



Newfolden / Middle River  
Subwatershed Flood Reduction  
Project Team Meeting  
July 10, 2017



**Middle-Snake-Tamarac Rivers Watershed District  
Project Team  
Middle River Meeting #6 - Agenda**

9:30 AM Monday, May 22<sup>nd</sup>, 2017

Newfolden Community Center

Newfolden, Minnesota

- 9:30 Call to Order / Introductions
- 9:40 Purpose & Need for Action
- Purpose & Need Statement
- 10:00 Discussion of Alternatives
- Refine Alternatives / Alternatives Screening Update
  - Landowner Meeting Updates
- 10:40 Development of Project Partners
- FEMA / MnDNR Update
  - Railroad Update
- 10:55 Action Items Needed Before Next Meeting
- Schedule Next Meeting
  - Task Assignments
- 11:00 Adjourn

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**CONVERSATION GROUND RULES:**

1. Everyone participates; no one dominates.
2. There is not one "right" answer.
3. Keep an open mind.
4. Listen carefully to others.
5. Help keep the discussions on track.
6. Try hard to understand the views of those who disagree with you.
7. Ask questions if you are uncertain of the meaning of someone else's comments.
8. It is okay to have friendly disagreements – everyone has a right to his/her own views.
9. To help bring closure to a discussion, use the "I can live with it" rule.

# PROJECT OBJECTIVES TO DEVELOP PURPOSE & NEED

- Remove Newfolden from floodplain and eliminate flood damages
- Minimize flood insurance
- Enhance future development
- Minimize upstream / downstream flooding / impacts
- Improve water quality & natural resources



# PURPOSE

- Remove Newfolden from 1% Annual (100 year) Floodplain

# NEED

- ~43 Residences, multiple elevator structures, a church, park, and apartment building in floodplain
- 10 out of 14 properties surveyed are within ½ foot of the Preliminary BFE of 1098.1'
- Structures within floodplain with federally secured mortgage require flood insurance
- City of Newfolden required to adopt a floodplain ordinance
- Economic & residential expansion will be difficult
- Structures in the floodplain will have less value
- New structures must be built 1.5' above BFE
- Home additions may not exceed 50% of home value
- Eliminate unsafe dam hazard
- Rehabilitate deteriorating RR culverts
- Provide safer passage for trains carrying HAZMAT



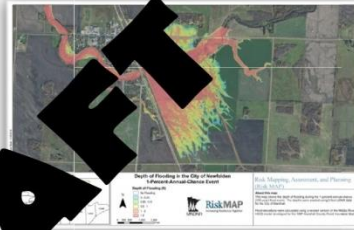
**Purpose and Need Statement**

*The purpose of this project is to remove the City of Newfolden from the 1% Annual (100 Year) Floodplain while maintaining or reducing downstream flood levels.*

**Problem Statement**

The City of Newfolden is located in northwestern Minnesota in Marshall County. In 2015, the Department of Homeland Security's Federal Emergency Management Agency (FEMA) performed a Flood Insurance Study (FIS) and developed a draft Flood Insurance Rate Map (FIRM) for Newfolden. As a result of that study, FEMA has mapped the majority of the eastern half of Newfolden in the 1% Annual (100 Year) Floodplain.

The eastern half of Newfolden is currently occupied by approximately 45 residences, the local grain elevator, a church, a park, and an apartment complex. All structures within the 1% Annual (100 Year) Floodplain with a federally secured mortgage will be required to obtain flood insurance. The required flood insurance will cost tens of thousands of dollars annually within the community that could otherwise be spent on the local economy. In addition to the costs of flood insurance, property owners will see a decrease in property values due to the floodplain designation.



The City of Newfolden will be required to adopt a floodplain ordinance which will make economical, residential, and recreational expansion difficult. Residents and business owners looking to construct an addition will be required to obtain a floodplain permit and construct first floor levels at a minimum of 1.0 foot above the Base Flood Elevation, which is not at the first floor elevation of existing structures. All structural improvements will be limited to 50 percent of the market value of the existing structure.

The Red River Basin Flood Damage Reduction Work Group Mediation Agreement specifies that one of the flood damage reduction goals in the Red River Basin is to prevent damage to communities, homes, and farm structures by providing flood protection from the 1% annual flood (100 year). The City of Newfolden will be in direct conflict with this goal based on the recent Floodplain mapping mandated by FEMA.

The existing railroad embankment is functioning as a high hazard dam during significant flood events. The railroad culvert structures in the Middle River do not have sufficient capacity, and thus are creating 10 feet of impounded water to the east of the embankment during a 1% chance event. This hydraulic head creates a hazard for residents and structures downstream. The culvert structures are currently in poor condition and nearing the end of their life expectancy. Multiple trains containing crude oil cars pass along this rail line on a regular basis. These circumstances create the potential for a public health, public safety, or environmental emergency.

**Comment [CLJ1]:** This currently has the potential to cause problems so there are a couple ways to deal with the statement of reducing ds flows.

1. If there truly is a need to reduce ds flows we will need much more information regarding the ds problems. Information such as what is flooding, how often and at what events, duration, and what are the impacts/losses of the flooding. This detailed information essentially needs to justify the need of reducing ds levels.

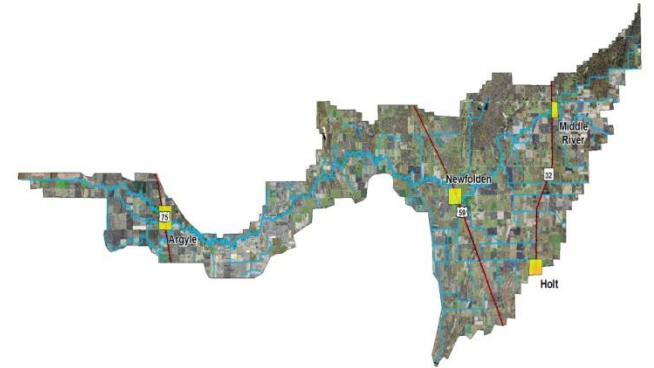
2. If the project is to solely focus on newfolden, we should remove this statement and leave it at removing the city from the 100 floodplain. I understand the potential of a project to increase the ds levels so, we can either handle that issue through the alternative analysis or insert language stating, "remove newfolden...while not increasing levels downstream."

My recommendation is to keep the P&N statement clean and account for the potential of increase levels ds in the alternatives analysis. During the Alt analysis, we would look the ds impacts of a particular alternative and possibly dismiss an alternative based on increased ds impacts.

**Comment [CLJ2]:** This paragraph is a good addition

## Review Comments From USACE

- Suggested “Removal of Newfalden from the 1% annual chance floodplain”
- Then develop alternatives based on P&N
- USACE would permit alternative that best addresses P&N and also is the Least Environmentally Damaging Practicable Alternative (LEDPA)



### Concept Feasibility Study

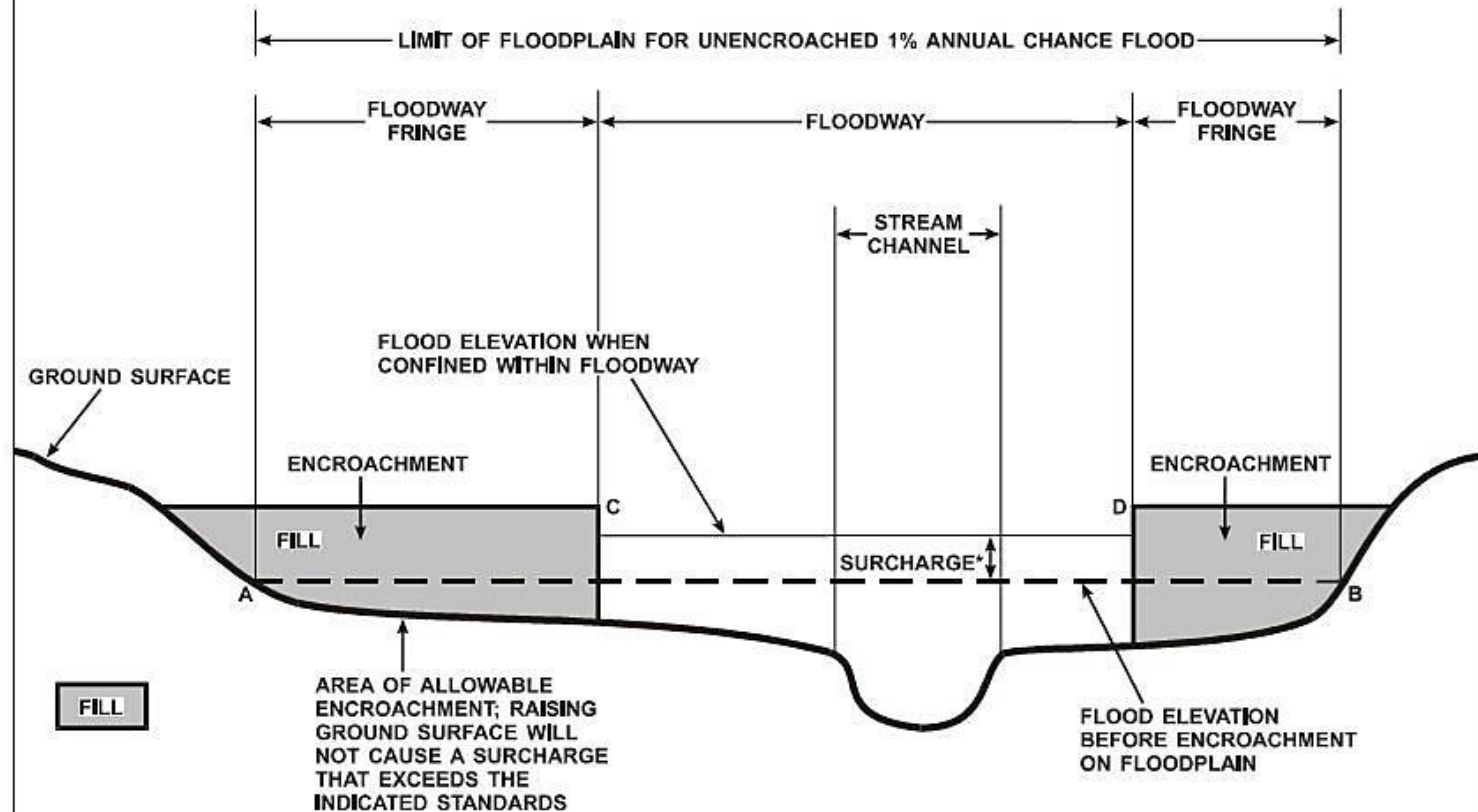
Middle River Subwatershed  
Middle-Snake-Tamarac Rivers Watershed District

Marshall County, Minnesota  
October 17, 2016

# FEMA / MNDNR MEETING

- FEMA appeal not acted upon, BFE may be set at 1098.1'. Concerns about raised RR and LIDAR topo will not be re-evaluated at this time.
- Maps could be finalized in 12-15 months
- Can use preliminary BFE for Elevation Certificates
- Model floodplain ordinance states new construction must be 1.5' above BFE
- If WSE lowered 0.01' below ground el. = could be removed from floodplain.  
HOWEVER.....

- Recommend a Factor of Safety (FS) due to floodway and future development
  - 1' below lowest ground in city minimum
- Would account for additional growth and construction within the floodplain
- FEMA can remap at anytime - LOMR / LOMA could remove areas from floodplain
- Steps to remove Newfolden
  - Design a project
  - Submit a CLOMR (Conditional Letter of Map Revision)
  - Construct Project
  - Submit a LOMR



FILL

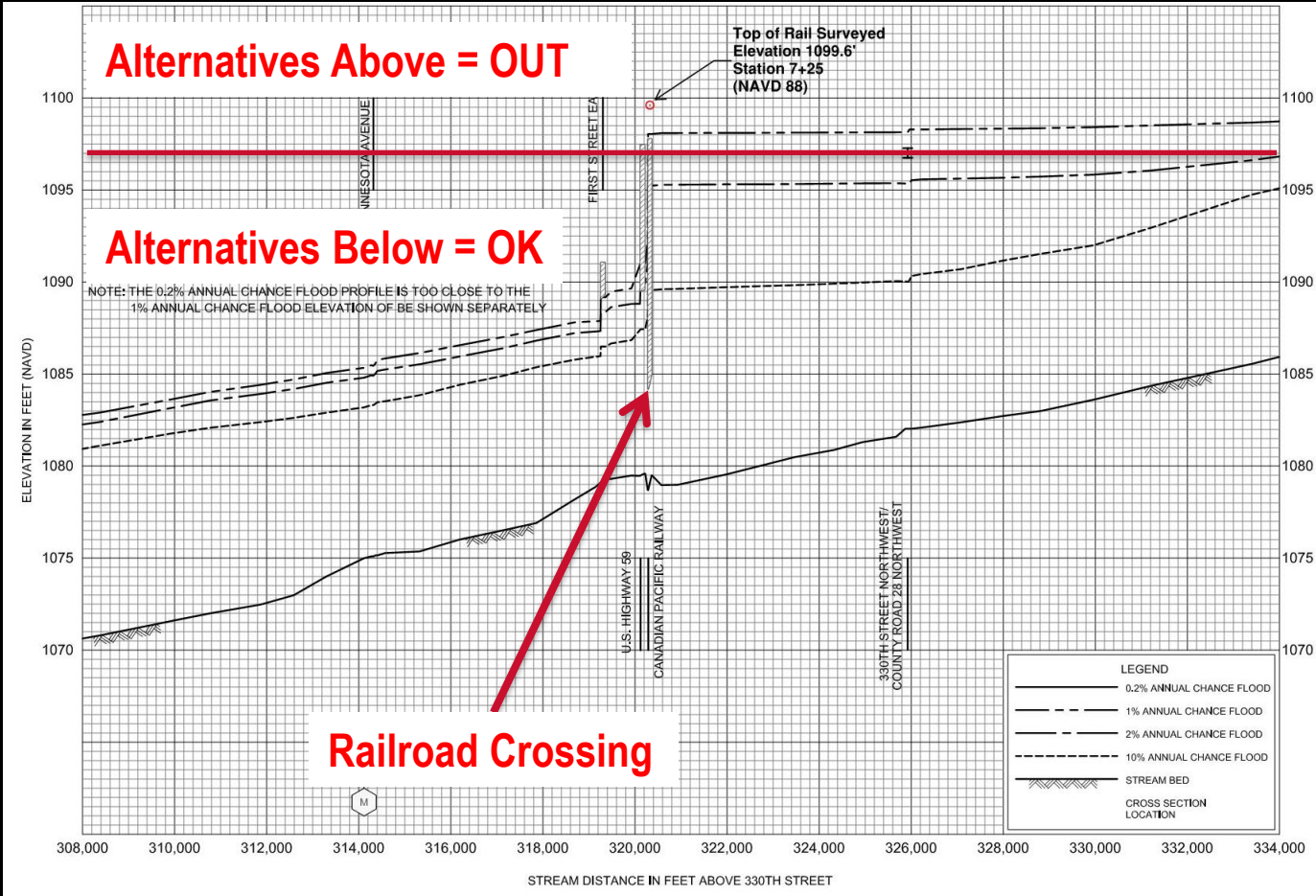
AREA OF ALLOWABLE ENCROACHMENT; RAISING GROUND SURFACE WILL NOT CAUSE A SURCHARGE THAT EXCEEDS THE INDICATED STANDARDS

LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT  
 LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT

\*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER HEIGHT IF SPECIFIED BY STATE OR COMMUNITY.



WSE 1097.1'



Alternatives shaded in blue may reduce WSE 1' below lowest natural ground in Newfolden east of the RR.

Alternative	Reduces Subwatershed Peak Flows	Reduces Subwatershed Runoff Volume	Decreases WSE at Newfolden	Improves Riparian Habitat	Enhances Water Quality	Benefits Highways	Benefits Railroad
48" CSP	N	N	Y	N	N	N	Y
54" CSP	N	N	Y	N	N	N	Y
(2) 48" CSP	N	N	Y	N	N	N	Y
(2) 54" CSP	N	N	Y	N	N	N	Y
(3) 9' x 9' Box Culverts	N	N	Y	N	N	N	Y
(5) 9' x 9' Box Culverts	N	N	Y	N	N	N	Y
Certified Levee	N	N	N	N	N	N	N
Certified Levee Expanded	N	N	N	N	N	N	N
Diversion Channel	N	N	Y	N	N	Y	Y
Detention Site B	Y	Y	Y	Y	Y	Y	Y
Detention Site C	Y	Y	Y	Y	Y	Y	Y
Detention Site A	Y	Y	Y	Y	Y	Y	Y
Detention Site F	Y	Y	Y	Y	Y	Y	Y
Detention Site G	Y	Y	Y	Y	Y	Y	Y
Detention Site B w/ Culvert Alt.	Y	Y	Y	Y	Y	Y	Y
Detention Site C w/ Culvert Alt.	Y	Y	Y	Y	Y	Y	Y
Detention Site A w/ Culvert Alt.	Y	Y	Y	Y	Y	Y	Y
Detention Site F w/ Culvert Alt.	Y	Y	Y	Y	Y	Y	Y
Detention Site G w/ Culvert Alt.	Y	Y	Y	Y	Y	Y	Y

# PURPOSE

Remove Newfolden from 1% Annual (100 year) Floodplain

or

Remove Newfolden from 1% Annual (100 year) Floodplain a minimum of 1' below the BFE.

## Pros

- Revised Purpose would quickly eliminate alternatives not meeting 1' goal
- Greater Factor of Safety for Newfolden and future development

## Cons

- Potentially lead to larger project (multi solution vs. single solution)
- May not be required & may complicate USACE process



# PROGRESS UPDATE

- Railroad Meeting
- BFE Letter from FEMA
- Landowner Meetings
- Alternatives Screening

# PROJECT DEVELOPMENT AND NEXT STEPS

- Narrow alternatives
- Continue landowner & partner discussions
- Submit P&N to USACE
- Finalize Elevation Certificates
- Update Feasibility Study Report



HDR

The requirement for a permit from the Managers for certain uses of water or for certain works within the District is not intended to delay or inhibit development, rather the permits are needed so that the Managers are kept informed of planned projects. The Managers can advise, in some cases provide assistance and insure that development of the resources of the District is orderly and in accordance with the overall plan of the District.

#### **MSTRWD permit is required if:**

- Water is to be diverted from one watershed to another.
  - Water is to be drained to a legal ditch.
    - A ditch is to be repaired.
    - A marsh is to be drained.
  - A dike is to be constructed or altered.
  - A reservoir is to be drained or constructed.
- A bridge, culvert, or drain is to be installed or changed.
  - A natural waterway, lake, or marsh is to be changed.
- Construction is to be done near a waterway, lake, or marsh.
  - Drain tile is to be installed
  - A bridge is to be constructed or altered.
- The elevation of a public roadway is to be altered.

#### **General Instructions**

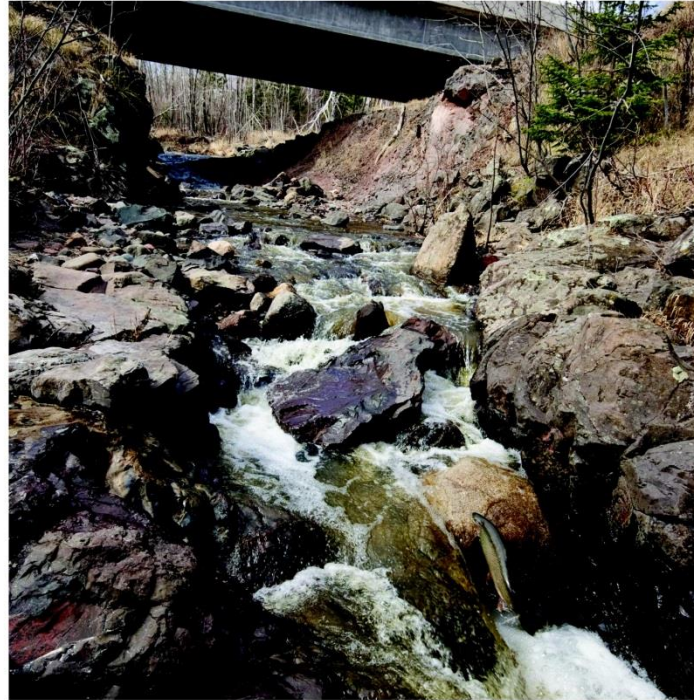
An application for a permit must be submitted by Wednesday prior to the meeting, by the owner or owners of the lands involved or their agent. If the applicant is a public corporation the application may be submitted by the person designated to oversee the activity for which a permit is requested.

- Applications submitted by a property owner on behalf of a lessee must be countersigned by the lessee.
  - Applications shall be filed with the Secretary or Administrator for the District.
- A plan should accompany the application; if a plan lacks important information the Managers may request the applicant to furnish whatever additional information they deem appropriate.
- That all permit requests shall be submitted to the District on forms provided. District Staff will conduct appropriate investigation of the request, including site investigation, Engineer review & recommendations, and contacts of affected individuals and agencies as deemed necessary to provide a recommendation to approve or deny. The frequency design of the affected ditch and district policies that apply shall be noted by District staff, as well as anticipated effect of the request. All permit requests shall come before the Board at a scheduled meeting for further review, discussion, and appropriate action. The following exceptions shall apply: That the District Administrator is authorized to approve the following permits prior to the next regular scheduled board meeting:
  - Temporary emergency repairs requested by a Government Agency (township, city or state) when public safety is a factor;
    - Replacement of culverts with similar diameter and or elevation and location;
    - Lengthening of in-place culverts
  - Requests from other governmental agencies (township, city and state) that include hydraulic analysis performed by a registered Engineer.

Adequate time for review of the permits shall be not less than 3 working days prior to the regular scheduled board meeting. Permits that are received, that do not have sufficient time for the District Staff or the Engineer to review shall be addressed at the next scheduled meeting.

## Chapter 2. Hydraulic and Hydrologic Recommendations

The following pages contain several detailed illustrations, notes and guidance of Best Practice options for Hydraulic and Hydrologic design of structures impacting Public Waters. Each site will have to be evaluated to ensure that replacement of an existing structure does not result in an increase of flood potential to upstream or downstream properties. Additional information is also provided to improve or repair stream stability and local habitat.





# Timeline

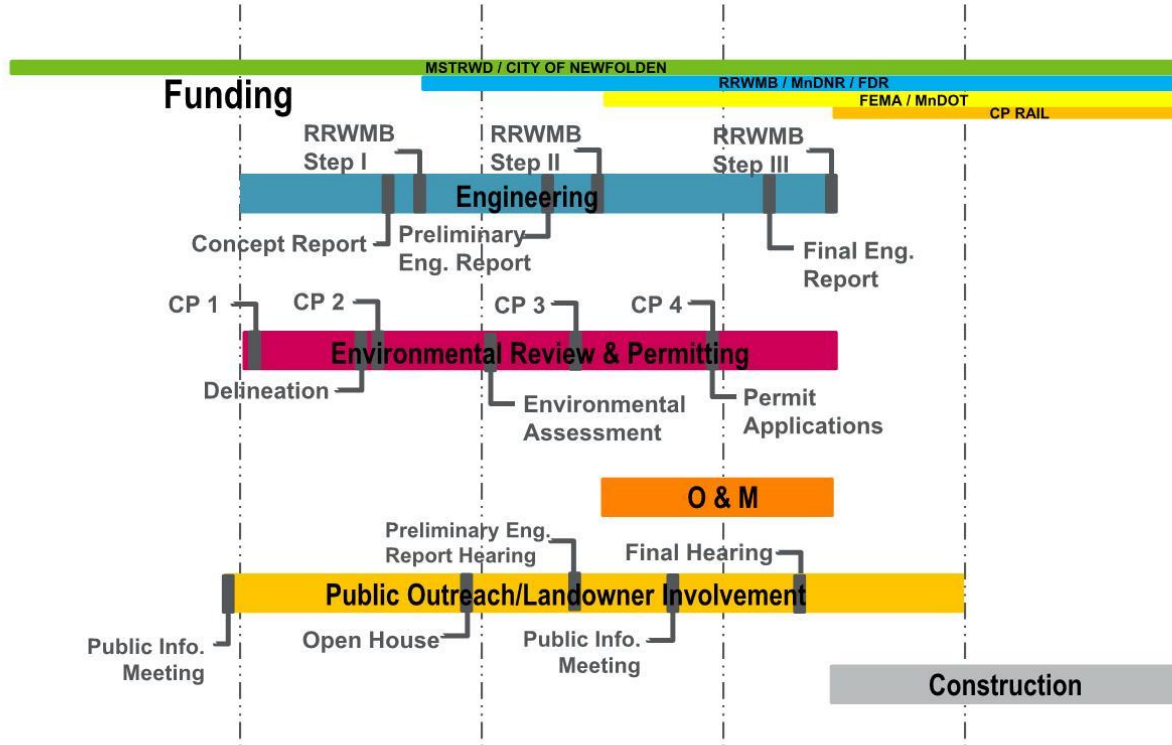
2016

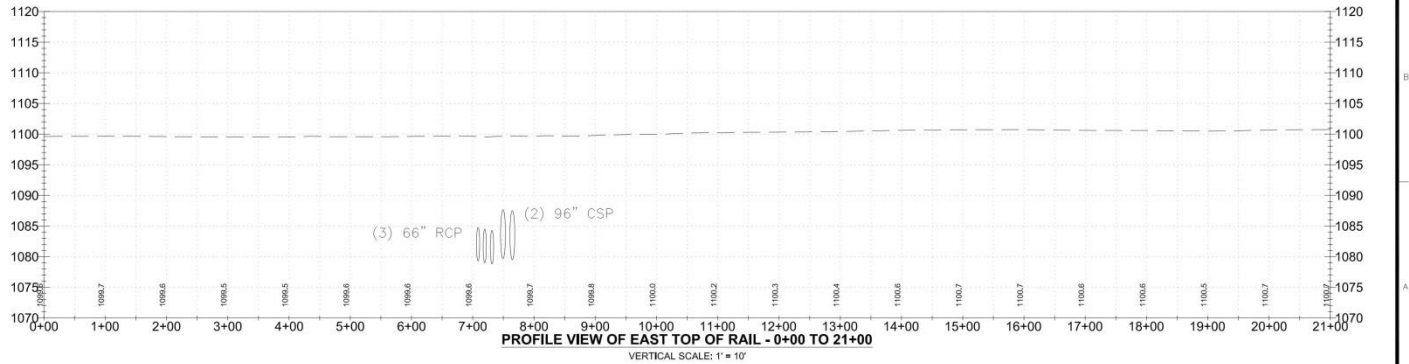
2017

2018

2019

2020





ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	Nathan P. Dalager
DESIGNED	D. Nelson
CHECKED	R. Knott
DRAWN	D. Nelson

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

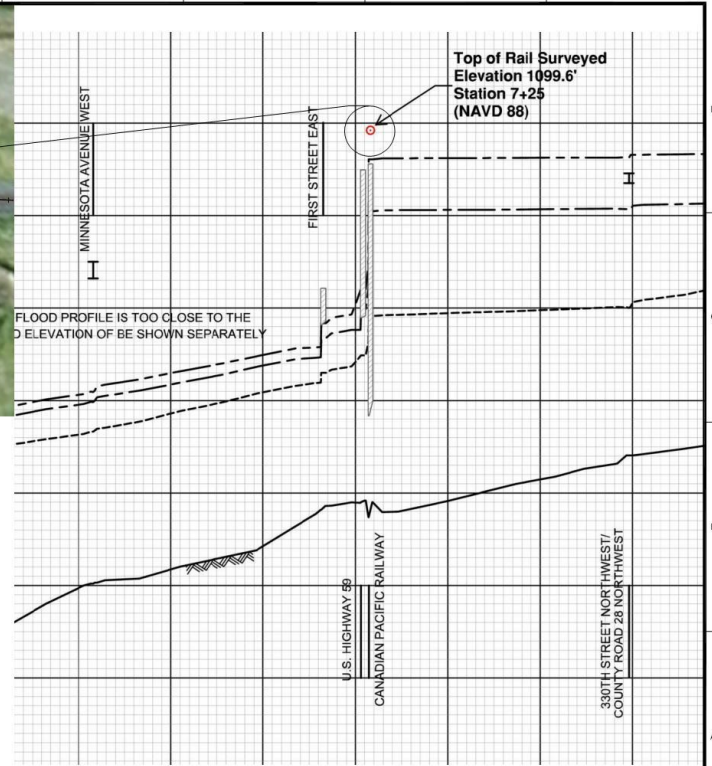
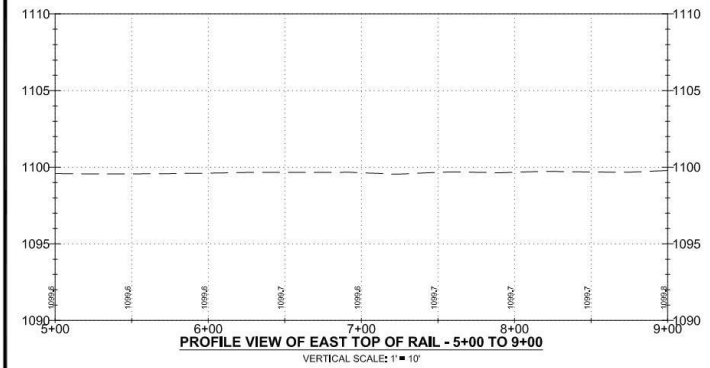
DATE 11/19/2016 REG. NO. 25309

*Nathan P. Dalager*  
Nathan P. Dalager

CITY OF NEWFOLDEN  
PO BOX 188 - 145 EAST FIRST ST.  
NEWFOLDEN, MN 56738 (218) 874-7135

**CITY OF  
NEWFOLDEN, MN**

CANADIAN PACIFIC RAILWAY TOP OF RAIL SURVEY 11-17-16 FIGURE 1-1					
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FILENAME					
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DATE: 11/15/2016 REG. NO.: 25369  
*Nathan P. DeBeger*  
 Nathan P. DeBeger

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 NEWFOLDEN, MN 56738 (218) 874-1135

**CITY OF  
 NEWFOLDEN, MN**

CANADIAN PACIFIC RAILWAY  
 TOP OF RAIL SURVEY 11-17-16  
 FIGURE 1-2

0 100' 200' 300'

FILENAME: \_\_\_\_\_ SHEET: **2**