

A G E N D A
FORT SMITH PORT AUTHORITY

MEETING
Thursday, April 20, 2023
Port of Fort Smith, 200 Navy Road
Fort Smith, Arkansas

TIME: 11:30 a.m.

1. Call to order – Larry Combs, Chair
2. Roll Call
3. Approve minutes of:
 - a. January 26, 2023 regular meeting
4. Treasurer’s Report – Philip Doss, Treasurer
 - a. Port Authority Bank activity and current balances
 - b. Ratification of payments made to date
5. Operator’s Report/Tonnage Report
6. Business Items for discussion:
 - a. Consider approval of FTN Invoice #69837 for \$1,815 and #69987 for \$4,716.25 for no-rise analysis work (previously approved up to a total of \$8500 plus expenses)
 - b. Review FTN’s Report on Warehouse #4 No Rise Analysis
7. Other business
8. Next regular meeting: Thursday, July 20, 2023
9. Adjourn.

City of Fort Smith
Port Authority Meeting
11:30 a.m. Thursday, January 26, 2023
Port of Fort Smith, 200 Navy Road
Fort Smith, Arkansas

MINUTES

The Fort Smith Port Authority scheduled a regular meeting at 11:30 a.m. on Thursday, January 26, 2023 at the Port of Fort Smith, 200 Navy Road, Fort Smith.

After a box lunch provided by Bank OZK and arranged by Philip Doss, the meeting was called to order by chairman Larry Combs at 11:45 a.m. and a quorum was noted present. Other Port Authority members present were Philip Doss, Dustin Collyge, Eddie Norman and Chad Lane. Others attending included Marty Shell, Cameron Hubbs and Jeff Dingman.

The minutes of the October 27, 2022 regular meeting were presented for approval. Mr. Doss moved approval of the minutes. Mr. Lane seconded, and the motion carried by unanimous vote.

The Port Authority reviewed the Port Authority's bank account statements for Certificates of Deposit funds as of December 24, 2022 and disbursements from operating accounts as of December 30, 2022. As of December 24, the three CD accounts total \$2,008,496.81. Mr. Lane asked if the three laddered CD had fees for breakage, or if the CD's could be redeemed so the funds could be re-invested at higher rates of return. It was noted that interest rates for CD's is currently over 3% and nearly 4%, compared to the 2.11% and 2.41%. Mr. Doss offered to do an analysis on the possibility of cashing out and reinvesting, assuming no fees are required.

The operating account maintained for grant funds stands at \$1.11 and the Port Authority's main operating account as at \$143,920.20 as of December 30, 2022. Mr. Norman moved approval of the Treasurer's Report. Mr. Collyge seconded, and the motion carried unanimously.

Mr. Doss reported that two outstanding invoices have been processed for payment and need to be ratified. The first is a payment Landmark CPA's for production of the FY2021 Financial Statements in the amount of \$1700, the specific amount being authorized at a previous meeting. The second is a payment to Studio 6 Architects in the amount of \$3,760 for pre-development services and evaluation of the Warehouse 4 addition, also authorized at previous meeting. Mr. Doss indicated both payments have been made and the checks have cleared. Mr. Collyge moved ratification of both payments, Mr. Doss seconded and the motion carried by unanimous vote.

Mr. Shell delivered the Operators/Tonnage Report, stating that in the fourth quarter 2022 the Port of Fort Smith saw a total of 15,588.368 net tons of material, mostly scrap iron by barge. The Port of Van Buren handled 44570.742 net tons of material, mostly bulk agricultural materials by barge. Total for the quarter at both facilities was 60,159.110

net tons. It was noted that this was about 36,000 fewer tons than the previous quarter, but overall 2022 saw 291,170 net tons at the two ports compared to 231,956 net tons in 2021 (an increase of 25.5%). Mr. Lane asked what the highest year's tonnage was for comparison, Mr. Shell replied that 2011 saw 370,000 net tons. More recently, before current tariffs went into effect 2017 saw 347,000 net tons, and 2018 went down to 285,000 net tons after government tariffs went into effect. The winter months coming up should see increased activity with bulk material for cattle feed in the first quarter 2023. Feed is seasonal and based on spot sales for space currently available when needed. Currently all warehouses at Port of Fort Smith are full with such material, which should continue through next spring.

Mr. Doss asked if there is typically more rail & truck traffic than barge traffic. Mr. Shell said that while that may be so currently, it fluctuates based on customer needs. The Ports of Van Buren & Fort Smith work together to provide storage off of barges, as it is cheaper than continuing to barge them up river and then having to find storage.

Mr. Norman asked about continuing to receive tonnage reports on the Port of Van Buren, as it isn't in the Port Authority's jurisdiction and no longer has any bearing on rents due by the Operator due to the flat fee monthly rent in the current Operator Agreement. Mr. Shell said while that is true, he likes providing it for continued transparency, plus he regularly works the two facilities together to provide maximum benefit to the customers that use the facilities. He tracks the information anyway, so it is no additional burden to provide it to the Port Authority as has historically been done. Mr. Doss moved approval of the Operators/Tonnage report. Mr. Norman seconded and the motion carried by unanimous vote.

The Port Authority reviewed the FY2021 Financial Statements, presented as final. There were no questions. The Port Authority then considered the Engagement Letter submitted by Landmark CPA's for the preparation of the FY2022 Financial Statements for the City of Fort Smith Port Authority. Mr. Lane clarified that the proposed fee for such service remains at \$1,700. Mr. Lane moved approval of the Engagement Letter with Landmark CPA's. Mr. Collyge seconded and the motion carried by unanimous vote.

Mr. Combs asked Mr. Shell to discuss the preliminary site plan and other matters pertaining to Warehouse 4. The preliminary plan submitted by Studio 6 shows a somewhat smaller Warehouse 4 (230 ft building) compared to the other three warehouses (250 foot buildings), due to the proximity of the building to the floodway and regulations that prevent encroachment of that area. FTN Associates, Ltd. Engineers has submitted a proposal to perform a No-Rise Analysis for the Proposed Warehouse (No. 4) at the Port of Fort Smith. The basic fee proposed for such services is \$8,500, plus reimbursable expenses. Such work is required for the construction of a 250-foot Warehouse No. 4, and will be useful to have on hand to verify that all of the work done at the Port of Fort Smith doesn't negatively impact the flood tendencies of the surrounding river or creek. Mr. Shell also noted that the city's Engineering Department has included \$3 million in its 2023 Capital Improvement Program to improve/enhance the tail end of Mill Creek that encircles the Port property, and having this No-Rise Analysis done ahead of that project will be helpful to both the Port and the City. Mr. Collyge moved approval of the FTN proposal for No-Rise Analysis. Mr. Doss seconded and the motion carried unanimously.

In other discussion items, Mr. Shell, supported by Mr. Hubbs, pointed out that the concrete needed for the fourth warehouse at today's prices will cost about \$20,000 more than the project to build Warehouse C. He noted that he is building the concrete bases of buildings at the Port of Van Buren, even though he needs to wait until the price of the building structures that go on top of them to come down. He suggested the Port Authority perhaps consider the same, and build out all of the fourth warehouse base and defer installation of building superstructure until prices of those come down. Mr. Collyge inquired about just building the concrete pads for outside storage, and not planning to enclose them in the future. Mr. Shell said that outside storage is useful and would definitely be used, but it there is a need and a higher priced market for indoor storage. Mr. Dingman asked if the warehouse base is built, when is the requirement for an additional fire hydrant triggered, to which Mr. Hubbs replied that it wouldn't be required until the building is enclosed. Mr. Norman pointed out that the Port Authority's funds are to be used for Port expansion and improvement, not as a savings account. The funds will be used, but he isn't in a hurry to make a decision on it. It may be worth seeing the impact of the no-rise analysis, the city's Mill Creek project, and it may be worth evaluating access across the creek to make that property more usable, all while undertaking the needed planning for the fourth building. Mr. Doss expressed similar comments, and all seemed to be in consensus.

The next regular meeting of the Fort Smith Port Authority is scheduled for Thursday, April 27, 2023. There being no further business, the meeting adjourned at 12:50 pm.

Respectfully submitted,



Jeff Dingman
Deputy City Administrator
City of Fort Smith, Arkansas



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115318-01A**045692



CITY OF FORT SMITH PORT AUTHORITY
 GRANT ACCOUNT
 623 GARRISON AVE
 FORT SMITH AR 72901-2508

Statement Date: 01/31/2023

Account Number: [REDACTED]

As of 12/19/22, our state specific Terms and Conditions have changed. To view these revisions, please go to [ozk.com/disclosures](https://www.ozk.com/disclosures).

PUBLIC FUND CHECKING ACCOUNT - [REDACTED]

PREVIOUS STATEMENT BALANCE AS OF 12/30/22:	1.11
PLUS 1 DEPOSITS AND OTHER CREDITS:	1.00
LESS 1 CHECKS AND OTHER DEBITS:	1.00
CURRENT STATEMENT BALANCE AS OF 01/31/23:	1.11
NUMBER OF DAYS IN THIS STATEMENT PERIOD:	32

OTHER TRANSACTIONS

DATE	DESCRIPTION	DEBITS	CREDITS
01/27	TRANSFER FROM DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]		1.00
01/31	TRANSFER TO DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]	1.00	

BALANCE BY DATE

DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT
01/27	2.11	01/31	1.11				

PAYER FEDERAL ID NUMBER: 71-0130170

INTEREST EARNED THIS STATEMENT PERIOD

AVERAGE LEDGER BALANCE:	1.23
INTEREST EARNED:	0.00
INTEREST PAID THIS PERIOD:	0.00
ANNUAL PERCENTAGE YIELD EARNED:	.00%
INTEREST RATE:	.05%

00025753



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115318-01A**045693



CITY OF FORT SMITH PORT AUTHORITY

OPERATING ACCOUNT

623 GARRISON AVE

FORT SMITH AR 72901-2508

Statement Date: 01/31/2023

Account Number: [REDACTED]

As of 12/19/22, our state specific Terms and Conditions have changed. To view these revisions, please go to ozk.com/disclosures.

PUBLIC FUND CHECKING ACCOUNT - [REDACTED]

PREVIOUS STATEMENT BALANCE AS OF 12/30/22:	143,920.20
PLUS 2 DEPOSITS AND OTHER CREDITS:	7.20
LESS 3 CHECKS AND OTHER DEBITS:	5,461.00
CURRENT STATEMENT BALANCE AS OF 01/31/23:	138,466.40
NUMBER OF DAYS IN THIS STATEMENT PERIOD:	32

CHECK TRANSACTIONS

SERIAL	DATE	AMOUNT	SERIAL	DATE	AMOUNT
173	01/04	1,700.00	174	01/24	3,760.00

OTHER TRANSACTIONS

DATE	DESCRIPTION	DEBITS	CREDITS
01/27	TRANSFER TO DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]	1.00	
01/31	TRANSFER FROM DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]		1.00
01/31	INTEREST		6.20

BALANCE BY DATE

DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT
01/04	142,220.20	01/24	138,460.20	01/27	138,459.20	01/31	138,466.40

PAYER FEDERAL ID NUMBER: 71-0130170

INTEREST PAID YEAR TO DATE: 6.20

INTEREST EARNED THIS STATEMENT PERIOD

AVERAGE LEDGER BALANCE:	141,492.57
INTEREST EARNED:	6.20
INTEREST PAID THIS PERIOD:	6.20
ANNUAL PERCENTAGE YIELD EARNED:	.05%
INTEREST RATE:	.05%



CITY OF FORT SMITH PORT AUTHORITY
OPERATING ACCOUNT
823 GARRISON AVE
FORT SMITH, AR 72903

173
11-727829
1023

12/20/2022

Pay to the Order of Landmark CPA \$ 1,700.—
One thousand seven hundred Dollars

BANK of the OZARKS
www.bankoftheozarks.com • MEMBER FDIC

For 12/31/2021 Financial Stmt

[Signature]

173 \$1700.00 01/04/2023

[REDACTED]

173 \$1700.00 01/04/2023

CITY OF FORT SMITH PORT AUTHORITY
OPERATING ACCOUNT
823 GARRISON AVE
FORT SMITH, AR 72903

174
11-727829
1023

1/18/2023

Pay to the Order of Studio 6 Architects \$ 3,760.00
Three thousand seven hundred sixty Dollars

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For PMT Inv 22-059-01

[Signature]

174 \$3760.00 01/24/2023

[REDACTED]

FOR DEPOSIT ONLY

174 \$3760.00 01/24/2023



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115917-01A**045985



CITY OF FORT SMITH PORT AUTHORITY

GRANT ACCOUNT

623 GARRISON AVE

FORT SMITH AR 72901-2508

Statement Date: 02/28/2023

Account Number: [REDACTED]

Effective February 1, 2023, Bank OZK will no longer assess a Return of Deposited Item Fee or a Return of Non-U.S. Item Fee. The Schedule of Fees has been updated to reflect this change.

PUBLIC FUND CHECKING ACCOUNT - [REDACTED]

PREVIOUS STATEMENT BALANCE AS OF 01/31/23:	1.11
PLUS 1 DEPOSITS AND OTHER CREDITS:	1.00
LESS 1 CHECKS AND OTHER DEBITS:	1.00
CURRENT STATEMENT BALANCE AS OF 02/28/23:	1.11
NUMBER OF DAYS IN THIS STATEMENT PERIOD:	28

OTHER TRANSACTIONS

DATE	DESCRIPTION	DEBITS	CREDITS
02/27	TRANSFER FROM DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]		1.00
02/28	TRANSFER TO DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]	1.00	

BALANCE BY DATE

DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT
02/27	2.11	02/28	1.11				

PAYER FEDERAL ID NUMBER: 71-0130170

INTEREST EARNED THIS STATEMENT PERIOD

AVERAGE LEDGER BALANCE:	1.14
INTEREST EARNED:	0.00
INTEREST PAID THIS PERIOD:	0.00
ANNUAL PERCENTAGE YIELD EARNED:	.00%
INTEREST RATE:	.05%



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115917-01A**045986



CITY OF FORT SMITH PORT AUTHORITY

OPERATING ACCOUNT

623 GARRISON AVE

FORT SMITH AR 72901-2508

Statement Date: 02/28/2023

Account Number: [REDACTED]

Effective February 1, 2023, Bank OZK will no longer assess a Return of Deposited Item Fee or a Return of Non-U.S. Item Fee. The Schedule of Fees has been updated to reflect this change.

PUBLIC FUND CHECKING ACCOUNT - [REDACTED]

PREVIOUS STATEMENT BALANCE AS OF 01/31/23:	138,466.40
PLUS 2 DEPOSITS AND OTHER CREDITS:	6.31
LESS 1 CHECKS AND OTHER DEBITS:	1.00
CURRENT STATEMENT BALANCE AS OF 02/28/23:	138,471.71
NUMBER OF DAYS IN THIS STATEMENT PERIOD:	28

OTHER TRANSACTIONS

DATE	DESCRIPTION	DEBITS	CREDITS
02/27	TRANSFER TO DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]	1.00	
02/28	TRANSFER FROM DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]		1.00
02/28	INTEREST		5.31

BALANCE BY DATE

DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT
02/27	138,465.40	02/28	138,471.71				

PAYER FEDERAL ID NUMBER: 71-0130170

INTEREST PAID YEAR TO DATE: 11.51

INTEREST EARNED THIS STATEMENT PERIOD

AVERAGE LEDGER BALANCE:	138,466.36
INTEREST EARNED:	5.31
INTEREST PAID THIS PERIOD:	5.31
ANNUAL PERCENTAGE YIELD EARNED:	.05%
INTEREST RATE:	.05%



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116645-03A**088172
 CITY OF FORT SMITH PORT AUTHORITY
 GRANT ACCOUNT
 623 GARRISON AVE
 FORT SMITH AR 72901-2508

Statement Date: 03/31/2023

Account Number: [REDACTED]

Effective February 1, 2023, Bank OZK will no longer assess a Return of Deposited Item Fee or a Return of Non-U.S. Item Fee. The Schedule of Fees has been updated to reflect this change.

PUBLIC FUND CHECKING ACCOUNT - [REDACTED]

PREVIOUS STATEMENT BALANCE AS OF 02/28/23:	1.11
PLUS 1 DEPOSITS AND OTHER CREDITS:	1.00
LESS 1 CHECKS AND OTHER DEBITS:	1.00
CURRENT STATEMENT BALANCE AS OF 03/31/23:	1.11
NUMBER OF DAYS IN THIS STATEMENT PERIOD:	31

OTHER TRANSACTIONS

DATE	DESCRIPTION	DEBITS	CREDITS
03/27	TRANSFER FROM DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]		1.00
03/31	TRANSFER TO DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]	1.00	

BALANCE BY DATE

DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT
03/27	2.11	03/31	1.11				

PAYER FEDERAL ID NUMBER: 71-0130170

INTEREST EARNED THIS STATEMENT PERIOD

AVERAGE LEDGER BALANCE:	1.23
INTEREST EARNED:	0.00
INTEREST PAID THIS PERIOD:	0.00
ANNUAL PERCENTAGE YIELD EARNED:	.00%
INTEREST RATE:	.05%

00021733



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116645-03A**088173



CITY OF FORT SMITH PORT AUTHORITY

OPERATING ACCOUNT

623 GARRISON AVE

FORT SMITH AR 72901-2508

Statement Date: 03/31/2023

Account Number: [REDACTED]

Effective February 1, 2023, Bank OZK will no longer assess a Return of Deposited Item Fee or a Return of Non-U.S. Item Fee. The Schedule of Fees has been updated to reflect this change.

PUBLIC FUND CHECKING ACCOUNT - [REDACTED]

PREVIOUS STATEMENT BALANCE AS OF 02/28/23:	138,471.71
PLUS 2 DEPOSITS AND OTHER CREDITS:	6.88
LESS 1 CHECKS AND OTHER DEBITS:	1.00
CURRENT STATEMENT BALANCE AS OF 03/31/23:	138,477.59
NUMBER OF DAYS IN THIS STATEMENT PERIOD:	31

OTHER TRANSACTIONS

DATE	DESCRIPTION	DEBITS	CREDITS
03/27	TRANSFER TO DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]	1.00	
03/31	TRANSFER FROM DDA PUBLIC FUNDS INT ACCOUNT [REDACTED]		1.00
03/31	INTEREST		5.88

BALANCE BY DATE

DATE	AMOUNT	DATE	AMOUNT
03/27	138,470.71	03/31	138,477.59

PAYER FEDERAL ID NUMBER: 71-0130170

INTEREST PAID YEAR TO DATE: 17.39

INTEREST EARNED THIS STATEMENT PERIOD

AVERAGE LEDGER BALANCE:	138,471.58
INTEREST EARNED:	5.88
INTEREST PAID THIS PERIOD:	5.88
ANNUAL PERCENTAGE YIELD EARNED:	.05%
INTEREST RATE:	.05%

FIVE RIVERS DISTRIBUTION - PORT OF FORT SMITH
TONNAGE REPORT
Jan 2023

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
FSPT	Steel	Truck	2,474,040	1,237.0200	61
FSPT	Bars	Truck	125,416	62.7080	3
		TOTALS	2,599,456	1,299.7280	64
FSPT	Corn/SBM	Truck	0	0.0000	0
		TOTALS	0	0.0000	0
FSPT	Steel	Rail Cars	0	0.0000	
FSPT	Wire Rods	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Lumber	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	LinPro	Rail Cars	600,494	300.2470	3
		TOTALS	600,494	300.2470	3
FSPT	Corn	Rail Cars	2,320,600	1,160.3000	12
		TOTALS	2,320,600	1,160.3000	12
FSPT	Hominy	Rail Cars	583,850	291.9250	3
		TOTALS	583,850	291.9250	3
FSPT	21% MCP	Rail Cars	0	0.0000	0
		TOTALS	0	0.0000	0
FSPT	Scrap Iron	Barge	3,005,600	1,502.8000	1
		TOTALS	3,005,600	1,502.8000	1
FSPT	Alloys	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Urea/Trio/Potash	Barge	0	0.0000	
FSPT	Mag. Oxide	Barge	0	0.0000	
FSPT	Magnachem Ore	Barge	0	0.0000	
FSPT	DDG/Soy Hull/Corn	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Coal	Barge	0	0.0000	
		TOTALS	0	0.0000	0
TOTAL TONNAGE				4,555.0000	83

barge	1,502.800	1
rail	1,752.472	18
truck	1,299.728	64
	<u>4,555.000</u>	<u>83</u>

**FIVE RIVERS DISTRIBUTION - PORT OF FORT SMITH
 TONNAGE REPORT
 Feb 2023**

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
FSPT	Steel	Truck	2,618,434	1,309.2170	64
FSPT	Bars	Truck	355,816	177.9080	8
		TOTALS	2,974,250	1,487.1250	72
FSPT	Corn	Truck	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Steel	Rail Cars	0	0.0000	
FSPT	Wire Rods	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Lumber	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	LinPro	Rail Cars	594,096	297.0480	3
		TOTALS	594,096	297.0480	3
FSPT	Corn	Rail Cars	1,014,950	507.4750	5
		TOTALS	1,014,950	507.4750	5
FSPT	Hominy	Rail Cars	953,050	476.5250	5
		TOTALS	953,050	476.5250	5
FSPT	21% MCP	Rail Cars	395,800	197.9000	2
		TOTALS	395,800	197.9000	2
FSPT	Scrap Iron	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Alloys	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Urea/Trio/Potash	Barge	0	0.0000	
FSPT	Mag. Oxide	Barge	0	0.0000	
FSPT	Magnachem Ore	Barge	0	0.0000	
FSPT	DDG/Soy Hull/Corn	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Coal	Barge	0	0.0000	
		TOTALS	0	0.0000	0
TOTAL TONNAGE			2,966.0730	87	

barge	0.000	0
rail	1,478.948	15
truck	1,487.125	72
	2,966.073	87

**FIVE RIVERS DISTRIBUTION - PORT OF FORT SMITH
 TONNAGE REPORT
 March 2023**

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
FSPT	Steel	Truck	2,652,070	1,326.0350	67
FSPT	Bars	Truck	127,942	63.9710	3
		TOTALS	2,780,012	1,390.0060	70
FSPT	Corn	Truck	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Steel	Rail Cars	0	0.0000	
FSPT	Wire Rods	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Lumber	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	LinPro	Rail Cars	796,812	398.4060	4
		TOTALS	796,812	398.4060	4
FSPT	Corn	Rail Cars	1,251,610	625.8050	6
		TOTALS	1,251,610	625.8050	6
FSPT	Hominy	Rail Cars	805,900	402.9500	4
		TOTALS	805,900	402.9500	4
FSPT	21% MCP	Rail Cars	794,900	397.4500	4
		TOTALS	794,900	397.4500	4
FSPT	Scrap Iron	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Alloys	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Urea/Trio/Potash	Barge	0	0.0000	
FSPT	Mag. Oxide	Barge	0	0.0000	
FSPT	Magnachem Ore	Barge	0	0.0000	
FSPT	DDG/Soy Hull/Corn	Barge	0	0.0000	
		TOTALS	0	0.0000	0
FSPT	Grain	Barge	0	0.0000	
		TOTALS	0	0.0000	0
TOTAL TONNAGE				3,214.6170	88

barge	0.000	0
rail	1,824.611	18
truck	1,390.006	70
	3,214.617	88

**FIVE RIVERS DISTRIBUTION - PORT OF FORT SMITH
TONNAGE REPORT
1st Quarter 2023**

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
FSPT	Steel	Truck	7,744,544	3,872.2720	192
FSPT	Bars	Truck	609,174	304.5870	14
		TOTALS	8,353,718	4,176.8590	206
FSPT	Corn	Truck	0	0.0000	0
		TOTALS	0	0.0000	0
FSPT	Steel	Rail Cars	0	0.0000	0
FSPT	Wire Rods	Rail Cars	0	0.0000	0
		TOTALS	0	0.0000	0
FSPT	Lumber	Rail Cars	0	0.0000	0
		TOTALS	0	0.0000	0
FSPT	LinPro	Rail Cars	1,991,402	995.7010	10
		TOTALS	1,991,402	995.7010	10
FSPT	Corn	Rail Cars	4,587,160	2,293.5800	23
		TOTALS	4,587,160	2,293.5800	23
FSPT	Hominy	Rail Cars	2,342,800	1,171.4000	12
		TOTALS	2,342,800	1,171.4000	12
FSPT	21% MCP	Rail Cars	1,190,700	595.3500	6
		TOTALS	1,190,700	595.3500	6
FSPT	Scrap Iron	Barge	3,005,600	1,502.8000	1
		TOTALS	3,005,600	1,502.8000	1
FSPT	Alloys	Barge	0	0.0000	0
		TOTALS	0	0.0000	0
FSPT	Urea/Trio/Potash	Barge	0	0.0000	0
FSPT	Mag. Oxide	Barge	0	0.0000	0
FSPT	Magnachem Ore	Barge	0	0.0000	0
FSPT	DDG/Soy Hull/Corn	Barge	0	0.0000	0
		TOTALS	0	0.0000	0
FSPT	Grain	Barge	0	0.0000	0
		TOTALS	0	0.0000	0
TOTAL TONNAGE			10,735.6900	258	

FIVE RIVERS DISTRIBUTION - VAN BUREN TONNAGE REPORT

Date: Jan 2023

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
VB	Steel Coils	Trucks	0	0.0000	
VB	Stainless Steel	Trucks	0	0.0000	
VB	Wire Rods	Trucks	91,618	45.8090	2
VB	Zinc	Trucks	179,180	89.5900	4
		TOTALS	270,798	135.3990	6
VB	Steel Coils	Rail Cars	0	0.0000	
VB	Wire Rods	Rail Cars	1,019,710	509.8550	6
		TOTALS	1,019,710	509.8550	6
VB	Feed Pellets/DDG	Rail Cars	0	0.0000	
VB	Sand	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
VB	Wire Rods	Barges	6,827,662	3,413.8310	3
VB	Alloy	Barges	0	0.0000	
VB	Steel Coils	Barges	0	0.0000	
		TOTALS	6,827,662	3,413.8310	3
VB	Urea/DFP/Potash/MCP/MgO	Barges	8,848,380	4,424.1900	3
VB	Feed Pellets	Barges	0	0.0000	
VB	Tapioca Starch	Barges	0	0.0000	
VB	Wheat	Barges	0	0.0000	
VB	DDG/Corn Gluten/SBM	Barges	2,787,898	1,393.9490	1
VB	MagnaChem	Barges	0	0.0000	
VB	Aggregate	Barges	3,060,000	1,530.0000	1
		TOTALS	14,696,278	7,348.1390	5
VB	Corn	Trucks	0	0.0000	
			0	0.0000	0
VB	Pig Iron	Barges	0	0.0000	
		TOTALS	0	0.0000	0
VB	Scrap	Barges	0	0.0000	
		TOTALS	0	0.0000	0
TOTAL TONNAGE				11,407.2240	20
			barge	10,761.970	8
			rail	509.855	6
			truck	135.399	6
				11,407.224	20

FIVE RIVERS DISTRIBUTION - VAN BUREN TONNAGE REPORT

Date: Feb 2023

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
VB	Steel Coils	Trucks	0	0.0000	
VB	Stainless Steel	Trucks	0	0.0000	
VB	Wire Rods	Trucks	0	128.6040	6
VB	Zinc	Trucks	0	0.0000	
TOTALS			0	128.6040	6
VB	Steel Coils	Rail Cars	0	0.0000	
VB	Wire Rods	Rail Cars	0	1,417.7640	17
TOTALS			0	1,417.7640	17
VB	Feed Pellets/DDG	Rail Cars	0	0.0000	
VB	Sand	Rail Cars	0	0.0000	
TOTALS			0	0.0000	0
VB	Wire Rods	Barges	21,591,910	10,795.9550	7
VB	Alloy	Barges	3,020,302	1,510.1510	1
VB	Steel Coils	Barges	0	0.0000	
TOTALS			24,612,212	12,306.1060	8
VB	Urea/DFP/Potash/MCP/MgO	Barges	19,510,008	9,755.0040	6
VB	Feed Pellets	Barges	0	0.0000	
VB	Tapioca Starch	Barges	0	0.0000	
VB	Wheat	Barges	0	0.0000	
VB	DDG/Corn Gluten/SBM	Barges	2,834,032	1,417.0160	1
VB	MagnaChem	Barges	0	0.0000	
VB	Aggregate	Barges	0	0.0000	
TOTALS			22,344,040	11,172.0200	7
VB	Potash/Magox	Trucks	0	0.0000	
			0	0.0000	0
VB	Pig Iron	Barges	0	0.0000	
TOTALS			0	0.0000	0
VB	Scrap	Barges	0	0.0000	
TOTALS			0	0.0000	0
TOTAL TONNAGE				25,024.4940	38
			barge	23,478.126	15
			rail	1,417.764	17
			truck	128.604	6
				25,024.494	38

FIVE RIVERS DISTRIBUTION - VAN BUREN TONNAGE REPORT

Date: March 2023

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
VB	Steel Coils	Trucks	0	0.0000	
VB	Stainless Steel	Trucks	0	0.0000	
VB	Wire Rods	Trucks	229,958	114.9790	5
VB	Zinc	Trucks	0	0.0000	
		TOTALS	229,958	114.9790	5
VB	Steel Coils	Rail Cars	0	0.0000	
VB	Wire Rods	Rail Cars	983,841	491.9205	6
		TOTALS	983,841	491.9205	6
VB	Feed Pellets/DDG	Rail Cars	0	0.0000	
VB	Sand	Rail Cars	0	0.0000	
		TOTALS	0	0.0000	0
VB	Wire Rods	Barges	21,810,562	10,905.2810	8
VB	Alloy	Barges	0	0.0000	
VB	Steel Coils	Barges	0	0.0000	
		TOTALS	21,810,562	10,905.2810	8
VB	Urea/DFP/Potash/MCP/MgO	Barges	9,398,354	4,699.1770	3
VB	Feed Pellets	Barges	0	0.0000	
VB	Tapioca Starch	Barges	0	0.0000	
VB	Wheat	Barges	0	0.0000	
VB	DDG/Corn Gluten/SBM	Barges	0	0.0000	
VB	MagnaChem	Barges	0	0.0000	
VB	Aggregate	Barges	3,038,804	1,519.4020	1
		TOTALS	12,437,158	6,218.5790	4
VB	Potash/Magox	Trucks	0	0.0000	
			0	0.0000	0
VB	Pig Iron	Barges	0	0.0000	
		TOTALS	0	0.0000	0
VB	Scrap	Barges	0	0.0000	
		TOTALS	0	0.0000	0
TOTAL TONNAGE				17,730.7595	23
			barge	17,123.860	12
			rail	491.921	6
			truck	114.979	5
				17,730.760	23

FIVE RIVERS DISTRIBUTION - VAN BUREN TONNAGE REPORT

Date: 1st Quarter - 2023

PORT	COMMODITY	RECD. VIA	LOAD WT	TONS	#
VB	Steel Coils	Trucks	0	0.0000	
VB	Stainless Steel	Trucks	0	0.0000	0
VB	Wire Rods	Trucks	321,576	289.3920	13
VB	Zinc	Trucks	179,180	89.5900	4
TOTALS			500,756	378.9820	17
VB	Steel Coils	Rail Cars	0	0.0000	0
VB	Wire Rods	Rail Cars	2,003,551	2,419.5395	29
TOTALS			2,003,551	2,419.5395	29
VB	Feed Pellets/DDG	Rail Cars	0	0.0000	0
VB	Sand	Rail Cars	0	0.0000	0
TOTALS			0	0.0000	0
VB	Wire Rods	Barges	50,230,134	25,115.0670	18
VB	Alloy	Barges	3,020,302	1,510.1510	1
VB	Steel Coils	Barges	0	0.0000	0
TOTALS			53,250,436	26,625.2180	19
VB	Urea/DFP/Potash/MCP/MgO	Barges	37,756,742	18,878.3710	12
VB	Feed Pellets	Barges	0	0.0000	0
VB	Tapioca Starch	Barges	0	0.0000	0
VB	Wheat	Barges	0	0.0000	0
VB	DDG/Corn Gluten/SBM	Barges	5,621,930	2,810.9650	2
VB	MagnaChem	Barges	0	0.0000	0
VB	Aggregate	Barges	6,098,804	3,049.4020	2
TOTALS			49,477,476	24,738.7380	16
VB	Potash/Magox	Trucks	0	0.0000	0
			0	0.0000	0
VB	Pig Iron	Barges	0	0.0000	0
TOTALS			0	0.0000	0
VB	Scrap	Barges	0	0.0000	0
TOTALS			0	0.0000	0
TOTAL TONNAGE				54,162.4775	81

Five Rivers Distribution

2023 - 1st Quarter Tonnage Report

Van Buren

Truck	378.982
Rail	2,419.540
Barge	51,363.956
	<hr/>
	54,162.478

Fort Smith

Truck	4,176.857
Rail	5,056.031
Barge	1,502.800
	<hr/>
	10,735.688

Total	64,898.166
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Mr. Marty Shell
 Five Rivers Distribution, LLC
 PO Box 5606
 2020 Riverfront Road
 Van Buren, AR 72957

March 03, 2023
 Project No: R22250-3063-001
 Invoice No: 69837

Invoice Total \$1,815.00

Hydraulic Modeling for No Rise Analysis Whse 4 along Mill Creek

Professional Services from February 1, 2023 to February 28, 2023

Professional Personnel

	Hours	Rate	Amount	
Prof Level VI	.75	215.00	161.25	
Prof Level II	12.25	135.00	1,653.75	
Totals	13.00		1,815.00	
Total Labor				1,815.00
		Total this Invoice		\$1,815.00

Please include our invoice number(s) with your payment.

By check: Make check payable to FTN Associates, Ltd. and send to 3 Inwood Circle, Suite 220, Little Rock, AR 72211.

Electronic / ACH Payment: Please contact accounting@ftn-assoc.com for routing information.

Questions: Contact us at (501) 225-7779 or accounting@ftn-assoc.com.

Progress Report

Project No. 22250-3063-001

**FORT SMITH PORT AUTHORITY
PORT OF FORT SMITH WAREHOUSE #4
NO-RISE ANALYSIS
MILL CREEK
FORT SMITH, AR**

During the February 2023 billing period, the following activities were performed for this Project:

1. Project Coordination:
 - Performed general project coordination (e.g., coordination on proposed bridge information, etc.).
 - Received preliminary development plan from Mr. Marty Shell on November 14, 2022.
 - Received signed contract to proceed with analysis on January 26, 2023.
2. No Rise Analysis:
 - Obtained effective Letter of Map Revision (LOMR) modeling for Mill Creek from the Flood Risk Study Engineering Library (FRiSEL).
 - Gathered available topographic data (e.g., LiDAR data) for the project area for use in development of the hydraulic modeling.
 - Received preliminary warehouse information on November 14, 2022.
 - Started development of hydraulic modeling for the No Rise Analysis to examine the impacts of the proposed development.

During the March 2023 billing period, the following activities are anticipated:

1. Complete development of hydraulic modeling.
2. Start and complete No Rise Analysis and provide summary of findings to the Client.

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Mr. Marty Shell
 Five Rivers Distribution, LLC
 PO Box 5606
 2020 Riverfront Road
 Van Buren, AR 72957

April 12, 2023
 Project No: R22250-3063-001
 Invoice No: 69987

Invoice Total	\$4,716.25
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Hydraulic Modeling for No Rise Analysis Warehouse 4 along Mill Creek

Professional Services from March 1, 2023 to March 31, 2023

Professional Personnel

	Hours	Rate	Amount	
Prof Level VII	1.50	240.00	360.00	
Prof Level VI	11.00	215.00	2,365.00	
Prof Level II	6.00	135.00	810.00	
Prof Level I	9.00	125.00	1,125.00	
Word Processor	.75	75.00	56.25	
Totals	28.25		4,716.25	
Total Labor				4,716.25
		Total this Invoice		\$4,716.25

Outstanding Invoices

Number	Date	Balance
69837	3/3/2023	1,815.00
Total		1,815.00

Please include our invoice number(s) with your payment.

By Check-Mail to Regions Bank Lockbox Address Only: Make check payable to FTN Associates, Ltd., and mail to Dept 6552, FTN Associates LTD, PO Box 11407, Birmingham, AL 35246-6552.

Credit Card: We accept credit card payments on our website at www.ftn-assoc.com. Click on CONTACT US and scroll down to the bottom of the screen to click on the ONLINE PAYMENT link to pay your invoice through the secure banking system.

Electronic / ACH Payment: Please contact accounting@ftn-assoc.com for routing information.

Questions: Contact us at (501) 225-7779 or accounting@ftn-assoc.com.

Progress Report

Project No. 22250-3063-001

**FORT SMITH PORT AUTHORITY
PORT OF FORT SMITH WAREHOUSE #4 NO-RISE ANALYSIS
MILL CREEK
FORT SMITH, AR**

During the March 2023 billing period, the following activities were performed for this Project:

1. Project Coordination:
 - Performed general project coordination (e.g., coordination on proposed bridge information, etc.).
 - Received signed contract to proceed with analysis on January 26, 2023.
2. No Rise Analysis:
 - Completed development of hydraulic modeling for the No Rise Analysis to examine the impacts of the proposed development.
 - Submitted No Rise Analysis and Certification documents to Client on March 10, 2023.

During the April 2023 billing period, the following activities are anticipated:

1. None. Project complete.

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PORT OF FORT SMITH WAREHOUSE #4 MILL CREEK NO-RISE ANALYSIS



March 10, 2023

NO-RISE CERTIFICATION & DOCUMENTATION



ENGINEERING "NO-RISE" CERTIFICATE

For Arkansas NFIP Communities

OFFICE USE ONLY

Date Received: _____
File Number: _____

INSTRUCTIONS FOR THE ENGINEER

Section 60.3 (d) (3) of the National Flood Insurance Program (NFIP) regulations states that a community shall "prohibit encroachments, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway **unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice** that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base (100-year) flood discharge." This certification -an Engineering "No-Rise" Certificate - must be obtained from the applicant and be signed and sealed by a professional engineer.

The engineering "no-rise" certification must be supported by technical data based upon hydraulic analyses that utilize the same model used to prepare the effective Flood Insurance Study (FIS) report and Flood Insurance Rate Map (FIRM) unless it is demonstrated that the effective hydraulic model is unavailable or its use is inappropriate.

The "no-rise" supporting data should include the following:

- Copy of the Duplicate Effective model;
- Copy of the Corrected Effective model;
- Existing conditions, or Pre-Project conditions model
- Proposed conditions or Post-Project conditions model.
- FIRM and topographic map, showing floodplain and floodway, the additional cross-sections, the site location with the proposed topographic modification superimposed onto the maps, and a copy of the effective FIRM or FBFM showing the current regulatory floodway.
- Analysis procedures noting modifications made to original FIS model to represent revised existing conditions, as well as those made to the revised existing conditions model to represent proposed conditions.
- Copy of effective Floodway Data Table copied from the (FIS) report.
- Statement defining source of additional cross-section topographic data and supporting information.
- Cross-section plots, of the added cross sections, for revised existing and proposed conditions.
- Certified planimetric (boundary survey) information indicating the location of structures on the property.
- Copy of the source from which input for original FIS model was taken.
- CD or flash drive with all input and output files.
- Printout of output files from EDIT runs for all three floodway models.

The engineering "no-rise" certification and-supporting technical data must stipulate **NO impact on the 100-year flood or floodway elevations at the new cross-sections and at all existing cross-sections anywhere in the model.** Therefore, the revised computer model should be run for a sufficient distance (usually one mile, depending on hydraulic slope of the stream) upstream and downstream of the development site to insure proper "no-rise" certification.

Failure to follow this guidance may result in notification to the Arkansas State Board of Licensure for Professional Engineers, the Arkansas Floodplain Managers Association Professional Development and Certification Committee, and/or FEMA Region VI.

If you have any questions regarding the Engineering "no-Rise" Certificate or need additional information, please contact the State National Flood Insurance Coordinator at 501-682-3969.



ENGINEERING "NO-RISE" CERTIFICATE For Arkansas NFIP Communities

OFFICE USE ONLY	
Date Received:	_____
File Number:	_____

SITE INFORMATION

Date	03/10/23
Community	Ft. Smith, AR
County	Sebastian County, AR
Applicant	
Name	Mr. Marty Shell
Address	200 Navy Rd, Fort Smith, AR 72901
Telephone	(479) 410-1557
Engineer	
Name	Lee J. Beshoner, PE, CFM
Address	124 W. Sunbridge Drive, Ste.3, Fayetteville, AR 72703
Telephone	479-571-3334

Project	
Address	Ft. Smith Port Authority (Fiver Rivers Distribution) 200 Navy Rd, Fort Smith, AR 72901
Description of Development:	Construction of a new warehouse at the Ft. Smith Port (Warehouse #4)
Principal Use of Premises:	Industrial Property

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

NFIP map(s) and panel(s) affected:	05131C0110K
Effective date of map:	03/02/2012
Base Flood Elevation on FIRM:	420.5ft (NAVD88) - Effective Lettered Cross Section A
Name of flooding source:	Mill Creek

SUPPORT DOCUMENTS

Attached are the following documents that support this Engineering "No-Rise" Certification:

- Copies of the Duplicate Effective, Corrected Effective, Existing or Pre-Project conditions, and Proposed or Post-Project conditions models
- Analysis procedures documentation
- Copy of effective Floodway Data Table
- Cross-section plots
- CD or flash drive with all input and output files.
- Printout of output files runs for all three floodway models.

Please see **INSTRUCTIONS FOR THE ENGINEER** for additional documentation that may be required.

CERTIFICATION

This is to certify that I am a duly qualified Professional Engineer licensed to practice in the State of Arkansas. I further certify that the attached engineering data supports the fact the proposed development would not result in any increase in flood levels within the community during the occurrence of a base flood event.

Lee J. Beshoner	12942
CERTIFIER'S NAME	LICENSE NUMBER
FTN Associates, Ltd.	
COMPANY NAME	
	3/10/23
SIGNATURE	DATE
Water Resources Engineer	
TITLE	



PORT OF FORTH SMITH WAREHOUSE #4
MILL CREEK
NO-RISE ANALYSIS

Prepared for

Fort Smith Port Authority
PO Box 5606
2020 Riverfront Road
Van Buren, AR 72957

Prepared by

FTN Associates, Ltd.
124 W. Sunbridge Drive, Suite 3
Fayetteville, AR 72703

FTN No. R22250-3063-001

March 10, 2023

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- APPENDIX A: Proposed Site Plan
APPENDIX B: Modeling Output (Including Effective Floodway Data Table)

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LIST OF FIGURES

ATTACHMENT 1:	Figure 1 – Project Location Map
	Figure 2 – FEMA Annotated FIRM Map

1.0 DATA GATHERING/REVIEW

1.1 Project Scope and Location

FTN Associates, Ltd. (FTN), on behalf of Fort Smith Port Authority (Client), performed a hydraulic analysis in support of a No-Rise Certification for a proposed future warehouse (Warehouse No. 4) along the right descending bank of Mill Creek in Fort Smith, Arkansas (the Project). The proposed project consists of constructing a warehouse (Warehouse No. 4) on the Port of Fort Smith / Five Rivers Distribution property. Figure 1 provides the location of the proposed Project.

1.2 Available Hydraulic Model Information

FTN obtained proposed project information from the Client and the effective hydraulic model for Mill Creek from the Federal Emergency Management Agency (FEMA). From available information, the effective hydraulic model was converted to a HEC-RAS model for a Letter of Map Revision (LOMR) in 2005. The hydraulic model included both the multiple flood and floodway scenarios. All hydraulic modeling and edits used to represent the proposed development are built upon the effective hydraulic model received.

The proposed development information consists of a proposed warehouse design, which was provided to FTN on November 4, 2022, by the Client.

1.3 Topographic Information

Since the completion of the Mill Creek Effective Model, updated high-resolution LiDAR data has been flown for the Project area as part of the 2017 North Corridor FEMA R6 LiDAR and 2017 Ouachita FEMA R6 LiDAR projects. This LiDAR information was collected by FEMA and the USGS as part of topographic collection effort and is guaranteed to be a Quality Level 2. Since this data is newer and contains more detailed data in and around the Project area, it has been used to perform any updates to floodplain overbank information. As no new survey data was collected as part of this Project, information for the channel was extracted from the Effective Model for all newly added cross section locations.

Figure 2, Annotated FIRM, shows the final development location on top of the effective FEMA Flood Insurance Rate Map (FIRM) information for both Sebastian County, Arkansas, and Incorporated Areas, FIRM 05131C0110F dated March 2, 2012, and LeFlore County, Oklahoma, and Incorporated Areas, FIRM 40079C0125C dated August 16, 2012.

2.0 HYDROLOGY

No new hydrologic analysis was performed for this Project. FTN used the discharges in the Effective Model (floodway and 4-flood runs) for Mill Creek. The discharges used are shown in Table 1.

Table 1. Mill Creek Discharges.

River Station	Discharge (cfs)			
	10% Annual Chance (10-year)	2% Annual Chance (50-year)	1% Annual Chance (100-year)	0.2% Annual Chance (500-year)
2.140	6,022	7,618	8,346	9,946
1.798	6,539	8,399	9,235	11,094

3.0 HYDRAULIC EVALUATION

3.1 Model Development

The models used in this hydraulic evaluation are described in the following sections. Cross section locations and floodway encroachment stations were taken from the effective model data.

3.2 Effective Model

As mentioned in Section 1.2, the effective model was provided to FTN from the FEMA Mapping Information Platform (MIP) in HEC-RAS model format. The model results were compared to the FIS report to confirm that the model available reflected information from the FIS.

3.3 Duplicate Effective Model

The Effective Model from Section 3.2 was originally developed using HEC-RAS (Version 3.1.2). For the Duplicate Effective Model (DEM), FTN converted the effective model data into the HEC-RAS (Version 6.1) hydraulic modeling software. As a result of this conversion, small differences (± 0.01 feet) were noted throughout the model. These differences are due to the change in software version only, as no further model changes were made.

3.4 Corrected Effective Model

Using the DEM as a starting point, FTN made additional improvements to the model, which then became the Corrected Effective Model (CEM). As part of this No-Rise analysis, the CEM was georeferenced, using the Effective FIRM data. Four (4) additional cross sections were added to better define the proposed development and Project area. These additional cross sections were located at river stations (RS) 0.018, 0.0408, 0.0609, and 0.1595. Additional changes made during development of the model are summarized below:

- Topographic data was updated for RS 0.077 due to its relation to the Project area.

- Manning’s “n” values were established for RS 0.018, 0.0408, 0.0609, 0.077, and 0.1595 based on a review of aerial imagery (e.g., Bing and Google imagery) and engineering judgment. A summary of the Manning’s “n” values is shown below:
 - Channel
 - 0.035: Channel with light brush cover in the overbanks
 - Overbanks
 - 0.10: Forested Areas
 - 0.05: Grassland/Herbaceous, Developed Low Intensity
 - 0.03: Gravel surfaces
 - 0.011: Paved surfaces (such as roadways).

With the addition of new cross sections, FTN determined new floodway encroachment stations for the added cross sections by intersecting the effective floodway with the cross sections using GIS toolsets. As the Project location is located along the county boundary, information from the Floodway Data Table was used to extrapolate the boundary in Leflore County, OK, as the current effective information is an approximate (Zone A) Special Flood Hazard Area (SFHA).

3.5 Existing Conditions Model

For the purposes of this Project, there is no difference between the CEM and the Existing Conditions Model (ECM). Therefore, an ECM has not been provided.

3.6 Post-Project (No-Rise) Model

The Post-Project Model (PPM) was developed by using the CEM and updating cross section geometry with obstructions to represent the proposed development. The application of a blocked obstruction is considered conservative as it removes the proposed building footprint from model calculations.

The proposed development information consists of a proposed warehouse design located on an existing pad. The location of the warehouse was provided to FTN by the Client on November 4, 2022.

3.7 Hydraulic Analyses

Hydraulic analyses were performed by FTN for the scenario described above using HEC-RAS Version 6.1. The results of the hydraulic analysis for the Corrected Effective Model (CEM) were compared to the results of the Post-Project Conditions Model (PPM) to evaluate for potential rises in the unencroached and floodway water surface elevations produced by the base flood (1% annual-chance event). The following comparison tables (Tables 2 and 3) provide a comparison of the unencroached and floodway water surface elevations. The Project area cross sections are highlighted in yellow. Table 4 shows the tie-in comparison for the multiple floods and floodway runs.

Table 2. Unencroached 1%-Annual-Chance Water Surface Elevation Comparison.

Corrected Effective vs Post-Project 100yr Floodplain comparison				
Cross Section Letter	Stationing	Corrected Effective WSEL (ft, NAVD88)	Proposed Post-Project Conditions WSEL (ft, NAVD88)	WSEL Difference
Added XS	0.0180	414.52	414.52	0.00
Added XS	0.0408	414.56	414.56	0.00
Added XS	0.0609	414.54	414.54	0.00
A	0.0770	414.51	414.51	0.00
Added XS	0.1595	414.53	414.53	0.00
	0.2670	414.75	414.75	0.00
	0.2810	414.55	414.55	0.00
	0.2825	Bridge		
	0.2840	414.93	414.93	0.00
	0.3220	415.68	415.68	0.00
	0.3790	415.63	415.63	0.00
	0.4060	415.60	415.60	0.00
	0.4220	415.29	415.29	0.00
	0.4240	Bridge		
	0.4260	415.89	415.89	0.00
	0.4450	416.84	416.84	0.00
	0.5180	417.16	417.16	0.00
B	0.5590	417.46	417.46	0.00
	0.5800	417.28	417.28	0.00
	0.5850	Bridge		
	0.5900	418.21	418.21	0.00
	0.6000	418.29	418.29	0.00
	0.6180	418.39	418.39	0.00
	0.7450	418.49	418.49	0.00
C	0.8850	418.94	418.94	0.00
	1.0150	419.24	419.24	0.00
	1.1010	419.42	419.42	0.00
	1.1780	419.52	419.52	0.00
	1.2370	419.49	419.49	0.00
	1.2500	419.80	419.80	0.00
	1.2540	Bridge		
	1.2580	421.17	421.17	0.00
D	1.2670	421.29	421.29	0.00
E	1.4810	423.43	423.43	0.00
	1.5660	424.32	424.32	0.00
	1.6670	425.64	425.64	0.00
	1.6910	426.03	426.03	0.00
	1.7800	427.40	427.40	0.00

Highlighted cells represent Project Area.

Table 3. Floodway Water Surface Elevation Comparison.

Corrected Effective vs Post-Project Floodway comparison				
Cross Section Letter	Stationing	Corrected Effective WSEL (ft, NAVD88)	Proposed Post-Project Conditions WSEL (ft, NAVD88)	WSEL Difference
Added XS	0.0180	415.32	415.32	0.00
Added XS	0.0408	415.43	415.43	0.00
Added XS	0.0609	415.42	415.42	0.00
A	0.0770	415.39	415.39	0.00
Added XS	0.1595	415.38	415.38	0.00
	0.2670	415.61	415.61	0.00
	0.2810	415.45	415.45	0.00
	0.2825	Bridge		
	0.2840	416.00	416.00	0.00
	0.3220	416.57	416.57	0.00
	0.3790	416.51	416.51	0.00
	0.4060	416.54	416.54	0.00
	0.4220	416.32	416.32	0.00
	0.4240	Bridge		
	0.4260	416.81	416.81	0.00
	0.4450	417.62	417.62	0.00
	0.5180	417.88	417.88	0.00
B	0.5590	418.18	418.18	0.00
	0.5800	418.04	418.04	0.00
	0.5850	Bridge		
	0.5900	418.91	418.91	0.00
	0.6000	419.19	419.19	0.00
	0.6180	419.22	419.22	0.00
	0.7450	419.46	419.46	0.00
C	0.8850	419.83	419.83	0.00
	1.0150	420.17	420.17	0.00
	1.1010	420.21	420.21	0.00
	1.1780	420.32	420.32	0.00
	1.2370	420.49	420.49	0.00
	1.2500	420.69	420.69	0.00
	1.2540	Bridge		
	1.2580	422.11	422.11	0.00
D	1.2670	422.20	422.20	0.00
E	1.4810	423.99	423.99	0.00
	1.5660	424.82	424.82	0.00
	1.6670	426.03	426.03	0.00
	1.6910	426.40	426.40	0.00
	1.7800	427.71	427.71	0.00

Highlighted cells represent Project Area.

Table 4. Tie-in Elevations.

Tie-in Elevations (ft, NAVD 88)							
@ RM 0.077 (XS Letter A)				@ RM 1.78			
Event	Effective WSEL	Post Project WSEL	WSEL Difference *	Event	Effective WSEL	Post Project WSEL	WSEL Difference
10-year	405.22	405.54	0.32	10-year	425.34	425.34	0.00
50-year	412.12	412.19	0.07	50-year	426.80	426.80	0.00
100-year	414.52	414.51	0.01	100-year	427.41	427.40	0.01
500-year	416.32	416.26	0.06	500-year	428.74	428.74	0.00
Floodway	415.32	415.39	0.07	Floodway	427.71	427.71	0.00

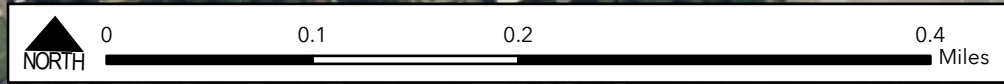
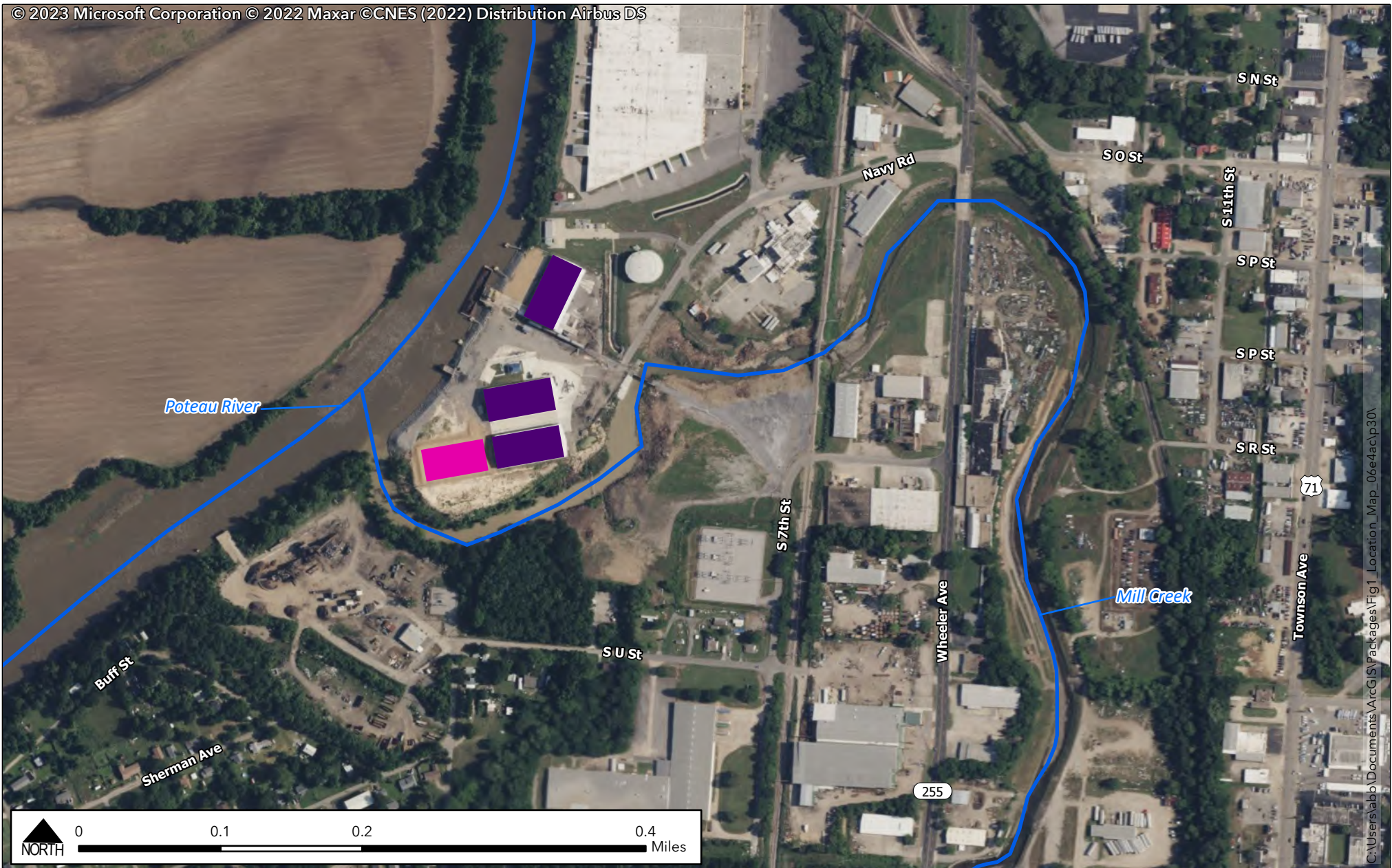
* Differences are due to the addition of downstream cross sections.

4.0 EVALUATION SUMMARY

This hydraulic evaluation has determined that the new warehouse, if constructed as proposed, will achieve a No-Rise condition in the unencroached and floodway water surface elevations of Mill Creek under base flood conditions. This analysis was performed under the condition that the areas of overbank alteration are limited to the information provided for this analysis and that the main channel and modeled structure crossings remain free and unobstructed of debris. Therefore, while this analysis was developed using applicable and, in our engineering judgment, conservative methods, this does not guarantee that flooding will not occur as larger and more intense flood events are possible that are above and beyond the design events and scenarios used.

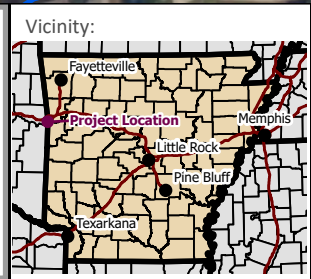
Attachment 1

Figures



Client Name: Fort Smith Port Authority	
Project Title: Port of Fort Smith Warehouse #4 No-Rise Analysis	
Project Location: Fort Smith, Sebastian County, AR	Location Map Figure 1
Date Exported: 2/24/2023	

Feature Key:
Streams
Existing Warehouse
Proposed Warehouse



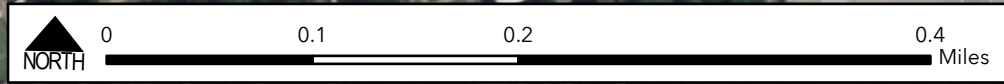
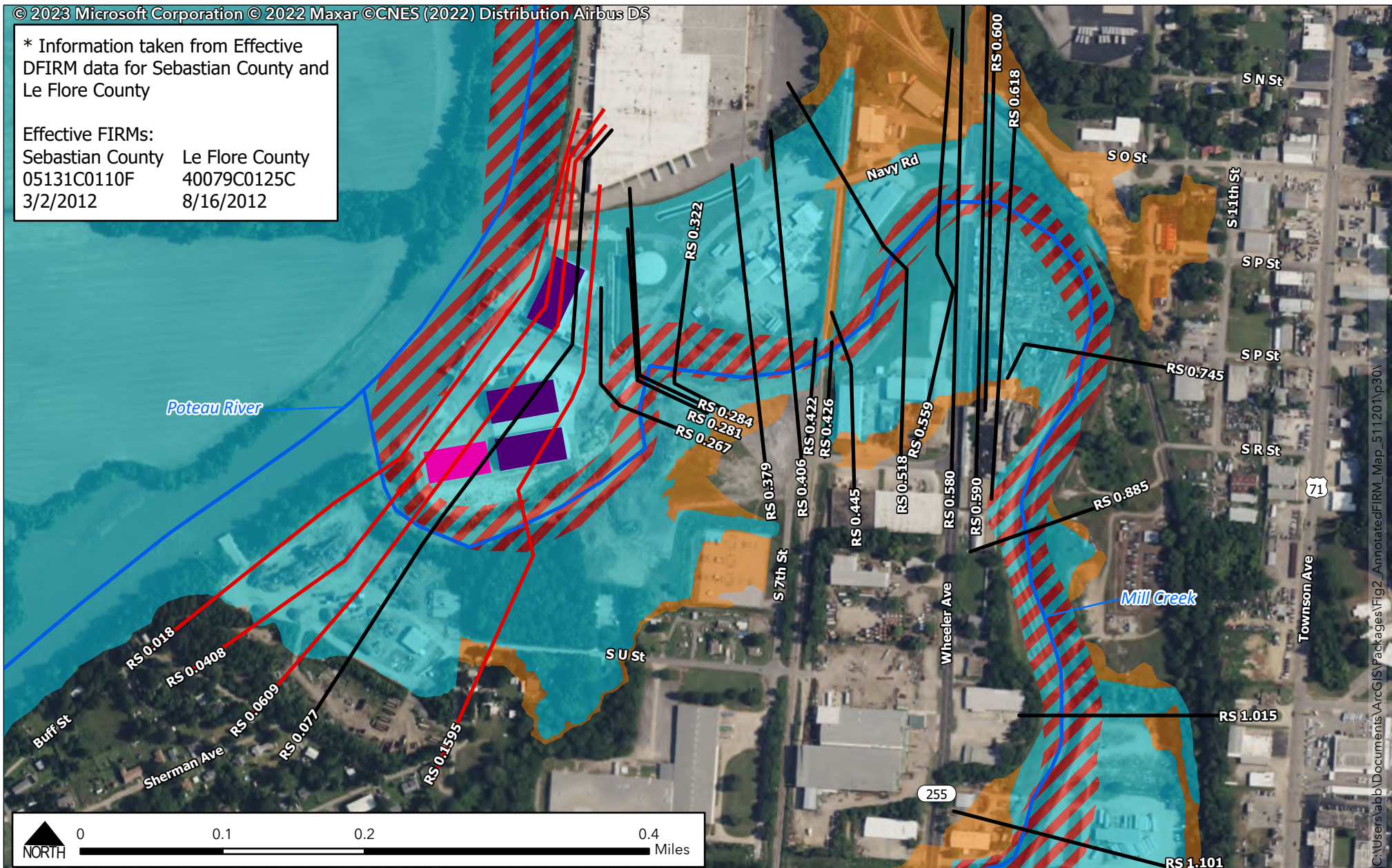
Notice of Intent:
This map was created by FTN Associates Ltd. Geospatial Analytics unit to visualize general location(s) of subject property. Unless otherwise stated, features depicted herein do not represent legal or survey boundaries.

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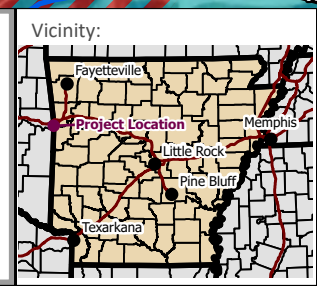
* Information taken from Effective DFIRM data for Sebastian County and Le Flore County


Effective FIRMs:
 Sebastian County 05131C0110F 3/2/2012
 Le Flore County 40079C0125C 8/16/2012



Client Name: Fort Smith Port Authority	
Project Title: Port of Fort Smith Warehouse #4 No-Rise Analysis	
Project Location: Fort Smith, Sebastian County, AR	Annotated FIRM Figure 2
Date Exported: 2/24/2023	

Feature Key:
— Added Cross Sections
— Existing Cross Sections
— Streams
 Existing Warehouse
 Proposed Warehouse
 Floodway*
 1% Annual Chance Flood Hazard*
 0.2% Annual Chance Flood Hazard*





Notice of Intent:
 This map was created by FTN Associates Ltd. Geospatial Analytics unit to visualize general location(s) of subject property. Unless otherwise stated, features depicted herein do not represent legal or survey boundaries.

Appendix A

Proposed Site Plan

Appendix B

Modeling Output (Including Effective Floodway Data Table)

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE-FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
MILL CREEK								
A	0.08	182/28 ³	3,062	3.0	420.5	414.5 ²	415.3	0.8
B	0.56	188	2,340	4.0	420.5	417.5 ²	418.2	0.7
C	0.89	160	1,929	4.8	420.5	419.0 ²	419.8	0.8
D	1.27	124	1,282	7.2	421.3	421.3	422.2	0.9
E	1.48	114	1,121	8.2	423.4	423.4	424.0	0.6
F	1.80	123	1,047	8.8	428.6	428.6	428.6	0.0
G	2.14	106	955	8.7	432.2	432.2	432.3	0.1
H	2.48	240	1,568	5.3	439.6	439.6	440.5	0.8
I	2.78	270	1,669	4.3	440.8	440.8	441.8	1.0
J	3.03	110	1,233	5.8	443.1	443.1	444.0	0.9
K	3.38	103	840	8.5	445.3	445.3	446.1	0.8
L	3.62	145	919	7.7	449.0	449.0	449.3	0.3
M	3.72	100	642	11.3	450.2	450.2	450.4	0.2
N	3.97	101	961	7.6	455.5	455.5	455.5	0.0
O	4.30	85	753	7.5	458.3	458.3	458.7	0.4
P	4.80	388	1,782	3.2	468.9	468.9	469.3	0.4
Q	5.26	410	1,977	1.1	476.8	476.8	477.1	0.3
R	5.47	67	309	7.3	477.0	477.0	477.7	0.7
S	5.56	56	329	6.9	479.8	479.8	479.8	0.0
T	5.85	43	345	6.6	485.1	485.1	485.2	0.1

¹Miles above confluence with Poteau River

³Total width/width within county boundary

²Elevation computed without consideration of backwater effects from Arkansas River

Table 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

**SEBASTIAN COUNTY, AR
AND INCORPORATED AREAS**

FLOODWAY DATA

MILL CREEK

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	0.077	100-Year LOMR	414.52		414.66	279.60		9043.64	191.36		500.00	500.00	684.00
Reach 1	0.077	LOMR Floodway	415.32	0.80	415.46	182.02		9235.00		500.00		500.00	684.00
Reach 1	0.267	100-Year LOMR	414.91		415.16	510.84	838.04	7814.03	582.93		138.00	138.00	238.00
Reach 1	0.267	LOMR Floodway	415.67	0.77	415.95	211.00	530.05	8223.42	481.53	100.00	138.00	138.00	311.00
Reach 1	0.281	100-Year LOMR	414.70		415.44	367.45		9025.12	209.88		214.00	214.00	287.00
Reach 1	0.281	LOMR Floodway	415.52	0.81	416.18	216.00		8977.88	257.12	214.00	214.00	214.00	430.00
Reach 1	0.2825 BR D	100-Year LOMR	415.06		415.72	285.89		7091.77	2160.25		214.00	214.00	287.00
Reach 1	0.2825 BR D	LOMR Floodway	416.02	0.96	416.66	210.37		7634.96	1600.00	214.00	214.00	214.00	430.00
Reach 1	0.2825 BR U	100-Year LOMR	415.06		415.76	285.89		7091.77	2160.25		214.00	214.00	287.00
Reach 1	0.2825 BR U	LOMR Floodway	416.05	0.99	416.66	212.16		7634.96	1600.00	214.00	214.00	214.00	430.00
Reach 1	0.284	100-Year LOMR	415.06		415.75	389.59		8967.99	267.01		214.00	214.00	287.00
Reach 1	0.284	LOMR Floodway	416.05	0.99	416.66	216.00		8917.54	317.46	214.00	214.00	214.00	430.00
Reach 1	0.322	100-Year LOMR	415.79		415.89	588.87	4426.44	3791.46	1017.11		235.00	235.00	287.00
Reach 1	0.322	LOMR Floodway	416.61	0.83	416.79	240.00	3858.54	4797.16	579.30	119.00	235.00	235.00	359.00
Reach 1	0.379	100-Year LOMR	415.77		416.04	801.67	559.41	6211.80	2463.79		454.00	454.00	528.00
Reach 1	0.379	LOMR Floodway	416.55	0.78	417.02	162.00	243.05	7738.63	1253.31	438.00	454.00	454.00	600.00
Reach 1	0.406	100-Year LOMR	415.72		416.15	581.05	828.55	7803.50	602.95		480.00	480.00	569.00
Reach 1	0.406	LOMR Floodway	416.58	0.86	417.11	127.00	301.97	8705.88	227.16	460.00	480.00	480.00	587.00
Reach 1	0.422	100-Year LOMR	415.38		416.63	69.00		9235.00			505.00	505.00	575.00
Reach 1	0.422	LOMR Floodway	416.36	0.98	417.46	69.25		9235.00		505.00	505.00	505.00	575.00
Reach 1	0.424 BR D	100-Year LOMR	415.35		416.81	63.99		9235.00			505.00	505.00	575.00
Reach 1	0.424 BR D	LOMR Floodway	416.33	0.98	417.61	64.24		9235.00		505.00	505.00	505.00	575.00
Reach 1	0.424 BR U	100-Year LOMR	415.55		416.97	64.11		9235.00			505.00	505.00	575.00
Reach 1	0.424 BR U	LOMR Floodway	416.49	0.94	417.75	64.35		9235.00		505.00	505.00	505.00	575.00
Reach 1	0.426	100-Year LOMR	415.97		417.12	69.21		9235.00			505.00	505.00	575.00
Reach 1	0.426	LOMR Floodway	416.85	0.88	417.88	69.44		9235.00		505.00	505.00	505.00	575.00
Reach 1	0.445	100-Year LOMR	416.91		417.39	361.48	106.44	8996.74	131.82		599.00	599.00	745.00
Reach 1	0.445	LOMR Floodway	417.66	0.75	418.11	146.00		9235.00		599.00	599.00	599.00	745.00
Reach 1	0.518	100-Year LOMR	417.23		417.63	593.06	455.46	8753.48	26.06		912.00	912.00	1036.00
Reach 1	0.518	LOMR Floodway	417.91	0.69	418.34	124.00		9235.00		912.00	912.00	912.00	1036.00
Reach 1	0.559	100-Year LOMR	417.52		417.73	814.99	711.37	8521.11	2.52		986.00	986.00	1174.00
Reach 1	0.559	LOMR Floodway	418.21	0.69	418.45	188.00		9235.00		986.00	986.00	986.00	1174.00
Reach 1	0.580	100-Year LOMR	417.34		417.99	104.00		9224.18	10.82		1122.00	1122.00	1224.00
Reach 1	0.580	LOMR Floodway	418.08	0.73	418.67	102.00		9235.00		1122.00	1122.00	1122.00	1224.00
Reach 1	0.585 BR D	100-Year LOMR	418.27		418.56	755.41	859.95	8339.44	52.14		1122.00	1122.00	1226.00
Reach 1	0.585 BR D	LOMR Floodway	418.93	0.67	419.40	102.00		9235.00		1122.00	1122.00	1122.00	1224.00
Reach 1	0.585 BR U	100-Year LOMR	418.27		418.58	755.41	859.95	8339.44	52.14		1122.00	1122.00	1226.00
Reach 1	0.585 BR U	LOMR Floodway	418.93	0.67	419.46	102.00		9235.00		1122.00	1122.00	1122.00	1224.00
Reach 1	0.590	100-Year LOMR	418.27		418.57	834.20	1466.02	7496.31	272.68		1122.00	1122.00	1224.00
Reach 1	0.590	LOMR Floodway	418.93	0.67	419.46	102.00		9235.00		1122.00	1122.00	1122.00	1224.00
Reach 1	0.600	100-Year LOMR	418.33		418.60	958.49	779.62	8366.27	89.10		776.00	776.00	919.00
Reach 1	0.600	LOMR Floodway	419.21	0.89	419.54	143.00		9235.00		776.00	776.00	776.00	919.00
Reach 1	.618	100-Year LOMR	418.44		418.64	799.46	1675.77	7380.94	178.29		1107.00	1107.00	1239.00
Reach 1	.618	LOMR Floodway	419.24	0.80	419.58	132.00		9235.00		1107.00	1107.00	1107.00	1239.00
Reach 1	0.745	100-Year LOMR	418.53		418.94	336.20	554.25	8680.70	0.04		409.00	409.00	541.00
Reach 1	0.745	LOMR Floodway	419.48	0.95	419.91	132.00		9235.00		409.00	409.00	409.00	541.00
Reach 1	0.885	100-Year LOMR	418.96		419.35	351.05	243.23	8057.77	934.00		251.00	251.00	366.00
Reach 1	0.885	LOMR Floodway	419.86	0.89	420.31	160.00	237.61	8879.51	117.87	225.00	251.00	251.00	385.00
Reach 1	1.015	100-Year LOMR	419.26		419.75	632.97	116.81	8793.08	325.11		199.00	199.00	332.00
Reach 1	1.015	LOMR Floodway	420.19	0.93	420.63	259.03	151.66	8965.75	117.59	150.00	199.00	199.00	410.00
Reach 1	1.101	100-Year LOMR	419.44		420.02	642.01		7330.37	1904.63		332.00	332.00	413.00
Reach 1	1.101	LOMR Floodway	420.23	0.79	420.93	273.00		8113.40	1121.60	332.00	332.00	332.00	605.00
Reach 1	1.178	100-Year LOMR	419.55		420.32	787.10		8196.59	1038.41		329.00	329.00	411.00
Reach 1	1.178	LOMR Floodway	420.34	0.79	421.24	291.00		8972.13	262.87	329.00	329.00	329.00	620.00
Reach 1	1.237	100-Year LOMR	419.48		420.93	130.40		9233.14	1.87		457.00	457.00	573.00
Reach 1	1.237	LOMR Floodway	420.50	1.02	421.69	108.69		9235.00		452.00	457.00	457.00	567.00
Reach 1	1.250	100-Year LOMR	419.80		421.14	151.61		9130.14	104.86		650.00	650.00	774.00
Reach 1	1.250	LOMR Floodway	420.71	0.91	421.84	121.52		9235.00		650.00	650.00	650.00	774.00

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	1.254 BR D	100-Year LOMR	419.53		421.53	80.00		9235.00			650.00	650.00	774.00
Reach 1	1.254 BR D	LOMR Floodway	420.44	0.90	422.23			9235.00		650.00		650.00	774.00
Reach 1	1.254 BR U	100-Year LOMR	420.00		421.83	79.94		9235.00			650.00	650.00	774.00
Reach 1	1.254 BR U	LOMR Floodway	420.83	0.83	422.63			9235.00		650.00	650.00	650.00	774.00
Reach 1	1.258	100-Year LOMR	421.17		422.13	162.00		9048.73	186.27		650.00	650.00	774.00
Reach 1	1.258	LOMR Floodway	422.13	0.95	422.96	124.00		9235.00		650.00	650.00	650.00	774.00
Reach 1	1.267	100-Year LOMR	421.34		422.22	632.44	7.29	8959.25	268.46		650.00	650.00	774.00
Reach 1	1.267	LOMR Floodway	422.22	0.88	423.03	124.00		9235.00		650.00	650.00	650.00	774.00
Reach 1	1.481	100-Year LOMR	423.41		424.49	368.36	194.22	8932.23	108.55		792.00	792.00	906.00
Reach 1	1.481	LOMR Floodway	424.00	0.59	425.06	114.00		9235.00		792.00	792.00	792.00	906.00
Reach 1	1.566	100-Year LOMR	424.30		425.62	171.75	167.11	9067.89			826.00	826.00	925.00
Reach 1	1.566	LOMR Floodway	424.83	0.53	426.06	109.00	55.69	9179.31		816.00	826.00	826.00	925.00
Reach 1	1.667	100-Year LOMR	425.61		426.95	115.84	21.43	9198.55	15.02		864.00	864.00	962.00
Reach 1	1.667	LOMR Floodway	426.03	0.42	427.28	98.00		9235.00		864.00	864.00	864.00	962.00
Reach 1	1.691	100-Year LOMR	426.01		427.24	121.53	29.32	9189.83	15.85		864.00	864.00	962.00
Reach 1	1.691	LOMR Floodway	426.40	0.39	427.56	98.00		9235.00		864.00	864.00	864.00	962.00
Reach 1	1.780	100-Year LOMR	427.39		428.19	377.57	25.08	9209.92			573.00	573.00	706.00
Reach 1	1.780	LOMR Floodway	427.71	0.32	428.46	133.00		9235.00		573.00	573.00	573.00	706.00
Reach 1	1.785 BR D	100-Year LOMR	428.80		429.49	116.96	364.44	8870.50			573.00	573.00	706.00
Reach 1	1.785 BR D	LOMR Floodway	428.81	0.01	429.51	1.56		9234.42		573.00	573.00	573.00	706.00
Reach 1	1.785 BR U	100-Year LOMR	428.80		429.54	116.96	364.44	8870.50			573.00	573.00	706.00
Reach 1	1.785 BR U	LOMR Floodway	428.81	0.01	429.56	1.56		9234.42		573.00	573.00	573.00	706.00
Reach 1	1.790	100-Year LOMR	428.80		429.54	230.79	63.04	9168.03	3.93		573.00	573.00	706.00
Reach 1	1.790	LOMR Floodway	428.81	0.01	429.56	133.00		9235.00		573.00	573.00	573.00	706.00
Reach 1	1.798	100-Year LOMR	428.62		429.83	154.46	0.43	9231.90	2.67		620.00	620.00	743.00
Reach 1	1.798	LOMR Floodway	428.63	0.02	429.84	123.00		9235.00		620.00	620.00	620.00	743.00
Reach 1	1.903	100-Year LOMR	430.18		430.97	152.96	4.30	8275.86	65.84		1063.00	1063.00	1181.00
Reach 1	1.903	LOMR Floodway	430.20	0.03	431.01	122.00	4.44	8341.56		1059.00	1063.00	1063.00	1181.00
Reach 1	1.994	100-Year LOMR	430.95		431.69	471.91	281.02	8029.48	35.50		1054.00	1054.00	1180.00
Reach 1	1.994	LOMR Floodway	430.97	0.01	431.79	126.00		8346.00		1054.00	1054.00	1054.00	1180.00
Reach 1	2.140	100-Year LOMR	432.24		433.10	513.63	784.37	7436.71	124.92		931.00	931.00	1037.00
Reach 1	2.140	LOMR Floodway	432.32	0.09	433.51	106.00		8346.00		931.00	931.00	931.00	1037.00
Reach 1	2.407	100-Year LOMR	435.76		436.97	403.81	25.57	8267.06	53.37		354.00	354.00	469.00
Reach 1	2.407	LOMR Floodway	436.41	0.65	437.47	115.00		8346.00		354.00	354.00	354.00	469.00
Reach 1	2.417	100-Year LOMR	436.26		437.19	498.58	29.65	8165.52	150.84		445.00	445.00	582.00
Reach 1	2.417	LOMR Floodway	436.79	0.54	437.65	160.00	10.49	8323.52	11.99	430.00	445.00	445.00	590.00
Reach 1	2.423	100-Year LOMR	436.23		437.33	505.81	47.00	8213.62	85.38		449.00	449.00	583.00
Reach 1	2.423	LOMR Floodway	436.79	0.56	437.76	170.00	36.16	8271.39	38.45	425.00	449.00	449.00	595.00
Reach 1	2.428	100-Year LOMR	436.38		437.43	513.73	62.21	8230.31	53.48		463.00	463.00	586.00
Reach 1	2.428	LOMR Floodway	436.90	0.52	437.84	165.00	67.00	8261.03	17.97	430.00	463.00	463.00	595.00
Reach 1	2.435	100-Year LOMR	436.16		437.78	501.34	73.55	8261.47	10.97		500.00	500.00	620.00
Reach 1	2.435	LOMR Floodway	436.65	0.49	438.16	160.00	125.81	8220.19		445.00	500.00	500.00	620.00
Reach 1	2.461	100-Year LOMR	437.83		438.40	1016.13	1261.94	6891.97	192.09		1112.00	1112.00	1320.00
Reach 1	2.461	LOMR Floodway	437.86	0.03	438.70	245.00	315.95	7867.30	162.75	1075.00	1112.00	1112.00	1320.00
Reach 1	2.47 BR D	100-Year LOMR	439.65		439.94	1348.72	744.85	5933.05	1660.85		1112.00	1112.00	1320.00
Reach 1	2.47 BR D	LOMR Floodway	440.43	0.78	441.05	245.00		7384.85	955.42	1075.00	1112.00	1112.00	1320.00
Reach 1	2.47 BR U	100-Year LOMR	439.65		440.13	1099.83	744.85	5933.05	1660.85		1098.00	1098.00	1205.00
Reach 1	2.47 BR U	LOMR Floodway	440.53	0.87	441.13	240.00		7384.85	955.42	1098.00	1098.00	1098.00	1338.00
Reach 1	2.479	100-Year LOMR	439.65		440.13	1340.82	727.54	7087.00	531.47		1098.00	1098.00	1205.00
Reach 1	2.479	LOMR Floodway	440.53	0.87	441.13	240.00		8069.11	276.89	1098.00	1098.00	1098.00	1338.00
Reach 1	2.493	100-Year LOMR	440.06		440.25	1488.18	643.03	5833.23	628.74		997.00	997.00	1126.00
Reach 1	2.493	LOMR Floodway	441.00	0.93	441.27	190.00	33.16	6937.18	134.66	985.00	997.00	997.00	1126.00
Reach 1	2.518	100-Year LOMR	440.08		440.31	1328.43	791.68	5762.29	551.03		970.00	970.00	1087.00
Reach 1	2.518	LOMR Floodway	441.00	0.92	441.34	160.00	61.97	6939.88	103.15	955.00	970.00	970.00	1115.00
Reach 1	2.553	100-Year LOMR	440.15		440.40	1083.74	1099.59	5543.57	461.84		1124.00	1124.00	1264.00
Reach 1	2.553	LOMR Floodway	441.05	0.89	441.45	160.00	76.14	6947.08	81.78	1104.00	1124.00	1124.00	1264.00
Reach 1	2.585	100-Year LOMR	440.21		440.51	1081.04	874.17	5703.42	527.41		1096.00	1096.00	1210.00
Reach 1	2.585	LOMR Floodway	441.15	0.94	441.57	160.00		6798.89	306.11	1096.00	1096.00	1096.00	1256.00

HEC-RAS Plan: PostprjFW River: MILL CREEK Reach: Reach 1 (Continued)

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	2.623	100-Year LOMR	440.31		440.65	985.58	792.11	6051.29	261.60		1019.00	1136.00	
Reach 1	2.623	LOMR Floodway	441.27	0.97	441.70	170.00	43.38	6932.40	129.22	999.00	1019.00	1136.00	1169.00
Reach 1	2.779	100-Year LOMR	440.86		441.39	714.80	0.17	6205.55	899.28		394.00	491.00	
Reach 1	2.779	LOMR Floodway	441.85	0.99	442.34	270.00		6397.91	707.09	394.00	394.00	491.00	664.00
Reach 1	2.802	100-Year LOMR	440.93		441.56	746.99		6758.12	346.88		308.00	396.00	
Reach 1	2.802	LOMR Floodway	441.91	0.98	442.46	265.00		6811.79	293.21	298.00	308.00	396.00	573.00
Reach 1	2.808 BR D	100-Year LOMR	442.48		442.78	598.08		5597.12	1509.02		321.00	381.00	
Reach 1	2.808 BR D	LOMR Floodway	443.12	0.64	443.63	266.81	35.84	5736.96	1318.95	298.00	321.00	381.00	573.00
Reach 1	2.808 BR U	100-Year LOMR	442.53		442.83	606.84		5597.12	1509.02		321.00	381.00	
Reach 1	2.808 BR U	LOMR Floodway	443.37	0.85	443.76	275.00	35.84	5736.96	1318.95	298.00	321.00	381.00	573.00
Reach 1	2.814	100-Year LOMR	442.53		442.83	935.49	1.46	5744.39	1359.15		308.00	396.00	
Reach 1	2.814	LOMR Floodway	443.37	0.85	443.76	275.00	6.36	6500.36	598.28	298.00	308.00	396.00	573.00
Reach 1	2.819	100-Year LOMR	442.60		442.85	871.89		6132.74	972.27		252.00	387.00	
Reach 1	2.819	LOMR Floodway	443.50	0.90	443.79	210.00		6802.88	302.12	252.00	252.00	387.00	462.00
Reach 1	3.033	100-Year LOMR	443.12		443.61	410.25	468.17	6610.34	26.49		584.00	694.00	
Reach 1	3.033	LOMR Floodway	444.01	0.89	444.52	110.00		7105.00		584.00	584.00	694.00	694.00
Reach 1	3.379	100-Year LOMR	445.36		446.52	493.47	0.09	6754.58	350.33		617.00	720.00	
Reach 1	3.379	LOMR Floodway	446.10	0.74	447.21	103.00		7105.00		617.00	617.00	720.00	720.00
Reach 1	3.618	100-Year LOMR	449.00		450.07	250.15	0.24	7075.01	29.75		895.00	1002.00	
Reach 1	3.618	LOMR Floodway	449.30	0.30	450.29	145.00		7073.60	31.40	895.00	895.00	1002.00	1040.00
Reach 1	3.631	100-Year LOMR	449.73		450.34	172.16	173.06	6808.87	123.08		636.00	760.00	
Reach 1	3.631	LOMR Floodway	449.91	0.18	450.52	146.63	30.41	6940.94	133.65	633.00	636.00	760.00	781.00
Reach 1	3.638 BR D	100-Year LOMR	449.73		450.55	119.99		7105.00			633.00	773.00	
Reach 1	3.638 BR D	LOMR Floodway	449.91	0.18	450.69	120.54		7105.00		633.00	633.00	773.00	781.00
Reach 1	3.638 BR U	100-Year LOMR	449.73		450.55	119.99		7105.00			633.00	773.00	
Reach 1	3.638 BR U	LOMR Floodway	449.91	0.18	450.69	120.54		7105.00		633.00	633.00	773.00	822.00
Reach 1	3.645	100-Year LOMR	449.83		450.38	169.95		7105.00			640.00	820.00	
Reach 1	3.645	LOMR Floodway	450.01	0.18	450.53	170.97		7105.00		633.00	640.00	820.00	822.00
Reach 1	3.724	100-Year LOMR	450.24		452.31	98.63		7261.00			623.00	730.00	
Reach 1	3.724	LOMR Floodway	450.37	0.13	452.36	99.63		7261.00		623.00	623.00	730.00	730.00
Reach 1	3.738	100-Year LOMR	451.56		452.85	91.86		7261.00			734.00	842.00	
Reach 1	3.738	LOMR Floodway	451.59	0.02	452.86	92.03		7261.00		734.00	734.00	842.00	842.00
Reach 1	3.744 BR D	100-Year LOMR	454.12		454.88		103.04	7114.88	42.43		738.00	804.00	
Reach 1	3.744 BR D	LOMR Floodway	454.19	0.07	454.94		3.92	7229.17	27.83	734.00	738.00	804.00	842.00
Reach 1	3.744 BR U	100-Year LOMR	454.12		454.88		103.04	7114.88	42.43		738.00	804.00	
Reach 1	3.744 BR U	LOMR Floodway	454.19	0.07	454.94		3.92	7229.17	27.83	734.00	738.00	804.00	842.00
Reach 1	3.750	100-Year LOMR	454.12		454.88	217.88	5.67	7251.04	4.29		734.00	832.00	
Reach 1	3.750	LOMR Floodway	454.19	0.07	454.94	108.00		7260.03	0.97	734.00	734.00	832.00	842.00
Reach 1	3.778	100-Year LOMR	454.43		455.10	119.61	0.34	7260.66			489.00	608.00	
Reach 1	3.778	LOMR Floodway	454.50	0.07	455.16	119.81	0.41	7260.59		487.00	489.00	608.00	608.00
Reach 1	3.822	100-Year LOMR	455.11		455.32	944.45	1081.56	4385.62	1793.82		691.00	785.00	
Reach 1	3.822	LOMR Floodway	455.11	0.00	455.39	380.00	947.29	4855.68	1458.03	570.00	691.00	785.00	950.00
Reach 1	3.848	100-Year LOMR	455.15		455.41	796.59	1228.54	4849.23	1183.23		769.00	870.00	
Reach 1	3.848	LOMR Floodway	455.15	0.00	455.51	405.00	1285.92	5426.01	549.08	555.00	769.00	870.00	960.00
Reach 1	3.973	100-Year LOMR	455.52		456.07	602.45	1041.03	6161.39	58.58		976.00	1077.00	
Reach 1	3.973	LOMR Floodway	455.55	0.03	456.44	101.00		7261.00		976.00	976.00	1077.00	1077.00
Reach 1	4.127	100-Year LOMR	456.51		457.43	547.44	15.11	7142.34	103.55		617.00	727.00	
Reach 1	4.127	LOMR Floodway	457.03	0.52	457.89	110.00		7261.00		617.00	617.00	727.00	727.00
Reach 1	4.300	100-Year LOMR	458.36		459.31	100.94	5.88	5653.14	12.97		153.00	238.00	
Reach 1	4.300	LOMR Floodway	458.72	0.36	459.60	85.00		5672.00		153.00	153.00	238.00	238.00
Reach 1	4.410	100-Year LOMR	459.50		460.31	127.13	22.62	5520.28	129.10		165.00	236.00	
Reach 1	4.410	LOMR Floodway	459.80	0.30	460.63	71.00		5672.00		165.00	165.00	236.00	236.00
Reach 1	4.589	100-Year LOMR	463.05		463.64	1446.42	706.98	1613.33	3351.69		1220.00	1245.10	
Reach 1	4.589	LOMR Floodway	464.07	1.02	465.07	485.00	661.67	2144.91	2865.42	1050.00	1220.00	1245.10	1535.00
Reach 1	4.591 BR D	100-Year LOMR	463.06		463.64	854.56	3074.74	664.15	1926.17		700.00	725.01	
Reach 1	4.591 BR D	LOMR Floodway											
Reach 1	4.591 BR U	100-Year LOMR	463.55		463.75	1020.48	3074.74	664.15	1926.17		700.00	725.01	
Reach 1	4.591 BR U	LOMR Floodway											

HEC-RAS Plan: PostprjFW River: MILL CREEK Reach: Reach 1 (Continued)

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	4.594	100-Year LOMR	463.55		463.75	1400.09	1841.24	1062.19	2768.57		1220.00	1245.10	
Reach 1	4.594	LOMR Floodway											
Reach 1	4.598	100-Year LOMR	463.70		463.96	1413.51	2010.73	1256.89	2404.38		1220.00	1245.10	
Reach 1	4.598	LOMR Floodway											
Reach 1	4.696	100-Year LOMR	466.80		467.05	1060.06	2009.61	1898.19	1764.21		700.00	738.00	
Reach 1	4.696	LOMR Floodway											
Reach 1	4.804	100-Year LOMR	468.82		469.15	604.55	2573.06	3002.42	96.52		830.00	899.00	
Reach 1	4.804	LOMR Floodway											

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	0.018	10% Annual Chanc	6539.00	392.79	405.22	399.53	405.68	0.000887	5.48	1271.70	179.97	0.31
Reach 1	0.018	4% Annual Chance	8399.00	392.79	412.12	400.57	412.31	0.000200	3.69	2993.71	466.20	0.16
Reach 1	0.018	1% Annual Chance	9235.00	392.79	414.52	400.99	414.63	0.000112	3.03	4606.86	860.56	0.12
Reach 1	0.018	0.2% Annual Chan	11094.00	392.79	416.32	401.83	416.41	0.000086	2.83	6416.12	1090.80	0.11
Reach 1	0.0408	10% Annual Chanc	6539.00	392.16	405.59		405.77	0.000334	3.45	1900.01	202.94	0.20
Reach 1	0.0408	4% Annual Chance	8399.00	392.16	412.24		412.34	0.000092	2.57	3370.22	243.10	0.11
Reach 1	0.0408	1% Annual Chance	9235.00	392.16	414.56		414.64	0.000068	2.41	4189.40	489.90	0.10
Reach 1	0.0408	0.2% Annual Chan	11094.00	392.16	416.33		416.42	0.000066	2.51	5204.23	609.38	0.10
Reach 1	0.0609	10% Annual Chanc	6539.00	392.83	405.56		405.85	0.000577	4.29	1525.56	171.08	0.25
Reach 1	0.0609	4% Annual Chance	8399.00	392.83	412.22		412.36	0.000164	3.06	2747.97	195.30	0.14
Reach 1	0.0609	1% Annual Chance	9235.00	392.83	414.54		414.67	0.000122	2.86	3326.42	432.18	0.13
Reach 1	0.0609	0.2% Annual Chan	11094.00	392.83	416.31		416.44	0.000114	2.97	4195.31	601.29	0.12
Reach 1	0.077	10% Annual Chanc	6539.00	392.75	405.54		405.93	0.000746	5.01	1305.68	139.08	0.29
Reach 1	0.077	4% Annual Chance	8399.00	392.75	412.19		412.40	0.000229	3.66	2296.18	158.43	0.17
Reach 1	0.077	1% Annual Chance	9235.00	392.75	414.51		414.70	0.000171	3.46	2939.82	490.95	0.15
Reach 1	0.077	0.2% Annual Chan	11094.00	392.75	416.26		416.47	0.000173	3.72	4097.42	723.88	0.15
Reach 1	0.1595	10% Annual Chanc	6539.00	392.96	405.77		406.38	0.001044	6.28	1041.68	99.20	0.34
Reach 1	0.1595	4% Annual Chance	8399.00	392.96	412.19		412.57	0.000347	4.95	1823.96	152.79	0.21
Reach 1	0.1595	1% Annual Chance	9235.00	392.96	414.53		414.81	0.000237	4.45	2863.61	764.33	0.18
Reach 1	0.1595	0.2% Annual Chan	11094.00	392.96	416.35		416.55	0.000178	4.10	4556.51	1122.42	0.16
Reach 1	0.267	10% Annual Chanc	6539.00	392.60	406.74		407.43	0.003134	6.73	1034.54	158.51	0.38
Reach 1	0.267	4% Annual Chance	8399.00	392.60	412.55		412.89	0.000903	4.95	2140.53	220.23	0.22
Reach 1	0.267	1% Annual Chance	9235.00	392.60	414.75		415.03	0.000643	4.57	3010.51	504.83	0.19
Reach 1	0.267	0.2% Annual Chan	11094.00	392.60	416.49		416.77	0.000591	4.66	3945.73	571.25	0.19
Reach 1	0.281	10% Annual Chanc	6539.00	394.10	406.58	403.20	407.94	0.001847	9.35	699.24	125.96	0.53
Reach 1	0.281	4% Annual Chance	8399.00	394.10	412.34	404.45	413.21	0.000635	7.50	1119.55	245.53	0.34
Reach 1	0.281	1% Annual Chance	9235.00	394.10	414.55	404.91	415.32	0.000475	7.10	1651.63	562.62	0.30
Reach 1	0.281	0.2% Annual Chan	11094.00	394.10	416.39	405.97	416.93	0.000346	6.47	3866.22	686.85	0.26
Reach 1	0.2825		Bridge									
Reach 1	0.284	10% Annual Chanc	6539.00	394.10	406.64	403.20	407.98	0.001810	9.29	703.51	127.16	0.53
Reach 1	0.284	4% Annual Chance	8399.00	394.10	412.99	404.45	413.77	0.000543	7.13	1244.15	259.28	0.31
Reach 1	0.284	1% Annual Chance	9235.00	394.10	414.93	404.91	415.64	0.000437	6.91	1791.81	593.91	0.29
Reach 1	0.284	0.2% Annual Chan	11094.00	394.10	416.54	405.97	417.06	0.000333	6.39	3966.78	695.94	0.25
Reach 1	0.322	10% Annual Chanc	6539.00	394.20	408.11		408.41	0.001559	5.63	2026.83	271.52	0.28
Reach 1	0.322	4% Annual Chance	8399.00	394.20	413.80		413.94	0.000504	4.10	4029.58	492.99	0.17
Reach 1	0.322	1% Annual Chance	9235.00	394.20	415.68		415.79	0.000384	3.83	5052.44	582.77	0.15
Reach 1	0.322	0.2% Annual Chan	11094.00	394.20	417.04		417.17	0.000397	4.06	5878.75	626.05	0.15
Reach 1	0.379	10% Annual Chanc	6539.00	396.96	408.12	405.47	409.23	0.002345	8.82	1012.02	250.16	0.51
Reach 1	0.379	4% Annual Chance	8399.00	396.96	413.65	406.50	414.27	0.000731	6.75	2138.59	473.75	0.31
Reach 1	0.379	1% Annual Chance	9235.00	396.96	415.63	406.93	415.98	0.000411	5.51	4278.46	800.82	0.24
Reach 1	0.379	0.2% Annual Chan	11094.00	396.96	417.02	407.81	417.34	0.000376	5.55	5394.85	809.09	0.23
Reach 1	0.406	10% Annual Chanc	6539.00	398.14	408.50		409.57	0.002460	8.49	940.41	173.91	0.52
Reach 1	0.406	4% Annual Chance	8399.00	398.14	413.87		414.38	0.000652	6.10	1989.60	214.29	0.29
Reach 1	0.406	1% Annual Chance	9235.00	398.14	415.60		416.09	0.000531	5.97	2572.24	548.53	0.27
Reach 1	0.406	0.2% Annual Chan	11094.00	398.14	416.95		417.47	0.000523	6.26	3641.22	872.80	0.27
Reach 1	0.422	10% Annual Chanc	6539.00	399.29	408.22	406.74	410.46	0.006080	12.00	544.96	67.20	0.74
Reach 1	0.422	4% Annual Chance	8399.00	399.29	413.55	407.97	414.88	0.002182	9.27	906.23	68.54	0.45
Reach 1	0.422	1% Annual Chance	9235.00	399.29	415.29	408.50	416.55	0.001834	9.00	1026.26	68.98	0.41
Reach 1	0.422	0.2% Annual Chan	11094.00	399.29	416.51	409.58	418.06	0.002106	9.99	1110.65	69.29	0.44
Reach 1	0.424		Bridge									
Reach 1	0.426	10% Annual Chanc	6539.00	399.29	410.19	406.76	411.64	0.003139	9.65	677.69	67.73	0.54
Reach 1	0.426	4% Annual Chance	8399.00	399.29	414.24	407.97	415.44	0.001878	8.81	953.77	68.77	0.42
Reach 1	0.426	1% Annual Chance	9235.00	399.29	415.89	408.50	417.05	0.001635	8.65	1067.82	69.19	0.39
Reach 1	0.426	0.2% Annual Chan	11094.00	399.29	417.26	409.60	418.67	0.001846	9.54	1162.63	69.54	0.41
Reach 1	0.445	10% Annual Chanc	6539.00	399.64	410.84		411.96	0.003538	8.47	771.69	122.99	0.60
Reach 1	0.445	4% Annual Chance	8399.00	399.64	415.12		415.72	0.001098	6.22	1417.63	215.80	0.36
Reach 1	0.445	1% Annual Chance	9235.00	399.64	416.84		417.32	0.000766	5.68	1936.13	358.60	0.30
Reach 1	0.445	0.2% Annual Chan	11094.00	399.64	418.53		419.02	0.000643	5.73	2601.31	427.49	0.28
Reach 1	0.518	10% Annual Chanc	6539.00	399.31	412.18	406.84	412.79	0.001304	6.26	1044.26	121.41	0.38
Reach 1	0.518	4% Annual Chance	8399.00	399.31	415.56	408.00	416.06	0.000710	5.70	1667.03	497.93	0.29
Reach 1	0.518	1% Annual Chance	9235.00	399.31	417.16	408.45	417.57	0.000519	5.30	2512.42	907.86	0.26
Reach 1	0.518	0.2% Annual Chan	11094.00	399.31	418.83	409.44	419.23	0.000447	5.32	3576.50	1001.75	0.24

HEC-RAS Plan: CorEff 4Q River: MILL CREEK Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	0.559	10% Annual Chanc	6539.00	400.11	412.67		413.04	0.000837	4.88	1339.18	165.72	0.30
Reach 1	0.559	4% Annual Chance	8399.00	400.11	415.92		416.21	0.000470	4.34	2211.72	629.46	0.24
Reach 1	0.559	1% Annual Chance	9235.00	400.11	417.46		417.68	0.000327	3.90	3299.92	807.93	0.20
Reach 1	0.559	0.2% Annual Chan	11094.00	400.11	419.13		419.32	0.000252	3.75	4815.40	958.99	0.18
Reach 1	0.580	10% Annual Chanc	6539.00	399.73	412.58	406.85	413.33	0.001425	6.91	946.17	94.67	0.39
Reach 1	0.580	4% Annual Chance	8399.00	399.73	415.78	407.96	416.47	0.000983	6.63	1268.19	165.76	0.33
Reach 1	0.580	1% Annual Chance	9235.00	399.73	417.28	408.43	417.94	0.000811	6.50	1424.29	715.59	0.31
Reach 1	0.580	0.2% Annual Chan	11094.00	399.73	419.10	409.53	419.40	0.000422	5.09	3638.13	894.15	0.23
Reach 1	0.585	Bridge										
Reach 1	0.590	10% Annual Chanc	6539.00	399.73	413.01	406.85	413.69	0.001270	6.63	986.71	96.45	0.37
Reach 1	0.590	4% Annual Chance	8399.00	399.73	416.88	407.96	417.46	0.000740	6.09	1382.35	659.61	0.29
Reach 1	0.590	1% Annual Chance	9235.00	399.73	418.21	408.43	418.53	0.000446	5.03	2872.99	830.25	0.23
Reach 1	0.590	0.2% Annual Chan	11094.00	399.73	419.45	409.53	419.71	0.000358	4.76	3959.26	919.64	0.21
Reach 1	0.600	10% Annual Chanc	6539.00	399.65	413.33		413.79	0.000922	5.45	1199.19	133.70	0.32
Reach 1	0.600	4% Annual Chance	8399.00	399.65	417.24		417.55	0.000432	4.58	2649.95	734.76	0.23
Reach 1	0.600	1% Annual Chance	9235.00	399.65	418.29		418.57	0.000365	4.45	3526.52	956.70	0.22
Reach 1	0.600	0.2% Annual Chan	11094.00	399.65	419.45		419.74	0.000351	4.62	4668.26	1004.44	0.21
Reach 1	.618	10% Annual Chanc	6539.00	399.35	413.47		413.88	0.000795	5.20	1571.87	407.06	0.30
Reach 1	.618	4% Annual Chance	8399.00	399.35	417.37		417.60	0.000313	4.12	3735.97	715.51	0.20
Reach 1	.618	1% Annual Chance	9235.00	399.35	418.39		418.60	0.000272	4.04	4509.93	797.12	0.19
Reach 1	.618	0.2% Annual Chan	11094.00	399.35	419.55		419.77	0.000275	4.28	5459.26	850.14	0.19
Reach 1	0.745	10% Annual Chanc	6539.00	400.42	413.99		414.58	0.001207	6.16	1063.27	130.11	0.37
Reach 1	0.745	4% Annual Chance	8399.00	400.42	417.51		417.94	0.000644	5.37	1969.76	313.74	0.28
Reach 1	0.745	1% Annual Chance	9235.00	400.42	418.49		418.91	0.000581	5.34	2287.72	335.24	0.27
Reach 1	0.745	0.2% Annual Chan	11094.00	400.42	419.62		420.10	0.000604	5.78	2682.56	368.12	0.28
Reach 1	0.885	10% Annual Chanc	6539.00	401.67	414.89		415.46	0.001159	6.13	1286.20	314.82	0.36
Reach 1	0.885	4% Annual Chance	8399.00	401.67	418.00		418.40	0.000605	5.39	2330.70	346.35	0.27
Reach 1	0.885	1% Annual Chance	9235.00	401.67	418.94		419.33	0.000544	5.37	2658.27	350.93	0.26
Reach 1	0.885	0.2% Annual Chan	11094.00	401.67	420.09		420.53	0.000563	5.77	3065.32	358.18	0.27
Reach 1	1.015	10% Annual Chanc	6539.00	403.32	415.58		416.18	0.000956	6.23	1065.61	149.63	0.38
Reach 1	1.015	4% Annual Chance	8399.00	403.32	418.33		418.86	0.000629	5.87	1794.63	622.89	0.32
Reach 1	1.015	1% Annual Chance	9235.00	403.32	419.24		419.73	0.000546	5.77	2361.85	632.76	0.30
Reach 1	1.015	0.2% Annual Chan	11094.00	403.32	420.41		420.92	0.000523	6.03	3113.79	658.84	0.30
Reach 1	1.101	10% Annual Chanc	6539.00	405.65	415.71	411.95	416.82	0.001205	8.44	777.60	439.39	0.48
Reach 1	1.101	4% Annual Chance	8399.00	405.65	418.52	413.04	419.19	0.000628	7.09	2656.16	624.03	0.36
Reach 1	1.101	1% Annual Chance	9235.00	405.65	419.42	413.49	420.01	0.000548	6.90	3221.11	641.52	0.33
Reach 1	1.101	0.2% Annual Chan	11094.00	405.65	420.59	414.47	421.19	0.000532	7.15	3987.49	715.83	0.33
Reach 1	1.178	10% Annual Chanc	6539.00	405.84	416.33	411.95	417.29	0.001040	7.87	831.29	251.72	0.43
Reach 1	1.178	4% Annual Chance	8399.00	405.84	418.55	413.02	419.62	0.000936	8.29	1015.35	678.60	0.42
Reach 1	1.178	1% Annual Chance	9235.00	405.84	419.52	413.47	420.33	0.000719	7.60	2540.93	876.12	0.37
Reach 1	1.178	0.2% Annual Chan	11094.00	405.84	420.71	414.44	421.48	0.000670	7.73	3517.33	1003.33	0.36
Reach 1	1.237	10% Annual Chanc	6539.00	407.38	416.48	414.74	418.10	0.004975	10.23	639.09	217.41	0.70
Reach 1	1.237	4% Annual Chance	8399.00	407.38	418.81	415.92	420.23	0.003431	9.54	880.38	330.55	0.60
Reach 1	1.237	1% Annual Chance	9235.00	407.38	419.49	416.41	420.94	0.003225	9.66	960.93	376.69	0.58
Reach 1	1.237	0.2% Annual Chan	11094.00	407.38	420.54	417.39	422.12	0.003131	10.16	1365.47	908.17	0.59
Reach 1	1.250	10% Annual Chanc	6539.00	407.09	416.87	415.08	418.41	0.004793	9.94	657.67	100.86	0.69
Reach 1	1.250	4% Annual Chance	8399.00	407.09	419.10	416.24	420.44	0.003216	9.31	947.02	143.83	0.58
Reach 1	1.250	1% Annual Chance	9235.00	407.09	419.80	416.72	421.15	0.003033	9.36	1049.76	151.61	0.57
Reach 1	1.250	0.2% Annual Chan	11094.00	407.09	420.79	417.71	422.31	0.003132	9.97	1205.01	292.43	0.59
Reach 1	1.254	Bridge										
Reach 1	1.258	10% Annual Chanc	6539.00	407.09	418.22	415.08	419.25	0.002725	8.16	824.30	133.93	0.53
Reach 1	1.258	4% Annual Chance	8399.00	407.09	420.37	416.24	421.34	0.002064	7.94	1138.29	174.53	0.47
Reach 1	1.258	1% Annual Chance	9235.00	407.09	421.17	416.72	422.13	0.001917	7.94	1266.41	406.07	0.46
Reach 1	1.258	0.2% Annual Chan	11094.00	407.09	423.62	417.71	424.15	0.000913	6.41	3802.90	1184.07	0.33
Reach 1	1.267	10% Annual Chanc	6539.00	407.09	418.38		419.36	0.002613	7.98	845.99	137.56	0.52
Reach 1	1.267	4% Annual Chance	8399.00	407.09	420.48		421.42	0.002026	7.81	1172.00	226.02	0.47
Reach 1	1.267	1% Annual Chance	9235.00	407.09	421.29		422.21	0.001782	7.77	1483.55	615.77	0.45
Reach 1	1.267	0.2% Annual Chan	11094.00	407.09	423.63		424.21	0.000947	6.57	3308.29	903.34	0.34
Reach 1	1.481	10% Annual Chanc	6539.00	410.58	421.41		422.38	0.002713	7.91	851.06	160.53	0.52
Reach 1	1.481	4% Annual Chance	8399.00	410.58	422.87		423.92	0.002351	8.33	1182.36	306.09	0.50
Reach 1	1.481	1% Annual Chance	9235.00	410.58	423.43		424.52	0.002249	8.49	1373.80	370.88	0.49
Reach 1	1.481	0.2% Annual Chan	11094.00	410.58	424.76	420.80	425.85	0.001942	8.63	2040.75	726.64	0.47

HEC-RAS Plan: CorEff 4Q River: MILL CREEK Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	1.566	10% Annual Chanc	6539.00	410.88	422.50		423.53	0.002381	8.15	836.01	132.05	0.50
Reach 1	1.566	4% Annual Chance	8399.00	410.88	423.81		425.04	0.002438	8.96	1021.98	150.82	0.51
Reach 1	1.566	1% Annual Chance	9235.00	410.88	424.32		425.65	0.002498	9.33	1101.93	173.09	0.52
Reach 1	1.566	0.2% Annual Chan	11094.00	410.88	425.44		426.96	0.002513	10.00	1351.53	314.41	0.53
Reach 1	1.667	10% Annual Chanc	6539.00	412.37	423.80		424.80	0.002384	8.05	818.35	105.93	0.49
Reach 1	1.667	4% Annual Chance	8399.00	412.37	425.11		426.34	0.002399	8.90	962.18	113.12	0.51
Reach 1	1.667	1% Annual Chance	9235.00	412.37	425.64		426.97	0.002421	9.27	1022.48	116.00	0.51
Reach 1	1.667	0.2% Annual Chan	11094.00	412.37	426.75		428.29	0.002451	10.00	1155.16	122.10	0.53
Reach 1	1.691	10% Annual Chanc	6539.00	412.37	424.17		425.09	0.002059	7.70	860.15	109.88	0.46
Reach 1	1.691	4% Annual Chance	8399.00	412.37	425.50		426.63	0.002100	8.55	1011.71	118.29	0.48
Reach 1	1.691	1% Annual Chance	9235.00	412.37	426.03		427.26	0.002127	8.91	1075.98	121.68	0.48
Reach 1	1.691	0.2% Annual Chan	11094.00	412.37	427.16		428.59	0.002170	9.63	1217.56	128.83	0.50
Reach 1	1.780	10% Annual Chanc	6539.00	413.56	425.34	420.75	425.98	0.001453	6.42	1019.14	125.68	0.40
Reach 1	1.780	4% Annual Chance	8399.00	413.56	426.80	421.79	427.55	0.001436	6.95	1221.98	154.42	0.40
Reach 1	1.780	1% Annual Chance	9235.00	413.56	427.40	422.22	428.20	0.001424	7.16	1363.55	385.90	0.40
Reach 1	1.780	0.2% Annual Chan	11094.00	413.56	428.74	423.12	429.54	0.001263	7.32	2070.39	638.47	0.39
Reach 1	1.785		Bridge									
Reach 1	1.790	10% Annual Chanc	6539.00	414.13	425.48	422.00	426.31	0.002152	7.29	896.52	122.69	0.48
Reach 1	1.790	4% Annual Chance	8399.00	414.13	427.01	423.03	427.93	0.002016	7.69	1093.88	140.25	0.47
Reach 1	1.790	1% Annual Chance	9235.00	414.13	428.80	423.47	429.54	0.001278	6.92	1389.43	230.57	0.39
Reach 1	1.790	0.2% Annual Chan	11094.00	414.13	429.63	424.33	430.50	0.001378	7.57	1636.00	364.74	0.41
Reach 1	1.798	10% Annual Chanc	6539.00	415.12	425.22		426.76	0.004899	9.95	657.09	100.11	0.68
Reach 1	1.798	4% Annual Chance	8399.00	415.12	426.75		428.38	0.004550	10.24	820.31	113.90	0.67
Reach 1	1.798	1% Annual Chance	9235.00	415.12	428.62		429.83	0.002701	8.83	1054.57	154.56	0.53
Reach 1	1.798	0.2% Annual Chan	11094.00	415.12	429.40	426.05	430.85	0.002899	9.69	1185.52	182.69	0.56
Reach 1	1.903	10% Annual Chanc	6022.00	416.90	427.78	423.92	428.53	0.001977	6.93	873.20	191.13	0.45
Reach 1	1.903	4% Annual Chance	7618.00	416.90	429.16	424.93	430.00	0.001775	7.36	1062.81	238.22	0.44
Reach 1	1.903	1% Annual Chance	8346.00	416.90	430.18	425.35	430.98	0.001465	7.19	1209.53	452.03	0.41
Reach 1	1.903	0.2% Annual Chan	9946.00	416.90	431.14	426.22	432.06	0.001506	7.76	1360.13	567.75	0.42
Reach 1	1.994	10% Annual Chanc	6022.00	417.26	428.76		429.51	0.002134	6.95	867.68	131.12	0.47
Reach 1	1.994	4% Annual Chance	7618.00	417.26	430.05		430.89	0.001935	7.37	1124.35	412.96	0.45
Reach 1	1.994	1% Annual Chance	8346.00	417.26	430.95		431.70	0.001536	7.04	1525.46	471.89	0.41
Reach 1	1.994	0.2% Annual Chan	9946.00	417.26	432.02		432.76	0.001381	7.20	2124.69	706.80	0.40
Reach 1	2.140	10% Annual Chanc	6022.00	419.52	430.46	427.41	431.41	0.002724	7.86	871.02	371.79	0.52
Reach 1	2.140	4% Annual Chance	7618.00	419.52	431.62		432.56	0.002353	8.07	1344.73	448.58	0.49
Reach 1	2.140	1% Annual Chance	8346.00	419.52	432.24		433.12	0.002069	7.94	1638.39	513.46	0.47
Reach 1	2.140	0.2% Annual Chan	9946.00	419.52	433.20		434.06	0.001859	8.06	2209.52	673.24	0.45

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	0.018	100-Year LOMR	414.52		414.63	860.56	8.08	7072.31	2154.61		1026.82	1154.95	
Reach 1	0.018	LOMR Floodway	415.32	0.80	415.50	216.71	15.65	8624.99	594.35	996.78	1026.82	1154.95	1213.69
Reach 1	0.0408	100-Year LOMR	414.55		414.64	489.30	13.94	8785.17	435.89		907.12	1104.46	
Reach 1	0.0408	LOMR Floodway	415.43	0.88	415.52	236.56	17.55	8920.64	296.81	894.24	907.12	1104.46	1130.80
Reach 1	0.0609	100-Year LOMR	414.53		414.66	432.01		9181.38	53.63		864.34	1064.40	
Reach 1	0.0609	LOMR Floodway	415.42	0.88	415.53	201.99		9234.68	0.33	864.34	864.34	1064.40	1087.91
Reach 1	0.077	100-Year LOMR	414.51		414.69	489.73	0.10	9216.87	18.03		826.81	987.22	
Reach 1	0.077	LOMR Floodway	415.39	0.89	415.56	185.95		9232.58	2.42	826.81	826.81	987.22	1015.06
Reach 1	0.1595	100-Year LOMR	414.53		414.80	764.42	111.51	8349.50	773.99		950.86	1048.54	
Reach 1	0.1595	LOMR Floodway	415.38	0.85	415.68	186.21	148.88	8879.37	206.76	879.91	950.86	1048.54	1066.12
Reach 1	0.267	100-Year LOMR	414.75		415.02	504.99	827.85	7857.62	549.53		138.00	238.00	
Reach 1	0.267	LOMR Floodway	415.61	0.86	415.89	211.00	528.39	8229.39	477.22	100.00	138.00	238.00	311.00
Reach 1	0.281	100-Year LOMR	414.55		415.31	357.66		9047.94	187.06		214.00	287.00	
Reach 1	0.281	LOMR Floodway	415.45	0.91	416.13	216.00		8984.62	250.38	214.00	214.00	287.00	430.00
Reach 1	0.2825 BR D	100-Year LOMR	414.94		415.61	273.54		7273.20	1974.94		214.00	287.00	
Reach 1	0.2825 BR D	LOMR Floodway	415.99	1.05	416.62	208.22		7677.10	1557.90	214.00	214.00	287.00	430.00
Reach 1	0.2825 BR U	100-Year LOMR	414.94		415.65	273.54		7273.20	1974.94		214.00	287.00	
Reach 1	0.2825 BR U	LOMR Floodway	416.00	1.06	416.62	208.73		7677.10	1557.90	214.00	214.00	287.00	430.00
Reach 1	0.284	100-Year LOMR	414.94		415.64	382.06		8988.23	246.77		214.00	287.00	
Reach 1	0.284	LOMR Floodway	416.00	1.06	416.62	216.00		8923.24	311.76	214.00	214.00	287.00	430.00
Reach 1	0.322	100-Year LOMR	415.68		415.79	583.01	4429.28	3807.66	998.07		235.00	287.00	
Reach 1	0.322	LOMR Floodway	416.57	0.89	416.75	240.00	3858.45	4800.23	576.32	119.00	235.00	287.00	359.00
Reach 1	0.379	100-Year LOMR	415.67		415.94	801.03	558.01	6248.48	2428.52		454.00	528.00	
Reach 1	0.379	LOMR Floodway	416.51	0.84	416.98	162.00	243.00	7740.95	1251.05	438.00	454.00	528.00	600.00
Reach 1	0.406	100-Year LOMR	415.62		416.05	552.93	823.82	7824.06	587.12		480.00	569.00	
Reach 1	0.406	LOMR Floodway	416.54	0.92	417.06	127.00	301.76	8706.53	226.71	460.00	480.00	569.00	587.00
Reach 1	0.422	100-Year LOMR	415.27		416.54	68.97		9235.00			505.00	575.00	
Reach 1	0.422	LOMR Floodway	416.32	1.04	417.42	69.24		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.424 BR D	100-Year LOMR	415.24		416.72	63.97		9235.00			505.00	575.00	
Reach 1	0.424 BR D	LOMR Floodway	416.28	1.04	417.58	64.23		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.424 BR U	100-Year LOMR	415.45		416.89	64.08		9235.00			505.00	575.00	
Reach 1	0.424 BR U	LOMR Floodway	416.45	1.00	417.71	64.34		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.426	100-Year LOMR	415.87		417.04	69.19		9235.00			505.00	575.00	
Reach 1	0.426	LOMR Floodway	416.81	0.93	417.84	69.43		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.445	100-Year LOMR	416.82		417.31	358.14	97.19	9009.69	128.12		599.00	745.00	
Reach 1	0.445	LOMR Floodway	417.62	0.80	418.08	146.00		9235.00		599.00	599.00	745.00	745.00
Reach 1	0.518	100-Year LOMR	417.15		417.56	588.38	432.03	8777.67	25.30		912.00	1036.00	
Reach 1	0.518	LOMR Floodway	417.88	0.73	418.31	124.00		9235.00		912.00	912.00	1036.00	1036.00
Reach 1	0.559	100-Year LOMR	417.45		417.66	806.62	687.44	8546.04	1.52		986.00	1174.00	
Reach 1	0.559	LOMR Floodway	418.18	0.73	418.42	188.00		9235.00		986.00	986.00	1174.00	1174.00
Reach 1	0.580	100-Year LOMR	417.27		417.93	104.00		9224.57	10.43		1122.00	1224.00	
Reach 1	0.580	LOMR Floodway	418.04	0.77	418.64	102.00		9235.00		1122.00	1122.00	1224.00	1224.00
Reach 1	0.585 BR D	100-Year LOMR	418.22		418.52	749.83	775.12	8431.55	44.67		1122.00	1226.00	
Reach 1	0.585 BR D	LOMR Floodway	418.91	0.69	419.38	102.00		9235.00		1122.00	1122.00	1226.00	1224.00
Reach 1	0.585 BR U	100-Year LOMR	418.22		418.54	749.83	775.12	8431.55	44.67		1122.00	1226.00	
Reach 1	0.585 BR U	LOMR Floodway	418.91	0.69	419.44	102.00		9235.00		1122.00	1122.00	1226.00	1224.00
Reach 1	0.590	100-Year LOMR	418.22		418.53	830.62	1424.85	7545.93	264.23		1122.00	1224.00	
Reach 1	0.590	LOMR Floodway	418.91	0.69	419.44	102.00		9235.00		1122.00	1122.00	1224.00	1224.00
Reach 1	0.600	100-Year LOMR	418.29		418.56	956.70	765.51	8385.23	84.26		776.00	919.00	
Reach 1	0.600	LOMR Floodway	419.19	0.90	419.51	143.00		9235.00		776.00	776.00	919.00	919.00
Reach 1	.618	100-Year LOMR	418.40		418.60	797.54	1664.71	7394.99	175.30		1107.00	1239.00	
Reach 1	.618	LOMR Floodway	419.22	0.81	419.55	132.00		9235.00		1107.00	1107.00	1239.00	1239.00
Reach 1	0.745	100-Year LOMR	418.49		418.90	335.04	547.44	8687.53	0.03		409.00	541.00	
Reach 1	0.745	LOMR Floodway	419.46	0.97	419.89	132.00		9235.00		409.00	409.00	541.00	541.00
Reach 1	0.885	100-Year LOMR	418.93		419.32	350.88	242.03	8064.82	928.15		251.00	366.00	
Reach 1	0.885	LOMR Floodway	419.83	0.91	420.29	160.00	237.19	8880.28	117.54	225.00	251.00	366.00	385.00
Reach 1	1.015	100-Year LOMR	419.22		419.72	632.62	115.88	8803.06	316.06		199.00	332.00	
Reach 1	1.015	LOMR Floodway	420.17	0.94	420.61	258.93	150.98	8967.59	116.43	150.00	199.00	332.00	410.00

HEC-RAS Plan: CorEffFW River: MILL CREEK Reach: Reach 1 (Continued)

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	1.101	100-Year LOMR	419.41		419.99	641.43		7343.26	1891.74		332.00	413.00	
Reach 1	1.101	LOMR Floodway	420.21	0.80	420.91	273.00		8117.08	1117.92	332.00		413.00	605.00
Reach 1	1.178	100-Year LOMR	419.52		420.30	784.99		8211.50	1023.50		329.00	411.00	
Reach 1	1.178	LOMR Floodway	420.32	0.80	421.23	291.00		8975.54	259.46	329.00	329.00	411.00	620.00
Reach 1	1.237	100-Year LOMR	419.46		420.92	129.53		9233.36	1.64		457.00	573.00	
Reach 1	1.237	LOMR Floodway	420.49	1.03	421.67	108.65		9235.00		452.00	457.00	573.00	567.00
Reach 1	1.250	100-Year LOMR	419.78		421.13	151.36		9131.32	103.68		650.00	774.00	
Reach 1	1.250	LOMR Floodway	420.69	0.91	421.82	121.43		9235.00		650.00	650.00	774.00	774.00
Reach 1	1.254 BR D	100-Year LOMR	419.51		421.52	80.00		9235.00			650.00	774.00	
Reach 1	1.254 BR D	LOMR Floodway	420.42	0.91	422.22			9235.00		650.00	650.00	774.00	774.00
Reach 1	1.254 BR U	100-Year LOMR	419.98		421.81	80.00		9235.00			650.00	774.00	
Reach 1	1.254 BR U	LOMR Floodway	420.82	0.84	422.61			9235.00		650.00	650.00	774.00	774.00
Reach 1	1.258	100-Year LOMR	421.16		422.12	161.99		9049.65	185.35		650.00	774.00	
Reach 1	1.258	LOMR Floodway	422.11	0.95	422.95	124.00		9235.00		650.00	650.00	774.00	774.00
Reach 1	1.267	100-Year LOMR	421.33		422.21	626.88	6.54	8964.43	264.03		650.00	774.00	
Reach 1	1.267	LOMR Floodway	422.20	0.87	423.01	124.00		9235.00		650.00	650.00	774.00	774.00
Reach 1	1.481	100-Year LOMR	423.40		424.49	367.84	193.71	8933.30	107.99		792.00	906.00	
Reach 1	1.481	LOMR Floodway	423.99	0.59	425.05	114.00		9235.00		792.00	792.00	906.00	906.00
Reach 1	1.566	100-Year LOMR	424.29		425.62	171.58	166.87	9068.13			826.00	925.00	
Reach 1	1.566	LOMR Floodway	424.82	0.53	426.06	108.99	55.61	9179.39		816.00	826.00	925.00	925.00
Reach 1	1.667	100-Year LOMR	425.61		426.94	115.84	21.41	9198.59	15.01		864.00	962.00	
Reach 1	1.667	LOMR Floodway	426.03	0.42	427.27	98.00		9235.00		864.00	864.00	962.00	962.00
Reach 1	1.691	100-Year LOMR	426.01		427.24	121.52	29.30	9189.86	15.84		864.00	962.00	
Reach 1	1.691	LOMR Floodway	426.40	0.39	427.56	98.00		9235.00		864.00	864.00	962.00	962.00
Reach 1	1.780	100-Year LOMR	427.39		428.19	377.14	25.02	9209.98			573.00	706.00	
Reach 1	1.780	LOMR Floodway	427.71	0.32	428.46	133.00		9235.00		573.00	573.00	706.00	706.00
Reach 1	1.785 BR D	100-Year LOMR	428.80		429.49	116.66	363.85	8869.54			573.00	706.00	
Reach 1	1.785 BR D	LOMR Floodway	428.80	0.00	429.51	1.31		9234.45		573.00	573.00	706.00	706.00
Reach 1	1.785 BR U	100-Year LOMR	428.80		429.53	116.66	363.85	8869.54			573.00	706.00	
Reach 1	1.785 BR U	LOMR Floodway	428.80	0.00	429.55	1.31		9234.45		573.00	573.00	706.00	706.00
Reach 1	1.790	100-Year LOMR	428.80		429.53	230.64	62.96	9168.12	3.92		573.00	706.00	
Reach 1	1.790	LOMR Floodway	428.80	0.00	429.55	133.00		9235.00		573.00	573.00	706.00	706.00
Reach 1	1.798	100-Year LOMR	428.62		429.83	154.43	0.43	9231.92	2.65		620.00	743.00	
Reach 1	1.798	LOMR Floodway	428.63	0.01	429.84	123.00		9235.00		620.00	620.00	743.00	743.00
Reach 1	1.903	100-Year LOMR	430.18		430.97	152.94	4.29	8275.88	65.82		1063.00	1181.00	
Reach 1	1.903	LOMR Floodway	430.20	0.03	431.01	122.00	4.43	8341.57		1059.00	1063.00	1181.00	1181.00
Reach 1	1.994	100-Year LOMR	430.95		431.69	471.89	280.90	8029.61	35.49		1054.00	1180.00	
Reach 1	1.994	LOMR Floodway	430.97	0.01	431.79	126.00		8346.00		1054.00	1054.00	1180.00	1180.00
Reach 1	2.140	100-Year LOMR	432.24		433.10	513.60	784.30	7436.79	124.91		931.00	1037.00	
Reach 1	2.140	LOMR Floodway	432.32	0.09	433.51	106.00		8346.00		931.00	931.00	1037.00	1037.00

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	0.018	10% Annual Chanc	6539.00	392.79	405.22	399.53	405.68	0.000887	5.48	1271.70	179.97	0.31
Reach 1	0.018	4% Annual Chance	8399.00	392.79	412.12	400.57	412.31	0.000200	3.69	2993.71	466.20	0.16
Reach 1	0.018	1% Annual Chance	9235.00	392.79	414.52	400.99	414.63	0.000112	3.03	4606.86	860.56	0.12
Reach 1	0.018	0.2% Annual Chan	11094.00	392.79	416.32	401.83	416.41	0.000086	2.83	6416.12	1090.80	0.11
Reach 1	0.0408	10% Annual Chanc	6539.00	392.16	405.59		405.77	0.000334	3.45	1900.01	202.94	0.20
Reach 1	0.0408	4% Annual Chance	8399.00	392.16	412.24		412.34	0.000092	2.57	3370.22	243.10	0.11
Reach 1	0.0408	1% Annual Chance	9235.00	392.16	414.56		414.64	0.000068	2.41	4180.23	483.69	0.10
Reach 1	0.0408	0.2% Annual Chan	11094.00	392.16	416.32		416.42	0.000066	2.52	5180.95	599.72	0.10
Reach 1	0.0609	10% Annual Chanc	6539.00	392.83	405.56		405.85	0.000577	4.29	1525.56	171.08	0.25
Reach 1	0.0609	4% Annual Chance	8399.00	392.83	412.22		412.36	0.000164	3.06	2747.97	195.30	0.14
Reach 1	0.0609	1% Annual Chance	9235.00	392.83	414.54		414.67	0.000122	2.86	3326.41	432.18	0.13
Reach 1	0.0609	0.2% Annual Chan	11094.00	392.83	416.31		416.44	0.000114	2.97	4179.59	564.54	0.12
Reach 1	0.077	10% Annual Chanc	6539.00	392.75	405.54		405.93	0.000746	5.01	1305.68	139.08	0.29
Reach 1	0.077	4% Annual Chance	8399.00	392.75	412.19		412.40	0.000229	3.66	2296.18	158.43	0.17
Reach 1	0.077	1% Annual Chance	9235.00	392.75	414.51		414.70	0.000171	3.46	2939.80	490.94	0.15
Reach 1	0.077	0.2% Annual Chan	11094.00	392.75	416.26		416.47	0.000173	3.72	4097.45	723.88	0.15
Reach 1	0.1595	10% Annual Chanc	6539.00	392.96	405.77		406.38	0.001044	6.28	1041.68	99.20	0.34
Reach 1	0.1595	4% Annual Chance	8399.00	392.96	412.19		412.57	0.000347	4.95	1823.96	152.79	0.21
Reach 1	0.1595	1% Annual Chance	9235.00	392.96	414.53		414.81	0.000237	4.45	2863.59	764.32	0.18
Reach 1	0.1595	0.2% Annual Chan	11094.00	392.96	416.35		416.55	0.000178	4.10	4556.54	1122.42	0.16
Reach 1	0.267	10% Annual Chanc	6539.00	392.60	406.74		407.43	0.003134	6.73	1034.54	158.51	0.38
Reach 1	0.267	4% Annual Chance	8399.00	392.60	412.55		412.89	0.000903	4.95	2140.53	220.23	0.22
Reach 1	0.267	1% Annual Chance	9235.00	392.60	414.75		415.03	0.000643	4.57	3010.50	504.83	0.19
Reach 1	0.267	0.2% Annual Chan	11094.00	392.60	416.49		416.77	0.000591	4.66	3945.74	571.25	0.19
Reach 1	0.281	10% Annual Chanc	6539.00	394.10	406.58	403.20	407.94	0.001847	9.35	699.24	125.96	0.53
Reach 1	0.281	4% Annual Chance	8399.00	394.10	412.34	404.45	413.21	0.000635	7.50	1119.55	245.53	0.34
Reach 1	0.281	1% Annual Chance	9235.00	394.10	414.55	404.91	415.32	0.000475	7.10	1651.61	562.61	0.30
Reach 1	0.281	0.2% Annual Chan	11094.00	394.10	416.39	405.97	416.93	0.000346	6.47	3866.24	686.85	0.26
Reach 1	0.2825		Bridge									
Reach 1	0.284	10% Annual Chanc	6539.00	394.10	406.64	403.20	407.98	0.001810	9.29	703.51	127.16	0.53
Reach 1	0.284	4% Annual Chance	8399.00	394.10	412.99	404.45	413.77	0.000543	7.13	1244.15	259.28	0.31
Reach 1	0.284	1% Annual Chance	9235.00	394.10	414.93	404.91	415.64	0.000437	6.91	1791.80	593.91	0.29
Reach 1	0.284	0.2% Annual Chan	11094.00	394.10	416.54	405.97	417.06	0.000333	6.39	3966.81	695.94	0.25
Reach 1	0.322	10% Annual Chanc	6539.00	394.20	408.11		408.41	0.001559	5.63	2026.83	271.52	0.28
Reach 1	0.322	4% Annual Chance	8399.00	394.20	413.80		413.94	0.000504	4.10	4029.58	492.99	0.17
Reach 1	0.322	1% Annual Chance	9235.00	394.20	415.68		415.79	0.000384	3.83	5052.42	582.77	0.15
Reach 1	0.322	0.2% Annual Chan	11094.00	394.20	417.04		417.17	0.000397	4.06	5878.77	626.05	0.15
Reach 1	0.379	10% Annual Chanc	6539.00	396.96	408.12	405.47	409.23	0.002345	8.82	1012.02	250.16	0.51
Reach 1	0.379	4% Annual Chance	8399.00	396.96	413.65	406.50	414.27	0.000731	6.75	2138.59	473.75	0.31
Reach 1	0.379	1% Annual Chance	9235.00	396.96	415.63	406.93	415.98	0.000411	5.51	4278.43	800.82	0.24
Reach 1	0.379	0.2% Annual Chan	11094.00	396.96	417.02	407.81	417.34	0.000376	5.55	5394.88	809.09	0.23
Reach 1	0.406	10% Annual Chanc	6539.00	398.14	408.50		409.57	0.002460	8.49	940.41	173.91	0.52
Reach 1	0.406	4% Annual Chance	8399.00	398.14	413.87		414.38	0.000652	6.10	1989.60	214.29	0.29
Reach 1	0.406	1% Annual Chance	9235.00	398.14	415.60		416.09	0.000531	5.97	2572.22	548.52	0.27
Reach 1	0.406	0.2% Annual Chan	11094.00	398.14	416.95		417.47	0.000523	6.26	3641.25	872.80	0.27
Reach 1	0.422	10% Annual Chanc	6539.00	399.29	408.22	406.74	410.46	0.006080	12.00	544.96	67.20	0.74
Reach 1	0.422	4% Annual Chance	8399.00	399.29	413.55	407.97	414.88	0.002182	9.27	906.23	68.54	0.45
Reach 1	0.422	1% Annual Chance	9235.00	399.29	415.29	408.50	416.55	0.001834	9.00	1026.26	68.98	0.41
Reach 1	0.422	0.2% Annual Chan	11094.00	399.29	416.51	409.58	418.06	0.002106	9.99	1110.65	69.29	0.44
Reach 1	0.424		Bridge									
Reach 1	0.426	10% Annual Chanc	6539.00	399.29	410.19	406.76	411.64	0.003139	9.65	677.69	67.73	0.54
Reach 1	0.426	4% Annual Chance	8399.00	399.29	414.24	407.97	415.44	0.001878	8.81	953.77	68.77	0.42
Reach 1	0.426	1% Annual Chance	9235.00	399.29	415.89	408.50	417.05	0.001635	8.65	1067.82	69.19	0.39
Reach 1	0.426	0.2% Annual Chan	11094.00	399.29	417.26	409.60	418.67	0.001846	9.54	1162.63	69.54	0.41
Reach 1	0.445	10% Annual Chanc	6539.00	399.64	410.84		411.96	0.003538	8.47	771.69	122.99	0.60
Reach 1	0.445	4% Annual Chance	8399.00	399.64	415.12		415.72	0.001098	6.22	1417.63	215.80	0.36
Reach 1	0.445	1% Annual Chance	9235.00	399.64	416.84		417.32	0.000766	5.68	1936.13	358.60	0.30
Reach 1	0.445	0.2% Annual Chan	11094.00	399.64	418.53		419.02	0.000643	5.73	2601.32	427.49	0.28
Reach 1	0.518	10% Annual Chanc	6539.00	399.31	412.18	406.84	412.79	0.001304	6.26	1044.26	121.41	0.38
Reach 1	0.518	4% Annual Chance	8399.00	399.31	415.56	408.00	416.06	0.000710	5.70	1667.03	497.93	0.29
Reach 1	0.518	1% Annual Chance	9235.00	399.31	417.16	408.45	417.57	0.000519	5.30	2512.42	907.86	0.26
Reach 1	0.518	0.2% Annual Chan	11094.00	399.31	418.83	409.44	419.23	0.000447	5.32	3576.52	1001.75	0.24

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	0.559	10% Annual Chanc	6539.00	400.11	412.67		413.04	0.000837	4.88	1339.18	165.72	0.30
Reach 1	0.559	4% Annual Chance	8399.00	400.11	415.92		416.21	0.000470	4.34	2211.72	629.46	0.24
Reach 1	0.559	1% Annual Chance	9235.00	400.11	417.46		417.68	0.000327	3.90	3299.92	807.93	0.20
Reach 1	0.559	0.2% Annual Chan	11094.00	400.11	419.13		419.32	0.000252	3.75	4815.43	958.99	0.18
Reach 1	0.580	10% Annual Chanc	6539.00	399.73	412.58	406.85	413.33	0.001425	6.91	946.17	94.67	0.39
Reach 1	0.580	4% Annual Chance	8399.00	399.73	415.78	407.96	416.47	0.000983	6.63	1268.19	165.76	0.33
Reach 1	0.580	1% Annual Chance	9235.00	399.73	417.28	408.43	417.94	0.000811	6.50	1424.29	715.59	0.31
Reach 1	0.580	0.2% Annual Chan	11094.00	399.73	419.10	409.53	419.40	0.000422	5.09	3638.16	894.15	0.23
Reach 1	0.585	Bridge										
Reach 1	0.590	10% Annual Chanc	6539.00	399.73	413.01	406.85	413.69	0.001270	6.63	986.71	96.45	0.37
Reach 1	0.590	4% Annual Chance	8399.00	399.73	416.88	407.96	417.46	0.000740	6.09	1382.35	659.61	0.29
Reach 1	0.590	1% Annual Chance	9235.00	399.73	418.21	408.43	418.53	0.000446	5.03	2872.99	830.25	0.23
Reach 1	0.590	0.2% Annual Chan	11094.00	399.73	419.45	409.53	419.71	0.000358	4.76	3959.26	919.64	0.21
Reach 1	0.600	10% Annual Chanc	6539.00	399.65	413.33		413.79	0.000922	5.45	1199.19	133.70	0.32
Reach 1	0.600	4% Annual Chance	8399.00	399.65	417.24		417.55	0.000432	4.58	2649.95	734.76	0.23
Reach 1	0.600	1% Annual Chance	9235.00	399.65	418.29		418.57	0.000365	4.45	3526.52	956.70	0.22
Reach 1	0.600	0.2% Annual Chan	11094.00	399.65	419.45		419.74	0.000351	4.62	4668.26	1004.44	0.21
Reach 1	.618	10% Annual Chanc	6539.00	399.35	413.47		413.88	0.000795	5.20	1571.87	407.06	0.30
Reach 1	.618	4% Annual Chance	8399.00	399.35	417.37		417.60	0.000313	4.12	3735.97	715.51	0.20
Reach 1	.618	1% Annual Chance	9235.00	399.35	418.39		418.60	0.000272	4.04	4509.93	797.12	0.19
Reach 1	.618	0.2% Annual Chan	11094.00	399.35	419.55		419.77	0.000275	4.28	5459.26	850.14	0.19
Reach 1	0.745	10% Annual Chanc	6539.00	400.42	413.99		414.58	0.001207	6.16	1063.27	130.11	0.37
Reach 1	0.745	4% Annual Chance	8399.00	400.42	417.51		417.94	0.000644	5.37	1969.76	313.74	0.28
Reach 1	0.745	1% Annual Chance	9235.00	400.42	418.49		418.91	0.000581	5.34	2287.72	335.24	0.27
Reach 1	0.745	0.2% Annual Chan	11094.00	400.42	419.62		420.10	0.000604	5.78	2682.56	368.12	0.28
Reach 1	0.885	10% Annual Chanc	6539.00	401.67	414.89		415.46	0.001159	6.13	1286.20	314.82	0.36
Reach 1	0.885	4% Annual Chance	8399.00	401.67	418.00		418.40	0.000605	5.39	2330.70	346.35	0.27
Reach 1	0.885	1% Annual Chance	9235.00	401.67	418.94		419.33	0.000544	5.37	2658.27	350.93	0.26
Reach 1	0.885	0.2% Annual Chan	11094.00	401.67	420.09		420.53	0.000563	5.77	3065.32	358.18	0.27
Reach 1	1.015	10% Annual Chanc	6539.00	403.32	415.58		416.18	0.000956	6.23	1065.61	149.63	0.38
Reach 1	1.015	4% Annual Chance	8399.00	403.32	418.33		418.86	0.000629	5.87	1794.63	622.89	0.32
Reach 1	1.015	1% Annual Chance	9235.00	403.32	419.24		419.73	0.000546	5.77	2361.85	632.76	0.30
Reach 1	1.015	0.2% Annual Chan	11094.00	403.32	420.41		420.92	0.000523	6.03	3113.79	658.84	0.30
Reach 1	1.101	10% Annual Chanc	6539.00	405.65	415.71	411.95	416.82	0.001205	8.44	777.60	439.39	0.48
Reach 1	1.101	4% Annual Chance	8399.00	405.65	418.52	413.04	419.19	0.000628	7.09	2656.16	624.03	0.36
Reach 1	1.101	1% Annual Chance	9235.00	405.65	419.42	413.49	420.01	0.000548	6.90	3221.11	641.52	0.33
Reach 1	1.101	0.2% Annual Chan	11094.00	405.65	420.59	414.47	421.19	0.000532	7.15	3987.49	715.83	0.33
Reach 1	1.178	10% Annual Chanc	6539.00	405.84	416.33	411.95	417.29	0.001040	7.87	831.29	251.72	0.43
Reach 1	1.178	4% Annual Chance	8399.00	405.84	418.55	413.02	419.62	0.000936	8.29	1015.35	678.60	0.42
Reach 1	1.178	1% Annual Chance	9235.00	405.84	419.52	413.47	420.33	0.000719	7.60	2540.93	876.12	0.37
Reach 1	1.178	0.2% Annual Chan	11094.00	405.84	420.71	414.44	421.48	0.000670	7.73	3517.33	1003.33	0.36
Reach 1	1.237	10% Annual Chanc	6539.00	407.38	416.48	414.74	418.10	0.004975	10.23	639.09	217.41	0.70
Reach 1	1.237	4% Annual Chance	8399.00	407.38	418.81	415.92	420.23	0.003431	9.54	880.38	330.55	0.60
Reach 1	1.237	1% Annual Chance	9235.00	407.38	419.49	416.41	420.94	0.003225	9.66	960.93	376.69	0.58
Reach 1	1.237	0.2% Annual Chan	11094.00	407.38	420.54	417.39	422.12	0.003131	10.16	1365.47	908.17	0.59
Reach 1	1.250	10% Annual Chanc	6539.00	407.09	416.87	415.08	418.41	0.004793	9.94	657.67	100.86	0.69
Reach 1	1.250	4% Annual Chance	8399.00	407.09	419.10	416.24	420.44	0.003216	9.31	947.02	143.83	0.58
Reach 1	1.250	1% Annual Chance	9235.00	407.09	419.80	416.72	421.15	0.003033	9.36	1049.76	151.61	0.57
Reach 1	1.250	0.2% Annual Chan	11094.00	407.09	420.79	417.71	422.31	0.003132	9.97	1205.01	292.43	0.59
Reach 1	1.254	Bridge										
Reach 1	1.258	10% Annual Chanc	6539.00	407.09	418.22	415.08	419.25	0.002725	8.16	824.30	133.93	0.53
Reach 1	1.258	4% Annual Chance	8399.00	407.09	420.37	416.24	421.34	0.002064	7.94	1138.29	174.53	0.47
Reach 1	1.258	1% Annual Chance	9235.00	407.09	421.17	416.72	422.13	0.001917	7.94	1266.41	406.07	0.46
Reach 1	1.258	0.2% Annual Chan	11094.00	407.09	423.62	417.71	424.15	0.000913	6.41	3802.90	1184.07	0.33
Reach 1	1.267	10% Annual Chanc	6539.00	407.09	418.38		419.36	0.002613	7.98	845.99	137.56	0.52
Reach 1	1.267	4% Annual Chance	8399.00	407.09	420.48		421.42	0.002026	7.81	1172.00	226.02	0.47
Reach 1	1.267	1% Annual Chance	9235.00	407.09	421.29		422.21	0.001782	7.77	1483.55	615.77	0.45
Reach 1	1.267	0.2% Annual Chan	11094.00	407.09	423.63		424.21	0.000947	6.57	3308.29	903.34	0.34
Reach 1	1.481	10% Annual Chanc	6539.00	410.58	421.41		422.38	0.002713	7.91	851.06	160.53	0.52
Reach 1	1.481	4% Annual Chance	8399.00	410.58	422.87		423.92	0.002351	8.33	1182.36	306.09	0.50
Reach 1	1.481	1% Annual Chance	9235.00	410.58	423.43		424.52	0.002249	8.49	1373.80	370.88	0.49
Reach 1	1.481	0.2% Annual Chan	11094.00	410.58	424.76	420.80	425.85	0.001942	8.63	2040.75	726.64	0.47

HEC-RAS Plan: PostPrj 4Q River: MILL CREEK Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach 1	1.566	10% Annual Chanc	6539.00	410.88	422.50		423.53	0.002381	8.15	836.01	132.05	0.50
Reach 1	1.566	4% Annual Chance	8399.00	410.88	423.81		425.04	0.002438	8.96	1021.98	150.82	0.51
Reach 1	1.566	1% Annual Chance	9235.00	410.88	424.32		425.65	0.002498	9.33	1101.93	173.09	0.52
Reach 1	1.566	0.2% Annual Chan	11094.00	410.88	425.44		426.96	0.002513	10.00	1351.53	314.41	0.53
Reach 1	1.667	10% Annual Chanc	6539.00	412.37	423.80		424.80	0.002384	8.05	818.35	105.93	0.49
Reach 1	1.667	4% Annual Chance	8399.00	412.37	425.11		426.34	0.002399	8.90	962.18	113.12	0.51
Reach 1	1.667	1% Annual Chance	9235.00	412.37	425.64		426.97	0.002421	9.27	1022.48	116.00	0.51
Reach 1	1.667	0.2% Annual Chan	11094.00	412.37	426.75		428.29	0.002451	10.00	1155.16	122.10	0.53
Reach 1	1.691	10% Annual Chanc	6539.00	412.37	424.17		425.09	0.002059	7.70	860.15	109.88	0.46
Reach 1	1.691	4% Annual Chance	8399.00	412.37	425.50		426.63	0.002100	8.55	1011.71	118.29	0.48
Reach 1	1.691	1% Annual Chance	9235.00	412.37	426.03		427.26	0.002127	8.91	1075.98	121.68	0.48
Reach 1	1.691	0.2% Annual Chan	11094.00	412.37	427.16		428.59	0.002170	9.63	1217.56	128.83	0.50
Reach 1	1.780	10% Annual Chanc	6539.00	413.56	425.34	420.75	425.98	0.001453	6.42	1019.14	125.68	0.40
Reach 1	1.780	4% Annual Chance	8399.00	413.56	426.80	421.79	427.55	0.001436	6.95	1221.98	154.42	0.40
Reach 1	1.780	1% Annual Chance	9235.00	413.56	427.40	422.22	428.20	0.001424	7.16	1363.55	385.90	0.40
Reach 1	1.780	0.2% Annual Chan	11094.00	413.56	428.74	423.12	429.54	0.001263	7.32	2070.39	638.47	0.39
Reach 1	1.785		Bridge									
Reach 1	1.790	10% Annual Chanc	6539.00	414.13	425.48	422.00	426.31	0.002152	7.29	896.52	122.69	0.48
Reach 1	1.790	4% Annual Chance	8399.00	414.13	427.01	423.03	427.93	0.002016	7.69	1093.88	140.25	0.47
Reach 1	1.790	1% Annual Chance	9235.00	414.13	428.80	423.47	429.54	0.001278	6.92	1389.43	230.57	0.39
Reach 1	1.790	0.2% Annual Chan	11094.00	414.13	429.63	424.33	430.50	0.001378	7.57	1636.00	364.74	0.41
Reach 1	1.798	10% Annual Chanc	6539.00	415.12	425.22		426.76	0.004899	9.95	657.09	100.11	0.68
Reach 1	1.798	4% Annual Chance	8399.00	415.12	426.75		428.38	0.004550	10.24	820.31	113.90	0.67
Reach 1	1.798	1% Annual Chance	9235.00	415.12	428.62		429.83	0.002701	8.83	1054.57	154.56	0.53
Reach 1	1.798	0.2% Annual Chan	11094.00	415.12	429.40	426.05	430.85	0.002899	9.69	1185.52	182.69	0.56
Reach 1	1.903	10% Annual Chanc	6022.00	416.90	427.78	423.92	428.53	0.001977	6.93	873.20	191.13	0.45
Reach 1	1.903	4% Annual Chance	7618.00	416.90	429.16	424.93	430.00	0.001775	7.36	1062.81	238.22	0.44
Reach 1	1.903	1% Annual Chance	8346.00	416.90	430.18	425.35	430.98	0.001465	7.19	1209.53	452.03	0.41
Reach 1	1.903	0.2% Annual Chan	9946.00	416.90	431.14	426.22	432.06	0.001506	7.76	1360.13	567.75	0.42
Reach 1	1.994	10% Annual Chanc	6022.00	417.26	428.76		429.51	0.002134	6.95	867.68	131.12	0.47
Reach 1	1.994	4% Annual Chance	7618.00	417.26	430.05		430.89	0.001935	7.37	1124.35	412.96	0.45
Reach 1	1.994	1% Annual Chance	8346.00	417.26	430.95		431.70	0.001536	7.04	1525.46	471.89	0.41
Reach 1	1.994	0.2% Annual Chan	9946.00	417.26	432.02		432.76	0.001381	7.20	2124.69	706.80	0.40
Reach 1	2.140	10% Annual Chanc	6022.00	419.52	430.46	427.41	431.41	0.002724	7.86	871.02	371.79	0.52
Reach 1	2.140	4% Annual Chance	7618.00	419.52	431.62		432.56	0.002353	8.07	1344.73	448.58	0.49
Reach 1	2.140	1% Annual Chance	8346.00	419.52	432.24		433.12	0.002069	7.94	1638.39	513.46	0.47
Reach 1	2.140	0.2% Annual Chan	9946.00	419.52	433.20		434.06	0.001859	8.06	2209.52	673.24	0.45

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	0.018	100-Year LOMR	414.52		414.63	860.56	8.08	7072.31	2154.61		1026.82	1154.95	
Reach 1	0.018	LOMR Floodway	415.32	0.80	415.50	216.71	15.65	8624.99	594.35	996.78	1026.82	1154.95	1213.69
Reach 1	0.0408	100-Year LOMR	414.55		414.64	483.09	13.95	8791.18	429.87		907.12	1104.46	
Reach 1	0.0408	LOMR Floodway	415.43	0.88	415.52	236.56	17.55	8920.64	296.81	894.24	907.12	1104.46	1130.80
Reach 1	0.0609	100-Year LOMR	414.53		414.66	432.01		9181.38	53.62		864.34	1064.40	
Reach 1	0.0609	LOMR Floodway	415.42	0.88	415.53	201.99		9234.68	0.33	864.34	864.34	1064.40	1087.91
Reach 1	0.077	100-Year LOMR	414.51		414.69	489.73	0.10	9216.87	18.03		826.81	987.22	
Reach 1	0.077	LOMR Floodway	415.39	0.89	415.56	185.95		9232.58	2.42	826.81	826.81	987.22	1015.06
Reach 1	0.1595	100-Year LOMR	414.53		414.80	764.42	111.51	8349.52	773.97		950.86	1048.54	
Reach 1	0.1595	LOMR Floodway	415.38	0.85	415.68	186.21	148.88	8879.37	206.76	879.91	950.86	1048.54	1066.12
Reach 1	0.267	100-Year LOMR	414.75		415.02	504.99	827.85	7857.63	549.52		138.00	238.00	
Reach 1	0.267	LOMR Floodway	415.61	0.86	415.89	211.00	528.39	8229.39	477.22	100.00	138.00	238.00	311.00
Reach 1	0.281	100-Year LOMR	414.55		415.31	357.66		9047.95	187.05		214.00	287.00	
Reach 1	0.281	LOMR Floodway	415.45	0.91	416.13	216.00		8984.62	250.38	214.00	214.00	287.00	430.00
Reach 1	0.2825 BR D	100-Year LOMR	414.94		415.61	273.54		7273.20	1974.94		214.00	287.00	
Reach 1	0.2825 BR D	LOMR Floodway	415.99	1.05	416.62	208.22		7677.10	1557.90	214.00	214.00	287.00	430.00
Reach 1	0.2825 BR U	100-Year LOMR	414.94		415.65	273.54		7273.20	1974.94		214.00	287.00	
Reach 1	0.2825 BR U	LOMR Floodway	416.00	1.06	416.62	208.73		7677.10	1557.90	214.00	214.00	287.00	430.00
Reach 1	0.284	100-Year LOMR	414.94		415.64	382.06		8988.23	246.77		214.00	287.00	
Reach 1	0.284	LOMR Floodway	416.00	1.06	416.62	216.00		8923.24	311.76	214.00	214.00	287.00	430.00
Reach 1	0.322	100-Year LOMR	415.68		415.79	583.01	4429.28	3807.66	998.07		235.00	287.00	
Reach 1	0.322	LOMR Floodway	416.57	0.89	416.75	240.00	3858.45	4800.23	576.32	119.00	235.00	287.00	359.00
Reach 1	0.379	100-Year LOMR	415.67		415.94	801.03	558.01	6248.48	2428.52		454.00	528.00	
Reach 1	0.379	LOMR Floodway	416.51	0.84	416.98	162.00	243.00	7740.95	1251.05	438.00	454.00	528.00	600.00
Reach 1	0.406	100-Year LOMR	415.62		416.05	552.93	823.82	7824.06	587.12		480.00	569.00	
Reach 1	0.406	LOMR Floodway	416.54	0.92	417.06	127.00	301.76	8706.53	226.71	460.00	480.00	569.00	587.00
Reach 1	0.422	100-Year LOMR	415.27		416.54	68.97		9235.00			505.00	575.00	
Reach 1	0.422	LOMR Floodway	416.32	1.04	417.42	69.24		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.424 BR D	100-Year LOMR	415.24		416.72	63.97		9235.00			505.00	575.00	
Reach 1	0.424 BR D	LOMR Floodway	416.28	1.04	417.58	64.23		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.424 BR U	100-Year LOMR	415.45		416.89	64.08		9235.00			505.00	575.00	
Reach 1	0.424 BR U	LOMR Floodway	416.45	1.00	417.71	64.34		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.426	100-Year LOMR	415.87		417.04	69.19		9235.00			505.00	575.00	
Reach 1	0.426	LOMR Floodway	416.81	0.93	417.84	69.43		9235.00		505.00	505.00	575.00	575.00
Reach 1	0.445	100-Year LOMR	416.82		417.31	358.14	97.19	9009.69	128.12		599.00	745.00	
Reach 1	0.445	LOMR Floodway	417.62	0.80	418.08	146.00		9235.00		599.00	599.00	745.00	745.00
Reach 1	0.518	100-Year LOMR	417.15		417.56	588.38	432.03	8777.67	25.30		912.00	1036.00	
Reach 1	0.518	LOMR Floodway	417.88	0.73	418.31	124.00		9235.00		912.00	912.00	1036.00	1036.00
Reach 1	0.559	100-Year LOMR	417.45		417.66	806.62	687.44	8546.04	1.52		986.00	1174.00	
Reach 1	0.559	LOMR Floodway	418.18	0.73	418.42	188.00		9235.00		986.00	986.00	1174.00	1174.00
Reach 1	0.580	100-Year LOMR	417.27		417.93	104.00		9224.57	10.43		1122.00	1224.00	
Reach 1	0.580	LOMR Floodway	418.04	0.77	418.64	102.00		9235.00		1122.00	1122.00	1224.00	1224.00
Reach 1	0.585 BR D	100-Year LOMR	418.22		418.52	749.83	775.12	8431.55	44.67		1122.00	1226.00	
Reach 1	0.585 BR D	LOMR Floodway	418.91	0.69	419.38	102.00		9235.00		1122.00	1122.00	1226.00	1224.00
Reach 1	0.585 BR U	100-Year LOMR	418.22		418.54	749.83	775.12	8431.55	44.67		1122.00	1226.00	
Reach 1	0.585 BR U	LOMR Floodway	418.91	0.69	419.44	102.00		9235.00		1122.00	1122.00	1226.00	1224.00
Reach 1	0.590	100-Year LOMR	418.22		418.53	830.62	1424.85	7545.93	264.23		1122.00	1224.00	
Reach 1	0.590	LOMR Floodway	418.91	0.69	419.44	102.00		9235.00		1122.00	1122.00	1224.00	1224.00
Reach 1	0.600	100-Year LOMR	418.29		418.56	956.70	765.51	8385.23	84.26		776.00	919.00	
Reach 1	0.600	LOMR Floodway	419.19	0.90	419.51	143.00		9235.00		776.00	776.00	919.00	919.00
Reach 1	.618	100-Year LOMR	418.40		418.60	797.54	1664.71	7394.99	175.30		1107.00	1239.00	
Reach 1	.618	LOMR Floodway	419.22	0.81	419.55	132.00		9235.00		1107.00	1107.00	1239.00	1239.00
Reach 1	0.745	100-Year LOMR	418.49		418.90	335.04	547.44	8687.53	0.03		409.00	541.00	
Reach 1	0.745	LOMR Floodway	419.46	0.97	419.89	132.00		9235.00		409.00	409.00	541.00	541.00
Reach 1	0.885	100-Year LOMR	418.93		419.32	350.88	242.03	8064.82	928.15		251.00	366.00	
Reach 1	0.885	LOMR Floodway	419.83	0.91	420.29	160.00	237.19	8880.28	117.54	225.00	251.00	366.00	385.00
Reach 1	1.015	100-Year LOMR	419.22		419.72	632.62	115.88	8803.06	316.06		199.00	332.00	
Reach 1	1.015	LOMR Floodway	420.17	0.94	420.61	258.93	150.98	8967.59	116.43	150.00	199.00	332.00	410.00

HEC-RAS Plan: PostPjFW River: MILL CREEK Reach: Reach 1 (Continued)

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach 1	1.101	100-Year LOMR	419.41		419.99	641.43		7343.26	1891.74		332.00	413.00	
Reach 1	1.101	LOMR Floodway	420.21	0.80	420.91	273.00		8117.08	1117.92	332.00		413.00	605.00
Reach 1	1.178	100-Year LOMR	419.52		420.30	784.99		8211.50	1023.50		329.00	411.00	
Reach 1	1.178	LOMR Floodway	420.32	0.80	421.23	291.00		8975.54	259.46	329.00	329.00	411.00	620.00
Reach 1	1.237	100-Year LOMR	419.46		420.92	129.53		9233.36	1.64		457.00	573.00	
Reach 1	1.237	LOMR Floodway	420.49	1.03	421.67	108.65		9235.00		452.00	457.00	573.00	567.00
Reach 1	1.250	100-Year LOMR	419.78		421.13	151.36		9131.32	103.68		650.00	774.00	
Reach 1	1.250	LOMR Floodway	420.69	0.91	421.82	121.43		9235.00		650.00	650.00	774.00	774.00
Reach 1	1.254 BR D	100-Year LOMR	419.51		421.52	80.00		9235.00			650.00	774.00	
Reach 1	1.254 BR D	LOMR Floodway	420.42	0.91	422.22			9235.00		650.00	650.00	774.00	774.00
Reach 1	1.254 BR U	100-Year LOMR	419.98		421.81	80.00		9235.00			650.00	774.00	
Reach 1	1.254 BR U	LOMR Floodway	420.82	0.84	422.61			9235.00		650.00	650.00	774.00	774.00
Reach 1	1.258	100-Year LOMR	421.16		422.12	161.99		9049.65	185.35		650.00	774.00	
Reach 1	1.258	LOMR Floodway	422.11	0.95	422.95	124.00		9235.00		650.00	650.00	774.00	774.00
Reach 1	1.267	100-Year LOMR	421.33		422.21	626.88	6.54	8964.43	264.03		650.00	774.00	
Reach 1	1.267	LOMR Floodway	422.20	0.87	423.01	124.00		9235.00		650.00	650.00	774.00	774.00
Reach 1	1.481	100-Year LOMR	423.40		424.49	367.84	193.71	8933.30	107.99		792.00	906.00	
Reach 1	1.481	LOMR Floodway	423.99	0.59	425.05	114.00		9235.00		792.00	792.00	906.00	906.00
Reach 1	1.566	100-Year LOMR	424.29		425.62	171.58	166.87	9068.13			826.00	925.00	
Reach 1	1.566	LOMR Floodway	424.82	0.53	426.06	108.99	55.61	9179.39		816.00	826.00	925.00	925.00
Reach 1	1.667	100-Year LOMR	425.61		426.94	115.84	21.41	9198.59	15.01		864.00	962.00	
Reach 1	1.667	LOMR Floodway	426.03	0.42	427.27	98.00		9235.00		864.00	864.00	962.00	962.00
Reach 1	1.691	100-Year LOMR	426.01		427.24	121.52	29.30	9189.86	15.84		864.00	962.00	
Reach 1	1.691	LOMR Floodway	426.40	0.39	427.56	98.00		9235.00		864.00	864.00	962.00	962.00
Reach 1	1.780	100-Year LOMR	427.39		428.19	377.14	25.02	9209.98			573.00	706.00	
Reach 1	1.780	LOMR Floodway	427.71	0.32	428.46	133.00		9235.00		573.00	573.00	706.00	706.00
Reach 1	1.785 BR D	100-Year LOMR	428.80		429.49	116.66	363.85	8869.54			573.00	706.00	
Reach 1	1.785 BR D	LOMR Floodway	428.80	0.00	429.51	1.31		9234.45		573.00	573.00	706.00	706.00
Reach 1	1.785 BR U	100-Year LOMR	428.80		429.53	116.66	363.85	8869.54			573.00	706.00	
Reach 1	1.785 BR U	LOMR Floodway	428.80	0.00	429.55	1.31		9234.45		573.00	573.00	706.00	706.00
Reach 1	1.790	100-Year LOMR	428.80		429.53	230.64	62.96	9168.12	3.92		573.00	706.00	
Reach 1	1.790	LOMR Floodway	428.80	0.00	429.55	133.00		9235.00		573.00	573.00	706.00	706.00
Reach 1	1.798	100-Year LOMR	428.62		429.83	154.43	0.43	9231.92	2.65		620.00	743.00	
Reach 1	1.798	LOMR Floodway	428.63	0.01	429.84	123.00		9235.00		620.00	620.00	743.00	743.00
Reach 1	1.903	100-Year LOMR	430.18		430.97	152.94	4.29	8275.88	65.82		1063.00	1181.00	
Reach 1	1.903	LOMR Floodway	430.20	0.03	431.01	122.00	4.43	8341.57		1059.00	1063.00	1181.00	1181.00
Reach 1	1.994	100-Year LOMR	430.95		431.69	471.89	280.90	8029.61	35.49		1054.00	1180.00	
Reach 1	1.994	LOMR Floodway	430.97	0.01	431.79	126.00		8346.00		1054.00	1054.00	1180.00	1180.00
Reach 1	2.140	100-Year LOMR	432.24		433.10	513.60	784.30	7436.79	124.91		931.00	1037.00	
Reach 1	2.140	LOMR Floodway	432.32	0.09	433.51	106.00		8346.00		931.00	931.00	1037.00	1037.00

