
New Birth of Charlotte
Flood Study-Ramah Drainage Basin
Highway 73
Huntersville, NC
MGES Project No. 751.20
August 2, 2007

Prepared by:

MEADE GUNNELL engineering and surveying, P.C.
19810 W. Catawba Ave. Suite A
Cornelius, NC 28031

August 2, 2007

Mr. Bill Tingle, Floodplain Administrator
Mecklenburg County Storm Water Services
700 North Tryon Street
Charlotte, NC 28202

RE: Floodland Development Permit Application –Submittal No. 3
New Birth of Charlotte
New Birth Drive-Proposed
Highway 73
Huntersville, North Carolina
MGES Project Number 751.20

Gentlemen:

MEADE GUNNELL engineering & surveying, P.C. (MGES) is pleased to re-submit this flood analysis for the subject site as a result of your review dated July 12, 2007. I have attached the revised report for review.

The proposed site development will include installation of two 108-inch culvert crossings for the construction of a new public road. The hydraulic analysis for the pipe installation predicts a maximum 0.86 ft floodway rise resulting from the 100 year rain fall event based on future build out conditions. The affected area is shown attached on the Flood study drawings, referenced as C100.

The floodway rise of 0.55 ft extends to the stream intersection of the upstream property line of the Tommie Mayes property, referenced as Station 28766.

If you have any questions, please contact me at 704-655-7290 x 11.

Sincerely,
MEADE GUNNELL
engineering & surveying, P.C.

Jerry L. Meade, P.E.
Principal

Enclosure

August 2, 2007

Mr. David Goode, P.E., CFM
Mecklenburg County Storm Water Services
Flood Mitigation Program
700 North Tryon Street
Charlotte, NC 28202

RE: Floodland Development Permit Application –Submittal No. 3
New Birth of Charlotte
New Birth Drive-Proposed
Highway 73
Huntersville, North Carolina
MGES Project Number 751.20

Dear Mr. Goode:

MEADE GUNNELL engineering & surveying, P.C. (MGES) is pleased to re-submit this flood analysis for the subject site as a result of your review dated July 12, 2007. I have attached the revised report for review. Please note our response to each highlighted item is shown in *italics*.

Community Conditional Letter of Map Revision

- According to the hydraulic computations provided by the applicant, the proposed project would result in an increase in the Community Base Flood Elevations and Community Floodplain Width on the applicant's property and upstream of the applicant's property. Applicant is required to notify the impacted property owners in writing of the increase in Community Base Flood Elevation and increase in Community Floodplain Width. In addition, the increase in Community Base Flood Elevation cannot impact an existing building.
- ✓ **Applicant must notify all impacted property owners of the increase in the Community Base Flood Elevation and increase in Community Floodplain Width in writing. The applicant must confirm that the proposed increase in the Community Base Flood Elevation will not impact an existing building. The Mecklenburg County Flood Mitigation Program can provide the applicant with example letters if necessary.**
 - *MGES has prepared a notification letter to be sent to the upstream property owner as attached..*

Hydraulic Modeling

- *The digital data is included on the CD Rom. New files have been submitted for review.*
- The proposed HEC-RAS model does not contain ineffective flow areas on the cross sections immediately upstream and downstream of the proposed culvert. The bridge should have ineffective flow areas on the upstream and downstream cross sections to adequately model the hydraulics near the entrance and exit of the culvert. See HEC-RAS Hydraulic Reference Manual Chapter 5.

- ✓ **Applicant should add ineffective flow areas consistent with the provisions of Chapter 5 of the HEC-RAS Hydraulic Reference Manual.**
 - *Ineffective flow areas are now included before and after the proposed fill-culvert.*
- The contraction/expansion coefficients upstream and downstream of the proposed bridge are 0.1 and 0.3 respectively. Typically, the contraction/expansion coefficients at a bridge are 0.3 and 0.5 respectively or greater.
 - *We selected contraction/expansion coefficients at 0.6 and 0.8 to match the existing model.*
- ✓ **Applicant must revise the HEC-RAS model to match Mecklenburg County Water Quality Program to block out 1-ft of soil in the twin pipes.**
 - *MGES has revised the model to add a 1-foot block.*

Variance Requirements

- Any project that encroaches upon a Community Encroachment Area requires a variance or administrative approval. (Town of Huntersville Floodplain Ordinance Section §18). Since the proposed work encroaches upon the Community Encroachment Area, a variance or administrative approval is required. Administrative approval may be obtained from the Floodplain Administrator provided that the Floodplain Administrator has not been informed of any opposition by surrounding property owners. (Town of Huntersville Floodplain Ordinance §18). The adjacent property owners must be notified of the Floodplain Development Permit Application and given sufficient time to comment. The Mecklenburg County Flood Mitigation Program has form letters for notification of adjacent property owners for your use.
- ✓ **Applicant must notify the impacted property owners of the proposed project regarding the results of the Flood Study or seek a variance from the Zoning Board of Adjustment. The Community Conditional Letter of Map Revision information and the variance information can be combined in a single letter.**
 - *MGES will contact property owner and Huntersville Board of Adjustment to request the variance upon technical approval of the application.*

If you have any questions, please contact me at 704-655-7290 x 11.

Sincerely,
MEADE GUNNELL
engineering & surveying, P.C.

Jerry L. Meade, P.E.
Principal

August 9, 2007

Mr. Tommie Mayes
1200 Mayes Road
Huntersville, NC 28078

RE: **Notification of Proposed Changes to the 1% Future Conditions Annual Chance Storm Event (Future Conditions 100-year Storm Event)**
Proposed New Birth
Huntersville, North Carolina
MGES Project Number 751.20

Dear Mr. Mayes:

Our records indicate that you own property that may be impacted by proposed changes to the Flood Insurance Rate Map.

New Birth of Charlotte is planning to construct a church facility south of your property. The proposed development will include construction of a new public road, identified as New Birth Drive. The roadway construction will include installation of two 108-inch culvert crossings. The hydraulic analysis predicts that there will be a maximum increase of 0.86 feet in the Community Base Flood Elevation as a result of the proposed project. The affected area is shown attached on the Flood study drawings.

The impact of the future conditions Floodplain rise is predicted to increase 0.55 ft at the intersection of the upstream property line of New Birth property.

Maps and detailed analysis of the proposed floodway revision can be viewed at Mecklenburg County Storm Water Services office located at 700 N. Tryon Street in Charlotte, NC. If you have any questions, you may contact Mr. David Goode of Mecklenburg County at 704-432-3087 or Mr. Bill Tingle at 704-336-3734 within 10 days from the date of the letter.

Sincerely,
MEADE GUNNELL
engineering & surveying, P.C.

Jerry L. Meade, P.E.
Principal

Enclosure

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APPENDICIES

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DRAWINGS

Figure No. 1	Aerial Photograph New Birth-Pre-Existing Conditions
Sheet C100	Overall Flood study Map
Sheets C101, 102, 103	Grading/Proposed Improvements
Sheet C104, 105, 106	Cross Sections

Charlotte,
Sheet 1 of 1

Certified Topographic Survey for New Birth of
Dated September 1, 2004

1.0 PROJECT NAARRATIVE

1.1 Overview

New Birth of Charlotte is proposing to construct an 80,000 sq-ft church facility on approximately 26.6 acre site located at 11901 Sam Furr Road in Huntersville, NC. The proposed facility will be accessed by a new public roadway, New Birth Drive. The proposed roadway is approximately 750 feet in length and crosses Ramah Creek. *A twin 108-in diameter CMP pipe is proposed for the stream crossing.* The stream crossing is located approximately 250 feet north (upstream) of Highway 73. There is an existing 78-in. diameter CMP culvert underneath Hwy 73. This existing pipe creates back water throughout the subject property and extending onto the upstream adjoining property owner, referenced as Tommie Mayes property, shown on Figure No. 1. **The 78-inch pipe underneath Hwy 73 will be extended 8 feet to accommodate the connection to the proposed New Birth Drive.**

1.2 Description of Proposed Construction

Construction plans have been prepared for the site development. The overall grading plan is attached, referenced as Sheets 101, 102, and 103. The proposed grading will impact the Mecklenburg County 100-yr floodplain. A retaining wall and fill area is proposed along the western bank of Ramah Creek for site improvements containing a parking area. The pipe underneath Highway 73 will be extended approximately 8 feet upstream of its existing headwall.

2.0 HYDRAULIC MODELING SUMMARY

MGES has prepared a flood study to evaluate a potential rise in surface water profiles resulting from the construction of the proposed Public Street and church facility. Below is a description of the hydraulic model used for the flood way impact analysis.

2.1 Effective Model

The effective model for Ramah Creek is a HEC-RAS model that was developed to produce the published Flood Insurance Study (FIS) and FIRM maps. The model was obtained from Mecklenburg County FTP site. The proposed improvement area is located immediately upstream of the last cross section used in the model (tail end).

2.2 Duplicate Effective Model

The duplicate effective model is a copy of the effective model and used in the HEC-RAS analysis. The model was duplicated to in Version 3.1.2 of HEC-RAS

2.3 Corrective Effective Model

The corrected effective model was prepared to adjust for discrepancies discovered in the effective model and to incorporate more detailed topographic information and additional cross sections into the analysis using the same Version 3.1.2. A topographic survey for the project was completed September 1, 2004. Certified cross sections were developed based on the actual location of stream profiles. The summary of the water surface profile for the corrective effective model is presented in Appendix D.

The corrected effective model for this project entailed adding three (3) new hydraulic cross sections in the immediate vicinity of the proposed culvert crossing and one (1) cross section at the upper reach of the site near crossing of the upstream property line.

The original model indicated the downstream pipe crossing Highway 73 as and reinforced concrete pipe (RCP). The corrected effective model corrected the pipe material to a corrugated metal pipe (CMP). An as-built survey was conducted for the pipe.

2.4 Proposed Model

The proposed model used the same corrective effective model conditions and includes the proposed pipe crossing at New Birth Drive along with the addition of fill and retaining wall as part of the western parking lot of the project. Results of the HEC-RAS corrected model propose installing two (2) 108-inch corrugated metal pipes and filling the areas shown on Sheet numbers C101, C102, and C103. The summary of the water surface profile for the proposed model is presented in Appendix E.

3.0 HYDRAULIC ANALYSIS

3.1 Potential Impact

Based on the results of proposed HEC-RAS model, based on the new construction consisting of: 1). placement of fill, 2) the installation of the retaining wall, 3) the installation of twin 108-inch culverts (details noted on the grading plan), and 4) extending the existing 78-inch pipe underneath Highway 73 an additional 8 feet produces a rise in water surface elevation of approximately 0.875-ft. The proposed HEC-RAS model was analyzed for the 100 year- future flood plain. A summary of the results are presented in the Hydraulic Tables.

The proposed construction produces an approximate 0.87-ft rise in the future 100 yr flood plain elevation at the pipe(s) entrances. The rise in surface water elevation increases the flood plain an approximate 0.56-ft at the upstream property line. The impacted area is shown on Sheet C100.

The new proposed flood plain area overlaps the Mecklenburg County Surface Water Improvement and Management (SWIMM) zone. The SWIMM buffer is an undisturbed buffer and has been designated as undevelopable area. Therefore, the new flood plain encroachment is not predicted to impact areas outside the SWIMM buffer.

4.0 HYDRAULIC TABLE

HYDRAULIC TABLE

New Birth Church

MGES Project No. 751.20

Table 1 - 100 Year Water Surface Elevation Comparison Summary						
Station	Corrected Effective Model (CE)		Proposed Model (PRP)		Change (PRP - CE)	
	Existing	Future	Existing	Future	Existing	Future
27476	723.24	724.21	721.75	724.09	-1.49	-0.12
27600	723.25	724.22	721.76	724.10	-1.49	-0.12
27695	723.26	724.23	721.77	724.10	-1.49	-0.13
27839	723.27	724.24	722.10	725.00	-1.17	0.76
27923	723.28	724.25	722.42	725.11	-0.86	0.86
28017	723.30	724.27	722.47	725.12	-0.83	0.85
28382	723.45	724.40	722.77	725.21	-0.68	0.81
28625	723.75	724.63	723.31	725.35	-0.44	0.72
28766	724.21	724.97	724.02	725.52	-0.19	0.55
28973	724.91	725.62	724.82	725.98	-0.09	0.36
29252	726.62	727.12	726.63	727.16	0.01	0.04



FLOODPLAIN DEVELOPMENT PERMIT APPLICATION CHECK SHEET
FOR DEVELOPMENT WITHIN THE FLOODWAY OR
COMMUNITY ENCROACHMENT AREA

Type/Area 1A, 1B, 3A, 3B

Project Name _____ Applicant's Name _____

Submit this check sheet and the following documentation along with the FDP Application:

Check one of the following:

- NO CHANGE IN TOPOGRAPHY
 CHANGE IN TOPOGRAPHY
(no increase in Base Flood Elevations)
- CHANGE IN TOPOGRAPHY
(increase in Base Flood Elevations)

NO CHANGE IN TOPOGRAPHY

I have included the following technical data supporting a finding of no increase in the Base Flood Elevations:

- Plans, construction drawings, and/or detailed description of work showing the proposed development.
- Letter stating that there will be no change in the existing topography as a result of the proposed development project.
- Letter stating that there is no known opposition by surrounding (adjacent) property owners.
- Proof that during the occurrence of the Community Base Flood the property would have permanent vehicular (including emergency vehicles) access to any building to be constructed on the property.
- Certification by a North Carolina Professional Engineer that the proposed development will not result in an increase in the FEMA Base Flood Elevation and Community Base Flood Elevation.

In the event the above conditions can not be met, as outlined in the Floodplain Regulations, a variance from the Zoning Board of Adjustment will be required.

The Floodplain Administrator reserves the right to determine the level of supporting technical data necessary.

CHANGE IN TOPOGRAPHY

Narrative Statement of the Study

- A concise statement of the study including the purpose, objectives, a brief history, any observations or engineering judgments, and property documentation.

Certified Topographic Maps and Construction Drawings

- A certified topographic map and/or construction drawing containing the following information:
 - Existing and proposed topography of a suitable scale and contour interval
 - Effective (FIRM) FEMA Floodplain and Community Floodplain lines and Effective (FIRM) FEMA Floodway and Community Floodway lines
 - Proposed FEMA Floodplain and Community Floodplain lines and Proposed FEMA Floodway and Community Floodway lines
 - Cross sections labeled with river station from HEC-RAS models on the drawing showing the proposed improvements
 - Planimetric features such as roads, buildings, ponds etc.
 - Reference to NAVD 88 as the vertical datum with appropriate benchmark
 - Basic property location information (when applicable) such as street address, legal description, parcel identification number
 - Channel modification projects must include detail drawings showing accessory structures such as rock cross vanes, J-hooks, energy dissipators, channel linings etc.
 - Bridge or culvert projects must include detail drawings showing the shape, material, beveling or rounding of inlets, wing wall skew etc
 - Bridge or culvert projects must include drawings showing the upstream and downstream structure inverts, overtopping elevations, stream elevations
 - Construction drawings must be final and certified by a North Carolina Registered Professional Engineer.

Hydrologic Models

- Hydrologic computations (only when revising the Flood Insurance Study estimated peak discharge values) including:
 - Hardcopy results for the hydrologic computations for the estimated peak discharge for all storm events contained in the FIS study
 - Digital copies of the computer models used to generate the revised estimated peak discharge values

Hydraulic Models

- Hydraulic computations using the current version of HEC-RAS including:
 - Hard copy tabular results for, as a minimum, the 100-year Existing Conditions and 100-year Future Conditions storm events
 - A digital copy of the HEC-RAS model used to perform the hydraulic computations
 - The submittal must contain the following models:
 - **Duplicate Effective Model** including hydraulic analyses which duplicate the hydraulic analyses contained in the Flood Insurance Study
 - **Corrected Effective and/or Existing Conditions Model** including hydraulic analyses updating the Duplicate Effective Model with existing floodplain conditions observed in the field, including but not limited to, updated field survey information, channel geometry, culvert/bridge dimensions, Mannings' "n" values etc. Provide a written description of all changes from the Duplicate Effective Model.
 - **Proposed Model** including hydraulic analyses incorporating the proposed improvements for the project including, but not limited to, changes to topography, channel geometry, culvert/bridge dimensions, Mannings' "n" values etc. Provide a written description of all changes from the Corrected Effective and/or Existing Conditions Model.

Annotated FIRM

- An annotated FEMA FIRM reflecting changes due to the project. The submittal must include the following:
 - All data necessary to demonstrate that the physical modifications to the floodplain meet NFIP Regulations and the Floodplain Ordinance in the community where the project is located.
 - Demonstrate that revised information (hydrologic and hydraulic analyses and the resulting floodplain and floodway boundaries) is consistent with the effective FIS information.
 - There must be consistency between the revised hydraulic models, the revised floodplain and floodway delineations, the revised flood profiles, topographic work map, annotated FIRMs, and construction plans.

Certification

- Hydrologic and hydraulic analyses, topographic maps and construction drawings are certified by a North Carolina Registered Professional Engineer.

Variance/Administrative Approval

- Letter stating that there is no known opposition by surrounding (adjacent) property owners or proof of individual notification
- Permanent vehicular (including emergency vehicles) access to any building to be constructed on the property during the occurrence of the Community Base

In the event the above conditions can not be met, as outlined in the Floodplain Regulations, a variance from the Zoning Board of Adjustment will be required.

The Floodplain Administrator reserves the right to determine the level of supporting technical data necessary.

Attach the following additional documentation if this Flood Study results in any increase in Base Flood Elevations

CLOMR (Conditional Letter of Map Revision)

Completed FEMA MT-2 Form

A request for a Conditional Letter of Map Revision must include, in addition to the items for a major change in topography, a completed FEMA MT-2 form which can be obtained at http://www.fema.gov/fhm/frm_form.shtm.

mges_ramahcrk_proposed.rep

HEC-RAS Version 4.0 Beta
U. S. Army Corp of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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X      X  XXXXXX      XXXX      XXXX      XX      XXXX
X      X  X          X      X      X  X      X
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X      X  X          X      X      X  X      X
X      X  XXXXXX      XXXX      X  X      X  X      XXXXX

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PROJECT DATA

Project Title: MGES NEW BIRTH_RamahCreekCLOMR
Project File : mges_ramahcrk_proposed.prj
Run Date and Time: 8/2/2007 9:34:03 AM

Project in English units

Project Description:

CLOMR for New Birth Church Development on Ramah Creek
prepared by: MEADE
GUNNELL engineering & surveying, P. C.

PLAN DATA

Plan Title: ProposedModel

Plan File : g:\Projects\751AmChurchBldgs NewBirth\HEC-RUNS\Meck
Re-Submittal 3\ProposedMODEL8-2-2007\mgес_ramahcrk_proposed.p07

Geometry Title: ProposedGeometry

Geometry File : g:\Projects\751AmChurchBldgs NewBirth\HEC-RUNS\Meck
Re-Submittal 3\ProposedMODEL8-2-2007\mgес_ramahcrk_proposed.g03

Flow Title : DDI_CorrectedEffectiveFlow

Flow File : g:\Projects\751AmChurchBldgs NewBirth\HEC-RUNS\Meck
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Plan Summary Information:

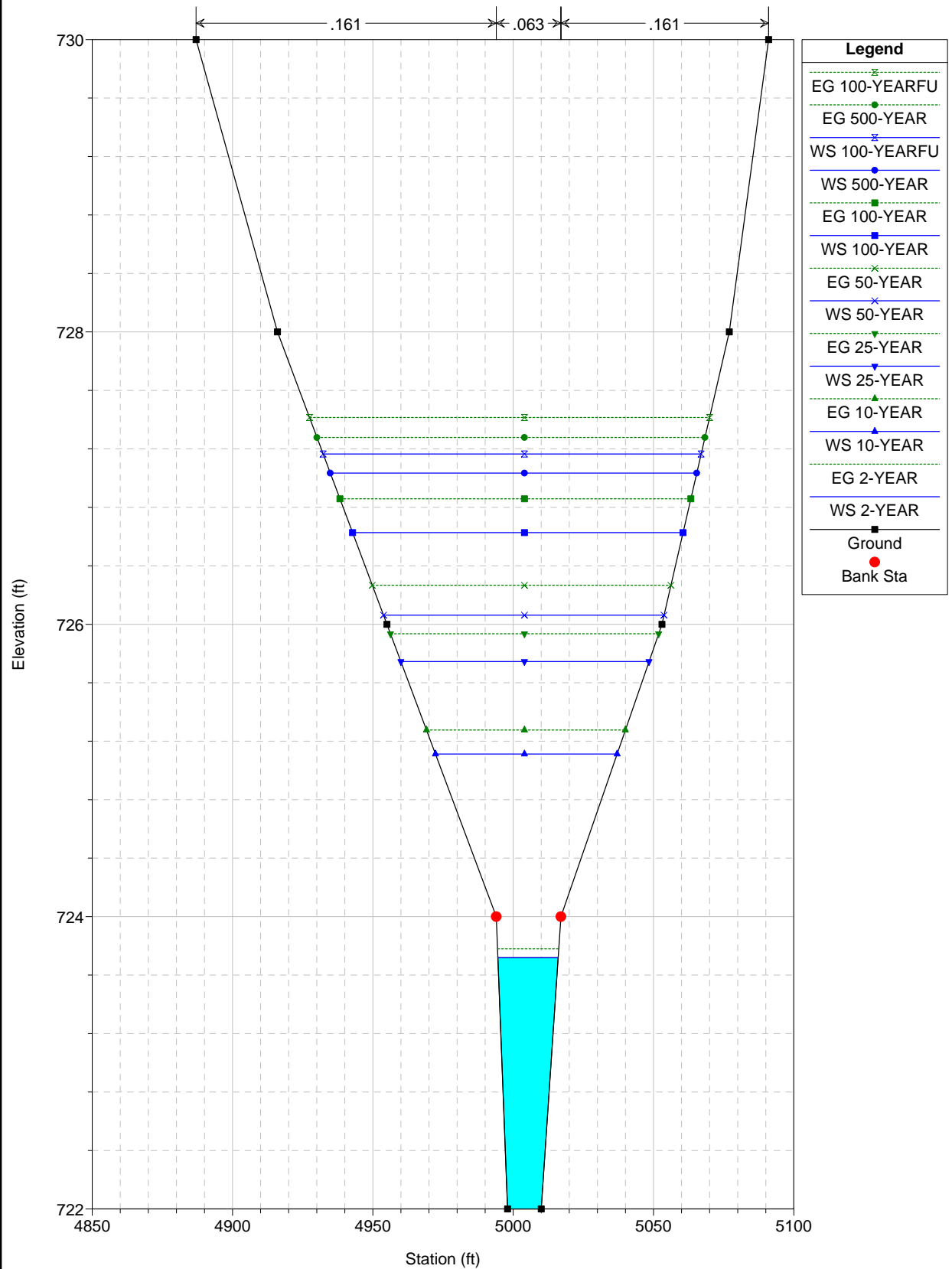
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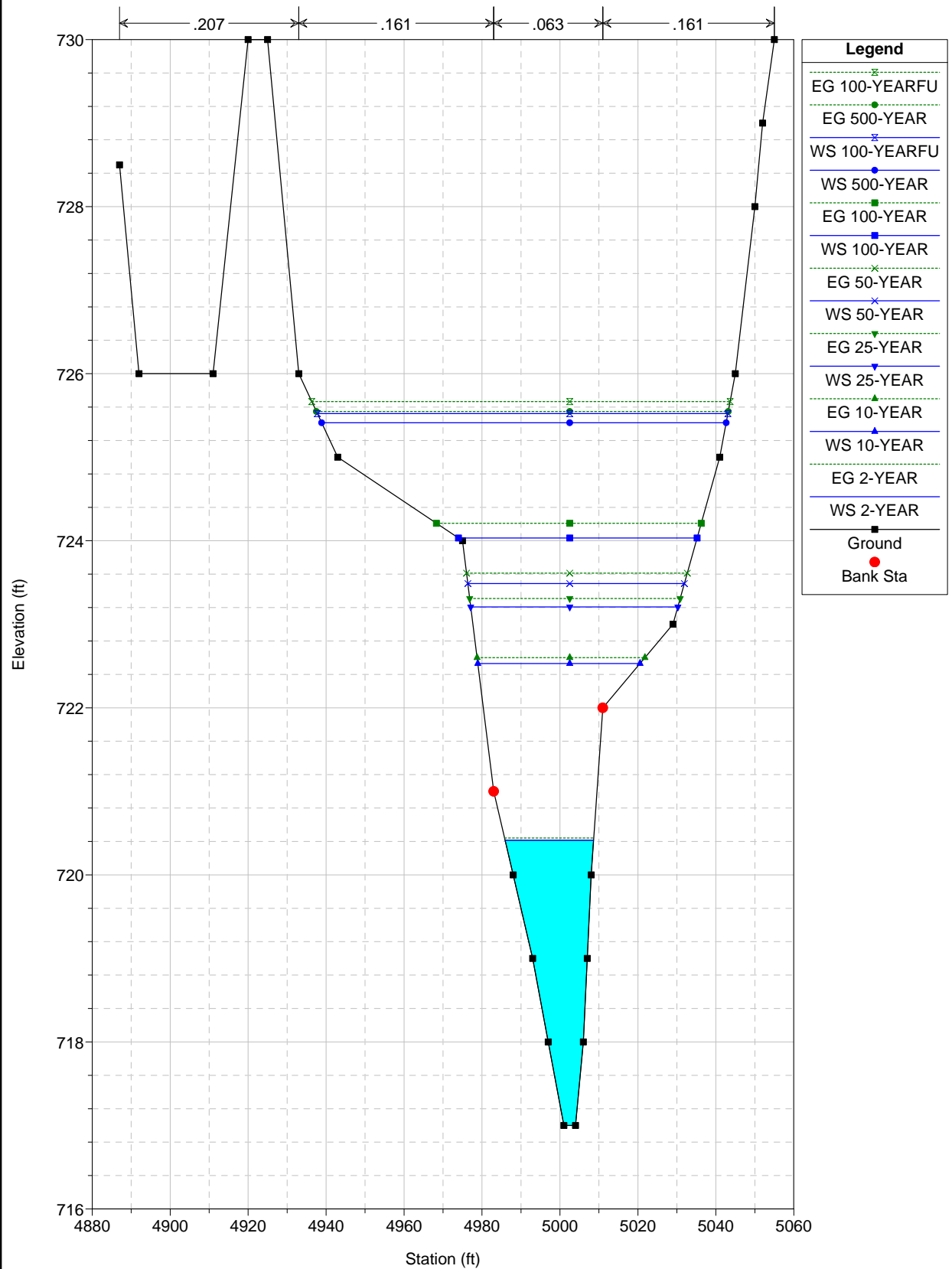
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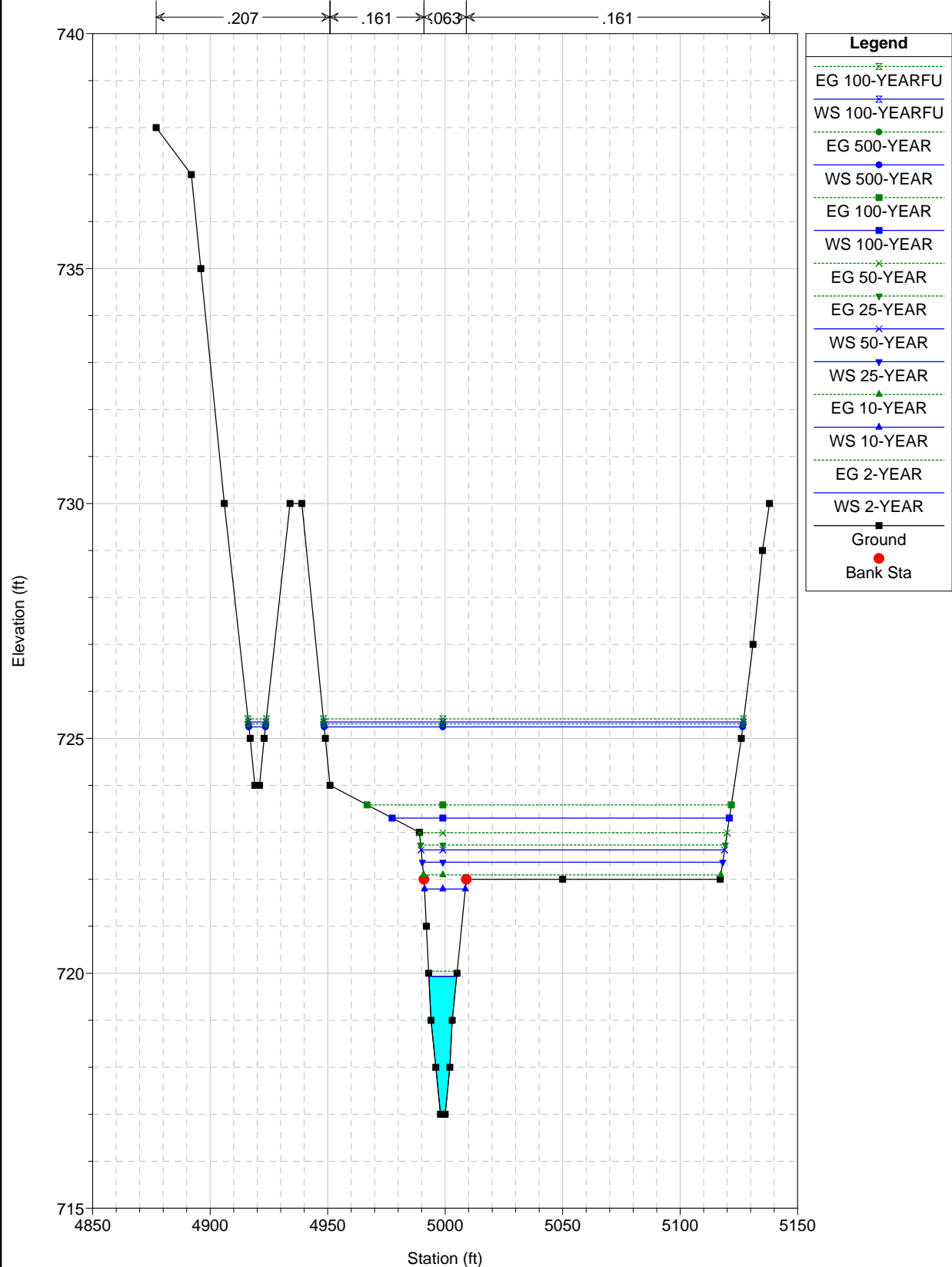
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Maximum difference tolerance	=	0.3
Flow tolerance factor	=	0.001

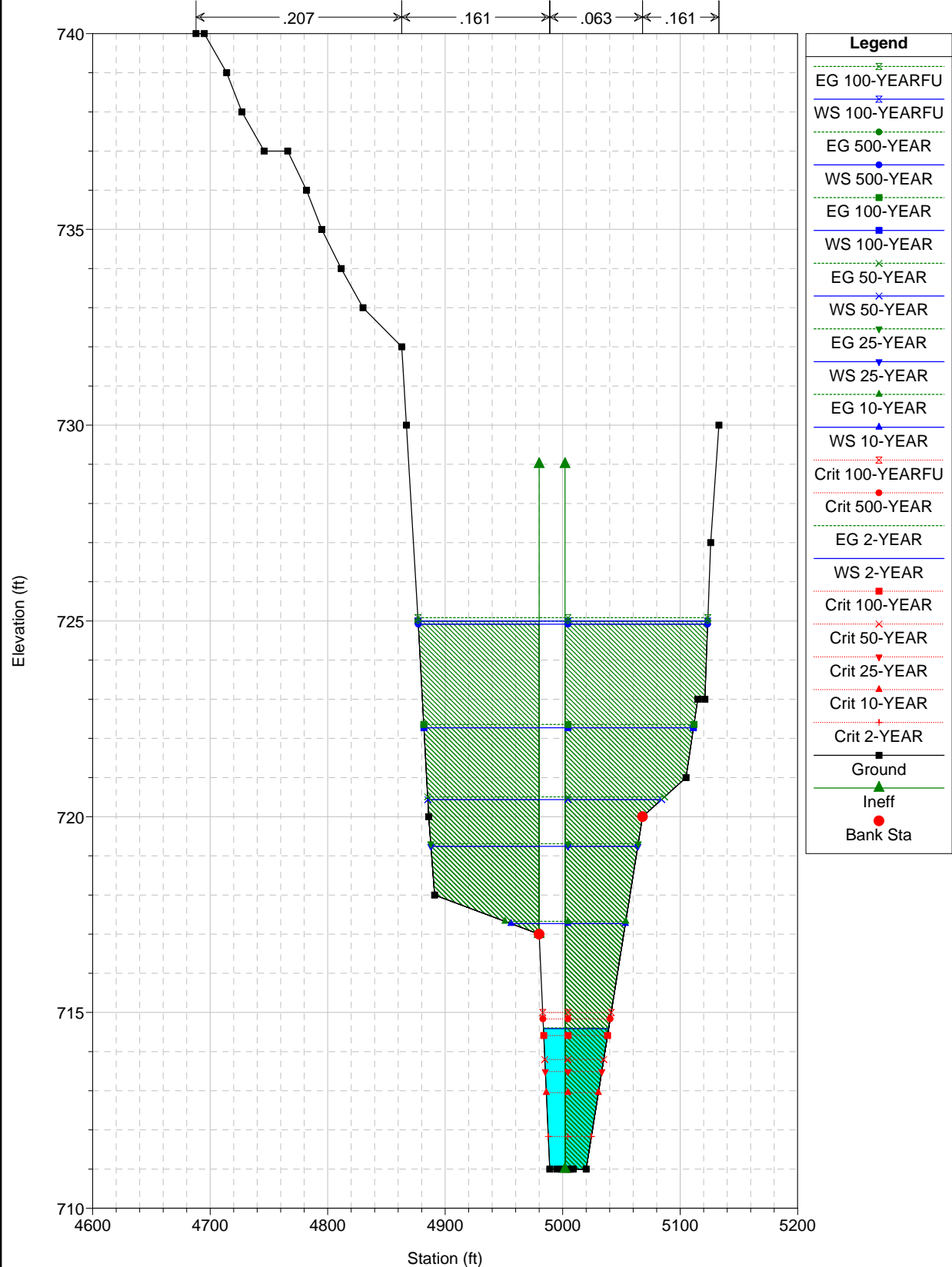
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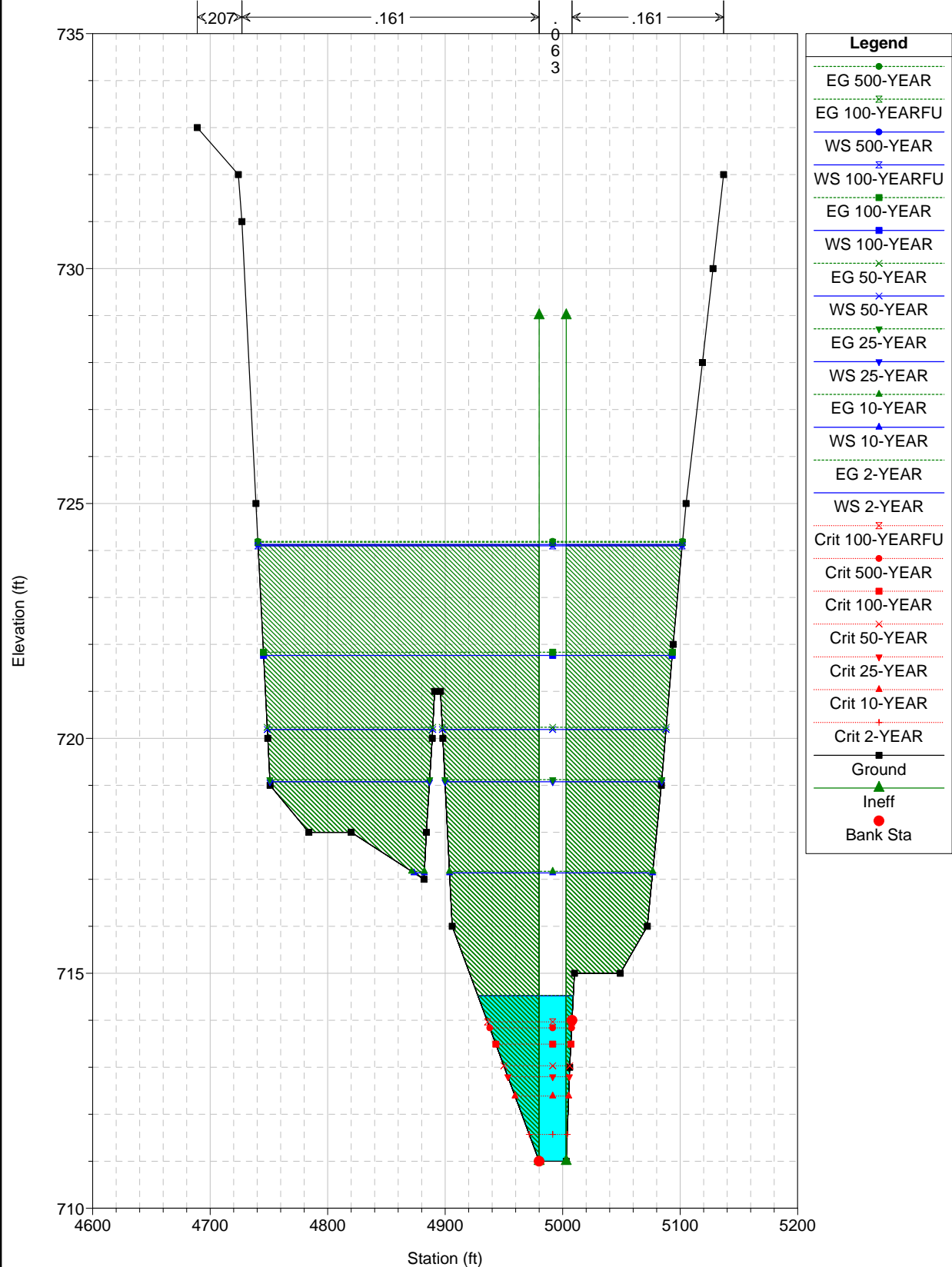
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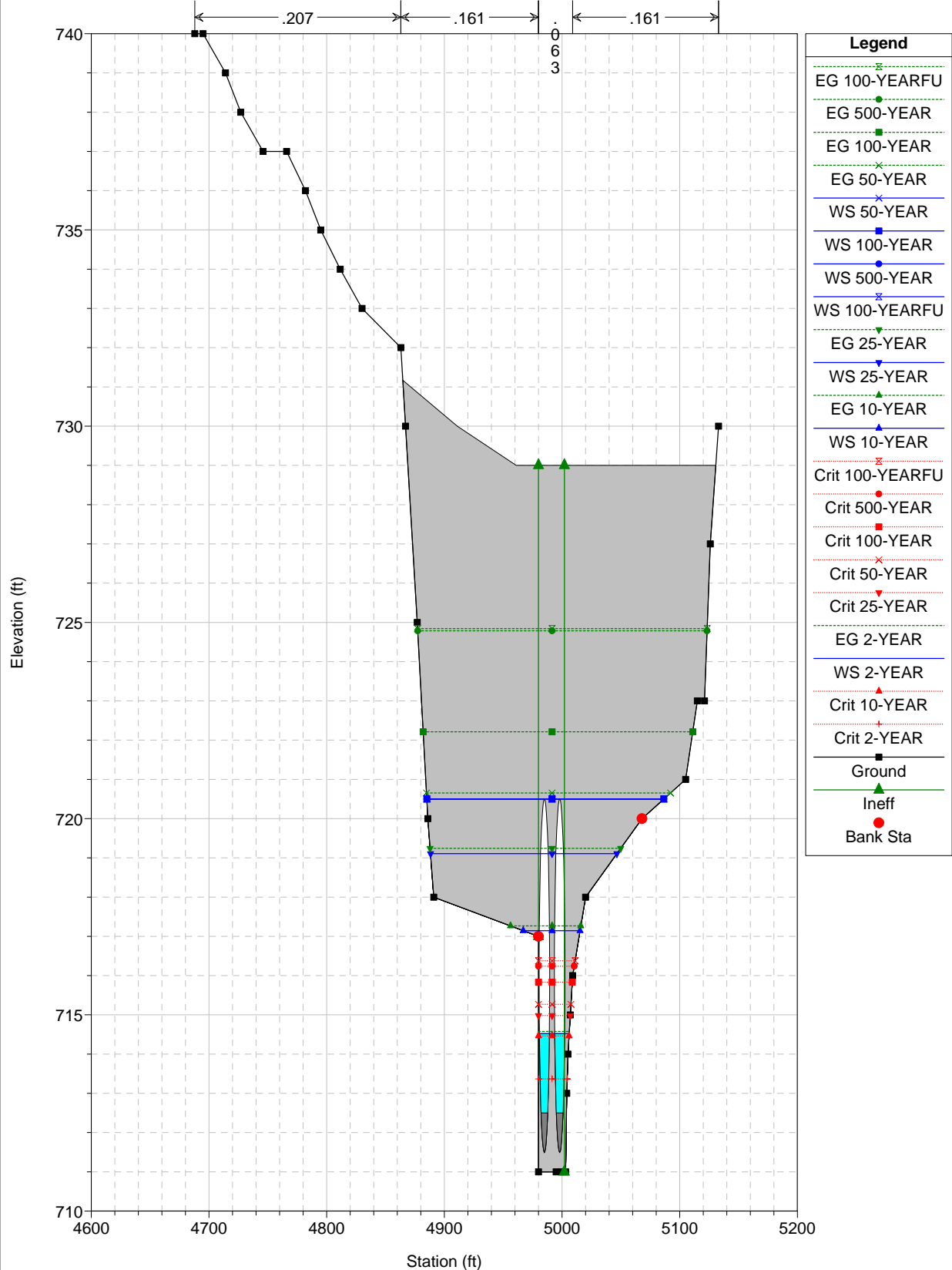






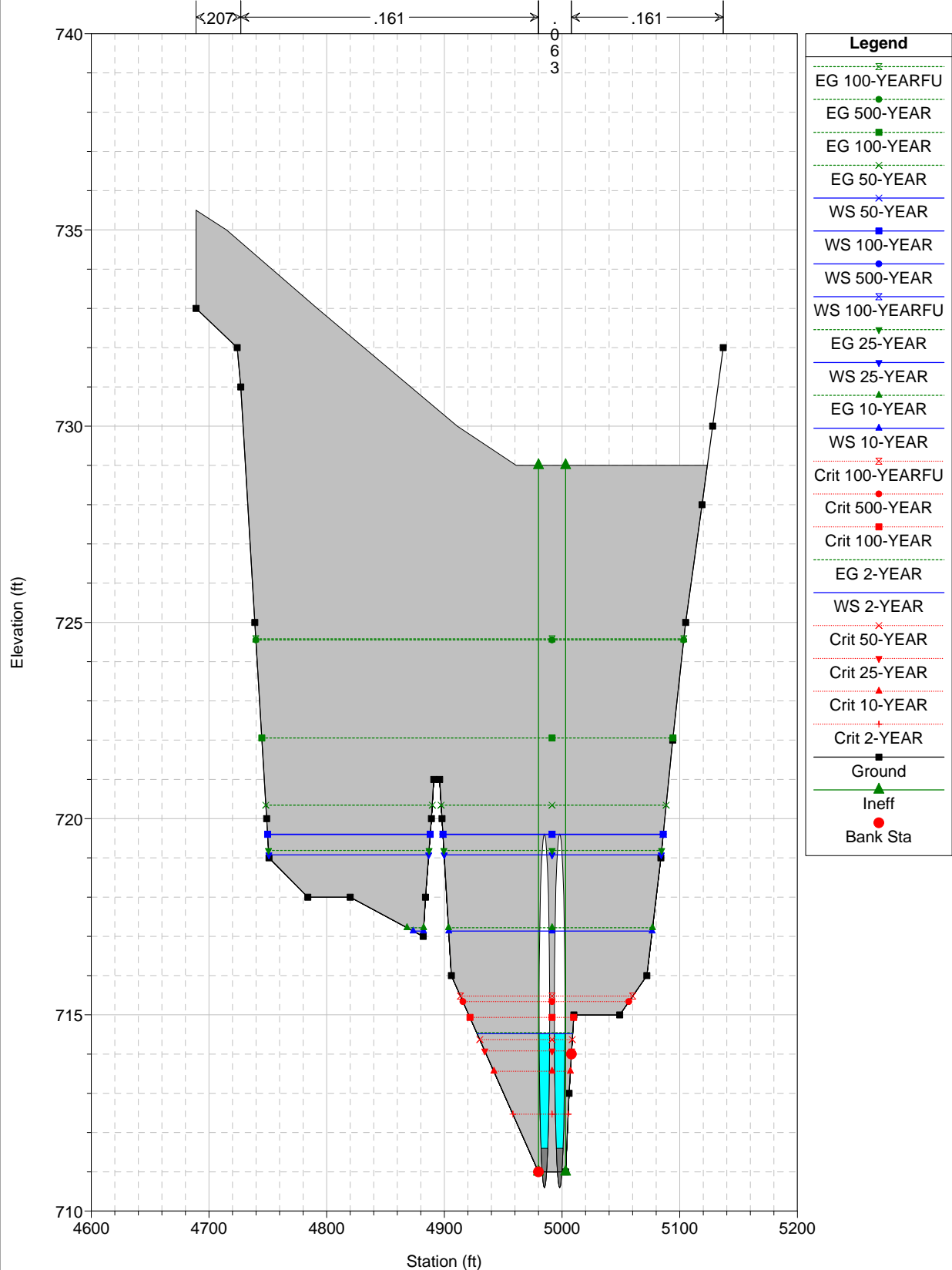
MGES NEW BIRTH_RamahCreekCLOMR Plan: ProposedModel 8/2/2007

New Birth Dr



MGES NEW BIRTH_RamahCreekCLOMR Plan: ProposedModel 8/2/2007

New Birth Dr



HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	28766	2-YEAR	57.00	717.00	719.87		719.92	0.001286	1.79	31.91	19.21	0.24
Reach - 1	28766	10-YEAR	213.00	717.00	721.90		722.01	0.001258	2.59	83.35	30.26	0.27
Reach - 1	28766	25-YEAR	314.00	717.00	722.65		722.79	0.001279	3.02	110.57	44.07	0.28
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Reach - 1	28766	100-YEAR	449.00	717.00	723.38		723.57	0.001376	3.53	147.46	54.63	0.30
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Reach - 1	28766	100-YEARFU	665.00	717.00	724.37		724.62	0.001446	4.14	207.85	74.08	0.31
Reach - 1	28625	2-YEAR	57.00	717.00	719.25		719.51	0.009040	4.11	13.87	9.76	0.61
Reach - 1	28625	10-YEAR	213.00	717.00	721.03		721.58	0.009711	5.91	36.03	15.10	0.67
Reach - 1	28625	25-YEAR	314.00	717.00	721.45		722.30	0.013511	7.38	42.57	16.35	0.81
Reach - 1	28625	50-YEAR	377.00	717.00	721.67	721.38	722.70	0.015701	8.17	46.15	17.00	0.87
Reach - 1	28625	100-YEAR	449.00	717.00	722.38	722.38	723.11	0.009247	7.09	100.73	127.92	0.69
Reach - 1	28625	500-YEAR	625.00	717.00	724.23		724.38	0.001596	3.97	369.98	177.12	0.31
Reach - 1	28625	100-YEARFU	665.00	717.00	724.19		724.37	0.001878	4.28	363.52	175.75	0.33
Reach - 1	28382	2-YEAR	57.00	715.00	718.81		718.86	0.001100	1.79	31.90	16.26	0.22
Reach - 1	28382	10-YEAR	213.00	715.00	720.41		720.55	0.001947	3.15	107.24	132.19	0.32
Reach - 1	28382	25-YEAR	314.00	715.00	720.79		720.97	0.002318	3.72	158.19	137.85	0.36
Reach - 1	28382	50-YEAR	377.00	715.00	720.93		721.15	0.002688	4.12	178.26	140.01	0.39
Reach - 1	28382	100-YEAR	449.00	715.00	721.94		722.04	0.001063	3.06	332.93	168.27	0.25
Reach - 1	28382	500-YEAR	625.00	715.00	724.18		724.21	0.000265	2.00	749.28	205.01	0.14
Reach - 1	28382	100-YEARFU	665.00	715.00	724.14		724.17	0.000310	2.15	740.21	204.20	0.15
Reach - 1	28251	2-YEAR	57.00	715.00	718.41		718.58	0.004980	3.35	17.03	9.23	0.43
Reach - 1	28251	10-YEAR	213.00	715.00	719.99		720.17	0.004677	4.14	125.01	152.03	0.45
Reach - 1	28251	25-YEAR	314.00	715.00	719.98	719.94	720.39	0.010323	6.15	123.85	151.28	0.66
Reach - 1	28251	50-YEAR	377.00	715.00	720.48		720.68	0.004917	4.75	204.74	170.42	0.47
Reach - 1	28251	100-YEAR	449.00	715.00	721.86		721.90	0.000839	2.49	465.45	202.31	0.21
Reach - 1	28251	500-YEAR	625.00	715.00	724.16		724.18	0.000203	1.61	972.50	237.33	0.11
Reach - 1	28251	100-YEARFU	665.00	715.00	724.12		724.13	0.000237	1.73	961.28	236.62	0.12
Reach - 1	28017	2-YEAR	57.00	715.00	716.75		716.99	0.009836	3.97	14.35	11.99	0.64
Reach - 1	28017	10-YEAR	213.00	715.00	718.20	718.20	718.64	0.009400	5.50	61.11	143.47	0.68
Reach - 1	28017	25-YEAR	314.00	715.00	719.21		719.33	0.002222	3.50	213.86	163.57	0.35
Reach - 1	28017	50-YEAR	377.00	715.00	720.25		720.29	0.000686	2.37	407.93	207.91	0.21
Reach - 1	28017	100-YEAR	449.00	715.00	721.79		721.81	0.000194	1.56	759.33	243.24	0.12
Reach - 1	28017	500-YEAR	625.00	715.00	724.14		724.15	0.000073	1.20	1360.94	266.99	0.08
Reach - 1	28017	100-YEARFU	665.00	715.00	724.09		724.10	0.000085	1.29	1347.28	266.51	0.08
Reach - 1	27923	2-YEAR	57.00	714.00	716.03		716.21	0.006766	3.35	17.52	30.54	0.54
Reach - 1	27923	10-YEAR	213.00	714.00	717.40		717.69	0.004992	4.77	77.27	66.62	0.52
Reach - 1	27923	25-YEAR	314.00	714.00	719.10		719.18	0.001041	3.05	261.83	148.92	0.26
Reach - 1	27923	50-YEAR	377.00	714.00	720.19		720.24	0.000463	2.37	443.33	183.27	0.18
Reach - 1	27923	100-YEAR	449.00	714.00	721.77		721.79	0.000178	1.74	778.60	242.35	0.12
Reach - 1	27923	500-YEAR	625.00	714.00	724.13		724.14	0.000071	1.34	1406.68	284.43	0.08
Reach - 1	27923	100-YEARFU	665.00	714.00	724.08		724.09	0.000083	1.44	1391.73	283.60	0.08
Reach - 1	27839	2-YEAR	57.00	713.00	714.94		715.30	0.018488	4.85	11.75	11.62	0.85
Reach - 1	27839	10-YEAR	213.00	713.00	717.02		717.30	0.004383	4.29	54.84	33.32	0.48
Reach - 1	27839	25-YEAR	314.00	713.00	719.04		719.11	0.000639	2.45	297.30	176.91	0.20
Reach - 1	27839	50-YEAR	377.00	713.00	720.17		720.20	0.000280	1.89	524.32	227.13	0.14
Reach - 1	27839	100-YEAR	449.00	713.00	721.76		721.78	0.000103	1.35	943.25	287.01	0.09
Reach - 1	27839	500-YEAR	625.00	713.00	724.13		724.14	0.000044	1.07	1671.08	324.30	0.06
Reach - 1	27839	100-YEARFU	665.00	713.00	724.08		724.09	0.000052	1.15	1653.87	323.74	0.07
Reach - 1	27695	2-YEAR	57.00	712.00	714.36		714.45	0.002486	2.42	24.49	20.80	0.34
Reach - 1	27695	10-YEAR	213.00	712.00	717.04		717.08	0.000446	1.99	266.96	147.34	0.17
Reach - 1	27695	25-YEAR	314.00	712.00	719.04		719.06	0.000132	1.41	628.44	212.49	0.10
Reach - 1	27695	50-YEAR	377.00	712.00	720.17		720.18	0.000080	1.22	874.25	224.85	0.08
Reach - 1	27695	100-YEAR	449.00	712.00	721.76		721.76	0.000043	1.02	1245.68	242.34	0.06
Reach - 1	27695	500-YEAR	625.00	712.00	724.13		724.13	0.000028	0.96	1852.06	269.82	0.05
Reach - 1	27695	100-YEARFU	665.00	712.00	724.07		724.08	0.000032	1.03	1837.60	269.19	0.05
Reach - 1	27600	2-YEAR	81.00	712.00	713.90		714.07	0.005940	3.29	24.62	19.33	0.51
Reach - 1	27600	10-YEAR	273.00	712.00	716.98		717.03	0.000517	2.19	268.71	133.68	0.19
Reach - 1	27600	25-YEAR	391.00	712.00	719.02		719.04	0.000169	1.62	585.55	171.27	0.11
Reach - 1	27600	50-YEAR	452.00	712.00	720.15		720.17	0.000106	1.43	787.69	186.13	0.09
Reach - 1	27600	100-YEAR	515.00	712.00	721.75		721.76	0.000057	1.20	1102.70	208.48	0.07
Reach - 1	27600	500-YEAR	668.00	712.00	724.12		724.13	0.000035	1.08	1635.87	240.99	0.06
Reach - 1	27600	100-YEARFU	666.00	712.00	724.07		724.08	0.000034	1.07	1623.14	240.26	0.06
Reach - 1	27476	2-YEAR	81.00	711.00	713.21		713.37	0.005342	3.29	24.81	19.89	0.49
Reach - 1	27476	10-YEAR	273.00	711.00	716.95		716.98	0.000296	1.79	362.81	175.30	0.14
Reach - 1	27476	25-YEAR	391.00	711.00	719.01		719.02	0.000102	1.33	769.52	217.89	0.09
Reach - 1	27476	50-YEAR	452.00	711.00	720.15		720.16	0.000065	1.18	1030.03	240.05	0.07
Reach - 1	27476	100-YEAR	515.00	711.00	721.75		721.75	0.000035	0.98	1431.96	262.45	0.06

HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	27476	500-YEAR	668.00	711.00	724.12		724.12	0.000021	0.87	2092.51	290.52	0.04
Reach - 1	27476	100-YEARFU	656.00	711.00	724.07		724.07	0.000021	0.86	2077.15	290.07	0.04
Reach - 1	27468.5	2-YEAR	81.00	709.52	713.27	711.40	713.32	0.001791	1.79	50.17	32.54	0.20
Reach - 1	27468.5	10-YEAR	273.00	709.52	716.90	712.69	716.97	0.000888	2.28	146.69	183.02	0.16
Reach - 1	27468.5	25-YEAR	391.00	709.52	718.94	713.28	719.02	0.000676	2.41	200.93	230.15	0.15
Reach - 1	27468.5	50-YEAR	452.00	709.52	720.07	713.52	720.15	0.000579	2.43	231.00	249.43	0.14
Reach - 1	27468.5	100-YEAR	515.00	709.52	721.67	713.76	721.74	0.000436	2.35	273.64	273.55	0.13
Reach - 1	27468.5	500-YEAR	668.00	709.52	724.12	714.27	724.12	0.000047	0.88	2298.36	333.27	0.04
Reach - 1	27468.5	100-YEARFU	656.00	709.52	724.07	714.23	724.07	0.000046	0.87	2280.81	330.22	0.04
Reach - 1	27405.0		Culvert									
Reach - 1	27342	2-YEAR	81.00	706.00	706.97	706.96	707.40	0.025050	5.24	15.44	17.88	0.99
Reach - 1	27342	10-YEAR	273.00	706.00	709.62		709.82	0.002624	3.62	75.45	26.85	0.38
Reach - 1	27342	25-YEAR	391.00	706.00	710.62		710.84	0.002223	3.76	104.08	30.67	0.36
Reach - 1	27342	50-YEAR	452.00	706.00	711.03		711.26	0.002174	3.86	116.98	32.44	0.36
Reach - 1	27342	100-YEAR	515.00	706.00	711.41		711.65	0.002143	3.97	129.67	34.10	0.36
Reach - 1	27342	500-YEAR	668.00	706.00	711.66		712.02	0.003036	4.83	138.30	35.17	0.43
Reach - 1	27342	100-YEARFU	656.00	706.00	711.61		711.97	0.003015	4.80	136.79	34.99	0.43
Reach - 1	27341.5	2-YEAR	81.00	704.22	707.19	706.10	707.29	0.005752	2.62	32.24	19.58	0.34
Reach - 1	27341.5	10-YEAR	273.00	704.22	709.63	707.39	709.81	0.003406	3.46	94.49	111.49	0.30
Reach - 1	27341.5	25-YEAR	391.00	704.22	710.61	707.98	710.83	0.003349	3.95	120.49	152.66	0.31
Reach - 1	27341.5	50-YEAR	452.00	704.22	711.00	708.22	711.25	0.003472	4.22	130.85	164.67	0.32
Reach - 1	27341.5	100-YEAR	515.00	704.22	711.36	708.44	711.65	0.003621	4.49	140.43	175.77	0.33
Reach - 1	27341.5	500-YEAR	668.00	704.22	711.83	708.98	711.94	0.001992	3.50	501.09	190.14	0.24
Reach - 1	27341.5	100-YEARFU	656.00	704.22	711.78	708.93	711.90	0.001996	3.49	492.28	188.71	0.24
Reach - 1	26971.0	2-YEAR	81.00	701.85	705.84		705.90	0.002516	1.93	42.00	18.33	0.22
Reach - 1	26971.0	10-YEAR	273.00	701.85	708.62		708.72	0.002314	2.53	107.83	29.13	0.23
Reach - 1	26971.0	25-YEAR	391.00	701.85	709.57		709.70	0.002452	2.85	137.92	38.90	0.24
Reach - 1	26971.0	50-YEAR	452.00	701.85	709.92		710.06	0.002561	3.03	153.81	51.22	0.25
Reach - 1	26971.0	100-YEAR	515.00	701.85	710.24		710.39	0.002684	3.21	174.54	104.90	0.26
Reach - 1	26971.0	500-YEAR	668.00	701.85	710.84		711.02	0.002851	3.53	293.45	291.61	0.27
Reach - 1	26971.0	100-YEARFU	656.00	701.85	710.80		710.98	0.002839	3.51	281.48	271.51	0.27
Reach - 1	26456.0	2-YEAR	81.00	700.47	704.52		704.58	0.002603	1.97	41.07	17.21	0.23
Reach - 1	26456.0	10-YEAR	273.00	700.47	707.38		707.48	0.002472	2.58	105.98	28.74	0.24
Reach - 1	26456.0	25-YEAR	391.00	700.47	708.17		708.31	0.002983	3.01	131.31	49.15	0.26
Reach - 1	26456.0	50-YEAR	452.00	700.47	708.40		708.57	0.003318	3.28	146.59	100.03	0.28
Reach - 1	26456.0	100-YEAR	515.00	700.47	708.60		708.79	0.003647	3.54	170.81	147.27	0.30
Reach - 1	26456.0	500-YEAR	668.00	700.47	708.95		709.20	0.004461	4.12	233.98	207.88	0.33
Reach - 1	26456.0	100-YEARFU	656.00	700.47	708.94		709.19	0.004332	4.05	232.54	207.68	0.33
Reach - 1	25744.0	2-YEAR	167.00	696.50	700.90		701.08	0.007302	3.39	49.19	20.45	0.39
Reach - 1	25744.0	10-YEAR	560.00	696.50	703.53		703.87	0.008059	4.74	123.73	113.81	0.43
Reach - 1	25744.0	25-YEAR	779.00	696.50	704.32	702.17	704.64	0.007188	4.79	264.64	251.17	0.42
Reach - 1	25744.0	50-YEAR	926.00	696.50	704.70		704.98	0.006417	4.69	368.63	290.19	0.40
Reach - 1	25744.0	100-YEAR	1063.00	696.50	704.99		705.25	0.005891	4.64	455.88	308.22	0.38
Reach - 1	25744.0	500-YEAR	1375.00	696.50	705.61		705.81	0.004869	4.48	647.91	315.13	0.36
Reach - 1	25744.0	100-YEARFU	1408.00	696.50	705.67		705.87	0.004783	4.47	666.24	316.74	0.35
Reach - 1	25236.0	2-YEAR	167.00	693.23	696.83		697.03	0.008787	3.53	47.31	21.92	0.42
Reach - 1	25236.0	10-YEAR	560.00	693.23	699.42		699.77	0.008118	4.70	119.18	33.54	0.44
Reach - 1	25236.0	25-YEAR	779.00	693.23	700.37		700.77	0.008053	5.10	152.85	37.77	0.45
Reach - 1	25236.0	50-YEAR	926.00	693.23	700.85		701.30	0.008112	5.40	172.09	43.69	0.45
Reach - 1	25236.0	100-YEAR	1063.00	693.23	701.21		701.72	0.008214	5.72	188.97	50.65	0.46
Reach - 1	25236.0	500-YEAR	1375.00	693.23	701.87		702.51	0.008793	6.46	226.71	63.51	0.49
Reach - 1	25236.0	100-YEARFU	1408.00	693.23	701.93		702.59	0.008850	6.53	230.82	64.76	0.49
Reach - 1	24684.0	2-YEAR	167.00	689.83	693.52		693.63	0.004500	2.67	62.58	27.20	0.31
Reach - 1	24684.0	10-YEAR	560.00	689.83	696.07		696.29	0.004938	3.72	150.40	42.37	0.35
Reach - 1	24684.0	25-YEAR	779.00	689.83	696.93		697.20	0.005209	4.11	193.59	93.70	0.36
Reach - 1	24684.0	50-YEAR	926.00	689.83	697.39		697.68	0.005293	4.30	245.56	135.04	0.37
Reach - 1	24684.0	100-YEAR	1063.00	689.83	697.74		698.03	0.005351	4.44	298.09	166.32	0.38
Reach - 1	24684.0	500-YEAR	1375.00	689.83	698.32		698.65	0.005464	4.81	408.56	215.84	0.39
Reach - 1	24684.0	100-YEARFU	1408.00	689.83	698.37		698.70	0.005486	4.85	419.80	220.25	0.39
Reach - 1	24046.0	2-YEAR	167.00	686.70	690.68		690.78	0.004405	2.57	64.96	29.04	0.30
Reach - 1	24046.0	10-YEAR	560.00	686.70	693.02		693.22	0.004657	3.66	164.21	64.41	0.34
Reach - 1	24046.0	25-YEAR	779.00	686.70	693.79		694.04	0.004705	4.07	233.66	123.57	0.35
Reach - 1	24046.0	50-YEAR	926.00	686.70	694.20		694.47	0.004765	4.30	297.66	201.07	0.36
Reach - 1	24046.0	100-YEAR	1063.00	686.70	694.52		694.80	0.004793	4.46	368.13	243.19	0.36
Reach - 1	24046.0	500-YEAR	1375.00	686.70	695.11		695.40	0.004727	4.69	534.53	322.98	0.36
Reach - 1	24046.0	100-YEARFU	1408.00	686.70	695.18		695.46	0.004691	4.70	554.70	334.12	0.36

HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	23455.0	2-YEAR	167.00	683.87	687.10		687.26	0.008432	3.29	50.80	26.01	0.41
Reach - 1	23455.0	10-YEAR	560.00	683.87	689.44		689.72	0.007765	4.28	130.76	42.39	0.43
Reach - 1	23455.0	25-YEAR	779.00	683.87	690.31		690.63	0.007257	4.52	188.83	93.37	0.42
Reach - 1	23455.0	50-YEAR	926.00	683.87	690.81		691.13	0.006823	4.58	241.78	118.56	0.42
Reach - 1	23455.0	100-YEAR	1063.00	683.87	691.23		691.54	0.006406	4.61	295.52	138.24	0.41
Reach - 1	23455.0	500-YEAR	1375.00	683.87	691.87		692.20	0.006240	4.89	390.65	160.19	0.41
Reach - 1	23455.0	100-YEARFU	1408.00	683.87	691.91		692.26	0.006319	4.95	398.08	167.33	0.41
Reach - 1	22861.0	2-YEAR	167.00	678.59	681.83		682.04	0.009162	3.72	44.90	19.52	0.43
Reach - 1	22861.0	10-YEAR	560.00	678.59	684.75		685.11	0.007757	4.81	116.43	29.65	0.43
Reach - 1	22861.0	25-YEAR	779.00	678.59	685.89		686.29	0.007324	5.11	152.36	33.76	0.42
Reach - 1	22861.0	50-YEAR	926.00	678.59	686.53		686.96	0.007185	5.30	174.70	36.08	0.42
Reach - 1	22861.0	100-YEAR	1063.00	678.59	687.02		687.49	0.007224	5.49	205.48	125.35	0.43
Reach - 1	22861.0	500-YEAR	1375.00	678.59	687.72	684.88	688.19	0.007271	5.76	397.14	371.43	0.43
Reach - 1	22861.0	100-YEARFU	1408.00	678.59	687.78	684.96	688.25	0.007197	5.75	421.61	379.94	0.43
Reach - 1	22166.0	2-YEAR	167.00	674.01	678.10		678.21	0.003638	2.67	62.65	22.17	0.28
Reach - 1	22166.0	10-YEAR	560.00	674.01	681.79		681.95	0.002898	3.26	171.80	37.84	0.27
Reach - 1	22166.0	25-YEAR	779.00	674.01	682.90		683.10	0.003043	3.59	217.53	46.54	0.28
Reach - 1	22166.0	50-YEAR	926.00	674.01	683.44		683.67	0.003252	3.83	254.03	95.91	0.29
Reach - 1	22166.0	100-YEAR	1063.00	674.01	683.84		684.09	0.003403	4.04	304.09	179.70	0.30
Reach - 1	22166.0	500-YEAR	1375.00	674.01	684.62		684.89	0.003257	4.28	499.25	302.85	0.30
Reach - 1	22166.0	100-YEARFU	1408.00	674.01	684.67		684.93	0.003300	4.33	512.86	308.69	0.30
Reach - 1	21608.0	2-YEAR	167.00	671.87	676.62		676.70	0.002085	2.16	77.24	23.87	0.21
Reach - 1	21608.0	10-YEAR	560.00	671.87	680.55		680.66	0.001845	2.75	228.00	64.12	0.21
Reach - 1	21608.0	25-YEAR	779.00	671.87	681.64		681.76	0.001889	2.97	384.48	198.58	0.22
Reach - 1	21608.0	50-YEAR	926.00	671.87	682.18		682.30	0.001835	3.04	501.97	244.57	0.22
Reach - 1	21608.0	100-YEAR	1063.00	671.87	682.60		682.73	0.001768	3.10	624.23	306.10	0.22
Reach - 1	21608.0	500-YEAR	1375.00	671.87	683.57		683.68	0.001444	3.01	936.77	336.61	0.20
Reach - 1	21608.0	100-YEARFU	1408.00	671.87	683.58		683.69	0.001504	3.08	940.06	336.92	0.20
Reach - 1	21120.0	2-YEAR	197.00	670.00	675.59		675.68	0.002070	2.35	83.94	20.04	0.20
Reach - 1	21120.0	10-YEAR	641.00	670.00	679.26		679.46	0.003236	3.57	181.45	43.37	0.27
Reach - 1	21120.0	25-YEAR	896.00	670.00	680.22		680.46	0.003731	4.02	298.01	193.72	0.30
Reach - 1	21120.0	50-YEAR	1077.00	670.00	680.84		681.06	0.003495	4.02	431.52	257.32	0.29
Reach - 1	21120.0	100-YEAR	1252.00	670.00	681.40		681.59	0.003025	3.88	587.52	288.61	0.27
Reach - 1	21120.0	500-YEAR	1680.00	670.00	682.75		682.87	0.001844	3.44	1005.74	329.46	0.22
Reach - 1	21120.0	100-YEARFU	1684.00	670.00	682.74		682.87	0.001860	3.46	1004.13	329.32	0.22
Reach - 1	20880.5	2-YEAR	305.00	669.09	675.33	671.91	675.36	0.000961	1.39	219.23	80.89	0.15
Reach - 1	20880.5	10-YEAR	971.00	669.09	679.15	674.09	679.20	0.000538	1.70	570.82	99.44	0.13
Reach - 1	20880.5	25-YEAR	1321.00	669.09	680.09	674.58	680.15	0.000615	1.98	667.70	116.16	0.14
Reach - 1	20880.5	50-YEAR	1597.00	669.09	680.67	674.89	680.74	0.000684	2.20	731.06	138.16	0.15
Reach - 1	20880.5	100-YEAR	1847.00	669.09	681.19	675.14	681.28	0.000723	2.37	789.88	151.96	0.15
Reach - 1	20880.5	500-YEAR	2543.00	669.09	682.50	675.79	682.62	0.000782	2.74	1045.02	193.11	0.16
Reach - 1	20880.5	100-YEARFU	2537.00	669.09	682.50	675.77	682.61	0.000780	2.74	1044.20	193.00	0.16
Reach - 1	20858.0		Bridge									
Reach - 1	20835.5	2-YEAR	305.00	668.97	675.17	671.78	675.20	0.001011	1.41	215.57	80.59	0.15
Reach - 1	20835.5	10-YEAR	971.00	668.97	678.98	673.98	679.03	0.000553	1.72	565.77	99.31	0.13
Reach - 1	20835.5	25-YEAR	1321.00	668.97	679.91	674.46	679.97	0.000634	2.00	660.83	113.38	0.14
Reach - 1	20835.5	50-YEAR	1597.00	668.97	680.46	674.77	680.54	0.000712	2.23	721.34	136.87	0.15
Reach - 1	20835.5	100-YEAR	1847.00	668.97	680.91	675.02	681.00	0.000778	2.42	770.99	146.34	0.16
Reach - 1	20835.5	500-YEAR	2543.00	668.97	681.94	675.66	682.07	0.000936	2.90	957.47	181.77	0.18
Reach - 1	20835.5	100-YEARFU	2537.00	668.97	681.94	675.67	682.07	0.000932	2.89	957.23	181.72	0.17
Reach - 1	20343.0	2-YEAR	305.00	668.37	674.06		674.25	0.004326	3.48	87.52	21.00	0.30
Reach - 1	20343.0	10-YEAR	971.00	668.37	677.93		678.31	0.005281	4.96	238.49	103.19	0.36
Reach - 1	20343.0	25-YEAR	1321.00	668.37	678.67		679.14	0.006066	5.69	347.66	176.15	0.39
Reach - 1	20343.0	50-YEAR	1597.00	668.37	679.05		679.59	0.006856	6.27	415.23	183.45	0.42
Reach - 1	20343.0	100-YEAR	1847.00	668.37	679.36	676.29	679.97	0.007424	6.72	473.79	189.01	0.44
Reach - 1	20343.0	500-YEAR	2543.00	668.37	680.03	678.65	680.82	0.009164	7.90	603.23	199.73	0.49
Reach - 1	20343.0	100-YEARFU	2537.00	668.37	680.06	678.64	680.83	0.008980	7.84	608.26	200.13	0.49
Reach - 1	19670.0	2-YEAR	305.00	665.19	669.89		670.18	0.008996	4.31	70.77	23.09	0.43
Reach - 1	19670.0	10-YEAR	971.00	665.19	672.60		673.18	0.011817	6.24	215.46	184.52	0.53
Reach - 1	19670.0	25-YEAR	1321.00	665.19	673.39		673.89	0.010365	6.23	414.21	286.50	0.50
Reach - 1	19670.0	50-YEAR	1597.00	665.19	673.91		674.34	0.008857	6.04	569.27	305.60	0.47
Reach - 1	19670.0	100-YEAR	1847.00	665.19	674.30		674.69	0.008090	5.97	692.01	316.31	0.46
Reach - 1	19670.0	500-YEAR	2543.00	665.19	675.34		675.65	0.006184	5.75	1042.32	365.01	0.41
Reach - 1	19670.0	100-YEARFU	2537.00	665.19	675.29		675.61	0.006426	5.83	1023.29	362.60	0.42
Reach - 1	19127.0	2-YEAR	349.00	661.99	668.38		668.46	0.001633	2.26	154.76	39.93	0.20
Reach - 1	19127.0	10-YEAR	995.00	661.99	670.96		671.08	0.001757	3.06	617.79	312.77	0.22
Reach - 1	19127.0	25-YEAR	1381.00	661.99	671.78		671.91	0.001748	3.33	886.09	342.10	0.23

HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	19127.0	50-YEAR	1692.00	661.99	672.35		672.48	0.001733	3.51	1086.37	362.38	0.23
Reach - 1	19127.0	100-YEAR	1927.00	661.99	672.83		672.96	0.001624	3.54	1264.96	377.35	0.23
Reach - 1	19127.0	500-YEAR	2717.00	661.99	673.97		674.11	0.001596	3.85	1710.92	401.19	0.23
Reach - 1	19127.0	100-YEARFU	2667.00	661.99	673.89		674.03	0.001612	3.85	1678.05	399.62	0.23
Reach - 1	18380.0	2-YEAR	349.00	661.33	666.82		666.94	0.002579	2.93	152.36	63.60	0.26
Reach - 1	18380.0	10-YEAR	995.00	661.33	669.18		669.38	0.003033	4.11	500.48	238.38	0.29
Reach - 1	18380.0	25-YEAR	1381.00	661.33	670.07		670.27	0.002823	4.35	724.67	262.62	0.29
Reach - 1	18380.0	50-YEAR	1692.00	661.33	670.70		670.89	0.002647	4.46	892.32	273.02	0.29
Reach - 1	18380.0	100-YEAR	1927.00	661.33	671.43		671.58	0.002093	4.21	1095.44	282.99	0.26
Reach - 1	18380.0	500-YEAR	2717.00	661.33	672.57		672.74	0.002129	4.63	1425.56	297.09	0.27
Reach - 1	18380.0	100-YEARFU	2667.00	661.33	672.46		672.64	0.002171	4.64	1394.83	295.86	0.27
Reach - 1	18074.5	2-YEAR	349.00	661.07	665.56	664.02	665.73	0.006842	3.31	105.41	46.20	0.39
Reach - 1	18074.5	10-YEAR	995.00	661.07	667.81	665.74	668.09	0.006094	4.26	237.80	78.93	0.39
Reach - 1	18074.5	25-YEAR	1381.00	661.07	668.72	666.40	669.06	0.005774	4.66	308.17	102.44	0.40
Reach - 1	18074.5	50-YEAR	1692.00	661.07	669.35	666.85	669.73	0.005677	4.96	358.54	147.84	0.40
Reach - 1	18074.5	100-YEAR	1927.00	661.07	670.38	667.17	670.70	0.004066	4.57	450.17	260.42	0.34
Reach - 1	18074.5	500-YEAR	2717.00	661.07	671.33	668.06	671.78	0.004657	5.44	539.06	304.43	0.38
Reach - 1	18074.5	100-YEARFU	2667.00	661.07	671.21	668.02	671.66	0.004805	5.45	527.23	298.59	0.38
Reach - 1	18051.0		Bridge									
Reach - 1	18027.5	2-YEAR	349.00	660.76	664.72	663.72	665.00	0.013152	4.24	82.35	40.62	0.52
Reach - 1	18027.5	10-YEAR	995.00	660.76	667.03	665.43	667.40	0.009324	4.89	203.63	66.71	0.48
Reach - 1	18027.5	25-YEAR	1381.00	660.76	667.94	666.08	668.37	0.008211	5.25	271.25	90.24	0.46
Reach - 1	18027.5	50-YEAR	1692.00	660.76	668.57	666.54	669.03	0.007772	5.51	320.48	106.45	0.46
Reach - 1	18027.5	100-YEAR	1927.00	660.76	669.00	666.86	669.50	0.007541	5.69	355.52	142.19	0.46
Reach - 1	18027.5	500-YEAR	2717.00	660.76	670.27	667.74	670.82	0.006828	6.06	543.04	269.64	0.45
Reach - 1	18027.5	100-YEARFU	2667.00	660.76	670.20	667.70	670.75	0.006891	6.04	531.10	266.44	0.45
Reach - 1	17619.0	2-YEAR	349.00	657.29	661.97	660.06	662.10	0.004250	3.34	182.29	75.53	0.31
Reach - 1	17619.0	10-YEAR	995.00	657.29	664.23	661.83	664.46	0.005492	4.84	367.89	165.58	0.37
Reach - 1	17619.0	25-YEAR	1381.00	657.29	665.00	662.47	665.31	0.006588	5.64	438.68	217.24	0.41
Reach - 1	17619.0	50-YEAR	1692.00	657.29	665.53	662.89	665.90	0.007392	6.21	488.61	244.88	0.44
Reach - 1	17619.0	100-YEAR	1927.00	657.29	665.89	663.18	666.30	0.007940	6.59	523.77	259.13	0.46
Reach - 1	17619.0	500-YEAR	2717.00	657.29	666.93	664.07	667.50	0.009749	7.80	631.49	289.99	0.51
Reach - 1	17619.0	100-YEARFU	2667.00	657.29	666.87	664.02	667.43	0.009647	7.73	624.95	288.26	0.51
Reach - 1	17039.0	2-YEAR	349.00	654.71	659.68		659.80	0.003708	2.76	126.52	46.00	0.29
Reach - 1	17039.0	10-YEAR	995.00	654.71	661.60		661.76	0.003931	3.57	493.05	278.56	0.32
Reach - 1	17039.0	25-YEAR	1381.00	654.71	662.26		662.44	0.003771	3.84	684.82	298.95	0.32
Reach - 1	17039.0	50-YEAR	1692.00	654.71	662.69		662.88	0.003748	4.07	814.85	309.63	0.32
Reach - 1	17039.0	100-YEAR	1927.00	654.71	662.98		663.18	0.003759	4.24	905.57	316.87	0.33
Reach - 1	17039.0	500-YEAR	2717.00	654.71	663.85		664.08	0.003758	4.70	1190.73	335.68	0.34
Reach - 1	17039.0	100-YEARFU	2667.00	654.71	663.80		664.03	0.003755	4.67	1173.90	334.60	0.34
Reach - 1	16428.0	2-YEAR	349.00	652.56	657.42		657.54	0.003678	2.78	135.75	134.38	0.29
Reach - 1	16428.0	10-YEAR	995.00	652.56	659.17		659.37	0.003899	3.93	482.72	270.44	0.33
Reach - 1	16428.0	25-YEAR	1381.00	652.56	659.86		660.08	0.003960	4.36	689.67	339.90	0.34
Reach - 1	16428.0	50-YEAR	1692.00	652.56	660.31		660.54	0.003913	4.58	849.13	365.27	0.34
Reach - 1	16428.0	100-YEAR	1927.00	652.56	660.61		660.84	0.003879	4.72	960.70	375.36	0.34
Reach - 1	16428.0	500-YEAR	2717.00	652.56	661.49		661.74	0.003889	5.18	1307.84	422.24	0.35
Reach - 1	16428.0	100-YEARFU	2667.00	652.56	661.44		661.69	0.003891	5.16	1286.51	419.94	0.35
Reach - 1	15875.0	2-YEAR	349.00	652.00	656.93		656.94	0.000472	1.09	762.12	337.54	0.11
Reach - 1	15875.0	10-YEAR	995.00	652.00	658.45		658.47	0.000815	1.85	1308.05	385.04	0.15
Reach - 1	15875.0	25-YEAR	1381.00	652.00	659.02		659.05	0.000983	2.20	1588.85	539.06	0.17
Reach - 1	15875.0	50-YEAR	1692.00	652.00	659.42		659.46	0.001069	2.40	1808.22	553.65	0.18
Reach - 1	15875.0	100-YEAR	1927.00	652.00	659.69		659.73	0.001135	2.55	1956.08	566.62	0.18
Reach - 1	15875.0	500-YEAR	2717.00	652.00	660.48		660.52	0.001304	2.97	2418.69	608.06	0.20
Reach - 1	15875.0	100-YEARFU	2667.00	652.00	660.43		660.48	0.001295	2.95	2390.57	605.88	0.20
Reach - 1	15152.0	2-YEAR	349.00	651.92	656.35		656.38	0.001451	2.04	569.72	628.80	0.19
Reach - 1	15152.0	10-YEAR	995.00	651.92	657.79		657.81	0.001011	2.12	1628.80	815.53	0.17
Reach - 1	15152.0	25-YEAR	1381.00	651.92	658.30		658.32	0.001020	2.27	2059.81	871.07	0.17
Reach - 1	15152.0	50-YEAR	1692.00	651.92	658.67		658.69	0.001040	2.39	2383.78	894.58	0.17
Reach - 1	15152.0	100-YEAR	1927.00	651.92	658.91		658.93	0.001040	2.45	2602.56	899.76	0.17
Reach - 1	15152.0	500-YEAR	2717.00	651.92	659.66		659.68	0.001032	2.63	3277.45	921.46	0.18
Reach - 1	15152.0	100-YEARFU	2667.00	651.92	659.61		659.64	0.001033	2.62	3236.48	920.04	0.18
Reach - 1	14616.0	2-YEAR	349.00	650.44	655.29		655.36	0.002603	2.14	165.63	96.17	0.24
Reach - 1	14616.0	10-YEAR	995.00	650.44	656.72		656.85	0.003859	3.10	489.71	332.27	0.31
Reach - 1	14616.0	25-YEAR	1381.00	650.44	657.21		657.36	0.003976	3.39	659.02	361.55	0.32
Reach - 1	14616.0	50-YEAR	1692.00	650.44	657.55		657.71	0.003956	3.59	785.89	380.55	0.32
Reach - 1	14616.0	100-YEAR	1927.00	650.44	657.79		657.95	0.003932	3.73	876.82	387.99	0.33
Reach - 1	14616.0	500-YEAR	2717.00	650.44	658.54		658.71	0.003725	4.06	1174.61	407.29	0.33

HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	14616.0	100-YEARFU	2667.00	650.44	658.49		658.67	0.003741	4.04	1156.09	406.28	0.33
Reach - 1	13983.0	2-YEAR	349.00	647.50	652.79		653.01	0.005653	3.90	133.39	162.39	0.34
Reach - 1	13983.0	10-YEAR	995.00	647.50	654.70		654.77	0.002798	3.16	875.77	514.01	0.25
Reach - 1	13983.0	25-YEAR	1381.00	647.50	655.34		655.40	0.002421	3.09	1223.78	576.92	0.24
Reach - 1	13983.0	50-YEAR	1692.00	647.50	655.80		655.85	0.002192	3.06	1496.63	604.18	0.23
Reach - 1	13983.0	100-YEAR	1927.00	647.50	656.12		656.17	0.002044	3.07	1691.46	615.52	0.22
Reach - 1	13983.0	500-YEAR	2717.00	647.50	657.06		657.11	0.001763	3.14	2280.28	637.12	0.21
Reach - 1	13983.0	100-YEARFU	2667.00	647.50	657.01		657.05	0.001776	3.13	2245.16	635.85	0.21
Reach - 1	13435.0	2-YEAR	349.00	646.02	650.94		651.02	0.002431	2.33	150.49	59.13	0.24
Reach - 1	13435.0	10-YEAR	995.00	646.02	653.25		653.37	0.002322	2.97	550.87	300.43	0.25
Reach - 1	13435.0	25-YEAR	1381.00	646.02	654.02		654.15	0.002147	3.19	787.61	314.14	0.25
Reach - 1	13435.0	50-YEAR	1692.00	646.02	654.54		654.67	0.002084	3.35	952.95	322.14	0.25
Reach - 1	13435.0	100-YEAR	1927.00	646.02	654.90		655.04	0.002047	3.46	1070.22	327.07	0.25
Reach - 1	13435.0	500-YEAR	2717.00	646.02	655.89		656.05	0.002071	3.85	1401.62	340.96	0.26
Reach - 1	13435.0	100-YEARFU	2667.00	646.02	655.84		655.99	0.002068	3.83	1382.33	340.16	0.26
Reach - 1	12850.0	2-YEAR	349.00	644.20	648.71		648.90	0.005949	3.49	103.06	45.25	0.37
Reach - 1	12850.0	10-YEAR	995.00	644.20	650.33		650.81	0.010620	5.71	219.12	94.66	0.51
Reach - 1	12850.0	25-YEAR	1381.00	644.20	650.86		651.53	0.013373	6.79	275.84	120.75	0.59
Reach - 1	12850.0	50-YEAR	1692.00	644.20	651.26		652.04	0.014787	7.42	327.83	141.71	0.62
Reach - 1	12850.0	100-YEAR	1927.00	644.20	651.53		652.39	0.015672	7.84	368.99	160.10	0.64
Reach - 1	12850.0	500-YEAR	2717.00	644.20	652.33		653.33	0.016316	8.78	507.50	184.13	0.67
Reach - 1	12850.0	100-YEARFU	2667.00	644.20	652.28		653.28	0.016329	8.73	498.83	182.89	0.67
Reach - 1	12166.0	2-YEAR	349.00	639.50	645.72		645.87	0.003406	3.11	117.39	59.37	0.28
Reach - 1	12166.0	10-YEAR	995.00	639.50	648.08		648.16	0.001862	3.07	968.90	533.17	0.23
Reach - 1	12166.0	25-YEAR	1381.00	639.50	648.76		648.84	0.001687	3.15	1343.25	558.04	0.22
Reach - 1	12166.0	50-YEAR	1692.00	639.50	649.20		649.27	0.001665	3.27	1588.77	571.27	0.22
Reach - 1	12166.0	100-YEAR	1927.00	639.50	649.49		649.56	0.001666	3.36	1754.47	576.16	0.22
Reach - 1	12166.0	500-YEAR	2717.00	639.50	650.34		650.42	0.001683	3.64	2251.88	590.53	0.23
Reach - 1	12166.0	100-YEARFU	2667.00	639.50	650.29		650.37	0.001678	3.62	2223.96	589.74	0.23
Reach - 1	11593.0	2-YEAR	349.00	638.00	644.13		644.25	0.002369	2.80	124.87	29.40	0.24
Reach - 1	11593.0	10-YEAR	995.00	638.00	646.38		646.65	0.003906	4.43	408.82	247.50	0.32
Reach - 1	11593.0	25-YEAR	1381.00	638.00	647.05		647.35	0.004383	4.93	632.57	391.40	0.34
Reach - 1	11593.0	50-YEAR	1692.00	638.00	647.47		647.77	0.004521	5.18	808.27	456.51	0.35
Reach - 1	11593.0	100-YEAR	1927.00	638.00	647.76		648.06	0.004525	5.33	945.94	495.37	0.36
Reach - 1	11593.0	500-YEAR	2717.00	638.00	648.64		648.93	0.004345	5.66	1415.11	555.86	0.36
Reach - 1	11593.0	100-YEARFU	2667.00	638.00	648.59		648.88	0.004374	5.65	1386.60	553.51	0.36
Reach - 1	11011.0	2-YEAR	349.00	637.23	643.16		643.21	0.001334	1.85	198.19	104.70	0.18
Reach - 1	11011.0	10-YEAR	995.00	637.23	644.76		644.88	0.002328	2.99	608.06	442.46	0.25
Reach - 1	11011.0	25-YEAR	1381.00	637.23	645.40		645.52	0.002245	3.22	909.37	496.06	0.25
Reach - 1	11011.0	50-YEAR	1692.00	637.23	645.88		646.00	0.002081	3.29	1154.54	513.88	0.25
Reach - 1	11011.0	100-YEAR	1927.00	637.23	646.23		646.34	0.001969	3.34	1334.56	526.33	0.24
Reach - 1	11011.0	500-YEAR	2717.00	637.23	647.27		647.38	0.001709	3.47	1900.57	561.48	0.23
Reach - 1	11011.0	100-YEARFU	2667.00	637.23	647.21		647.32	0.001720	3.46	1867.17	559.88	0.23
Reach - 1	10448.0	2-YEAR	349.00	636.49	641.84		641.96	0.004361	2.98	214.32	359.52	0.31
Reach - 1	10448.0	10-YEAR	995.00	636.49	643.65		643.70	0.001820	2.51	1107.46	563.54	0.22
Reach - 1	10448.0	25-YEAR	1381.00	636.49	644.51		644.55	0.001310	2.41	1606.34	600.38	0.19
Reach - 1	10448.0	50-YEAR	1692.00	636.49	645.10		645.13	0.001120	2.40	1967.51	620.71	0.18
Reach - 1	10448.0	100-YEAR	1927.00	636.49	645.50		645.53	0.001041	2.42	2218.64	637.16	0.17
Reach - 1	10448.0	500-YEAR	2717.00	636.49	646.63		646.67	0.000920	2.56	2967.43	686.88	0.17
Reach - 1	10448.0	100-YEARFU	2667.00	636.49	646.57		646.60	0.000926	2.55	2923.38	684.00	0.17
Reach - 1	9875.0	2-YEAR	349.00	635.33	640.13		640.20	0.002249	2.18	162.72	65.53	0.23
Reach - 1	9875.0	10-YEAR	995.00	635.33	642.72		642.80	0.001353	2.60	673.97	259.98	0.20
Reach - 1	9875.0	25-YEAR	1381.00	635.33	643.73		643.82	0.001200	2.76	943.22	269.29	0.19
Reach - 1	9875.0	50-YEAR	1692.00	635.33	644.37		644.47	0.001185	2.92	1117.14	275.14	0.20
Reach - 1	9875.0	100-YEAR	1927.00	635.33	644.78		644.89	0.001201	3.06	1231.29	278.92	0.20
Reach - 1	9875.0	500-YEAR	2717.00	635.33	645.90		646.03	0.001312	3.51	1549.21	289.17	0.21
Reach - 1	9875.0	100-YEARFU	2667.00	635.33	645.84		645.97	0.001305	3.48	1530.95	288.59	0.21
Reach - 1	9204.5	2-YEAR	349.00	632.18	638.58	634.95	638.68	0.002272	2.55	137.06	48.54	0.23
Reach - 1	9204.5	10-YEAR	995.00	632.18	641.07	637.56	641.36	0.003795	4.31	231.07	99.62	0.32
Reach - 1	9204.5	25-YEAR	1381.00	632.18	642.39	638.31	642.63	0.002782	4.16	474.07	189.44	0.28
Reach - 1	9204.5	50-YEAR	1692.00	632.18	643.00	638.88	643.27	0.002858	4.46	627.28	218.81	0.29
Reach - 1	9204.5	100-YEAR	1927.00	632.18	643.36	639.28	643.66	0.003016	4.73	708.06	234.65	0.30
Reach - 1	9204.5	500-YEAR	2717.00	632.18	644.22	640.47	644.62	0.003721	5.63	927.37	273.05	0.34
Reach - 1	9204.5	100-YEARFU	2667.00	632.18	644.18	640.40	644.57	0.003677	5.58	914.55	270.96	0.33
Reach - 1	9184.0	Bridge										
Reach - 1	9163.5	2-YEAR	349.00	631.76	638.12	634.54	638.22	0.002354	2.58	135.49	47.94	0.23

HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	9163.5	10-YEAR	995.00	631.76	640.51	637.13	640.81	0.004091	4.42	225.33	91.54	0.33
Reach - 1	9163.5	25-YEAR	1381.00	631.76	641.24	637.89	641.57	0.004320	4.80	380.65	139.95	0.34
Reach - 1	9163.5	50-YEAR	1692.00	631.76	641.70	638.46	642.11	0.004847	5.34	453.51	171.42	0.37
Reach - 1	9163.5	100-YEAR	1927.00	631.76	642.02	638.85	642.48	0.005194	5.71	510.78	192.60	0.38
Reach - 1	9163.5	500-YEAR	2717.00	631.76	642.93	640.06	643.52	0.006047	6.68	704.60	233.99	0.42
Reach - 1	9163.5	100-YEARFU	2667.00	631.76	642.87	639.98	643.46	0.006002	6.63	692.57	231.69	0.42
Reach - 1	9023.0	2-YEAR	349.00	631.56	637.80		637.90	0.002199	2.43	144.00	44.87	0.23
Reach - 1	9023.0	10-YEAR	995.00	631.56	640.15		640.31	0.002353	3.46	499.53	232.10	0.26
Reach - 1	9023.0	25-YEAR	1381.00	631.56	640.84		641.03	0.002635	3.95	664.21	246.44	0.28
Reach - 1	9023.0	50-YEAR	1692.00	631.56	641.29		641.51	0.002824	4.28	777.08	256.45	0.29
Reach - 1	9023.0	100-YEAR	1927.00	631.56	641.59		641.82	0.002961	4.51	855.28	263.22	0.30
Reach - 1	9023.0	500-YEAR	2717.00	631.56	642.46		642.75	0.003346	5.18	1094.37	280.96	0.32
Reach - 1	9023.0	100-YEARFU	2667.00	631.56	642.41		642.69	0.003322	5.14	1080.51	280.36	0.32
Reach - 1	8199.0	2-YEAR	349.00	630.40	635.65		635.77	0.003054	2.79	125.00	37.06	0.27
Reach - 1	8199.0	10-YEAR	995.00	630.40	637.98		638.14	0.002973	3.55	574.30	405.98	0.28
Reach - 1	8199.0	25-YEAR	1381.00	630.40	638.61		638.76	0.002858	3.71	843.07	457.63	0.28
Reach - 1	8199.0	50-YEAR	1692.00	630.40	639.05		639.19	0.002746	3.79	1052.70	499.97	0.28
Reach - 1	8199.0	100-YEAR	1927.00	630.40	639.33		639.47	0.002697	3.88	1195.46	517.70	0.28
Reach - 1	8199.0	500-YEAR	2717.00	630.40	640.11		640.25	0.002667	4.18	1621.62	585.10	0.28
Reach - 1	8199.0	100-YEARFU	2667.00	630.40	640.06		640.21	0.002669	4.16	1595.73	583.54	0.28
Reach - 1	7551.0	2-YEAR	349.00	628.77	634.04		634.13	0.002114	2.35	148.72	44.45	0.23
Reach - 1	7551.0	10-YEAR	995.00	628.77	636.41		636.51	0.002110	2.91	696.76	420.14	0.24
Reach - 1	7551.0	25-YEAR	1381.00	628.77	637.06		637.17	0.002098	3.11	1002.62	519.87	0.24
Reach - 1	7551.0	50-YEAR	1692.00	628.77	637.51		637.62	0.002121	3.31	1248.48	581.66	0.25
Reach - 1	7551.0	100-YEAR	1927.00	628.77	637.80		637.91	0.002132	3.43	1420.77	626.79	0.25
Reach - 1	7551.0	500-YEAR	2717.00	628.77	638.58		638.71	0.002128	3.72	1939.65	683.41	0.25
Reach - 1	7551.0	100-YEARFU	2667.00	628.77	638.54		638.66	0.002127	3.70	1909.21	681.09	0.25
Reach - 1	6903.0	2-YEAR	349.00	626.85	632.34		632.49	0.003068	3.14	131.88	51.40	0.27
Reach - 1	6903.0	10-YEAR	995.00	626.85	634.38		634.65	0.004074	4.75	491.69	328.66	0.34
Reach - 1	6903.0	25-YEAR	1381.00	626.85	635.02		635.29	0.004169	5.14	718.80	379.09	0.35
Reach - 1	6903.0	50-YEAR	1692.00	626.85	635.44		635.71	0.004257	5.40	882.67	410.89	0.36
Reach - 1	6903.0	100-YEAR	1927.00	626.85	635.70		635.99	0.004340	5.59	995.79	428.20	0.36
Reach - 1	6903.0	500-YEAR	2717.00	626.85	636.45		636.75	0.004551	6.10	1330.63	481.74	0.38
Reach - 1	6903.0	100-YEARFU	2667.00	626.85	636.41		636.70	0.004543	6.07	1310.06	473.17	0.38
Reach - 1	5927.0	2-YEAR	349.00	623.68	629.70		629.81	0.002446	2.64	154.96	129.94	0.24
Reach - 1	5927.0	10-YEAR	995.00	623.68	631.74		631.82	0.002093	2.87	810.00	464.12	0.23
Reach - 1	5927.0	25-YEAR	1381.00	623.68	632.34		632.42	0.002118	3.00	1116.88	590.84	0.24
Reach - 1	5927.0	50-YEAR	1692.00	623.68	632.74		632.82	0.002109	3.07	1358.25	616.48	0.24
Reach - 1	5927.0	100-YEAR	1927.00	623.68	633.01		633.09	0.002083	3.12	1526.42	627.43	0.24
Reach - 1	5927.0	500-YEAR	2717.00	623.68	633.82		633.90	0.001961	3.32	2042.96	651.03	0.24
Reach - 1	5927.0	100-YEARFU	2667.00	623.68	633.77		633.85	0.001969	3.31	2011.52	649.69	0.24
Reach - 1	5402.0	2-YEAR	349.00	622.55	628.18		628.32	0.003317	2.95	128.58	83.48	0.28
Reach - 1	5402.0	10-YEAR	995.00	622.55	630.53		630.65	0.002407	3.28	784.78	485.65	0.25
Reach - 1	5402.0	25-YEAR	1381.00	622.55	631.13		631.25	0.002361	3.49	1080.38	496.46	0.25
Reach - 1	5402.0	50-YEAR	1692.00	622.55	631.52		631.64	0.002409	3.68	1273.75	503.40	0.26
Reach - 1	5402.0	100-YEAR	1927.00	622.55	631.79		631.91	0.002437	3.80	1409.43	508.22	0.26
Reach - 1	5402.0	500-YEAR	2717.00	622.55	632.61		632.74	0.002481	4.15	1836.35	529.26	0.27
Reach - 1	5402.0	100-YEARFU	2667.00	622.55	632.56		632.69	0.002483	4.13	1809.47	527.87	0.27
Reach - 1	4771.0	2-YEAR	349.00	621.00	626.59		626.68	0.002062	2.35	148.72	43.80	0.22
Reach - 1	4771.0	10-YEAR	995.00	621.00	629.05		629.18	0.002234	3.11	618.57	484.00	0.25
Reach - 1	4771.0	25-YEAR	1381.00	621.00	629.69		629.82	0.002165	3.32	1022.31	775.69	0.25
Reach - 1	4771.0	50-YEAR	1692.00	621.00	630.11		630.23	0.002070	3.41	1355.78	812.14	0.25
Reach - 1	4771.0	100-YEAR	1927.00	621.00	630.41		630.53	0.001962	3.43	1605.07	823.58	0.24
Reach - 1	4771.0	500-YEAR	2717.00	621.00	631.41		631.50	0.001563	3.38	2444.45	856.25	0.22
Reach - 1	4771.0	100-YEARFU	2667.00	621.00	631.35		631.44	0.001587	3.38	2390.37	854.28	0.22
Reach - 1	4085.0	2-YEAR	349.00	619.07	624.32		624.53	0.005251	3.64	95.99	28.76	0.34
Reach - 1	4085.0	10-YEAR	995.00	619.07	627.24		627.42	0.002973	3.99	701.05	490.15	0.28
Reach - 1	4085.0	25-YEAR	1381.00	619.07	628.10		628.24	0.002443	3.94	1190.48	600.35	0.26
Reach - 1	4085.0	50-YEAR	1692.00	619.07	628.67		628.79	0.002121	3.87	1543.48	630.81	0.25
Reach - 1	4085.0	100-YEAR	1927.00	619.07	629.09		629.20	0.001905	3.80	1812.19	648.94	0.24
Reach - 1	4085.0	500-YEAR	2717.00	619.07	630.39		630.47	0.001425	3.63	2689.41	695.82	0.21
Reach - 1	4085.0	100-YEARFU	2667.00	619.07	630.31		630.39	0.001450	3.64	2633.70	693.44	0.21
Reach - 1	3739.0	2-YEAR	349.00	616.98	622.81		622.97	0.003848	3.14	111.26	31.27	0.29
Reach - 1	3739.0	10-YEAR	995.00	616.98	626.02		626.28	0.003630	4.13	332.32	278.71	0.31
Reach - 1	3739.0	25-YEAR	1381.00	616.98	627.01		627.27	0.003196	4.32	654.57	351.07	0.30
Reach - 1	3739.0	50-YEAR	1692.00	616.98	627.70		627.93	0.002846	4.36	902.44	370.32	0.29
Reach - 1	3739.0	100-YEAR	1927.00	616.98	628.20		628.42	0.002585	4.35	1092.22	383.98	0.28
Reach - 1	3739.0	500-YEAR	2717.00	616.98	629.69		629.88	0.002040	4.34	1691.10	420.74	0.25

HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	3739.0	100-YEARFU	2667.00	616.98	629.60		629.79	0.002069	4.34	1653.29	418.70	0.25
Reach - 1	3555.0	2-YEAR	349.00	615.87	622.37	618.80	622.46	0.001923	2.42	144.40	37.11	0.22
Reach - 1	3555.0	10-YEAR	995.00	615.87	625.55	620.99	625.72	0.002349	3.24	308.49	116.41	0.25
Reach - 1	3555.0	25-YEAR	1381.00	615.87	626.51	621.90	626.73	0.002583	3.78	366.92	149.88	0.27
Reach - 1	3555.0	50-YEAR	1692.00	615.87	627.14	622.52	627.41	0.002773	4.18	405.91	176.64	0.29
Reach - 1	3555.0	100-YEAR	1927.00	615.87	627.60	622.94	627.91	0.002873	4.46	434.28	193.71	0.29
Reach - 1	3555.0	500-YEAR	2717.00	615.87	628.96	624.37	629.39	0.003195	5.28	517.21	238.67	0.32
Reach - 1	3555.0	100-YEARFU	2667.00	615.87	628.87	624.31	629.30	0.003181	5.23	512.13	236.08	0.32
Reach - 1	3535.0	Bridge										
Reach - 1	3515.0	2-YEAR	349.00	615.67	622.14	618.60	622.24	0.001957	2.43	143.46	36.99	0.22
Reach - 1	3515.0	10-YEAR	995.00	615.67	625.28	620.79	625.44	0.002464	3.29	303.77	114.37	0.26
Reach - 1	3515.0	25-YEAR	1381.00	615.67	626.10	621.70	626.34	0.002898	3.91	354.42	141.36	0.29
Reach - 1	3515.0	50-YEAR	1692.00	615.67	626.62	622.31	626.92	0.003281	4.40	385.84	162.87	0.31
Reach - 1	3515.0	100-YEAR	1927.00	615.67	626.98	622.75	627.33	0.003526	4.74	408.33	178.30	0.32
Reach - 1	3515.0	500-YEAR	2717.00	615.67	627.94	624.17	628.47	0.004480	5.84	467.21	211.64	0.37
Reach - 1	3515.0	100-YEARFU	2667.00	615.67	627.89	624.12	628.40	0.004424	5.77	463.77	209.76	0.37
Reach - 1	3098.0	2-YEAR	349.00	614.79	621.09		621.23	0.002903	3.08	113.17	24.60	0.25
Reach - 1	3098.0	10-YEAR	995.00	614.79	623.68		623.99	0.004903	4.75	371.15	325.27	0.34
Reach - 1	3098.0	25-YEAR	1381.00	614.79	624.35		624.69	0.005471	5.28	597.76	364.71	0.36
Reach - 1	3098.0	50-YEAR	1692.00	614.79	624.74		625.11	0.005853	5.66	749.97	408.68	0.38
Reach - 1	3098.0	100-YEAR	1927.00	614.79	625.01		625.40	0.006209	5.98	861.75	422.14	0.39
Reach - 1	3098.0	500-YEAR	2717.00	614.79	625.72		626.15	0.006782	6.65	1170.48	449.49	0.42
Reach - 1	3098.0	100-YEARFU	2667.00	614.79	625.68		626.10	0.006751	6.61	1152.27	447.92	0.42
Reach - 1	2507.0	2-YEAR	349.00	613.50	619.67		619.77	0.002084	2.58	164.88	64.94	0.22
Reach - 1	2507.0	10-YEAR	995.00	613.50	621.67		621.81	0.002766	3.52	680.24	491.78	0.27
Reach - 1	2507.0	25-YEAR	1381.00	613.50	622.19		622.33	0.002903	3.80	980.72	641.19	0.28
Reach - 1	2507.0	50-YEAR	1692.00	613.50	622.52		622.66	0.002937	3.97	1198.06	685.09	0.28
Reach - 1	2507.0	100-YEAR	1927.00	613.50	622.75		622.88	0.002948	4.07	1354.30	707.07	0.28
Reach - 1	2507.0	500-YEAR	2717.00	613.50	623.39		623.52	0.002961	4.34	1823.66	759.42	0.29
Reach - 1	2507.0	100-YEARFU	2667.00	613.50	623.35		623.48	0.002960	4.33	1795.68	756.28	0.29
Reach - 1	2008.0	2-YEAR	349.00	612.74	618.68		618.77	0.001917	2.49	192.23	79.69	0.21
Reach - 1	2008.0	10-YEAR	995.00	612.74	620.31		620.43	0.002747	3.41	788.72	614.67	0.26
Reach - 1	2008.0	25-YEAR	1381.00	612.74	620.80		620.90	0.002780	3.55	1097.02	646.08	0.27
Reach - 1	2008.0	50-YEAR	1692.00	612.74	621.12		621.22	0.002788	3.66	1305.84	671.80	0.27
Reach - 1	2008.0	100-YEAR	1927.00	612.74	621.34		621.44	0.002797	3.75	1457.55	709.48	0.27
Reach - 1	2008.0	500-YEAR	2717.00	612.74	621.96		622.06	0.002865	4.05	1911.70	764.35	0.28
Reach - 1	2008.0	100-YEARFU	2667.00	612.74	621.92		622.02	0.002861	4.03	1884.60	761.17	0.28
Reach - 1	1494.0	2-YEAR	349.00	611.91	617.72		617.79	0.001872	2.32	292.93	312.60	0.21
Reach - 1	1494.0	10-YEAR	995.00	611.91	619.03		619.10	0.002397	2.96	939.61	647.75	0.24
Reach - 1	1494.0	25-YEAR	1381.00	611.91	619.47		619.54	0.002508	3.15	1238.95	695.55	0.25
Reach - 1	1494.0	50-YEAR	1692.00	611.91	619.77		619.84	0.002559	3.28	1452.78	729.66	0.25
Reach - 1	1494.0	100-YEAR	1927.00	611.91	619.98		620.04	0.002597	3.36	1605.10	755.35	0.26
Reach - 1	1494.0	500-YEAR	2717.00	611.91	620.56		620.63	0.002647	3.62	2065.90	810.56	0.26
Reach - 1	1494.0	100-YEARFU	2667.00	611.91	620.53		620.60	0.002645	3.61	2038.32	808.79	0.26
Reach - 1	1035.0	2-YEAR	349.00	611.48	616.90		616.95	0.001796	2.22	445.37	482.14	0.20
Reach - 1	1035.0	10-YEAR	995.00	611.48	618.00		618.04	0.002161	2.69	1227.79	835.28	0.22
Reach - 1	1035.0	25-YEAR	1381.00	611.48	618.41		618.45	0.002200	2.80	1579.66	884.08	0.23
Reach - 1	1035.0	50-YEAR	1692.00	611.48	618.69		618.73	0.002235	2.88	1831.45	911.29	0.23
Reach - 1	1035.0	100-YEAR	1927.00	611.48	618.88		618.92	0.002273	2.94	2004.25	928.31	0.23
Reach - 1	1035.0	500-YEAR	2717.00	611.48	619.44		619.48	0.002374	3.13	2533.64	977.37	0.24
Reach - 1	1035.0	100-YEARFU	2667.00	611.48	619.41		619.45	0.002367	3.11	2502.84	974.73	0.24
Reach - 1	598.0	2-YEAR	349.00	611.23	616.29		616.31	0.001161	1.68	787.06	827.43	0.16
Reach - 1	598.0	10-YEAR	995.00	611.23	617.18		617.20	0.001712	2.23	1598.85	967.41	0.20
Reach - 1	598.0	25-YEAR	1381.00	611.23	617.52		617.55	0.001930	2.45	1950.05	1092.71	0.21
Reach - 1	598.0	50-YEAR	1692.00	611.23	617.77		617.79	0.002059	2.58	2232.16	1200.89	0.22
Reach - 1	598.0	100-YEAR	1927.00	611.23	617.93		617.96	0.002122	2.66	2431.17	1214.53	0.23
Reach - 1	598.0	500-YEAR	2717.00	611.23	618.42		618.46	0.002280	2.93	3049.18	1284.50	0.24
Reach - 1	598.0	100-YEARFU	2667.00	611.23	618.40		618.43	0.002273	2.91	3012.83	1273.11	0.24
Reach - 1	318.0	2-YEAR	349.00	610.97	615.47		615.64	0.006958	3.77	260.51	601.71	0.39
Reach - 1	318.0	10-YEAR	995.00	610.97	616.47		616.52	0.003773	3.12	1529.26	1520.35	0.29
Reach - 1	318.0	25-YEAR	1381.00	610.97	616.82		616.86	0.003241	3.00	2087.30	1618.51	0.28
Reach - 1	318.0	50-YEAR	1692.00	610.97	617.07		617.10	0.002999	2.98	2492.41	1679.96	0.27
Reach - 1	318.0	100-YEAR	1927.00	610.97	617.24		617.27	0.002870	2.98	2783.10	1729.64	0.26
Reach - 1	318.0	500-YEAR	2717.00	610.97	617.75		617.78	0.002575	3.00	3697.58	1851.42	0.25
Reach - 1	318.0	100-YEARFU	2667.00	610.97	617.72		617.75	0.002591	3.00	3644.16	1849.72	0.25
Reach - 1	66.0	2-YEAR	349.00	610.73	615.06	614.03	615.06	0.001001	1.36	1132.84	1060.66	0.14

HEC-RAS Plan: CEMODEL River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	66.0	10-YEAR	995.00	610.73	616.06	614.48	616.07	0.001000	1.52	2774.30	2041.68	0.14
Reach - 1	66.0	25-YEAR	1381.00	610.73	616.43	614.68	616.43	0.001000	1.58	3555.17	2190.90	0.14
Reach - 1	66.0	50-YEAR	1692.00	610.73	616.68	614.82	616.69	0.001000	1.62	4123.90	2262.01	0.14
Reach - 1	66.0	100-YEAR	1927.00	610.73	616.86	614.87	616.86	0.001001	1.65	4522.21	2288.86	0.14
Reach - 1	66.0	500-YEAR	2717.00	610.73	617.38	615.11	617.39	0.001001	1.73	5738.84	2369.19	0.15
Reach - 1	66.0	100-YEARFU	2667.00	610.73	617.35	615.07	617.36	0.001001	1.72	5668.17	2366.27	0.15

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	29252	2-YEAR	57.00	722.00	723.72		723.78	0.004976	1.98	28.75	21.45	0.30
Reach - 1	29252	10-YEAR	213.00	722.00	725.11		725.28	0.005737	3.34	83.78	64.71	0.36
Reach - 1	29252	25-YEAR	314.00	722.00	725.74		725.94	0.005337	3.71	132.19	88.42	0.36
Reach - 1	29252	50-YEAR	377.00	722.00	726.06		726.27	0.005234	3.91	162.21	99.98	0.36
Reach - 1	29252	100-YEAR	515.00	722.00	726.63		726.86	0.005210	4.30	223.65	117.75	0.37
Reach - 1	29252	500-YEAR	625.00	722.00	727.03		727.28	0.005086	4.52	274.19	130.58	0.37
Reach - 1	29252	100-YEARFU	665.00	722.00	727.16		727.41	0.005079	4.61	291.51	134.69	0.38
Reach - 1	28973	2-YEAR	57.00	719.00	721.05		721.24	0.021426	3.51	16.22	15.24	0.60
Reach - 1	28973	10-YEAR	213.00	719.00	723.10		723.30	0.008884	3.64	58.58	26.69	0.43
Reach - 1	28973	25-YEAR	314.00	719.00	723.85		724.08	0.008503	3.90	80.47	31.92	0.43
Reach - 1	28973	50-YEAR	377.00	719.00	724.19		724.45	0.008285	4.11	93.02	47.25	0.43
Reach - 1	28973	100-YEAR	515.00	719.00	724.82		725.12	0.007472	4.47	138.16	95.36	0.43
Reach - 1	28973	500-YEAR	625.00	719.00	725.85		726.05	0.003770	3.79	257.59	128.57	0.32
Reach - 1	28973	100-YEARFU	665.00	719.00	725.98		726.19	0.003780	3.87	274.40	131.55	0.32
Reach - 1	28766	2-YEAR	57.00	717.00	720.41		720.44	0.001434	1.31	43.35	22.70	0.17
Reach - 1	28766	10-YEAR	213.00	717.00	722.53		722.60	0.001633	2.12	105.52	41.63	0.20
Reach - 1	28766	25-YEAR	314.00	717.00	723.21		723.31	0.001930	2.59	138.15	53.13	0.22
Reach - 1	28766	50-YEAR	377.00	717.00	723.49		723.61	0.002209	2.89	153.35	55.55	0.24
Reach - 1	28766	100-YEAR	515.00	717.00	724.03		724.21	0.002721	3.46	184.96	61.23	0.27
Reach - 1	28766	500-YEAR	625.00	717.00	725.41		725.55	0.001586	3.10	303.61	103.77	0.22
Reach - 1	28766	100-YEARFU	665.00	717.00	725.52		725.67	0.001674	3.22	315.10	105.31	0.22
Reach - 1	28625	2-YEAR	57.00	717.00	719.93		720.04	0.007143	2.69	21.20	11.80	0.35
Reach - 1	28625	10-YEAR	213.00	717.00	721.79		722.09	0.010993	4.41	48.33	17.38	0.47
Reach - 1	28625	25-YEAR	314.00	717.00	722.36		722.73	0.011604	5.02	98.19	127.82	0.49
Reach - 1	28625	50-YEAR	377.00	717.00	722.63		722.99	0.011190	5.19	131.81	129.13	0.49
Reach - 1	28625	100-YEAR	515.00	717.00	723.30		723.59	0.008049	4.95	222.31	143.49	0.43
Reach - 1	28625	500-YEAR	625.00	717.00	725.24		725.31	0.001517	2.77	555.40	185.17	0.20
Reach - 1	28625	100-YEARFU	665.00	717.00	725.35		725.41	0.001572	2.85	574.82	186.10	0.20
Reach - 1	28382	2-YEAR	57.00	715.00	719.34		719.37	0.001392	1.39	40.97	18.35	0.16
Reach - 1	28382	10-YEAR	213.00	715.00	720.81		720.89	0.002570	2.50	161.47	138.20	0.24
Reach - 1	28382	25-YEAR	314.00	715.00	721.20		721.31	0.003231	3.01	216.01	146.75	0.27
Reach - 1	28382	50-YEAR	377.00	715.00	721.53		721.64	0.003034	3.08	266.79	156.46	0.27
Reach - 1	28382	100-YEAR	515.00	715.00	722.75		722.81	0.001487	2.57	474.67	180.03	0.20
Reach - 1	28382	500-YEAR	625.00	715.00	725.12		725.13	0.000362	1.62	948.49	220.69	0.10
Reach - 1	28382	100-YEARFU	665.00	715.00	725.21		725.23	0.000385	1.68	969.89	221.27	0.11
Reach - 1	28251	2-YEAR	57.00	715.00	718.92		719.02	0.006275	2.58	22.12	10.76	0.32
Reach - 1	28251	10-YEAR	213.00	715.00	720.34		720.43	0.005305	3.04	180.92	165.31	0.31
Reach - 1	28251	25-YEAR	314.00	715.00	720.59		720.70	0.007012	3.68	223.47	174.33	0.36
Reach - 1	28251	50-YEAR	377.00	715.00	721.08		721.16	0.004366	3.19	313.39	189.92	0.29
Reach - 1	28251	100-YEAR	515.00	715.00	722.60		722.62	0.001268	2.15	611.77	201.59	0.16
Reach - 1	28251	500-YEAR	625.00	715.00	725.08		725.09	0.000297	1.35	1120.62	208.34	0.09
Reach - 1	28251	100-YEARFU	665.00	715.00	725.17		725.18	0.000318	1.40	1140.31	208.73	0.09
Reach - 1	28017	2-YEAR	57.00	715.00	717.39		717.49	0.006873	2.48	22.99	14.96	0.35
Reach - 1	28017	10-YEAR	213.00	715.00	718.54		718.74	0.010113	4.02	110.90	147.74	0.46
Reach - 1	28017	25-YEAR	314.00	715.00	719.62		719.68	0.002903	2.76	282.36	177.85	0.26
Reach - 1	28017	50-YEAR	377.00	715.00	720.67		720.70	0.001067	2.00	482.80	195.00	0.17
Reach - 1	28017	100-YEAR	515.00	715.00	722.45		722.46	0.000415	1.56	834.74	200.49	0.11
Reach - 1	28017	500-YEAR	625.00	715.00	725.03		725.04	0.000144	1.16	1364.75	214.07	0.07
Reach - 1	28017	100-YEARFU	665.00	715.00	725.12		725.13	0.000156	1.21	1384.19	214.26	0.07
Reach - 1	27923	2-YEAR	57.00	714.00	715.50	715.50	715.98	0.064493	5.53	10.30	11.03	1.01
Reach - 1	27923	10-YEAR	213.00	714.00	717.53		717.78	0.010141	4.46	86.35	73.24	0.48
Reach - 1	27923	25-YEAR	314.00	714.00	719.40		719.47	0.001836	2.69	301.46	145.07	0.22
Reach - 1	27923	50-YEAR	377.00	714.00	720.57		720.61	0.000855	2.14	482.48	168.00	0.16
Reach - 1	27923	100-YEAR	515.00	714.00	722.40		722.42	0.000406	1.77	829.99	206.36	0.11
Reach - 1	27923	500-YEAR	625.00	714.00	725.02		725.03	0.000140	1.26	1398.44	228.10	0.07
Reach - 1	27923	100-YEARFU	665.00	714.00	725.11		725.12	0.000151	1.33	1418.88	228.54	0.07
Reach - 1	27839	2-YEAR	57.00	711.00	714.59	711.83	714.61	0.001145	1.01	56.32	55.53	0.10
Reach - 1	27839	10-YEAR	213.00	711.00	717.27	712.95	717.33	0.002740	1.92	110.93	97.43	0.15
Reach - 1	27839	25-YEAR	314.00	711.00	719.24	713.49	719.31	0.001979	2.03	154.38	176.08	0.14
Reach - 1	27839	50-YEAR	377.00	711.00	720.44	713.80	720.50	0.001691	2.09	180.61	198.94	0.13
Reach - 1	27839	100-YEAR	515.00	711.00	722.27	714.41	722.36	0.001610	2.33	220.97	229.45	0.13
Reach - 1	27839	500-YEAR	625.00	711.00	724.92	714.84	725.00	0.001088	2.24	279.19	246.25	0.11
Reach - 1	27839	100-YEARFU	665.00	711.00	725.00	715.00	725.08	0.001207	2.37	280.91	246.49	0.12
Reach - 1	27750		Culvert									
Reach - 1	27695	2-YEAR	57.00	711.00	714.52	711.57	714.53	0.000166	0.70	80.99	81.16	0.07
Reach - 1	27695	10-YEAR	213.00	711.00	717.14	712.39	717.17	0.000364	1.51	141.13	181.54	0.11
Reach - 1	27695	25-YEAR	314.00	711.00	719.08	712.80	719.12	0.000317	1.69	185.76	320.25	0.10

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	27695	50-YEAR	377.00	711.00	720.19	713.03	720.24	0.000297	1.78	211.33	331.09	0.10
Reach - 1	27695	100-YEAR	515.00	711.00	721.77	713.49	721.83	0.000327	2.08	247.62	347.75	0.11
Reach - 1	27695	500-YEAR	625.00	711.00	724.13	713.84	724.19	0.000249	2.07	301.93	361.05	0.10
Reach - 1	27695	100-YEARFU	665.00	711.00	724.10	713.97	724.18	0.000284	2.21	301.29	360.90	0.11
Reach - 1	27600	2-YEAR	81.00	712.00	714.32		714.42	0.005806	2.45	33.56	23.57	0.34
Reach - 1	27600	10-YEAR	273.00	712.00	717.05		717.10	0.001203	2.14	278.39	135.23	0.18
Reach - 1	27600	25-YEAR	391.00	712.00	719.05		719.07	0.000420	1.62	589.87	171.60	0.11
Reach - 1	27600	50-YEAR	452.00	712.00	720.17		720.18	0.000265	1.44	790.71	186.36	0.09
Reach - 1	27600	100-YEAR	515.00	712.00	721.76		721.77	0.000145	1.21	1104.53	208.61	0.07
Reach - 1	27600	500-YEAR	668.00	712.00	724.13		724.13	0.000088	1.10	1637.11	241.06	0.06
Reach - 1	27600	100-YEARFU	665.00	712.00	724.10		724.11	0.000088	1.10	1630.68	240.69	0.06
Reach - 1	27476	2-YEAR	81.00	711.00	713.21		713.38	0.013009	3.27	24.98	20.01	0.49
Reach - 1	27476	10-YEAR	273.00	711.00	716.95		716.98	0.000743	1.81	363.12	175.35	0.14
Reach - 1	27476	25-YEAR	391.00	711.00	719.01		719.03	0.000258	1.34	769.72	217.90	0.09
Reach - 1	27476	50-YEAR	452.00	711.00	720.15		720.16	0.000165	1.19	1030.19	240.06	0.07
Reach - 1	27476	100-YEAR	515.00	711.00	721.75		721.75	0.000090	0.99	1432.06	262.45	0.06
Reach - 1	27476	500-YEAR	668.00	711.00	724.12		724.12	0.000054	0.89	2092.53	290.52	0.04
Reach - 1	27476	100-YEARFU	665.00	711.00	724.09		724.10	0.000054	0.89	2084.79	290.29	0.04
Reach - 1	27468.5	2-YEAR	81.00	709.52	713.27	711.40	713.32	0.001791	1.79	50.17	32.54	0.20
Reach - 1	27468.5	10-YEAR	273.00	709.52	716.90	712.69	716.97	0.000888	2.28	146.69	183.02	0.16
Reach - 1	27468.5	25-YEAR	391.00	709.52	718.94	713.28	719.02	0.000676	2.41	200.93	230.15	0.15
Reach - 1	27468.5	50-YEAR	452.00	709.52	720.07	713.52	720.15	0.000579	2.43	231.00	249.43	0.14
Reach - 1	27468.5	100-YEAR	515.00	709.52	721.67	713.76	721.74	0.000436	2.35	273.64	273.55	0.13
Reach - 1	27468.5	500-YEAR	668.00	709.52	724.12	714.27	724.12	0.000047	0.88	2298.36	333.27	0.04
Reach - 1	27468.5	100-YEARFU	665.00	709.52	724.09	714.25	724.10	0.000047	0.88	2289.51	331.74	0.04
Reach - 1	27405.0	Culvert										
Reach - 1	27342	2-YEAR	81.00	706.00	707.16		707.44	0.033942	4.30	18.85	18.62	0.75
Reach - 1	27342	10-YEAR	273.00	706.00	709.63		709.83	0.006401	3.60	75.88	26.89	0.38
Reach - 1	27342	25-YEAR	391.00	706.00	710.62		710.84	0.005502	3.75	104.17	30.68	0.36
Reach - 1	27342	50-YEAR	452.00	706.00	711.04		711.27	0.005338	3.85	117.43	32.50	0.36
Reach - 1	27342	100-YEAR	515.00	706.00	711.43		711.67	0.005221	3.94	130.55	34.21	0.36
Reach - 1	27342	500-YEAR	668.00	706.00	711.78		712.12	0.006905	4.68	142.87	35.73	0.41
Reach - 1	27342	100-YEARFU	665.00	706.00	711.77		712.11	0.006895	4.67	142.47	35.68	0.41
Reach - 1	27341.5	2-YEAR	81.00	704.22	707.19	706.10	707.29	0.005752	2.62	32.24	19.58	0.34
Reach - 1	27341.5	10-YEAR	273.00	704.22	709.63	707.39	709.81	0.003406	3.46	94.49	111.49	0.30
Reach - 1	27341.5	25-YEAR	391.00	704.22	710.61	707.98	710.83	0.003349	3.95	120.49	152.66	0.31
Reach - 1	27341.5	50-YEAR	452.00	704.22	711.00	708.22	711.25	0.003472	4.22	130.85	164.67	0.32
Reach - 1	27341.5	100-YEAR	515.00	704.22	711.36	708.44	711.65	0.003621	4.49	140.43	175.77	0.33
Reach - 1	27341.5	500-YEAR	668.00	704.22	711.83	708.98	711.94	0.001992	3.50	501.09	190.14	0.24
Reach - 1	27341.5	100-YEARFU	665.00	704.22	711.82	708.96	711.93	0.001993	3.50	498.91	189.79	0.24
Reach - 1	26971.0	2-YEAR	81.00	701.85	705.84		705.90	0.002516	1.93	42.00	18.33	0.22
Reach - 1	26971.0	10-YEAR	273.00	701.85	708.62		708.72	0.002314	2.53	107.83	29.13	0.23
Reach - 1	26971.0	25-YEAR	391.00	701.85	709.57		709.70	0.002452	2.85	137.92	38.90	0.24
Reach - 1	26971.0	50-YEAR	452.00	701.85	709.92		710.06	0.002561	3.03	153.81	51.22	0.25
Reach - 1	26971.0	100-YEAR	515.00	701.85	710.24		710.39	0.002684	3.21	174.54	104.90	0.26
Reach - 1	26971.0	500-YEAR	668.00	701.85	710.84		711.02	0.002851	3.53	293.45	291.61	0.27
Reach - 1	26971.0	100-YEARFU	665.00	701.85	710.83		711.01	0.002848	3.53	290.38	286.26	0.27
Reach - 1	26456.0	2-YEAR	81.00	700.47	704.52		704.58	0.002603	1.97	41.07	17.21	0.23
Reach - 1	26456.0	10-YEAR	273.00	700.47	707.38		707.48	0.002472	2.58	105.98	28.74	0.24
Reach - 1	26456.0	25-YEAR	391.00	700.47	708.17		708.31	0.002983	3.01	131.31	49.15	0.26
Reach - 1	26456.0	50-YEAR	452.00	700.47	708.40		708.57	0.003318	3.28	146.59	100.03	0.28
Reach - 1	26456.0	100-YEAR	515.00	700.47	708.60		708.79	0.003647	3.54	170.81	147.27	0.30
Reach - 1	26456.0	500-YEAR	668.00	700.47	708.95		709.20	0.004461	4.12	233.98	207.88	0.33
Reach - 1	26456.0	100-YEARFU	665.00	700.47	708.95		709.20	0.004398	4.09	235.09	208.03	0.33
Reach - 1	25744.0	2-YEAR	167.00	696.50	700.90		701.08	0.007302	3.39	49.19	20.45	0.39
Reach - 1	25744.0	10-YEAR	560.00	696.50	703.53		703.87	0.008059	4.74	123.73	113.81	0.43
Reach - 1	25744.0	25-YEAR	779.00	696.50	704.32	702.17	704.64	0.007188	4.79	264.64	251.17	0.42
Reach - 1	25744.0	50-YEAR	926.00	696.50	704.70		704.98	0.006417	4.69	368.63	290.19	0.40
Reach - 1	25744.0	100-YEAR	1063.00	696.50	704.99		705.25	0.005891	4.64	455.88	308.22	0.38
Reach - 1	25744.0	500-YEAR	1375.00	696.50	705.61		705.81	0.004869	4.48	647.91	315.13	0.36
Reach - 1	25744.0	100-YEARFU	1408.00	696.50	705.67		705.87	0.004783	4.47	666.24	316.74	0.35
Reach - 1	25236.0	2-YEAR	167.00	693.23	696.83		697.03	0.008787	3.53	47.31	21.92	0.42
Reach - 1	25236.0	10-YEAR	560.00	693.23	699.42		699.77	0.008118	4.70	119.18	33.54	0.44
Reach - 1	25236.0	25-YEAR	779.00	693.23	700.37		700.77	0.008053	5.10	152.85	37.77	0.45
Reach - 1	25236.0	50-YEAR	926.00	693.23	700.85		701.30	0.008112	5.40	172.09	43.69	0.45
Reach - 1	25236.0	100-YEAR	1063.00	693.23	701.21		701.72	0.008214	5.72	188.97	50.65	0.46
Reach - 1	25236.0	500-YEAR	1375.00	693.23	701.87		702.51	0.008793	6.46	226.71	63.51	0.49

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	25236.0	100-YEARFU	1408.00	693.23	701.93		702.59	0.008850	6.53	230.82	64.76	0.49
Reach - 1	24684.0	2-YEAR	167.00	689.83	693.52		693.63	0.004500	2.67	62.58	27.20	0.31
Reach - 1	24684.0	10-YEAR	560.00	689.83	696.07		696.29	0.004938	3.72	150.40	42.37	0.35
Reach - 1	24684.0	25-YEAR	779.00	689.83	696.93		697.20	0.005209	4.11	193.59	93.70	0.36
Reach - 1	24684.0	50-YEAR	926.00	689.83	697.39		697.68	0.005293	4.30	245.56	135.04	0.37
Reach - 1	24684.0	100-YEAR	1063.00	689.83	697.74		698.03	0.005351	4.44	298.09	166.32	0.38
Reach - 1	24684.0	500-YEAR	1375.00	689.83	698.32		698.65	0.005464	4.81	408.56	215.84	0.39
Reach - 1	24684.0	100-YEARFU	1408.00	689.83	698.37		698.70	0.005486	4.85	419.80	220.25	0.39
Reach - 1	24046.0	2-YEAR	167.00	686.70	690.68		690.78	0.004405	2.57	64.96	29.04	0.30
Reach - 1	24046.0	10-YEAR	560.00	686.70	693.02		693.22	0.004657	3.66	164.21	64.41	0.34
Reach - 1	24046.0	25-YEAR	779.00	686.70	693.79		694.04	0.004705	4.07	233.66	123.57	0.35
Reach - 1	24046.0	50-YEAR	926.00	686.70	694.20		694.47	0.004765	4.30	297.66	201.07	0.36
Reach - 1	24046.0	100-YEAR	1063.00	686.70	694.52		694.80	0.004793	4.46	368.13	243.19	0.36
Reach - 1	24046.0	500-YEAR	1375.00	686.70	695.11		695.40	0.004727	4.69	534.53	322.98	0.36
Reach - 1	24046.0	100-YEARFU	1408.00	686.70	695.18		695.46	0.004691	4.70	554.70	334.12	0.36
Reach - 1	23455.0	2-YEAR	167.00	683.87	687.10		687.26	0.008432	3.29	50.80	26.01	0.41
Reach - 1	23455.0	10-YEAR	560.00	683.87	689.44		689.72	0.007765	4.28	130.76	42.39	0.43
Reach - 1	23455.0	25-YEAR	779.00	683.87	690.31		690.63	0.007257	4.52	188.83	93.37	0.42
Reach - 1	23455.0	50-YEAR	926.00	683.87	690.81		691.13	0.006823	4.58	241.78	118.56	0.42
Reach - 1	23455.0	100-YEAR	1063.00	683.87	691.23		691.54	0.006406	4.61	295.52	138.24	0.41
Reach - 1	23455.0	500-YEAR	1375.00	683.87	691.87		692.20	0.006240	4.89	390.65	160.19	0.41
Reach - 1	23455.0	100-YEARFU	1408.00	683.87	691.91		692.26	0.006319	4.95	398.08	167.33	0.41
Reach - 1	22861.0	2-YEAR	167.00	678.59	681.83		682.04	0.009162	3.72	44.90	19.52	0.43
Reach - 1	22861.0	10-YEAR	560.00	678.59	684.75		685.11	0.007757	4.81	116.43	29.65	0.43
Reach - 1	22861.0	25-YEAR	779.00	678.59	685.89		686.29	0.007324	5.11	152.36	33.76	0.42
Reach - 1	22861.0	50-YEAR	926.00	678.59	686.53		686.96	0.007185	5.30	174.70	36.08	0.42
Reach - 1	22861.0	100-YEAR	1063.00	678.59	687.02		687.49	0.007224	5.49	205.48	125.35	0.43
Reach - 1	22861.0	500-YEAR	1375.00	678.59	687.72	684.88	688.19	0.007271	5.76	397.14	371.43	0.43
Reach - 1	22861.0	100-YEARFU	1408.00	678.59	687.78	684.96	688.25	0.007197	5.75	421.61	379.94	0.43
Reach - 1	22166.0	2-YEAR	167.00	674.01	678.10		678.21	0.003638	2.67	62.65	22.17	0.28
Reach - 1	22166.0	10-YEAR	560.00	674.01	681.79		681.95	0.002898	3.26	171.80	37.84	0.27
Reach - 1	22166.0	25-YEAR	779.00	674.01	682.90		683.10	0.003043	3.59	217.53	46.54	0.28
Reach - 1	22166.0	50-YEAR	926.00	674.01	683.44		683.67	0.003252	3.83	254.03	95.91	0.29
Reach - 1	22166.0	100-YEAR	1063.00	674.01	683.84		684.09	0.003403	4.04	304.09	179.70	0.30
Reach - 1	22166.0	500-YEAR	1375.00	674.01	684.62		684.89	0.003257	4.28	499.25	302.85	0.30
Reach - 1	22166.0	100-YEARFU	1408.00	674.01	684.67		684.93	0.003300	4.33	512.86	308.69	0.30
Reach - 1	21608.0	2-YEAR	167.00	671.87	676.62		676.70	0.002085	2.16	77.24	23.87	0.21
Reach - 1	21608.0	10-YEAR	560.00	671.87	680.55		680.66	0.001845	2.75	228.00	64.12	0.21
Reach - 1	21608.0	25-YEAR	779.00	671.87	681.64		681.76	0.001889	2.97	384.48	198.58	0.22
Reach - 1	21608.0	50-YEAR	926.00	671.87	682.18		682.30	0.001835	3.04	501.97	244.57	0.22
Reach - 1	21608.0	100-YEAR	1063.00	671.87	682.60		682.73	0.001768	3.10	624.23	306.10	0.22
Reach - 1	21608.0	500-YEAR	1375.00	671.87	683.57		683.68	0.001444	3.01	936.77	336.61	0.20
Reach - 1	21608.0	100-YEARFU	1408.00	671.87	683.58		683.69	0.001504	3.08	940.06	336.92	0.20
Reach - 1	21120.0	2-YEAR	197.00	670.00	675.59		675.68	0.002070	2.35	83.94	20.04	0.20
Reach - 1	21120.0	10-YEAR	641.00	670.00	679.26		679.46	0.003236	3.57	181.45	43.37	0.27
Reach - 1	21120.0	25-YEAR	896.00	670.00	680.22		680.46	0.003731	4.02	298.01	193.72	0.30
Reach - 1	21120.0	50-YEAR	1077.00	670.00	680.84		681.06	0.003495	4.02	431.52	257.32	0.29
Reach - 1	21120.0	100-YEAR	1252.00	670.00	681.40		681.59	0.003025	3.88	587.52	288.61	0.27
Reach - 1	21120.0	500-YEAR	1680.00	670.00	682.75		682.87	0.001844	3.44	1005.74	329.46	0.22
Reach - 1	21120.0	100-YEARFU	1684.00	670.00	682.74		682.87	0.001860	3.46	1004.13	329.32	0.22
Reach - 1	20880.5	2-YEAR	305.00	669.09	675.33	671.91	675.36	0.000961	1.39	219.23	80.89	0.15
Reach - 1	20880.5	10-YEAR	971.00	669.09	679.15	674.09	679.20	0.000538	1.70	570.82	99.44	0.13
Reach - 1	20880.5	25-YEAR	1321.00	669.09	680.09	674.58	680.15	0.000615	1.98	667.70	116.16	0.14
Reach - 1	20880.5	50-YEAR	1597.00	669.09	680.67	674.89	680.74	0.000684	2.20	731.06	138.16	0.15
Reach - 1	20880.5	100-YEAR	1847.00	669.09	681.19	675.14	681.28	0.000723	2.37	789.88	151.96	0.15
Reach - 1	20880.5	500-YEAR	2543.00	669.09	682.50	675.79	682.62	0.000782	2.74	1045.02	193.11	0.16
Reach - 1	20880.5	100-YEARFU	2537.00	669.09	682.50	675.77	682.61	0.000780	2.74	1044.20	193.00	0.16
Reach - 1	20858.0	Bridge										
Reach - 1	20835.5	2-YEAR	305.00	668.97	675.17	671.78	675.20	0.001011	1.41	215.57	80.59	0.15
Reach - 1	20835.5	10-YEAR	971.00	668.97	678.98	673.98	679.03	0.000553	1.72	565.77	99.31	0.13
Reach - 1	20835.5	25-YEAR	1321.00	668.97	679.91	674.46	679.97	0.000634	2.00	660.83	113.38	0.14
Reach - 1	20835.5	50-YEAR	1597.00	668.97	680.46	674.77	680.54	0.000712	2.23	721.34	136.87	0.15
Reach - 1	20835.5	100-YEAR	1847.00	668.97	680.91	675.02	681.00	0.000778	2.42	770.99	146.34	0.16
Reach - 1	20835.5	500-YEAR	2543.00	668.97	681.94	675.66	682.07	0.000936	2.90	957.47	181.77	0.18
Reach - 1	20835.5	100-YEARFU	2537.00	668.97	681.94	675.67	682.07	0.000932	2.89	957.23	181.72	0.17
Reach - 1	20343.0	2-YEAR	305.00	668.37	674.06		674.25	0.004326	3.48	87.52	21.00	0.30

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	20343.0	10-YEAR	971.00	668.37	677.93		678.31	0.005281	4.96	238.49	103.19	0.36
Reach - 1	20343.0	25-YEAR	1321.00	668.37	678.67		679.14	0.006066	5.69	347.66	176.15	0.39
Reach - 1	20343.0	50-YEAR	1597.00	668.37	679.05		679.59	0.006856	6.27	415.23	183.45	0.42
Reach - 1	20343.0	100-YEAR	1847.00	668.37	679.36	676.29	679.97	0.007424	6.72	473.79	189.01	0.44
Reach - 1	20343.0	500-YEAR	2543.00	668.37	680.03	678.65	680.82	0.009164	7.90	603.23	199.73	0.49
Reach - 1	20343.0	100-YEARFU	2537.00	668.37	680.06	678.64	680.83	0.008980	7.84	608.26	200.13	0.49
Reach - 1	19670.0	2-YEAR	305.00	665.19	669.89		670.18	0.008996	4.31	70.77	23.09	0.43
Reach - 1	19670.0	10-YEAR	971.00	665.19	672.60		673.18	0.011817	6.24	215.46	184.52	0.53
Reach - 1	19670.0	25-YEAR	1321.00	665.19	673.39		673.89	0.010365	6.23	414.21	286.50	0.50
Reach - 1	19670.0	50-YEAR	1597.00	665.19	673.91		674.34	0.008857	6.04	569.27	305.60	0.47
Reach - 1	19670.0	100-YEAR	1847.00	665.19	674.30		674.69	0.008090	5.97	692.01	316.31	0.46
Reach - 1	19670.0	500-YEAR	2543.00	665.19	675.34		675.65	0.006184	5.75	1042.32	365.01	0.41
Reach - 1	19670.0	100-YEARFU	2537.00	665.19	675.29		675.61	0.006426	5.83	1023.29	362.60	0.42
Reach - 1	19127.0	2-YEAR	349.00	661.99	668.38		668.46	0.001633	2.26	154.76	39.93	0.20
Reach - 1	19127.0	10-YEAR	995.00	661.99	670.96		671.08	0.001757	3.06	617.79	312.77	0.22
Reach - 1	19127.0	25-YEAR	1381.00	661.99	671.78		671.91	0.001748	3.33	886.09	342.10	0.23
Reach - 1	19127.0	50-YEAR	1692.00	661.99	672.35		672.48	0.001733	3.51	1086.37	362.38	0.23
Reach - 1	19127.0	100-YEAR	1927.00	661.99	672.83		672.96	0.001624	3.54	1264.96	377.35	0.23
Reach - 1	19127.0	500-YEAR	2717.00	661.99	673.97		674.11	0.001596	3.85	1710.92	401.19	0.23
Reach - 1	19127.0	100-YEARFU	2667.00	661.99	673.89		674.03	0.001612	3.85	1678.05	399.62	0.23
Reach - 1	18380.0	2-YEAR	349.00	661.33	666.82		666.94	0.002579	2.93	152.36	63.60	0.26
Reach - 1	18380.0	10-YEAR	995.00	661.33	669.18		669.38	0.003033	4.11	500.48	238.38	0.29
Reach - 1	18380.0	25-YEAR	1381.00	661.33	670.07		670.27	0.002823	4.35	724.67	262.62	0.29
Reach - 1	18380.0	50-YEAR	1692.00	661.33	670.70		670.89	0.002647	4.46	892.32	273.02	0.29
Reach - 1	18380.0	100-YEAR	1927.00	661.33	671.43		671.58	0.002093	4.21	1095.44	282.99	0.26
Reach - 1	18380.0	500-YEAR	2717.00	661.33	672.57		672.74	0.002129	4.63	1425.56	297.09	0.27
Reach - 1	18380.0	100-YEARFU	2667.00	661.33	672.46		672.64	0.002171	4.64	1394.83	295.86	0.27
Reach - 1	18074.5	2-YEAR	349.00	661.07	665.56	664.02	665.73	0.006842	3.31	105.41	46.20	0.39
Reach - 1	18074.5	10-YEAR	995.00	661.07	667.81	665.74	668.09	0.006094	4.26	237.80	78.93	0.39
Reach - 1	18074.5	25-YEAR	1381.00	661.07	668.72	666.40	669.06	0.005774	4.66	308.17	102.44	0.40
Reach - 1	18074.5	50-YEAR	1692.00	661.07	669.35	666.85	669.73	0.005677	4.96	358.54	147.84	0.40
Reach - 1	18074.5	100-YEAR	1927.00	661.07	670.38	667.17	670.70	0.004066	4.57	450.17	260.42	0.34
Reach - 1	18074.5	500-YEAR	2717.00	661.07	671.33	668.06	671.78	0.004657	5.44	539.06	304.43	0.38
Reach - 1	18074.5	100-YEARFU	2667.00	661.07	671.21	668.02	671.66	0.004805	5.45	527.23	298.59	0.38
Reach - 1	18051.0		Bridge									
Reach - 1	18027.5	2-YEAR	349.00	660.76	664.72	663.72	665.00	0.013152	4.24	82.35	40.62	0.52
Reach - 1	18027.5	10-YEAR	995.00	660.76	667.03	665.43	667.40	0.009324	4.89	203.63	66.71	0.48
Reach - 1	18027.5	25-YEAR	1381.00	660.76	667.94	666.08	668.37	0.008211	5.25	271.25	90.24	0.46
Reach - 1	18027.5	50-YEAR	1692.00	660.76	668.57	666.54	669.03	0.007772	5.51	320.48	106.45	0.46
Reach - 1	18027.5	100-YEAR	1927.00	660.76	669.00	666.86	669.50	0.007541	5.69	355.52	142.19	0.46
Reach - 1	18027.5	500-YEAR	2717.00	660.76	670.27	667.74	670.82	0.006828	6.06	543.04	269.64	0.45
Reach - 1	18027.5	100-YEARFU	2667.00	660.76	670.20	667.70	670.75	0.006891	6.04	531.10	266.44	0.45
Reach - 1	17619.0	2-YEAR	349.00	657.29	661.97	660.06	662.10	0.004250	3.34	182.29	75.53	0.31
Reach - 1	17619.0	10-YEAR	995.00	657.29	664.23	661.83	664.46	0.005492	4.84	367.89	165.58	0.37
Reach - 1	17619.0	25-YEAR	1381.00	657.29	665.00	662.47	665.31	0.006588	5.64	438.68	217.24	0.41
Reach - 1	17619.0	50-YEAR	1692.00	657.29	665.53	662.89	665.90	0.007392	6.21	488.61	244.88	0.44
Reach - 1	17619.0	100-YEAR	1927.00	657.29	665.89	663.18	666.30	0.007940	6.59	523.77	259.13	0.46
Reach - 1	17619.0	500-YEAR	2717.00	657.29	666.93	664.07	667.50	0.009749	7.80	631.49	289.99	0.51
Reach - 1	17619.0	100-YEARFU	2667.00	657.29	666.87	664.02	667.43	0.009647	7.73	624.95	288.26	0.51
Reach - 1	17039.0	2-YEAR	349.00	654.71	659.68		659.80	0.003708	2.76	126.52	46.00	0.29
Reach - 1	17039.0	10-YEAR	995.00	654.71	661.60		661.76	0.003931	3.57	493.05	278.56	0.32
Reach - 1	17039.0	25-YEAR	1381.00	654.71	662.26		662.44	0.003771	3.84	684.82	298.95	0.32
Reach - 1	17039.0	50-YEAR	1692.00	654.71	662.69		662.88	0.003748	4.07	814.85	309.63	0.32
Reach - 1	17039.0	100-YEAR	1927.00	654.71	662.98		663.18	0.003759	4.24	905.57	316.87	0.33
Reach - 1	17039.0	500-YEAR	2717.00	654.71	663.85		664.08	0.003758	4.70	1190.73	335.68	0.34
Reach - 1	17039.0	100-YEARFU	2667.00	654.71	663.80		664.03	0.003755	4.67	1173.90	334.60	0.34
Reach - 1	16428.0	2-YEAR	349.00	652.56	657.42		657.54	0.003678	2.78	135.75	134.38	0.29
Reach - 1	16428.0	10-YEAR	995.00	652.56	659.17		659.37	0.003899	3.93	482.72	270.44	0.33
Reach - 1	16428.0	25-YEAR	1381.00	652.56	659.86		660.08	0.003960	4.36	689.67	339.90	0.34
Reach - 1	16428.0	50-YEAR	1692.00	652.56	660.31		660.54	0.003913	4.58	849.13	365.27	0.34
Reach - 1	16428.0	100-YEAR	1927.00	652.56	660.61		660.84	0.003879	4.72	960.70	375.36	0.34
Reach - 1	16428.0	500-YEAR	2717.00	652.56	661.49		661.74	0.003889	5.18	1307.84	422.24	0.35
Reach - 1	16428.0	100-YEARFU	2667.00	652.56	661.44		661.69	0.003891	5.16	1286.51	419.94	0.35
Reach - 1	15875.0	2-YEAR	349.00	652.00	656.93		656.94	0.000472	1.09	762.12	337.54	0.11
Reach - 1	15875.0	10-YEAR	995.00	652.00	658.45		658.47	0.000815	1.85	1308.05	385.04	0.15
Reach - 1	15875.0	25-YEAR	1381.00	652.00	659.02		659.05	0.000983	2.20	1588.85	539.06	0.17
Reach - 1	15875.0	50-YEAR	1692.00	652.00	659.42		659.46	0.001069	2.40	1808.22	553.65	0.18

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	15875.0	100-YEAR	1927.00	652.00	659.69		659.73	0.001135	2.55	1956.08	566.62	0.18
Reach - 1	15875.0	500-YEAR	2717.00	652.00	660.48		660.52	0.001304	2.97	2418.69	608.06	0.20
Reach - 1	15875.0	100-YEARFU	2667.00	652.00	660.43		660.48	0.001295	2.95	2390.57	605.88	0.20
Reach - 1	15152.0	2-YEAR	349.00	651.92	656.35		656.38	0.001451	2.04	569.72	628.80	0.19
Reach - 1	15152.0	10-YEAR	995.00	651.92	657.79		657.81	0.001011	2.12	1628.80	815.53	0.17
Reach - 1	15152.0	25-YEAR	1381.00	651.92	658.30		658.32	0.001020	2.27	2059.81	871.07	0.17
Reach - 1	15152.0	50-YEAR	1692.00	651.92	658.67		658.69	0.001040	2.39	2383.78	894.58	0.17
Reach - 1	15152.0	100-YEAR	1927.00	651.92	658.91		658.93	0.001040	2.45	2602.56	899.76	0.17
Reach - 1	15152.0	500-YEAR	2717.00	651.92	659.66		659.68	0.001032	2.63	3277.45	921.46	0.18
Reach - 1	15152.0	100-YEARFU	2667.00	651.92	659.61		659.64	0.001033	2.62	3236.48	920.04	0.18
Reach - 1	14616.0	2-YEAR	349.00	650.44	655.29		655.36	0.002603	2.14	165.63	96.17	0.24
Reach - 1	14616.0	10-YEAR	995.00	650.44	656.72		656.85	0.003859	3.10	489.71	332.27	0.31
Reach - 1	14616.0	25-YEAR	1381.00	650.44	657.21		657.36	0.003976	3.39	659.02	361.55	0.32
Reach - 1	14616.0	50-YEAR	1692.00	650.44	657.55		657.71	0.003956	3.59	785.89	380.55	0.32
Reach - 1	14616.0	100-YEAR	1927.00	650.44	657.79		657.95	0.003932	3.73	876.82	387.99	0.33
Reach - 1	14616.0	500-YEAR	2717.00	650.44	658.54		658.71	0.003725	4.06	1174.61	407.29	0.33
Reach - 1	14616.0	100-YEARFU	2667.00	650.44	658.49		658.67	0.003741	4.04	1156.09	406.28	0.33
Reach - 1	13983.0	2-YEAR	349.00	647.50	652.79		653.01	0.005653	3.90	133.39	162.39	0.34
Reach - 1	13983.0	10-YEAR	995.00	647.50	654.70		654.77	0.002798	3.16	875.77	514.01	0.25
Reach - 1	13983.0	25-YEAR	1381.00	647.50	655.34		655.40	0.002421	3.09	1223.78	576.92	0.24
Reach - 1	13983.0	50-YEAR	1692.00	647.50	655.80		655.85	0.002192	3.06	1496.63	604.18	0.23
Reach - 1	13983.0	100-YEAR	1927.00	647.50	656.12		656.17	0.002044	3.07	1691.46	615.52	0.22
Reach - 1	13983.0	500-YEAR	2717.00	647.50	657.06		657.11	0.001763	3.14	2280.28	637.12	0.21
Reach - 1	13983.0	100-YEARFU	2667.00	647.50	657.01		657.05	0.001776	3.13	2245.16	635.85	0.21
Reach - 1	13435.0	2-YEAR	349.00	646.02	650.94		651.02	0.002431	2.33	150.49	59.13	0.24
Reach - 1	13435.0	10-YEAR	995.00	646.02	653.25		653.37	0.002322	2.97	550.87	300.43	0.25
Reach - 1	13435.0	25-YEAR	1381.00	646.02	654.02		654.15	0.002147	3.19	787.61	314.14	0.25
Reach - 1	13435.0	50-YEAR	1692.00	646.02	654.54		654.67	0.002084	3.35	952.95	322.14	0.25
Reach - 1	13435.0	100-YEAR	1927.00	646.02	654.90		655.04	0.002047	3.46	1070.22	327.07	0.25
Reach - 1	13435.0	500-YEAR	2717.00	646.02	655.89		656.05	0.002071	3.85	1401.62	340.96	0.26
Reach - 1	13435.0	100-YEARFU	2667.00	646.02	655.84		655.99	0.002068	3.83	1382.33	340.16	0.26
Reach - 1	12850.0	2-YEAR	349.00	644.20	648.71		648.90	0.005949	3.49	103.06	45.25	0.37
Reach - 1	12850.0	10-YEAR	995.00	644.20	650.33		650.81	0.010620	5.71	219.12	94.66	0.51
Reach - 1	12850.0	25-YEAR	1381.00	644.20	650.86		651.53	0.013373	6.79	275.84	120.75	0.59
Reach - 1	12850.0	50-YEAR	1692.00	644.20	651.26		652.04	0.014787	7.42	327.83	141.71	0.62
Reach - 1	12850.0	100-YEAR	1927.00	644.20	651.53		652.39	0.015672	7.84	368.99	160.10	0.64
Reach - 1	12850.0	500-YEAR	2717.00	644.20	652.33		653.33	0.016316	8.78	507.50	184.13	0.67
Reach - 1	12850.0	100-YEARFU	2667.00	644.20	652.28		653.28	0.016329	8.73	498.83	182.89	0.67
Reach - 1	12166.0	2-YEAR	349.00	639.50	645.72		645.87	0.003406	3.11	117.39	59.37	0.28
Reach - 1	12166.0	10-YEAR	995.00	639.50	648.08		648.16	0.001862	3.07	968.90	533.17	0.23
Reach - 1	12166.0	25-YEAR	1381.00	639.50	648.76		648.84	0.001687	3.15	1343.25	558.04	0.22
Reach - 1	12166.0	50-YEAR	1692.00	639.50	649.20		649.27	0.001665	3.27	1588.77	571.27	0.22
Reach - 1	12166.0	100-YEAR	1927.00	639.50	649.49		649.56	0.001666	3.36	1754.47	576.16	0.22
Reach - 1	12166.0	500-YEAR	2717.00	639.50	650.34		650.42	0.001683	3.64	2251.88	590.53	0.23
Reach - 1	12166.0	100-YEARFU	2667.00	639.50	650.29		650.37	0.001678	3.62	2223.96	589.74	0.23
Reach - 1	11593.0	2-YEAR	349.00	638.00	644.13		644.25	0.002369	2.80	124.87	29.40	0.24
Reach - 1	11593.0	10-YEAR	995.00	638.00	646.38		646.65	0.003906	4.43	408.82	247.50	0.32
Reach - 1	11593.0	25-YEAR	1381.00	638.00	647.05		647.35	0.004383	4.93	632.57	391.40	0.34
Reach - 1	11593.0	50-YEAR	1692.00	638.00	647.47		647.77	0.004521	5.18	808.27	456.51	0.35
Reach - 1	11593.0	100-YEAR	1927.00	638.00	647.76		648.06	0.004525	5.33	945.94	495.37	0.36
Reach - 1	11593.0	500-YEAR	2717.00	638.00	648.64		648.93	0.004345	5.66	1415.11	555.86	0.36
Reach - 1	11593.0	100-YEARFU	2667.00	638.00	648.59		648.88	0.004374	5.65	1386.60	553.51	0.36
Reach - 1	11011.0	2-YEAR	349.00	637.23	643.16		643.21	0.001334	1.85	198.19	104.70	0.18
Reach - 1	11011.0	10-YEAR	995.00	637.23	644.76		644.88	0.002328	2.99	608.06	442.46	0.25
Reach - 1	11011.0	25-YEAR	1381.00	637.23	645.40		645.52	0.002245	3.22	909.37	496.06	0.25
Reach - 1	11011.0	50-YEAR	1692.00	637.23	645.88		646.00	0.002081	3.29	1154.54	513.88	0.25
Reach - 1	11011.0	100-YEAR	1927.00	637.23	646.23		646.34	0.001969	3.34	1334.56	526.33	0.24
Reach - 1	11011.0	500-YEAR	2717.00	637.23	647.27		647.38	0.001709	3.47	1900.57	561.48	0.23
Reach - 1	11011.0	100-YEARFU	2667.00	637.23	647.21		647.32	0.001720	3.46	1867.17	559.88	0.23
Reach - 1	10448.0	2-YEAR	349.00	636.49	641.84		641.96	0.004361	2.98	214.32	359.52	0.31
Reach - 1	10448.0	10-YEAR	995.00	636.49	643.65		643.70	0.001820	2.51	1107.46	563.54	0.22
Reach - 1	10448.0	25-YEAR	1381.00	636.49	644.51		644.55	0.001310	2.41	1606.34	600.38	0.19
Reach - 1	10448.0	50-YEAR	1692.00	636.49	645.10		645.13	0.001120	2.40	1967.51	620.71	0.18
Reach - 1	10448.0	100-YEAR	1927.00	636.49	645.50		645.53	0.001041	2.42	2218.64	637.16	0.17
Reach - 1	10448.0	500-YEAR	2717.00	636.49	646.63		646.67	0.000920	2.56	2967.43	686.88	0.17
Reach - 1	10448.0	100-YEARFU	2667.00	636.49	646.57		646.60	0.000926	2.55	2923.38	684.00	0.17
Reach - 1	9875.0	2-YEAR	349.00	635.33	640.13		640.20	0.002249	2.18	162.72	65.53	0.23

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	9875.0	10-YEAR	995.00	635.33	642.72		642.80	0.001353	2.60	673.97	259.98	0.20
Reach - 1	9875.0	25-YEAR	1381.00	635.33	643.73		643.82	0.001200	2.76	943.22	269.29	0.19
Reach - 1	9875.0	50-YEAR	1692.00	635.33	644.37		644.47	0.001185	2.92	1117.14	275.14	0.20
Reach - 1	9875.0	100-YEAR	1927.00	635.33	644.78		644.89	0.001201	3.06	1231.29	278.92	0.20
Reach - 1	9875.0	500-YEAR	2717.00	635.33	645.90		646.03	0.001312	3.51	1549.21	289.17	0.21
Reach - 1	9875.0	100-YEARFU	2667.00	635.33	645.84		645.97	0.001305	3.48	1530.95	288.59	0.21
Reach - 1	9204.5	2-YEAR	349.00	632.18	638.58	634.95	638.68	0.002272	2.55	137.06	48.54	0.23
Reach - 1	9204.5	10-YEAR	995.00	632.18	641.07	637.56	641.36	0.003795	4.31	231.07	99.62	0.32
Reach - 1	9204.5	25-YEAR	1381.00	632.18	642.39	638.31	642.63	0.002782	4.16	474.07	189.44	0.28
Reach - 1	9204.5	50-YEAR	1692.00	632.18	643.00	638.88	643.27	0.002858	4.46	627.28	218.81	0.29
Reach - 1	9204.5	100-YEAR	1927.00	632.18	643.36	639.28	643.66	0.003016	4.73	708.06	234.65	0.30
Reach - 1	9204.5	500-YEAR	2717.00	632.18	644.22	640.47	644.62	0.003721	5.63	927.37	273.05	0.34
Reach - 1	9204.5	100-YEARFU	2667.00	632.18	644.18	640.40	644.57	0.003677	5.58	914.55	270.96	0.33
Reach - 1	9184.0		Bridge									
Reach - 1	9163.5	2-YEAR	349.00	631.76	638.12	634.54	638.22	0.002354	2.58	135.49	47.94	0.23
Reach - 1	9163.5	10-YEAR	995.00	631.76	640.51	637.13	640.81	0.004091	4.42	225.33	91.54	0.33
Reach - 1	9163.5	25-YEAR	1381.00	631.76	641.24	637.89	641.57	0.004320	4.80	380.65	139.95	0.34
Reach - 1	9163.5	50-YEAR	1692.00	631.76	641.70	638.46	642.11	0.004847	5.34	453.51	171.42	0.37
Reach - 1	9163.5	100-YEAR	1927.00	631.76	642.02	638.85	642.48	0.005194	5.71	510.78	192.60	0.38
Reach - 1	9163.5	500-YEAR	2717.00	631.76	642.93	640.06	643.52	0.006047	6.68	704.60	233.99	0.42
Reach - 1	9163.5	100-YEARFU	2667.00	631.76	642.87	639.98	643.46	0.006002	6.63	692.57	231.69	0.42
Reach - 1	9023.0	2-YEAR	349.00	631.56	637.80		637.90	0.002199	2.43	144.00	44.87	0.23
Reach - 1	9023.0	10-YEAR	995.00	631.56	640.15		640.31	0.002353	3.46	499.53	232.10	0.26
Reach - 1	9023.0	25-YEAR	1381.00	631.56	640.84		641.03	0.002635	3.95	664.21	246.44	0.28
Reach - 1	9023.0	50-YEAR	1692.00	631.56	641.29		641.51	0.002824	4.28	777.08	256.45	0.29
Reach - 1	9023.0	100-YEAR	1927.00	631.56	641.59		641.82	0.002961	4.51	855.28	263.22	0.30
Reach - 1	9023.0	500-YEAR	2717.00	631.56	642.46		642.75	0.003346	5.18	1094.37	280.96	0.32
Reach - 1	9023.0	100-YEARFU	2667.00	631.56	642.41		642.69	0.003322	5.14	1080.51	280.36	0.32
Reach - 1	8199.0	2-YEAR	349.00	630.40	635.65		635.77	0.003054	2.79	125.00	37.06	0.27
Reach - 1	8199.0	10-YEAR	995.00	630.40	637.98		638.14	0.002973	3.55	574.30	405.98	0.28
Reach - 1	8199.0	25-YEAR	1381.00	630.40	638.61		638.76	0.002858	3.71	843.07	457.63	0.28
Reach - 1	8199.0	50-YEAR	1692.00	630.40	639.05		639.19	0.002746	3.79	1052.70	499.97	0.28
Reach - 1	8199.0	100-YEAR	1927.00	630.40	639.33		639.47	0.002697	3.88	1195.46	517.70	0.28
Reach - 1	8199.0	500-YEAR	2717.00	630.40	640.11		640.25	0.002667	4.18	1621.62	585.10	0.28
Reach - 1	8199.0	100-YEARFU	2667.00	630.40	640.06		640.21	0.002669	4.16	1595.73	583.54	0.28
Reach - 1	7551.0	2-YEAR	349.00	628.77	634.04		634.13	0.002114	2.35	148.72	44.45	0.23
Reach - 1	7551.0	10-YEAR	995.00	628.77	636.41		636.51	0.002110	2.91	696.76	420.14	0.24
Reach - 1	7551.0	25-YEAR	1381.00	628.77	637.06		637.17	0.002098	3.11	1002.62	519.87	0.24
Reach - 1	7551.0	50-YEAR	1692.00	628.77	637.51		637.62	0.002121	3.31	1248.48	581.66	0.25
Reach - 1	7551.0	100-YEAR	1927.00	628.77	637.80		637.91	0.002132	3.43	1420.77	626.79	0.25
Reach - 1	7551.0	500-YEAR	2717.00	628.77	638.58		638.71	0.002128	3.72	1939.65	683.41	0.25
Reach - 1	7551.0	100-YEARFU	2667.00	628.77	638.54		638.66	0.002127	3.70	1909.21	681.09	0.25
Reach - 1	6903.0	2-YEAR	349.00	626.85	632.34		632.49	0.003068	3.14	131.88	51.40	0.27
Reach - 1	6903.0	10-YEAR	995.00	626.85	634.38		634.65	0.004074	4.75	491.69	328.66	0.34
Reach - 1	6903.0	25-YEAR	1381.00	626.85	635.02		635.29	0.004169	5.14	718.80	379.09	0.35
Reach - 1	6903.0	50-YEAR	1692.00	626.85	635.44		635.71	0.004257	5.40	882.67	410.89	0.36
Reach - 1	6903.0	100-YEAR	1927.00	626.85	635.70		635.99	0.004340	5.59	995.79	428.20	0.36
Reach - 1	6903.0	500-YEAR	2717.00	626.85	636.45		636.75	0.004551	6.10	1330.63	481.74	0.38
Reach - 1	6903.0	100-YEARFU	2667.00	626.85	636.41		636.70	0.004543	6.07	1310.06	473.17	0.38
Reach - 1	5927.0	2-YEAR	349.00	623.68	629.70		629.81	0.002446	2.64	154.96	129.94	0.24
Reach - 1	5927.0	10-YEAR	995.00	623.68	631.74		631.82	0.002093	2.87	810.00	464.12	0.23
Reach - 1	5927.0	25-YEAR	1381.00	623.68	632.34		632.42	0.002118	3.00	1116.88	590.84	0.24
Reach - 1	5927.0	50-YEAR	1692.00	623.68	632.74		632.82	0.002109	3.07	1358.25	616.48	0.24
Reach - 1	5927.0	100-YEAR	1927.00	623.68	633.01		633.09	0.002083	3.12	1526.42	627.43	0.24
Reach - 1	5927.0	500-YEAR	2717.00	623.68	633.82		633.90	0.001961	3.32	2042.96	651.03	0.24
Reach - 1	5927.0	100-YEARFU	2667.00	623.68	633.77		633.85	0.001969	3.31	2011.52	649.69	0.24
Reach - 1	5402.0	2-YEAR	349.00	622.55	628.18		628.32	0.003317	2.95	128.58	83.48	0.28
Reach - 1	5402.0	10-YEAR	995.00	622.55	630.53		630.65	0.002407	3.28	784.78	485.65	0.25
Reach - 1	5402.0	25-YEAR	1381.00	622.55	631.13		631.25	0.002361	3.49	1080.38	496.46	0.25
Reach - 1	5402.0	50-YEAR	1692.00	622.55	631.52		631.64	0.002409	3.68	1273.75	503.40	0.26
Reach - 1	5402.0	100-YEAR	1927.00	622.55	631.79		631.91	0.002437	3.80	1409.43	508.22	0.26
Reach - 1	5402.0	500-YEAR	2717.00	622.55	632.61		632.74	0.002481	4.15	1836.35	529.26	0.27
Reach - 1	5402.0	100-YEARFU	2667.00	622.55	632.56		632.69	0.002483	4.13	1809.47	527.87	0.27
Reach - 1	4771.0	2-YEAR	349.00	621.00	626.59		626.68	0.002062	2.35	148.72	43.80	0.22
Reach - 1	4771.0	10-YEAR	995.00	621.00	629.05		629.18	0.002234	3.11	618.57	484.00	0.25
Reach - 1	4771.0	25-YEAR	1381.00	621.00	629.69		629.82	0.002165	3.32	1022.31	775.69	0.25
Reach - 1	4771.0	50-YEAR	1692.00	621.00	630.11		630.23	0.002070	3.41	1355.78	812.14	0.25

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	4771.0	100-YEAR	1927.00	621.00	630.41		630.53	0.001962	3.43	1605.07	823.58	0.24
Reach - 1	4771.0	500-YEAR	2717.00	621.00	631.41		631.50	0.001563	3.38	2444.45	856.25	0.22
Reach - 1	4771.0	100-YEARFU	2667.00	621.00	631.35		631.44	0.001587	3.38	2390.37	854.28	0.22
Reach - 1	4085.0	2-YEAR	349.00	619.07	624.32		624.53	0.005251	3.64	95.99	28.76	0.34
Reach - 1	4085.0	10-YEAR	995.00	619.07	627.24		627.42	0.002973	3.99	701.05	490.15	0.28
Reach - 1	4085.0	25-YEAR	1381.00	619.07	628.10		628.24	0.002443	3.94	1190.48	600.35	0.26
Reach - 1	4085.0	50-YEAR	1692.00	619.07	628.67		628.79	0.002121	3.87	1543.48	630.81	0.25
Reach - 1	4085.0	100-YEAR	1927.00	619.07	629.09		629.20	0.001905	3.80	1812.19	648.94	0.24
Reach - 1	4085.0	500-YEAR	2717.00	619.07	630.39		630.47	0.001425	3.63	2689.41	695.82	0.21
Reach - 1	4085.0	100-YEARFU	2667.00	619.07	630.31		630.39	0.001450	3.64	2633.70	693.44	0.21
Reach - 1	3739.0	2-YEAR	349.00	616.98	622.81		622.97	0.003848	3.14	111.26	31.27	0.29
Reach - 1	3739.0	10-YEAR	995.00	616.98	626.02		626.28	0.003630	4.13	332.32	278.71	0.31
Reach - 1	3739.0	25-YEAR	1381.00	616.98	627.01		627.27	0.003196	4.32	654.57	351.07	0.30
Reach - 1	3739.0	50-YEAR	1692.00	616.98	627.70		627.93	0.002846	4.36	902.44	370.32	0.29
Reach - 1	3739.0	100-YEAR	1927.00	616.98	628.20		628.42	0.002585	4.35	1092.22	383.98	0.28
Reach - 1	3739.0	500-YEAR	2717.00	616.98	629.69		629.88	0.002040	4.34	1691.10	420.74	0.25
Reach - 1	3739.0	100-YEARFU	2667.00	616.98	629.60		629.79	0.002069	4.34	1653.29	418.70	0.25
Reach - 1	3555.0	2-YEAR	349.00	615.87	622.37	618.80	622.46	0.001923	2.42	144.40	37.11	0.22
Reach - 1	3555.0	10-YEAR	995.00	615.87	625.55	620.99	625.72	0.002349	3.24	308.49	116.41	0.25
Reach - 1	3555.0	25-YEAR	1381.00	615.87	626.51	621.90	626.73	0.002583	3.78	366.92	149.88	0.27
Reach - 1	3555.0	50-YEAR	1692.00	615.87	627.14	622.52	627.41	0.002773	4.18	405.91	176.64	0.29
Reach - 1	3555.0	100-YEAR	1927.00	615.87	627.60	622.94	627.91	0.002873	4.46	434.28	193.71	0.29
Reach - 1	3555.0	500-YEAR	2717.00	615.87	628.96	624.37	629.39	0.003195	5.28	517.21	238.67	0.32
Reach - 1	3555.0	100-YEARFU	2667.00	615.87	628.87	624.31	629.30	0.003181	5.23	512.13	236.08	0.32
Reach - 1	3535.0		Bridge									
Reach - 1	3515.0	2-YEAR	349.00	615.67	622.14	618.60	622.24	0.001957	2.43	143.46	36.99	0.22
Reach - 1	3515.0	10-YEAR	995.00	615.67	625.28	620.79	625.44	0.002464	3.29	303.77	114.37	0.26
Reach - 1	3515.0	25-YEAR	1381.00	615.67	626.10	621.70	626.34	0.002898	3.91	354.42	141.36	0.29
Reach - 1	3515.0	50-YEAR	1692.00	615.67	626.62	622.31	626.92	0.003281	4.40	385.84	162.87	0.31
Reach - 1	3515.0	100-YEAR	1927.00	615.67	626.98	622.75	627.33	0.003526	4.74	408.33	178.30	0.32
Reach - 1	3515.0	500-YEAR	2717.00	615.67	627.94	624.17	628.47	0.004480	5.84	467.21	211.64	0.37
Reach - 1	3515.0	100-YEARFU	2667.00	615.67	627.89	624.12	628.40	0.004424	5.77	463.77	209.76	0.37
Reach - 1	3098.0	2-YEAR	349.00	614.79	621.09		621.23	0.002903	3.08	113.17	24.60	0.25
Reach - 1	3098.0	10-YEAR	995.00	614.79	623.68		623.99	0.004903	4.75	371.15	325.27	0.34
Reach - 1	3098.0	25-YEAR	1381.00	614.79	624.35		624.69	0.005471	5.28	597.76	364.71	0.36
Reach - 1	3098.0	50-YEAR	1692.00	614.79	624.74		625.11	0.005853	5.66	749.97	408.68	0.38
Reach - 1	3098.0	100-YEAR	1927.00	614.79	625.01		625.40	0.006209	5.98	861.75	422.14	0.39
Reach - 1	3098.0	500-YEAR	2717.00	614.79	625.72		626.15	0.006782	6.65	1170.48	449.49	0.42
Reach - 1	3098.0	100-YEARFU	2667.00	614.79	625.68		626.10	0.006751	6.61	1152.27	447.92	0.42
Reach - 1	2507.0	2-YEAR	349.00	613.50	619.67		619.77	0.002084	2.58	164.88	64.94	0.22
Reach - 1	2507.0	10-YEAR	995.00	613.50	621.67		621.81	0.002766	3.52	680.24	491.78	0.27
Reach - 1	2507.0	25-YEAR	1381.00	613.50	622.19		622.33	0.002903	3.80	980.72	641.19	0.28
Reach - 1	2507.0	50-YEAR	1692.00	613.50	622.52		622.66	0.002937	3.97	1198.06	685.09	0.28
Reach - 1	2507.0	100-YEAR	1927.00	613.50	622.75		622.88	0.002948	4.07	1354.30	707.07	0.28
Reach - 1	2507.0	500-YEAR	2717.00	613.50	623.39		623.52	0.002960	4.34	1823.71	759.42	0.29
Reach - 1	2507.0	100-YEARFU	2667.00	613.50	623.35		623.48	0.002960	4.33	1795.68	756.28	0.29
Reach - 1	2008.0	2-YEAR	349.00	612.74	618.68		618.77	0.001917	2.49	192.23	79.69	0.21
Reach - 1	2008.0	10-YEAR	995.00	612.74	620.31		620.43	0.002747	3.41	788.72	614.67	0.26
Reach - 1	2008.0	25-YEAR	1381.00	612.74	620.80		620.90	0.002780	3.55	1097.02	646.08	0.27
Reach - 1	2008.0	50-YEAR	1692.00	612.74	621.12		621.22	0.002788	3.66	1305.84	671.80	0.27
Reach - 1	2008.0	100-YEAR	1927.00	612.74	621.34		621.44	0.002797	3.75	1457.55	709.48	0.27
Reach - 1	2008.0	500-YEAR	2717.00	612.74	621.96		622.06	0.002865	4.05	1911.74	764.36	0.28
Reach - 1	2008.0	100-YEARFU	2667.00	612.74	621.92		622.02	0.002861	4.03	1884.60	761.17	0.28
Reach - 1	1494.0	2-YEAR	349.00	611.91	617.72		617.79	0.001872	2.32	292.93	312.60	0.21
Reach - 1	1494.0	10-YEAR	995.00	611.91	619.03		619.10	0.002397	2.96	939.65	647.76	0.24
Reach - 1	1494.0	25-YEAR	1381.00	611.91	619.47		619.54	0.002508	3.15	1238.95	695.55	0.25
Reach - 1	1494.0	50-YEAR	1692.00	611.91	619.77		619.84	0.002559	3.28	1452.78	729.66	0.25
Reach - 1	1494.0	100-YEAR	1927.00	611.91	619.98		620.04	0.002597	3.36	1605.10	755.35	0.26
Reach - 1	1494.0	500-YEAR	2717.00	611.91	620.56		620.63	0.002647	3.62	2065.95	810.56	0.26
Reach - 1	1494.0	100-YEARFU	2667.00	611.91	620.53		620.60	0.002645	3.61	2038.37	808.79	0.26
Reach - 1	1035.0	2-YEAR	349.00	611.48	616.90		616.95	0.001796	2.22	445.37	482.14	0.20
Reach - 1	1035.0	10-YEAR	995.00	611.48	618.00		618.04	0.002160	2.69	1227.84	835.28	0.22
Reach - 1	1035.0	25-YEAR	1381.00	611.48	618.41		618.45	0.002200	2.80	1579.66	884.08	0.23
Reach - 1	1035.0	50-YEAR	1692.00	611.48	618.69		618.73	0.002235	2.88	1831.51	911.29	0.23
Reach - 1	1035.0	100-YEAR	1927.00	611.48	618.88		618.92	0.002273	2.94	2004.31	928.32	0.23
Reach - 1	1035.0	500-YEAR	2717.00	611.48	619.44		619.48	0.002374	3.13	2533.70	977.37	0.24
Reach - 1	1035.0	100-YEARFU	2667.00	611.48	619.41		619.45	0.002367	3.11	2502.90	974.73	0.24

HEC-RAS Plan: ProposedMode River: Main Stem Reach: Reach - 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach - 1	598.0	2-YEAR	349.00	611.23	616.29		616.31	0.001161	1.68	787.06	827.43	0.16
Reach - 1	598.0	10-YEAR	995.00	611.23	617.18		617.20	0.001712	2.23	1598.91	967.42	0.20
Reach - 1	598.0	25-YEAR	1381.00	611.23	617.52		617.55	0.001930	2.45	1950.05	1092.71	0.21
Reach - 1	598.0	50-YEAR	1692.00	611.23	617.76		617.79	0.002059	2.58	2232.09	1200.89	0.22
Reach - 1	598.0	100-YEAR	1927.00	611.23	617.93		617.96	0.002122	2.66	2431.10	1214.52	0.23
Reach - 1	598.0	500-YEAR	2717.00	611.23	618.43		618.46	0.002279	2.93	3049.81	1284.60	0.24
Reach - 1	598.0	100-YEARFU	2667.00	611.23	618.40		618.43	0.002272	2.91	3012.98	1273.12	0.24
Reach - 1	318.0	2-YEAR	349.00	610.97	615.47		615.64	0.006958	3.77	260.51	601.71	0.39
Reach - 1	318.0	10-YEAR	995.00	610.97	616.47		616.52	0.003772	3.12	1529.35	1520.37	0.29
Reach - 1	318.0	25-YEAR	1381.00	610.97	616.82		616.86	0.003242	3.00	2087.10	1618.48	0.28
Reach - 1	318.0	50-YEAR	1692.00	610.97	617.07		617.10	0.003001	2.98	2491.80	1679.83	0.27
Reach - 1	318.0	100-YEAR	1927.00	610.97	617.24		617.27	0.002872	2.98	2782.68	1729.58	0.26
Reach - 1	318.0	500-YEAR	2717.00	610.97	617.75		617.78	0.002571	3.00	3699.95	1851.50	0.25
Reach - 1	318.0	100-YEARFU	2667.00	610.97	617.72		617.75	0.002590	3.00	3644.72	1849.74	0.25
Reach - 1	66.0	2-YEAR	349.00	610.73	615.06	614.03	615.06	0.001001	1.36	1132.84	1060.66	0.14
Reach - 1	66.0	10-YEAR	995.00	610.73	616.06	614.48	616.06	0.001000	1.52	2774.18	2041.67	0.14
Reach - 1	66.0	25-YEAR	1381.00	610.73	616.43	614.68	616.43	0.001000	1.58	3555.17	2190.90	0.14
Reach - 1	66.0	50-YEAR	1692.00	610.73	616.68	614.79	616.69	0.001001	1.62	4122.11	2261.89	0.14
Reach - 1	66.0	100-YEAR	1927.00	610.73	616.86	614.86	616.86	0.001001	1.65	4522.21	2288.86	0.14
Reach - 1	66.0	500-YEAR	2717.00	610.73	617.38	615.08	617.39	0.001001	1.73	5738.84	2369.19	0.15
Reach - 1	66.0	100-YEARFU	2667.00	610.73	617.35	615.07	617.36	0.001001	1.72	5668.17	2366.27	0.15

New Birth Huntersville, NC



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 - Water_existing.shp
 - Sewer_existing.shp
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