000090	0.03	7.62	181.43	0.05
Reach #8	Tributary 7B	1735.11	5 Year	0.43	142.30	142.35		142.35	0.000119	0.04	9.70	181.49	0.06
Reach #8	Tributary 7B	1735.11	10 Year	0.57	142.30	142.36		142.36	0.000128	0.05	11.26	181.53	0.06
Reach #8	Tributary 7B	1735.11	25 Year	0.77	142.30	142.37		142.37	0.000131	0.06	13.38	181.60	0.07
Reach #8	Tributary 7B	1735.11	50 Year	0.93	142.30	142.38		142.38	0.000129	0.06	15.05	181.64	0.07
Reach #8	Tributary 7B	1735.11	100 Year	1.10	142.30	142.39		142.39	0.000124	0.07	16.86	181.70	0.07
Reach #8	Tributary 7B	1735.11	Regulatory	5.21	142.30	143.45		143.45	0.000001	0.02	239.13	250.22	0.01
Reach #8	Tributary 7A	1658.11	2 Year	0.33	142.30	142.33	142.31	142.33	0.000512	0.06	5.72	216.70	0.11
Reach #8	Tributary 7A	1658.11	5 Year	0.52	142.30	142.34	142.31	142.34	0.000431	0.07	7.09	216.75	0.11
Reach #8	Tributary 7A	1658.11	10 Year	0.69	142.30	142.35	142.31	142.35	0.000376	0.07	9.63	216.78	0.11
Reach #8	Tributary 7A	1658.11	25 Year	0.93	142.30	142.36	142.31	142.36	0.000264	0.07	12.54	216.83	0.10
Reach #8	Tributary 7A	1658.11	50 Year	1.13	142.30	142.37		142.37	0.000284	0.08	14.65	216.87	0.09
Reach #8	Tributary 7A	1658.11	100 Year	1.33	142.30	142.38		142.38	0.000214	0.08	17.25	216.91	0.08
Reach #8	Tributary 7A	1658.11	Regulatory	6.33	142.30	143.45		143.45	0.000001	0.02	282.39	290.37	0.01
Reach #8	Tributary 7A	1483.11	2 Year	0.39	142.00	142.07	142.07	142.11	0.026417	0.83	0.47	6.69	1.00
Reach #8	Tributary 7A	1483.11	5 Year	0.64	142.00	142.10	142.10	142.15	0.026825	0.68	0.65	6.72	1.00
Reach #8	Tributary 7A	1483.11	10 Year	0.85	142.00	142.12	142.12	142.16	0.025196	1.07	0.79	6.74	1.00
Reach #8	Tributary 7A	1483.11	25 Year	1.14	142.00	142.14	142.14	142.22	0.024020	1.10	0.66	6.77	1.00
Reach #8	Tributary 7A	1483.11	50 Year	1.37	142.00	142.16	142.16	142.24	0.023132	1.26	1.09	6.80	1.00
Reach #8	Tributary 7A	1483.11	100 Year	1.62	142.00	142.18	142.18	142.27	0.022439	1.33	1.22	6.82	1.01
Reach #8	Tributary 7A	1483.11	Regulatory	7.71	142.00	143.45		143.45	0.000051	0.23	111.52	236.24	0.06
Reach #8	Tributary 7A	1480.11	Culvert										
Reach #8	Tributary 7A	1480.11	2 Year	0.39	140.47	141.80	140.62	141.80	0.000016	0.09	4.19	4.05	0.03
Reach #8	Tributary 7A	1480.11	5 Year	0.64	140.47	141.80	140.67	141.80	0.000032	0.14	4.60	4.18	0.04
Reach #8	Tributary 7A	1480.11	10 Year	0.85	140.47	141.97	140.71	141.97	0.000047	0.17	4.80	4.28	0.05
Reach #8	Tributary 7A	1480.11	25 Year	1.14	140.47	142.06	140.76	142.06	0.000069	0.22	5.28	4.40	0.06
Reach #8	Tributary 7A	1480.11	50 Year	1.37	140.47	142.12	140.79	142.13	0.000087	0.25	5.56	4.48	0.07
Reach #8	Tributary 7A	1480.11	100 Year	1.62	140.47	142.18	140.83	142.19	0.000106	0.28	5.84	4.57	0.08
Reach #8	Tributary 7A	1480.11	Regulatory	7.71	140.47	143.43	141.43	143.45	0.000070	0.64	12.09	16.00	0.13
Reach #8	Tributary 7A	1475.11											
Reach #8	Tributary 7A	1464.11	2 Year	0.39	140.18	141.80	140.32	141.80	0.000008	0.08	5.04	3.96	0.02
Reach #8	Tributary 7A	1464.11	5 Year	0.64	140.18	141.80	140.38	141.80	0.000020	0.12	5.43	4.07	0.03
Reach #8	Tributary 7A	1464.11	10 Year	0.85	140.18	141.97	140.42	141.97	0.000031	0.15	5.71	4.14	0.04
Reach #8	Tributary 7A	1464.11	25 Year	1.14	140.18	142.05	140.47	142.05	0.000046	0.19	6.07	4.69	0.05
Reach #8	Tributary 7A	1464.11	50 Year	1.37	140.18	142.11	140.51	142.11	0.000050	0.22	6.37	5.29	0.06
Reach #8	Tributary 7A	1464.11	100 Year	1.62	140.18	142.17	140.55	142.17	0.000072	0.25	6.66	5.87	0.06
Reach #8	Tributary 7A	1464.11	Regulatory	7.71	140.18	143.01	141.16	143.03	0.000075	0.75	11.03	14.27	0.15
Reach #8	Tributary 7A	1450.11											
Reach #8	Tributary 7A	1450.11	2 Year	0.39	140.81	141.80		141.80	0.000003	0.04	8.84	12.96	0.01
Reach #8	Tributary 7A	1450.11	5 Year	0.64	140.81	141.90		141.90	0.000006	0.06	11.12	13.12	0.02
Reach #8	Tributary 7A	1450.11	10 Year	0.85	140.81	141.97		141.97	0.000008	0.07	12.02	13.23	0.02
Reach #8	Tributary 7A	1450.11	25 Year	1.14	140.81	142.05		142.05	0.000011	0.09	13.16	13.88	0.03
Reach #8	Tributary 7A	1450.11	50 Year	1.37	140.81	142.11		142.11	0.000013	0.10	14.01	14.80	0.03
Reach #8	Tributary 7A	1450.11	100 Year	1.62	140.81	142.17		142.17	0.000016	0.11	14.89	15.58	0.03
Reach #8	Tributary 7A	1450.11	Regulatory	7.71	140.81	143.01		143.01	0.000049	0.29	32.61	26.57	0.07
Reach #8	Tributary 7A	1391.11											
Reach #8	Tributary 7A	1391.11	2 Year	0.39	141.50	141.70	141.70	141.79	0.024115	1.31	0.30	1.76	1.01
Reach #8	Tributary 7A	1391.11	5 Year	0.64	141.50	141.77	141.77	141.89	0.022651	1.48	0.43	1.95	1.01
Reach #8	Tributary 7A	1391.11	10 Year	0.85	141.50	141.82	141.82	141.95	0.021857	1.59	0.53	2.08	1.01
Reach #8	Tributary 7A	1391.11	25 Year	1.14	141.50	141.88	141.88	142.03	0.021061	1.71	0.66	2.25	1.01
Reach #8	Tributary 7A	1391.11	50 Year	1.37	141.50	141.93	141.93	142.09	0.020627	1.79	0.77	2.37	1.01
Reach #8	Tributary 7A	1391.11	100 Year	1.62	141.50	141.97	141.97	142.15	0.020151	1.86	0.87	2.49	1.01
Reach #8	Tributary 7A	1391.11	Regulatory	7.71	141.50	142.61	142.61	142.97	0.011474	2.78	3.75	6.66	0.90
Reach #8	Tributary 7A	1356.11											
Reach #8	Tributary 7A	1356.11	2 Year	0.39	140.50	140.72	140.72	140.81	0.024846	1.37	0.20	1.53	1.01

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chn.
Reach #8	Tributary 7A	1356.11	10 Year	0.65	140.50	140.85	140.85	140.99	0.022809	1.87	0.51	1.79	1.01
Reach #8	Tributary 7A	1356.11	25 Year	1.14	140.50	141.03	141.03	141.11	0.008161	1.26	1.41	21.44	0.63
Reach #8	Tributary 7A	1356.11	50 Year	1.37	140.50	140.96	140.96	141.15	0.022184	1.90	0.72	2.02	1.01
Reach #8	Tributary 7A	1356.11	100 Year	1.62	140.50	141.08	141.08	141.16	0.007718	1.33	2.63	24.03	0.62
Reach #8	Tributary 7A	1356.11	Regulatory	7.71	140.50	141.66	141.66	141.66	0.001294	0.92	23.83	51.17	0.29
Reach #8	Tributary 7A	1325.11	2 Year	0.39	139.40	140.78	140.78	140.78	0.000000	0.01	50.30	135.03	0.00
Reach #8	Tributary 7A	1325.11	5 Year	0.64	139.40	140.87	140.87	140.87	0.000000	0.02	54.48	162.54	0.00
Reach #8	Tributary 7A	1325.11	10 Year	0.85	139.40	140.94	140.94	140.94	0.000000	0.03	75.60	173.26	0.01
Reach #8	Tributary 7A	1325.11	25 Year	1.14	139.40	141.02	141.02	141.02	0.000000	0.03	90.75	237.80	0.01
Reach #8	Tributary 7A	1325.11	50 Year	1.37	139.40	141.08	141.08	141.13	0.000001	0.03	104.41	241.13	0.01
Reach #8	Tributary 7A	1325.11	100 Year	1.62	139.40	141.13	141.13	141.13	0.000001	0.03	117.84	244.37	0.01
Reach #8	Tributary 7A	1325.11	Regulatory	7.71	139.40	141.66	141.66	141.66	0.000003	0.08	254.08	275.03	0.02
Reach #8	Tributary 7A	1273.11	2 Year	0.48	140.50	140.78	140.78	140.78	0.000011	0.04	11.66	42.44	0.02
Reach #8	Tributary 7A	1273.11	5 Year	0.78	140.50	140.87	140.87	140.87	0.000012	0.05	15.72	42.83	0.03
Reach #8	Tributary 7A	1273.11	10 Year	1.03	140.50	140.94	140.94	140.94	0.000012	0.06	18.53	43.10	0.03
Reach #8	Tributary 7A	1273.11	25 Year	1.38	140.50	141.02	141.02	141.02	0.000012	0.06	23.62	129.97	0.03
Reach #8	Tributary 7A	1273.11	50 Year	1.66	140.50	141.08	141.08	141.08	0.000012	0.07	31.19	135.02	0.03
Reach #8	Tributary 7A	1273.11	100 Year	1.96	140.50	141.13	141.13	141.13	0.000011	0.07	38.78	139.92	0.03
Reach #8	Tributary 7A	1273.11	Regulatory	9.36	140.50	141.66	141.66	141.66	0.000019	0.14	124.28	186.38	0.04
Reach #8	Tributary 7A	1234.11	2 Year	0.48	140.50	140.69	140.69	140.77	0.022435	1.25	0.38	2.32	0.98
Reach #8	Tributary 7A	1234.11	5 Year	0.78	140.50	140.75	140.75	140.86	0.021970	1.45	0.54	2.53	1.01
Reach #8	Tributary 7A	1234.11	10 Year	1.03	140.50	140.80	140.80	140.93	0.021117	1.56	0.66	2.68	1.01
Reach #8	Tributary 7A	1234.11	25 Year	1.38	140.50	140.86	140.86	140.93	0.020230	1.68	0.82	2.88	1.01
Reach #8	Tributary 7A	1234.11	50 Year	1.66	140.50	140.90	140.90	141.06	0.019739	1.76	0.94	3.02	1.01
Reach #8	Tributary 7A	1234.11	100 Year	1.96	140.50	140.94	140.94	141.11	0.019336	1.84	1.07	3.15	1.01
Reach #8	Tributary 7A	1234.11	Regulatory	9.36	140.50	141.57	141.57	141.65	0.004004	1.65	15.38	46.54	0.54
Reach #8	Tributary 7A	1160.11	2 Year	0.48	140.50	140.73	140.73	140.73	0.000035	0.06	7.50	32.52	0.04
Reach #8	Tributary 7A	1160.11	5 Year	0.78	140.50	140.82	140.82	140.82	0.000034	0.08	10.21	32.85	0.04
Reach #8	Tributary 7A	1160.11	10 Year	1.03	140.50	140.87	140.87	140.88	0.000034	0.09	12.12	33.08	0.04
Reach #8	Tributary 7A	1160.11	25 Year	1.38	140.50	140.95	140.95	140.95	0.000034	0.10	14.51	33.37	0.05
Reach #8	Tributary 7A	1160.11	50 Year	1.66	140.50	141.00	141.00	141.00	0.000034	0.10	16.25	33.57	0.05
Reach #8	Tributary 7A	1160.11	100 Year	1.96	140.50	141.05	141.05	141.05	0.000033	0.11	20.83	91.89	0.05
Reach #8	Tributary 7A	1160.11	Regulatory	9.36	140.50	141.61	141.61	141.61	0.000043	0.20	74.33	99.29	0.06
Reach #8	Tributary 7A	1135.11	2 Year	0.48	140.50	140.65	140.65	140.72	0.024346	1.18	0.40	2.88	1.00
Reach #8	Tributary 7A	1135.11	5 Year	0.78	140.50	140.71	140.71	140.80	0.022439	1.36	0.57	3.06	1.01
Reach #8	Tributary 7A	1135.11	10 Year	1.03	140.50	140.75	140.75	140.86	0.021424	1.47	0.70	3.19	1.00
Reach #8	Tributary 7A	1135.11	25 Year	1.38	140.50	140.80	140.80	140.93	0.020510	1.60	0.86	3.35	1.01
Reach #8	Tributary 7A	1135.11	50 Year	1.66	140.50	140.84	140.84	140.96	0.019910	1.68	0.99	3.46	1.00
Reach #8	Tributary 7A	1135.11	100 Year	1.96	140.50	140.87	140.87	141.03	0.019523	1.76	1.11	3.57	1.01
Reach #8	Tributary 7A	1135.11	Regulatory	9.36	140.50	141.61	141.61	141.61	0.000187	0.37	70.16	117.93	0.12
Reach #8	Tributary 7A	1082.11	2 Year	0.55	139.60	140.41	140.41	140.41	0.000031	0.31	1.75	3.22	0.14
Reach #8	Tributary 7A	1082.11	5 Year	0.91	139.60	140.52	140.52	140.53	0.000053	0.42	2.15	3.63	0.17
Reach #8	Tributary 7A	1082.11	10 Year	1.20	139.60	140.60	140.60	140.61	0.000060	0.50	2.44	4.01	0.19
Reach #8	Tributary 7A	1082.11	25 Year	1.60	139.60	140.67	140.67	140.69	0.000782	0.61	2.73	4.36	0.22
Reach #8	Tributary 7A	1082.11	50 Year	1.93	139.60	140.70	140.70	140.73	0.000976	0.70	2.88	4.54	0.25
Reach #8	Tributary 7A	1082.11	100 Year	2.28	139.60	140.74	140.74	140.77	0.001182	0.79	3.04	4.71	0.27
Reach #8	Tributary 7A	1082.11	Regulatory	10.86	139.60	141.53	141.53	141.58	0.001194	1.23	25.97	70.26	0.31
Reach #8	Tributary 7A	1076.11	2 Year	0.55	139.55	140.41	139.70	140.41	0.000101	0.20	2.76	3.39	0.07
Reach #8	Tributary 7A	1076.11	5 Year	0.91	139.55	140.53	139.76	140.53	0.000178	0.29	3.16	3.69	0.10
Reach #8	Tributary 7A	1076.11	10 Year	1.20	139.55	140.60	139.80	140.61	0.000240	0.35	3.46	3.93	0.11
Reach #8	Tributary 7A	1076.11	25 Year	1.60	139.55	140.67	139.85	140.68	0.000342	0.44	3.75	4.17	0.13
Reach #8	Tributary 7A	1076.11	50 Year	1.93	139.55	140.71	139.88	140.72	0.000443	0.51	3.90	4.28	0.15
Reach #8	Tributary 7A	1076.11	100 Year	2.28	139.55	140.74	139.83	140.76	0.000555	0.58	4.05	4.40	0.17
Reach #8	Tributary 7A	1076.11	Regulatory	10.86	139.55	141.54	141.57	141.57	0.000820	1.00	32.02	83.36	0.23
Reach #8	Tributary 7A	1065.11	Culvert										
Reach #8	Tributary 7A	1056.11	2 Year	0.55	139.73	140.41	139.88	140.41	0.000100	0.20	3.08	29.00	0.08
Reach #8	Tributary 7A	1056.11	5 Year	0.91	139.73	140.52	139.93	140.52	0.000160	0.27	3.78	39.54	0.10
Reach #8	Tributary 7A	1056.11	10 Year	1.20	139.73	140.59	139.97	140.60	0.000187	0.33	4.22	46.20	0.12
Reach #8	Tributary 7A	1056.11	25 Year	1.60	139.73	140.66	140.02	140.67	0.000256	0.40	4.61	52.19	0.14
Reach #8	Tributary 7A	1056.11	50 Year	1.93	139.73	140.69	140.05	140.70	0.000327	0.46	4.80	55.00	0.18
Reach #8	Tributary 7A	1056.11	100 Year	2.28	139.73	140.72	140.09	140.73	0.000407	0.53	4.97	57.59	0.18
Reach #8	Tributary 7A	1056.11	Regulatory	10.86	139.73	141.00	140.83	141.17	0.003675	1.90	6.68	83.52	0.65
Reach #8	Tributary 7A	1047.11	2 Year	0.55	139.75	140.40	140.40	140.40	0.000422	0.31	2.02	7.59	0.16
Reach #8	Tributary 7A	1047.11	5 Year	0.91	139.75	140.51	140.52	140.52	0.000462	0.39	3.03	10.22	0.17
Reach #8	Tributary 7A	1047.11	10 Year	1.20	139.75	140.59	140.59	140.59	0.000487	0.43	3.83	11.88	0.18
Reach #8	Tributary 7A	1047.11	25 Year	1.60	139.75	140.65	140.66	140.66	0.000552	0.51	4.84	13.36	0.20
Reach #8	Tributary 7A	1047.11	50 Year	1.93	139.75	140.68	140.69	140.69	0.000709	0.57	5.03	14.02	0.22
Reach #8	Tributary 7A	1047.11	100 Year	2.28	139.75	140.70	140.70	140.72	0.000846	0.64	5.41	14.63	0.25
Reach #8	Tributary 7A	1047.11	Regulatory	10.86	139.75	140.95	141.11	141.11	0.005642	2.03	9.65	20.25	0.67
Reach #8	Tributary 7A	984.11	2 Year	0.55	139.50	140.40	140.40	140.40	0.000003	0.04	42.88	122.51	0.01
Reach #8	Tributary 7A	984.11	5 Year	0.91	139.50	140.52	140.52	140.52	0.000003	0.05	57.63	134.07	0.02
Reach #8	Tributary 7A	984.11	10 Year	1.20	139.50	140.59	140.59	140.59	0.000004	0.05	67.69	141.40	0.02
Reach #8	Tributary 7A	984.11	25 Year	1.60	139.50	140.66	140.66	140.66	0.000005	0.06	77.21	148.02	0.02
Reach #8	Tributary 7A	984.11	50 Year	1.93	139.50	140.69	140.69	140.72	0.000007	0.07	81.79	151.10	0.02
Reach #8	Tributary 7A	984.11	100 Year	2.28	139.50	140.							

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m3/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
			Laf Struct										
Reach #5	Tributary 7A	900.11											
Reach #5	Tributary 7A	892.11	2 Year	0.62	139.50	140.40		140.40	0.000001	0.02	83.08	216.10	0.01
Reach #5	Tributary 7A	892.11	5 Year	1.04	139.50	140.52		140.52	0.000001	0.03	109.44	224.99	0.01
Reach #5	Tributary 7A	892.11	10 Year	1.36	139.50	140.59		140.59	0.000001	0.03	125.06	230.64	0.01
Reach #5	Tributary 7A	892.11	25 Year	1.82	139.50	140.66		140.66	0.000002	0.04	140.39	235.72	0.01
Reach #5	Tributary 7A	892.11	50 Year	2.20	139.50	140.69		140.69	0.000002	0.04	147.64	238.09	0.01
Reach #5	Tributary 7A	892.11	100 Year	2.59	139.50	140.72		140.72	0.000003	0.05	154.47	240.30	0.01
Reach #5	Tributary 7A	892.11	Regulatory	12.30	139.50	141.05		141.05	0.000017	0.15	230.09	262.45	0.04
Reach #5	Tributary 7A	566.11	2 Year	0.75	139.50	140.40		140.40	0.000003	0.05	44.03	113.33	0.02
Reach #5	Tributary 7A	566.11	5 Year	1.25	139.50	140.52		140.52	0.000005	0.06	57.47	120.78	0.02
Reach #5	Tributary 7A	566.11	10 Year	1.65	139.50	140.59		140.59	0.000006	0.07	66.44	125.51	0.02
Reach #5	Tributary 7A	566.11	25 Year	2.20	139.50	140.66		140.66	0.000007	0.08	74.80	129.78	0.02
Reach #5	Tributary 7A	566.11	50 Year	2.65	139.50	140.69		140.69	0.000009	0.09	78.76	131.72	0.03
Reach #5	Tributary 7A	566.11	100 Year	3.12	139.50	140.71		140.71	0.000011	0.10	82.51	133.56	0.03
Reach #5	Tributary 7A	566.11	Regulatory	11.26	139.50	141.04		141.04	0.000042	0.24	129.82	152.55	0.06
Reach #5	Tributary 7A	495.11	2 Year	0.77	139.50	140.40		140.40	0.000001	0.02	59.90	117.08	0.01
Reach #5	Tributary 7A	495.11	5 Year	1.30	139.50	140.52		140.52	0.000001	0.03	73.70	123.41	0.01
Reach #5	Tributary 7A	495.11	10 Year	1.71	139.50	140.59		140.59	0.000001	0.03	82.83	127.43	0.01
Reach #5	Tributary 7A	495.11	25 Year	2.29	139.50	140.65		140.65	0.000002	0.04	91.29	131.04	0.01
Reach #5	Tributary 7A	495.11	50 Year	2.75	139.50	140.69		140.69	0.000002	0.05	95.28	132.71	0.01
Reach #5	Tributary 7A	495.11	100 Year	3.24	139.50	140.71		140.71	0.000003	0.06	99.05	134.27	0.02
Reach #5	Tributary 7A	495.11	Regulatory	11.25	139.50	141.04		141.04	0.000014	0.14	145.95	150.81	0.04
Reach #5	Tributary 7A	446.11	2 Year	0.77	139.50	140.40		140.40	0.000010	0.08	19.71	47.77	0.03
Reach #5	Tributary 7A	446.11	5 Year	1.30	139.50	140.52		140.52	0.000015	0.11	25.44	52.18	0.03
Reach #5	Tributary 7A	446.11	10 Year	1.71	139.50	140.59		140.59	0.000019	0.12	29.33	55.11	0.04
Reach #5	Tributary 7A	446.11	25 Year	2.29	139.50	140.65		140.65	0.000025	0.15	33.01	57.74	0.05
Reach #5	Tributary 7A	446.11	50 Year	2.75	139.50	140.68		140.68	0.000032	0.17	34.76	58.95	0.05
Reach #5	Tributary 7A	446.11	100 Year	3.24	139.50	140.71		140.71	0.000040	0.20	38.42	60.07	0.06
Reach #5	Tributary 7A	446.11	Regulatory	10.00	139.50	141.03		141.04	0.000123	0.40	57.92	72.15	0.11
Reach #5	Tributary 7A	352.11	2 Year	0.77	139.90	140.29	140.39	0.022614	1.39	0.56	2.93	1.02	
Reach #5	Tributary 7A	352.11	5 Year	1.30	139.90	140.38	140.50	0.020864	1.55	0.84	3.60	1.01	
Reach #5	Tributary 7A	352.11	10 Year	1.71	139.90	140.43	140.43	0.019735	1.65	1.04	4.02	1.01	
Reach #5	Tributary 7A	352.11	25 Year	2.29	139.90	140.56	140.64	0.007464	1.29	3.27	35.51	0.66	
Reach #5	Tributary 7A	352.11	50 Year	2.75	139.90	140.59	140.67	0.007367	1.34	4.32	39.98	0.66	
Reach #5	Tributary 7A	352.11	100 Year	3.24	139.90	140.61	140.69	0.007867	1.43	5.12	43.11	0.69	
Reach #5	Tributary 7A	352.11	Regulatory	9.81	139.90	140.96	141.01	0.001543	0.96	33.53	104.96	0.34	
Reach #5	Tributary 7A	320.11	2 Year	0.77	139.60	140.28	140.28	0.000424	0.23	9.55	67.61	0.14	
Reach #5	Tributary 7A	320.11	5 Year	1.30	139.60	140.37	140.37	0.000266	0.21	17.38	91.46	0.11	
Reach #5	Tributary 7A	320.11	10 Year	1.71	139.60	140.44	140.44	0.000212	0.20	23.50	106.55	0.10	
Reach #5	Tributary 7A	320.11	25 Year	2.29	139.60	140.56	140.64	0.007464	1.29	3.27	35.51	0.66	
Reach #5	Tributary 7A	320.11	50 Year	2.75	139.60	140.59	140.67	0.007367	1.34	4.32	39.98	0.66	
Reach #5	Tributary 7A	320.11	100 Year	3.24	139.60	140.61	140.69	0.007867	1.43	5.12	43.11	0.69	
Reach #5	Tributary 7A	320.11	Regulatory	9.81	139.60	141.00	141.00	0.000088	0.21	93.61	129.87	0.08	
Reach #5	Tributary 7A	279.11	2 Year	0.86	139.60	140.19	140.23	0.005175	0.89	1.20	6.50	0.52	
Reach #5	Tributary 7A	279.11	5 Year	1.44	139.60	140.29	140.18	0.005409	1.04	1.07	8.85	0.55	
Reach #5	Tributary 7A	279.11	10 Year	1.90	139.60	140.35	140.24	0.005397	1.11	2.56	10.32	0.56	
Reach #5	Tributary 7A	279.11	25 Year	2.54	139.60	140.43	140.30	0.005218	1.17	3.41	12.12	0.56	
Reach #5	Tributary 7A	279.11	50 Year	3.05	139.60	140.48	140.48	0.004956	1.20	4.14	13.47	0.55	
Reach #5	Tributary 7A	279.11	100 Year	3.59	139.60	140.54	140.60	0.004652	1.22	0.17	113.73	0.54	
Reach #5	Tributary 7A	279.11	Regulatory	11.51	139.60	140.98	140.98	0.000437	0.65	60.32	117.07	0.18	
Reach #5	Tributary 7A	187.11	2 Year	0.86	138.60	139.49	139.55	0.010952	1.17	0.92	3.29	0.64	
Reach #5	Tributary 7A	187.11	5 Year	1.44	138.60	139.65	139.71	0.008621	1.27	1.49	4.22	0.61	
Reach #5	Tributary 7A	187.11	10 Year	1.90	138.60	139.74	139.82	0.007658	1.35	1.92	4.80	0.59	
Reach #5	Tributary 7A	187.11	25 Year	2.54	138.60	139.86	139.94	0.006641	1.44	2.52	5.51	0.57	
Reach #5	Tributary 7A	187.11	50 Year	3.05	138.60	139.94	140.03	0.006168	1.50	2.99	6.02	0.58	
Reach #5	Tributary 7A	187.11	100 Year	3.59	138.60	140.02	140.12	0.005810	1.56	3.50	6.59	0.55	
Reach #5	Tributary 7A	187.11	Regulatory	11.51	138.60	140.82	140.80	0.002843	1.72	18.91	58.53	0.43	
Reach #5	Tributary 7A	119.11	2 Year	0.86	138.50	139.12	139.16	0.003501	0.92	0.96	2.50	0.42	
Reach #5	Tributary 7A	119.11	5 Year	1.44	138.50	139.27	139.34	0.003781	1.15	1.41	3.28	0.46	
Reach #5	Tributary 7A	119.11	10 Year	1.90	138.50	139.37	139.45	0.004007	1.28	1.74	3.75	0.48	
Reach #5	Tributary 7A	119.11	25 Year	2.54	138.50	139.48	139.58	0.004207	1.46	2.20	4.31	0.51	
Reach #5	Tributary 7A	119.11	50 Year	3.05	138.50	139.56	139.68	0.004330	1.57	2.66	4.71	0.52	
Reach #5	Tributary 7A	119.11	100 Year	3.59	138.50	139.63	139.76	0.004535	1.69	2.91	5.07	0.54	
Reach #5	Tributary 7A	119.11	Regulatory	11.51	138.50	140.41	140.64	0.004547	2.48	8.63	10.37	0.59	
Reach #5	Tributary 7A	41.11	2 Year	0.86	137.80	138.43	138.43	0.021873	1.65	0.60	2.34	0.68	
Reach #5	Tributary 7A	41.11	5 Year	1.60	137.80	138.56	138.56	0.019702	1.88	0.92	2.91	0.69	
Reach #5	Tributary 7A	41.11	10 Year	2.11	137.80	138.63	138.63	0.018077	2.04	1.15	3.26	0.97	
Reach #5	Tributary 7A	41.11	25 Year	2.81	137.80	138.72	138.72	0.016842	2.23	1.47	3.69	0.97	
Reach #5	Tributary 7A	41.11	50 Year	3.38	137.80	138.79	138.78	0.016067	2.35	1.73	4.01	0.96	
Reach #5	Tributary 7A	41.11	100 Year	3.98	137.80	138.86	138.86	0.014914	2.44	2.03	4.34	0.94	
Reach #5	Tributary 7A	41.11	Regulatory	13.38	137.80	139.57	139.57	0.011622	3.46	8.12	7.19	0.94	
Reach #5	Tributary 7A	1392.16	2 Year	0.68	154.66	156.15	154.88	0.000005	0.06	38.59	245.49	0.02	
Reach #5	Tributary 7A	1392.16	5 Year	1.14	154.66	156.20	154.96	0.000008	0.08	52.64	265.58	0.03	
Reach #5	Tributary 7A	1392.16	10 Year	1.49	154.66	156.23	155.01	0.000011	0.09	61.09	276.96	0.03	
Reach #5	Tributary 7A	1392.16	25 Year	1.99	154.66	156.27	155.07	0.000014	0.11	70.95	289.68	0.03	

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl.
Reach #7	Tributary 6	1392.16	50 Year	2.38	154.66	156.29	155.11	156.29	0.000016	0.12	78.37	298.90	0.04
Reach #7	Tributary 6	1392.16	100 Year	2.80	154.66	156.32	155.16	156.32	0.000018	0.13	85.65	307.66	0.04
Reach #7	Tributary 6	1392.16	Regulatory	11.08	154.66	156.60	155.69	156.60	0.000045	0.23	186.00	409.86	0.06
Reach #7	Tributary 6	1360.18	Culvert										
Reach #7	Tributary 6	1330.18	2 Year	0.68	154.98	156.15		156.15	0.000008	0.07	43.06	297.25	0.02
Reach #7	Tributary 6	1330.18	5 Year	1.14	154.98	156.20		156.20	0.000011	0.08	60.03	319.95	0.03
Reach #7	Tributary 6	1330.18	10 Year	1.46	154.98	156.23		156.23	0.000013	0.09	70.20	332.81	0.03
Reach #7	Tributary 6	1330.18	25 Year	1.89	154.98	156.27		156.27	0.000016	0.10	82.04	347.19	0.04
Reach #7	Tributary 6	1330.18	50 Year	2.38	154.98	156.29		156.29	0.000017	0.11	90.94	357.81	0.04
Reach #7	Tributary 6	1330.18	100 Year	2.80	154.98	156.32		156.32	0.000018	0.12	99.64	367.51	0.04
Reach #7	Tributary 6	1330.18	Regulatory	11.08	154.98	156.60		156.60	0.000038	0.19	218.59	482.98	0.05
Reach #7	Tributary 6	1245.18	2 Year	0.73	156.00	156.14		156.14	0.000555	0.18	9.15	73.09	0.16
Reach #7	Tributary 6	1245.18	5 Year	1.23	156.00	156.20		156.20	0.000512	0.22	13.28	80.25	0.16
Reach #7	Tributary 6	1245.18	10 Year	1.61	156.00	156.23		156.23	0.000528	0.25	15.80	84.28	0.16
Reach #7	Tributary 6	1245.18	25 Year	2.15	156.00	156.28		156.26	0.000571	0.28	18.74	88.76	0.17
Reach #7	Tributary 6	1245.18	50 Year	2.57	156.00	156.29		156.29	0.000591	0.30	20.97	92.02	0.18
Reach #7	Tributary 6	1245.18	100 Year	3.02	156.00	156.31		156.31	0.000615	0.32	23.16	95.11	0.19
Reach #7	Tributary 6	1245.18	Regulatory	11.91	156.00	156.58		156.59	0.000886	0.59	53.95	131.10	0.25
Reach #7	Tributary 6	1156.18	2 Year	0.73	155.60	155.89	155.89	156.00	0.022742	1.50	0.49	2.17	1.01
Reach #7	Tributary 6	1156.18	5 Year	1.23	155.60	156.05	156.05	156.10	0.006368	1.05	3.00	42.19	0.57
Reach #7	Tributary 6	1156.18	10 Year	1.61	155.60	156.07	156.07	156.12	0.007376	1.17	3.77	42.62	0.62
Reach #7	Tributary 6	1156.18	25 Year	2.15	155.60	156.09	156.09	156.15	0.008631	1.31	4.64	43.10	0.67
Reach #7	Tributary 6	1156.18	50 Year	2.57	155.60	156.11	156.11	156.16	0.009160	1.39	5.32	43.48	0.70
Reach #7	Tributary 6	1156.18	100 Year	3.02	155.60	156.12	156.12	156.18	0.009954	1.48	5.91	43.80	0.73
Reach #7	Tributary 6	1156.18	Regulatory	11.91	155.60	156.31	156.29	156.40	0.014267	2.26	14.47	48.23	0.83
Reach #7	Tributary 6	1096.18	2 Year	0.73	154.60	155.21		155.22	0.000544	0.41	3.12	16.34	0.18
Reach #7	Tributary 6	1096.18	5 Year	1.23	154.60	155.27		155.28	0.000925	0.57	4.17	19.49	0.24
Reach #7	Tributary 6	1096.18	10 Year	1.61	154.60	155.31		155.33	0.001115	0.66	5.05	21.80	0.27
Reach #7	Tributary 6	1096.18	25 Year	2.15	154.60	155.37		155.36	0.001260	0.74	6.40	24.93	0.29
Reach #7	Tributary 6	1096.18	50 Year	2.57	154.60	155.40		155.42	0.001421	0.81	7.22	26.68	0.31
Reach #7	Tributary 6	1096.18	100 Year	3.02	154.60	155.44		155.46	0.001494	0.86	8.28	28.73	0.32
Reach #7	Tributary 6	1096.18	Regulatory	11.91	154.60	155.63		155.75	0.006685	2.13	14.95	39.34	0.70
Reach #7	Tributary 6	991.18	2 Year	0.73	154.60	154.91	154.91	155.03	0.022303	1.55	0.47	1.98	1.01
Reach #7	Tributary 6	991.18	5 Year	1.23	154.60	155.05	155.05	155.08	0.005506	0.67	4.69	92.68	0.52
Reach #7	Tributary 6	991.18	10 Year	1.61	154.60	155.06	155.06	155.09	0.006162	1.05	6.10	94.22	0.56
Reach #7	Tributary 6	991.18	25 Year	2.15	154.60	155.07	155.07	155.11	0.008176	1.23	6.60	95.35	0.65
Reach #7	Tributary 6	991.18	50 Year	2.57	154.60	155.08	155.08	155.12	0.008221	1.26	8.16	96.80	0.65
Reach #7	Tributary 6	991.18	100 Year	3.02	154.60	155.09	155.09	155.13	0.009782	1.39	8.69	97.48	0.71
Reach #7	Tributary 6	991.18	Regulatory	11.91	154.60	155.41		155.41	0.001558	0.83	46.17	135.80	0.31
Reach #7	Tributary 6	940.18	2 Year	0.84	153.70	154.33		154.34	0.000742	0.37	5.14	29.20	0.20
Reach #7	Tributary 6	940.18	5 Year	1.41	153.70	154.46		154.46	0.000513	0.38	9.37	38.65	0.18
Reach #7	Tributary 6	940.18	10 Year	1.86	153.70	154.53		154.53	0.000442	0.38	12.55	45.96	0.17
Reach #7	Tributary 6	940.18	25 Year	2.47	153.70	154.62		154.62	0.000388	0.40	16.74	53.15	0.16
Reach #7	Tributary 6	940.18	50 Year	2.96	153.70	154.67		154.68	0.000360	0.41	19.09	58.12	0.16
Reach #7	Tributary 6	940.18	100 Year	3.48	153.70	154.73		154.73	0.000340	0.42	23.36	62.85	0.15
Reach #7	Tributary 6	940.18	Regulatory	13.63	153.70	155.39		155.39	0.000200	0.49	81.03	108.15	0.13
Reach #7	Tributary 6	887.18	2 Year	0.84	153.60	154.29		154.30	0.000777	0.51	3.72	19.74	0.21
Reach #7	Tributary 6	887.18	5 Year	1.41	153.60	154.42		154.43	0.000688	0.55	6.67	27.90	0.21
Reach #7	Tributary 6	887.18	10 Year	1.86	153.60	154.50		154.51	0.000646	0.57	9.23	32.70	0.20
Reach #7	Tributary 6	887.18	25 Year	2.47	153.60	154.59		154.59	0.000606	0.59	12.34	38.12	0.20
Reach #7	Tributary 6	887.18	50 Year	2.96	153.60	154.65		154.65	0.000582	0.60	14.74	41.83	0.20
Reach #7	Tributary 6	887.18	100 Year	3.48	153.60	154.70		154.71	0.000564	0.62	17.22	45.34	0.20
Reach #7	Tributary 6	887.18	Regulatory	13.63	153.60	155.37		155.38	0.000384	0.72	61.39	85.73	0.18
Reach #7	Tributary 6	827.18	2 Year	0.84	153.60	154.29		154.30	0.000777	0.51	3.72	19.74	0.21
Reach #7	Tributary 6	827.18	5 Year	1.41	153.60	154.42		154.37	0.001258	0.70	4.23	16.71	0.28
Reach #7	Tributary 6	827.18	10 Year	1.86	153.60	154.44		154.45	0.001212	0.74	5.69	19.70	0.28
Reach #7	Tributary 6	827.18	25 Year	2.47	153.60	154.53		154.54	0.001171	0.79	7.60	23.05	0.28
Reach #7	Tributary 6	827.18	50 Year	2.96	153.60	154.59		154.61	0.001145	0.82	9.09	25.35	0.28
Reach #7	Tributary 6	827.18	100 Year	3.48	153.60	154.64		154.66	0.001131	0.85	10.61	27.50	0.28
Reach #7	Tributary 6	827.18	Regulatory	13.63	153.60	155.35		155.35	0.000879	1.07	38.38	54.47	0.27
Reach #7	Tributary 6	783.18	2 Year	0.84	153.60	153.94	153.94	154.07	0.022242	1.62	0.52	1.97	1.01
Reach #7	Tributary 6	783.18	5 Year	1.41	153.60	154.07	154.07	154.22	0.017336	1.78	0.87	3.66	0.63
Reach #7	Tributary 6	783.18	10 Year	1.86	153.60	154.15	154.15	154.31	0.014588	1.85	1.24	5.44	0.68
Reach #7	Tributary 6	783.18	25 Year	2.47	153.60	154.23	154.23	154.41	0.012711	1.95	1.79	7.07	0.85
Reach #7	Tributary 6	783.18	50 Year	2.96	153.60	154.29	154.29	154.47	0.012140	2.04	2.21	8.10	0.85
Reach #7	Tributary 6	783.18	100 Year	3.48	153.60	154.34	154.34	154.53	0.011696	2.12	2.68	9.07	0.84
Reach #7	Tributary 6	783.18	Regulatory	13.63	153.60	155.14		155.27	0.004186	2.17	16.06	27.05	0.58
Reach #7	Tributary 6	693.18	2 Year	0.84	153.00	153.46		153.48	0.002121	0.54	1.56	5.87	0.33
Reach #7	Tributary 6	693.18	5 Year	1.41	153.00	153.57		153.59	0.001902	0.63	2.25	6.24	0.33
Reach #7	Tributary 6	693.18	10 Year	1.86	153.00	153.66		153.68	0.001705	0.67	2.78	6.83	0.32
Reach #7	Tributary 6	693.18	25 Year	2.47	153.00	153.76		153.78	0.001509	0.73	3.57	9.01	0.32
Reach #7	Tributary 6	693.18	50 Year	2.96	153.00	153.83		153.86	0.001380	0.76	4.30	10.64	0.31
Reach #7	Tributary 6	693.18	100 Year	3.48	153.00	153.91		153.94	0.001243	0.78	5.21	12.36	0.30
Reach #7	Tributary 6	693.18	Regulatory	13.63	153.00	155.16		155.17	0.000269	0.72	42.08	48.80	0.16
Reach #7	Tributary 6	687.18	2 Year	0.84	153.08	153.45	153.26	153.47	0.001721	0.52	1.61	5.39	0.30

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl.
Reach #7	Tributary 6	697.18	5 Year	1.41	153.08	153.57	153.33	153.59	0.001738	0.63	2.24	6.18	0.32
Reach #7	Tributary 6	697.18	10 Year	1.86	153.08	153.65	153.37	153.67	0.001857	0.69	2.71	7.56	0.32
Reach #7	Tributary 6	697.18	25 Year	2.47	153.08	153.75	153.43	153.78	0.001581	0.75	3.30	10.08	0.32
Reach #7	Tributary 6	697.18	50 Year	2.86	153.08	153.82	153.47	153.85	0.001492	0.79	3.76	13.61	0.32
Reach #7	Tributary 6	697.18	100 Year	3.48	153.08	153.90	153.50	153.93	0.001369	0.83	4.24	17.31	0.31
Reach #7	Tributary 6	697.18	Regulatory	13.63	153.08	155.16	154.01	155.17	0.000162	0.55	65.09	78.00	0.13
Reach #7	Tributary 6	680.18	Culvert										
Reach #7	Tributary 6	677.18	2 Year	0.84	153.08	153.42	153.26	153.44	0.002893	0.65	1.28	4.40	0.39
Reach #7	Tributary 6	677.18	5 Year	1.41	153.08	153.50	153.34	153.53	0.003939	0.66	1.64	4.69	0.47
Reach #7	Tributary 6	677.18	10 Year	1.86	153.08	153.55	153.39	153.60	0.004370	0.67	1.91	4.89	0.50
Reach #7	Tributary 6	677.18	25 Year	2.47	153.08	153.61	153.45	153.67	0.005115	1.13	2.10	5.10	0.55
Reach #7	Tributary 6	677.18	50 Year	2.86	153.08	153.64	153.49	153.72	0.005794	1.26	2.36	5.23	0.59
Reach #7	Tributary 6	677.18	100 Year	3.48	153.08	153.67	153.53	153.77	0.006538	1.38	2.52	5.35	0.63
Reach #7	Tributary 6	677.18	Regulatory	13.63	153.08	154.08	154.08	154.51	0.012798	2.90	4.98	12.56	0.98
Reach #7	Tributary 6	674.18	2 Year	0.84	152.95	153.38		153.42	0.004889	0.78	1.08	4.33	0.50
Reach #7	Tributary 6	674.18	5 Year	1.41	152.95	153.46		153.51	0.006917	1.02	1.39	5.15	0.61
Reach #7	Tributary 6	674.18	10 Year	1.86	152.95	153.52		153.58	0.006873	1.11	1.72	6.86	0.62
Reach #7	Tributary 6	674.18	25 Year	2.47	152.95	153.57		153.65	0.007323	1.26	2.14	8.68	0.65
Reach #7	Tributary 6	674.18	50 Year	2.86	152.95	153.61		153.70	0.007574	1.36	2.48	10.00	0.67
Reach #7	Tributary 6	674.18	100 Year	3.48	152.95	153.65		153.76	0.007583	1.45	2.89	11.41	0.69
Reach #7	Tributary 6	674.18	Regulatory	13.63	152.95	154.05		154.28	0.008832	2.39	10.50	26.04	0.82
Reach #7	Tributary 6	638.18	2 Year	0.94	152.50	152.91	152.91	153.05	0.022667	1.75	0.54	1.75	1.01
Reach #7	Tributary 6	638.18	5 Year	1.59	152.50	153.10	153.20	153.20	0.009915	1.51	1.78	12.06	0.71
Reach #7	Tributary 6	638.18	10 Year	2.11	152.50	153.15	153.15	153.26	0.010473	1.66	2.39	13.63	0.74
Reach #7	Tributary 6	638.18	25 Year	2.79	152.50	153.21	153.21	153.33	0.010360	1.77	3.25	15.56	0.75
Reach #7	Tributary 6	638.18	50 Year	3.34	152.50	153.25	153.25	153.37	0.010548	1.87	3.86	16.79	0.76
Reach #7	Tributary 6	638.18	100 Year	3.93	152.50	153.28	153.41	153.61	0.011029	1.98	4.42	17.86	0.79
Reach #7	Tributary 6	638.18	Regulatory	15.34	152.50	153.64	153.64	153.88	0.014809	3.06	13.96	29.76	0.98
Reach #7	Tributary 6	584.18	2 Year	0.64	152.50	152.77		152.77	0.000149	0.14	6.53	24.39	0.09
Reach #7	Tributary 6	584.18	5 Year	1.59	152.50	152.87		152.87	0.000152	0.18	8.98	24.79	0.09
Reach #7	Tributary 6	584.18	10 Year	2.11	152.50	152.94		152.94	0.000152	0.20	10.63	25.05	0.10
Reach #7	Tributary 6	584.18	25 Year	2.79	152.50	153.02		153.02	0.000153	0.22	12.70	29.94	0.10
Reach #7	Tributary 6	584.18	50 Year	3.34	152.50	153.08		153.08	0.000151	0.24	14.51	32.51	0.10
Reach #7	Tributary 6	584.18	100 Year	3.93	152.50	153.13		153.14	0.000150	0.25	16.46	35.06	0.10
Reach #7	Tributary 6	584.18	Regulatory	15.34	152.50	153.60		153.61	0.000303	0.52	37.65	55.71	0.16
Reach #7	Tributary 6	543.18	2 Year	0.94	152.50	152.67	152.67	152.74	0.023108	1.24	0.76	4.86	1.00
Reach #7	Tributary 6	543.18	5 Year	1.59	152.50	152.73	152.73	152.84	0.020745	1.45	1.10	5.09	1.00
Reach #7	Tributary 6	543.18	10 Year	2.11	152.50	152.78	152.78	152.91	0.019967	1.59	1.33	5.24	1.01
Reach #7	Tributary 6	543.18	25 Year	2.79	152.50	152.83	152.83	152.98	0.016854	1.72	1.62	5.43	1.00
Reach #7	Tributary 6	543.18	50 Year	3.34	152.50	152.87	152.87	153.04	0.018472	1.81	1.84	5.56	1.01
Reach #7	Tributary 6	543.18	100 Year	3.93	152.50	152.91	152.91	153.10	0.017990	1.90	2.07	5.70	1.01
Reach #7	Tributary 6	543.18	Regulatory	15.34	152.50	153.37	153.37	153.56	0.009263	2.29	13.94	42.04	0.82
Reach #7	Tributary 6	535.18	2 Year	0.94	151.60	152.25		152.27	0.002138	0.74	1.49	5.82	0.35
Reach #7	Tributary 6	535.18	5 Year	1.59	151.60	152.32		152.37	0.003470	1.04	1.07	7.36	0.46
Reach #7	Tributary 6	535.18	10 Year	2.11	151.60	152.37		152.44	0.004365	1.23	2.34	8.32	0.52
Reach #7	Tributary 6	535.18	25 Year	2.79	151.60	152.41		152.51	0.005525	1.46	2.77	9.34	0.59
Reach #7	Tributary 6	535.18	50 Year	3.34	151.60	152.45		152.57	0.006503	1.64	3.07	9.98	0.65
Reach #7	Tributary 6	535.18	100 Year	3.93	151.60	152.47		152.62	0.007603	1.82	3.34	10.55	0.70
Reach #7	Tributary 6	535.18	Regulatory	15.34	151.60	152.96	152.96	153.27	0.010158	3.02	11.02	20.77	0.89
Reach #7	Tributary 6	493.18	2 Year	0.94	151.50	152.22		152.22	0.000653	0.45	5.42	26.90	0.19
Reach #7	Tributary 6	493.18	5 Year	1.59	151.50	152.29		152.30	0.000924	0.58	7.41	30.26	0.23
Reach #7	Tributary 6	493.18	10 Year	2.11	151.50	152.34		152.35	0.001034	0.64	8.85	32.64	0.24
Reach #7	Tributary 6	493.18	25 Year	2.79	151.50	152.39		152.40	0.001160	0.71	10.83	35.32	0.26
Reach #7	Tributary 6	493.18	50 Year	3.34	151.50	152.43		152.44	0.001242	0.76	12.17	37.11	0.27
Reach #7	Tributary 6	493.18	100 Year	3.93	151.50	152.47		152.48	0.001317	0.81	13.57	38.80	0.28
Reach #7	Tributary 6	493.18	Regulatory	15.34	151.50	152.88		152.88	0.002063	1.32	33.58	58.76	0.38
Reach #7	Tributary 6	475.18	2 Year	0.94	151.50	152.20	151.84	152.21	0.001177	0.57	4.09	21.24	0.24
Reach #7	Tributary 6	475.18	5 Year	1.59	151.50	152.26		152.27	0.001791	0.75	5.42	23.53	0.30
Reach #7	Tributary 6	475.18	10 Year	2.11	151.50	152.30		152.32	0.002033	0.84	6.53	25.26	0.33
Reach #7	Tributary 6	475.18	25 Year	2.79	151.50	152.36		152.38	0.002288	0.93	7.87	27.21	0.35
Reach #7	Tributary 6	475.18	50 Year	3.34	151.50	152.39		152.41	0.002505	1.00	8.80	28.49	0.37
Reach #7	Tributary 6	475.18	100 Year	3.93	151.50	152.42		152.45	0.002674	1.07	9.79	29.79	0.38
Reach #7	Tributary 6	475.18	Regulatory	15.34	151.50	152.80		152.85	0.004444	1.78	23.71	44.18	0.53
Reach #7	Tributary 6	417.18	2 Year	0.94	151.50	151.87	151.87	152.02	0.022226	1.70	0.55	1.91	1.01
Reach #7	Tributary 6	417.18	5 Year	1.59	151.50	152.08	152.08	152.11	0.005533	1.10	4.58	59.54	0.53
Reach #7	Tributary 6	417.18	10 Year	2.11	151.50	152.08	152.08	152.13	0.006338	1.21	5.74	60.18	0.57
Reach #7	Tributary 6	417.18	25 Year	2.79	151.50	152.10	152.10	152.15	0.007579	1.36	6.88	60.80	0.63
Reach #7	Tributary 6	417.18	50 Year	3.34	151.50	152.12	152.12	152.17	0.008103	1.44	7.83	61.31	0.65
Reach #7	Tributary 6	417.18	100 Year	3.93	151.50	152.13	152.13	152.19	0.008930	1.54	8.61	61.73	0.69
Reach #7	Tributary 6	417.18	Regulatory	15.34	151.50	152.28	152.28	152.38	0.018097	2.60	18.30	66.71	1.02
Reach #7	Tributary 6	379.18	2 Year	0.94	150.50	151.23		151.24	0.001037	0.56	4.04	20.20	0.23
Reach #7	Tributary 6	379.18	5 Year	1.59	150.50	151.30		151.31	0.001493	0.73	5.61	23.51	0.29
Reach #7	Tributary 6	379.18	10 Year	2.11	150.50	151.35		151.37	0.001658	0.81	6.90	25.90	0.30
Reach #7	Tributary 6	379.18	25 Year	2.79	150.50	151.41		151.43	0.001838	0.89	8.47	28.54	0.32
Reach #7	Tributary 6	379.18	50 Year	3.34	150.50	151.45		151.47	0.001951	0.95	9.66	30.38	0.34
Reach #7	Tributary 6	379.18	100 Year	3.93	150.50	151.49		151.51	0.002027	1.00	10.93	32.24	0.35

HEC-RAS Plan 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (mm/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chnl
Reach #7	Tributary 6	379.18	Regulatory	15.34	150.50	151.93		151.96	0.002788	1.55	29.39	52.26	0.44
Reach #7	Tributary 6	354.18	2 Year	0.94	150.50	151.20		151.21	0.00095	0.50	4.86	24.84	0.21
Reach #7	Tributary 6	354.18	5 Year	1.59	150.50	151.26		151.27	0.001344	0.66	6.44	27.24	0.27
Reach #7	Tributary 6	354.18	10 Year	2.11	150.50	151.31		151.32	0.001484	0.73	7.81	28.15	0.28
Reach #7	Tributary 6	354.18	25 Year	2.79	150.50	151.36		151.38	0.001652	0.81	9.41	31.25	0.30
Reach #7	Tributary 6	354.18	50 Year	3.34	150.50	151.40		151.42	0.001764	0.87	10.60	32.72	0.32
Reach #7	Tributary 6	354.18	100 Year	3.93	150.50	151.44		151.46	0.001834	0.91	11.89	34.24	0.32
Reach #7	Tributary 6	354.18	Regulatory	15.34	150.50	151.85		151.88	0.002786	1.48	29.34	50.52	0.43
Reach #7	Tributary 6	325.18	2 Year	1.05	150.50	150.94	150.94	151.12	0.023248	1.84	0.57	1.67	1.01
Reach #7	Tributary 6	325.18	5 Year	1.78	150.50	151.12	151.12	151.19	0.008647	1.42	2.97	21.86	0.65
Reach #7	Tributary 6	325.18	10 Year	2.36	150.50	151.15	151.15	151.23	0.009613	1.57	3.75	22.96	0.69
Reach #7	Tributary 6	325.18	25 Year	3.12	150.50	151.19	151.19	151.27	0.010558	1.72	4.65	24.18	0.73
Reach #7	Tributary 6	325.18	50 Year	3.74	150.50	151.21	151.21	151.31	0.011362	1.84	5.28	24.99	0.76
Reach #7	Tributary 6	325.18	100 Year	4.40	150.50	151.23	151.23	151.34	0.012886	2.00	5.75	25.59	0.82
Reach #7	Tributary 6	325.18	Regulatory	17.11	150.50	151.52	151.52	151.71	0.019668	3.20	14.44	34.74	1.08
Reach #7	Tributary 6	278.18	2 Year	1.05	149.50	150.23		150.24	0.001842	0.73	3.12	15.27	0.30
Reach #7	Tributary 6	278.18	5 Year	1.78	149.50	150.29		150.32	0.003021	1.00	4.14	17.53	0.39
Reach #7	Tributary 6	278.18	10 Year	2.36	149.50	150.34		150.38	0.003363	1.12	5.14	19.51	0.42
Reach #7	Tributary 6	278.18	25 Year	3.12	149.50	150.40		150.44	0.003842	1.25	6.26	21.50	0.46
Reach #7	Tributary 6	278.18	50 Year	3.74	149.50	150.44		150.46	0.004106	1.34	7.15	22.98	0.48
Reach #7	Tributary 6	278.18	100 Year	4.40	149.50	150.48		150.52	0.004317	1.42	8.08	24.39	0.49
Reach #7	Tributary 6	278.18	Regulatory	17.11	149.50	150.88		150.97	0.006895	2.31	20.98	39.19	0.66
Reach #7	Tributary 6	248.18	2 Year	1.05	149.50	149.93	149.93	150.10	0.022771	1.79	0.59	1.82	1.01
Reach #7	Tributary 6	248.18	5 Year	1.78	149.50	150.10	150.10	150.17	0.008373	1.38	3.01	23.20	0.64
Reach #7	Tributary 6	248.18	10 Year	2.36	149.50	150.13	150.13	150.21	0.009715	1.55	3.71	23.80	0.70
Reach #7	Tributary 6	248.18	25 Year	3.12	149.50	150.17	150.17	150.26	0.010269	1.68	4.67	24.60	0.73
Reach #7	Tributary 6	248.18	50 Year	3.74	149.50	150.20	150.20	150.29	0.011013	1.79	5.29	25.11	0.76
Reach #7	Tributary 6	248.18	100 Year	4.40	149.50	150.22	150.22	150.32	0.011891	1.81	5.86	25.57	0.80
Reach #7	Tributary 6	248.18	Regulatory	17.11	149.50	150.61		150.72	0.010483	2.51	17.22	33.39	0.81
Reach #7	Tributary 6	170.18	2 Year	1.05	148.50	149.30		149.33	0.002074	0.81	2.60	11.87	0.32
Reach #7	Tributary 6	170.18	5 Year	1.78	148.50	149.41		149.44	0.002655	1.01	4.02	15.34	0.37
Reach #7	Tributary 6	170.18	10 Year	2.36	148.50	149.47		149.51	0.002952	1.13	5.05	17.44	0.39
Reach #7	Tributary 6	170.18	25 Year	3.12	148.50	149.54		149.58	0.003228	1.24	6.34	18.74	0.42
Reach #7	Tributary 6	170.18	50 Year	3.74	148.50	149.58		149.63	0.003413	1.32	7.31	21.32	0.43
Reach #7	Tributary 6	170.18	100 Year	4.40	148.50	149.63		149.68	0.003560	1.39	8.32	22.85	0.44
Reach #7	Tributary 6	170.18	Regulatory	17.11	148.50	150.11		150.18	0.004704	2.08	23.12	36.78	0.54
Reach #7	Tributary 6	125.18	2 Year	1.05	148.50	149.09	149.09	149.15	0.008207	1.29	1.88	16.97	0.61
Reach #7	Tributary 6	125.18	5 Year	1.78	148.50	149.15	149.15	149.22	0.011260	1.55	2.90	18.50	0.69
Reach #7	Tributary 6	125.18	10 Year	2.36	148.50	149.18	149.18	149.26	0.012630	1.71	3.54	19.40	0.74
Reach #7	Tributary 6	125.18	25 Year	3.12	148.50	149.22	149.22	149.31	0.014291	1.80	4.26	20.37	0.76
Reach #7	Tributary 6	125.18	50 Year	3.74	148.50	149.24	149.24	149.34	0.015336	2.02	4.81	21.07	0.83
Reach #7	Tributary 6	125.18	100 Year	4.40	148.50	149.27	149.27	149.37	0.016510	2.16	5.32	21.71	0.86
Reach #7	Tributary 6	125.18	Regulatory	17.11	148.50	149.57	149.57	149.76	0.020545	3.43	13.00	29.67	1.14
Reach #7	Tributary 6	75.18	2 Year	1.05	147.50	148.21		148.26	0.004249	1.07	1.65	9.06	0.45
Reach #7	Tributary 6	75.18	5 Year	1.78	147.50	148.32		148.38	0.004888	1.29	2.87	13.68	0.49
Reach #7	Tributary 6	75.18	10 Year	2.36	147.50	148.40		148.46	0.004766	1.36	3.86	15.81	0.50
Reach #7	Tributary 6	75.18	25 Year	3.12	147.50	148.48		148.54	0.004467	1.41	5.44	18.91	0.49
Reach #7	Tributary 6	75.18	50 Year	3.74	147.50	148.54		148.60	0.004228	1.44	6.86	21.11	0.48
Reach #7	Tributary 6	75.18	100 Year	4.40	147.50	148.58		148.64	0.004627	1.55	7.44	22.42	0.51
Reach #7	Tributary 6	75.18	Regulatory	17.11	147.50	149.03		149.12	0.006136	2.31	21.41	38.24	0.62
Reach #7	Tributary 6	14.18	2 Year	1.16	147.50	148.10		148.11	0.001474	0.62	4.70	38.24	0.28
Reach #7	Tributary 6	14.18	5 Year	1.97	147.50	148.12		148.15	0.002948	0.91	5.71	40.28	0.41
Reach #7	Tributary 6	14.18	10 Year	2.62	147.50	148.13		148.18	0.004533	1.14	6.11	40.69	0.51
Reach #7	Tributary 6	14.18	25 Year	3.45	147.50	148.14		148.21	0.007014	1.43	6.46	41.05	0.64
Reach #7	Tributary 6	14.18	50 Year	4.14	147.50	148.15		148.23	0.009083	1.65	6.79	41.38	0.73
Reach #7	Tributary 6	14.18	100 Year	4.87	147.50	148.16	148.16	148.26	0.009020	1.70	7.89	42.46	0.73
Reach #7	Tributary 6	14.18	Regulatory	18.86	147.50	148.41	148.41	148.56	0.015361	2.80	18.89	52.04	1.01
Reach #6	Tributary 5B	2561.14	2 Year	0.55	169.00	169.37	169.37	169.37	0.000066	0.02	41.00	141.27	0.02
Reach #6	Tributary 5B	2561.14	5 Year	0.92	169.00	169.37	169.37	169.37	0.000017	0.04	41.00	141.27	0.03
Reach #6	Tributary 5B	2561.14	10 Year	1.21	169.00	169.37	169.37	169.37	0.000029	0.05	41.00	141.27	0.03
Reach #6	Tributary 5B	2561.14	25 Year	1.61	169.00	169.37	169.37	169.37	0.000051	0.07	41.00	141.27	0.05
Reach #6	Tributary 5B	2561.14	50 Year	1.94	169.00	169.37	169.37	169.37	0.000101	0.10	41.00	141.27	0.06
Reach #6	Tributary 5B	2561.14	100 Year	2.28	169.00	169.37	169.37	169.40	0.001182	0.37	44.79	144.50	0.22
Reach #6	Tributary 5B	2561.14	Regulatory	8.96	169.00	169.40	169.37	169.40	0.001182				
Reach #6	Tributary 5B	2496.14	2 Year	0.55	168.70	169.03		169.05	0.007068	0.84	3.27	93.81	0.53
Reach #6	Tributary 5B	2496.14	5 Year	0.92	168.70	169.05	169.05	169.06	0.007240	0.88	4.94	96.81	0.54
Reach #6	Tributary 5B	2496.14	10 Year	1.21	168.70	169.06	169.05	169.07	0.008120	0.98	5.82	98.44	0.58
Reach #6	Tributary 5B	2496.14	25 Year	1.61	168.70	169.07	169.06	169.08	0.008036	0.98	7.20	100.94	0.58
Reach #6	Tributary 5B	2496.14	50 Year	1.94	168.70	169.08	169.06	169.10	0.007671	0.99	8.35	102.99	0.57
Reach #6	Tributary 5B	2496.14	100 Year	2.28	168.70	169.10	169.07	169.11	0.007318	0.99	9.50	105.00	0.56
Reach #6	Tributary 5B	2496.14	Regulatory	8.96	168.70	169.23	169.14	169.24	0.007088	1.22	24.60	128.45	0.59
Reach #6	Tributary 5B	2392.14	2 Year	0.55	167.70	167.99	167.96	168.07	0.014852	1.20	0.48	2.12	0.82
Reach #6	Tributary 5B	2392.14	5 Year	0.92	167.70	168.08	168.08	168.17	0.011753	1.33	1.01	11.10	0.77
Reach #6	Tributary 5B	2392.14	10 Year	1.21	167.70	168.13	168.13	168.21	0.009835	1.35	1.71	16.72	0.73
Reach #6	Tributary 5B	2392.14	25 Year	1.61	167.70	168.17	168.17	168.25	0.009369	1.42	2.64	21.55	0.72
Reach #6	Tributary 5B	2392.14	50 Year	1.94	167.70	168.20	168.20	168.28	0.009504	1.50	3.14	24.43	0.74

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m³/s)	Min Ch.Elev (m)	W.S.Elev (m)	Crit.W.S. (m)	E.G.Elev (m)	E.G.Slope (m/m)	Vel.Chnl (m/s)	Flow Area (m²)	Top Width (m)	Froude # Ch.
Reach #6	Tributary 5B	2392.14	100 Year	2.28	167.70	168.22	168.31	0.006612	1.56	3.74	27.02	0.75	
Reach #6	Tributary 5B	2392.14	Regulatory	8.96	167.70	168.61	168.45	0.007174	1.87	15.81	58.37	0.70	
Reach #6	Tributary 5B	2299.14	2 Year	0.55	166.70	167.11	167.07	167.15	0.006963	1.01	1.01	7.79	0.56
Reach #6	Tributary 5B	2299.14	5 Year	0.92	166.70	167.18	167.13	167.23	0.007765	1.21	1.57	9.25	0.61
Reach #6	Tributary 5B	2299.14	10 Year	1.21	166.70	167.21	167.17	167.27	0.008702	1.35	1.92	10.04	0.66
Reach #6	Tributary 5B	2299.14	25 Year	1.61	166.70	167.26	167.22	167.33	0.009384	1.50	2.39	11.02	0.69
Reach #6	Tributary 5B	2299.14	50 Year	1.94	166.70	167.29	167.25	167.37	0.009560	1.59	2.79	11.79	0.71
Reach #6	Tributary 5B	2299.14	100 Year	2.28	166.70	167.32	167.40	167.44	0.009784	1.67	3.17	12.48	0.72
Reach #6	Tributary 5B	2299.14	Regulatory	8.96	166.70	167.73	167.83	167.83	0.009403	2.37	9.96	21.31	0.78
Reach #6	Tributary 5B	2207.14	2 Year	0.55	165.70	165.87	165.97	166.08	0.022942	1.45	0.38	1.80	1.00
Reach #6	Tributary 5B	2207.14	5 Year	0.92	165.70	166.07	166.20	166.20	0.017058	1.58	0.65	4.00	0.92
Reach #6	Tributary 5B	2207.14	10 Year	1.21	165.70	166.14	166.14	166.27	0.013890	1.63	0.98	5.92	0.86
Reach #6	Tributary 5B	2207.14	25 Year	1.61	165.70	166.21	166.21	166.34	0.012160	1.71	1.46	7.00	0.82
Reach #6	Tributary 5B	2207.14	50 Year	1.94	165.70	166.25	166.25	166.39	0.011577	1.78	1.84	9.18	0.82
Reach #6	Tributary 5B	2207.14	100 Year	2.28	165.70	166.29	166.29	166.43	0.011137	1.84	2.24	10.34	0.81
Reach #6	Tributary 5B	2207.14	Regulatory	8.96	165.70	166.68	166.68	166.88	0.011211	2.68	8.45	21.53	0.89
Reach #6	Tributary 5B	2095.14	2 Year	0.55	163.70	164.06	164.03	164.15	0.012547	1.27	0.49	3.15	0.76
Reach #6	Tributary 5B	2095.14	5 Year	0.92	163.70	164.14	164.14	164.28	0.013620	1.56	0.80	4.65	0.83
Reach #6	Tributary 5B	2095.14	10 Year	1.21	163.70	164.20	164.20	164.33	0.013447	1.70	1.08	5.65	0.84
Reach #6	Tributary 5B	2095.14	25 Year	1.61	163.70	164.26	164.26	164.40	0.012749	1.83	1.49	6.68	0.84
Reach #6	Tributary 5B	2095.14	50 Year	1.94	163.70	164.31	164.31	164.46	0.012430	1.92	1.82	7.73	0.84
Reach #6	Tributary 5B	2095.14	100 Year	2.28	163.70	164.35	164.35	164.50	0.012212	2.00	2.16	8.50	0.84
Reach #6	Tributary 5B	2095.14	Regulatory	8.96	163.70	164.78	164.78	165.01	0.012792	2.96	7.48	16.46	0.95
Reach #6	Tributary 5B	1985.14	2 Year	0.55	161.70	161.91	161.91	162.00	0.023005	1.31	0.42	2.44	1.01
Reach #6	Tributary 5B	1985.14	5 Year	0.92	161.70	161.98	161.98	162.10	0.021107	1.49	0.62	2.75	1.00
Reach #6	Tributary 5B	1985.14	10 Year	1.21	161.70	162.05	162.05	162.15	0.014612	1.45	1.01	7.40	0.87
Reach #6	Tributary 5B	1985.14	25 Year	1.61	161.70	162.10	162.10	162.22	0.013577	1.56	1.41	8.34	0.86
Reach #6	Tributary 5B	1985.14	50 Year	1.94	161.70	162.14	162.14	162.26	0.013246	1.65	1.72	8.99	0.86
Reach #6	Tributary 5B	1985.14	100 Year	2.28	161.70	162.17	162.17	162.30	0.013040	1.73	2.01	9.58	0.87
Reach #6	Tributary 5B	1985.14	Regulatory	8.96	161.70	162.54	162.54	162.78	0.012393	2.61	6.93	16.57	0.94
Reach #6	Tributary 5B	1885.14	2 Year	0.55	159.70	160.08	160.08	160.14	0.011477	1.22	0.85	8.82	0.71
Reach #6	Tributary 5B	1885.14	5 Year	0.92	159.70	160.14	160.14	160.20	0.011575	1.38	1.48	10.80	0.73
Reach #6	Tributary 5B	1885.14	10 Year	1.21	159.70	160.17	160.17	160.25	0.012342	1.52	1.84	11.67	0.77
Reach #6	Tributary 5B	1885.14	25 Year	1.61	159.70	160.21	160.21	160.29	0.013806	1.69	2.29	13.01	0.82
Reach #6	Tributary 5B	1885.14	50 Year	1.94	159.70	160.24	160.24	160.32	0.014053	1.79	2.66	13.60	0.84
Reach #6	Tributary 5B	1885.14	100 Year	2.28	159.70	160.25	160.25	160.35	0.015821	1.94	2.91	14.46	0.90
Reach #6	Tributary 5B	1885.14	Regulatory	8.96	159.70	160.54	160.54	160.70	0.019614	2.96	8.34	23.58	1.08
Reach #6	Tributary 5B	1804.14	2 Year	0.55	158.70	159.23	159.24	159.24	0.001949	0.63	2.27	14.82	0.30
Reach #6	Tributary 5B	1804.14	5 Year	0.92	158.70	159.29	159.30	159.30	0.002514	0.78	3.26	17.84	0.35
Reach #6	Tributary 5B	1804.14	10 Year	1.21	158.70	159.33	159.34	159.39	0.002764	0.86	4.00	19.94	0.37
Reach #6	Tributary 5B	1804.14	25 Year	1.61	158.70	159.37	159.37	159.41	0.003090	0.95	4.89	22.13	0.40
Reach #6	Tributary 5B	1804.14	50 Year	1.94	158.70	159.39	159.39	159.44	0.003595	1.05	5.38	23.24	0.43
Reach #6	Tributary 5B	1804.14	100 Year	2.28	158.70	159.42	159.42	159.44	0.003857	1.12	5.99	24.56	0.45
Reach #6	Tributary 5B	1804.14	Regulatory	8.96	158.70	159.68	159.75	159.75	0.007257	1.83	14.24	38.12	0.65
Reach #6	Tributary 5B	1764.14	2 Year	0.55	158.70	159.05	159.05	159.08	0.014355	1.11	1.87	35.85	0.66
Reach #6	Tributary 5B	1764.14	5 Year	0.92	158.70	159.07	159.07	159.10	0.016852	1.28	2.65	37.03	0.73
Reach #6	Tributary 5B	1764.14	10 Year	1.21	158.70	159.08	159.08	159.11	0.020446	1.42	3.02	37.54	0.80
Reach #6	Tributary 5B	1764.14	25 Year	1.61	158.70	159.09	159.09	159.13	0.023276	1.58	3.54	38.24	0.86
Reach #6	Tributary 5B	1764.14	50 Year	1.94	158.70	159.12	159.12	159.14	0.016764	1.66	4.38	39.31	0.78
Reach #6	Tributary 5B	1764.14	100 Year	2.28	158.70	159.13	159.11	159.15	0.019207	1.51	4.84	39.93	0.80
Reach #6	Tributary 5B	1764.14	Regulatory	8.96	158.70	159.34	159.36	159.36	0.012451	1.65	14.34	50.62	0.69
Reach #6	Tributary 5B	1711.14	2 Year	0.55	157.70	158.06	158.06	158.08	0.008548	0.97	1.79	28.36	0.59
Reach #6	Tributary 5B	1711.14	5 Year	0.92	157.70	158.08	158.08	158.11	0.011426	1.19	2.52	31.19	0.69
Reach #6	Tributary 5B	1711.14	10 Year	1.21	157.70	158.10	158.10	158.13	0.012876	1.30	3.02	32.39	0.74
Reach #6	Tributary 5B	1711.14	25 Year	1.61	157.70	158.11	158.11	158.15	0.015034	1.46	3.58	33.67	0.80
Reach #6	Tributary 5B	1711.14	50 Year	1.94	157.70	158.12	158.12	158.17	0.018022	1.63	3.86	34.29	0.89
Reach #6	Tributary 5B	1711.14	100 Year	2.28	157.70	158.14	158.14	158.19	0.017645	1.66	4.42	35.51	0.88
Reach #6	Tributary 5B	1711.14	Regulatory	8.96	157.70	158.27	158.37	158.37	0.032090	2.76	9.88	45.73	1.25
Reach #6	Tributary 5B	1666.14	2 Year	0.55	156.70	157.05	157.05	157.08	0.008603	0.99	1.74	32.91	0.61
Reach #6	Tributary 5B	1666.14	5 Year	0.92	156.70	157.07	157.07	157.11	0.011248	1.20	2.53	34.89	0.71
Reach #6	Tributary 5B	1666.14	10 Year	1.21	156.70	157.09	157.09	157.12	0.011326	1.25	3.21	36.49	0.72
Reach #6	Tributary 5B	1666.14	25 Year	1.61	156.70	157.11	157.11	157.15	0.011309	1.31	4.06	38.41	0.73
Reach #6	Tributary 5B	1666.14	50 Year	1.94	156.70	157.13	157.11	157.16	0.010793	1.34	4.74	39.88	0.73
Reach #6	Tributary 5B	1666.14	100 Year	2.28	156.70	157.15	157.13	157.18	0.010751	1.37	5.43	41.32	0.72
Reach #6	Tributary 5B	1666.14	Regulatory	8.96	156.70	157.35	157.28	157.39	0.009398	1.73	15.85	58.91	0.73
Reach #6	Tributary 5B	1596.14	2 Year	0.55	155.70	156.11	156.11	156.15	0.016335	1.06	1.04	15.12	0.82
Reach #6	Tributary 5B	1596.14	5 Year	0.92	155.70	156.15	156.15	156.20	0.015358	1.19	1.78	20.42	0.83
Reach #6	Tributary 5B	1596.14	10 Year	1.21	155.70	156.18	156.18	156.23	0.016448	1.31	2.24	23.05	0.87
Reach #6	Tributary 5B	1596.14	25 Year	1.61	155.70	156.20	156.20	156.26	0.016350	1.40	2.91	26.51	0.88
Reach #6	Tributary 5B	1596.14	50 Year	1.94	155.70	156.22	156.22	156.28	0.016693	1.48	3.41	28.79	0.90
Reach #6	Tributary 5B	1596.14	100 Year	2.28	155.70	156.24	156.24	156.30	0.017223	1.56	3.88	30.78	0.92
Reach #6	Tributary 5B	1596.14	Regulatory	8.96	155.70	156.41	156.41	156.51	0.021157	2.38	11.32	53.17	1.11
Reach #6	Tributary 5B	1460.17	2 Year	0.55	154.70	155.40	155.41	155.41	0.000349	0.33	4.78	21.41	0.13
Reach #6	Tributary 5B	1460.17	5 Year	0.92	154.70	155.56	155.56	155.56	0.000238	0.32	8.80	29.38	0.11
Reach #6	Tributary 5B	1460.17	10 Year	1.21	154.70	155.68							

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crft.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chn.
Reach #6	Tributary 5B	1460.17	50 Year	1.94	154.70	155.92		155.02	0.000104	0.27	22.54	47.40	0.08
Reach #6	Tributary 5B	1460.17	100 Year	2.28	154.70	155.93		155.03	0.000140	0.31	22.75	47.62	0.09
Reach #6	Tributary 5B	1460.17	Regulatory	8.86	154.70	166.13		156.14	0.000786	0.82	33.65	57.33	0.23
Reach #6	Tributary 5B	1383.17	2 Year	0.72	154.70	155.37		155.38	0.000489	0.42	3.99	15.55	0.17
Reach #6	Tributary 5B	1383.17	5 Year	1.21	154.70	155.54		155.54	0.000396	0.44	7.00	20.76	0.16
Reach #6	Tributary 5B	1383.17	10 Year	1.60	154.70	155.65		155.66	0.000325	0.44	9.67	24.48	0.15
Reach #6	Tributary 5B	1383.17	25 Year	2.13	154.70	155.81		155.82	0.000243	0.43	13.92	29.45	0.13
Reach #6	Tributary 5B	1383.17	50 Year	2.56	154.70	155.91		155.91	0.000223	0.43	16.84	32.41	0.13
Reach #6	Tributary 5B	1383.17	100 Year	3.01	154.70	155.91		155.91	0.000309	0.51	16.81	32.39	0.15
Reach #6	Tributary 5B	1383.17	Regulatory	11.02	154.70	155.95		156.01	0.004046	1.88	18.13	33.65	0.55
Reach #6	Tributary 5B	1375.17	2 Year	0.72	154.05	155.37	154.23	155.37	0.000011	0.11	6.92	26.17	0.03
Reach #6	Tributary 5B	1375.17	5 Year	1.21	154.05	155.54	154.29	155.54	0.000020	0.16	7.86	32.29	0.04
Reach #6	Tributary 5B	1375.17	10 Year	1.60	154.05	155.66	154.33	155.66	0.000026	0.19	8.52	36.65	0.05
Reach #6	Tributary 5B	1375.17	25 Year	2.13	154.05	155.81	154.38	155.81	0.000034	0.23	9.41	42.46	0.06
Reach #6	Tributary 5B	1375.17	50 Year	2.56	154.05	155.91	154.41	155.91	0.000015	0.16	33.18	46.03	0.04
Reach #6	Tributary 5B	1375.17	100 Year	3.01	154.05	155.91	154.44	155.91	0.000021	0.19	33.16	46.01	0.05
Reach #6	Tributary 5B	1375.17	Regulatory	11.02	154.05	155.97	154.92	155.99	0.000278	0.69	36.14	48.36	0.17
Reach #6	Tributary 5B	1370.17	Culvert										
Reach #6	Tributary 5B	1361.17	2 Year	0.72	154.10	154.34	154.28	154.38	0.008402	0.89	0.82	4.04	0.63
Reach #6	Tributary 5B	1361.17	5 Year	1.21	154.10	154.44	154.35	154.49	0.007359	1.00	1.22	4.56	0.62
Reach #6	Tributary 5B	1361.17	10 Year	1.60	154.10	154.49	154.40	154.55	0.007239	1.08	1.48	4.87	0.62
Reach #6	Tributary 5B	1361.17	25 Year	2.13	154.10	154.55	154.45	154.63	0.007188	1.19	1.79	5.38	0.64
Reach #6	Tributary 5B	1361.17	50 Year	2.56	154.10	154.59	154.49	154.68	0.007504	1.29	1.99	5.71	0.66
Reach #6	Tributary 5B	1361.17	100 Year	3.01	154.10	154.63	154.53	154.73	0.007799	1.38	2.18	6.02	0.68
Reach #6	Tributary 5B	1361.17	Regulatory	11.02	154.10	155.02	155.02	155.41	0.013738	2.74	4.36	9.94	1.00
Reach #6	Tributary 5B	1348.17	2 Year	0.72	153.60	154.04	154.04	154.16	0.023374	1.59	0.46	1.94	1.01
Reach #6	Tributary 5B	1346.17	5 Year	1.21	153.60	154.16	154.16	154.30	0.017366	1.69	0.84	4.33	0.92
Reach #6	Tributary 5B	1346.17	10 Year	1.60	153.60	154.23	154.23	154.38	0.014630	1.76	1.21	6.13	0.87
Reach #6	Tributary 5B	1346.17	25 Year	2.13	153.60	154.31	154.31	154.46	0.012946	1.85	1.76	8.06	0.84
Reach #6	Tributary 5B	1346.17	50 Year	2.56	153.60	154.36	154.36	154.52	0.011941	1.90	2.23	9.43	0.82
Reach #6	Tributary 5B	1346.17	100 Year	3.01	153.60	154.41	154.41	154.57	0.011557	1.98	2.69	10.57	0.82
Reach #6	Tributary 5B	1348.17	Regulatory	11.82	153.60	154.66	154.66	155.09	0.011526	2.89	10.08	21.90	0.90
Reach #6	Tributary 5B	1263.17	2 Year	0.82	152.50	153.25		153.29	0.003148	0.89	1.87	10.39	0.36
Reach #6	Tributary 5B	1263.17	5 Year	1.38	152.50	153.38		153.41	0.002906	0.96	3.43	14.89	0.38
Reach #6	Tributary 5B	1263.17	10 Year	1.81	152.50	153.45		153.48	0.002764	1.00	4.61	17.54	0.35
Reach #6	Tributary 5B	1263.17	25 Year	2.42	152.50	153.46		153.50	0.004695	1.31	4.71	17.73	0.46
Reach #6	Tributary 5B	1263.17	50 Year	2.90	152.50	153.50		153.55	0.004858	1.38	5.51	19.31	0.47
Reach #6	Tributary 5B	1263.17	100 Year	3.41	152.50	153.54		153.59	0.004917	1.43	6.36	20.84	0.48
Reach #6	Tributary 5B	1263.17	Regulatory	13.58	152.50	153.97		154.03	0.006326	2.10	18.55	38.36	0.58
Reach #6	Tributary 5B	1203.17	2 Year	0.82	152.50	152.78	152.78	152.90	0.018005	1.44	0.57	2.43	0.95
Reach #6	Tributary 5B	1203.17	5 Year	1.38	152.50	152.88	152.88	153.03	0.020289	1.71	0.80	2.72	1.01
Reach #6	Tributary 5B	1203.17	10 Year	1.81	152.50	152.95	152.95	153.12	0.019463	1.83	0.99	2.93	1.00
Reach #6	Tributary 5B	1203.17	25 Year	2.42	152.50	153.09	153.09	153.16	0.006980	1.34	3.88	32.38	0.63
Reach #6	Tributary 5B	1203.17	50 Year	2.90	152.50	153.11	153.11	153.19	0.007493	1.44	4.62	33.49	0.66
Reach #6	Tributary 5B	1203.17	100 Year	3.41	152.50	153.13	153.13	153.22	0.008213	1.54	5.24	34.39	0.69
Reach #6	Tributary 5B	1203.17	Regulatory	13.58	152.50	153.37	153.37	153.51	0.013051	2.51	14.61	45.85	0.93
Reach #6	Tributary 5B	1124.17	2 Year	0.94	151.50	152.03	151.92	152.08	0.006795	1.10	2.69	71.58	0.54
Reach #6	Tributary 5B	1124.17	5 Year	1.57	151.50	152.06	152.06	152.10	0.006935	1.17	5.15	73.56	0.55
Reach #6	Tributary 5B	1124.17	10 Year	2.07	151.50	152.08	152.08	152.12	0.007506	1.25	6.43	74.57	0.58
Reach #6	Tributary 5B	1124.17	25 Year	2.75	151.50	152.10	152.10	152.14	0.009025	1.40	7.60	75.48	0.64
Reach #6	Tributary 5B	1124.17	50 Year	3.31	151.50	152.11	152.11	152.15	0.009919	1.49	8.50	76.17	0.67
Reach #6	Tributary 5B	1124.17	100 Year	3.89	151.50	152.11	152.11	152.17	0.012090	1.65	8.94	76.50	0.74
Reach #6	Tributary 5B	1124.17	Regulatory	15.51	151.50	152.32	152.24	152.38	0.006621	1.86	26.18	88.68	0.70
Reach #6	Tributary 5B	1045.17	2 Year	0.94	150.50	150.97	150.97	151.15	0.025815	1.87	0.50	1.43	1.01
Reach #6	Tributary 5B	1045.17	5 Year	1.57	150.50	151.11	151.11	151.16	0.008893	1.33	3.32	29.38	0.62
Reach #6	Tributary 5B	1045.17	10 Year	2.07	150.50	151.13	151.13	151.18	0.010832	1.51	3.94	30.54	0.69
Reach #6	Tributary 5B	1045.17	25 Year	2.75	150.50	151.15	151.15	151.22	0.012440	1.88	4.80	32.08	0.74
Reach #6	Tributary 5B	1045.17	50 Year	3.31	150.50	151.18	151.18	151.25	0.012461	1.74	5.62	33.49	0.75
Reach #6	Tributary 5B	1045.17	100 Year	3.89	150.50	151.20	151.20	151.27	0.013288	1.84	6.26	34.55	0.78
Reach #6	Tributary 5B	1045.17	Regulatory	15.51	150.50	151.46		151.55	0.016426	2.62	17.13	49.15	0.92
Reach #6	Tributary 5B	999.17	2 Year	1.04	149.50	150.32		150.34	0.003459	0.80	2.43	13.15	0.41
Reach #6	Tributary 5B	999.17	5 Year	1.74	149.50	150.41		150.44	0.003544	0.94	3.87	16.88	0.43
Reach #6	Tributary 5B	999.17	10 Year	2.28	149.50	150.47		150.50	0.003586	1.01	4.93	19.16	0.44
Reach #6	Tributary 5B	999.17	25 Year	3.05	149.50	150.54		150.57	0.003679	1.11	6.27	21.72	0.45
Reach #6	Tributary 5B	999.17	50 Year	3.67	149.50	150.58		150.62	0.003762	1.17	7.28	23.46	0.46
Reach #6	Tributary 5B	999.17	100 Year	4.31	149.50	150.62		150.66	0.003849	1.24	8.29	25.07	0.47
Reach #6	Tributary 5B	999.17	Regulatory	17.25	149.50	151.06		151.14	0.005561	2.06	23.21	45.31	0.62
Reach #6	Tributary 5B	941.17	2 Year	1.04	149.50	150.22		150.23	0.001148	0.80	3.81	21.82	0.25
Reach #6	Tributary 5B	941.17	5 Year	1.74	149.50	150.24		150.27	0.002565	0.82	4.45	23.43	0.38
Reach #6	Tributary 5B	941.17	10 Year	2.28	149.50	150.29		150.32	0.002817	1.02	5.67	26.75	0.40
Reach #6	Tributary 5B	941.17	25 Year	3.05	149.50	150.34		150.38	0.003365	1.16	6.93	29.78	0.44
Reach #6	Tributary 5B	941.17	50 Year	3.67	149.50	150.37		150.41	0.003692	1.26	7.93	31.97	0.47
Reach #6	Tributary 5B	941.17	100 Year	4.31	149.50	150.40		150.45	0.003905	1.33	9.01	34.21	0.48
Reach #6	Tributary 5B	941.17	Regulatory	17.25	149.50	150.74	150.61	150.82	0.006289	2.16	24.85	57.67	0.65
Reach #6	Tributary 5B	805.17	2 Year	1.04	149.50	149.94	149.94	150.10	0.022816	1.81	0.57	1.74	1.01

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl.
Reach #5	Tributary 5B	805.17	5 Year	1.74	149.50	150.08	150.08	150.12	0.006481	1.18	5.08	59.73	0.56
Reach #5	Tributary 5B	805.17	10 Year	2.29	149.50	150.09	150.09	150.15	0.008426	1.37	5.87	61.52	0.64
Reach #6	Tributary 5B	805.17	25 Year	3.05	149.50	150.12	150.12	150.17	0.008907	1.47	7.44	64.03	0.67
Reach #6	Tributary 5B	805.17	50 Year	3.67	149.50	150.13	150.13	150.19	0.008661	1.55	8.47	67.07	0.70
Reach #6	Tributary 5B	805.17	100 Year	4.31	149.50	150.15	150.15	150.20	0.010760	1.66	9.29	68.72	0.74
Reach #6	Tributary 5B	805.17	Regulatory	17.25	149.50	150.30	150.30	150.40	0.020432	2.73	21.63	80.06	1.06
Reach #6	Tributary 5B	838.17	2 Year	1.17	148.50	149.20		149.20	0.000551	0.31	10.60	58.46	0.16
Reach #6	Tributary 5B	838.17	5 Year	1.96	148.50	149.26		149.26	0.000653	0.37	14.27	62.85	0.18
Reach #6	Tributary 5B	838.17	10 Year	2.58	148.50	149.30		149.30	0.000730	0.41	16.73	65.63	0.19
Reach #6	Tributary 5B	838.17	25 Year	3.44	148.50	149.34		149.34	0.000829	0.47	19.56	68.70	0.21
Reach #6	Tributary 5B	838.17	50 Year	4.13	148.50	149.37		149.38	0.000878	0.50	21.81	71.03	0.22
Reach #6	Tributary 5B	838.17	100 Year	4.86	148.50	149.40		149.41	0.000933	0.54	23.94	73.18	0.23
Reach #6	Tributary 5B	838.17	Regulatory	19.43	148.50	149.75		149.76	0.001557	0.96	54.04	88.64	0.32
Reach #6	Tributary 5B	761.17	2 Year	1.17	148.50	149.17		149.17	0.000456	0.32	12.79	76.56	0.14
Reach #6	Tributary 5B	761.17	5 Year	1.96	148.50	149.22		149.22	0.000549	0.37	16.97	78.03	0.16
Reach #6	Tributary 5B	761.17	10 Year	2.58	148.50	149.25		149.26	0.000607	0.41	19.67	79.00	0.16
Reach #6	Tributary 5B	761.17	25 Year	3.44	148.50	149.29		149.29	0.000712	0.46	22.50	80.01	0.18
Reach #6	Tributary 5B	761.17	50 Year	4.13	148.50	149.32		149.32	0.000757	0.48	24.85	80.83	0.19
Reach #6	Tributary 5B	761.17	100 Year	4.86	148.50	149.35		149.35	0.000815	0.52	26.95	81.56	0.20
Reach #6	Tributary 5B	761.17	Regulatory	19.43	148.50	149.65		149.66	0.001650	0.93	52.94	90.10	0.29
Reach #6	Tributary 5B	685.17	2 Year	1.30	148.50	149.06		149.06	0.004931	0.94	5.56	83.87	0.47
Reach #6	Tributary 5B	685.17	5 Year	2.18	148.50	149.08		149.11	0.008438	1.27	6.93	84.33	0.61
Reach #6	Tributary 5B	685.17	10 Year	2.86	148.50	149.09		149.13	0.011141	1.48	7.75	84.60	0.71
Reach #6	Tributary 5B	685.17	25 Year	3.81	148.50	149.11		149.15	0.011710	1.56	9.50	85.18	0.73
Reach #6	Tributary 5B	685.17	50 Year	4.58	148.50	149.11		149.16	0.014479	1.75	10.05	85.36	0.82
Reach #6	Tributary 5B	685.17	100 Year	5.38	148.50	149.12		149.18	0.015981	1.87	10.91	85.64	0.86
Reach #6	Tributary 5B	685.17	Regulatory	21.61	148.50	149.34		149.39	0.012550	2.12	30.23	91.73	0.81
Reach #6	Tributary 5B	628.17	2 Year	1.30	147.50	148.25		148.26	0.001461	0.70	4.29	21.80	0.28
Reach #6	Tributary 5B	628.17	5 Year	2.18	147.50	148.33		148.35	0.002018	0.89	6.22	26.66	0.34
Reach #6	Tributary 5B	628.17	10 Year	2.86	147.50	148.38		148.40	0.002321	1.00	7.61	29.66	0.37
Reach #6	Tributary 5B	628.17	25 Year	3.61	147.50	148.43		148.47	0.002637	1.12	9.40	33.13	0.40
Reach #6	Tributary 5B	628.17	50 Year	4.58	147.50	148.47		148.51	0.002836	1.20	10.75	35.54	0.42
Reach #6	Tributary 5B	628.17	100 Year	5.38	147.50	148.51		148.55	0.002987	1.27	12.15	37.85	0.43
Reach #6	Tributary 5B	628.17	Regulatory	21.61	147.50	148.65		149.01	0.004127	1.94	34.60	84.57	0.54
Reach #6	Tributary 5B	556.17	2 Year	1.40	147.50	148.18		148.18	0.000954	0.50	9.09	51.70	0.22
Reach #6	Tributary 5B	556.17	5 Year	2.35	147.50	148.24		148.24	0.001197	0.60	12.25	54.25	0.25
Reach #6	Tributary 5B	556.17	10 Year	3.09	147.50	148.27		148.28	0.001334	0.68	14.85	55.88	0.28
Reach #6	Tributary 5B	556.17	25 Year	4.12	147.50	148.32		148.33	0.001519	0.73	16.79	57.73	0.28
Reach #6	Tributary 5B	556.17	50 Year	4.94	147.50	148.35		148.36	0.001661	0.79	18.50	58.99	0.30
Reach #6	Tributary 5B	556.17	100 Year	5.81	147.50	148.38		148.39	0.001752	0.83	20.35	60.31	0.31
Reach #6	Tributary 5B	556.17	Regulatory	23.36	147.50	148.73		148.75	0.003120	1.44	44.18	75.36	0.44
Reach #6	Tributary 5A	525.19	2 Year	1.48	147.50	148.06		148.11	0.006447	1.15	4.15	53.53	0.56
Reach #6	Tributary 5A	525.19	5 Year	2.48	147.50	148.10		148.15	0.008188	1.37	6.09	53.92	0.64
Reach #6	Tributary 5A	525.19	10 Year	3.26	147.50	148.12		148.17	0.009567	1.52	7.18	54.14	0.69
Reach #6	Tributary 5A	525.19	25 Year	4.35	147.50	148.14		148.18	0.011141	1.69	8.47	54.40	0.76
Reach #6	Tributary 5A	525.19	50 Year	5.22	147.50	148.16		148.23	0.012327	1.82	9.35	54.57	0.80
Reach #6	Tributary 5A	525.19	100 Year	6.13	147.50	148.18		148.25	0.013292	1.93	10.25	54.75	0.83
Reach #6	Tributary 5A	525.19	Regulatory	24.63	147.50	148.44		148.53	0.015819	2.72	24.83	57.54	0.87
Reach #6	Tributary 5A	491.19	2 Year	1.56	146.50	147.01		147.20	0.020818	1.93	0.81	2.73	1.00
Reach #6	Tributary 5A	491.19	5 Year	2.61	146.50	147.22		147.36	0.009693	1.77	2.60	14.21	0.74
Reach #6	Tributary 5A	491.19	10 Year	3.44	146.50	147.30		147.43	0.008861	1.86	3.86	15.37	0.72
Reach #6	Tributary 5A	491.19	25 Year	4.58	146.50	147.37		147.51	0.009157	2.00	5.26	22.17	0.74
Reach #6	Tributary 5A	491.19	50 Year	5.49	146.50	147.42		147.42	0.009394	2.11	6.33	24.61	0.76
Reach #6	Tributary 5A	491.19	100 Year	6.46	146.50	147.46		147.51	0.009226	2.17	7.56	27.18	0.76
Reach #6	Tributary 5A	491.19	Regulatory	25.91	146.50	147.88		147.88	0.012812	3.35	23.50	49.64	0.96
Reach #6	Tributary 5A	404.19	2 Year	1.75	145.60	146.34		146.37	0.002426	0.94	3.32	14.13	0.39
Reach #6	Tributary 5A	404.19	5 Year	2.95	145.60	146.45		146.50	0.003059	1.19	5.11	18.27	0.45
Reach #6	Tributary 5A	404.19	10 Year	3.89	145.60	146.52		146.58	0.003233	1.31	6.58	21.07	0.47
Reach #6	Tributary 5A	404.19	25 Year	5.17	145.60	146.61		146.67	0.003394	1.43	8.50	24.23	0.49
Reach #6	Tributary 5A	404.19	50 Year	6.19	145.60	146.66		146.74	0.003506	1.52	9.95	26.38	0.50
Reach #6	Tributary 5A	404.19	100 Year	7.29	145.60	146.72		146.80	0.003539	1.59	11.53	28.53	0.51
Reach #6	Tributary 5A	404.19	Regulatory	20.17	145.60	147.38		147.46	0.003320	2.16	35.76	40.19	0.54
Reach #6	Tributary 5A	353.19	2 Year	1.87	145.50	145.93		146.09	0.018649	1.78	1.05	3.19	0.99
Reach #6	Tributary 5A	353.19	5 Year	3.14	145.50	146.11		146.24	0.009788	1.66	3.01	16.58	0.76
Reach #6	Tributary 5A	353.19	10 Year	4.16	145.50	146.17		146.17	0.010599	1.82	4.00	17.87	0.78
Reach #6	Tributary 5A	353.19	25 Year	5.51	145.50	146.23		146.39	0.010423	1.99	5.20	19.30	0.82
Reach #6	Tributary 5A	353.19	50 Year	6.61	145.50	146.28		146.45	0.010488	2.10	6.13	20.35	0.83
Reach #6	Tributary 5A	353.19	100 Year	7.77	145.50	146.32		146.50	0.010942	2.23	6.97	21.25	0.85
Reach #6	Tributary 5A	353.19	Regulatory	31.08	145.50	146.84		147.16	0.012924	3.51	20.88	32.77	1.02
Reach #6	Tributary 5A	277.19	2 Year	2.04	144.60	145.36		145.41	0.005123	1.17	3.30	15.76	0.55
Reach #6	Tributary 5A	277.19	5 Year	3.44	144.60	145.49		145.55	0.004506	1.31	5.74	21.48	0.54
Reach #6	Tributary 5A	277.19	10 Year	4.54	144.60	145.57		145.63	0.004390	1.39	7.59	24.92	0.54
Reach #6	Tributary 5A	277.19	25 Year	6.03	144.60	145.66		145.72	0.004230	1.48	9.97	28.77	0.54
Reach #6	Tributary 5A	277.19	50 Year	7.22	144.60	145.72		145.78	0.004165	1.55	11.79	31.40	0.54
Reach #6	Tributary 5A	277.19	100 Year	8.50	144.60	145.78		145.84	0.004120	1.61	13.66	33.88	0.55
Reach #6	Tributary 5A	277.19	Regulatory	33.93	144.60	146.35		146.45	0.004599	2.37	37.84	45.71	0.63

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Ch1 (m/s)	Flow Area (m2)	Top Width (m)	Froude # Ch1
Reach #5	Tributary 5A	247.19	2 Year	2.04	144.50	145.24		145.28	0.003012	1.05	3.51	16.71	0.43
Reach #6	Tributary 5A	247.19	5 Year	3.44	144.50	145.33		145.41	0.004413	1.39	5.16	21.26	0.53
Reach #6	Tributary 5A	247.19	10 Year	4.54	144.50	145.38		145.48	0.005305	1.60	6.33	23.97	0.59
Reach #6	Tributary 5A	247.19	25 Year	6.03	144.50	145.44		145.55	0.006473	1.84	7.69	26.77	0.65
Reach #6	Tributary 5A	247.19	50 Year	7.22	144.50	145.47		145.61	0.007256	2.01	8.73	28.73	0.70
Reach #6	Tributary 5A	247.19	100 Year	8.50	144.50	145.51		145.68	0.008021	2.17	9.77	30.56	0.74
Reach #6	Tributary 5A	247.19	Regulatory	33.93	144.50	145.87	145.97	146.21	0.011440	3.44	29.49	54.71	0.95
Reach #6	Tributary 5A	223.19	2 Year	2.16	144.50	145.09	145.17		0.007792	1.40	3.27	28.42	0.66
Reach #6	Tributary 5A	223.19	5 Year	3.65	144.50	145.17	145.25		0.008419	1.61	5.68	33.97	0.70
Reach #6	Tributary 5A	223.19	10 Year	4.81	144.50	145.21	145.30		0.008029	1.75	7.22	37.10	0.74
Reach #6	Tributary 5A	223.19	25 Year	6.38	144.50	145.28	145.36		0.008199	1.80	9.81	41.84	0.71
Reach #6	Tributary 5A	223.19	50 Year	7.66	144.50	145.32	145.39	145.40	0.007836	1.84	11.75	45.08	0.71
Reach #6	Tributary 5A	223.19	100 Year	9.01	144.50	145.37	145.45		0.007400	1.86	13.86	48.32	0.69
Reach #6	Tributary 5A	223.19	Regulatory	35.95	144.50	145.81	145.91		0.007790	2.61	42.25	80.19	0.77
Reach #6	Tributary 5A	80.19	2 Year	2.49	143.50	144.32		144.35	0.003174	1.06	7.40	40.89	0.41
Reach #6	Tributary 5A	80.19	5 Year	4.20	143.50	144.41		144.44	0.003684	1.24	11.34	51.38	0.45
Reach #6	Tributary 5A	80.19	10 Year	5.65	143.50	144.46		144.49	0.003829	1.32	14.32	58.04	0.47
Reach #6	Tributary 5A	80.19	25 Year	7.36	143.50	144.52		144.55	0.004060	1.43	18.11	67.79	0.49
Reach #6	Tributary 5A	80.19	50 Year	8.82	143.50	144.57		144.60	0.004160	1.49	21.44	78.33	0.50
Reach #6	Tributary 5A	80.19	100 Year	10.38	143.50	144.60		144.64	0.004344	1.57	24.53	86.94	0.51
Reach #6	Tributary 5A	80.19	Regulatory	41.31	143.50	145.00		145.04	0.004780	2.07	77.22	178.35	0.57
Reach #6	Tributary 5A	28.19	2 Year	2.61	143.50	144.06	144.06	144.13	0.005733	1.22	4.86	60.91	0.58
Reach #6	Tributary 5A	28.19	5 Year	4.40	143.50	144.12	144.12	144.19	0.006231	1.39	8.11	74.33	0.61
Reach #6	Tributary 5A	28.19	10 Year	5.82	143.50	144.16	144.16	144.22	0.006592	1.52	11.61	81.20	0.65
Reach #6	Tributary 5A	28.19	25 Year	7.71	143.50	144.19	144.19	144.26	0.007736	1.68	14.46	88.39	0.70
Reach #6	Tributary 5A	28.19	50 Year	9.24	143.50	144.21	144.21	144.29	0.008688	1.82	16.25	92.60	0.74
Reach #6	Tributary 5A	28.19	100 Year	10.87	143.50	144.23	144.23	144.32	0.009030	1.90	18.49	97.63	0.78
Reach #6	Tributary 5A	28.19	Regulatory	43.26	143.50	144.47	144.47	144.61	0.015821	3.10	46.93	147.25	1.06
Reach #5	Tributary 4B	6371.12	2 Year	0.64	195.00	195.02	195.02	195.03	0.182829	0.40	1.62	81.75	0.80
Reach #5	Tributary 4B	6371.12	5 Year	1.06	195.00	195.03	195.03	195.04	0.094207	0.40	2.70	83.37	0.69
Reach #5	Tributary 4B	6371.12	10 Year	1.38	195.00	195.04	195.03	195.05	0.079554	0.42	3.34	84.33	0.66
Reach #5	Tributary 4B	6371.12	25 Year	1.83	195.00	195.05	195.04	195.06	0.066389	0.44	4.20	85.59	0.63
Reach #5	Tributary 4B	6371.12	50 Year	2.18	195.00	195.06	195.04	195.07	0.058652	0.46	4.85	86.53	0.60
Reach #5	Tributary 4B	6371.12	100 Year	2.55	195.00	195.07	195.05	195.08	0.052776	0.47	5.52	87.50	0.58
Reach #5	Tributary 4B	6371.12	Regulatory	6.66	195.00	195.19	195.11	195.21	0.018548	0.57	17.78	103.52	0.41
Reach #5	Tributary 4B	6271.12	2 Year	0.64	194.00	194.09	194.03	194.09	0.002963	0.14	4.66	52.41	0.15
Reach #5	Tributary 4B	6271.12	5 Year	1.08	194.00	194.12	194.12	194.14	0.003194	0.17	6.22	54.04	0.16
Reach #5	Tributary 4B	6271.12	10 Year	1.38	194.00	194.14	194.14	194.14	0.003272	0.19	7.29	56.12	0.18
Reach #5	Tributary 4B	6271.12	25 Year	1.83	194.00	194.17		194.17	0.003330	0.22	8.65	56.48	0.17
Reach #5	Tributary 4B	6271.12	50 Year	2.18	194.00	194.18		194.19	0.003372	0.23	9.63	57.43	0.17
Reach #5	Tributary 4B	6271.12	100 Year	2.55	194.00	194.20		194.20	0.003430	0.25	10.58	58.34	0.18
Reach #5	Tributary 4B	6271.12	Regulatory	9.66	194.00	194.40		194.41	0.004466	0.45	23.05	69.17	0.23
Reach #5	Tributary 4B	6130.12	2 Year	0.64	193.00	193.04	193.04	193.07	0.037544	0.69	0.96	22.85	1.05
Reach #5	Tributary 4B	6130.12	5 Year	1.06	193.00	193.06	193.06	193.09	0.029676	0.79	1.42	23.88	0.99
Reach #5	Tributary 4B	6130.12	10 Year	1.38	193.00	193.08	193.08	193.11	0.028040	0.86	1.71	24.47	0.90
Reach #5	Tributary 4B	6130.12	25 Year	1.83	193.00	193.09	193.09	193.14	0.026266	0.94	2.10	25.26	0.90
Reach #5	Tributary 4B	6130.12	50 Year	2.18	193.00	193.10	193.10	193.15	0.025690	1.00	2.37	25.80	1.00
Reach #5	Tributary 4B	6130.12	100 Year	2.55	193.00	193.11	193.11	193.17	0.024383	1.05	2.67	26.40	0.99
Reach #5	Tributary 4B	6130.12	Regulatory	9.66	193.00	193.30	193.27	193.39	0.012911	1.44	8.32	35.67	0.85
Reach #5	Tributary 4B	6033.12	2 Year	0.64	192.00	192.18	192.10	192.18	0.003103	0.50	1.64	12.11	0.38
Reach #5	Tributary 4B	6033.12	5 Year	1.06	192.00	192.24	192.14	192.25	0.003057	0.61	2.41	14.03	0.40
Reach #5	Tributary 4B	6033.12	10 Year	1.38	192.00	192.28	192.16	192.29	0.003028	0.67	2.97	15.26	0.40
Reach #5	Tributary 4B	6033.12	25 Year	1.83	192.00	192.32	192.19	192.34	0.003013	0.74	3.71	16.75	0.41
Reach #5	Tributary 4B	6033.12	50 Year	2.18	192.00	192.35	192.21	192.38	0.003005	0.78	4.26	17.79	0.42
Reach #5	Tributary 4B	6033.12	100 Year	2.55	192.00	192.38	192.23	192.41	0.002991	0.83	4.83	18.81	0.43
Reach #5	Tributary 4B	6033.12	Regulatory	9.66	192.00	192.74	192.51	192.80	0.003413	1.36	13.51	30.31	0.51
Reach #5	Tributary 4B	6585.12	2 Year	0.64	191.00	191.10	191.08	191.12	0.015411	0.74	0.92	10.47	0.77
Reach #5	Tributary 4B	6585.12	5 Year	1.06	191.00	191.13	191.11	191.17	0.017048	0.83	1.24	10.98	0.84
Reach #5	Tributary 4B	6585.12	10 Year	1.38	191.00	191.14	191.13	191.20	0.017733	1.05	1.45	11.34	0.88
Reach #5	Tributary 4B	6585.12	25 Year	1.83	191.00	191.17	191.16	191.24	0.018584	1.19	1.72	11.75	0.82
Reach #5	Tributary 4B	6585.12	50 Year	2.18	191.00	191.18	191.18	191.26	0.019047	1.28	1.92	12.05	0.85
Reach #5	Tributary 4B	6585.12	100 Year	2.55	191.00	191.20	191.20	191.29	0.019607	1.37	2.12	12.34	0.88
Reach #5	Tributary 4B	6585.12	Regulatory	9.66	191.00	191.48	191.46	191.67	0.014973	2.10	6.00	17.03	0.98
Reach #5	Tributary 4B	5699.12	2 Year	0.64	189.00	189.08	189.08	189.09	0.011209	0.55	1.25	17.75	0.83
Reach #5	Tributary 4B	5699.12	5 Year	1.06	189.00	189.11	189.08	189.13	0.010363	0.66	1.79	18.98	0.84
Reach #5	Tributary 4B	5699.12	10 Year	1.38	189.00	189.13	189.10	189.15	0.010084	0.72	2.16	19.77	0.85
Reach #5	Tributary 4B	5699.12	25 Year	1.83	189.00	189.15	189.12	189.18	0.009790	0.80	2.64	20.77	0.86
Reach #5	Tributary 4B	5699.12	50 Year	2.18	189.00	189.17	189.13	189.20	0.009675	0.85	2.99	21.46	0.87
Reach #5	Tributary 4B	5699.12	100 Year	2.55	189.00	189.18	189.14	189.22	0.009517	0.90	3.35	22.16	0.87
Reach #5	Tributary 4B	5699.12	Regulatory	9.66	189.00	189.39	189.33	189.49	0.009526	1.49	8.80	30.81	0.76
Reach #5	Tributary 4B	5613.12	2 Year	0.64	188.00	188.13		188.15	0.010443	0.75	1.42	16.94	0.66
Reach #5	Tributary 4B	5613.12	5 Year	1.06	188.00	188.17		188.20	0.011117	0.91	2.09	20.27	0.71
Reach #5	Tributary 4B	5613.12	10 Year	1.38	188.00	188.19		188.22	0.011263	1.00	2.58	22.40	0.73
Reach #5	Tributary 4B	5613.12	25 Year	1.83	188.00	188.22		188.26	0.011486	1.10	3.23	24.94	0.76
Reach #5	Tributary 4B	5613.12	50 Year	2.18	188.00	188.24		188.28	0.011604	1.17	3.72	26.68	0.77
Reach #5	Tributary 4B	5613.12	100 Year	2.55	188.00	188.25		188.30	0.01				

HEC-RAS Plan: 0706NS (Continued)

HEC-RAS Plan 0706NS (Continued)													
River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m²)	Top Width (m)	Erodible Chl.
Reach #5	Tributary 4B	5548.12	2 Year	0.64	187.00	187.11	187.11	187.16	0.023877	1.04	0.94	12.08	0.98
Reach #5	Tributary 4B	5548.12	5 Year	1.06	187.00	187.15	187.15	187.21	0.021339	1.20	1.46	14.75	0.67
Reach #5	Tributary 4B	5548.12	10 Year	1.38	187.00	187.18	187.18	187.24	0.020850	1.30	1.83	16.35	0.99
Reach #5	Tributary 4B	5548.12	25 Year	1.83	187.00	187.21	187.21	187.28	0.019966	1.41	2.35	18.36	0.99
Reach #5	Tributary 4B	5548.12	50 Year	2.18	187.00	187.23	187.23	187.31	0.019468	1.48	2.73	19.75	0.99
Reach #5	Tributary 4B	5548.12	100 Year	2.55	187.00	187.25	187.25	187.33	0.018810	1.55	3.15	21.13	0.99
Reach #5	Tributary 4B	5548.12	Regulatory	9.66	187.00	187.48	187.48	187.62	0.017077	2.29	9.86	36.84	1.05
Reach #5	Tributary 4B	5490.12	2 Year	0.64	186.00	186.37		186.38	0.001319	0.53	3.06	15.27	0.28
Reach #5	Tributary 4B	5490.12	5 Year	1.06	186.00	186.45	186.25	186.46	0.001503	0.65	4.38	18.24	0.31
Reach #5	Tributary 4B	5490.12	10 Year	1.38	186.00	186.48	186.28	186.49	0.001799	0.75	5.04	19.56	0.34
Reach #5	Tributary 4B	5490.12	25 Year	1.83	186.00	186.53		186.54	0.002027	0.84	6.03	21.38	0.37
Reach #5	Tributary 4B	5490.12	50 Year	2.18	186.00	186.56		186.58	0.002224	0.92	6.69	22.52	0.39
Reach #5	Tributary 4B	5490.12	100 Year	2.55	186.00	186.59		186.61	0.002402	0.98	7.35	23.61	0.41
Reach #5	Tributary 4B	5490.12	Regulatory	9.66	186.00	186.91		186.96	0.004171	1.74	17.01	35.87	0.58
Reach #5	Tributary 4B	5391.12	2 Year	0.64	185.80	186.05	186.05	186.07	0.013540	1.05	2.31	41.65	0.74
Reach #5	Tributary 4B	5391.12	5 Year	1.06	185.80	186.07		186.10	0.018499	1.30	2.99	42.45	0.88
Reach #5	Tributary 4B	5391.12	10 Year	1.38	185.80	186.09		186.11	0.013556	1.19	4.02	43.62	0.77
Reach #5	Tributary 4B	5391.12	25 Year	1.83	185.80	186.11		186.13	0.013250	1.24	4.92	44.61	0.77
Reach #5	Tributary 4B	5391.12	50 Year	2.18	185.80	186.13		186.15	0.012018	1.23	5.72	45.48	0.74
Reach #5	Tributary 4B	5391.12	100 Year	2.55	185.80	186.15		186.17	0.011234	1.24	6.50	46.32	0.72
Reach #5	Tributary 4B	5391.12	Regulatory	9.66	185.80	186.36	186.22	186.39	0.008381	1.53	17.60	56.68	0.68
Reach #5	Tributary 4B	5313.12	2 Year	0.64	184.80	185.03	185.03	185.06	0.007783	0.83	2.69	66.85	0.60
Reach #5	Tributary 4B	5313.12	5 Year	1.06	184.80	185.05	185.05	185.08	0.009400	0.96	3.01	67.51	0.67
Reach #5	Tributary 4B	5313.12	10 Year	1.38	184.80	185.06	185.06	185.09	0.012268	1.12	4.35	67.74	0.77
Reach #5	Tributary 4B	5313.12	25 Year	1.83	184.80	185.07	185.07	185.10	0.012536	1.19	5.36	68.29	0.78
Reach #5	Tributary 4B	5313.12	50 Year	2.18	184.80	185.08	185.08	185.11	0.014078	1.28	5.85	68.54	0.83
Reach #5	Tributary 4B	5313.12	100 Year	2.55	184.80	185.09	185.12	185.15	0.015232	1.37	6.35	68.81	0.87
Reach #5	Tributary 4B	5313.12	Regulatory	9.66	184.80	185.18	185.18	185.25	0.028416	2.29	12.78	72.12	1.25
Reach #5	Tributary 4B	5243.12	2 Year	0.64	183.80	184.16		184.17	0.002587	0.64	2.78	25.87	0.37
Reach #5	Tributary 4B	5243.12	5 Year	1.06	183.80	184.20		184.22	0.003211	0.78	4.04	31.44	0.42
Reach #5	Tributary 4B	5243.12	10 Year	1.38	183.80	184.23		184.25	0.003503	0.86	4.84	34.85	0.44
Reach #5	Tributary 4B	5243.12	25 Year	1.83	183.80	184.28		184.28	0.003742	0.94	6.15	39.00	0.47
Reach #5	Tributary 4B	5243.12	50 Year	2.18	183.80	184.29		184.30	0.003824	0.98	7.08	41.93	0.47
Reach #5	Tributary 4B	5243.12	100 Year	2.55	183.80	184.31		184.33	0.003914	1.03	8.03	44.66	0.48
Reach #5	Tributary 4B	5243.12	Regulatory	9.66	183.80	184.57		184.59	0.003917	1.39	23.88	77.43	0.52
Reach #6	Tributary 4B	5170.12	2 Year	0.64	183.80	184.14		184.14	0.000140	0.15	14.49	105.59	0.09
Reach #6	Tributary 4B	5170.12	5 Year	1.06	183.80	184.18		184.18	0.000178	0.18	18.67	108.10	0.10
Reach #6	Tributary 4B	5170.12	10 Year	1.38	183.80	184.20		184.20	0.000204	0.20	21.23	109.60	0.11
Reach #6	Tributary 4B	5170.12	25 Year	1.83	183.80	184.23		184.23	0.000234	0.23	24.43	111.45	0.12
Reach #6	Tributary 4B	5170.12	50 Year	2.18	183.80	184.25		184.25	0.000250	0.24	26.78	112.80	0.12
Reach #6	Tributary 4B	5170.12	100 Year	2.55	183.80	184.27		184.27	0.000270	0.26	28.92	114.00	0.13
Reach #6	Tributary 4B	5170.12	Regulatory	9.66	183.80	184.50		184.51	0.000490	0.47	57.18	128.89	0.18
Reach #5	Tributary 4B	5070.12	2 Year	0.64	183.80	184.12		184.12	0.000384	0.22	10.10	87.66	0.14
Reach #5	Tributary 4B	5070.12	5 Year	1.06	183.80	184.15		184.15	0.000480	0.27	13.02	89.17	0.15
Reach #5	Tributary 4B	5070.12	10 Year	1.38	183.80	184.17		184.17	0.000554	0.30	14.73	90.05	0.17
Reach #5	Tributary 4B	5070.12	25 Year	1.83	183.80	184.19		184.19	0.000620	0.33	17.03	91.21	0.18
Reach #5	Tributary 4B	5070.12	50 Year	2.18	183.80	184.21		184.21	0.000653	0.36	18.73	92.06	0.19
Reach #5	Tributary 4B	5070.12	100 Year	2.55	183.80	184.23		184.23	0.000711	0.38	20.16	92.76	0.20
Reach #5	Tributary 4B	5070.12	Regulatory	9.66	183.80	184.42		184.43	0.001289	0.67	39.29	101.75	0.28
Reach #5	Tributary 4B	4998.12	2 Year	0.64	183.80	184.03	184.03	184.04	0.003116	0.78	3.85	124.84	0.60
Reach #5	Tributary 4B	4998.12	5 Year	1.06	183.80	184.04	184.04	184.05	0.010732	0.94	5.16	125.56	0.70
Reach #5	Tributary 4B	4998.12	10 Year	1.38	183.80	184.05	184.05	184.06	0.011335	1.01	6.08	125.88	0.74
Reach #5	Tributary 4B	4998.12	25 Year	1.83	183.80	184.05	184.05	184.07	0.014878	1.16	6.86	126.35	0.83
Reach #5	Tributary 4B	4998.12	50 Year	2.18	183.80	184.06	184.06	184.08	0.018100	1.29	7.25	126.53	0.82
Reach #5	Tributary 4B	4998.12	100 Year	2.55	183.80	184.06	184.06	184.08	0.018262	1.32	8.05	126.80	0.83
Reach #5	Tributary 4B	4998.12	Regulatory	9.66	183.80	184.12	184.12	184.16	0.036060	2.18	15.52	130.33	1.36
Reach #5	Tributary 4B	4994.12	2 Year	0.64	182.86	183.36	183.00	183.37	0.000295	0.31	2.19	54.58	0.14
Reach #5	Tributary 4B	4994.12	5 Year	1.06	182.86	183.60	183.05	183.60	0.000224	0.35	3.22	79.15	0.13
Reach #5	Tributary 4B	4994.12	10 Year	1.38	182.86	183.68	183.09	183.68	0.000168	0.10	36.89	88.45	0.04
Reach #5	Tributary 4B	4994.12	25 Year	1.83	182.86	183.73	183.13	183.73	0.000024	0.13	41.23	93.50	0.04
Reach #5	Tributary 4B	4994.12	50 Year	2.18	182.86	183.75	183.17	183.75	0.000031	0.15	42.60	95.05	0.05
Reach #5	Tributary 4B	4994.12	100 Year	2.55	182.86	183.76	183.20	183.76	0.000039	0.16	44.28	96.91	0.06
Reach #5	Tributary 4B	4994.12	Regulatory	9.66	182.86	183.94	183.65	183.94	0.000236	0.46	62.56	115.18	0.14
Reach #5	Tributary 4B	4990.121	Culvert										
Reach #5	Tributary 4B	4990.121	2 Year	0.64	182.71	183.21	182.85	183.21	0.000300	0.31	2.17	50.38	0.14
Reach #5	Tributary 4B	4990.121	5 Year	1.06	182.71	183.27	182.91	183.28	0.000563	0.46	2.43	56.15	0.20
Reach #5	Tributary 4B	4990.121	10 Year	1.38	182.71	183.30	182.94	183.32	0.000773	0.55	2.59	59.67	0.23
Reach #5	Tributary 4B	4990.121	25 Year	1.83	182.71	183.34	182.99	183.37	0.001091	0.69	2.76	63.57	0.28
Reach #5	Tributary 4B	4990.121	50 Year	2.18	182.71	183.37	183.02	183.40	0.001346	0.78	2.88	66.21	0.31
Reach #5	Tributary 4B	4990.121	100 Year	2.55	182.71	183.39	183.05	183.43	0.001632	0.80	2.99	68.56	0.34
Reach #5	Tributary 4B	4990.121	Regulatory	9.66	182.71	183.67	183.52	183.68	0.000472	0.60	46.55	95.87	0.20
Reach #5	Tributary 4B	4956.121	2 Year	0.64	182.80	183.19		183.20	0.001013	0.43	3.25	27.34	0.24
Reach #5	Tributary 4B	4956.121	5 Year	1.06	182.80	183.25		183.26	0.001237	0.53	4.87	34.78	0.27
Reach #5	Tributary 4B	4956.121	10 Year	1.38	182.80	183.28		183.29	0.001343	0.58	6.21	39.26	0.20
Reach #5	Tributary 4B	4956.121	25 Year	1.83	182.80	183.32		183.33	0.001481	0.65	7.76	44.25	0.31

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (mm/m)	Vel Chnl. (m/s)	Flow Area (m²)	Top Width (m)	Crude # Ch.
Reach #5	Tributary 4B	4659.121	50 Year	2.18	182.80	183.35		183.36	0.001546	0.68	8.96	47.73	0.31
Reach #5	Tributary 4B	4659.121	100 Year	2.55	182.80	183.37		183.38	0.001621	0.72	10.13	50.90	0.32
Reach #5	Tributary 4B	4659.121	Regulatory	8.66	182.80	183.63		183.65	0.002231	1.12	27.93	65.78	0.41
Reach #5	Tributary 4B	4693.121	2 Year	0.64	182.70	183.04	183.04	183.06	0.005871	0.85	2.51	53.99	0.52
Reach #5	Tributary 4B	4693.121	5 Year	1.06	182.70	183.06	183.06	183.09	0.007796	1.03	3.65	55.73	0.61
Reach #5	Tributary 4B	4693.121	10 Year	1.38	182.70	183.07	183.07	183.10	0.008863	1.13	4.36	66.80	0.65
Reach #5	Tributary 4B	4693.121	25 Year	1.83	182.70	183.09	183.09	183.12	0.010295	1.26	5.19	58.02	0.71
Reach #5	Tributary 4B	4693.121	50 Year	2.16	182.70	183.10	183.10	183.13	0.011717	1.37	5.67	58.71	0.76
Reach #5	Tributary 4B	4693.121	100 Year	2.55	182.70	183.11	183.11	183.15	0.012632	1.44	6.23	59.50	0.79
Reach #5	Tributary 4B	4693.121	Regulatory	9.66	182.70	183.21	183.21	183.29	0.024607	2.42	13.02	68.43	1.16
Reach #5	Tributary 4B	4776.121	2 Year	0.71	181.70	182.28		182.28	0.000494	0.38	5.58	34.21	0.17
Reach #5	Tributary 4B	4776.121	5 Year	1.18	181.70	182.35		182.36	0.000574	0.45	8.38	42.42	0.19
Reach #5	Tributary 4B	4776.121	10 Year	1.54	181.70	182.39		182.40	0.000621	0.49	10.26	47.17	0.20
Reach #5	Tributary 4B	4776.121	25 Year	2.04	181.70	182.44		182.45	0.000669	0.53	12.71	52.67	0.21
Reach #5	Tributary 4B	4776.121	50 Year	2.43	181.70	182.48		182.48	0.000704	0.56	14.47	56.31	0.21
Reach #5	Tributary 4B	4776.121	100 Year	2.85	181.70	182.51		182.51	0.000734	0.59	16.25	59.76	0.22
Reach #5	Tributary 4B	4776.121	Regulatory	11.11	181.70	182.84		182.85	0.001040	0.91	42.76	97.67	0.28
Reach #5	Tributary 4B	4714.121	2 Year	0.71	181.70	182.22		182.23	0.001764	0.63	3.12	21.93	0.30
Reach #5	Tributary 4B	4714.121	5 Year	1.18	181.70	182.28		182.29	0.002138	0.75	4.63	27.04	0.34
Reach #5	Tributary 4B	4714.121	10 Year	1.54	181.70	182.32		182.33	0.002366	0.83	5.64	29.97	0.36
Reach #5	Tributary 4B	4714.121	25 Year	2.04	181.70	182.36		182.37	0.002570	0.91	6.98	33.49	0.38
Reach #5	Tributary 4B	4714.121	50 Year	2.43	181.70	182.39		182.40	0.002728	0.97	7.93	35.78	0.39
Reach #5	Tributary 4B	4714.121	100 Year	2.85	181.70	182.41		182.43	0.002848	1.02	8.92	37.98	0.41
Reach #5	Tributary 4B	4714.121	Regulatory	11.11	181.70	182.71		182.74	0.003971	1.55	23.82	62.56	0.51
Reach #5	Tributary 4B	4669.121	2 Year	0.71	181.70	182.05	182.05	182.08	0.008154	0.97	2.53	43.08	0.59
Reach #5	Tributary 4B	4669.121	5 Year	1.18	181.70	182.08	182.08	182.11	0.010709	1.17	3.49	44.31	0.68
Reach #5	Tributary 4B	4669.121	10 Year	1.54	181.70	182.09	182.09	182.12	0.012206	1.29	4.10	45.07	0.73
Reach #5	Tributary 4B	4669.121	25 Year	2.04	181.70	182.10	182.10	182.14	0.014690	1.46	4.74	45.86	0.81
Reach #5	Tributary 4B	4669.121	50 Year	2.43	181.70	182.11	182.11	182.16	0.016880	1.55	5.26	46.48	0.85
Reach #5	Tributary 4B	4669.121	100 Year	2.85	181.70	182.12	182.12	182.17	0.017525	1.66	5.69	47.00	0.89
Reach #5	Tributary 4B	4669.121	Regulatory	11.11	181.70	182.25	182.25	182.34	0.031361	2.72	12.12	54.11	1.28
Reach #5	Tributary 4B	4599.121	2 Year	0.71	180.70	181.29		181.30	0.000726	0.45	4.28	22.68	0.20
Reach #5	Tributary 4B	4599.121	5 Year	1.18	180.70	181.38		181.39	0.000769	0.52	6.50	28.19	0.21
Reach #5	Tributary 4B	4599.121	10 Year	1.54	180.70	181.43		181.43	0.000879	0.58	7.87	31.11	0.23
Reach #5	Tributary 4B	4599.121	25 Year	2.04	180.70	181.48		181.49	0.000974	0.64	9.60	34.43	0.24
Reach #5	Tributary 4B	4599.121	50 Year	2.43	180.70	181.51		181.52	0.001039	0.68	10.85	38.65	0.25
Reach #5	Tributary 4B	4599.121	100 Year	2.85	180.70	181.55		181.56	0.001096	0.72	12.11	38.76	0.26
Reach #5	Tributary 4B	4599.121	Regulatory	11.11	180.70	181.92		181.93	0.001694	1.16	30.65	62.00	0.35
Reach #5	Tributary 4B	4515.121	2 Year	0.79	180.70	181.09	181.09	181.14	0.008281	1.12	1.60	17.97	0.64
Reach #5	Tributary 4B	4515.121	5 Year	1.32	180.70	181.13		181.20	0.011936	1.45	2.28	20.05	0.78
Reach #5	Tributary 4B	4515.121	10 Year	1.72	180.70	181.16		181.23	0.011970	1.54	2.88	22.70	0.79
Reach #5	Tributary 4B	4515.121	25 Year	2.29	180.70	181.20		181.27	0.011799	1.63	3.92	25.86	0.80
Reach #5	Tributary 4B	4515.121	50 Year	2.73	180.70	181.23		181.30	0.011465	1.67	4.68	28.13	0.80
Reach #5	Tributary 4B	4515.121	100 Year	3.20	180.70	181.25		181.32	0.011419	1.73	5.40	30.14	0.80
Reach #5	Tributary 4B	4515.121	Regulatory	12.85	180.70	181.57	181.48	181.63	0.009215	2.18	18.89	55.67	0.78
Reach #5	Tributary 4B	4425.121	2 Year	0.79	179.70	180.01	179.99	180.10	0.016905	1.35	0.61	7.04	0.80
Reach #5	Tributary 4B	4425.121	5 Year	1.32	179.70	180.10	180.10	180.18	0.010608	1.36	1.71	15.53	0.75
Reach #5	Tributary 4B	4425.121	10 Year	1.72	179.70	180.14	180.14	180.23	0.010414	1.45	2.39	18.93	0.78
Reach #5	Tributary 4B	4425.121	25 Year	2.29	179.70	180.19	180.19	180.27	0.010396	1.56	3.29	22.65	0.77
Reach #5	Tributary 4B	4425.121	50 Year	2.73	179.70	180.21	180.21	180.31	0.010547	1.64	3.94	25.02	0.79
Reach #5	Tributary 4B	4425.121	100 Year	3.20	179.70	180.24	180.24	180.33	0.010529	1.70	4.64	27.33	0.80
Reach #5	Tributary 4B	4425.121	Regulatory	12.85	179.70	180.51	180.50	180.65	0.013348	2.56	15.03	50.44	0.97
Reach #5	Tributary 4B	4356.121	2 Year	0.79	178.70	179.09	179.09	179.16	0.011123	1.29	1.04	11.48	0.74
Reach #5	Tributary 4B	4356.121	5 Year	1.32	178.70	179.16	179.16	179.24	0.010050	1.41	2.13	18.38	0.73
Reach #5	Tributary 4B	4356.121	10 Year	1.72	178.70	179.20	179.20	179.28	0.010275	1.51	2.85	21.74	0.75
Reach #5	Tributary 4B	4356.121	25 Year	2.29	178.70	179.24	179.24	179.32	0.010655	1.64	3.76	25.40	0.78
Reach #5	Tributary 4B	4356.121	50 Year	2.73	178.70	179.27	179.27	179.35	0.010506	1.69	4.53	28.11	0.78
Reach #5	Tributary 4B	4356.121	100 Year	3.20	178.70	179.29	179.29	179.37	0.010688	1.78	5.20	30.27	0.80
Reach #5	Tributary 4B	4356.121	Regulatory	12.85	178.70	179.53	179.53	179.66	0.015395	2.75	15.37	53.20	1.01
Reach #5	Tributary 4B	4300.121	2 Year	0.76	177.70	178.35		178.35	0.000542	0.42	5.46	27.80	0.18
Reach #5	Tributary 4B	4300.121	5 Year	1.32	177.70	178.44		178.44	0.000615	0.50	8.19	34.45	0.19
Reach #5	Tributary 4B	4300.121	10 Year	1.72	177.70	178.49		178.49	0.000659	0.54	10.68	38.32	0.20
Reach #5	Tributary 4B	4300.121	25 Year	2.29	177.70	178.55		178.55	0.000703	0.58	12.48	42.83	0.21
Reach #5	Tributary 4B	4300.121	50 Year	2.73	177.70	178.59		178.59	0.000730	0.62	14.27	45.88	0.22
Reach #5	Tributary 4B	4300.121	100 Year	3.20	177.70	178.62		178.63	0.000755	0.65	18.08	48.78	0.22
Reach #5	Tributary 4B	4300.121	Regulatory	12.85	177.70	179.08		179.09	0.000857	0.92	46.32	81.31	0.26
Reach #5	Tributary 4B	4207.121	2 Year	0.79	177.70	178.25		178.27	0.001698	0.71	2.75	17.35	0.33
Reach #5	Tributary 4B	4207.121	5 Year	1.32	177.70	178.32		178.34	0.002394	0.85	4.18	21.83	0.37
Reach #5	Tributary 4B	4207.121	10 Year	1.72	177.70	178.37		178.39	0.002586	0.93	5.19	24.51	0.39
Reach #5	Tributary 4B	4207.121	25 Year	2.29	177.70	178.42		178.44	0.002720	1.01	6.57	27.76	0.40
Reach #5	Tributary 4B	4207.121	50 Year	2.73	177.70	178.46		178.48	0.002772	1.06	7.64	30.03	0.41
Reach #5	Tributary 4B	4207.121	100 Year	3.20	177.70	178.49		178.52	0.002802	1.10	8.74	32.20	0.42
Reach #5	Tributary 4B	4207.121	Regulatory	12.85	177.70	178.66		178.68	0.002237	1.38	30.36	60.79	0.41
Reach #5	Tributary 4B	4127.121	2 Year	0.79	177.70	178.25		178.25	0.000705	0.41	6.38	37.92	0.19
Reach #5	Tributary 4B	4127.121	5 Year	1.32	177.70	178.32		178.32	0.000740	0.46	9.46	45.86	0.20
Reach #5	Tributary 4B	4127.121	10 Year	1.72	177.70	178.36		178.37	0.00				

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total: (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl
Reach #5	Tributary 4B	4127.121	25 Year	2.29	177.70	178.42		178.42	0.000773	0.52	14.44	56.32	0.21
Reach #5	Tributary 4B	4127.121	50 Year	2.73	177.70	178.46		178.46	0.000774	0.54	15.61	60.32	0.21
Reach #5	Tributary 4B	4127.121	100 Year	3.20	177.70	178.49		178.49	0.000773	0.56	15.83	64.14	0.21
Reach #5	Tributary 4B	4127.121	Regulatory	12.85	177.70	178.96		178.96	0.000610	0.70	60.53	114.27	0.21
Reach #5	Tributary 4B	4085.121	2 Year	0.79	177.70	178.11	178.11	178.17	0.012237	1.32	1.38	10.94	0.74
Reach #5	Tributary 4B	4085.121	5 Year	1.32	177.70	178.16	178.16	178.23	0.015290	1.62	1.92	11.64	0.84
Reach #5	Tributary 4B	4085.121	10 Year	1.72	177.70	178.19	178.19	178.28	0.016497	1.78	2.31	12.12	0.89
Reach #5	Tributary 4B	4085.121	25 Year	2.28	177.70	178.23	178.23	178.33	0.017623	1.96	2.80	12.70	0.93
Reach #5	Tributary 4B	4085.121	50 Year	2.73	177.70	178.26	178.26	178.36	0.018561	2.08	3.15	13.09	0.97
Reach #5	Tributary 4B	4085.121	100 Year	3.20	177.70	178.29	178.28	178.40	0.016324	2.21	3.50	13.47	0.99
Reach #5	Tributary 4B	4085.121	Regulatory	12.85	177.70	178.74		178.88	0.013819	2.87	11.19	20.13	0.94
Reach #5	Tributary 4B	4024.121	2 Year	0.79	176.70	177.04	177.04	177.13	0.013475	1.32	0.79	7.44	0.81
Reach #5	Tributary 4B	4024.121	5 Year	1.32	176.70	177.12	177.12	177.22	0.013050	1.53	1.37	8.17	0.83
Reach #5	Tributary 4B	4024.121	10 Year	1.72	176.70	177.16	177.16	177.27	0.013372	1.67	1.73	8.59	0.86
Reach #5	Tributary 4B	4024.121	25 Year	2.28	176.70	177.21	177.21	177.34	0.013765	1.84	2.17	9.09	0.89
Reach #5	Tributary 4B	4024.121	50 Year	2.73	176.70	177.25	177.25	177.39	0.013925	1.95	2.51	9.44	0.90
Reach #5	Tributary 4B	4024.121	100 Year	3.20	176.70	177.28	177.28	177.44	0.014160	2.06	2.84	9.78	0.92
Reach #5	Tributary 4B	4024.121	Regulatory	12.85	176.70	177.74	177.74	178.04	0.014829	3.25	8.37	14.30	1.05
Reach #5	Tributary 4B	3970.121	2 Year	0.97	175.70	176.19		176.22	0.001980	0.71	1.70	7.36	0.34
Reach #5	Tributary 4B	3970.121	5 Year	1.62	175.70	176.27		176.31	0.003003	0.96	2.38	8.69	0.43
Reach #5	Tributary 4B	3970.121	10 Year	2.12	175.70	176.30		176.36	0.003880	1.15	2.72	9.37	0.50
Reach #5	Tributary 4B	3970.121	25 Year	2.81	175.70	176.35		176.43	0.004533	1.36	3.20	10.26	0.56
Reach #5	Tributary 4B	3970.121	50 Year	3.36	175.70	176.39		176.48	0.005442	1.50	3.50	10.92	0.60
Reach #5	Tributary 4B	3970.121	100 Year	3.94	175.70	176.42		176.64	0.006035	1.84	3.97	11.54	0.64
Reach #5	Tributary 4B	3970.121	Regulatory	16.47	175.70	176.80	176.80	177.21	0.010610	3.09	11.32	19.99	0.93
Reach #5	Tributary 4B	3944.121	2 Year	0.97	175.70	176.07	176.07	176.12	0.000691	1.15	1.83	20.87	0.68
Reach #5	Tributary 4B	3944.121	5 Year	1.62	175.70	176.11	176.11	176.18	0.011402	1.41	2.80	21.63	0.77
Reach #5	Tributary 4B	3944.121	10 Year	2.12	175.70	176.15	176.15	176.21	0.011438	1.50	3.51	22.23	0.79
Reach #5	Tributary 4B	3944.121	25 Year	2.81	175.70	176.18	176.18	176.25	0.012894	1.67	4.19	22.79	0.85
Reach #5	Tributary 4B	3944.121	50 Year	3.36	175.70	176.20	176.20	176.28	0.014332	1.82	4.63	23.14	0.90
Reach #5	Tributary 4B	3944.121	100 Year	3.94	175.70	176.21	176.21	176.31	0.015677	1.98	5.05	23.47	0.95
Reach #5	Tributary 4B	3944.121	Regulatory	16.47	175.70	176.51	176.71	176.71	0.021782	3.25	12.72	28.69	1.22
Reach #5	Tributary 4B	3893.121	2 Year	0.97	173.70	174.09	174.09	174.10	0.014204	1.48	0.88	5.01	0.84
Reach #5	Tributary 4B	3893.121	5 Year	1.62	173.70	174.18	174.18	174.30	0.013378	1.71	1.51	7.58	0.86
Reach #5	Tributary 4B	3893.121	10 Year	2.12	173.70	174.24	174.24	174.37	0.013122	1.85	1.87	8.60	0.87
Reach #5	Tributary 4B	3893.121	25 Year	2.81	173.70	174.30	174.30	174.46	0.012964	2.01	2.58	9.76	0.89
Reach #5	Tributary 4B	3893.121	50 Year	3.36	173.70	174.35	174.35	174.51	0.012916	2.11	3.04	10.60	0.89
Reach #5	Tributary 4B	3893.121	100 Year	3.94	173.70	174.39	174.39	174.58	0.012742	2.21	3.53	11.41	0.90
Reach #5	Tributary 4B	3893.121	Regulatory	16.47	173.70	174.92	174.92	175.20	0.013123	3.37	11.98	20.84	1.01
Reach #5	Tributary 4B	3838.121	2 Year	0.97	172.70	173.14		173.22	0.011531	1.41	1.19	6.91	0.75
Reach #5	Tributary 4B	3838.121	5 Year	1.62	172.70	173.23		173.33	0.011101	1.62	1.89	7.99	0.77
Reach #5	Tributary 4B	3838.121	10 Year	2.12	172.70	173.29		173.40	0.011066	1.75	2.37	8.85	0.78
Reach #5	Tributary 4B	3838.121	25 Year	2.81	172.70	173.36		173.48	0.010963	1.90	3.01	9.46	0.79
Reach #5	Tributary 4B	3838.121	50 Year	3.36	172.70	173.41	173.38	173.53	0.010957	2.00	3.48	10.01	0.80
Reach #5	Tributary 4B	3838.121	100 Year	3.94	172.70	173.46	173.40	173.59	0.011120	2.11	3.94	10.53	0.82
Reach #5	Tributary 4B	3838.121	Regulatory	16.47	172.70	174.02	173.95	174.28	0.012737	3.39	11.73	17.14	0.97
Reach #5	Tributary 4B	3751.121	2 Year	0.97	171.70	172.11	172.11	172.19	0.012500	1.42	1.29	8.53	0.78
Reach #5	Tributary 4B	3751.121	5 Year	1.62	171.70	172.18	172.18	172.28	0.013719	1.69	1.89	10.00	0.84
Reach #5	Tributary 4B	3751.121	10 Year	2.12	171.70	172.22	172.22	172.33	0.014303	1.84	2.47	11.74	0.88
Reach #5	Tributary 4B	3751.121	25 Year	2.81	171.70	172.27	172.27	172.40	0.015126	2.03	3.08	12.73	0.92
Reach #5	Tributary 4B	3751.121	50 Year	3.36	171.70	172.31	172.31	172.44	0.016559	2.15	3.53	13.43	0.94
Reach #5	Tributary 4B	3751.121	100 Year	3.94	171.70	172.34	172.34	172.48	0.015674	2.25	4.02	14.14	0.95
Reach #5	Tributary 4B	3751.121	Regulatory	16.47	171.70	172.77	172.77	173.03	0.018167	3.54	12.00	22.76	1.13
Reach #5	Tributary 4B	3713.121	2 Year	0.97	170.70	171.05	171.05	171.11	0.009013	1.13	1.59	20.16	0.68
Reach #5	Tributary 4B	3713.121	5 Year	1.62	170.70	171.10	171.10	171.17	0.010364	1.35	2.58	20.96	0.74
Reach #5	Tributary 4B	3713.121	10 Year	2.12	170.70	171.13	171.13	171.20	0.010428	1.44	3.29	21.51	0.76
Reach #5	Tributary 4B	3713.121	25 Year	2.81	170.70	171.17	171.17	171.25	0.011275	1.59	4.05	22.08	0.80
Reach #5	Tributary 4B	3713.121	50 Year	3.36	170.70	171.19	171.19	171.28	0.011882	1.70	4.58	22.47	0.83
Reach #5	Tributary 4B	3713.121	100 Year	3.94	170.70	171.21	171.21	171.31	0.012748	1.82	5.05	22.81	0.87
Reach #5	Tributary 4B	3713.121	Regulatory	16.47	170.70	172.21	172.21	172.24	0.010138	1.13	36.11	88.67	0.30
Reach #5	Tributary 4B	3702.121	2 Year	1.06	169.40	169.98	169.97	169.98	0.000974	0.48	2.22	8.75	0.24
Reach #5	Tributary 4B	3702.121	5 Year	1.76	169.40	170.16	169.78	170.17	0.000804	0.55	3.24	11.23	0.23
Reach #5	Tributary 4B	3702.121	10 Year	2.31	169.40	170.27	169.83	170.29	0.000747	0.60	3.95	12.85	0.23
Reach #5	Tributary 4B	3702.121	25 Year	3.06	169.40	170.41	169.89	170.43	0.000703	0.66	4.86	14.82	0.23
Reach #5	Tributary 4B	3702.121	50 Year	3.67	169.40	170.51	169.93	170.53	0.000678	0.70	5.55	16.24	0.23
Reach #5	Tributary 4B	3702.121	100 Year	4.31	169.40	170.61	169.98	170.64	0.000660	0.74	6.23	17.85	0.23
Reach #5	Tributary 4B	3702.121	Regulatory	16.26	169.40	172.15	170.61	172.22	0.000509	1.19	16.86	45.53	0.24
Reach #5	Tributary 4B	3650.13	Culvert										
Reach #5	Tributary 4B	3618.13	2 Year	1.06	167.90	169.17	168.28	169.17	0.000047	0.19	5.68	19.65	0.06
Reach #5	Tributary 4B	3618.13	5 Year	1.76	167.90	169.25	168.39	169.25	0.000100	0.20	6.52	22.15	0.09
Reach #5	Tributary 4B	3618.13	10 Year	2.31	167.90	169.30	168.44	169.30	0.000148	0.37	6.85	23.64	0.11
Reach #5	Tributary 4B	3618.13	25 Year	3.06	167.90	169.35	168.50	169.36	0.000221	0.46	7.22	25.35	0.14
Reach #5	Tributary 4B	3618.13	50 Year	3.67	167.90	169.39	168.54	169.40	0.000285	0.53	7.48	26.52	0.16
Reach #5	Tributary 4B	3618.13	100 Year	4.31	167.90	169.42	168.58	169.44	0.000357	0.61	7.71	27.57	0.18
Reach #5	Tributary 4B	3618.13	Regulatory	16.26	167.90	169.70	169.22	169.91	0.003189	2.09	9.62</		

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel ChInt (m/s)	Flow Area (m2)	Top Width (m)	Froude # Ch
Reach #5	Tributary 4B	3609.13	2 Year	1.06	168.70	169.06	169.15	169.06	0.010961	1.29	1.47	13.86	0.75
Reach #5	Tributary 4B	3609.13	5 Year	1.76	168.70	169.14	169.14	169.23	0.011799	1.51	2.41	16.29	0.80
Reach #5	Tributary 4B	3609.13	10 Year	2.31	168.70	169.18	169.18	169.27	0.012360	1.65	3.05	17.74	0.84
Reach #5	Tributary 4B	3609.13	25 Year	3.06	168.70	169.22	169.22	169.33	0.012844	1.81	3.87	19.46	0.87
Reach #5	Tributary 4B	3609.13	50 Year	3.67	168.70	169.25	169.25	169.36	0.013331	1.92	4.46	20.61	0.89
Reach #5	Tributary 4B	3609.13	100 Year	4.31	168.70	169.28	169.28	169.40	0.013237	2.00	5.14	21.86	0.90
Reach #5	Tributary 4B	3609.13	Regulatory	18.26	168.70	169.65	169.64	169.85	0.016026	3.17	15.72	36.10	1.08
Reach #5	Tributary 4B	3541.13	2 Year	1.06	167.70	168.09	168.16	168.16	0.010455	1.29	1.58	15.03	0.72
Reach #5	Tributary 4B	3541.13	5 Year	1.76	167.70	168.15	168.15	168.23	0.011157	1.50	2.64	18.89	0.76
Reach #5	Tributary 4B	3541.13	10 Year	2.31	167.70	168.19	168.19	168.27	0.011823	1.64	3.36	21.07	0.80
Reach #5	Tributary 4B	3541.13	25 Year	3.06	167.70	168.23	168.23	168.32	0.012352	1.78	4.31	23.63	0.83
Reach #5	Tributary 4B	3541.13	50 Year	3.67	167.70	168.25	168.25	168.36	0.013007	1.90	4.97	25.26	0.86
Reach #5	Tributary 4B	3541.13	100 Year	4.31	167.70	168.28	168.28	168.39	0.012916	1.97	5.76	27.09	0.86
Reach #5	Tributary 4B	3541.13	Regulatory	18.26	167.70	168.59	168.77	0.018008	3.16	17.08	45.85	1.10	
Reach #5	Tributary 4B	3487.13	2 Year	1.06	166.70	167.09	167.13	167.13	0.011339	1.27	2.43	26.41	0.73
Reach #5	Tributary 4B	3487.13	5 Year	1.76	166.70	167.13	167.13	167.18	0.012054	1.47	3.55	28.37	0.80
Reach #5	Tributary 4B	3487.13	10 Year	2.31	166.70	167.15	167.15	167.21	0.014755	1.64	4.19	29.42	0.86
Reach #5	Tributary 4B	3487.13	25 Year	3.06	166.70	167.18	167.18	167.24	0.016787	1.83	4.97	30.66	0.82
Reach #5	Tributary 4B	3487.13	50 Year	3.67	166.70	167.19	167.19	167.27	0.018050	1.86	5.54	31.54	0.97
Reach #5	Tributary 4B	3487.13	100 Year	4.31	166.70	167.21	167.21	167.29	0.019966	2.10	6.03	32.27	1.02
Reach #5	Tributary 4B	3487.13	Regulatory	18.26	166.70	167.48	167.45	167.61	0.024377	3.21	16.41	45.10	1.22
Reach #5	Tributary 4B	3442.13	2 Year	1.06	165.70	166.06	166.06	166.10	0.008214	1.07	2.87	40.71	0.64
Reach #5	Tributary 4B	3442.13	5 Year	1.76	165.70	166.09	166.09	166.13	0.009729	1.25	4.25	41.88	0.71
Reach #5	Tributary 4B	3442.13	10 Year	2.31	165.70	166.11	166.11	166.16	0.011709	1.42	4.93	42.44	0.79
Reach #5	Tributary 4B	3442.13	25 Year	3.06	165.70	166.13	166.13	166.19	0.012759	1.55	5.95	43.27	0.83
Reach #5	Tributary 4B	3442.13	50 Year	3.67	165.70	166.14	166.14	166.21	0.014937	1.71	6.43	43.66	0.80
Reach #5	Tributary 4B	3442.13	100 Year	4.31	165.70	166.16	166.16	166.23	0.016006	1.82	7.06	44.17	0.94
Reach #5	Tributary 4B	3442.13	Regulatory	18.26	165.70	166.36	166.36	166.50	0.025456	3.05	16.75	51.27	1.27
Reach #5	Tributary 4B	3408.13	2 Year	1.06	164.70	165.20	165.20	165.26	0.021397	1.35	1.65	15.61	0.94
Reach #5	Tributary 4B	3408.13	5 Year	1.76	164.70	165.26	165.25	165.32	0.020626	1.55	2.81	19.78	0.96
Reach #5	Tributary 4B	3408.13	10 Year	2.31	164.70	165.28	165.28	165.36	0.021927	1.71	3.20	21.96	1.01
Reach #5	Tributary 4B	3408.13	25 Year	3.06	164.70	165.32	165.32	165.40	0.021430	1.83	4.10	24.92	1.02
Reach #5	Tributary 4B	3408.13	50 Year	3.67	164.70	165.36	165.34	165.43	0.018037	1.81	5.12	27.89	0.95
Reach #5	Tributary 4B	3408.13	100 Year	4.31	164.70	165.38	165.36	165.46	0.018524	1.91	5.78	29.66	0.97
Reach #5	Tributary 4B	3408.13	Regulatory	18.26	164.70	165.74	165.64	165.83	0.012703	2.44	21.59	57.55	0.90
Reach #5	Tributary 4B	3317.13	2 Year	1.06	163.70	164.04	164.04	164.08	0.005812	0.92	3.29	59.12	0.55
Reach #5	Tributary 4B	3317.13	5 Year	1.76	163.70	164.07	164.07	164.11	0.007405	1.10	4.09	60.59	0.63
Reach #5	Tributary 4B	3317.13	10 Year	2.31	163.70	164.09	164.09	164.13	0.008544	1.22	5.98	61.42	0.68
Reach #5	Tributary 4B	3317.13	25 Year	3.06	163.70	164.11	164.11	164.15	0.009576	1.35	7.23	62.46	0.72
Reach #5	Tributary 4B	3317.13	50 Year	3.67	163.70	164.12	164.12	164.17	0.011730	1.51	7.70	62.84	0.80
Reach #5	Tributary 4B	3317.13	100 Year	4.31	163.70	164.13	164.13	164.19	0.011704	1.56	8.74	63.68	0.81
Reach #5	Tributary 4B	3317.13	Regulatory	18.26	163.70	164.28	164.41	164.41	0.022396	2.73	19.87	71.98	1.19
Reach #5	Tributary 4B	3257.13	2 Year	1.17	161.70	162.09	162.09	162.19	0.012851	1.45	1.11	9.38	0.82
Reach #5	Tributary 4B	3257.13	5 Year	1.95	161.70	162.19	162.19	162.29	0.010402	1.56	2.40	16.19	0.77
Reach #5	Tributary 4B	3257.13	10 Year	2.56	161.70	162.24	162.24	162.34	0.010181	1.67	3.30	19.58	0.78
Reach #5	Tributary 4B	3257.13	25 Year	3.40	161.70	162.29	162.29	162.40	0.010263	1.80	4.43	23.17	0.80
Reach #5	Tributary 4B	3257.13	50 Year	4.07	161.70	162.33	162.33	162.44	0.010092	1.87	5.37	25.77	0.80
Reach #5	Tributary 4B	3257.13	100 Year	4.79	161.70	162.36	162.36	162.48	0.010664	1.99	6.13	27.88	0.83
Reach #5	Tributary 4B	3257.13	Regulatory	20.35	161.70	162.71	162.71	162.80	0.013580	3.07	20.28	51.79	1.01
Reach #5	Tributary 4B	3198.13	2 Year	1.17	160.70	161.15	161.15	161.22	0.009964	1.37	1.86	16.95	0.72
Reach #5	Tributary 4B	3198.13	5 Year	1.95	160.70	161.22	161.22	161.29	0.009408	1.51	3.43	24.21	0.72
Reach #5	Tributary 4B	3198.13	10 Year	2.56	160.70	161.26	161.26	161.34	0.010424	1.67	4.30	27.40	0.76
Reach #5	Tributary 4B	3198.13	25 Year	3.40	160.70	161.30	161.30	161.38	0.011043	1.81	5.52	31.34	0.80
Reach #5	Tributary 4B	3198.13	50 Year	4.07	160.70	161.32	161.32	161.41	0.012173	1.96	6.25	33.47	0.84
Reach #5	Tributary 4B	3198.13	100 Year	4.79	160.70	161.35	161.35	161.44	0.012296	2.03	7.22	36.12	0.85
Reach #5	Tributary 4B	3198.13	Regulatory	20.35	160.70	161.63	161.63	161.78	0.017963	3.21	21.25	63.00	1.10
Reach #5	Tributary 4B	3110.13	2 Year	1.17	159.70	160.00	160.00	160.07	0.015645	1.39	0.84	3.31	0.88
Reach #5	Tributary 4B	3110.13	5 Year	1.95	159.70	160.09	160.09	160.14	0.007501	1.18	4.14	40.51	0.64
Reach #5	Tributary 4B	3110.13	10 Year	2.56	159.70	160.11	160.11	160.17	0.008427	1.30	5.11	42.08	0.68
Reach #5	Tributary 4B	3110.13	25 Year	3.40	159.70	160.14	160.14	160.20	0.009820	1.47	6.19	43.74	0.75
Reach #5	Tributary 4B	3110.13	50 Year	4.07	159.70	160.15	160.15	160.22	0.010867	1.59	6.93	44.84	0.79
Reach #5	Tributary 4B	3110.13	100 Year	4.79	159.70	160.17	160.17	160.25	0.011525	1.68	7.76	46.05	0.82
Reach #5	Tributary 4B	3110.13	Regulatory	20.35	159.70	160.50	160.50	160.58	0.008929	2.17	26.72	68.04	0.79
Reach #5	Tributary 4B	3029.13	2 Year	1.17	159.70	159.96	159.96	159.12	0.009441	1.18	1.83	21.03	0.70
Reach #5	Tributary 4B	3029.13	5 Year	1.95	159.70	159.11	159.11	159.18	0.010074	1.37	3.18	26.23	0.75
Reach #5	Tributary 4B	3029.13	10 Year	2.56	159.70	159.15	159.15	159.22	0.010836	1.51	4.02	28.59	0.78
Reach #5	Tributary 4B	3029.13	25 Year	3.40	159.70	159.18	159.18	159.27	0.011696	1.66	5.07	31.29	0.83
Reach #5	Tributary 4B	3029.13	50 Year	4.07	159.70	159.21	159.21	159.30	0.012155	1.76	5.88	33.21	0.85
Reach #5	Tributary 4B	3029.13	100 Year	4.79	159.70	159.23	159.23	159.33	0.012313	1.84	6.75	35.17	0.86
Reach #5	Tributary 4B	3029.13	Regulatory	20.35	159.70	159.52	159.52	159.68	0.016191	2.93	20.33	57.63	1.08
Reach #5	Tributary 4B	2966.13	2 Year	1.17	157.70	158.24	158.25	158.25	0.001813	0.70	4.35	25.06	0.32
Reach #5	Tributary 4B	2966.13	5 Year	1.95	157.70	158.31	158.33	158.33	0.002275	0.66	6.33	30.35	0.37
Reach #5	Tributary 4B	2966.13	10 Year	2.56	157.70	158.36	158.36	158.38	0.002491	0.65	7.75	33.66	0.39
Reach #5	Tributary 4B	2966.13	25 Year	3.40	157.70	158.41	158.41	158.43	0.002695	1.04	9.82	37.54	0.42
Reach #5	Tributary 4B												

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel.Crit.( m/s)	Flow Area (m2)	Top Width (m)	Froude # Ch
Reach #5	Tributary 4B	2914.13	2 Year	1.17	157.70	158.06	158.06	158.09	0.006689	0.09	3.98	60.47	0.58
Reach #5	Tributary 4B	2914.13	5 Year	1.95	157.70	158.09	158.09	158.12	0.008657	1.20	5.63	62.04	0.67
Reach #5	Tributary 4B	2914.13	10 Year	2.56	157.70	158.10	158.10	158.14	0.010432	1.36	6.51	62.86	0.74
Reach #5	Tributary 4B	2914.13	25 Year	3.40	157.70	158.12	158.12	158.16	0.012371	1.52	7.61	63.87	0.81
Reach #5	Tributary 4B	2914.13	50 Year	4.07	157.70	158.13	158.13	158.18	0.013268	1.61	8.50	64.67	0.84
Reach #5	Tributary 4B	2914.13	100 Year	4.79	157.70	158.15	158.14	158.20	0.012697	1.63	9.73	65.77	0.83
Reach #5	Tributary 4B	2914.13	Regulatory	20.35	157.70	159.26		159.26	0.000185	0.48	116.89	121.25	0.13
Reach #5	Tributary 4B	2851.13	2 Year	1.17	156.70	157.13	157.13	157.22	0.010731	1.41	1.48	13.05	0.75
Reach #5	Tributary 4B	2851.13	5 Year	1.95	156.70	157.22	157.22	157.31	0.010138	1.57	2.85	18.64	0.76
Reach #5	Tributary 4B	2851.13	10 Year	2.56	156.70	157.26	157.26	157.35	0.010309	1.69	3.78	23.09	0.77
Reach #5	Tributary 4B	2851.13	25 Year	3.40	156.70	157.31	157.31	157.41	0.010740	1.83	4.95	26.79	0.80
Reach #5	Tributary 4B	2851.13	50 Year	4.07	156.70	157.34	157.34	157.44	0.010660	1.90	5.92	29.52	0.81
Reach #5	Tributary 4B	2851.13	100 Year	4.79	156.70	157.37	157.37	157.48	0.010740	1.98	6.88	31.98	0.82
Reach #5	Tributary 4B	2851.13	Regulatory	20.35	156.70	159.25		159.25	0.000053	0.36	165.68	115.07	0.07
Reach #5	Tributary 4B	2797.13	2 Year	1.17	155.70	156.51		156.52	0.000043	0.55	4.94	18.15	0.24
Reach #5	Tributary 4B	2797.13	5 Year	1.95	155.70	156.68		156.69	0.000735	0.58	8.46	23.89	0.22
Reach #5	Tributary 4B	2797.13	10 Year	2.56	155.70	156.80		156.80	0.000603	0.58	11.50	27.87	0.20
Reach #5	Tributary 4B	2797.13	25 Year	3.40	155.70	156.95		156.95	0.000479	0.58	16.02	32.93	0.19
Reach #5	Tributary 4B	2797.13	50 Year	4.07	155.70	157.06		157.07	0.000388	0.56	20.01	35.89	0.17
Reach #5	Tributary 4B	2797.13	100 Year	4.79	155.70	157.18		157.18	0.000319	0.54	24.26	38.26	0.16
Reach #5	Tributary 4B	2797.13	Regulatory	20.35	155.70	159.25		159.25	0.000047	0.41	144.89	78.58	0.07
Reach #5	Tributary 4B	2756.13	2 Year	1.17	155.70	156.45		156.47	0.001431	0.77	3.16	10.39	0.30
Reach #5	Tributary 4B	2756.13	5 Year	1.95	155.70	156.63		156.65	0.001288	0.85	5.39	14.51	0.28
Reach #5	Tributary 4B	2756.13	10 Year	2.56	155.70	156.75		156.77	0.001120	0.88	7.33	17.05	0.28
Reach #5	Tributary 4B	2756.13	25 Year	3.40	155.70	156.91		156.93	0.000921	0.86	10.25	20.27	0.26
Reach #5	Tributary 4B	2756.13	50 Year	4.07	155.70	157.03		157.05	0.000771	0.85	12.85	22.49	0.24
Reach #5	Tributary 4B	2756.13	100 Year	4.79	155.70	157.15		157.16	0.000642	0.82	15.63	23.81	0.22
Reach #5	Tributary 4B	2756.13	Regulatory	20.35	155.70	159.24		159.25	0.000116	0.65	89.55	48.54	0.11
Reach #5	Tributary 4B	2707.13	2 Year	1.31	155.70	156.35		156.38	0.003075	0.96	2.98	11.20	0.40
Reach #5	Tributary 4B	2707.13	5 Year	2.19	155.70	156.56		156.58	0.001841	0.82	5.78	15.45	0.33
Reach #5	Tributary 4B	2707.13	10 Year	2.87	155.70	156.70		156.72	0.001412	0.89	8.10	18.24	0.30
Reach #5	Tributary 4B	2707.13	25 Year	3.82	155.70	156.87		156.88	0.001068	0.87	11.48	21.67	0.27
Reach #5	Tributary 4B	2707.13	50 Year	4.58	155.70	157.00		157.01	0.000871	0.85	14.44	24.28	0.24
Reach #5	Tributary 4B	2707.13	100 Year	5.38	155.70	157.12		157.13	0.000689	0.81	17.59	25.44	0.22
Reach #5	Tributary 4B	2707.13	Regulatory	22.93	155.70	159.24		159.24	0.000134	0.66	99.59	56.60	0.11
Reach #5	Tributary 4B	2704.13	Culvert										
Reach #5	Tributary 4B	2690.13	2 Year	1.31	155.35	156.35	156.36	156.42	0.000148	0.32	4.53	8.05	0.10
Reach #5	Tributary 4B	2690.13	5 Year	2.19	155.35	156.57	156.54	156.58	0.000227	0.44	5.63	10.49	0.12
Reach #5	Tributary 4B	2690.13	10 Year	2.87	155.35	156.70	156.61	156.71	0.000275	0.52	6.36	12.10	0.14
Reach #5	Tributary 4B	2690.13	25 Year	3.82	155.35	156.86	156.71	156.86	0.000351	0.61	7.24	14.06	0.15
Reach #5	Tributary 4B	2690.13	50 Year	4.58	155.35	156.98	155.79	157.01	0.000365	0.67	7.91	15.55	0.16
Reach #5	Tributary 4B	2690.13	100 Year	5.38	155.35	157.11	155.86	157.13	0.000398	0.73	8.57	16.74	0.17
Reach #5	Tributary 4B	2690.13	Regulatory	22.93	155.35	159.23	156.83	159.24	0.000085	0.57	104.78	57.14	0.09
Reach #5	Tributary 4B	2679.13	Culvert										
Reach #5	Tributary 4B	2690.13	2 Year	1.31	155.35	156.35	156.65	156.36	0.000338	0.43	3.46	6.07	0.14
Reach #5	Tributary 4B	2690.13	5 Year	2.19	155.35	156.54	156.77	156.55	0.000483	0.58	4.46	7.05	0.18
Reach #5	Tributary 4B	2690.13	10 Year	2.87	155.35	156.68	156.85	156.68	0.000571	0.67	5.12	7.68	0.19
Reach #5	Tributary 4B	2690.13	25 Year	3.82	155.35	156.80	156.95	156.83	0.000673	0.79	5.90	8.44	0.21
Reach #5	Tributary 4B	2690.13	50 Year	4.58	155.35	156.90	156.03	156.94	0.000742	0.87	6.46	8.98	0.23
Reach #5	Tributary 4B	2690.13	100 Year	5.38	155.35	157.00	156.11	157.04	0.000808	0.95	7.00	9.55	0.24
Reach #5	Tributary 4B	2690.13	Regulatory	22.93	155.35	158.29	157.07	158.47	0.001732	2.06	14.02	37.67	0.39
Reach #5	Tributary 4B	2679.13	2 Year	1.31	155.50	156.31		156.35	0.002158	0.87	2.21	5.36	0.34
Reach #5	Tributary 4B	2679.13	5 Year	2.19	155.50	156.49		156.54	0.002378	1.07	3.20	5.86	0.37
Reach #5	Tributary 4B	2679.13	10 Year	2.87	155.50	156.60		156.66	0.002483	1.19	3.89	6.19	0.39
Reach #5	Tributary 4B	2679.13	25 Year	3.82	155.50	156.74		156.81	0.002600	1.33	4.76	6.58	0.40
Reach #5	Tributary 4B	2679.13	50 Year	4.58	155.50	156.84		156.91	0.002656	1.42	5.43	6.86	0.41
Reach #5	Tributary 4B	2679.13	100 Year	5.38	155.50	156.94		157.02	0.002711	1.51	6.10	7.13	0.42
Reach #5	Tributary 4B	2679.13	Regulatory	22.93	155.50	158.30		158.43	0.002337	2.26	27.49	29.62	0.44
Reach #5	Tributary 4B	2640.13	2 Year	1.31	155.50	155.98	155.98	156.14	0.022522	1.86	0.70	2.05	1.01
Reach #5	Tributary 4B	2640.13	5 Year	2.19	155.50	156.12	156.12	156.33	0.016644	2.02	1.24	3.81	0.92
Reach #5	Tributary 4B	2640.13	10 Year	2.87	155.50	156.21	156.21	156.44	0.016049	2.21	1.57	4.03	0.93
Reach #5	Tributary 4B	2640.13	25 Year	3.82	155.50	156.31	156.31	156.59	0.015263	2.41	2.01	4.30	0.93
Reach #5	Tributary 4B	2640.13	50 Year	4.56	155.50	156.39	156.39	156.69	0.015140	2.56	2.32	4.49	0.94
Reach #5	Tributary 4B	2640.13	100 Year	5.38	155.50	156.46	156.46	156.79	0.014832	2.70	2.65	4.68	0.95
Reach #5	Tributary 4B	2640.13	Regulatory	22.93	155.50	157.54	157.54	158.21	0.011483	4.15	8.48	8.33	0.98
Reach #5	Tributary 4B	2609.13	2 Year	1.31	154.50	154.87	154.97	155.15	0.021811	1.88	0.70	1.96	1.00
Reach #5	Tributary 4B	2609.13	5 Year	2.19	154.50	155.14	155.14	155.24	0.010056	1.61	2.71	15.31	0.72
Reach #5	Tributary 4B	2609.13	10 Year	2.87	154.50	155.18	155.18	155.29	0.010370	1.74	3.47	15.98	0.74
Reach #5	Tributary 4B	2609.13	25 Year	3.82	154.50	155.23	155.23	155.36	0.011441	1.84	4.29	16.65	0.79
Reach #5	Tributary 4B	2609.13	50 Year	4.58	154.50	155.27	155.27	155.40	0.012109	2.07	4.87	17.12	0.83
Reach #5	Tributary 4B	2609.13	100 Year	5.38	154.50	155.30	155.30	155.45	0.012671	2.19	5.48	17.60	0.85
Reach #5	Tributary 4B	2609.13	Regulatory	22.93	154.50	155.76	155.76	156.05	0.017750	3.65	14.86	23.75	1.09
Reach #5	Tributary 4B	2534.13	2 Year	1.31	152.60	153.20	153.20	153.31	0.015778	1.54	1.20	7.46	0.89
Reach #5	Tributary 4B	2534.13	5 Year	2.19	152.60	153.30	153.30	153.43	0.014167	1.76	2.08	10.41	0.88
Reach #5	Tributary 4B	2534.13	10 Year	2.87	152.60	153.36	153.36	153.50	0.013043	1.86	2.80	12.31	0.87
Reach #5	Tributary 4B	2534.13	25 Year	3.82	152.60	153.43	153.43	153.68	0.012998	2.02	3.67	14.26	0.88

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El. (m)	W/S Elev. (m)	Crit W/S. (m)	E.G. Elev. (m)	E/G Slope (m/m)	Vef Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl.
Reach #5	Tributary 4B	2534.13	50 Year	4.56	152.60	153.47	153.47	153.63	0.012695	2.12	4.38	15.69	0.89
Reach #5	Tributary 4B	2534.13	100 Year	5.36	152.60	153.52	153.52	153.68	0.012565	2.21	5.10	17.00	0.89
Reach #5	Tributary 4B	2534.13	Regulatory	22.93	152.60	154.11		154.29	0.009028	2.92	20.15	31.04	0.84
Reach #5	Tributary 4B	2478.13	2 Year	1.31	151.50	152.10	152.10	152.28	0.016376	1.81	0.89	4.11	0.65
Reach #5	Tributary 4B	2478.13	5 Year	2.19	151.50	152.25	152.25	152.43	0.014250	2.04	1.64	5.81	0.63
Reach #5	Tributary 4B	2478.13	10 Year	2.87	151.50	152.33	152.33	152.53	0.013778	2.19	2.18	6.77	0.63
Reach #5	Tributary 4B	2478.13	25 Year	3.82	151.50	152.44	152.44	152.65	0.013252	2.35	2.92	7.90	0.64
Reach #5	Tributary 4B	2478.13	50 Year	4.58	151.50	152.50	152.50	152.72	0.013502	2.49	3.43	8.59	0.65
Reach #5	Tributary 4B	2478.13	100 Year	5.38	151.50	152.56	152.56	152.80	0.013568	2.61	3.07	9.27	0.67
Reach #5	Tributary 4B	2478.13	Regulatory	22.93	151.50	153.29	153.29	153.66	0.014010	3.02	13.93	18.15	0.97
Reach #5	Tributary 4B	2431.13	2 Year	1.31	150.60	151.51		151.55	0.004937	1.06	2.19	8.00	0.47
Reach #5	Tributary 4B	2431.13	5 Year	2.19	150.60	151.60		151.67	0.006775	1.38	2.97	9.37	0.57
Reach #5	Tributary 4B	2431.13	10 Year	2.87	150.60	151.67		151.75	0.006978	1.51	3.70	10.47	0.59
Reach #5	Tributary 4B	2431.13	25 Year	3.82	150.60	151.77		151.85	0.006888	1.84	4.74	11.87	0.60
Reach #5	Tributary 4B	2431.13	50 Year	4.58	150.60	151.83		151.92	0.006944	1.73	5.52	12.82	0.60
Reach #5	Tributary 4B	2431.13	100 Year	5.38	150.60	151.89		151.98	0.008847	1.80	6.33	13.74	0.61
Reach #5	Tributary 4B	2431.13	Regulatory	22.93	150.60	152.72		152.85	0.005408	2.49	20.66	19.98	0.60
Reach #5	Tributary 4B	2389.13	2 Year	1.31	150.50	150.98	150.98	151.18	0.021801	1.85	0.71	2.04	1.01
Reach #5	Tributary 4B	2389.13	5 Year	2.19	150.50	151.15	151.15	151.28	0.012113	1.77	1.95	8.71	0.80
Reach #5	Tributary 4B	2389.13	10 Year	2.87	150.50	151.21	151.21	151.36	0.012116	1.92	2.52	9.08	0.81
Reach #5	Tributary 4B	2389.13	25 Year	3.82	150.50	151.28	151.28	151.45	0.012897	2.13	3.14	9.47	0.85
Reach #5	Tributary 4B	2389.13	50 Year	4.58	150.50	151.33	151.33	151.52	0.013116	2.26	3.62	9.77	0.87
Reach #5	Tributary 4B	2389.13	100 Year	5.38	150.50	151.37	151.37	151.58	0.013398	2.39	4.09	10.05	0.89
Reach #5	Tributary 4B	2389.13	Regulatory	22.93	150.50	152.03	152.03	152.46	0.015266	3.91	11.99	13.92	1.06
Reach #5	Tributary 4B	2342.13	2 Year	1.31	149.50	150.20		150.28	0.004665	1.15	1.77	0.28	0.49
Reach #5	Tributary 4B	2342.13	5 Year	2.19	149.50	150.28		150.39	0.007269	1.56	2.55	11.99	0.62
Reach #5	Tributary 4B	2342.13	10 Year	2.87	149.50	150.32		150.45	0.009009	1.82	3.10	13.57	0.70
Reach #5	Tributary 4B	2342.13	25 Year	3.82	149.50	150.37		150.53	0.010603	2.10	3.84	15.44	0.78
Reach #5	Tributary 4B	2342.13	50 Year	4.58	149.50	150.41		150.59	0.012145	2.28	4.40	16.74	0.83
Reach #5	Tributary 4B	2342.13	100 Year	5.38	149.50	150.44		150.64	0.013215	2.45	4.99	17.99	0.87
Reach #5	Tributary 4B	2342.13	Regulatory	22.93	149.50	150.95		151.19	0.013636	3.48	19.01	36.83	0.96
Reach #5	Tributary 4B	2321.13	2 Year	1.31	149.50	150.09	150.09	150.13	0.008220	1.18	3.54	36.06	0.56
Reach #5	Tributary 4B	2321.13	5 Year	2.19	149.50	150.12	150.12	150.17	0.011501	1.47	4.75	37.59	0.67
Reach #5	Tributary 4B	2321.13	10 Year	2.87	149.50	150.15	150.15	150.20	0.013251	1.62	5.60	38.63	0.73
Reach #5	Tributary 4B	2321.13	25 Year	3.82	149.50	150.17	150.17	150.23	0.015502	1.81	6.58	39.78	0.79
Reach #5	Tributary 4B	2321.13	50 Year	4.58	149.50	150.19	150.19	150.25	0.017082	1.94	7.27	40.58	0.83
Reach #5	Tributary 4B	2321.13	100 Year	5.38	149.50	150.20	150.20	150.27	0.016676	2.07	7.93	41.33	0.88
Reach #5	Tributary 4B	2321.13	Regulatory	22.93	149.50	150.58	150.43	150.64	0.012077	2.33	26.55	58.58	0.77
Reach #5	Tributary 4B	2284.13	2 Year	1.31	148.50	148.86	148.86	149.13	0.021426	1.83	0.72	2.09	1.00
Reach #5	Tributary 4B	2284.13	5 Year	2.19	148.50	149.15	149.15	149.25	0.009538	1.59	2.64	16.05	0.71
Reach #5	Tributary 4B	2284.13	10 Year	2.87	148.50	149.20	149.20	149.31	0.009937	1.72	3.51	18.41	0.73
Reach #5	Tributary 4B	2284.13	25 Year	3.82	148.50	149.26	149.26	149.37	0.009938	1.85	4.73	21.28	0.75
Reach #5	Tributary 4B	2284.13	50 Year	4.58	148.50	149.29	149.29	149.42	0.010413	1.96	5.53	22.98	0.77
Reach #5	Tributary 4B	2284.13	100 Year	5.38	148.50	149.33	149.33	149.46	0.010856	2.07	6.33	24.57	0.79
Reach #5	Tributary 4B	2284.13	Regulatory	22.93	148.50	149.74	149.74	149.93	0.013403	3.13	20.04	43.65	0.95
Reach #5	Tributary 4B	2205.13	2 Year	1.31	147.21	148.19	147.44	148.20	0.000019	0.25	5.16	7.13	0.09
Reach #5	Tributary 4B	2205.13	5 Year	2.19	147.21	148.33	147.53	148.34	0.000194	0.36	6.09	8.31	0.12
Reach #5	Tributary 4B	2205.13	10 Year	2.87	147.21	148.41	147.58	148.42	0.000256	0.44	6.81	8.97	0.14
Reach #5	Tributary 4B	2205.13	25 Year	3.82	147.21	148.50	147.66	148.52	0.000338	0.53	7.23	9.76	0.16
Reach #5	Tributary 4B	2205.13	50 Year	4.58	147.21	148.57	147.71	148.59	0.000393	0.60	7.70	10.35	0.18
Reach #5	Tributary 4B	2205.13	100 Year	5.38	147.21	148.64	147.76	148.67	0.000445	0.66	8.17	10.95	0.19
Reach #5	Tributary 4B	2205.13	Regulatory	22.93	147.21	149.28	148.48	149.37	0.001373	1.52	31.98	72.06	0.36
Reach #5	Tributary 4B	2190.13	Culvert										
Reach #5	Tributary 4B	2174.13	2 Year	1.31	146.98	148.17	147.21	148.17	0.000052	0.20	6.62	24.14	0.08
Reach #5	Tributary 4B	2174.13	5 Year	2.19	146.98	148.29	148.29	148.30	0.000101	0.30	7.42	31.54	0.09
Reach #5	Tributary 4B	2174.13	10 Year	2.87	146.98	148.35	147.35	148.36	0.000147	0.37	7.80	35.06	0.11
Reach #5	Tributary 4B	2174.13	25 Year	3.82	146.98	148.41	147.43	148.42	0.000220	0.47	8.21	38.83	0.13
Reach #5	Tributary 4B	2174.13	50 Year	4.58	146.98	148.45	147.48	148.48	0.000285	0.55	8.47	41.23	0.15
Reach #5	Tributary 4B	2174.13	100 Year	5.38	146.98	148.48	147.53	148.50	0.000359	0.63	8.71	43.41	0.17
Reach #5	Tributary 4B	2174.13	Regulatory	22.93	146.98	148.74	148.24	148.99	0.003858	2.24	10.38	58.89	0.57
Reach #5	Tributary 4B	2162.13	2 Year	1.45	147.50	147.95	147.95	148.12	0.020502	1.83	0.79	2.31	1.00
Reach #5	Tributary 4B	2162.13	5 Year	2.42	147.50	148.15	148.15	148.26	0.008993	1.60	2.83	10.09	0.71
Reach #5	Tributary 4B	2162.13	10 Year	3.18	147.50	148.21	148.21	148.32	0.008460	1.68	4.17	24.28	0.70
Reach #5	Tributary 4B	2162.13	25 Year	4.23	147.50	148.27	148.27	148.38	0.008603	1.80	5.75	28.22	0.72
Reach #5	Tributary 4B	2162.13	50 Year	5.07	147.50	148.31	148.31	148.42	0.008777	1.89	6.92	32.41	0.73
Reach #5	Tributary 4B	2162.13	100 Year	5.96	147.50	148.34	148.34	148.46	0.009078	1.99	8.05	35.20	0.75
Reach #5	Tributary 4B	2162.13	Regulatory	25.48	147.50	148.71	148.71	148.87	0.012128	3.02	26.25	65.70	0.93
Reach #5	Tributary 4B	2067.13	2 Year	1.45	146.60	147.37	147.20	147.38	0.002059	0.54	6.29	32.17	0.30
Reach #5	Tributary 4B	2067.13	5 Year	2.42	146.60	147.40	147.25	147.41	0.004156	0.60	7.15	34.32	0.43
Reach #5	Tributary 4B	2067.13	10 Year	3.18	146.60	147.44	147.28	147.45	0.004315	0.68	8.73	37.94	0.45
Reach #5	Tributary 4B	2067.13	25 Year	4.23	146.60	147.48	147.32	147.51	0.004411	0.97	10.82	42.27	0.46
Reach #5	Tributary 4B	2067.13	50 Year	5.07	146.60	147.53	147.34	147.55	0.004496	1.03	12.37	45.22	0.47
Reach #5	Tributary 4B	2067.13	100 Year	5.96	146.60	147.56	147.37	147.58	0.004529	1.08	14.00	48.11	0.48
Reach #5	Tributary 4B	2067.13	Regulatory	25.48	146.60	147.94	147.68	147.98	0.006264	1.83	38.22	79.57	0.62
Reach #5	Tributary 4B	2012.13	2 Year	1.45	146.50	146.93	146.93	147.09	0.020462	1.80	0.80	2.45	1.01

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m3/s)	Min Ch El (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vol.Chnl (m3/s)	Flow/Area (m2)	Top.Width (m)	Fractile #Chl
Reach #5	Tributary 4B	2012.13	5 Year	2.42	146.50	147.08	147.08	147.13	0.005982	1.21	6.58	71.11	0.57
Reach #5	Tributary 4B	2012.13	10 Year	3.18	146.50	147.10	147.10	147.15	0.006763	1.33	8.11	73.01	0.61
Reach #5	Tributary 4B	2012.13	25 Year	4.23	146.50	147.13	147.13	147.18	0.007931	1.48	9.77	75.00	0.67
Reach #5	Tributary 4B	2012.13	50 Year	5.07	146.50	147.14	147.14	147.20	0.008895	1.60	10.86	76.29	0.71
Reach #5	Tributary 4B	2012.13	100 Year	5.98	146.50	147.15	147.15	147.22	0.009872	1.71	11.89	77.49	0.75
Reach #5	Tributary 4B	2012.13	Regulatory	25.48	146.50	147.37	147.34	147.46	0.014988	2.65	30.55	96.64	0.98
Reach #5	Tributary 4B	1959.13	2 Year	1.45	145.50	146.26	146.16	146.28	0.003136	0.81	4.38	27.06	0.41
Reach #5	Tributary 4B	1959.13	5 Year	2.42	145.50	146.31		146.34	0.004410	1.05	6.02	32.05	0.49
Reach #5	Tributary 4B	1959.13	10 Year	3.18	145.50	146.38		146.39	0.004572	1.14	7.57	36.13	0.51
Reach #5	Tributary 4B	1959.13	25 Year	4.23	145.50	146.41		146.45	0.004797	1.24	9.52	40.69	0.53
Reach #5	Tributary 4B	1959.13	50 Year	5.07	145.50	146.44		146.48	0.005215	1.34	10.74	43.29	0.56
Reach #5	Tributary 4B	1959.13	100 Year	5.98	145.50	146.45		146.50	0.006454	1.51	11.26	44.35	0.62
Reach #5	Tributary 4B	1959.13	Regulatory	25.48	145.50	146.84		146.91	0.007375	2.25	35.28	79.20	0.72
Reach #5	Tributary 4B	1918.13	2 Year	1.45	145.50	145.86	145.86	146.00	0.020116	1.69	0.86	3.01	1.01
Reach #5	Tributary 4B	1918.13	5 Year	2.42	145.50	146.07	146.07	146.13	0.005890	1.22	4.72	50.27	0.58
Reach #5	Tributary 4B	1918.13	10 Year	3.18	145.50	146.10	146.10	146.16	0.006536	1.34	6.18	52.05	0.62
Reach #5	Tributary 4B	1918.13	25 Year	4.23	145.50	146.13	146.13	146.20	0.007343	1.49	7.84	54.02	0.66
Reach #5	Tributary 4B	1918.13	50 Year	5.07	145.50	146.16		146.23	0.007036	1.51	9.51	55.91	0.66
Reach #5	Tributary 4B	1918.13	100 Year	5.98	145.50	146.21		146.26	0.005213	1.38	12.49	59.16	0.57
Reach #5	Tributary 4B	1918.13	Regulatory	25.48	145.50	146.65		146.70	0.003609	1.67	44.66	86.77	0.52
Reach #5	Tributary 4B	1853.13	2 Year	1.45	144.70	145.51	145.28	145.54	0.001988	0.77	2.63	8.79	0.35
Reach #5	Tributary 4B	1853.13	5 Year	2.42	144.70	145.61	145.39	145.66	0.002764	1.02	3.58	10.31	0.42
Reach #5	Tributary 4B	1853.13	10 Year	3.18	144.70	145.67	145.46	145.73	0.003203	1.18	4.26	11.29	0.48
Reach #5	Tributary 4B	1853.13	25 Year	4.23	144.70	145.75	145.54	145.82	0.003690	1.36	5.15	12.43	0.51
Reach #5	Tributary 4B	1853.13	50 Year	5.07	144.70	145.80	145.60	145.89	0.004004	1.48	5.82	13.24	0.53
Reach #5	Tributary 4B	1853.13	100 Year	5.98	144.70	145.85	145.65	145.95	0.004221	1.59	6.58	14.07	0.55
Reach #5	Tributary 4B	1853.13	Regulatory	25.48	144.70	146.32		146.43	0.004620	2.23	42.55	118.24	0.62
Reach #5	Tributary 4B	1764.13	2 Year	1.45	144.50	144.91	144.91	145.07	0.020254	1.76	0.82	2.62	1.01
Reach #5	Tributary 4B	1754.13	5 Year	2.42	144.50	145.11	145.11	145.21	0.008177	1.49	3.08	26.25	0.68
Reach #5	Tributary 4B	1754.13	10 Year	3.18	144.50	145.17	145.17	145.26	0.007585	1.54	4.78	34.67	0.67
Reach #5	Tributary 4B	1754.13	25 Year	4.23	144.50	145.22	145.22	145.31	0.007566	1.64	6.81	42.59	0.68
Reach #5	Tributary 4B	1754.13	50 Year	5.07	144.50	145.25	145.25	145.35	0.007809	1.72	8.22	47.30	0.70
Reach #5	Tributary 4B	1754.13	100 Year	5.98	144.50	145.28	145.28	145.38	0.008408	1.84	9.41	50.95	0.73
Reach #5	Tributary 4B	1754.13	Regulatory	25.48	144.50	146.33		146.33	0.000253	0.60	156.21	238.57	0.15
Reach #5	Tributary 4B	1722.13	2 Year	1.45	143.65	144.65	143.82	144.65	0.000044	0.19	7.73	20.47	0.06
Reach #5	Tributary 4B	1722.13	5 Year	2.42	143.65	144.72	143.88	144.73	0.000096	0.29	8.34	21.61	0.08
Reach #5	Tributary 4B	1722.13	10 Year	3.18	143.65	144.79	143.92	144.78	0.000137	0.36	8.84	22.53	0.11
Reach #5	Tributary 4B	1722.13	25 Year	4.23	143.65	144.88	143.97	144.89	0.000185	0.44	9.58	23.90	0.13
Reach #5	Tributary 4B	1722.13	50 Year	5.07	143.65	144.96	144.01	144.98	0.000214	0.50	10.22	25.07	0.14
Reach #5	Tributary 4B	1722.13	100 Year	5.98	143.65	145.05	144.05	145.07	0.000237	0.55	10.93	52.19	0.15
Reach #5	Tributary 4B	1722.13	Regulatory	25.48	143.65	146.31	144.69	146.32	0.000136	0.63	99.45	297.22	0.12
Reach #5	Tributary 4B	1700.13	Culvert										
Reach #5	Tributary 4B	1890.13	2 Year	1.45	143.56	144.62	143.76	144.62	0.000061	0.22	7.02	81.27	0.07
Reach #5	Tributary 4B	1890.13	5 Year	2.42	143.56	144.66	143.84	144.66	0.000150	0.35	7.33	85.39	0.11
Reach #5	Tributary 4B	1890.13	10 Year	3.18	143.56	144.68	143.90	144.69	0.000237	0.45	7.54	88.10	0.14
Reach #5	Tributary 4B	1890.13	25 Year	4.23	143.56	144.72	143.96	144.73	0.000379	0.58	7.80	91.46	0.18
Reach #5	Tributary 4B	1890.13	50 Year	5.07	143.56	144.75	144.01	144.77	0.000499	0.67	8.02	94.40	0.20
Reach #5	Tributary 4B	1890.13	100 Year	5.98	143.56	144.77	144.06	144.80	0.000644	0.78	8.20	98.75	0.23
Reach #5	Tributary 4B	1890.13	Regulatory	25.48	143.56	144.94	144.77	145.35	0.007246	2.66	9.59	114.84	0.79
Reach #5	Tributary 4B	1681.13	2 Year	1.45	144.00	144.58	144.57	144.61	0.005735	1.05	4.77	60.28	0.50
Reach #5	Tributary 4B	1681.13	5 Year	2.42	144.00	144.64	144.60	144.66	0.004559	1.02	8.55	71.44	0.46
Reach #5	Tributary 4B	1681.13	10 Year	3.18	144.00	144.67	144.62	144.69	0.004289	1.03	11.00	77.82	0.45
Reach #5	Tributary 4B	1681.13	25 Year	4.23	144.00	144.71		144.73	0.003925	1.03	14.33	85.74	0.43
Reach #5	Tributary 4B	1681.13	50 Year	5.07	144.00	144.74		144.75	0.003630	1.03	17.04	91.67	0.42
Reach #5	Tributary 4B	1681.13	100 Year	5.98	144.00	144.76		144.78	0.003519	1.06	19.35	98.44	0.42
Reach #5	Tributary 4B	1681.13	Regulatory	25.48	144.00	145.09		145.11	0.003398	1.35	62.32	164.39	0.44
Reach #5	Tributary 4B	1567.13	2 Year	1.60	143.50	144.22		144.23	0.002252	0.78	7.70	61.75	0.33
Reach #5	Tributary 4B	1567.13	5 Year	2.68	143.50	144.28		144.29	0.002479	0.87	11.92	77.75	0.35
Reach #5	Tributary 4B	1567.13	10 Year	3.52	143.50	144.32		144.33	0.002567	0.92	14.93	87.37	0.36
Reach #5	Tributary 4B	1567.13	25 Year	4.68	143.50	144.35		144.37	0.002783	0.99	18.38	97.25	0.38
Reach #5	Tributary 4B	1567.13	50 Year	5.82	143.50	144.38		144.39	0.003003	1.05	20.76	103.81	0.39
Reach #5	Tributary 4B	1567.13	100 Year	6.60	143.50	144.41		144.42	0.002642	1.07	23.93	111.32	0.39
Reach #5	Tributary 4B	1567.13	Regulatory	25.28	143.50	144.71		144.72	0.003616	1.48	67.60	176.50	0.46
Reach #5	Tributary 4A	1523.20	2 Year	1.68	143.50	144.05	144.05	144.06	0.005143	1.04	6.83	111.48	0.50
Reach #5	Tributary 4A	1523.20	5 Year	2.81	143.50	144.08	144.08	144.11	0.007271	1.27	9.24	112.97	0.60
Reach #5	Tributary 4A	1523.20	10 Year	3.69	143.50	144.09	144.09	144.13	0.008809	1.43	10.75	113.83	0.67
Reach #5	Tributary 4A	1523.20	25 Year	4.91	143.50	144.11	144.11	144.15	0.009720	1.54	12.98	115.10	0.71
Reach #5	Tributary 4A	1523.20	50 Year	5.88	143.50	144.13	144.13	144.17	0.009758	1.56	14.88	116.16	0.71
Reach #5	Tributary 4A	1523.20	100 Year	6.93	143.50	144.13	144.13	144.18	0.012155	1.78	15.47	116.49	0.80
Reach #5	Tributary 4A	1523.20	Regulatory	29.59	143.50	144.27	144.27	144.37	0.025702	3.05	32.81	125.77	1.21
Reach #5	Tributary 4A	1488.20	2 Year	1.68	142.50	143.25		143.27	0.001248	0.67	6.84	44.09	0.27
Reach #5	Tributary 4A	1488.20	5 Year	2.81	142.50	143.33		143.35	0.001589	0.82	10.64	56.60	0.31
Reach #5	Tributary 4A	1488.20	10 Year	3.69	142.50	143.37		143.39	0.001709	0.89	13.54	64.54	0.33
Reach #5	Tributary 4A	1488.20	25 Year	4.91	142.50	143.43		143.45	0.001834	0.96	17.25	73.43	0.34
Reach #5	Tributary 4A	1488.20	50 Year	5.88	142.50	143.47		143.49	0.001890	1.01	20.13	79.67	0.35
Reach #5	Tributary 4A	1488.20	100 Year	6.93	142.50	143.50	</td						

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m3/s)	Min Ch El (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (mm/m)	Vel.Crit. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Ch
Reach #5	Tributary 4A	1488.20	Regulatory	26.59	142.50	143.94		143.96	0.002056	1.41	71.53	135.42	0.39
Reach #5	Tributary 4A	1412.20	2 Year	1.68	142.50	143.21		143.21	0.000388	0.35	16.33	80.83	0.15
Reach #5	Tributary 4A	1412.20	5 Year	2.81	142.50	143.28		143.28	0.000498	0.43	21.67	85.42	0.17
Reach #5	Tributary 4A	1412.20	10 Year	3.69	142.50	143.32		143.32	0.000553	0.47	25.35	88.44	0.18
Reach #5	Tributary 4A	1412.20	25 Year	4.91	142.50	143.36		143.37	0.000641	0.53	28.43	91.68	0.20
Reach #5	Tributary 4A	1412.20	50 Year	5.89	142.50	143.40		143.40	0.000698	0.57	32.44	94.00	0.21
Reach #5	Tributary 4A	1412.20	100 Year	6.93	142.50	143.43		143.43	0.000749	0.60	35.50	96.29	0.22
Reach #5	Tributary 4A	1412.20	Regulatory	29.59	142.50	143.82		143.83	0.001450	1.08	78.40	123.31	0.32
Reach #5	Tributary 4A	1283.20	2 Year	1.68	142.50	143.06	143.08	143.10	0.005804	1.10	5.66	78.51	0.53
Reach #5	Tributary 4A	1283.20	5 Year	2.81	142.50	143.09	143.09	143.13	0.007718	1.33	8.02	79.86	0.62
Reach #5	Tributary 4A	1283.20	10 Year	3.69	142.50	143.11	143.11	143.16	0.010087	1.55	9.01	80.42	0.71
Reach #5	Tributary 4A	1283.20	25 Year	4.91	142.50	143.13	143.13	143.18	0.010986	1.67	10.92	81.49	0.75
Reach #5	Tributary 4A	1283.20	50 Year	5.89	142.50	143.14	143.14	143.20	0.011889	1.77	12.17	82.16	0.78
Reach #5	Tributary 4A	1283.20	100 Year	6.93	142.50	143.16	143.16	143.22	0.013278	1.90	13.17	82.73	0.83
Reach #5	Tributary 4A	1283.20	Regulatory	29.59	142.50	143.43		143.49	0.012014	2.37	37.22	94.87	0.84
Reach #5	Tributary 4A	1127.20	2 Year	1.68	141.50	142.18		142.19	0.000581	0.49	8.23	39.71	0.21
Reach #5	Tributary 4A	1127.20	5 Year	2.81	141.50	142.31		142.32	0.000596	0.52	13.56	43.81	0.20
Reach #5	Tributary 4A	1127.20	10 Year	3.69	141.50	142.34		142.35	0.000795	0.62	15.04	44.89	0.23
Reach #5	Tributary 4A	1127.20	25 Year	4.91	141.50	142.41		142.42	0.000895	0.70	17.98	46.84	0.25
Reach #5	Tributary 4A	1127.20	50 Year	5.89	141.50	142.45		142.47	0.000671	0.75	20.06	48.35	0.26
Reach #5	Tributary 4A	1127.20	100 Year	6.93	141.50	142.49		142.51	0.001039	0.81	22.14	49.71	0.28
Reach #5	Tributary 4A	1127.20	Regulatory	29.59	141.50	143.01		143.06	0.001941	1.51	52.38	66.42	0.41
Reach #5	Tributary 4A	1023.20	2 Year	1.68	141.50	142.15		142.15	0.000203	0.28	12.24	59.09	0.12
Reach #5	Tributary 4A	1023.20	5 Year	2.81	141.50	142.28		142.28	0.000193	0.31	20.24	63.17	0.12
Reach #5	Tributary 4A	1023.20	10 Year	3.69	141.50	142.30		142.31	0.000287	0.39	21.51	63.66	0.14
Reach #5	Tributary 4A	1023.20	25 Year	4.91	141.50	142.36		142.36	0.000348	0.45	25.11	65.03	0.16
Reach #5	Tributary 4A	1023.20	50 Year	5.89	141.50	142.39		142.40	0.000395	0.49	27.57	65.95	0.17
Reach #5	Tributary 4A	1023.20	100 Year	6.93	141.50	142.43		142.44	0.000439	0.53	30.02	66.85	0.18
Reach #5	Tributary 4A	1023.20	Regulatory	29.59	141.50	142.87		142.90	0.001156	1.14	61.38	76.72	0.32
Reach #5	Tributary 4A	934.20	2 Year	1.68	141.50	142.12		142.13	0.000411	0.38	9.97	64.07	0.16
Reach #5	Tributary 4A	934.20	5 Year	2.81	141.50	142.26		142.26	0.000305	0.38	19.37	74.58	0.14
Reach #5	Tributary 4A	934.20	10 Year	3.69	141.50	142.27		142.27	0.000491	0.48	19.07	75.20	0.16
Reach #5	Tributary 4A	934.20	25 Year	4.91	141.50	142.32		142.33	0.000578	0.55	23.83	79.08	0.20
Reach #5	Tributary 4A	934.20	50 Year	5.89	141.50	142.35		142.36	0.000648	0.60	26.47	81.63	0.22
Reach #5	Tributary 4A	934.20	100 Year	6.93	141.50	142.38		142.39	0.000708	0.64	29.18	84.16	0.23
Reach #5	Tributary 4A	934.20	Regulatory	29.59	141.50	142.76		142.79	0.001668	1.27	65.92	113.03	0.37
Reach #5	Tributary 4A	820.20	2 Year	1.68	141.50	141.84	141.84	141.98	0.019747	1.65	1.01	3.68	1.01
Reach #5	Tributary 4A	820.20	5 Year	2.81	141.50	141.98	141.86	142.14	0.016359	1.89	1.49	4.17	1.01
Reach #5	Tributary 4A	820.20	10 Year	3.69	141.50	142.09	142.09	142.14	0.005649	1.25	8.63	88.79	0.58
Reach #5	Tributary 4A	820.20	25 Year	4.91	141.50	142.11	142.11	142.18	0.006572	1.40	10.94	94.20	0.64
Reach #5	Tributary 4A	820.20	50 Year	5.89	141.50	142.13	142.13	142.20	0.007044	1.49	12.73	98.19	0.66
Reach #5	Tributary 4A	820.20	100 Year	6.93	141.50	142.15	142.15	142.22	0.007348	1.55	14.60	102.20	0.68
Reach #5	Tributary 4A	820.20	Regulatory	29.59	141.50	142.44		142.48	0.006249	1.91	53.00	163.99	0.67
Reach #5	Tributary 4A	693.20	2 Year	1.68	140.50	141.20		141.21	0.002213	0.74	7.57	47.55	0.31
Reach #5	Tributary 4A	693.20	5 Year	2.81	140.50	141.27		141.28	0.002414	0.84	11.24	56.40	0.33
Reach #5	Tributary 4A	693.20	10 Year	3.69	140.50	141.33		141.34	0.002162	0.84	14.66	63.55	0.32
Reach #5	Tributary 4A	693.20	25 Year	4.91	140.50	141.41		141.42	0.001749	0.81	20.00	73.34	0.29
Reach #5	Tributary 4A	693.20	50 Year	5.89	140.50	141.48		141.49	0.001365	0.76	25.42	82.07	0.26
Reach #5	Tributary 4A	693.20	100 Year	6.93	140.50	141.56		141.56	0.001014	0.69	32.35	92.05	0.23
Reach #5	Tributary 4A	693.20	Regulatory	29.59	140.50	142.41		142.41	0.000298	0.58	158.43	211.07	0.14
Reach #5	Tributary 4A	628.20	2 Year	1.68	140.50	141.16		141.17	0.000416	0.34	19.14	118.25	0.14
Reach #5	Tributary 4A	628.20	5 Year	2.81	140.50	141.24		141.24	0.000387	0.35	27.94	123.82	0.14
Reach #5	Tributary 4A	628.20	10 Year	3.69	140.50	141.30		141.30	0.000315	0.34	35.07	128.70	0.13
Reach #5	Tributary 4A	628.20	25 Year	4.91	140.50	141.39		141.39	0.000248	0.32	47.14	135.18	0.12
Reach #5	Tributary 4A	628.20	50 Year	5.89	140.50	141.46		141.46	0.000198	0.31	57.44	140.90	0.11
Reach #5	Tributary 4A	628.20	100 Year	6.93	140.50	141.54		141.54	0.000155	0.29	69.53	147.33	0.10
Reach #5	Tributary 4A	628.20	Regulatory	29.59	140.50	142.40		142.40	0.000089	0.36	233.10	258.63	0.08
Reach #5	Tributary 4A	552.20	2 Year	1.68	140.50	141.15		141.15	0.000172	0.23	30.74	206.42	0.10
Reach #5	Tributary 4A	552.20	5 Year	2.81	140.50	141.22		141.22	0.000143	0.23	46.29	209.80	0.09
Reach #5	Tributary 4A	552.20	10 Year	3.69	140.50	141.29		141.29	0.000109	0.21	60.55	212.86	0.08
Reach #5	Tributary 4A	552.20	25 Year	4.91	140.50	141.38		141.38	0.000083	0.20	79.39	218.82	0.07
Reach #5	Tributary 4A	552.20	50 Year	5.89	140.50	141.45		141.45	0.000065	0.19	96.18	220.29	0.07
Reach #5	Tributary 4A	552.20	100 Year	6.93	140.50	141.54		141.54	0.000051	0.18	115.23	225.00	0.06
Reach #5	Tributary 4A	552.20	Regulatory	29.59	140.50	142.40		142.40	0.000039	0.25	344.22	334.86	0.06
Reach #5	Tributary 4A	545.20	2 Year	1.68	139.73	141.14	139.99	141.15	0.000045	0.24	8.31	192.99	0.06
Reach #5	Tributary 4A	545.20	5 Year	2.81	139.73	141.21	140.08	141.22	0.000107	0.38	8.74	195.78	0.10
Reach #5	Tributary 4A	545.20	10 Year	3.69	139.73	141.28	140.13	141.29	0.000160	0.47	9.13	198.31	0.12
Reach #5	Tributary 4A	545.20	25 Year	4.91	139.73	141.36	140.21	141.37	0.000238	0.60	9.62	201.55	0.15
Reach #5	Tributary 4A	545.20	50 Year	5.89	139.73	141.43	140.27	141.45	0.000296	0.68	10.05	204.40	0.17
Reach #5	Tributary 4A	545.20	100 Year	6.93	139.73	141.51	140.32	141.53	0.000349	0.77	10.54	207.98	0.19
Reach #5	Tributary 4A	545.20	Regulatory	29.59	139.73	142.40	141.21	142.40	0.000023	0.26	381.31	330.47	0.05
Reach #5	Tributary 4A	540.20	Culvert										
Reach #5	Tributary 4A	535.20	2 Year	1.68	139.73	141.13	140.03	141.14	0.000124	0.30	5.68	9.66	0.09
Reach #5	Tributary 4A	535.20	5 Year	2.81	139.73	141.19	140.16	141.20	0.000301	0.48	5.97	11.63	0.14
Reach #5	Tributary 4A	535.20	10 Year	3.69	139.73	141.23	140.24	141.25	0.000463	0.61	6.21	13.21	0.17

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	O.Total (m3/s)	Min Ch El (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl.
Reach #5	Tributary 4A	535.20	25 Year	4.01	139.73	141.27	140.34	141.30	0.000725	0.78	6.48	14.95	0.22
Reach #5	Tributary 4A	535.20	50 Year	5.89	139.73	141.31	140.41	141.35	0.000860	0.81	6.68	16.17	0.25
Reach #5	Tributary 4A	535.20	100 Year	6.93	139.73	141.34	140.49	141.39	0.001229	1.05	6.86	17.31	0.28
Reach #5	Tributary 4A	535.20	Regulatory	29.59	139.73	141.73	141.56	142.32	0.009506	3.44	9.24	81.65	0.82
Reach #5	Tributary 4A	486.20	2 Year	1.68	140.50	140.91	140.91	141.07	0.016606	1.77	0.85	3.03	1.01
Reach #5	Tributary 4A	486.20	5 Year	2.81	140.50	141.09	141.09	141.14	0.006264	1.27	6.11	57.72	0.60
Reach #5	Tributary 4A	486.20	10 Year	3.68	140.50	141.11	141.11	141.17	0.007399	1.43	7.44	58.32	0.66
Reach #5	Tributary 4A	486.20	25 Year	4.91	140.50	141.14	141.14	141.21	0.008180	1.57	9.25	59.11	0.70
Reach #5	Tributary 4A	486.20	50 Year	5.89	140.50	141.16	141.16	141.23	0.008792	1.67	10.47	59.65	0.73
Reach #5	Tributary 4A	486.20	100 Year	6.93	140.50	141.18	141.18	141.26	0.009368	1.76	11.66	60.16	0.76
Reach #5	Tributary 4A	486.20	Regulatory	29.59	140.50	141.86		141.88	0.001617	1.25	72.83	160.05	0.36
Reach #5	Tributary 4A	419.20	2 Year	1.68	139.50	140.25		140.28	0.001307	0.72	3.53	14.61	0.29
Reach #5	Tributary 4A	419.20	5 Year	2.81	139.50	140.40		140.43	0.001395	0.86	6.22	21.26	0.31
Reach #5	Tributary 4A	419.20	10 Year	3.68	139.50	140.50	140.16	140.54	0.001320	0.91	8.59	25.75	0.31
Reach #5	Tributary 4A	419.20	25 Year	4.91	139.50	140.59		140.63	0.001441	1.01	11.07	29.72	0.33
Reach #5	Tributary 4A	419.20	50 Year	5.89	139.50	140.66		140.69	0.001506	1.07	12.98	32.45	0.34
Reach #5	Tributary 4A	419.20	100 Year	6.93	139.50	140.71		140.75	0.001587	1.14	14.83	34.89	0.35
Reach #5	Tributary 4A	419.20	Regulatory	29.59	139.50	141.81		141.83	0.000455	0.97	123.27	192.14	0.21
Reach #5	Tributary 4A	400.20	Laf Struct										
Reach #5	Tributary 4A	347.20	2 Year	1.68	139.50	139.96		140.06	0.011250	1.40	1.20	3.56	0.77
Reach #5	Tributary 4A	347.20	5 Year	2.81	139.50	140.15		140.24	0.005889	1.34	2.98	14.89	0.60
Reach #5	Tributary 4A	347.20	10 Year	3.68	139.50	140.14	140.14	140.30	0.011329	1.83	2.78	14.12	0.82
Reach #5	Tributary 4A	347.20	25 Year	4.91	139.50	140.23	140.23	140.39	0.009976	1.91	4.26	19.22	0.79
Reach #5	Tributary 4A	347.20	50 Year	5.89	139.50	140.29	140.28	140.45	0.008535	1.89	5.41	22.39	0.79
Reach #5	Tributary 4A	347.20	100 Year	6.93	139.50	140.34	140.34	140.50	0.009222	2.05	6.61	25.28	0.78
Reach #5	Tributary 4A	347.20	Regulatory	29.59	139.50	141.80		141.81	0.000165	0.58	188.67	234.66	0.13
Reach #5	Tributary 4A	338.20	Culvert										
Reach #5	Tributary 4A	316.20	2 Year	1.68	138.46	140.02	138.71	140.03	0.000042	0.19	8.74	8.27	0.05
Reach #5	Tributary 4A	316.20	5 Year	2.81	138.46	140.21	138.81	140.21	0.000075	0.28	10.05	18.36	0.07
Reach #5	Tributary 4A	316.20	10 Year	3.68	138.46	140.18	138.88	140.18	0.000139	0.38	9.81	16.55	0.10
Reach #5	Tributary 4A	316.20	25 Year	4.91	138.46	140.23	138.97	140.24	0.000218	0.48	10.18	19.39	0.13
Reach #5	Tributary 4A	316.20	50 Year	5.89	138.46	140.27	139.03	140.29	0.000284	0.56	10.49	21.78	0.15
Reach #5	Tributary 4A	316.20	100 Year	6.93	138.46	140.32	139.09	140.34	0.000353	0.64	10.82	24.37	0.16
Reach #5	Tributary 4A	316.20	Regulatory	29.59	138.46	141.69	140.00	141.79	0.000783	1.45	20.38	229.98	0.27
Reach #5	Tributary 4A	325.20	Culvert										
Reach #5	Tributary 4A	316.20	2 Year	1.68	138.30	140.02	138.55	140.02	0.000042	0.20	8.48	7.97	0.05
Reach #5	Tributary 4A	316.20	5 Year	2.81	138.30	140.19	138.68	140.20	0.000081	0.30	9.64	21.65	0.07
Reach #5	Tributary 4A	316.20	10 Year	3.68	138.30	140.14	138.73	140.15	0.000165	0.40	9.25	17.90	0.10
Reach #5	Tributary 4A	316.20	25 Year	4.91	138.30	140.17	138.81	140.19	0.000259	0.52	9.42	20.12	0.13
Reach #5	Tributary 4A	316.20	50 Year	5.89	138.30	140.19	138.88	140.21	0.000357	0.62	9.64	21.67	0.15
Reach #5	Tributary 4A	316.20	100 Year	6.93	138.30	140.21	138.94	140.24	0.000476	0.72	9.66	23.13	0.18
Reach #5	Tributary 4A	316.20	Regulatory	29.59	138.30	140.56	139.92	140.89	0.004636	2.55	11.74	50.13	0.57
Reach #5	Tributary 4A	278.20	2 Year	1.68	139.50	139.83	139.83	139.97	0.019810	1.65	1.02	3.72	1.01
Reach #5	Tributary 4A	278.20	5 Year	2.81	139.50	139.95	139.95	140.13	0.018281	1.88	1.50	4.20	1.00
Reach #5	Tributary 4A	278.20	10 Year	3.68	139.50	140.08	140.12	140.12	0.005149	1.18	10.27	117.72	0.56
Reach #5	Tributary 4A	278.20	25 Year	4.91	139.50	140.10	140.10	140.15	0.005810	1.30	13.02	120.53	0.60
Reach #5	Tributary 4A	278.20	50 Year	5.89	139.50	140.11	140.11	140.17	0.006378	1.38	14.82	122.34	0.63
Reach #5	Tributary 4A	278.20	100 Year	6.93	139.50	140.13	140.13	140.18	0.006989	1.48	16.48	123.97	0.66
Reach #5	Tributary 4A	278.20	Regulatory	29.59	139.50	140.63		140.65	0.001237	0.88	95.07	185.91	0.31
Reach #5	Tributary 4A	209.20	2 Year	1.68	138.50	138.50	139.24	139.24	0.002806	0.97	2.44	9.38	0.41
Reach #5	Tributary 4A	209.20	5 Year	2.81	138.50	139.35	138.40	139.40	0.002949	1.16	4.08	12.72	0.44
Reach #5	Tributary 4A	209.20	10 Year	3.68	138.50	139.44	138.50	139.63	0.002883	1.26	5.33	14.78	0.45
Reach #5	Tributary 4A	209.20	25 Year	4.91	138.50	139.47	138.57	139.57	0.004407	1.57	5.83	15.52	0.55
Reach #5	Tributary 4A	209.20	50 Year	5.89	138.50	139.53	139.63	139.70	0.004770	1.71	6.70	16.73	0.58
Reach #5	Tributary 4A	209.20	100 Year	6.93	138.50	139.57	139.70	139.70	0.005196	1.84	7.51	17.80	0.61
Reach #5	Tributary 4A	209.20	Regulatory	29.59	138.50	140.18		140.45	0.008144	3.22	22.26	28.86	0.83
Reach #5	Tributary 4A	156.20	2 Year	1.68	138.50	138.79	138.79	138.92	0.020105	1.59	1.06	4.18	1.01
Reach #5	Tributary 4A	156.20	5 Year	2.81	138.50	138.80	138.90	139.07	0.018512	1.82	1.54	4.62	1.01
Reach #5	Tributary 4A	156.20	10 Year	3.68	138.50	138.98	138.98	139.17	0.017702	1.85	1.89	4.92	1.00
Reach #5	Tributary 4A	156.20	25 Year	4.91	138.50	139.11	139.11	139.24	0.009054	1.89	4.68	24.20	0.75
Reach #5	Tributary 4A	156.20	50 Year	5.89	138.50	139.15	139.15	139.29	0.009307	1.80	5.59	24.50	0.77
Reach #5	Tributary 4A	156.20	100 Year	6.93	138.50	139.19	139.19	139.33	0.009277	1.88	6.55	24.82	0.78
Reach #5	Tributary 4A	156.20	Regulatory	29.59	138.50	140.02		140.13	0.003413	2.04	29.92	31.55	0.66
Reach #5	Tributary 4A	93.20	2 Year	1.68	137.50	138.17		138.22	0.002944	0.97	2.30	7.89	0.42
Reach #5	Tributary 4A	93.20	5 Year	2.81	137.50	138.32		138.38	0.003130	1.17	3.62	9.77	0.45
Reach #5	Tributary 4A	93.20	10 Year	3.68	137.50	138.41		138.48	0.003299	1.30	4.53	10.84	0.47
Reach #5	Tributary 4A	93.20	25 Year	4.91	137.50	138.52		138.61	0.003328	1.43	5.83	12.19	0.48
Reach #5	Tributary 4A	93.20	50 Year	5.89	137.50	138.60		138.69	0.003336	1.52	6.84	13.15	0.49
Reach #5	Tributary 4A	93.20	100 Year	6.93	137.50	138.69		138.78	0.003258	1.59	7.88	14.14	0.49
Reach #5	Tributary 4A	93.20	Regulatory	29.59	137.50	139.84		139.96	0.002197	2.13	31.68	26.45	0.46
Reach #5	Tributary 4A	25.20	2 Year	4.37	136.60	137.45	137.45	137.62	0.016810	1.85	3.12	11.50	0.98
Reach #5	Tributary 4A	25.20	5 Year	7.30	136.60	137.59	137.59	137.80	0.014618	2.24	5.02	14.81	0.97
Reach #5	Tributary 4A	25.20	10 Year	9.59	136.60	137.69	137.69	137.92	0.013441	2.38	6.59	17.05	0.96
Reach #5	Tributary 4A	25.20	25 Year	12.70	136.60	137.80	137.80	138.05	0.012912	2.59	8.53	19.47	0.95
Reach #5	Tributary 4A	25.20	50 Year	15.25	136.60	137.88	137.88	138.15	0.012457	2.71	10.13	21.27	0.95
Reach #5	Tributary 4A	25.20	100 Year	17.95	136.60	137.95	137.95	138.24	0.012455	2.86	11.65	22.84	0.96

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W/S (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Row Area (m²)	Top Width (m)	Froude # Chl
Reach #5	Tributary 4A	25.20	Regulatory	74.34	136.60	139.65		139.81	0.002325	2.51	65.77	38.71	0.50
Reach #4	Tributary 3	843.27	2 Year	0.14	121.80	121.97	121.97	122.03	0.027961	1.13	0.12	0.95	1.01
Reach #4	Tributary 3	843.27	5 Year	0.24	121.80	122.04	122.04	122.07	0.009392	0.84	0.71	13.81	0.62
Reach #4	Tributary 3	843.27	10 Year	0.32	121.80	122.05	122.05	122.08	0.010347	0.92	0.90	14.06	0.66
Reach #4	Tributary 3	843.27	25 Year	0.57	121.80	122.08	122.08	122.12	0.013750	1.16	1.30	14.36	0.77
Reach #4	Tributary 3	843.27	50 Year	0.83	121.80	122.10	122.10	122.15	0.017268	1.38	1.60	14.57	0.88
Reach #4	Tributary 3	843.27	100 Year	1.10	121.80	122.12	122.12	122.18	0.020083	1.58	1.87	14.76	0.96
Reach #4	Tributary 3	843.27	Regulatory	4.66	121.80	122.29	122.28	122.40	0.027347	2.53	4.57	16.58	1.21
Reach #4	Tributary 3	841.27	2 Year	0.14	121.10	121.21	121.17	121.22	0.007524	0.53	0.26	2.50	0.52
Reach #4	Tributary 3	841.27	5 Year	0.24	121.10	121.25	121.20	121.27	0.006707	0.63	0.38	2.56	0.52
Reach #4	Tributary 3	841.27	10 Year	0.32	121.10	121.29	121.22	121.31	0.006303	0.68	0.46	2.58	0.51
Reach #4	Tributary 3	841.27	25 Year	0.57	121.10	121.38	121.28	121.41	0.005607	0.81	0.70	2.67	0.50
Reach #4	Tributary 3	841.27	50 Year	0.83	121.10	121.48	121.33	121.50	0.005184	0.90	0.92	2.75	0.50
Reach #4	Tributary 3	841.27	100 Year	1.10	121.10	121.54	121.37	121.59	0.004730	0.98	1.15	2.83	0.48
Reach #4	Tributary 3	841.27	Regulatory	4.66	121.10	122.29	121.79	122.37	0.002761	1.29	4.02	11.80	0.40
Reach #4	Tributary 3	800.27	Culvert										
Reach #4	Tributary 3	775.27	2 Year	0.14	119.93	120.08	120.00	120.07	0.003346	0.41	0.34	2.58	0.36
Reach #4	Tributary 3	775.27	5 Year	0.24	119.93	120.12	120.03	120.13	0.003432	0.50	0.47	2.64	0.38
Reach #4	Tributary 3	775.27	10 Year	0.32	119.93	120.15	120.05	120.17	0.003398	0.56	0.57	2.69	0.39
Reach #4	Tributary 3	775.27	25 Year	0.57	119.93	120.21	120.11	120.24	0.005265	0.70	0.72	2.76	0.49
Reach #4	Tributary 3	775.27	50 Year	0.83	119.93	120.26	120.15	120.30	0.008662	0.97	0.85	2.82	0.56
Reach #4	Tributary 3	775.27	100 Year	1.10	119.93	120.30	120.20	120.36	0.008063	1.14	0.97	2.88	0.63
Reach #4	Tributary 3	775.27	Regulatory	4.66	119.93	120.61	120.94	120.94	0.016718	2.40	1.94	3.29	1.00
Reach #4	Tributary 3	758.27	2 Year	0.14	119.80	119.90	119.90	119.94	0.026218	0.82	0.15	1.70	1.00
Reach #4	Tributary 3	758.27	5 Year	0.24	119.80	119.94	119.94	120.00	0.026175	1.09	0.22	1.83	1.01
Reach #4	Tributary 3	758.27	10 Year	0.32	119.80	119.96	119.96	120.03	0.025034	1.18	0.27	1.92	1.01
Reach #4	Tributary 3	758.27	25 Year	0.57	119.80	120.05	120.05	120.11	0.012301	1.11	0.84	10.13	0.76
Reach #4	Tributary 3	758.27	50 Year	0.83	119.80	120.09	120.09	120.15	0.012690	1.26	1.19	10.57	0.80
Reach #4	Tributary 3	758.27	100 Year	1.10	119.80	120.11	120.11	120.19	0.013796	1.39	1.51	10.95	0.84
Reach #4	Tributary 3	758.27	Regulatory	4.66	119.80	120.34	120.34	120.49	0.017588	2.32	4.28	13.63	1.04
Reach #4	Tributary 3	721.27	2 Year	0.14	118.80	118.87	118.94	119.00	0.013884	0.82	0.17	1.28	0.72
Reach #4	Tributary 3	721.27	5 Year	0.24	118.80	119.02	119.02	119.06	0.012842	0.95	0.36	7.75	0.73
Reach #4	Tributary 3	721.27	10 Year	0.32	118.80	119.04	119.04	119.09	0.012538	1.01	0.54	8.00	0.73
Reach #4	Tributary 3	721.27	25 Year	0.57	118.80	119.09	119.09	119.14	0.013182	1.20	0.94	8.54	0.78
Reach #4	Tributary 3	721.27	50 Year	0.83	118.80	119.12	119.12	119.19	0.015604	1.41	1.20	8.88	0.87
Reach #4	Tributary 3	721.27	100 Year	1.10	118.80	119.15	119.15	119.23	0.016776	1.57	1.47	9.22	0.91
Reach #4	Tributary 3	721.27	Regulatory	4.66	118.80	119.39	119.39	119.56	0.021159	2.61	4.01	11.91	1.13
Reach #4	Tributary 3	664.27	2 Year	0.14	117.80	117.87	117.87	117.90	0.028620	0.79	0.17	2.60	0.97
Reach #4	Tributary 3	664.27	5 Year	0.24	117.80	117.90	117.90	117.95	0.027518	0.85	0.25	2.72	1.00
Reach #4	Tributary 3	664.27	10 Year	0.32	117.80	117.92	117.92	117.97	0.028101	1.04	0.31	2.81	1.01
Reach #4	Tributary 3	664.27	25 Year	0.57	117.80	117.97	117.97	118.05	0.023562	1.23	0.46	3.04	1.01
Reach #4	Tributary 3	664.27	50 Year	0.83	117.80	118.04	118.04	118.10	0.012530	1.12	1.08	13.10	0.78
Reach #4	Tributary 3	664.27	100 Year	1.10	117.80	118.07	118.07	118.14	0.012651	1.23	1.46	13.33	0.80
Reach #4	Tributary 3	664.27	Regulatory	5.24	117.80	118.29	118.29	118.44	0.016329	2.15	4.64	15.13	1.01
Reach #4	Tributary 3	597.27	2 Year	0.14	115.80	115.89	115.89	115.94	0.030371	0.85	0.14	1.63	1.02
Reach #4	Tributary 3	597.27	5 Year	0.24	115.80	115.94	115.94	116.00	0.026678	1.11	0.21	1.73	1.00
Reach #4	Tributary 3	597.27	10 Year	0.32	115.80	115.96	115.96	116.04	0.025985	1.21	0.26	1.79	1.01
Reach #4	Tributary 3	597.27	25 Year	0.57	115.80	116.05	116.05	116.12	0.014353	1.20	0.68	6.84	0.80
Reach #4	Tributary 3	597.27	50 Year	0.83	115.80	116.10	116.10	116.17	0.014422	1.35	0.98	7.43	0.83
Reach #4	Tributary 3	597.27	100 Year	1.10	115.80	116.13	116.13	116.22	0.014784	1.40	1.26	7.93	0.86
Reach #4	Tributary 3	597.27	Regulatory	5.24	115.80	116.44	116.63	116.63	0.016514	2.49	4.34	12.16	1.02
Reach #4	Tributary 3	549.27	2 Year	0.14	114.80	114.98	114.94	115.01	0.010474	0.74	0.18	1.35	0.64
Reach #4	Tributary 3	549.27	5 Year	0.24	114.80	115.02	114.99	115.06	0.011342	0.80	0.39	7.94	0.69
Reach #4	Tributary 3	549.27	10 Year	0.32	114.80	115.04	115.04	115.09	0.011744	0.98	0.58	8.27	0.72
Reach #4	Tributary 3	549.27	25 Year	0.57	114.80	115.10	115.09	115.14	0.009814	1.08	1.08	9.25	0.69
Reach #4	Tributary 3	549.27	50 Year	0.83	114.80	115.12	115.12	115.19	0.015150	1.40	1.23	9.52	0.66
Reach #4	Tributary 3	549.27	100 Year	1.10	114.80	115.15	115.15	115.23	0.016191	1.55	1.52	10.01	0.91
Reach #4	Tributary 3	549.27	Regulatory	5.24	114.80	115.66			0.004052	1.50	8.71	18.35	0.53
Reach #4	Tributary 3	472.27	2 Year	0.14	113.80	113.87	113.88	113.89	0.021319	0.68	0.20	3.08	0.84
Reach #4	Tributary 3	472.27	5 Year	0.24	113.80	113.90	113.89	113.93	0.019742	0.81	0.29	3.20	0.85
Reach #4	Tributary 3	472.27	10 Year	0.32	113.80	113.92	113.91	113.96	0.018950	0.89	0.36	3.28	0.86
Reach #4	Tributary 3	472.27	25 Year	0.57	113.80	113.95	113.95	114.03	0.024037	1.18	0.48	3.43	1.01
Reach #4	Tributary 3	472.27	50 Year	0.83	113.80	114.03	114.03	114.07	0.008187	0.90	1.07	39.98	0.63
Reach #4	Tributary 3	472.27	100 Year	1.10	113.80	114.05	114.05	114.09	0.008732	0.98	2.67	40.26	0.66
Reach #4	Tributary 3	472.27	Regulatory	5.88	113.80	115.68			0.000014	0.16	87.82	60.79	0.04
Reach #4	Tributary 3	421.27	2 Year	0.14	112.80	112.92	112.90	112.95	0.016346	0.77	0.18	1.80	0.78
Reach #4	Tributary 3	421.27	5 Year	0.24	112.80	112.96	112.94	113.00	0.016956	0.93	0.26	1.97	0.83
Reach #4	Tributary 3	421.27	10 Year	0.32	112.80	112.98	112.97	113.04	0.017132	1.02	0.31	2.09	0.85
Reach #4	Tributary 3	421.27	25 Year	0.57	112.80	113.05	113.05	113.09	0.010962	1.03	1.05	14.66	0.72
Reach #4	Tributary 3	421.27	50 Year	0.83	112.80	113.08	113.08	113.13	0.012553	1.18	1.45	15.18	0.77
Reach #4	Tributary 3	421.27	100 Year	1.10	112.80	113.10	113.10	113.16	0.013270	1.30	1.81	15.60	0.82
Reach #4	Tributary 3	421.27	Regulatory	5.88	112.80	115.68			0.000009	0.17	90.93	46.50	0.03
Reach #4	Tributary 3	361.27	2 Year	0.14	111.50	111.61	111.61	111.66	0.028393	0.89	0.14	1.37	1.00
Reach #4	Tributary 3	361.27	5 Year	0.24	111.50	111.66	111.66	111.73	0.026526	1.16	0.20	1.48	1.00
Reach #4	Tributary 3	361.27	10 Year	0.32	111.50	111.69	111.69	111.77	0.025847	1.26	0.25	1.56	1.01

HEC-RAS Plan: 0708NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chn. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Ch
Reach #4	Tributary 3	361.27	25 Year	0.57	111.50	111.77	111.77	111.88	0.024184	1.48	0.38	1.76	1.01
Reach #4	Tributary 3	361.27	50 Year	0.83	111.50	111.84	111.84	111.97	0.023110	1.62	0.51	1.92	1.00
Reach #4	Tributary 3	361.27	100 Year	1.10	111.50	111.90	111.90	112.05	0.022497	1.74	0.63	2.07	1.00
Reach #4	Tributary 3	361.27	Regulatory	5.88	111.50	115.68		115.68	0.000001	0.06	220.75	76.68	0.01
Reach #4	Tributary 3	319.27	2 Year	0.14	110.50	110.61	110.60	110.64	0.018709	0.82	0.17	1.64	0.82
Reach #4	Tributary 3	319.27	5 Year	0.24	110.50	110.65	110.64	110.70	0.019290	1.00	0.24	1.73	0.87
Reach #4	Tributary 3	319.27	10 Year	0.32	110.50	110.68	110.67	110.74	0.019544	1.11	0.29	1.79	0.89
Reach #4	Tributary 3	319.27	25 Year	0.57	110.50	110.75	110.74	110.84	0.020533	1.36	0.42	1.95	0.84
Reach #4	Tributary 3	319.27	50 Year	0.83	110.50	110.81	110.80	110.93	0.020991	1.55	0.53	2.08	0.97
Reach #4	Tributary 3	319.27	100 Year	1.10	110.50	110.86	110.86	111.01	0.021211	1.69	0.65	2.20	0.99
Reach #4	Tributary 3	319.27	Regulatory	6.38	110.50	115.68		115.68	0.000001	0.07	249.58	78.07	0.01
Reach #4	Tributary 3	276.27	2 Year	0.14	109.50	109.61	109.61	109.68	0.027680	0.99	0.14	1.34	0.90
Reach #4	Tributary 3	276.27	5 Year	0.24	109.50	109.66	109.66	109.73	0.026422	1.18	0.20	1.44	1.00
Reach #4	Tributary 3	276.27	10 Year	0.32	109.50	109.69	109.69	109.77	0.025512	1.28	0.25	1.51	1.01
Reach #4	Tributary 3	276.27	25 Year	0.57	109.50	109.77	109.77	109.89	0.023849	1.50	0.38	1.69	1.01
Reach #4	Tributary 3	276.27	50 Year	0.83	109.50	109.84	109.84	109.96	0.022919	1.65	0.50	1.84	1.01
Reach #4	Tributary 3	276.27	100 Year	1.10	109.50	109.91	109.91	110.06	0.022255	1.77	0.62	1.99	1.01
Reach #4	Tributary 3	276.27	Regulatory	6.38	109.50	115.68		115.68	0.000000	0.05	327.51	81.78	0.01
Reach #4	Tributary 3	243.27	2 Year	0.14	108.50	108.65	108.65	108.71	0.029131	1.12	0.12	0.98	1.00
Reach #4	Tributary 3	243.27	5 Year	0.24	108.50	108.71	108.71	108.78	0.027605	1.30	0.16	1.08	1.00
Reach #4	Tributary 3	243.27	10 Year	0.32	108.50	108.75	108.75	108.85	0.027047	1.41	0.23	1.13	1.01
Reach #4	Tributary 3	243.27	25 Year	0.57	108.50	108.85	108.85	108.98	0.025683	1.62	0.35	1.31	1.00
Reach #4	Tributary 3	243.27	50 Year	0.83	108.50	108.93	108.93	109.09	0.024932	1.78	0.47	1.46	1.00
Reach #4	Tributary 3	243.27	100 Year	1.10	108.50	109.03	109.03	109.19	0.019067	1.77	0.68	3.70	0.90
Reach #4	Tributary 3	243.27	Regulatory	6.38	108.50	115.68		115.68	0.000000	0.05	319.50	79.78	0.01
Reach #4	Tributary 3	218.27	2 Year	0.14	107.50	107.64	107.64	107.70	0.029081	1.10	0.12	1.02	1.00
Reach #4	Tributary 3	218.27	5 Year	0.24	107.50	107.69	107.69	107.78	0.027457	1.28	0.19	1.11	1.00
Reach #4	Tributary 3	218.27	10 Year	0.32	107.50	107.73	107.73	107.83	0.026910	1.39	0.23	1.17	1.00
Reach #4	Tributary 3	218.27	25 Year	0.57	107.50	107.94	107.94	108.00	0.020455	1.12	0.51	1.50	0.62
Reach #4	Tributary 3	218.27	50 Year	0.83	107.50	108.24		108.27	0.002186	0.80	1.33	4.59	0.32
Reach #4	Tributary 3	218.27	100 Year	1.10	107.50	108.52		108.54	0.000754	0.60	3.16	8.19	0.20
Reach #4	Tributary 3	218.27	Regulatory	6.38	107.50	115.68		115.68	0.000000	0.06	286.15	63.37	0.01
Reach #4	Tributary 3	184.27	2 Year	0.14	106.50	106.87		106.87	0.000167	0.16	0.88	2.72	0.09
Reach #4	Tributary 3	184.27	5 Year	0.24	106.50	107.32		107.32	0.000018	0.09	4.34	12.30	0.03
Reach #4	Tributary 3	184.27	10 Year	0.32	106.50	107.62		107.62	0.000007	0.07	8.68	17.02	0.02
Reach #4	Tributary 3	184.27	25 Year	0.57	106.50	107.98		107.98	0.000006	0.08	16.02	22.88	0.02
Reach #4	Tributary 3	184.27	50 Year	0.83	106.50	108.28		108.28	0.000005	0.08	22.62	26.63	0.02
Reach #4	Tributary 3	184.27	100 Year	1.10	106.50	108.53		108.53	0.000004	0.09	30.84	30.34	0.02
Reach #4	Tributary 3	184.27	Regulatory	6.38	106.50	115.68		115.68	0.000000	0.04	473.79	86.45	0.00
Reach #4	Tributary 3	158.27	2 Year	0.14	105.50	106.87		106.87	0.000000	0.02	18.77	38.39	0.01
Reach #4	Tributary 3	158.27	5 Year	0.24	105.50	107.32		107.32	0.000000	0.02	39.59	53.98	0.00
Reach #4	Tributary 3	158.27	10 Year	0.32	105.50	107.62		107.62	0.000000	0.02	57.00	63.58	0.00
Reach #4	Tributary 3	158.27	25 Year	0.57	105.50	107.98		107.98	0.000000	0.08	82.56	75.50	0.00
Reach #4	Tributary 3	158.27	50 Year	0.83	105.50	108.26		108.26	0.000000	0.02	103.66	77.82	0.00
Reach #4	Tributary 3	158.27	100 Year	1.10	105.50	108.53		108.53	0.000000	0.03	125.26	79.70	0.00
Reach #4	Tributary 3	158.27	Regulatory	6.38	105.50	115.68		115.68	0.000000	0.02	841.58	117.13	0.00
Reach #4	Tributary 3	119.27	2 Year	0.14	105.50	106.87		106.87	0.000000	0.01	31.53	55.84	0.00
Reach #4	Tributary 3	119.27	5 Year	0.24	105.50	107.32		107.32	0.000000	0.01	59.96	70.86	0.00
Reach #4	Tributary 3	119.27	10 Year	0.32	105.50	107.62		107.62	0.000000	0.01	82.35	80.31	0.00
Reach #4	Tributary 3	119.27	25 Year	0.57	105.50	107.98		107.98	0.000000	0.01	114.02	92.02	0.00
Reach #4	Tributary 3	119.27	50 Year	0.83	105.50	108.26		108.26	0.000000	0.02	139.76	95.18	0.00
Reach #4	Tributary 3	119.27	100 Year	1.10	105.50	108.53		108.53	0.000000	0.02	168.27	97.96	0.00
Reach #4	Tributary 3	119.27	Regulatory	7.04	105.50	115.68		115.68	0.000000	0.02	1021.56	136.19	0.00
Reach #3	Tributary 2	774.25	2 Year	1.74	110.60	111.36		111.40	0.002699	1.02	2.80	7.47	0.40
Reach #3	Tributary 2	774.25	5 Year	2.39	110.60	111.45		111.50	0.002838	1.18	3.53	8.15	0.43
Reach #3	Tributary 2	774.25	10 Year	2.87	110.60	111.51		111.57	0.003093	1.25	4.02	8.58	0.45
Reach #3	Tributary 2	774.25	25 Year	3.49	110.60	111.58		111.64	0.003285	1.38	4.81	9.07	0.47
Reach #3	Tributary 2	774.25	50 Year	4.17	110.60	111.64		111.72	0.003477	1.47	5.21	9.54	0.48
Reach #3	Tributary 2	774.25	100 Year	4.72	110.60	111.69		111.77	0.003629	1.55	5.67	9.89	0.50
Reach #3	Tributary 2	774.25	Regulatory	10.84	110.60	112.07		112.22	0.004763	2.21	10.00	12.61	0.60
Reach #3	Tributary 2	746.25	2 Year	1.74	110.60	111.30	111.02	111.33	0.001914	0.88	2.74	7.44	0.35
Reach #3	Tributary 2	746.25	5 Year	2.39	110.60	111.38	111.19	111.43	0.002193	1.00	3.41	8.24	0.38
Reach #3	Tributary 2	746.25	10 Year	2.87	110.60	111.44	111.16	111.49	0.002373	1.09	3.86	8.75	0.40
Reach #3	Tributary 2	746.25	25 Year	3.49	110.60	111.50	111.21	111.58	0.002596	1.20	4.40	9.31	0.43
Reach #3	Tributary 2	746.25	50 Year	4.17	110.60	111.56	111.27	111.63	0.002819	1.31	4.96	9.86	0.45
Reach #3	Tributary 2	746.25	100 Year	4.72	110.60	111.60	111.32	111.68	0.003002	1.40	5.38	10.25	0.47
Reach #3	Tributary 2	746.25	Regulatory	10.84	110.60	111.81	111.68	112.09	0.004731	2.14	9.08	13.23	0.62
Reach #3	Tributary 2	717.25	2 Year	1.74	110.60	111.07	111.07	111.21	0.013420	1.64	1.32	7.43	0.85
Reach #3	Tributary 2	717.25	5 Year	2.39	110.60	111.15	111.15	111.29	0.012231	1.77	1.93	8.82	0.84
Reach #3	Tributary 2	717.25	10 Year	2.87	110.60	111.19	111.19	111.35	0.012014	1.88	2.34	9.64	0.84
Reach #3	Tributary 2	717.25	25 Year	3.49	110.60	111.25	111.25	111.41	0.011739	1.97	2.88	10.59	0.85
Reach #3	Tributary 2	717.25	50 Year	4.17	110.60	111.29	111.29	111.47	0.011644	2.07	3.40	11.49	0.86
Reach #3	Tributary 2	717.25	100 Year	4.72	110.60	111.33	111.33	111.52	0.011447	2.14	3.85	12.20	0.86
Reach #3	Tributary 2	717.25	Regulatory	10.84	110.60	111.63	111.63	111.88	0.011279	2.74	8.22	17.63	0.91
Reach #3	Tributary 2	684.25	2 Year	1.74	109.60	110.13	110.13	110.28	0.013978	1.78	1.27	5.55	0.86
Reach #3	Tributary 2	684.25	5 Year	2.39	109.60	110.21	110.21	110.38	0.013102	1.94	1.77	6.44	0.86

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vd Chnl. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl
Reach #3	Tributary 2	684.25	10 Year	2.87	109.60	110.27	110.45	0.012779	2.04	2.12	7.00	0.86	
Reach #3	Tributary 2	684.25	25 Year	3.49	109.60	110.33	110.52	0.012522	2.16	2.56	7.64	0.87	
Reach #3	Tributary 2	684.25	50 Year	4.17	109.60	110.38	110.60	0.012506	2.29	3.01	8.24	0.88	
Reach #3	Tributary 2	684.25	100 Year	4.72	109.60	110.43	110.65	0.012442	2.38	3.37	8.70	0.89	
Reach #3	Tributary 2	684.25	Regulatory	10.84	109.60	110.78	111.09	0.011864	3.02	7.15	12.49	0.93	
Reach #3	Tributary 2	645.25	2 Year	1.74	108.60	109.15	109.34	0.016223	1.94	1.00	3.61	0.93	
Reach #3	Tributary 2	645.25	5 Year	2.39	108.60	109.26	109.46	0.013861	2.07	1.46	4.83	0.89	
Reach #3	Tributary 2	645.25	10 Year	2.87	108.60	109.32	109.54	0.012809	2.15	1.81	5.60	0.87	
Reach #3	Tributary 2	645.25	25 Year	3.49	108.60	109.40	109.63	0.012072	2.25	2.26	6.45	0.86	
Reach #3	Tributary 2	645.25	50 Year	4.17	108.60	109.47	109.71	0.011576	2.35	2.75	7.25	0.85	
Reach #3	Tributary 2	645.25	100 Year	4.72	108.60	109.52	109.77	0.011226	2.42	3.15	7.85	0.85	
Reach #3	Tributary 2	645.25	Regulatory	10.84	108.60	109.92	110.24	0.010335	3.03	7.21	12.38	0.87	
Reach #3	Tributary 2	590.25	2 Year	1.74	107.60	108.38	108.41	0.002085	0.90	4.62	18.90	0.35	
Reach #3	Tributary 2	590.25	5 Year	2.39	107.60	108.43	108.27	0.002691	1.07	5.57	20.03	0.40	
Reach #3	Tributary 2	590.25	10 Year	2.87	107.60	108.47	108.31	0.002740	1.13	6.58	22.89	0.41	
Reach #3	Tributary 2	590.25	25 Year	3.49	107.60	108.52	108.35	0.002838	1.20	7.76	25.00	0.42	
Reach #3	Tributary 2	590.25	50 Year	4.17	107.60	108.57	108.40	0.002859	1.25	9.10	27.18	0.43	
Reach #3	Tributary 2	590.25	100 Year	4.72	107.60	108.61	108.42	0.002905	1.30	10.10	28.71	0.44	
Reach #3	Tributary 2	590.25	Regulatory	10.84	107.60	108.91	108.64	0.002859	1.56	20.80	41.66	0.45	
Reach #3	Tributary 2	534.25	2 Year	1.74	107.60	107.99	107.99	0.019209	1.72	1.01	3.34	1.00	
Reach #3	Tributary 2	534.25	5 Year	2.39	107.60	108.10	108.20	0.010138	1.52	2.45	14.92	0.76	
Reach #3	Tributary 2	534.25	10 Year	2.87	107.60	108.13	108.24	0.010628	1.63	2.90	15.21	0.79	
Reach #3	Tributary 2	534.25	25 Year	3.49	107.60	108.16	108.16	0.010603	1.73	3.49	15.58	0.80	
Reach #3	Tributary 2	534.25	50 Year	4.17	107.60	108.20	108.33	0.011186	1.85	4.00	15.90	0.83	
Reach #3	Tributary 2	534.25	100 Year	4.72	107.60	108.23	108.37	0.011186	1.92	4.46	16.17	0.84	
Reach #3	Tributary 2	534.25	Regulatory	10.84	107.60	108.44	108.66	0.012012	2.59	8.20	18.28	0.65	
Reach #3	Tributary 2	512.25	2 Year	1.74	106.60	107.05	107.05	0.012392	1.54	1.43	10.28	0.82	
Reach #3	Tributary 2	512.25	5 Year	2.39	106.60	107.12	107.12	0.011245	1.64	2.17	11.42	0.80	
Reach #3	Tributary 2	512.25	10 Year	2.87	106.60	107.15	107.29	0.011345	1.74	2.59	12.02	0.82	
Reach #3	Tributary 2	512.25	25 Year	3.49	106.60	107.10	107.19	0.011710	1.87	3.08	12.58	0.84	
Reach #3	Tributary 2	512.25	50 Year	4.17	106.60	107.24	107.39	0.011474	1.96	3.67	13.42	0.84	
Reach #3	Tributary 2	512.25	100 Year	4.72	106.60	107.27	107.43	0.011389	2.03	4.12	13.96	0.85	
Reach #3	Tributary 2	512.25	Regulatory	10.84	106.60	107.53	107.76	0.012040	2.66	8.22	18.18	0.03	
Reach #3	Tributary 2	485.25	2 Year	1.74	105.60	106.10	106.05	0.011018	1.54	1.19	4.22	0.78	
Reach #3	Tributary 2	485.25	5 Year	2.39	105.60	106.18	106.13	0.011372	1.76	1.54	5.19	0.82	
Reach #3	Tributary 2	485.25	10 Year	2.87	105.60	106.22	106.19	0.011518	1.88	1.80	5.83	0.84	
Reach #3	Tributary 2	485.25	25 Year	3.49	105.60	106.26	106.26	0.011735	2.03	2.14	6.55	0.86	
Reach #3	Tributary 2	485.25	50 Year	4.17	105.60	106.33	106.56	0.011964	2.17	2.51	7.28	0.88	
Reach #3	Tributary 2	485.25	100 Year	4.72	105.60	106.38	106.61	0.011619	2.25	2.88	7.87	0.88	
Reach #3	Tributary 2	485.25	Regulatory	10.84	105.60	107.59	106.76	0.000728	1.12	21.73	22.71	0.28	
Reach #3	Tributary 2	406.25	2 Year	1.74	104.60	105.17	105.30	0.012157	1.72	1.73	8.38	0.79	
Reach #3	Tributary 2	406.25	5 Year	2.39	104.60	105.24	105.24	0.012352	1.89	2.34	9.50	0.82	
Reach #3	Tributary 2	406.25	10 Year	2.87	104.60	105.28	105.43	0.012623	2.01	2.75	10.18	0.84	
Reach #3	Tributary 2	406.25	25 Year	3.49	104.60	105.33	105.33	0.012865	2.13	3.26	10.97	0.85	
Reach #3	Tributary 2	406.25	50 Year	4.17	104.60	105.38	105.55	0.013018	2.25	3.80	11.76	0.87	
Reach #3	Tributary 2	406.25	100 Year	4.72	104.60	105.41	105.59	0.013210	2.35	4.21	12.32	0.88	
Reach #3	Tributary 2	406.25	Regulatory	10.84	104.60	107.60	107.60	0.000084	0.48	56.07	30.61	0.09	
Reach #3	Tributary 2	401.25	2 Year	1.74	103.52	104.55	104.84	0.001648	0.78	2.24	2.34	0.25	
Reach #3	Tributary 2	401.25	5 Year	2.39	103.52	104.76	104.04	0.001841	0.88	2.73	2.41	0.26	
Reach #3	Tributary 2	401.25	10 Year	2.87	103.52	104.90	104.10	0.001939	0.93	3.07	2.46	0.27	
Reach #3	Tributary 2	401.25	25 Year	3.49	103.52	105.08	104.18	0.002043	0.99	3.53	2.66	0.28	
Reach #3	Tributary 2	401.25	50 Year	4.17	103.52	105.27	104.27	0.002001	1.01	4.22	4.13	0.29	
Reach #3	Tributary 2	401.25	100 Year	4.72	103.52	105.43	104.33	0.001804	1.00	4.97	5.11	0.28	
Reach #3	Tributary 2	401.25	Regulatory	10.84	103.52	104.91	107.60	0.000135	0.53	48.28	52.38	0.09	
Reach #3	Tributary 2	300.25	Culvert										
Reach #3	Tributary 2	249.25	2 Year	1.74	99.00	99.57	99.75	0.019342	1.85	0.94	2.70	1.00	
Reach #3	Tributary 2	249.25	5 Year	2.39	99.00	99.66	99.66	0.018858	2.00	1.20	2.93	1.00	
Reach #3	Tributary 2	249.25	10 Year	2.87	99.00	99.72	99.72	0.018368	2.09	1.37	3.08	1.00	
Reach #3	Tributary 2	249.25	25 Year	3.49	99.00	99.79	99.79	0.018004	2.19	1.59	3.26	1.00	
Reach #3	Tributary 2	249.25	50 Year	4.17	99.00	99.86	99.86	0.017814	2.29	1.82	3.43	1.00	
Reach #3	Tributary 2	249.25	100 Year	4.72	99.00	99.91	99.91	0.017610	2.36	2.00	3.56	1.00	
Reach #3	Tributary 2	249.25	Regulatory	10.84	99.00	100.35	100.35	0.013665	2.95	3.92	5.43	0.96	
Reach #3	Tributary 2	234.25	2 Year	1.74	98.50	98.80	98.80	0.020137	1.62	1.07	4.01	1.00	
Reach #3	Tributary 2	234.25	5 Year	2.39	98.50	98.86	98.86	0.019262	1.78	1.34	4.18	1.00	
Reach #3	Tributary 2	234.25	10 Year	2.87	98.50	98.91	98.91	0.018861	1.87	1.53	4.30	1.00	
Reach #3	Tributary 2	234.25	25 Year	3.49	98.50	98.96	98.96	0.018230	1.96	1.76	4.43	1.00	
Reach #3	Tributary 2	234.25	50 Year	4.17	98.50	99.01	99.01	0.017469	2.07	2.01	4.79	0.99	
Reach #3	Tributary 2	234.25	100 Year	4.72	98.50	99.05	99.05	0.016677	2.16	2.21	5.48	0.99	
Reach #3	Tributary 2	234.25	Regulatory	10.84	98.50	99.44	99.44	0.010879	2.56	5.63	12.32	0.88	
Reach #3	Tributary 2	158.25	2 Year	1.74	96.50	97.04	97.04	0.016247	1.77	1.09	5.85	0.88	
Reach #3	Tributary 2	158.25	5 Year	2.39	96.50	97.13	97.13	0.013669	1.87	1.69	6.84	0.84	
Reach #3	Tributary 2	158.25	10 Year	2.87	96.50	97.18	97.18	0.013299	1.96	2.05	7.38	0.84	
Reach #3	Tributary 2	158.25	25 Year	3.49	96.50	97.24	97.24	0.013111	2.08	2.49	7.97	0.85	
Reach #3	Tributary 2	158.25	50 Year	4.17	96.50	97.30	97.30	0.012768	2.18	2.97	8.58	0.85	
Reach #3	Tributary 2	158.25	100 Year	4.72	96.50	97.34	97.34	0.012659	2.26	3.34	9.02	0.85	
Reach #3	Tributary 2	158.25	Regulatory	10.84	96.50	97.67	97.67	0.005900	2.24	9.65	14.60	0.64	

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel. Chnl (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chnl	
Reach #3	Tributary 2	93.25	2 Year		1.74	94.50	95.07	95.07	95.22	0.014744	1.75	1.19	6.21	0.85
Reach #3	Tributary 2	93.25	5 Year		2.39	94.50	95.15	95.15	95.32	0.013237	1.89	1.78	7.46	0.83
Reach #3	Tributary 2	93.25	10 Year		2.87	94.50	95.21	95.21	95.38	0.012948	1.98	2.19	8.17	0.83
Reach #3	Tributary 2	93.25	25 Year		3.49	94.50	95.26	95.26	95.45	0.012701	2.09	2.69	8.99	0.83
Reach #3	Tributary 2	93.25	50 Year		4.17	94.50	95.32	95.32	95.52	0.012569	2.20	3.21	9.78	0.84
Reach #3	Tributary 2	93.25	100 Year		4.72	94.50	95.36	95.36	95.56	0.012583	2.28	3.60	10.34	0.85
Reach #3	Tributary 2	93.25	Regulatory	10.84	94.50	97.97			97.98	0.000055	0.41	59.61	27.00	0.07
Reach #3	Tributary 2	50.25	2 Year		1.74	93.50	94.03	94.03	94.18	0.015103	1.73	1.11	7.16	0.88
Reach #3	Tributary 2	50.25	5 Year		2.39	93.50	94.12	94.12	94.27	0.012023	1.78	1.89	9.33	0.81
Reach #3	Tributary 2	50.25	10 Year		2.87	93.50	94.17	94.17	94.32	0.011682	1.86	2.36	10.41	0.81
Reach #3	Tributary 2	50.25	25 Year		3.49	93.50	94.22	94.22	94.39	0.011439	1.96	2.94	11.81	0.82
Reach #3	Tributary 2	50.25	50 Year		4.17	93.50	94.27	94.27	94.44	0.011281	2.05	3.55	12.77	0.82
Reach #3	Tributary 2	50.25	100 Year		4.72	93.50	94.31	94.31	94.49	0.010923	2.11	4.08	13.69	0.82
Reach #3	Tributary 2	50.25	Regulatory	10.84	93.50	97.97			97.97	0.000008	0.19	139.65	48.70	0.03
Reach #3	Tributary 2	17.25	2 Year		1.74	91.90	92.35	92.35	92.46	0.020681	1.48	1.18	5.36	1.01
Reach #3	Tributary 2	17.25	5 Year		2.39	91.90	92.41	92.41	92.54	0.019850	1.61	1.49	6.04	1.01
Reach #3	Tributary 2	17.25	10 Year		2.87	91.90	92.45	92.45	92.59	0.019005	1.68	1.72	6.50	1.01
Reach #3	Tributary 2	17.25	25 Year		3.49	91.90	92.50	92.50	92.83	0.017122	0.83	4.77	10.82	0.34
Reach #3	Tributary 2	17.25	50 Year		4.17	91.90	93.07	93.07	93.09	0.006534	0.65	8.18	14.00	0.22
Reach #3	Tributary 2	17.25	100 Year		4.72	91.90	93.36	93.36	93.38	0.00276	0.52	12.72	16.83	0.15
Reach #3	Tributary 2	17.25	Regulatory	10.84	91.90	97.97			97.97	0.000003	0.16	181.67	80.56	0.02
Reach #2	Tributary 1	387.34	2 Year		2.20	94.00	94.67		94.70	0.001873	0.94	4.66	11.77	0.37
Reach #2	Tributary 1	387.34	5 Year		3.08	94.00	94.76		94.80	0.002196	1.10	5.83	13.12	0.40
Reach #2	Tributary 1	387.34	10 Year		3.73	94.00	94.82		94.87	0.002265	1.20	6.63	13.98	0.42
Reach #2	Tributary 1	387.34	25 Year		4.65	94.00	94.89		94.95	0.002486	1.32	7.60	15.02	0.45
Reach #2	Tributary 1	387.34	50 Year		5.31	94.00	94.94		95.00	0.002608	1.40	8.43	15.71	0.46
Reach #2	Tributary 1	387.34	100 Year		5.96	94.00	94.99		95.05	0.002716	1.47	9.11	16.32	0.47
Reach #2	Tributary 1	387.34	Regulatory	12.95	94.00	96.19			96.20	0.000388	0.95	33.01	23.40	0.20
Reach #2	Tributary 1	339.34	2 Year		2.20	94.00	94.59		94.62	0.001442	0.77	5.19	14.14	0.32
Reach #2	Tributary 1	339.34	5 Year		3.08	94.00	94.68		94.71	0.001680	0.90	6.43	15.65	0.36
Reach #2	Tributary 1	339.34	10 Year		3.73	94.00	94.73		94.42	0.001625	0.99	7.28	16.60	0.37
Reach #2	Tributary 1	339.34	25 Year		4.65	94.00	94.80		94.48	0.002000	1.10	8.41	17.79	0.39
Reach #2	Tributary 1	339.34	50 Year		5.31	94.00	94.84		94.52	0.002112	1.17	9.18	18.57	0.41
Reach #2	Tributary 1	339.34	100 Year		5.96	94.00	94.88		94.93	0.002212	1.23	9.60	19.26	0.42
Reach #2	Tributary 1	339.34	Regulatory	12.95	94.00	96.18			96.19	0.000220	0.71	40.71	26.57	0.15
Reach #2	Tributary 1	256.34	2 Year		2.84	94.00	94.17		94.26	0.021567	1.31	2.28	13.92	1.00
Reach #2	Tributary 1	256.34	5 Year		3.89	94.00	94.21		94.32	0.016919	1.45	2.65	14.32	1.00
Reach #2	Tributary 1	256.34	10 Year		4.65	94.00	94.24		94.36	0.019267	1.54	3.23	14.58	1.00
Reach #2	Tributary 1	256.34	25 Year		5.73	94.00	94.28		94.41	0.018415	1.65	3.75	14.92	1.00
Reach #2	Tributary 1	256.34	50 Year		6.51	94.00	94.30		94.45	0.017824	1.71	4.12	15.16	1.00
Reach #2	Tributary 1	256.34	100 Year		7.26	94.00	94.32		94.48	0.017332	1.77	4.47	15.38	0.99
Reach #2	Tributary 1	256.34	Regulatory	15.23	94.00	96.17			96.18	0.000102	0.48	40.04	41.24	0.10
Reach #2	Tributary 1	251.34	2 Year		2.86	92.25	93.30		92.62	0.000540	0.68	4.18	13.50	0.21
Reach #2	Tributary 1	251.34	5 Year		3.92	92.25	93.54		92.71	0.000503	0.76	5.16	14.26	0.21
Reach #2	Tributary 1	251.34	10 Year		4.69	92.25	93.70		92.77	0.000484	0.81	5.81	14.76	0.21
Reach #2	Tributary 1	251.34	25 Year		5.77	92.25	93.92		92.85	0.000462	0.88	6.68	15.42	0.21
Reach #2	Tributary 1	251.34	50 Year		6.65	92.25	94.07		92.90	0.000449	0.90	7.27	15.87	0.21
Reach #2	Tributary 1	251.34	100 Year		7.31	92.25	94.20		92.95	0.000438	0.93	7.82	16.30	0.21
Reach #2	Tributary 1	251.34	Regulatory	15.32	92.25	96.17			93.39	0.000023	0.34	67.93	38.66	0.05
Reach #2	Tributary 1	155.34				Culvert								
Reach #2	Tributary 1	101.34	2 Year		3.59	88.55	90.23		89.10	0.000340	0.72	4.97	11.09	0.18
Reach #2	Tributary 1	101.34	5 Year		4.85	88.55	90.27		90.22	0.000583	0.98	5.07	11.25	0.24
Reach #2	Tributary 1	101.34	10 Year		5.75	88.55	90.28		90.29	0.000783	1.12	5.12	11.33	0.27
Reach #2	Tributary 1	101.34	25 Year		7.01	88.55	90.30		90.40	0.001129	1.35	5.17	11.41	0.33
Reach #2	Tributary 1	101.34	50 Year		7.92	88.55	90.30		90.47	0.001432	1.53	5.18	11.43	0.37
Reach #2	Tributary 1	101.34	100 Year		8.80	88.55	90.31		90.53	0.001743	1.69	5.21	11.48	0.41
Reach #2	Tributary 1	101.34	Regulatory	17.94	88.55	93.77			90.12	0.000024	0.39	102.31	64.48	0.08
Reach #2	Tributary 1	63.34	2 Year		3.59	90.00	90.16		90.16	0.022731	1.24	2.98	20.02	1.01
Reach #2	Tributary 1	63.34	5 Year		4.99	90.00	90.19		90.19	0.020653	1.38	3.71	20.41	0.99
Reach #2	Tributary 1	63.34	10 Year		5.75	90.00	90.21		90.21	0.020137	1.45	4.15	20.64	1.00
Reach #2	Tributary 1	63.34	25 Year		7.01	90.00	90.24		90.36	0.019332	1.54	4.77	20.96	1.00
Reach #2	Tributary 1	63.34	50 Year		7.92	90.00	90.26		90.39	0.018536	1.60	5.22	21.16	0.99
Reach #2	Tributary 1	63.34	100 Year		8.80	90.00	90.28		90.42	0.018338	1.68	5.60	21.38	1.00
Reach #2	Tributary 1	63.34	Regulatory	17.94	90.00	93.76			93.78	0.000008	0.20	148.92	75.59	0.03
Reach #2	Tributary 1	78.34	2 Year		3.70	89.00	89.45		89.49	0.000392	1.64	7.07	30.17	0.77
Reach #2	Tributary 1	78.34	5 Year		4.99	89.00	89.50		89.54	0.010595	1.85	8.53	33.13	0.84
Reach #2	Tributary 1	78.34	10 Year		5.80	89.00	89.54		89.58	0.010327	1.92	9.81	35.54	0.84
Reach #2	Tributary 1	78.34	25 Year		7.19	89.00	89.57		89.62	0.011181	2.08	11.08	37.78	0.88
Reach #2	Tributary 1	78.34	50 Year		8.13	89.00	89.60		89.64	0.011688	2.19	11.99	39.29	0.90
Reach #2	Tributary 1	78.34	100 Year		9.02	89.00	89.62		89.67	0.012155	2.28	12.81	40.60	0.93
Reach #2	Tributary 1	78.34	Regulatory	18.32	89.00	93.76			93.78	0.000004	0.15	338.68	106.19	0.02
Reach #2	Tributary 1	59.34	2 Year		3.70	89.00	89.09		89.09	0.047718	1.28	5.56	61.05	1.34
Reach #2	Tributary 1	59.34	5 Year		4.99	89.00	89.11		89.10	0.044371	1.41	6.82	61.62	1.34
Reach #2	Tributary 1	59.34	10 Year		5.66	89.00	89.12		89.17	0.056932	1.63	7.01	61.70	1.52
Reach #2	Tributary 1	59.34	25 Year		7.19	89.00	89.13		89.20	0.054604	1.74	8.01	62.14	1.52

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q_Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chnl
Reach #2	Tributary 1	59.34	50 Year	8.13	89.00	89.14	89.22	0.053114	1.81	8.71	62.45	1.52	
Reach #2	Tributary 1	59.34	100 Year	9.02	89.00	89.15	89.23	0.051819	1.81	9.36	62.74	1.52	
Reach #2	Tributary 1	59.34	Regulatory	18.32	89.00	93.78		0.000001	0.09	456.07	128.57	0.01	
Reach #2	Tributary 1	32.34	2 Year	3.83	88.00	88.28	88.39	0.017809	1.61	3.35	16.75	0.98	
Reach #2	Tributary 1	32.34	5 Year	5.28	88.00	88.33	88.46	0.016798	1.77	4.30	18.54	0.88	
Reach #2	Tributary 1	32.34	10 Year	6.23	88.00	88.47	88.55	0.006058	1.35	7.32	23.34	0.63	
Reach #2	Tributary 1	32.34	25 Year	7.58	88.00	88.71	88.73	0.001212	0.79	23.19	76.80	0.30	
Reach #2	Tributary 1	32.34	50 Year	8.55	88.00	88.85	88.86	0.000626	0.64	33.93	83.82	0.22	
Reach #2	Tributary 1	32.34	100 Year	9.48	88.00	88.95	88.96	0.000432	0.57	42.68	88.79	0.19	
Reach #2	Tributary 1	32.34	Regulatory	19.14	88.00	93.78		0.000001	0.08	662.25	175.18	0.01	
Reach #10	Tributary 9	1243.04	2 Year	0.77	192.70	192.94	193.06	0.011046	1.11	0.69	2.92	0.73	
Reach #10	Tributary 9	1243.04	5 Year	1.28	192.70	193.05	193.08	0.006764	0.99	4.13	73.95	0.59	
Reach #10	Tributary 9	1243.04	10 Year	1.68	192.70	193.06	193.10	0.006927	1.05	5.41	74.98	0.60	
Reach #10	Tributary 9	1243.04	25 Year	2.22	192.70	193.08	193.11	0.007209	1.11	6.83	76.11	0.62	
Reach #10	Tributary 9	1243.04	50 Year	2.65	192.70	193.10	193.13	0.006541	1.10	8.23	77.21	0.60	
Reach #10	Tributary 9	1243.04	100 Year	3.11	192.70	193.12	193.14	0.006386	1.12	9.42	78.13	0.59	
Reach #10	Tributary 9	1243.04	Regulatory	11.34	192.70	193.26	193.30	0.008542	1.62	21.57	86.97	0.73	
Reach #10	Tributary 9	1142.04	2 Year	0.77	191.70	192.05	192.08	0.008164	1.01	2.50	44.85	0.62	
Reach #10	Tributary 9	1142.04	5 Year	1.28	191.70	192.08	192.11	0.009328	1.15	3.80	47.71	0.67	
Reach #10	Tributary 9	1142.04	10 Year	1.68	191.70	192.09	192.13	0.011819	1.33	4.33	48.83	0.76	
Reach #10	Tributary 9	1142.04	25 Year	2.22	191.70	192.11	192.15	0.012616	1.43	5.29	50.60	0.80	
Reach #10	Tributary 9	1142.04	50 Year	2.65	191.70	192.12	192.16	0.014309	1.55	5.79	51.79	0.85	
Reach #10	Tributary 9	1142.04	100 Year	3.11	191.70	192.13	192.18	0.014788	1.62	6.47	53.11	0.87	
Reach #10	Tributary 9	1142.04	Regulatory	11.34	191.70	192.35	192.38	0.009148	1.75	20.17	74.91	0.74	
Reach #10	Tributary 9	1051.04	2 Year	0.77	190.70	191.31		0.000456	0.33	8.44	52.02	0.14	
Reach #10	Tributary 9	1051.04	5 Year	1.28	190.70	191.31		0.001236	0.54	8.51	52.24	0.24	
Reach #10	Tributary 9	1051.04	10 Year	1.68	190.70	191.31		0.002082	0.70	8.58	52.49	0.31	
Reach #10	Tributary 9	1051.04	25 Year	2.22	190.70	191.32		0.003389	0.90	8.84	53.26	0.40	
Reach #10	Tributary 9	1051.04	50 Year	2.65	190.70	191.33		0.004355	1.03	9.22	54.42	0.45	
Reach #10	Tributary 9	1051.04	100 Year	3.11	190.70	191.34		0.004914	1.11	10.00	56.73	0.48	
Reach #10	Tributary 9	1051.04	Regulatory	11.34	190.70	191.50		0.010142	1.89	20.98	82.56	0.72	
Reach #10	Tributary 9	1021.04	2 Year	0.77	190.70	191.31		0.000014	0.06	36.96	133.44	0.03	
Reach #10	Tributary 9	1021.04	5 Year	1.28	190.70	191.31		0.000038	0.10	37.07	133.52	0.05	
Reach #10	Tributary 9	1021.04	10 Year	1.68	190.70	191.31		0.000064	0.14	37.18	133.61	0.08	
Reach #10	Tributary 9	1021.04	25 Year	2.22	190.70	191.32		0.000108	0.18	37.65	133.96	0.08	
Reach #10	Tributary 9	1021.04	50 Year	2.65	190.70	191.32		0.000145	0.21	38.44	134.56	0.09	
Reach #10	Tributary 9	1021.04	100 Year	3.11	190.70	191.34		0.000175	0.23	40.16	135.86	0.10	
Reach #10	Tributary 9	1021.04	Regulatory	11.34	190.70	191.46		0.000783	0.56	57.82	145.50	0.22	
Reach #10	Tributary 9	977.04	2 Year	0.77	190.70	191.31		0.000008	0.04	46.00	158.39	0.02	
Reach #10	Tributary 9	977.04	5 Year	1.28	190.70	191.31		0.000022	0.07	46.00	158.39	0.03	
Reach #10	Tributary 9	977.04	10 Year	1.68	190.70	191.31		0.000037	0.10	46.00	158.39	0.04	
Reach #10	Tributary 9	977.04	25 Year	2.22	190.70	191.31		0.000064	0.13	48.33	158.45	0.05	
Reach #10	Tributary 9	977.04	50 Year	2.65	190.70	191.32		0.000086	0.15	49.07	158.60	0.06	
Reach #10	Tributary 9	977.04	100 Year	3.11	190.70	191.33		0.000105	0.17	50.93	158.97	0.07	
Reach #10	Tributary 9	977.04	Regulatory	11.34	190.70	191.43		0.000574	0.43	67.20	162.17	0.17	
Reach #10	Tributary 9	971.04	2 Year	0.77	189.65	191.31	191.31	0.000001	0.03	88.87	156.68	0.01	
Reach #10	Tributary 9	971.04	5 Year	1.28	189.65	191.31	191.31	0.000002	0.05	88.87	156.68	0.01	
Reach #10	Tributary 9	971.04	10 Year	1.68	189.65	191.31	191.31	0.000003	0.06	88.87	156.68	0.02	
Reach #10	Tributary 9	971.04	25 Year	2.22	189.65	191.31	191.36	0.000005	0.08	89.11	156.76	0.02	
Reach #10	Tributary 9	971.04	50 Year	2.65	189.65	191.32	191.32	0.000006	0.09	89.64	156.94	0.02	
Reach #10	Tributary 9	971.04	100 Year	3.11	189.65	191.33	191.33	0.000005	0.08	119.80	157.40	0.02	
Reach #10	Tributary 9	971.04	Regulatory	11.34	189.65	191.43	191.43	0.000049	0.27	135.93	161.39	0.07	
Reach #10	Tributary 9	960.04											
Reach #10	Tributary 9	960.04	Culvert										
Reach #10	Tributary 9	956.04	2 Year	0.77	189.53	190.11	189.81	190.13	0.002077	0.73	1.33	27.50	0.35
Reach #10	Tributary 9	956.04	5 Year	1.28	189.53	190.14	190.00	190.20	0.004362	1.11	1.45	30.09	0.52
Reach #10	Tributary 9	956.04	10 Year	1.68	189.53	190.16	190.05	190.25	0.006471	1.39	1.53	33.01	0.63
Reach #10	Tributary 9	956.04	25 Year	2.22	189.53	190.18	190.12	190.32	0.009904	1.77	1.59	34.86	0.79
Reach #10	Tributary 9	956.04	50 Year	2.65	189.53	190.19	190.17	190.38	0.013331	2.07	1.62	35.69	0.92
Reach #10	Tributary 9	956.04	100 Year	3.11	189.53	190.22	190.22	190.45	0.015509	2.31	1.71	38.22	1.00
Reach #10	Tributary 9	956.04	Regulatory	11.34	189.53	190.72	190.72	190.73	0.001168	0.98	39.68	88.50	0.31
Reach #10	Tributary 9	941.04	2 Year	0.77	188.70	190.05		0.000008	0.08	2.73	51.91	0.60	
Reach #10	Tributary 9	941.04	5 Year	1.28	188.70	190.09	190.07	190.11	0.005386	0.90	5.16	58.07	0.51
Reach #10	Tributary 9	941.04	10 Year	1.68	188.70	190.11	190.09	190.13	0.005345	0.93	6.44	61.06	0.51
Reach #10	Tributary 9	941.04	25 Year	2.22	188.70	190.13	190.10	190.15	0.005657	1.02	7.86	63.81	0.55
Reach #10	Tributary 9	941.04	50 Year	2.65	188.70	190.15	190.11	190.17	0.006444	1.09	8.51	65.64	0.57
Reach #10	Tributary 9	941.04	100 Year	3.11	188.70	190.16	190.12	190.18	0.006625	1.14	9.51	67.73	0.59
Reach #10	Tributary 9	941.04	Regulatory	11.34	188.70	190.35	190.24	190.37	0.006672	1.49	24.76	94.07	0.63
Reach #10	Tributary 9	807.04	2 Year	0.77	188.70	189.05	189.05	189.08	0.006928	0.93	2.94	54.38	0.57
Reach #10	Tributary 9	807.04	5 Year	1.28	188.70	189.07		189.10	0.010826	1.21	3.85	58.63	0.72
Reach #10	Tributary 9	807.04	10 Year	1.68	188.70	189.08		189.12	0.011072	1.27	4.83	58.93	0.74
Reach #10	Tributary 9	807.04	25 Year	2.22	188.70	189.11		189.14	0.009629	1.25	6.40	62.45	0.70
Reach #10	Tributary 9	807.04	50 Year	2.65	188.70	189.13		189.15	0.008782	1.24	7.61	65.03	0.67
Reach #10	Tributary 9	807.04	100 Year	3.11	188.70	189.15		189.17	0.008510	1.26	8.70	67.27	0.67
Reach #10	Tributary 9	807.04	Regulatory	11.34	188.70	189.32		189.35	0.008787	1.66	22.39	60.81	0.72
Reach #10	Tributary 9	714.04	2 Year	0.77	187.70	188.04	188.04	188.06	0.007004	0.68	3.72	87.24	0.55

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (mm/m)	Vel Chnl (m/s)	Flow Area (m²)	Top Width (m)	Produc # Chl
Reach #10	Tributary 9	714.04	5 Year	1.28	187.70	188.05	188.08	188.21	0.011372	1.15	4.73	88.37	0.70
Reach #10	Tributary 9	714.04	10 Year	1.68	187.70	188.06	188.09	188.10	0.011261	1.18	5.91	89.67	0.70
Reach #10	Tributary 9	714.04	25 Year	2.22	187.70	188.07	188.07	188.10	0.013243	1.31	6.87	90.71	0.77
Reach #10	Tributary 9	714.04	50 Year	2.65	187.70	188.08	188.11	188.12	0.015042	1.42	7.48	91.35	0.82
Reach #10	Tributary 9	714.04	100 Year	3.11	187.70	188.09	188.12	188.14	0.016952	1.49	8.22	92.14	0.85
Reach #10	Tributary 9	714.04	Regulatory	11.34	187.70	188.20	188.17	188.24	0.017574	1.92	19.39	103.32	0.94
Reach #10	Tributary 9	611.04	2 Year	0.77	186.70	187.20		187.21	0.001604	0.67	4.43	35.88	0.28
Reach #10	Tributary 9	611.04	5 Year	1.28	186.70	187.26		187.27	0.001791	0.66	6.68	44.44	0.30
Reach #10	Tributary 9	611.04	10 Year	1.68	186.70	187.29		187.30	0.001880	0.71	8.29	49.65	0.32
Reach #10	Tributary 9	611.04	25 Year	2.22	186.70	187.33		187.34	0.001996	0.76	10.23	55.29	0.33
Reach #10	Tributary 9	611.04	50 Year	2.65	186.70	187.36		187.36	0.00207	0.80	11.66	59.11	0.34
Reach #10	Tributary 9	611.04	100 Year	3.11	186.70	187.38		187.39	0.002175	0.84	13.06	62.61	0.35
Reach #10	Tributary 9	611.04	Regulatory	11.34	186.70	187.62		187.64	0.002886	1.22	32.79	99.72	0.42
Reach #10	Tributary 9	556.04	2 Year	0.77	186.70	187.08		187.09	0.003284	0.70	3.46	47.01	0.41
Reach #10	Tributary 9	556.04	5 Year	1.28	186.70	187.11		187.12	0.004354	0.86	4.96	52.84	0.48
Reach #10	Tributary 9	556.04	10 Year	1.68	186.70	187.12		187.14	0.005277	0.98	5.82	58.06	0.53
Reach #10	Tributary 9	556.04	25 Year	2.22	186.70	187.14		187.17	0.006029	1.09	7.01	60.12	0.57
Reach #10	Tributary 9	556.04	50 Year	2.65	186.70	187.16		187.18	0.006452	1.15	7.93	63.05	0.59
Reach #10	Tributary 9	556.04	100 Year	3.11	186.70	187.17		187.20	0.006455	1.19	9.07	66.54	0.60
Reach #10	Tributary 9	556.04	Regulatory	11.34	186.70	187.32		187.37	0.010326	1.86	21.28	96.22	0.80
Reach #10	Tributary 9	549.04	2 Year	0.77	186.70	187.04		187.06	0.005590	0.84	3.40	78.60	0.52
Reach #10	Tributary 9	549.04	5 Year	1.28	186.70	187.05		187.08	0.007973	1.04	4.73	79.86	0.63
Reach #10	Tributary 9	549.04	10 Year	1.68	186.70	187.07		187.10	0.008600	1.12	5.79	80.85	0.66
Reach #10	Tributary 9	549.04	25 Year	2.22	186.70	187.08		187.11	0.010111	1.25	6.80	81.78	0.72
Reach #10	Tributary 9	549.04	50 Year	2.65	186.70	187.09		187.12	0.011420	1.35	7.45	82.37	0.77
Reach #10	Tributary 9	549.04	100 Year	3.11	186.70	187.09		187.13	0.014021	1.50	7.78	82.67	0.85
Reach #10	Tributary 9	549.04	Regulatory	11.34	186.70	187.19		187.26	0.023959	2.35	16.20	89.98	1.16
Reach #10	Tributary 9	490.04	2 Year	0.77	185.70	186.05		186.05	0.008305	0.91	2.64	48.70	0.58
Reach #10	Tributary 9	490.04	5 Year	1.28	185.70	186.07		186.11	0.008176	1.10	3.03	53.48	0.64
Reach #10	Tributary 9	490.04	10 Year	1.68	185.70	186.10		186.13	0.007015	1.07	5.42	58.48	0.60
Reach #10	Tributary 9	490.04	25 Year	2.22	185.70	186.08		186.15	0.007104	1.13	6.85	62.02	0.61
Reach #10	Tributary 9	490.04	50 Year	2.65	185.70	186.15		186.17	0.006542	1.13	8.21	66.86	0.60
Reach #10	Tributary 9	490.04	100 Year	3.11	185.70	186.16		186.18	0.006827	1.19	9.10	69.57	0.61
Reach #10	Tributary 9	490.04	Regulatory	11.34	185.70	186.32		186.36	0.008835	1.71	22.80	99.99	0.74
Reach #10	Tributary 9	383.04	2 Year	0.77	184.70	185.06		185.06	0.008183	1.01	2.58	43.58	0.62
Reach #10	Tributary 9	383.04	5 Year	1.28	184.70	185.08		185.11	0.010071	1.19	3.74	46.45	0.69
Reach #10	Tributary 9	383.04	10 Year	1.68	184.70	185.09		185.13	0.013171	1.39	4.20	47.54	0.60
Reach #10	Tributary 9	383.04	25 Year	2.22	184.70	185.11		185.15	0.013143	1.45	5.26	49.98	0.80
Reach #10	Tributary 9	383.04	50 Year	2.85	184.70	185.12		185.17	0.014783	1.57	5.77	51.11	0.88
Reach #10	Tributary 9	383.04	100 Year	3.11	184.70	185.14		185.18	0.014087	1.58	6.65	53.00	0.84
Reach #10	Tributary 9	383.04	Regulatory	11.34	184.70	185.35		185.38	0.009800	1.77	20.03	76.21	0.75
Reach #10	Tributary 9	273.04	2 Year	0.77	183.70	184.19		184.20	0.003304	0.79	3.12	28.77	0.40
Reach #10	Tributary 9	273.04	5 Year	1.28	183.70	184.24		184.25	0.003786	0.92	4.76	36.02	0.44
Reach #10	Tributary 9	273.04	10 Year	1.68	183.70	184.27		184.29	0.003969	0.98	5.85	40.50	0.45
Reach #10	Tributary 9	273.04	25 Year	2.22	183.70	184.30		184.32	0.004162	1.05	7.44	45.46	0.47
Reach #10	Tributary 9	273.04	50 Year	2.65	183.70	184.33		184.35	0.004283	1.10	8.55	48.84	0.48
Reach #10	Tributary 9	273.04	100 Year	3.11	183.70	184.35		184.37	0.004470	1.15	9.81	51.86	0.49
Reach #10	Tributary 9	273.04	Regulatory	11.34	183.70	184.58		184.60	0.005365	1.59	25.42	85.03	0.57
Reach #10	Tributary 9	230.04	2 Year	0.77	183.70	184.08		184.05	0.001780	0.52	5.41	61.58	0.29
Reach #10	Tributary 9	230.04	5 Year	1.28	183.70	184.13		184.13	0.002126	0.60	7.52	66.66	0.33
Reach #10	Tributary 9	230.04	10 Year	1.68	183.70	184.14		184.15	0.002448	0.67	8.77	69.49	0.35
Reach #10	Tributary 9	230.04	25 Year	2.22	183.70	184.17		184.17	0.002775	0.74	10.32	72.83	0.38
Reach #10	Tributary 9	230.04	50 Year	2.65	183.70	184.18		184.19	0.003001	0.76	11.43	75.16	0.40
Reach #10	Tributary 9	230.04	100 Year	3.11	183.70	184.20		184.21	0.002971	0.81	12.92	78.15	0.40
Reach #10	Tributary 9	230.04	Regulatory	11.34	183.70	184.36		184.38	0.004906	1.30	27.89	103.54	0.54
Reach #10	Tributary 9	206.04	2 Year	0.77	183.70	183.90		183.80	0.022505	1.34	0.59	3.37	1.00
Reach #10	Tributary 9	206.04	5 Year	1.28	183.70	184.03		184.05	0.004836	0.84	5.73	162.08	0.50
Reach #10	Tributary 9	206.04	10 Year	1.68	183.70	184.04		184.07	0.005169	0.89	7.61	162.92	0.52
Reach #10	Tributary 9	206.04	25 Year	2.22	183.70	184.05		184.08	0.005882	0.97	9.42	163.76	0.56
Reach #10	Tributary 9	206.04	50 Year	2.65	183.70	184.06		184.09	0.006336	1.02	10.69	164.34	0.58
Reach #10	Tributary 9	206.04	100 Year	3.11	183.70	184.06		184.09	0.007018	1.15	11.18	164.55	0.65
Reach #10	Tributary 9	206.04	Regulatory	11.34	183.70	184.14		184.18	0.015300	1.83	23.19	169.95	0.94
Reach #10	Tributary 9	138.04	2 Year	0.77	182.70	183.19		183.20	0.002051	0.63	4.32	42.04	0.32
Reach #10	Tributary 9	138.04	5 Year	1.28	182.70	183.24		183.25	0.002081	0.69	6.92	53.87	0.32
Reach #10	Tributary 9	138.04	10 Year	1.68	182.70	183.27		183.28	0.002275	0.75	8.42	59.63	0.34
Reach #10	Tributary 9	138.04	25 Year	2.22	182.70	183.30		183.31	0.002249	0.79	10.74	67.59	0.35
Reach #10	Tributary 9	138.04	50 Year	2.65	182.70	183.32		183.33	0.002451	0.84	12.01	71.60	0.36
Reach #10	Tributary 9	138.04	100 Year	3.11	182.70	183.34		183.35	0.002512	0.87	13.58	76.22	0.37
Reach #10	Tributary 9	138.04	Regulatory	11.34	182.70	183.55		183.56	0.003358	1.24	34.05	121.45	0.45
Reach #10	Tributary 9	92.04	2 Year	0.77	182.70	183.04		183.05	0.004974	0.77	4.93	117.50	0.47
Reach #10	Tributary 9	92.04	5 Year	1.28	182.70	183.05		183.07	0.009188	1.06	5.83	118.82	0.64
Reach #10	Tributary 9	92.04	10 Year	1.68	182.70	183.06		183.08	0.009818	1.12	7.03	120.56	0.67
Reach #10	Tributary 9	92.04	25 Year	2.22	182.70	183.06		183.09	0.013953	1.35	7.60	121.37	0.80
Reach #10	Tributary 9	92.04	50 Year	2.65	182.70	183.07		183.10	0.014073	1.38	8.63	122.83	0.80
Reach #10	Tributary 9	92.04	100 Year	3.11	182.70	183.08		183.10	0.015606	1.48	9.31	123.79	0.85
Reach #10	Tributary 9	92.04	Regulatory	11.34	182.70	183.14		183.14	0.031346	2.38	17.89	135.27	1.24

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit. W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel. Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Ch#
Reach #1	Main Channel G	14299.03	2 Year	1.04	189.70	190.24		190.24	0.000579	0.38	8.38	42.31	0.18
Reach #1	Main Channel G	14299.03	5 Year	1.74	189.70	190.31		190.31	0.000727	0.46	11.38	47.33	0.21
Reach #1	Main Channel G	14299.03	10 Year	2.28	189.70	190.35		190.35	0.000816	0.52	13.36	50.36	0.22
Reach #1	Main Channel G	14299.03	25 Year	3.02	189.70	190.39		190.40	0.000944	0.59	15.62	53.63	0.24
Reach #1	Main Channel G	14299.03	50 Year	3.60	189.70	190.43		190.43	0.001011	0.63	17.41	56.07	0.25
Reach #1	Main Channel G	14299.03	100 Year	4.22	189.70	190.45		190.46	0.001096	0.68	19.03	58.19	0.27
Reach #1	Main Channel G	14299.03	Regulatory	15.63	189.70	190.78		190.79	0.001854	1.15	42.02	82.65	0.37
Reach #1	Main Channel G	14182.03	2 Year	1.04	189.70	190.09	180.05	190.09	0.004844	0.70	5.63	66.77	0.41
Reach #1	Main Channel G	14182.03	5 Year	1.74	189.70	190.10	180.11	190.11	0.005074	0.84	6.69	67.85	0.54
Reach #1	Main Channel G	14182.03	10 Year	2.28	189.70	190.12	180.13	190.13	0.008503	1.00	7.86	69.03	0.56
Reach #1	Main Channel G	14182.03	25 Year	3.02	189.70	190.15	180.16	190.17	0.007170	0.98	10.00	71.12	0.52
Reach #1	Main Channel G	14182.03	50 Year	3.60	189.70	190.17	180.17	190.17	0.007389	1.02	11.13	72.20	0.53
Reach #1	Main Channel G	14182.03	100 Year	4.22	189.70	190.19	180.19	190.19	0.008554	1.02	12.65	73.63	0.52
Reach #1	Main Channel G	14182.03	Regulatory	15.63	189.70	190.43	190.45	190.45	0.005355	1.24	32.84	90.53	0.49
Reach #1	Main Channel G	14070.03	2 Year	1.04	188.70	188.96	188.96	189.05	0.021617	1.39	0.75	3.89	1.01
Reach #1	Main Channel G	14070.03	5 Year	1.74	188.70	189.06	189.12	189.12	0.009182	1.17	3.07	36.78	0.70
Reach #1	Main Channel G	14070.03	10 Year	2.28	188.70	189.10	189.10	189.15	0.008584	1.22	4.31	40.14	0.69
Reach #1	Main Channel G	14070.03	25 Year	3.02	188.70	189.12	189.12	189.16	0.010258	1.39	5.22	42.44	0.76
Reach #1	Main Channel G	14070.03	50 Year	3.60	188.70	189.14	189.14	189.21	0.009774	1.42	6.31	45.07	0.75
Reach #1	Main Channel G	14070.03	100 Year	4.22	188.70	189.16	189.16	189.23	0.010554	1.53	7.01	46.68	0.78
Reach #1	Main Channel G	14070.03	Regulatory	15.63	188.70	189.36	189.35	189.48	0.015178	2.41	18.28	67.38	1.01
Reach #1	Main Channel G	13940.03	2 Year	1.17	187.70	188.21		188.22	0.000854	0.46	6.85	34.81	0.22
Reach #1	Main Channel G	13940.03	5 Year	1.94	187.70	188.27		188.28	0.001108	0.57	9.16	37.42	0.29
Reach #1	Main Channel G	13940.03	10 Year	2.54	187.70	188.31		188.32	0.001315	0.65	10.52	38.97	0.29
Reach #1	Main Channel G	13940.03	25 Year	3.35	187.70	188.35		188.36	0.001573	0.75	12.12	40.73	0.32
Reach #1	Main Channel G	13940.03	50 Year	4.01	187.70	188.38		188.39	0.001759	0.82	13.28	41.96	0.34
Reach #1	Main Channel G	13940.03	100 Year	4.70	187.70	188.40		188.42	0.001952	0.89	14.38	43.08	0.36
Reach #1	Main Channel G	13940.03	Regulatory	17.69	187.70	188.44	188.82	188.82	0.002701	1.44	34.32	60.00	0.46
Reach #1	Main Channel G	13885.03	2 Year	1.17	187.70	188.05	188.05	188.06	0.007703	0.97	5.81	121.41	0.57
Reach #1	Main Channel G	13885.03	5 Year	1.94	187.70	188.06	188.06	188.08	0.009722	1.14	7.89	123.03	0.65
Reach #1	Main Channel G	13885.03	10 Year	2.54	187.70	188.08	188.07	188.09	0.003489	1.10	10.05	124.70	0.61
Reach #1	Main Channel G	13885.03	25 Year	3.35	187.70	188.10	188.08	188.11	0.007528	1.68	12.71	126.70	0.58
Reach #1	Main Channel G	13885.03	50 Year	4.01	187.70	188.12	188.09	188.13	0.007013	1.07	14.68	128.18	0.57
Reach #1	Main Channel G	13885.03	100 Year	4.70	187.70	188.13	188.09	188.14	0.006395	1.06	16.83	129.78	0.54
Reach #1	Main Channel G	13885.03	Regulatory	17.69	187.70	188.18	188.18	188.24	0.037802	2.76	22.45	133.82	1.35
Reach #1	Main Channel G	13813.03	2 Year	1.17	186.70	187.14	187.20	187.20	0.010285	1.32	2.53	26.81	0.70
Reach #1	Main Channel G	13813.03	5 Year	1.94	186.70	187.20	187.20	187.25	0.011017	1.50	4.15	35.13	0.74
Reach #1	Main Channel G	13813.03	10 Year	2.54	186.70	187.22	187.22	187.28	0.012115	1.64	5.13	39.30	0.78
Reach #1	Main Channel G	13813.03	25 Year	3.35	186.70	187.25	187.25	187.31	0.013227	1.78	6.36	44.02	0.83
Reach #1	Main Channel G	13813.03	50 Year	4.01	186.70	187.27	187.27	187.34	0.014023	1.89	7.27	47.18	0.86
Reach #1	Main Channel G	13813.03	100 Year	4.70	186.70	187.28	187.28	187.36	0.015863	2.04	7.92	49.32	0.92
Reach #1	Main Channel G	13813.03	Regulatory	17.69	186.70	188.02		188.02	0.000563	0.70	87.07	164.20	0.20
Reach #1	Main Channel G	13753.03	2 Year	1.17	185.85	186.30		186.37	0.009085	1.14	1.02	3.62	0.68
Reach #1	Main Channel G	13753.03	5 Year	1.94	185.85	186.47		186.53	0.005279	1.13	2.04	8.77	0.55
Reach #1	Main Channel G	13753.03	10 Year	2.54	185.85	186.59		186.64	0.003551	1.08	3.48	18.20	0.47
Reach #1	Main Channel G	13753.03	25 Year	3.35	185.85	186.75		186.78	0.001716	0.80	8.11	37.79	0.34
Reach #1	Main Channel G	13753.03	50 Year	4.01	185.85	186.88		186.90	0.000960	0.75	13.82	52.96	0.26
Reach #1	Main Channel G	13753.03	100 Year	4.70	185.85	187.02		187.03	0.000533	0.62	22.26	69.44	0.20
Reach #1	Main Channel G	13753.03	Regulatory	17.69	185.85	188.01		188.01	0.000086	0.49	159.82	207.13	0.09
Reach #1	Main Channel G	13748.03	2 Year	1.17	185.67	186.33	185.91	186.34	0.000368	0.37	3.52	26.42	0.15
Reach #1	Main Channel G	13748.03	5 Year	1.94	185.67	186.50	186.59	186.51	0.000429	0.47	4.68	38.23	0.17
Reach #1	Main Channel G	13748.03	10 Year	2.54	185.67	186.61	186.04	186.62	0.000456	0.53	5.43	46.10	0.18
Reach #1	Main Channel G	13748.03	25 Year	3.35	185.67	186.76	186.11	186.77	0.000457	0.59	6.47	56.81	0.19
Reach #1	Main Channel G	13748.03	50 Year	4.01	185.67	186.87	186.45	186.89	0.000444	0.63	7.29	65.37	0.19
Reach #1	Main Channel G	13748.03	100 Year	4.70	185.67	187.00	186.20	187.02	0.000241	0.66	8.19	74.61	0.19
Reach #1	Main Channel G	13748.03	Regulatory	17.69	185.67	188.01		188.01	0.000052	0.34	178.88	201.10	0.07
Reach #1	Main Channel G	13740.03	Culvert										
Reach #1	Main Channel G	13730.03	2 Year	1.17	185.67	186.25	185.93	186.26	0.000705	0.46	2.87	19.14	0.21
Reach #1	Main Channel G	13730.03	5 Year	1.94	185.67	186.35	186.00	186.37	0.001026	0.63	3.58	25.79	0.26
Reach #1	Main Channel G	13730.03	10 Year	2.54	185.67	186.40	186.06	186.42	0.001330	0.75	3.91	28.95	0.30
Reach #1	Main Channel G	13730.03	25 Year	3.35	185.67	186.46	186.13	186.49	0.001711	0.90	4.34	32.93	0.34
Reach #1	Main Channel G	13730.03	50 Year	4.01	185.67	186.50	186.17	186.54	0.002018	1.02	4.62	35.56	0.38
Reach #1	Main Channel G	13730.03	100 Year	4.70	185.67	186.53	186.21	186.59	0.002345	1.13	4.87	37.97	0.41
Reach #1	Main Channel G	13730.03	Regulatory	17.69	185.67	186.78		186.78	0.012689	3.17	6.64	54.53	1.00
Reach #1	Main Channel G	13714.03	2 Year	1.17	185.67	186.23		186.24	0.001568	0.64	3.15	15.52	0.30
Reach #1	Main Channel G	13714.03	5 Year	1.94	185.67	186.32		186.35	0.001803	0.78	5.11	24.39	0.33
Reach #1	Main Channel G	13714.03	10 Year	2.54	185.67	186.37		186.40	0.002076	0.88	6.34	28.60	0.36
Reach #1	Main Channel G	13714.03	25 Year	3.35	185.67	186.43		186.46	0.002260	0.98	8.16	33.87	0.38
Reach #1	Main Channel G	13714.03	50 Year	4.01	185.67	186.47		186.50	0.002375	1.04	9.57	37.43	0.39
Reach #1	Main Channel G	13714.03	100 Year	4.70	185.67	186.51		186.54	0.002466	1.10	11.02	40.79	0.40
Reach #1	Main Channel G	13714.03	Regulatory	17.69	185.67	186.89		186.89	0.000317	1.63	33.68	75.67	0.49
Reach #1	Main Channel G	13670.03	2 Year	1.17	185.50	186.19		186.20	0.000674	0.48	4.27	26.85	0.21
Reach #1	Main Channel G	13670.03	5 Year	1.94	185.50	186.28		186.29	0.000871	0.61	7.13	37.79	0.24
Reach #1	Main Channel G	13670.03	10 Year	2.54	185.50	186.31		186.33	0.001114	0.71	8.50	42.04	0.27
Reach #1	Main Channel G	13670.03	25 Year	3.35	185.50	186.36		186.38	0.001299	0.80	10.72	48.13	0.30
Reach #1	Main Channel G	13670.03	50 Year	4.01	185.50	186.39		186.42	0.001422	0.87	12.40	52.27	0.31

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel.Chi.: (m/s)	Flow Area (m²)	Top Width (m)	Froude # Ch:
Reach #1	Main Channel G	13670.03	100 Year	4.70	185.50	186.42		186.45	0.001519	0.92	14.16	56.28	0.33
Reach #1	Main Channel G	13670.03	Regulatory		17.69	185.50	186.78	186.82	0.002095	1.38	42.43	100.81	0.41
Reach #1	Main Channel G	13589.03	2 Year	1.28	185.50	186.14		186.14	0.000555	0.40	11.22	82.05	0.18
Reach #1	Main Channel G	13589.03	5 Year	2.14	185.50	186.23		186.24	0.000366	0.37	19.64	92.67	0.15
Reach #1	Main Channel G	13589.03	10 Year	2.79	185.50	186.25		186.26	0.000516	0.44	21.56	85.17	0.18
Reach #1	Main Channel G	13589.03	25 Year	3.68	185.50	186.30		186.30	0.000565	0.48	25.70	99.96	0.19
Reach #1	Main Channel G	13589.03	50 Year	4.40	185.50	186.32		186.33	0.000614	0.52	28.51	103.07	0.20
Reach #1	Main Channel G	13589.03	100 Year	5.16	185.50	186.35		186.36	0.000651	0.54	31.42	108.19	0.20
Reach #1	Main Channel G	13589.03	Regulatory	19.71	185.50	186.66		186.67	0.001098	0.90	69.63	141.14	0.28
Reach #1	Main Channel G	13474.03	2 Year	1.28	185.50	185.81	185.81	185.94	0.020391	1.58	0.81	3.22	1.00
Reach #1	Main Channel G	13474.03	5 Year	2.14	185.50	185.92	185.92	186.09	0.019022	1.80	1.18	3.65	1.01
Reach #1	Main Channel G	13474.03	10 Year	2.79	185.50	186.07	186.07	186.11	0.005253	1.15	7.08	88.02	0.55
Reach #1	Main Channel G	13474.03	25 Year	3.68	185.50	186.09	186.09	186.14	0.006202	1.28	8.88	89.46	0.61
Reach #1	Main Channel G	13474.03	50 Year	4.40	185.50	186.10	186.10	186.16	0.006311	1.34	10.58	90.82	0.62
Reach #1	Main Channel G	13474.03	100 Year	5.16	185.50	186.12	186.12	186.17	0.006852	1.42	11.83	91.81	0.65
Reach #1	Main Channel G	13474.03	Regulatory	19.71	185.50	186.30		186.37	0.010443	2.15	28.24	104.57	0.84
Reach #1	Main Channel G	13391.03	2 Year	1.28	184.50	185.32	185.16	185.33	0.001273	0.61	6.56	33.80	0.23
Reach #1	Main Channel G	13391.03	5 Year	2.14	184.50	185.41		185.42	0.001350	0.68	9.99	42.06	0.25
Reach #1	Main Channel G	13391.03	10 Year	2.79	184.50	185.47		185.47	0.001375	0.72	12.42	47.03	0.26
Reach #1	Main Channel G	13391.03	25 Year	3.68	184.50	185.53		185.54	0.001409	0.76	15.47	52.62	0.26
Reach #1	Main Channel G	13391.03	50 Year	4.40	184.50	185.57		185.58	0.001420	0.79	17.85	56.59	0.26
Reach #1	Main Channel G	13391.03	100 Year	5.16	184.50	185.61		185.62	0.001423	0.81	20.27	60.37	0.26
Reach #1	Main Channel G	13391.03	Regulatory	19.71	184.50	186.07		186.08	0.001416	1.05	57.41	99.27	0.28
Reach #1	Main Channel G	13281.03	2 Year	1.28	184.50	184.87	184.87	185.01	0.020562	1.69	0.76	2.84	1.01
Reach #1	Main Channel G	13281.03	5 Year	2.14	184.50	185.07	185.07	185.16	0.008185	1.41	2.64	22.70	0.68
Reach #1	Main Channel G	13281.03	10 Year	2.79	184.50	185.11	185.11	185.21	0.008316	1.51	3.68	23.91	0.69
Reach #1	Main Channel G	13281.03	25 Year	3.68	184.50	185.16	185.16	185.26	0.008800	1.65	4.77	25.18	0.72
Reach #1	Main Channel G	13281.03	50 Year	4.40	184.50	185.19	185.19	185.30	0.009185	1.75	5.56	26.04	0.75
Reach #1	Main Channel G	13281.03	100 Year	5.16	184.50	185.22	185.22	185.33	0.009845	1.85	6.31	26.83	0.77
Reach #1	Main Channel G	13281.03	Regulatory	19.71	184.50	185.54	185.54	185.76	0.013052	2.99	16.55	35.93	1.00
Reach #1	Main Channel G	13190.03	2 Year	1.42	183.50	184.31		184.32	0.000705	0.55	5.58	26.24	0.21
Reach #1	Main Channel G	13190.03	5 Year	2.36	183.50	184.40		184.42	0.000978	0.70	8.23	32.98	0.25
Reach #1	Main Channel G	13190.03	10 Year	3.07	183.50	184.46		184.47	0.001149	0.79	10.01	36.83	0.28
Reach #1	Main Channel G	13190.03	25 Year	4.05	183.50	184.51		184.53	0.001312	0.88	12.40	41.43	0.30
Reach #1	Main Channel G	13190.03	50 Year	4.85	183.50	184.56		184.58	0.001363	0.93	14.51	45.11	0.31
Reach #1	Main Channel G	13190.03	100 Year	5.69	183.50	184.59		184.62	0.001502	1.01	16.13	47.74	0.33
Reach #1	Main Channel G	13190.03	Regulatory	22.00	183.50	185.01		185.06	0.002517	1.65	42.66	79.38	0.45
Reach #1	Main Channel G	13008.03	2 Year	1.42	183.50	184.05	184.05	184.07	0.007904	1.05	6.49	116.92	0.51
Reach #1	Main Channel G	13008.03	5 Year	2.36	183.50	184.07	184.07	184.09	0.010334	1.23	8.66	118.55	0.59
Reach #1	Main Channel G	13008.03	10 Year	3.07	183.50	184.08	184.08	184.11	0.011670	1.33	10.05	119.59	0.63
Reach #1	Main Channel G	13008.03	25 Year	4.05	183.50	184.08	184.08	184.12	0.014130	1.49	11.43	120.61	0.69
Reach #1	Main Channel G	13008.03	50 Year	4.85	183.50	184.10	184.10	184.13	0.016414	1.75	11.59	120.73	0.61
Reach #1	Main Channel G	13008.03	100 Year	5.69	183.50	184.11	184.11	184.14	0.018059	1.76	13.03	121.78	0.61
Reach #1	Main Channel G	13008.03	Regulatory	22.00	183.50	184.20	184.20	184.27	0.044950	3.03	24.16	128.64	1.28
Reach #1	Main Channel G	12902.03	2 Year	1.42	182.50	183.13		183.13	0.000308	0.27	22.42	170.01	0.12
Reach #1	Main Channel G	12902.03	5 Year	2.36	182.50	183.17		183.17	0.000379	0.31	29.30	174.23	0.14
Reach #1	Main Channel G	12902.03	10 Year	3.07	182.50	183.20		183.20	0.000431	0.34	33.46	178.20	0.15
Reach #1	Main Channel G	12902.03	25 Year	4.05	182.50	183.23		183.23	0.000476	0.37	38.81	178.70	0.16
Reach #1	Main Channel G	12902.03	50 Year	4.85	182.50	183.25		183.25	0.000509	0.39	42.66	180.40	0.16
Reach #1	Main Channel G	12902.03	100 Year	5.69	182.50	183.26		183.27	0.000564	0.42	45.78	181.92	0.17
Reach #1	Main Channel G	12902.03	Regulatory	22.00	182.50	183.50		183.51	0.001004	0.70	91.55	201.75	0.24
Reach #1	Main Channel G	12803.03	2 Year	1.55	182.50	183.05	183.05	183.06	0.003440	0.84	9.02	180.07	0.42
Reach #1	Main Channel G	12803.03	5 Year	2.57	182.50	183.06	183.06	183.08	0.004697	1.03	12.21	181.67	0.50
Reach #1	Main Channel G	12803.03	10 Year	3.35	182.50	183.07	183.07	183.10	0.005717	1.13	14.26	182.69	0.54
Reach #1	Main Channel G	12803.03	25 Year	4.41	182.50	183.08	183.08	183.11	0.007827	1.34	15.67	183.38	0.64
Reach #1	Main Channel G	12803.03	50 Year	5.28	182.50	183.09	183.09	183.12	0.009695	1.50	16.58	183.83	0.71
Reach #1	Main Channel G	12803.03	100 Year	6.20	182.50	183.10	183.10	183.13	0.009092	1.49	18.14	185.09	0.69
Reach #1	Main Channel G	12803.03	Regulatory	24.23	182.50	183.19	183.19	183.25	0.022980	2.65	35.70	193.02	1.13
Reach #1	Main Channel G	12723.05	2 Year	1.55	181.50	182.14		182.15	0.001540	0.66	7.38	65.00	0.29
Reach #1	Main Channel G	12723.05	5 Year	2.57	181.50	182.22		182.23	0.001236	0.66	13.92	88.26	0.27
Reach #1	Main Channel G	12723.05	10 Year	3.35	181.50	182.28		182.28	0.001053	0.64	19.16	103.16	0.25
Reach #1	Main Channel G	12723.05	25 Year	4.41	181.50	182.34		182.35	0.000851	0.62	26.78	121.82	0.23
Reach #1	Main Channel G	12723.05	50 Year	5.28	181.50	182.40		182.40	0.000728	0.60	33.33	135.50	0.22
Reach #1	Main Channel G	12723.05	100 Year	6.20	181.50	182.39		182.40	0.001075	0.72	32.37	133.56	0.26
Reach #1	Main Channel G	12723.05	Regulatory	24.23	181.50	182.67		182.68	0.001743	1.13	80.24	209.54	0.35
Reach #1	Main Channel G	12636.05	2 Year	1.55	181.50	181.60	181.60	181.73	0.032211	1.57	0.98	3.94	1.68
Reach #1	Main Channel G	12636.05	5 Year	2.57	181.50	181.70	181.70	181.88	0.079800	2.29	1.40	4.57	1.78
Reach #1	Main Channel G	12636.05	10 Year	3.35	181.50	181.77	181.77	181.98	0.069738	2.54	1.77	5.05	1.72
Reach #1	Main Channel G	12636.05	25 Year	4.41	181.50	181.86	181.86	182.09	0.060255	2.73	2.25	5.62	1.63
Reach #1	Main Channel G	12636.05	50 Year	5.28	181.50	181.94	181.94	182.18	0.051590	2.78	2.70	6.10	1.54
Reach #1	Main Channel G	12636.05	100 Year	6.20	181.50	182.12	182.12	182.17	0.011673	1.70	13.78	105.23	0.78
Reach #1	Main Channel G	12636.05	Regulatory	24.23	181.50	182.46		182.48	0.003249	1.28	68.14	199.89	0.45
Reach #1	Main Channel G	12498.05	2 Year	1.77	181.50	181.41		181.41	0.000593		16.81	82.28	0.00
Reach #1	Main Channel G	12498.05	5 Year	2.94	181.50	181.54		181.54	0.000357	0.06	29.68	109.63	0.09
Reach #1	Main Channel G	12498.05	10 Year	3.83	181.50	181.65		181.65	0.000238	0.08	42.17	130.63	0.08
Reach #1	Main Channel G	12498.05	25 Year	5.05	181.50	181.80		181.80	0.000129	0.08	65.17	162.36	0.06

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Pbw Area (m²)	Top Width (m)	Froude # Chl
Reach #1	Main Channel G	12498.05	50 Year	6.04	181.50	181.95		181.95	0.000077	0.08	90.71	191.53	0.04
Reach #1	Main Channel G	12498.05	100 Year	7.09	181.50	181.99		181.99	0.000084	0.08	98.02	200.00	0.04
Reach #1	Main Channel G	12498.05	Regulatory	27.96	181.50	182.43		182.43	0.000133	0.18	228.68	323.16	0.06
Reach #1	Main Channel G	12426.05	2 Year	1.77	180.42	181.39		181.39	0.000145	0.28	24.46	114.74	0.10
Reach #1	Main Channel G	12426.05	5 Year	2.94	180.42	181.53		181.53	0.000109	0.27	43.39	154.47	0.09
Reach #1	Main Channel G	12426.05	10 Year	3.83	180.42	181.63		181.64	0.000080	0.25	61.75	185.05	0.08
Reach #1	Main Channel G	12426.05	25 Year	5.05	180.42	181.80		181.80	0.000047	0.21	65.31	230.68	0.06
Reach #1	Main Channel G	12426.05	50 Year	6.04	180.42	181.94		181.94	0.000030	0.18	132.17	272.12	0.05
Reach #1	Main Channel G	12426.05	100 Year	7.09	180.42	181.68		181.68	0.000033	0.19	143.72	263.88	0.05
Reach #1	Main Channel G	12426.05	Regulatory	27.96	180.42	182.42		182.42	0.000072	0.34	277.72	320.43	0.08
Reach #1	Main Channel G	12403.05	2 Year	1.77	179.94	181.38	180.21	181.39	0.000047	0.22	8.40	88.12	0.06
Reach #1	Main Channel G	12403.05	5 Year	2.94	179.94	180.52	180.29	181.52	0.000093	0.33	9.37	116.48	0.09
Reach #1	Main Channel G	12403.05	10 Year	3.83	179.94	181.62	180.35	181.63	0.000125	0.40	10.12	138.34	0.10
Reach #1	Main Channel G	12403.05	25 Year	5.05	179.94	181.78	180.42	181.79	0.000158	0.48	11.24	171.19	0.11
Reach #1	Main Channel G	12403.05	50 Year	6.04	179.94	181.93	180.48	181.94	0.000173	0.53	12.27	201.22	0.12
Reach #1	Main Channel G	12403.05	100 Year	7.09	179.94	181.97	180.53	181.98	0.000143	0.46	29.01	211.18	0.10
Reach #1	Main Channel G	12403.05	Regulatory	27.96	179.94	182.42	181.37	182.42	0.000096	0.43	219.36	280.01	0.09
Reach #1	Main Channel G	12396.05	Culvert										
Reach #1	Main Channel G	12389.05	2 Year	1.77	180.12	181.36	180.39	181.36	0.000075	0.25	7.67	70.82	0.08
Reach #1	Main Channel G	12389.05	5 Year	2.94	180.12	181.45	180.48	181.46	0.000156	0.38	8.37	88.23	0.11
Reach #1	Main Channel G	12389.05	10 Year	3.83	180.12	181.51	180.55	181.52	0.000227	0.48	8.78	98.62	0.13
Reach #1	Main Channel G	12389.05	25 Year	5.05	180.12	181.58	180.62	181.60	0.000320	0.59	9.31	111.50	0.16
Reach #1	Main Channel G	12389.05	50 Year	6.04	180.12	181.64	180.68	181.66	0.000412	0.68	9.70	121.38	0.18
Reach #1	Main Channel G	12389.05	100 Year	7.09	180.12	181.69	180.75	181.72	0.000501	0.77	10.09	130.99	0.20
Reach #1	Main Channel G	12389.05	Regulatory	27.96	180.12	182.41	181.50	182.42	0.000131	0.51	180.18	239.56	0.11
Reach #1	Main Channel F	12288.05	2 Year	1.93	180.50	181.34		181.38	0.002383	0.88	6.94	36.86	0.33
Reach #1	Main Channel F	12288.05	5 Year	3.19	180.50	181.44		181.48	0.002205	0.83	11.37	47.98	0.33
Reach #1	Main Channel F	12288.05	10 Year	4.16	180.50	181.51		181.52	0.002084	0.95	14.65	54.68	0.32
Reach #1	Main Channel F	12288.05	25 Year	5.48	180.50	181.58		181.60	0.001909	0.96	19.16	62.78	0.31
Reach #1	Main Channel F	12288.05	50 Year	6.56	180.50	181.64		181.65	0.001758	0.98	22.96	68.87	0.30
Reach #1	Main Channel F	12288.05	100 Year	7.70	180.50	181.70		181.71	0.001623	0.95	27.00	74.81	0.30
Reach #1	Main Channel F	12288.05	Regulatory	30.35	180.50	182.41		182.42	0.000409	0.67	164.68	293.81	0.16
Reach #1	Main Channel F	12224.05	2 Year	1.93	180.50	181.32		181.32	0.000153	0.22	26.89	97.22	0.09
Reach #1	Main Channel F	12224.05	5 Year	3.19	180.50	181.42		181.43	0.000166	0.25	37.21	107.02	0.09
Reach #1	Main Channel F	12224.05	10 Year	4.16	180.50	181.49		181.49	0.000175	0.27	44.03	113.03	0.09
Reach #1	Main Channel F	12224.05	25 Year	5.48	180.50	181.56		181.56	0.000181	0.30	52.82	120.33	0.10
Reach #1	Main Channel F	12224.05	50 Year	6.56	180.50	181.62		181.62	0.000183	0.31	59.87	125.88	0.10
Reach #1	Main Channel F	12224.05	100 Year	7.70	180.50	181.68		181.68	0.000183	0.32	67.09	131.32	0.10
Reach #1	Main Channel F	12224.05	Regulatory	30.35	180.50	182.40		182.40	0.000164	0.43	183.59	184.53	0.10
Reach #1	Main Channel F	12152.05	2 Year	2.03	180.50	181.32		181.32	0.000129	0.23	26.05	83.40	0.09
Reach #1	Main Channel F	12152.05	5 Year	3.35	180.50	181.41		181.42	0.000154	0.28	34.51	86.23	0.10
Reach #1	Main Channel F	12152.05	10 Year	4.37	180.50	181.48		181.48	0.000172	0.31	39.83	87.97	0.11
Reach #1	Main Channel F	12152.05	25 Year	5.76	180.50	181.55		181.55	0.000189	0.34	46.46	90.08	0.11
Reach #1	Main Channel F	12152.05	50 Year	6.80	180.50	181.61		181.61	0.000197	0.36	51.63	91.70	0.12
Reach #1	Main Channel F	12152.05	100 Year	8.10	180.50	181.66		181.67	0.000204	0.38	56.79	93.29	0.12
Reach #1	Main Channel F	12152.05	Regulatory	32.20	180.50	182.38		182.38	0.000274	0.63	132.62	122.24	0.15
Reach #1	Main Channel F	12035.05	2 Year	2.03	180.50	181.28		181.29	0.001548	0.88	8.51	35.43	0.27
Reach #1	Main Channel F	12035.05	5 Year	3.35	180.50	181.38		181.39	0.001728	0.79	12.11	40.30	0.29
Reach #1	Main Channel F	12035.05	10 Year	4.37	180.50	181.44		181.45	0.001841	0.86	14.53	43.26	0.31
Reach #1	Main Channel F	12035.05	25 Year	5.76	180.50	181.51		181.52	0.001890	0.92	17.76	46.93	0.32
Reach #1	Main Channel F	12035.05	50 Year	6.80	180.50	181.56		181.58	0.001882	0.98	20.45	49.78	0.32
Reach #1	Main Channel F	12035.05	100 Year	8.10	180.50	181.62		181.63	0.001848	0.99	23.29	52.61	0.32
Reach #1	Main Channel F	12035.05	Regulatory	32.20	180.50	182.33		182.35	0.001432	1.25	75.32	97.57	0.31
Reach #1	Main Channel F	11978.05	2 Year	2.03	180.50	181.01	180.90	181.10	0.008179	1.35	1.64	23.70	0.68
Reach #1	Main Channel F	11978.05	5 Year	3.35	180.50	181.14		181.21	0.005714	1.32	5.18	30.19	0.57
Reach #1	Main Channel F	11978.05	10 Year	4.37	180.50	181.22		181.28	0.004351	1.27	7.87	34.29	0.51
Reach #1	Main Channel F	11978.05	25 Year	5.76	180.50	181.32		181.37	0.003360	1.23	11.46	39.11	0.46
Reach #1	Main Channel F	11978.05	50 Year	6.80	180.50	181.39		181.43	0.002802	1.21	14.30	42.53	0.44
Reach #1	Main Channel F	11978.05	100 Year	8.10	180.50	181.46		181.49	0.002561	1.21	17.29	45.87	0.42
Reach #1	Main Channel F	11978.05	Regulatory	32.20	180.50	182.23		182.26	0.001299	1.32	66.75	76.16	0.33
Reach #1	Main Channel F	11893.05	2 Year	2.03	179.60	180.71		180.73	0.002444	0.87	4.74	13.09	0.34
Reach #1	Main Channel F	11893.05	5 Year	3.35	179.60	180.88		180.90	0.002413	1.00	7.19	16.15	0.35
Reach #1	Main Channel F	11893.05	10 Year	4.37	179.60	180.98		181.01	0.002423	1.08	8.92	17.99	0.36
Reach #1	Main Channel F	11893.05	25 Year	5.76	179.60	181.08		181.12	0.002517	1.19	11.08	20.60	0.37
Reach #1	Main Channel F	11893.05	50 Year	6.90	179.60	181.17		181.21	0.002577	1.26	12.76	22.50	0.38
Reach #1	Main Channel F	11893.05	100 Year	8.10	179.60	181.25		181.28	0.002590	1.32	14.58	24.38	0.38
Reach #1	Main Channel F	11893.05	Regulatory	32.20	179.60	182.04		182.10	0.003157	2.04	41.39	43.10	0.46
Reach #1	Main Channel F	11799.05	2 Year	2.28	179.50	180.56		180.58	0.001171	0.76	7.10	18.80	0.25
Reach #1	Main Channel F	11799.05	5 Year	3.77	179.50	180.71		180.73	0.001419	0.93	10.19	22.78	0.28
Reach #1	Main Channel F	11799.05	10 Year	4.93	179.50	180.80		180.82	0.001541	1.02	12.38	25.18	0.30
Reach #1	Main Channel F	11799.05	25 Year	6.50	179.50	180.90		180.92	0.001720	1.13	14.85	27.72	0.32
Reach #1	Main Channel F	11799.05	50 Year	7.77	179.50	180.97		180.99	0.001834	1.21	16.91	29.51	0.33
Reach #1	Main Channel F	11799.05	100 Year	9.13	179.50	181.03		181.06	0.001680	1.29	18.97	32.05	0.35
Reach #1	Main Channel F	11799.05	Regulatory	36.52	179.50	181.73		181.79	0.003108	2.12	53.29	66.55	0.47
Reach #1	Main Channel F	11677.05	2 Year	2.28	179.50	180.12	180.12	180.25	0.010526	1.66	2.21	14.45	0.73

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m3/s)	Min.Cn Elv. (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m <sup>2</sup> )	Top Width (m)	Froude # Chl.
Reach #1	Main Channel F	11677.05	5 Year	3.77	179.50	180.25	180.37	180.37	0.009269	1.80	4.58	22.81	0.71
Reach #1	Main Channel F	11677.05	10 Year	4.93	179.50	180.30	180.43	180.43	0.009742	1.95	6.00	26.74	0.73
Reach #1	Main Channel F	11677.05	25 Year	6.50	179.50	180.37	180.57	180.57	0.009904	2.08	7.05	31.23	0.75
Reach #1	Main Channel F	11677.05	50 Year	7.77	179.50	180.42	180.42	180.55	0.010155	2.19	9.38	34.16	0.77
Reach #1	Main Channel F	11677.05	100 Year	9.13	179.50	180.45	180.60	180.60	0.010580	2.30	10.75	36.74	0.79
Reach #1	Main Channel F	11677.05	Regulatory	36.52	179.50	180.66	180.86	181.08	0.014989	3.55	31.46	64.17	1.00
Reach #1	Main Channel F	11597.05	2 Year	2.28	178.50	179.32		179.34	0.002345	0.87	8.68	47.36	0.33
Reach #1	Main Channel F	11597.05	5 Year	3.77	178.50	179.87		179.87	0.000978	0.23	54.51	121.74	0.07
Reach #1	Main Channel F	11597.05	10 Year	4.93	178.50	179.46		179.47	0.002719	1.05	16.09	65.39	0.37
Reach #1	Main Channel F	11597.05	25 Year	6.50	178.50	179.52		179.53	0.002682	1.10	20.42	73.03	0.37
Reach #1	Main Channel F	11597.05	50 Year	7.77	178.50	179.53		179.55	0.003380	1.25	21.52	75.94	0.42
Reach #1	Main Channel F	11597.05	100 Year	9.13	178.50	179.56		179.58	0.003809	1.35	23.30	79.24	0.44
Reach #1	Main Channel F	11597.05	Regulatory	36.52	178.50	180.02		180.04	0.003255	1.62	74.30	140.77	0.44
Reach #1	Main Channel F	11533.05	2 Year	2.48	178.50	179.08	179.08	179.13	0.005955	1.22	6.18	66.03	0.58
Reach #1	Main Channel F	11533.05	5 Year	34.09	178.50	178.77		178.80	0.002349	1.58	58.76	87.05	0.47
Reach #1	Main Channel F	11533.05	10 Year	5.35	178.50	179.14	179.14	179.21	0.009138	1.64	10.43	67.97	0.73
Reach #1	Main Channel F	11533.05	25 Year	7.05	178.50	179.16		179.25	0.012064	1.93	11.67	68.53	0.84
Reach #1	Main Channel F	11533.05	50 Year	8.43	178.50	179.21		179.27	0.008493	1.73	15.35	70.15	0.72
Reach #1	Main Channel F	11533.05	100 Year	9.90	178.50	179.26		179.31	0.006807	1.63	18.73	71.61	0.65
Reach #1	Main Channel F	11533.05	Regulatory	38.77	178.50	179.85		179.88	0.002842	1.63	66.13	89.60	0.47
Reach #1	Main Channel F	11448.05	2 Year	2.48	177.50	178.53		178.56	0.001517	0.88	7.23	23.13	0.30
Reach #1	Main Channel F	11448.05	5 Year	34.09	177.50	179.42		179.50	0.004281	2.35	43.73	59.27	0.56
Reach #1	Main Channel F	11448.05	10 Year	5.35	177.50	178.73		178.77	0.002099	1.19	12.65	31.13	0.36
Reach #1	Main Channel F	11448.05	25 Year	7.05	177.50	178.81		178.85	0.002385	1.32	15.25	34.32	0.39
Reach #1	Main Channel F	11448.05	50 Year	8.43	177.50	178.87		178.91	0.002585	1.42	17.19	36.51	0.41
Reach #1	Main Channel F	11448.05	100 Year	9.90	177.50	178.92		178.97	0.002746	1.51	19.22	38.68	0.43
Reach #1	Main Channel F	11448.05	Regulatory	39.77	177.50	179.50		179.59	0.004500	2.48	48.50	62.52	0.58
Reach #1	Main Channel F	11387.05	2 Year	2.48	177.50	178.43		178.45	0.002220	0.90	7.83	30.07	0.32
Reach #1	Main Channel F	11387.05	5 Year	34.09	177.50	179.18		179.23	0.004802	2.08	47.40	70.82	0.53
Reach #1	Main Channel F	11387.05	10 Year	5.35	177.50	178.60		178.62	0.002726	1.13	13.92	40.50	0.37
Reach #1	Main Channel F	11387.05	25 Year	7.05	177.50	178.66		178.69	0.003140	1.27	16.53	44.22	0.40
Reach #1	Main Channel F	11387.05	50 Year	8.43	177.50	178.70		178.73	0.003454	1.36	18.41	46.72	0.42
Reach #1	Main Channel F	11387.05	100 Year	9.90	177.50	178.75		178.78	0.003590	1.43	20.87	49.54	0.43
Reach #1	Main Channel F	11387.05	Regulatory	39.77	177.50	179.26		179.31	0.005004	2.16	52.56	73.23	0.54
Reach #1	Main Channel F	11308.05	2 Year	2.48	177.50	178.09	178.09	178.15	0.007143	1.32	5.17	45.88	0.61
Reach #1	Main Channel F	11308.05	5 Year	34.09	177.50	178.74		178.80	0.006192	2.16	43.44	72.91	0.65
Reach #1	Main Channel F	11308.05	10 Year	5.35	177.50	178.18	178.18	178.25	0.009770	1.71	9.13	49.45	0.73
Reach #1	Main Channel F	11308.05	25 Year	7.05	177.50	178.23	178.21	178.30	0.008843	1.73	11.89	51.73	0.70
Reach #1	Main Channel F	11308.05	50 Year	8.43	177.50	178.27	178.23	178.34	0.008158	1.74	14.08	53.47	0.68
Reach #1	Main Channel F	11308.05	100 Year	9.90	177.50	178.30	178.26	178.37	0.008504	1.83	15.65	54.80	0.70
Reach #1	Main Channel F	11308.05	Regulatory	38.77	177.50	178.88		178.93	0.004592	2.02	54.17	78.82	0.57
Reach #1	Main Channel F	11240.05	2 Year	2.48	176.60	177.28	177.28	177.42	0.011236	1.69	2.16	13.68	0.80
Reach #1	Main Channel F	11240.05	5 Year	34.09	176.60	178.01	178.01	178.22	0.011927	3.29	32.01	67.56	0.86
Reach #1	Main Channel F	11240.05	10 Year	5.35	176.60	177.48	177.48	177.61	0.008697	1.92	6.33	28.34	0.78
Reach #1	Main Channel F	11240.05	25 Year	7.05	176.60	177.55	177.55	177.69	0.006045	2.06	8.47	33.45	0.77
Reach #1	Main Channel F	11240.05	50 Year	8.43	176.60	177.59	177.59	177.74	0.009242	2.17	10.04	36.76	0.79
Reach #1	Main Channel F	11240.05	100 Year	9.90	176.60	177.65		177.79	0.008408	2.17	12.31	41.07	0.76
Reach #1	Main Channel F	11240.05	Regulatory	39.77	176.60	178.79		178.81	0.000882	1.25	101.67	112.52	0.28
Reach #1	Main Channel F	11218.05	2 Year	2.71	176.51	177.15	176.76	177.17	0.000728	0.54	5.26	21.35	0.22
Reach #1	Main Channel F	11218.05	5 Year	4.47	176.51	177.32	176.85	177.34	0.000868	0.69	6.02	35.51	0.25
Reach #1	Main Channel F	11218.05	10 Year	5.84	176.51	177.41	176.91	177.44	0.001011	0.80	7.84	43.31	0.27
Reach #1	Main Channel F	11218.05	25 Year	7.71	176.51	177.51	176.99	177.56	0.001202	0.94	8.86	52.02	0.30
Reach #1	Main Channel F	11218.05	50 Year	9.21	176.51	177.57	177.05	177.63	0.001393	1.05	9.47	57.23	0.33
Reach #1	Main Channel F	11218.05	100 Year	10.82	176.51	177.83	177.12	177.70	0.001576	1.16	10.09	62.46	0.36
Reach #1	Main Channel F	11218.05	Regulatory	43.63	176.51	178.78	177.93	178.80	0.000311	0.84	144.72	135.66	0.18
Reach #1	Main Channel F	11200.06	Culvert										
Reach #1	Main Channel F	11173.06	2 Year	2.71	176.33	177.14	176.57	177.15	0.000358	0.43	6.54	23.14	0.16
Reach #1	Main Channel F	11173.06	5 Year	4.47	176.33	177.30	176.67	177.32	0.000518	0.55	8.10	37.03	0.19
Reach #1	Main Channel F	11173.06	10 Year	5.84	176.33	177.38	176.73	177.40	0.000661	0.70	8.91	44.29	0.22
Reach #1	Main Channel F	11173.06	25 Year	7.71	176.33	177.47	176.82	177.50	0.000869	0.84	9.77	51.94	0.26
Reach #1	Main Channel F	11173.06	50 Year	9.21	176.33	177.51	176.87	177.56	0.001084	0.97	10.21	55.86	0.28
Reach #1	Main Channel F	11173.06	100 Year	10.82	176.33	177.55	176.84	177.61	0.001328	1.10	10.61	59.41	0.32
Reach #1	Main Channel F	11173.06	Regulatory	43.63	176.33	178.00	177.78	178.48	0.007107	3.16	15.11	99.46	0.79
Reach #1	Main Channel F	11152.06	2 Year	2.71	176.27	177.08		177.13	0.002780	0.86	3.18	14.38	0.42
Reach #1	Main Channel F	11152.06	5 Year	4.47	176.27	177.22		177.28	0.002879	1.15	6.28	29.24	0.44
Reach #1	Main Channel F	11152.06	10 Year	5.84	176.27	177.30		177.37	0.002878	1.24	8.98	37.66	0.45
Reach #1	Main Channel F	11152.06	25 Year	7.71	176.27	177.40		177.46	0.002719	1.30	13.06	47.66	0.45
Reach #1	Main Channel F	11152.06	50 Year	9.21	176.27	177.44		177.51	0.002996	1.41	15.17	52.08	0.48
Reach #1	Main Channel F	11152.06	100 Year	10.82	176.27	177.48		177.56	0.003185	1.50	17.54	56.63	0.49
Reach #1	Main Channel F	11152.06	Regulatory	43.63	176.27	178.09		178.19	0.003418	2.16	78.86	206.57	0.56
Reach #1	Main Channel F	11016.06	2 Year	2.71	175.50	176.34	176.34	176.46	0.010618	1.88	3.18	14.48	0.71
Reach #1	Main Channel F	11016.06	5 Year	4.47	175.50	176.45	176.45	176.59	0.011352	2.16	5.18	19.13	0.76
Reach #1	Main Channel F	11016.06	10 Year	5.84	175.50	176.52	176.52	176.67	0.012059	2.34	6.51	21.68	0.79
Reach #1	Main Channel F	11016.06	25 Year	7.71	175.50	176.58		176.75	0.014219	2.65	7.82	23.02	0.86
Reach #1	Main Channel F	11016.06	50 Year	9.21	175.50	176.66		176.81	0.011661	2.54	10.05	27.32	0.79
Reach #1	Main Channel F	11016.06	100 Year	10.82	175.50	176.74		176.87	0.010148	2.49	12.30	30.37	0.75

HEC-RAS Plan 0706NS (Continued)

River	Reach	River Sta.	Profile	Q_Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crft W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chrf (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl.
Reach #1	Main Channel F	11016.06	Regulatory	43.63	175.50	177.56		177.64	0.005207	2.59	49.77	61.25	0.59
Reach #1	Main Channel F	10919.06	2 Year	2.71	174.60	175.77		175.80	0.002099	0.94	5.83	14.54	0.34
Reach #1	Main Channel F	10919.06	5 Year	4.47	174.60	175.94		175.97	0.002372	1.14	8.45	17.54	0.38
Reach #1	Main Channel F	10919.06	10 Year	5.84	174.60	176.04		176.08	0.002573	1.27	10.29	19.81	0.40
Reach #1	Main Channel F	10919.06	25 Year	7.71	174.60	176.16		176.21	0.002754	1.41	12.84	23.42	0.42
Reach #1	Main Channel F	10919.06	50 Year	9.21	174.60	176.23		176.29	0.002891	1.51	14.75	25.79	0.44
Reach #1	Main Channel F	10919.06	100 Year	10.82	174.60	176.30		176.36	0.003038	1.61	16.64	27.94	0.45
Reach #1	Main Channel F	10919.06	Regulatory	43.63	174.60	177.07		177.18	0.004218	2.58	47.21	50.52	0.57
Reach #1	Main Channel F	10798.06	2 Year	2.71	174.50	175.17	175.31	0.010902	1.78	2.46	12.54	0.78	
Reach #1	Main Channel F	10798.06	5 Year	4.47	174.50	175.30	175.45	0.010234	2.00	4.41	17.58	0.79	
Reach #1	Main Channel F	10798.06	10 Year	5.84	174.50	175.37	175.63	0.010130	2.14	5.84	20.49	0.80	
Reach #1	Main Channel F	10798.06	25 Year	7.71	174.50	175.45	175.63	0.010710	2.35	7.47	23.37	0.83	
Reach #1	Main Channel F	10798.06	50 Year	9.21	174.50	175.50	175.69	0.010858	2.47	8.80	25.49	0.85	
Reach #1	Main Channel F	10798.06	100 Year	10.82	174.50	175.56	175.75	0.010781	2.58	10.27	27.64	0.85	
Reach #1	Main Channel F	10798.06	Regulatory	43.63	174.50	176.12	176.40	0.012760	3.83	31.68	46.37	1.01	
Reach #1	Main Channel F	10724.06	2 Year	2.71	173.50	174.29	174.26	174.39	0.008029	1.66	3.53	16.23	0.65
Reach #1	Main Channel F	10724.06	5 Year	4.47	173.50	174.40		174.52	0.009112	1.96	5.59	21.06	0.71
Reach #1	Main Channel F	10724.06	10 Year	5.84	173.50	174.46		174.59	0.009698	2.15	6.97	23.76	0.75
Reach #1	Main Channel F	10724.06	25 Year	7.71	173.50	174.54		174.68	0.010100	2.31	8.97	27.18	0.77
Reach #1	Main Channel F	10724.06	50 Year	9.21	173.50	174.59		174.73	0.010546	2.44	10.35	29.31	0.79
Reach #1	Main Channel F	10724.06	100 Year	10.82	173.50	174.65		174.79	0.010411	2.51	12.03	31.71	0.79
Reach #1	Main Channel F	10724.06	Regulatory	43.63	173.50	175.25		175.40	0.009361	3.25	38.34	50.91	0.81
Reach #1	Main Channel F	10606.06	2 Year	2.71	172.50	173.08	173.04	173.24	0.012578	1.80	1.65	7.02	0.84
Reach #1	Main Channel F	10606.06	5 Year	4.47	172.50	173.25	173.25	173.43	0.010250	1.99	3.45	14.74	0.80
Reach #1	Main Channel F	10606.06	10 Year	5.84	172.50	173.34	173.34	173.52	0.009299	2.08	5.04	19.13	0.78
Reach #1	Main Channel F	10606.06	25 Year	7.71	172.50	173.43	173.43	173.63	0.008975	2.21	7.04	23.51	0.78
Reach #1	Main Channel F	10606.06	50 Year	9.21	172.50	173.50	173.69	173.89	0.008663	2.29	8.69	26.80	0.78
Reach #1	Main Channel F	10606.06	100 Year	10.82	172.50	173.56	173.76	173.96	0.008727	2.39	10.24	29.19	0.79
Reach #1	Main Channel F	10606.06	Regulatory	43.63	172.50	174.13	174.40	174.40	0.009850	3.50	34.36	50.65	0.91
Reach #1	Main Channel F	10532.06	2 Year	2.71	171.50	172.30	172.30	172.43	0.008876	1.83	3.10	14.90	0.71
Reach #1	Main Channel F	10532.06	5 Year	4.47	171.50	172.42	172.42	172.56	0.010311	2.09	5.23	20.24	0.75
Reach #1	Main Channel F	10532.06	10 Year	5.84	171.50	172.49	172.49	172.64	0.010686	2.25	6.73	23.26	0.77
Reach #1	Main Channel F	10532.06	25 Year	7.71	171.50	172.56	172.56	172.72	0.011611	2.47	8.42	26.27	0.81
Reach #1	Main Channel F	10532.06	50 Year	9.21	171.50	172.61	172.61	172.76	0.011901	2.59	9.83	28.52	0.83
Reach #1	Main Channel F	10532.06	100 Year	10.82	171.50	172.66	172.66	172.83	0.012259	2.71	11.22	30.60	0.85
Reach #1	Main Channel F	10532.06	Regulatory	43.63	171.50	173.22		173.41	0.012249	3.62	34.81	49.63	0.91
Reach #1	Main Channel F	10466.06	2 Year	2.71	170.50	171.50	171.40	171.55	0.008140	1.42	4.30	16.06	0.60
Reach #1	Main Channel F	10466.06	5 Year	4.47	170.50	171.56	171.51	171.65	0.013335	1.94	5.33	17.84	0.77
Reach #1	Main Channel F	10466.06	10 Year	5.84	170.50	171.63	171.57	171.73	0.013256	2.08	6.88	20.13	0.79
Reach #1	Main Channel F	10466.06	25 Year	7.71	170.50	171.71	171.64	171.82	0.013468	2.24	8.34	22.53	0.81
Reach #1	Main Channel F	10466.06	50 Year	9.21	170.50	171.77	171.69	171.88	0.013222	2.33	9.73	24.36	0.81
Reach #1	Main Channel F	10466.06	100 Year	10.82	170.50	171.83	171.73	171.94	0.012834	2.40	11.22	26.18	0.81
Reach #1	Main Channel F	10466.06	Regulatory	43.63	170.50	172.46	172.24	172.62	0.012209	3.33	31.89	38.04	0.86
Reach #1	Main Channel F	10430.06	2 Year	2.71	170.50	170.89	170.89	171.05	0.018525	1.79	1.52	4.70	1.60
Reach #1	Main Channel F	10430.06	5 Year	4.47	170.50	171.09	171.09	171.20	0.008405	1.58	4.65	30.41	0.72
Reach #1	Main Channel F	10430.06	10 Year	5.84	170.50	171.14	171.14	171.27	0.008526	1.71	6.32	32.46	0.74
Reach #1	Main Channel F	10430.06	25 Year	7.71	170.50	171.20	171.20	171.33	0.008625	1.84	8.36	34.80	0.76
Reach #1	Main Channel F	10430.06	50 Year	9.21	170.50	171.24	171.24	171.38	0.008998	1.96	9.72	36.27	0.78
Reach #1	Main Channel F	10430.06	100 Year	10.82	170.50	171.28	171.28	171.43	0.009497	2.09	10.98	37.59	0.81
Reach #1	Main Channel F	10430.06	Regulatory	43.63	170.50	171.73	172.00	172.00	0.012285	3.33	31.76	54.88	1.00
Reach #1	Main Channel F	10342.06	2 Year	2.71	169.50	170.22		170.23	0.000713	0.55	9.59	37.63	0.22
Reach #1	Main Channel F	10342.06	5 Year	4.47	169.50	170.30		170.32	0.001081	0.73	12.73	41.28	0.28
Reach #1	Main Channel F	10342.06	10 Year	5.84	169.50	170.34		170.37	0.001390	0.86	14.50	42.21	0.32
Reach #1	Main Channel F	10342.06	25 Year	7.71	169.50	170.40		170.43	0.001685	1.00	17.05	45.84	0.35
Reach #1	Main Channel F	10342.06	50 Year	9.21	169.50	170.44		170.47	0.001911	1.10	18.87	47.63	0.38
Reach #1	Main Channel F	10342.06	100 Year	10.82	169.50	170.47		170.52	0.002116	1.18	20.76	48.42	0.40
Reach #1	Main Channel F	10342.06	Regulatory	43.63	169.50	170.92		171.05	0.004629	2.34	47.13	69.74	0.65
Reach #1	Main Channel F	10277.06	2 Year	2.71	169.50	170.10	170.10	170.13	0.012199	1.43	7.10	66.80	0.67
Reach #1	Main Channel F	10277.06	5 Year	4.47	169.50	170.12	170.12	170.17	0.021921	1.84	8.33	67.14	0.69
Reach #1	Main Channel F	10277.06	10 Year	5.84	169.50	170.15	170.15	170.20	0.020201	1.96	10.20	67.68	0.68
Reach #1	Main Channel F	10277.06	25 Year	7.71	169.50	170.16	170.16	170.22	0.025743	2.26	11.33	67.99	0.69
Reach #1	Main Channel F	10277.06	50 Year	9.21	169.50	170.18	170.18	170.25	0.027951	2.40	12.42	68.30	1.04
Reach #1	Main Channel F	10277.06	100 Year	10.82	169.50	170.19	170.19	170.27	0.031081	2.57	13.34	68.65	1.10
Reach #1	Main Channel F	10277.06	Regulatory	43.63	169.50	170.69		170.74	0.008358	2.05	49.99	78.10	0.64
Reach #1	Main Channel F	10252.06	2 Year	2.71	168.50	169.53		169.65	0.002587	1.01	7.58	26.09	0.34
Reach #1	Main Channel F	10252.06	5 Year	4.47	168.50	169.59		169.63	0.004438	1.38	9.28	29.01	0.45
Reach #1	Main Channel F	10252.06	10 Year	5.84	168.50	169.66		169.70	0.004744	1.50	11.32	32.17	0.47
Reach #1	Main Channel F	10252.06	25 Year	7.71	168.50	169.73		169.77	0.005261	1.65	13.65	35.43	0.50
Reach #1	Main Channel F	10252.06	50 Year	9.21	168.50	169.78		169.82	0.005506	1.74	15.55	37.88	0.52
Reach #1	Main Channel F	10252.06	100 Year	10.82	168.50	169.83		169.88	0.005657	1.81	17.54	40.29	0.53
Reach #1	Main Channel F	10252.06	Regulatory	43.63	168.50	170.59		170.63	0.003579	2.00	56.67	58.48	0.46
Reach #1	Main Channel F	10151.06	2 Year	2.71	168.50	168.91	168.90	169.07	0.017418	1.79	1.51	4.41	0.97
Reach #1	Main Channel F	10151.06	5 Year	4.47	168.50	169.10	169.10	169.19	0.006845	1.46	6.72	48.00	0.65
Reach #1	Main Channel F	10151.06	10 Year	5.84	168.50	169.14	169.14	169.23	0.007653	1.61	8.48	48.80	0.70
Reach #1	Main Channel F	10151.06	25 Year	7.71	168.50	169.19	169.19	169.29	0.008054	1.74	10.77	49.84	0.72
Reach #1	Main Channel F	10151.06	50 Year	9.21	168.50	169.21	169.21	169.32	0.008629	1.86	12.23	50.49	0.75

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m³/s)	Min Ch.E. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel.Chmt (m/s)	Flow Area (m²)	Top Width (m)	Froude # Ch#
Reach #1	Main Channel F	10151.06	100 Year	10.82	168.50	169.24	169.24	169.36	0.009301	1.98	13.58	51.08	0.79
Reach #1	Main Channel F	10151.06	Regulatory	43.63	168.50	170.53		170.55	0.000591	1.12	96.13	73.97	0.26
Reach #1	Main Channel F	10100.06	2 Year	2.71	167.50	167.96	167.96	168.14	0.018577	1.92	1.41	3.78	1.00
Reach #1	Main Channel F	10100.06	5 Year	4.47	167.50	168.15	168.15	168.33	0.010723	1.90	3.35	15.79	0.81
Reach #1	Main Channel F	10100.06	10 Year	5.84	167.50	168.24	168.24	168.42	0.009620	1.99	4.98	20.65	0.79
Reach #1	Main Channel F	10100.06	25 Year	7.71	167.50	168.33	168.33	168.51	0.009065	2.10	7.04	25.62	0.78
Reach #1	Main Channel F	10100.06	50 Year	9.21	167.50	168.39	168.39	168.57	0.009033	2.20	8.58	28.77	0.79
Reach #1	Main Channel F	10100.06	100 Year	10.82	167.50	168.45	168.45	168.63	0.008784	2.28	10.32	31.93	0.79
Reach #1	Main Channel F	10100.06	Regulatory	43.63	167.50	170.53		170.53	0.000186	0.76	157.44	91.32	0.14
Reach #1	Main Channel F	10048.06	2 Year	2.71	168.50	167.35		167.41	0.002900	1.16	3.69	12.13	0.43
Reach #1	Main Channel F	10048.06	5 Year	4.47	168.50	167.47		167.57	0.003987	1.50	5.35	15.32	0.52
Reach #1	Main Channel F	10048.06	10 Year	5.84	168.50	167.55		167.68	0.004665	1.71	6.52	17.22	0.57
Reach #1	Main Channel F	10048.06	25 Year	7.71	168.50	167.63		167.77	0.005408	1.95	8.02	19.39	0.62
Reach #1	Main Channel F	10048.06	50 Year	9.21	168.50	167.69		167.85	0.005863	2.11	9.21	20.94	0.65
Reach #1	Main Channel F	10048.06	100 Year	10.82	168.50	167.75		167.92	0.006213	2.26	10.48	22.49	0.68
Reach #1	Main Channel F	10048.06	Regulatory	43.63	168.50	170.51		170.52	0.000203	0.93	121.76	52.38	0.15
Reach #1	Main Channel F	10012.06	2 Year	2.71	166.50	167.15	167.15	167.24	0.009050	1.59	3.69	20.11	0.71
Reach #1	Main Channel F	10012.06	5 Year	4.47	166.50	167.23	167.23	167.34	0.011007	1.93	5.30	21.15	0.80
Reach #1	Main Channel F	10012.06	10 Year	5.84	166.50	167.28	167.28	167.41	0.012000	2.12	6.38	21.82	0.84
Reach #1	Main Channel F	10012.06	25 Year	7.71	166.50	167.34	167.34	167.49	0.013039	2.35	7.70	22.60	0.89
Reach #1	Main Channel F	10012.06	50 Year	9.21	166.50	167.38	167.38	167.54	0.013815	2.51	8.64	23.15	0.93
Reach #1	Main Channel F	10012.06	100 Year	10.82	166.50	167.42	167.42	167.60	0.014727	2.68	9.54	23.66	0.97
Reach #1	Main Channel F	10012.06	Regulatory	43.63	166.50	170.51		170.52	0.000158	0.80	137.83	55.22	0.13
Reach #1	Main Channel F	9948.06	2 Year	2.89	164.78	165.28	165.28	165.46	0.017742	1.90	1.57	5.63	0.97
Reach #1	Main Channel F	9948.06	5 Year	4.78	164.78	165.46	165.46	165.66	0.013142	2.04	3.00	10.71	0.87
Reach #1	Main Channel F	9948.06	10 Year	6.25	164.78	165.55	165.55	165.77	0.012224	2.16	4.17	13.52	0.86
Reach #1	Main Channel F	9948.06	25 Year	8.26	164.78	165.66	165.66	165.89	0.011179	2.29	5.84	17.30	0.84
Reach #1	Main Channel F	9948.06	50 Year	9.89	164.78	165.94		166.04	0.003862	1.66	12.01	27.02	0.52
Reach #1	Main Channel F	9948.06	100 Year	11.52	164.78	166.21		166.25	0.001659	1.27	19.89	30.89	0.35
Reach #1	Main Channel F	9948.06	Regulatory	47.40	164.78	170.51		170.51	0.000036	0.49	233.23	62.40	0.07
Reach #1	Main Channel F	9938.06	2 Year	2.89	164.93	164.61	164.61	164.99	0.002285	1.09	2.65	4.38	0.41
Reach #1	Main Channel F	9938.06	5 Year	4.78	164.93	165.22	164.77	165.31	0.001998	1.28	3.74	4.65	0.41
Reach #1	Main Channel F	9938.06	10 Year	6.25	164.93	165.43	164.88	165.52	0.001840	1.38	4.50	4.84	0.40
Reach #1	Main Channel F	9938.06	25 Year	8.26	164.93	165.68	165.68	165.80	0.001697	1.52	5.45	5.07	0.40
Reach #1	Main Channel F	9938.06	50 Year	9.89	164.93	165.89	165.11	165.91	0.001580	1.59	6.20	5.26	0.39
Reach #1	Main Channel F	9938.06	100 Year	11.62	164.93	166.09	165.22	166.23	0.001483	1.87	6.96	6.76	0.39
Reach #1	Main Channel F	9938.06	Regulatory	47.40	164.93	170.50		170.51	0.000067	0.61	180.65	64.22	0.08
Reach #1	Main Channel F	9920.06	Culvert										
Reach #1	Main Channel F	9903.06	2 Year	2.89	163.68	164.45	164.08	164.50	0.001767	1.01	2.86	5.58	0.37
Reach #1	Main Channel F	9903.06	5 Year	4.78	163.68	164.62	164.23	164.84	0.003642	1.53	3.12	5.74	0.53
Reach #1	Main Channel F	9903.06	10 Year	6.25	163.68	164.81	164.34	164.78	0.004428	1.81	3.45	5.96	0.60
Reach #1	Main Channel F	9903.06	25 Year	8.26	163.68	164.71	164.48	164.95	0.005462	2.15	3.83	6.21	0.68
Reach #1	Main Channel F	9903.06	50 Year	9.89	163.68	164.78	164.58	165.08	0.006254	2.41	4.10	6.38	0.73
Reach #1	Main Channel F	9903.06	100 Year	11.62	163.68	164.81	164.68	165.20	0.007874	2.76	4.22	6.45	0.83
Reach #1	Main Channel F	9903.06	Regulatory	47.40	163.68	166.23		167.50	0.008761	5.00	0.49	42.58	1.00
Reach #1	Main Channel F	9898.06	2 Year	2.89	163.35	164.43		164.49	0.003050	1.07	2.71	4.18	0.42
Reach #1	Main Channel F	9898.06	5 Year	4.78	163.35	164.46		164.63	0.007442	1.69	2.83	4.27	0.66
Reach #1	Main Channel F	9898.06	10 Year	6.25	163.35	164.53		164.73	0.009538	1.98	3.16	4.50	0.76
Reach #1	Main Channel F	9898.06	25 Year	8.26	163.35	164.81		164.63	0.012466	2.35	3.52	4.75	0.87
Reach #1	Main Channel F	9898.06	50 Year	9.89	163.35	164.66		164.83	0.014733	2.62	3.78	4.93	0.95
Reach #1	Main Channel F	9898.06	100 Year	11.62	163.35	164.73		164.93	0.016063	2.81	4.13	5.15	1.00
Reach #1	Main Channel F	9898.06	Regulatory	47.40	163.35	165.67		166.02	0.008186	3.19	31.22	45.13	0.80
Reach #1	Main Channel F	9844.06	2 Year	2.89	163.50	164.00	163.97	164.18	0.015151	1.81	1.59	4.01	0.92
Reach #1	Main Channel F	9844.06	5 Year	4.78	163.50	164.13	164.13	164.20	0.006984	1.48	8.44	55.01	0.85
Reach #1	Main Channel F	9844.06	10 Year	6.25	163.50	164.16	164.16	164.24	0.007841	1.84	10.26	55.61	0.70
Reach #1	Main Channel F	9844.06	25 Year	8.26	163.50	164.20	164.20	164.29	0.008766	1.81	12.42	56.31	0.75
Reach #1	Main Channel F	9844.06	50 Year	9.89	163.50	164.22	164.22	164.32	0.009554	1.94	13.88	56.77	0.79
Reach #1	Main Channel F	9844.06	100 Year	11.82	163.50	164.26	164.24	164.36	0.009576	2.01	15.74	57.36	0.79
Reach #1	Main Channel F	9844.06	Regulatory	47.40	163.50	164.83		164.92	0.005607	2.34	51.40	67.67	0.67
Reach #1	Main Channel F	9779.06	2 Year	2.89	162.50	163.06	163.06	163.23	0.013576	1.83	1.83	9.33	0.88
Reach #1	Main Channel F	9779.06	5 Year	4.78	162.50	163.22	163.22	163.40	0.010328	1.97	3.88	16.08	0.81
Reach #1	Main Channel F	9779.06	10 Year	6.25	162.50	163.31	163.31	163.49	0.009723	2.08	5.41	19.64	0.80
Reach #1	Main Channel F	9779.06	25 Year	8.26	162.50	163.40	163.40	163.59	0.009331	2.23	7.42	23.54	0.80
Reach #1	Main Channel F	9779.06	50 Year	9.89	162.50	163.46	163.46	163.66	0.009265	2.33	8.94	26.10	0.81
Reach #1	Main Channel F	9779.06	100 Year	11.62	162.50	163.52	163.52	163.73	0.009513	2.46	10.36	28.28	0.83
Reach #1	Main Channel F	9779.06	Regulatory	47.40	162.50	164.13		164.42	0.010023	3.68	35.40	49.46	0.93
Reach #1	Main Channel F	9715.06	2 Year	2.89	161.50	162.06	162.06	162.21	0.012012	1.75	2.06	12.06	0.82
Reach #1	Main Channel F	9715.06	5 Year	4.78	161.50	162.20	162.20	162.36	0.010487	1.95	4.04	16.26	0.80
Reach #1	Main Channel F	9715.06	10 Year	6.25	161.50	162.28	162.28	162.46	0.010346	2.10	5.38	18.57	0.81
Reach #1	Main Channel F	9715.06	25 Year	8.26	161.50	162.36	162.36	162.56	0.010440	2.28	7.06	21.12	0.83
Reach #1	Main Channel F	9715.06	50 Year	9.89	161.50	162.42	162.42	162.63	0.010234	2.38	8.46	23.02	0.84
Reach #1	Main Channel F	9715.06	100 Year	11.62	161.50	162.48	162.48	162.70	0.010606	2.52	9.68	24.57	0.86
Reach #1	Main Channel F	9715.06	Regulatory	47.40	161.50	163.13		163.46	0.01060	3.73	31.96	41.50	0.86
Reach #1	Main Channel F	9664.06	2 Year	2.89	160.50	161.34		161.38	0.002315	1.03	5.25	10.30	0.39
Reach #1	Main Channel F	9664.06	5 Year	4.78	160.50	161.44		161.51	0.003245	1.34	7.51	23.77	0.47

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El. (m)	W/S: Elev. (m)	Crit W/S: (m)	E/G: Elev. (m)	E/G: Slope (mm/m)	Vel Chnl. (m/s)	Flow Area (m²)	Top Width (m)	Prods # Chl.
Reach #1	Main Channel F	9664.06	10 Year	6.25	160.50	161.51		161.59	0.003760	1.52	0.14	26.54	0.52
Reach #1	Main Channel F	9664.06	25 Year	8.26	160.50	161.59		161.68	0.004251	1.71	11.37	29.91	0.56
Reach #1	Main Channel F	9664.06	50 Year	9.89	160.50	161.64		161.74	0.004706	1.86	12.87	31.98	0.59
Reach #1	Main Channel F	9664.06	100 Year	11.62	160.50	161.68		161.80	0.005115	1.99	14.43	33.98	0.62
Reach #1	Main Channel F	9664.06	Regulatory	47.40	160.50	162.23		162.46	0.008317	3.36	38.26	48.81	0.85
Reach #1	Main Channel F	9619.06	2 Year	2.89	160.50	161.13	161.13	161.19	0.010733	1.57	5.64	38.25	0.71
Reach #1	Main Channel F	9619.06	5 Year	4.78	160.50	161.18	161.18	161.25	0.013830	1.69	7.51	38.53	0.82
Reach #1	Main Channel F	9619.06	10 Year	6.25	160.50	161.21	161.21	161.29	0.016936	2.11	8.65	38.70	0.89
Reach #1	Main Channel F	9619.06	25 Year	8.26	160.50	161.24	161.24	161.34	0.019524	2.41	9.80	38.87	1.00
Reach #1	Main Channel F	9619.06	50 Year	9.89	160.50	161.27	161.27	161.38	0.019781	2.51	11.03	39.05	1.01
Reach #1	Main Channel F	9619.06	100 Year	11.62	160.50	161.30	161.30	161.41	0.021221	2.67	12.01	39.19	1.06
Reach #1	Main Channel F	9619.06	Regulatory	47.40	160.50	161.78	161.84	161.95	0.018155	3.57	31.60	41.95	1.07
Reach #1	Main Channel F	9514.06	2 Year	2.89	158.50	159.28	159.41	160.00	0.015004	1.91	2.90	12.73	0.91
Reach #1	Main Channel F	9514.06	5 Year	4.78	158.50	159.39	159.39	159.54	0.015085	2.21	4.47	15.67	0.95
Reach #1	Main Channel F	9514.06	10 Year	6.25	158.50	159.46	159.46	159.63	0.016744	2.43	5.51	17.34	0.99
Reach #1	Main Channel F	9514.06	25 Year	8.26	158.50	159.54	159.54	159.73	0.016281	2.61	7.06	19.57	1.00
Reach #1	Main Channel F	9514.06	50 Year	9.89	158.50	159.60	159.60	159.79	0.016331	2.75	8.19	21.05	1.01
Reach #1	Main Channel F	9514.06	100 Year	11.62	158.50	159.84	159.84	159.85	0.016956	2.92	9.23	22.93	1.04
Reach #1	Main Channel F	9514.06	Regulatory	47.40	158.50	160.26	160.61	160.81	0.018072	4.40	27.43	34.78	1.18
Reach #1	Main Channel F	9430.06	2 Year	2.89	157.50	157.98	157.80	158.06	0.006866	1.26	2.29	5.70	0.63
Reach #1	Main Channel F	9430.06	5 Year	4.78	157.50	158.10	158.00	158.23	0.007834	1.59	3.13	8.40	0.70
Reach #1	Main Channel F	9430.06	10 Year	6.25	157.50	158.18	158.08	158.34	0.008172	1.78	3.87	10.40	0.74
Reach #1	Main Channel F	9430.06	25 Year	8.26	157.50	158.27	158.20	158.47	0.008934	2.03	4.82	12.50	0.79
Reach #1	Main Channel F	9430.06	50 Year	9.89	157.50	158.33	158.28	158.56	0.009293	2.20	5.63	14.04	0.81
Reach #1	Main Channel F	9430.06	100 Year	11.62	157.50	158.39	158.36	158.65	0.009568	2.35	6.52	15.55	0.84
Reach #1	Main Channel F	9430.06	Regulatory	47.40	157.50	159.20	159.20	159.63	0.008165	3.46	27.41	34.10	0.87
Reach #1	Main Channel F	9369.06	2 Year	2.89	156.50	157.32	157.32	157.44	0.016150	1.94	3.16	14.68	0.91
Reach #1	Main Channel F	9369.06	5 Year	4.78	156.50	157.43	157.43	157.57	0.015886	2.22	4.89	18.62	0.93
Reach #1	Main Channel F	9369.06	10 Year	6.25	156.50	157.49	157.49	157.65	0.016932	2.44	6.13	20.70	0.98
Reach #1	Main Channel F	9369.06	25 Year	8.26	156.50	157.57	157.57	157.73	0.016525	2.60	7.87	23.52	0.98
Reach #1	Main Channel F	9369.06	50 Year	9.89	156.50	157.62	157.62	157.79	0.017053	2.76	9.03	25.24	1.01
Reach #1	Main Channel F	9369.06	100 Year	11.62	156.50	157.66	157.66	157.85	0.017816	2.93	10.16	26.79	1.04
Reach #1	Main Channel F	9369.06	Regulatory	47.40	156.50	158.27	158.27	158.51	0.018148	3.93	32.34	42.72	1.05
Reach #1	Main Channel F	9304.06	2 Year	2.89	155.50	156.18	156.18	156.32	0.008892	1.69	2.36	9.06	0.72
Reach #1	Main Channel F	9304.06	5 Year	4.78	155.50	156.34	156.30	156.50	0.008666	1.96	4.04	12.36	0.74
Reach #1	Main Channel F	9304.06	10 Year	6.25	155.50	156.43	156.39	156.61	0.008886	2.15	5.21	14.22	0.76
Reach #1	Main Channel F	9304.06	25 Year	8.26	155.50	156.54	156.54	156.74	0.008679	2.31	6.88	16.52	0.77
Reach #1	Main Channel F	9304.06	50 Year	9.89	155.50	156.81	156.81	156.82	0.008937	2.48	8.07	17.98	0.79
Reach #1	Main Channel F	9304.06	100 Year	11.62	155.50	156.68	156.68	156.90	0.008865	2.58	9.37	19.42	0.80
Reach #1	Main Channel F	9304.06	Regulatory	47.40	155.50	157.49	157.49	157.82	0.008911	3.77	31.42	33.47	0.88
Reach #1	Main Channel F	9201.06	2 Year	2.89	154.50	155.19	155.19	155.31	0.010660	1.70	3.20	14.04	0.76
Reach #1	Main Channel F	9201.06	5 Year	4.78	154.50	155.29	155.29	155.45	0.012632	2.16	4.68	15.60	0.85
Reach #1	Main Channel F	9201.06	10 Year	6.25	154.50	155.36	155.36	155.53	0.012833	2.34	5.82	16.70	0.87
Reach #1	Main Channel F	9201.06	25 Year	8.26	154.50	155.44	155.44	155.63	0.014061	2.61	7.06	17.82	0.93
Reach #1	Main Channel F	9201.06	50 Year	9.89	154.50	155.50	155.50	155.70	0.014164	2.74	8.15	18.75	0.94
Reach #1	Main Channel F	9201.06	100 Year	11.62	154.50	155.55	155.55	155.77	0.014599	2.90	9.18	19.58	0.98
Reach #1	Main Channel F	9201.06	Regulatory	47.40	154.50	156.22	156.22	156.62	0.017200	4.53	25.75	28.15	1.15
Reach #1	Main Channel F	9100.06	2 Year	2.89	152.50	153.09	153.02	153.23	0.010175	1.64	1.84	5.85	0.78
Reach #1	Main Channel F	9100.06	5 Year	4.78	152.50	153.22	153.20	153.43	0.011150	2.04	2.62	6.85	0.85
Reach #1	Main Channel F	9100.06	10 Year	6.25	152.50	153.31	153.31	153.55	0.011388	2.26	3.66	10.80	0.88
Reach #1	Main Channel F	9100.06	25 Year	8.26	152.50	153.43	153.43	153.69	0.010338	2.40	5.13	15.53	0.86
Reach #1	Main Channel F	9100.06	50 Year	9.89	152.50	153.51	153.51	153.78	0.009868	2.50	6.31	15.38	0.85
Reach #1	Main Channel F	9100.06	100 Year	11.62	152.50	153.59	153.59	153.87	0.009482	2.60	7.59	17.15	0.86
Reach #1	Main Channel F	9100.06	Regulatory	47.40	152.50	154.40	154.40	154.83	0.009154	3.84	28.18	31.67	0.92
Reach #1	Main Channel F	9029.06	2 Year	2.89	151.40	152.22	152.22	152.33	0.016120	1.76	2.94	14.11	0.86
Reach #1	Main Channel F	9029.06	5 Year	4.78	151.40	152.32	152.32	152.46	0.016682	2.06	4.51	17.25	0.91
Reach #1	Main Channel F	9029.06	10 Year	6.25	151.40	152.38	152.38	152.54	0.016630	2.22	5.70	19.28	0.93
Reach #1	Main Channel F	9029.06	25 Year	8.26	151.40	152.45	152.45	152.63	0.017545	2.45	7.07	21.39	0.97
Reach #1	Main Channel F	9029.06	50 Year	9.89	151.40	152.51	152.51	152.69	0.017032	2.56	8.33	23.17	0.97
Reach #1	Main Channel F	9029.06	100 Year	11.62	151.40	152.66	152.66	152.75	0.017083	2.68	9.53	24.74	0.98
Reach #1	Main Channel F	9029.06	Regulatory	47.40	151.40	153.14	153.14	153.45	0.017574	3.97	29.03	39.83	1.09
Reach #1	Main Channel F	8979.06	2 Year	2.89	150.50	151.25	151.25	151.38	0.011316	1.90	3.08	13.66	0.77
Reach #1	Main Channel F	8979.06	5 Year	4.78	150.50	151.37	151.37	151.52	0.011481	2.17	5.06	17.65	0.80
Reach #1	Main Channel F	8979.06	10 Year	6.25	150.50	151.44	151.44	151.61	0.012405	2.38	6.29	19.72	0.84
Reach #1	Main Channel F	8979.06	25 Year	8.26	150.50	151.52	151.52	151.70	0.012644	2.57	8.05	22.35	0.86
Reach #1	Main Channel F	8979.06	50 Year	9.89	150.50	151.58	151.58	151.76	0.012670	2.70	9.34	24.10	0.88
Reach #1	Main Channel F	8979.06	100 Year	11.62	150.50	151.63	151.63	151.83	0.013524	2.86	10.57	25.66	0.91
Reach #1	Main Channel F	8979.06	Regulatory	47.40	150.50	152.20	152.20	152.50	0.017172	4.34	28.83	39.62	1.10
Reach #1	Main Channel F	8908.06	2 Year	2.89	149.50	150.22	150.21	150.35	0.009472	1.77	2.89	15.38	0.74
Reach #1	Main Channel F	8908.06	5 Year	4.78	149.50	150.35	150.35	150.49	0.009394	2.01	5.36	21.88	0.78
Reach #1	Main Channel F	8908.06	10 Year	6.25	149.50	150.42	150.42	150.57	0.009446	2.15	7.07	25.59	0.77
Reach #1	Main Channel F	8908.06	25 Year	8.26	149.50	150.49	150.49	150.65	0.010194	2.38	8.99	28.17	0.81
Reach #1	Main Channel F	8908.06	50 Year	9.89	149.50	150.54	150.54	150.71	0.010473	2.49	10.55	31.79	0.86
Reach #1	Main Channel F	8908.06	100 Year	11.62	149.50	150.68	150.68	150.77	0.011077	2.64	11.96	33.99	0.86
Reach #1	Main Channel F	8908.06	Regulatory	47.40	149.50	151.13	151.11	151.35	0.012101	3.72	37.57	56.00	0.97
Reach #1	Main Channel F	8795.06	2 Year	2.89	148.50	149.21	149.21	149.33	0.009303	1.74	3.25	18.34	0.72

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Promts # Chl.
Reach #1	Main Channel F	8795.06	5 Year	4.78	148.50	149.32		149.46	0.009377	1.07	5.82	26.03	0.75
Reach #1	Main Channel F	8795.06	10 Year	6.25	148.50	149.39		149.53	0.008104	2.07	7.84	30.74	0.75
Reach #1	Main Channel F	8795.06	25 Year	8.26	148.50	149.47		149.60	0.008878	2.18	10.47	35.95	0.75
Reach #1	Main Channel F	8795.06	50 Year	9.89	148.50	149.50	149.50	149.65	0.010402	2.41	11.52	37.84	0.82
Reach #1	Main Channel F	8795.06	100 Year	11.62	148.50	149.55	149.55	149.70	0.010817	2.52	13.28	40.80	0.83
Reach #1	Main Channel F	8795.06	Regulatory	47.40	148.50	150.04	150.03	150.24	0.012363	3.61	41.44	71.53	0.97
Reach #1	Main Channel F	8805.06	2 Year	2.89	147.50	148.23	148.23	148.31	0.011760	1.76	4.67	27.62	0.73
Reach #1	Main Channel F	8805.06	5 Year	4.78	147.50	148.31	148.31	148.40	0.013678	2.05	6.07	33.83	0.80
Reach #1	Main Channel F	8805.06	10 Year	6.25	147.50	148.35	148.35	148.45	0.015183	2.25	8.45	37.29	0.85
Reach #1	Main Channel F	8805.06	25 Year	8.26	147.50	148.40	148.40	148.51	0.016771	2.47	10.31	41.23	0.91
Reach #1	Main Channel F	8805.06	50 Year	9.89	147.50	148.47	148.47	148.55	0.012468	2.27	13.59	47.37	0.80
Reach #1	Main Channel F	8805.06	100 Year	11.62	147.50	148.55	148.55	148.61	0.009485	2.10	17.40	53.63	0.70
Reach #1	Main Channel F	8805.06	Regulatory	47.40	147.50	148.95		149.06	0.013476	3.20	46.33	87.81	0.89
Reach #1	Main Channel F	8817.06	2 Year	2.89	146.10	146.90		146.98	0.005077	1.29	2.25	3.95	0.54
Reach #1	Main Channel F	8817.06	5 Year	4.78	146.10	147.11		147.23	0.005647	1.53	3.12	4.54	0.59
Reach #1	Main Channel F	8817.06	10 Year	6.25	146.10	147.22		147.37	0.006346	1.71	3.65	4.86	0.63
Reach #1	Main Channel F	8817.06	25 Year	8.26	146.10	147.30		147.51	0.008293	2.03	4.06	5.09	0.73
Reach #1	Main Channel F	8817.06	50 Year	9.89	146.10	147.32		147.61	0.011138	2.38	4.16	5.15	0.84
Reach #1	Main Channel F	8817.06	100 Year	11.62	146.10	147.38	147.32	147.72	0.012753	2.61	4.46	5.31	0.91
Reach #1	Main Channel F	8817.06	Regulatory	47.40	146.10	148.31		148.48	0.004587	2.53	60.56	139.69	0.61
Reach #1	Main Channel F	8809.06	2 Year	2.89	145.61	146.95	145.94	146.96	0.000182	0.40	8.04	40.04	0.11
Reach #1	Main Channel F	8809.06	5 Year	4.78	145.61	147.17	146.06	147.10	0.000281	0.55	9.81	58.28	0.14
Reach #1	Main Channel F	8809.06	10 Year	6.25	145.61	147.30	146.15	147.32	0.000380	0.65	10.81	66.61	0.18
Reach #1	Main Channel F	8809.06	25 Year	8.26	145.61	147.42	146.28	147.45	0.000493	0.80	11.73	78.12	0.19
Reach #1	Main Channel F	8809.06	50 Year	9.89	145.61	147.48	146.34	147.52	0.000623	0.92	12.23	83.27	0.22
Reach #1	Main Channel F	8809.06	100 Year	11.62	145.61	147.57	146.43	147.62	0.000727	1.03	12.63	90.52	0.24
Reach #1	Main Channel F	8809.06	Regulatory	47.40	145.61	148.41	147.57	148.43	0.000369	0.93	160.75	162.60	0.18
Reach #1	Main Channel F	8800.06	Culvert										
Reach #1	Main Channel F	8589.06	2 Year	2.89	145.66	146.91	146.24	146.92	0.000243	0.42	7.07	48.15	0.14
Reach #1	Main Channel F	8589.06	5 Year	4.78	145.66	147.11	146.34	147.13	0.000344	0.57	8.64	70.59	0.17
Reach #1	Main Channel F	8589.06	10 Year	6.25	145.66	147.21	146.41	147.24	0.000437	0.68	9.44	85.94	0.20
Reach #1	Main Channel F	8589.06	25 Year	8.26	145.66	147.28	146.50	147.32	0.000634	0.85	10.00	98.38	0.24
Reach #1	Main Channel F	8589.06	50 Year	9.89	145.66	147.29	146.56	147.34	0.000893	1.01	10.05	97.34	0.28
Reach #1	Main Channel F	8589.06	100 Year	11.62	145.66	147.31	146.62	147.38	0.001162	1.16	10.23	100.81	0.32
Reach #1	Main Channel F	8589.06	Regulatory	47.40	145.66	147.58	147.58	148.38	0.010496	3.05	12.30	140.13	1.00
Reach #1	Main Channel F	8589.06	2 Year	2.89	145.68	146.83		146.89	0.003033	1.06	2.71	4.05	0.41
Reach #1	Main Channel F	8589.06	5 Year	4.78	145.68	146.97	146.66	147.08	0.004875	1.45	3.30	4.35	0.53
Reach #1	Main Channel F	8589.06	10 Year	6.25	145.68	147.04	146.76	147.18	0.006020	1.68	5.61	59.47	0.60
Reach #1	Main Channel F	8589.06	25 Year	8.26	145.68	147.10	146.92	147.25	0.006842	1.88	9.20	67.78	0.64
Reach #1	Main Channel F	8589.06	50 Year	9.89	145.68	147.17	147.17	147.28	0.005162	1.73	14.96	78.37	0.57
Reach #1	Main Channel F	8589.06	100 Year	11.62	145.68	147.21	147.21	147.32	0.005432	1.81	17.72	84.38	0.58
Reach #1	Main Channel F	8589.06	Regulatory	47.40	145.68	147.84	147.52	147.73	0.005507	2.33	67.93	148.19	0.62
Reach #1	Main Channel F	8389.06	2 Year	2.89	145.40	146.08	146.08	146.13	0.006816	1.32	8.26	83.17	0.59
Reach #1	Main Channel F	8389.06	5 Year	4.78	145.40	146.14		146.17	0.005424	1.27	14.23	98.33	0.64
Reach #1	Main Channel F	8389.06	10 Year	6.25	145.40	146.18		146.21	0.004970	1.27	18.16	103.17	0.52
Reach #1	Main Channel F	8389.06	25 Year	8.26	145.40	146.23		146.25	0.004730	1.30	22.70	107.53	0.51
Reach #1	Main Channel F	8389.06	50 Year	9.89	145.40	146.26		146.28	0.004628	1.33	26.19	110.63	0.51
Reach #1	Main Channel F	8389.06	100 Year	11.62	145.40	146.29		146.31	0.004550	1.36	29.62	113.66	0.51
Reach #1	Main Channel F	8389.06	Regulatory	47.40	145.40	146.58		146.63	0.007704	2.21	66.92	142.54	0.70
Reach #1	Main Channel F	8244.06	2 Year	2.89	144.40	145.10	145.10	145.14	0.008241	1.34	8.37	77.44	0.57
Reach #1	Main Channel F	8244.06	5 Year	4.78	144.40	145.13	145.13	145.18	0.012091	1.73	10.35	78.38	0.73
Reach #1	Main Channel F	8244.06	10 Year	6.25	144.40	145.15	145.15	145.20	0.015728	1.94	11.76	79.04	0.80
Reach #1	Main Channel F	8244.06	25 Year	8.26	144.40	145.17	145.17	145.23	0.018435	2.15	13.56	78.68	0.87
Reach #1	Main Channel F	8244.06	50 Year	9.89	144.40	145.19	145.19	145.25	0.020116	2.29	14.92	80.90	0.92
Reach #1	Main Channel F	8244.06	100 Year	11.62	144.40	145.20	145.20	145.27	0.021765	2.42	16.23	81.10	0.98
Reach #1	Main Channel F	8244.06	Regulatory	47.40	144.40	145.67		145.71	0.007852	2.09	60.06	121.41	0.63
Reach #1	Main Channel F	8178.06	2 Year	3.12	143.40	144.53		144.53	0.000853	0.60	17.28	52.52	0.20
Reach #1	Main Channel F	8178.06	5 Year	5.17	143.40	144.64		144.64	0.000964	0.68	24.99	75.54	0.21
Reach #1	Main Channel F	8178.06	10 Year	6.77	143.40	144.71		144.71	0.000994	0.72	30.66	83.83	0.22
Reach #1	Main Channel F	8178.06	25 Year	8.97	143.40	144.79		144.80	0.001023	0.77	37.90	93.35	0.22
Reach #1	Main Channel F	8178.06	50 Year	10.74	143.40	144.85		144.85	0.001056	0.80	43.13	99.65	0.23
Reach #1	Main Channel F	8178.06	100 Year	12.64	143.40	144.90		144.91	0.001073	0.83	48.68	105.95	0.23
Reach #1	Main Channel F	8178.06	Regulatory	52.21	143.40	145.57		145.58	0.001030	1.08	146.52	182.90	0.24
Reach #1	Main Channel F	8025.06	2 Year	3.12	143.40	144.15	144.15	144.23	0.009722	1.65	5.01	28.67	0.68
Reach #1	Main Channel F	8025.06	5 Year	5.17	143.40	144.22	144.22	144.31	0.011653	1.95	7.06	29.24	0.76
Reach #1	Main Channel F	8025.06	10 Year	6.77	143.40	144.26	144.26	144.36	0.013284	2.16	8.24	29.39	0.82
Reach #1	Main Channel F	8025.06	25 Year	8.97	143.40	144.30	144.30	144.43	0.015969	2.46	9.46	29.54	0.91
Reach #1	Main Channel F	8025.06	50 Year	10.74	143.40	144.34	144.34	144.48	0.016406	2.59	10.63	29.69	0.93
Reach #1	Main Channel F	8025.06	100 Year	12.64	143.40	144.37	144.37	144.52	0.017602	2.75	11.64	29.82	0.97
Reach #1	Main Channel F	8025.06	Regulatory	52.21	143.40	144.97	144.83	145.22	0.016961	3.90	30.24	32.07	1.04
Reach #1	Main Channel F	7912.08	2 Year	3.12	142.40	143.36		143.40	0.001716	0.93	6.07	23.49	0.33
Reach #1	Main Channel F	7912.08	5 Year	5.17	142.40	143.47		143.52	0.002474	1.22	9.72	28.15	0.41
Reach #1	Main Channel F	7912.08	10 Year	6.77	142.40	143.53		143.59	0.003008	1.40	11.51	30.82	0.45
Reach #1	Main Channel F	7912.08	25 Year	8.97	142.40	143.60		143.68	0.003585	1.60	13.87	34.01	0.50
Reach #1	Main Channel F	7912.08	50 Year	10.74	142.40	143.65		143.74	0.004007	1.75	15.58	36.15	0.53
Reach #1	Main Channel F	7912.08	100 Year	12.64	142.40	143.70		143.79	0.004437	1.89	17.28	38.15	0.56

HEC-RAS Plant 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	EG Slope (m/m)	Vel Chnf. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl.
Reach #1	Main Channel F	7912.08	Regulatory	52.21	142.40	144.23		144.45	0.008579	3.39	43.15	55.28	0.83
Reach #1	Main Channel F	7829.08	2 Year	3.12	142.40	143.10	143.10	143.15	0.006555	1.35	7.07	71.95	0.59
Reach #1	Main Channel F	7829.08	5 Year	5.17	142.40	143.15	143.14	143.20	0.007355	1.52	11.70	72.48	0.63
Reach #1	Main Channel F	7829.08	10 Year	6.77	142.40	143.19	143.16	143.23	0.006960	1.54	14.67	72.89	0.62
Reach #1	Main Channel F	7829.08	25 Year	8.97	142.40	143.23	143.19	143.28	0.007008	1.62	17.92	73.34	0.63
Reach #1	Main Channel F	7829.08	50 Year	10.74	142.40	143.27	143.21	143.31	0.006922	1.66	20.40	73.68	0.63
Reach #1	Main Channel F	7829.08	100 Year	12.64	142.40	143.30	143.23	143.34	0.006851	1.71	22.87	74.02	0.63
Reach #1	Main Channel F	7829.08	Regulatory	52.21	142.40	143.85		143.00	0.004735	2.05	64.99	79.58	0.58
Reach #1	Main Channel F	7666.08	2 Year	3.37	141.40	142.15	142.11	142.19	0.004510	1.20	8.00	47.62	0.50
Reach #1	Main Channel F	7666.08	5 Year	5.58	141.40	142.21	142.17	142.26	0.005749	1.46	11.04	48.25	0.57
Reach #1	Main Channel F	7666.08	10 Year	7.32	141.40	142.26	142.21	142.31	0.005983	1.56	13.37	48.73	0.59
Reach #1	Main Channel F	7666.08	25 Year	9.70	141.40	142.32		142.38	0.005804	1.63	16.61	49.38	0.59
Reach #1	Main Channel F	7666.08	50 Year	11.62	141.40	142.37		142.42	0.005769	1.69	18.89	49.85	0.60
Reach #1	Main Channel F	7666.08	100 Year	13.67	141.40	142.42		142.47	0.005718	1.74	21.24	50.31	0.60
Reach #1	Main Channel F	7666.08	Regulatory	57.07	141.40	142.97		143.08	0.007444	2.77	50.69	55.85	0.74
Reach #1	Main Channel F	7540.08	2 Year	3.37	140.40	141.02	141.02	141.25	0.017602	2.11	1.61	4.65	1.00
Reach #1	Main Channel F	7540.08	5 Year	5.58	140.40	141.26	141.26	141.45	0.009308	2.04	4.40	18.30	0.78
Reach #1	Main Channel F	7540.08	10 Year	7.32	140.40	141.37	141.37	141.55	0.008323	2.11	6.60	24.13	0.75
Reach #1	Main Channel F	7540.08	25 Year	9.70	140.40	141.46	141.46	141.68	0.008256	2.27	9.16	29.52	0.76
Reach #1	Main Channel F	7540.08	50 Year	11.62	140.40	141.53	141.53	141.73	0.008089	2.36	11.30	33.31	0.78
Reach #1	Main Channel F	7540.08	100 Year	13.67	140.40	141.59	141.59	141.79	0.008116	2.46	13.38	36.65	0.77
Reach #1	Main Channel F	7540.08	Regulatory	57.07	140.40	142.30		142.49	0.006496	3.11	51.07	61.42	0.75
Reach #1	Main Channel F	7368.08	2 Year	3.37	139.40	140.37		140.42	0.001753	0.96	5.64	17.94	0.35
Reach #1	Main Channel F	7368.08	5 Year	5.58	139.40	140.47		140.55	0.002835	1.35	7.84	21.81	0.45
Reach #1	Main Channel F	7368.08	10 Year	7.32	139.40	140.55		140.65	0.003270	1.54	9.50	24.88	0.49
Reach #1	Main Channel F	7368.08	25 Year	9.70	139.40	140.64		140.75	0.003878	1.76	11.70	28.07	0.54
Reach #1	Main Channel F	7368.08	50 Year	11.62	139.40	140.70		140.83	0.004196	1.90	13.53	30.47	0.57
Reach #1	Main Channel F	7368.08	100 Year	13.67	139.40	140.90		140.98	0.002539	1.65	20.34	38.10	0.45
Reach #1	Main Channel F	7368.08	Regulatory	57.07	139.40	141.82		142.01	0.002096	2.18	66.93	50.57	0.45
Reach #1	Main Channel F	7300.08	2 Year	3.37	139.40	139.91	139.87	140.08	0.014501	1.83	1.84	4.38	0.80
Reach #1	Main Channel F	7300.08	5 Year	5.58	139.40	140.12	140.12	140.21	0.006461	1.54	8.17	51.93	0.63
Reach #1	Main Channel F	7300.08	10 Year	7.32	139.40	140.16	140.16	140.26	0.007252	1.71	10.28	52.41	0.68
Reach #1	Main Channel F	7300.08	25 Year	9.70	139.40	140.21	140.21	140.32	0.007736	1.86	13.02	53.02	0.71
Reach #1	Main Channel F	7300.08	50 Year	11.62	139.40	140.24	140.24	140.36	0.008300	1.99	14.77	53.41	0.74
Reach #1	Main Channel F	7300.08	100 Year	13.67	139.40	140.89	140.89	140.90	0.000376	0.65	51.93	61.11	0.18
Reach #1	Main Channel F	7300.08	Regulatory	57.07	139.40	141.89		141.91	0.000614	1.19	125.17	86.90	0.25
Reach #1	Main Channel F	7234.08	2 Year	3.37	138.40	138.35		139.43	0.006995	1.62	5.09	21.74	0.58
Reach #1	Main Channel F	7234.08	5 Year	5.58	138.40	139.42	139.42	139.55	0.011135	2.16	6.74	25.41	0.74
Reach #1	Main Channel F	7234.08	10 Year	7.32	138.40	139.48	139.48	139.62	0.011817	2.33	8.51	28.84	0.77
Reach #1	Main Channel F	7234.08	25 Year	9.70	138.40	139.55	139.55	139.70	0.013219	2.58	10.50	32.27	0.82
Reach #1	Main Channel F	7234.08	50 Year	11.62	138.40	140.08		140.09	0.001092	0.98	34.81	57.07	0.25
Reach #1	Main Channel F	7234.08	100 Year	13.67	138.40	140.88		140.89	0.000109	0.41	89.83	78.06	0.09
Reach #1	Main Channel F	7234.08	Regulatory	57.07	138.40	141.88		141.89	0.000249	0.79	193.34	118.43	0.14
Reach #1	Main Channel F	7137.08	2 Year	3.37	137.40	138.37	138.37	138.48	0.014863	2.04	4.26	19.59	0.73
Reach #1	Main Channel F	7137.08	5 Year	5.58	137.40	138.58		138.62	0.008138	1.75	8.92	29.13	0.56
Reach #1	Main Channel F	7137.08	10 Year	7.32	137.40	138.98		138.99	0.001073	0.80	25.82	50.15	0.22
Reach #1	Main Channel F	7137.08	25 Year	9.70	137.40	139.55		139.55	0.000161	0.41	55.31	54.88	0.09
Reach #1	Main Channel F	7137.08	50 Year	11.62	137.40	140.07		140.07	0.000073	0.31	84.95	61.67	0.06
Reach #1	Main Channel F	7137.08	100 Year	13.67	137.40	140.88		140.88	0.000027	0.22	152.59	104.49	0.04
Reach #1	Main Channel F	7137.08	Regulatory	57.07	137.40	141.87		141.87	0.000118	0.56	288.55	172.63	0.09
Reach #1	Main Channel F	7065.08	2 Year	3.37	136.67	138.03		138.04	0.000261	0.47	8.98	13.72	0.15
Reach #1	Main Channel F	7065.08	5 Year	5.58	136.67	138.57		138.58	0.001035	0.45	23.40	39.63	0.11
Reach #1	Main Channel F	7065.08	10 Year	7.32	136.67	138.97		138.98	0.000077	0.39	43.33	59.02	0.09
Reach #1	Main Channel F	7065.08	25 Year	9.70	136.67	139.54		139.54	0.000034	0.31	78.83	65.24	0.08
Reach #1	Main Channel F	7065.08	50 Year	11.62	136.67	140.06		140.07	0.000019	0.26	114.34	75.64	0.05
Reach #1	Main Channel F	7065.08	100 Year	13.67	136.67	140.88		140.88	0.000008	0.20	208.09	154.23	0.03
Reach #1	Main Channel F	7065.08	Regulatory	57.07	136.67	141.86		141.87	0.000042	0.52	464.46	346.09	0.08
Reach #1	Main Channel F	7045.08	2 Year	3.37	136.78	138.01	137.26	138.03	0.000433	0.63	5.47	17.70	0.19
Reach #1	Main Channel F	7045.08	5 Year	5.58	136.78	138.55	137.41	138.57	0.000322	0.71	8.15	46.28	0.17
Reach #1	Main Channel F	7045.08	10 Year	7.32	136.78	138.95	137.52	138.98	0.000269	0.74	10.14	67.61	0.17
Reach #1	Main Channel F	7045.08	25 Year	9.70	136.78	139.51	137.65	139.54	0.000210	0.77	12.96	150.03	0.15
Reach #1	Main Channel F	7045.08	50 Year	11.62	136.78	140.03	137.74	140.06	0.000164	0.77	15.57	163.22	0.14
Reach #1	Main Channel F	7045.08	100 Year	13.67	136.78	140.85	137.84	140.88	0.000105	0.72	19.66	214.78	0.12
Reach #1	Main Channel F	7045.08	Regulatory	57.07	136.78	141.87	140.27	141.59	0.014633	5.26	12.70	57.60	0.94
Reach #1	Main Channel F	7035.08	Culvert										
Reach #1	Main Channel F	7027.08	2 Year	3.37	136.72	137.36	137.36	137.65	0.022636	2.40	1.40	2.40	1.00
Reach #1	Main Channel F	7027.08	5 Year	5.58	136.72	137.60	137.60	138.00	0.023060	2.78	2.00	2.55	1.00
Reach #1	Main Channel F	7027.08	10 Year	7.32	136.72	137.77	137.77	138.23	0.023162	3.00	2.44	2.65	1.00
Reach #1	Main Channel F	7027.08	25 Year	9.70	136.72	137.97	137.97	138.51	0.023627	3.25	2.98	2.78	1.00
Reach #1	Main Channel F	7027.08	50 Year	11.62	136.72	138.12	138.12	138.71	0.022968	3.41	3.41	2.91	1.00
Reach #1	Main Channel F	7027.08	100 Year	13.67	136.72	138.27	138.27	138.91	0.022477	3.57	3.85	3.06	1.00
Reach #1	Main Channel F	7027.08	Regulatory	57.07	136.72	140.27	140.27	141.59	0.014633	5.26	12.70	57.60	0.94
Reach #1	Main Channel F	7025.08	2 Year	3.68	136.30	137.03		137.04	0.000674	0.54	6.01	11.39	0.22
Reach #1	Main Channel F	7025.08	5 Year	6.10	136.30	137.24		137.26	0.000696	0.66	9.32	11.50	0.23
Reach #1	Main Channel F	7025.08	10 Year	8.00	136.30	137.36		137.39	0.000762	0.76	10.70	11.56	0.25

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q.Total (m3/s)	Min Ch.E. (m)	W.S. Elev. (m)	Crit.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chnl
Reach #1	Main Channel F	7025.08	25 Year	10.61	136.30	137.50		137.54	0.000826	0.87	12.41	11.64	0.27
Reach #1	Main Channel F	7025.08	50 Year	12.71	136.30	137.61		137.65	0.000877	0.95	13.61	11.69	0.28
Reach #1	Main Channel F	7025.08	100 Year	14.97	136.30	137.70		137.76	0.000937	1.04	14.75	11.74	0.29
Reach #1	Main Channel F	7025.08	Regulatory	63.14	136.30	139.71		139.78	0.000438	1.32	110.56	123.20	0.23
Reach #1	Main Channel E	6900.21	2 Year	3.84	136.40	137.03		137.04	0.000488	0.44	9.28	17.60	0.18
Reach #1	Main Channel E	6900.21	5 Year	6.39	136.40	137.24		137.26	0.000468	0.53	13.06	17.91	0.19
Reach #1	Main Channel E	6900.21	10 Year	8.38	136.40	137.36		137.38	0.000494	0.60	15.25	18.09	0.20
Reach #1	Main Channel E	6900.21	25 Year	11.11	136.40	137.52		137.54	0.000520	0.68	17.98	18.32	0.21
Reach #1	Main Channel E	6900.21	50 Year	13.32	136.40	137.62		137.65	0.000541	0.74	19.93	18.47	0.22
Reach #1	Main Channel E	6900.21	100 Year	15.68	136.40	137.72		137.75	0.000569	0.80	21.78	18.62	0.23
Reach #1	Main Channel E	6900.21	Regulatory	66.10	136.40	139.71		139.78	0.000385	1.25	69.84	31.86	0.22
Reach #1	Main Channel E	6905.21	2 Year	3.84	136.05	137.03	136.24	137.04	0.000085	0.24	15.82	17.60	0.08
Reach #1	Main Channel E	6905.21	5 Year	6.39	136.05	137.25	136.31	137.25	0.000117	0.33	19.61	17.92	0.10
Reach #1	Main Channel E	6905.21	10 Year	8.38	136.05	137.37	136.37	137.38	0.000143	0.39	21.82	18.10	0.11
Reach #1	Main Channel E	6905.21	25 Year	11.11	136.05	137.52	136.43	137.53	0.000172	0.46	24.58	18.33	0.12
Reach #1	Main Channel E	6905.21	50 Year	13.32	136.05	137.63	136.48	137.64	0.000193	0.51	26.55	18.48	0.13
Reach #1	Main Channel E	6905.21	100 Year	15.68	136.05	137.73	136.53	137.75	0.000216	0.56	28.41	19.63	0.14
Reach #1	Main Channel E	6905.21	Regulatory	66.10	136.05	139.72	137.26	139.77	0.000243	1.02	76.74	31.87	0.17
Reach #1	Main Channel E	6970.21	Culvert										
Reach #1	Main Channel E	6981.21	2 Year	3.84	135.98	137.03		137.03	0.000072	0.23	16.51	17.11	0.07
Reach #1	Main Channel E	6981.21	5 Year	6.39	135.98	137.23		137.24	0.000105	0.32	20.12	17.82	0.09
Reach #1	Main Channel E	6981.21	10 Year	8.38	135.98	137.35		137.36	0.000132	0.38	22.22	18.22	0.11
Reach #1	Main Channel E	6981.21	25 Year	11.11	135.98	137.49		137.50	0.000165	0.46	24.81	18.70	0.12
Reach #1	Main Channel E	6981.21	50 Year	13.32	135.98	137.58		137.60	0.000193	0.52	26.53	19.02	0.13
Reach #1	Main Channel E	6981.21	100 Year	15.68	135.98	137.66		137.68	0.000226	0.56	28.07	19.29	0.14
Reach #1	Main Channel E	6981.21	Regulatory	66.10	135.98	138.29		138.44	0.001316	1.73	41.08	22.53	0.37
Reach #1	Main Channel E	6956.21	2 Year	3.84	135.98	137.03		137.03	0.000070	0.25	16.49	17.10	0.08
Reach #1	Main Channel E	6956.21	5 Year	6.39	135.98	137.23		137.24	0.000106	0.35	20.09	17.81	0.10
Reach #1	Main Channel E	6956.21	10 Year	8.38	135.98	137.35		137.36	0.000135	0.41	22.18	18.21	0.11
Reach #1	Main Channel E	6956.21	25 Year	11.11	135.98	137.49		137.50	0.000172	0.50	24.76	18.69	0.13
Reach #1	Main Channel E	6956.21	50 Year	13.32	135.98	137.58		137.59	0.000203	0.56	26.46	19.00	0.14
Reach #1	Main Channel E	6956.21	100 Year	15.68	135.98	137.66		137.68	0.000238	0.63	27.08	19.28	0.15
Reach #1	Main Channel E	6956.21	Regulatory	66.10	135.98	138.24		138.43	0.001533	1.94	39.97	22.18	0.41
Reach #1	Main Channel D	6931.21	2 Year	4.07	136.00	136.85		137.02	0.003297	1.21	3.37	4.62	0.45
Reach #1	Main Channel D	6931.21	5 Year	6.78	136.00	137.09	136.80	137.23	0.004956	1.64	4.94	16.80	0.57
Reach #1	Main Channel D	6931.21	10 Year	8.89	136.00	137.15	136.93	137.34	0.006384	1.95	6.10	20.24	0.65
Reach #1	Main Channel D	6931.21	25 Year	11.80	136.00	137.21	137.21	137.47	0.008813	2.38	7.25	23.06	0.77
Reach #1	Main Channel D	6931.21	50 Year	14.14	136.00	137.31	137.31	137.57	0.008060	2.43	9.81	28.37	0.75
Reach #1	Main Channel D	6931.21	100 Year	16.65	136.00	137.40	137.40	137.65	0.007576	2.48	12.52	33.06	0.74
Reach #1	Main Channel D	6931.21	Regulatory	64.43	136.00	138.13		139.42	0.007282	3.37	50.53	66.09	0.78
Reach #1	Main Channel D	6924.21	2 Year	4.52	135.40	136.40	136.37	136.50	0.007021	1.85	6.27	26.02	0.64
Reach #1	Main Channel D	6924.21	5 Year	7.54	135.40	136.59		136.66	0.005723	1.80	12.23	37.53	0.56
Reach #1	Main Channel D	6924.21	10 Year	9.91	135.40	136.71		136.77	0.004339	1.69	17.70	45.62	0.50
Reach #1	Main Channel D	6924.21	25 Year	13.15	135.40	136.88		136.92	0.003067	1.58	26.19	55.89	0.43
Reach #1	Main Channel D	6924.21	50 Year	15.77	135.40	137.03		137.05	0.002172	1.49	34.88	63.58	0.37
Reach #1	Main Channel D	6924.21	100 Year	18.57	135.40	137.19		137.21	0.001393	1.21	45.66	66.44	0.30
Reach #1	Main Channel D	6924.21	Regulatory	72.36	135.40	137.98		138.00	0.002088	1.80	101.57	79.62	0.39
Reach #1	Main Channel D	6725.21	2 Year	4.94	134.28	135.14	135.14	135.47	0.014354	2.58	2.18	4.07	0.98
Reach #1	Main Channel D	6725.21	5 Year	8.26	134.28	135.43	135.43	135.85	0.012214	2.97	3.53	5.17	0.93
Reach #1	Main Channel D	6725.21	10 Year	10.85	134.28	135.62	135.62	136.10	0.011571	3.22	4.53	5.88	0.93
Reach #1	Main Channel D	6725.21	25 Year	14.41	134.28	135.85	135.85	136.38	0.010531	3.45	6.00	6.74	0.92
Reach #1	Main Channel D	6725.21	50 Year	17.27	134.28	135.95	135.85	136.59	0.011874	3.83	6.66	7.10	0.98
Reach #1	Main Channel D	6725.21	100 Year	20.35	134.28	135.99	135.99	136.82	0.014780	4.35	6.98	7.28	1.10
Reach #1	Main Channel D	6725.21	Regulatory	79.71	134.28	137.84		137.88	0.000884	1.88	147.15	110.95	0.32
Reach #1	Main Channel D	6700.21	Culvert										
Reach #1	Main Channel D	6679.21	2 Year	4.94	134.39	135.27	134.79	135.34	0.000741	0.67	7.41	19.17	0.24
Reach #1	Main Channel D	6679.21	5 Year	8.26	134.39	135.48	134.95	135.54	0.001801	1.09	7.57	7.83	0.35
Reach #1	Main Channel D	6679.21	10 Year	10.85	134.39	135.59	135.06	135.67	0.002242	1.28	8.48	8.01	0.40
Reach #1	Main Channel D	6679.21	25 Year	14.41	134.39	135.71	135.19	135.83	0.002878	1.53	9.43	8.20	0.45
Reach #1	Main Channel D	6679.21	50 Year	17.27	134.39	135.78	135.29	135.83	0.003434	1.72	10.05	8.82	0.50
Reach #1	Main Channel D	6679.21	100 Year	20.35	134.39	135.85	135.39	136.04	0.004070	1.82	10.61	8.42	0.55
Reach #1	Main Channel D	6679.21	Regulatory	79.71	134.39	136.69	136.69	137.68	0.011588	4.46	18.11	49.67	0.99
Reach #1	Main Channel D	6654.21	2 Year	4.94	133.80	135.27		135.28	0.000397	0.57	9.08	9.41	0.18
Reach #1	Main Channel D	6654.21	5 Year	8.26	133.80	135.47		135.50	0.000615	0.79	11.16	11.39	0.23
Reach #1	Main Channel D	6654.21	10 Year	10.85	133.80	135.58		135.62	0.000794	0.95	12.47	12.49	0.26
Reach #1	Main Channel D	6654.21	25 Year	14.41	133.80	135.70		135.76	0.001049	1.16	14.01	13.66	0.30
Reach #1	Main Channel D	6654.21	50 Year	17.27	133.80	135.77		135.85	0.001270	1.32	15.04	14.39	0.34
Reach #1	Main Channel D	6654.21	100 Year	20.35	133.80	135.83		135.94	0.001523	1.48	15.09	15.04	0.37

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch El (m)	W.S. Elev (m)	Crft.W.S. (m)	E.G. Elev. (m)	E.G. Slope (mm/m)	Vel Chnt (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chnt
Reach #1	Main Channel D	6654.21	Regulatory	85.39	133.80	136.58	136.58	137.12	0.005342	3.58	46.30	60.04	0.74
Reach #1	Main Channel D	6597.21	2 Year	5.46	134.40	135.13	134.89	135.21	0.004077	1.31	5.16	19.66	0.51
Reach #1	Main Channel D	6597.21	5 Year	9.18	134.40	135.29	135.13	135.40	0.004664	1.61	9.19	31.75	0.57
Reach #1	Main Channel D	6597.21	10 Year	12.06	134.40	135.37	135.27	135.51	0.006030	1.79	12.25	38.47	0.60
Reach #1	Main Channel D	6597.21	25 Year	16.03	134.40	135.49	135.39	135.63	0.004870	1.81	17.30	47.54	0.61
Reach #1	Main Channel D	6597.21	50 Year	19.22	134.40	135.57	135.49	135.71	0.004795	1.09	21.26	53.59	0.61
Reach #1	Main Channel D	6597.21	100 Year	22.64	134.40	135.65	135.59	135.79	0.004658	2.06	25.63	59.55	0.61
Reach #1	Main Channel D	6597.21	Regulatory	64.88	134.40	136.45		136.61	0.004222	2.77	91.80	92.90	0.63
Reach #1	Main Channel D	6400.21	2 Year	6.31	133.40	134.34		134.44	0.009852	1.96	8.75	33.38	0.70
Reach #1	Main Channel D	6400.21	5 Year	10.60	133.40	134.47		134.57	0.009798	2.17	13.94	41.45	0.72
Reach #1	Main Channel D	6400.21	10 Year	13.83	133.40	134.56		134.66	0.009457	2.27	17.70	46.65	0.72
Reach #1	Main Channel D	6400.21	25 Year	18.52	133.40	134.63		134.74	0.011169	2.57	20.93	50.58	0.79
Reach #1	Main Channel D	6400.21	50 Year	22.21	133.40	134.67		134.80	0.012314	2.76	23.34	53.34	0.84
Reach #1	Main Channel D	6400.21	100 Year	26.17	133.40	134.71		134.86	0.013904	3.02	25.39	55.57	0.89
Reach #1	Main Channel D	6400.21	Regulatory	109.50	133.40	135.22		135.54	0.025350	5.18	60.32	79.07	1.28
Reach #1	Main Channel D	6340.21	2 Year	6.31	132.40	133.22	133.34		0.007223	1.77	7.85	43.74	0.68
Reach #1	Main Channel D	6340.21	5 Year	10.60	132.40	133.34	133.34	133.47	0.007376	2.00	14.48	62.53	0.70
Reach #1	Main Channel D	6340.21	10 Year	13.93	132.40	133.40	133.40	133.54	0.007827	2.16	18.78	72.15	0.73
Reach #1	Main Channel D	6340.21	25 Year	18.52	132.40	133.50	133.48	133.62	0.006929	2.18	25.50	86.76	0.70
Reach #1	Main Channel D	6340.21	50 Year	22.21	132.40	133.57	133.52	133.68	0.006426	2.19	32.60	96.76	0.68
Reach #1	Main Channel D	6340.21	100 Year	26.17	132.40	133.64		133.73	0.005847	2.18	39.52	106.99	0.66
Reach #1	Main Channel D	6340.21	Regulatory	109.50	132.40	134.50		134.54	0.002214	1.97	176.06	188.58	0.45
Reach #1	Main Channel D	6207.21	2 Year	7.13	131.40	132.22	132.18	132.34	0.006905	1.75	7.44	27.60	0.68
Reach #1	Main Channel D	6207.21	5 Year	11.98	131.40	132.37	132.33	132.52	0.007200	2.05	12.12	33.27	0.72
Reach #1	Main Channel D	6207.21	10 Year	15.76	131.40	132.49	132.42	132.64	0.006567	2.14	16.18	37.32	0.71
Reach #1	Main Channel D	6207.21	25 Year	20.97	131.40	132.60	132.54	132.76	0.006623	2.32	20.74	41.39	0.72
Reach #1	Main Channel D	6207.21	50 Year	25.15	131.40	132.68		132.86	0.006570	2.43	24.35	44.34	0.73
Reach #1	Main Channel D	6207.21	100 Year	29.63	131.40	132.76		132.94	0.006692	2.56	27.78	48.98	0.74
Reach #1	Main Channel D	6207.21	Regulatory	123.62	131.40	133.53	133.51	133.96	0.011009	4.58	77.83	85.90	1.03
Reach #1	Main Channel D	6084.21	2 Year	7.65	130.40	131.20	131.20	131.29	0.011094	1.97	12.09	56.77	0.78
Reach #1	Main Channel D	6084.21	5 Year	12.87	130.40	131.29	131.27	131.38	0.012603	2.27	17.00	58.80	0.85
Reach #1	Main Channel D	6084.21	10 Year	16.93	130.40	131.32	131.32	131.44	0.016368	2.66	18.84	59.68	0.88
Reach #1	Main Channel D	6084.21	25 Year	22.52	130.40	131.37	131.37	131.51	0.016406	2.96	22.07	61.03	1.05
Reach #1	Main Channel D	6084.21	50 Year	27.02	130.40	131.41	131.41	131.57	0.020503	3.21	24.18	61.80	1.11
Reach #1	Main Channel D	6084.21	100 Year	31.84	130.40	131.45	131.45	131.62	0.021384	3.38	26.71	62.91	1.14
Reach #1	Main Channel D	6084.21	Regulatory	132.94	130.40	132.19	131.88	132.41	0.014913	4.24	80.39	79.77	1.06
Reach #1	Main Channel D	5977.21	2 Year	8.10	128.40	130.28	130.28	130.39	0.015378	2.33	10.09	40.05	0.87
Reach #1	Main Channel D	5977.21	5 Year	13.64	129.40	130.39		130.51	0.016527	2.65	14.77	45.28	0.93
Reach #1	Main Channel D	5977.21	10 Year	17.94	129.40	130.52		130.60	0.011547	2.44	20.90	51.34	0.78
Reach #1	Main Channel D	5977.21	25 Year	23.88	129.40	130.65		130.73	0.009284	2.38	28.19	57.73	0.73
Reach #1	Main Channel D	5977.21	50 Year	28.65	129.40	130.74		130.82	0.008344	2.38	33.69	62.11	0.70
Reach #1	Main Channel D	5977.21	100 Year	33.76	129.40	130.83		130.90	0.007665	2.39	39.58	66.49	0.67
Reach #1	Main Channel D	5977.21	Regulatory	140.88	129.40	131.81		131.91	0.005445	2.96	125.35	107.40	0.63
Reach #1	Main Channel D	5970.21	2 Year	8.10	128.40	129.85		129.87	0.001703	1.11	20.85	42.13	0.31
Reach #1	Main Channel D	5970.21	5 Year	13.64	128.40	130.07		130.09	0.001869	1.28	30.98	52.26	0.33
Reach #1	Main Channel D	5970.21	10 Year	17.94	128.40	130.17		130.20	0.002120	1.43	36.90	58.08	0.36
Reach #1	Main Channel D	5970.21	25 Year	23.88	128.40	130.30		130.33	0.002337	1.57	44.74	65.00	0.38
Reach #1	Main Channel D	5970.21	50 Year	28.65	128.40	130.40		130.43	0.002414	1.66	51.14	70.14	0.39
Reach #1	Main Channel D	5970.21	100 Year	33.76	128.40	130.51		130.55	0.002274	1.67	59.77	76.53	0.38
Reach #1	Main Channel D	5970.21	Regulatory	140.88	128.40	131.43		131.50	0.003735	2.78	153.59	130.72	0.52
Reach #1	Main Channel D	5794.21	2 Year	8.87	128.40	129.42	129.42	129.58	0.011243	2.38	9.46	29.34	0.82
Reach #1	Main Channel D	5794.21	5 Year	14.96	128.40	129.56		129.76	0.013800	2.81	13.81	35.30	0.92
Reach #1	Main Channel D	5794.21	10 Year	19.68	128.40	129.70		129.87	0.011325	2.87	19.07	41.38	0.86
Reach #1	Main Channel D	5794.21	25 Year	26.20	128.40	129.89		130.02	0.008199	2.70	27.75	49.81	0.76
Reach #1	Main Channel D	5794.21	50 Year	31.43	128.40	130.09		130.12	0.007554	2.73	33.34	54.55	0.73
Reach #1	Main Channel D	5794.21	100 Year	37.04	128.40	130.29		130.24	0.008334	2.99	41.08	66.74	0.77
Reach #1	Main Channel D	5794.21	Regulatory	154.45	128.40	131.07		131.17	0.005127	3.27	157.85	154.73	0.66
Reach #1	Main Channel D	5703.23	2 Year	8.87	127.40	128.55	128.42	128.68	0.006217	2.01	8.51	16.19	0.64
Reach #1	Main Channel D	5703.23	5 Year	14.96	127.40	128.82	128.63	128.98	0.005850	2.30	13.37	19.13	0.65
Reach #1	Main Channel D	5703.23	10 Year	19.68	127.40	128.98	128.76	129.16	0.005890	2.50	16.62	20.67	0.67
Reach #1	Main Channel D	5703.23	25 Year	26.20	127.40	129.20	128.91	129.40	0.005947	2.75	23.08	39.88	0.69
Reach #1	Main Channel D	5703.23	50 Year	31.43	127.40	129.34	129.00	129.54	0.005655	2.84	29.67	52.68	0.68
Reach #1	Main Channel D	5703.23	100 Year	37.04	127.40	129.48	129.18	129.66	0.005166	2.85	37.77	64.89	0.66
Reach #1	Main Channel D	5703.23	Regulatory	154.45	127.40	130.79	130.20	130.87	0.002429	2.76	192.93	166.21	0.49
Reach #1	Main Channel D	5607.23	2 Year	8.87	126.40	127.63	127.63	127.93	0.010204	2.68	5.57	11.61	0.82
Reach #1	Main Channel D	5607.23	5 Year	14.96	126.40	127.93	127.83	128.27	0.009630	3.07	9.63	15.00	0.83
Reach #1	Main Channel D	5607.23	10 Year	19.68	126.40	128.10	128.10	128.46	0.009316	3.26	12.61	18.01	0.83
Reach #1	Main Channel D	5607.23	25 Year	26.20	126.40	128.27	128.27	128.67	0.009772	3.58	15.88	19.78	0.87
Reach #1	Main Channel D	5607.23	50 Year	31.43	126.40	128.40	128.38	128.83	0.009872	3.79	18.41	21.06	0.89
Reach #1	Main Channel D	5607.23	100 Year	37.04	126.40	128.51	128.51	128.97	0.010277	4.01	20.00	22.24	0.91
Reach #1	Main Channel D	5607.23	Regulatory	154.45	126.40	129.98	129.98	130.45	0.008329	5.22	107.66	171.48	0.90
Reach #1	Main Channel D	5520.23	2 Year	8.87	124.73	125.82	125.82	126.11	0.014956	2.41	3.84	7.09	0.97
Reach #1	Main Channel D	5520.23	5 Year	14.96	124.73	126.08	126.08	126.44	0.013722	2.67	6.11	9.48	0.97
Reach #1	Main Channel D	5520.23	10 Year	19.68	124.73	126.23	126.23	126.65	0.012736	2.00	7.59	10.12	0.97
Reach #1	Main Channel D	5520.23	25 Year	26.20	124.73	126.42	126.42	126.81	0.012045	3.18	9.50	10.88	0.97
Reach #1	Main Channel D	5520.23	50 Year	31.43	124.73	126.55	126.55	127.10	0.011594	3.37	10.00	11.45	0.97

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m²)	Top Width (m)	Froude # Chl
Reach #1	Main Channel D	5520.23	100 Year	37.04	124.73	126.69	126.68	127.28	0.011120	3.54	12.60	12.03	0.97
Reach #1	Main Channel D	5520.23	Regulatory	154.45	124.73	128.81	128.81	129.61	0.005357	4.59	67.87	59.58	0.78
Reach #1	Main Channel D	5510.23	2 Year	8.87	124.85	125.67	125.36	125.74	0.002730	1.23	7.50	10.47	0.45
Reach #1	Main Channel D	5510.23	5 Year	14.96	124.85	125.98	125.55	126.09	0.002388	1.45	10.88	10.90	0.45
Reach #1	Main Channel D	5510.23	10 Year	19.68	124.85	128.20	125.87	126.33	0.002224	1.59	13.26	11.20	0.45
Reach #1	Main Channel D	5510.23	25 Year	26.20	124.85	126.47	125.83	126.62	0.002060	1.74	16.37	11.57	0.44
Reach #1	Main Channel D	5510.23	50 Year	31.43	124.85	126.68	125.95	126.84	0.001960	1.84	18.74	11.84	0.44
Reach #1	Main Channel D	5510.23	100 Year	37.04	124.85	126.88	126.06	127.07	0.001868	1.93	21.21	12.12	0.44
Reach #1	Main Channel D	5510.23	Regulatory	154.45	124.85	128.19	127.86	129.27	0.005684	4.73	37.82	28.50	0.83
Reach #1	Main Channel D	5471.23	Culvert										
Reach #1	Main Channel D	5432.23	2 Year	8.87	124.08	124.93	124.61	125.00	0.002524	1.18	8.13	14.28	0.43
Reach #1	Main Channel D	5432.23	5 Year	14.96	124.08	125.15	124.79	125.26	0.003040	1.54	10.60	15.77	0.50
Reach #1	Main Channel D	5432.23	10 Year	19.68	124.08	125.27	124.91	125.43	0.003467	1.79	12.03	16.63	0.54
Reach #1	Main Channel D	5432.23	25 Year	26.20	124.08	125.42	125.05	125.63	0.004102	2.10	13.65	17.60	0.60
Reach #1	Main Channel D	5432.23	50 Year	31.43	124.08	125.51	125.17	125.78	0.004589	2.34	14.75	18.25	0.64
Reach #1	Main Channel D	5432.23	100 Year	37.04	124.08	125.59	125.28	125.92	0.005292	2.60	15.62	18.77	0.70
Reach #1	Main Channel D	5432.23	Regulatory	154.45	124.08	127.02	127.02	128.38	0.008751	5.33	32.88	27.12	1.01
Reach #1	Main Channel D	5414.23	2 Year	8.87	124.00	124.85		124.93	0.003615	1.38	8.82	17.48	0.52
Reach #1	Main Channel D	5414.23	5 Year	14.96	124.00	125.07		125.19	0.003909	1.71	13.07	21.62	0.56
Reach #1	Main Channel D	5414.23	10 Year	19.68	124.00	125.20		125.36	0.004144	1.92	16.15	24.75	0.59
Reach #1	Main Channel D	5414.23	25 Year	26.20	124.00	125.34		125.54	0.004556	2.19	19.90	28.11	0.63
Reach #1	Main Channel D	5414.23	50 Year	31.43	124.00	125.44		125.67	0.004791	2.37	22.86	30.50	0.66
Reach #1	Main Channel D	5414.23	100 Year	37.04	124.00	125.52		125.78	0.005295	2.58	25.30	32.33	0.70
Reach #1	Main Channel D	5414.23	Regulatory	154.45	124.00	126.55		127.24	0.008390	4.71	68.78	47.69	0.66
Reach #1	Main Channel D	5354.23	2 Year	8.87	123.40	124.38	124.38	124.59	0.009847	2.32	6.45	18.53	0.82
Reach #1	Main Channel D	5354.23	5 Year	14.96	123.40	124.58	124.58	124.84	0.009263	2.64	11.35	25.42	0.83
Reach #1	Main Channel D	5354.23	10 Year	19.68	123.40	124.70	124.70	124.99	0.009480	2.88	14.65	29.15	0.85
Reach #1	Main Channel D	5354.23	25 Year	26.20	123.40	124.85	124.85	125.15	0.009357	3.09	19.30	33.71	0.86
Reach #1	Main Channel D	5354.23	50 Year	31.43	123.40	124.94	124.94	125.27	0.009656	3.20	22.49	38.52	0.89
Reach #1	Main Channel D	5354.23	100 Year	37.04	123.40	125.05	125.05	125.37	0.009203	3.37	26.59	39.40	0.88
Reach #1	Main Channel D	5354.23	Regulatory	154.45	123.40	126.16	126.00	126.85	0.009852	5.03	84.02	67.72	0.89
Reach #1	Main Channel D	5266.23	2 Year	8.87	122.40	123.23		123.34	0.004434	1.51	7.40	21.16	0.56
Reach #1	Main Channel D	5266.23	5 Year	14.96	122.40	123.52		123.63	0.003200	1.60	15.70	35.67	0.51
Reach #1	Main Channel D	5266.23	10 Year	19.68	122.40	123.65		123.77	0.003260	1.75	20.76	42.14	0.52
Reach #1	Main Channel D	5266.23	25 Year	26.20	122.40	123.76		123.91	0.003859	2.02	25.53	47.43	0.57
Reach #1	Main Channel D	5266.23	50 Year	31.43	122.40	123.85		124.02	0.003903	2.14	30.46	52.35	0.59
Reach #1	Main Channel D	5266.23	100 Year	37.04	122.40	123.95		124.13	0.003888	2.24	35.86	57.25	0.59
Reach #1	Main Channel D	5266.23	Regulatory	154.45	122.40	126.30		126.37	0.000734	1.84	249.48	152.64	0.30
Reach #1	Main Channel D	5218.23	2 Year	8.87	122.00	122.81		123.07	0.006713	2.01	7.03	14.83	0.72
Reach #1	Main Channel D	5218.23	5 Year	14.96	122.00	123.14		123.39	0.007377	2.50	11.79	29.39	0.78
Reach #1	Main Channel D	5218.23	10 Year	19.68	122.00	123.31		123.55	0.006284	2.56	18.13	44.81	0.74
Reach #1	Main Channel D	5218.23	25 Year	26.20	122.00	123.55		123.72	0.004202	2.36	31.30	66.25	0.63
Reach #1	Main Channel D	5218.23	50 Year	31.43	122.00	123.71		123.84	0.003305	2.24	42.70	80.31	0.56
Reach #1	Main Channel D	5218.23	100 Year	37.04	122.00	123.84		123.95	0.002681	2.19	53.81	91.98	0.53
Reach #1	Main Channel D	5218.23	Regulatory	154.45	122.00	126.31		126.33	0.000390	1.46	407.52	268.88	0.23
Reach #1	Main Channel D	5177.23	2 Year	8.87	121.40	122.45	122.45	122.71	0.011465	2.57	6.85	12.95	0.85
Reach #1	Main Channel D	5177.23	5 Year	14.96	121.40	122.70	122.70	123.02	0.011604	3.01	9.46	15.08	0.88
Reach #1	Main Channel D	5177.23	10 Year	19.68	121.40	122.84	122.84	123.20	0.011670	3.27	11.09	17.81	0.91
Reach #1	Main Channel D	5177.23	25 Year	26.20	121.40	122.99	122.99	123.42	0.012982	3.70	14.66	19.58	0.97
Reach #1	Main Channel D	5177.23	50 Year	31.43	121.40	123.13	123.13	123.58	0.012436	3.85	17.66	22.29	0.97
Reach #1	Main Channel D	5177.23	100 Year	37.04	121.40	123.43		123.75	0.007902	3.44	25.17	28.12	0.79
Reach #1	Main Channel D	5177.23	Regulatory	154.45	121.40	126.20		126.30	0.001388	2.62	180.64	91.31	0.39
Reach #1	Main Channel D	5166.23	2 Year	8.87	120.63	121.97	121.24	122.01	0.001181	0.88	9.04	7.74	0.29
Reach #1	Main Channel D	5166.23	5 Year	14.96	120.63	122.30	121.48	122.38	0.001541	1.28	11.75	9.13	0.34
Reach #1	Main Channel D	5166.23	10 Year	19.68	120.63	122.57	121.64	122.67	0.001574	1.42	14.00	10.34	0.35
Reach #1	Main Channel D	5166.23	25 Year	26.20	120.63	122.93	121.84	123.05	0.001524	1.55	17.14	11.98	0.35
Reach #1	Main Channel D	5166.23	50 Year	31.43	120.63	123.23	121.99	123.38	0.001400	1.62	19.72	15.69	0.34
Reach #1	Main Channel D	5166.23	100 Year	37.04	120.63	123.53	122.13	123.68	0.001276	1.68	22.42	20.31	0.33
Reach #1	Main Channel D	5166.23	Regulatory	154.45	120.63	126.08	124.16	126.28	0.001020	2.37	146.54	80.66	0.33
Reach #1	Main Channel D	5150.23	Culvert										
Reach #1	Main Channel D	5140.23	2 Year	8.87	120.81	121.81	121.41	121.80	0.002075	1.33	6.66	7.48	0.45
Reach #1	Main Channel D	5140.23	5 Year	14.96	120.81	121.95	121.65	122.14	0.005847	1.95	7.68	7.71	0.62
Reach #1	Main Channel D	5140.23	10 Year	19.68	120.81	122.05	121.81	122.32	0.007017	2.32	8.53	23.99	0.71
Reach #1	Main Channel D	5140.23	25 Year	26.20	120.81	122.15	122.01	122.55	0.009351	2.83	9.38	25.46	0.83
Reach #1	Main Channel D	5140.23	50 Year	31.43	120.81	122.20	122.18	122.74	0.011535	3.24	9.86	26.30	0.93
Reach #1	Main Channel D	5140.23	100 Year	37.04	120.81	122.29	122.28	122.93	0.012595	3.55	10.67	27.70	0.98
Reach #1	Main Channel D	5140.23	Regulatory	154.45	120.81	124.32	124.32	125.84	0.009511	5.72	28.47	57.38	1.00
Reach #1	Main Channel D	5128.23	2 Year	8.87	120.50	121.68		121.82	0.009238	2.16	8.21	20.39	0.76
Reach #1	Main Channel D	5128.23	5 Year	14.96	120.50	121.86		122.05	0.010007	2.52	12.75	26.06	0.81
Reach #1	Main Channel D	5128.23	10 Year	19.68	120.50	121.98		122.19	0.010015	2.73	16.16	29.52	0.83
Reach #1	Main Channel D	5128.23	25 Year	26.20	120.50	122.13		122.35	0.009247	2.86	20.76	31.27	0.81
Reach #1	Main Channel D	5128.23	50 Year	31.43	120.50	122.24		122.46	0.008823	2.95	24.20	32.30	0.80
Reach #1	Main Channel D	5128.23	100 Year	37.04	120.50	122.36		122.57	0.008263	3.01	27.98	33.40	0.79
Reach #1	Main Channel D	5128.23	Regulatory	154.45	120.50	123.79		124.12	0.006628	4.23	84.98	45.82	0.79

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit. W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chs. (m/s)	Flow/Area (m²)	Top Width (m)	Froude # Ch.
Reach #1	Main Channel D	5068.23	2 Year	8.87	120.30	120.92	120.68	121.15	0.013990	2.15	4.12	7.80	0.94
Reach #1	Main Channel D	5068.23	5 Year	14.96	120.30	121.16	121.16	121.43	0.010806	2.38	7.63	19.38	0.88
Reach #1	Main Channel D	5068.23	10 Year	19.68	120.30	121.28	121.28	121.59	0.010236	2.57	10.19	21.33	0.88
Reach #1	Main Channel D	5068.23	25 Year	26.20	120.30	121.43	121.43	121.78	0.009843	2.79	13.47	23.59	0.88
Reach #1	Main Channel D	5068.23	50 Year	31.43	120.30	121.53	121.53	121.91	0.009572	2.94	16.04	25.21	0.88
Reach #1	Main Channel D	5068.23	100 Year	37.04	120.30	121.63	121.63	122.04	0.009629	3.11	18.48	26.67	0.90
Reach #1	Main Channel D	5068.23	Regulatory	154.45	120.30	122.87	122.87	123.64	0.009060	4.81	62.34	43.20	0.98
Reach #1	Main Channel D	4992.23	2 Year	8.87	119.30	119.82	119.81	120.04	0.015255	2.07	4.28	9.25	0.97
Reach #1	Main Channel D	4992.23	5 Year	14.96	119.30	120.01	120.32	120.49	0.014658	2.44	6.14	12.26	1.00
Reach #1	Main Channel D	4992.23	10 Year	19.68	119.30	120.15	120.49	120.82	0.012365	2.58	8.16	15.88	0.95
Reach #1	Main Channel D	4992.23	25 Year	26.20	119.30	120.32	120.70	120.70	0.010882	2.76	11.11	20.03	0.92
Reach #1	Main Channel D	4992.23	50 Year	31.43	119.30	120.44	120.84	120.97	0.010037	2.87	13.65	23.02	0.90
Reach #1	Main Channel D	4992.23	100 Year	37.04	119.30	120.55	120.97	120.97	0.009495	2.99	16.37	25.82	0.89
Reach #1	Main Channel D	4992.23	Regulatory	154.45	119.30	121.82	121.82	122.53	0.007717	4.43	66.77	51.25	0.91
Reach #1	Main Channel D	4908.23	2 Year	8.87	118.30	118.98	118.86	119.13	0.008094	1.73	5.11	8.90	0.73
Reach #1	Main Channel D	4908.23	5 Year	14.96	118.30	119.15	119.15	119.33	0.007468	1.98	12.33	46.55	0.73
Reach #1	Main Channel D	4908.23	10 Year	19.68	118.30	119.25	119.24	119.43	0.007220	2.11	16.76	47.27	0.73
Reach #1	Main Channel D	4908.23	25 Year	26.20	118.30	119.39	119.33	119.56	0.005890	2.12	23.73	48.37	0.68
Reach #1	Main Channel D	4908.23	50 Year	31.43	118.30	119.43	119.39	119.64	0.007091	2.38	25.56	48.68	0.75
Reach #1	Main Channel D	4908.23	100 Year	37.04	118.30	119.48	119.45	119.72	0.007912	2.60	27.93	49.03	0.80
Reach #1	Main Channel D	4908.23	Regulatory	154.45	118.30	120.58	120.94	120.94	0.006207	3.69	86.15	56.07	0.80
Reach #1	Main Channel D	4822.23	2 Year	8.87	117.30	118.18	118.18	118.38	0.008899	2.07	6.85	24.46	0.78
Reach #1	Main Channel D	4822.23	5 Year	14.96	117.30	118.38	118.38	118.59	0.009154	2.43	11.57	29.30	0.82
Reach #1	Main Channel D	4822.23	10 Year	19.68	117.30	118.47	118.47	118.72	0.009219	2.63	14.93	32.30	0.84
Reach #1	Main Channel D	4822.23	25 Year	26.20	117.30	118.56	118.56	118.88	0.010769	3.01	18.04	34.85	0.82
Reach #1	Main Channel D	4822.23	50 Year	31.43	117.30	118.72	118.72	118.98	0.008112	2.86	24.01	39.28	0.81
Reach #1	Main Channel D	4822.23	100 Year	37.04	117.30	118.88	118.88	119.11	0.006392	2.75	30.65	43.68	0.74
Reach #1	Main Channel D	4822.23	Regulatory	154.45	117.30	119.86	119.86	120.32	0.008769	4.57	78.30	51.66	0.84
Reach #1	Main Channel D	4738.23	2 Year	8.87	115.30	116.56	116.56	116.67	0.012388	2.62	3.86	6.24	0.89
Reach #1	Main Channel D	4739.23	5 Year	14.96	115.30	116.95	116.95	117.43	0.010643	3.31	6.75	8.74	0.87
Reach #1	Main Channel D	4739.23	10 Year	19.68	115.30	117.17	117.17	117.70	0.010184	3.57	8.90	10.20	0.87
Reach #1	Main Channel D	4739.23	25 Year	26.20	115.30	117.44	117.44	118.02	0.009672	3.83	11.88	11.92	0.87
Reach #1	Main Channel D	4739.23	50 Year	31.43	115.30	117.62	117.62	118.24	0.009549	4.04	14.11	13.07	0.88
Reach #1	Main Channel D	4739.23	100 Year	37.04	115.30	117.79	117.79	118.44	0.009436	4.23	16.46	14.18	0.88
Reach #1	Main Channel D	4739.23	Regulatory	154.45	115.30	119.30	119.30	119.73	0.006514	4.90	105.47	87.41	0.80
Reach #1	Main Channel D	4665.23	2 Year	8.87	114.30	115.38	115.25	115.55	0.005384	1.87	7.30	16.05	0.82
Reach #1	Main Channel D	4665.23	5 Year	14.96	114.30	115.71	115.50	115.87	0.004262	2.03	13.32	21.57	0.58
Reach #1	Main Channel D	4665.23	10 Year	19.68	114.30	116.90	116.64	116.07	0.003917	2.14	17.77	24.87	0.57
Reach #1	Main Channel D	4665.23	25 Year	26.20	114.30	116.12	115.81	116.29	0.003532	2.23	25.52	46.31	0.56
Reach #1	Main Channel D	4665.23	50 Year	31.43	114.30	116.28	115.92	116.43	0.003146	2.24	33.18	53.46	0.53
Reach #1	Main Channel D	4665.23	100 Year	37.04	114.30	116.42	116.11	116.56	0.002855	2.24	41.46	60.23	0.51
Reach #1	Main Channel D	4665.23	Regulatory	154.45	114.30	119.53	117.12	119.55	0.000213	1.16	381.68	133.57	0.16
Reach #1	Main Channel D	4604.23	2 Year	8.87	113.30	114.73	114.73	115.07	0.011360	2.65	5.15	9.32	0.82
Reach #1	Main Channel D	4604.23	5 Year	14.96	113.30	115.04	115.04	115.45	0.011448	3.34	8.69	12.65	0.85
Reach #1	Main Channel D	4604.23	10 Year	19.68	113.30	115.25	115.25	115.67	0.011027	3.55	11.45	15.43	0.85
Reach #1	Main Channel D	4604.23	25 Year	26.20	113.30	115.47	115.47	115.91	0.010666	3.79	15.28	18.50	0.85
Reach #1	Main Channel D	4604.23	50 Year	31.43	113.30	115.62	115.62	116.07	0.010785	3.98	18.04	20.42	0.87
Reach #1	Main Channel D	4604.23	100 Year	37.04	113.30	115.75	115.75	116.22	0.010872	4.16	20.88	22.24	0.88
Reach #1	Main Channel D	4604.23	Regulatory	154.45	113.30	119.46	119.46	119.52	0.000827	2.19	221.07	105.93	0.29
Reach #1	Main Channel D	4576.23	Cuvert										
Reach #1	Main Channel D	4594.23	2 Year	8.87	112.43	114.57	113.03	114.59	0.000212	0.58	15.85	9.42	0.13
Reach #1	Main Channel D	4594.23	5 Year	14.96	112.43	114.84	113.27	114.87	0.000403	0.83	18.10	9.87	0.18
Reach #1	Main Channel D	4594.23	10 Year	19.68	112.43	115.04	113.43	115.03	0.000524	0.98	19.85	10.38	0.21
Reach #1	Main Channel D	4594.23	25 Year	26.20	112.43	115.33	113.63	115.40	0.000629	1.17	22.37	11.97	0.23
Reach #1	Main Channel D	4594.23	50 Year	31.43	112.43	115.57	113.77	115.66	0.000673	1.29	24.50	13.31	0.24
Reach #1	Main Channel D	4594.23	100 Year	37.04	112.43	115.84	113.91	115.94	0.000688	1.38	26.88	14.82	0.25
Reach #1	Main Channel D	4594.23	Regulatory	154.45	112.43	119.40	115.95	119.51	0.000407	1.72	196.12	101.51	0.22
Reach #1	Main Channel D	4576.23	Cuvert										
Reach #1	Main Channel D	4556.23	2 Year	8.87	112.31	114.48	112.92	114.50	0.000252	0.59	15.01	8.24	0.13
Reach #1	Main Channel D	4556.23	5 Year	14.96	112.31	114.63	113.18	114.67	0.000579	0.93	16.08	8.40	0.20
Reach #1	Main Channel D	4556.23	10 Year	19.68	112.31	114.71	113.33	114.78	0.000894	1.18	16.70	8.49	0.25
Reach #1	Main Channel D	4556.23	25 Year	26.20	112.31	114.79	113.53	114.90	0.001426	1.52	17.28	8.58	0.32
Reach #1	Main Channel D	4556.23	50 Year	31.43	112.31	114.83	113.69	114.39	0.001943	1.79	17.60	8.63	0.37
Reach #1	Main Channel D	4556.23	100 Year	37.04	112.31	114.86	113.83	115.08	0.002605	2.08	17.81	8.66	0.43
Reach #1	Main Channel D	4556.23	Regulatory	154.45	112.31	116.00	117.73	117.73	0.012273	5.83	26.75	61.58	0.99
Reach #1	Main Channel D	4535.23	2 Year	8.87	113.30	114.32	114.32	114.45	0.011700	2.23	10.20	34.84	0.78
Reach #1	Main Channel D	4535.23	5 Year	14.96	113.30	114.44	114.44	114.60	0.013897	2.66	14.76	39.89	0.87
Reach #1	Main Channel D	4535.23	10 Year	19.68	113.30	114.51	114.51	114.69	0.016834	2.98	17.52	42.68	0.94
Reach #1	Main Channel D	4535.23	25 Year	26.20	113.30	114.60	114.60	114.80	0.016644	3.23	21.62	46.47	0.98
Reach #1	Main Channel D	4535.23	50 Year	31.43	113.30	114.66	114.66	114.88	0.017582	3.44	24.48	49.93	1.01
Reach #1	Main Channel D	4535.23	100 Year	37.04	113.30	114.72	114.72	114.95	0.018263	3.62	27.45	51.40	1.04
Reach #1	Main Channel D	4535.23	Regulatory	154.45	113.30	115.77	115.77	116.98	0.009731	3.99	94.12	68.38	0.84
Reach #1	Main Channel D	4474.23	2 Year	8.87	111.30	112.48	112.48	112.75	0.009372	2.48	5.95	15.12	0.79
Reach #1	Main Channel D	4474.23	5 Year	14.96	111.30	112.75	112.75	113.04	0.008687	2.80	10.89	21.83	0.79
Reach #1	Main Channel D	4474.23	10 Year	19.68	111.30	112.90	112.90	113.20	0.008721	3.01	14.32	25.48	0.81
Reach #1	Main Channel D	4474.23	25 Year	26.20	111.30	113.03	113.03	113.39	0.008804	3.39	17.84	29.20	0.87
Reach #1	Main Channel D	4474.23	50 Year										

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m³/s)	Min Ch El (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel.Chr. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Ch#
Reach #1	Main Channel D	4474.23	100 Year	37.04	111.30	113.28	113.28	113.64	0.009054	3.60	26.48	38.91	0.66
Reach #1	Main Channel D	4474.23	Regulatory	154.45	111.30	115.74	114.32	115.80	0.01048	2.17	185.90	72.97	0.34
Reach #1	Main Channel D	4422.23	2 Year	8.87	110.30	111.49		111.74	0.007114	2.25	4.83	7.99	0.70
Reach #1	Main Channel D	4422.23	5 Year	14.96	110.30	111.68	111.68	112.13	0.010582	3.07	6.53	9.70	0.88
Reach #1	Main Channel D	4422.23	10 Year	19.68	110.30	111.90	111.90	112.38	0.009569	3.26	8.88	11.64	0.86
Reach #1	Main Channel D	4422.23	25 Year	26.20	110.30	112.13	112.13	112.69	0.009850	3.60	11.87	15.82	0.89
Reach #1	Main Channel D	4422.23	50 Year	31.43	110.30	112.37	112.37	112.88	0.007900	3.56	16.33	21.87	0.82
Reach #1	Main Channel D	4422.23	100 Year	37.04	110.30	112.54	112.54	113.05	0.007350	3.64	20.45	26.25	0.80
Reach #1	Main Channel D	4422.23	Regulatory	154.45	110.30	115.63		115.75	0.01055	2.53	156.15	54.38	0.35
Reach #1	Main Channel D	4372.23	2 Year	8.87	110.30	111.21	111.21	111.32	0.007507	1.87	12.45	53.19	0.70
Reach #1	Main Channel D	4372.23	5 Year	14.96	110.30	111.31	111.31	111.45	0.009278	2.26	17.02	56.68	0.79
Reach #1	Main Channel D	4372.23	10 Year	19.68	110.30	111.37	111.37	111.52	0.010541	2.52	21.26	56.68	0.86
Reach #1	Main Channel D	4372.23	25 Year	26.20	110.30	111.44	111.44	111.62	0.011526	2.78	25.71	61.27	0.91
Reach #1	Main Channel D	4372.23	50 Year	31.43	110.30	111.49	111.49	111.68	0.012386	2.98	28.79	63.00	0.95
Reach #1	Main Channel D	4372.23	100 Year	37.04	110.30	111.54	111.54	111.75	0.013117	3.17	31.91	64.71	0.98
Reach #1	Main Channel D	4372.23	Regulatory	154.45	110.30	115.69		115.70	0.000124	0.89	414.59	102.78	0.12
Reach #1	Main Channel D	4264.23	2 Year	8.87	108.30	109.31	109.31	109.54	0.009221	2.28	6.31	19.27	0.79
Reach #1	Main Channel D	4264.23	5 Year	14.96	108.30	109.54	109.54	109.79	0.008581	2.57	11.64	27.75	0.80
Reach #1	Main Channel D	4264.23	10 Year	19.68	108.30	109.67	109.67	109.94	0.008544	2.77	15.43	32.46	0.81
Reach #1	Main Channel D	4264.23	25 Year	26.20	108.30	109.80	109.80	110.08	0.008901	3.03	20.02	37.38	0.84
Reach #1	Main Channel D	4264.23	50 Year	31.43	108.30	109.90	109.90	110.20	0.008811	3.16	23.82	41.11	0.85
Reach #1	Main Channel D	4264.23	100 Year	37.04	108.30	109.98	109.98	110.30	0.009259	3.36	27.25	44.03	0.88
Reach #1	Main Channel D	4264.23	Regulatory	154.45	108.30	115.69		115.69	0.000047	0.68	585.09	119.12	0.08
Reach #1	Main Channel D	4197.23	2 Year	8.87	107.30	108.35	108.34	108.55	0.008917	2.26	7.14	18.89	0.77
Reach #1	Main Channel D	4197.23	5 Year	14.96	107.30	108.54	108.54	108.80	0.009684	2.68	11.50	25.10	0.83
Reach #1	Main Channel D	4197.23	10 Year	19.68	107.30	108.67	108.67	108.94	0.009741	2.90	14.82	28.44	0.85
Reach #1	Main Channel D	4197.23	25 Year	26.20	107.30	108.80	108.80	109.10	0.010114	3.17	18.92	32.08	0.86
Reach #1	Main Channel D	4197.23	50 Year	31.43	107.30	108.90	108.90	109.22	0.010223	3.34	22.16	34.69	0.89
Reach #1	Main Channel D	4197.23	100 Year	37.04	107.30	108.99	108.99	109.33	0.010517	3.53	25.30	37.05	0.91
Reach #1	Main Channel D	4197.23	Regulatory	154.45	107.30	115.68		115.68	0.000042	0.69	570.50	103.72	0.08
Reach #1	Main Channel D	4070.23	2 Year	9.38	108.30	108.82	108.82	107.04	0.016411	2.08	4.50	10.28	1.01
Reach #1	Main Channel D	4070.23	5 Year	15.64	108.30	107.24		107.37	0.004874	1.62	11.14	23.32	0.60
Reach #1	Main Channel D	4070.23	10 Year	20.50	108.30	107.56		107.65	0.002329	1.38	20.41	34.20	0.43
Reach #1	Main Channel D	4070.23	25 Year	27.20	108.30	107.85		108.03	0.001163	1.19	36.32	48.87	0.32
Reach #1	Main Channel D	4070.23	50 Year	32.63	108.30	108.23		108.28	0.000788	1.11	51.64	60.14	0.27
Reach #1	Main Channel D	4070.23	100 Year	38.35	108.30	108.51		108.55	0.000568	1.04	70.04	71.45	0.24
Reach #1	Main Channel D	4070.23	Regulatory	159.73	108.30	115.68		115.68	0.000013	0.44	875.38	146.80	0.05
Reach #1	Main Channel D	4013.24	2 Year	9.38	105.70	106.87		106.87	0.000099	0.28	7.64	101.71	0.69
Reach #1	Main Channel D	4013.24	5 Year	15.64	105.70	107.32		107.32	0.000062	0.28	119.41	110.94	0.08
Reach #1	Main Channel D	4013.24	10 Year	20.50	105.70	107.61		107.62	0.000051	0.30	152.09	115.81	0.07
Reach #1	Main Channel D	4013.24	25 Year	27.20	105.70	107.98		107.98	0.000043	0.31	195.64	121.84	0.07
Reach #1	Main Channel D	4013.24	50 Year	32.63	105.70	108.26		108.26	0.000039	0.32	230.46	124.60	0.06
Reach #1	Main Channel D	4013.24	100 Year	38.35	105.70	108.53		108.53	0.000035	0.32	265.02	127.24	0.06
Reach #1	Main Channel D	4013.24	Regulatory	159.73	105.70	115.68		115.68	0.000005	0.29	1541.35	257.74	0.03
Reach #1	Main Channel C	3992.24	2 Year	9.41	105.30	106.87		106.87	0.000055	0.26	75.51	83.54	0.07
Reach #1	Main Channel C	3992.24	5 Year	15.69	105.30	107.32		107.32	0.000047	0.29	114.05	89.20	0.07
Reach #1	Main Channel C	3992.24	10 Year	20.55	105.30	107.61		107.62	0.000043	0.31	141.03	93.01	0.07
Reach #1	Main Channel C	3992.24	25 Year	27.28	105.30	107.98		107.98	0.000040	0.33	176.06	97.73	0.07
Reach #1	Main Channel C	3992.24	50 Year	32.71	105.30	108.25		108.26	0.000038	0.34	203.29	100.83	0.07
Reach #1	Main Channel C	3992.24	100 Year	38.45	105.30	108.53		108.53	0.000036	0.35	231.38	103.91	0.06
Reach #1	Main Channel C	3992.24	Regulatory	160.20	105.30	115.68		115.68	0.000008	0.37	1139.32	189.16	0.04
Reach #1	Main Channel C	3988.24	2 Year	9.41	105.40	106.85	105.85	106.87	0.000356	0.61	16.25	72.26	0.18
Reach #1	Main Channel C	3988.24	5 Year	15.69	105.40	107.28	106.14	107.32	0.000353	0.74	22.25	85.03	0.18
Reach #1	Main Channel C	3988.24	10 Year	20.55	105.40	107.58	106.26	107.61	0.000353	0.82	26.22	85.53	0.19
Reach #1	Main Channel C	3988.24	25 Year	27.28	105.40	107.94	106.42	107.98	0.000352	0.92	31.14	88.38	0.19
Reach #1	Main Channel C	3988.24	50 Year	32.71	105.40	108.20	106.52	108.25	0.000351	0.98	34.81	92.06	0.20
Reach #1	Main Channel C	3988.24	100 Year	38.45	105.40	108.47	106.61	108.53	0.000348	1.05	38.49	96.44	0.20
Reach #1	Main Channel C	3988.24	Regulatory	160.20	105.40	115.68	108.13	115.68	0.000009	0.38	1077.19	195.05	0.04
Reach #1	Main Channel C	3956.24	Culvert										
Reach #1	Main Channel C	3936.24	2 Year	9.41	104.00	104.57	104.43	104.67	0.008303	1.40	6.72	13.62	0.64
Reach #1	Main Channel C	3936.24	5 Year	15.69	104.00	104.83	104.59	104.94	0.004450	1.52	10.33	15.27	0.57
Reach #1	Main Channel C	3936.24	10 Year	20.55	104.00	105.11	104.69	105.21	0.002627	1.43	14.37	21.39	0.46
Reach #1	Main Channel C	3936.24	25 Year	27.28	104.00	105.51	104.82	105.80	0.001462	1.34	20.53	40.54	0.36
Reach #1	Main Channel C	3936.24	50 Year	32.71	104.00	105.82	104.92	105.91	0.001074	1.32	25.22	55.11	0.32
Reach #1	Main Channel C	3936.24	100 Year	38.45	104.00	106.14	105.01	106.22	0.000840	1.30	30.01	64.55	0.29
Reach #1	Main Channel C	3936.24	Regulatory	160.20	104.00	111.64	106.43	111.75	0.000179	1.44	113.51	138.31	0.17
Reach #1	Main Channel C	3928.24	2 Year	9.41	103.30	104.59		104.82	0.000694	0.82	14.81	19.81	0.24
Reach #1	Main Channel C	3928.24	5 Year	15.69	103.30	104.84		104.90	0.000927	1.08	20.10	23.34	0.29
Reach #1	Main Channel C	3928.24	10 Year	20.55	103.30	105.12		105.18	0.000838	1.15	30.54	56.67	0.26
Reach #1	Main Channel C	3928.24	25 Year	27.28	103.30	105.53		105.57	0.000488	1.02	54.75	59.72	0.22
Reach #1	Main Channel C	3928.24	50 Year	32.71	103.30	105.85		105.88	0.000351	0.95	73.81	61.87	0.19
Reach #1	Main Channel C	3928.24	100 Year	38.45	103.30	106.16		106.19	0.000266	0.89	93.84	63.81	0.17
Reach #1	Main Channel C	3928.24	Regulatory	160.20	103.30	111.69		111.70	0.000044	0.75	559.81	122.68	0.08
Reach #1	Main Channel C	3908.24	2 Year	9.41	103.30	104.32	104.32	104.57	0.000498	2.33	6.46	19.03	0.81
Reach #1	Main Channel C	3908.24	5 Year	15.69	103.30	104.69		104.85	0.004858	2.12	15.89	32.22	0.61

HEC-RAS Plan: 0708NS (Continued)

River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch E (m)	W.S. Elev. (m)	Crit W.S. (m)	E.S. Elev. (m)	E.G. Slope (m/m)	Vel Crit. (m/s)	Flow Area (m²)	Top Width (m)	Froude # Ch.
Reach #1	Main Channel C	3908.24	10 Year	20.55	103.30	105.07		105.15	0.002033	1.64	30.73	44.05	0.41
Reach #1	Main Channel C	3908.24	25 Year	27.26	103.30	105.52		105.56	0.000860	1.33	51.31	48.92	0.30
Reach #1	Main Channel C	3908.24	50 Year	32.71	103.30	105.84		105.87	0.000653	1.22	67.45	52.42	0.25
Reach #1	Main Channel C	3908.24	100 Year	38.45	103.30	106.16		106.18	0.000486	1.13	84.82	55.12	0.22
Reach #1	Main Channel C	3909.24	Regulatory	160.20	103.30	111.69		111.70	0.000075	0.94	516.39	131.38	0.10
Reach #1	Main Channel C	3901.24	2 Year	9.41	103.30	104.27	103.87	104.35	0.002560	1.34	7.09	19.48	0.44
Reach #1	Main Channel C	3901.24	5 Year	15.69	103.30	104.71	104.09	104.81	0.001914	1.50	12.14	32.26	0.41
Reach #1	Main Channel C	3901.24	10 Year	20.55	103.30	105.02	104.24	105.13	0.001663	1.58	15.02	40.84	0.39
Reach #1	Main Channel C	3901.24	25 Year	27.26	103.30	105.41	104.42	105.54	0.001446	1.70	18.69	45.21	0.38
Reach #1	Main Channel C	3901.24	50 Year	32.71	103.30	105.70	104.56	105.85	0.001323	1.78	21.48	48.53	0.37
Reach #1	Main Channel C	3901.24	100 Year	38.45	103.30	106.01	104.69	106.16	0.001217	1.85	24.34	51.91	0.36
Reach #1	Main Channel C	3901.24	Regulatory	160.20	103.30	111.68	106.74	111.70	0.000067	0.92	535.60	160.05	0.10
Reach #1	Main Channel C	3875.24	Culvert										
Reach #1	Main Channel C	3840.24	2 Year	9.41	102.53	103.23	103.08	103.38	0.006739	1.72	5.99	14.09	0.69
Reach #1	Main Channel C	3849.24	5 Year	15.69	102.53	103.37	103.28	103.84	0.009993	2.38	7.23	15.55	0.66
Reach #1	Main Channel C	3849.24	10 Year	20.55	102.53	103.47	103.42	103.83	0.011182	2.74	8.22	16.70	0.63
Reach #1	Main Channel C	3849.24	25 Year	27.28	102.53	103.58	103.58	104.08	0.013146	3.22	9.29	20.00	1.03
Reach #1	Main Channel C	3849.24	50 Year	32.71	102.53	103.71	103.71	104.27	0.012572	3.42	10.50	23.27	1.03
Reach #1	Main Channel C	3849.24	100 Year	38.45	102.53	103.84	103.84	104.46	0.012229	3.62	11.67	26.42	1.03
Reach #1	Main Channel C	3849.24	Regulatory	160.20	102.53	105.82	107.43	108.88	0.008886	5.81	30.26	95.78	1.03
Reach #1	Main Channel C	3827.24	2 Year	9.41	101.80	102.93	102.93	103.17	0.009879	2.42	7.03	19.18	0.79
Reach #1	Main Channel C	3827.24	5 Year	15.69	101.80	103.16	103.16	103.41	0.009387	2.72	12.16	25.59	0.80
Reach #1	Main Channel C	3827.24	10 Year	20.55	101.80	103.27	103.27	103.56	0.009942	2.98	15.30	28.66	0.84
Reach #1	Main Channel C	3827.24	25 Year	27.28	101.80	103.42	103.42	103.72	0.009903	3.20	19.89	32.64	0.85
Reach #1	Main Channel C	3827.24	50 Year	32.71	101.80	103.49	103.49	103.84	0.011248	3.52	22.11	34.41	0.81
Reach #1	Main Channel C	3827.24	100 Year	38.45	101.80	103.71	103.71	103.93	0.008894	3.02	39.18	80.46	0.73
Reach #1	Main Channel C	3827.24	Regulatory	160.20	101.80	104.34	104.34	104.73	0.012658	5.03	93.23	88.07	1.04
Reach #1	Main Channel C	3715.24	2 Year	9.41	100.30	101.36	101.36	101.58	0.006388	2.24	7.47	25.47	0.76
Reach #1	Main Channel C	3715.24	5 Year	15.69	100.30	101.58	101.58	101.80	0.007835	2.49	14.32	40.13	0.76
Reach #1	Main Channel C	3715.24	10 Year	20.55	100.30	101.70	101.70	101.92	0.007450	2.61	19.81	50.76	0.75
Reach #1	Main Channel C	3715.24	25 Year	27.28	100.30	101.81	101.81	102.05	0.007819	2.83	26.18	60.47	0.78
Reach #1	Main Channel C	3715.24	50 Year	32.71	100.30	101.89	101.89	102.13	0.008027	2.98	31.08	67.08	0.80
Reach #1	Main Channel C	3715.24	100 Year	38.45	100.30	101.98	101.98	102.21	0.007529	3.01	37.57	74.99	0.78
Reach #1	Main Channel C	3715.24	Regulatory	160.20	100.30	102.88		103.13	0.007063	3.69	117.52	101.12	0.82
Reach #1	Main Channel C	3610.24	2 Year	9.41	99.00	100.13	100.13	100.38	0.010479	2.36	5.02	15.28	0.86
Reach #1	Main Channel C	3610.24	5 Year	15.69	99.00	100.38	100.38	100.66	0.008873	2.62	10.48	23.61	0.83
Reach #1	Main Channel C	3610.24	10 Year	20.55	99.00	100.50	100.50	100.82	0.009205	2.88	13.57	27.64	0.86
Reach #1	Main Channel C	3610.24	25 Year	27.28	99.00	100.69	100.69	101.01	0.008156	3.61	19.92	38.85	0.84
Reach #1	Main Channel C	3610.24	50 Year	32.71	99.00	100.81	100.81	101.13	0.007643	3.09	25.06	45.07	0.82
Reach #1	Main Channel C	3610.24	100 Year	38.45	99.00	100.91	100.91	101.24	0.007424	3.10	30.09	52.02	0.82
Reach #1	Main Channel C	3610.24	Regulatory	160.20	99.00	101.84	101.84	102.31	0.006240	4.86	96.60	90.65	0.98
Reach #1	Main Channel C	3421.24	2 Year	9.41	97.80	98.68	98.46	98.77	0.003954	1.46	11.28	43.07	0.52
Reach #1	Main Channel C	3421.24	5 Year	15.69	97.80	98.74	98.74	99.92	0.007414	2.10	14.07	45.80	0.73
Reach #1	Main Channel C	3421.24	10 Year	20.55	97.80	98.83	98.83	99.03	0.007738	2.29	18.15	49.53	0.75
Reach #1	Main Channel C	3421.24	25 Year	27.28	97.80	98.92	98.92	99.14	0.008171	2.51	23.14	53.73	0.79
Reach #1	Main Channel C	3421.24	50 Year	32.71	97.80	98.99	98.99	99.23	0.008531	2.67	26.76	56.58	0.81
Reach #1	Main Channel C	3421.24	100 Year	38.45	97.80	99.05	99.05	99.31	0.008752	2.81	30.51	59.06	0.83
Reach #1	Main Channel C	3421.24	Regulatory	160.20	97.80	99.93	99.93	100.31	0.009117	4.17	96.65	91.70	0.93
Reach #1	Main Channel C	3264.24	2 Year	9.41	96.30	97.47	97.45	97.81	0.011046	2.71	4.83	9.26	0.68
Reach #1	Main Channel C	3264.24	5 Year	15.69	96.30	97.79	97.79	97.95	0.005346	2.27	20.57	89.29	0.63
Reach #1	Main Channel C	3264.24	10 Year	20.55	96.30	97.88	97.88	98.04	0.005491	2.40	27.05	78.48	0.64
Reach #1	Main Channel C	3264.24	25 Year	27.28	96.30	97.95	97.95	98.13	0.006340	2.67	33.36	86.47	0.70
Reach #1	Main Channel C	3264.24	50 Year	32.71	96.30	98.02	98.02	98.19	0.006186	2.72	39.83	91.66	0.70
Reach #1	Main Channel C	3264.24	100 Year	38.45	96.30	98.06	98.06	98.25	0.006987	2.94	43.24	91.95	0.74
Reach #1	Main Channel C	3264.24	Regulatory	160.20	96.30	98.59	98.59	98.97	0.014612	5.15	93.18	96.04	1.13
Reach #1	Main Channel C	3141.24	2 Year	9.41	95.30	96.41	96.41	96.60	0.008836	2.30	8.51	25.44	0.77
Reach #1	Main Channel C	3141.24	5 Year	15.69	95.30	96.67	96.67	96.79	0.005403	2.13	23.87	80.03	0.62
Reach #1	Main Channel C	3141.24	10 Year	20.55	95.30	96.73	96.73	96.86	0.006292	2.37	28.43	82.26	0.68
Reach #1	Main Channel C	3141.24	25 Year	27.28	95.30	96.79	96.79	96.94	0.007213	2.62	34.11	87.13	0.73
Reach #1	Main Channel C	3141.24	50 Year	32.71	95.30	96.84	96.84	97.00	0.007851	2.80	38.22	89.83	0.77
Reach #1	Main Channel C	3141.24	100 Year	38.45	95.30	96.88	96.88	97.06	0.008583	2.98	41.99	92.23	0.81
Reach #1	Main Channel C	3141.24	Regulatory	160.20	95.30	98.13	97.41	98.20	0.002474	2.46	184.56	130.68	0.48
Reach #1	Main Channel C	3092.24	2 Year	9.41	94.30	95.54	95.54	95.76	0.008714	2.43	8.16	22.40	0.76
Reach #1	Main Channel C	3092.24	5 Year	15.69	94.30	95.75	95.75	96.00	0.009039	2.79	13.62	29.95	0.79
Reach #1	Main Channel C	3092.24	10 Year	20.55	94.30	95.87	95.87	96.13	0.009211	2.99	17.53	34.37	0.81
Reach #1	Main Channel C	3092.24	25 Year	27.28	94.30	95.99	95.99	96.28	0.010181	3.32	21.79	38.61	0.87
Reach #1	Main Channel C	3092.24	50 Year	32.71	94.30	96.08	96.08	96.39	0.010839	3.53	25.46	43.21	0.88
Reach #1	Main Channel C	3092.24	100 Year	38.45	94.30	96.16	96.16	96.49	0.010410	3.63	30.00	48.46	0.89
Reach #1	Main Channel C	3092.24	Regulatory	160.20	94.30	98.03		98.10	0.001715	2.42	185.05	96.77	0.41
Reach #1	Main Channel C	2869.24	2 Year	9.41	93.30	94.18	93.88	94.25	0.002073	1.27	9.58	25.07	0.48
Reach #1	Main Channel C	2869.24	5 Year	15.69	93.30	94.36	94.36	94.47	0.003478	1.59	14.40	27.63	0.52
Reach #1	Main Channel C	2869.24	10 Year	20.55	93.30	94.48	94.48	94.61	0.003725	1.78	17.71	29.26	0.55
Reach #1	Main Channel C	2869.24	25 Year	27.28	93.30	94.60	94.38	94.77	0.004149	2.02	25.08	67.89	0.59
Reach #1	Main Channel C	2869.24	50 Year	32.71	93.30	94.68	94.48	94.86	0.004252	2.14	30.80	73.23	0.61
Reach #1	Main Channel C	2869.24	100 Year	38.45	93.30	94.76	94.67	94.95	0.004314	2.24	36.65	78.30	0.62
Reach #1	Main Channel C	2869.24	Regulatory	160.20	93.30	97.98	95.42	98.00	0.000189	1.06	350.57	102.72	0.16

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q Total (m³/s)	Min Ch El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope: (m/m)	Vel Chnl (m/s)	Flow Area: (m²)	Top Width: (m)	Froude # Chl
Reach #1	Main Channel C	2699.24	2 Year	8.41	92.30	93.36	93.36	93.53	0.008957	2.18	10.36	37.05	0.78
Reach #1	Main Channel C	2699.24	5 Year	15.69	92.30	93.52	93.52	93.69	0.009366	2.50	16.88	47.94	0.80
Reach #1	Main Channel C	2699.24	10 Year	20.55	92.30	93.60	93.60	93.79	0.010248	2.75	20.87	53.56	0.85
Reach #1	Main Channel C	2699.24	25 Year	27.28	92.30	93.70	93.70	93.90	0.010660	2.97	26.49	60.57	0.88
Reach #1	Main Channel C	2699.24	50 Year	32.71	92.30	93.76	93.76	93.98	0.011167	3.15	30.48	65.09	0.91
Reach #1	Main Channel C	2699.24	100 Year	38.45	92.30	93.82	93.82	94.05	0.011765	3.33	34.35	69.20	0.94
Reach #1	Main Channel C	2699.24	Regulatory	160.20	92.30	97.97		97.98	0.000123	0.88	423.33	101.77	0.12
Reach #1	Main Channel C	2618.24	2 Year	9.41	91.30	92.56		92.62	0.001809	1.24	13.99	33.68	0.38
Reach #1	Main Channel C	2618.24	5 Year	15.69	91.30	92.64		92.91	0.001648	1.38	25.43	47.79	0.37
Reach #1	Main Channel C	2618.24	10 Year	20.55	91.30	92.68		93.05	0.001742	1.51	32.41	54.65	0.39
Reach #1	Main Channel C	2618.24	25 Year	27.28	91.30	93.10		93.19	0.001987	1.70	39.83	60.27	0.42
Reach #1	Main Channel C	2618.24	50 Year	32.71	91.30	93.22		93.31	0.001966	1.77	47.27	65.27	0.43
Reach #1	Main Channel C	2618.24	100 Year	38.45	91.30	93.43		93.50	0.001485	1.66	61.90	74.10	0.38
Reach #1	Main Channel C	2618.24	Regulatory	160.20	91.30	97.97		97.98	0.000063	0.76	538.16	120.21	0.10
Reach #1	Main Channel C	2497.24	2 Year	9.41	90.70	91.84	91.84	92.15	0.013566	2.53	4.26	8.12	0.66
Reach #1	Main Channel C	2497.24	5 Year	15.69	90.70	92.17	92.17	92.52	0.010090	2.72	8.08	19.11	0.67
Reach #1	Main Channel C	2497.24	10 Year	20.55	90.70	92.38	92.38	92.69	0.007727	2.70	13.32	30.99	0.70
Reach #1	Main Channel C	2497.24	25 Year	27.28	90.70	92.65		92.88	0.004978	2.49	24.03	46.66	0.65
Reach #1	Main Channel C	2497.24	50 Year	32.71	90.70	92.99		93.11	0.002355	1.97	43.13	65.93	0.46
Reach #1	Main Channel C	2497.24	100 Year	38.45	90.70	93.32		93.38	0.001253	1.60	66.76	79.23	0.35
Reach #1	Main Channel C	2497.24	Regulatory	160.20	90.70	97.97		97.97	0.000052	0.70	614.71	150.31	0.09
Reach #1	Main Channel B	2488.24	2 Year	10.05	90.40	91.71		91.77	0.001978	1.12	10.42	16.66	0.39
Reach #1	Main Channel B	2488.24	5 Year	16.60	90.40	92.15		92.21	0.001273	1.11	19.53	27.72	0.33
Reach #1	Main Channel B	2488.24	10 Year	21.67	90.40	92.44		92.49	0.000934	1.10	29.27	39.94	0.29
Reach #1	Main Channel B	2488.24	25 Year	28.67	90.40	92.78		92.83	0.000685	1.09	45.51	54.54	0.26
Reach #1	Main Channel B	2488.24	50 Year	34.33	90.40	93.05		93.09	0.000543	1.06	61.39	66.99	0.24
Reach #1	Main Channel B	2488.24	100 Year	40.32	90.40	93.34		93.37	0.000414	1.01	82.77	80.01	0.21
Reach #1	Main Channel B	2488.24	Regulatory	169.29	90.40	97.97		97.97	0.000040	0.64	667.49	156.80	0.08
Reach #1	Main Channel B	2486.24	2 Year	10.05	90.48	91.71	91.10	91.77	0.001296	1.03	9.77	9.82	0.32
Reach #1	Main Channel B	2486.24	5 Year	16.60	90.48	92.12	91.32	92.20	0.001195	1.23	13.53	11.88	0.32
Reach #1	Main Channel B	2486.24	10 Year	21.67	90.48	92.39	91.47	92.48	0.001176	1.38	15.95	14.47	0.33
Reach #1	Main Channel B	2486.24	25 Year	28.67	90.48	92.70	91.65	92.82	0.001189	1.52	18.81	18.09	0.34
Reach #1	Main Channel B	2486.24	50 Year	34.33	90.48	92.94	91.77	93.08	0.001181	1.04	21.00	20.88	0.34
Reach #1	Main Channel B	2486.24	100 Year	40.32	90.48	93.21	91.90	93.36	0.001124	1.72	23.47	35.84	0.34
Reach #1	Main Channel B	2486.24	Regulatory	169.31	90.48	97.96	93.92	97.97	0.000058	0.76	573.41	152.67	0.09
Reach #1	Main Channel B	2450.26	Culvert										
Reach #1	Main Channel B	2438.26	2 Year	10.05	90.25	91.64	90.88	91.60	0.001105	1.00	10.16	9.80	0.20
Reach #1	Main Channel B	2438.26	5 Year	16.60	90.25	92.00	91.12	92.08	0.001370	1.28	13.21	12.17	0.33
Reach #1	Main Channel B	2438.26	10 Year	21.67	90.25	92.21	91.29	92.32	0.001522	1.47	16.14	16.46	0.35
Reach #1	Main Channel B	2438.26	25 Year	28.67	90.25	92.44	91.49	92.59	0.001756	1.71	17.27	21.22	0.38
Reach #1	Main Channel B	2438.26	50 Year	34.33	90.25	92.61	91.63	92.79	0.001899	1.88	18.86	24.78	0.41
Reach #1	Main Channel B	2438.26	100 Year	40.32	90.25	92.77	91.77	92.99	0.002062	2.06	20.32	28.05	0.43
Reach #1	Main Channel B	2438.26	Regulatory	169.31	90.25	96.66	93.89	97.16	0.001340	3.18	55.85	156.81	0.41
Reach #1	Main Channel B	2421.26	2 Year	10.05	90.06	91.58	91.02	91.66	0.001752	1.38	11.37	14.80	0.37
Reach #1	Main Channel B	2421.26	5 Year	16.60	90.06	91.93	91.33	92.04	0.001894	1.67	17.17	17.94	0.40
Reach #1	Main Channel B	2421.26	10 Year	21.67	90.06	92.15	91.51	92.28	0.002041	1.87	21.29	21.14	0.42
Reach #1	Main Channel B	2421.26	25 Year	28.67	90.06	92.39	91.72	92.55	0.002181	2.09	27.04	25.50	0.45
Reach #1	Main Channel B	2421.26	50 Year	34.33	90.06	92.58	91.87	92.75	0.002176	2.20	32.21	28.86	0.45
Reach #1	Main Channel B	2421.26	100 Year	40.32	90.06	92.75	92.00	92.93	0.002204	2.32	37.35	31.86	0.46
Reach #1	Main Channel B	2421.26	Regulatory	169.31	90.06	96.90	93.94	96.91	0.000109	0.98	518.86	153.24	0.12
Reach #1	Main Channel B	2406.26	2 Year	10.05	90.06	91.24	90.84	91.58	0.012373	2.63	4.38	8.51	0.92
Reach #1	Main Channel B	2406.26	5 Year	16.60	90.06	91.54	91.54	91.96	0.010416	2.97	7.48	11.72	0.89
Reach #1	Main Channel B	2406.26	10 Year	21.67	90.06	91.73	91.73	92.19	0.009931	3.21	9.79	13.63	0.89
Reach #1	Main Channel B	2406.26	25 Year	28.67	90.06	91.95	91.95	92.46	0.009378	3.45	13.04	15.93	0.89
Reach #1	Main Channel B	2406.26	50 Year	34.33	90.06	92.08	92.08	92.65	0.009366	3.70	15.29	17.91	0.91
Reach #1	Main Channel B	2406.26	100 Year	40.32	90.06	92.26	92.26	92.83	0.009763	3.78	16.79	21.07	0.89
Reach #1	Main Channel B	2406.26	Regulatory	169.31	90.06	96.87	96.00	96.00	0.000264	1.51	333.87	109.16	0.19
Reach #1	Main Channel B	2399.26	2 Year	10.05	89.99	90.84	90.48	90.89	0.002068	1.05	10.66	15.34	0.38
Reach #1	Main Channel B	2399.26	5 Year	16.60	89.99	91.16	90.65	91.23	0.001688	1.21	15.48	18.42	0.37
Reach #1	Main Channel B	2399.26	10 Year	21.67	89.99	91.37	90.76	91.46	0.001539	1.31	18.74	24.02	0.37
Reach #1	Main Channel B	2399.26	25 Year	28.67	89.99	91.65	90.89	91.74	0.001407	1.42	22.85	31.06	0.38
Reach #1	Main Channel B	2399.26	50 Year	34.33	89.99	91.85	90.99	91.95	0.001332	1.50	25.93	36.33	0.36
Reach #1	Main Channel B	2399.26	100 Year	40.32	89.99	92.05	91.09	92.17	0.001270	1.57	28.01	41.48	0.36
Reach #1	Main Channel B	2399.26	Regulatory	169.31	89.99	96.71	92.60	96.99	0.000377	1.93	99.61	112.11	0.24
Reach #1	Main Channel B	2300.26	Culvert										
Reach #1	Main Channel B	2265.26	2 Year	10.05	89.36	90.49	89.83	90.51	0.000644	0.75	17.96	30.26	0.23
Reach #1	Main Channel B	2265.26	5 Year	16.60	89.36	90.67	89.98	90.71	0.001036	1.05	21.20	33.12	0.30
Reach #1	Main Channel B	2265.26	10 Year	21.67	89.36	90.79	90.07	90.85	0.001294	1.25	23.35	35.02	0.34
Reach #1	Main Channel B	2265.26	25 Year	28.67	89.36	90.92	90.20	91.01	0.001658	1.50	26.72	37.12	0.39
Reach #1	Main Channel B	2265.26	50 Year	34.33	89.36	91.00	90.30	91.12	0.001963	1.69	27.28	38.67	0.43
Reach #1	Main Channel B	2265.26	100 Year	40.32	89.36	91.05	90.39	91.23	0.002288	1.89	28.70	45.36	0.47
Reach #1	Main Channel B	2265.26	Regulatory	169.31	89.36	93.66	91.84	94.02	0.001708	3.04	75.36	138.15	0.47
Reach #1	Main Channel B	2229.26	2 Year	10.05	89.20	90.42		90.47	0.001222	1.02	13.89	31.35	0.31
Reach #1	Main Channel B	2229.26	5 Year	16.60	89.20</td								

HEC-RAS Plan 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m3/s)	Min Chl E (m)	W.S. Elev (m)	Crd.W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Reach #1	Main Channel B	2229.26	10 Year	21.67	89.20	90.66		90.77	0.002454	1.64	22.72	43.85	0.46
Reach #1	Main Channel B	2229.26	25 Year	28.67	89.20	90.76		90.92	0.003002	1.92	27.72	49.60	0.51
Reach #1	Main Channel B	2229.26	50 Year	34.33	89.20	90.84		91.01	0.003405	2.11	31.47	53.52	0.55
Reach #1	Main Channel B	2229.26	100 Year	40.32	89.20	90.91		91.11	0.003776	2.29	35.35	57.29	0.59
Reach #1	Main Channel B	2229.26	Regulatory	169.31	89.20	93.81		93.83	0.000218	1.11	407.42	154.28	0.17
Reach #1	Main Channel B	2141.26	2 Year	10.05	89.00	89.97	89.92	90.21	0.010324	2.20	4.96	10.88	0.85
Reach #1	Main Channel B	2141.26	5 Year	16.60	89.00	90.22	90.22	90.37	0.005429	1.97	20.63	82.83	0.65
Reach #1	Main Channel B	2141.26	10 Year	21.67	89.00	90.29	90.29	90.44	0.005941	2.16	26.44	60.90	0.69
Reach #1	Main Channel B	2141.26	25 Year	28.67	89.00	90.36	90.36	90.53	0.006496	2.37	33.68	100.03	0.73
Reach #1	Main Channel B	2141.26	50 Year	34.33	89.00	90.41	90.41	90.60	0.006925	2.52	38.82	106.15	0.75
Reach #1	Main Channel B	2141.26	100 Year	40.32	89.00	90.46	90.46	90.65	0.007281	2.66	44.26	112.04	0.78
Reach #1	Main Channel B	2141.26	Regulatory	169.31	89.00	93.81		93.82	0.000111	0.80	550.93	174.66	0.12
Reach #1	Main Channel B	2018.26	2 Year	10.05	88.20	89.45		89.54	0.003277	1.57	15.39	52.01	0.48
Reach #1	Main Channel B	2018.26	5 Year	16.60	88.20	89.68		89.75	0.002681	1.62	29.80	75.74	0.46
Reach #1	Main Channel B	2018.26	10 Year	21.67	88.20	89.80		89.87	0.002532	1.67	39.84	88.58	0.45
Reach #1	Main Channel B	2018.26	25 Year	28.67	88.20	89.93		90.00	0.002449	1.74	52.54	102.55	0.45
Reach #1	Main Channel B	2018.26	50 Year	34.33	88.20	90.02		90.09	0.002421	1.80	61.77	109.97	0.45
Reach #1	Main Channel B	2018.26	100 Year	40.32	88.20	90.25		90.28	0.001324	1.45	87.25	115.65	0.34
Reach #1	Main Channel B	2018.26	Regulatory	169.31	88.20	93.80		93.81	0.000082	0.74	582.77	153.36	0.10
Reach #1	Main Channel B	1986.26	2 Year	10.05	87.65	88.77	88.49	88.84	0.003001	1.14	8.81	13.80	0.48
Reach #1	Main Channel B	1986.26	5 Year	16.60	87.65	89.01	88.65	89.10	0.002993	1.37	12.11	14.80	0.48
Reach #1	Main Channel B	1986.26	10 Year	21.67	87.65	89.43	89.43	89.66	0.007120	2.34	14.02	42.76	0.73
Reach #1	Main Channel B	1986.26	25 Year	28.67	87.65	89.55	89.55	89.78	0.006936	2.48	19.60	52.57	0.73
Reach #1	Main Channel B	1986.26	50 Year	34.33	87.65	89.67	89.67	89.91	0.007045	2.67	26.50	62.60	0.75
Reach #1	Main Channel B	1986.26	100 Year	40.32	87.65	90.18		90.25	0.001801	1.69	69.37	96.95	0.40
Reach #1	Main Channel B	1986.26	Regulatory	169.31	87.65	93.80		93.81	0.000097	0.82	542.51	152.59	0.11
Reach #1	Main Channel B	1986.26	Bridge										
Reach #1	Main Channel B	1973.26	2 Year	10.05	87.65	88.70	88.45	88.78	0.004036	1.22	8.22	14.48	0.52
Reach #1	Main Channel B	1973.26	5 Year	16.60	87.65	88.92	88.64	89.02	0.004311	1.43	11.58	16.80	0.55
Reach #1	Main Channel B	1973.26	10 Year	21.67	87.65	89.05	88.76	89.18	0.004274	1.56	13.92	19.42	0.56
Reach #1	Main Channel B	1973.26	25 Year	28.67	87.65	89.18	88.89	89.34	0.004501	1.77	16.21	20.87	0.58
Reach #1	Main Channel B	1973.26	50 Year	34.33	87.65	89.25	88.99	89.46	0.005139	1.88	17.35	23.28	0.49
Reach #1	Main Channel B	1973.26	100 Year	40.32	87.65	89.30	88.98	89.55	0.005975	2.21	18.27	22.37	0.68
Reach #1	Main Channel B	1973.26	Regulatory	169.31	87.65	93.77	90.46	93.79	0.000002	0.83	491.08	172.46	0.11
Reach #1	Main Channel B	1919.26	2 Year	10.05	87.20	88.14	88.14	88.39	0.010124	2.26	5.76	19.00	0.83
Reach #1	Main Channel B	1919.26	5 Year	16.60	87.20	88.38	88.38	88.65	0.008511	2.49	11.38	28.18	0.80
Reach #1	Main Channel B	1919.26	10 Year	21.67	87.20	88.50	88.50	88.79	0.006778	2.72	14.87	32.62	0.82
Reach #1	Main Channel B	1919.26	25 Year	28.67	87.20	88.67	88.67	88.97	0.007913	2.85	22.07	49.27	0.80
Reach #1	Main Channel B	1919.26	50 Year	34.33	87.20	88.79	88.79	89.08	0.007355	2.91	28.30	60.20	0.78
Reach #1	Main Channel B	1919.26	100 Year	40.32	87.20	88.88	88.88	89.17	0.007141	2.98	34.37	69.20	0.78
Reach #1	Main Channel B	1919.26	Regulatory	169.31	87.20	93.77		93.78	0.000081	0.84	535.12	136.61	0.11
Reach #1	Main Channel B	1867.26	2 Year	10.05	86.20	88.02		88.05	0.000535	0.88	23.64	35.24	0.22
Reach #1	Main Channel B	1867.26	5 Year	16.60	86.20	88.34		88.38	0.000617	1.04	37.07	48.90	0.24
Reach #1	Main Channel B	1867.26	10 Year	21.67	86.20	88.51		88.55	0.000685	1.16	45.97	56.08	0.25
Reach #1	Main Channel B	1867.26	25 Year	28.67	86.20	88.68		88.73	0.000787	1.31	56.05	62.13	0.28
Reach #1	Main Channel B	1867.26	50 Year	34.33	86.20	88.80		88.85	0.000954	1.41	63.69	66.35	0.29
Reach #1	Main Channel B	1867.26	100 Year	40.32	86.20	88.89		88.85	0.000604	1.54	69.79	69.54	0.31
Reach #1	Main Channel B	1867.26	Regulatory	169.31	86.20	93.77		93.78	0.000068	0.84	535.03	117.80	0.10
Reach #1	Main Channel A	1853.26	2 Year	10.56	86.20	87.83		88.04	0.002694	1.74	11.82	18.98	0.45
Reach #1	Main Channel A	1853.26	5 Year	17.29	86.20	88.21		88.36	0.003479	2.14	18.79	32.29	0.51
Reach #1	Main Channel A	1853.26	10 Year	22.49	86.20	88.36		88.54	0.003590	2.31	24.93	41.77	0.52
Reach #1	Main Channel A	1853.26	25 Year	29.66	86.20	88.55		88.72	0.003751	2.48	32.86	51.27	0.54
Reach #1	Main Channel A	1853.26	50 Year	35.45	86.20	88.68		88.84	0.003604	2.54	40.15	58.28	0.54
Reach #1	Main Channel A	1853.26	100 Year	41.58	86.20	88.77		88.84	0.003886	2.70	45.36	62.82	0.56
Reach #1	Main Channel A	1853.26	Regulatory	173.05	86.20	93.77		93.78	0.000061	0.72	655.07	156.40	0.08
Reach #1	Main Channel A	1838.35	2 Year	10.58	86.20	87.88		88.00	0.002753	1.71	11.25	18.00	0.45
Reach #1	Main Channel A	1838.35	5 Year	17.29	86.20	88.13		88.31	0.003690	2.20	18.80	29.77	0.53
Reach #1	Main Channel A	1838.35	10 Year	22.49	86.20	88.28		88.48	0.004087	2.44	21.83	40.39	0.57
Reach #1	Main Channel A	1838.35	25 Year	29.66	86.20	88.42		88.65	0.004627	2.72	28.28	50.86	0.61
Reach #1	Main Channel A	1838.35	50 Year	35.45	86.20	88.59		88.78	0.003944	2.65	37.98	63.43	0.57
Reach #1	Main Channel A	1838.35	100 Year	41.58	86.20	88.65		88.87	0.004424	2.87	42.47	68.46	0.61
Reach #1	Main Channel A	1838.35	Regulatory	173.05	86.20	93.77		93.78	0.000051	0.68	684.41	153.16	0.08
Reach #1	Main Channel A	1729.35	2 Year	10.56	86.20	87.42		87.55	0.006383	1.78	10.09	31.65	0.67
Reach #1	Main Channel A	1729.35	5 Year	17.29	86.20	87.57		87.75	0.007453	2.18	15.38	40.23	0.75
Reach #1	Main Channel A	1729.35	10 Year	22.49	86.20	87.66		87.87	0.007976	2.41	19.25	45.54	0.79
Reach #1	Main Channel A	1729.35	25 Year	29.66	86.20	87.79		88.01	0.007491	2.55	25.83	53.38	0.78
Reach #1	Main Channel A	1729.35	50 Year	35.45	86.20	87.79		88.10	0.010769	3.05	26.75	53.30	0.93
Reach #1	Main Channel A	1729.35	100 Year	41.58	86.20	87.90	87.90	88.19	0.009347	3.03	31.91	59.71	0.88
Reach #1	Main Channel A	1729.35	Regulatory	173.05	86.20	93.77		93.77	0.000036	0.62	750.25	163.33	0.07

HEC-RAS Plan: 0706NS (Continued)

River	Reach	River Sta	Profile	Q.Total (m3/s)	Min Ch El. (m)	W.S. Elev. (m)	Off.W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vei Chnl. (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl.
Reach #1	Main Channel A	1643.35	2 Year	10.56	85.30	86.66	86.66	86.84	0.011104	2.09	9.18	34.52	0.84
Reach #1	Main Channel A	1643.35	5 Year	17.29	85.30	86.83	86.83	87.01	0.010062	2.30	16.53	53.81	0.83
Reach #1	Main Channel A	1643.35	10 Year	22.49	85.30	86.92	86.92	87.11	0.009883	2.45	21.80	64.18	0.84
Reach #1	Main Channel A	1643.35	25 Year	29.66	85.30	86.98		87.22	0.011755	2.81	26.31	71.86	0.92
Reach #1	Main Channel A	1643.35	50 Year	35.45	85.30	87.11		87.28	0.007977	2.52	35.84	76.70	0.78
Reach #1	Main Channel A	1643.35	100 Year	41.58	85.30	87.22		87.36	0.006359	2.40	44.42	79.44	0.71
Reach #1	Main Channel A	1643.35	Regulatory	173.05	85.30	93.77		93.77	0.000023	0.60	853.70	155.77	0.06
Reach #1	Main Channel A	1553.35	2 Year	10.56	84.20	85.39	85.16	85.56	0.005118	1.91	6.83	12.36	0.62
Reach #1	Main Channel A	1553.35	5 Year	17.29	84.20	85.58		85.87	0.006729	2.48	9.59	15.31	0.73
Reach #1	Main Channel A	1553.35	10 Year	22.49	84.20	85.71		86.07	0.007634	2.82	11.62	17.12	0.79
Reach #1	Main Channel A	1553.35	25 Year	29.66	84.20	85.86		86.31	0.008543	3.21	14.35	19.30	0.85
Reach #1	Main Channel A	1553.35	50 Year	35.45	84.20	85.96		86.48	0.009188	3.49	16.42	20.80	0.89
Reach #1	Main Channel A	1553.35	100 Year	41.58	84.20	86.12		86.66	0.008669	3.61	20.07	25.89	0.88
Reach #1	Main Channel A	1553.35	Regulatory	173.05	84.20	93.76		93.77	0.000030	0.66	894.70	230.84	0.07
Reach #1	Main Channel A	1415.35	2 Year	10.56	83.20	84.20	84.20	84.52	0.011817	2.53	4.77	11.91	0.80
Reach #1	Main Channel A	1415.35	5 Year	17.29	83.20	84.51	84.51	84.83	0.008535	2.68	10.15	22.57	0.81
Reach #1	Main Channel A	1415.35	10 Year	22.49	83.20	84.67	84.67	85.01	0.007930	2.82	14.21	28.04	0.80
Reach #1	Main Channel A	1415.35	25 Year	29.66	83.20	84.85	84.85	85.20	0.007594	3.01	19.58	33.06	0.80
Reach #1	Main Channel A	1415.35	50 Year	35.45	83.20	84.96	84.96	85.32	0.007534	3.15	23.64	37.82	0.80
Reach #1	Main Channel A	1415.35	100 Year	41.58	83.20	85.00	85.00	85.45	0.008082	3.52	25.27	39.32	0.89
Reach #1	Main Channel A	1415.35	Regulatory	173.05	83.20	93.76		93.77	0.000011	0.42	1397.60	300.91	0.04
Reach #1	Main Channel A	1321.35	2 Year	10.56	82.20	83.47		83.50	0.001185	1.00	20.91	40.88	0.31
Reach #1	Main Channel A	1321.35	5 Year	17.29	82.20	83.70		83.75	0.001255	1.18	31.10	45.97	0.33
Reach #1	Main Channel A	1321.35	10 Year	22.49	82.20	83.96		84.00	0.000918	1.13	43.88	51.66	0.29
Reach #1	Main Channel A	1321.35	25 Year	29.66	82.20	84.35		84.38	0.000565	1.03	64.90	56.31	0.23
Reach #1	Main Channel A	1321.35	50 Year	35.45	82.20	84.66		84.68	0.000416	0.97	82.68	59.67	0.21
Reach #1	Main Channel A	1321.35	100 Year	41.58	82.20	84.97		84.98	0.000324	0.93	101.75	63.07	0.19
Reach #1	Main Channel A	1321.35	Regulatory	173.05	82.20	93.76		93.77	0.000011	0.46	1024.59	152.50	0.04
Reach #1	Main Channel A	1260.35	2 Year	10.56	82.20	83.30	83.11	83.38	0.003112	1.45	12.86	36.12	0.48
Reach #1	Main Channel A	1260.35	5 Year	17.29	82.20	83.56		83.65	0.002531	1.54	23.75	48.24	0.45
Reach #1	Main Channel A	1260.35	10 Year	22.49	82.20	83.80		83.84	0.001235	1.27	42.46	63.91	0.33
Reach #1	Main Channel A	1260.35	25 Year	29.66	82.20	84.32		84.35	0.000580	1.03	73.04	77.41	0.24
Reach #1	Main Channel A	1260.35	50 Year	35.45	82.20	84.84		84.86	0.000379	0.92	85.07	85.84	0.20
Reach #1	Main Channel A	1260.35	100 Year	41.58	82.20	84.96		84.97	0.000269	0.85	127.49	94.25	0.17
Reach #1	Main Channel A	1260.35	Regulatory	173.05	82.20	93.76		93.77	0.000007	0.36	1343.51	195.00	0.03
Reach #1	Main Channel A	1242.35	2 Year	10.56	82.20	82.98	82.98	83.29	0.015083	2.46	4.29	6.91	1.00
Reach #1	Main Channel A	1242.35	5 Year	17.29	82.20	83.46		83.60	0.003814	1.81	17.26	37.58	0.55
Reach #1	Main Channel A	1242.35	10 Year	22.49	82.20	83.86		83.92	0.001522	1.40	35.31	54.37	0.37
Reach #1	Main Channel A	1242.35	25 Year	29.66	82.20	84.30		84.34	0.000717	1.14	64.31	76.79	0.26
Reach #1	Main Channel A	1242.35	50 Year	35.45	82.20	84.83		84.85	0.000463	1.01	92.15	94.30	0.21
Reach #1	Main Channel A	1242.35	100 Year	41.58	82.20	84.95		84.97	0.000306	0.91	125.24	111.60	0.18
Reach #1	Main Channel A	1242.35	Regulatory	173.05	82.20	93.76		93.77	0.000006	0.35	1624.72	344.26	0.03
Reach #1	Main Channel A	1237.35	2 Year	11.51	81.77	82.90	82.53	83.07	0.005301	1.82	6.34	5.71	0.55
Reach #1	Main Channel A	1237.35	5 Year	18.54	81.77	83.33	82.81	83.55	0.004700	2.09	9.16	7.83	0.54
Reach #1	Main Channel A	1237.35	10 Year	23.93	81.77	83.64	83.01	83.89	0.004154	2.22	11.59	9.77	0.52
Reach #1	Main Channel A	1237.35	25 Year	31.38	81.77	84.03	83.27	84.30	0.003572	2.35	14.93	15.42	0.50
Reach #1	Main Channel A	1237.35	50 Year	37.40	81.77	84.33	83.47	84.62	0.003234	2.43	17.48	44.51	0.49
Reach #1	Main Channel A	1237.35	100 Year	43.76	81.77	84.63	83.65	84.93	0.002970	2.51	20.03	73.56	0.47
Reach #1	Main Channel A	1237.35	Regulatory	183.83	81.77	86.18	83.76	93.76	0.000008	0.35	1548.79	343.23	0.03
Reach #1	Main Channel A	1210.38	Culvert										
Reach #1	Main Channel A	1195.38	2 Year	11.51	81.67	82.41	82.78	82.87	0.014525	2.68	4.34	6.12	1.00
Reach #1	Main Channel A	1195.38	5 Year	18.54	81.67	82.69	82.69	83.19	0.012893	3.13	6.05	6.29	1.00
Reach #1	Main Channel A	1195.38	10 Year	23.93	81.67	82.88	82.88	83.47	0.012240	3.41	7.24	6.42	0.99
Reach #1	Main Channel A	1195.38	25 Year	31.38	81.67	83.11	83.11	83.82	0.011596	3.74	8.75	6.55	1.00
Reach #1	Main Channel A	1195.38	50 Year	37.40	81.67	83.28	83.28	84.08	0.011245	3.97	9.89	6.64	1.00
Reach #1	Main Channel A	1195.38	100 Year	43.76	81.67	83.46	83.46	84.34	0.010756	4.17	11.10	6.73	1.00
Reach #1	Main Channel A	1195.38	Regulatory	183.83	81.67	86.23	86.23	88.33	0.007665	6.57	33.70	121.06	0.08
Reach #1	Main Channel A	1175.38	2 Year	11.51	81.20	81.92	81.92	82.22	0.015322	2.44	4.72	7.89	1.01
Reach #1	Main Channel A	1175.38	5 Year	18.54	81.20	82.17	82.17	82.54	0.012225	2.70	7.47	13.14	0.95
Reach #1	Main Channel A	1175.38	10 Year	23.93	81.20	82.33	82.33	82.74	0.011111	2.88	9.82	14.78	0.93
Reach #1	Main Channel A	1175.38	25 Year	31.38	81.20	82.50	82.50	82.97	0.010616	3.14	12.32	16.62	0.93
Reach #1	Main Channel A	1175.38	50 Year	37.40	81.20	82.64	82.64	83.15	0.009850	3.26	14.93	19.87	0.92
Reach #1	Main Channel A	1175.38	100 Year	43.76	81.20	82.78	82.78	83.31	0.009197	3.37	17.89	23.01	0.90
Reach #1	Main Channel A	1175.38	Regulatory	183.83	81.20	84.35	84.35	85.00	0.006160	4.52	99.96	86.39	0.83
Reach #1	Main Channel A	1166.38	2 Year	11.51	80.20	81.39		81.57	0.005288	1.96	7.80	15.71	0.63
Reach #1	Main Channel A	1166.38	5 Year	18.54	80.20	81.61		81.87	0.006091	2.41	11.78	20.31	0.70
Reach #1	Main Channel A	1166.38	10 Year	23.93	80.20	81.74		82.05	0.006653	2.69	14.54	22.91	0.74
Reach #1	Main Channel A	1166.38	25 Year	31.38	80.20	81.88		82.28	0.007358	3.03	18.07	25.85	0.80
Reach #1	Main Channel A	1166.38	50 Year	37.40	80.20	81.98		82.41	0.007810	3.28	20.68	27.83	0.83
Reach #1	Main Channel A	1166.38	100 Year	43.76	80.20	82.05		82.58	0.009323	3.66	22.75	33.12	0.91
Reach #1	Main Channel A	1166.38	Regulatory	183.83	80.20	84.00		84.13	0.001744	2.67	194.48	107.15	0.45
Reach #1	Main Channel A	1052.38	2 Year	11.51	80.20	81.15		81.27	0.004045	1.54	8.61	20.22	0.55
Reach #1	Main Channel A	1052.38	5 Year	18.54	80.20	81.39		81.54	0.003872	1.79	14.51	28.84	0.56
Reach #1	Main Channel A	1052.38	10 Year	23.93	80.20	81.52		81.69	0.004096	1.98	18.37	33.46	0.58
Reach #1	Main Channel A	1052.38	25 Year	31.38	80.20	81.66		81.87	0.004301	2.21	23.42	38.88	0.62

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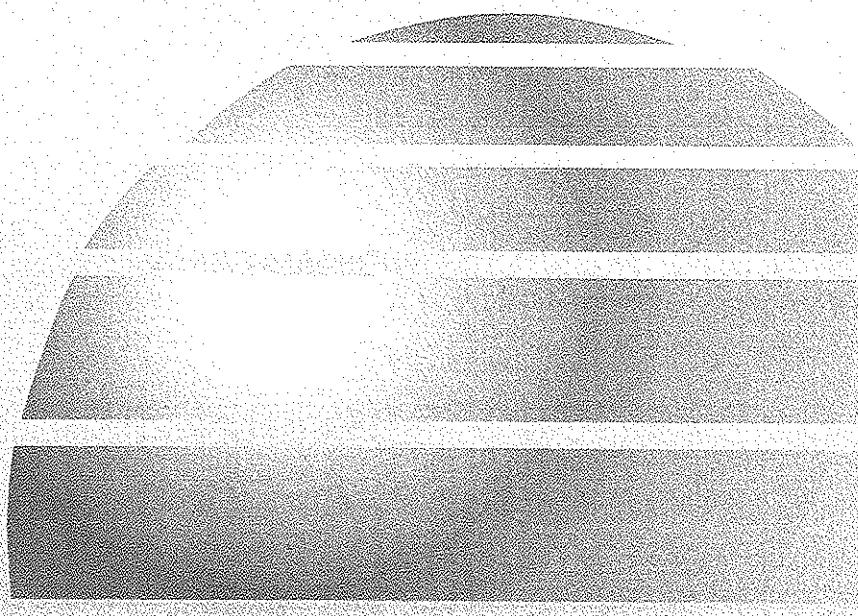
River	Reach	River Sta	Profile	O-Totl (m/s)	Min Ch.El. (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chn. (m/s)	Flow Area (m <sup>2</sup> )	Top Width (m)	Froude # Chn.
Reach #1	Main Channel A	1052.38	50 Year	37.40	80.20	81.76		81.99	0.004531	2.36	27.53	42.46	0.63
Reach #1	Main Channel A	1052.38	100 Year	43.76	80.20	81.85		82.11	0.004646	2.50	31.80	46.06	0.65
Reach #1	Main Channel A	1052.38	Regulatory	183.83	80.20	83.90		84.04	0.001315	2.35	195.33	105.63	0.40
Reach #1	Main Channel A	978.38	2 Year	11.51	79.20	80.44	80.44	80.78	0.010465	2.72	5.78	11.50	0.85
Reach #1	Main Channel A	978.38	5 Year	18.54	79.20	80.79	80.79	81.13	0.007783	2.85	12.21	25.98	0.77
Reach #1	Main Channel A	978.38	10 Year	23.93	79.20	80.88	80.98	81.30	0.006999	2.93	17.67	34.28	0.75
Reach #1	Main Channel A	978.38	25 Year	31.38	79.20	81.14	81.14	81.47	0.006910	3.12	23.86	30.92	0.75
Reach #1	Main Channel A	978.38	50 Year	37.40	79.20	81.24	81.24	81.59	0.007114	3.28	26.08	43.13	0.77
Reach #1	Main Channel A	978.38	100 Year	43.76	79.20	81.33	81.33	81.69	0.007381	3.45	32.14	46.03	0.79
Reach #1	Main Channel A	978.38	Regulatory	183.83	79.20	83.91		83.95	0.000734	1.91	301.02	148.53	0.29
Reach #1	Main Channel A	912.38	2 Year	11.51	78.20	79.75		79.88	0.002432	1.62	8.40	9.33	0.45
Reach #1	Main Channel A	912.38	5 Year	18.54	78.20	80.06		80.26	0.003038	2.08	11.52	11.81	0.52
Reach #1	Main Channel A	912.38	10 Year	23.93	78.20	80.24		80.50	0.003466	2.38	13.68	15.24	0.56
Reach #1	Main Channel A	912.38	25 Year	31.38	78.20	80.38		80.75	0.004433	2.83	16.37	17.99	0.64
Reach #1	Main Channel A	912.38	50 Year	37.40	78.20	80.46		80.92	0.005332	3.19	17.93	19.58	0.71
Reach #1	Main Channel A	912.38	100 Year	43.76	78.20	80.62		81.14	0.005687	3.42	21.51	28.49	0.73
Reach #1	Main Channel A	912.38	Regulatory	183.83	78.20	83.85		83.92	0.000539	1.94	258.35	88.25	0.26
Reach #1	Main Channel A	849.38	2 Year	11.51	78.20	79.45		79.65	0.005714	2.09	7.78	12.73	0.65
Reach #1	Main Channel A	849.38	5 Year	18.54	78.20	79.70		79.98	0.006516	2.57	11.74	20.25	0.72
Reach #1	Main Channel A	849.38	10 Year	23.93	78.20	79.78		80.17	0.008335	3.02	13.55	23.22	0.62
Reach #1	Main Channel A	849.38	25 Year	31.38	78.20	79.99		80.38	0.007788	3.20	18.93	30.38	0.81
Reach #1	Main Channel A	849.38	50 Year	37.40	78.20	80.28		80.55	0.004753	2.80	26.80	36.07	0.65
Reach #1	Main Channel A	849.38	100 Year	43.76	78.20	80.61		80.79	0.002005	2.44	41.64	42.12	0.52
Reach #1	Main Channel A	849.38	Regulatory	183.83	78.20	83.80		83.88	0.000619	2.04	221.70	64.90	0.28
Reach #1	Main Channel A	783.38	2 Year	11.51	78.00	79.06		79.25	0.005857	1.96	7.07	15.34	0.66
Reach #1	Main Channel A	783.38	5 Year	18.54	78.00	79.30		79.55	0.005976	2.32	12.63	31.50	0.70
Reach #1	Main Channel A	783.38	10 Year	23.93	78.00	79.60		79.75	0.003330	2.02	24.84	51.54	0.54
Reach #1	Main Channel A	783.38	25 Year	31.38	78.00	80.01		80.09	0.001433	1.57	52.27	79.15	0.37
Reach #1	Main Channel A	783.38	50 Year	37.40	78.00	80.33		80.37	0.000765	1.27	77.54	80.30	0.28
Reach #1	Main Channel A	783.38	100 Year	43.76	78.00	80.65		80.68	0.000479	1.11	103.26	81.46	0.22
Reach #1	Main Channel A	783.38	Regulatory	183.83	78.00	83.82		83.84	0.000176	1.16	378.71	92.19	0.16
Reach #1	Main Channel A	685.38	2 Year	11.51	77.20	78.62		78.74	0.004527	1.92	13.29	27.42	0.58
Reach #1	Main Channel A	685.38	5 Year	18.54	77.20	79.17		79.22	0.001597	1.46	32.95	44.18	0.35
Reach #1	Main Channel A	685.38	10 Year	23.93	77.20	79.53		79.56	0.009984	1.30	50.73	56.17	0.28
Reach #1	Main Channel A	685.38	25 Year	31.38	77.20	79.97		79.99	0.000594	1.14	78.80	71.09	0.23
Reach #1	Main Channel A	685.38	50 Year	37.40	77.20	80.30		80.31	0.000408	1.03	103.15	76.18	0.19
Reach #1	Main Channel A	685.38	100 Year	43.76	77.20	80.62		80.64	0.000302	0.95	128.78	80.55	0.17
Reach #1	Main Channel A	685.38	Regulatory	183.83	77.20	83.81		83.82	0.000173	1.14	454.88	130.89	0.14
Reach #1	Main Channel A	673.38	2 Year	11.51	77.35	78.58	78.09	78.69	0.002563	1.44	8.08	7.68	0.44
Reach #1	Main Channel A	673.38	5 Year	18.54	77.35	79.05	78.34	79.19	0.002024	1.62	11.79	9.18	0.41
Reach #1	Main Channel A	673.38	10 Year	23.93	77.35	79.38	79.52	79.53	0.001789	1.73	14.55	13.58	0.40
Reach #1	Main Channel A	673.38	25 Year	31.38	77.35	79.79	78.72	79.06	0.001584	1.85	18.04	19.09	0.38
Reach #1	Main Channel A	673.38	50 Year	37.40	77.35	80.10	78.88	80.28	0.001471	1.94	20.65	62.34	0.38
Reach #1	Main Channel A	673.38	100 Year	43.76	77.35	80.40	79.00	80.61	0.001381	2.02	23.27	69.15	0.38
Reach #1	Main Channel A	673.38	Regulatory	183.83	77.35	83.78	81.44	83.82	0.000205	1.30	393.82	130.33	0.17
Reach #1	Main Channel A	650.38	Culvert										
Reach #1	Main Channel A	640.38	2 Year	11.51	77.00	77.74	77.74	78.08	0.016466	2.62	4.39	6.22	1.00
Reach #1	Main Channel A	640.38	5 Year	18.54	77.00	78.01	78.01	78.48	0.015834	3.04	6.10	6.44	1.00
Reach #1	Main Channel A	640.38	10 Year	23.93	77.00	78.19	78.19	78.75	0.016065	3.32	7.22	6.50	1.00
Reach #1	Main Channel A	640.38	25 Year	31.38	77.00	78.41	78.41	79.08	0.014214	3.63	8.67	6.57	1.00
Reach #1	Main Channel A	640.38	50 Year	37.40	77.00	78.58	78.58	79.33	0.013585	3.84	9.78	6.62	1.00
Reach #1	Main Channel A	640.38	100 Year	43.76	77.00	78.74	78.74	79.58	0.013149	4.05	10.88	6.68	1.00
Reach #1	Main Channel A	640.38	Regulatory	183.83	77.00	81.43	81.43	83.48	0.009107	6.41	31.60	80.97	0.98
Reach #1	Main Channel A	571.38	2 Year	11.51	76.20	77.53		77.62	0.002209	1.41	12.16	22.15	0.42
Reach #1	Main Channel A	571.38	5 Year	18.54	76.20	77.68		77.85	0.003327	1.89	16.01	26.08	0.53
Reach #1	Main Channel A	571.38	10 Year	23.93	76.20	77.75		77.97	0.004574	2.28	17.62	27.58	0.62
Reach #1	Main Channel A	571.38	25 Year	31.38	76.20	77.84		78.14	0.006019	2.72	20.13	26.73	0.72
Reach #1	Main Channel A	571.38	50 Year	37.40	76.20	77.90		78.28	0.007232	3.06	21.85	31.13	0.80
Reach #1	Main Channel A	571.38	100 Year	43.76	76.20	78.41		78.41	0.008671	3.42	23.31	32.27	0.88
Reach #1	Main Channel A	571.38	Regulatory	183.83	76.20	79.30	79.30	79.93	0.007616	4.88	92.29	65.45	0.91
Reach #1	Main Channel A	571.38	2 Year	11.51	76.20	77.25	77.25	77.45	0.007699	2.13	9.41	37.01	0.74
Reach #1	Main Channel A	571.38	5 Year	18.54	76.20	77.43	77.43	77.64	0.007328	2.38	17.69	55.10	0.75
Reach #1	Main Channel A	571.38	10 Year	23.93	76.20	77.55	77.55	77.74	0.006497	2.39	24.76	63.36	0.72
Reach #1	Main Channel A	571.38	25 Year	31.38	76.20	77.63	77.63	77.84	0.007173	2.64	30.26	65.27	0.76
Reach #1	Main Channel A	571.38	50 Year	37.40	76.20	77.69	77.69	77.92	0.007764	2.83	34.00	68.54	0.80
Reach #1	Main Channel A	571.38	100 Year	43.76	76.20	77.74	77.74	77.99	0.008222	3.00	37.83	67.81	0.83
Reach #1	Main Channel A	571.38	Regulatory	183.83	76.20	79.06		79.25	0.004053	3.32	139.64	84.39	0.65
Reach #1	Main Channel A	500.38	2 Year	11.51	75.20	76.74		76.79	0.001167	1.14	18.44	32.03	0.31
Reach #1	Main Channel A	500.38	5 Year	18.54	75.20	76.98		77.05	0.001401	1.39	27.20	39.89	0.35
Reach #1	Main Channel A	500.38	10 Year	23.93	75.20	77.12		77.21	0.001553	1.65	33.14	44.18	0.38
Reach #1	Main Channel A	500.38	25 Year	31.38	75.20	77.28		77.38	0.001736	1.74	40.59	49.00	0.40
Reach #1	Main Channel A	500.38	50 Year	37.40	75.20	77.38		77.50	0.001910	1.89	45.68	52.04	0.43
Reach #1	Main Channel A	500.38	100 Year	43.76	75.20	77.48		77.61	0.002073	2.03	50.80	54.92	0.45
Reach #1	Main Channel A	500.38	Regulatory	183.83	75.20	78.83		79.03	0.002598	3.17	165.94	108.29	0.55
Reach #1	Main Channel A	435.38	2 Year	11.51	75.20	76.43		76.63	0.006574	2.17	9.67	24.81	0.68

HEC-RAS Plan: 0706NS (Continued)

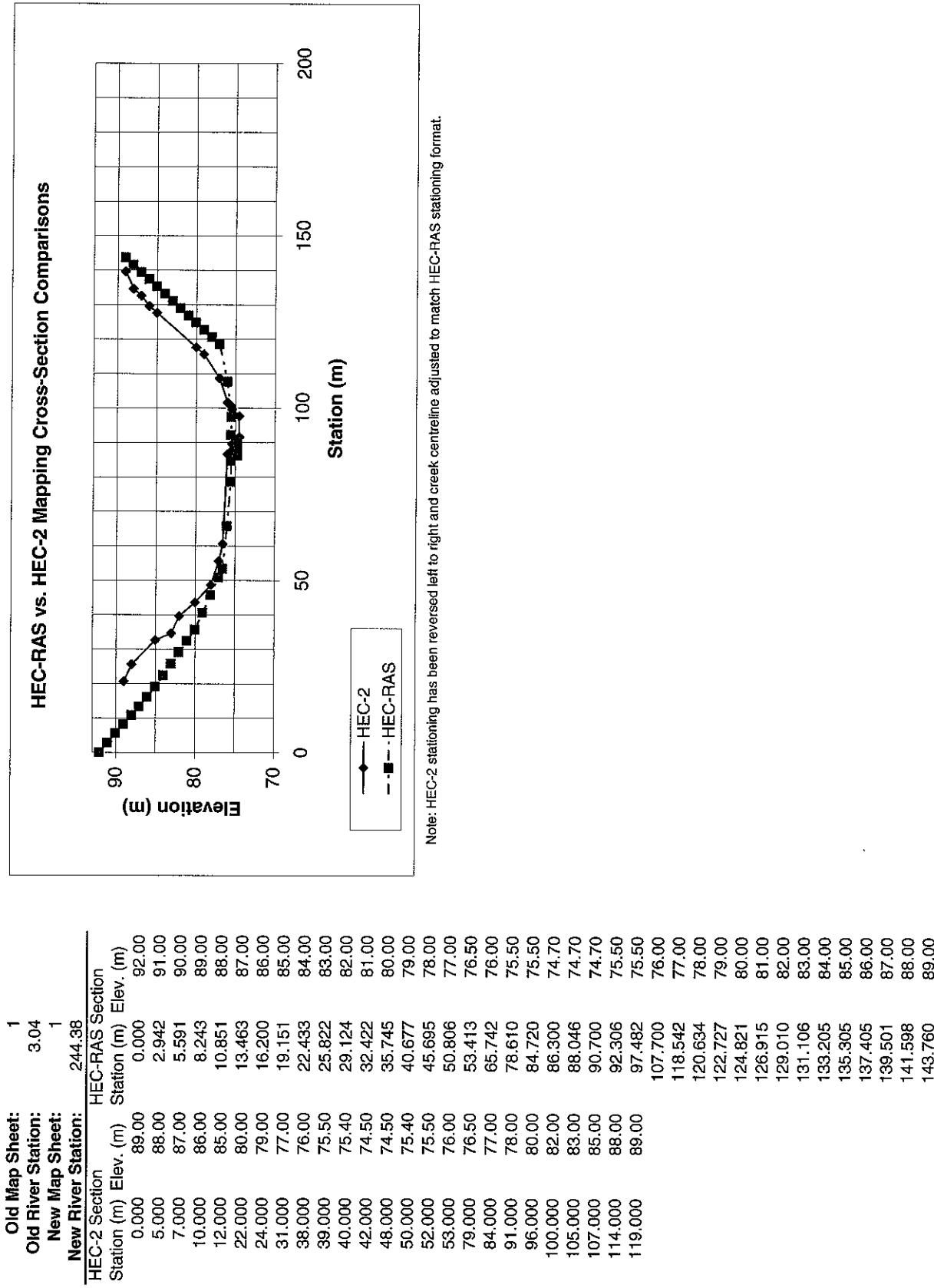
River	Reach	River Sta.	Profile	Q Total (m³/s)	Min Ch E (m)	W.S. Elev. (m)	Crit W.S. (m)	E.G. Elev. (m)	E.G. Slope (m/m)	Vel Chan (m/s)	Flow Area (m²)	Top Width (m)	Froude # Ch
Reach #1	Main Channel A	435.38	5 Year	16.54	75.20	76.67		76.88	0.008262	2.43	16.45	33.58	0.69
Reach #1	Main Channel A	435.38	10 Year	23.93	75.20	76.81		77.02	0.006033	2.56	21.60	38.93	0.69
Reach #1	Main Channel A	435.38	25 Year	31.38	75.20	76.97		77.19	0.005821	2.71	28.45	45.09	0.69
Reach #1	Main Channel A	435.38	50 Year	37.40	75.20	77.08		77.30	0.005580	2.78	33.65	47.27	0.69
Reach #1	Main Channel A	435.38	100 Year	43.76	75.20	77.19		77.40	0.005417	2.85	38.60	48.66	0.68
Reach #1	Main Channel A	435.38	Regulatory	183.83	75.20	78.50		78.80	0.005348	4.09	112.53	61.08	0.74
Reach #1	Main Channel A	244.38	2 Year	11.51	74.70	75.88		75.95	0.002097	1.27	15.17	36.25	0.40
Reach #1	Main Channel A	244.38	5 Year	18.54	74.70	76.08		76.17	0.002282	1.51	23.76	45.02	0.44
Reach #1	Main Channel A	244.38	10 Year	23.93	74.70	76.21		76.31	0.002429	1.66	28.45	49.31	0.48
Reach #1	Main Channel A	244.38	25 Year	31.38	74.70	76.35		76.46	0.002604	1.83	36.66	54.25	0.48
Reach #1	Main Channel A	244.38	50 Year	37.40	74.70	76.45		76.57	0.002699	1.95	42.29	57.82	0.49
Reach #1	Main Channel A	244.38	100 Year	43.76	74.70	76.54		76.67	0.002702	2.06	47.77	60.34	0.51
Reach #1	Main Channel A	244.38	Regulatory	183.83	74.70	77.62		77.92	0.004290	3.56	121.02	72.24	0.66
Reach #1	Main Channel A	170.38	2 Year	11.51	74.70	75.81		75.83	0.000538	0.80	34.08	92.47	0.26
Reach #1	Main Channel A	170.38	5 Year	18.54	74.70	76.05		76.07	0.000640	0.80	56.68	97.72	0.23
Reach #1	Main Channel A	170.38	10 Year	23.93	74.70	76.18		76.20	0.000623	0.85	69.29	99.27	0.23
Reach #1	Main Channel A	170.38	25 Year	31.38	74.70	76.32		76.34	0.000632	0.91	83.84	101.02	0.24
Reach #1	Main Channel A	170.38	50 Year	37.40	74.70	76.43		76.45	0.000642	0.96	94.41	102.28	0.24
Reach #1	Main Channel A	170.38	100 Year	43.76	74.70	76.52		76.54	0.000665	1.02	104.09	103.42	0.25
Reach #1	Main Channel A	170.38	Regulatory	183.83	74.70	77.62		77.69	0.001217	1.92	223.38	112.10	0.37
Reach #1	Main Channel A	35.38	2 Year	11.51	74.70	75.65		75.69	0.001265	0.90	15.45	42.63	0.31
Reach #1	Main Channel A	35.38	5 Year	18.54	74.70	75.80		75.95	0.001140	1.02	29.52	69.21	0.31
Reach #1	Main Channel A	35.38	10 Year	23.93	74.70	76.03		76.08	0.001175	1.11	38.85	80.20	0.32
Reach #1	Main Channel A	35.38	25 Year	31.38	74.70	76.17		76.22	0.001192	1.20	50.46	84.53	0.33
Reach #1	Main Channel A	35.38	50 Year	37.40	74.70	76.27		76.33	0.001197	1.26	59.20	87.64	0.33
Reach #1	Main Channel A	35.38	100 Year	43.76	74.70	76.36		76.42	0.001230	1.33	66.96	90.33	0.34
Reach #1	Main Channel A	35.38	Regulatory	183.83	74.70	77.28		77.46	0.002393	2.53	162.83	112.58	0.51
Reach #1	Main Channel A	20.38	2 Year	11.51	74.70	75.34		75.34	0.015452	2.34	5.12	0.25	1.01
Reach #1	Main Channel A	20.38	5 Year	19.20	74.70	75.64		75.64	0.008807	2.28	11.17	36.43	0.81
Reach #1	Main Channel A	20.38	10 Year	24.72	74.70	75.76		75.76	0.008229	2.41	15.86	42.85	0.80
Reach #1	Main Channel A	20.38	25 Year	32.39	74.70	75.89		76.17	0.007645	2.54	22.21	50.25	0.78
Reach #1	Main Channel A	20.38	50 Year	38.57	74.70	75.86		76.27	0.008264	2.75	25.58	53.77	0.83
Reach #1	Main Channel A	20.38	100 Year	45.16	74.70	76.11		76.11	0.006370	2.62	36.47	82.08	0.74
Reach #1	Main Channel A	20.38	Regulatory	190.77	74.70	76.89		76.89	0.009162	4.32	110.11	105.64	0.96

## **APPENDIX E**

### **HEC-RAS vs. HEC-2 CROSS SECTION COMPARISON**

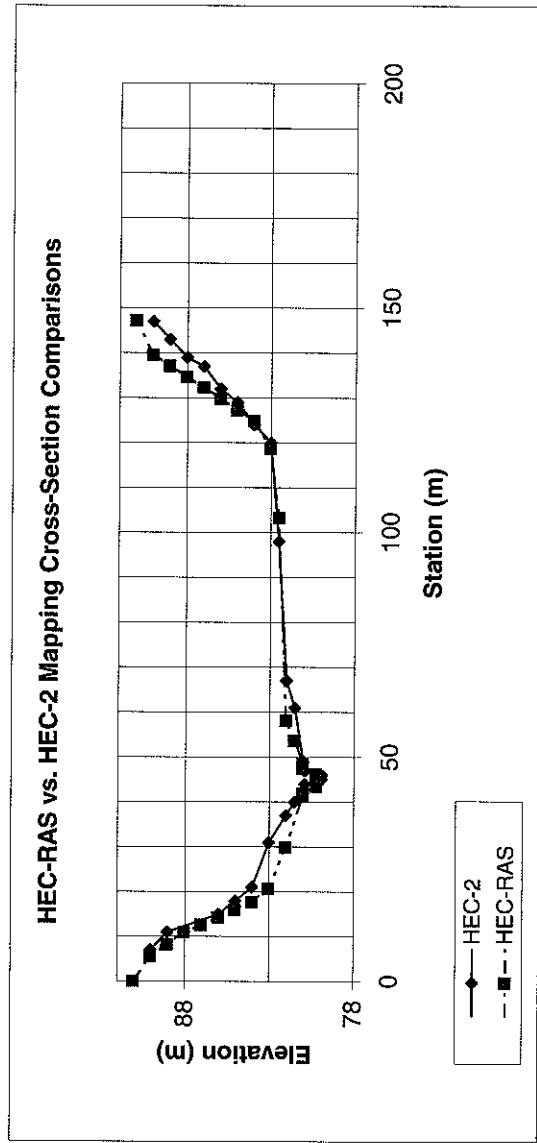


Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons



Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons

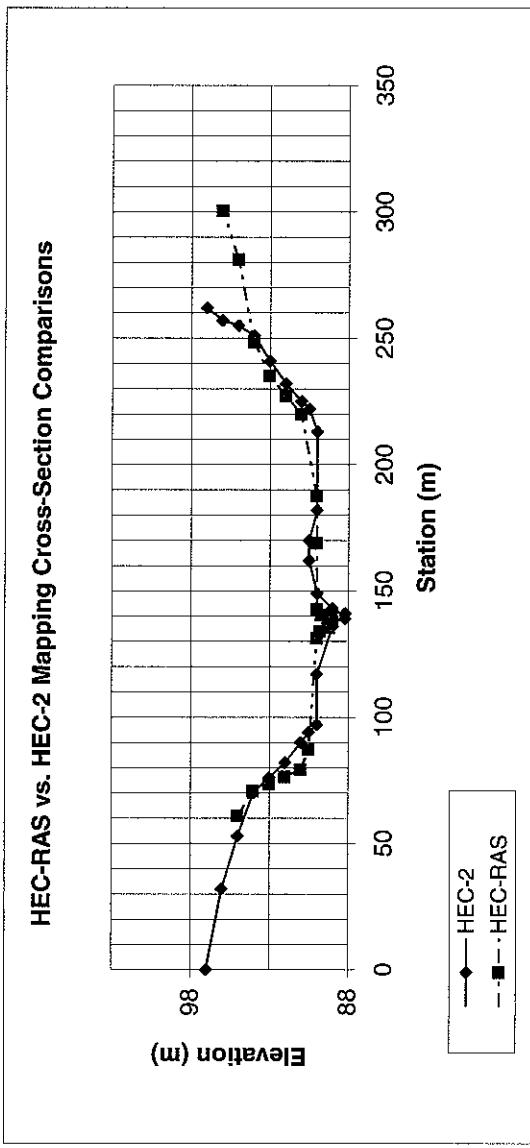
Old Map Sheet:	1		
Old River Station:	3.17		
New Map Sheet:	1		
New River Station:	1116.38		
HEC-2 Section	HEC-RAS Section		
Station (m)	Elev. (m)	Station (m)	Elev. (m)
0.000	90.00	0.000	91.00
4.000	89.00	5.583	90.00
8.000	88.00	8.242	89.00
10.000	87.00	10.959	88.00
15.000	86.00	12.570	87.00
18.000	85.00	14.243	86.00
23.000	84.00	15.956	85.00
27.000	83.00	17.688	84.00
49.000	82.50	20.615	83.00
80.000	82.00	29.868	82.00
86.000	81.50	41.260	81.00
98.000	81.00	41.980	81.00
100.000	80.90	43.500	80.20
101.000	79.90	44.944	80.20
102.000	79.90	46.200	80.20
103.000	80.90	47.539	81.00
105.000	81.00	48.628	81.00
107.000	81.50	53.636	81.50
110.000	82.00	58.106	82.00
116.000	83.00	103.282	82.50
126.000	84.00	118.634	83.00
129.000	85.00	124.837	84.00
132.000	86.00	127.300	85.00
136.000	89.00	129.760	86.00
140.000	90.00	132.216	87.00
		134.668	88.00
		137.113	89.00
		139.553	90.00
		147.152	91.00



Note: HEC-2 stationing has been reversed left to right and creek centreline adjusted to match HEC-RAS stationing format.

Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons

<b>Old Map Sheet:</b>	1		
<b>Old River Station:</b>	3.34		
<b>New Map Sheet:</b>	1		
<b>New River Station:</b>	2141.26		
<b>HEC-2 Section</b>	<b>HEC-RAS Section</b>		
Station (m)	Elev. (m)	Station (m)	Elev. (m)
0.000	97.00	0.000	95.00
5.000	96.00	9.702	94.00
7.000	95.00	12.649	93.00
11.000	94.00	15.443	92.00
21.000	93.00	18.202	91.00
30.000	92.00	26.245	90.50
37.000	91.00	70.296	90.00
40.000	90.50	73.030	89.80
49.000	90.00	74.400	89.20
80.000	90.00	77.534	89.00
92.000	90.50	78.100	89.30
100.000	90.50	79.573	89.71
113.000	90.00	81.888	90.00
119.000	89.00	107.931	90.00
120.000	89.00	126.647	90.00
121.000	88.20	158.933	91.00
123.000	88.20	166.350	92.00
124.000	89.00	174.259	93.00
126.000	89.00	187.445	94.00
145.000	90.00	220.204	95.00
165.000	90.00	239.408	96.00
168.000	90.50		
172.000	91.00		
180.000	92.00		
186.000	93.00		
192.000	94.00		
209.000	95.00		
230.000	96.00		
262.000	97.00		

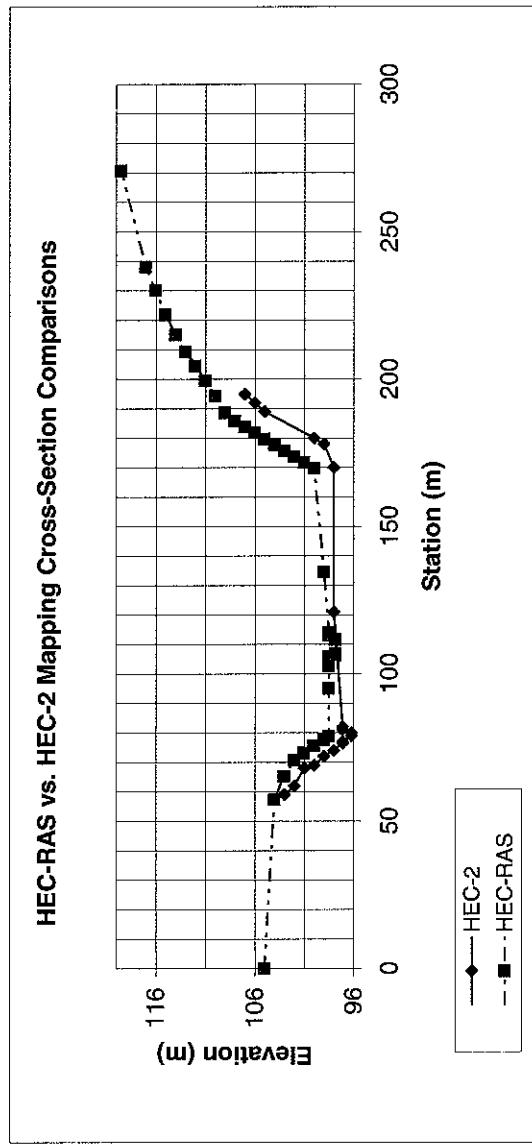


Note: HEC-2 stationing has been reversed left to right and creek centreline adjusted to match HEC-RAS stationing format.

Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons

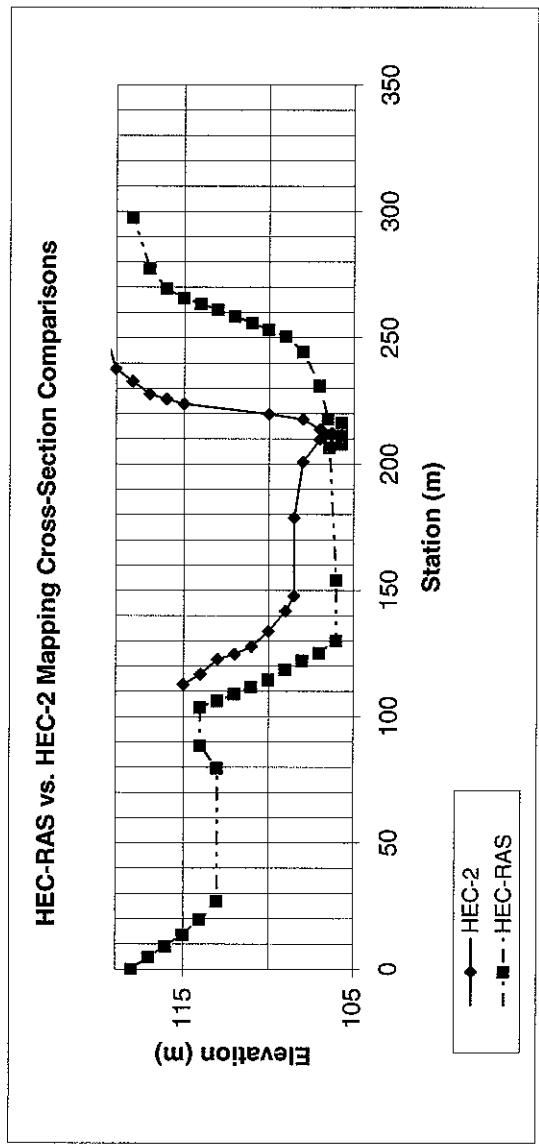
<b>Old Map Sheet:</b>	<sup>2</sup>
<b>Old River Station:</b>	3.48
<b>New Map Sheet:</b>	<sup>2</sup>
<b>New River Station:</b>	3421.24

HEC-2 Section		HEC-RAS Section	
Station (m)	Elev. (m)	Station (m)	Elev. (m)
0.000	107.00	0.000	105.00
3.000	106.00	57.393	104.00
6.000	105.00	65.281	103.00
5.000	100.00	70.848	102.00
17.000	99.00	73.238	101.00
25.000	98.00	75.581	100.00
74.000	98.00	77.764	99.00
113.000	97.10	78.824	98.50
114.000	97.10	95.130	98.50
115.000	96.20	102.809	98.50
116.000	96.20	106.046	98.50
118.000	97.10	106.500	97.80
118.500	97.10	107.040	97.80
121.000	98.00	111.700	97.80
123.000	99.00	113.024	98.50
126.000	100.00	114.102	98.50
127.000	101.00	134.781	99.00
133.000	102.00	169.884	100.00
136.000	103.00	171.832	101.00
		173.794	102.00
		175.778	103.00
		177.785	104.00
		179.810	105.00
		181.850	106.00
		183.906	107.00
		185.976	108.00
		188.714	109.00
		194.296	110.00
		199.511	111.00
		204.541	112.00
		209.483	113.00
		215.144	114.00
		221.912	115.00
		230.198	116.00
		238.189	117.00
		270.776	119.50



Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons

Old Map Sheet:	2		
Old River Station:	3.61		
New Map Sheet:	2		
New River Station:	4013.24		
HEC-2 Section	HEC-RAS Section		
Station (m)	Elev. (m)	Station (m)	Elev. (m)
0.000	120.00	0.000	118.00
21.000	119.00	4.756	117.00
26.000	118.00	9.147	116.00
31.000	117.00	13.509	115.00
33.000	116.00	19.626	114.00
35.000	115.00	26.864	113.00
39.000	110.00	79.576	113.00
41.000	108.00	88.407	114.00
45.000	107.00	103.628	114.00
46.000	106.80	106.256	113.00
46.500	106.30	108.920	112.00
47.500	106.30	111.640	111.00
48.000	106.80	114.578	110.00
49.000	107.00	118.629	109.00
58.000	108.00	122.172	108.00
80.000	108.50	125.228	107.00
111.000	108.50	130.105	106.00
117.000	109.00	154.035	106.00
125.000	110.00	206.528	106.41
131.000	111.00	207.907	105.70
134.000	112.00	211.226	105.70
136.000	113.00	216.407	105.70
142.000	114.00	217.776	106.50
146.000	115.00	230.937	107.00
		244.311	108.00
		250.378	109.00
		253.146	110.00
		255.810	111.00
		258.428	112.00
		261.020	113.00
		263.363	114.00
		265.742	115.00
		269.440	116.00
		277.645	117.00
		297.639	118.00



Note: HEC-2 stationing has been reversed left to right and creek centreline adjusted to match HEC-RAS stationing format.

Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons

Old Map Sheet:

2

Old River Station:

3.66

New Map Sheet:

2

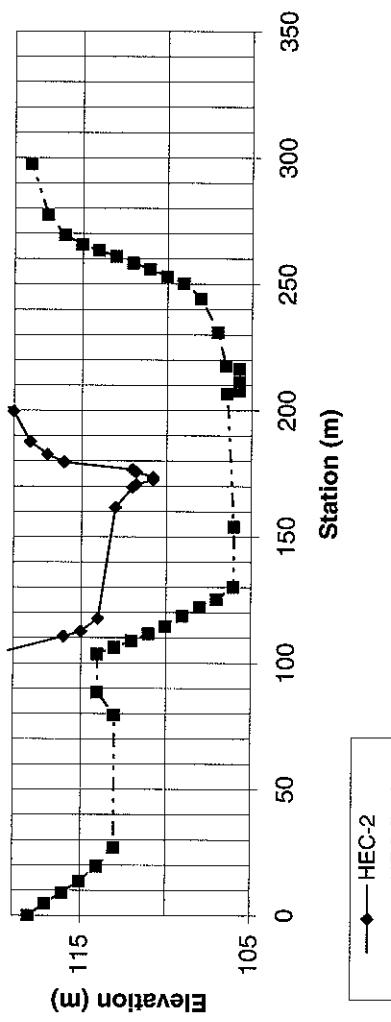
New River Station:

4372.23

HEC-2 Section  
Station (m) Elev., (m)

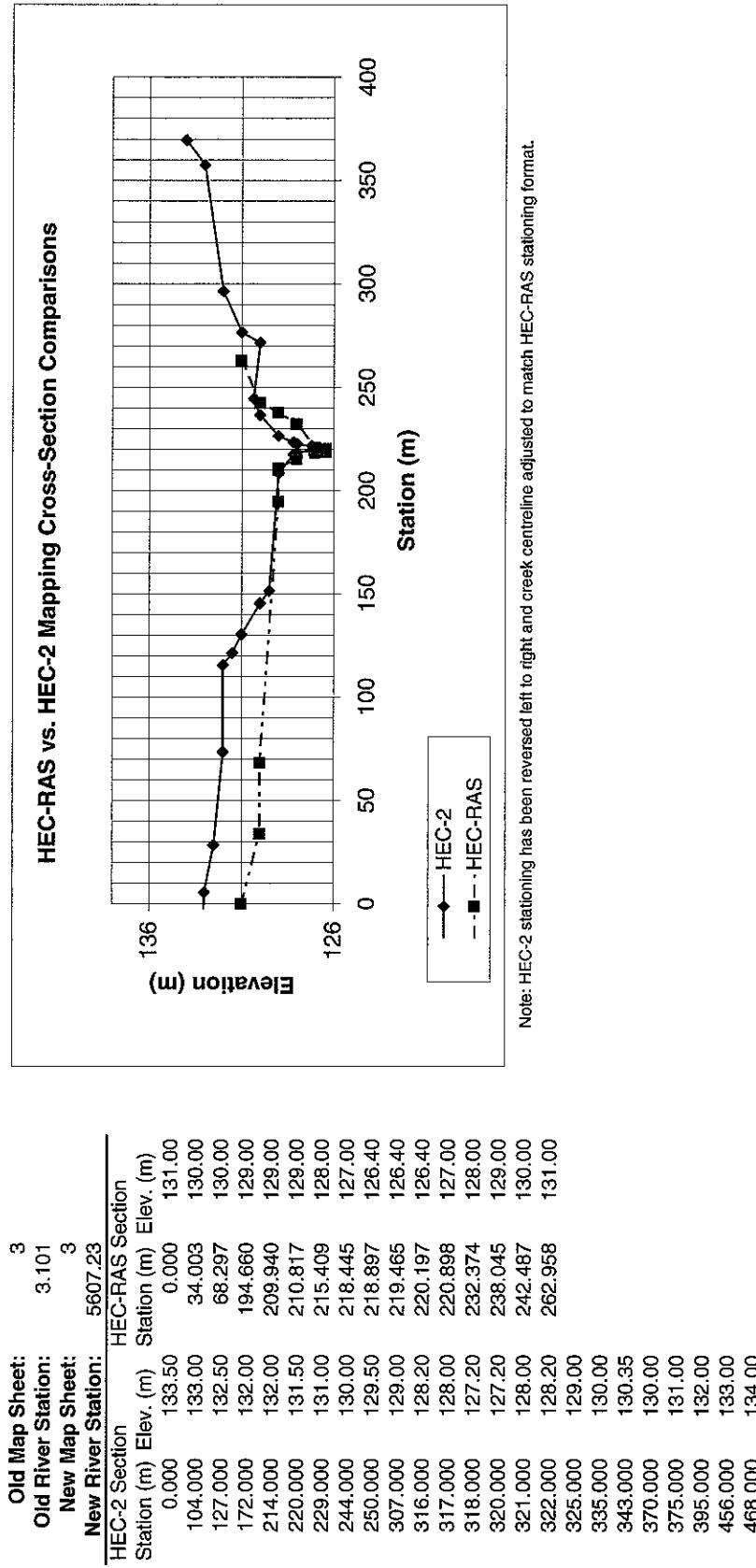
HEC-2 Section	Station (m)	Elev. (m)	HEC-RAS Section	Station (m)	Elev. (m)
	122.00	0.000		118.00	0.000
0.000	121.00	4.756		117.00	4.756
3.000	120.00	9.147		116.00	9.147
5.000	116.00	13.509		115.00	13.509
12.000	115.00	19.626		114.00	19.626
14.000	114.00	26.864		113.00	26.864
19.000	113.00	79.576		113.00	79.576
63.000	112.00	88.407		114.00	88.407
71.000	111.80	103.628		114.00	103.628
72.000	110.80	106.256		113.00	106.256
74.000	110.80	108.920		112.00	108.920
75.000	111.80	111.640		111.00	111.640
77.000	111.80	114.578		110.00	114.578
78.000	112.00	118.629		109.00	118.629
81.000	116.00	118.629		108.00	118.629
84.000	117.00	122.172		108.00	122.172
89.000	118.00	125.228		107.00	125.228
101.000	119.00	130.105		106.00	130.105
106.000	120.00	154.035		106.00	154.035
122.000	121.00	206.528		106.41	206.528
151.000	122.00	207.907		105.70	207.907
172.000	123.00	211.226		105.70	211.226
		216.407		105.70	216.407
		217.776		106.50	217.776
		230.937		107.00	230.937
		244.311		108.00	244.311
		250.378		109.00	250.378
		253.146		110.00	253.146
		265.742		115.00	265.742
		269.440		116.00	269.440
		277.645		117.00	277.645
		297.639		118.00	297.639

HEC-RAS vs. HEC-2 Mapping Cross-Section Comparisons

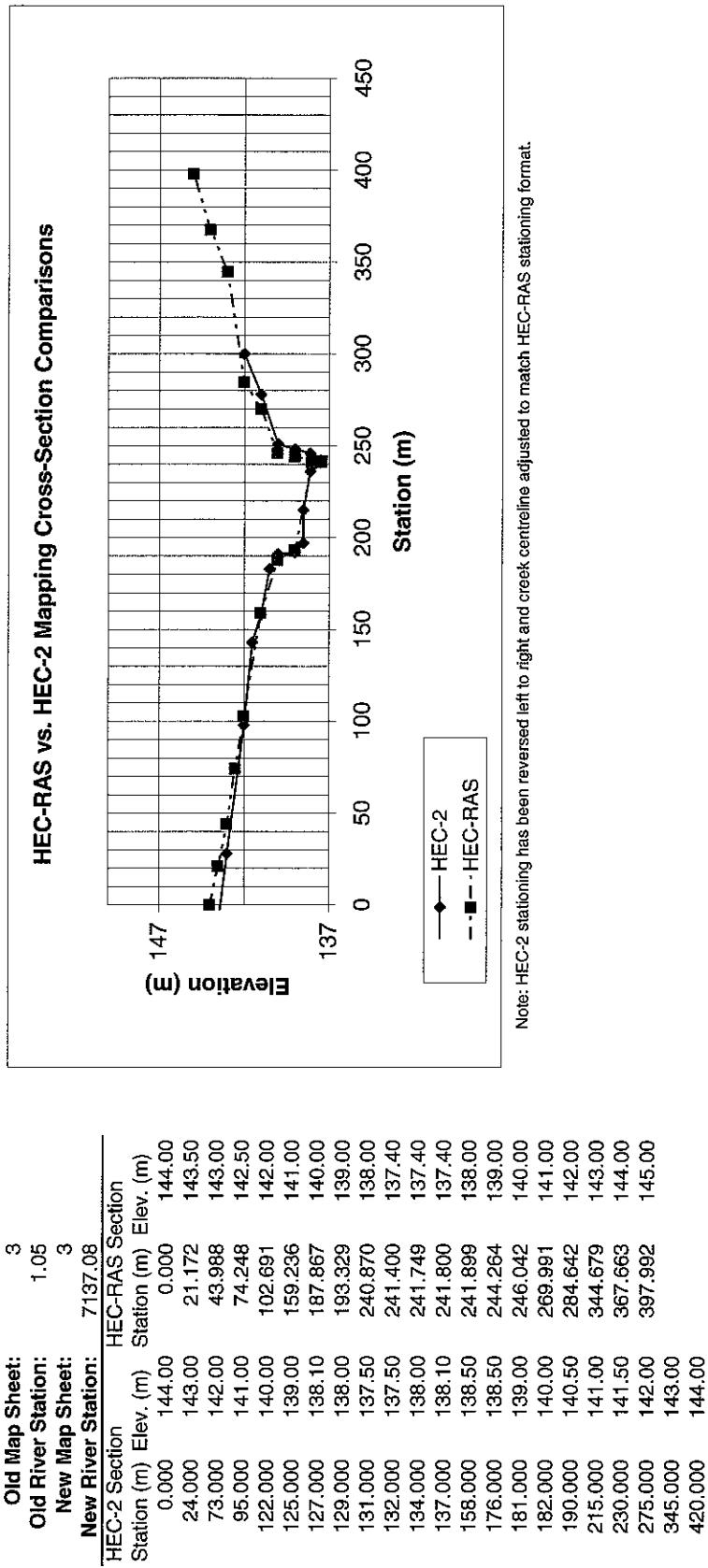


Note: HEC-2 stationing has been reversed left to right and creek centreline adjusted to match HEC-RAS stationing format.

**Petticoat Creek - Main Branch**  
**HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons**



**Petticoat Creek - Main Branch**  
**HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons**



**Petticoat Creek - Main Branch**  
**HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons**

**Old Map Sheet:** 3

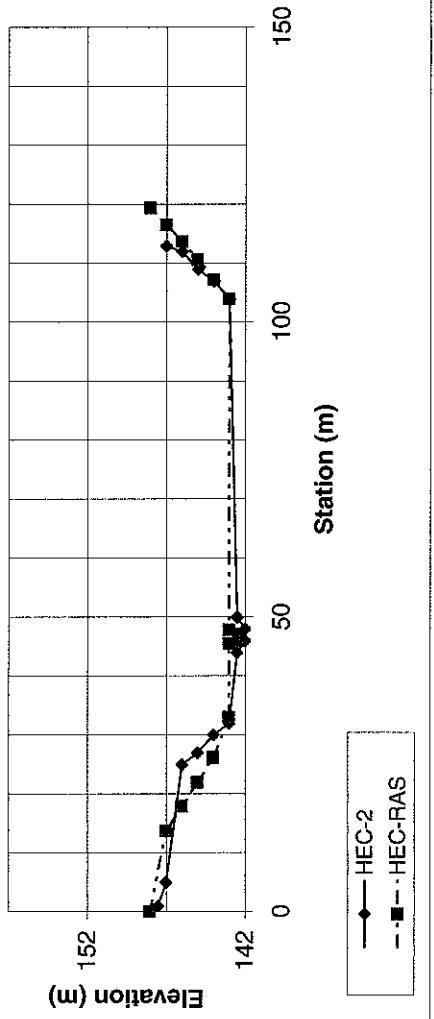
1.10

**New Map Sheet:** 3

7829.08

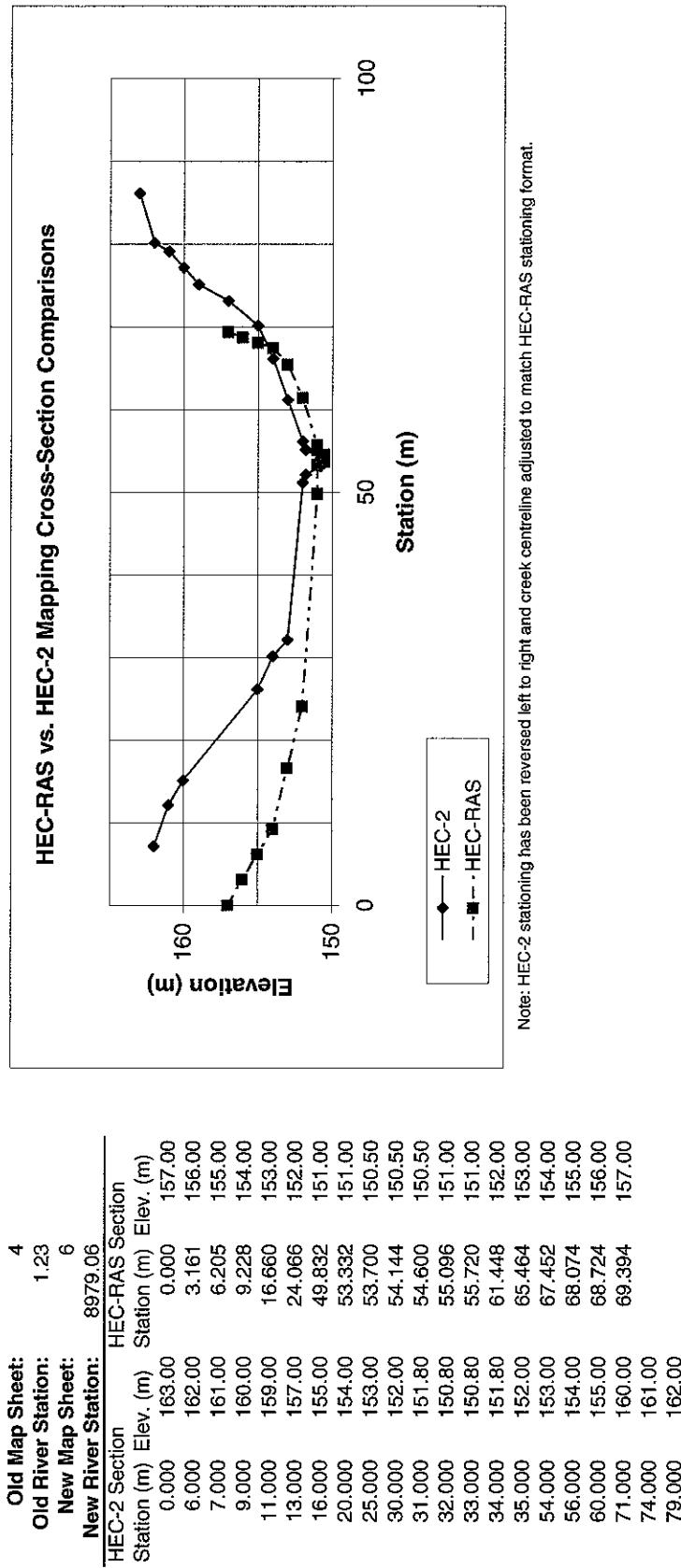
HEC-2 Section	Station (m)	Elev. (m)	HEC-RAS Section	Station (m)	Elev. (m)
	0.000	148.00		0.000	148.00
	4.000	147.00		13.692	147.00
	5.000	146.00		17.882	146.00
	8.000	145.00		21.941	145.00
	10.000	144.00		26.156	144.00
	13.000	143.00		32.970	143.00
	67.000	142.50		45.498	143.00
	69.000	142.00		46.000	142.40
	69.500	141.50		46.427	142.40
	70.500	141.50		47.100	142.40
	71.000	142.00		47.826	143.00
	73.000	142.50		103.934	143.00
	85.000	143.00		107.276	144.00
	87.000	144.00		110.593	145.00
	90.000	145.00		113.664	146.00
	92.000	146.00		116.526	147.00
	112.000	147.00		119.393	148.00
	116.000	147.50			

**HEC-RAS vs. HEC-2 Mapping Cross-Section Comparisons**

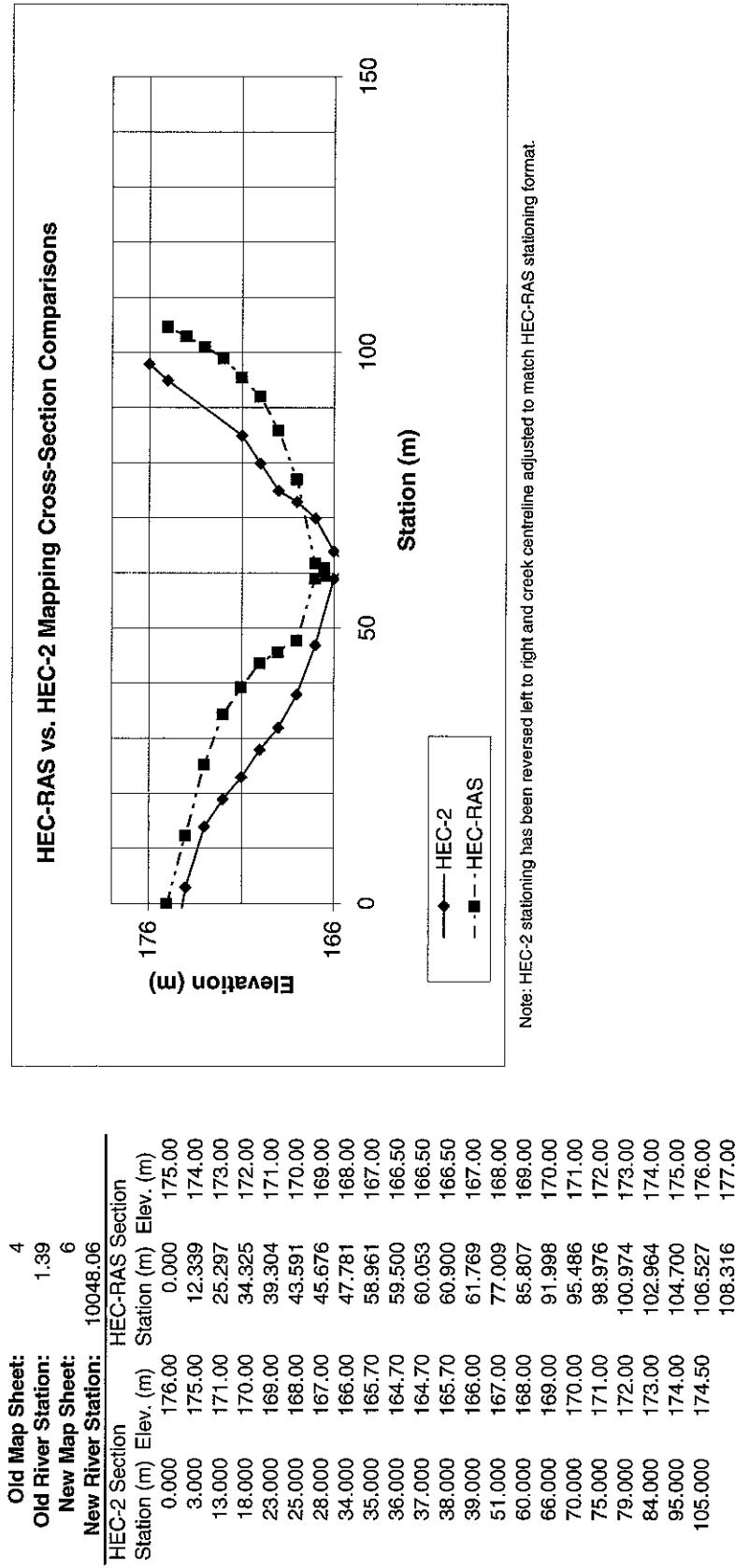


Note: HEC-2 stationing has been reversed left to right and creek centreline adjusted to match HEC-RAS stationing format.

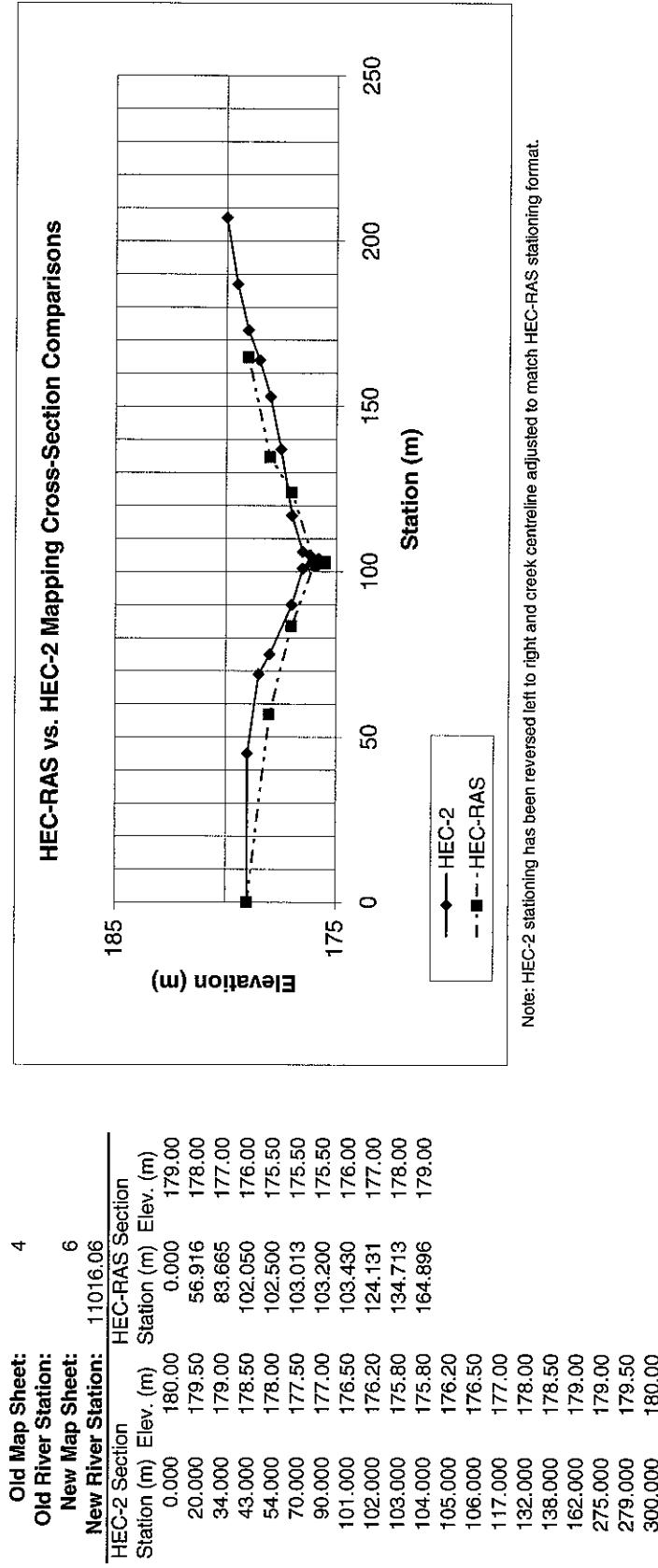
Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons



Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons



Petticoat Creek - Main Branch  
HEC-RAS vs. HEC-2 Mapping Cross-Sections Comparisons



## **APPENDIX F**

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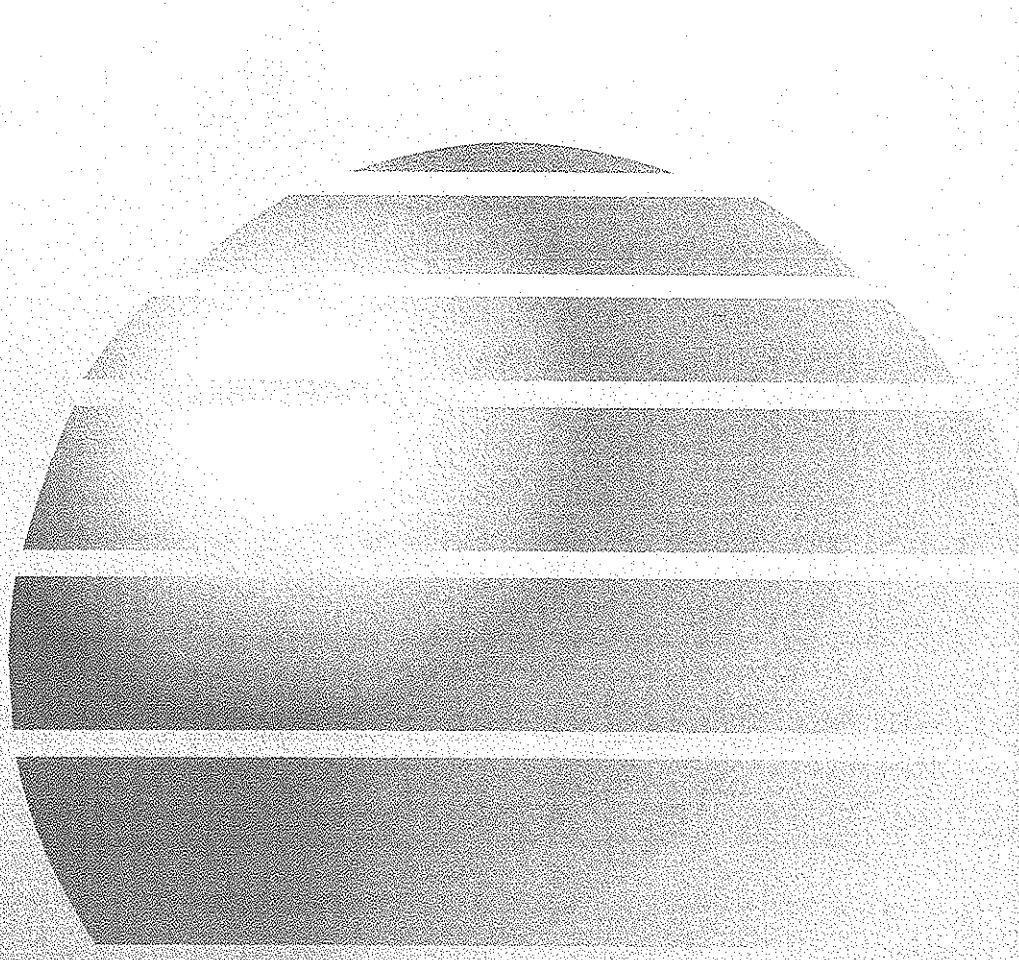
### **STRUCTURE FLOODING FREQUENCIES**

Structure Number	Description (Length, Width, Material, Shape, Location)	Location	River Station / ID	Overtopping Frequency
33	1.20 X 1.75 CSP arch, 14th Avenue	Reach #1	Main Channel G	13740.03 West Culvert
32	1.20 X 2.15 CSP arch, 11th Concession Road	Reach #1	Main Channel G	12396.05 North Culvert
27	1.64 X 7.05 concrete box, Steele's Avenue	Reach #1	Main Channel F	11200.06 Culvert #1
26	3.73 X 2.28 CSP arch, Scarborough-Pickering Townline	Reach #1	Main Channel F	9920.06 Culvert #1
15A	1.83 X 4.88 concrete box, Sideline 34	Reach #1	Main Channel F	8600.06 Culvert #1
15	2.05 X 2.00 CSP arch, CP Rail	Reach #1	Main Channel F	7035.08 Culvert #1
14A	1.50 X 3.00 concrete box, Abandoned Railway Line	Reach #1	Main Channel E	6970 Culvert #1
14	2.74 X 6.10 concrete box, Finch Avenue	Reach #1	Main Channel D	6700.21 Culvert #1
13	2.75 X 3.05 triple concrete boxes, Altona Road	Reach #1	Main Channel D	5471.23 Middle Culvert
12	4.10 X 5.80 CSP arch, Altona Road @ Pinebrook	Reach #1	Main Channel D	5150.23 Culvert #1
11	4.10 X 5.80 CSP arch, Altona Road @ Strouds	Reach #1	Main Channel D	4575.23 Culvert #1
9	3.66 X 3.50 CSP ellipse, CN Rail	Reach #1	Main Channel C	3950.24 West Culvert
8	3.84 X 6.40 CSP arch, Sheppard Avenue	Reach #1	Main Channel C	3875.24 Culvert #1
6	2.42 X 6.15 concrete box, Kingston Road	Reach #1	Main Channel B	2450.26 Culvert #1
5	3.05 X 4.88 triple concrete boxes, Highway 401	Reach #1	Main Channel B	2300.26 Culv 1A (E)
3	1.25 X 12.20 concrete bridge, Rosebank Road	Reach #1	Main Channel B	1980.26 Bridge
2	4.00 X 5.50 concrete arch, CN Rail	Reach #1	Main Channel A	1210.38 Culvert #1
1	2.80 X 5.50 concrete box, Petticoat Conservation Area	Reach #1	Main Channel A	650.38 Culvert #1
4	1.84 X 1.84 concrete box, Granite Court	Reach #2	Tributary 1	155.34 Culvert #1
7	1.60 dia. CSP, Rougemont Drive	Reach #3	Tributary 2	300.25 Culvert #1
10	1.00 X 2.40 concrete box, Strouds Lane	Reach #4	Tributary 3	800.27 Culvert #1
31	0.95 X 1.46 CSP arch, 4th Concession Road	Reach #5	Tributary 4B	4990.121 Culvert #1
28	2.46 X 3.91 CSP elliptical, Taunton Road	Reach #5	Tributary 4B	3650.13 Culvert #1
25	1.77 X 2.45 concrete box, 3rd Concession Road	Reach #5	Tributary 4B	2700.13 Culvert #1
24	1.54 X 3.67 concrete box, Davidson Road	Reach #5	Tributary 4B	2190.13 Culvert #1
20	1.52 X 4.88 concrete box, Altona Road	Reach #5	Tributary 4B	1700.13 Culvert #1
19	1.50 X 3.10 concrete box, CP Rail	Reach #5	Tributary 4A	540.20 Culvert #1
18	2.90 X 4.12 CSP arch, Altona Road	Reach #5	Tributary 4A	325.20 Culvert #1
22	0.93 X 1.83 concrete box, 3rd Concession Road	Reach #6	Tributary 5B	1370.17 Culvert #1
23	0.80 X 2.74 CSP arch, 3rd Concession Road	Reach #7	Tributary 6	1360.18 Culvert #1
21	1.50 X 3.20 concrete box, Rosebank Road	Reach #7	Tributary 6	680.18 Culvert #1
17	1.80 X 2.25 concrete arch, CP Rail	Reach #8	Tributary 7A	1475.11 Culvert #1
16	1.52 X 3.05 concrete box, Scarborough-Pickering Townline	Reach #8	Tributary 7A	1065.11 Culvert #1
34	0.60 dia. CSP, 14th Avenue	Reach #10	Tributary 9	960.04 Culvert #1
				2 Year

## **APPENDIX G**

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### **FLOODLINE MAPS 1 THROUGH 10**



**Refer to filed Map Sheets 1 through 10**