



LOWER PLATTE SOUTH natural resources district

3125 Portia Street | P.O. Box 83581 • Lincoln, Nebraska 68501-3581
P: 402.476.2729 • F: 402.476.6454 | www.lpsnrd.org

Memorandum

Date: December 14, 2021
To: Urban Subcommittee
From: Jared Nelson, District Engineer
Subject: Urban Subcommittee Meeting Minutes – December 2021

The Urban Subcommittee met virtually at 5:30pm, on Monday, December 13, 2021. Subcommittee members participating included Tom Green, Bob Andersen, Christine Lamberty, Luke Peterson, Larry Ruth, and Ray Stevens. Others participating included Board Chair Deb Eagan; NRD staff Paul Zillig, Dave Potter, Al Langdale, Tracy Zayac and Jared Nelson; Mike Sotak and Conner Kelly with FYRA Engineering. Director Green called the meeting to order at 5:35pm. There was one item the Subcommittee took action on, as described below.

(a.) Consideration of a Contract Modification for Deadmans Run-USACE WIK Modeling [ACTION] – Nelson referred to his Background Information Memo dated December 9th, 2021 (attached) and explained how the modeling for the Deadmans Run Flood Reduction Project took more time and effort than anticipated. He explained how the U.S. Army Corps of Engineers wanted to see additional scenarios modeled and had a few questions, and there was additional coordination surrounding the physical flume model. Finally, he reported that the Detention Basin is no longer needed for the project.

Then Kelly gave a short presentation (slides attached) on the modeling effort and findings. Kelly and staff answered questions from the Subcommittee. The Subcommittee reviewed and discussed the modeling effort and contract modification request from FYRA.

It was moved by Andersen, seconded by Stevens, and unanimously approved by the Subcommittee to recommend that the Board of Directors approve the Amendment #1 to the Professional Services Agreement with FYRA Engineering, for Deadmans Run – USACE WIK Modeling, in an amount not to exceed \$37,515.75, pending legal counsel review.

There being no further business the meeting adjourned at approximately 6:15 pm.


JN/jn



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Memorandum

Date: December 9, 2021
To: Urban Subcommittee
From: Jared Nelson, District Engineer 
Subject: Urban Subcommittee Background Information – December 2021

The Urban Subcommittee will be meeting virtually on Monday, December 13, 2021 at 5:30pm to review, discuss and take action on one item described below. Attached is related information, including a Memorandum from Paul Zillig provided to you on November 19, 2021, which gives an update on the Deadmans Run Flood Reduction Project.

(a.) Consideration of a Contract Modification for Deadmans Run-USACE WIK Modeling [ACTION] – For the better part of a year, FYRA has been working to update the numerical computer model for the Deadmans Run Flood Reduction Project (DMRFRP) to more accurately portray how floodwaters may be affected by the DMRFRP. The U.S. Army Corps of Engineers (USACE) previously requested updates to be incorporated by FYRA into the model, and the District previously entered into an agreement with FRYA for this work, under the ‘Deadmans Run – USACE WIK Modeling’ agreement.

As this work has progressed, additional requests by the USACE have been made as needed, and FYRA’s effort has exceeded the amount in the original contract. Most recently, the USACE reviewed the final draft models and provided review comments on November 30th, 2021. District Staff directed FYRA to proceed so as not to delay the DMRFRP project. FYRA is now requesting an amendment (No. 1) to the contract to account for the additional requests/coordination needed for the project.

Also on November 30th, 2021, the USACE confirmed to the District, that the District no longer needs to construct a detention basin at Fleming Fields; it is no longer needed for the DMRFRP project.

The Subcommittee will consider the attached Amendment No. 1, between FYRA and LPSNRD, in an amount not to exceed \$37,515.75, for professional services for Deadmans Run – USACE WIK Modeling.

Enclosures;

cc: Steve Seglin
Corey Wasserburger
Deb Eagan



PROFESSIONAL SERVICES AGREEMENT – AMENDMENT 1

PROJECT: Deadman’s Run – USACE WIK Modeling **FYRA Engineering, LLC JOB #:** 002-21-01

CLIENT: Lower Platte South NRD

ADDRESS: 3125 Portia Street, Lincoln, NE 68521

CONTACT: Paul Zillig **TEL:** 402.476.2729 **FAX:** 402.476.6454

CONSULTANT: FYRA Engineering, LLC

ADDRESS: 12702 Westport Pkwy, Suite 300, Omaha, NE 68138

CONTACT: Michael K. Sotak, P.E., D.WRE **TEL:** 402.502.7131 **FAX:** 402.932.6940

PROJECT DESCRIPTION: Addition of additional modeling work requested by the USACE related to the overall modeling and flume/detention cell design

SCOPE OF SERVICES (See Attachment) **SCHEDULE (See Original Agreement – No Change)**

COMPENSATION:

The total compensation under this Agreement shall not exceed the dollar amount indicated herein or the amount authorized by Amendment(s) and/or Notice(s) to Proceed (NTP), whichever is the lesser.

LUMP SUM. Compensation for these services shall be a Lump Sum of \$_____.

TIME AND MATERIALS. Compensation for these services will not exceed **\$37,515.75** without written authorization and will be based on the following option (per the attached Budget or List of Hourly Rates), and Reimbursable Expenses based on actual costs incurred and approved by FYRA Engineering, LLC and as authorized in writing by Client. **This modification brings the total contract amount to \$88,423.75**

Subconsultant's Direct Job Wages times a factor of _____. Budget/List of Subconsultant's Hourly Rates.


COST PLUS FIXED FEE. Compensation for these services shall be Subconsultant Cost plus a fixed professional fee, including Reimbursable Expenses. The estimated compensation for services is \$_____ plus a fixed fee of \$_____ for a total of \$_____.

COMPENSATION DETAIL (See Following Pages)

SCHEDULE OF PAYMENTS (See Following Pages)

SERVICES AUTHORIZED BY: **Execution of Agreement** or **Amendment(s) and/or NTP**

EXECUTION: Execution of this document by duly authorized representatives of FYRA Engineering, LLC and CLIENT, including FYRA Engineering LLC's Standard Conditions (original Agreement) and any attachments, Additional Provisions as indicated, and addenda, represents the entire Agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. This Agreement may be amended or modified by written instrument, but such instrument is valid only upon signature by both parties.

CONSULTANT:	<u>FYRA Engineering, LLC</u>	CLIENT:	<u>Lower Platte South NRD</u>
BY:	<u>Michael K. Sotak, P.E., D.WRE</u>	BY:	<u>Paul Zillig</u>
SIGNATURE:		SIGNATURE:	_____
TITLE:	<u>Owner/Principal Engineer</u>	TITLE:	<u>General Manager</u>
DATE:	<u>9 December 2021</u>	DATE:	_____



FYRA ENGINEERING, LLC STANDARD CONDITIONS

SERVICES. FYRA Engineering will perform services for the Project as set forth in attachment and in accordance with these Terms & Conditions. FYRA Engineering has developed the Project scope of service, schedule, and compensation based on available information and various assumptions. The Client acknowledges that adjustments to the schedule and compensation may be necessary based on the actual circumstances encountered by FYRA Engineering in performing their services.

AUTHORIZED REPRESENTATIVES. The officer assigned to the Project by FYRA Engineering is the only authorized representative to make decisions or commitments on behalf of FYRA Engineering. The Client shall designate a representative with similar authority.

PROJECT REQUIREMENTS. The Client shall confirm the objectives, requirements, constraints, and criteria for the Project at its inception. If the Client has established design standards, they shall be furnished to FYRA Engineering at Project inception. FYRA Engineering will review the Client design standards and may recommend alternate standards considering the standard of care provision.

SITE ACCESS. The Client shall obtain all necessary approvals for FYRA Engineering to access the Project site(s).

PERIOD OF SERVICE. FYRA Engineering shall perform the services for the Project in a timely manner consistent with sound professional practice. FYRA Engineering will strive to perform its services according to the Project schedule set forth in attachment. The services of each task shall be considered complete when deliverables for the task have been presented to the Client. FYRA Engineering shall be entitled to an extension of time and compensation adjustment for any delay beyond FYRA Engineering control.

COMPENSATION. In consideration of the services performed by FYRA Engineering, the Client shall pay FYRA Engineering in the manner set forth in attachment. The parties acknowledge that terms of compensation are based on an orderly and continuous progress of the Project. Compensation shall be equitably adjusted for delays or extensions of time beyond the control of FYRA Engineering.

PAYMENT TERMS. FYRA Engineering shall submit monthly invoices for services performed and Client shall pay the full invoice amount within thirty (30) days of the invoice date. Invoices will be considered correct if not questioned in writing within ten (10) days of the invoice date. FYRA Engineering shall be entitled to a 2% per month administrative charge in the event of payment delay. Client payment to FYRA Engineering is not contingent on arrangement of project financing. Invoice payment delayed beyond sixty (60) days shall give FYRA Engineering the right to stop work until payments are current. Non-payment beyond seventy (70) days shall be just cause for termination by FYRA Engineering.

ADDITIONAL SERVICES. The Client and FYRA Engineering acknowledge that additional services may be necessary for the Project to address issues that may not be known at Project initiation or that may be required to address circumstances that were not foreseen. In that event, FYRA Engineering shall notify the Client of the need for additional services and the Client shall pay for such additional services in an amount and manner as the parties may subsequently agree.

INDEPENDENT CONSULTANT. FYRA Engineering shall serve as an independent consultant for services provided under this agreement. FYRA Engineering shall retain control over the means and methods used in performing their services and may retain subconsultants to perform certain services as determined by FYRA Engineering.

STANDARD OF CARE. Services provided by FYRA Engineering will be performed with the care and skill ordinarily exercised by members of the same profession practicing under similar circumstances. FYRA Engineering will not be liable for the cost of any omission that adds value to the Project.

COMPLIANCE WITH LAWS. FYRA Engineering shall perform its services consistent with sound professional practice and endeavor to incorporate laws, regulations, codes, and standards applicable at the time the work is performed. In the event that standards of practice change during the Project, FYRA Engineering shall be entitled to additional compensation where additional services are needed to conform to the standard of practice.



PERMITS AND APPROVALS. FYRA Engineering will assist the Client in preparing applications and supporting documents for the Client to secure permits and approvals from agencies having jurisdiction over the Project. The Client agrees to pay all application and review fees.

OWNERSHIP OF DOCUMENTS. Documents prepared by FYRA Engineering for the Project are instruments of service and shall remain the property of FYRA Engineering. Record documents of service shall be based on the printed copy. FYRA Engineering will furnish documents electronically; however, the Client releases FYRA Engineering from any liability that may result from documents used in this form. FYRA Engineering shall not be held liable for reuse of documents for any purpose other than those intended under the Project.

INSURANCE. FYRA Engineering will maintain the following insurance and coverage limits during the period of service. The Client will be named as an additional insured on the Commercial General Liability and Automobile Liability policies.

<u>Workers' Compensation</u>	As required by applicable state statute.
<u>Umbrella or Excess Liability</u>	\$2,000,000
<u>Commercial General Liability</u>	\$1,000,000 per occurrence (bodily injury including death & property damage) \$2,000,000 aggregate.
<u>Automobile Liability</u>	\$1,000,000 combined single limit for bodily injury and property damage.
<u>Professional Liability</u>	\$1,000,000 each claim and in the aggregate.

The Client shall make arrangements for Builder's Risk, Protective Liability, Pollution Prevention, and other specific insurance coverage warranted for the Project in amounts appropriate to the Project value and risks. FYRA Engineering shall be a named insured on those policies where FYRA Engineering may be at risk. The Client shall obtain the counsel of others in setting insurance limits for construction contracts.

WAIVER OF SUBROGATION. FYRA Engineering, LLC affirmatively agrees to obtain waiver of subrogation against the client and name the client as an additional insured on the Commercial General Liability and Automobile policies.

INDEMNIFICATION AND HOLD HARMLESS. FYRA Engineering, LLC shall indemnify and hold harmless the Client and its employees and agents from any and all liability, settlements, loss, defense costs, and expenses in connection with any action, suit, or claim resulting from the negligent acts, errors, or omissions in services provided pursuant to this Agreement by FYRA Engineering, LLC its employees, or Subconsultants and/or subcontractors. Client shall indemnify and hold harmless FYRA Engineering, LLC and its employees and agents from any and all liability, settlements, loss, defense costs, and expenses in connection with any action, suit, or claim resulting from the negligent acts, errors, or omissions in services provided pursuant to this Agreement by the Client, its employees, or subconsultants and/or subcontractors. However, if any such liability, settlements, loss, defense costs or expenses result from the concurrent negligence of FYRA Engineering, LLC, and the Client this indemnification applies only to the extent of the negligence of FYRA Engineering, LLC.



LIMITATION OF LIABILITY. To the fullest extent permitted by law, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Owner, Engineer, Subconsultant and all other negligent entities and individuals.

LEGAL EXPENSE. In the event that either party takes legal action against the other that is not prosecuted, is dismissed, or if the decision is rendered for the other party, the party taking legal action agrees to pay the other their attorney fees, court costs, and defense expenses that are allowable under Nebraska state law, within thirty (30) days of the court action.

CONSEQUENTIAL DAMAGES. Neither the Client nor FYRA Engineering shall be liable to the other for any consequential damages regardless of the nature or fault.

ENVIRONMENTAL MATTERS. The Client warrants they have disclosed all potential hazardous materials that may be encountered on the Project. In the event unknown hazardous materials are encountered, FYRA Engineering shall be entitled to additional compensation for appropriate actions to protect the health and safety of its personnel, and for additional services required to comply with applicable laws. The Client shall indemnify FYRA Engineering from any claim related to hazardous materials encountered on the Project except for those events caused by negligent acts of FYRA Engineering.

COST OPINIONS. If included in the scope of service, FYRA Engineering shall prepare cost opinions for the Project based on historical information that represents the judgment of a qualified professional. The Client and FYRA Engineering acknowledge that actual costs may vary from the cost opinions prepared and that FYRA Engineering offers no guarantee related to the Project cost.

INDEPENDENT COUNSEL. The Client agrees to obtain independent legal and financial counsel for the Project considering FYRA Engineering does not furnish these services.

CONTRACTOR SELECTION. FYRA Engineering may make recommendations concerning award of construction contracts and products. The Client acknowledges that the final selection of construction contractors and products is their sole responsibility.

SHOP DRAWING REVIEW. If included in the scope of service, FYRA Engineering shall review shop drawing submittals from the contractor solely for their conformance with the design intent of and performance criteria specified for the Project. FYRA Engineering shall not be liable for the performance of or consequential damages of any equipment furnished by the contractor under the Project.

CONSTRUCTION REVIEW. If included in the scope of service, FYRA Engineering shall observe the progress and content of the work to determine if the work is proceeding in general accordance with the Contract Documents. This construction review is intended to observe, document, and report information concerning the construction process. Observation of work at the Project site shall not make FYRA Engineering responsible for the work performed by another party; the means, methods, techniques, sequences, or procedures selected by another party; nor the safety precautions or programs of another party.

REJECTION OF WORK. FYRA Engineering may recommend that the Client reject work by construction contractors that does not conform to the requirements of the Project.

SAFETY. FYRA Engineering shall be responsible solely for the safety precautions or programs of its employees and no other party.

INFORMATION FROM OTHER PARTIES. The Client and FYRA Engineering acknowledge that FYRA Engineering will rely on information furnished by other parties in performing its services under the Project. FYRA Engineering shall not be liable for any damages that may be incurred by the Client in the use of third party information.



CONSTRUCTION RECORD DRAWINGS. If included in the scope of service, FYRA Engineering will deliver drawings to the Client incorporating information furnished by construction contractors. In that construction record drawings are based on information provided by others, FYRA Engineering cannot and does not warrant their accuracy.

FORCE MAJEURE. Neither party will hold the other responsible for damages or delay caused by Acts of God, acts of war, strikes, accidents, or other events beyond the other's control.

DISPUTE RESOLUTION. The Client and FYRA Engineering agree that they shall diligently pursue resolution of all disagreements within forty-five (45) days of either party's written notice using a mutually acceptable form of mediated dispute resolution prior to exercising their rights under law. FYRA Engineering shall continue to perform services for the Project and the Client shall pay for such services during the dispute resolution process unless the Client issues a written notice to suspend work.

SUSPENSION OF WORK. The Client may suspend services performed by FYRA Engineering with cause upon fourteen (14) days written notice. FYRA Engineering shall submit an invoice for services performed up to the effective date of the work suspension and the Client shall pay FYRA Engineering all outstanding invoices within fourteen (14) days. If the work suspension exceeds thirty (30) days from the effective work suspension date, FYRA Engineering shall be entitled to renegotiate the Project schedule and the compensation terms for the Project.

TERMINATION. The Client or FYRA Engineering may terminate services on the Project upon seven (7) days written notice in the event of substantial failure by the other party to fulfill its obligations of the terms hereunder. FYRA Engineering shall submit an invoice for services performed up to the effective date of termination and the Client shall pay FYRA Engineering all outstanding invoices within fourteen (14) days. The Client may withhold an amount for services that may be in dispute provided that the Client furnishes a written notice of the basis for their dispute and that the amount withheld represents a reasonable value.

GOVERNING LAW. The terms of agreement shall be governed by the laws of the state where the services are performed provided that nothing contained herein shall be interpreted in such a manner as to render it unenforceable under the laws of the state in which the Project resides.

ASSIGNMENT. Neither party shall assign its rights, interests, or obligations under the Project without the express written consent of the other party.

WAIVER OF RIGHTS. The failure of either party to enforce any provision of these terms and conditions shall not constitute a waiver of such provision nor diminish the right of either party to the remedies of such provision.

WARRANTY. FYRA Engineering warrants that it will deliver products under the Project within the standard of care. FYRA Engineering provides no other expressed or implied warranty.

SEVERABILITY. Any provision of these terms later held to violate any law shall be deemed void and all remaining provisions shall continue in force. In such event, the Client and FYRA Engineering will work in good faith to replace an invalid provision with one that is valid with as close to the original meaning as possible.

SURVIVAL. All provisions of these terms that allocate responsibility or liability between the Client and FYRA Engineering shall survive the completion or termination of services for the project.



Deadmans Run - USACE WIK Modeling
Lower Platte South NRD
Lincoln, NE
FYRA Project No. 002-21-01

FYRA Engineering				
Prj Mgr	Prj Engr	El	Additional WIK	
Sotak	Gregalunas	Kelley	Billing Rate Adj.	
\$225	\$205	\$115	Expenses	

Tasks

No.	Proposed Conditions Hydraulic Model Updates						Total
4.13	Coordination and Analysis of the Flume Alternatives	8	6	80	\$50		
4.13	7 Additional Months Coordination and Analysis of the Flume			100		\$55.75	
4.13a	Analysis of Salt Creek Tailwater using Salt Creek FIS			16			
4.13b	Analysis of Physical Flume Results			24			
4.13c	Analysis of RR Bridge Widening Alternative			16			
4.13d	Develop 1D model representation of Flume			8			
4.13e	Calibrate Losses for Each Bridge			8			
4.13f	Restructure model to show only one bridge			32			
4.13g	Responses to USACE requested changes to model	10		80		\$2,550	
4.14	Update Channel Cross Section between 33rd St and Cornhusker ¹		1	48			
4.15	Confirm Channel Thalweg Profile is Correct and Adjust if Necessary ²		1	32			
4.16*	Implement Channel Alignment Alternatives between the Flume and 33rd ³ (if needed)		1.5	24			
4.17*	Update Inflow Location of 33rd St Box Culvert (if needed)			2			
4.18	Hydraulic analysis of Relocated 33rd St Box Culvert and Interior Ponding		4	40			
4.19	Coordinate with City to Implement New Bridge Designs at 33rd St, 38th St and 48th Street	8	6	80	\$50		
4.20	Determine if Huntington Bridge Needs to be Replaced or if Overbank Fill can be Placed to Prevent out of Bank Flows	2	2	8			
4.21	Secondary Edits to the Final Model if Changes made in Final Design for CLOMR		8	40			
Proposed Conditions Hydraulic Model Updates Task Total		\$4,050	\$6,048	\$40,710	\$100		\$50,908
Add. Proposed Conditions Hydraulic Model Updates Task Total		\$2,250	\$0	\$32,660		\$2,605.75	\$37,515.75
	Old Subtotal Hours	18	29.5	354			
	Old Subtotal Costs	\$4,050	\$6,048	\$40,710	\$100		\$50,908
	New Subtotal Hours	28	29.5	638			
	New Subtotal Costs	\$6,300	\$6,048	\$73,370	\$100	\$2,605.75	\$88,423.75

*Tasks to be completed only if needed.
 Assumptions

¹ FYRA will review the geometry files in the HEC-RAS model previously furnished by USACE and will request to review the HEC-RAS geometry files furnished for the physical flume modeling to complete the updates. If preliminary design drawings of the channel are available this information will also be considered.

² FYRA will notify the NRD/USACE if adjustments are found to be necessary prior to altering the profile


³ Assumes three alignment configurations are considered



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Memorandum

Date: November 19, 2021
To: Urban Subcommittee
From: Paul Zillig, General Manager 
Subject: Deadmans Run Flood Reduction Project (DMRFRP) Update

The Deadmans Run Flood Reduction Project was approved in late 2019 as the NRD signed agreements with the City of Lincoln and US Army Corps of Engineers. The project included a Section 205 portion (Corps) of the project, and a Local portion of the project. Attached are a couple of maps showing the main components of each portion and a list of the original anticipated cost of each component. The Section 205 portion included the channel, flume under the railroad bridges (see attached pic of RR bridges), and access mitigation off of State Fair Park Drive. The Local portion included new bridges at 48th, 38th, and 33rd Streets, and constructing a basin on the west portion of Fleming Fields.

The Section 205 portion would be designed by the Corps, landrights acquired by the City, and constructed by the Corps' contractor in several phases. The cost of the Section 205 portion would be approximately \$15M with the Corps contributing \$10M and the remaining cost split between the City and NRD.

The Local portion would be designed and overseen by the City and NRD. The City would design the 48th & 33rd Street bridges, the NRD entered into an agreement with UNL to pay for the design of their 38th Street Bridge and the NRD would design the basin. The cost of the Local portion would be approximately \$10M with the State Water Sustainability Fund (WSF) contributing \$5.7M and the remaining cost split between the City and NRD.

The Corps requested the NRD contract to do some work and be credited as "work in kind" (the NRD will receive credit for this work and save time not having to go thru the Corps contracting process). To assist the Corps with the Section 205 portion the NRD contracted for geotechnical exploration, surveying, and contracting with UNL to construct a model flume to assist with the Corps design. The City, NRD and UNL hired consulting firms to design the bridges and basin.

The NRD's consultant for the WSF application and basin, FYRA Engineering, noticed that the floodwater situation in the general area of the basin, flume and 33rd Street was much more

complicated than anticipated and additional modeling would be required to understand the flood water situation better. The updated modeling also provides other efficiencies in the design of the basin and also the bridges, flume and channel. The NRD contracted with FYRA to do this additional analysis in 2020.

During the 2020-2021 timeline the Corps worked primarily on flood repair designs due to the 2019 Flood. The City with the Railroad Transportation and Safety District (RTSD) worked on compatible options for the 33rd & Cornhusker Project. Covid and an Engineering College remodeling project delayed the completion of the flume model and analysis. We are now approaching the completion of the flume, modeling by FYRA and analysis of the planned components. The Corps is currently reviewing the work done by FYRA and we soon should have a much better idea of the path forward.

I have attached a little more detailed listing of the status and issues in regard to the flume, modeling by FYRA, Railroad bridge/flume options, and coordinating the 33rd & Cornhusker and DMR Flood Reduction Projects.

PDZ/pz

Enc. 6

pc: Deborah Eagan

DEADMANS RUN FLOOD REDUCTION PROJECT

Section 205 Project

Local Project

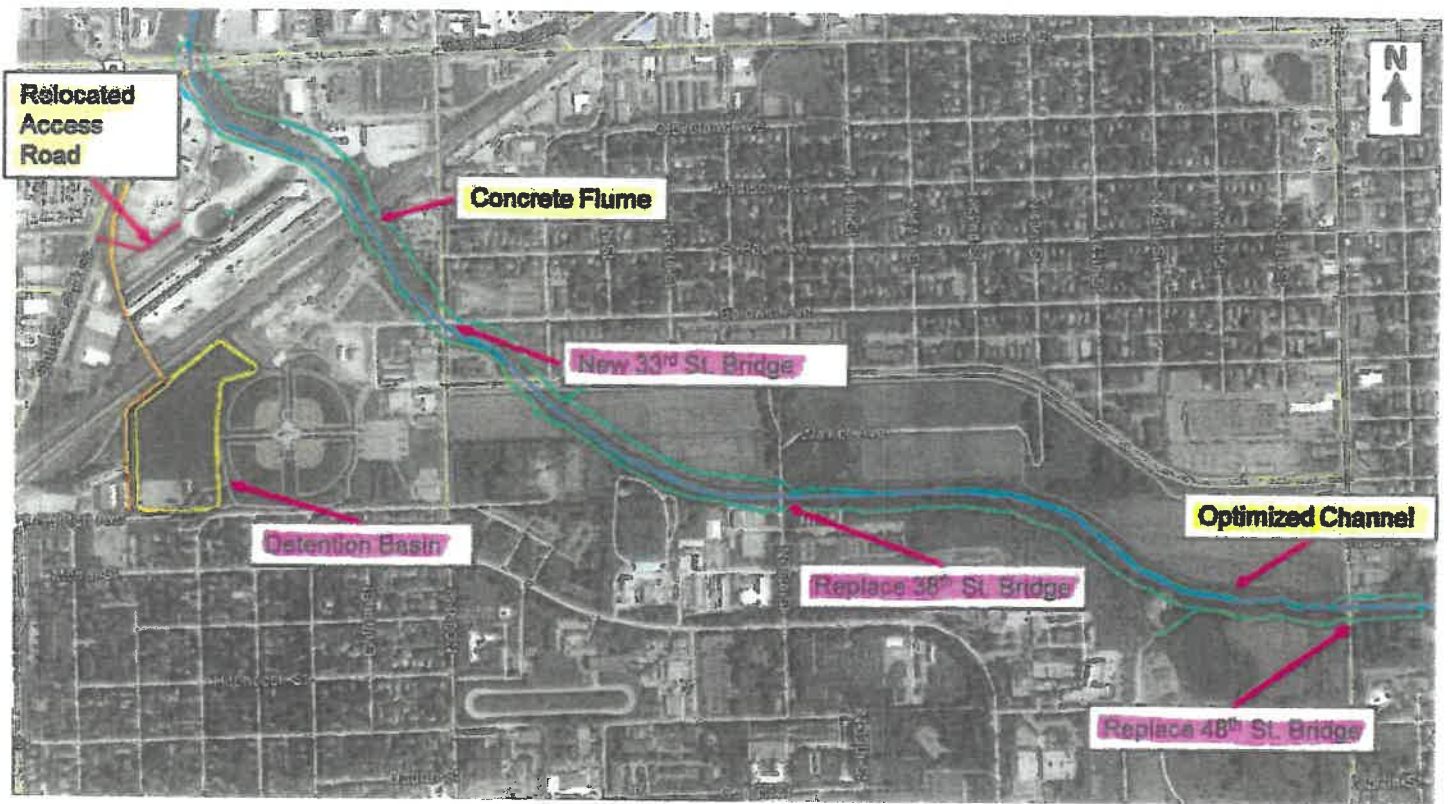
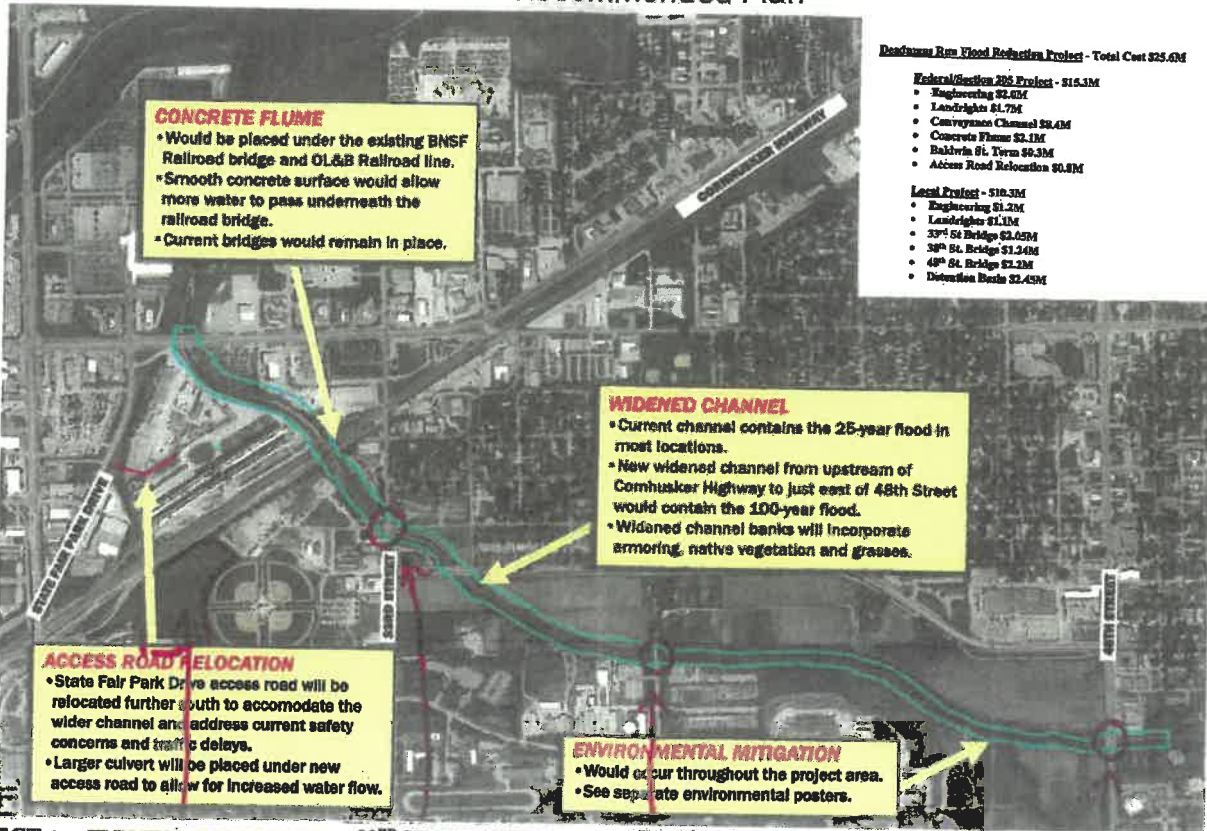


Figure 26. Optimized Recommended Plan



Section 205 Flood Risk Management Study Deadmans Run - Lincoln, NE Recommended Plan



LOCAL PROJECT > FLEMING FIELD BASIN 33RD STREET BRIDGE 38TH STREET BRIDGE 48TH STREET BRIDGE

Deadmans Run Flood Reduction Project - Total Cost \$25.6M

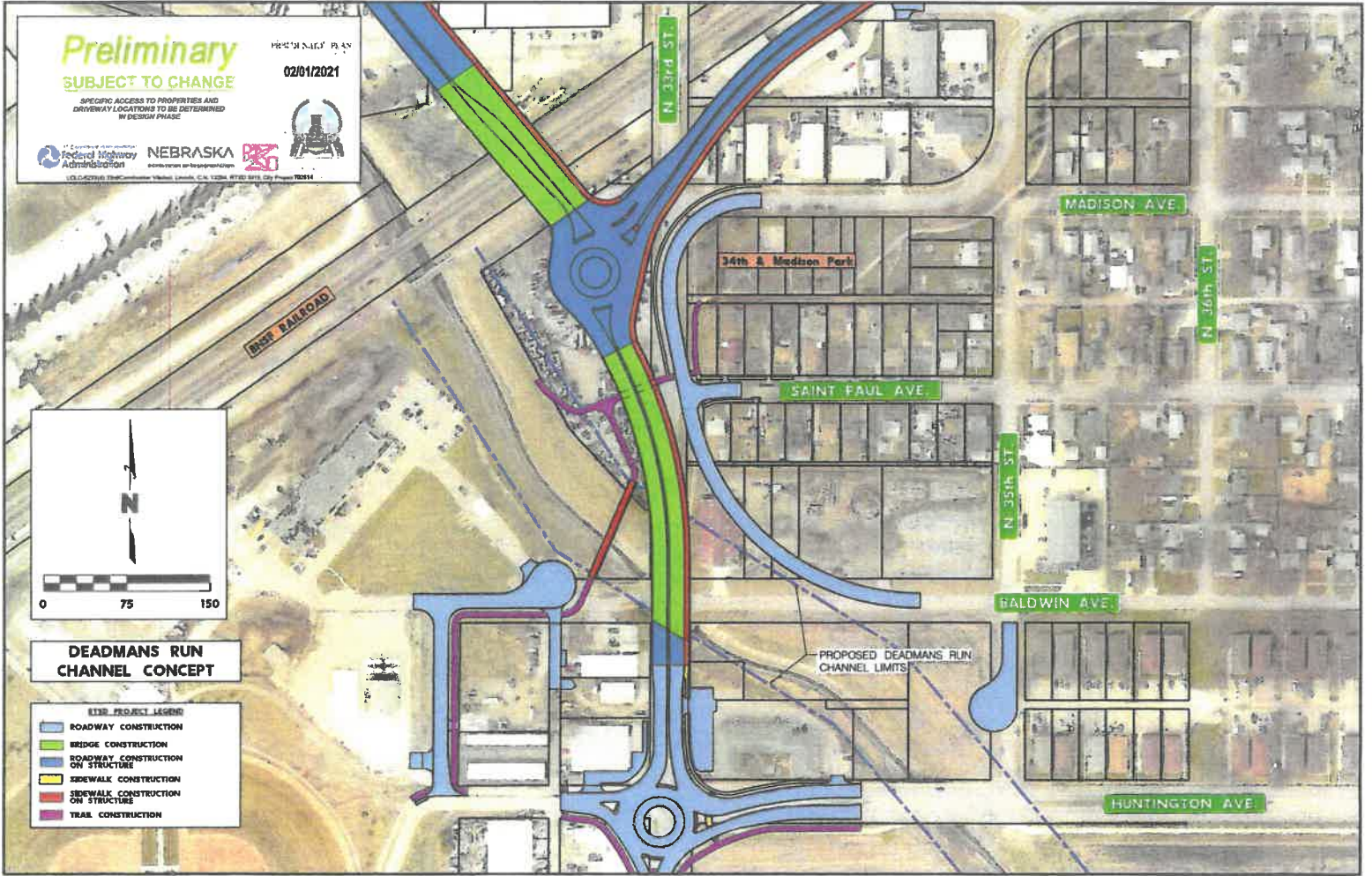
Federal/Section 205 Project - \$15.3M

- **Engineering \$2.0M**
- **Landrights \$1.7M**
- **Conveyance Channel \$8.4M**
- **Concrete Flume \$2.1M**
- **Baldwin St. Term \$0.3M**
- **Access Road Relocation \$0.8M**

Local Project - \$10.3M

- **Engineering \$1.2M**
- **Landrights \$1.1M**
- **33rd St Bridge \$2.05M**
- **38th St. Bridge \$1.24M**
- **48th St. Bridge \$2.2M**
- **Detention Basin \$2.45M**

33rd & Cornhusker Project Roadway/bridge Concepts



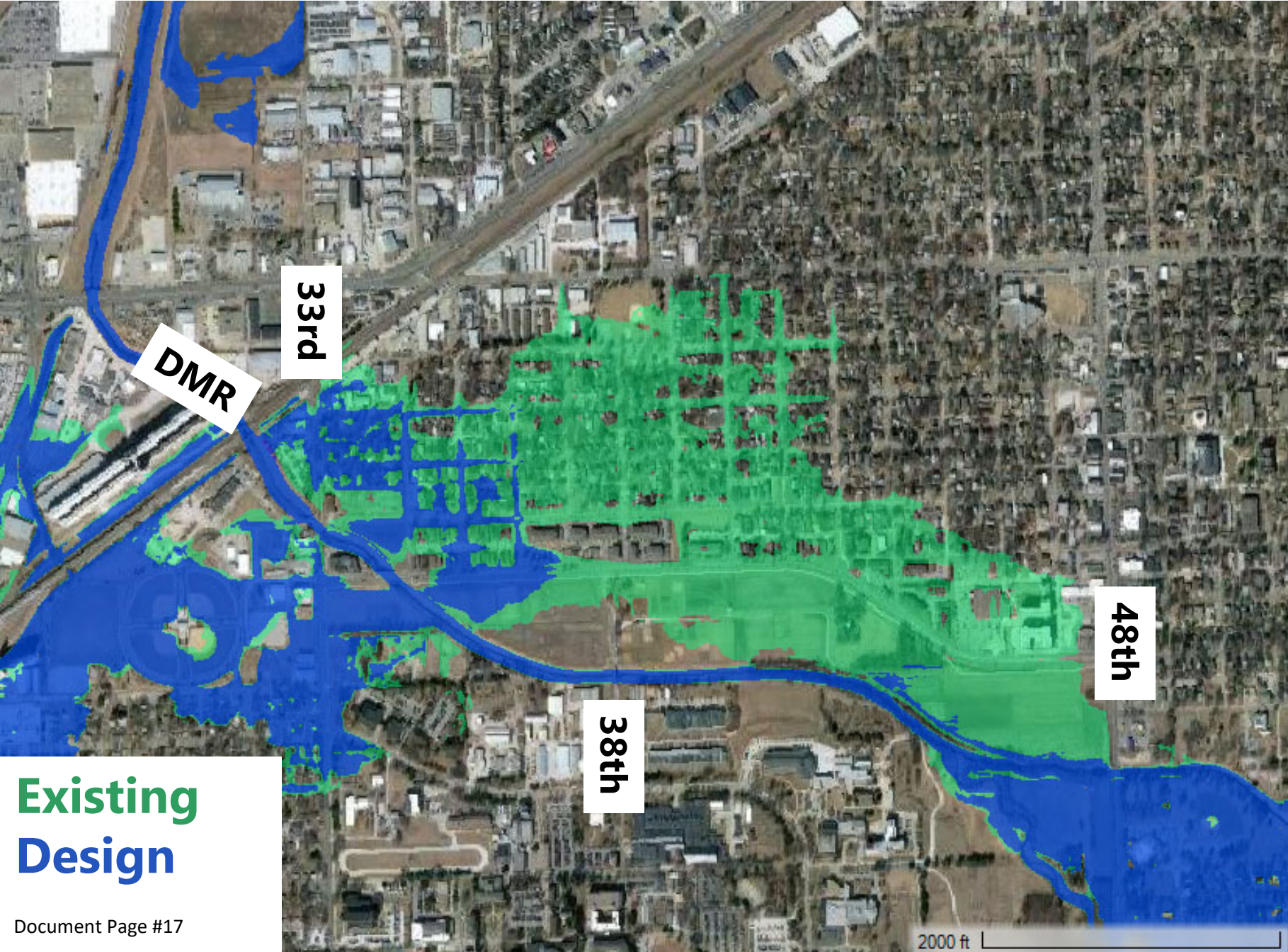
**DMR Railroad Bridges
OL&B (foreground) and BNSF (behind OL&B)**



**DEADMAN'S RUN
FLOOD REDUCTION PROJECT
UPDATE
(Nov. 19, 2021)**

- 1. DMR flume model construction & analysis by UNL.**
 - **NRD contracted with UNL on behalf of the Corps.**
 - **Covid & remodeling of the lab delayed the work.**
 - **Construction of the model is complete.**
 - **Analysis continues with different flume configurations.**
 - **Corps estimated cost of the flume was \$2.2M, updated cost is now \$3.5M.**
- 2. Hydrology/hydraulic review by FYRA.**
 - **Initial review of hydrology/hydraulics showed more detailed analysis was required to insure accurate floodplain mapping.**
 - **Draft modeling results are under a technical review at the Corps.**
 - **The basin (\$2.45M) might not be needed, and other DMRFRP project components may be revised, per Corps modeling review.**
 - **Corps has asked NRD/FYRA to complete additional modeling tasks, and may request more for the Corps design phase.**
 - **May consider having FYRA look at 'betterments' to handle increases in runoff (i.e., from future development and/or increases in rainfall.)**
- 3. BNSF/OL&B RR Bridge considerations.**
 - **NRD contracted with BNSF to review flume/bridge alternatives.**
 - **Corps offered "the project" to contribute \$3.5M to BNSF/OL&B, if the RR's want to build a new railroad bridge (in lieu of Corps building a flume).**
- 4. RTSD/City 33rd & Cornhusker Project Considerations (relocate 33rd to an overpass over the RRs and DMR).**
 - **Overland flow problems/solutions need to be coordinated and the designs modified on both projects.**
 - **33rd Street Bridge for DMRFRP won't work for 33rd & Cornhusker Project, alternatives are being considered by City.**

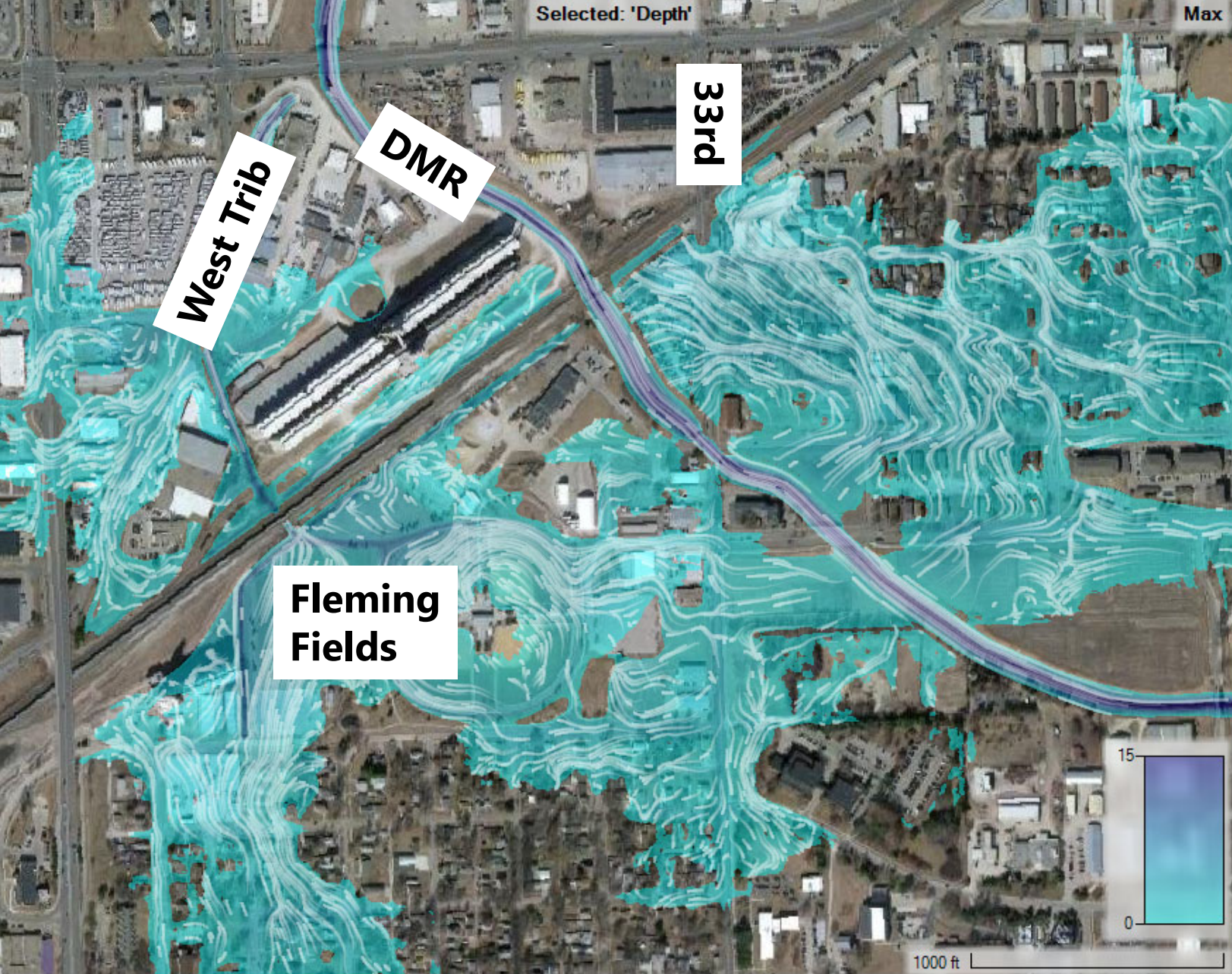
Hydraulics



**Existing
Design**

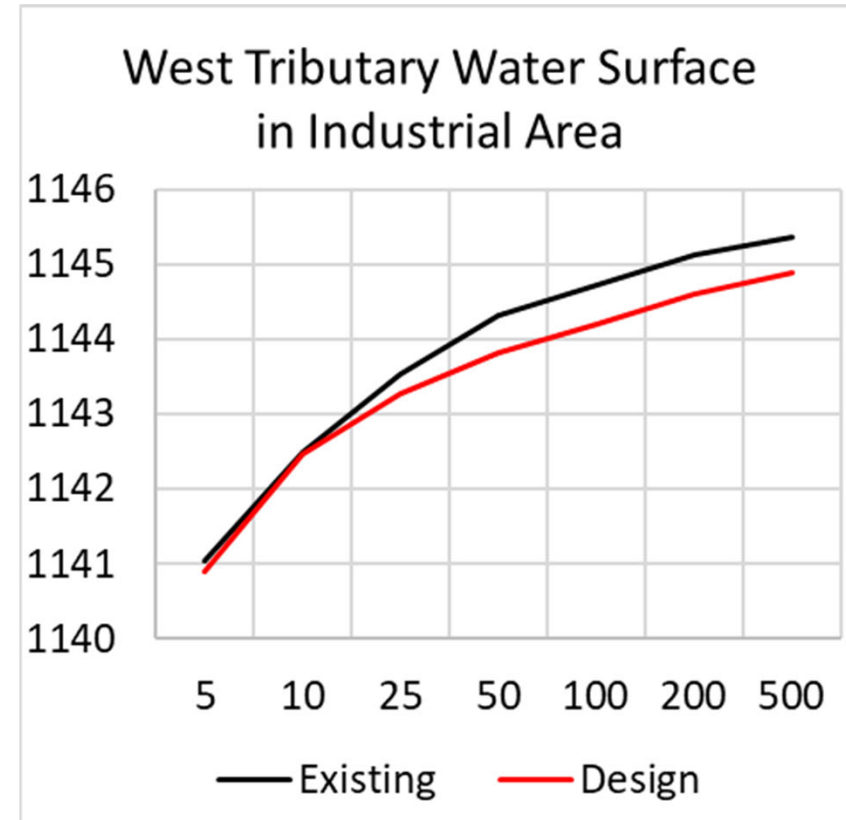


Hydraulics - Existing Conditions



Detention Requirement

- **Prior to the hydrology and hydraulics updates** the design conditions model showed a **rise** in water surfaces on West Trib that **induced damages** and the planned detention basin mitigated these induced damages.
- **After the hydrology and hydraulics updates** the design conditions model **does not show a rise** on West Trib, so induced damage mitigation (**detention basin**) is not required.



Design conditions water surfaces remain below the existing conditions water surfaces