



HONEY CREEK AQUATIC ECOSYSTEM RESTORATION – SECTION 206 WRDA 1996

Appendix D - Hydrology & Hydraulics



USACE, Chicago and
Detroit Districts

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HYDROLOGY AND HYDRAULICS

APPENDIX D

INTRODUCTION

The US Army Corps of Engineers Chicago District is completing a study on the feasibility of an aquatic ecosystem restoration project for Honey Creek in Wauwatosa, Wisconsin. This Hydrology and Hydraulics (H&H) Appendix presents the existing conditions, the proposed features and the hydraulic design of those features that make up the Tentatively Selected Plan (TSP).

Site Description

The Honey Creek watershed is part of the overall Menomonee River watershed, refer to Figure 1. The total area of the Honey Creek watershed is 10.8 square miles at its confluence with the Menomonee River. The drainage basin is located in an urbanized portion of Milwaukee County. It includes portions of the cities of Greenfield, Wauwatosa, West Allis, and Milwaukee. The stream flows in a generally northerly direction for a distance of approximately 8.8 miles from South 43rd Street in Greenfield to the Menomonee River. Approximately two-thirds of the drainage basin consists of residential land use, along with lesser commercial, transportation, and open parkland land uses. Additionally, the Wisconsin State Fair Park is in the drainage basin and adjacent to the proposed project area near IH-94.



Figure 1: Location of the project area within the Menomonee River Watershed

The project site is located north of IH-94 and extends to the confluence with the Menomonee River. At the upstream end of the project, there is the outlet from the quadruple-cell pipe culvert that carries Honey Creek under IH-94. The stream has several meanders and bridge crossings. There are some points of erosion and a sand bar in the non-concrete, downstream portion of the project. Some retaining walls line portions of the reach on the downstream end.

Honey Creek discharges to the Menomonee River. Figure 2 demonstrates the relationship between the downstream stage of Honey Creek and stages of the Menomonee River. A close look at the data indicates that Honey Creek stages peak prior to those of the Menomonee River. Larger historic events were also examined, and the same conclusion was found, indicating that backwater is not a significant factor at this location.

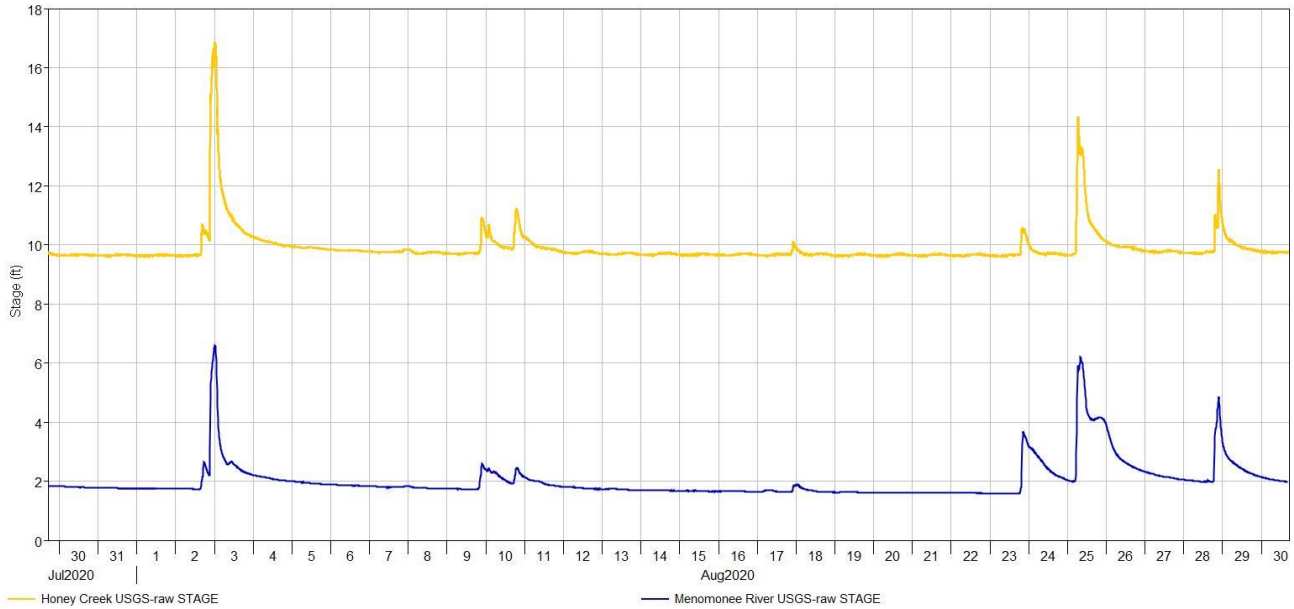


Figure 2: Comparison of Honey Creek and Menomonee River Stage at Wauwatosa, WI.

Previous channel modifications along Honey Creek, including deepening, realignment, concrete lining, and complete enclosure, have been made to over seven miles of the 8.8 mile long stream to convey increased flows from development within the basin. The modifications increased capacity as intended; however the changes have reduced the ecological and aesthetic benefits that would be present in a natural stream environment.

The Milwaukee Metropolitan Sewerage District (MMSD) has initiated and undergone several projects to restore rivers and streams within the Milwaukee metropolitan area that were channelized and lined with concrete around the 1960’s. The MMSD has a strong commitment to improving the quality and function of habitat. Habitat restoration for the purpose of fish and wildlife recolonization, water quality improvement, and natural aesthetics on Honey Creek is in line with the commitment of MMSD.

The MMSD has requested that the Chicago District conduct a feasibility study to evaluate the benefits of potential modifications to the Honey Creek river system. The study focused on removal of the concrete channel lining with some slope and grading work to return the creek back to a more natural state. This will require removal of concrete weirs within the channel. In addition, there are several bridges crossing in the study area with concrete that will remain untouched for bridge integrity purposes.

HYDROLOGY (DESIGN FLOWS)

Design Flows

At the beginning of the study process, the Chicago District (LRC) reached out to MMSD and Wisconsin Department of Transportation (WisDOT) regarding the recent completed culvert construction project at the upstream end of our study area. It had been previously mentioned that modeling work was done as part of the culvert project and LRC wanted to ensure that the best available data with regards to stream flow was being used.

WisDOT provided the hydraulic report (2012) that was produced for the reconstruction project for the upstream culvert at IH-94. In the report it was summarized that in December 2009, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) completed work updating the floodplain (including new flows & stages) for Honey Creek for the Milwaukee County Automated Mapping and Land Information System (MCAMLIS). Therefore, these flows are considered the most current with respect to design analysis within the watershed.

The 1-percent Annual Exceedance Probability (AEP) discharge of 2,340 cubic feet per second (cfs) was used for the design and analysis of the existing and proposed conditions. Additional recurrence-interval flow values are listed in Table 1. At River Station 0.94 the flows are controlled by the capacity limit of the upstream enclosure/culvert system, which is why the flows are the same for the 4% to 0.2% AEP.

Table 1. Summary of Flows for Honey Creek

River Station (RS)	50% AEP	20% AEP	10% AEP	4% AEP	2% AEP	1% AEP	0.2% AEP
0.94	1160	1750	2140	2340	2340	2340	2340
1.935	1230	1890	2350	2980	3040	3090	3210
0.878	1270	1950	2440	3290	3380	3470	3660

CLIMATE CHANGE

USACE Engineering and Construction Bulletin (ECB) 2018-14 (*Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Designs, and Projects*), “provides guidance for incorporating climate change information in hydrologic analyses in accordance with the USACE overarching climate change adaptation policy. This policy requires consideration of climate change in all current and future studies to reduce vulnerabilities and enhance the resilience of our water resources infrastructure.” The document “helps support a qualitative assessment of potential climate change threats and impacts” related to USACE analyses. The subsequent sections discuss the various tools that were developed by the USACE Climate Preparedness and Resiliency Community of Practice (CPR CoP), to meet the qualitative assessment requirements set forth in ECB 2018-14.

Literature Review

The USACE is undertaking its climate change preparedness and resilience planning and implementation in consultation with internal and external experts using the best available — and actionable — climate science. As part of this effort, the USACE has developed concise reports summarizing observed and projected climate and hydrological patterns, at a hydrologic unit code (HUC2) watershed scale. The information cited in these reports comes from reputable, peer-reviewed literature and authoritative national and regional reports. Trends are characterized in terms of climate threats to USACE business lines. The reports also provide context and linkage to other agency resources for climate resilience planning, such as downscaled climate data for sub-regions, and watershed

vulnerability assessment tools.

The USACE literature review report focused on the Great Lakes Region was finalized in April 2015 (USACE, April 2015). The Honey Creek Watershed is located in the Great Lakes Region. Figure 3 portrays the National Climate Assessment's (NCA) reported summary of the observed change in very heavy precipitation for the U.S., defined as the amount of precipitation falling during the heaviest 1% of all daily events. The NCA results indicate that 42% more precipitation is falling in the Great Lakes Region now as compared with the first half of the 20th century, and that the precipitation is concentrated in larger events.

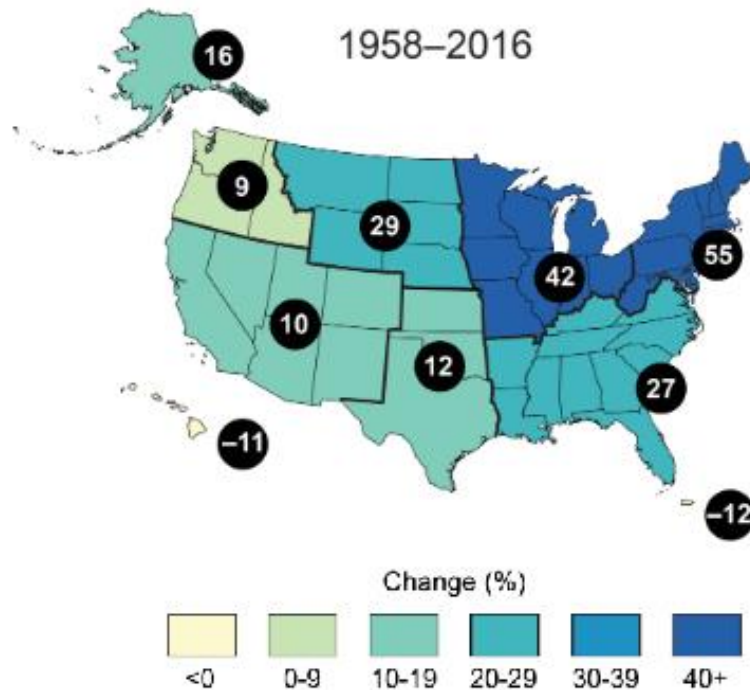


Figure 3: Percent changes in precipitation falling in the heaviest 1% of events from 1958 to 2016 for each region (Easterling et al., 2017).

The USACE literature review document summarizes and consolidates several studies which have attempted to project future changes in hydrology. Based on a review of four studies, the projected total annual precipitation is expected to have a small increase when compared to the historic record and the precipitation extremes are projected to see a large increase. It is noted that consensus between the studies is low, and although most studies indicate an overall increase in observed average precipitation, there is variation in how these trends manifest both seasonally and geographically. Figure 4 taken from the USACE Climate Change and Hydrology Literature Reviews, summarizes observed and projected trends for various variables reviewed.

PRIMARY VARIABLE	OBSERVED		PROJECTED	
	Trend	Literature Consensus (n)	Trend	Literature Consensus (n)
Temperature	↑	(7)	↑	(4)
Temperature MINIMUMS	↑	(1)	↑	(1)
Temperature MAXIMUMS	—	(1)	↑	(5)
Precipitation	↕	(7)	↑	(4)
Precipitation EXTREMES	↑	(5)	↑↑	(4)
Hydrology/ Streamflow	↑	(7)	↕	(3)

NOTE: Although most studies indicate an overall increase in observed average precipitation, there is variation both seasonally and geographically. There is considerable uncertainty in projected streamflows, with no clear consensus between studies

TREND SCALE
 = Large Increase = Small Increase = No Change = Variable
 = Large Decrease = Small Decrease = No Literature

LITERATURE CONSENSUS SCALE
 = All literature report similar trend = Low consensus
 = Majority report similar trends = No peer-reviewed literature available for review
(n) = number of relevant literature studies reviewed

Figure 4: Great Lakes Region - Summary matrix of observed and projected climate trends and literary consensus (USACE, 2015).

For the Great Lakes Regions, increase in temperatures have been observed and additional increases in temperature are predicted for the future. In addition, for the Great Lakes Region, “nearly all studies note an upward trend in average temperatures, but generally the observed change is small. Some studies note seasonal differences with possible cooling trends in fall or winter.” There is a strong consensus within the literature that temperatures are projected to continue to increase over the next century.

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The Wisconsin Initiative for Climate Changes Impacts (WICCI) scenarios suggest that two to three additional heavy precipitation events, defined as daily precipitation rate of two or more inches, can be expected per decade in Wisconsin by the mid-21st century. This would correspond to a 25 percent increase in the frequency of heavy precipitation.

Kunkel et al. (2012) reported that the multi-model mean change in the number of days with precipitation greater than one inch from the nine North American Regional Climate Change Assessment Program (NARCCAP) simulations varies from little or no change in the southeastern and eastern portion of the Midwest region to an over 30% increase in the northern portion of the region by mid-century. The percentage increases in frequency are projected to be larger for more extreme precipitation events (e.g., precipitation rates greater than one inch, two inches, three inches, and four inches). More generally, Schoof et al. (2010) found that, based on downscaled climate projections from ten Global Climate Models (GCMs), intense precipitation events in the Midwest are likely to either continue at their current frequency or increase in frequency, regardless of the sign of the change in total precipitation.

First Order Statistical Analysis & Nonstationarity Analysis

There are two stream gages in close proximity to the project area. These two stream gages include: 04087119 Honey Creek at Wauwatosa, WI and 04087120 Menomonee River at Wauwatosa, WI. The drainage area for gage 04087119 Honey Creek at Wauwatosa, WI, is 10.3 square miles and for 04087120 Menomonee River at Wauwatosa, WI, 123 square miles. However, only the Menomonee River gage has a period of record greater than 30 years and therefore will be the focus of this analysis.

Climate Hydrology Assessment Tool

As outlined in ECB No. 2018-14, an investigation of the trends in the annual maximum flow gage data was performed to qualitatively assess impacts of climate change within the watershed using the USACE Climate Hydrology Assessment Tool. Figure 5 below shows the observed, instantaneous peak streamflow obtained from the USGS website for stream gage with close proximity to the watershed that has a period of record greater than 30 years. The figures depict an increasing trend in annual peak streamflow for the period of record with a p-value of 0.0384868. Since the gage has a p-value smaller than 0.05 (the generally accepted threshold for significance) it indicates that the trends are statistically significant.

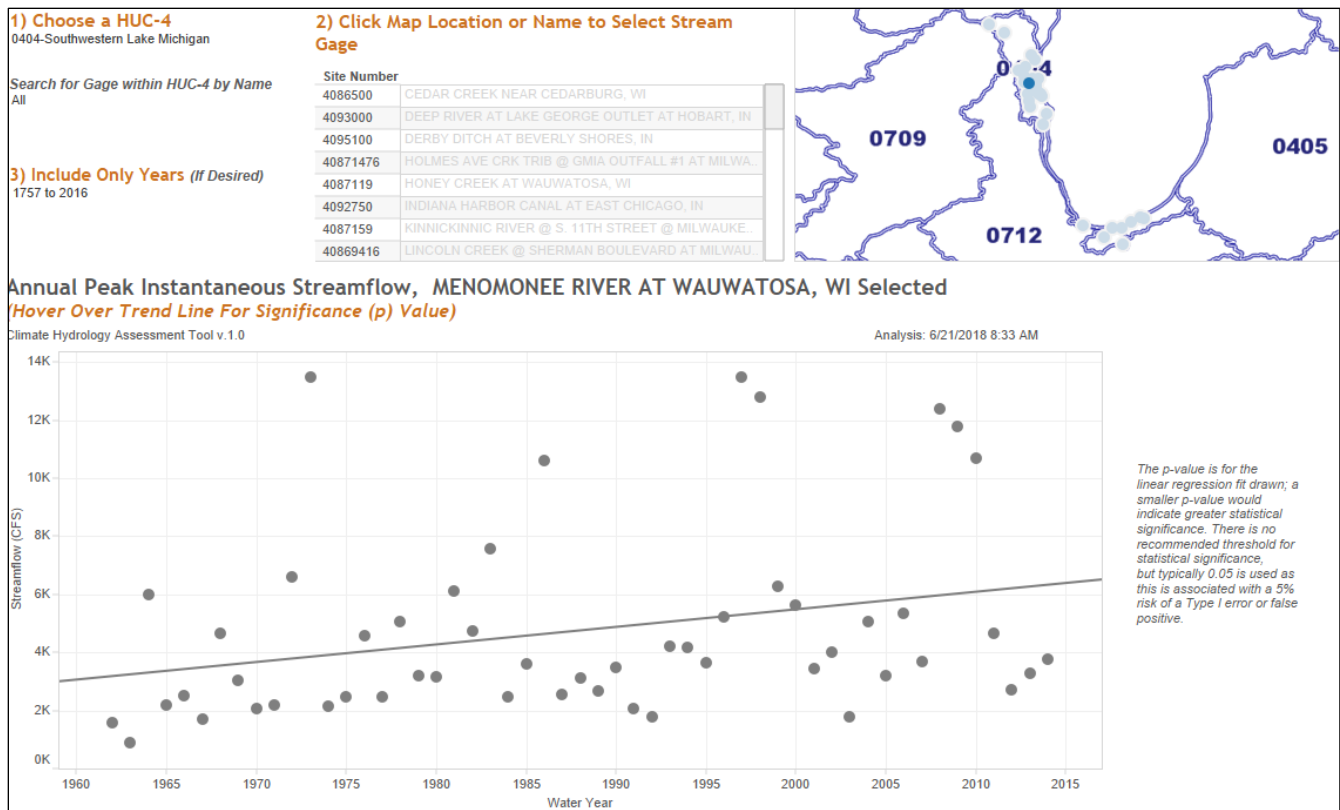


Figure 5: Annual Peak Streamflow, USGS 04087120 Menomonee River at Wauwatosa, WI

Figure 6 displays the projected annual, maximum monthly trends from the USACE Climate Hydrology Assessment Tool for HUC 0404-Southwestern Lake Michigan. As expected for this type of qualitative analysis, there is a considerable, but consistent spread in the projected annual maximum monthly flows. This spread is indicative of the uncertainty associated with climate changed hydrology. The trend in the mean projected annual maximum monthly streamflow indicates an increase over time. This increasing trend for the Southwestern Lake Michigan watershed HUC 04, which encompasses the Honey Creek, is statistically-significant ($p\text{-value} < 0.0001$) and suggests the potential for future increases in flow relative to current conditions.

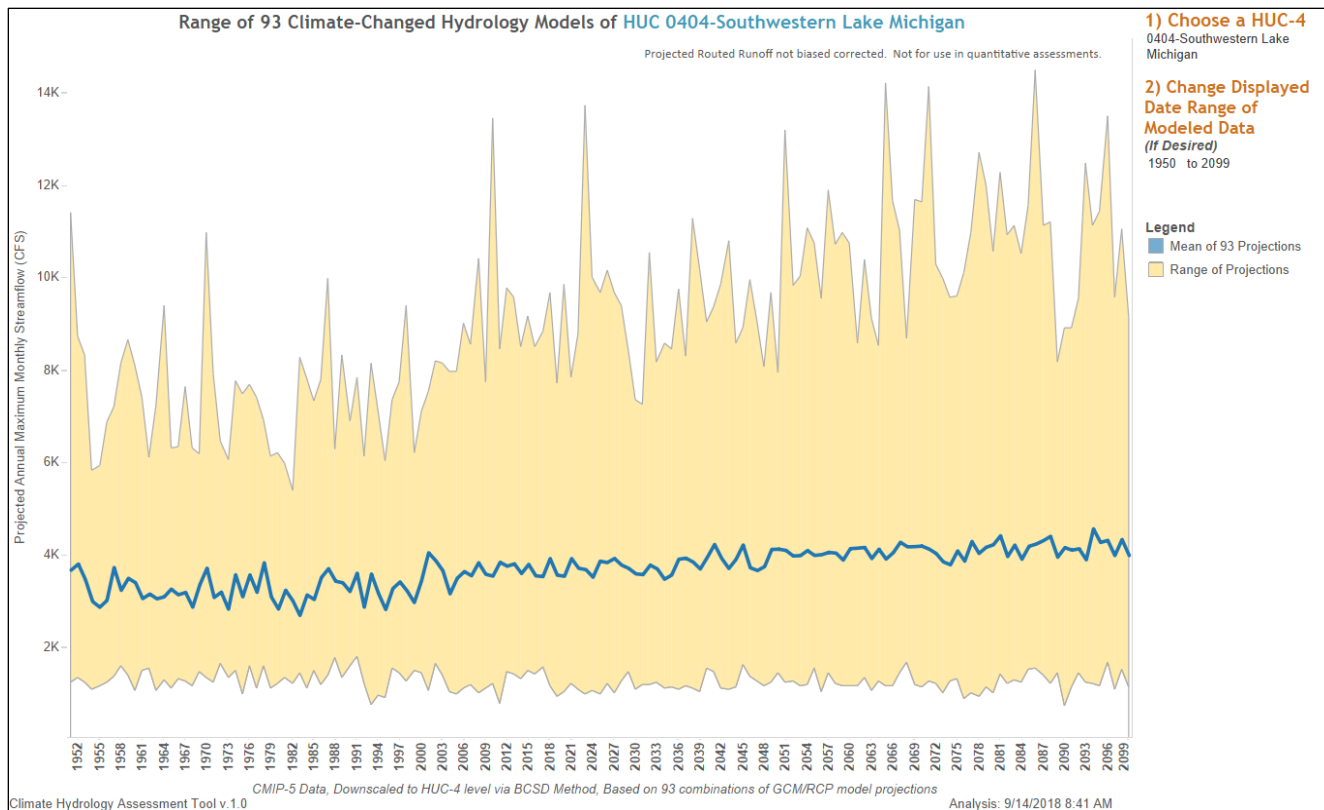


Figure 6: Projected Annual Maximum Monthly Streamflow for HUC-4: 0404-Southwestern Lake Michigan

Nonstationarity Detection Tool

Stationarity, or the assumption that the statistical characteristics of hydrologic time series data are constant through time, enables the use of well-accepted statistical methods in water resources planning and design in which the definition of future conditions relies primarily on the observed record (USACE, April 2017). However, recent scientific evidence shows that in some locations climate change and human modifications of watersheds are undermining this fundamental assumption, resulting in nonstationarity (Milly et al., 2008, Friedman, et. al, 2016). Using the web-based Nonstationary Detection Tool, USGS Gage 04087120 has a period of record of 30 years or more was investigated for nonstationarities. There are no nonstationarities or statistically significant monotonic trends detected in the peak streamflow record observed along the Menomonee River at Wauwatosa, WI, refer to Figure 7 and Figure 8 below.

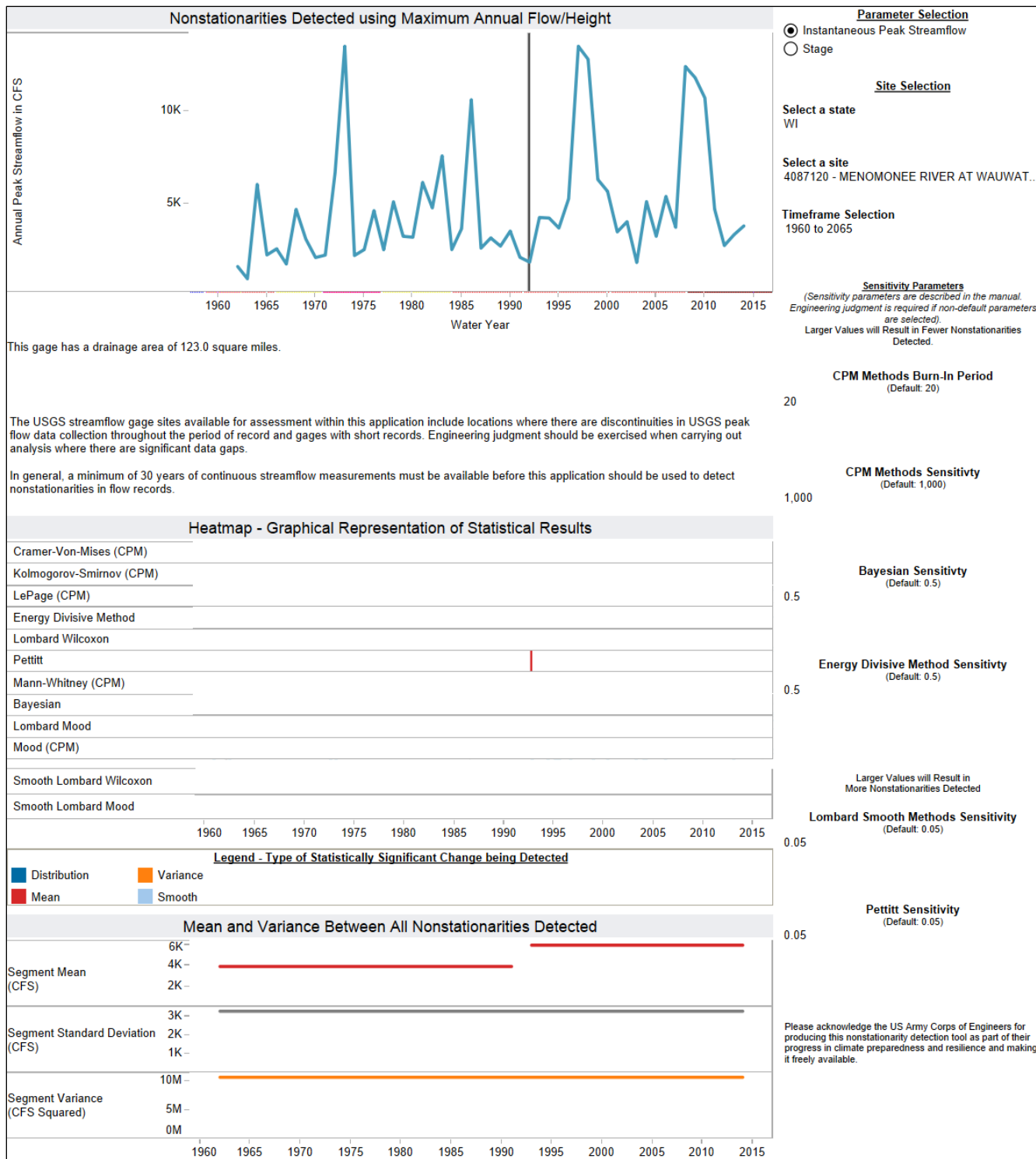


Figure 7: Nonstationarity Analysis, Menomonee River at Wauwatosa, WI

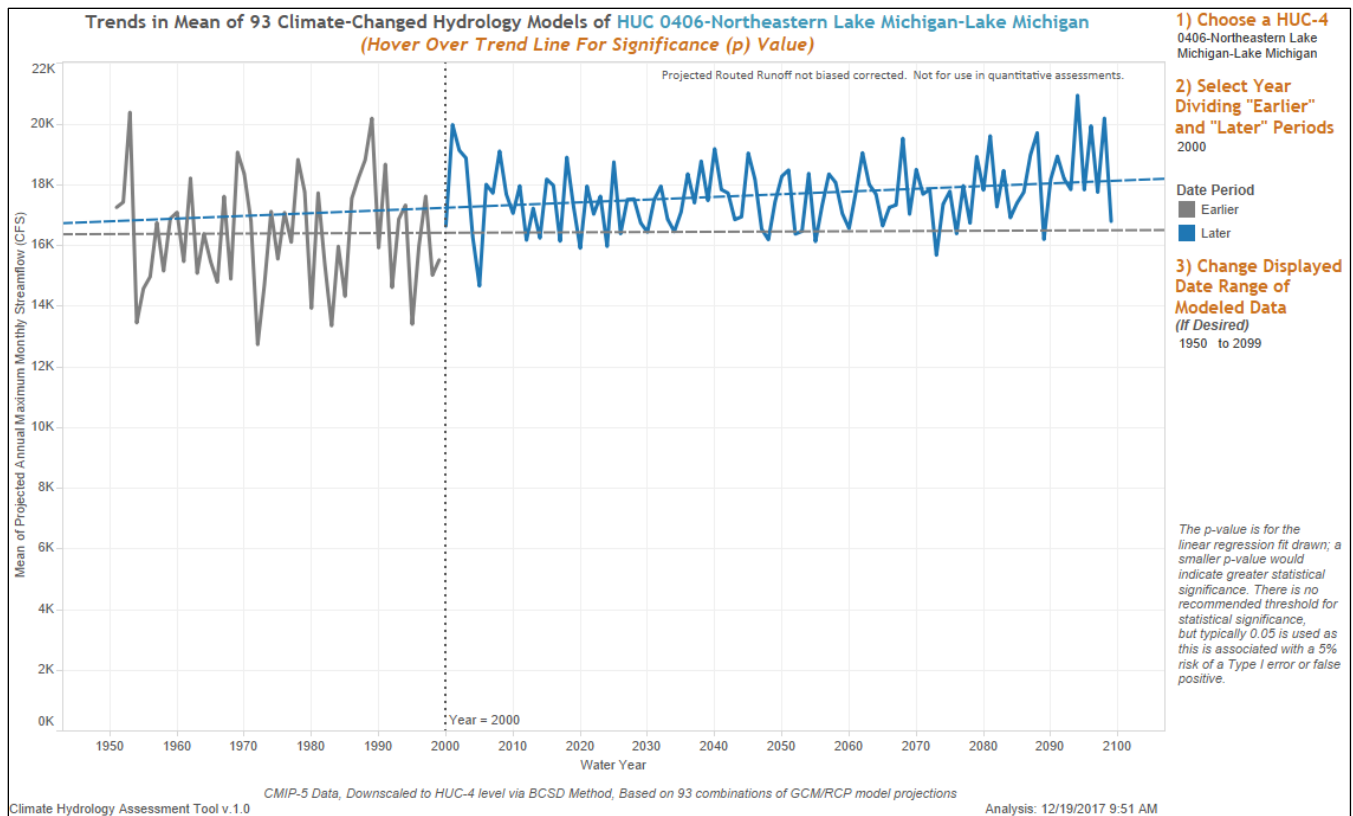


Figure 8: Trend Analysis for Menomonee River at Wauwatosa, WI

Vulnerability Assessment Tool

The USACE Vulnerability Assessment Tool was applied for the 0404-Southwestern Lake Michigan HUC-4 to assess the Honey Creek’s vulnerability to climate change impacts relative to the other 201 HUC-4 watersheds within the continental United States. The USACE Watershed Climate Vulnerability Assessment (VA) Tool facilitates a screening level, comparative assessment of the vulnerability of a given HUC 04 watershed to the impacts of climate change relative to a maximum of 202 (depending on which business line is specified) HUC04 watersheds within the continental United States (CONUS). Assessments using this tool identify and characterize specific climate threats and sensitivities or vulnerabilities, at least in a relative sense, across regions and business lines. Ecosystem Restoration is the primary business line being assessed as part of this Feasibility Study.

The Watershed Vulnerability tool uses the Weighted Order Weighted Average (WOWA) method to represent a composite index of how vulnerable (vulnerability score) a given HUC04 watershed is to climate change specific to a given business line by using a set of specific indicator variables which relate to a particular business line. The HUC04 watersheds with the top 20% of WOWA scores are flagged as vulnerable. All vulnerability assessment analyses were performed using the National Standard Settings. The USACE Climate Vulnerability Assessment Tool makes an assessment for two 30-year epochs centered at 2050 and 2085 to judge future risk due to climate change. These two epochs are selected to be consistent with many other national and international

analyses related to climate. The Vulnerability tool assesses climate change vulnerability for a given business line using climate changed hydrology based on a combination of projected climate outputs from the general circulation models (GCM) and representative concentration pathway (RCPs) of greenhouse gas emissions resulting in 100 traces per watershed per time period. The top 50% of the traces is called “wet” and the bottom 50% of traces is called “dry.” Meteorological data projected by the GCMs is translated into runoff using the Variable Infiltration Capacity (VIC) macroscale hydrologic model. The VIC model applied to generate the results used by the Vulnerability Assessment Tool was developed by the U.S. Bureau of Reclamation and is configured to model unregulated basin conditions.

While there is a great deal of uncertainty with the climate changed hydrology given by the vulnerability assessment tool, it does allow a qualitative analysis of watershed-scale vulnerability for USACE business line and for individual contributing indicators to the business lines. Each of the inputs to the vulnerability assessment tool has uncertainty associated with it. The vulnerability tool relies on projected, climate changed hydrology. The uncertainty associated with projected hydrologic data includes error in temporal downscaling, error in spatial downscaling, errors in the hydrologic modeling, errors associated with emissions scenarios, and errors associated with GCMs. Some of the uncertainty associated with the tool can be visualized because the tool separates results for each of the scenarios (wet versus dry) and epochs (2050 versus 2085) combinations rather than presenting a single, aggregate result (USACE, 2014). The analysis also incorporates uncertainty inherent in the level of risk aversion selected (ORness factor) and the importance weights applied. Some users may elect to use a higher level of risk aversion while others may not. The importance weights of the indicator variables used to compute the WOVA (vulnerability) scores are subjective assessments of the expert users on a national basis (in the national standard view) and by local experts if a user-modified analysis is performed. The user should note that the uncertainty with climate changed hydrology projects may be high, but this uncertainty is ameliorated by using all of the available climate information and no prematurely downselecting to a small subset of models.

For the Ecosystem Restoration business line, the results show that there are no indicated threats for both “wet” and “dry” scenarios during the 2050 and 2085 timeframe in the Southwestern Lake Michigan HUC-4 region as shown in Figure 9 below. The main indicator variable contributing to the WOVA score is At Risk Freshwater Plants. Additional information about each of these indicator variables and how they are used to determine a WOVA score is described in the Vulnerability Assessment User Manual.

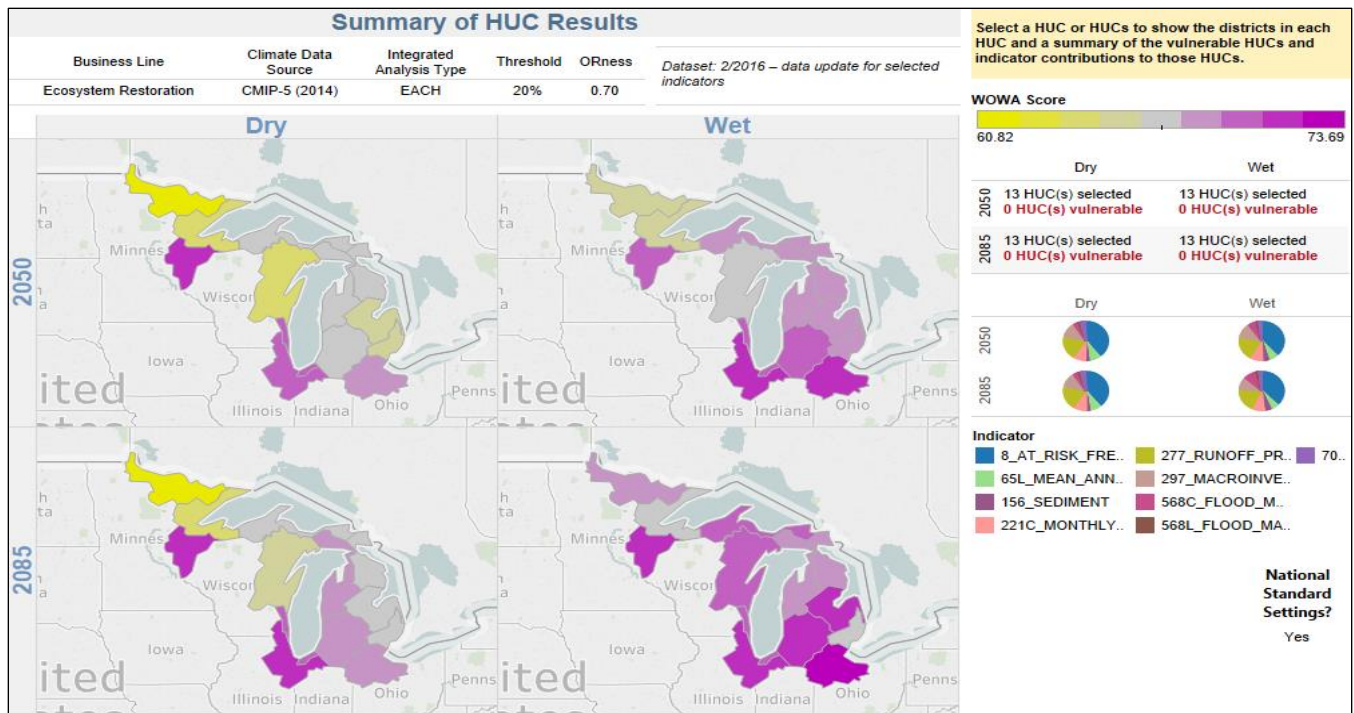


Figure 9: Vulnerability Assessment Tool HUC-4: 0404 Southwestern Lake Michigan

In addition, for the dry scenario there was a +0.40% change and the wet scenario a +1.58% change in the WOVA scores computed for 2050 and 2085 for the HUC-4 Region with an Ecosystem Restoration business line as shown in Figure 10 and Figure 11 below.

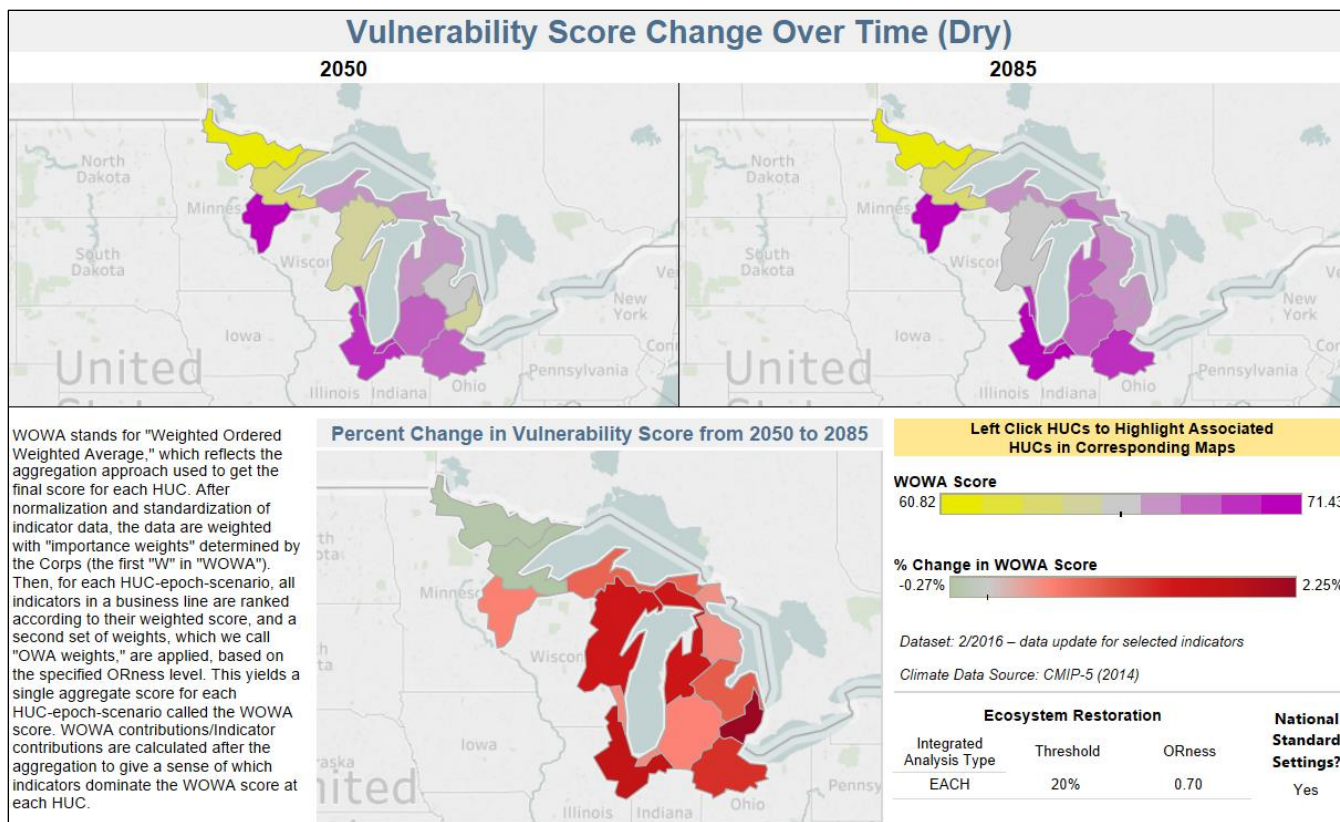


Figure 10: Vulnerability Score, Dry Scenario HUC-4: 0404 Southwestern Lake Michigan

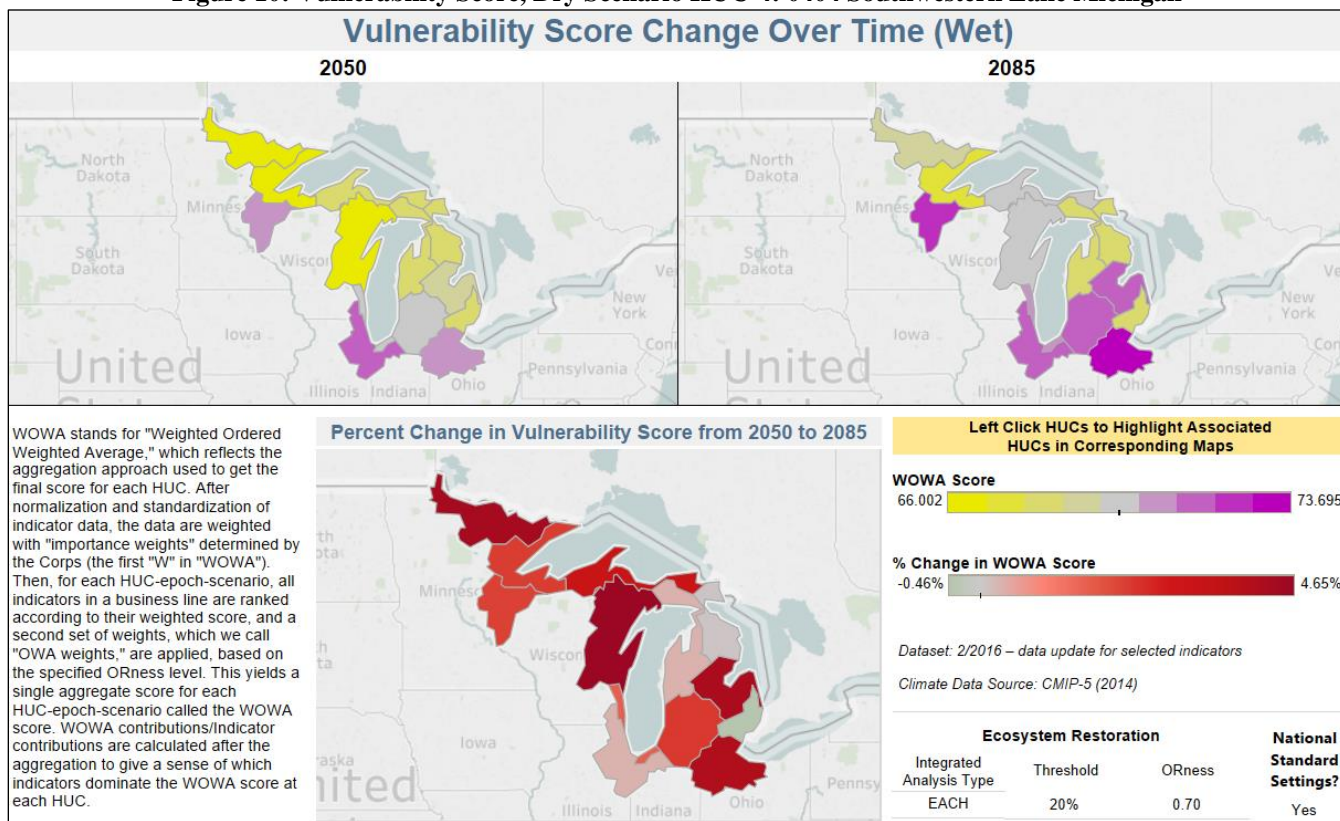


Figure 11: Vulnerability Score, Wet Scenario HUC-4: 0404 Southwestern Lake Michigan

Climate Risk Register

Assessing climate change trends is relevant to the study’s purpose as it could impact the design of project features. As summarized above the study area increasing trends in peak stream do exist. Therefore, adaptable measures may be considered in the project features as discussed in the Tentatively Selected Plan section below. Despite these increasing trends, it is expected that the proposed project features will have minimal impacts on the hydrology of the study area. While climate changes was qualitatively considered during the plan formulation process, uncertainty with those projections exist and risk potentially could remain. Table 2 summarizes residual risk associated with the tentatively selected plan specifically due to the potential for a changing climate.

Table 2. Climate Risk Register

Feature or Measure	Trigger	Hazard	Consequence	Qualitative Likelihood
Channel & In-Stream Design Features	Changes in water velocities due to increased peak streamflow	Reduced assurance on rock sizing design; increased probability of movement of features	Flooding of protected area, economic damages and transportation delays	Unlikely – observed trends in peak streamflow are not certain; factor of safety is built into rock sizing design

HYDRAULICS

Previous Studies and Models

The project is a follow-on project for the reconstruction of the triple-cell box culvert and metal plate pipe arch conveying Honey Creek under State Fair Park and IH-94 from south to north. At this point, the culvert discharges to the open concrete-lined channel on the north side of IH-94 just west of 84th street. The HEC-RAS model used in that project was provided and used as the basis for the current model. The hydraulic model was developed in steady-state HEC-RAS.

The model was used for the studies conducted under the MMSD’s Menomonee River Phase 1 and Phase 2 Watercourse System Management Plans in 2000 and 2002, respectively. In 2009-2010 SEWRPC updated the entire hydrologic and hydraulic modeling for Honey Creek as part of the MCAMLIS updates based on a review of original construction plans, updates to topographic mapping, as-built information for recently constructed facilities such as bridges, field reconnaissance, field survey, and revisions to various modeling techniques and hydraulic parameters (eg: expansion/contraction and Manning’s “n” coefficients). This prior modeling was completed in HEC-RAS version 4.0.0 and therefore does not have an associated terrain model.

Design Model

The Geographic Coordinate System used was North American 927. An associated terrain file was not used. For this project, the vertical datum was converted from NGVD29 to NAVD88 by subtracting 0.4 ft. The model was then geo-referenced; refer to HEC-RAS schematic in Figure 12. Bridge, cross-section, and channel parameters were obtained from the previous model. The bridge at Bluemound Road was modeled with lidded cross-sections, based on the previously developed geometry. This geometry was retained but will be converted to a bridge in the design and implementation phase. The Manning's "n" values were verified via site visit and photography. Additional survey data was gathered to verify the overbank areas.

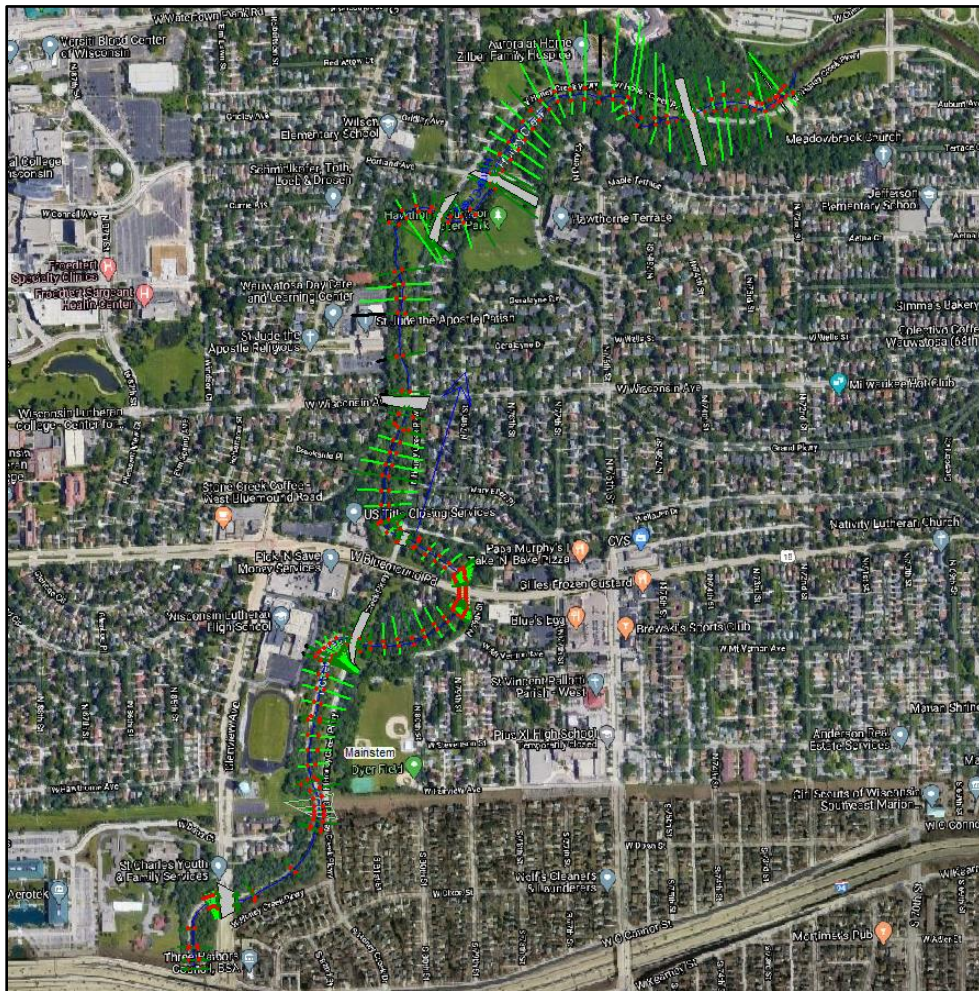


Figure 12: HEC-RAS Schematic

The flow regime was set to mixed in the existing and proposed conditions model. The existing channel is not natural, and the existing and proposed conditions contain sections of super- and sub-critical flows. The model produces a warning about defaulting to critical depth, but this warning occurs at bridges where there is a significant drop in the channel's profile following the bridge, in both the existing and proposed conditions. The concrete channel is integral into the bridges infrastructure and therefore not being removed in these locations in the proposed conditions. A photograph of these bridge

conditions is provided in Figure 13.



Figure 13: Channel Conditions Downstream of Bridge

Hydraulic Model Scenarios

The Existing Conditions scenario represents the current conditions with the concrete stream lining in place. The proposed conditions assume removal of the concrete lining north of the utility fairway, including the concrete weirs. It also includes the placement of riffles and woody revetments, as requested by the sponsor, to allow for fish passage and a stable river channel. The concrete under and surrounding the bridges remains in place.

The proposed conditions include adjustments to the bank slopes. The channel beds were adjusted using the graphical cross section editor in HEC-RAS. The bank slopes were set to approximately 20% below the bank stations and 10% above the bank stations, where existing conditions (i.e. buildings, roadways, retaining walls, etc.) allowed. The channel slope was modified to smooth out the removal of weirs, where necessary.

Based on the spacing of the cross sections present in the model, the slight changes of the cross sectional geometry introduced by the placement of in-stream features (j-hooks, riffles, and woody revetments) are not significant enough to warrant modification of the geometry of the cross sections in the model. Instead, in-stream features were represented in the model by increasing the Manning's roughness coefficient in the channel in areas where in-stream structures were proposed. Mannings "n" values were also adjusted for

the change from brush to marshland and placement of woody revetments along a few sections of the banks. The riffles were placed to ease the transitions from the removal of the weirs and with the concrete bridge structures that could not be modified. Additional interpolated cross sections were added to assess the impacts of these features on the hydraulic conditions.

TENTATIVELY SELECTED PLAN

A detailed discussion of the plan formulation for this study is provided in the main report. Plan formulation for ecosystem restoration presents a challenge because alternatives have non-monetary benefits. To summarize the process, working closely with the study team several project features and locations were identified. These project features included a proposed channel bed design and instream features such as rock riffles, j-hook vanes, and woody revetments, refer to Figure 14. Based on the water surface elevations and velocities within the channel, along with environmental factors, the study team identify features and locations for the study area which are described in more detail below.



Figure 14: Tentatively Selected Plan (TSP)

Channel Bed Design

The concrete lining will be removed from the channel as identified in the above figure. The concrete removal does not extend further upstream due to HTRW concerns, refer to Appendix E. Once the concrete is removed, the channel is to be lined with stone. The velocities reported in the HEC-RAS model were used to evaluate rock gradations for stability in the necessary flow conditions. The average velocities for the upstream portion of the channel are approximately 5 ft/s and 9 ft/s for the downstream portion. There are some areas downstream of the concrete structures with higher velocities. Larger boulders will be placed in these locations to maintain stabilization.

The Hydraulic Design Chart 712-1 was used to determine the appropriate stone sizing and gradation of the channel bed. Twenty-five percent was added onto the stone size, since rounded stone is preferred for ecological stream restoration. The calculations are shown on Plate 1. Several sizes were identified. The placement for each size will be dependent upon the velocity trend for each stream reach section. Guidance from EM 1110-2-1601 was used to determine layer thickness.

Riffle and J-Hook Vane Design

A riffle is a rock structure that spans the width of the stream, with slight impedance of low flows. Riffles are expected to improve fish habitat by providing cover for aquatic species and increasing oxygen levels downstream. Upstream of the riffle, the changes in velocity and streambed slope will allow for increased fish passage into the transitional flow regime downstream of the riffle.

J-hooks will be installed to diversify flow, reduce bank erosion and provide additional fish habitat. The J-Hook is an upstream directed, gently sloping structure comprised of stone. The vane portion of the structure occupies approximately 1/6 of the bankfull width of the channel, while the "hook" occupies the center 1/6. Maximum velocity, shear stress, stream power and velocity gradients are decreased in the bank region and increased towards the center of the channel. The scour pool in the hook portion of the structure provides energy dissipation and holding cover for fish.

The riffle and j-hook structures will be designed in a manner such that the structures will perform their respective ecological functions during average flow conditions, but made of materials sufficient to withstand washout during increased velocities up to the 1% AEP flood. To meet the multi-objective design parameters, the riffle design was determined by using HEC-RAS to predict flow conditions which will induce ecological function and to estimate stream velocities in various conditions. The pertinent velocities reported in the HEC-RAS model were then used to evaluate rock gradations for stability in the necessary flow conditions.

The HEC-RAS model indicates the maximum average channel velocity that can be expected at the riffle locations. The velocities at the riffle locations are approximately 5-8 ft/s upstream and 10-12 ft/s downstream. There is one additional riffle at a high velocity point of 16 ft/s on the downstream side of a concrete bridge structure. To determine the appropriate stone size and gradation to construct the riffles, the application of the Isbash

equation, as summarized in “Hydraulic Design Chart Criteria Sheet 712, Velocity vs. Stone Diameter” was used. Plate 1 summarizes the calculations that were used to determine the appropriate stone sizing and gradation of the riffle structures. Several sizes were identified, and the placement will depend upon the velocity at the location of each proposed structure.

Woody Revetment Design

Bank stabilization features are intended keep graded areas stable. In some cases, stabilization measures are used to prevent bank erosion in areas where it is evident. Four areas were identified as having experienced more erosion than the rest of the banks. Reinforcement is intended for those areas to maintain the graded slopes that will be constructed for this project. A wood/rock revetment as shown in Figure 15 will be constructed in these areas to be flush with the bank.

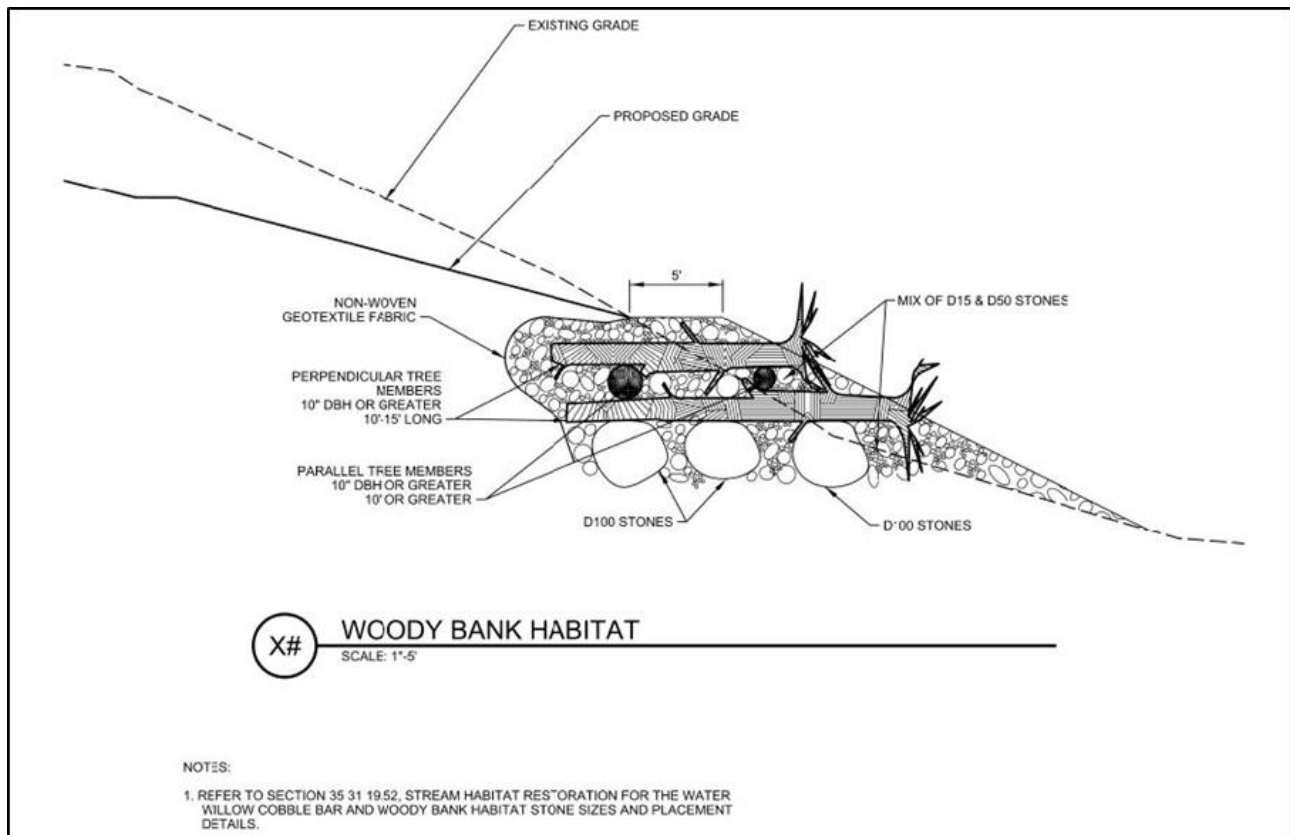


Figure 15: Typical Bank Stabilization Section

RESULTS AND CONCLUSIONS

Impact to Water Surface Elevation

Removing the concrete lining from Honey Creek will have minimal impacts to flood stages. At the very upstream end of the project limits, the proposed water surface elevation profiles converge with the existing conditions profiles. There are certain areas where the water surface elevation increases between the existing and proposed conditions model. These differences can be attributed to the reduction in hydraulic jumps throughout

the reach provided a more stable channel design. Generally, the stage increases do not extend past the bank stations. All increases are contained within the property of the non-federal sponsor and do not affect any insurable structures. Through the downstream half of the modeled reach, the project is expected to reduce flood levels.

Impact to Velocity

The cross sections with the most significant changes in velocity are generally located where there is a constriction in cross-sectional area. The primary change from the existing to proposed conditions shown in the model is a small decrease in velocity. Significant decreases occur at the location of removal of the weirs. After Honey Creek Parkway Bridge, at RS 0.585, the model shows a 2.5 ft/s increase in velocity, up to 12.5 ft/s, for the proposed conditions. There is a high velocity point downstream of the Portland Avenue Bridge, at RS 0.484, where the velocity is 15.5 ft/s. However, the velocity is also this high in the existing conditions, and there is no concrete in place. The stone for these locations will be sized accordingly.

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PLATE 1

BASIC EQUATIONS

$$V = C \left[2g \left(\frac{\gamma_s - \gamma_w}{\gamma_w} \right) \right]^{1/2} (D_{50})^{1/2}$$

$$D_{50} = \left(\frac{6W_{50}}{\pi \gamma_s} \right)^{1/3}$$

WHERE: V = VELOCITY, FPS
 γ_s = SPECIFIC STONE WEIGHT, LB/FT³
 γ_w = SPECIFIC WEIGHT OF WATER, 62.5 LB/FT³
 W_{50} = WEIGHT OF STONE. SUBSCRIPT DENOTES PERCENT OF TOTAL WEIGHT OF MATERIAL CONTAINING STONE OF LESS WEIGHT.
 D_{50} = SPHERICAL DIAMETER OF STONE HAVING THE SAME WEIGHT AS W_{50}
 C = ISBASH CONSTANT (0.86 FOR HIGH TURBULENCE LEVEL FLOW AND 1.20 FOR LOW TURBULENCE LEVEL FLOW)
 g = ACCELERATION OF GRAVITY, FT/SEC²

Source: Hydraulic Design Chart Criteria Sheet 712 Velocity vs. Stone Diameter

For Channel Bed

	V =	5	V =	9
For Angular Riprap	D_{50} =	0.32	D_{50} =	1.04
	W_{50} =	3	W_{50} =	96
For Rounded Stone (add 25%)	D_{50} =	0.40	D_{50} =	1.30
	W_{50} =	6	W_{50} =	188

For Riffles and J-Hook Vanes

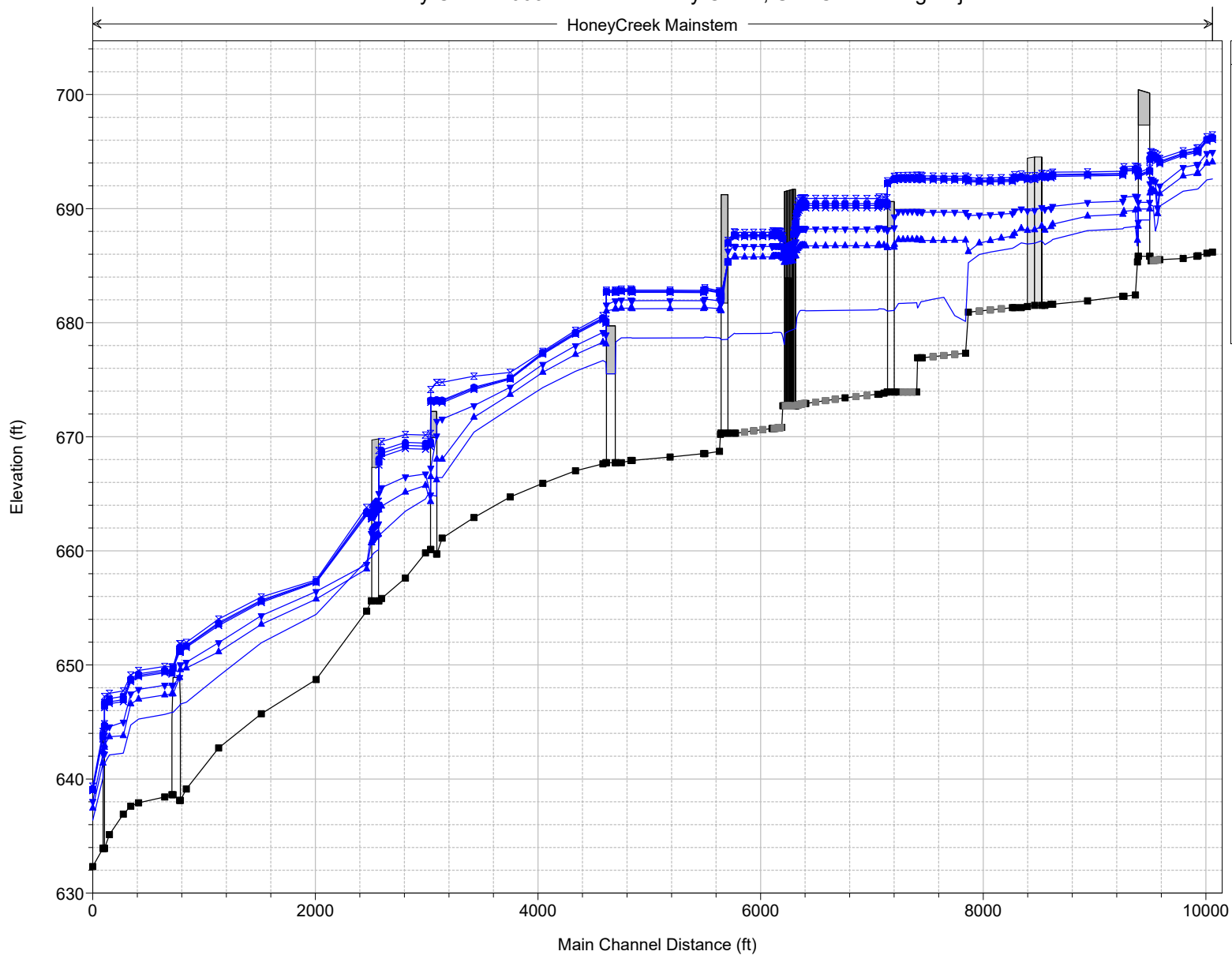
	V =	9	V =	14	V =	16
For Angular Riprap	D_{50} =	1.04	D_{50} =	2.51	D_{50} =	3.28
	W_{50} =	96	W_{50} =	1365	W_{50} =	3041
For Rounded Stone (add 25%)	D_{50} =	1.30	D_{50} =	3.14	D_{50} =	4.10
	W_{50} =	188	W_{50} =	2666	W_{50} =	5940

*Uses Isbash constant for high turbulence level flow and assumes specific stone weight of 165 lb/ft³

APPENDIX A-1: HEC-RAS Model Results, Existing Conditions

Honey Creek 2009 Plan: Honey Creek, USACE Existing Adjust

HoneyCreek Mainstem



Legend

- WS 500-YR
- WS 100-YR
- WS 50-YR
- WS 25-YR
- WS 10-YR
- WS 5-YR
- WS 2-YR
- Ground

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem

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
Mainstem	1.94	2-YR	1160.00	686.19	692.60	688.74	692.69	0.000427	2.39	493.56	106.03	0.18
Mainstem	1.94	5-YR	1750.00	686.19	694.08	689.33	694.20	0.000442	2.84	626.59	115.20	0.19
Mainstem	1.94	10-YR	2140.00	686.19	694.93	689.69	695.08	0.000451	3.09	703.29	120.49	0.19
Mainstem	1.94	25-YR	2340.00	686.19	696.06	689.86	696.19	0.000345	2.95	804.56	127.47	0.17
Mainstem	1.94	50-YR	2340.00	686.19	696.17	689.86	696.30	0.000332	2.91	814.35	128.15	0.17
Mainstem	1.94	100-YR	2340.00	686.19	696.28	689.86	696.40	0.000318	2.88	824.42	128.84	0.17
Mainstem	1.94	500-YR	2340.00	686.19	696.46	689.86	696.58	0.000298	2.82	841.12	129.99	0.16
Mainstem	1.935	2-YR	1230.00	686.09	692.52	689.22	692.66	0.000716	3.13	431.24	95.21	0.23
Mainstem	1.935	5-YR	1890.00	686.09	693.98	689.95	694.17	0.000715	3.65	577.73	104.72	0.24
Mainstem	1.935	10-YR	2350.00	686.09	694.83	690.39	695.04	0.000709	3.92	665.90	110.22	0.25
Mainstem	1.935	25-YR	2980.00	686.09	695.91	690.97	696.15	0.000695	4.23	777.97	117.21	0.25
Mainstem	1.935	50-YR	3040.00	686.09	696.01	691.01	696.26	0.000692	4.25	788.66	117.88	0.25
Mainstem	1.935	100-YR	3090.00	686.09	696.10	691.05	696.34	0.000691	4.27	797.29	118.42	0.25
Mainstem	1.935	500-YR	3210.00	686.09	696.29	691.14	696.55	0.000687	4.32	817.84	119.70	0.25
Mainstem	1.9	2-YR	1230.00	685.87	691.74		692.47	0.006400	6.86	179.28	49.44	0.64
Mainstem	1.9	5-YR	1890.00	685.87	693.10		693.97	0.005952	7.49	252.27	57.58	0.63
Mainstem	1.9	10-YR	2350.00	685.87	693.88		694.84	0.005790	7.85	299.25	62.25	0.63
Mainstem	1.9	25-YR	2980.00	685.87	694.94		695.96	0.005317	8.10	368.10	68.53	0.62
Mainstem	1.9	50-YR	3040.00	685.87	695.04		696.06	0.005248	8.10	375.38	69.16	0.61
Mainstem	1.9	100-YR	3090.00	685.87	695.13		696.15	0.005200	8.11	381.22	69.66	0.61
Mainstem	1.9	500-YR	3210.00	685.87	695.33		696.35	0.005086	8.12	395.38	70.86	0.61
Mainstem	1.889	2-YR	1230.00	685.82	691.71		692.44	0.001517	6.86	179.25	49.26	0.63
Mainstem	1.889	5-YR	1890.00	685.82	693.07		693.94	0.001672	7.51	251.76	57.36	0.63
Mainstem	1.889	10-YR	2350.00	685.82	693.84		694.81	0.001747	7.88	298.27	62.01	0.63
Mainstem	1.889	25-YR	2980.00	685.82	694.90		695.92	0.001724	8.12	367.12	68.31	0.62
Mainstem	1.889	50-YR	3040.00	685.82	695.01		696.03	0.001713	8.12	374.41	68.94	0.61
Mainstem	1.889	100-YR	3090.00	685.82	695.09		696.12	0.001705	8.13	380.25	69.45	0.61
Mainstem	1.889	500-YR	3210.00	685.82	695.29		696.32	0.001687	8.14	394.40	70.65	0.61
Mainstem	1.865	2-YR	1230.00	685.62	691.52		692.25	0.001500	6.83	180.18	49.37	0.63
Mainstem	1.865	5-YR	1890.00	685.62	692.85		693.73	0.001685	7.53	250.91	57.28	0.63
Mainstem	1.865	10-YR	2350.00	685.62	693.61		694.59	0.001776	7.93	296.19	61.81	0.64
Mainstem	1.865	25-YR	2980.00	685.62	694.67		695.71	0.001748	8.17	364.97	68.12	0.62
Mainstem	1.865	50-YR	3040.00	685.62	694.78		695.81	0.001734	8.16	372.45	68.77	0.62
Mainstem	1.865	100-YR	3090.00	685.62	694.87		695.90	0.001725	8.17	378.42	69.29	0.62
Mainstem	1.865	500-YR	3210.00	685.62	695.07		696.11	0.001703	8.17	392.87	70.52	0.61
Mainstem	1.826	2-YR	1230.00	685.52	690.22	690.22	691.72	0.003265	9.85	124.92	42.17	1.01
Mainstem	1.826	5-YR	1890.00	685.52	691.31	691.31	693.13	0.003794	10.82	174.61	48.69	1.01
Mainstem	1.826	10-YR	2350.00	685.52	691.97	691.97	693.95	0.003975	11.29	208.20	52.64	1.00
Mainstem	1.826	25-YR	2980.00	685.52	693.93		695.25	0.002344	9.25	322.31	64.28	0.73
Mainstem	1.826	50-YR	3040.00	685.52	694.05		695.37	0.002302	9.20	330.37	65.02	0.72
Mainstem	1.826	100-YR	3090.00	685.52	694.15		695.46	0.002269	9.17	337.05	65.63	0.71
Mainstem	1.826	500-YR	3210.00	685.52	694.39		695.68	0.002194	9.09	353.12	67.08	0.70
Mainstem	1.82225*	2-YR	1230.00	685.50	688.72	689.59	691.50	0.008316	13.36	92.05	41.65	1.58
Mainstem	1.82225*	5-YR	1890.00	685.50	689.56	690.57	692.88	0.008198	14.61	129.33	47.54	1.56
Mainstem	1.82225*	10-YR	2350.00	685.50	690.06	691.14	693.68	0.008462	15.26	153.96	50.49	1.54
Mainstem	1.82225*	25-YR	2980.00	685.50	694.25		695.06	0.001202	7.23	413.09	74.92	0.53
Mainstem	1.82225*	50-YR	3040.00	685.50	694.37		695.18	0.001180	7.22	421.93	76.14	0.53
Mainstem	1.82225*	100-YR	3090.00	685.50	694.47		695.28	0.001163	7.22	429.39	79.17	0.52
Mainstem	1.82225*	500-YR	3210.00	685.50	694.69		695.51	0.001125	7.22	448.28	86.37	0.52
Mainstem	1.8185*	2-YR	1230.00	685.47	688.04	689.02	691.24	0.013982	14.35	85.70	46.67	1.87
Mainstem	1.8185*	5-YR	1890.00	685.47	691.47	689.91	692.17	0.001442	6.71	281.56	65.30	0.57
Mainstem	1.8185*	10-YR	2350.00	685.47	692.35	690.48	693.09	0.001356	6.90	340.38	69.40	0.55
Mainstem	1.8185*	25-YR	2980.00	685.47	694.40		694.98	0.000759	6.10	500.98	93.83	0.42
Mainstem	1.8185*	50-YR	3040.00	685.47	694.51		695.09	0.000751	6.11	511.92	96.04	0.42
Mainstem	1.8185*	100-YR	3090.00	685.47	694.61		695.19	0.000744	6.12	521.12	97.90	0.42
Mainstem	1.8185*	500-YR	3210.00	685.47	694.83		695.42	0.000728	6.15	543.70	102.60	0.41
Mainstem	1.81475*	2-YR	1230.00	685.44	690.23	688.53	690.62	0.000902	4.96	248.17	66.34	0.45
Mainstem	1.81475*	5-YR	1890.00	685.44	691.61		692.08	0.000844	5.51	343.45	72.20	0.44
Mainstem	1.81475*	10-YR	2350.00	685.44	692.48		693.00	0.000793	5.80	407.92	76.38	0.43
Mainstem	1.81475*	25-YR	2980.00	685.44	694.48		694.92	0.000503	5.35	586.36	103.43	0.35
Mainstem	1.81475*	50-YR	3040.00	685.44	694.60		695.04	0.000500	5.37	598.35	105.17	0.35
Mainstem	1.81475*	100-YR	3090.00	685.44	694.69		695.14	0.000497	5.39	608.35	106.60	0.35
Mainstem	1.81475*	500-YR	3210.00	685.44	694.91		695.37	0.000491	5.42	632.67	110.00	0.35
Mainstem	1.811	2-YR	1230.00	685.42	690.32		690.57	0.000326	3.98	309.32	76.70	0.35
Mainstem	1.811	5-YR	1890.00	685.42	691.71		692.03	0.000298	4.51	419.43	83.64	0.35
Mainstem	1.811	10-YR	2350.00	685.42	692.59		692.94	0.000278	4.80	489.32	93.18	0.34
Mainstem	1.811	25-YR	2980.00	685.42	694.55		694.88	0.000179	4.61	646.76	116.46	0.29
Mainstem	1.811	50-YR	3040.00	685.42	694.67		695.00	0.000178	4.63	655.91	117.94	0.29
Mainstem	1.811	100-YR	3090.00	685.42	694.76		695.10	0.000177	4.66	663.43	119.16	0.29
Mainstem	1.811	500-YR	3210.00	685.42	694.99		695.33	0.000175	4.71	681.30	122.26	0.28

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.809	2-YR	1230.00	685.82	690.07	688.55	690.50	0.000603	5.29	232.42	67.73	0.47
Mainstem	1.809	5-YR	1890.00	685.82	691.37	689.34	691.95	0.000542	6.09	310.52	70.75	0.47
Mainstem	1.809	10-YR	2350.00	685.82	692.18	689.82	692.85	0.000515	6.54	359.37	72.64	0.47
Mainstem	1.809	25-YR	2980.00	685.82	694.20	690.45	694.80	0.000314	6.20	480.53	77.34	0.39
Mainstem	1.809	50-YR	3040.00	685.82	694.31	690.50	694.92	0.000313	6.24	487.10	77.59	0.39
Mainstem	1.809	100-YR	3090.00	685.82	694.40	690.55	695.02	0.000311	6.27	492.50	77.80	0.39
Mainstem	1.809	500-YR	3210.00	685.82	694.62	690.67	695.24	0.000308	6.35	505.32	78.30	0.39
Mainstem	1.79	Bridge										
Mainstem	1.789	2-YR	1230.00	685.82	687.89	688.55	690.17	0.009515	12.11	101.59	64.10	1.64
Mainstem	1.789	5-YR	1890.00	685.82	688.44	689.34	691.49	0.008726	14.01	134.92	66.15	1.65
Mainstem	1.789	10-YR	2350.00	685.82	688.79	689.82	692.33	0.008356	15.09	155.77	67.43	1.65
Mainstem	1.789	25-YR	2980.00	685.82	693.15		693.95	0.000502	7.14	417.53	102.20	0.48
Mainstem	1.789	50-YR	3040.00	685.82	693.26		694.06	0.000498	7.17	423.71	104.13	0.48
Mainstem	1.789	100-YR	3090.00	685.82	693.34		694.15	0.000495	7.21	428.68	105.69	0.48
Mainstem	1.789	500-YR	3210.00	685.82	693.54		694.36	0.000487	7.29	440.53	109.41	0.47
Mainstem	1.788	2-YR	1230.00	685.32	686.72	687.63	689.83	0.017497	14.14	86.97	64.04	2.13
Mainstem	1.788	5-YR	1890.00	685.32	687.22	688.37	691.15	0.014769	15.90	118.84	65.48	2.06
Mainstem	1.788	10-YR	2350.00	685.32	691.05	688.84	691.70	0.000548	6.46	363.90	76.50	0.48
Mainstem	1.788	25-YR	2980.00	685.32	693.28		693.82	0.000293	5.89	506.35	99.49	0.37
Mainstem	1.788	50-YR	3040.00	685.32	693.38		693.93	0.000292	5.93	512.97	101.05	0.37
Mainstem	1.788	100-YR	3090.00	685.32	693.46		694.02	0.000291	5.96	518.31	102.31	0.37
Mainstem	1.788	500-YR	3210.00	685.32	693.66		694.23	0.000290	6.04	531.02	105.30	0.37
Mainstem	1.784	2-YR	1230.00	682.42	688.44	686.79	688.93	0.001030	5.61	219.37	58.47	0.51
Mainstem	1.784	5-YR	1890.00	682.42	689.87	687.78	690.45	0.001075	6.11	309.34	67.31	0.50
Mainstem	1.784	10-YR	2350.00	682.42	691.09		691.64	0.000915	5.93	396.30	74.87	0.45
Mainstem	1.784	25-YR	2980.00	682.42	693.33		693.75	0.000477	5.23	570.01	103.47	0.34
Mainstem	1.784	50-YR	3040.00	682.42	693.43		693.86	0.000473	5.26	578.18	105.21	0.34
Mainstem	1.784	100-YR	3090.00	682.42	693.52		693.95	0.000471	5.28	584.77	106.62	0.34
Mainstem	1.784	500-YR	3210.00	682.42	693.72		694.16	0.000465	5.35	600.48	109.98	0.34
Mainstem	1.765	2-YR	1230.00	682.32	688.33		688.82	0.001035	5.62	218.92	58.42	0.51
Mainstem	1.765	5-YR	1890.00	682.32	689.75		690.34	0.001084	6.13	308.33	67.22	0.50
Mainstem	1.765	10-YR	2350.00	682.32	691.00		691.54	0.000913	5.92	396.67	74.91	0.45
Mainstem	1.765	25-YR	2980.00	682.32	693.28		693.70	0.000466	5.19	574.89	141.40	0.34
Mainstem	1.765	50-YR	3040.00	682.32	693.39		693.81	0.000462	5.22	583.23	146.75	0.34
Mainstem	1.765	100-YR	3090.00	682.32	693.47		693.90	0.000460	5.25	589.96	151.06	0.34
Mainstem	1.765	500-YR	3210.00	682.32	693.68		694.11	0.000455	5.31	606.01	161.33	0.34
Mainstem	1.763	2-YR	1230.00	682.32	688.23		688.80	0.000691	6.08	209.23	53.78	0.51
Mainstem	1.763	5-YR	1890.00	682.32	689.50		690.31	0.000695	7.22	280.80	59.07	0.54
Mainstem	1.763	10-YR	2350.00	682.32	690.65		691.50	0.000575	7.43	352.17	64.89	0.50
Mainstem	1.763	25-YR	2980.00	682.32	692.91		693.66	0.000350	7.02	527.46	95.18	0.41
Mainstem	1.763	50-YR	3040.00	682.32	693.01		693.77	0.000351	7.08	536.71	95.40	0.41
Mainstem	1.763	100-YR	3090.00	682.32	693.09		693.86	0.000352	7.13	544.14	95.57	0.41
Mainstem	1.763	500-YR	3210.00	682.32	693.27		694.07	0.000354	7.25	561.91	95.99	0.42
Mainstem	1.703	2-YR	1230.00	681.92	688.07		688.59	0.000575	5.75	225.25	57.78	0.47
Mainstem	1.703	5-YR	1890.00	681.92	689.35		690.08	0.000599	6.90	304.28	66.45	0.50
Mainstem	1.703	10-YR	2350.00	681.92	690.54		691.31	0.000496	7.10	388.93	75.96	0.47
Mainstem	1.703	25-YR	2980.00	681.92	692.86		693.54	0.000302	6.69	591.03	100.28	0.38
Mainstem	1.703	50-YR	3040.00	681.92	692.96		693.65	0.000303	6.75	600.79	101.49	0.39
Mainstem	1.703	100-YR	3090.00	681.92	693.04		693.74	0.000304	6.80	608.70	102.46	0.39
Mainstem	1.703	500-YR	3210.00	681.92	693.22		693.94	0.000308	6.92	627.90	104.78	0.39
Mainstem	1.643	2-YR	1230.00	681.62	687.30		688.10	0.008703	7.20	170.92	51.11	0.69
Mainstem	1.643	5-YR	1890.00	681.62	688.64		689.54	0.014319	7.64	247.45	64.10	0.69
Mainstem	1.643	10-YR	2350.00	681.62	690.19		690.86	0.010356	6.54	360.47	80.75	0.53
Mainstem	1.643	25-YR	2980.00	681.62	692.81		693.23	0.003682	5.23	618.64	129.39	0.34
Mainstem	1.643	50-YR	3040.00	681.62	692.92		693.34	0.003645	5.25	632.10	132.53	0.34
Mainstem	1.643	100-YR	3090.00	681.62	693.00		693.42	0.003619	5.27	643.16	135.05	0.34
Mainstem	1.643	500-YR	3210.00	681.62	693.20		693.63	0.003555	5.32	670.45	141.08	0.34
Mainstem	1.641	2-YR	1230.00	681.62	687.16		688.04	0.001837	7.53	163.28	49.09	0.73
Mainstem	1.641	5-YR	1890.00	681.62	688.42		689.47	0.001925	8.23	229.57	56.38	0.72
Mainstem	1.641	10-YR	2350.00	681.62	689.99		690.80	0.001321	7.22	325.44	65.20	0.57
Mainstem	1.641	25-YR	2980.00	681.62	692.70		693.21	0.000576	5.74	561.29	129.43	0.38
Mainstem	1.641	50-YR	3040.00	681.62	692.80		693.31	0.000571	5.76	574.51	133.08	0.38
Mainstem	1.641	100-YR	3090.00	681.62	692.88		693.40	0.000568	5.79	585.37	136.01	0.38
Mainstem	1.641	500-YR	3210.00	681.62	693.07		693.60	0.000560	5.85	612.31	143.01	0.38
Mainstem	1.630	2-YR	1230.00	681.52	686.85		687.92	0.001998	8.31	148.10	46.31	0.82
Mainstem	1.630	5-YR	1890.00	681.52	688.10		689.34	0.001796	8.94	211.64	55.44	0.80
Mainstem	1.630	10-YR	2350.00	681.52	689.94		690.74	0.000852	7.23	328.54	72.44	0.58
Mainstem	1.630	25-YR	2980.00	681.52	692.68		693.18	0.000300	5.77	570.82	106.61	0.37

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.630	50-YR	3040.00	681.52	692.78		693.29	0.000299	5.80	581.57	108.08	0.37
Mainstem	1.630	100-YR	3090.00	681.52	692.86		693.37	0.000298	5.83	590.27	109.27	0.37
Mainstem	1.630	500-YR	3210.00	681.52	693.05		693.58	0.000296	5.91	611.37	112.08	0.37
Mainstem	1.625	2-YR	1230.00	684.85	687.19	685.88	687.72	0.000908	5.86	209.85	58.23	0.54
Mainstem	1.625	5-YR	1890.00	684.85	688.46	686.74	689.14	0.000867	6.60	286.55	62.14	0.54
Mainstem	1.625	10-YR	2350.00	684.85	690.09	687.28	690.65	0.000540	6.00	392.15	67.67	0.43
Mainstem	1.625	25-YR	2980.00	684.85	692.72	687.97	693.15	0.000321	5.27	583.92	76.50	0.33
Mainstem	1.625	50-YR	3040.00	684.85	692.82	688.01	693.26	0.000324	5.32	591.50	76.68	0.33
Mainstem	1.625	100-YR	3090.00	684.85	692.90	688.08	693.34	0.000326	5.35	597.59	76.83	0.33
Mainstem	1.625	500-YR	3210.00	684.85	693.09	688.20	693.55	0.000332	5.45	612.10	77.17	0.33
Mainstem	1.613	2-YR	1230.00	684.85	686.96	685.92	687.64	0.001166	6.61	186.04	51.30	0.61
Mainstem	1.613	5-YR	1890.00	684.85	688.14	686.82	689.05	0.001170	7.63	247.58	52.78	0.62
Mainstem	1.613	10-YR	2350.00	684.85	689.85	687.38	690.59	0.000719	6.92	339.40	54.91	0.49
Mainstem	1.613	25-YR	2980.00	684.85	692.54	688.07	693.11	0.000456	6.07	497.54	64.35	0.39
Mainstem	1.613	50-YR	3040.00	684.85	692.64	688.14	693.22	0.000461	6.13	503.68	64.43	0.39
Mainstem	1.613	100-YR	3090.00	684.85	692.71	688.20	693.30	0.000465	6.18	508.59	64.49	0.39
Mainstem	1.613	500-YR	3210.00	684.85	692.89	688.33	693.51	0.000475	6.29	520.27	64.64	0.39
Mainstem	1.601	2-YR	1230.00	684.75	686.89	685.82	687.56	0.001132	6.55	187.87	51.34	0.60
Mainstem	1.601	5-YR	1890.00	684.75	688.08	686.72	688.97	0.001144	7.58	249.45	52.82	0.61
Mainstem	1.601	10-YR	2350.00	684.75	689.81	687.27	690.54	0.000697	6.85	343.00	54.99	0.48
Mainstem	1.601	25-YR	2980.00	684.75	692.52	687.98	693.08	0.000445	6.02	502.97	65.17	0.38
Mainstem	1.601	50-YR	3040.00	684.75	692.61	688.04	693.19	0.000450	6.08	509.17	65.24	0.38
Mainstem	1.601	100-YR	3090.00	684.75	692.69	688.10	693.27	0.000454	6.12	514.13	65.31	0.38
Mainstem	1.601	500-YR	3210.00	684.75	692.87	688.23	693.47	0.000464	6.24	525.92	65.46	0.39
Mainstem	1.590	2-YR	1230.00	681.32	686.99		687.45	0.000715	5.39	228.04	63.51	0.50
Mainstem	1.590	5-YR	1890.00	681.32	688.25		688.83	0.000660	6.06	312.23	70.20	0.50
Mainstem	1.590	10-YR	2350.00	681.32	689.98		690.43	0.000361	5.42	441.12	79.42	0.39
Mainstem	1.590	25-YR	2980.00	681.32	692.66		693.00	0.000168	4.71	677.23	101.22	0.28
Mainstem	1.590	50-YR	3040.00	681.32	692.76		693.10	0.000168	4.75	687.29	102.50	0.28
Mainstem	1.590	100-YR	3090.00	681.32	692.84		693.19	0.000168	4.78	695.45	103.53	0.28
Mainstem	1.590	500-YR	3210.00	681.32	693.03		693.39	0.000169	4.86	715.17	105.98	0.28
Mainstem	1.579	2-YR	1230.00	681.32	686.62		687.36	0.001642	6.87	178.92	53.81	0.66
Mainstem	1.579	5-YR	1890.00	681.32	687.83		688.73	0.001790	7.61	248.31	61.05	0.67
Mainstem	1.579	10-YR	2350.00	681.32	689.79		690.38	0.001001	6.19	379.36	72.80	0.48
Mainstem	1.579	25-YR	2980.00	681.32	692.60		692.98	0.000412	4.95	662.23	152.80	0.32
Mainstem	1.579	50-YR	3040.00	681.32	692.70		693.08	0.000409	4.98	677.77	157.21	0.32
Mainstem	1.579	100-YR	3090.00	681.32	692.78		693.17	0.000408	5.00	690.52	160.74	0.32
Mainstem	1.579	500-YR	3210.00	681.32	692.97		693.37	0.000405	5.06	722.04	169.15	0.32
Mainstem	1.575	2-YR	1230.00	681.32	686.52		687.32	0.001223	7.20	193.45	74.03	0.66
Mainstem	1.575	5-YR	1890.00	681.32	687.59		688.68	0.001205	8.46	277.16	82.92	0.68
Mainstem	1.575	10-YR	2350.00	681.32	689.57		690.35	0.000554	7.24	450.42	98.82	0.49
Mainstem	1.575	25-YR	2980.00	681.32	692.38		692.95	0.000265	6.31	749.23	149.74	0.36
Mainstem	1.575	50-YR	3040.00	681.32	692.47		693.06	0.000266	6.37	761.20	152.27	0.36
Mainstem	1.575	100-YR	3090.00	681.32	692.55		693.14	0.000268	6.42	770.86	154.28	0.36
Mainstem	1.575	500-YR	3210.00	681.32	692.72		693.34	0.000271	6.54	794.33	159.07	0.37
Mainstem	1.5563*	2-YR	1230.00	681.22	686.36		687.19	0.001312	7.36	181.16	70.26	0.68
Mainstem	1.5563*	5-YR	1890.00	681.22	687.41	686.52	688.55	0.001284	8.64	264.85	85.74	0.71
Mainstem	1.5563*	10-YR	2350.00	681.22	689.53		690.29	0.000541	7.19	454.23	108.64	0.49
Mainstem	1.5563*	25-YR	2980.00	681.22	692.36		692.92	0.000257	6.25	758.50	166.74	0.36
Mainstem	1.5563*	50-YR	3040.00	681.22	692.45		693.03	0.000258	6.31	770.47	169.61	0.36
Mainstem	1.5563*	100-YR	3090.00	681.22	692.53		693.11	0.000260	6.36	780.13	171.89	0.36
Mainstem	1.5563*	500-YR	3210.00	681.22	692.70		693.31	0.000263	6.48	803.56	177.32	0.36
Mainstem	1.5375*	2-YR	1230.00	681.12	686.19		687.06	0.001397	7.51	175.42	65.73	0.70
Mainstem	1.5375*	5-YR	1890.00	681.12	687.19		688.41	0.001416	8.92	248.23	80.33	0.74
Mainstem	1.5375*	10-YR	2350.00	681.12	689.47		690.24	0.000532	7.17	455.17	115.97	0.48
Mainstem	1.5375*	25-YR	2980.00	681.12	692.34		692.90	0.000251	6.22	764.78	186.65	0.35
Mainstem	1.5375*	50-YR	3040.00	681.12	692.43		693.00	0.000253	6.28	776.72	190.04	0.35
Mainstem	1.5375*	100-YR	3090.00	681.12	692.51		693.08	0.000254	6.33	786.34	192.73	0.36
Mainstem	1.5375*	500-YR	3210.00	681.12	692.68		693.28	0.000258	6.45	809.70	199.15	0.36
Mainstem	1.5188*	2-YR	1230.00	681.02	685.98	685.36	686.91	0.001554	7.75	168.42	65.06	0.74
Mainstem	1.5188*	5-YR	1890.00	681.02	686.98	686.33	688.26	0.001542	9.15	238.79	75.65	0.77
Mainstem	1.5188*	10-YR	2350.00	681.02	689.43		690.19	0.000520	7.13	457.57	116.26	0.48
Mainstem	1.5188*	25-YR	2980.00	681.02	692.32		692.87	0.000245	6.17	772.42	210.05	0.35
Mainstem	1.5188*	50-YR	3040.00	681.02	692.41		692.97	0.000246	6.23	784.34	211.84	0.35
Mainstem	1.5188*	100-YR	3090.00	681.02	692.49		693.06	0.000248	6.28	793.94	213.26	0.35
Mainstem	1.5188*	500-YR	3210.00	681.02	692.66		693.25	0.000251	6.40	817.25	216.66	0.35
Mainstem	1.50	2-YR	1230.00	680.92	685.26	685.26	686.66	0.003027	9.48	131.12	54.12	1.00
Mainstem	1.50	5-YR	1890.00	680.92	686.24	686.21	688.02	0.002620	10.75	193.36	69.80	0.97
Mainstem	1.50	10-YR	2350.00	680.92	689.38	686.81	690.13	0.000507	7.07	461.58	103.88	0.47

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.50	25-YR	2980.00	680.92	692.36	687.55	692.82	0.000213	5.81	963.68	228.09	0.33
Mainstem	1.50	50-YR	3040.00	680.92	692.45	687.62	692.92	0.000212	5.84	986.16	229.95	0.33
Mainstem	1.50	100-YR	3090.00	680.92	692.53	687.67	693.01	0.000212	5.87	1004.20	231.44	0.33
Mainstem	1.50	500-YR	3210.00	680.92	692.72	687.79	693.20	0.000211	5.93	1047.77	234.99	0.33
Mainstem	1.495	2-YR	1230.00	677.32	680.12	681.66	686.04	0.026572	19.52	63.00	38.78	2.70
Mainstem	1.495	5-YR	1890.00	677.32	687.22	682.59	687.58	0.000184	4.82	468.66	79.04	0.29
Mainstem	1.495	10-YR	2350.00	677.32	689.68	683.19	690.00	0.000117	4.57	689.69	103.59	0.24
Mainstem	1.495	25-YR	2980.00	677.32	692.49	683.93	692.76	0.000078	4.35	1212.92	244.66	0.21
Mainstem	1.495	50-YR	3040.00	677.32	692.59	684.00	692.86	0.000078	4.39	1236.83	246.51	0.21
Mainstem	1.495	100-YR	3090.00	677.32	692.67	684.05	692.94	0.000079	4.42	1256.04	247.99	0.21
Mainstem	1.495	500-YR	3210.00	677.32	692.85	684.20	693.14	0.000080	4.50	1302.38	251.51	0.21
Mainstem	1.47675*	2-YR	1230.00	677.22	680.62	681.56	683.69	0.010064	14.06	87.48	42.40	1.73
Mainstem	1.47675*	5-YR	1890.00	677.22	687.22	687.56	687.56	0.000174	4.73	489.41	85.69	0.29
Mainstem	1.47675*	10-YR	2350.00	677.22	689.68	689.98	689.98	0.000109	4.45	723.80	124.84	0.24
Mainstem	1.47675*	25-YR	2980.00	677.22	692.48	689.75	692.75	0.000077	4.34	1060.79	282.76	0.21
Mainstem	1.47675*	50-YR	3040.00	677.22	692.58	692.85	692.85	0.000078	4.40	1075.17	285.22	0.21
Mainstem	1.47675*	100-YR	3090.00	677.22	692.65	692.93	692.93	0.000079	4.44	1086.81	287.19	0.21
Mainstem	1.47675*	500-YR	3210.00	677.22	692.83	693.13	693.13	0.000081	4.54	1115.12	291.87	0.21
Mainstem	1.4585*	2-YR	1230.00	677.12	682.23	681.46	683.09	0.001359	7.45	167.98	51.60	0.69
Mainstem	1.4585*	5-YR	1890.00	677.12	687.21	687.54	687.54	0.000165	4.65	512.45	93.25	0.28
Mainstem	1.4585*	10-YR	2350.00	677.12	689.68	689.96	689.96	0.000104	4.36	755.75	142.35	0.23
Mainstem	1.4585*	25-YR	2980.00	677.12	692.49	692.74	692.74	0.000073	4.24	1139.16	328.00	0.20
Mainstem	1.4585*	50-YR	3040.00	677.12	692.58	692.84	692.84	0.000073	4.29	1156.21	328.00	0.20
Mainstem	1.4585*	100-YR	3090.00	677.12	692.66	692.92	692.92	0.000074	4.33	1169.80	328.00	0.20
Mainstem	1.4585*	500-YR	3210.00	677.12	692.84	693.11	693.11	0.000076	4.42	1202.20	328.00	0.21
Mainstem	1.44025*	2-YR	1230.00	677.02	682.06	681.29	682.95	0.001449	7.60	164.79	51.90	0.71
Mainstem	1.44025*	5-YR	1890.00	677.02	687.21	687.52	687.52	0.000156	4.54	535.62	102.16	0.27
Mainstem	1.44025*	10-YR	2350.00	677.02	689.69	689.95	689.95	0.000098	4.26	787.64	158.69	0.22
Mainstem	1.44025*	25-YR	2980.00	677.02	692.50	692.73	692.73	0.000067	4.08	1232.57	358.00	0.19
Mainstem	1.44025*	50-YR	3040.00	677.02	692.59	692.83	692.83	0.000067	4.12	1251.01	358.00	0.19
Mainstem	1.44025*	100-YR	3090.00	677.02	692.67	692.91	692.91	0.000068	4.16	1265.72	358.00	0.20
Mainstem	1.44025*	500-YR	3210.00	677.02	692.85	693.10	693.10	0.000070	4.25	1300.76	358.00	0.20
Mainstem	1.422	2-YR	1230.00	676.92	681.85	681.08	682.80	0.001605	7.83	159.62	51.99	0.75
Mainstem	1.422	5-YR	1890.00	676.92	687.21	687.50	687.50	0.000145	4.42	556.97	111.83	0.26
Mainstem	1.422	10-YR	2350.00	676.92	689.69	689.93	689.93	0.000090	4.12	820.59	175.22	0.22
Mainstem	1.422	25-YR	2980.00	676.92	692.51	692.71	692.71	0.000061	3.93	1211.06	383.00	0.18
Mainstem	1.422	50-YR	3040.00	676.92	692.60	692.81	692.81	0.000062	3.97	1224.53	383.00	0.19
Mainstem	1.422	100-YR	3090.00	676.92	692.68	692.89	692.89	0.000063	4.01	1235.26	383.00	0.19
Mainstem	1.422	500-YR	3210.00	676.92	692.86	693.09	693.09	0.000064	4.10	1260.83	383.00	0.19
Mainstem	1.420	2-YR	1230.00	676.92	681.84	681.28	682.77	0.002152	7.75	158.68	51.30	0.78
Mainstem	1.420	5-YR	1890.00	676.92	687.28	687.46	687.46	0.000269	3.45	552.61	113.32	0.24
Mainstem	1.420	10-YR	2350.00	676.92	689.76	689.90	689.90	0.000136	3.06	813.36	182.69	0.18
Mainstem	1.420	25-YR	2980.00	676.92	692.57	692.69	692.69	0.000081	2.84	1195.59	378.00	0.15
Mainstem	1.420	50-YR	3040.00	676.92	692.66	692.79	692.79	0.000082	2.87	1208.94	378.00	0.15
Mainstem	1.420	100-YR	3090.00	676.92	692.74	692.87	692.87	0.000082	2.89	1219.60	378.00	0.15
Mainstem	1.420	500-YR	3210.00	676.92	692.93	693.06	693.06	0.000084	2.95	1244.98	378.00	0.15
Mainstem	1.414	2-YR	1230.00	676.92	681.29	681.29	682.65	0.003446	9.37	131.33	48.62	1.00
Mainstem	1.414	5-YR	1890.00	676.92	687.24	687.45	687.45	0.000196	3.70	578.11	125.24	0.24
Mainstem	1.414	10-YR	2350.00	676.92	689.72	689.90	689.90	0.000115	3.42	834.75	181.99	0.19
Mainstem	1.414	25-YR	2980.00	676.92	692.53	692.68	692.68	0.000075	3.25	1201.04	388.00	0.16
Mainstem	1.414	50-YR	3040.00	676.92	692.62	692.78	692.78	0.000076	3.29	1213.79	388.00	0.16
Mainstem	1.414	100-YR	3090.00	676.92	692.70	692.86	692.86	0.000077	3.32	1223.96	388.00	0.16
Mainstem	1.414	500-YR	3210.00	676.92	692.89	693.05	693.05	0.000078	3.39	1248.19	388.00	0.16
Mainstem	1.413	2-YR	1230.00	673.92	681.75	678.29	681.96	0.000375	3.67	335.34	69.66	0.29
Mainstem	1.413	5-YR	1890.00	673.92	687.30	687.39	687.39	0.000071	2.40	829.65	128.51	0.14
Mainstem	1.413	10-YR	2350.00	673.92	689.77	689.85	689.85	0.000049	2.33	1096.75	187.72	0.12
Mainstem	1.413	25-YR	2980.00	673.92	692.56	692.64	692.64	0.000037	2.32	1471.60	388.00	0.11
Mainstem	1.413	50-YR	3040.00	673.92	692.66	692.74	692.74	0.000037	2.34	1484.74	388.00	0.11
Mainstem	1.413	100-YR	3090.00	673.92	692.74	692.82	692.82	0.000038	2.37	1495.21	388.00	0.11
Mainstem	1.413	500-YR	3210.00	673.92	692.92	693.01	693.01	0.000039	2.42	1520.18	388.00	0.11
Mainstem	1.40475*	2-YR	1230.00	673.92	681.73	681.73	681.94	0.000379	3.68	334.28	69.62	0.30
Mainstem	1.40475*	5-YR	1890.00	673.92	687.30	687.39	687.39	0.000072	2.43	818.70	121.58	0.14
Mainstem	1.40475*	10-YR	2350.00	673.92	689.76	689.85	689.85	0.000051	2.37	1081.22	192.66	0.12
Mainstem	1.40475*	25-YR	2980.00	673.92	692.55	692.64	692.64	0.000039	2.39	1432.08	378.50	0.11
Mainstem	1.40475*	50-YR	3040.00	673.92	692.65	692.74	692.74	0.000040	2.42	1444.26	378.50	0.11
Mainstem	1.40475*	100-YR	3090.00	673.92	692.73	692.82	692.82	0.000040	2.45	1453.96	378.50	0.11
Mainstem	1.40475*	500-YR	3210.00	673.92	692.91	693.01	693.01	0.000042	2.51	1477.10	378.50	0.11
Mainstem	1.3965*	2-YR	1230.00	673.92	681.71	681.71	681.92	0.000382	3.69	333.16	69.56	0.30
Mainstem	1.3965*	5-YR	1890.00	673.92	687.29	687.39	687.39	0.000073	2.44	809.21	114.11	0.14

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.3965*	10-YR	2350.00	673.92	689.76		689.84	0.000052	2.39	1065.38	185.72	0.12
Mainstem	1.3965*	25-YR	2980.00	673.92	692.55		692.64	0.000040	2.43	1390.61	361.00	0.11
Mainstem	1.3965*	50-YR	3040.00	673.92	692.64		692.74	0.000041	2.46	1401.86	361.00	0.11
Mainstem	1.3965*	100-YR	3090.00	673.92	692.72		692.81	0.000042	2.48	1410.83	361.00	0.11
Mainstem	1.3965*	500-YR	3210.00	673.92	692.91		693.00	0.000043	2.55	1432.20	361.00	0.11
Mainstem	1.38825*	2-YR	1230.00	673.92	681.70		681.91	0.000386	3.70	332.08	69.51	0.30
Mainstem	1.38825*	5-YR	1890.00	673.92	687.29		687.38	0.000073	2.44	800.76	105.92	0.14
Mainstem	1.38825*	10-YR	2350.00	673.92	689.75		689.84	0.000052	2.40	1046.98	173.63	0.12
Mainstem	1.38825*	25-YR	2980.00	673.92	692.54		692.63	0.000041	2.45	1346.39	343.50	0.11
Mainstem	1.38825*	50-YR	3040.00	673.92	692.64		692.73	0.000042	2.48	1356.71	343.50	0.11
Mainstem	1.38825*	100-YR	3090.00	673.92	692.72		692.81	0.000043	2.51	1364.96	343.50	0.11
Mainstem	1.38825*	500-YR	3210.00	673.92	692.90		693.00	0.000044	2.57	1384.60	343.50	0.12
Mainstem	1.380	2-YR	1230.00	673.92	681.68		681.89	0.000389	3.72	330.93	69.45	0.30
Mainstem	1.380	5-YR	1890.00	673.92	687.29		687.38	0.000073	2.45	792.60	102.10	0.14
Mainstem	1.380	10-YR	2350.00	673.92	689.75		689.84	0.000053	2.41	1024.91	150.44	0.12
Mainstem	1.380	25-YR	2980.00	673.92	692.54		692.63	0.000042	2.47	1298.35	326.00	0.11
Mainstem	1.380	50-YR	3040.00	673.92	692.63		692.73	0.000043	2.51	1307.77	326.00	0.11
Mainstem	1.380	100-YR	3090.00	673.92	692.71		692.81	0.000044	2.54	1315.28	326.00	0.12
Mainstem	1.380	500-YR	3210.00	673.92	692.89		693.00	0.000045	2.60	1333.19	326.00	0.12
Mainstem	1.373	2-YR	1230.00	673.92	681.13	678.40	681.75	0.000437	6.33	194.26	47.33	0.44
Mainstem	1.373	5-YR	1890.00	673.92	686.87	679.64	687.28	0.000125	5.16	366.27	78.81	0.26
Mainstem	1.373	10-YR	2350.00	673.92	689.28	680.42	689.73	0.000106	5.36	438.77	97.16	0.25
Mainstem	1.373	25-YR	2980.00	673.92	692.47	681.41	692.62	0.000038	3.20	1474.96	341.93	0.14
Mainstem	1.373	50-YR	3040.00	673.92	692.57	681.50	692.72	0.000039	3.23	1508.61	348.94	0.14
Mainstem	1.373	100-YR	3090.00	673.92	692.64	681.57	692.80	0.000039	3.25	1535.92	354.53	0.14
Mainstem	1.373	500-YR	3210.00	673.92	692.83	681.75	692.98	0.000040	3.30	1603.01	367.91	0.15
Mainstem	1.37		Bridge									
Mainstem	1.361	2-YR	1230.00	673.92	681.03	678.40	681.67	0.000461	6.43	191.26	47.04	0.45
Mainstem	1.361	5-YR	1890.00	673.92	686.66	679.64	687.09	0.000132	5.25	360.07	77.35	0.27
Mainstem	1.361	10-YR	2350.00	673.92	688.11	680.41	688.64	0.000140	5.82	403.60	87.61	0.28
Mainstem	1.361	25-YR	2980.00	673.92	690.15	681.41	690.40	0.000076	4.05	898.67	127.35	0.19
Mainstem	1.361	50-YR	3040.00	673.92	690.35	681.50	690.60	0.000075	4.06	925.65	134.45	0.19
Mainstem	1.361	100-YR	3090.00	673.92	690.52	681.58	690.77	0.000074	4.07	948.70	140.23	0.19
Mainstem	1.361	500-YR	3210.00	673.92	690.96	681.73	691.22	0.000072	4.09	1023.01	209.37	0.19
Mainstem	1.356	2-YR	1230.00	673.82	681.20	678.17	681.49	0.000310	4.29	286.84	66.89	0.32
Mainstem	1.356	5-YR	1890.00	673.82	686.79	679.12	686.95	0.000071	3.27	577.38	91.67	0.17
Mainstem	1.356	10-YR	2350.00	673.82	688.27	679.67	688.47	0.000072	3.59	654.52	100.94	0.18
Mainstem	1.356	25-YR	2980.00	673.82	690.20	680.36	690.33	0.000073	2.93	1103.46	117.72	0.15
Mainstem	1.356	50-YR	3040.00	673.82	690.41	680.43	690.54	0.000072	2.94	1128.09	121.02	0.14
Mainstem	1.356	100-YR	3090.00	673.82	690.58	680.47	690.71	0.000071	2.94	1148.63	123.71	0.14
Mainstem	1.356	500-YR	3210.00	673.82	691.02	680.59	691.15	0.000069	2.95	1204.82	130.78	0.14
Mainstem	1.347	2-YR	1230.00	673.72	681.22	678.10	681.46	0.000444	3.94	312.55	67.61	0.32
Mainstem	1.347	5-YR	1890.00	673.72	686.83	679.08	686.93	0.000081	2.52	768.72	104.45	0.14
Mainstem	1.347	10-YR	2350.00	673.72	688.33	679.67	688.44	0.000076	2.69	900.48	120.83	0.14
Mainstem	1.347	25-YR	2980.00	673.72	690.20	680.39	690.33	0.000070	2.88	1208.53	145.59	0.14
Mainstem	1.347	50-YR	3040.00	673.72	690.41	680.46	690.54	0.000069	2.89	1238.80	147.56	0.14
Mainstem	1.347	100-YR	3090.00	673.72	690.58	680.50	690.71	0.000068	2.89	1263.74	149.15	0.14
Mainstem	1.347	500-YR	3210.00	673.72	691.02	680.62	691.15	0.000065	2.90	1330.59	153.35	0.14
Mainstem	1.345	2-YR	1230.00	673.72	681.13	678.06	681.44	0.000258	4.52	293.14	60.75	0.33
Mainstem	1.345	5-YR	1890.00	673.72	686.74	678.99	686.92	0.000062	3.45	740.54	105.71	0.18
Mainstem	1.345	10-YR	2350.00	673.72	688.22	679.59	688.43	0.000062	3.77	882.54	127.24	0.18
Mainstem	1.345	25-YR	2980.00	673.72	690.06	680.33	690.32	0.000063	4.14	1196.92	166.41	0.19
Mainstem	1.345	50-YR	3040.00	673.72	690.27	680.40	690.52	0.000062	4.15	1231.31	167.85	0.19
Mainstem	1.345	100-YR	3090.00	673.72	690.44	680.46	690.69	0.000062	4.17	1259.49	169.02	0.19
Mainstem	1.345	500-YR	3210.00	673.72	690.88	680.59	691.13	0.000060	4.19	1334.79	172.11	0.19
Mainstem	1.3263*	2-YR	1230.00	673.62	681.11	677.96	681.42	0.000245	4.44	305.24	65.10	0.32
Mainstem	1.3263*	5-YR	1890.00	673.62	686.74	678.89	686.91	0.000059	3.39	791.04	123.99	0.18
Mainstem	1.3263*	10-YR	2350.00	673.62	688.22	679.48	688.42	0.000060	3.70	943.99	153.04	0.18
Mainstem	1.3263*	25-YR	2980.00	673.62	690.07	680.23	690.31	0.000060	4.05	1362.01	207.07	0.18
Mainstem	1.3263*	50-YR	3040.00	673.62	690.28	680.30	690.51	0.000059	4.06	1404.85	208.18	0.18
Mainstem	1.3263*	100-YR	3090.00	673.62	690.44	680.36	690.68	0.000059	4.07	1439.88	209.17	0.18
Mainstem	1.3263*	500-YR	3210.00	673.62	690.89	680.50	691.12	0.000057	4.08	1533.04	211.77	0.18
Mainstem	1.3077*	2-YR	1230.00	673.52	681.10	677.86	681.39	0.000233	4.37	318.35	69.38	0.31
Mainstem	1.3077*	5-YR	1890.00	673.52	686.74	678.79	686.91	0.000056	3.34	838.80	142.39	0.17
Mainstem	1.3077*	10-YR	2350.00	673.52	688.22	679.40	688.41	0.000057	3.64	1003.07	179.16	0.18
Mainstem	1.3077*	25-YR	2980.00	673.52	690.07	680.14	690.30	0.000057	3.96	1523.59	246.93	0.18
Mainstem	1.3077*	50-YR	3040.00	673.52	690.28	680.21	690.50	0.000056	3.97	1574.79	247.99	0.18
Mainstem	1.3077*	100-YR	3090.00	673.52	690.45	680.26	690.67	0.000055	3.98	1616.56	248.84	0.18
Mainstem	1.3077*	500-YR	3210.00	673.52	690.89	680.41	691.11	0.000053	3.98	1727.46	251.10	0.18

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.289	2-YR	1230.00	673.42	681.08	677.76	681.36	0.000221	4.30	332.29	73.55	0.31
Mainstem	1.289	5-YR	1890.00	673.42	686.74	678.70	686.90	0.000054	3.29	885.46	160.84	0.17
Mainstem	1.289	10-YR	2350.00	673.42	688.22	679.30	688.41	0.000055	3.58	1061.40	204.75	0.17
Mainstem	1.289	25-YR	2980.00	673.42	690.08	680.05	690.29	0.000054	3.88	1679.82	286.60	0.18
Mainstem	1.289	50-YR	3040.00	673.42	690.28	680.10	690.49	0.000053	3.89	1739.34	287.53	0.17
Mainstem	1.289	100-YR	3090.00	673.42	690.45	680.16	690.66	0.000053	3.89	1787.86	288.29	0.17
Mainstem	1.289	500-YR	3210.00	673.42	690.90	680.30	691.10	0.000051	3.89	1916.43	290.29	0.17
Mainstem	1.2728*	2-YR	1230.00	673.29	681.07		681.34	0.000207	4.22	339.31	74.09	0.30
Mainstem	1.2728*	5-YR	1890.00	673.29	686.74		686.89	0.000052	3.23	869.63	156.73	0.17
Mainstem	1.2728*	10-YR	2350.00	673.29	688.22		688.40	0.000052	3.52	1228.11	195.24	0.17
Mainstem	1.2728*	25-YR	2980.00	673.29	690.08		690.28	0.000052	3.82	1658.31	258.34	0.17
Mainstem	1.2728*	50-YR	3040.00	673.29	690.28		690.49	0.000051	3.83	1711.93	259.37	0.17
Mainstem	1.2728*	100-YR	3090.00	673.29	690.45		690.66	0.000050	3.83	1755.68	260.21	0.17
Mainstem	1.2728*	500-YR	3210.00	673.29	690.90		691.10	0.000049	3.83	1871.73	262.41	0.17
Mainstem	1.2565*	2-YR	1230.00	673.17	681.06		681.32	0.000196	4.15	344.91	74.10	0.29
Mainstem	1.2565*	5-YR	1890.00	673.17	686.74		686.89	0.000050	3.20	967.64	151.03	0.16
Mainstem	1.2565*	10-YR	2350.00	673.17	688.22		688.39	0.000051	3.48	1213.15	181.67	0.17
Mainstem	1.2565*	25-YR	2980.00	673.17	690.07		690.28	0.000050	3.79	1601.67	230.18	0.17
Mainstem	1.2565*	50-YR	3040.00	673.17	690.28		690.48	0.000050	3.80	1649.44	231.29	0.17
Mainstem	1.2565*	100-YR	3090.00	673.17	690.45		690.65	0.000049	3.81	1688.42	232.19	0.17
Mainstem	1.2565*	500-YR	3210.00	673.17	690.89		691.09	0.000048	3.81	1791.99	234.57	0.17
Mainstem	1.2403*	2-YR	1230.00	673.04	681.05		681.30	0.000184	4.07	349.52	73.07	0.28
Mainstem	1.2403*	5-YR	1890.00	673.04	686.73		686.88	0.000048	3.18	941.46	140.36	0.16
Mainstem	1.2403*	10-YR	2350.00	673.04	688.22		688.39	0.000049	3.46	1166.32	164.99	0.17
Mainstem	1.2403*	25-YR	2980.00	673.04	690.07		690.27	0.000049	3.76	1511.28	202.11	0.17
Mainstem	1.2403*	50-YR	3040.00	673.04	690.28		690.48	0.000049	3.78	1553.22	203.29	0.17
Mainstem	1.2403*	100-YR	3090.00	673.04	690.45		690.65	0.000048	3.78	1587.47	204.24	0.17
Mainstem	1.2403*	500-YR	3210.00	673.04	690.89		691.09	0.000047	3.79	1678.65	206.77	0.17
Mainstem	1.224	2-YR	1230.00	672.92	681.04		681.28	0.000174	4.01	349.84	69.57	0.28
Mainstem	1.224	5-YR	1890.00	672.92	686.73		686.88	0.000048	3.17	886.19	125.61	0.16
Mainstem	1.224	10-YR	2350.00	672.92	688.21		688.38	0.000048	3.45	1086.73	146.36	0.16
Mainstem	1.224	25-YR	2980.00	672.92	690.07		690.27	0.000048	3.74	1387.11	174.09	0.17
Mainstem	1.224	50-YR	3040.00	672.92	690.28		690.47	0.000048	3.75	1423.27	175.33	0.17
Mainstem	1.224	100-YR	3090.00	672.92	690.44		690.64	0.000047	3.76	1452.84	176.34	0.17
Mainstem	1.224	500-YR	3210.00	672.92	690.89		691.08	0.000046	3.77	1531.72	179.01	0.16
Mainstem	1.222	2-YR	1230.00	672.92	681.08		681.26	0.000319	3.43	358.86	71.72	0.27
Mainstem	1.222	5-YR	1890.00	672.92	686.77		686.86	0.000062	2.32	884.42	120.23	0.13
Mainstem	1.222	10-YR	2350.00	672.92	688.27		688.36	0.000059	2.49	1079.05	141.45	0.13
Mainstem	1.222	25-YR	2980.00	672.92	690.13		690.24	0.000056	2.67	1369.12	166.47	0.13
Mainstem	1.222	50-YR	3040.00	672.92	690.34		690.44	0.000055	2.67	1403.71	167.71	0.13
Mainstem	1.222	100-YR	3090.00	672.92	690.51		690.61	0.000054	2.68	1432.02	168.72	0.13
Mainstem	1.222	500-YR	3210.00	672.92	690.95		691.06	0.000052	2.68	1507.47	171.38	0.12
Mainstem	1.2200*	2-YR	1230.00	672.90	681.08		681.26	0.000316	3.42	360.13	71.83	0.27
Mainstem	1.2200*	5-YR	1890.00	672.90	686.77		686.86	0.000062	2.32	878.36	114.76	0.13
Mainstem	1.2200*	10-YR	2350.00	672.90	688.26		688.36	0.000059	2.49	1058.68	135.80	0.13
Mainstem	1.2200*	25-YR	2980.00	672.90	690.13		690.24	0.000057	2.69	1293.47	160.93	0.13
Mainstem	1.2200*	50-YR	3040.00	672.90	690.33		690.44	0.000056	2.69	1319.49	162.22	0.13
Mainstem	1.2200*	100-YR	3090.00	672.90	690.50		690.61	0.000055	2.70	1340.65	163.27	0.13
Mainstem	1.2200*	500-YR	3210.00	672.90	690.94		691.06	0.000053	2.71	1396.42	166.05	0.13
Mainstem	1.2180*	2-YR	1230.00	672.88	681.08		681.26	0.000313	3.40	361.41	71.94	0.27
Mainstem	1.2180*	5-YR	1890.00	672.88	686.77		686.86	0.000061	2.31	868.34	109.72	0.13
Mainstem	1.2180*	10-YR	2350.00	672.88	688.26		688.36	0.000059	2.49	1026.08	130.07	0.13
Mainstem	1.2180*	25-YR	2980.00	672.88	690.12		690.24	0.000057	2.71	1223.33	155.55	0.13
Mainstem	1.2180*	50-YR	3040.00	672.88	690.33		690.44	0.000057	2.72	1245.19	156.91	0.13
Mainstem	1.2180*	100-YR	3090.00	672.88	690.50		690.61	0.000056	2.73	1262.96	158.02	0.13
Mainstem	1.2180*	500-YR	3210.00	672.88	690.94		691.05	0.000055	2.74	1309.81	160.80	0.13
Mainstem	1.2160*	2-YR	1230.00	672.86	681.07		681.25	0.000311	3.39	362.69	72.05	0.27
Mainstem	1.2160*	5-YR	1890.00	672.86	686.77		686.85	0.000061	2.34	824.53	105.70	0.13
Mainstem	1.2160*	10-YR	2350.00	672.86	688.26		688.36	0.000060	2.54	949.52	124.22	0.13
Mainstem	1.2160*	25-YR	2980.00	672.86	690.11		690.23	0.000059	2.78	1105.54	150.31	0.13
Mainstem	1.2160*	50-YR	3040.00	672.86	690.32		690.44	0.000058	2.80	1122.83	151.78	0.13
Mainstem	1.2160*	100-YR	3090.00	672.86	690.49		690.61	0.000058	2.81	1136.89	152.97	0.13
Mainstem	1.2160*	500-YR	3210.00	672.86	690.93		691.05	0.000056	2.83	1173.97	153.20	0.13
Mainstem	1.2140*	2-YR	1230.00	672.84	681.06		681.25	0.000241	3.48	353.66	72.09	0.26
Mainstem	1.2140*	5-YR	1890.00	672.84	686.74		686.85	0.000057	2.68	705.79	102.01	0.14
Mainstem	1.2140*	10-YR	2350.00	672.84	688.22		688.35	0.000059	2.95	797.47	117.70	0.14
Mainstem	1.2140*	25-YR	2980.00	672.84	690.06		690.23	0.000060	3.27	911.84	145.15	0.15
Mainstem	1.2140*	50-YR	3040.00	672.84	690.27		690.44	0.000060	3.29	924.54	145.60	0.15
Mainstem	1.2140*	100-YR	3090.00	672.84	690.43		690.60	0.000060	3.31	934.87	145.60	0.15

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Mainstem	1.2140*	500-YR	3210.00	672.84	690.87		691.05	0.000059	3.34	962.13	145.60	0.15
Mainstem	1.212	2-YR	1230.00	672.82	680.92		681.23	0.000204	4.47	275.13	71.37	0.30
Mainstem	1.212	5-YR	1890.00	672.82	686.62		686.84	0.000064	3.76	503.02	98.32	0.19
Mainstem	1.212	10-YR	2350.00	672.82	688.07		688.34	0.000069	4.19	560.85	109.06	0.20
Mainstem	1.212	25-YR	2980.00	672.82	689.87		690.21	0.000074	4.71	632.84	138.00	0.21
Mainstem	1.212	50-YR	3040.00	672.82	690.07		690.42	0.000074	4.74	640.91	138.00	0.21
Mainstem	1.212	100-YR	3090.00	672.82	690.23		690.59	0.000074	4.77	647.46	138.00	0.21
Mainstem	1.212	500-YR	3210.00	672.82	690.67		691.03	0.000073	4.83	664.82	138.00	0.21
Mainstem	1.2103*	2-YR	1230.00	672.79	680.77		681.20	0.000504	5.25	234.49	65.09	0.35
Mainstem	1.2103*	5-YR	1890.00	672.79	686.51		686.81	0.000160	4.42	427.81	87.06	0.22
Mainstem	1.2103*	10-YR	2350.00	672.79	687.93		688.31	0.000174	4.94	475.48	97.78	0.23
Mainstem	1.2103*	25-YR	2980.00	672.79	689.69		690.17	0.000189	5.57	534.70	111.74	0.25
Mainstem	1.2103*	50-YR	3040.00	672.79	689.88		690.37	0.000189	5.62	541.39	113.32	0.25
Mainstem	1.2103*	100-YR	3090.00	672.79	690.05		690.54	0.000189	5.65	546.82	114.60	0.25
Mainstem	1.2103*	500-YR	3210.00	672.79	690.47		690.98	0.000187	5.72	561.27	117.33	0.25
Mainstem	1.2087*	2-YR	1230.00	672.75	680.46		681.12	0.001249	6.52	188.69	55.61	0.44
Mainstem	1.2087*	5-YR	1890.00	672.75	686.31		686.77	0.000381	5.42	348.60	75.47	0.27
Mainstem	1.2087*	10-YR	2350.00	672.75	687.67		688.24	0.000420	6.09	385.74	81.55	0.29
Mainstem	1.2087*	25-YR	2980.00	672.75	689.35		690.09	0.000465	6.90	431.65	89.06	0.31
Mainstem	1.2087*	50-YR	3040.00	672.75	689.54		690.29	0.000464	6.96	436.93	89.92	0.31
Mainstem	1.2087*	100-YR	3090.00	672.75	689.70		690.46	0.000465	7.00	441.21	90.62	0.31
Mainstem	1.2087*	500-YR	3210.00	672.75	690.12		690.90	0.000460	7.09	452.69	92.50	0.31
Mainstem	1.207	2-YR	1230.00	672.72	679.48	678.07	680.89	0.001057	9.51	129.37	43.52	0.68
Mainstem	1.207	5-YR	1890.00	672.72	685.86	679.64	686.66	0.000233	7.18	263.32	60.37	0.36
Mainstem	1.207	10-YR	2350.00	672.72	687.08	680.63	688.11	0.000265	8.13	288.91	63.62	0.39
Mainstem	1.207	25-YR	2980.00	672.72	688.55	681.89	689.90	0.000303	9.32	319.90	67.56	0.42
Mainstem	1.207	50-YR	3040.00	672.72	688.73	681.98	690.10	0.000304	9.39	323.66	68.03	0.42
Mainstem	1.207	100-YR	3090.00	672.72	688.88	682.08	690.27	0.000304	9.46	326.69	68.42	0.42
Mainstem	1.207	500-YR	3210.00	672.72	689.27	682.28	690.70	0.000302	9.58	335.05	69.48	0.42
Mainstem	1.206	2-YR	1230.00	672.72	679.48	678.07	680.88	0.001861	9.52	129.26	21.00	0.65
Mainstem	1.206	5-YR	1890.00	672.72	685.86	679.64	686.66	0.000640	7.18	263.30	21.00	0.35
Mainstem	1.206	10-YR	2350.00	672.72	687.08	680.62	688.10	0.000779	8.13	288.89	21.00	0.38
Mainstem	1.206	25-YR	2980.00	672.72	688.46	681.89	689.88	0.001650	9.56	311.85		0.42
Mainstem	1.206	50-YR	3040.00	672.72	688.59	682.00	690.07	0.001717	9.75	311.85		0.43
Mainstem	1.206	100-YR	3090.00	672.72	688.70	682.08	690.23	0.001774	9.91	311.85		0.44
Mainstem	1.206	500-YR	3210.00	672.72	688.99	682.32	690.63	0.001915	10.29	311.85		0.45
Mainstem	1.205	2-YR	1230.00	672.72	679.46	678.07	680.87	0.001877	9.54	128.88	21.00	0.65
Mainstem	1.205	5-YR	1890.00	672.72	685.85	679.64	686.65	0.000641	7.18	263.20	21.00	0.35
Mainstem	1.205	10-YR	2350.00	672.72	687.07	680.62	688.10	0.000780	8.14	288.76	21.00	0.38
Mainstem	1.205	25-YR	2980.00	672.72	688.16	681.89	689.80	0.002024	10.28	289.80		0.46
Mainstem	1.205	50-YR	3040.00	672.72	688.28	682.00	689.99	0.002106	10.49	289.80		0.47
Mainstem	1.205	100-YR	3090.00	672.72	688.37	682.08	690.14	0.002176	10.66	289.80		0.48
Mainstem	1.205	500-YR	3210.00	672.72	688.64	682.32	690.54	0.002349	11.08	289.80		0.49
Mainstem	1.203	2-YR	1230.00	672.72	679.41	678.07	680.85	0.001914	9.61	127.99	21.00	0.65
Mainstem	1.203	5-YR	1890.00	672.72	685.84	679.64	686.64	0.001075	7.20	262.50		0.35
Mainstem	1.203	10-YR	2350.00	672.72	686.78	680.62	688.02	0.001663	8.95	262.50		0.42
Mainstem	1.203	25-YR	2980.00	672.72	687.66	681.89	689.67	0.002673	11.35	262.50		0.52
Mainstem	1.203	50-YR	3040.00	672.72	687.76	682.00	689.85	0.002782	11.58	262.50		0.53
Mainstem	1.203	100-YR	3090.00	672.72	687.84	682.08	690.00	0.002874	11.77	262.50		0.53
Mainstem	1.203	500-YR	3210.00	672.72	688.06	682.32	690.39	0.003102	12.23	262.50		0.55
Mainstem	1.202	2-YR	1230.00	672.72	679.40	678.07	680.84	0.001931	9.64	127.59	21.00	0.66
Mainstem	1.202	5-YR	1890.00	672.72	685.42	679.64	686.54	0.001721	8.49	222.60		0.42
Mainstem	1.202	10-YR	2350.00	672.72	686.13	680.62	687.86	0.002661	10.56	222.60		0.51
Mainstem	1.202	25-YR	2980.00	672.72	686.63	681.89	689.41	0.004279	13.39	222.60		0.63
Mainstem	1.202	50-YR	3040.00	672.72	686.68	682.00	689.58	0.004453	13.66	222.60		0.64
Mainstem	1.202	100-YR	3090.00	672.72	686.73	682.08	689.72	0.004601	13.88	222.60		0.65
Mainstem	1.202	500-YR	3210.00	672.72	686.86	682.32	690.09	0.004966	14.42	222.60		0.68
Mainstem	1.2001*	2-YR	1230.00	672.72	679.36	678.06	680.82	0.001968	9.71	126.73	21.00	0.66
Mainstem	1.2001*	5-YR	1890.00	672.72	685.40	679.64	686.52	0.001722	8.49	222.55		0.42
Mainstem	1.2001*	10-YR	2350.00	672.72	686.10	680.61	687.84	0.002663	10.56	222.55		0.51
Mainstem	1.2001*	25-YR	2980.00	672.72	686.58	681.89	689.37	0.004282	13.39	222.55		0.63
Mainstem	1.2001*	50-YR	3040.00	672.72	686.64	682.00	689.54	0.004456	13.66	222.55		0.65
Mainstem	1.2001*	100-YR	3090.00	672.72	686.68	682.10	689.68	0.004604	13.88	222.55		0.66
Mainstem	1.2001*	500-YR	3210.00	672.72	686.81	682.32	690.04	0.004968	14.42	222.55		0.68
Mainstem	1.1983*	2-YR	1230.00	672.72	679.32	678.06	680.80	0.002003	9.77	125.93	21.00	0.67
Mainstem	1.1983*	5-YR	1890.00	672.72	685.39	679.64	686.51	0.001722	8.49	222.55		0.42
Mainstem	1.1983*	10-YR	2350.00	672.72	686.08	680.63	687.81	0.002662	10.56	222.55		0.51
Mainstem	1.1983*	25-YR	2980.00	672.72	686.54	681.89	689.33	0.004281	13.39	222.55		0.64
Mainstem	1.1983*	50-YR	3040.00	672.72	686.59	682.00	689.49	0.004455	13.66	222.55		0.65

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.1983*	100-YR	3090.00	672.72	686.63	682.10	689.63	0.004603	13.88	222.55		0.66
Mainstem	1.1983*	500-YR	3210.00	672.72	686.76	682.31	689.99	0.004968	14.42	222.55		0.68
Mainstem	1.1964*	2-YR	1230.00	672.72	679.28	678.07	680.78	0.002040	9.83	125.11	21.00	0.68
Mainstem	1.1964*	5-YR	1890.00	672.72	685.37	679.63	686.49	0.001722	8.49	222.55		0.42
Mainstem	1.1964*	10-YR	2350.00	672.72	686.05	680.63	687.78	0.002662	10.56	222.55		0.51
Mainstem	1.1964*	25-YR	2980.00	672.72	686.50	681.89	689.28	0.004280	13.39	222.55		0.64
Mainstem	1.1964*	50-YR	3040.00	672.72	686.55	681.98	689.45	0.004455	13.66	222.55		0.65
Mainstem	1.1964*	100-YR	3090.00	672.72	686.59	682.10	689.58	0.004602	13.88	222.55		0.66
Mainstem	1.1964*	500-YR	3210.00	672.72	686.71	682.32	689.94	0.004967	14.42	222.55		0.68
Mainstem	1.1945*	2-YR	1230.00	672.72	679.23	678.07	680.76	0.002084	9.91	124.17	21.00	0.68
Mainstem	1.1945*	5-YR	1890.00	672.72	685.35	679.64	686.47	0.001722	8.49	222.56		0.42
Mainstem	1.1945*	10-YR	2350.00	672.72	686.03	680.64	687.76	0.002661	10.56	222.56		0.51
Mainstem	1.1945*	25-YR	2980.00	672.72	686.46	681.87	689.24	0.004280	13.39	222.56		0.64
Mainstem	1.1945*	50-YR	3040.00	672.72	686.51	682.00	689.41	0.004454	13.66	222.56		0.65
Mainstem	1.1945*	100-YR	3090.00	672.72	686.54	682.10	689.54	0.004602	13.88	222.56		0.66
Mainstem	1.1945*	500-YR	3210.00	672.72	686.66	682.31	689.89	0.004966	14.42	222.56		0.68
Mainstem	1.1926*	2-YR	1230.00	672.72	679.19	678.04	680.74	0.002129	9.98	123.22	21.00	0.69
Mainstem	1.1926*	5-YR	1890.00	672.72	685.34	679.64	686.46	0.001721	8.49	222.58		0.42
Mainstem	1.1926*	10-YR	2350.00	672.72	686.00	680.63	687.73	0.002661	10.56	222.58		0.51
Mainstem	1.1926*	25-YR	2980.00	672.72	686.41	681.89	689.20	0.004278	13.39	222.58		0.64
Mainstem	1.1926*	50-YR	3040.00	672.72	686.46	682.01	689.36	0.004452	13.66	222.58		0.65
Mainstem	1.1926*	100-YR	3090.00	672.72	686.50	682.08	689.49	0.004600	13.88	222.58		0.66
Mainstem	1.1926*	500-YR	3210.00	672.72	686.61	682.31	689.84	0.004964	14.42	222.58		0.68
Mainstem	1.1908*	2-YR	1230.00	672.72	679.14	678.07	680.71	0.002184	10.07	122.11	21.00	0.70
Mainstem	1.1908*	5-YR	1890.00	672.72	685.32	679.65	686.44	0.001721	8.49	222.55		0.42
Mainstem	1.1908*	10-YR	2350.00	672.72	685.97	680.62	687.70	0.002661	10.56	222.55		0.51
Mainstem	1.1908*	25-YR	2980.00	672.72	686.37	681.89	689.16	0.004279	13.39	222.55		0.64
Mainstem	1.1908*	50-YR	3040.00	672.72	686.42	681.99	689.32	0.004453	13.66	222.55		0.65
Mainstem	1.1908*	100-YR	3090.00	672.72	686.45	682.09	689.45	0.004601	13.88	222.55		0.66
Mainstem	1.1908*	500-YR	3210.00	672.72	686.56	682.33	689.79	0.004965	14.42	222.55		0.68
Mainstem	1.1889*	2-YR	1230.00	672.72	679.08	678.07	680.69	0.002240	10.16	121.01	21.00	0.71
Mainstem	1.1889*	5-YR	1890.00	672.72	685.30	679.64	686.42	0.001720	8.49	222.57		0.42
Mainstem	1.1889*	10-YR	2350.00	672.72	685.95	680.61	687.68	0.002660	10.56	222.57		0.51
Mainstem	1.1889*	25-YR	2980.00	672.72	686.33	681.88	689.11	0.004277	13.39	222.57		0.64
Mainstem	1.1889*	50-YR	3040.00	672.72	686.37	681.99	689.27	0.004451	13.66	222.57		0.65
Mainstem	1.1889*	100-YR	3090.00	672.72	686.41	682.09	689.40	0.004599	13.88	222.57		0.66
Mainstem	1.1889*	500-YR	3210.00	672.72	686.51	682.30	689.75	0.004963	14.42	222.57		0.68
Mainstem	1.187	2-YR	1230.00	672.72	678.09	678.06	680.43	0.003874	12.29	100.07	21.00	0.94
Mainstem	1.187	5-YR	1890.00	672.72	685.28	679.64	686.40	0.001721	8.49	222.60		0.42
Mainstem	1.187	10-YR	2350.00	672.72	685.92	680.63	687.65	0.002661	10.56	222.60		0.51
Mainstem	1.187	25-YR	2980.00	672.72	686.29	681.89	689.07	0.004279	13.39	222.60		0.64
Mainstem	1.187	50-YR	3040.00	672.72	686.33	682.00	689.23	0.004453	13.66	222.60		0.65
Mainstem	1.187	100-YR	3090.00	672.72	686.36	682.09	689.36	0.004601	13.88	222.60		0.66
Mainstem	1.187	500-YR	3210.00	672.72	686.46	682.32	689.70	0.004966	14.42	222.60		0.69
Mainstem	1.185	2-YR	1230.00	672.72	678.74	678.06	679.73	0.000947	7.97	154.23	50.09	0.62
Mainstem	1.185	5-YR	1890.00	672.72	685.63	686.05	686.05	0.000132	5.24	360.74	87.01	0.27
Mainstem	1.185	10-YR	2350.00	672.72	686.49	687.07	687.07	0.000161	6.08	386.75	91.56	0.30
Mainstem	1.185	25-YR	2980.00	672.72	687.26	688.08	688.08	0.000214	7.27	409.76	95.59	0.35
Mainstem	1.185	50-YR	3040.00	672.72	687.35	688.20	688.20	0.000218	7.37	412.46	96.06	0.35
Mainstem	1.185	100-YR	3090.00	672.72	687.42	688.28	688.28	0.000221	7.45	414.52	96.42	0.35
Mainstem	1.185	500-YR	3210.00	672.72	687.62	688.53	688.53	0.000228	7.63	420.52	97.47	0.36
Mainstem	1.183	2-YR	1230.00	670.82	679.07	679.39	679.39	0.000205	4.56	269.59	60.93	0.30
Mainstem	1.183	5-YR	1890.00	670.82	685.74	685.94	685.94	0.000053	3.61	522.91	100.05	0.17
Mainstem	1.183	10-YR	2350.00	670.82	686.64	686.92	686.92	0.000066	4.22	557.25	102.76	0.19
Mainstem	1.183	25-YR	2980.00	670.82	687.47	687.87	687.87	0.000089	5.06	588.78	105.25	0.23
Mainstem	1.183	50-YR	3040.00	670.82	687.57	687.98	687.98	0.000091	5.13	592.40	105.54	0.23
Mainstem	1.183	100-YR	3090.00	670.82	687.64	688.06	688.06	0.000092	5.19	595.21	105.76	0.23
Mainstem	1.183	500-YR	3210.00	670.82	687.85	688.29	688.29	0.000095	5.32	603.19	106.00	0.24
Mainstem	1.1811*	2-YR	1230.00	670.81	679.14	679.36	679.36	0.000576	3.78	325.04	62.47	0.28
Mainstem	1.1811*	5-YR	1890.00	670.81	685.80	685.91	685.91	0.000102	2.65	766.16	104.82	0.13
Mainstem	1.1811*	10-YR	2350.00	670.81	686.73	686.88	686.88	0.000123	3.05	842.78	113.48	0.15
Mainstem	1.1811*	25-YR	2980.00	670.81	687.61	687.81	687.81	0.000159	3.61	915.28	118.50	0.17
Mainstem	1.1811*	50-YR	3040.00	670.81	687.71	687.91	687.91	0.000162	3.66	923.54	118.50	0.17
Mainstem	1.1811*	100-YR	3090.00	670.81	687.79	688.00	688.00	0.000164	3.70	929.96	118.50	0.17
Mainstem	1.1811*	500-YR	3210.00	670.81	688.00	688.22	688.22	0.000168	3.78	948.08	118.50	0.18
Mainstem	1.1793*	2-YR	1230.00	670.79	679.14	679.35	679.35	0.000589	3.65	337.41	63.80	0.27
Mainstem	1.1793*	5-YR	1890.00	670.79	685.81	685.91	685.91	0.000101	2.52	797.46	112.06	0.13
Mainstem	1.1793*	10-YR	2350.00	670.79	686.74	686.87	686.87	0.000121	2.91	875.51	125.99	0.14
Mainstem	1.1793*	25-YR	2980.00	670.79	687.62	687.80	687.80	0.000156	3.44	950.82	131.00	0.16

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.1793*	50-YR	3040.00	670.79	687.72		687.91	0.000158	3.48	959.40	131.00	0.16
Mainstem	1.1793*	100-YR	3090.00	670.79	687.80		687.99	0.000161	3.52	966.06	131.00	0.16
Mainstem	1.1793*	500-YR	3210.00	670.79	688.02		688.22	0.000164	3.60	984.86	131.00	0.17
Mainstem	1.1774*	2-YR	1230.00	670.78	679.15		679.34	0.000589	3.55	346.70	65.20	0.26
Mainstem	1.1774*	5-YR	1890.00	670.78	685.81		685.90	0.000096	2.42	826.41	122.02	0.12
Mainstem	1.1774*	10-YR	2350.00	670.78	686.75		686.87	0.000115	2.78	905.80	138.60	0.14
Mainstem	1.1774*	25-YR	2980.00	670.78	687.63		687.80	0.000148	3.29	983.43	143.50	0.16
Mainstem	1.1774*	50-YR	3040.00	670.78	687.73		687.90	0.000150	3.34	992.32	143.50	0.16
Mainstem	1.1774*	100-YR	3090.00	670.78	687.81		687.98	0.000152	3.37	999.22	143.50	0.16
Mainstem	1.1774*	500-YR	3210.00	670.78	688.03		688.21	0.000156	3.44	1018.69	143.50	0.16
Mainstem	1.1755*	2-YR	1230.00	670.77	679.15		679.33	0.000559	3.47	353.97	66.67	0.26
Mainstem	1.1755*	5-YR	1890.00	670.77	685.82		685.90	0.000086	2.33	853.98	134.19	0.12
Mainstem	1.1755*	10-YR	2350.00	670.77	686.75		686.86	0.000103	2.68	935.15	152.81	0.13
Mainstem	1.1755*	25-YR	2980.00	670.77	687.64		687.79	0.000132	3.17	1014.40	155.72	0.15
Mainstem	1.1755*	50-YR	3040.00	670.77	687.74		687.89	0.000134	3.21	1023.59	156.00	0.15
Mainstem	1.1755*	100-YR	3090.00	670.77	687.81		687.98	0.000136	3.24	1030.73	156.00	0.15
Mainstem	1.1755*	500-YR	3210.00	670.77	688.03		688.20	0.000139	3.31	1050.86	156.00	0.16
Mainstem	1.1736*	2-YR	1230.00	670.76	679.14		679.33	0.000513	3.42	359.71	68.19	0.26
Mainstem	1.1736*	5-YR	1890.00	670.76	685.82		685.90	0.000077	2.25	880.29	148.38	0.12
Mainstem	1.1736*	10-YR	2350.00	670.76	686.76		686.86	0.000092	2.58	963.49	164.30	0.13
Mainstem	1.1736*	25-YR	2980.00	670.76	687.64		687.79	0.000117	3.05	1044.40	166.84	0.15
Mainstem	1.1736*	50-YR	3040.00	670.76	687.74		687.89	0.000119	3.09	1053.75	167.13	0.15
Mainstem	1.1736*	100-YR	3090.00	670.76	687.82		687.97	0.000121	3.12	1061.03	167.35	0.15
Mainstem	1.1736*	500-YR	3210.00	670.76	688.04		688.20	0.000123	3.19	1081.64	167.99	0.15
Mainstem	1.1718*	2-YR	1230.00	670.74	679.14		679.32	0.000415	3.36	365.74	69.82	0.26
Mainstem	1.1718*	5-YR	1890.00	670.74	685.82		685.90	0.000064	2.18	906.27	164.39	0.11
Mainstem	1.1718*	10-YR	2350.00	670.74	686.76		686.86	0.000075	2.50	991.70	176.04	0.12
Mainstem	1.1718*	25-YR	2980.00	670.74	687.65		687.78	0.000096	2.95	1074.52	178.29	0.14
Mainstem	1.1718*	50-YR	3040.00	670.74	687.75		687.89	0.000098	2.99	1084.07	178.54	0.14
Mainstem	1.1718*	100-YR	3090.00	670.74	687.83		687.97	0.000099	3.02	1091.50	178.74	0.14
Mainstem	1.1718*	500-YR	3210.00	670.74	688.05		688.19	0.000101	3.08	1112.51	179.30	0.15
Mainstem	1.1699*	2-YR	1230.00	670.73	679.14		679.31	0.000345	3.31	371.60	71.53	0.26
Mainstem	1.1699*	5-YR	1890.00	670.73	685.83		685.90	0.000053	2.11	931.39	182.13	0.11
Mainstem	1.1699*	10-YR	2350.00	670.73	686.76		686.86	0.000063	2.42	1019.22	188.00	0.12
Mainstem	1.1699*	25-YR	2980.00	670.73	687.65		687.78	0.000080	2.86	1104.14	189.99	0.14
Mainstem	1.1699*	50-YR	3040.00	670.73	687.75		687.88	0.000081	2.89	1113.92	190.22	0.14
Mainstem	1.1699*	100-YR	3090.00	670.73	687.83		687.96	0.000082	2.92	1121.52	190.39	0.14
Mainstem	1.1699*	500-YR	3210.00	670.73	688.05		688.19	0.000084	2.99	1143.00	190.89	0.14
Mainstem	1.168	2-YR	1230.00	670.72	679.14		679.31	0.000281	3.25	378.06	73.35	0.25
Mainstem	1.168	5-YR	1890.00	670.72	685.83		685.89	0.000042	2.07	955.97	198.22	0.11
Mainstem	1.168	10-YR	2350.00	670.72	686.77		686.85	0.000050	2.37	1046.28	200.09	0.12
Mainstem	1.168	25-YR	2980.00	670.72	687.66		687.78	0.000063	2.80	1133.38	201.87	0.14
Mainstem	1.168	50-YR	3040.00	670.72	687.76		687.88	0.000064	2.84	1143.39	202.07	0.14
Mainstem	1.168	100-YR	3090.00	670.72	687.84		687.96	0.000065	2.87	1151.17	202.23	0.14
Mainstem	1.168	500-YR	3210.00	670.72	688.06		688.19	0.000067	2.93	1173.15	202.67	0.14
Mainstem	1.166	2-YR	1230.00	670.72	679.07		679.30	0.000155	3.87	359.52	66.88	0.26
Mainstem	1.166	5-YR	1890.00	670.72	685.76		685.89	0.000035	2.91	909.86	198.08	0.14
Mainstem	1.166	10-YR	2350.00	670.72	686.68		686.85	0.000043	3.37	994.97	199.91	0.16
Mainstem	1.166	25-YR	2980.00	670.72	687.53		687.76	0.000057	4.02	1075.46	201.61	0.18
Mainstem	1.166	50-YR	3040.00	670.72	687.62		687.87	0.000058	4.07	1084.79	201.81	0.18
Mainstem	1.166	100-YR	3090.00	670.72	687.70		687.95	0.000059	4.12	1092.01	201.96	0.18
Mainstem	1.166	500-YR	3210.00	670.72	687.91		688.17	0.000061	4.21	1112.61	202.39	0.19
Mainstem	1.1505*	2-YR	1230.00	670.62	679.06		679.29	0.000149	3.82	366.34	67.76	0.26
Mainstem	1.1505*	5-YR	1890.00	670.62	685.76		685.88	0.000034	2.85	1118.43	176.18	0.14
Mainstem	1.1505*	10-YR	2350.00	670.62	686.68		686.84	0.000041	3.27	1281.25	178.13	0.15
Mainstem	1.1505*	25-YR	2980.00	670.62	687.54		687.75	0.000053	3.87	1434.47	180.02	0.17
Mainstem	1.1505*	50-YR	3040.00	670.62	687.64		687.86	0.000053	3.92	1452.17	180.24	0.18
Mainstem	1.1505*	100-YR	3090.00	670.62	687.71		687.94	0.000054	3.96	1465.87	180.42	0.18
Mainstem	1.1505*	500-YR	3210.00	670.62	687.93		688.16	0.000056	4.05	1504.86	180.91	0.18
Mainstem	1.1350*	2-YR	1230.00	670.52	679.05		679.27	0.000142	3.77	373.19	68.70	0.25
Mainstem	1.1350*	5-YR	1890.00	670.52	685.76		685.88	0.000033	2.83	1096.41	154.20	0.13
Mainstem	1.1350*	10-YR	2350.00	670.52	686.68		686.83	0.000040	3.26	1238.90	156.27	0.15
Mainstem	1.1350*	25-YR	2980.00	670.52	687.53		687.75	0.000052	3.87	1373.14	158.28	0.17
Mainstem	1.1350*	50-YR	3040.00	670.52	687.63		687.85	0.000053	3.92	1388.67	158.53	0.17
Mainstem	1.1350*	100-YR	3090.00	670.52	687.71		687.93	0.000054	3.96	1400.67	158.73	0.18
Mainstem	1.1350*	500-YR	3210.00	670.52	687.92		688.16	0.000055	4.05	1434.89	159.30	0.18
Mainstem	1.1195*	2-YR	1230.00	670.42	679.05		679.26	0.000136	3.72	380.06	70.73	0.25
Mainstem	1.1195*	5-YR	1890.00	670.42	685.76		685.88	0.000032	2.82	1050.72	132.19	0.13
Mainstem	1.1195*	10-YR	2350.00	670.42	686.68		686.83	0.000039	3.26	1172.82	134.36	0.15

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	1.1195*	25-YR	2980.00	670.42	687.53		687.74	0.000052	3.88	1287.95	136.40	0.17
Mainstem	1.1195*	50-YR	3040.00	670.42	687.62		687.85	0.000053	3.93	1301.28	136.69	0.17
Mainstem	1.1195*	100-YR	3090.00	670.42	687.70		687.93	0.000054	3.97	1311.59	136.92	0.18
Mainstem	1.1195*	500-YR	3210.00	670.42	687.91		688.15	0.000055	4.06	1341.01	137.56	0.18
Mainstem	1.104	2-YR	1230.00	670.32	679.04		679.25	0.000130	3.67	384.03	69.26	0.24
Mainstem	1.104	5-YR	1890.00	670.32	685.76		685.87	0.000032	2.82	981.33	110.09	0.13
Mainstem	1.104	10-YR	2350.00	670.32	686.67		686.83	0.000039	3.27	1082.95	112.37	0.15
Mainstem	1.104	25-YR	2980.00	670.32	687.52		687.74	0.000052	3.90	1178.92	114.49	0.17
Mainstem	1.104	50-YR	3040.00	670.32	687.61		687.84	0.000053	3.96	1190.05	114.73	0.18
Mainstem	1.104	100-YR	3090.00	670.32	687.69		687.92	0.000054	4.00	1198.66	114.92	0.18
Mainstem	1.104	500-YR	3210.00	670.32	687.90		688.15	0.000056	4.10	1223.25	115.63	0.18
Mainstem	1.102	2-YR	1230.00	670.32	679.07		679.21	0.000242	3.06	402.14	75.36	0.23
Mainstem	1.102	5-YR	1890.00	670.32	685.78		685.85	0.000038	2.01	1000.64	104.13	0.10
Mainstem	1.102	10-YR	2350.00	670.32	686.71		686.79	0.000045	2.31	1097.66	105.97	0.11
Mainstem	1.102	25-YR	2980.00	670.32	687.57		687.68	0.000058	2.73	1189.79	107.70	0.13
Mainstem	1.102	50-YR	3040.00	670.32	687.67		687.79	0.000059	2.77	1200.42	107.90	0.13
Mainstem	1.102	100-YR	3090.00	670.32	687.74		687.86	0.000060	2.80	1208.66	108.07	0.13
Mainstem	1.102	500-YR	3210.00	670.32	687.96		688.09	0.000062	2.86	1232.09	108.72	0.14
Mainstem	1.091	2-YR	1230.00	670.32	678.63	674.94	679.10	0.000276	5.51	223.22	55.75	0.36
Mainstem	1.091	5-YR	1890.00	670.32	685.47	676.18	685.77	0.000074	4.41	428.36	82.70	0.21
Mainstem	1.091	10-YR	2350.00	670.32	686.26	676.96	686.68	0.000096	5.20	452.26	85.85	0.24
Mainstem	1.091	25-YR	2980.00	670.32	686.91	677.94	687.53	0.000134	6.32	471.54	88.39	0.28
Mainstem	1.091	50-YR	3040.00	670.32	686.98	678.03	687.62	0.000137	6.42	473.87	88.69	0.28
Mainstem	1.091	100-YR	3090.00	670.32	687.04	678.09	687.70	0.000140	6.50	475.61	88.92	0.29
Mainstem	1.091	500-YR	3210.00	670.32	687.22	678.29	687.91	0.000146	6.68	480.88	89.62	0.29
Mainstem	1.08		Bridge									
Mainstem	1.079	2-YR	1230.00	670.32	678.53	674.94	679.02	0.000289	5.58	220.28	55.37	0.36
Mainstem	1.079	5-YR	1890.00	670.32	681.05	676.18	681.68	0.000255	6.39	295.78	65.25	0.36
Mainstem	1.079	10-YR	2350.00	670.32	681.67	676.94	682.54	0.000321	7.47	314.55	67.72	0.41
Mainstem	1.079	25-YR	2980.00	670.32	682.26	677.91	683.51	0.000432	8.98	331.98	70.01	0.48
Mainstem	1.079	50-YR	3040.00	670.32	682.30	678.03	683.59	0.000443	9.12	333.38	70.20	0.48
Mainstem	1.079	100-YR	3090.00	670.32	682.33	678.11	683.66	0.000453	9.24	334.33	70.32	0.49
Mainstem	1.079	500-YR	3210.00	670.32	682.40	678.29	683.81	0.000480	9.55	336.29	70.58	0.50
Mainstem	1.078	2-YR	1230.00	670.22	678.59		678.96	0.000222	4.91	250.42	73.04	0.32
Mainstem	1.078	5-YR	1890.00	670.22	681.12		681.61	0.000196	5.62	336.59	83.97	0.31
Mainstem	1.078	10-YR	2350.00	670.22	681.77		682.44	0.000245	6.55	358.81	85.84	0.36
Mainstem	1.078	25-YR	2980.00	670.22	682.40		683.36	0.000325	7.84	380.19	87.86	0.41
Mainstem	1.078	50-YR	3040.00	670.22	682.45		683.44	0.000333	7.96	381.95	88.02	0.42
Mainstem	1.078	100-YR	3090.00	670.22	682.49		683.50	0.000340	8.06	383.18	88.14	0.42
Mainstem	1.078	500-YR	3210.00	670.22	682.57		683.64	0.000359	8.32	385.79	88.38	0.44
Mainstem	1.077	2-YR	1230.00	668.72	678.68		678.87	0.000092	3.52	349.27	80.94	0.21
Mainstem	1.077	5-YR	1890.00	668.72	681.23		681.50	0.000092	4.19	451.36	86.45	0.22
Mainstem	1.077	10-YR	2350.00	668.72	681.92		682.29	0.000117	4.91	478.98	87.99	0.25
Mainstem	1.077	25-YR	2980.00	668.72	682.61		683.15	0.000156	5.88	506.59	89.52	0.29
Mainstem	1.077	50-YR	3040.00	668.72	682.67		683.22	0.000160	5.97	508.91	89.65	0.30
Mainstem	1.077	100-YR	3090.00	668.72	682.71		683.28	0.000164	6.05	510.59	89.75	0.30
Mainstem	1.077	500-YR	3210.00	668.72	682.80		683.40	0.000172	6.24	514.23	89.95	0.31
Mainstem	1.052	2-YR	1230.00	668.52	678.73		678.82	0.000118	2.38	518.54	82.39	0.16
Mainstem	1.052	5-YR	1890.00	668.52	681.33		681.44	0.000090	2.60	765.73	118.19	0.15
Mainstem	1.052	10-YR	2350.00	668.52	682.07		682.21	0.000106	2.98	857.66	134.38	0.17
Mainstem	1.052	25-YR	2980.00	668.52	682.83		683.02	0.000132	3.49	960.28	152.75	0.19
Mainstem	1.052	50-YR	3040.00	668.52	682.90		683.09	0.000134	3.53	969.40	154.33	0.19
Mainstem	1.052	100-YR	3090.00	668.52	682.95		683.15	0.000137	3.58	976.20	155.50	0.19
Mainstem	1.052	500-YR	3210.00	668.52	683.06		683.26	0.000142	3.67	991.32	158.09	0.20
Mainstem	1.05	2-YR	1230.00	668.52	678.67		678.82	0.000070	3.05	481.81	77.72	0.18
Mainstem	1.05	5-YR	1890.00	668.52	681.23		681.43	0.000068	3.57	718.85	117.32	0.19
Mainstem	1.05	10-YR	2350.00	668.52	681.93		682.19	0.000086	4.16	805.88	134.80	0.21
Mainstem	1.05	25-YR	2980.00	668.52	682.64		683.00	0.000112	4.94	900.97	157.38	0.25
Mainstem	1.05	50-YR	3040.00	668.52	682.70		683.07	0.000114	5.01	909.29	159.29	0.25
Mainstem	1.05	100-YR	3090.00	668.52	682.74		683.13	0.000117	5.08	915.37	160.68	0.25
Mainstem	1.05	500-YR	3210.00	668.52	682.84		683.24	0.000123	5.23	928.66	163.70	0.26
Mainstem	0.993	2-YR	1230.00	668.22	678.66		678.79	0.000063	2.94	541.83	125.36	0.17
Mainstem	0.993	5-YR	1890.00	668.22	681.23		681.40	0.000059	3.38	1013.64	247.90	0.18
Mainstem	0.993	10-YR	2350.00	668.22	681.94		682.16	0.000072	3.89	1187.21	291.31	0.20
Mainstem	0.993	25-YR	2980.00	668.22	682.66		682.95	0.000092	4.56	1371.18	354.91	0.22
Mainstem	0.993	50-YR	3040.00	668.22	682.72		683.02	0.000094	4.62	1386.84	360.32	0.23
Mainstem	0.993	100-YR	3090.00	668.22	682.76		683.07	0.000096	4.68	1398.24	364.26	0.23
Mainstem	0.993	500-YR	3210.00	668.22	682.86		683.19	0.000100	4.81	1423.15	372.88	0.23

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	0.928	2-YR	1230.00	667.92	678.65		678.77	0.000056	2.83	579.69	103.51	0.16
Mainstem	0.928	5-YR	1890.00	667.92	681.22		681.38	0.000054	3.27	951.61	205.60	0.17
Mainstem	0.928	10-YR	2350.00	667.92	681.93		682.13	0.000065	3.74	1109.30	234.92	0.19
Mainstem	0.928	25-YR	2980.00	667.92	682.65		682.91	0.000080	4.31	1283.62	245.09	0.21
Mainstem	0.928	50-YR	3040.00	667.92	682.72		682.98	0.000081	4.37	1298.88	245.96	0.21
Mainstem	0.928	100-YR	3090.00	667.92	682.76		683.03	0.000083	4.41	1310.03	246.59	0.21
Mainstem	0.928	500-YR	3210.00	667.92	682.86		683.14	0.000086	4.53	1334.53	247.98	0.22
Mainstem	0.926	2-YR	1230.00	667.92	678.68		678.75	0.000090	2.19	576.93	103.65	0.15
Mainstem	0.926	5-YR	1890.00	667.92	681.27		681.36	0.000070	2.38	949.58	207.31	0.14
Mainstem	0.926	10-YR	2350.00	667.92	681.99		682.10	0.000080	2.67	1112.13	235.28	0.15
Mainstem	0.926	25-YR	2980.00	667.92	682.74		682.87	0.000094	3.03	1291.43	244.26	0.16
Mainstem	0.926	50-YR	3040.00	667.92	682.81		682.94	0.000095	3.07	1307.11	245.03	0.16
Mainstem	0.926	100-YR	3090.00	667.92	682.85		682.99	0.000096	3.10	1318.67	245.59	0.16
Mainstem	0.926	500-YR	3210.00	667.92	682.96		683.10	0.000100	3.17	1344.21	246.84	0.17
Mainstem	0.910	2-YR	1230.00	667.72	678.68		678.75	0.000082	2.13	593.20	108.36	0.14
Mainstem	0.910	5-YR	1890.00	667.72	681.27		681.35	0.000066	2.34	971.87	192.00	0.13
Mainstem	0.910	10-YR	2350.00	667.72	681.99		682.09	0.000077	2.66	1119.16	213.67	0.14
Mainstem	0.910	25-YR	2980.00	667.72	682.73		682.86	0.000093	3.06	1282.33	226.64	0.16
Mainstem	0.910	50-YR	3040.00	667.72	682.79		682.93	0.000095	3.09	1296.75	227.75	0.16
Mainstem	0.910	100-YR	3090.00	667.72	682.84		682.98	0.000096	3.13	1307.37	228.57	0.16
Mainstem	0.910	500-YR	3210.00	667.72	682.94		683.09	0.000100	3.20	1330.86	230.36	0.17
Mainstem	0.901	2-YR	1230.00	667.72	678.31	672.74	678.71	0.000162	5.08	241.97	84.11	0.29
Mainstem	0.901	5-YR	1890.00	667.72	681.21	674.16	681.34	0.000059	3.63	953.82	215.43	0.18
Mainstem	0.901	10-YR	2350.00	667.72	681.92	675.04	682.09	0.000069	4.10	1111.02	229.12	0.20
Mainstem	0.901	25-YR	2980.00	667.72	682.65	676.18	682.85	0.000086	4.72	1288.08	250.40	0.22
Mainstem	0.901	50-YR	3040.00	667.72	682.71	676.27	682.92	0.000087	4.78	1300.59	250.90	0.22
Mainstem	0.901	100-YR	3090.00	667.72	682.75	676.35	682.97	0.000089	4.83	1311.93	251.26	0.23
Mainstem	0.901	500-YR	3210.00	667.72	682.85	676.57	683.08	0.000093	4.95	1336.75	252.05	0.23
Mainstem	0.89		Bridge									
Mainstem	0.884	2-YR	1230.00	667.72	676.54	672.67	677.13	0.000307	6.16	199.66	49.84	0.38
Mainstem	0.884	5-YR	1890.00	667.72	678.14	674.11	678.80	0.000307	6.95	391.15	56.54	0.39
Mainstem	0.884	10-YR	2350.00	667.72	678.93	674.99	679.78	0.000357	7.89	437.46	61.51	0.43
Mainstem	0.884	25-YR	2980.00	667.72	679.96	676.13	681.01	0.000400	8.89	535.91	179.01	0.46
Mainstem	0.884	50-YR	3040.00	667.72	680.05	676.22	681.11	0.000403	8.96	552.17	180.91	0.46
Mainstem	0.884	100-YR	3090.00	667.72	680.14	676.30	681.21	0.000402	9.01	568.80	182.83	0.46
Mainstem	0.884	500-YR	3210.00	667.72	680.32	676.52	681.41	0.000407	9.15	601.07	186.50	0.47
Mainstem	0.878	2-YR	1270.00	667.62	676.68		676.94	0.003019	4.16	343.55	89.83	0.28
Mainstem	0.878	5-YR	1950.00	667.62	678.29		678.61	0.003000	4.78	522.40	123.32	0.29
Mainstem	0.878	10-YR	2440.00	667.62	679.15		679.51	0.003051	5.15	630.64	127.35	0.30
Mainstem	0.878	25-YR	3290.00	667.62	680.25		680.67	0.003281	5.76	804.41	194.33	0.32
Mainstem	0.878	50-YR	3380.00	667.62	680.34		680.77	0.003296	5.81	822.98	195.47	0.32
Mainstem	0.878	100-YR	3470.00	667.62	680.43		680.86	0.003311	5.85	841.04	196.58	0.32
Mainstem	0.878	500-YR	3660.00	667.62	680.62		681.05	0.003349	5.96	877.12	198.77	0.32
Mainstem	0.832	2-YR	1270.00	667.02	675.74		676.10	0.003863	4.93	296.94	66.45	0.33
Mainstem	0.832	5-YR	1950.00	667.02	677.21		677.71	0.004390	5.98	422.79	104.69	0.36
Mainstem	0.832	10-YR	2440.00	667.02	677.99		678.57	0.004706	6.57	513.33	133.34	0.38
Mainstem	0.832	25-YR	3290.00	667.02	678.98		679.66	0.005096	7.32	674.74	190.64	0.40
Mainstem	0.832	50-YR	3380.00	667.02	679.07		679.75	0.005126	7.38	691.73	195.69	0.41
Mainstem	0.832	100-YR	3470.00	667.02	679.16		679.84	0.005155	7.44	708.64	200.60	0.41
Mainstem	0.832	500-YR	3660.00	667.02	679.32		680.02	0.005234	7.58	742.31	210.03	0.41
Mainstem	0.776	2-YR	1270.00	665.92	674.31		674.68	0.006125	5.04	286.99	78.93	0.36
Mainstem	0.776	5-YR	1950.00	665.92	675.65		676.15	0.006578	5.95	412.87	108.48	0.38
Mainstem	0.776	10-YR	2440.00	665.92	676.35		676.91	0.006891	6.46	498.77	139.52	0.40
Mainstem	0.776	25-YR	3290.00	665.92	677.23		677.87	0.007351	7.15	639.96	180.94	0.42
Mainstem	0.776	50-YR	3380.00	665.92	677.31		677.95	0.007390	7.21	654.24	184.61	0.42
Mainstem	0.776	100-YR	3470.00	665.92	677.38		678.03	0.007428	7.26	668.36	188.17	0.42
Mainstem	0.776	500-YR	3660.00	665.92	677.49		678.17	0.007713	7.46	689.26	193.32	0.43
Mainstem	0.721	2-YR	1270.00	664.72	672.49		672.89	0.006181	5.23	288.07	93.38	0.39
Mainstem	0.721	5-YR	1950.00	664.72	673.72		674.23	0.006570	6.14	427.49	133.87	0.41
Mainstem	0.721	10-YR	2440.00	664.72	674.34		674.91	0.006823	6.62	527.70	185.76	0.42
Mainstem	0.721	25-YR	3290.00	664.72	675.04		675.70	0.007563	7.40	678.37	243.96	0.45
Mainstem	0.721	50-YR	3380.00	664.72	675.10		675.77	0.007648	7.47	692.73	248.80	0.46
Mainstem	0.721	100-YR	3470.00	664.72	675.16		675.83	0.007727	7.55	707.08	253.54	0.46
Mainstem	0.721	500-YR	3660.00	664.72	675.64		676.17	0.005994	6.90	837.72	293.21	0.41
Mainstem	0.659	2-YR	1270.00	662.92	670.41		670.69	0.007246	4.29	303.13	90.02	0.36
Mainstem	0.659	5-YR	1950.00	662.92	671.71		672.07	0.006750	4.91	451.91	137.71	0.36
Mainstem	0.659	10-YR	2440.00	662.92	672.73		673.03	0.005088	4.74	640.09	234.05	0.32
Mainstem	0.659	25-YR	3290.00	662.92	674.13		674.32	0.002847	4.01	1059.86	353.79	0.25
Mainstem	0.659	50-YR	3380.00	662.92	674.25		674.43	0.002693	3.94	1101.07	360.87	0.24

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	0.659	100-YR	3470.00	662.92	674.34		674.52	0.002594	3.90	1135.50	366.78	0.24
Mainstem	0.659	500-YR	3660.00	662.92	675.30		675.41	0.001279	2.94	1477.09	424.80	0.17
Mainstem	0.605	2-YR	1270.00	661.12	666.42	665.88	667.78	0.014146	9.36	137.28	38.77	0.81
Mainstem	0.605	5-YR	1950.00	661.12	668.02	667.18	669.58	0.010663	10.12	217.05	64.05	0.75
Mainstem	0.605	10-YR	2440.00	661.12	671.56	668.03	672.12	0.002371	6.58	590.30	157.95	0.38
Mainstem	0.605	25-YR	3290.00	661.12	672.98	669.49	673.63	0.002394	7.27	919.10	279.57	0.39
Mainstem	0.605	50-YR	3380.00	661.12	673.12	669.63	673.76	0.002378	7.31	957.00	291.90	0.39
Mainstem	0.605	100-YR	3470.00	661.12	673.21	669.78	673.87	0.002398	7.38	985.44	300.82	0.39
Mainstem	0.605	500-YR	3660.00	661.12	674.78	670.21	675.11	0.001202	5.72	1495.88	404.86	0.29
Mainstem	0.596	2-YR	1270.00	659.72	666.41	664.29	667.07	0.004532	6.53	198.89	58.83	0.49
Mainstem	0.596	5-YR	1950.00	659.72	668.04	665.49	668.94	0.004454	7.70	263.27	93.72	0.51
Mainstem	0.596	10-YR	2440.00	659.72	671.35	666.23	671.99	0.001903	6.50	395.92	171.76	0.35
Mainstem	0.596	25-YR	3290.00	659.72	673.02	667.42	673.43	0.001268	5.85	1115.36	243.55	0.30
Mainstem	0.596	50-YR	3380.00	659.72	673.15	667.52	673.57	0.001296	5.96	1146.72	260.23	0.30
Mainstem	0.596	100-YR	3470.00	659.72	673.24	667.65	673.68	0.001333	6.07	1170.88	272.39	0.31
Mainstem	0.596	500-YR	3660.00	659.72	674.76	667.89	675.02	0.000775	5.01	1607.29	394.52	0.24
Mainstem	0.59		Bridge									
Mainstem	0.585	2-YR	1270.00	660.12	665.33	664.36	666.32	0.008333	8.16	169.51	51.09	0.68
Mainstem	0.585	5-YR	1950.00	660.12	664.32	665.46	668.32	0.046446	16.28	129.26	45.08	1.53
Mainstem	0.585	10-YR	2440.00	660.12	664.90	666.18	669.42	0.043071	17.36	152.52	48.55	1.51
Mainstem	0.585	25-YR	3290.00	660.12	669.12	667.31	670.76	0.006475	10.79	445.01	115.70	0.66
Mainstem	0.585	50-YR	3380.00	660.12	669.37	667.40	670.94	0.006048	10.64	474.65	120.09	0.64
Mainstem	0.585	100-YR	3470.00	660.12	669.63	667.53	671.14	0.005657	10.49	505.77	125.71	0.62
Mainstem	0.585	500-YR	3660.00	660.12	670.29	667.83	671.63	0.004663	10.00	596.05	144.87	0.57
Mainstem	0.577	2-YR	1270.00	659.82	664.55	664.05	665.77	0.014011	8.87	145.96	43.23	0.81
Mainstem	0.577	5-YR	1950.00	659.82	665.73	665.16	667.34	0.012953	10.24	202.61	52.16	0.81
Mainstem	0.577	10-YR	2440.00	659.82	666.74	665.91	668.41	0.010620	10.50	259.07	59.76	0.76
Mainstem	0.577	25-YR	3290.00	659.82	668.91	666.98	670.37	0.006368	10.00	428.49	106.46	0.62
Mainstem	0.577	50-YR	3380.00	659.82	669.18	667.59	670.59	0.005949	9.87	457.54	114.39	0.60
Mainstem	0.577	100-YR	3470.00	659.82	669.44	670.81	670.81	0.005544	9.73	489.32	122.47	0.58
Mainstem	0.577	500-YR	3660.00	659.82	670.15	671.35	671.35	0.004521	9.26	584.32	149.09	0.53
Mainstem	0.542	2-YR	1270.00	657.62	663.48		663.94	0.006146	5.47	237.17	60.03	0.46
Mainstem	0.542	5-YR	1950.00	657.62	665.15		665.70	0.004775	5.99	350.32	76.72	0.43
Mainstem	0.542	10-YR	2440.00	657.62	666.49		667.03	0.003670	6.00	462.99	91.46	0.39
Mainstem	0.542	25-YR	3290.00	657.62	668.97		669.44	0.002281	5.74	722.70	117.48	0.32
Mainstem	0.542	50-YR	3380.00	657.62	669.24		669.70	0.002171	5.70	754.90	120.19	0.32
Mainstem	0.542	100-YR	3470.00	657.62	669.51		669.96	0.002068	5.66	787.99	122.91	0.31
Mainstem	0.542	500-YR	3660.00	657.62	670.21		670.64	0.001808	5.53	881.86	152.66	0.29
Mainstem	0.501	2-YR	1270.00	655.82	661.55		662.45	0.007469	7.62	175.95	47.93	0.63
Mainstem	0.501	5-YR	1950.00	655.82	663.92		664.73	0.004070	7.42	308.98	67.22	0.50
Mainstem	0.501	10-YR	2440.00	655.82	665.54		666.30	0.002967	7.29	411.78	77.38	0.44
Mainstem	0.501	25-YR	3290.00	655.82	668.26		668.96	0.001975	7.14	596.93	92.75	0.37
Mainstem	0.501	50-YR	3380.00	655.82	668.54		669.24	0.001903	7.13	617.53	94.75	0.37
Mainstem	0.501	100-YR	3470.00	655.82	668.83		669.53	0.001834	7.11	638.43	96.76	0.36
Mainstem	0.501	500-YR	3660.00	655.82	669.58		670.25	0.001629	6.99	694.52	102.03	0.35
Mainstem	0.497	2-YR	1270.00	655.62	661.47	659.44	662.29	0.004544	7.23	175.65	53.66	0.53
Mainstem	0.497	5-YR	1950.00	655.62	663.58	660.71	664.61	0.003854	8.17	238.69	60.23	0.51
Mainstem	0.497	10-YR	2440.00	655.62	665.03	661.52	666.19	0.003454	8.65	282.18	64.77	0.50
Mainstem	0.497	25-YR	3290.00	655.62	667.53	662.82	668.85	0.002861	9.21	357.21	71.28	0.47
Mainstem	0.497	50-YR	3380.00	655.62	667.80	662.96	669.13	0.002804	9.25	365.26	72.14	0.47
Mainstem	0.497	100-YR	3470.00	655.62	668.06	663.10	669.41	0.002747	9.29	373.35	73.44	0.46
Mainstem	0.497	500-YR	3660.00	655.62	668.80	663.36	670.13	0.002523	9.25	395.47	77.01	0.45
Mainstem	0.49		Culvert									
Mainstem	0.484	2-YR	1270.00	655.62	659.44	659.44	661.35	0.018809	11.07	114.70	37.79	1.00
Mainstem	0.484	5-YR	1950.00	655.62	660.71	660.71	663.24	0.017088	12.77	152.68	48.31	1.00
Mainstem	0.484	10-YR	2440.00	655.62	661.52	661.52	664.47	0.016306	13.77	177.14	54.80	1.00
Mainstem	0.484	25-YR	3290.00	655.62	662.82	662.82	666.43	0.015303	15.23	216.01	61.39	1.00
Mainstem	0.484	50-YR	3380.00	655.62	662.96	662.96	666.62	0.015141	15.35	220.23	62.11	1.00
Mainstem	0.484	100-YR	3470.00	655.62	663.10	663.10	666.82	0.015020	15.47	224.27	62.79	1.00
Mainstem	0.484	500-YR	3660.00	655.62	663.36	663.36	667.22	0.014886	15.76	232.19	64.13	1.00
Mainstem	0.476	2-YR	1270.00	654.72	659.14	658.33	660.07	0.011046	7.75	163.92	46.75	0.73
Mainstem	0.476	5-YR	1950.00	654.72	658.41	659.44	661.84	0.048333	14.87	131.14	42.64	1.49
Mainstem	0.476	10-YR	2440.00	654.72	658.82	660.08	662.98	0.052936	16.36	149.16	44.95	1.58
Mainstem	0.476	25-YR	3290.00	654.72	663.11	661.03	664.33	0.005593	8.93	407.17	75.20	0.59
Mainstem	0.476	50-YR	3380.00	654.72	663.28	661.13	664.50	0.005457	8.95	419.68	76.24	0.58
Mainstem	0.476	100-YR	3470.00	654.72	663.45	661.22	664.67	0.005314	8.97	432.73	77.30	0.57
Mainstem	0.476	500-YR	3660.00	654.72	663.81	661.44	665.03	0.005024	8.99	461.00	79.62	0.56

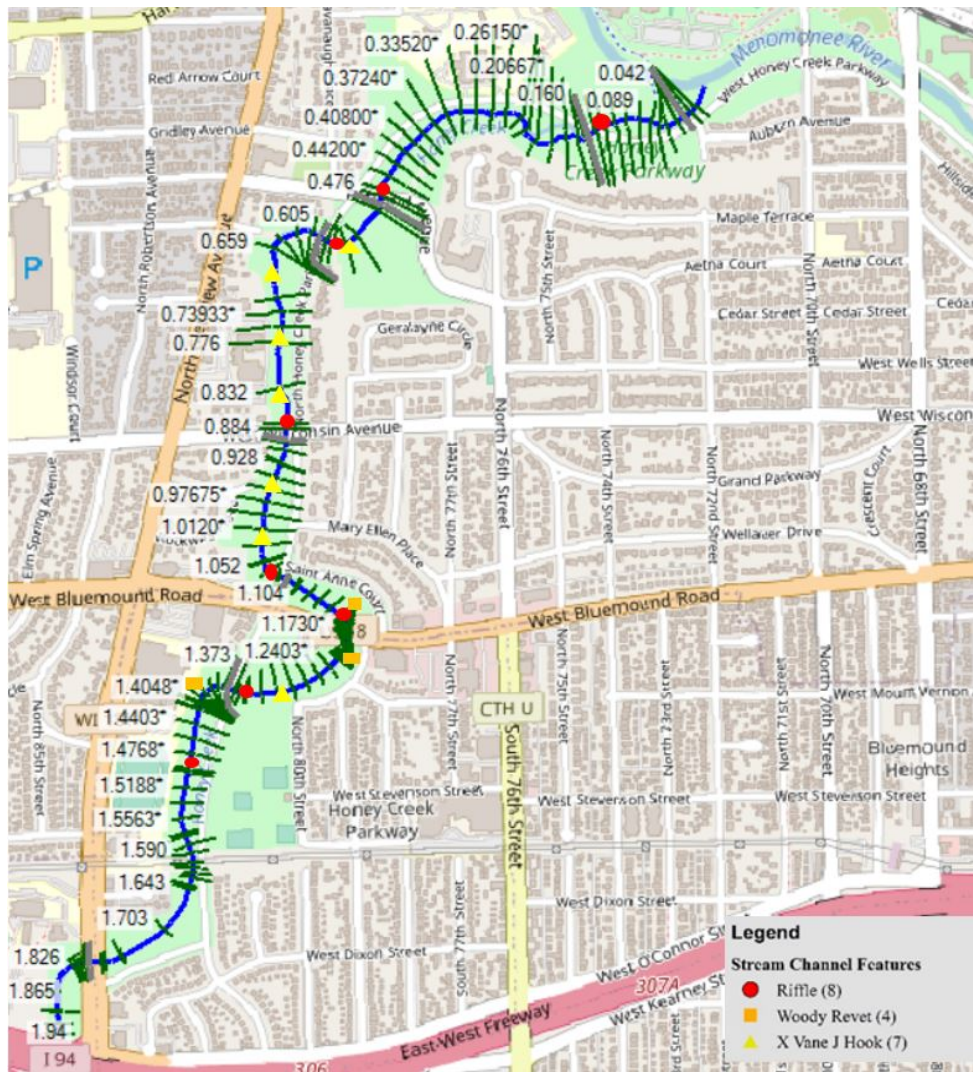
HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (Continued)

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
Mainstem	0.391	2-YR	1270.00	648.72	654.43		655.63	0.008610	8.86	152.70	35.13	0.68
Mainstem	0.391	5-YR	1950.00	648.72	655.77	654.68	657.51	0.009311	10.71	202.28	39.14	0.74
Mainstem	0.391	10-YR	2440.00	648.72	656.43	655.53	658.64	0.010433	12.09	229.02	41.14	0.79
Mainstem	0.391	25-YR	3290.00	648.72	657.22	656.93	660.41	0.013228	14.59	262.38	43.50	0.91
Mainstem	0.391	50-YR	3380.00	648.72	657.28	657.08	660.59	0.013577	14.86	265.19	43.69	0.92
Mainstem	0.391	100-YR	3470.00	648.72	657.35	657.21	660.77	0.013928	15.12	267.93	43.88	0.93
Mainstem	0.391	500-YR	3660.00	648.72	657.45	657.45	661.15	0.014811	15.73	272.59	44.20	0.96
Mainstem	0.298	2-YR	1270.00	645.72	651.94		652.45	0.004466	5.72	222.06	50.23	0.48
Mainstem	0.298	5-YR	1950.00	645.72	653.56		654.17	0.004299	6.29	310.20	59.09	0.48
Mainstem	0.298	10-YR	2440.00	645.72	654.32		655.05	0.004314	6.84	368.21	99.82	0.49
Mainstem	0.298	25-YR	3290.00	645.72	655.47		656.34	0.004173	7.56	489.84	152.97	0.50
Mainstem	0.298	50-YR	3380.00	645.72	655.58		656.46	0.004159	7.63	501.87	156.99	0.50
Mainstem	0.298	100-YR	3470.00	645.72	655.69		656.58	0.004156	7.70	513.25	160.79	0.50
Mainstem	0.298	500-YR	3660.00	645.72	655.95	653.15	656.87	0.004050	7.79	542.29	164.35	0.50
Mainstem	0.225	2-YR	1270.00	642.72	649.01	646.91	649.60	0.014566	6.16	206.27	44.70	0.51
Mainstem	0.225	5-YR	1950.00	642.72	651.14	648.13	651.73	0.010300	6.24	335.15	87.68	0.44
Mainstem	0.225	10-YR	2440.00	642.72	651.95	648.91	652.62	0.010172	6.72	415.38	107.23	0.44
Mainstem	0.225	25-YR	3290.00	642.72	653.45	650.06	654.11	0.008383	6.92	591.84	173.64	0.41
Mainstem	0.225	50-YR	3380.00	642.72	653.59	650.20	654.26	0.008252	6.94	610.16	190.62	0.41
Mainstem	0.225	100-YR	3470.00	642.72	653.71	650.33	654.38	0.008197	6.98	626.18	205.25	0.41
Mainstem	0.225	500-YR	3660.00	642.72	654.02	650.60	654.71	0.008143	7.11	669.17	278.32	0.41
Mainstem	0.17	2-YR	1270.00	639.12	646.73	643.80	647.17	0.005192	5.35	248.59	47.22	0.38
Mainstem	0.17	5-YR	1950.00	639.12	649.72	644.92	650.15	0.003081	5.37	410.10	372.01	0.31
Mainstem	0.17	10-YR	2440.00	639.12	650.24	645.66	650.83	0.003981	6.32	441.42	380.72	0.36
Mainstem	0.17	25-YR	3290.00	639.12	651.54	646.78	652.32	0.004527	7.34	527.22	434.63	0.39
Mainstem	0.17	50-YR	3380.00	639.12	651.64	646.88	652.45	0.004616	7.45	533.96	440.23	0.39
Mainstem	0.17	100-YR	3470.00	639.12	651.69	646.94	652.53	0.004775	7.61	537.58	443.24	0.40
Mainstem	0.17	500-YR	3660.00	639.12	651.97	647.23	652.84	0.004846	7.79	598.59	474.05	0.41
Mainstem	0.160	2-YR	1270.00	638.12	646.57	643.28	646.99	0.002071	5.27	261.54	58.18	0.36
Mainstem	0.160	5-YR	1950.00	638.12	649.58	644.43	650.04	0.001398	5.54	384.81	345.84	0.31
Mainstem	0.160	10-YR	2440.00	638.12	650.01	645.13	650.67	0.001890	6.63	402.57	386.39	0.37
Mainstem	0.160	25-YR	3290.00	638.12	651.13	646.28	652.09	0.002418	8.04	448.29	479.46	0.42
Mainstem	0.160	50-YR	3380.00	638.12	651.20	646.36	652.21	0.002494	8.21	451.46	485.92	0.43
Mainstem	0.160	100-YR	3470.00	638.12	651.57	646.50	652.33	0.001979	7.47	761.20	508.37	0.38
Mainstem	0.160	500-YR	3660.00	638.12	651.86	646.74	652.63	0.001984	7.60	817.64	516.26	0.39
Mainstem	0.15		Bridge									
Mainstem	0.145	2-YR	1270.00	638.62	645.84	643.99	646.51	0.004718	6.65	204.98	49.92	0.51
Mainstem	0.145	5-YR	1950.00	638.62	647.45	645.09	648.36	0.004510	7.77	271.24	56.17	0.52
Mainstem	0.145	10-YR	2440.00	638.62	648.23	645.78	649.37	0.004924	8.71	303.10	287.81	0.55
Mainstem	0.145	25-YR	3290.00	638.62	649.20	646.90	650.83	0.005999	10.41	342.76	396.44	0.62
Mainstem	0.145	50-YR	3380.00	638.62	649.30	647.01	650.98	0.006093	10.57	346.83	402.37	0.63
Mainstem	0.145	100-YR	3470.00	638.62	649.41	647.14	651.14	0.006137	10.71	351.69	409.43	0.63
Mainstem	0.145	500-YR	3660.00	638.62	649.83	647.35	651.14	0.004834	9.80	629.66	420.77	0.57
Mainstem	0.133	2-YR	1270.00	638.42	645.67	643.32	646.13	0.003856	5.45	232.97	51.24	0.45
Mainstem	0.133	5-YR	1950.00	638.42	647.37	644.47	647.92	0.003722	5.91	330.07	62.66	0.45
Mainstem	0.133	10-YR	2440.00	638.42	648.22	645.18	648.84	0.003679	6.35	385.81	295.62	0.46
Mainstem	0.133	25-YR	3290.00	638.42	649.31	646.27	650.11	0.003783	7.20	468.69	336.54	0.48
Mainstem	0.133	50-YR	3380.00	638.42	649.42	646.38	650.24	0.003778	7.28	477.75	340.84	0.48
Mainstem	0.133	100-YR	3470.00	638.42	649.56	646.48	650.39	0.003735	7.33	488.43	345.91	0.48
Mainstem	0.133	500-YR	3660.00	638.42	649.87	646.70	650.59	0.003224	7.00	685.54	367.65	0.45
Mainstem	0.089	2-YR	1270.00	637.92	645.25	640.91	645.34	0.001813	2.38	532.77	97.02	0.18
Mainstem	0.089	5-YR	1950.00	637.92	647.01	641.68	647.12	0.001754	2.76	719.40	171.09	0.18
Mainstem	0.089	10-YR	2440.00	637.92	647.86	642.12	648.00	0.001861	3.06	828.05	195.45	0.19
Mainstem	0.089	25-YR	3290.00	637.92	648.96	642.81	649.15	0.002141	3.58	988.00	238.25	0.21
Mainstem	0.089	50-YR	3380.00	637.92	649.08	642.87	649.27	0.002156	3.62	1006.66	242.85	0.21
Mainstem	0.089	100-YR	3470.00	637.92	649.22	642.94	649.42	0.002148	3.65	1029.72	248.46	0.21
Mainstem	0.089	500-YR	3660.00	637.92	649.51	643.09	649.72	0.002133	3.72	1078.49	259.99	0.21
Mainstem	0.076	2-YR	1270.00	637.62	644.74		645.03	0.009835	4.39	306.15	92.05	0.33
Mainstem	0.076	5-YR	1950.00	637.62	646.58		646.86	0.007226	4.48	533.85	146.31	0.29
Mainstem	0.076	10-YR	2440.00	637.62	647.45		647.74	0.006754	4.67	655.87	156.79	0.29
Mainstem	0.076	25-YR	3290.00	637.62	648.53		648.87	0.006938	5.14	817.54	183.47	0.30
Mainstem	0.076	50-YR	3380.00	637.62	648.65		648.99	0.006895	5.17	836.13	186.95	0.30
Mainstem	0.076	100-YR	3470.00	637.62	648.81		649.14	0.006741	5.16	859.71	191.36	0.29
Mainstem	0.076	500-YR	3660.00	637.62	649.12		649.45	0.006455	5.16	907.96	200.40	0.29
Mainstem	0.065	2-YR	1270.00	636.92	642.27	641.97	643.99	0.018552	10.53	120.57	28.79	0.91
Mainstem	0.065	5-YR	1950.00	636.92	643.80	643.48	645.88	0.022556	11.58	168.58	40.01	0.92
Mainstem	0.065	10-YR	2440.00	636.92	644.99	644.99	646.91	0.016063	11.29	272.14	135.13	0.80
Mainstem	0.065	25-YR	3290.00	636.92	646.79	646.03	648.22	0.009607	10.36	493.50	200.53	0.65
Mainstem	0.065	50-YR	3380.00	636.92	646.95		648.35	0.009247	10.30	514.82	201.87	0.64

HEC-RAS Plan: Ex Cond, Adjust River: HoneyCreek Reach: Mainstem (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
Mainstem	0.065	100-YR	3470.00	636.92	647.25		648.55	0.008312	10.01	553.03	204.24	0.61
Mainstem	0.065	500-YR	3660.00	636.92	647.73		648.91	0.007247	9.69	615.22	208.21	0.57
Mainstem	0.042	2-YR	1270.00	635.12	642.11	639.36	642.66	0.004364	5.94	214.84	45.76	0.45
Mainstem	0.042	5-YR	1950.00	635.12	643.71	640.77	644.45	0.004265	6.93	309.24	210.53	0.46
Mainstem	0.042	10-YR	2440.00	635.12	644.58	641.61	645.44	0.004349	7.57	375.00	327.71	0.48
Mainstem	0.042	25-YR	3290.00	635.12	646.60	642.83	647.40	0.003147	7.51	614.63	350.24	0.42
Mainstem	0.042	50-YR	3380.00	635.12	646.76	642.96	647.56	0.003120	7.56	631.80	350.98	0.42
Mainstem	0.042	100-YR	3470.00	635.12	647.05	643.08	647.82	0.002932	7.47	664.13	352.37	0.41
Mainstem	0.042	500-YR	3660.00	635.12	647.51	643.32	648.26	0.002733	7.43	716.30	354.60	0.40
Mainstem	0.033	2-YR	1270.00	633.92	641.35	640.10	642.34	0.009692	7.98	159.18	35.90	0.66
Mainstem	0.033	5-YR	1950.00	633.92	642.97	641.39	644.15	0.007882	8.82	234.30	116.17	0.63
Mainstem	0.033	10-YR	2440.00	633.92	643.85	642.30	645.16	0.007479	9.39	296.48	358.26	0.62
Mainstem	0.033	25-YR	3290.00	633.92	646.25	643.78	647.23	0.004138	8.49	515.69	398.58	0.49
Mainstem	0.033	50-YR	3380.00	633.92	646.41	643.90	647.39	0.004073	8.52	531.23	399.49	0.48
Mainstem	0.033	100-YR	3470.00	633.92	646.74	644.02	647.67	0.003746	8.35	562.70	401.31	0.47
Mainstem	0.033	500-YR	3660.00	633.92	647.24	644.23	648.13	0.003407	8.23	612.00	404.10	0.45
Mainstem	0.032		Bridge									
Mainstem	0.031	2-YR	1270.00	633.92	640.10	640.10	641.93	0.023281	10.86	117.00	31.91	1.00
Mainstem	0.031	5-YR	1950.00	633.92	641.39	641.39	643.68	0.022098	12.13	160.86	37.32	1.00
Mainstem	0.031	10-YR	2440.00	633.92	642.24	642.24	644.75	0.019508	12.75	195.91	45.28	0.96
Mainstem	0.031	25-YR	3290.00	633.92	643.58	643.58	646.33	0.016281	13.49	274.61	267.84	0.91
Mainstem	0.031	50-YR	3380.00	633.92	643.81	643.81	646.47	0.015113	13.30	292.47	357.49	0.89
Mainstem	0.031	100-YR	3470.00	633.92	643.92	643.92	646.61	0.015069	13.41	300.41	359.77	0.89
Mainstem	0.031	500-YR	3660.00	633.92	644.17	644.17	646.90	0.014726	13.56	319.57	365.22	0.88
Mainstem	0.013	2-YR	1270.00	632.32	636.39	637.03	639.01	0.037689	12.97	97.90	32.01	1.31
Mainstem	0.013	5-YR	1950.00	632.32	637.43	638.28	640.78	0.036908	14.67	132.96	35.14	1.33
Mainstem	0.013	10-YR	2440.00	632.32	638.03	639.08	641.91	0.037719	15.79	154.54	36.94	1.36
Mainstem	0.013	25-YR	3290.00	632.32	638.98	640.24	643.60	0.037847	17.23	190.95	39.79	1.39
Mainstem	0.013	50-YR	3380.00	632.32	639.06	640.36	643.78	0.038184	17.42	194.06	40.02	1.39
Mainstem	0.013	100-YR	3470.00	632.32	639.17	640.47	643.92	0.037886	17.50	198.30	40.34	1.39
Mainstem	0.013	500-YR	3660.00	632.32	639.38	640.71	644.24	0.037396	17.68	206.99	40.98	1.39

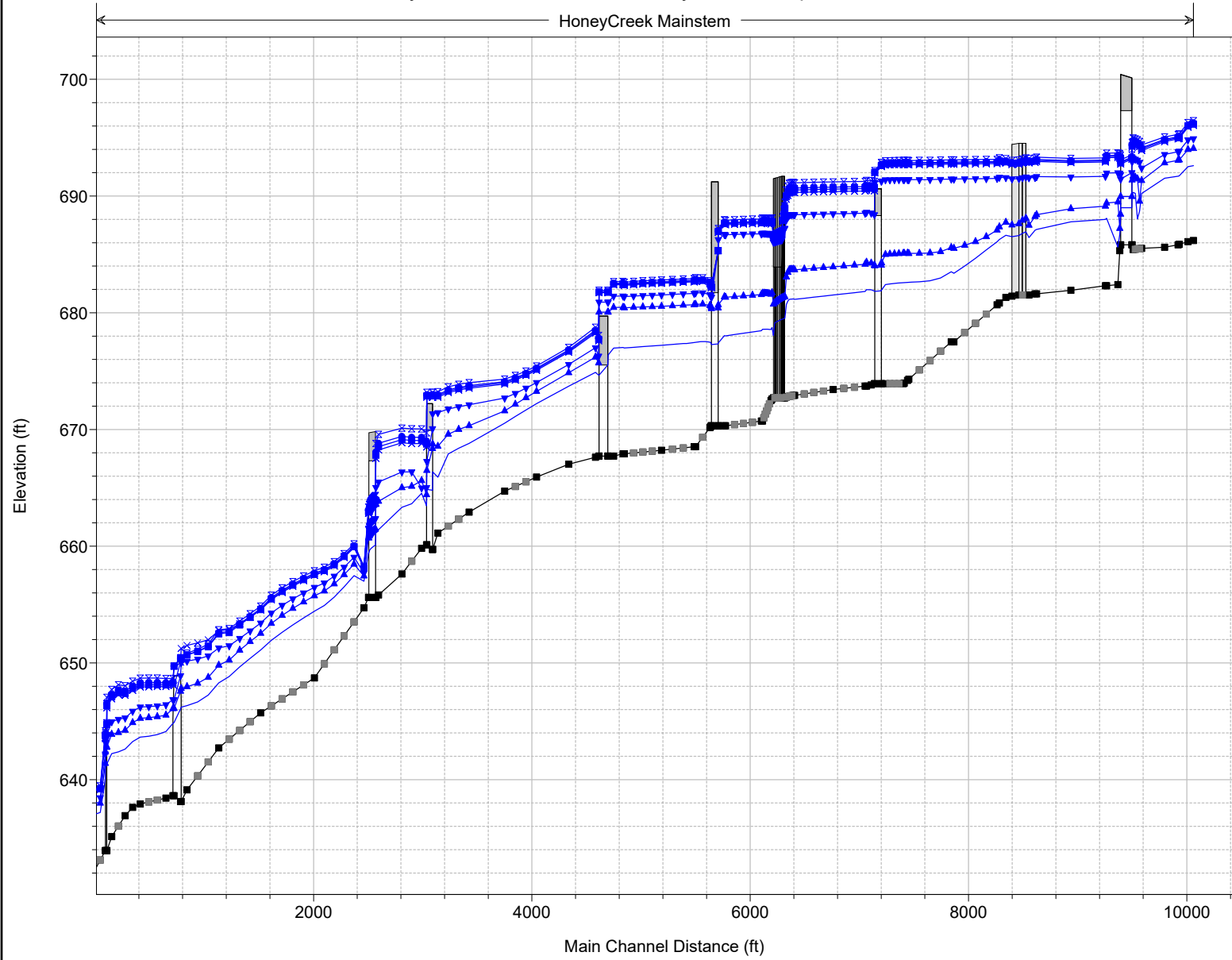
APPENDIX A-2: HEC-RAS Model Results, Proposed Conditions



Hydraulic Model with Labeled Features

Honey Creek 2009 Plan: Honey Creek, Proposed Conditions 2019

HoneyCreek Mainstem



Legend	
WS 500-YR	Blue line with square markers
WS 50-YR	Blue line with circle markers
WS 100-YR	Blue line with triangle markers
WS 25-YR	Blue line with cross markers
WS 10-YR	Blue line with inverted triangle markers
WS 5-YR	Blue line with upward triangle markers
WS 2-YR	Blue line with diamond markers
Ground	Black dashed line with square markers

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem

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
Mainstem	1.94	2-YR	1160.00	686.19	692.60	688.74	692.69	0.000427	2.39	493.56	106.03	0.18
Mainstem	1.94	5-YR	1750.00	686.19	694.08	689.33	694.20	0.000443	2.84	626.32	115.18	0.19
Mainstem	1.94	10-YR	2140.00	686.19	694.91	689.69	695.06	0.000455	3.10	701.27	120.35	0.19
Mainstem	1.94	25-YR	2340.00	686.19	696.05	689.86	696.19	0.000346	2.95	804.26	127.45	0.17
Mainstem	1.94	50-YR	2340.00	686.19	696.16	689.86	696.29	0.000332	2.91	814.06	128.13	0.17
Mainstem	1.94	100-YR	2340.00	686.19	696.27	689.86	696.40	0.000319	2.88	824.08	128.82	0.17
Mainstem	1.94	500-YR	2340.00	686.19	696.46	689.86	696.58	0.000298	2.82	840.74	129.97	0.16
Mainstem	1.935	2-YR	1230.00	686.09	692.52	689.22	692.66	0.000716	3.13	431.24	95.21	0.23
Mainstem	1.935	5-YR	1890.00	686.09	693.98	689.95	694.16	0.000716	3.65	577.40	104.70	0.24
Mainstem	1.935	10-YR	2350.00	686.09	694.81	690.39	695.02	0.000717	3.94	663.43	110.07	0.25
Mainstem	1.935	25-YR	2980.00	686.09	695.91	690.97	696.15	0.000696	4.23	777.61	117.19	0.25
Mainstem	1.935	50-YR	3040.00	686.09	696.01	691.01	696.26	0.000693	4.25	788.30	117.86	0.25
Mainstem	1.935	100-YR	3090.00	686.09	696.09	691.05	696.34	0.000692	4.27	796.87	118.39	0.25
Mainstem	1.935	500-YR	3210.00	686.09	696.29	691.14	696.54	0.000688	4.32	817.37	119.67	0.25
Mainstem	1.9	2-YR	1230.00	685.87	691.74		692.47	0.006400	6.86	179.28	49.44	0.64
Mainstem	1.9	5-YR	1890.00	685.87	693.09		693.97	0.005974	7.50	251.93	57.54	0.63
Mainstem	1.9	10-YR	2350.00	685.87	693.84		694.82	0.005931	7.92	296.60	62.00	0.64
Mainstem	1.9	25-YR	2980.00	685.87	694.93		695.95	0.005333	8.10	367.69	68.49	0.62
Mainstem	1.9	50-YR	3040.00	685.87	695.04		696.06	0.005263	8.11	374.98	69.12	0.61
Mainstem	1.9	100-YR	3090.00	685.87	695.12		696.14	0.005217	8.12	380.76	69.62	0.61
Mainstem	1.9	500-YR	3210.00	685.87	695.32		696.35	0.005104	8.13	394.86	70.82	0.61
Mainstem	1.889	2-YR	1230.00	685.82	691.71		692.44	0.001517	6.86	179.25	49.26	0.63
Mainstem	1.889	5-YR	1890.00	685.82	693.06		693.94	0.001677	7.52	251.42	57.33	0.63
Mainstem	1.889	10-YR	2350.00	685.82	693.80		694.78	0.001784	7.95	295.58	61.75	0.64
Mainstem	1.889	25-YR	2980.00	685.82	694.90		695.92	0.001729	8.13	366.72	68.27	0.62
Mainstem	1.889	50-YR	3040.00	685.82	695.00		696.03	0.001717	8.13	374.00	68.91	0.62
Mainstem	1.889	100-YR	3090.00	685.82	695.08		696.11	0.001710	8.14	379.78	69.41	0.61
Mainstem	1.889	500-YR	3210.00	685.82	695.29		696.32	0.001693	8.15	393.86	70.60	0.61
Mainstem	1.865	2-YR	1230.00	685.62	691.52		692.25	0.001500	6.83	180.18	49.37	0.63
Mainstem	1.865	5-YR	1890.00	685.62	692.84		693.73	0.001691	7.54	250.50	57.23	0.64
Mainstem	1.865	10-YR	2350.00	685.62	693.56		694.56	0.001823	8.02	292.89	61.49	0.65
Mainstem	1.865	25-YR	2980.00	685.62	694.66		695.70	0.001754	8.18	364.48	68.08	0.62
Mainstem	1.865	50-YR	3040.00	685.62	694.77		695.81	0.001739	8.17	371.97	68.73	0.62
Mainstem	1.865	100-YR	3090.00	685.62	694.86		695.90	0.001731	8.18	377.86	69.24	0.62
Mainstem	1.865	500-YR	3210.00	685.62	695.06		696.10	0.001709	8.18	392.23	70.47	0.61
Mainstem	1.826	2-YR	1230.00	685.52	690.22	690.22	691.72	0.003264	9.85	124.94	42.17	1.01
Mainstem	1.826	5-YR	1890.00	685.52	691.33	691.33	693.13	0.003742	10.76	175.72	48.83	1.00
Mainstem	1.826	10-YR	2350.00	685.52	692.40	691.97	694.01	0.003139	10.16	231.21	55.19	0.88
Mainstem	1.826	25-YR	2980.00	685.52	693.91		695.25	0.002360	9.27	321.35	64.19	0.73
Mainstem	1.826	50-YR	3040.00	685.52	694.04		695.36	0.002317	9.23	329.44	64.94	0.72
Mainstem	1.826	100-YR	3090.00	685.52	694.14		695.45	0.002285	9.20	336.01	65.54	0.72
Mainstem	1.826	500-YR	3210.00	685.52	694.38		695.67	0.002210	9.12	352.00	66.98	0.70
Mainstem	1.8223*	2-YR	1230.00	685.50	688.72	689.59	691.50	0.008317	13.36	92.05	41.65	1.58
Mainstem	1.8223*	5-YR	1890.00	685.50	689.56	690.57	692.88	0.008201	14.62	129.31	47.54	1.56
Mainstem	1.8223*	10-YR	2350.00	685.50	692.89		693.74	0.001456	7.38	318.28	65.57	0.59
Mainstem	1.8223*	25-YR	2980.00	685.50	694.24		695.06	0.001209	7.24	412.19	74.79	0.53
Mainstem	1.8223*	50-YR	3040.00	685.50	694.36		695.17	0.001187	7.24	421.04	76.01	0.53
Mainstem	1.8223*	100-YR	3090.00	685.50	694.45		695.27	0.001170	7.24	428.37	78.76	0.52
Mainstem	1.8223*	500-YR	3210.00	685.50	694.68		695.50	0.001132	7.24	447.09	85.93	0.52
Mainstem	1.8185*	2-YR	1230.00	685.47	688.04	689.02	691.24	0.013983	14.35	85.70	46.67	1.87
Mainstem	1.8185*	5-YR	1890.00	685.47	691.47	689.91	692.17	0.001442	6.71	281.56	65.30	0.57
Mainstem	1.8185*	10-YR	2350.00	685.47	693.07		693.63	0.000906	6.01	391.89	73.75	0.45
Mainstem	1.8185*	25-YR	2980.00	685.47	694.39		694.97	0.000763	6.11	499.93	93.62	0.42
Mainstem	1.8185*	50-YR	3040.00	685.47	694.50		695.08	0.000754	6.12	510.88	95.83	0.42
Mainstem	1.8185*	100-YR	3090.00	685.47	694.60		695.18	0.000748	6.13	519.93	97.65	0.42
Mainstem	1.8185*	500-YR	3210.00	685.47	694.82		695.41	0.000732	6.16	542.38	102.33	0.41
Mainstem	1.8148*	2-YR	1230.00	685.44	690.23	688.53	690.62	0.000902	4.96	248.17	66.34	0.45
Mainstem	1.8148*	5-YR	1890.00	685.44	691.61		692.08	0.000844	5.51	343.45	72.20	0.44
Mainstem	1.8148*	10-YR	2350.00	685.44	693.16		693.57	0.000563	5.16	462.09	84.67	0.37
Mainstem	1.8148*	25-YR	2980.00	685.44	694.47		694.91	0.000505	5.36	585.24	103.26	0.35
Mainstem	1.8148*	50-YR	3040.00	685.44	694.59		695.03	0.000502	5.38	597.24	105.01	0.35
Mainstem	1.8148*	100-YR	3090.00	685.44	694.68		695.13	0.000499	5.39	607.11	106.42	0.35
Mainstem	1.8148*	500-YR	3210.00	685.44	694.90		695.36	0.000493	5.43	631.29	109.81	0.35
Mainstem	1.811	2-YR	1230.00	685.42	690.32		690.57	0.000326	3.98	309.32	76.70	0.35
Mainstem	1.811	5-YR	1890.00	685.42	691.71		692.03	0.000298	4.51	419.43	83.64	0.35
Mainstem	1.811	10-YR	2350.00	685.42	693.24		693.53	0.000200	4.34	541.24	100.31	0.29
Mainstem	1.811	25-YR	2980.00	685.42	694.54		694.87	0.000180	4.61	645.92	116.32	0.29
Mainstem	1.811	50-YR	3040.00	685.42	694.66		694.99	0.000178	4.64	655.09	117.81	0.29
Mainstem	1.811	100-YR	3090.00	685.42	694.75		695.09	0.000178	4.66	662.52	119.01	0.29
Mainstem	1.811	500-YR	3210.00	685.42	694.97		695.32	0.000176	4.72	680.33	122.07	0.29

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.809	2-YR	1230.00	685.82	690.07	688.55	690.50	0.000603	5.29	232.42	67.73	0.47
Mainstem	1.809	5-YR	1890.00	685.82	691.37	689.34	691.95	0.000542	6.09	310.52	70.75	0.47
Mainstem	1.809	10-YR	2350.00	685.82	692.93	689.82	693.46	0.000348	5.82	404.12	74.38	0.40
Mainstem	1.809	25-YR	2980.00	685.82	694.19	690.45	694.79	0.000316	6.21	479.83	77.31	0.39
Mainstem	1.809	50-YR	3040.00	685.82	694.30	690.50	694.91	0.000314	6.25	486.43	77.56	0.39
Mainstem	1.809	100-YR	3090.00	685.82	694.39	690.55	695.00	0.000313	6.28	491.75	77.77	0.39
Mainstem	1.809	500-YR	3210.00	685.82	694.60	690.67	695.23	0.000310	6.36	504.51	78.26	0.39
Mainstem	1.79	Bridge										
Mainstem	1.789	2-YR	1230.00	685.82	687.89	688.55	690.17	0.009515	12.11	101.59	64.10	1.64
Mainstem	1.789	5-YR	1890.00	685.82	688.44	689.34	691.49	0.008726	14.01	134.92	66.15	1.65
Mainstem	1.789	10-YR	2350.00	685.82	691.83		692.58	0.000633	6.96	337.81	78.65	0.52
Mainstem	1.789	25-YR	2980.00	685.82	693.13		693.93	0.000509	7.16	415.97	101.71	0.48
Mainstem	1.789	50-YR	3040.00	685.82	693.23		694.04	0.000504	7.20	422.19	103.66	0.48
Mainstem	1.789	100-YR	3090.00	685.82	693.31		694.13	0.000501	7.24	427.03	105.17	0.48
Mainstem	1.789	500-YR	3210.00	685.82	693.51		694.34	0.000494	7.32	438.77	108.85	0.48
Mainstem	1.788	2-YR	1230.00	685.32	686.72	687.63	689.83	0.017497	14.14	86.97	64.04	2.13
Mainstem	1.788	5-YR	1890.00	685.32	687.22	688.37	691.15	0.014769	15.90	118.84	65.48	2.06
Mainstem	1.788	10-YR	2350.00	685.32	691.96		692.44	0.000335	5.57	421.80	79.56	0.38
Mainstem	1.788	25-YR	2980.00	685.32	693.25		693.79	0.000296	5.90	504.77	99.11	0.37
Mainstem	1.788	50-YR	3040.00	685.32	693.36		693.91	0.000295	5.94	511.43	100.69	0.37
Mainstem	1.788	100-YR	3090.00	685.32	693.44		693.99	0.000294	5.98	516.63	101.91	0.37
Mainstem	1.788	500-YR	3210.00	685.32	693.64		694.21	0.000293	6.07	529.22	104.88	0.37
Mainstem	1.784	2-YR	1230.00	682.42	685.62	686.79	689.36	0.013432	15.51	79.30	41.23	1.97
Mainstem	1.784	5-YR	1890.00	682.42	689.49	687.78	690.18	0.000838	6.64	284.46	64.99	0.56
Mainstem	1.784	10-YR	2350.00	682.42	691.99		692.39	0.000320	5.04	465.99	81.24	0.36
Mainstem	1.784	25-YR	2980.00	682.42	693.31		693.73	0.000266	5.24	568.23	103.09	0.34
Mainstem	1.784	50-YR	3040.00	682.42	693.41		693.84	0.000264	5.27	576.45	104.85	0.34
Mainstem	1.784	100-YR	3090.00	682.42	693.49		693.93	0.000263	5.30	582.88	106.22	0.34
Mainstem	1.784	500-YR	3210.00	682.42	693.69		694.14	0.000260	5.36	598.44	109.54	0.34
Mainstem	1.765	2-YR	1230.00	682.32	688.10	686.69	688.65	0.000877	5.99	205.44	56.98	0.56
Mainstem	1.765	5-YR	1890.00	682.32	689.41		690.09	0.000830	6.62	285.47	65.08	0.56
Mainstem	1.765	10-YR	2350.00	682.32	691.97		692.35	0.000308	4.99	471.42	84.78	0.36
Mainstem	1.765	25-YR	2980.00	682.32	693.28		693.70	0.000257	5.19	574.97	141.45	0.34
Mainstem	1.765	50-YR	3040.00	682.32	693.39		693.81	0.000255	5.22	583.34	146.82	0.34
Mainstem	1.765	100-YR	3090.00	682.32	693.47		693.90	0.000254	5.25	589.89	151.02	0.34
Mainstem	1.765	500-YR	3210.00	682.32	693.67		694.11	0.000251	5.31	605.78	161.18	0.34
Mainstem	1.763	2-YR	1230.00	682.32	687.99		688.64	0.000831	6.43	196.70	52.79	0.56
Mainstem	1.763	5-YR	1890.00	682.32	689.13		690.05	0.000874	7.74	259.11	57.52	0.59
Mainstem	1.763	10-YR	2350.00	682.32	691.69		692.33	0.000355	6.42	422.62	70.36	0.40
Mainstem	1.763	25-YR	2980.00	682.32	692.91		693.67	0.000350	7.02	527.69	95.19	0.41
Mainstem	1.763	50-YR	3040.00	682.32	693.01		693.78	0.000351	7.08	536.98	95.40	0.41
Mainstem	1.763	100-YR	3090.00	682.32	693.09		693.86	0.000352	7.13	544.18	95.57	0.41
Mainstem	1.763	500-YR	3210.00	682.32	693.27		694.07	0.000355	7.25	561.73	95.99	0.42
Mainstem	1.703	2-YR	1230.00	681.92	687.79		688.38	0.000710	6.13	209.33	55.87	0.52
Mainstem	1.703	5-YR	1890.00	681.92	688.91		689.77	0.000775	7.46	276.19	63.51	0.56
Mainstem	1.703	10-YR	2350.00	681.92	691.64		692.20	0.000303	6.11	477.37	85.28	0.38
Mainstem	1.703	25-YR	2980.00	681.92	692.86		693.54	0.000301	6.69	591.26	100.31	0.38
Mainstem	1.703	50-YR	3040.00	681.92	692.96		693.65	0.000303	6.75	601.08	101.53	0.39
Mainstem	1.703	100-YR	3090.00	681.92	693.04		693.74	0.000304	6.80	608.75	102.47	0.39
Mainstem	1.703	500-YR	3210.00	681.92	693.22		693.94	0.000308	6.92	627.69	104.75	0.39
Mainstem	1.643	2-YR	1230.00	681.62	687.14		688.02	0.001598	7.54	163.13	50.06	0.74
Mainstem	1.643	5-YR	1890.00	681.62	688.40		689.43	0.001522	8.13	232.57	61.49	0.74
Mainstem	1.643	10-YR	2350.00	681.62	691.67		692.05	0.000294	4.97	490.50	95.50	0.35
Mainstem	1.643	25-YR	2980.00	681.62	692.96		693.38	0.000250	5.20	637.63	133.80	0.34
Mainstem	1.643	50-YR	3040.00	681.62	693.06		693.48	0.000249	5.23	651.48	136.92	0.33
Mainstem	1.643	100-YR	3090.00	681.62	693.14		693.57	0.000248	5.26	662.47	139.34	0.33
Mainstem	1.643	500-YR	3210.00	681.62	693.33		693.77	0.000246	5.33	689.91	145.23	0.33
Mainstem	1.641	2-YR	1230.00	681.62	687.07	686.39	688.00	0.001680	7.75	158.78	48.52	0.76
Mainstem	1.641	5-YR	1890.00	681.62	688.24	687.44	689.39	0.001605	8.59	219.97	55.42	0.76
Mainstem	1.641	10-YR	2350.00	681.62	691.59		692.04	0.000366	5.38	440.46	89.23	0.39
Mainstem	1.641	25-YR	2980.00	681.62	692.88		693.37	0.000306	5.59	585.96	136.17	0.37
Mainstem	1.641	50-YR	3040.00	681.62	692.99		693.47	0.000304	5.62	600.06	139.87	0.36
Mainstem	1.641	100-YR	3090.00	681.62	693.06		693.56	0.000302	5.65	611.24	142.74	0.36
Mainstem	1.641	500-YR	3210.00	681.62	693.26		693.76	0.000299	5.71	639.36	149.71	0.36
Mainstem	1.630	2-YR	1230.00	681.52	686.44	686.35	687.83	0.002864	9.48	129.79	43.67	0.97
Mainstem	1.630	5-YR	1890.00	681.52	687.50	687.45	689.22	0.002787	10.52	179.72	50.56	0.98
Mainstem	1.630	10-YR	2350.00	681.52	691.57		692.02	0.000328	5.43	461.60	90.78	0.37
Mainstem	1.630	25-YR	2980.00	681.52	692.84		693.35	0.000288	5.73	588.73	109.06	0.36

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.630	50-YR	3040.00	681.52	692.94		693.45	0.000287	5.77	599.76	110.54	0.36
Mainstem	1.630	100-YR	3090.00	681.52	693.02		693.54	0.000287	5.80	608.39	111.69	0.36
Mainstem	1.630	500-YR	3210.00	681.52	693.21		693.74	0.000286	5.88	629.74	114.47	0.36
Mainstem	1.625	2-YR	1230.00	684.85	686.93	685.88	687.55	0.001122	6.30	195.26	57.46	0.60
Mainstem	1.625	5-YR	1890.00	684.85	688.09	686.74	688.89	0.001099	7.16	263.96	61.01	0.61
Mainstem	1.625	10-YR	2350.00	684.85	691.63	687.28	691.98	0.000294	4.76	501.67	74.42	0.32
Mainstem	1.625	25-YR	2980.00	684.85	692.90	687.97	693.31	0.000303	5.16	597.54	76.83	0.32
Mainstem	1.625	50-YR	3040.00	684.85	693.00	688.01	693.42	0.000306	5.21	605.23	77.01	0.32
Mainstem	1.625	100-YR	3090.00	684.85	693.08	688.08	693.50	0.000309	5.25	611.20	77.15	0.32
Mainstem	1.625	500-YR	3210.00	684.85	693.26	688.20	693.71	0.000315	5.34	625.72	77.50	0.32
Mainstem	1.6190*	2-YR	1230.00	684.85	686.81	685.90	687.50	0.001262	6.67	184.50	54.31	0.64
Mainstem	1.6190*	5-YR	1890.00	684.85	687.92	686.77	688.84	0.001267	7.69	245.77	56.40	0.65
Mainstem	1.6190*	10-YR	2350.00	684.85	691.57	687.31	691.97	0.000340	5.07	467.39	67.54	0.34
Mainstem	1.6190*	25-YR	2980.00	684.85	692.82	687.99	693.30	0.000356	5.52	552.91	68.86	0.34
Mainstem	1.6190*	50-YR	3040.00	684.85	692.92	688.06	693.40	0.000359	5.57	559.69	68.97	0.35
Mainstem	1.6190*	100-YR	3090.00	684.85	693.00	688.10	693.49	0.000363	5.61	564.95	69.05	0.35
Mainstem	1.6190*	500-YR	3210.00	684.85	693.18	688.23	693.69	0.000371	5.72	577.71	69.88	0.35
Mainstem	1.613	2-YR	1230.00	684.85	686.62	685.92	687.44	0.001575	7.30	168.50	50.87	0.71
Mainstem	1.613	5-YR	1890.00	684.85	687.63	686.82	688.77	0.001651	8.57	220.55	52.13	0.73
Mainstem	1.613	10-YR	2350.00	684.85	691.49	687.38	691.95	0.000362	5.45	431.24	56.96	0.35
Mainstem	1.613	25-YR	2980.00	684.85	692.73	688.07	693.28	0.000431	5.95	509.54	64.51	0.37
Mainstem	1.613	50-YR	3040.00	684.85	692.82	688.14	693.38	0.000435	6.00	515.76	64.59	0.37
Mainstem	1.613	100-YR	3090.00	684.85	692.90	688.20	693.47	0.000440	6.05	520.57	64.65	0.38
Mainstem	1.613	500-YR	3210.00	684.85	693.08	688.33	693.67	0.000450	6.17	532.23	64.80	0.38
Mainstem	1.601	2-YR	1230.00	684.75	686.52	685.82	687.34	0.001576	7.30	168.46	50.87	0.71
Mainstem	1.601	5-YR	1890.00	684.75	687.52	686.72	688.67	0.001658	8.58	220.23	52.13	0.74
Mainstem	1.601	10-YR	2350.00	684.75	691.47	687.27	691.92	0.000395	5.39	436.00	58.30	0.37
Mainstem	1.601	25-YR	2980.00	684.75	692.71	687.98	693.25	0.000420	5.90	515.20	65.32	0.37
Mainstem	1.601	50-YR	3040.00	684.75	692.80	688.04	693.35	0.000425	5.95	521.49	65.40	0.37
Mainstem	1.601	100-YR	3090.00	684.75	692.88	688.10	693.43	0.000429	6.00	526.33	65.46	0.37
Mainstem	1.601	500-YR	3210.00	684.75	693.06	688.23	693.64	0.000440	6.12	538.11	65.61	0.37
Mainstem	1.590	2-YR	1230.00	681.32	686.64	687.19	687.19	0.000967	5.98	205.68	61.61	0.58
Mainstem	1.590	5-YR	1890.00	681.32	687.75	686.47	688.47	0.000957	6.82	277.23	67.50	0.59
Mainstem	1.590	10-YR	2350.00	681.32	691.57	691.86	691.86	0.000166	4.29	574.98	88.20	0.27
Mainstem	1.590	25-YR	2980.00	681.32	692.83	693.17	693.17	0.000160	4.66	695.08	103.48	0.27
Mainstem	1.590	50-YR	3040.00	681.32	692.93	693.27	693.27	0.000160	4.70	705.42	104.77	0.28
Mainstem	1.590	100-YR	3090.00	681.32	693.01	693.36	693.36	0.000161	4.74	713.50	105.77	0.28
Mainstem	1.590	500-YR	3210.00	681.32	693.20	693.55	693.55	0.000162	4.82	733.43	108.19	0.28
Mainstem	1.579	2-YR	1230.00	680.84	686.28	687.04	687.04	0.007969	7.03	174.98	55.46	0.70
Mainstem	1.579	5-YR	1890.00	680.84	687.36	688.32	688.32	0.008431	7.86	240.42	67.22	0.73
Mainstem	1.579	10-YR	2350.00	680.84	691.61	691.82	691.82	0.000982	3.66	653.35	143.47	0.27
Mainstem	1.579	25-YR	2980.00	680.84	692.90	693.12	693.12	0.000781	3.74	862.85	179.78	0.25
Mainstem	1.579	50-YR	3040.00	680.84	693.00	693.22	693.22	0.000773	3.76	881.37	182.55	0.25
Mainstem	1.579	100-YR	3090.00	680.84	693.08	693.30	693.30	0.000768	3.77	895.91	184.70	0.25
Mainstem	1.579	500-YR	3210.00	680.84	693.27	693.50	693.50	0.000755	3.81	931.91	189.91	0.25
Mainstem	1.575	2-YR	1230.00	680.68	686.08	686.89	686.89	0.007506	7.25	181.11	74.30	0.69
Mainstem	1.575	5-YR	1890.00	680.68	687.08	688.15	688.15	0.007191	8.41	261.25	86.46	0.70
Mainstem	1.575	10-YR	2350.00	680.68	691.51	691.79	691.79	0.000856	4.60	754.84	150.84	0.27
Mainstem	1.575	25-YR	2980.00	680.68	692.77	693.09	693.09	0.000826	4.93	931.67	170.87	0.27
Mainstem	1.575	50-YR	3040.00	680.68	692.87	693.19	693.19	0.000828	4.97	946.18	172.46	0.27
Mainstem	1.575	100-YR	3090.00	680.68	692.95	693.27	693.27	0.000831	5.01	957.33	173.68	0.27
Mainstem	1.575	500-YR	3210.00	680.68	693.14	693.47	693.47	0.000837	5.09	984.92	176.66	0.28
Mainstem	1.5563*	2-YR	1230.00	679.89	685.38	686.12	686.12	0.007597	6.90	178.70	60.34	0.68
Mainstem	1.5563*	5-YR	1890.00	679.89	686.52	687.44	687.44	0.006318	7.72	263.75	89.16	0.66
Mainstem	1.5563*	10-YR	2350.00	679.89	691.50	691.70	691.70	0.000572	3.87	899.99	167.25	0.22
Mainstem	1.5563*	25-YR	2980.00	679.89	692.77	693.00	693.00	0.000556	4.16	1127.98	190.68	0.23
Mainstem	1.5563*	50-YR	3040.00	679.89	692.87	693.10	693.10	0.000558	4.19	1147.19	192.52	0.23
Mainstem	1.5563*	100-YR	3090.00	679.89	692.95	693.18	693.18	0.000560	4.22	1161.96	193.92	0.23
Mainstem	1.5563*	500-YR	3210.00	679.89	693.13	693.37	693.37	0.000564	4.29	1198.77	197.37	0.23
Mainstem	1.5375*	2-YR	1230.00	679.10	684.67	685.36	685.36	0.007427	6.69	183.90	59.77	0.67
Mainstem	1.5375*	5-YR	1890.00	679.10	686.09	686.83	686.83	0.005048	6.88	283.35	83.64	0.59
Mainstem	1.5375*	10-YR	2350.00	679.10	691.48	691.64	691.64	0.000404	3.35	1011.19	185.11	0.19
Mainstem	1.5375*	25-YR	2980.00	679.10	692.76	692.93	692.93	0.000400	3.62	1265.78	212.97	0.19
Mainstem	1.5375*	50-YR	3040.00	679.10	692.86	693.04	693.04	0.000402	3.65	1287.23	213.70	0.19
Mainstem	1.5375*	100-YR	3090.00	679.10	692.94	693.12	693.12	0.000403	3.67	1303.65	214.26	0.19
Mainstem	1.5375*	500-YR	3210.00	679.10	693.13	693.31	693.31	0.000407	3.73	1344.21	215.65	0.20
Mainstem	1.5188*	2-YR	1230.00	678.31	684.00	684.64	684.64	0.006814	6.44	191.08	61.69	0.64
Mainstem	1.5188*	5-YR	1890.00	678.31	685.78	686.35	686.35	0.003753	6.02	318.84	86.02	0.51
Mainstem	1.5188*	10-YR	2350.00	678.31	691.47	691.59	691.59	0.000294	2.94	1119.74	205.39	0.16

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.5188*	25-YR	2980.00	678.31	692.75		692.89	0.000296	3.19	1403.23	230.68	0.17
Mainstem	1.5188*	50-YR	3040.00	678.31	692.85		692.99	0.000297	3.21	1426.48	231.33	0.17
Mainstem	1.5188*	100-YR	3090.00	678.31	692.93		693.07	0.000299	3.24	1444.27	231.83	0.17
Mainstem	1.5188*	500-YR	3210.00	678.31	693.12		693.26	0.000302	3.29	1488.18	233.07	0.17
Mainstem	1.50	2-YR	1230.00	677.51	683.38		683.99	0.006224	6.27	196.32	61.60	0.62
Mainstem	1.50	5-YR	1890.00	677.51	685.51		685.98	0.003036	5.50	343.84	76.26	0.46
Mainstem	1.50	10-YR	2350.00	677.51	691.45		691.56	0.000260	2.80	1037.83	206.57	0.15
Mainstem	1.50	25-YR	2980.00	677.51	692.72		692.86	0.000267	3.07	1322.01	235.00	0.16
Mainstem	1.50	50-YR	3040.00	677.51	692.82		692.96	0.000269	3.10	1345.71	237.10	0.16
Mainstem	1.50	100-YR	3090.00	677.51	692.90		693.04	0.000271	3.12	1363.92	238.70	0.16
Mainstem	1.50	500-YR	3210.00	677.51	693.09		693.23	0.000274	3.17	1409.25	242.50	0.16
Mainstem	1.495	2-YR	1230.00	677.51	683.51		683.82	0.001978	4.51	308.38	91.99	0.38
Mainstem	1.495	5-YR	1890.00	677.51	685.59		685.89	0.001221	4.54	524.87	116.53	0.31
Mainstem	1.495	10-YR	2350.00	677.51	691.45		691.55	0.000187	2.72	1416.57	233.33	0.14
Mainstem	1.495	25-YR	2980.00	677.51	692.73		692.85	0.000199	2.99	1733.40	252.31	0.14
Mainstem	1.495	50-YR	3040.00	677.51	692.83		692.95	0.000202	3.02	1758.81	253.91	0.14
Mainstem	1.495	100-YR	3090.00	677.51	692.91		693.03	0.000204	3.05	1778.29	255.13	0.14
Mainstem	1.495	500-YR	3210.00	677.51	693.10		693.22	0.000208	3.11	1826.63	258.12	0.15
Mainstem	1.4768*	2-YR	1230.00	676.71	682.98		683.50	0.005512	5.82	227.96	67.70	0.49
Mainstem	1.4768*	5-YR	1890.00	676.71	685.23		685.70	0.002956	5.63	409.36	95.89	0.39
Mainstem	1.4768*	10-YR	2350.00	676.71	691.43		691.53	0.000318	2.87	1390.08	269.61	0.14
Mainstem	1.4768*	25-YR	2980.00	676.71	692.72		692.82	0.000322	3.08	1759.01	294.74	0.14
Mainstem	1.4768*	50-YR	3040.00	676.71	692.82		692.92	0.000324	3.10	1788.81	295.67	0.14
Mainstem	1.4768*	100-YR	3090.00	676.71	692.89		693.00	0.000326	3.12	1811.58	296.38	0.15
Mainstem	1.4768*	500-YR	3210.00	676.71	693.08		693.19	0.000329	3.16	1867.86	298.00	0.15
Mainstem	1.4585*	2-YR	1230.00	675.91	682.75		683.12	0.002336	4.97	267.77	73.34	0.40
Mainstem	1.4585*	5-YR	1890.00	675.91	685.13		685.48	0.001304	4.88	472.72	100.29	0.32
Mainstem	1.4585*	10-YR	2350.00	675.91	691.41		691.51	0.000172	2.71	1524.12	297.64	0.13
Mainstem	1.4585*	25-YR	2980.00	675.91	692.69		692.80	0.000181	2.95	1934.47	328.00	0.14
Mainstem	1.4585*	50-YR	3040.00	675.91	692.79		692.90	0.000182	2.98	1967.48	328.00	0.14
Mainstem	1.4585*	100-YR	3090.00	675.91	692.87		692.98	0.000184	3.00	1992.60	328.00	0.14
Mainstem	1.4585*	500-YR	3210.00	675.91	693.06		693.17	0.000187	3.05	2054.50	328.00	0.14
Mainstem	1.4403*	2-YR	1230.00	675.11	682.65		682.91	0.001439	4.15	321.96	80.41	0.32
Mainstem	1.4403*	5-YR	1890.00	675.11	685.09		685.35	0.000865	4.17	549.61	107.02	0.27
Mainstem	1.4403*	10-YR	2350.00	675.11	691.41		691.49	0.000132	2.43	1664.19	331.18	0.12
Mainstem	1.4403*	25-YR	2980.00	675.11	692.69		692.78	0.000140	2.67	2118.35	358.00	0.12
Mainstem	1.4403*	50-YR	3040.00	675.11	692.79		692.88	0.000141	2.69	2154.38	358.00	0.12
Mainstem	1.4403*	100-YR	3090.00	675.11	692.87		692.96	0.000143	2.71	2181.80	358.00	0.12
Mainstem	1.4403*	500-YR	3210.00	675.11	693.06		693.15	0.000145	2.76	2249.32	358.00	0.12
Mainstem	1.422	2-YR	1230.00	674.31	682.59		682.78	0.000906	3.50	384.59	87.85	0.26
Mainstem	1.422	5-YR	1890.00	674.31	685.07		685.26	0.000592	3.60	629.93	114.50	0.22
Mainstem	1.422	10-YR	2350.00	674.31	691.40		691.47	0.000110	2.28	1489.95	362.71	0.11
Mainstem	1.422	25-YR	2980.00	674.31	692.68		692.76	0.000126	2.59	1744.64	383.00	0.12
Mainstem	1.422	50-YR	3040.00	674.31	692.78		692.87	0.000128	2.62	1764.56	383.00	0.12
Mainstem	1.422	100-YR	3090.00	674.31	692.85		692.94	0.000130	2.64	1779.72	383.00	0.12
Mainstem	1.422	500-YR	3210.00	674.31	693.04		693.13	0.000134	2.70	1817.03	383.00	0.12
Mainstem	1.420	2-YR	1230.00	674.21	682.61		682.76	0.000974	3.13	392.44	86.55	0.26
Mainstem	1.420	5-YR	1890.00	674.21	685.10		685.24	0.000599	2.99	636.68	117.82	0.21
Mainstem	1.420	10-YR	2350.00	674.21	691.42		691.46	0.000082	1.73	1484.94	359.92	0.09
Mainstem	1.420	25-YR	2980.00	674.21	692.70		692.75	0.000091	1.96	1736.55	378.00	0.10
Mainstem	1.420	50-YR	3040.00	674.21	692.80		692.86	0.000093	1.98	1756.26	378.00	0.10
Mainstem	1.420	100-YR	3090.00	674.21	692.87		692.93	0.000094	2.00	1771.26	378.00	0.10
Mainstem	1.420	500-YR	3210.00	674.21	693.06		693.12	0.000096	2.05	1808.18	378.00	0.10
Mainstem	1.414	2-YR	1230.00	673.98	682.59		682.73	0.000873	2.97	413.65	91.09	0.25
Mainstem	1.414	5-YR	1890.00	673.98	685.09		685.22	0.000498	2.85	669.89	122.10	0.20
Mainstem	1.414	10-YR	2350.00	673.98	691.42		691.46	0.000076	1.75	1504.41	370.35	0.09
Mainstem	1.414	25-YR	2980.00	673.98	692.69		692.75	0.000087	1.99	1757.08	388.00	0.09
Mainstem	1.414	50-YR	3040.00	673.98	692.79		692.85	0.000088	2.01	1776.85	388.00	0.09
Mainstem	1.414	100-YR	3090.00	673.98	692.87		692.93	0.000089	2.03	1791.94	388.00	0.09
Mainstem	1.414	500-YR	3210.00	673.98	693.05		693.12	0.000091	2.08	1828.98	388.00	0.10
Mainstem	1.413	2-YR	1230.00	673.92	682.58		682.72	0.000846	2.94	418.66	91.64	0.24
Mainstem	1.413	5-YR	1890.00	673.92	685.09		685.21	0.000476	2.83	680.89	121.29	0.19
Mainstem	1.413	10-YR	2350.00	673.92	691.42		691.46	0.000074	1.75	1542.45	370.63	0.09
Mainstem	1.413	25-YR	2980.00	673.92	692.69		692.75	0.000085	1.99	1802.79	388.00	0.09
Mainstem	1.413	50-YR	3040.00	673.92	692.79		692.85	0.000086	2.01	1823.16	388.00	0.09
Mainstem	1.413	100-YR	3090.00	673.92	692.87		692.93	0.000087	2.03	1838.69	388.00	0.09
Mainstem	1.413	500-YR	3210.00	673.92	693.05		693.12	0.000090	2.08	1876.86	388.00	0.10
Mainstem	1.4048*	2-YR	1230.00	673.92	682.55		682.68	0.000865	2.96	415.16	91.24	0.24
Mainstem	1.4048*	5-YR	1890.00	673.92	685.07		685.19	0.000481	2.84	675.44	120.89	0.19

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.4048*	10-YR	2350.00	673.92	691.41		691.46	0.000076	1.76	1447.55	360.14	0.09
Mainstem	1.4048*	25-YR	2980.00	673.92	692.68		692.75	0.000088	2.03	1607.63	378.50	0.09
Mainstem	1.4048*	50-YR	3040.00	673.92	692.78		692.85	0.000090	2.05	1620.13	378.50	0.10
Mainstem	1.4048*	100-YR	3090.00	673.92	692.86		692.92	0.000091	2.07	1629.67	378.50	0.10
Mainstem	1.4048*	500-YR	3210.00	673.92	693.05		693.11	0.000094	2.13	1653.11	378.50	0.10
Mainstem	1.3965*	2-YR	1230.00	673.92	682.51		682.65	0.000885	2.99	411.68	90.88	0.25
Mainstem	1.3965*	5-YR	1890.00	673.92	685.05		685.17	0.000487	2.86	668.98	120.50	0.20
Mainstem	1.3965*	10-YR	2350.00	673.92	691.41		691.45	0.000077	1.78	1400.85	340.71	0.09
Mainstem	1.3965*	25-YR	2980.00	673.92	692.68		692.74	0.000090	2.05	1548.98	361.00	0.10
Mainstem	1.3965*	50-YR	3040.00	673.92	692.78		692.84	0.000092	2.07	1560.55	361.00	0.10
Mainstem	1.3965*	100-YR	3090.00	673.92	692.85		692.92	0.000093	2.10	1569.37	361.00	0.10
Mainstem	1.3965*	500-YR	3210.00	673.92	693.04		693.11	0.000096	2.15	1591.04	361.00	0.10
Mainstem	1.3883*	2-YR	1230.00	673.92	682.47		682.61	0.000906	3.01	408.06	90.50	0.25
Mainstem	1.3883*	5-YR	1890.00	673.92	685.02		685.15	0.000490	2.88	661.04	120.04	0.20
Mainstem	1.3883*	10-YR	2350.00	673.92	691.40		691.45	0.000079	1.81	1344.02	321.43	0.09
Mainstem	1.3883*	25-YR	2980.00	673.92	692.67		692.74	0.000093	2.09	1480.19	343.50	0.10
Mainstem	1.3883*	50-YR	3040.00	673.92	692.77		692.84	0.000095	2.12	1490.81	343.50	0.10
Mainstem	1.3883*	100-YR	3090.00	673.92	692.84		692.91	0.000096	2.14	1498.92	343.50	0.10
Mainstem	1.3883*	500-YR	3210.00	673.92	693.03		693.10	0.000099	2.19	1518.83	343.50	0.10
Mainstem	1.380	2-YR	1230.00	673.92	682.42		682.56	0.001458	3.05	403.50	89.97	0.25
Mainstem	1.380	5-YR	1890.00	673.92	684.99		685.13	0.000771	2.92	649.19	119.32	0.20
Mainstem	1.380	10-YR	2350.00	673.92	691.39		691.45	0.000129	1.86	1278.28	302.54	0.09
Mainstem	1.380	25-YR	2980.00	673.92	692.66		692.73	0.000153	2.15	1400.44	326.00	0.10
Mainstem	1.380	50-YR	3040.00	673.92	692.76		692.83	0.000155	2.18	1410.12	326.00	0.10
Mainstem	1.380	100-YR	3090.00	673.92	692.83		692.91	0.000158	2.21	1417.50	326.00	0.10
Mainstem	1.380	500-YR	3210.00	673.92	693.02		693.10	0.000163	2.26	1435.63	326.00	0.10
Mainstem	1.373	2-YR	1230.00	673.92	681.95	678.40	682.44	0.000295	5.63	218.66	49.76	0.37
Mainstem	1.373	5-YR	1890.00	673.92	684.29	679.64	684.95	0.000275	6.54	288.85	60.56	0.37
Mainstem	1.373	10-YR	2350.00	673.92	691.29	680.42	691.42	0.000035	2.92	1124.18	247.81	0.13
Mainstem	1.373	25-YR	2980.00	673.92	692.53	681.41	692.70	0.000042	3.36	1496.09	346.35	0.15
Mainstem	1.373	50-YR	3040.00	673.92	692.63	681.50	692.80	0.000043	3.40	1529.77	353.28	0.15
Mainstem	1.373	100-YR	3090.00	673.92	692.70	681.57	692.88	0.000043	3.43	1555.77	358.54	0.15
Mainstem	1.373	500-YR	3210.00	673.92	692.88	681.75	693.07	0.000045	3.52	1621.47	371.50	0.15
Mainstem	1.37		Bridge									
Mainstem	1.361	2-YR	1230.00	673.92	681.86	678.40	682.36	0.000307	5.69	216.08	49.50	0.37
Mainstem	1.361	5-YR	1890.00	673.92	684.08	679.64	684.78	0.000295	6.68	282.75	59.12	0.38
Mainstem	1.361	10-YR	2350.00	673.92	688.40	680.41	688.90	0.000130	5.70	412.27	89.66	0.27
Mainstem	1.361	25-YR	2980.00	673.92	690.45	681.41	690.69	0.000070	3.95	938.80	137.78	0.19
Mainstem	1.361	50-YR	3040.00	673.92	690.65	681.50	690.89	0.000069	3.97	967.81	150.10	0.19
Mainstem	1.361	100-YR	3090.00	673.92	690.82	681.58	691.07	0.000069	3.99	996.09	182.89	0.19
Mainstem	1.361	500-YR	3210.00	673.92	691.26	681.73	691.51	0.000067	4.01	1095.05	267.68	0.19
Mainstem	1.356	2-YR	1230.00	673.82	681.97	678.50	682.22	0.001074	4.05	312.47	77.79	0.29
Mainstem	1.356	5-YR	1890.00	673.82	684.26	679.41	684.57	0.000881	4.53	431.45	95.08	0.27
Mainstem	1.356	10-YR	2350.00	673.82	688.54	679.96	688.75	0.000346	3.73	654.09	120.63	0.18
Mainstem	1.356	25-YR	2980.00	673.82	690.50	680.67	690.63	0.000206	2.91	1266.20	132.88	0.14
Mainstem	1.356	50-YR	3040.00	673.82	690.71	680.75	690.83	0.000203	2.92	1293.68	134.42	0.14
Mainstem	1.356	100-YR	3090.00	673.82	690.88	680.79	691.00	0.000200	2.93	1316.78	135.70	0.14
Mainstem	1.356	500-YR	3210.00	673.82	691.32	680.92	691.44	0.000192	2.93	1377.24	139.00	0.14
Mainstem	1.347	2-YR	1230.00	673.72	681.98	678.44	682.14	0.001686	3.22	382.10	87.56	0.27
Mainstem	1.347	5-YR	1890.00	673.72	684.33	679.39	684.49	0.000948	3.21	588.91	109.21	0.22
Mainstem	1.347	10-YR	2350.00	673.72	688.61	679.95	688.70	0.000282	2.43	965.90	144.88	0.13
Mainstem	1.347	25-YR	2980.00	673.72	690.52	680.64	690.60	0.000222	2.33	1449.30	156.48	0.12
Mainstem	1.347	50-YR	3040.00	673.72	690.73	680.70	690.81	0.000218	2.33	1481.60	157.09	0.12
Mainstem	1.347	100-YR	3090.00	673.72	690.90	680.75	690.98	0.000214	2.33	1508.59	157.59	0.12
Mainstem	1.347	500-YR	3210.00	673.72	691.34	680.84	691.42	0.000205	2.33	1578.35	158.89	0.11
Mainstem	1.345	2-YR	1230.00	673.72	681.83	678.42	682.11	0.001178	4.34	341.92	77.48	0.30
Mainstem	1.345	5-YR	1890.00	673.72	684.15	679.43	684.46	0.000895	4.65	542.81	105.02	0.28
Mainstem	1.345	10-YR	2350.00	673.72	688.53	680.07	688.69	0.000301	3.54	965.00	156.82	0.17
Mainstem	1.345	25-YR	2980.00	673.72	690.43	680.87	690.59	0.000272	3.68	1443.78	173.44	0.17
Mainstem	1.345	50-YR	3040.00	673.72	690.63	680.93	690.80	0.000267	3.68	1479.78	174.17	0.17
Mainstem	1.345	100-YR	3090.00	673.72	690.81	680.99	690.97	0.000263	3.68	1509.86	174.77	0.17
Mainstem	1.345	500-YR	3210.00	673.72	691.25	681.13	691.41	0.000252	3.67	1587.76	176.34	0.16
Mainstem	1.3263*	2-YR	1230.00	673.62	681.72		681.99	0.001140	4.26	351.04	81.77	0.30
Mainstem	1.3263*	5-YR	1890.00	673.62	684.08		684.37	0.000857	4.56	577.89	112.80	0.27
Mainstem	1.3263*	10-YR	2350.00	673.62	688.51		688.66	0.000269	3.35	1233.91	187.56	0.16
Mainstem	1.3263*	25-YR	2980.00	673.62	690.42		690.56	0.000243	3.49	1620.15	212.20	0.16
Mainstem	1.3263*	50-YR	3040.00	673.62	690.62		690.77	0.000238	3.49	1664.38	212.91	0.16
Mainstem	1.3263*	100-YR	3090.00	673.62	690.80		690.94	0.000234	3.48	1701.28	213.51	0.16
Mainstem	1.3263*	500-YR	3210.00	673.62	691.24		691.38	0.000222	3.46	1796.75	215.03	0.15

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.3077*	2-YR	1230.00	673.52	681.62		681.88	0.001109	4.19	356.45	83.57	0.29
Mainstem	1.3077*	5-YR	1890.00	673.52	684.00		684.28	0.000819	4.46	591.46	116.17	0.27
Mainstem	1.3077*	10-YR	2350.00	673.52	688.49		688.63	0.000254	3.27	1295.14	212.21	0.16
Mainstem	1.3077*	25-YR	2980.00	673.52	690.40		690.54	0.000227	3.38	1747.49	250.96	0.15
Mainstem	1.3077*	50-YR	3040.00	673.52	690.61		690.74	0.000221	3.37	1800.02	251.65	0.15
Mainstem	1.3077*	100-YR	3090.00	673.52	690.78		690.91	0.000217	3.36	1843.82	252.22	0.15
Mainstem	1.3077*	500-YR	3210.00	673.52	691.23		691.36	0.000205	3.33	1957.01	253.71	0.15
Mainstem	1.289	2-YR	1230.00	673.42	681.52		681.77	0.001076	4.12	361.31	82.94	0.29
Mainstem	1.289	5-YR	1890.00	673.42	683.93		684.20	0.000784	4.36	600.29	115.94	0.26
Mainstem	1.289	10-YR	2350.00	673.42	688.47		688.60	0.000243	3.21	1318.15	221.22	0.16
Mainstem	1.289	25-YR	2980.00	673.42	690.38		690.51	0.000218	3.32	1826.12	289.70	0.15
Mainstem	1.289	50-YR	3040.00	673.42	690.59		690.72	0.000212	3.31	1887.01	290.37	0.15
Mainstem	1.289	100-YR	3090.00	673.42	690.77		690.89	0.000207	3.30	1937.73	290.93	0.15
Mainstem	1.289	500-YR	3210.00	673.42	691.21		691.34	0.000194	3.25	2068.80	292.38	0.14
Mainstem	1.2728*	2-YR	1230.00	673.29	681.42		681.67	0.001104	4.08	366.82	85.86	0.29
Mainstem	1.2728*	5-YR	1890.00	673.29	683.87		684.13	0.000802	4.29	615.94	119.60	0.26
Mainstem	1.2728*	10-YR	2350.00	673.29	688.46		688.58	0.000240	3.09	1338.00	208.52	0.15
Mainstem	1.2728*	25-YR	2980.00	673.29	690.37		690.49	0.000217	3.21	1801.14	261.27	0.14
Mainstem	1.2728*	50-YR	3040.00	673.29	690.58		690.70	0.000212	3.20	1856.09	262.08	0.14
Mainstem	1.2728*	100-YR	3090.00	673.29	690.75		690.87	0.000208	3.19	1901.92	262.76	0.14
Mainstem	1.2728*	500-YR	3210.00	673.29	691.20		691.32	0.000196	3.16	2020.44	264.50	0.14
Mainstem	1.2565*	2-YR	1230.00	673.17	681.33		681.58	0.001034	4.06	370.53	86.51	0.28
Mainstem	1.2565*	5-YR	1890.00	673.17	683.80		684.06	0.000738	4.27	623.77	120.01	0.25
Mainstem	1.2565*	10-YR	2350.00	673.17	688.44		688.56	0.000218	3.08	1329.48	192.61	0.15
Mainstem	1.2565*	25-YR	2980.00	673.17	690.35		690.47	0.000202	3.23	1744.96	232.77	0.15
Mainstem	1.2565*	50-YR	3040.00	673.17	690.56		690.68	0.000198	3.22	1793.90	233.72	0.14
Mainstem	1.2565*	100-YR	3090.00	673.17	690.73		690.85	0.000194	3.22	1834.74	234.51	0.14
Mainstem	1.2565*	500-YR	3210.00	673.17	691.18		691.30	0.000184	3.20	1940.59	236.55	0.14
Mainstem	1.2403*	2-YR	1230.00	673.04	681.24		681.49	0.001012	4.04	371.71	84.76	0.28
Mainstem	1.2403*	5-YR	1890.00	673.04	683.74		684.00	0.000724	4.25	622.11	117.52	0.25
Mainstem	1.2403*	10-YR	2350.00	673.04	688.42		688.54	0.000215	3.06	1293.71	174.26	0.15
Mainstem	1.2403*	25-YR	2980.00	673.04	690.33		690.45	0.000202	3.25	1660.23	204.17	0.15
Mainstem	1.2403*	50-YR	3040.00	673.04	690.54		690.66	0.000198	3.24	1703.14	205.28	0.14
Mainstem	1.2403*	100-YR	3090.00	673.04	690.71		690.84	0.000195	3.24	1738.99	206.19	0.14
Mainstem	1.2403*	500-YR	3210.00	673.04	691.16		691.28	0.000187	3.23	1832.13	208.56	0.14
Mainstem	1.224	2-YR	1230.00	672.92	681.16		681.40	0.001002	4.03	366.91	80.49	0.28
Mainstem	1.224	5-YR	1890.00	672.92	683.67		683.93	0.000724	4.27	606.27	112.34	0.25
Mainstem	1.224	10-YR	2350.00	672.92	688.40		688.52	0.000216	3.09	1229.12	154.16	0.15
Mainstem	1.224	25-YR	2980.00	672.92	690.30		690.43	0.000207	3.30	1545.61	175.49	0.15
Mainstem	1.224	50-YR	3040.00	672.92	690.51		690.64	0.000204	3.30	1582.47	176.74	0.15
Mainstem	1.224	100-YR	3090.00	672.92	690.68		690.82	0.000201	3.31	1613.32	177.79	0.15
Mainstem	1.224	500-YR	3210.00	672.92	691.13		691.27	0.000194	3.30	1693.72	180.48	0.14
Mainstem	1.222	2-YR	1230.00	672.92	681.19		681.36	0.001101	3.35	367.56	80.32	0.28
Mainstem	1.222	5-YR	1890.00	672.92	683.74		683.89	0.000623	3.19	598.46	100.86	0.22
Mainstem	1.222	10-YR	2350.00	672.92	688.43		688.50	0.000150	2.25	1179.23	148.43	0.12
Mainstem	1.222	25-YR	2980.00	672.92	690.33		690.42	0.000138	2.39	1482.73	167.68	0.12
Mainstem	1.222	50-YR	3040.00	672.92	690.54		690.63	0.000136	2.40	1517.91	168.93	0.12
Mainstem	1.222	100-YR	3090.00	672.92	690.72		690.80	0.000134	2.40	1547.37	169.98	0.12
Mainstem	1.222	500-YR	3210.00	672.92	691.16		691.25	0.000129	2.40	1624.08	172.66	0.11
Mainstem	1.2195*	2-YR	1230.00	672.90	681.18		681.35	0.001038	3.32	371.01	78.54	0.27
Mainstem	1.2195*	5-YR	1890.00	672.90	683.73		683.89	0.000609	3.21	595.07	96.83	0.22
Mainstem	1.2195*	10-YR	2350.00	672.90	688.42		688.50	0.000153	2.29	1128.39	140.32	0.12
Mainstem	1.2195*	25-YR	2980.00	672.90	690.33		690.42	0.000144	2.46	1361.45	160.80	0.12
Mainstem	1.2195*	50-YR	3040.00	672.90	690.53		690.63	0.000142	2.47	1387.01	162.13	0.12
Mainstem	1.2195*	100-YR	3090.00	672.90	690.71		690.80	0.000140	2.47	1408.28	163.23	0.12
Mainstem	1.2195*	500-YR	3210.00	672.90	691.15		691.25	0.000135	2.48	1463.04	166.08	0.12
Mainstem	1.2170*	2-YR	1230.00	672.87	681.17		681.34	0.000983	3.29	373.75	76.69	0.26
Mainstem	1.2170*	5-YR	1890.00	672.87	683.72		683.88	0.000597	3.22	591.06	93.05	0.22
Mainstem	1.2170*	10-YR	2350.00	672.87	688.41		688.50	0.000159	2.35	1036.60	132.05	0.12
Mainstem	1.2170*	25-YR	2980.00	672.87	690.31		690.41	0.000153	2.56	1216.95	154.17	0.12
Mainstem	1.2170*	50-YR	3040.00	672.87	690.52		690.62	0.000151	2.57	1236.74	156.62	0.12
Mainstem	1.2170*	100-YR	3090.00	672.87	690.69		690.80	0.000150	2.58	1253.21	156.82	0.12
Mainstem	1.2170*	500-YR	3210.00	672.87	691.14		691.24	0.000145	2.59	1295.61	157.00	0.12
Mainstem	1.2145*	2-YR	1230.00	672.84	681.15		681.32	0.000855	3.32	370.44	74.75	0.25
Mainstem	1.2145*	5-YR	1890.00	672.84	683.68		683.87	0.000571	3.49	540.94	89.26	0.22
Mainstem	1.2145*	10-YR	2350.00	672.84	688.38		688.49	0.000190	2.74	858.20	123.24	0.14
Mainstem	1.2145*	25-YR	2980.00	672.84	690.27		690.41	0.000192	3.02	985.56	147.50	0.14
Mainstem	1.2145*	50-YR	3040.00	672.84	690.47		690.62	0.000191	3.04	999.56	147.50	0.14
Mainstem	1.2145*	100-YR	3090.00	672.84	690.64		690.79	0.000190	3.06	1011.21	147.50	0.14

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.2145*	500-YR	3210.00	672.84	691.09		691.24	0.000186	3.08	1041.23	147.50	0.14
Mainstem	1.212	2-YR	1230.00	672.82	681.01		681.30	0.001022	4.34	283.48	71.88	0.29
Mainstem	1.212	5-YR	1890.00	672.82	683.46		683.84	0.000897	4.95	381.53	84.85	0.28
Mainstem	1.212	10-YR	2350.00	672.82	688.21		688.48	0.000360	4.11	571.77	111.65	0.19
Mainstem	1.212	25-YR	2980.00	672.82	690.05		690.38	0.000387	4.62	645.34	138.00	0.20
Mainstem	1.212	50-YR	3040.00	672.82	690.26		690.59	0.000386	4.65	653.49	138.00	0.20
Mainstem	1.212	100-YR	3090.00	672.82	690.43		690.77	0.000385	4.68	660.27	138.00	0.20
Mainstem	1.212	500-YR	3210.00	672.82	690.87		691.21	0.000381	4.74	677.82	138.00	0.20
Mainstem	1.2095*	2-YR	1230.00	672.77	680.71		681.22	0.001750	5.69	216.15	60.94	0.38
Mainstem	1.2095*	5-YR	1890.00	672.77	683.07		683.74	0.001589	6.56	287.89	69.19	0.38
Mainstem	1.2095*	10-YR	2350.00	672.77	687.97		688.41	0.000610	5.37	437.31	90.82	0.25
Mainstem	1.2095*	25-YR	2980.00	672.77	689.73		690.31	0.000666	6.07	491.24	101.21	0.27
Mainstem	1.2095*	50-YR	3040.00	672.77	689.93		690.51	0.000665	6.11	497.30	102.37	0.27
Mainstem	1.2095*	100-YR	3090.00	672.77	690.10		690.69	0.000664	6.15	502.34	103.35	0.27
Mainstem	1.2095*	500-YR	3210.00	672.77	690.53		691.13	0.000658	6.23	515.47	105.87	0.27
Mainstem	1.207	2-YR	1230.00	672.72	679.53	678.07	680.91	0.005688	9.43	130.47	43.63	0.67
Mainstem	1.207	5-YR	1890.00	672.72	681.38	679.64	683.32	0.005634	11.16	169.31	48.43	0.69
Mainstem	1.207	10-YR	2350.00	672.72	687.23	680.63	688.23	0.001415	8.05	292.09	64.02	0.38
Mainstem	1.207	25-YR	2980.00	672.72	688.76	681.89	690.07	0.001607	9.19	324.15	68.10	0.41
Mainstem	1.207	50-YR	3040.00	672.72	688.94	681.98	690.27	0.001609	9.27	327.97	68.58	0.41
Mainstem	1.207	100-YR	3090.00	672.72	689.09	682.08	690.44	0.001609	9.33	331.15	68.98	0.41
Mainstem	1.207	500-YR	3210.00	672.72	689.49	682.28	690.88	0.001596	9.45	339.63	70.06	0.41
Mainstem	1.206	2-YR	1230.00	672.72	679.52	678.07	680.91	0.001820	9.44	130.30	21.00	0.64
Mainstem	1.206	5-YR	1890.00	672.72	681.37	679.64	683.31	0.002081	11.18	169.12	21.00	0.67
Mainstem	1.206	10-YR	2350.00	672.72	687.23	680.62	688.23	0.000758	8.05	292.04	21.00	0.37
Mainstem	1.206	25-YR	2980.00	672.72	688.62	681.89	690.03	0.001650	9.56	311.85		0.42
Mainstem	1.206	50-YR	3040.00	672.72	688.75	682.00	690.23	0.001717	9.75	311.85		0.43
Mainstem	1.206	100-YR	3090.00	672.72	688.86	682.08	690.39	0.001774	9.91	311.85		0.43
Mainstem	1.206	500-YR	3210.00	672.72	689.15	682.32	690.80	0.001915	10.29	311.85		0.45
Mainstem	1.205	2-YR	1230.00	672.72	679.51	678.07	680.90	0.001834	9.47	129.94	21.00	0.64
Mainstem	1.205	5-YR	1890.00	672.72	681.35	679.64	683.30	0.002096	11.20	168.69	21.00	0.67
Mainstem	1.205	10-YR	2350.00	672.72	687.20	680.62	688.22	0.001259	8.11	289.80		0.38
Mainstem	1.205	25-YR	2980.00	672.72	688.31	681.89	689.96	0.002024	10.28	289.80		0.46
Mainstem	1.205	50-YR	3040.00	672.72	688.44	682.00	690.15	0.002106	10.49	289.80		0.47
Mainstem	1.205	100-YR	3090.00	672.72	688.54	682.08	690.30	0.002176	10.66	289.80		0.47
Mainstem	1.205	500-YR	3210.00	672.72	688.80	682.32	690.71	0.002349	11.08	289.80		0.49
Mainstem	1.203	2-YR	1230.00	672.72	679.47	678.07	680.88	0.001869	9.53	129.07	21.00	0.65
Mainstem	1.203	5-YR	1890.00	672.72	681.30	679.64	683.28	0.002135	11.28	167.54	21.00	0.68
Mainstem	1.203	10-YR	2350.00	672.72	686.89	680.62	688.14	0.001663	8.95	262.50		0.42
Mainstem	1.203	25-YR	2980.00	672.72	687.82	681.89	689.82	0.002673	11.35	262.50		0.52
Mainstem	1.203	50-YR	3040.00	672.72	687.92	682.00	690.00	0.002782	11.58	262.50		0.52
Mainstem	1.203	100-YR	3090.00	672.72	688.00	682.08	690.16	0.002874	11.77	262.50		0.53
Mainstem	1.203	500-YR	3210.00	672.72	688.23	682.32	690.55	0.003102	12.23	262.50		0.55
Mainstem	1.202	2-YR	1230.00	672.72	679.45	678.07	680.87	0.001885	9.56	128.69	21.00	0.65
Mainstem	1.202	5-YR	1890.00	672.72	681.28	679.64	683.27	0.002151	11.31	167.09	21.00	0.68
Mainstem	1.202	10-YR	2350.00	672.72	686.25	680.62	687.98	0.002661	10.56	222.60		0.51
Mainstem	1.202	25-YR	2980.00	672.72	686.78	681.89	689.57	0.004279	13.39	222.60		0.63
Mainstem	1.202	50-YR	3040.00	672.72	686.84	682.00	689.74	0.004453	13.66	222.60		0.64
Mainstem	1.202	100-YR	3090.00	672.72	686.89	682.08	689.88	0.004601	13.88	222.60		0.65
Mainstem	1.202	500-YR	3210.00	672.72	687.02	682.32	690.26	0.004966	14.42	222.60		0.67
Mainstem	1.1995*	2-YR	1230.00	672.72	679.39	678.07	680.84	0.001934	9.65	127.49	21.00	0.66
Mainstem	1.1995*	5-YR	1890.00	672.72	681.21	679.64	683.23	0.002206	11.42	165.54	21.00	0.69
Mainstem	1.1995*	10-YR	2350.00	672.72	686.21	680.63	687.95	0.002662	10.56	222.55		0.51
Mainstem	1.1995*	25-YR	2980.00	672.72	686.72	681.87	689.51	0.004281	13.39	222.55		0.63
Mainstem	1.1995*	50-YR	3040.00	672.72	686.78	682.00	689.68	0.004455	13.66	222.55		0.64
Mainstem	1.1995*	100-YR	3090.00	672.72	686.83	682.09	689.82	0.004603	13.88	222.55		0.65
Mainstem	1.1995*	500-YR	3210.00	672.72	686.96	682.33	690.19	0.004968	14.42	222.55		0.67
Mainstem	1.1970*	2-YR	1230.00	672.72	679.34	678.06	680.81	0.001984	9.74	126.34	21.00	0.67
Mainstem	1.1970*	5-YR	1890.00	672.72	681.13	679.65	683.20	0.002262	11.52	164.02	21.00	0.70
Mainstem	1.1970*	10-YR	2350.00	672.72	686.18	680.62	687.91	0.002662	10.56	222.55		0.51
Mainstem	1.1970*	25-YR	2980.00	672.72	686.67	681.89	689.45	0.004281	13.39	222.55		0.63
Mainstem	1.1970*	50-YR	3040.00	672.72	686.72	682.00	689.62	0.004455	13.66	222.55		0.64
Mainstem	1.1970*	100-YR	3090.00	672.72	686.77	682.10	689.76	0.004603	13.88	222.55		0.65
Mainstem	1.1970*	500-YR	3210.00	672.72	686.89	682.32	690.13	0.004967	14.42	222.55		0.68
Mainstem	1.1945*	2-YR	1230.00	672.72	679.28	678.07	680.78	0.002038	9.83	125.14	21.00	0.68
Mainstem	1.1945*	5-YR	1890.00	672.72	681.05	679.64	683.16	0.002328	11.64	162.31	21.00	0.71
Mainstem	1.1945*	10-YR	2350.00	672.72	686.14	680.64	687.88	0.002661	10.56	222.56		0.51
Mainstem	1.1945*	25-YR	2980.00	672.72	686.61	681.87	689.40	0.004280	13.39	222.56		0.63
Mainstem	1.1945*	50-YR	3040.00	672.72	686.66	682.00	689.56	0.004454	13.66	222.56		0.64

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.1945*	100-YR	3090.00	672.72	686.71	682.10	689.70	0.004602	13.88	222.56		0.65
Mainstem	1.1945*	500-YR	3210.00	672.72	686.83	682.31	690.06	0.004966	14.42	222.56		0.68
Mainstem	1.1920*	2-YR	1230.00	672.72	679.22	678.07	680.75	0.002100	9.93	123.81	21.00	0.69
Mainstem	1.1920*	5-YR	1890.00	672.72	680.96	679.64	683.12	0.002399	11.77	160.52	21.00	0.72
Mainstem	1.1920*	10-YR	2350.00	672.72	686.11	680.62	687.84	0.002660	10.56	222.58		0.51
Mainstem	1.1920*	25-YR	2980.00	672.72	686.55	681.87	689.34	0.004278	13.39	222.58		0.63
Mainstem	1.1920*	50-YR	3040.00	672.72	686.61	681.97	689.50	0.004452	13.66	222.58		0.65
Mainstem	1.1920*	100-YR	3090.00	672.72	686.64	682.09	689.64	0.004599	13.88	222.58		0.66
Mainstem	1.1920*	500-YR	3210.00	672.72	686.76	682.30	689.99	0.004963	14.42	222.58		0.68
Mainstem	1.1895*	2-YR	1230.00	672.72	679.14	678.06	680.72	0.002179	10.07	122.20	21.00	0.70
Mainstem	1.1895*	5-YR	1890.00	672.72	680.86	679.62	683.08	0.002492	11.94	158.30	21.00	0.74
Mainstem	1.1895*	10-YR	2350.00	672.72	686.07	680.63	687.80	0.002660	10.56	222.56		0.51
Mainstem	1.1895*	25-YR	2980.00	672.72	686.50	681.87	689.28	0.004278	13.39	222.56		0.64
Mainstem	1.1895*	50-YR	3040.00	672.72	686.55	681.99	689.45	0.004452	13.66	222.56		0.65
Mainstem	1.1895*	100-YR	3090.00	672.72	686.58	682.10	689.58	0.004600	13.88	222.56		0.66
Mainstem	1.1895*	500-YR	3210.00	672.72	686.70	682.32	689.93	0.004964	14.42	222.56		0.68
Mainstem	1.187	2-YR	1230.00	672.72	678.06	678.06	680.43	0.003927	12.35	99.61	21.00	0.94
Mainstem	1.187	5-YR	1890.00	672.72	680.74	679.64	683.03	0.002604	12.13	155.87	21.00	0.75
Mainstem	1.187	10-YR	2350.00	672.72	686.04	680.63	687.77	0.002661	10.56	222.60		0.51
Mainstem	1.187	25-YR	2980.00	672.72	686.44	681.89	689.23	0.004279	13.39	222.60		0.64
Mainstem	1.187	50-YR	3040.00	672.72	686.49	682.00	689.39	0.004453	13.66	222.60		0.65
Mainstem	1.187	100-YR	3090.00	672.72	686.52	682.09	689.52	0.004601	13.88	222.60		0.66
Mainstem	1.187	500-YR	3210.00	672.72	686.63	682.32	689.86	0.004966	14.42	222.60		0.68
Mainstem	1.185	2-YR	1230.00	672.61	678.73	676.20	679.07	0.002212	4.71	261.36	56.72	0.39
Mainstem	1.185	5-YR	1890.00	672.61	681.72	682.01	682.01	0.000996	4.33	438.17	68.45	0.28
Mainstem	1.185	10-YR	2350.00	672.61	686.82	686.97	686.97	0.000269	3.19	743.97	93.26	0.16
Mainstem	1.185	25-YR	2980.00	672.61	687.71	687.93	687.93	0.000343	3.77	797.72	97.97	0.18
Mainstem	1.185	50-YR	3040.00	672.61	687.81	688.04	688.04	0.000348	3.82	803.73	98.56	0.18
Mainstem	1.185	100-YR	3090.00	672.61	687.90	688.13	688.13	0.000353	3.86	808.63	99.05	0.18
Mainstem	1.185	500-YR	3210.00	672.61	688.12	688.36	688.36	0.000361	3.94	821.84	100.37	0.19
Mainstem	1.183	2-YR	1230.00	672.49	678.57	678.57	679.02	0.002842	5.36	229.66	57.07	0.44
Mainstem	1.183	5-YR	1890.00	672.49	681.59	681.97	681.97	0.001246	4.97	380.54	73.36	0.32
Mainstem	1.183	10-YR	2350.00	672.49	686.75	686.96	686.96	0.000344	3.68	638.25	103.08	0.18
Mainstem	1.183	25-YR	2980.00	672.49	687.61	687.91	687.91	0.000444	4.37	681.45	105.67	0.21
Mainstem	1.183	50-YR	3040.00	672.49	687.71	688.01	688.01	0.000452	4.43	686.32	105.96	0.21
Mainstem	1.183	100-YR	3090.00	672.49	687.79	688.10	688.10	0.000458	4.48	690.28	106.00	0.21
Mainstem	1.183	500-YR	3210.00	672.49	688.00	688.33	688.33	0.000469	4.58	701.02	106.00	0.22
Mainstem	1.1805*	2-YR	1230.00	672.20	678.57	678.57	678.97	0.002544	5.05	243.62	60.43	0.42
Mainstem	1.1805*	5-YR	1890.00	672.20	681.62	681.94	681.94	0.001104	4.53	421.80	80.06	0.30
Mainstem	1.1805*	10-YR	2350.00	672.20	686.78	686.94	686.94	0.000274	3.23	795.14	119.08	0.16
Mainstem	1.1805*	25-YR	2980.00	672.20	687.66	687.88	687.88	0.000347	3.80	868.17	122.67	0.18
Mainstem	1.1805*	50-YR	3040.00	672.20	687.76	687.98	687.98	0.000352	3.85	876.37	122.67	0.19
Mainstem	1.1805*	100-YR	3090.00	672.20	687.84	688.07	688.07	0.000356	3.89	883.06	122.67	0.19
Mainstem	1.1805*	500-YR	3210.00	672.20	688.06	688.29	688.29	0.000363	3.97	901.14	122.67	0.19
Mainstem	1.1780*	2-YR	1230.00	671.90	678.58	678.58	678.92	0.002173	4.69	262.36	63.76	0.39
Mainstem	1.1780*	5-YR	1890.00	671.90	681.64	681.91	681.91	0.000949	4.21	452.33	86.32	0.28
Mainstem	1.1780*	10-YR	2350.00	671.90	686.79	686.93	686.93	0.000239	3.02	838.06	135.86	0.15
Mainstem	1.1780*	25-YR	2980.00	671.90	687.67	687.87	687.87	0.000303	3.56	914.03	139.33	0.17
Mainstem	1.1780*	50-YR	3040.00	671.90	687.77	687.97	687.97	0.000307	3.61	922.57	139.33	0.17
Mainstem	1.1780*	100-YR	3090.00	671.90	687.85	688.05	688.05	0.000311	3.64	929.54	139.33	0.17
Mainstem	1.1780*	500-YR	3210.00	671.90	688.07	688.28	688.28	0.000317	3.72	948.36	139.33	0.18
Mainstem	1.1755*	2-YR	1230.00	671.60	678.59	678.59	678.88	0.001914	4.33	283.85	67.11	0.36
Mainstem	1.1755*	5-YR	1890.00	671.60	681.66	681.89	681.89	0.000805	3.86	493.24	92.31	0.25
Mainstem	1.1755*	10-YR	2350.00	671.60	686.80	686.92	686.92	0.000201	2.77	905.00	152.96	0.14
Mainstem	1.1755*	25-YR	2980.00	671.60	687.69	687.85	687.85	0.000255	3.26	985.06	155.90	0.16
Mainstem	1.1755*	50-YR	3040.00	671.60	687.79	687.96	687.96	0.000259	3.30	994.18	156.00	0.16
Mainstem	1.1755*	100-YR	3090.00	671.60	687.87	688.04	688.04	0.000262	3.33	1001.63	156.00	0.16
Mainstem	1.1755*	500-YR	3210.00	671.60	688.09	688.27	688.27	0.000267	3.40	1021.72	156.00	0.16
Mainstem	1.1730*	2-YR	1230.00	671.31	678.59	678.59	678.85	0.001699	4.08	301.56	70.38	0.34
Mainstem	1.1730*	5-YR	1890.00	671.31	681.67	681.87	681.87	0.000710	3.63	524.14	97.91	0.24
Mainstem	1.1730*	10-YR	2350.00	671.31	686.81	686.91	686.91	0.000178	2.60	952.90	168.32	0.13
Mainstem	1.1730*	25-YR	2980.00	671.31	687.70	687.84	687.84	0.000226	3.07	1034.94	170.77	0.15
Mainstem	1.1730*	50-YR	3040.00	671.31	687.80	687.95	687.95	0.000229	3.11	1044.26	171.05	0.15
Mainstem	1.1730*	100-YR	3090.00	671.31	687.88	688.03	688.03	0.000232	3.14	1051.89	171.27	0.15
Mainstem	1.1730*	500-YR	3210.00	671.31	688.10	688.26	688.26	0.000237	3.21	1072.55	171.88	0.15
Mainstem	1.1705*	2-YR	1230.00	671.01	678.59	678.59	678.82	0.001558	3.85	319.42	73.55	0.33
Mainstem	1.1705*	5-YR	1890.00	671.01	681.68	681.85	681.85	0.000628	3.39	559.99	103.12	0.22
Mainstem	1.1705*	10-YR	2350.00	671.01	686.81	686.91	686.91	0.000156	2.43	1014.27	184.12	0.12
Mainstem	1.1705*	25-YR	2980.00	671.01	687.71	687.84	687.84	0.000198	2.86	1100.14	186.21	0.14

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.1705*	50-YR	3040.00	671.01	687.81		687.94	0.000200	2.90	1109.87	186.44	0.14
Mainstem	1.1705*	100-YR	3090.00	671.01	687.89		688.02	0.000203	2.93	1117.83	186.63	0.14
Mainstem	1.1705*	500-YR	3210.00	671.01	688.11		688.25	0.000207	2.99	1139.33	187.15	0.14
Mainstem	1.168	2-YR	1230.00	670.72	678.58		678.79	0.002176	3.66	336.35	76.73	0.31
Mainstem	1.168	5-YR	1890.00	670.72	681.68		681.84	0.000882	3.22	588.83	108.03	0.21
Mainstem	1.168	10-YR	2350.00	670.72	686.82		686.90	0.000220	2.31	1059.01	200.20	0.12
Mainstem	1.168	25-YR	2980.00	670.72	687.72		687.83	0.000278	2.72	1147.08	201.99	0.13
Mainstem	1.168	50-YR	3040.00	670.72	687.82		687.93	0.000282	2.75	1157.03	202.19	0.13
Mainstem	1.168	100-YR	3090.00	670.72	687.90		688.02	0.000285	2.78	1165.17	202.36	0.13
Mainstem	1.168	500-YR	3210.00	670.72	688.12		688.24	0.000291	2.84	1187.16	202.80	0.14
Mainstem	1.166	2-YR	1230.00	670.72	678.47		678.76	0.001332	4.41	316.04	69.49	0.32
Mainstem	1.166	5-YR	1890.00	670.72	681.56		681.82	0.000713	4.26	552.55	101.41	0.25
Mainstem	1.166	10-YR	2350.00	670.72	686.76		686.89	0.000214	3.16	1012.09	200.07	0.15
Mainstem	1.166	25-YR	2980.00	670.72	687.63		687.82	0.000278	3.74	1094.96	201.82	0.17
Mainstem	1.166	50-YR	3040.00	670.72	687.73		687.92	0.000283	3.79	1104.39	202.01	0.17
Mainstem	1.166	100-YR	3090.00	670.72	687.81		688.01	0.000286	3.83	1112.09	202.17	0.17
Mainstem	1.166	500-YR	3210.00	670.72	688.02		688.23	0.000294	3.92	1132.99	202.61	0.18
Mainstem	1.1505*	2-YR	1230.00	670.62	678.36		678.65	0.001338	4.41	314.28	68.70	0.32
Mainstem	1.1505*	5-YR	1890.00	670.62	681.50		681.76	0.000708	4.26	573.61	99.91	0.25
Mainstem	1.1505*	10-YR	2350.00	670.62	686.75		686.87	0.000190	2.99	1321.74	178.28	0.14
Mainstem	1.1505*	25-YR	2980.00	670.62	687.63		687.79	0.000237	3.47	1479.50	180.24	0.16
Mainstem	1.1505*	50-YR	3040.00	670.62	687.73		687.89	0.000240	3.51	1497.41	180.46	0.16
Mainstem	1.1505*	100-YR	3090.00	670.62	687.81		687.97	0.000242	3.54	1512.02	180.65	0.16
Mainstem	1.1505*	500-YR	3210.00	670.62	688.03		688.20	0.000246	3.60	1551.66	181.15	0.16
Mainstem	1.1350*	2-YR	1230.00	670.52	678.25		678.54	0.001347	4.42	311.76	67.54	0.32
Mainstem	1.1350*	5-YR	1890.00	670.52	681.44		681.70	0.000696	4.23	570.55	96.32	0.25
Mainstem	1.1350*	10-YR	2350.00	670.52	686.73		686.85	0.000191	3.01	1255.03	156.39	0.14
Mainstem	1.1350*	25-YR	2980.00	670.52	687.61		687.77	0.000241	3.52	1392.27	158.47	0.16
Mainstem	1.1350*	50-YR	3040.00	670.52	687.71		687.87	0.000245	3.55	1407.91	158.73	0.16
Mainstem	1.1350*	100-YR	3090.00	670.52	687.79		687.95	0.000248	3.59	1420.67	158.94	0.16
Mainstem	1.1350*	500-YR	3210.00	670.52	688.00		688.17	0.000252	3.66	1455.35	159.51	0.16
Mainstem	1.1195*	2-YR	1230.00	670.42	678.13		678.43	0.001359	4.43	308.25	66.09	0.32
Mainstem	1.1195*	5-YR	1890.00	670.42	681.39		681.65	0.000688	4.22	561.46	90.35	0.25
Mainstem	1.1195*	10-YR	2350.00	670.42	686.71		686.84	0.000194	3.04	1171.87	134.45	0.14
Mainstem	1.1195*	25-YR	2980.00	670.42	687.58		687.75	0.000249	3.58	1288.71	136.55	0.16
Mainstem	1.1195*	50-YR	3040.00	670.42	687.67		687.85	0.000253	3.62	1302.07	136.84	0.16
Mainstem	1.1195*	100-YR	3090.00	670.42	687.75		687.93	0.000256	3.66	1312.97	137.08	0.16
Mainstem	1.1195*	500-YR	3210.00	670.42	687.97		688.15	0.000262	3.74	1342.67	137.73	0.17
Mainstem	1.104	2-YR	1230.00	670.32	678.02		678.32	0.001376	4.45	303.08	63.64	0.32
Mainstem	1.104	5-YR	1890.00	670.32	681.33		681.59	0.000686	4.23	544.10	82.11	0.25
Mainstem	1.104	10-YR	2350.00	670.32	686.69		686.82	0.000201	3.11	1071.91	112.42	0.14
Mainstem	1.104	25-YR	2980.00	670.32	687.54		687.72	0.000262	3.68	1168.45	114.54	0.17
Mainstem	1.104	50-YR	3040.00	670.32	687.63		687.82	0.000266	3.73	1179.53	114.79	0.17
Mainstem	1.104	100-YR	3090.00	670.32	687.71		687.91	0.000270	3.76	1188.57	114.98	0.17
Mainstem	1.104	500-YR	3210.00	670.32	687.93		688.13	0.000277	3.85	1213.25	115.72	0.17
Mainstem	1.102	2-YR	1230.00	670.32	678.03		678.27	0.001521	3.91	314.49	68.96	0.32
Mainstem	1.102	5-YR	1890.00	670.32	681.37		681.54	0.000600	3.31	575.10	84.83	0.22
Mainstem	1.102	10-YR	2350.00	670.32	686.71		686.79	0.000141	2.32	1085.04	105.98	0.12
Mainstem	1.102	25-YR	2980.00	670.32	687.57		687.69	0.000180	2.75	1176.91	107.70	0.13
Mainstem	1.102	50-YR	3040.00	670.32	687.67		687.79	0.000183	2.78	1187.41	107.90	0.13
Mainstem	1.102	100-YR	3090.00	670.32	687.75		687.87	0.000185	2.81	1195.98	108.08	0.13
Mainstem	1.102	500-YR	3210.00	670.32	687.96		688.09	0.000189	2.87	1219.34	108.73	0.14
Mainstem	1.091	2-YR	1230.00	670.32	677.42		674.94	0.000498	6.58	187.03	51.05	0.46
Mainstem	1.091	5-YR	1890.00	670.32	680.68		676.18	0.000290	6.64	284.58	63.77	0.38
Mainstem	1.091	10-YR	2350.00	670.32	686.27		676.96	0.000096	5.20	452.31	85.86	0.24
Mainstem	1.091	25-YR	2980.00	670.32	686.90		677.94	0.000134	6.32	471.46	88.38	0.28
Mainstem	1.091	50-YR	3040.00	670.32	686.98		678.03	0.000137	6.42	473.74	88.68	0.28
Mainstem	1.091	100-YR	3090.00	670.32	687.04		678.09	0.000140	6.50	475.58	88.92	0.29
Mainstem	1.091	500-YR	3210.00	670.32	687.22		678.29	0.000146	6.68	480.81	89.61	0.29
Mainstem	1.08		Bridge									
Mainstem	1.079	2-YR	1230.00	670.32	677.30		674.94	0.000533	6.71	183.26	50.56	0.48
Mainstem	1.079	5-YR	1890.00	670.32	680.45		676.18	0.000315	6.81	277.68	62.86	0.39
Mainstem	1.079	10-YR	2350.00	670.32	681.32		676.94	0.000360	7.73	304.03	66.33	0.43
Mainstem	1.079	25-YR	2980.00	670.32	682.16		677.91	0.000445	9.06	328.97	69.62	0.48
Mainstem	1.079	50-YR	3040.00	670.32	682.21		678.03	0.000455	9.19	330.72	69.85	0.49
Mainstem	1.079	100-YR	3090.00	670.32	682.26		678.11	0.000463	9.30	332.20	70.04	0.49
Mainstem	1.079	500-YR	3210.00	670.32	682.37		678.29	0.000483	9.57	335.54	70.48	0.50
Mainstem	1.078	2-YR	1230.00	670.26	677.45		677.84	0.001343	5.05	243.51	70.78	0.33

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	1.078	5-YR	1890.00	670.26	680.58		681.03	0.000947	5.40	349.94	82.43	0.30
Mainstem	1.078	10-YR	2350.00	670.26	681.49		682.08	0.001103	6.17	380.99	85.01	0.32
Mainstem	1.078	25-YR	2980.00	670.26	682.38		683.20	0.001374	7.25	411.32	87.79	0.37
Mainstem	1.078	50-YR	3040.00	670.26	682.45		683.29	0.001404	7.35	413.53	88.00	0.37
Mainstem	1.078	100-YR	3090.00	670.26	682.50		683.36	0.001429	7.44	415.39	88.17	0.38
Mainstem	1.078	500-YR	3210.00	670.26	682.63		683.54	0.001491	7.65	419.65	88.57	0.38
Mainstem	1.077	2-YR	1230.00	670.16	677.49		677.78	0.001019	4.34	283.58	75.37	0.29
Mainstem	1.077	5-YR	1890.00	670.16	680.63		680.96	0.000708	4.62	409.25	85.12	0.25
Mainstem	1.077	10-YR	2350.00	670.16	681.56		681.99	0.000819	5.26	446.52	87.19	0.28
Mainstem	1.077	25-YR	2980.00	670.16	682.48		683.07	0.001011	6.16	483.41	89.25	0.31
Mainstem	1.077	50-YR	3040.00	670.16	682.55		683.16	0.001032	6.25	486.15	89.40	0.32
Mainstem	1.077	100-YR	3090.00	670.16	682.61		683.23	0.001050	6.33	488.45	89.53	0.32
Mainstem	1.077	500-YR	3210.00	670.16	682.74		683.40	0.001093	6.50	493.73	89.82	0.33
Mainstem	1.0645*	2-YR	1230.00	669.34	677.52		677.66	0.001131	3.01	408.70	85.04	0.23
Mainstem	1.0645*	5-YR	1890.00	669.34	680.73		680.86	0.000557	2.85	675.13	107.05	0.17
Mainstem	1.0645*	10-YR	2350.00	669.34	681.71		681.86	0.000592	3.16	764.66	115.19	0.18
Mainstem	1.0645*	25-YR	2980.00	669.34	682.70		682.90	0.000675	3.61	859.88	129.28	0.20
Mainstem	1.0645*	50-YR	3040.00	669.34	682.78		682.98	0.000686	3.66	867.33	130.36	0.20
Mainstem	1.0645*	100-YR	3090.00	669.34	682.84		683.05	0.000694	3.69	873.61	131.26	0.20
Mainstem	1.0645*	500-YR	3210.00	669.34	682.99		683.21	0.000714	3.78	888.20	133.36	0.20
Mainstem	1.052	2-YR	1230.00	668.52	677.48		677.60	0.000713	2.76	446.32	94.61	0.22
Mainstem	1.052	5-YR	1890.00	668.52	680.73		680.82	0.000291	2.46	800.61	154.19	0.16
Mainstem	1.052	10-YR	2350.00	668.52	681.71		681.82	0.000299	2.70	928.31	173.84	0.16
Mainstem	1.052	25-YR	2980.00	668.52	682.71		682.86	0.000331	3.05	1066.71	190.39	0.17
Mainstem	1.052	50-YR	3040.00	668.52	682.79		682.94	0.000335	3.09	1077.59	191.66	0.17
Mainstem	1.052	100-YR	3090.00	668.52	682.85		683.00	0.000339	3.12	1086.77	192.72	0.17
Mainstem	1.052	500-YR	3210.00	668.52	683.00		683.16	0.000347	3.19	1108.07	195.18	0.18
Mainstem	1.05	2-YR	1230.00	668.52	677.44		677.59	0.000612	3.18	454.91	101.04	0.22
Mainstem	1.05	5-YR	1890.00	668.52	680.68		680.82	0.000333	3.06	834.00	147.36	0.17
Mainstem	1.05	10-YR	2350.00	668.52	681.65		681.82	0.000361	3.40	966.24	166.79	0.18
Mainstem	1.05	25-YR	2980.00	668.52	682.64		682.85	0.000416	3.87	1108.11	182.10	0.20
Mainstem	1.05	50-YR	3040.00	668.52	682.72		682.93	0.000423	3.92	1119.14	183.24	0.20
Mainstem	1.05	100-YR	3090.00	668.52	682.78		682.99	0.000428	3.95	1128.42	184.20	0.20
Mainstem	1.05	500-YR	3210.00	668.52	682.93		683.15	0.000441	4.05	1149.92	186.42	0.21
Mainstem	1.0310*	2-YR	1230.00	668.42	677.36		677.52	0.000667	3.28	451.21	100.45	0.22
Mainstem	1.0310*	5-YR	1890.00	668.42	680.65		680.78	0.000364	3.12	895.27	178.51	0.17
Mainstem	1.0310*	10-YR	2350.00	668.42	681.62		681.78	0.000383	3.40	1076.75	212.16	0.18
Mainstem	1.0310*	25-YR	2980.00	668.42	682.61		682.80	0.000428	3.81	1278.87	241.37	0.19
Mainstem	1.0310*	50-YR	3040.00	668.42	682.69		682.88	0.000434	3.85	1294.81	243.92	0.20
Mainstem	1.0310*	100-YR	3090.00	668.42	682.75		682.94	0.000438	3.88	1308.28	246.07	0.20
Mainstem	1.0310*	500-YR	3210.00	668.42	682.90		683.10	0.000449	3.96	1339.53	251.03	0.20
Mainstem	1.0120*	2-YR	1230.00	668.32	677.29		677.46	0.000637	3.39	449.26	95.63	0.23
Mainstem	1.0120*	5-YR	1890.00	668.32	680.59		680.74	0.000359	3.29	919.32	204.10	0.18
Mainstem	1.0120*	10-YR	2350.00	668.32	681.57		681.74	0.000370	3.55	1133.75	248.46	0.19
Mainstem	1.0120*	25-YR	2980.00	668.32	682.56		682.75	0.000406	3.93	1381.03	301.24	0.20
Mainstem	1.0120*	50-YR	3040.00	668.32	682.64		682.83	0.000410	3.97	1401.14	306.05	0.20
Mainstem	1.0120*	100-YR	3090.00	668.32	682.70		682.90	0.000414	4.00	1418.23	310.11	0.20
Mainstem	1.0120*	500-YR	3210.00	668.32	682.85		683.05	0.000423	4.08	1458.12	318.47	0.20
Mainstem	0.993	2-YR	1230.00	668.22	677.21		677.39	0.000661	3.52	449.07	94.90	0.23
Mainstem	0.993	5-YR	1890.00	668.22	680.55		680.71	0.000371	3.40	967.19	227.19	0.18
Mainstem	0.993	10-YR	2350.00	668.22	681.53		681.70	0.000384	3.67	1197.99	264.61	0.19
Mainstem	0.993	25-YR	2980.00	668.22	682.52		682.71	0.000416	4.04	1449.78	342.63	0.20
Mainstem	0.993	50-YR	3040.00	668.22	682.59		682.79	0.000420	4.07	1468.98	349.27	0.20
Mainstem	0.993	100-YR	3090.00	668.22	682.66		682.86	0.000424	4.11	1485.17	354.87	0.20
Mainstem	0.993	500-YR	3210.00	668.22	682.80		683.01	0.000433	4.18	1522.48	367.77	0.21
Mainstem	0.97675*	2-YR	1230.00	668.14	677.16		677.33	0.000653	3.51	451.16	94.90	0.23
Mainstem	0.97675*	5-YR	1890.00	668.14	680.52		680.67	0.000358	3.35	952.91	219.43	0.18
Mainstem	0.97675*	10-YR	2350.00	668.14	681.50		681.67	0.000373	3.63	1188.66	268.96	0.19
Mainstem	0.97675*	25-YR	2980.00	668.14	682.49		682.68	0.000403	3.98	1488.44	338.17	0.20
Mainstem	0.97675*	50-YR	3040.00	668.14	682.56		682.75	0.000407	4.02	1513.90	342.79	0.20
Mainstem	0.97675*	100-YR	3090.00	668.14	682.63		682.82	0.000410	4.05	1535.67	346.45	0.20
Mainstem	0.97675*	500-YR	3210.00	668.14	682.77		682.97	0.000418	4.12	1586.70	354.88	0.20
Mainstem	0.96050*	2-YR	1230.00	668.07	677.10		677.28	0.000686	3.50	452.78	98.02	0.23
Mainstem	0.96050*	5-YR	1890.00	668.07	680.50		680.64	0.000375	3.32	933.08	212.32	0.18
Mainstem	0.96050*	10-YR	2350.00	668.07	681.47		681.63	0.000391	3.59	1163.29	260.95	0.19
Mainstem	0.96050*	25-YR	2980.00	668.07	682.45		682.64	0.000427	3.96	1448.88	315.47	0.20
Mainstem	0.96050*	50-YR	3040.00	668.07	682.53		682.72	0.000432	4.00	1472.43	318.39	0.20
Mainstem	0.96050*	100-YR	3090.00	668.07	682.59		682.78	0.000435	4.03	1492.49	320.40	0.20
Mainstem	0.96050*	500-YR	3210.00	668.07	682.74		682.93	0.000445	4.10	1539.17	325.03	0.20

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	0.94425*	2-YR	1230.00	667.99	677.04		677.22	0.000643	3.50	454.57	97.39	0.23
Mainstem	0.94425*	5-YR	1890.00	667.99	680.46		680.61	0.000350	3.33	906.45	197.02	0.18
Mainstem	0.94425*	10-YR	2350.00	667.99	681.43		681.60	0.000371	3.64	1118.37	242.01	0.19
Mainstem	0.94425*	25-YR	2980.00	667.99	682.40		682.60	0.000413	4.05	1376.52	280.65	0.20
Mainstem	0.94425*	50-YR	3040.00	667.99	682.48		682.68	0.000418	4.09	1397.11	282.20	0.20
Mainstem	0.94425*	100-YR	3090.00	667.99	682.54		682.74	0.000422	4.12	1414.64	283.51	0.20
Mainstem	0.94425*	500-YR	3210.00	667.99	682.68		682.89	0.000432	4.20	1455.22	286.52	0.21
Mainstem	0.928	2-YR	1230.00	667.92	676.99		677.16	0.000638	3.49	450.49	92.00	0.23
Mainstem	0.928	5-YR	1890.00	667.92	680.42		680.58	0.000362	3.40	859.28	169.60	0.18
Mainstem	0.928	10-YR	2350.00	667.92	681.38		681.56	0.000394	3.75	1043.63	215.62	0.19
Mainstem	0.928	25-YR	2980.00	667.92	682.34		682.56	0.000448	4.22	1266.26	240.67	0.21
Mainstem	0.928	50-YR	3040.00	667.92	682.41		682.64	0.000454	4.26	1283.58	241.67	0.21
Mainstem	0.928	100-YR	3090.00	667.92	682.47		682.70	0.000459	4.30	1298.31	242.53	0.21
Mainstem	0.928	500-YR	3210.00	667.92	682.61		682.85	0.000472	4.39	1332.30	244.48	0.22
Mainstem	0.926	2-YR	1230.00	667.92	677.03		677.14	0.000647	2.65	463.30	96.57	0.21
Mainstem	0.926	5-YR	1890.00	667.92	680.47		680.55	0.000244	2.30	904.05	177.68	0.14
Mainstem	0.926	10-YR	2350.00	667.92	681.44		681.53	0.000251	2.52	1096.09	219.73	0.15
Mainstem	0.926	25-YR	2980.00	667.92	682.41		682.53	0.000275	2.82	1322.69	240.28	0.16
Mainstem	0.926	50-YR	3040.00	667.92	682.48		682.60	0.000279	2.85	1340.27	241.15	0.16
Mainstem	0.926	100-YR	3090.00	667.92	682.54		682.67	0.000281	2.88	1355.21	241.90	0.16
Mainstem	0.926	500-YR	3210.00	667.92	682.69		682.81	0.000288	2.94	1389.68	243.60	0.16
Mainstem	0.910	2-YR	1230.00	667.72	676.98		677.08	0.000605	2.59	474.76	97.57	0.21
Mainstem	0.910	5-YR	1890.00	667.72	680.45		680.53	0.000227	2.25	945.34	179.25	0.14
Mainstem	0.910	10-YR	2350.00	667.72	681.42		681.51	0.000235	2.47	1129.51	201.95	0.14
Mainstem	0.910	25-YR	2980.00	667.72	682.39		682.50	0.000261	2.78	1334.93	220.71	0.15
Mainstem	0.910	50-YR	3040.00	667.72	682.46		682.58	0.000265	2.81	1351.04	221.99	0.16
Mainstem	0.910	100-YR	3090.00	667.72	682.52		682.64	0.000268	2.84	1364.71	223.06	0.16
Mainstem	0.910	500-YR	3210.00	667.72	682.66		682.79	0.000275	2.90	1396.40	225.53	0.16
Mainstem	0.901	2-YR	1230.00	667.72	676.39	672.74	677.01	0.000334	6.31	194.79	74.01	0.40
Mainstem	0.901	5-YR	1890.00	667.72	680.06	674.16	680.48	0.000162	5.67	719.41	169.37	0.29
Mainstem	0.901	10-YR	2350.00	667.72	680.92	675.04	681.46	0.000189	6.43	891.31	211.07	0.32
Mainstem	0.901	25-YR	2980.00	667.72	681.72	676.18	682.43	0.000236	7.48	1065.51	222.99	0.36
Mainstem	0.901	50-YR	3040.00	667.72	681.77	676.27	682.51	0.000241	7.58	1077.57	224.63	0.37
Mainstem	0.901	100-YR	3090.00	667.72	681.82	676.35	682.57	0.000246	7.67	1087.93	226.03	0.37
Mainstem	0.901	500-YR	3210.00	667.72	681.92	676.57	682.71	0.000257	7.88	1111.31	229.16	0.38
Mainstem	0.89		Bridge									
Mainstem	0.884	2-YR	1230.00	667.72	674.65	672.67	675.65	0.000741	8.02	153.29	43.73	0.57
Mainstem	0.884	5-YR	1890.00	667.72	675.70	674.11	677.43	0.001041	10.55	179.12	46.37	0.69
Mainstem	0.884	10-YR	2350.00	667.72	676.29	674.99	678.58	0.001243	12.14	193.60	48.81	0.76
Mainstem	0.884	25-YR	2980.00	667.72	677.61	676.13	679.89	0.001067	12.47	361.64	54.31	0.73
Mainstem	0.884	50-YR	3040.00	667.72	677.72	676.22	680.03	0.001065	12.56	367.70	54.78	0.73
Mainstem	0.884	100-YR	3090.00	667.72	677.84	676.30	680.17	0.001054	12.60	374.23	55.28	0.72
Mainstem	0.884	500-YR	3210.00	667.72	678.06	676.52	680.45	0.001047	12.76	387.01	56.24	0.72
Mainstem	0.878	2-YR	1270.00	667.62	674.89		675.33	0.004261	5.33	242.05	57.79	0.43
Mainstem	0.878	5-YR	1950.00	667.62	676.20		676.82	0.004386	6.37	326.09	77.09	0.46
Mainstem	0.878	10-YR	2440.00	667.62	677.01		677.74	0.004408	6.94	397.83	100.28	0.47
Mainstem	0.878	25-YR	3290.00	667.62	678.27		679.11	0.004234	7.61	543.11	123.22	0.47
Mainstem	0.878	50-YR	3380.00	667.62	678.39		679.25	0.004211	7.66	558.31	123.79	0.47
Mainstem	0.878	100-YR	3470.00	667.62	678.51		679.38	0.004189	7.72	573.33	124.36	0.47
Mainstem	0.878	500-YR	3660.00	667.62	678.76		679.64	0.004146	7.83	604.51	125.52	0.47
Mainstem	0.832	2-YR	1270.00	667.02	673.71		674.30	0.003996	6.22	217.73	58.89	0.51
Mainstem	0.832	5-YR	1950.00	667.02	674.86		675.72	0.004402	7.55	292.07	70.36	0.55
Mainstem	0.832	10-YR	2440.00	667.02	675.57		676.61	0.004585	8.32	344.79	77.49	0.57
Mainstem	0.832	25-YR	3290.00	667.02	676.62		677.95	0.004908	9.51	435.55	96.55	0.61
Mainstem	0.832	50-YR	3380.00	667.02	676.72		678.08	0.004939	9.62	445.33	98.50	0.61
Mainstem	0.832	100-YR	3470.00	667.02	676.82		678.21	0.004970	9.73	455.12	100.42	0.61
Mainstem	0.832	500-YR	3660.00	667.02	677.02		678.47	0.005030	9.96	475.93	104.38	0.62
Mainstem	0.776	2-YR	1270.00	665.92	672.22		672.90	0.005730	6.62	193.07	56.21	0.60
Mainstem	0.776	5-YR	1950.00	665.92	673.26		674.23	0.005852	7.89	257.22	66.17	0.64
Mainstem	0.776	10-YR	2440.00	665.92	674.02		675.12	0.005548	8.47	310.33	76.41	0.63
Mainstem	0.776	25-YR	3290.00	665.92	675.07		676.42	0.005498	9.46	401.13	97.08	0.65
Mainstem	0.776	50-YR	3380.00	665.92	675.16		676.55	0.005512	9.57	410.51	98.97	0.65
Mainstem	0.776	100-YR	3470.00	665.92	675.25		676.66	0.005541	9.68	419.38	100.72	0.66
Mainstem	0.776	500-YR	3660.00	665.92	675.44		676.91	0.005575	9.89	439.05	104.51	0.66
Mainstem	0.75767*	2-YR	1270.00	665.52	671.68		672.34	0.005619	6.53	196.09	58.65	0.60
Mainstem	0.75767*	5-YR	1950.00	665.52	672.73		673.66	0.005678	7.76	262.96	68.75	0.63
Mainstem	0.75767*	10-YR	2440.00	665.52	673.55		674.58	0.005139	8.22	324.06	82.08	0.61
Mainstem	0.75767*	25-YR	3290.00	665.52	674.63		675.88	0.004999	9.12	424.97	105.39	0.62
Mainstem	0.75767*	50-YR	3380.00	665.52	674.72		676.00	0.005011	9.22	435.23	107.65	0.63

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	0.75767*	100-YR	3470.00	665.52	674.81		676.12	0.005044	9.33	444.65	109.72	0.63
Mainstem	0.75767*	500-YR	3660.00	665.52	675.00		676.36	0.005077	9.54	466.13	114.50	0.63
Mainstem	0.73933*	2-YR	1270.00	665.12	671.11		671.77	0.006045	6.51	197.55	60.88	0.60
Mainstem	0.73933*	5-YR	1950.00	665.12	672.16		673.07	0.006184	7.69	266.79	71.24	0.63
Mainstem	0.73933*	10-YR	2440.00	665.12	673.09		674.05	0.005256	7.95	340.25	89.13	0.59
Mainstem	0.73933*	25-YR	3290.00	665.12	674.23		675.36	0.004992	8.71	458.11	120.24	0.59
Mainstem	0.73933*	50-YR	3380.00	665.12	674.33		675.48	0.004986	8.79	470.47	123.77	0.59
Mainstem	0.73933*	100-YR	3470.00	665.12	674.42		675.59	0.004991	8.87	482.28	127.63	0.59
Mainstem	0.73933*	500-YR	3660.00	665.12	674.63		675.83	0.004965	9.01	510.24	141.79	0.59
Mainstem	0.721	2-YR	1270.00	664.72	670.53		671.19	0.005826	6.51	198.09	63.14	0.61
Mainstem	0.721	5-YR	1950.00	664.72	671.60		672.49	0.005626	7.62	271.02	73.79	0.63
Mainstem	0.721	10-YR	2440.00	664.72	672.69		673.57	0.004223	7.61	366.79	103.66	0.56
Mainstem	0.721	25-YR	3290.00	664.72	673.90		674.90	0.003817	8.22	514.03	148.70	0.55
Mainstem	0.721	50-YR	3380.00	664.72	674.00		675.01	0.003804	8.29	530.06	157.39	0.55
Mainstem	0.721	100-YR	3470.00	664.72	674.10		675.12	0.003809	8.37	545.36	165.26	0.55
Mainstem	0.721	500-YR	3660.00	664.72	674.31		675.36	0.003776	8.50	582.74	183.08	0.55
Mainstem	0.659	2-YR	1270.00	662.92	668.81		669.42	0.004984	6.26	202.92	63.90	0.62
Mainstem	0.659	5-YR	1950.00	662.92	670.32		670.94	0.003724	6.30	314.76	92.47	0.54
Mainstem	0.659	10-YR	2440.00	662.92	672.11		672.56	0.001913	5.41	537.95	175.61	0.39
Mainstem	0.659	25-YR	3290.00	662.92	673.53		673.98	0.001602	5.58	883.19	311.09	0.36
Mainstem	0.659	50-YR	3380.00	662.92	673.65		674.10	0.001586	5.60	921.41	322.61	0.36
Mainstem	0.659	100-YR	3470.00	662.92	673.76		674.21	0.001578	5.64	956.85	331.50	0.36
Mainstem	0.659	500-YR	3660.00	662.92	674.01		674.46	0.001531	5.66	1042.78	346.83	0.35
Mainstem	0.64100*	2-YR	1270.00	662.32	668.40	667.00	668.94	0.004653	5.89	215.51	59.55	0.54
Mainstem	0.64100*	5-YR	1950.00	662.32	670.01	667.94	670.60	0.003181	6.20	336.99	97.06	0.48
Mainstem	0.64100*	10-YR	2440.00	662.32	671.94	668.53	672.39	0.001634	5.48	521.52	172.40	0.36
Mainstem	0.64100*	25-YR	3290.00	662.32	673.38	669.41	673.84	0.001416	5.76	927.97	302.77	0.35
Mainstem	0.64100*	50-YR	3380.00	662.32	673.50	669.50	673.96	0.001398	5.78	965.40	314.62	0.35
Mainstem	0.64100*	100-YR	3470.00	662.32	673.61	669.59	674.08	0.001390	5.81	998.57	325.24	0.34
Mainstem	0.64100*	500-YR	3660.00	662.32	673.87	669.82	674.33	0.001352	5.84	1076.43	343.01	0.34
Mainstem	0.62300*	2-YR	1270.00	661.72	667.91	666.26	668.51	0.004189	6.23	207.47	57.24	0.52
Mainstem	0.62300*	5-YR	1950.00	661.72	669.59	667.33	670.29	0.003203	6.76	333.11	97.21	0.48
Mainstem	0.62300*	10-YR	2440.00	661.72	671.76	667.99	672.24	0.001572	5.81	567.62	165.86	0.36
Mainstem	0.62300*	25-YR	3290.00	661.72	673.16	669.07	673.70	0.001516	6.33	931.01	288.98	0.36
Mainstem	0.62300*	50-YR	3380.00	661.72	673.28	669.18	673.82	0.001515	6.38	966.33	300.15	0.36
Mainstem	0.62300*	100-YR	3470.00	661.72	673.39	669.32	673.94	0.001521	6.44	998.39	309.93	0.36
Mainstem	0.62300*	500-YR	3660.00	661.72	673.66	669.55	674.20	0.001476	6.46	1082.63	333.13	0.36
Mainstem	0.605	2-YR	1270.00	661.12	665.92	665.88	667.68	0.016919	10.66	119.36	33.74	0.98
Mainstem	0.605	5-YR	1950.00	661.12	668.56	667.18	669.82	0.006132	9.16	255.19	78.75	0.65
Mainstem	0.605	10-YR	2440.00	661.12	671.44	668.02	672.06	0.002058	6.84	575.82	155.08	0.40
Mainstem	0.605	25-YR	3290.00	661.12	672.76	669.46	673.52	0.002191	7.72	859.45	258.96	0.42
Mainstem	0.605	50-YR	3380.00	661.12	672.88	669.60	673.64	0.002198	7.79	890.32	268.82	0.42
Mainstem	0.605	100-YR	3470.00	661.12	672.98	669.76	673.75	0.002217	7.87	917.42	279.00	0.42
Mainstem	0.605	500-YR	3660.00	661.12	673.24	670.19	674.02	0.002199	7.97	992.59	303.03	0.42
Mainstem	0.596	2-YR	1270.00	659.72	666.37	664.29	667.05	0.000674	6.63	197.22	58.41	0.50
Mainstem	0.596	5-YR	1950.00	659.72	668.75	665.49	669.52	0.000471	7.06	291.88	109.13	0.45
Mainstem	0.596	10-YR	2440.00	659.72	671.34	666.24	672.02	0.000282	6.62	395.53	171.54	0.36
Mainstem	0.596	25-YR	3290.00	659.72	672.77	667.42	673.45	0.000269	7.04	1057.92	209.58	0.36
Mainstem	0.596	50-YR	3380.00	659.72	672.88	667.52	673.59	0.000277	7.18	1080.93	223.81	0.37
Mainstem	0.596	100-YR	3470.00	659.72	672.97	667.64	673.71	0.000285	7.32	1101.78	235.96	0.37
Mainstem	0.596	500-YR	3660.00	659.72	673.18	667.90	673.98	0.000300	7.60	1155.57	264.75	0.38
Mainstem	0.59		Bridge									
Mainstem	0.585	2-YR	1270.00	660.12	663.46	664.38	666.65	0.007502	14.37	95.11	39.95	1.55
Mainstem	0.585	5-YR	1950.00	660.12	664.41	665.53	668.44	0.006364	16.21	132.68	45.59	1.51
Mainstem	0.585	10-YR	2440.00	660.12	665.02	666.26	669.58	0.005840	17.26	157.44	49.29	1.48
Mainstem	0.585	25-YR	3290.00	660.12	668.51	667.47	670.83	0.001364	12.46	384.58	88.09	0.79
Mainstem	0.585	50-YR	3380.00	660.12	668.76	667.58	671.04	0.001288	12.37	407.39	93.39	0.77
Mainstem	0.585	100-YR	3470.00	660.12	669.01	667.73	671.25	0.001213	12.26	432.79	112.92	0.75
Mainstem	0.585	500-YR	3660.00	660.12	669.71	667.96	671.78	0.001012	11.83	516.82	128.22	0.70
Mainstem	0.577	2-YR	1270.00	659.82	664.53	664.06	665.76	0.017536	8.90	145.27	43.11	0.81
Mainstem	0.577	5-YR	1950.00	659.82	665.62	665.16	667.31	0.017349	10.50	196.44	51.27	0.84
Mainstem	0.577	10-YR	2440.00	659.82	664.99	665.91	668.55	0.043773	15.19	165.78	46.55	1.31
Mainstem	0.577	25-YR	3290.00	659.82	668.79	666.98	670.28	0.008202	10.11	416.10	102.90	0.63
Mainstem	0.577	50-YR	3380.00	659.82	669.06		670.50	0.007637	9.97	444.46	110.89	0.61
Mainstem	0.577	100-YR	3470.00	659.82	669.33		670.71	0.007087	9.82	475.78	119.09	0.59
Mainstem	0.577	500-YR	3660.00	659.82	670.05		671.25	0.005706	9.30	569.53	144.80	0.54
Mainstem	0.55950*	2-YR	1270.00	658.72	663.64		664.52	0.009469	7.56	170.11	49.90	0.69
Mainstem	0.55950*	5-YR	1950.00	658.72	665.12		666.16	0.007090	8.21	248.93	56.38	0.64

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	0.55950*	10-YR	2440.00	658.72	666.37	664.43	667.40	0.005315	8.21	323.99	66.57	0.57
Mainstem	0.55950*	25-YR	3290.00	658.72	668.79		669.68	0.003097	7.76	537.03	118.58	0.46
Mainstem	0.55950*	50-YR	3380.00	658.72	669.06		669.93	0.002919	7.69	570.48	128.77	0.45
Mainstem	0.55950*	100-YR	3470.00	658.72	669.34		670.18	0.002743	7.60	607.39	139.00	0.44
Mainstem	0.55950*	500-YR	3660.00	658.72	670.06		670.81	0.002273	7.27	717.99	166.37	0.40
Mainstem	0.542	2-YR	1270.00	657.62	663.33		663.83	0.004637	5.67	228.57	59.45	0.49
Mainstem	0.542	5-YR	1950.00	657.62	665.01		665.59	0.003509	6.16	339.58	75.17	0.45
Mainstem	0.542	10-YR	2440.00	657.62	666.36		666.93	0.002665	6.16	451.35	90.05	0.40
Mainstem	0.542	25-YR	3290.00	657.62	668.86		669.36	0.001651	5.91	709.99	116.39	0.33
Mainstem	0.542	50-YR	3380.00	657.62	669.13		669.63	0.001573	5.88	742.08	119.12	0.33
Mainstem	0.542	100-YR	3470.00	657.62	669.41		669.89	0.001499	5.84	775.11	121.86	0.32
Mainstem	0.542	500-YR	3660.00	657.62	670.11		670.57	0.001309	5.70	867.24	147.15	0.30
Mainstem	0.501	2-YR	1270.00	655.82	661.42		662.37	0.010229	7.86	169.35	47.02	0.66
Mainstem	0.501	5-YR	1950.00	655.82	663.84		664.66	0.005173	7.47	304.36	66.75	0.50
Mainstem	0.501	10-YR	2440.00	655.82	665.50		666.25	0.003664	7.26	409.07	77.12	0.44
Mainstem	0.501	25-YR	3290.00	655.82	668.24		668.93	0.002386	7.06	596.03	92.66	0.37
Mainstem	0.501	50-YR	3380.00	655.82	668.53		669.21	0.002295	7.04	616.76	94.68	0.37
Mainstem	0.501	100-YR	3470.00	655.82	668.82		669.49	0.002209	7.02	637.80	96.70	0.36
Mainstem	0.501	500-YR	3660.00	655.82	669.58		670.22	0.001954	6.89	694.27	102.01	0.34
Mainstem	0.497	2-YR	1270.00	655.62	661.47		662.29	0.000648	7.23	175.65	53.66	0.53
Mainstem	0.497	5-YR	1950.00	655.62	663.58		664.61	0.000550	8.17	238.69	60.23	0.51
Mainstem	0.497	10-YR	2440.00	655.62	665.03		666.19	0.000493	8.65	282.18	64.77	0.50
Mainstem	0.497	25-YR	3290.00	655.62	667.53		668.85	0.000408	9.21	357.21	71.28	0.47
Mainstem	0.497	50-YR	3380.00	655.62	667.80		669.13	0.000400	9.25	365.26	72.14	0.47
Mainstem	0.497	100-YR	3470.00	655.62	668.06		669.41	0.000392	9.29	373.35	73.44	0.46
Mainstem	0.497	500-YR	3660.00	655.62	668.80		670.13	0.000360	9.25	395.48	77.01	0.45
Mainstem	0.49		Culvert									
Mainstem	0.484	2-YR	1270.00	655.62	659.44		659.44	0.023221	11.07	114.70	37.79	1.00
Mainstem	0.484	5-YR	1950.00	655.62	660.71		663.24	0.021096	12.77	152.68	48.31	1.00
Mainstem	0.484	10-YR	2440.00	655.62	661.52		664.47	0.020131	13.77	177.14	54.80	1.00
Mainstem	0.484	25-YR	3290.00	655.62	662.82		666.43	0.018892	15.23	216.01	61.39	1.00
Mainstem	0.484	50-YR	3380.00	655.62	662.96		666.62	0.018692	15.35	220.23	62.11	1.00
Mainstem	0.484	100-YR	3470.00	655.62	663.10		666.82	0.018543	15.47	224.27	62.79	1.00
Mainstem	0.484	500-YR	3660.00	655.62	663.36		667.22	0.018378	15.76	232.19	64.13	1.00
Mainstem	0.476	2-YR	1270.00	654.72	657.00		659.57	0.071444	12.85	98.80	55.81	1.70
Mainstem	0.476	5-YR	1950.00	654.72	657.44		658.58	0.086652	15.68	124.37	60.22	1.92
Mainstem	0.476	10-YR	2440.00	654.72	657.71		659.07	0.095002	17.32	140.86	62.90	2.04
Mainstem	0.476	25-YR	3290.00	654.72	658.12		659.85	0.100376	19.71	166.94	66.99	2.15
Mainstem	0.476	50-YR	3380.00	654.72	658.16		659.93	0.100604	19.94	169.55	67.40	2.16
Mainstem	0.476	100-YR	3470.00	654.72	658.20		660.02	0.100702	20.15	172.19	67.81	2.17
Mainstem	0.476	500-YR	3660.00	654.72	658.29		660.18	0.100958	20.60	177.65	68.66	2.18
Mainstem	0.45900*	2-YR	1270.00	653.52	657.48		658.17	0.010701	6.67	190.33	68.97	0.71
Mainstem	0.45900*	5-YR	1950.00	653.52	658.46		659.31	0.010319	7.41	263.00	79.10	0.72
Mainstem	0.45900*	10-YR	2440.00	653.52	659.06		660.01	0.010160	7.80	312.80	86.66	0.72
Mainstem	0.45900*	25-YR	3290.00	653.52	659.88		661.01	0.010055	8.52	388.28	98.04	0.74
Mainstem	0.45900*	50-YR	3380.00	653.52	659.96		661.10	0.010055	8.59	396.01	99.14	0.74
Mainstem	0.45900*	100-YR	3470.00	653.52	660.03		661.20	0.010052	8.66	403.76	100.22	0.74
Mainstem	0.45900*	500-YR	3660.00	653.52	660.20		661.40	0.010040	8.80	420.13	102.47	0.74
Mainstem	0.44200*	2-YR	1270.00	652.32	656.52		657.21	0.010376	6.65	190.97	67.88	0.70
Mainstem	0.44200*	5-YR	1950.00	652.32	657.56		658.39	0.009812	7.29	267.47	79.38	0.70
Mainstem	0.44200*	10-YR	2440.00	652.32	658.19		659.10	0.009614	7.63	319.66	87.20	0.70
Mainstem	0.44200*	25-YR	3290.00	652.32	659.04		660.11	0.009347	8.30	398.79	99.56	0.71
Mainstem	0.44200*	50-YR	3380.00	652.32	659.12		660.20	0.009350	8.37	406.65	100.71	0.71
Mainstem	0.44200*	100-YR	3470.00	652.32	659.20		660.30	0.009343	8.43	414.63	101.87	0.71
Mainstem	0.44200*	500-YR	3660.00	652.32	659.36		660.50	0.009320	8.57	431.60	104.28	0.72
Mainstem	0.42500*	2-YR	1270.00	651.12	655.64		656.30	0.009550	6.49	195.54	67.57	0.67
Mainstem	0.42500*	5-YR	1950.00	651.12	656.77		657.53	0.008703	6.98	279.27	80.73	0.66
Mainstem	0.42500*	10-YR	2440.00	651.12	657.43		658.26	0.008436	7.29	334.92	88.75	0.66
Mainstem	0.42500*	25-YR	3290.00	651.12	658.33		659.29	0.008017	7.87	420.60	102.29	0.66
Mainstem	0.42500*	50-YR	3380.00	651.12	658.41		659.39	0.007941	7.94	429.28	103.58	0.66
Mainstem	0.42500*	100-YR	3470.00	651.12	658.50		659.49	0.007856	7.99	438.20	104.89	0.66
Mainstem	0.42500*	500-YR	3660.00	651.12	658.68		659.70	0.007685	8.11	457.17	107.62	0.66
Mainstem	0.40800*	2-YR	1270.00	649.92	654.92		655.49	0.007795	6.05	209.95	69.19	0.61
Mainstem	0.40800*	5-YR	1950.00	649.92	656.16		656.80	0.006871	6.40	304.69	83.95	0.59
Mainstem	0.40800*	10-YR	2440.00	649.92	656.85		657.54	0.006594	6.68	365.40	92.61	0.59
Mainstem	0.40800*	25-YR	3290.00	649.92	657.82		658.62	0.005874	7.21	462.56	107.52	0.58
Mainstem	0.40800*	50-YR	3380.00	649.92	657.91		658.73	0.005825	7.27	472.45	108.90	0.57
Mainstem	0.40800*	100-YR	3470.00	649.92	658.00		658.83	0.005764	7.32	482.72	110.32	0.57
Mainstem	0.40800*	500-YR	3660.00	649.92	658.20		659.05	0.005646	7.43	504.46	113.27	0.57

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	0.391	2-YR	1270.00	648.72	654.43		654.86	0.005420	5.29	240.24	73.66	0.52
Mainstem	0.391	5-YR	1950.00	648.72	655.74		656.23	0.004826	5.62	346.95	88.99	0.50
Mainstem	0.391	10-YR	2440.00	648.72	656.47		657.01	0.004394	5.90	415.31	99.13	0.49
Mainstem	0.391	25-YR	3290.00	648.72	657.50		658.14	0.004000	6.45	524.85	114.62	0.48
Mainstem	0.391	50-YR	3380.00	648.72	657.59		658.25	0.003985	6.51	535.77	116.05	0.48
Mainstem	0.391	100-YR	3470.00	648.72	657.69		658.36	0.003960	6.57	547.21	117.53	0.48
Mainstem	0.391	500-YR	3660.00	648.72	657.89		658.58	0.003913	6.68	571.37	121.17	0.48
Mainstem	0.37240*	2-YR	1270.00	648.12	653.85		654.32	0.005532	5.48	231.64	68.05	0.52
Mainstem	0.37240*	5-YR	1950.00	648.12	655.22		655.75	0.004946	5.83	334.23	82.26	0.51
Mainstem	0.37240*	10-YR	2440.00	648.12	655.99		656.57	0.004488	6.10	401.83	94.23	0.50
Mainstem	0.37240*	25-YR	3290.00	648.12	657.05		657.74	0.004099	6.68	511.92	114.36	0.49
Mainstem	0.37240*	50-YR	3380.00	648.12	657.14		657.85	0.004091	6.74	522.78	115.92	0.49
Mainstem	0.37240*	100-YR	3470.00	648.12	657.24		657.96	0.004068	6.80	534.40	117.56	0.49
Mainstem	0.37240*	500-YR	3660.00	648.12	657.45		658.19	0.004025	6.92	558.86	121.19	0.49
Mainstem	0.35380*	2-YR	1270.00	647.52	653.26		653.76	0.005704	5.72	222.19	62.44	0.53
Mainstem	0.35380*	5-YR	1950.00	647.52	654.67		655.25	0.005153	6.11	319.35	75.34	0.52
Mainstem	0.35380*	10-YR	2440.00	647.52	655.49		656.11	0.004691	6.36	385.22	88.98	0.51
Mainstem	0.35380*	25-YR	3290.00	647.52	656.57		657.32	0.004294	6.97	496.17	115.16	0.50
Mainstem	0.35380*	50-YR	3380.00	647.52	656.66		657.43	0.004296	7.04	506.90	117.13	0.51
Mainstem	0.35380*	100-YR	3470.00	647.52	656.76		657.54	0.004276	7.10	518.77	119.27	0.51
Mainstem	0.35380*	500-YR	3660.00	647.52	656.97		657.77	0.004237	7.23	543.91	123.68	0.51
Mainstem	0.33520*	2-YR	1270.00	646.92	652.63		653.19	0.005974	6.00	211.80	56.95	0.55
Mainstem	0.33520*	5-YR	1950.00	646.92	654.07		654.72	0.005496	6.45	302.16	68.36	0.54
Mainstem	0.33520*	10-YR	2440.00	646.92	654.93		655.63	0.005053	6.71	364.92	82.58	0.53
Mainstem	0.33520*	25-YR	3290.00	646.92	656.04		656.87	0.004629	7.35	476.72	117.73	0.52
Mainstem	0.33520*	50-YR	3380.00	646.92	656.13		656.98	0.004648	7.43	487.19	120.28	0.53
Mainstem	0.33520*	100-YR	3470.00	646.92	656.23		657.09	0.004628	7.50	499.49	123.21	0.53
Mainstem	0.33520*	500-YR	3660.00	646.92	656.44		657.33	0.004589	7.63	525.79	128.86	0.53
Mainstem	0.31660*	2-YR	1270.00	646.32	651.94		652.57	0.006460	6.37	199.37	51.40	0.57
Mainstem	0.31660*	5-YR	1950.00	646.32	653.39		654.14	0.006108	6.94	281.07	61.12	0.57
Mainstem	0.31660*	10-YR	2440.00	646.32	654.28		655.09	0.005785	7.22	338.07	70.78	0.56
Mainstem	0.31660*	25-YR	3290.00	646.32	655.41		656.37	0.005279	7.89	447.77	120.89	0.56
Mainstem	0.31660*	50-YR	3380.00	646.32	655.49		656.47	0.005346	8.00	456.72	123.90	0.56
Mainstem	0.31660*	100-YR	3470.00	646.32	655.59		656.59	0.005324	8.07	469.48	127.60	0.56
Mainstem	0.31660*	500-YR	3660.00	646.32	655.80		656.83	0.005270	8.21	497.08	133.75	0.56
Mainstem	0.298	2-YR	1270.00	645.72	651.11		651.87	0.007582	6.97	182.32	45.67	0.61
Mainstem	0.298	5-YR	1950.00	645.72	652.53		653.46	0.007458	7.72	252.53	53.46	0.63
Mainstem	0.298	10-YR	2440.00	645.72	653.42		654.43	0.007217	8.07	302.21	58.35	0.63
Mainstem	0.298	25-YR	3290.00	645.72	654.54		655.76	0.006915	8.86	390.99	114.22	0.63
Mainstem	0.298	50-YR	3380.00	645.72	654.57		655.84	0.007182	9.06	393.95	116.07	0.64
Mainstem	0.298	100-YR	3470.00	645.72	654.67		655.96	0.007166	9.15	404.14	122.43	0.64
Mainstem	0.298	500-YR	3660.00	645.72	654.87		656.20	0.007120	9.31	425.59	131.33	0.64
Mainstem	0.27975*	2-YR	1270.00	644.97	650.40		651.15	0.007439	6.95	182.69	45.38	0.61
Mainstem	0.27975*	5-YR	1950.00	644.97	651.83		652.75	0.007255	7.72	252.70	52.53	0.62
Mainstem	0.27975*	10-YR	2440.00	644.97	652.75		653.75	0.006916	8.05	303.19	58.28	0.62
Mainstem	0.27975*	25-YR	3290.00	644.97	653.92		655.12	0.006341	8.80	405.88	114.74	0.61
Mainstem	0.27975*	50-YR	3380.00	644.97	653.90		655.17	0.006773	9.08	403.40	114.16	0.63
Mainstem	0.27975*	100-YR	3470.00	644.97	654.00	652.22	655.29	0.006763	9.16	414.72	116.78	0.63
Mainstem	0.27975*	500-YR	3660.00	644.97	654.21	652.43	655.54	0.006712	9.32	439.86	122.53	0.63
Mainstem	0.26150*	2-YR	1270.00	644.22	649.66		650.43	0.007466	7.02	180.84	44.29	0.61
Mainstem	0.26150*	5-YR	1950.00	644.22	651.09		652.05	0.007362	7.83	249.01	51.04	0.63
Mainstem	0.26150*	10-YR	2440.00	644.22	652.10		653.11	0.006512	8.07	305.18	68.86	0.60
Mainstem	0.26150*	25-YR	3290.00	644.22	653.36		654.53	0.005817	8.73	423.12	113.86	0.59
Mainstem	0.26150*	50-YR	3380.00	644.22	653.26		654.54	0.006489	9.13	411.46	111.95	0.62
Mainstem	0.26150*	100-YR	3470.00	644.22	653.36		654.66	0.006485	9.22	422.66	113.78	0.62
Mainstem	0.26150*	500-YR	3660.00	644.22	653.58		654.91	0.006422	9.37	448.18	117.85	0.62
Mainstem	0.24325*	2-YR	1270.00	643.47	648.84		649.67	0.008175	7.32	173.40	42.35	0.64
Mainstem	0.24325*	5-YR	1950.00	643.47	650.23		651.29	0.008266	8.23	237.04	48.77	0.66
Mainstem	0.24325*	10-YR	2440.00	643.47	651.47		652.49	0.006302	8.14	308.33	75.39	0.59
Mainstem	0.24325*	25-YR	3290.00	643.47	652.85		653.98	0.005389	8.66	442.22	113.14	0.57
Mainstem	0.24325*	50-YR	3380.00	643.47	652.61		653.91	0.006455	9.27	415.21	109.47	0.62
Mainstem	0.24325*	100-YR	3470.00	643.47	652.70		654.03	0.006462	9.36	426.03	110.96	0.62
Mainstem	0.24325*	500-YR	3660.00	643.47	652.94		654.30	0.006368	9.49	452.46	114.50	0.62
Mainstem	0.225	2-YR	1270.00	642.72	648.29	646.80	648.91	0.006545	6.32	200.82	51.88	0.57
Mainstem	0.225	5-YR	1950.00	642.72	649.81	647.89	650.53	0.005800	6.81	286.26	61.90	0.55
Mainstem	0.225	10-YR	2440.00	642.72	651.28	648.51	651.93	0.003635	6.46	401.65	94.39	0.46
Mainstem	0.225	25-YR	3290.00	642.72	652.77	649.56	653.47	0.003076	6.85	561.68	118.67	0.43
Mainstem	0.225	50-YR	3380.00	642.72	652.49	649.65	653.31	0.003709	7.34	529.43	114.80	0.47
Mainstem	0.225	100-YR	3470.00	642.72	652.59	649.75	653.42	0.003719	7.42	541.25	116.24	0.48

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	0.225	500-YR	3660.00	642.72	652.84	649.91	653.69	0.003679	7.54	570.28	119.68	0.48
Mainstem	0.20667*	2-YR	1270.00	641.52	647.25	646.04	648.11	0.008651	7.46	170.33	42.23	0.65
Mainstem	0.20667*	5-YR	1950.00	641.52	648.75	647.27	649.80	0.007309	8.22	240.03	50.97	0.63
Mainstem	0.20667*	10-YR	2440.00	641.52	650.60	647.98	651.48	0.004156	7.56	347.05	72.70	0.50
Mainstem	0.20667*	25-YR	3290.00	641.52	651.98	649.00	653.03	0.003996	8.35	477.61	115.39	0.50
Mainstem	0.20667*	50-YR	3380.00	641.52	651.39	649.14	652.72	0.005514	9.34	413.92	97.29	0.58
Mainstem	0.20667*	100-YR	3470.00	641.52	651.44	649.24	652.82	0.005687	9.53	418.68	99.45	0.59
Mainstem	0.20667*	500-YR	3660.00	641.52	651.61	649.45	653.07	0.005839	9.79	436.78	104.88	0.60
Mainstem	0.18833*	2-YR	1270.00	640.32	646.66	645.01	647.35	0.005786	6.69	191.49	44.87	0.55
Mainstem	0.18833*	5-YR	1950.00	640.32	648.26	646.16	649.14	0.004970	7.56	268.50	51.20	0.54
Mainstem	0.18833*	10-YR	2440.00	640.32	650.33	646.86	651.08	0.002903	7.01	386.47	66.78	0.43
Mainstem	0.18833*	25-YR	3290.00	640.32	651.72	647.94	652.63	0.002948	7.83	570.00	292.51	0.44
Mainstem	0.18833*	50-YR	3380.00	640.32	650.97	648.04	652.19	0.004315	8.98	451.78	194.90	0.53
Mainstem	0.18833*	100-YR	3470.00	640.32	651.00	648.16	652.28	0.004490	9.18	456.12	197.08	0.54
Mainstem	0.18833*	500-YR	3660.00	640.32	651.16	648.38	652.51	0.004661	9.46	480.21	208.80	0.55
Mainstem	0.17	2-YR	1270.00	639.12	646.34	643.80	646.85	0.003155	5.74	230.71	46.06	0.42
Mainstem	0.17	5-YR	1950.00	639.12	647.96	644.93	648.67	0.003213	6.82	310.25	188.15	0.44
Mainstem	0.17	10-YR	2440.00	639.12	650.16	645.64	650.78	0.002042	6.47	436.41	377.77	0.37
Mainstem	0.17	25-YR	3290.00	639.12	651.50	646.75	652.34	0.002317	7.52	525.07	432.84	0.40
Mainstem	0.17	50-YR	3380.00	639.12	650.69	646.88	651.75	0.003241	8.45	471.12	397.46	0.47
Mainstem	0.17	100-YR	3470.00	639.12	650.70	646.97	651.82	0.003399	8.66	472.01	397.97	0.48
Mainstem	0.17	500-YR	3660.00	639.12	650.84	647.21	652.04	0.003604	8.99	480.96	403.00	0.49
Mainstem	0.160	2-YR	1270.00	638.12	646.21	643.28	646.68	0.002492	5.58	246.90	56.08	0.39
Mainstem	0.160	5-YR	1950.00	638.12	647.81	644.43	648.50	0.002752	6.80	312.40	162.35	0.43
Mainstem	0.160	10-YR	2440.00	638.12	650.01	645.13	650.67	0.001888	6.63	402.73	386.70	0.37
Mainstem	0.160	25-YR	3290.00	638.12	651.24	646.28	652.18	0.002339	7.96	452.88	488.80	0.42
Mainstem	0.160	50-YR	3380.00	638.12	650.37	646.36	651.54	0.003224	8.87	417.38	416.53	0.48
Mainstem	0.160	100-YR	3470.00	638.12	650.36	646.50	651.60	0.003410	9.11	416.90	415.55	0.50
Mainstem	0.160	500-YR	3660.00	638.12	650.44	646.74	651.80	0.003695	9.54	420.27	422.42	0.52
Mainstem	0.15		Bridge									
Mainstem	0.145	2-YR	1270.00	638.62	644.82	643.99	645.86	0.011932	8.26	163.47	46.01	0.70
Mainstem	0.145	5-YR	1950.00	638.62	646.08	645.08	647.51	0.011698	9.71	215.10	50.87	0.73
Mainstem	0.145	10-YR	2440.00	638.62	646.86	645.78	648.56	0.011744	10.62	246.87	53.87	0.75
Mainstem	0.145	25-YR	3290.00	638.62	648.13	646.90	650.25	0.011453	11.86	299.14	277.81	0.76
Mainstem	0.145	50-YR	3380.00	638.62	648.24	647.01	650.41	0.011500	12.00	303.76	289.47	0.76
Mainstem	0.145	100-YR	3470.00	638.62	648.38	647.10	650.58	0.011440	12.11	309.20	303.20	0.76
Mainstem	0.145	500-YR	3660.00	638.62	648.67	647.35	650.94	0.011233	12.30	321.28	365.16	0.76
Mainstem	0.133	2-YR	1270.00	638.42	644.12	643.32	645.10	0.010929	7.96	159.48	43.62	0.73
Mainstem	0.133	5-YR	1950.00	638.42	645.53	644.47	646.69	0.009888	8.63	225.93	50.56	0.72
Mainstem	0.133	10-YR	2440.00	638.42	646.41	645.18	647.65	0.009490	8.94	272.96	56.18	0.71
Mainstem	0.133	25-YR	3290.00	638.42	647.98	646.27	649.21	0.007687	8.92	369.13	286.57	0.66
Mainstem	0.133	50-YR	3380.00	638.42	648.12	646.38	649.36	0.007460	8.94	379.04	291.99	0.65
Mainstem	0.133	100-YR	3470.00	638.42	648.29	646.48	649.52	0.007138	8.91	391.03	298.39	0.64
Mainstem	0.133	500-YR	3660.00	638.42	648.66	646.70	649.88	0.006487	8.85	418.35	312.36	0.62
Mainstem	0.11833*	2-YR	1270.00	638.25	643.86	642.10	644.30	0.004614	5.35	237.46	63.11	0.49
Mainstem	0.11833*	5-YR	1950.00	638.25	645.39	643.07	645.90	0.003919	5.71	341.75	72.62	0.46
Mainstem	0.11833*	10-YR	2440.00	638.25	646.32	643.67	646.87	0.003671	5.92	412.30	78.83	0.46
Mainstem	0.11833*	25-YR	3290.00	638.25	647.98	644.57	648.53	0.002774	5.98	569.96	200.46	0.41
Mainstem	0.11833*	50-YR	3380.00	638.25	648.13	644.65	648.69	0.002703	5.99	589.71	216.30	0.41
Mainstem	0.11833*	100-YR	3470.00	638.25	648.31	644.74	648.87	0.002598	5.98	614.06	234.94	0.40
Mainstem	0.11833*	500-YR	3660.00	638.25	648.71	644.92	649.25	0.002381	5.94	670.98	275.71	0.39
Mainstem	0.10367*	2-YR	1270.00	638.09	643.72	641.32	643.95	0.002295	3.86	328.94	85.13	0.35
Mainstem	0.10367*	5-YR	1950.00	638.09	645.31	642.15	645.57	0.001896	4.13	471.92	95.12	0.33
Mainstem	0.10367*	10-YR	2440.00	638.09	646.26	642.67	646.55	0.001775	4.31	565.48	101.46	0.32
Mainstem	0.10367*	25-YR	3290.00	638.09	647.96	643.42	648.26	0.001331	4.44	760.02	197.11	0.29
Mainstem	0.10367*	50-YR	3380.00	638.09	648.11	643.49	648.42	0.001306	4.46	780.56	205.49	0.29
Mainstem	0.10367*	100-YR	3470.00	638.09	648.30	643.56	648.61	0.001265	4.46	805.41	215.34	0.29
Mainstem	0.10367*	500-YR	3660.00	638.09	648.70	643.71	649.01	0.001180	4.46	861.75	236.67	0.28
Mainstem	0.089	2-YR	1270.00	637.92	643.64	640.74	643.77	0.001209	2.91	436.47	106.96	0.25
Mainstem	0.089	5-YR	1950.00	637.92	645.25	641.47	645.41	0.001023	3.16	618.05	117.86	0.24
Mainstem	0.089	10-YR	2440.00	637.92	646.22	641.90	646.39	0.000937	3.32	734.58	166.72	0.24
Mainstem	0.089	25-YR	3290.00	637.92	647.94	642.53	648.13	0.000739	3.49	955.92	198.52	0.22
Mainstem	0.089	50-YR	3380.00	637.92	648.10	642.61	648.29	0.000729	3.51	977.84	204.72	0.22
Mainstem	0.089	100-YR	3470.00	637.92	648.28	642.66	648.48	0.000710	3.52	1004.28	212.01	0.22
Mainstem	0.089	500-YR	3660.00	637.92	648.69	642.79	648.88	0.000671	3.53	1063.83	227.77	0.21
Mainstem	0.076	2-YR	1270.00	637.62	643.26		643.58	0.003159	4.56	278.25	69.60	0.40
Mainstem	0.076	5-YR	1950.00	637.62	644.88		645.23	0.003010	4.79	408.03	98.44	0.40
Mainstem	0.076	10-YR	2440.00	637.62	645.86		646.23	0.002425	4.87	525.55	137.73	0.37

HEC-RAS Plan: prop 15 River: HoneyCreek Reach: Mainstem (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
Mainstem	0.076	25-YR	3290.00	637.62	647.65		648.00	0.001621	4.82	772.89	159.21	0.32
Mainstem	0.076	50-YR	3380.00	637.62	647.82		648.17	0.001582	4.83	796.29	162.75	0.31
Mainstem	0.076	100-YR	3470.00	637.62	648.01		648.36	0.001522	4.82	825.08	168.33	0.31
Mainstem	0.076	500-YR	3660.00	637.62	648.43		648.77	0.001396	4.79	889.61	180.44	0.30
Mainstem	0.065	2-YR	1270.00	636.92	642.62		643.25	0.006675	6.37	199.42	51.44	0.57
Mainstem	0.065	5-YR	1950.00	636.92	644.24		644.93	0.005369	6.71	297.69	87.33	0.53
Mainstem	0.065	10-YR	2440.00	636.92	645.28		645.98	0.004250	6.79	414.19	157.95	0.49
Mainstem	0.065	25-YR	3290.00	636.92	647.22		647.84	0.002706	6.53	656.25	204.02	0.41
Mainstem	0.065	50-YR	3380.00	636.92	647.39		648.01	0.002639	6.54	677.99	205.36	0.41
Mainstem	0.065	100-YR	3470.00	636.92	647.60		648.20	0.002530	6.51	704.89	207.01	0.40
Mainstem	0.065	500-YR	3660.00	636.92	648.04		648.63	0.002319	6.46	764.97	220.98	0.39
Mainstem	0.05350*	2-YR	1270.00	636.02	642.38		642.87	0.004512	5.61	226.28	51.42	0.47
Mainstem	0.05350*	5-YR	1950.00	636.02	644.03		644.63	0.003773	6.20	328.92	106.92	0.45
Mainstem	0.05350*	10-YR	2440.00	636.02	645.17		645.72	0.002927	6.14	580.09	259.84	0.41
Mainstem	0.05350*	25-YR	3290.00	636.02	647.28		647.64	0.001570	5.36	1163.70	292.79	0.31
Mainstem	0.05350*	50-YR	3380.00	636.02	647.45		647.80	0.001513	5.33	1215.62	294.97	0.31
Mainstem	0.05350*	100-YR	3470.00	636.02	647.67		648.01	0.001430	5.26	1279.46	297.63	0.30
Mainstem	0.05350*	500-YR	3660.00	636.02	648.13		648.44	0.001273	5.12	1417.78	303.83	0.29
Mainstem	0.042	2-YR	1270.00	635.12	642.23	639.26	642.62	0.003012	5.01	253.99	50.53	0.38
Mainstem	0.042	5-YR	1950.00	635.12	643.88	640.45	644.40	0.002857	5.82	356.22	316.54	0.39
Mainstem	0.042	10-YR	2440.00	635.12	644.96	641.17	645.55	0.002679	6.21	439.38	333.87	0.39
Mainstem	0.042	25-YR	3290.00	635.12	646.93	642.22	647.50	0.002080	6.33	684.95	351.79	0.35
Mainstem	0.042	50-YR	3380.00	635.12	647.09	642.33	647.67	0.002062	6.37	703.30	352.58	0.35
Mainstem	0.042	100-YR	3470.00	635.12	647.30	642.43	647.88	0.002012	6.38	726.52	353.57	0.35
Mainstem	0.042	500-YR	3660.00	635.12	647.73	642.62	648.32	0.001937	6.43	775.56	383.90	0.35
Mainstem	0.033	2-YR	1270.00	633.92	641.35	640.10	642.34	0.009692	7.98	159.18	35.90	0.66
Mainstem	0.033	5-YR	1950.00	633.92	642.81	641.39	644.12	0.008882	9.20	225.01	77.52	0.66
Mainstem	0.033	10-YR	2440.00	633.92	643.88	642.21	645.28	0.007783	9.61	299.23	358.96	0.64
Mainstem	0.033	25-YR	3290.00	633.92	646.16	643.57	647.32	0.004774	9.06	506.90	398.07	0.52
Mainstem	0.033	50-YR	3380.00	633.92	646.33	643.67	647.49	0.004691	9.09	523.18	399.02	0.52
Mainstem	0.033	100-YR	3470.00	633.92	646.56	644.02	647.70	0.004498	9.04	545.36	400.31	0.51
Mainstem	0.033	500-YR	3660.00	633.92	647.05	644.28	648.15	0.004113	8.94	593.75	403.07	0.49
Mainstem	0.032		Bridge									
Mainstem	0.031	2-YR	1270.00	633.92	640.10	640.10	641.93	0.023281	10.86	117.00	31.91	1.00
Mainstem	0.031	5-YR	1950.00	633.92	641.39	641.39	643.68	0.022212	12.15	160.60	37.10	1.00
Mainstem	0.031	10-YR	2440.00	633.92	642.19	642.19	644.77	0.020194	12.90	193.86	44.88	0.98
Mainstem	0.031	25-YR	3290.00	633.92	643.59	643.59	646.41	0.016457	13.59	275.91	267.03	0.92
Mainstem	0.031	50-YR	3380.00	633.92	643.82	643.82	646.56	0.015410	13.44	292.88	357.59	0.89
Mainstem	0.031	100-YR	3470.00	633.92	643.95	643.95	646.71	0.015190	13.50	302.62	360.40	0.89
Mainstem	0.031	500-YR	3660.00	633.92	644.18	644.18	647.00	0.014965	13.69	320.91	365.59	0.89
Mainstem	0.02200*	2-YR	1270.00	633.12	637.19	638.06	640.06	0.054027	13.58	93.49	38.63	1.54
Mainstem	0.02200*	5-YR	1950.00	633.12	637.98	639.16	641.72	0.054540	15.51	125.72	42.47	1.59
Mainstem	0.02200*	10-YR	2440.00	633.12	638.45	639.82	642.79	0.056082	16.71	146.06	44.88	1.63
Mainstem	0.02200*	25-YR	3290.00	633.12	639.16	640.80	644.40	0.057811	18.37	179.11	48.54	1.69
Mainstem	0.02200*	50-YR	3380.00	633.12	639.23	640.88	644.56	0.057890	18.52	182.55	48.91	1.69
Mainstem	0.02200*	100-YR	3470.00	633.12	639.30	640.98	644.70	0.057716	18.63	186.25	49.30	1.69
Mainstem	0.02200*	500-YR	3660.00	633.12	639.46	641.17	644.99	0.057277	18.85	194.12	50.12	1.69
Mainstem	0.013	2-YR	1270.00	632.32	637.04	636.76	638.17	0.016827	8.55	148.60	51.65	0.89
Mainstem	0.013	5-YR	1950.00	632.32	638.03	637.77	639.45	0.016814	9.55	204.14	59.95	0.91
Mainstem	0.013	10-YR	2440.00	632.32	638.63	638.39	640.22	0.016809	10.12	241.12	64.88	0.93
Mainstem	0.013	25-YR	3290.00	632.32	639.07	639.31	641.36	0.022338	12.14	270.90	68.60	1.08
Mainstem	0.013	50-YR	3380.00	632.32	639.09	639.39	641.49	0.023270	12.42	272.23	68.76	1.10
Mainstem	0.013	100-YR	3470.00	632.32	639.09	639.48	641.62	0.024543	12.75	272.15	68.75	1.13
Mainstem	0.013	500-YR	3660.00	632.32	639.16	639.65	641.87	0.026087	13.22	276.81	69.31	1.17