

Downtown Moorhead Railroad Grade Separation Feasibility Study

July 2008



Submitted to:
City of Moorhead, MN

By:
Ulteig Engineers, Inc.
& HDR Engineering, Inc.



FEASIBILITY STUDY

Downtown Moorhead Railroad Grade Separation Moorhead, Minnesota UEI Project No. 106.0754

July 2008

CERTIFICATION

I hereby certify that this 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.

Printed Name: Matthew T. Kinsella

Signature: 

Date: 07/31/08 License #: 45297

Feasibility Study
Downtown Moorhead Railroad Grade Separation
Moorhead, Minnesota
UEI Project No. 106.0754

July 2008

The preparation of this document was funded in part by the United States Department of Transportation with funding administered through the North Dakota & Minnesota Departments of Transportation, the Federal Highway Administration and the Federal Transit Administration. Additional funding was provided by the Minnesota Department of Transportation and through local contributions from the governments of Fargo, West Fargo, and Cass County in North Dakota; and Moorhead, Dilworth, and Clay County in Minnesota. The United States Government and the States of North Dakota and Minnesota assume no liability for the contents or use thereof.

This document does not constitute a standard, specification, or regulation. The United States Government, the States of North Dakota and Minnesota, and the Metropolitan Council of Governments do not endorse products or manufacturers. Trade or manufacturers' names appear herein only because they are considered essential to the objective of this document.

The contents of this document reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the policies of the state and federal Departments of Transportation.

**Feasibility Study
Downtown Moorhead Railroad Grade Separation
Moorhead, Minnesota – July 2008**

TABLE OF CONTENTS

	<u>Page No.</u>
I. INTRODUCTION	1
A. Study Background and Need	1
B. Study Objectives	1
C. Study Area	2
II. AGENCY AND PUBLIC INVOLVEMENT	5
A. Study Review Committee	5
B. Coordination with BNSF	6
C. Public Involvement Process	6
III. INITIAL SCREENING OF POTENTIAL CROSSING LOCATIONS	7
A. Fatal Flaw Screening	7
B. Comparison Screening	8
IV. EXISTING CONDITIONS AT 11TH STREET & 14TH STREET	19
A. Roadway Conditions	19
B. BNSF Railroad	21
C. Utilities	22
D. Transit Routes	23
E. Current Study of 1 st Avenue North Corridor	23
V. ISSUE IDENTIFICATION AT 11TH STREET & 14TH STREET	27
A. Vehicle and Pedestrian Safety Issues	27
B. Traffic Access and Mobility Issues	27
C. Railroad Consolidation Issues	28
D. Utility Impact Issues	28
E. Property Impact Issues	29
F. Environmental Issues	29
VI. ALTERNATIVE DEVELOPMENT AND EVALUATION	33
A. 11 th Street Concept #1 – Center Avenue Lowered to Meet 11 th Street At-grade	34
B. 11 th Street Concept #2 – Center Avenue Stays at Existing Grade, Passes Over 11 th Street Tunnel (No Connection to 11 th Street)	35
C. 11 th Street Concept #3 – Center Avenue Stays at Existing Grade, Passes Over 11 th Street Tunnel (With Connection to 11 th Street)	36
D. 14 th Street Concept – Center Avenue Lowered to Meet 14 th Street At-grade	37
E. Comparison of 11 th Street and 14 th Street	38
VII. STUDY CONCLUSIONS	53

LIST OF TABLES

	<u>Page No.</u>
Table 6.1 – Design Assumptions for 11 th Street & 14 th Street Alternatives	34
Table 6.2 – 11 th Street/14 th Street Comparison Table	39
Table 7.1 – Downtown Moorhead Railroad Grade Separation – Project Development Process and Estimated Timetable	53
Table 7.2 – Approximate Right-of-Way Acquisition and Construction Costs for Concepts at 8 th Street, 11 th Street, and 14 th Street	54

LIST OF FIGURES

Figure 1.1 – Study Area Map	3
Figure 3.1 – Existing RR Crossings in Moorhead	11
Figure 3.2 – Fatal Flaw Decision Matrix	13
Figure 3.3 – Crossing Location Comparison Matrix (1 of 2)	15
Figure 3.4 – Crossing Location Comparison Matrix (2 of 2)	17
Figure 4.1 – Existing Utility Map	25
Figure 5.1 – Issues Map	31
Figure 6.1 – 11 th Street Concept #1	41
Figure 6.2 – 11 th Street Concept #2	43
Figure 6.3 – 11 th Street Concept #3	45
Figure 6.4 – 14 th Street Concept	47
Figure 6.5 – Profiles – 11 th Street Concepts	49
Figure 6.6 – Profiles – 14 th Street Concept	51

APPENDICES

Appendix A	Design Criteria and Supporting Data
Appendix B	Public Involvement Documentation
Appendix C	Conceptual Cost Estimates

I. INTRODUCTION

A. Study Background and Need

The absence of a grade-separated crossing of the railroad tracks in downtown Moorhead has long affected local travel patterns for both vehicles and pedestrians. As automobile and train traffic volumes continue to rise, the City of Moorhead (City) has focused on finding feasible solutions to critical problems such as vehicle and pedestrian safety, traffic congestion, and delays to emergency vehicle response times.

The City previously studied the possibility of a downtown railroad grade separation in the late 1970s. Since then, significant changes in land development, land use, and traffic patterns have occurred. With this knowledge, the City commissioned a new study to evaluate the feasibility of constructing a railroad grade separation.

Needs for a railroad grade separation in downtown Moorhead include:

- Decreasing the number of train-vehicle exposures in downtown Moorhead
- Enhancing safety for pedestrians and bicyclists
- Reducing delays to emergency response times
- Reduce traffic congestion and delays for vehicles traveling in downtown Moorhead

B. Study Objectives

The objectives of this Study are:

- To identify the most feasible location(s) for a railroad grade separation within the downtown area.
- To determine whether a railroad grade separation in downtown Moorhead is feasible, from a constructability and cost standpoint.
- To provide the public an opportunity for early and continuing project involvement.
- To initiate communication with the BNSF Railway (BNSF) concerning a railroad grade separation in downtown Moorhead.
- To supply information to elected officials who may need to actively promote desired improvements.
- To identify future traffic analysis needs.

Introduction

- To determine realistic potential right-of-way needs.
- To present cost information for decision making, prioritization, and budgeting.
- To provide a baseline for future engineering efforts.

C. Study Area

The **overall study area** extends from west of 4th Street to east of 15th Street, and encompasses all eight existing at-grade railroad crossings within that area.

The **focused study area** is bounded by 10th Street on the west, 15th Street on the east, 2nd Avenue South on the south, and 2nd Avenue North on the north. **Figure 1.1** contains an aerial photo on which the overall study area and focused study area are shown.

The following roadways are also recognized by the listed US highway or state highway name:

- **County State Aid Highway (CSAH) 3:** 11th Street (north of 1st Avenue North)
- **US 10/US 75:** 8th Street (from Main Avenue to Center Avenue),
Center Avenue (east of 8th Street)
- **US 10:** Main Avenue (west of 8th Street)
- **US 75:** 8th Street (south of Main Avenue)

US (Trunk) Highways 10 and 75 are under Mn/DOT jurisdiction. The other study area streets are under City jurisdiction. Land use through the study area is primarily zoned as Community Commercial.

II. AGENCY AND PUBLIC INVOLVEMENT

A. Study Review Committee

A Study Review Committee (SRC) was formed at the beginning of the Study process, with the following primary objectives:

- To provide general guidance on the direction of the study
- To assist in identifying issues and reviewing analysis
- To evaluate information prior to public viewing
- To review proposed responses to public comments
- To enable SRC members to relay project information to their constituents

A total of three separate meetings were held with the SRC over the course of the Study:

1. December 20, 2006
2. March 20, 2007
3. March 27, 2008

Copies of SRC meeting summaries can be found in **Appendix B**. The SRC included participation from the following agencies and individuals:

City of Moorhead

Bob Zimmerman, PE - *City Engineer*
Tom Trowbridge, PE - *Asst. City Engineer*
Clair Hanson - *Asst. to the City Engineer*
Peter Doll - *Bus. & Devel. Services Manager*

FM Metro COG

Brian Gibson - *Transportation Planner*

Clay County

David Overbo, PE - *County Engineer*

Mn/DOT

Mark Waisanen, PE - *Prog. Devel. Manager*

BNSF Railway

Spencer Arndt - *Assistant Director Public Projects*
Lynn Leibfried, PE - *Manager Public Projects*

Ulteig Engineers

Dain Miller, PE - *Project Manager*
Matt Kinsella, PE - *Project Engineer*

HDR

Bobby Oare, PE - *Project Engineer*
Leif Thorson, PE - *Senior Rail Engineer*

Agency and Public Involvement

B. Coordination with BNSF

In addition to BNSF's participation in the SRC as described above, other methods of coordinating with and involving BNSF in the Study process included:

- Providing draft copies of layouts and exhibits for BNSF review (both hard copies and PDFs).
- July 18, 2007 separate coordination meeting at the BNSF Fargo office.
- April 29, 2008 conference call to discuss 14th Street layout issues with BNSF staff.
- Various phone calls and e-mails to coordinate project issues and update Study status.

C. Public Involvement Process

During the Study, two public input meetings were held to provide opportunities for the public to review project information and to provide comments on the Study process. The public notification process for each meeting included two advertisements in the Forum and a general mailing to addresses within the affected project area. The public process for this Study had the following goals:

- To utilize input to help identify critical issues
- To present railroad grade-separated crossing alternatives for public review and comment
- To determine the viability of crossing alternatives, and gauge public support for the improvement concepts
- To provide information about the short-term and long-range project schedule

After Study issues were identified, location screening were completed, and preliminary crossing alternatives were developed, the first public input meeting was scheduled. This meeting was held on Tuesday, May 22, 2007, at the Hjemkomst Center in Moorhead. The meeting was open house format, with a formal presentation and question-and-answer session.

At that first public meeting, several people commented that they felt that the 14th Street location was more desirable than the 11th Street location, and they asked that the Study team take another look at 14th Street. The SRC heard these comments, and subsequently went back to analyze the 14th Street location in greater detail. The results of this analysis and the comparison to 11th Street were presented at the second public meeting, which was held on Tuesday, May 13, 2008, at the Hjemkomst Center in Moorhead. These results are presented later in this report.

Public comments from these two meetings and SRC responses to those comments, as well as all other sources of public input, can be found in **Appendix B**. In general, most comments at the two public meetings fell into one of the following subject areas:

- Location of underpass (11th Street vs. 14th Street)
- Impacts to side streets
- Impacts to properties and access
- Costs (both overall project cost and assessed costs)
- Overpass vs. underpass
- Impacts during construction

III. INITIAL SCREENING OF POTENTIAL CROSSING LOCATIONS

The first objective of this Study was to determine the most appropriate location(s) for a railroad grade separation within the downtown Moorhead area. In this chapter, the process used to identify these crossing locations is described.

To begin, the seven north-south streets in the Study area that had existing at-grade crossings as of December 2006 were deemed as eligible locations (see **Figure 3.1**).

- 4th Street
- 5th Street
- 6th Street
- 8th Street
- 10th Street
- 11th Street
- 14th Street

Next, the analysis was divided into two stages: Fatal Flaw Screening and Comparison Screening. For each stage of analysis, decision criteria were established and matrices were developed to help organize and evaluate the data. The process then consisted of the following steps:

- **Fatal Flaw Screening:** Use fatal flaw matrix to determine which locations advance to the Comparison Analysis.
- **Comparison Screening:** Use comparison matrix to evaluate remaining locations and determine the location(s) where a grade separation is most feasible.

A. Fatal Flaw Screening

1. Criteria

The Study Review Committee (SRC) agreed on the following four criteria for the Fatal Flaw Screening:

- **Lack of Continuity** – Does the street corridor provide continuity from the North to South part of the City of Moorhead?
- **Vehicle-Train Exposures** – Does the crossing meet the minimum 300,000 daily train-vehicle crash exposures?
- **Significant Site Constraints** – Can a grade separation be constructed without significant impacts to buildings, property, or other infrastructure?
- **Planned Crossing Closures** – Will the crossing remain open in the future?

Initial Screening of Potential Crossing Locations

2. Fatal Flaw Analysis

Figure 3.2 shows the Fatal Flaw Decision Matrix that was developed and used during the evaluation process. In the matrix, each crossing location is measured against the four criteria listed above, and assigned one of three different ratings by color:

- **Red:** Fatal Flaw – crossing location does not meet criterion
- **Yellow:** Crossing location meets criterion, but with concerns noted
- **Green:** Crossing location meets criterion

Based on the results, a final recommendation was provided to either eliminate the crossing location from further consideration, or advance the crossing location for additional analysis.

To summarize the results from the Fatal Flaw Screening:

- **Advanced for Additional Analysis**
 - 8th Street, 11th Street, 14th Street (met all criteria)
- **Eliminated from Further Consideration**
 - 4th Street, 5th Street (failed to meet 3 of 4 criteria)
 - 6th Street, 10th Street (crossings were closed in 2007 during Quiet Zone project)

B. Comparison Screening

1. Criteria

Additional analysis was conducted for the three crossing locations that were advanced from the Fatal Flaw Screening. For this Comparison Screening stage of analysis, the SRC agreed on the following main criteria categories:

- Property Impacts
- Safety
- Emergency Vehicle Access
- Traffic Capacity/Mobility
- Constructability & Design
- Environmental Impacts
- Costs/Economics
- Railroad Issues

2. Comparison Analysis

Figure 3.3 and Figure 3.4 show the Crossing Location Comparison Matrix that was used to narrow the focus of this Study down to one crossing location. Five different crossing options at three separate locations were measured against the criteria listed above. The crossing options were:

- **Option #1:** 8th Street Grade-separation at both KO and Prosper
- **Option #2:** 8th Street Grade-separation at KO only, Prosper crossing remains at-grade
- **Option #3:** 11th Street Grade-separation at both KO and Prosper
- **Option #4:** 11th Street Grade-separation at KO only, Prosper crossing remains at-grade
- **Option #5:** 14th Street Grade-separation at both KO and Prosper

At 14th Street, an option to grade-separate at the KO line only was determined to be not feasible due to the proximity of the KO and Prosper railroad lines to each other (about 320 feet apart at 14th Street).

Each of the eight main criteria categories listed previously contained one or more sub-categories. The sub-categories were evaluated and assigned a rating from ●○○○○ (Least Beneficial) to ●●●●● (Most Beneficial). The rankings within these subcategories were then summed to establish an overall category ranking and ultimately a final total for each crossing option. The SRC discussed and compared the options, and also considered the public comment that had been received at the first public meeting.

At this point in the Study process, Options #2 and #4 (grade-separating only the KO line and not the Prosper Line) were eliminated from further consideration. Upon further analysis, it was determined that these options do not meet several of the Study needs and objectives, since an at-grade crossing would still remain along the corridor.

When measured against the criteria, Option #3 (11th Street) and Option #5 (14th Street) fared best among the remaining three options. Comments on the results of the comparative screening:

- The option at 8th Street results in the most significant property and private access impacts, and the highest cost.
- 8th Street does not provide the same degree of north-south continuity compared to either 11th Street or 14th Street, which is important in relation to traffic capacity and emergency response times.
- Utility impacts are higher at 8th Street compared to the other locations.
- 11th Street and 14th Street have undeveloped parcels that could be used for an on-site retention pond, while 8th Street does not have a good location for this pond.

The SRC determined that **Option #3 - 11th Street** and **Option #5 - 14th Street** should be carried forward for alternative development and additional comparison against each other.

Initial Screening of Potential Crossing Locations

This page intentionally left blank.

IV. EXISTING CONDITIONS AT 11TH STREET & 14TH STREET

Existing conditions are described for the following transportation corridors within the **focused study area**: BNSF KO Line and Prosper Line, 11th Street, 14th Street, Main Avenue, Center Avenue, and 1st Avenue North.

A. Roadway Conditions

1. 11th Street

11th Street is classified as a minor arterial street and runs continuously north-south through most of the City of Moorhead, terminating on the south at 28th Avenue South (just north of I-94). Within the Study area, the roadway has the following characteristics:

- Lane Configuration:
 - **12th Avenue South to 2nd Avenue South** – Two-lane, 1-way (southbound) Municipal State Aid Street (parking lanes are present south of 9th Avenue South).
 - **2nd Avenue South to 1st Avenue North** - Four-lane, 2-way Municipal State Aid Street.
 - **North of 1st Avenue North** - Two-lane, 2-way (CSAH 3) (parking lanes are present in some stretches).
- Pavement Surface: North of Center Avenue, 11th Street is surfaced with bituminous pavement over concrete pavement. South of Center Avenue, 11th Street is surfaced with concrete pavement.
- Access: There are a number of private property accesses on both sides of 11th Street. The City recently acquired the parcels on the west and east sides of 11th Street just south of 1st Avenue North, so access to these parcels is not currently provided.
- Signalization: Within the Study area, traffic signals are present on 11th Street at Main Avenue, Center Avenue, and 1st Avenue North.
- Sidewalks: Sidewalks (width varies, minimum 5 feet) are present on both sides of 11th Street through the study corridor.
- Right-of-Way: The width of the 11th Street right-of-way is 66 feet.
- Landscaping: Minimal to none, since space within the right-of-way is limited.

2. 14th Street

14th Street is classified as a minor arterial street and runs for three miles north-south through the midsection of Moorhead. The north termination of 14th Street is at 15th Avenue North, and the south termination is at 28th Avenue South (just north of I-94). Within the Study area, the roadway has the following characteristics:

Existing Conditions at 11th Street & 14th Street

- Lane Configuration:
 - 12th Avenue South to Main Avenue – Two-lane, 1-way (northbound) Municipal State Aid Street (parking lanes are present in some stretches).
 - Main Avenue to 1st Avenue North - Four-lane, 2-way Municipal State Aid Street.
 - North of 1st Avenue North - Two-lane, 2-way (parking lanes are present in some stretches).
- Pavement Surface: 14th Street is surfaced with bituminous pavement over concrete pavement.
- Access: There are several private property accesses on both sides of 14th Street.
- Signalization: Within the Study area, traffic signals are present on 14th Street at Main Avenue, Center Avenue, and 1st Avenue North.
- Sidewalks: Within the Study area, south of Main Avenue, sidewalk (width varies, minimum 5 feet) is present on both sides of 14th Street. North of Main Avenue, sidewalk is present on the west side of 14th Street only.
- Right-of-Way: The width of the 14th Street right-of-way varies from 73 to 78 feet.
- Landscaping: Minimal to none, since space within the right-of-way is limited.

3. Main Avenue, Center Avenue (US 10/US 75), and 1st Avenue North

These east-west roadways are the other major streets within the study area. Center Avenue (US 10/US 75) is classified as a principal arterial, while Main Avenue (east of 8th Street) and 1st Avenue North are classified as minor arterials. Within the Study area, the roadways have the following characteristics:

- Lane Configuration: All three roadways are generally configured as 5-lane sections, with two through lanes in each direction and a center turn lane. Main Avenue is an undivided roadway section, while 1st Avenue North is divided by a raised median. Center Avenue is primarily undivided through the study area, with the exception of a short stretch just east of 11th Street that is divided by a raised median.
- Pavement Surface: All three roadways are surfaced with bituminous pavement over concrete pavement.
- Access: Each of these roadways has several access points on both the north and south sides of the street. Moorhead Fire Station has access off the north side of 1st Avenue North just east of 11th Street.

- Sidewalks: Sidewalks (width varies, minimum 5 feet) are present on both sides of Main Avenue and Center Avenue west of 11th Street, and on both sides of Main Avenue east of 11th Street. On 1st Avenue North, there is sidewalk only on the north side of the roadway. No sidewalk is present on Center Avenue east of 11th Street.
- Right-of-Way:
 - Main Avenue – 80 feet
 - Center Avenue – 70 to 85 feet
 - 1st Avenue North – 80 to 85 feet
- Landscaping: Minimal to none, since space within the right-of-way is limited.

B. BNSF Railroad

According to the 2004 *Fargo-Moorhead Rail Corridor Consolidation Feasibility Study*, there are 94 trains per day passing through downtown Moorhead:

- 63 trains on the main double-track line known as the KO Subdivision Line (KO Line), located between Main Avenue and Center Avenue.
- 31 trains on the single-track Prosper Subdivision Line (Prosper Line), located between Center Avenue and 1st Avenue North. Included in this number is passenger train traffic (Amtrak uses the Prosper Line to access the Hillsboro Subdivision).

The KO Line is part of BNSF Railroad's Seattle to Chicago corridor and is a major segment on the BNSF system. Train traffic on this corridor has been steadily increasing, and is estimated to double within the next 10 years. The Prosper Line is also used as an emergency "runaround" for KO Line traffic if the KO Line needs to be shut down.

East of 14th Street, another railroad line (P Line) turns out from the Prosper Line and heads north. Also, the KO Line and Prosper intersect at an at-grade diamond crossing. Several track turnouts, crossovers, and switches are required on both the KO Line and Prosper Lines to move train traffic back and forth between these three railroad lines. Maintaining the interaction among all these railroad lines is critical to BNSF operations.

Currently, all five of the north-south street crossings of the two BNSF railroad lines between 3rd Street and 21st Street in the downtown Moorhead area are at-grade crossings. These crossings are located at:

- 4th Street
- 5th Street
- 8th Street
- 11th Street
- 14th Street

Existing Conditions at 11th Street & 14th Street

The former 6th Street crossing of the KO Subdivision tracks and the former 10th Street crossings of both the KO and Prosper Subdivision tracks were all closed in 2007 during the Quiet Zone Improvement Project.

The existing 11th Street and 14th Street at-grade crossings of the KO Line and the Prosper Line are both signalized and gated.

In Summer 2007, additional crossing safety improvements including raised medians and pedestrian crossing gates were constructed at the 11th Street and 14th Street at-grade crossings of both the KO Line and the Prosper Line, as part of the Fargo-Moorhead Metropolitan Train Whistle Quiet Zone project.

C. Utilities

1. Lighting

Street light standards with mast arms are present on the five major roadways in the focused study area, typically at intersections and mid-block locations.

2. Overhead and Underground Electric

Overhead power lines are present along the following roadways within the Study area:

- Both north and south sides of 1st Avenue North
- North side of Main Avenue
- East side of 11th Street (north of 1st Avenue North)
- East side of 14th Street (north of 1st Avenue North)

All other power lines are underground.

3. Storm Drainage

All storm water from the focused study area eventually drains to the Red River of the North. The two BNSF railroad lines act as dividing lines between drainage basins. The storm sewer system in the corridor is briefly described as follows (see **Figure 4.1**):

- South of the KO Line: Storm water is picked up by inlets in the Main Avenue and 2nd Avenue South intersections with both 11th Street and 14th Street, then flows west along 2nd Avenue South and outfalls into the Red River just west of 3rd Street (60" RCP at outfall).
- Between the KO Line and Prosper Line: Storm water is picked up by inlets in the Center Avenue intersections with both 11th Street and 14th Street, then flows west along the southern boundary of the Prosper Line ROW, crosses the Prosper Tracks at 5th Street and outfalls into the Red River (36" RCP at outfall).

- North of the Prosper Line: For 11th Street, storm water is picked up by inlets in the 1st Avenue North/11th Street intersection, flows west along 1st Avenue North, and outfalls into the Red River just west of 8th Street (15" RCP at outfall). For 14th Street, storm water is picked up by inlets in the 1st Avenue North/14th Street intersection, flows north down 14th Street and west along 4th Avenue North, and outfalls into the Red River just west of 8th Street (36" RCP at outfall).

4. Watermains

City watermains are present underneath 11th Street, 14th Street, Main Avenue, Center Avenue, and 1st Avenue North. Watermain crosses underneath the Prosper Line, but not the KO Line. Pipe sizes range from 6 to 12 inches (see **Figure 4.1**).

5. Sanitary Sewer Mains

There are no sanitary sewer mains on 11th Street between 2nd Avenue South and 1st Avenue North, or on 14th Street between Main Avenue and 1st Avenue North. City sanitary sewer mains are present underneath Main Avenue, Center Avenue, and 1st Avenue North, all flowing to the west. Pipe sizes range from 8 to 21 inches, and pipe types include polyvinyl chloride (PVC) and vitrified clay pipe (VCP) (see **Figure 4.1**).

D. Transit Routes

As of October 2007, the Fargo-Moorhead Metro Area Transit (MAT) agency provides three bus routes that serve the study area:

- **Route 2** – Runs along Main Avenue and 11th Street.
- **Route 4** – Runs along 1st Avenue North and 14th Street.
- **Route 7 (Evenings Only)** – Runs along Center Avenue and 11th Street.

E. Current Study of 1st Avenue North Corridor

Concurrent with this Study, the City of Moorhead conducted a Corridor Study of 1st Avenue North from the Red River to 21st Street. The primary objective of this study was to develop concepts for enhancing the operational and aesthetic aspects of the 1st Avenue North corridor, in order to better appeal to potential development opportunities. Concepts included roadway widening, median enhancements, landscaping improvements, and resurfacing or reconstructing part of the roadway. The City completed the 1st Avenue North Corridor Study in 2008.

Since the limits of this Study and the 1st Avenue North study overlap, a coordinated approach was used between the two projects. Most likely, any improvements that result from the 1st Avenue North study will occur in the short-term, while a potential downtown grade separation would be more long-range in nature. With this in mind, any 1st Avenue North development concepts in the vicinity of either 11th Street or 14th Street should allow for the possibility that those streets may be lowered.

Existing Conditions at 11th Street & 14th Street

This page intentionally left blank.

V. ISSUE IDENTIFICATION AT 11TH STREET & 14TH STREET

Once it was determined that 11th Street and 14th Street were the most feasible locations for a grade-separated crossing, the Study Review Committee (SRC) worked together to identify critical issues and needs. These issues are listed below, and are also illustrated on the maps shown in **Figure 5.1** at the end of this chapter.

A. Vehicle and Pedestrian Safety Issues

Of the five at-grade crossings that remain after the 2007 closure of the 6th Street and 10th Street crossings, only three locations meet or exceed the Minnesota Department of Transportation's (Mn/DOT) grade separation threshold of 300,000 daily Train-Vehicle Crash Exposures -- 8th Street, 11th Street, and 14th Street.

The 8th Street and 11th Street crossings have the two highest Train-Vehicle Crash Exposure totals, respectively. They also have a greater number of rail-related accidents (including both train-vehicle and train-pedestrian accident data) than the other studied crossing locations:

- 8th Street – 26 recorded accidents (1972-2006), 1 fatality, 8 personal injuries, and property damage.
- 11th Street – 9 recorded accidents (1976-2006), 1 fatality, 2 personal injuries, and property damage.

In May 2007, while this study was being conducted, another fatal train-pedestrian accident occurred in the vicinity of the 8th Street crossing of the KO Line.

B. Traffic Access and Mobility Issues

1. Emergency Vehicle Access

Moorhead Fire Station Headquarters is located on the north side of 1st Avenue North, between 11th Street and 12th Street. This location is north of both the KO Line and Prosper Line. The nearest grade-separated crossings of the railroad tracks are at 3rd Street (about $\frac{3}{4}$ mile to the west, crosses both railroad lines) and at 21st Street (about $\frac{3}{4}$ mile to the east, crosses KO Line only).

These conditions are a concern for emergency response vehicles. With the high number of trains using the KO Line and Prosper Line, the potential for delay to emergency response times due to passing trains is high and does occasionally occur. In theory, it could take a significant amount of time for an emergency response vehicle to reach a location south of the tracks that is only a few blocks away from the fire station, if a train happens to be passing at that exact moment.

Issue Identification at 11th Street & 14th Street

2. Local Traffic Mobility

The lack of a grade-separated crossing of the railroad tracks between 3rd Street and 21st Street also causes considerable travel time delay for vehicles passing through downtown Moorhead.

Table 5 in the 2004 *Fargo-Moorhead Rail Corridor Consolidation Feasibility Study* estimated the Year 2000 total cumulative PM peak hour delay to vehicles as:

- **11th Street:** 14.85 hours at the KO Line crossing
29.70 hours at the Prosper Line crossing
- **14th Street:** 9.82 hours at the KO Line crossing
22.64 hours at the Prosper Line crossing

C. Railroad Consolidation Issues

In 2004, the Fargo-Moorhead Metropolitan Council of Governments (FM Metro COG) commissioned a feasibility study to consider eliminating the Prosper Line through downtown Fargo and Moorhead, and consolidating train traffic onto the KO Line.

The study concluded that the proposed consolidation was both financially and operationally feasible. Total cost was estimated at \$53 million (2004 dollars). Since the completion of that study, no further determination has been made regarding if and when consolidation might occur.

If it occurs, future consolidation of the two railroad lines would have an effect on this Feasibility Study. The difference in project cost, impact to property and access, and impact to BNSF operations would be considerable if only one set of tracks had to be crossed, rather than two sets of tracks.

A decision was made by the SRC early in this 11th Street Study process to separate the course of this Study from the course of the railroad consolidation effort, and to assume for the purposes of this Feasibility Study that the consolidation may not happen. This decision ensured that the development and analysis of alternatives for this Study would allow for the most conservative future scenario (that both railroad lines are still in operation).

D. Utility Impact Issues

If either 11th Street or 14th Street were lowered to cross under the two railroad lines, the existing storm sewer system would be impacted in two ways.

First, existing storm lines under 11th Street/14th Street and adjacent intersecting streets would need to be lowered, and a lift station would be required to pump storm water.

Second, a substantial amount of storm water will be drawn down into the large depression created by the lowering of 11th Street/14th Street and intersecting streets. Since the existing infrastructure is not currently sized to handle this flow, the storm system would probably need to be upgraded all the way to the outlet at the Red River. A retention pond may also be needed on site to regulate the release of storm water into the system.

Existing watermain and sanitary sewer lines along 11th Street/14th Street, Main Avenue, Center Avenue, and 1st Avenue North would also be affected by the grade changes required for an underpass. A sanitary sewer lift station would be necessary to pump the sewer flow back up to the current system grades.

E. Property Impact Issues

1. Land Impacts

Lowering either 11th Street or 14th Street by 20-25 feet would impact the surrounding commercial properties. Retaining walls can be constructed to help minimize impacts and preserve private property, but the amount of private land that would need to be acquired would still be considerable. Land acquisition would also include acquiring complete parcels in some cases.

2. Access Impacts

There are several private access points that would be impacted to different degrees by a grade separation on either 11th Street or 14th Street. These impacts range from slightly lowering driveways to complete closure or relocation of accesses.

Study area land and access impacts are addressed and shown in further detail in **Chapter VI – Alternative Development and Evaluation**.

F. Environmental Issues

The area of disturbance that would result from a railroad underpass on either 11th Street or 14th Street could potentially impact the environment in a number of category areas, including the following:

- Social and Economic
- Right-of-Way
- Air Quality, Water Quality, Visual Quality, and Noise
- Floodplains
- Historic Preservation
- Hazardous Waste
- Utilities
- Parks and Recreation
- Construction

Issue Identification at 11th Street & 14th Street

This page intentionally left blank.

VI. ALTERNATIVE DEVELOPMENT AND EVALUATION

This chapter presents the concepts that were developed and evaluated for a railroad grade separation - three concepts at 11th Street, and one concept at 14th Street. For each alternative, a general description is provided and potential impacts related to implementing the alternative are discussed and evaluated.

For the purposes of this study, the Study Review Committee (SRC) chose to focus solely on underpass crossing alternatives. An overpass alternative would need to be approximately 28-30 feet into the air due to the 23-foot track clearance requirements and the associated bridge structure depth. Raising either 11th Street or 14th Street to this height would result in tremendous impacts to adjacent property and a loss of private access and local street connections. Also, the touch-down points for either 11th Street or 14th Street would be pushed even further to the north and south. For these reasons, an overpass was considered not feasible as part of this study.

An alternative that included consolidation of the KO Line and Prosper Line through downtown Moorhead was also considered during the Study process. The consolidated alternative had significant property impacts and created some undesirable skewed at-grade crossings of streets. As mentioned in the previous chapter, the SRC ultimately decided to assume for this Study that the consolidation may not occur, and concepts were developed under this scenario.

In each 11th Street underpass concept, the roadway is lowered to pass under both the KO and Prosper railroad tracks. The main differences between the 11th Street concepts involve how the intersection with Center Avenue is addressed.

The single 14th Street concept assumes that Center Avenue would be lowered to meet 14th Street (similar to 11th Street Concept #1). The alternatives for either connecting or not connecting with Center Avenue that were used in 11th Street Concepts #2 and #3, could also be applied to the 14th Street corridor if desired.

BNSF indicated during project discussions that the railroad tracks could be raised by a maximum of one foot. At this time, BNSF has not committed to a grade raise. Therefore, for the purposes of this study, it was assumed that the railroad tracks would remain at current elevations and would not be raised.

Certain assumptions were made regarding design criteria for the alternatives, since a detailed traffic analysis was not within the scope of this study. Assumptions related to roadway design are listed in **Table 6.1**. Other assumptions related to bridge and railroad shoofly design can be found in **Appendix A**.

A maximum roadway grade of 5% was assumed for alternative development, for the purposes of minimizing property impacts, maintaining reasonable grades at the signalized intersections, and adhering to the requirements of the Americans with Disabilities Act (ADA). However, in order to illustrate the differences between grades, profiles for both 5% and 6% grades are shown in **Figure 6.5**.

**Table 6.1
Design Assumptions for 11th Street & 14th Street Alternatives**

Description of Design Criteria	Assumed Value for Alternative Development
Design Speed	30 mph
Lane Width	12 feet
* Roadway Section	5 lanes (for 11 th , Main, Center, 1 st)
Sidewalk and Boulevard Width	6 feet (on both sides of 11 th St)
Roadway Profile Grades (max/min)	5.0% max, 0.5% min
Cut slopes	3:1
Vert. clearance to bottom of RR structure	16'-4"
Min. K-value for Crest Vertical Curves	19 (Mn/DOT Stopping Sight Dist. Criteria)
Min. K-value for Sag Vertical Curves	19 (Mn/DOT Comfort Criteria)

* Without a traffic analysis, it was difficult to determine the potential need for auxiliary lanes. Therefore, no right-turn lanes or dual left-turn lanes were assumed at any of the intersections.

All impacts and costs described for the alternatives in this report are derived from using the design criteria included here and in the Appendix. Changes to these criteria, such as using different lane/sidewalk widths or increasing the number of driving lanes, would have a corresponding effect on the impacts and costs for each alternative.

A. 11th Street Concept #1 – Center Avenue Lowered to Meet 11th Street At-grade

Description

Figure 6.1 shows 11th Street Concept #1 in plan view, and Figure 6.5 in profile view. This alternative consists of the following elements:

- Shoofly tracks are constructed for both the KO and Prosper Lines, north of the existing tracks.
- Main Avenue, Center Avenue, and 1st Avenue North are all lowered to meet 11th Street at-grade. Approximate grade changes for each street at its intersection with 11th Street are:
 - Main Avenue: 5-7 feet lower
 - Center Avenue: 18 feet lower
 - 1st Avenue North: 11-12 feet lower
- The route for US 10 is modified. Coming from the west, US 10 follows Main Avenue east to 11th Street, then follows 11th Street (using the new railroad underpass) north to Center Avenue, where it resumes its present route to the east.
- Retaining walls were assumed along portions of 11th Street and Center Avenue to minimize property impacts.

Evaluation

11th Street Concept #1 provides full access between 11th Street and Center Avenue. This alternative impacts a large number of properties and property accesses along those roadways. Approximate impacts are as follows:

- Accesses closed = 32
- Accesses where grade needs to be lowered = 9
- Businesses requiring relocation/closure = 11

The presence of a railroad underpass and the route adjustment for US 10 will increase traffic volumes on 11th Street. Eventually, dual left turn lanes may be needed from westbound Center Avenue and from eastbound Main Avenue onto 11th Street.

Lowering Center Avenue to meet 11th Street will have a greater impact on the utilities in Center Avenue than the other alternatives.

The main access for the Fire Station on 1st Avenue North will need to be closed and relocated, due to lowering the street grade. This will require modifications to the ingress and egress routes that fire trucks use to access the station property.

B. 11th Street Concept #2 – Center Avenue Stays at Existing Grade, Passes Over 11th Street Tunnel (No Connection to 11th Street)

Description

Figure 6.2 shows 11th Street Concept #2 in plan view, and Figure 6.5 in profile view. This alternative consists of the following elements:

- Shoofly tracks are constructed for both the KO and Prosper Lines, north of the existing tracks.
- 11th Street is lowered and tunnels under the KO Line, the Prosper Line, and Center Avenue.
- Main Avenue and 1st Avenue North are both lowered to meet 11th Street at-grade. Approximate grade changes for each street at its intersection with 11th Street are:
 - Main Avenue: 8-9 feet lower
 - 1st Avenue North: 11-12 feet lower
- Center Avenue remains at its current grade and passes over the 11th Street tunnel, with no connection between the two roadways.
- Current US 10 routing does not change, since there is no connection provided between Center Avenue and 11th Street.
- Retaining walls were assumed along portions of 11th Street to minimize property impacts.

Alternative Development and Evaluation

Evaluation

11th Street Concept #2 does not provide a connection between 11th Street and Center Avenue. Approximate impacts to properties and property access are as follows:

- Accesses closed = 23
- Accesses where grade needs to be lowered = 8
- Businesses requiring relocation/closure = 8

US 10 traffic will not be able to take advantage of the railroad underpass since it remains on its present route.

The presence of a railroad underpass will increase traffic volumes on 11th Street. Eventually, dual left turn lanes may be needed from westbound Center Avenue and from eastbound Main Avenue onto 11th Street.

11th Street Concept #2 has fewer permanent impacts to property, access, and utilities on Center Avenue, since the roadway remains at existing grade. However, there would be some temporary impacts during construction.

The main access for the Fire Station on 1st Avenue North will need to be closed and relocated, due to lowering the street grade. This will require modifications to the ingress and egress routes that fire trucks use to access the station property.

C. 11th Street Concept #3 – Center Avenue Stays at Existing Grade, Passes Over 11th Street Tunnel (With Connection to 11th Street)

Description

Figure 6.3 shows 11th Street Concept #3 in plan view, and **Figure 6.5** in profile view. This alternative consists of the following elements:

- Shoofly tracks are constructed for both the KO and Prosper Lines, north of the existing tracks.
- 11th Street is lowered and tunnels under the Prosper Line and Center Avenue. The KO Line crosses 11th Street on a new bridge structure.
- Main Avenue and 1st Avenue North are lowered to meet 11th Street at-grade. Approximate grade changes for each street at its intersection with 11th Street are:
 - Main Avenue: 8-9 feet lower
 - 1st Avenue North: 11-12 feet lower
- Center Avenue remains at its current grade and passes over the 11th Street tunnel.
- A 2-way connector roadway is provided between Center Avenue and 11th Street. The roadway connects to 11th Street approximately 100 feet north of the KO Line, and connects to Center Avenue approximately 600 feet east of 11th Street.

- US 10 route does not change, since there is not an at-grade intersection at Center Avenue and 11th Street.
- Retaining walls were assumed along portions of 11th Street and along the connector roadway to minimize property impacts.

Evaluation

11th Street Concept #3 provides full access between 11th Street and Center Avenue, via the 2-way connector roadway. Approximate impacts to properties and property access are as follows:

- Accesses closed = 25
- Accesses where grade needs to be lowered = 8
- Businesses requiring relocation/closure = 9

US 10 traffic will not be able to take advantage of the railroad underpass since it remains on its current route.

The presence of a railroad underpass will increase traffic volumes on 11th Street. Eventually, dual left turn lanes may be needed from westbound Center Avenue and from eastbound Main Avenue onto 11th Street.

On the west side of 11th Street, 11th Street Concept #3 has fewer permanent impacts to property, access, and utilities on Center Avenue, since the roadway remains at existing grade. However, the inclusion of the connector roadway results in additional negative impacts to properties and access on the east side of 11th Street. In addition, there will be temporary impacts during construction.

The addition of the connector roadway also introduces some safety and operational concerns for vehicle and pedestrian traffic on both 11th Street and Center Avenue. The presence of bridge abutments, piers, retaining walls, and/or tunnel walls will make it difficult to provide adequate sight distance for vehicles stopped at the intersection with 11th Street.

The main access for the Fire Station on 1st Avenue North will need to be closed and relocated, due to lowering the street grade. This will require modifications to the ingress and egress routes that fire trucks use to access the station property.

D. 14th Street Concept – Center Avenue Lowered to Meet 14th Street At-grade

Description

Figure 6.4 shows the 14th Street Concept in plan view, and Figure 6.6 in profile view. This alternative consists of the following elements:

- Shoofly tracks are constructed for both the KO and Prosper Lines, north of the existing tracks. Temporary crossovers and turnouts are required on the KO and Prosper shooflies west of 14th Street.

Alternative Development and Evaluation

- A temporary at-grade crossing of 11th Street is required for the KO shoofly. This will require moving the existing crossing signal.
- Main Avenue, Center Avenue, and 1st Avenue North are all lowered to meet 14th Street at-grade. Approximate grade changes for each street at its intersection with 14th Street are:
 - Main Avenue: 5-7 feet lower
 - Center Avenue: 20 feet lower
 - 1st Avenue North: 5-7 feet lower
- The route for US 10 is modified. Coming from the west, US 10 follows Main Avenue east to 14th Street, then follows 14th Street (using the new railroad underpass) north to Center Avenue, where it resumes its present route to the east.
- Retaining walls were assumed along portions of 14th Street and Center Avenue to minimize property impacts.

Evaluation

The 14th Street Concept provides full access between 14th Street and Center Avenue. This alternative impacts a large number of properties and property accesses along those roadways. Approximate impacts are as follows:

- Accesses closed = 32
- Accesses where grade needs to be lowered = 9
- Businesses potentially requiring relocation/closure = 11

The presence of a railroad underpass and the route adjustment for US 10 will increase traffic volumes on 14th Street. Eventually, dual left turn lanes may be needed from westbound Center Avenue and from eastbound Main Avenue onto 14th Street.

E. Comparison of 11th Street and 14th Street

The following table compares the 11th Street location to the 14th Street location, using the eight main criteria categories that were listed in **Chapter III**. For the purposes of comparing equivalent alternatives, 11th Street Concept #1 was compared to the 14th Street Concept.

The table shows that while 11th Street and 14th Street are both feasible locations for a railroad grade separation, **11th Street is a more desirable and favorable location for an underpass than 14th Street.**

Table 6.2
11th Street/14th Street Comparison Table

● More Favorable ● Less Favorable = Relatively Equal

11 th Street		Criteria	14 th Street	
●	11 Potential Property Acquisitions 5.7 Acres	Property Impacts/Business Relocations	●	13 Potential Property Acquisitions 6.3 Acres
		Costs		
=	\$3.0 - \$4.0 million (approx.)	- Right-of-Way Costs	=	\$3.0 - \$4.0 Million (approx.)
●	\$27.0 - \$33.0 million (approx.)	- Const./Engineering Costs	●	\$29.5 - \$36.0 Million (approx.)
		Traffic Capacity/Mobility		
=	2005 ADT = 4,400 vehicles	- Traffic Volumes	=	2005 ADT = 3,900 vehicles
●	¼ mile closer to downtown	- Proximity to Downtown	●	¼ mile further from downtown
●	Continuous from 28 th Ave S to Wall Street	- North-South Continuity	●	Continuous from 28 th Ave S to 15 th Ave N
=	Impacts to 1 st Ave N grades more significant	Constructability/ Utility Issues	=	More storm sewer required, fewer impacts to 1 st Ave N grades
		Railroad Issues		
●	Less temporary track, Less impact to track operations	- Shoofly Construction	●	Approx. \$2.0 - 2.5 million more, 2 times as much temporary track
●	555,200 exposures eliminated	- Train/Vehicle Exposures	●	363,500 exposures eliminated
●	Turnouts/crossovers unaffected	- Coordination with BNSF Operations	●	More impacts to turnouts/crossovers and existing rail operations
=		Safety Impacts	=	
=	Response times faster to southwest	Emergency Vehicle Access	=	Response times faster to southeast

This page intentionally left blank.

VII. STUDY CONCLUSIONS

With input from the Study Review Committee, this study provided an analysis of the feasibility of constructing a railroad grade separation in downtown Moorhead, and determined the appropriate location for the grade separation.

The following conclusions were reached in this Study:

- 11th Street and 14th Street are the most feasible locations for a railroad grade separation in the downtown Moorhead area.
- From a constructability standpoint and an operational standpoint, a railroad grade separation at either 11th Street or 14th Street is feasible.
- However, it would be difficult to construct the temporary shoofly tracks at 14th Street without incurring significant costs or potentially impacting BNSF operations.
- 11th Street is the more favorable location for a railroad grade separation, based on direct comparisons using the eight main criteria categories developed for this study.

The financial component of project feasibility is more difficult to ascertain. The availability of funding for planning, environmental studies, design, and construction is a significant factor in a project of this magnitude. Realistically securing funding and following through the project development process could take approximately 8 to 17 years (see Table 7.1).

**Table 7.1
Downtown Moorhead Railroad Grade Separation
Project Development Process and Estimated Timetable**

Project Phase	Approximate Duration	Estimated Year of Completion	
		Funding	Project
Complete Feasibility Study	3 - 6 months		2008
Secure Funding for Preliminary Engineering & EA (Accomplished through Congressional Appropriation Process)	1 - 5 years	2009 - 2013	
Complete Preliminary Engineering & EA/EAW or EIS	2 years		2011 - 2015
Obtain FONSI/Negative Declaration	6 months - 1 year		2012 - 2016
Secure Funding for Final Design & ROW Acquisition (Accomplished through Congressional Appropriation Process)	1 - 5 years	2010 - 2018	
Complete Final Design & ROW Acquisition/Property Purchases	2 years		2014 - 2020
Secure Funding for Construction (Accomplished through Congressional Appropriation Process)	1 - 5 years	2012 - 2023	
Complete Construction	2 years		2016 - 2025

Definitions

EA = Environmental Assessment
EAW = Environmental Assessment Worksheet
EIS = Environmental Impact Statement

FONSI = Finding of No Significant Impact
ROW = Right-of-Way

Study Conclusions

Federal funds will be required for the City to finance this project. Typically, projects of this type are funded 80% Federal and 20% local. At this point, no funds have been allocated or programmed beyond this Feasibility Study.

The level of cost participation from BNSF will also need to be determined. Federal regulation 23 CFR Part 646.210(b)(3) states the following: *"On projects for the elimination of existing grade crossings at which active warning devices are in place ... the railroad share of the project costs shall be 5 percent."* In cases where the above statute is not used, BNSF in the past has contributed between \$10,000 and \$15,000 to projects that include closure of existing at-grade crossings.

A detailed analysis of construction costs was not included in the scope of this study. At this stage in the project development process, it is difficult to determine how much a grade separation project would cost due to the number of unknowns and variables related to construction cost. Project elements that will have a significant impact on cost include, but are not limited to:

- Funding availability and timing
- Property acquisitions
- Business relocations
- Utility needs and impacts
- Railroad operational needs and impacts
- Bridge or tunnel structures
- Retaining walls
- Construction cost inflation
- Property value fluctuation

Approximate conceptual-level costs were developed for the three primary locations that were evaluated at the Comparative Screening stage. Table 7.2 lists approximate cost ranges for construction and right-of-way acquisition for the alternatives at 8th Street, 11th Street, and 14th Street (in 2008 dollars).

Table 7.2
Approximate Right-of-Way Acquisition and Construction Costs
for Concepts at 8th Street, 11th Street, and 14th Street

	8 th Street	11 th Street	14 th Street
Right-of-Way Cost - Includes ROW and easement acquisition, business relocation	\$6.0 - \$7.5 million	\$3.0 - \$4.0 million	\$3.0 - \$4.0 million
Construction Cost - Includes Engin., Const. Admin., Roadway, Bridge, Shoofly, and Util.	\$32.5 - \$39.5 million	\$27.0 - \$33.0 million	\$29.5 - \$36.0 million
Total	\$38.5 - \$47.0 million	\$30.0 - \$37.0 million	\$32.5 - \$40.0 million

Note: All costs are in 2008 dollars.

Appendix A

Design Criteria and Supporting Data

Downtown Moorhead Railroad Grade Separation Feasibility Study
Moorhead, MN
Compiled 3/20/2007
Revised 5/27/2008

Design Criteria and Assumptions (Roadway)

- 1.) Design Speed = 30mph
- 2.) Lane width = 12'
- 3.) All roadways assumed to be 5 lanes wide
- 4.) Face of Curb to Face of Curb = 64'
- 5.) Boulevard width = 6'
- 6.) Sidewalk width = 6'
- 7.) Boulevard and Sidewalk assumed both sides of road
- 8.) 1:3 tie slope to match existing ground
- 9.) Maximum Road Grade = 5%
- 10.) Minimum Road Grade = 0.5%
- 11.) Sag vertical curves designed from Comfort Sight Distance (k=19)
- 12.) Crest vertical curves designed from Stopping Sight Distance (k=19)
- 13.) Vertical Clearance Option 1 = 16'-4"

Design Criteria and Assumptions (Bridge)

- 1.) Structure Depth Overpass = 5'
- 2.) 3-span bridges
- 3.) Long span = 64'
- 4.) Total Bridge length = 140'
- 5.) KO Bridge carries 2 tracks
- 6.) Prosper Bridge carries 1 track
- 7.) Combined KO & Prosper carries 2 tracks

Design Criteria and Assumptions (KO Shoofly)

- 1.) Design speed = 50mph
- 2.) 2 degree max curve used on shoofly
- 3.) 40' spiral used in and out of shoofly curves
- 4.) 200' of tangent between reverse curves
- 5.) 100' of tangent between curves (same direction)
- 6.) Existing Rail grades taken from condensed profiles
- 7.) Shoofly does not require a temporary bridge

Design Criteria and Assumptions (Prosper Shoofly)

- 1.) Design speed = 25mph
- 2.) 6 degree max curve used on shoofly
- 3.) 40' spiral used in and out of shoofly curves
- 4.) 200' of tangent between reverse curves
- 5.) 100' of tangent between curves (same direction)
- 6.) Existing Rail grades taken from condensed profiles
- 7.) Shoofly does not require a temporary bridge

Prepared by HDR

11th Street Railroad Grade Separation Feasibility Study
Moorhead, MN
3/20/2007

TH 10/11th Street Ramp Assumptions

- 1.) Assume TH 10 is grade separated with 11th Street
- 2.) Two-way ramp connection (jug handle)
- 3.) Assume three lanes on ramp approach (one left, one right, one receiving lane)
- 4.) 0.5% grades at intersections (100' minimum landing area)
- 5.) 5% max grade
- 6.) 20 MPH design speed for horizontal alignment
- 7.) 800' long ramp to make 22' elevation difference
- 8.) NE Quad ramp not feasible due to TH 10 and Prosper alignments converging
- 9.) SE Quad ramp impacts one building
- 10.) SE Quad ramp intersection approx. 600' from 14th Street intersection on TH 10
- 11.) SW Quad ramp impacts four buildings
- 12.) SW Quad ramp intersection approx. 560' from 8th Street intersection on TH 10
- 13.) NW Quad ramp impacts three buildings
- 14.) NW Quad ramp intersection approx. 550' from 8th Street intersection on TH 10
- 15.) SE and SW Quad ramp intersection approx. 325' from Main Avenue intersection on 11th Street
- 16.) NW Quad ramp intersection approx. 275' from 1st Avenue intersection on 11th Street
- 17.) SE and SW Quad ramps assume temp. sheet pile wall for shoo-fly with future grading of 1:2 max between ramp and KO sub
- 18.) NW Quad ramp ramp assumes 1:2 max slope between ramp and Prosper sub

Prepared by HDR

11th Street Railroad Grade Separation Feasibility Study
Moorhead, MN
3/20/2007

11th ST at Prosper Subdivision - Option 1 only										
11th St & Prosper	Vertical Curve @ Prop Overpass		Approach Track Raise	11th St Exist El.	11th St Elev (16'-4")	11th St Cut (16'-4")	11th St Elev (14'-6")	11th St Cut (14'-6")	Table 1	
	Grade in	Grade out							VC Length	11th St Prop El.
No Change	-	-	0	905	883.6	21.4	885.43	19.57		
Option 1	0.5	-0.5	1000	905	886.6	18.4	888.43	16.57		
Option 2	0.4	-0.4	800	905	886	19	887.83	17.17		
Option 3	0.3	-0.3	600	905	884.9	20.1	886.73	18.27		
Option 4	0.2	-0.2	400	905	884.1	20.9	885.93	19.07		
Option 5	0.1	-0.5	500	905	885.6	19.4	887.43	17.57		

11th ST at KO Subdivision - Option 1 & 2										
11th St & KO	Vertical Curve @ Prop Overpass		Approach Track Raise	11th St Exist El.	11th St Elev (16'-4")	11th St Cut (16'-4")	11th St Elev (14'-6")	11th St Cut (14'-6")	Table 2	
	Grade in	Grade out							VC Length	11th St Prop El.
No Change	-	-	0	907	885.5	21.5	887.33	19.67		
Option 1	0.5	-0.5	1000	907	889.5	17.5	891.33	15.67		
Option 2	0.4	-0.4	800	907	888.7	18.3	890.53	16.47		
Option 3	0.3	-0.3	600	907	887.7	19.3	889.53	17.47		
Option 4	0.2	-0.2	400	907	886.7	20.3	888.53	18.47		
Option 5	0.1	-0.5	600	907	888.5	18.5	890.33	16.67		

Side Roads (Main, Center, and 1st Ave) Option 1 only									
14'-6" Option	16'-4" Option	Main		Center		1st Ave		Table 3	
		Exist El	Prop El	Exist El	Prop El	Exist El	Prop El	1st Ave Exist El	1st Ave Prop El
902.6	902.6	891.5	891.5	886.15	886.15	16.95	16.95	903.7	891.2
		889.85	889.85	884.3	884.3	18.8	18.8	903.7	889.3

Side Roads (Main & Center) Option 2 only									
14'-6" Option	16'-4" Option	Main		Center		Table 4			
		Exist El	Prop El	Exist El	Prop El	Center Exist El	Center Prop El		
902.6	902.6	894.6	894.6	893.3	893.3	9.8	9.8		
		892.38	892.38	891.3	891.3	11.8	11.8		

Prepared by HDR

To: Matt Kinsella	
From: Bobby Oare	Project: Downtown Moorhead Railroad Grade Separation Feasibility Study
CC: Leif Thorson	
Date: May 8, 2008	Job No: 53065

RE: Railroad shoo-fly concepts at possible 14th Street location**Design Assumptions**

Here are the basic design assumptions made for the BNSF shoo-fly for the 14th Street Underpass alternative.

1. KO Subdivision Design speed = 50 MPH
2. Prosper Subdivision design speed = 25 MPH
3. Max. Grade = same as existing
4. KO Min. Curve = 2 degree
5. Prosper Min. Curve = 6 degree
6. Spiral Length = 40 feet
7. Tangent Length between reverse curves = 200 feet
8. Tangent Length between curves (same direction) = 100 feet
9. KO crossover = Number 20
10. Prosper turnout = Number 11
11. Min. distance to existing tracks (when parallel) = 40'
12. Shoo-fly track does not require a temporary bridge.

Design Comments

The KO Subdivision shoo-fly begins at a point 200 feet from the diamond crossing with the Prosper Subdivision. The shoo-fly curves north using the spiral and curve standards outlined above. The first tangent was extended to allow for the appropriate tangent distances plus a number 20 turnout to connect the KO and Prosper Subdivisions. The next spiral curve aligns the shoo-fly to be parallel with the existing tracks. The second tangent was also lengthened to allow for the appropriate tangent distances plus a number 20 crossover between the south KO track (Main 2) and the north KO track (Main 1). Incorporating the number 20 crossover and turnout within the shoo-fly lengthens the shoo-fly but keeps the necessary rail movements reasonably close for train operations during the construction. The shoo-fly does extend past 11th Street to the west which would add a new signal cost to the project. It is also important to note that the location of the shoo-fly turnout to head south still gets into the existing crossover. Additional project cost will result due to the removal and reinstallation of the existing crossover.

The Prosper Subdivision shoo-fly begins just off the bridge over TH 10 (Center Street). The curves are reduced for the lesser design speed. The lengthened the first tangent section of track to allow for a more desirable turnout to reconnect the P-Line subdivision. This extended tangent limits the amount of reconstruction to the P-Line. A number 11 turnout is shown on the west end of the shoo-fly. This is only required if the spur track to the business along 11th Street needs to remain during construction. The turnout could be eliminated if service is no longer required.



Grade Crossing Accident History

8th - Prosper

Current Crossing Information			
USDOTNO	062936U	AADT:	7,300
State Xing	14-01-042	Trains / Day	60
Road Designation	MSAS 0108	Exposure	438,000
Location:	8th St N	HazardIndex	1315.3153
City:	Moorhead	Accident Prediction	
File No:	F0265C	No. of Tracks	1
Railroad	BNSF (Bnsf Railway Company)	Signal Installed	01/27/1983
Warning Device	Gates & Bells & 12" Lenses	Current Agmt.	NONE

Accident History					
Accident Date	Accident Time	Accident Type	Number Killed	Number Injured	In-Place Warning Signal at time of Accident
01/01/1979		Property Damage	0	0	Not Listed
01/01/1973		Property Damage	0	0	Not Listed
01/01/1974		Property Damage	0	0	Not Listed
01/01/1974		Personal Injury	0	2	Not Listed
01/01/1975		Personal Injury	0	2	Not Listed
01/01/1976		Property Damage	0	0	Not Listed
01/01/1976		Property Damage	0	0	Not Listed
01/01/1976		Personal Injury	0	1	Not Listed
01/01/1972		Property Damage	0	0	Not Listed
01/01/1978		Property Damage	0	0	Not Listed
04/28/2004	9:12 AM	Fatal	1	0	Gate
01/01/1979		Property Damage	0	0	Not Listed
01/01/1979		Property Damage	0	0	Not Listed
01/01/1979		Property Damage	0	0	Not Listed
01/01/1981		Property Damage	0	0	Not Listed
01/01/1981		Property Damage	0	0	Not Listed
12/11/1982	9:45 PM	Property Damage	0	0	Flashing Lights
01/04/1998	5:20 PM	Property Damage	0	0	Gates
01/01/1976		Personal Injury	0	1	Not Listed

**Note: Prior to January 1, 1982 the month, day and time of accident was not known.
For convenience, the month and day of these accidents was coded as January 1.**

Date:	04/28/2004	Train Speed:	23
Time:	9:12 AM	Vehicle Speed:	
Accident Type:	F	Train Direction:	E
Warning Signs:	Gate	Veh Direction:	N
Fatalities:	1	Obscurity:	NONE
Injuries:	0	Prop Damage:	
Circumstances:	PED HIT BY TRAIN	Action:	NONE
Hazardous Mat:	RAIL	Notes:	73 YR OLD WALKED BEHIND GATE INTO PATH OF TRAIN
Visibility Conds:	DAY		
Weather Conds:	CLEAR		
US DOT No: 062936U			

Date:	01/04/1998	Train Speed:	25
Time:	5:20 PM	Vehicle Speed:	0
Accident Type:	PD	Train Direction:	W
Warning Signs:	GATES	Veh Direction:	E
Fatalities:	0	Obscurity:	NONE
Injuries:	0	Prop Damage:	\$2,000.00
Circumstances:	TRAIN HIT CAR	Action:	NONE
Hazardous Mat:	NONE	Notes:	NONE
Visibility Conds:	DARK		
Weather Conds:	CLEAR		
US DOT No: 062936U			

Date:	12/11/1982	Train Speed:	20
Time:	9:45 PM	Vehicle Speed:	
Accident Type:	PD	Train Direction:	
Warning Signs:	FLASHING LIGHTS	Veh Direction:	
Fatalities:	0	Obscurity:	NOT OBSTRUCTED
Injuries:	0	Prop Damage:	\$5,004.00
Circumstances:	TRAIN HIT CAR	Action:	
Hazardous Mat:	NONE	Notes:	
Visibility Conds:	DARK		
Weather Conds:	CLEAR		
US DOT No: 062936U			

Date:	01/01/1981	Train Speed:	
Time:		Vehicle Speed:	
Accident Type:	PD	Train Direction:	



Grade Crossing Accident History

812 - KO

Current Crossing Information

USDOTNO	062952D	AADT:	11,700
State Xing	14-01-220	Trains / Day	67
Road Designation	USTH 0075	Exposure	783,900
Location:	8th St S	HazardIndex	235.40541
City:	Moorhead	Accident Prediction	
File No:	F0944C	No. of Tracks	2
Railroad	BNSF (Bnsf Railway Company)	Signal Installed	03/29/2005
Warning Device	Gates/ Cants/ Bells/ 12"lenses	Current Agmt.	87019

Accident History

Accident Date	Accident Time	Accident Type	Number Killed	Number Injured	In-Place Warning Signal at time of Accident
08/09/1997	10:50 AM	Property Damage	0	0	Gates
09/20/1996	3:18 PM	Property Damage	0	0	Gates
02/03/1992	1:38 PM	Property Damage	0	0	Gates
01/01/1978		Personal Injury	0	1	Not Listed
01/01/1978		Property Damage	0	0	Not Listed
01/01/1974		Personal Injury	0	1	Not Listed
01/01/1972		Property Damage	0	0	Not Listed

Note: Prior to January 1, 1982 the month, day and time of accident was not known.
 For convenience, the month and day of these accidents was coded as January 1.

Date:	08/09/1997	Train Speed:	10
Time:	10:50 AM	Vehicle Speed:	
Accident Type:	PD	Train Direction:	E
Warning Signs:	GATES	Veh Direction:	S
Fatalities:	0	Obscurity:	NONE
Injuries:	0	Prop Damage:	\$500.00
Circumstances:	TRAIN HIT CAR	Action:	NONE
Hazardous Mat:	RAIL	Notes:	NONE
Visibility Conds:	DAY		
Weather Conds:	CLEAR		
US DOT No: 062952D			
Date:	09/20/1996	Train Speed:	12
Time:	3:18 PM	Vehicle Speed:	0
Accident Type:	PD	Train Direction:	W
Warning Signs:	GATES	Veh Direction:	W
Fatalities:	0	Obscurity:	NONE
Injuries:	0	Prop Damage:	\$3,000.00
Circumstances:	TRAIN HIT CAR	Action:	NONE
Hazardous Mat:	RAIL	Notes:	NONE
Visibility Conds:	DAY		
Weather Conds:	CLOUDY		
US DOT No: 062952D			
Date:	02/03/1992	Train Speed:	2
Time:	1:38 PM	Vehicle Speed:	15
Accident Type:	PD	Train Direction:	E
Warning Signs:	GATES	Veh Direction:	S
Fatalities:	0	Obscurity:	NONE
Injuries:	0	Prop Damage:	\$500.00
Circumstances:	TRAIN HIT CAR	Action:	NONE
Hazardous Mat:	NONE	Notes:	NONE
Visibility Conds:	DAY		
Weather Conds:	CLOUDY		
US DOT No: 062952D			
Date:	01/01/1978	Train Speed:	
Time:		Vehicle Speed:	
Accident Type:	PI	Train Direction:	



Grade Crossing Accident History

11th - Prosper

Current Crossing Information

USDOTNO	062930D	AADT:	4,400
State Xing	14-01-039	Trains / Day	60
Road Designation	CSAH 0003	Exposure	264,000
Location:	11th St N	HazardIndex	79.279282
City:	Moorhead	Accident Prediction	
File No:	F0265E	No. of Tracks	1
Railroad	BNSF (Bnsf Railway Company)	Signal Installed	03/29/2005
Warning Device	Gates & Bells & 12" Lenses	Current Agmt.	87019

Accident History

Accident Date	Accident Time	Accident Type	Number Killed	Number Injured	In-Place Warning Signal at time of Accident
11/24/1997	3:00 PM	Property Damage	0	0	Gates
04/07/1983	7:40 AM	Property Damage	0	0	Gates
01/01/1978		Property Damage	0	0	Not Listed
01/01/1976		Property Damage	0	0	Not Listed

Note: Prior to January 1, 1982 the month, day and time of accident was not known. For convenience, the month and day of these accidents was coded as January 1.

Date: 11/24/1997	Train Speed: 1
Time: 3:00 PM	Vehicle Speed: 3
Accident Type: PD	Train Direction: E
Warning Signs: GATES	Veh Direction: S
Fatalities: 0	Obscurity: NONE
Injuries: 0	Prop Damage: \$1,000.00
Circumstances: TRAIN HIT CAR	Action: NONE
Hazardous Mat: NONE	Notes: RR HAS NONE FOR WARNING DEVICE
Visibility Conds: DAY	
Weather Conds: CLOUDY	
US DOT No: 062930D	

Date: 04/07/1983	Train Speed: 5
Time: 7:40 AM	Vehicle Speed:
Accident Type: PD	Train Direction:
Warning Signs: GATES	Veh Direction:
Fatalities: 0	Obscurity: NOT OBSTRUCTED
Injuries: 0	Prop Damage: \$750.00
Circumstances: CAR HIT TRAIN	Action:
Hazardous Mat: NONE	Notes:
Visibility Conds: DAY	
Weather Conds: CLEAR	
US DOT No: 062930D	

Date: 01/01/1978	Train Speed:
Time:	Vehicle Speed:
Accident Type: PD	Train Direction:
Warning Signs:	Veh Direction:
Fatalities: 0	Obscurity:
Injuries: 0	Prop Damage:
Circumstances:	Action:
Hazardous Mat:	Notes:
Visibility Conds:	
Weather Conds:	
US DOT No: 062930D	

Date: 01/01/1976	Train Speed:
Time:	Vehicle Speed:
Accident Type: PD	Train Direction:



Grade Crossing Accident History

11th - KO

Current Crossing Information

USDOTNO	062949V	AADT:	3,900
State Xing	14-01-218	Trains / Day	67
Road Designation	MSAS 0121	Exposure	261,300
Location:	11th St S	HazardIndex	1569.3694
City:	Moorhead	Accident Prediction	
File No:	F0944E	No. of Tracks	2
Railroad	BNSF (Bnsf Railway Company)	Signal Installed	03/29/2005
Warning Device	Gates & Bells	Current Agmt.	87019

Accident History

Accident Date	Accident Time	Accident Type	Number Killed	Number Injured	In-Place Warning Signal at time of Accident
05/26/2006	3:30 PM	Fatal	1	0	Gate
09/29/2003	11:30 AM	Property Damage	0	0	Gate
08/31/1993	5:45 AM	Personal Injury	0	2	Gates
07/31/1983	12:50 AM	Property Damage	0	0	Gates
01/01/1979		Property Damage	0	0	Not Listed

Note: Prior to January 1, 1982 the month, day and time of accident was not known. For convenience, the month and day of these accidents was coded as January 1.

Date:	05/26/2006	Train Speed:	35
Time:	3:30 PM	Vehicle Speed:	3
Accident Type:	F	Train Direction:	W
Warning Signs:	Gate	Veh Direction:	N
Fatalities:	1	Obscurity:	NONE
Injuries:	0	Prop Damage:	
Circumstances:	TRESPAS HIT BY TRAIN	Action:	NONE
Hazardous Mat:	NONE	Notes:	PEDESTRIAN WALKED AROUND LOWERED GATES AND WAS HIT AND KILLED BY TRAIN
Visibility Conds:	DAY		
Weather Conds:	RAIN		
US DOT No: 062949V			
Date:	09/29/2003	Train Speed:	1
Time:	11:30 AM	Vehicle Speed:	0
Accident Type:	PD	Train Direction:	E
Warning Signs:	Gate	Veh Direction:	S
Fatalities:	0	Obscurity:	PASSING TRAIN
Injuries:	0	Prop Damage:	\$5,000.00
Circumstances:	CAR HIT BY TRAIN	Action:	NONE
Hazardous Mat:	NONE	Notes:	
Visibility Conds:	DAY		
Weather Conds:	CLEAR		
US DOT No: 062949V			
Date:	08/31/1993	Train Speed:	24
Time:	5:45 AM	Vehicle Speed:	5
Accident Type:	PI	Train Direction:	E
Warning Signs:	GATES	Veh Direction:	S
Fatalities:	0	Obscurity:	NONE
Injuries:	2	Prop Damage:	\$1,500.00
Circumstances:	TRAIN HIT CAR	Action:	NONE
Hazardous Mat:	NONE	Notes:	DROVE AROUND OR THRU GATES
Visibility Conds:	DAWN		
Weather Conds:	CLEAR		
US DOT No: 062949V			
Date:	07/31/1983	Train Speed:	10
Time:	12:50 AM	Vehicle Speed:	
Accident Type:	PD	Train Direction:	



Grade Crossing Accident History

14th - Prosper

Current Crossing Information

USDOTNO	062927V	AADT:	2,500
State Xing	14-01-037	Trains / Day	60
Road Designation	MSAS 0122	Exposure	150,000
Location:	14th St N	HazardIndex	45.045044
City:	Moorhead	Accident Prediction	
File No:	F0265F	No. of Tracks	2
Railroad	BNSF (Bnsf Railway Company)	Signal Installed	11/02/1984
Warning Device	Gates & Bells & 12" Lenses	Current Agmt.	NONE

Accident History

Accident Date	Accident Time	Accident Type	Number Killed	Number Injured	In-Place Warning Signal at time of Accident
01/01/1978		Property Damage	0	0	Not Listed

Note: Prior to January 1, 1982 the month, day and time of accident was not known. For convenience, the month and day of these accidents was coded as January 1.



Grade Crossing Accident History

14th - KO

Current Crossing Information

USDOTNO	062946A	AADT:	3,900
State Xing	14-01-217	Trains / Day	67
Road Designation	MSAS 0122	Exposure	261,300
Location:	14th St S	HazardIndex	78.468468
City:	Moorhead	Accident Prediction	
File No:	F0944F	No. of Tracks	2
Railroad	BNSF (Bnsf Railway Company)	Signal Installed	03/29/2005
Warning Device	Gates & Bells	Current Agmt.	87019

Accident History

Accident Date	Accident Time	Accident Type	Number Killed	Number Injured	In-Place Warning Signal at time of Accident
09/20/1984	10:45 AM	Property Damage	0	0	Gates
01/01/1978		Property Damage	0	0	Not Listed

Note: Prior to January 1, 1982 the month, day and time of accident was not known.
 For convenience, the month and day of these accidents was coded as January 1.

Appendix B

Public Involvement Documentation

To: Project File – UEI Project № 106.0754
From: Dain Miller, PE
Matt Kinsella, PE
CC: All Attendees, Brian Gibson, David Overbo, Mark Waisanen, Steve Grabill
Date: December 22, 2006
Re: **Summary of December 20, 2006 Study Review Committee Meeting #1
11th Street Railroad Grade Separation Study**

Study Review Committee Meeting #1 was held on December 20, 2006 at Moorhead City Hall. Bob Zimmerman, Tom Trowbridge, Clair Hanson, and Peter Doll of the City of Moorhead (City), Lori Vanderhider of Mn/DOT, Dain Miller and Matt Kinsella of Ulteig Engineers (Ulteig) attended the meeting in person. Leif Thorson of HDR, Spencer Arndt and Lynn Leibfried of BNSF attended the meeting via conference call. A copy of the meeting agenda is attached.

Meeting Summary

Introductions

Dain Miller opened the meeting at 10:05 a.m. Introductions were made and copies of the agenda and handouts were distributed. The handouts included:

- Fatal Flaw Matrix
- Intersection Comparison Matrix
- 2 Aerial Maps showing project issues

Spencer Arndt mentioned that Lynn Leibfried would be the main contact from BNSF for the project duration.

Meeting Objectives

Dain Miller reviewed the meeting objectives:

- Receive input from the SRC on the study goals
- Review fatal flaw and intersection comparison matrices
- Discuss data collection needs, project schedule, and upcoming tasks

SRC Input / Goals of this Study

Bob Zimmerman explained that it has been a long-term goal of the City to provide another grade separation in the downtown area. Construction of any improvements are probably a number of years away, but it will be important for this study to begin to establish the scope and feasibility of a grade separation. It will also be critical to determine how a proposed grade separation best fits into the overall transportation network.

Lori Vanderhider mentioned that the study should consider the impacts a grade separation would have on TH 10. Bob Zimmerman concurred and added that realignment of TH 10 may be a consideration as well.

BNSF commented that their main concerns are impacts to operations during and after construction of any improvements. A shoofly will definitely be required to keep their operations running.

Dain Miller mentioned that it is critical early in the study to screen the alternatives down to one intersection to study (i.e. 11th Street). The budget on this project is somewhat limited so it will be important to keep the effort focused and continue to progress toward the study objective.

Regarding public input, Dain Miller commented that once the study focuses on one intersection, it might be a good idea to hold a separate meeting with a group of property owners that would be most affected by any proposed improvements. The City agreed with this idea.

Leif Thorson asked if BNSF would consider moving the KO and Prosper lines closer together through this stretch, so that a proposed underpass could cross both of the lines in a much shorter span than would be required under the current configuration of the tracks. BNSF responded that this could potentially be an option, but they would need to keep both lines operational, so they wouldn't want to consolidate the lines. Dain mentioned that the study should consider this option as well. Leif will work with BNSF to develop a concept for this option.

Comparison Matrix for Screening Grade Separation Locations

Dain Miller described the two matrices that Ulteig developed for the meeting:

- Fatal Flaw Matrix – The objective behind this matrix was to screen out intersections that had fatal flaws, i.e. did not meet a specific criteria or objective of the study. Using this approach, 4th and 5th Streets were screened out due to adverse property impacts to the Center Mall, and 6th and 10th Streets were screened out because these crossings are scheduled to be closed as part of the Quiet Zone Improvements.
- Comparison Matrix – This matrix included additional categories and criteria to compare and rank 8th, 11th, and 14th Street alternatives in greater detail.

Dain asked the members of the SRC if they concurred with the elimination of 4th, 5th, 6th, and 10th Streets for the reasons listed on the matrix. The group agreed that these intersections should be eliminated from further consideration.

The members of the SRC all agreed that the matrix concepts developed by Ulteig were a good way to present the information. Ulteig will continue to refine the matrices and add information. Dain Miller stated that although Ulteig had filled out some of the rankings and criteria, the members of the SRC should definitely review the information and add their own criteria and rankings so that the group as a whole can agree on the final results.

The issue of how far to take cost estimates at this point was discussed. Peter Doll mentioned that they should be able to obtain some decent data regarding property impacts costs, enough to at least get a feel for what the right-of-way costs might be. He also mentioned that it is much easier for him to price out a full property take rather than partial takes, so he requested that as the alternatives are developed Ulteig looks at minimizing the number of small partial takes to properties.

Lori commented that in regards to hazardous materials, it may be a good idea to include a Phase I investigation as part of this study, a Phase II investigation would not be necessary at this point in the process.

BNSF stated that the FRA database has updated information on safety issues for each crossing, such as crash and fatality data. Ulteig will obtain the updated information from this database and add it to the matrix as appropriate. BNSF also mentioned that the shoofly constructability would be much easier at 11th Street than the other intersections. Ulteig will make sure this is reflected in the matrix.

The members of the SRC discussed the options of using one long tunnel to cross both lines as opposed to separate underpasses. Ulteig will review both these options as part of the study. Lori pointed out that if you re-route TH 10 down to 11th and then on 11th to Center Avenue, you would not be able to use a tunnel option with this scenario and still maintain access to TH 10.

The proximity of the Prosper Line to 1st Ave. N. was discussed, particularly at 8th Street. It will be extremely difficult to maintain access to 8th Street from an underpass of the Prosper Line due to these proximity issues.

The City reiterated the importance of somehow addressing impacts to TH 10 in the comparison matrix. Ulteig will develop a method for including this information in the matrix.

Matt Kinsella described the method that Ulteig used in ranking the different categories in the comparison matrix. The goal was to attempt to give each category equal treatment at this point so that one particular criteria is not weighted more than a different one. Tom Trowbridge pointed out that sometimes we might want to show that a particular impact is more important, such as a business take being more critical than a single property take.

The question was asked about possibly raising the tracks slightly to help achieve the grade separation. BNSF stated that in this case you probably wouldn't be able to raise the tracks much, maybe 1-2 feet.

Data Collection Needs

Leif Thorson asked for the number and speed of trains using both lines. BNSF and HDR will coordinate directly with each other to share this information.

Ulteig will check the Clay County GIS website to obtain some additional mapping information.

The City will provide Ulteig with information about the existing utilities in the study corridors. It was agreed that the storm system would need to be upgraded all the way to the discharge point with any alternative.

Schedule and Upcoming Tasks

Dain Miller reviewed the schedule. Ulteig anticipates holding one more meeting sometime in January or February with the SRC before the first public meeting is held.

Adjourn

The meeting was adjourned at 11:30 a.m.

Action Items

1. Leif Thorson will work with BNSF to develop a concept for moving the two railroad lines closer together.
2. Ulteig will check FRA database to obtain updated safety information at existing crossings.
3. SRC members will review the comparison matrices and add their own comments and rankings.
4. BNSF to provide HDR with number and speed of trains using the two railroad lines.

5. Ulteig will check the Clay County GIS website to obtain additional mapping information.
6. City of Moorhead will provide Ulteig with information about existing utilities.
7. Ulteig will continue to refine the matrices and begin alternative development.

**Study Review Committee
Meeting Agenda
11th Street Railroad Grade Separation Study
Moorhead, MN**

Date: December 20, 2006

Time: 10:00 a.m. – 12:00 p.m.

Location: Conf. Room 4th Floor – City Engineering

AGENDA ITEMS:

- 1. Introduction / Objectives of this Meeting (10:00 – 10:10)**
 - Introduction of committee members / consider additional members
 - Get input from SRC on goals of the study
 - Focus on Comparison Matrix of Intersections today
 - Data Collection Needs
 - Discuss Schedule & Upcoming Tasks

- 2. SRC Input / Goals of this Study (10:15 – 10:40)**
 - Concerns / Goals of the City, County, MnDOT
 - BNSF's role in this Study
 - Ulteig / HDR Responsibilities & Concerns
 - Public Input Approach

- 3. Comparison Matrix for Screening Grade Separation Locations (10:45 – 11:30)**
 - Focus to narrow to one intersection
 - Review Fatal Flaw Matrix started by Ulteig (Handout)
 - Agree on Selection Criteria
 - Committee Input on Matrix Rating System & Analysis

- 4. Data Collection Needs (11:35 – 11:45)**
 - Information available from BNSF?
 - Existing Contour Information from Aerials
 - Other information?

- 5. Schedule & Upcoming Tasks (11:45 – 11:55)**
 - Finalize Matrix after getting committee input
 - Begin Developing Alternatives at 11th Street?
 - Next SRC Meeting – End of January/Beginning of February

- 6. Adjourn (12:00 noon)**

To: Project File – UEI Project № 106.0754
From: Dain Miller, PE
Matt Kinsella, PE
CC: All Attendees, David Overbo, Steve Grabill, Spencer Arndt, Leif Thorson, Lori Vanderhider
Date: March 26, 2007
Re: **Summary of March 20, 2007 Study Review Committee Meeting #2
11th Street Railroad Grade Separation Study**

Study Review Committee (SRC) Meeting #2 was held on March 20, 2007 at Moorhead City Hall. Brian Gibson of FM Metro COG, Bob Zimmerman, Tom Trowbridge, and Clair Hanson of the City of Moorhead (City), Mark Waisanen of Mn/DOT, Dain Miller and Matt Kinsella of Ulteig Engineers (Ulteig), Bobby Oare of HDR, and Lynn Leibfried of BNSF attended the meeting. A copy of the meeting agenda is attached.

Meeting Summary

Introductions

Dain Miller opened the meeting at 10:05 a.m. Introductions were made and copies of the agenda and handouts were distributed. The handouts included:

- Fatal Flaw Matrix
- Intersection Comparison Matrix
- Meeting minutes from SRC Meeting #1
- Spreadsheets from HDR summarizing design data from alternative analysis

Meeting Objectives

Dain Miller reviewed the meeting objectives:

- Comparison matrix update
- Review Grade Separation Impacts
- Review Railroad alignment and consolidation concepts
- Discuss public involvement approach

Comparison Matrix Update

Dain reviewed the updates and refinements that had been made to the matrices. He re-iterated the importance of committee input in the evaluation process.

Based on the comparison matrix ranking criteria agreed on by the SRC, 11th Street is the preferred crossing location. The SRC concurred with this finding.

Bob Zimmerman commented that the cost of the 14th Street alternative could potentially be cheaper since the KO and Prosper tracks are closer together at that point. Dain acknowledged that was true, but mentioned that you would probably need a tunnel because of the limited distance between the tracks, which would bump the cost back up again for that alternative. Since no detailed cost estimates have been prepared at this point, Dain pointed out that the ratings in the matrix could change regarding cost.

Grade Separation Impacts

Bobby Oare from HDR provided an overview of the various alternatives for grade separation concepts at 11th Street. After discussion, the SRC agreed that there were basically 3 feasible concepts to take to the public for the 11th Street underpass, assuming both the KO and Prosper lines remain in operation:

- Center Avenue is depressed to meet 11th Street at-grade between two separate railroad bridges.
- Center Avenue remains at current grade and passes over an 11th Street tunnel under both tracks. Connector roadways are provided between Center and 11th Street (similar to the Main Avenue/10th Street tunnel and ramps in Fargo).
- Center Avenue remains at current grade and passes over an 11th Street tunnel under both tracks, with no connection provided between Center and 11th Street.

Bobby also presented exhibits that showed approximate construction limits for 11th Street, Main, Center, and 1st Avenue North. 3:1 slopes were used to approximate the impacts. Future roadway widths shown assumed 5 12-foot wide lanes on 11th Street and construction limits to accommodate pedestrian facilities. The intersections at Main and 1st Avenue North will need to drop approximately 10-12 feet to meet the new 11th Street grade, which results in numerous property and access impacts to the surrounding properties. The SRC agreed that showing some retaining walls where it makes sense would be appropriate before going to the public. Minimizing right-of-way impacts where practical should be considered.

The significant impacts to underground utilities were discussed. Storm sewer would most likely need to be reconstructed all the way downstream to the Red River to provide the increased capacity necessary for the underpass. It was also proposed that some form of on-site retention could be provided to help regulate the storm water flow into the system and mitigate some of the impacts to the system capacity. Impacts to sanitary sewer and water systems are not anticipated to be significant.

A question was asked about the quiet zone work that is currently ongoing, and whether it would be wasted if the underpass was determine to be feasible. Bob Zimmerman responded that even if the underpass was recommended, it would be 10-15 years before it would probably be constructed, so the quiet zone elements would serve the City for that period of time and would not be considered a wasted effort.

Dain Miller reminded the SRC that Mn/DOT had suggested at the first meeting to consider performing a Phase I investigation of hazardous materials. The SRC discussed this and decided that this effort would not be necessary as part of this study.

Bob Zimmerman reminded the SRC that it was important to remember that the scope of this study is to take the concept development far enough to determine the feasibility of the underpass and to identify any fatal flaws in alternatives, while not getting too carried away with design details.

Railroad Alignment and Consolidation Concepts

HDR had also developed some concepts for realignment and consolidation of the KO and Prosper lines, which Bobby Oare reviewed with the SRC. Regarding consolidation, BNSF indicated that it is unlikely that the need for a separate Prosper Line will go away.

After some discussion about impacts to downtown and other possibilities for line realignments, it was determined that the consolidation option and the underpass concepts are two separate issues. The SRC directed Ulteig and HDR to cease any further efforts on the consolidation options as part of this feasibility study, and focus on the 11th Street underpass concepts. Ulteig and HDR will include some consideration and discussion in the report and public materials regarding what the "throw-away" elements and costs would be if the Prosper Line is eliminated at some point in the future after the underpass is already constructed.

Public Involvement Approach and Schedule

The following elements were discussed and agreed on regarding the public meeting approach and schedule:

- The first public meeting will be held sometime in late April or early May. Location to be determined, but Ulteig will check into using the Hjemkomst Center as a potential location.
- Project costs will not be shown at the 1st public meeting, but will be presented at the 2nd meeting.
- Ulteig will send out PDFs of the final exhibits in an e-mail to the SRC for review and comment before the public meeting.
- Ulteig and HDR will continue to refine the exhibits to make them as clear as possible for the public. Dots (or some identifying feature) will be added to the access locations to help make them stand out on the concept maps.
- The SRC directed that no individual meetings with property owners should be held at this time.
- City staff will notify City Council in advance of the public meeting and include the meeting notice in the Council packet.
- The City will take care of mailing the meeting notices out to property owners. Ulteig will provide the notices to the City, and will also hand-deliver notices to certain critical properties if necessary.

Additional Issues

Dain Miller asked the representatives from BNSF and Mn/DOT if they felt any further coordination was required with their agencies before the public meeting. Mark Waisanen responded that he was satisfied with the effort and coordination to this point. Lynn Leibfried agreed, but mentioned that she would like to review the proposed concepts with some of her staff before the meeting. Bobby Oare will provide Lynn with 11" x 17" plots of the exhibits for this purpose.

Dain Miller & Steve Grabill met separately on March 27th with Mark Waisanen to review and consider another alternative or idea Mark had. The alternative included realigning Hwy 10 to join into Main Avenue in the vicinity of 14th Street. The elevation of Hwy 10 would be maintained as an underpass in the same fashion as it is today where it goes under the P-Line that branches to the north and would continue to go under the KO line just to the east of 14th Street.

There were

Adjourn

The meeting was adjourned at 11:50 a.m.

Action Items

1. Ulteig will plan and schedule the first public meeting in late April or early May.
2. Ulteig and HDR will continue to refine and revise the public meeting exhibits based on the comments in this meeting.
3. City of Moorhead will prepare a project mailing list and send out the meeting notice once it is provided by Ulteig.
4. HDR will provide Lynn Leibfried with 11" x 17" versions of the exhibits for her use.

Study Review Committee
Meeting #2 Agenda
11th Street Railroad Grade Separation Study
Moorhead, MN

Date: March 20, 2007

Time: 10:00 a.m. – 12:00 p.m.

Location: Conf. Room 4th Floor – City Engineering

AGENDA ITEMS:

- 1. Introduction / Objectives of this Meeting (10:00 – 10:10)**
 - Introduction of committee members & attendees
 - Comparison Matrix Update – Confirms 11th Street as preferred location
 - Review Grade Separation Impacts
 - Review Railroad Alignment Concepts @ 11th Street
 - Discuss Public Involvement Approach & Schedule
 - Additional Issues Identification / Input from Committee

- 2. Comparison Matrix Updated (10:15 – 10:30)**
 - Review Fatal Flaw Matrix
 - Review Results to Date on Selection Criteria
 - Committee Input on Matrix Rating System & Analysis
 - Does everyone agree 11th Street is the right location to study?

- 3. Review Grade Separation Impacts (10:35 – 11:05)**
 - Alternatives for Grade Separation Concepts
 - 2 Bridges, Drop Center Avenue to match 11th Street
 - Continuous Tunnel, Leave Center Ave at Grade
 - 1 Bridge – If Rail Consolidation is Feasible
 - Right of Way Impacts / Construction Limits

- 4. Review Railroad Alignment Concepts (11:10 – 11:30)**
 - Update from HDR's on their meeting with BNSF
 - Show RR Consolidation Concept

- 5. Public Involvement Approach & Schedule (11:35 – 11:45)**
 - How much do we show them / Can we discuss Costs?
 - Meet with Adjacent Property Owners first
 - Schedule Public Input Meeting End of April / Early May

- 6. Additional Issues / Input from the Committee (11:45 – 11:55)**

- 7. Upcoming Tasks / Schedule (11:55)**

- 8. Adjourn (12:00 noon)**

To: Project File – UEI Project № 106.0754
From: Dain Miller, PE
Matt Kinsella, PE
CC: All Attendees, David Overbo, Spencer Arndt, Leif Thorson, Bobby Oare
Date: April 2, 2008
Re: **Summary of March 27, 2008 Study Review Committee Meeting #3
Downtown Moorhead Railroad Grade Separation Feasibility Study**

Study Review Committee (SRC) Meeting #3 was held on March 27, 2008 at Moorhead City Hall. Brian Gibson of FM Metro COG, Bob Zimmerman, Tom Trowbridge, and Pete Doll of the City of Moorhead (City), Mark Waisanen of Mn/DOT, Dain Miller and Matt Kinsella of Ulteig Engineers (Ulteig), and Lynn Leibfried of BNSF attended the meeting. A copy of the meeting agenda is attached.

Meeting Summary

Introductions

- Dain Miller opened the meeting at 10:05 a.m. Introductions were made and copies of the agenda were distributed.

Meeting Objectives

Dain Miller reviewed the meeting objectives:

- Project status and schedule update
- Comments on draft report
- 14th Street discussion
- Approach for 2nd public meeting

Project Status and Schedule Update

Dain Miller stated that the 2nd public meeting is tentatively set for Thursday, May 1st (depending on the outcome of the 14th Street discussion during this SRC meeting). The final report should be completed by June or July. Bob Zimmerman commented that City Engineering has tentatively planned on taking this project to City Council in June, so that schedule should work.

Comments on Draft Report

Matt Kinsella reviewed the comments that had already been received by e-mail. Bob Zimmerman, Tom Trowbridge, Dave Overbo, Brian Gibson, and Bobby Oare all had previously sent in e-mail comments. Some comments that required clarification included:

- Trowbridge Comment #10: On page 26, the second paragraph notes the delay times - are these switched around? The KO line has twice the train volume, but the Prosper line has twice the delay time? *The delay times are correct, and were taken directly from the RR Consolidation Study.*
- Trowbridge Comment #11: On page 31 - Table 6.1 - The vertical clearance is assumed to be 16'-4", but in Appendix A, it mentions a second alternative clearance of 14'-6". Should this be explained? Also, check the Minimum K value for Sag Vertical Curves. Table 6.1 shows "19", but Appendix A shows "37". *Delete 14'-6" clearance criteria from Appendix. Minimum K value should be 19, will revise accordingly.*
- Trowbridge Comment #13: On page 34, the 5th bullet point describes where the "jug handle" connects to Center Ave in relation to 11th St (600 feet away). How far would it be from 14th St? Would this meet current Mn/DOT access guidelines? *The SRC discussed the context of the situation and determined that the access spacing would be OK.*
- Trowbridge Comment #15: In Appendix A, the first page, are the bridge design criteria #3 (3 spans) and #5 (140' length) correct? *Yes.*
- Trowbridge Comment #16: In Appendix B, on page 3 of the March 20, 2007 SRC 2nd meeting, the last paragraph ends abruptly "There were...". Something appears to be missing. *We will review and correct this incomplete sentence.*
- Gibson Comment #1: On page #2 you identify TH 10 and TH 75 as being Minnesota Trunk Highways. They are U.S. Highways also. I don't know what protocol is for this sort of thing, but I would think we would refer to them by their "highest" title. *We will change these to "US."*
- Oare Comment #4: Page 31, you call out AASHTO requirements for both the crest and sag vertical curves. These values also represent Mn/DOT design standards. Since this is a project in Minnesota and there is a possibility that this could carry the TH 75 designation, I think you should reference Mn/DOT rather than AASHTO. *We will change reference to "Mn/DOT."*

After discussion, the group agreed that the name of the study should be changed to "Downtown Moorhead Railroad Grade Separation Feasibility Study."

There were no additional comments from the group members on the Draft Report.

14th Street Discussion

The group discussed how 14th Street should be addressed, both in the report and at the next public meeting. It was clear at the first public meeting last May that there was some public sentiment for considering 14th Street as the grade separation location. There was discussion about whether the final report could identify two locations as being feasible for an underpass (i.e. 11th Street and 14th Street). The group decided that this approach would be appropriate. Ulteig passed around Powerpoint slides that contained advantage and disadvantage comparisons for the two locations. Pete Doll pointed out

that the cost information on the slides needs to correspond with the data shown in the comparison matrices. Dain Miller agreed, and added that the cost estimates for 14th Street do not reflect yet any costs associated with potential impacts to the railroad switch point or existing bridges east of 14th Street.

The group agreed that we need to demonstrate to the public that we did hear their comments and have addressed them. It was concluded that an alternative and graphic similar to those for 11th Street should be developed for 14th Street. Bob Zimmerman directed Ulteig to develop that graphic, and include 14th Street in the final report as a secondary feasible option to 11th Street. Bob realized that this additional effort is beyond the original scope of work, and he requested that Ulteig prepare a proposed scope of services and fee estimate for the additional work.

Dain Miller talked about some of the challenges of designing a shoofly at 14th Street. There is limited room to the east of 14th Street to tie the shoofly back in before bridge structures and track switch points are reached. The services of HDR Engineering will be needed to review the design for the shoofly, and determine the extent of impacts to the switch point and structures east of 14th Street. Some ideas were suggested for addressing this issue. The group discussed and agreed that a reduced design speed for the Prosper Line during construction might allow sharper radius curves and quicker tie-ins. Lynn Leibfried mentioned that BNSF would be on board with considering a reduced design speed during construction under these circumstances.

Approach for 2nd Public Meeting

The following elements were discussed and agreed on regarding the public meeting approach and schedule:

- The public meeting date should be pushed back due to the addition of graphics at 14th Street. Matt Kinsella said that he would check with the Hjemkomst Center on availability. **Update: the public meeting date has been moved to Tuesday, May 13th.**
- Some level of estimated project costs will be shown at the meeting. The “Prosper Only” alternative costs do not need to be shown. Ulteig will revise the cost table to include ranges of costs, and will refine the appearance of the table to make it more user-friendly.
- Similar to the first public meeting, City staff will notify City Council in advance of the public meeting and include the meeting notice in the Council packet. The City will also take care of mailing the meeting notices out to property owners. Ulteig will provide the notices to the City.

Additional Issues

- 1st Avenue North was discussed. Tom Trowbridge said that the improvements for 1st mainly consist of overlays and median improvements, so the throw-away costs would be minimal if an underpass project happened in 10-15 years.
- The railroad consolidation will probably not happen, there is not much interest from either the local jurisdictions or from BNSF.

- Lynn Leibfried asked if any of the 11th Street options had been identified as preferred. The answer was no. She also wondered about any difference in construction timeline that might exist between 11th Street and 14th Street. The construction timeline for this project would be two years.
- The design speed reduction for the Prosper Line would be needed for one year at most during construction.
- Lynn pointed out the if a track raise is needed, it will be more difficult to raise the tracks at 14th Street than at 11th Street, due to the limited room on the east side of 14th Street to tie back into the existing elevations before the existing bridge structures.
- Mark Waisanen mentioned that for a 14th Street alternative, TH 10 would have to be re-routed during construction, which would create more significant impacts to traffic operations and businesses.

Adjourn

The meeting was adjourned at 11:20 a.m.

Action Items

1. Ulteig will check on room availability at the Hjemkomst for a public meeting date change.
2. Ulteig will prepare a scope of services and fee estimate for the additional work required at 14th Street.
3. City of Moorhead will use the project mailing list to send out the public meeting notice once it is provided by Ulteig.

Study Review Committee
Meeting #3 Agenda
11th Street Railroad Grade Separation Feasibility Study
Moorhead, MN

Date: March 27, 2008
Time: 10:00 am – 12:00 pm
Location: Conference Room 4th Floor – City of Moorhead Engineering

AGENDA ITEMS:

- 1. Introduction & Objectives of this Meeting (10:00 – 10:15)**
 - Introduction of committee members & attendees
 - Project status and schedule update
 - Review and discuss comments on draft report
 - Discuss how 14th Street should be addressed - with the public and in the report
 - Discuss approach for 2nd public meeting
 - Additional input from committee

- 2. Project Status and Schedule Update (10:15 – 10:20)**
 - Public Meeting #2 tentative date – May 1st
 - Submittal of final report – June/July 2008

- 3. Comments on Draft Report (10:20 – 11:05)**
 - Received e-mail comments from:
 - City (Bob Zimmerman & Tom Trowbridge)
 - FM Metro COG (Brian Gibson)
 - Clay County (Dave Overbo)
 - HDR (Bobby Oare)
 - Main body of report
 - Study Conclusions
 - Cost information
 - Appendices

- 4. 14th Street Discussion (11:05 – 11:25)**
 - How to address public's previous comments about a 14th Street underpass?
 - Should we recommend two alternatives as feasible in final report?

- 5. Approach for 2nd Public Meeting (11:25 – 11:45)**
 - Tentatively scheduled for May 1st at Hjemkomst Center
 - What has changed since last public meeting?
 - 14th Street – Need to show that we heard the comments from Public Meeting #1
 - Cost information – how much to show?

- 6. Additional Input from Committee (11:45 – 12:00)**

- 7. Adjourn (12:00)**

To: Project File – UEI Project № 106.0754
From: Matt Kinsella, PE
CC: Call Participants, Project SRC Committee Members
Date: May 1, 2008
Re: **Summary of April 29, 2008 Conference Call with BNSF
Downtown Moorhead Railroad Grade Separation Feasibility Study**

This summary contains notes from a conference call with BNSF on April 29, 2008 at 3:00 pm. Bobby Oare, Chris Romansky (HDR), Matt Kinsella (Ulteig), Lynn Leibfried, Mark Gjevre, and Chad Jasmin (BNSF) were present on the call. A PDF of a preliminary shoofly layout for 14th Street was provided for all participants to comment on during the conversation (see attached).

Conclusions

Based on BNSF's operational requirements and constraints for the KO Line and Prosper Line as stated during the conference call (and as outlined in the summary below), and due to the proximity to 14th Street of several railroad track switches, turnouts, and crossovers, construction of shoofly lines for the KO and Prosper will be nearly impossible to achieve without substantial financial and property impacts, well over and above what would be required to construct similar shoofly lines at 11th Street. Without the shoofly tracks, construction of a railroad underpass at 14th Street would not be feasible.

Summary of Conference Call

- For the KO Subdivision (the south rail lines), a reduction in design speed will not be permitted during construction. Design speeds must remain at up to 60 MPH for this subdivision.
- For the Prosper Subdivision (the north line), a reduction in speed could be considered. However the existing design speed is 25 MPH for the Prosper Line.
- BNSF is installing a new interlocker (a series of interconnected signals which control train movement) at the diamond crossing of the KO and the Prosper Subdivisions. This is a major rail/rail crossing for BNSF. The location of this diamond crossing prohibits the location of a shoofly in close proximity.
- BNSF will not permit any re-routing of traffic from the Prosper Subdivision to the KO Subdivision, or vice versa. Both lines are busy and the combining of this traffic onto a single line will not be allowed.

- In addition to both the KO Subdivision and Prosper Subdivision remaining in service during the proposed construction, all corresponding sidings and tracks that come in and out of these lines must remain open and operational during construction.
- There is an existing No. 20 crossover between the 2 tracks on the KO Subdivision that starts 176' east of 14th Street. The crossover is 376' long from point of switch to point of switch. This crossover must remain in service (it allows trains coming from Breckenridge to cross over to the north KO Subdivision track (referred to as Main 1)).
- The presence of this No. 20 crossover on the KO Subdivision, in combination with BNSF operational requirements as listed above, result in only 2 possible options for a shoofly on the KO Subdivision:
 - 1) A 200' tangent section of track is required from the No. 20 crossover to the beginning of a potential shoofly (temporary diversion track) alignment. As a result, the shoofly would need to begin just west of 14th Street. Clearly, starting the shoofly at this point would not work with the current 14th Street alignment. Therefore, 14th Street would need to be realigned approximately 700-800' to the west, which would have significant property and financial impacts.
 - 2) The mainline shoofly could be constructed as shown in the attached drawing. However, the existing track crossover would need to be removed, and a temporary crossover would be installed west of 11th Street, where sufficient tangent track would be available to accommodate the crossover length (376'). Separating the crossover from the turnout in this fashion would most likely impact BNSF operations. Overall, this option would have much higher costs due to the longer shoofly tracks, crossing, switches, and right-of-way needs.
- Constructability challenges also exist at the Prosper Subdivision. There is a No. 11 turnout 155' east of 14th Street that serves customers to the north and east who receive shipments daily. This segment of track is known as the P Line and must remain in service.
- These conditions result in similar options being available for the Prosper Subdivision. The shoofly would need to maintain these turnout connections. The shoofly design could be modified to accommodate a No. 11 turnout to maintain this connection.
- After discussion and consideration of all these issues, the consensus opinion was that construction of an underpass at 14th Street is not feasible.

End of Conference Call Summary

To: Project File -- UEI Project № 106.0754
From: Dain Miller, PE
Matt Kinsella, PE
CC: File
Date: July 19, 2007
Re: **Summary of July 18, 2007 Meeting with BNSF
11th Street Railroad Grade Separation Study**

Notes from our meeting with BNSF at BNSF Fargo Office. Bob Zimmerman from City of Moorhead was also present.

Meeting Summary

- BNSF Cost Participation: Lynn said that there is a state statute that allows for BNSF to pay 5% of the theoretical structure costs under certain conditions. She was not sure of the details, and recommended that we research this statute.

She also mentioned that if the statute isn't used, BNSF typically contributes around \$10,000 to \$20,000 to the cost if the project includes closing an existing at-grade crossing. The state will also match up to \$7,500 of this amount.

- Track raising: BNSF said to assume no more than a 1' raising of the track, and to keep the change in grade to less than 0.5%, with a max. grade of 1%.
- The Prosper Line is used as a "run-around" to the KO Line, if the KO Line needs to be shut down.
- Amtrak uses the Prosper Line to access the Hillsboro Subdivision and carry passenger service to Grand Forks, Minot, etc.
- For updated crossing crash data, check the FRA website. Lynn will check with Paul Dellarosa, Mn/DOT Rail representative for the Moorhead area.
- Bob Z. said not to worry about 14th Street, he feels that we have the justification for the 11th Street crossing right now.

11th Street
Public Meeting #1

Ad in the Forum

05/09/2007

Page C3 (Business Section)

to align its work force to corre-
spond with lower market
demand," the company said in
a statement at the time.
The company also cut about
layoffs.

MAGICIAN: Shares messages, too

From Page C1

Last week, Young shared the
same message at Marketplace
for Kids in Moorhead.

Steele-Dawson (N.D.) School
Superintendent Ken Miller
said the district had Young
give a performance for its 300
students last fall.

Not only did Young have
"wonderful magic tricks," but
he shared a message with stu-
dents about working hard and
going after goals, Miller said.

So what does Young say are
the secrets to his success?
"A lot of hard work, a desire
to succeed, always striving to
become better, support from
my parents ... and maybe just
a little magic."

Readers can reach Forum reporter
Teri Finneman at (701) 241-5560

PUBLIC INPUT MEETING

Tuesday, May 22nd
Hjemkomst Center - 202 1st Ave N, Moorhead
Oak Room



TOPIC: 11th Street
Railroad Grade
Separation Study

Notice is hereby given that the City of Moorhead, FMI MetroCOG, and
Ulteig Engineers, Inc. will hold a public input meeting at the Hjemkomst
Center, Oak Room at 202 1st Avenue North, Moorhead.

The meeting will begin at 5:00 p.m. with an open house and end at
7:00 p.m. on Tuesday, May 22, 2007. A formal presentation will be
given at 6:00 p.m. with opportunities to review project materials before
and after the presentation.

• **Meeting Purpose:** To provide information and to obtain comments
from all interested persons on the feasibility and issues related to a
possible underpass at 11th Street below the 2 sets of railroad tracks in
downtown Moorhead.

• **Project Area:** 11th St - from 3rd Ave S to 2nd Ave N

Main Ave, Center Ave, & 1st Ave N - From 8th St
to 14th St

• **Issues:** Potential property and access impacts, traffic mobility, street
connectivity, railroad crossing safety, emergency vehicle access

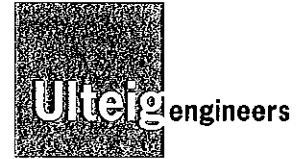
All interested persons are invited to participate in this meeting. Requests for special
facilities to assist disabled persons' involvement in this meeting should be submitted
by May 18, 2007.

If you are unable to attend but still wish to provide comments, please submit
comments by May 31, 2007. Comments or requests for special facilities should be
directed to Dain Miller at 3350 38th Ave. S., Fargo, ND 58104, e-mail
Dain.Miller@Ulteig.com, phone (701) 280-8568.

If you have
or concerns
"Ask Us." V
too and we
good neigh

Toll Free: 1-
Online at:
crystalsug

DR



NOTICE OF PUBLIC INPUT MEETING

TO: Resident or Business Owner

FROM: Robert Zimmerman, PE, City Engineer - City of Moorhead
Dain Miller, PE, Project Manager - Ulteig Engineers, Inc.

DATE: May 7, 2007

SUBJECT:

<p>Public Input Meeting 11th Street Railroad Grade Separation Feasibility Study</p> <p>Location: Hjemkomst Center – 202 1st Avenue North, Moorhead Oak Room</p> <p>Date: Tuesday, May 22, 2007 Time: 5:00 pm to 7:00 pm</p>

PROJECT LOCATION: 11th St – from 3rd Ave S to 2nd Ave N
Main Ave, Center Ave, & 1st Ave N – from 8th St to 14th St

Dear Resident or Business Owner:

The City of Moorhead, the Fargo-Moorhead Metropolitan Council of Governments, and Ulteig Engineers, Inc. invite you to attend a public input meeting which will be held at the Hjemkomst Center, Oak Room at 202 1st Avenue North, Moorhead.

The meeting will begin at 5:00 p.m. with an open house and end at 7:00 p.m. on **Tuesday, May 22, 2007**. A formal presentation will be given at 6:00 p.m. with opportunities to review project materials before and after the presentation.

- **Meeting Purpose:** To provide information and to obtain comments from all interested persons on the feasibility and issues related to a possible underpass at 11th Street below the 2 sets of railroad tracks in downtown Moorhead.
- **Issues:** Potential property and access impacts, traffic mobility, street connectivity, railroad crossing safety, emergency vehicle access

All interested persons are invited to participate in this meeting. Requests for special facilities to assist disabled persons' involvement in this meeting should be submitted by May 18, 2007.

If you are unable to attend the meeting but still wish to provide comments, please submit your comments by May 31, 2007. Comments or requests for special facilities should be directed to Dain Miller at 3350 38th Ave. S., Fargo, ND 58104, e-mail Dain.Miller@Ulteig.com, or by telephone at (701) 280-8568.

PUBLIC INPUT MEETING

Tuesday, May 22nd
Hjemkomst Center – 202 1st Ave N, Moorhead
Oak Room

TOPIC: Moorhead
11th Street Railroad
Grade Separation Study



Agenda
Public Input Meeting #1

11th Street Railroad Grade Separation Feasibility Study
Moorhead, Minnesota

May 22, 2007 5:00 pm to 7:00 pm

Presented by **Ulteig Engineers, Inc.** on behalf of the

City of Moorhead
and the
Fargo-Moorhead Metropolitan Council of Governments

Hjemkomst Center – Oak Room
202 1st Avenue North
Moorhead, Minnesota

5:00 pm **Open House** (please review the project displays)

6:00 pm **Formal Presentation**

Purpose of Tonight's Meeting
Project Background and Project Needs
Study Objectives / Approach
Preliminary Findings of the Study
Discuss Alternatives Developed
Project Status and Timelines
Open Discussion

6:30 pm **Open House** (please review the project displays)

7:00 pm **Adjourn Meeting**

Ulteig engineers



PUBLIC INPUT MEETING



City of Moorhead, Minnesota
May 22, 2007

11th Street Railroad Grade Separation Feasibility Study



MEETING PURPOSE

This public input meeting is being held to inform the public and businesses that a railroad grade separation Feasibility Study in the downtown area is currently being prepared on behalf of the City of Moorhead and the FM Metropolitan Council of Governments.

1. To help the public understand:

- The role of a Feasibility Study in the overall project development process
- The location of the Study area
- Why a Feasibility Study for a possible railroad grade separation is being prepared
- The alternatives being studied
- The schedule of this study and future engineering efforts before a project is built

2. To give the public an opportunity for input on:

- Other issues that exist within the study area
- How the alternatives impact them or the city
- Potential new or revised alternatives

STUDY BACKGROUND & NEEDS

In the interest of improving emergency vehicle response times, increasing safety for pedestrians and bikers and reducing traffic delays in the downtown area, the City of Moorhead has determined that now is the time to start analyzing a location for a possible grade separation of the roadway and pedestrian facilities from the railroad tracks in downtown Moorhead.

Background and Needs Summary:

- Reduce train-vehicle exposures in downtown Moorhead
- Enhance safety for pedestrians and bikers
- Reduce potential delays to emergency vehicle response times that exist today
- Reduce traffic congestion and delays as traffic volumes increase in downtown Moorhead

STUDY OBJECTIVES / APPROACH

A Feasibility Study is only the beginning of the process before a project is actually considered for programming for future funding and implementation. A more detailed preliminary engineering and environmental documentation effort would precede any actual detailed design and eventual construction project.

Study Objectives and Approach

- Form a Study Review Committee (SRC) representing various governmental agencies
- Determine if a railroad grade separated crossing is feasible in downtown Moorhead
- Consider all at-grade crossing locations initially & eliminate obvious non-feasible locations
- Narrow the focus of the study to one crossing location (11th Street)
- Identify the impacts of railroad grade separated crossings at 11th Street
- Develop concept alternatives for the grade separated crossings at 11th Street
- Get input from the public
- Provide a document to help elected officials secure funding for future project development

PRELIMINARY STUDY FINDINGS

Although no concepts have been completely eliminated from future consideration, the Feasibility Study has narrowed the alternatives by consensus of the Study Review Committee. These alternatives may be eliminated or revised during this study or in future preliminary engineering studies. Some preliminary results of the study include:

Preferred Location Analysis

- Fatal Flaw Matrix narrowed possible locations to 8th Street, 11th Street and 14th Street
- Screening Criteria used for selecting 11th Street:
 1. Property Impacts & Business Relocation
 2. Emergency Vehicle Access
 3. Traffic Capacity / Mobility / North-South Connectivity thru town
 4. Constructability / Utility Impacts
 5. Costs & Economics (Right of Way and Construction)
 6. Railroad Issues (Temporary Shoofly Construction, Train-Vehicle Exposures)
 7. Safety Impacts (Based on history of accidents, injuries and fatalities)

Alternative Concept Development at 11th Street

- Three alternative concepts have been developed at 11th Street:
 1. Lower 11th Street, build bridges at KO Line and Prosper Lines (Lower Center Avenue to connect to 11th Street)
 2. Lower 11th Street, build continuous tunnel under KO and Prosper Lines (No connector ramp between 11th Street and Center Ave)
 3. Lower 11th Street, build tunnel under KO and Prosper Lines (Build connector ramp between 11th Street and Center Ave)
- Main Avenue and 11th Street intersection will be lowered 5 to 7 feet
- 1st Avenue North and 11th Street intersection will be lowered 10 to 12 feet
- Probable construction limits and right of way impacts developed
- Preliminary railroad shoofly layouts developed for KO and Prosper tracks

FREQUENTLY ASKED QUESTIONS

■ If feasible, when will this project be built?

Answer: Many factors affect the timing of a potential construction project of this magnitude. The most significant factor is the availability of funding. Realistically securing funding and following the project development process from preliminary design to environmental documentation to final design to construction could take anywhere from 8 to 20 years. (See the separate handout showing the typical project development process and estimated time frames)

■ What is a Train-Vehicle Exposure?

Answer: A common statistic in assessing risk is train crash exposure. Crash exposure is derived from multiplying the number of trains moving through an at-grade crossing on a daily basis by the average daily traffic volume (vehicles) at the crossing. (example: 11th Street / K.O. Subdivision Line – 63 trains X 6,500 ADT = 409,500 exposures¹)

■ How many Train-Vehicle Exposures does it take to justify a grade separation crossing?

Answer: MnDOT's (Minnesota Department of Transportation) standards for train-vehicle exposures is 300,000 for justification of a grade separated crossing.

■ How many trains per day come through the City of Moorhead?

Answer: Currently the KO Subdivision line (main tracks) carries just over 60 trains per day and the Prosper Subdivision line (farthest north tracks) carries around 30 trains per day.

■ How will traffic in downtown Moorhead be affected by a grade separation project?

Answer: The scope of the Feasibility does not include any traffic operations analysis. However, it would be safe to say that eliminating some delays due to traffic congestion could be expected by having a railroad grade separated crossing in the downtown area.

¹Information based on 2000 ADT Traffic Volumes and the FM Rail Corridor Consolidation Study 2004, TKDA, Inc.

PROJECT SCHEDULE, COSTS, & FUNDING

Schedule:

- One more public input meeting will be conducted as part of the Feasibility Study in July 2007
- Feasibility Study will be finalized in August 2007
- Study will be presented to City Council for adoption
- Next Step? Secure funding for Preliminary Engineering / Environmental Assessment via Congressional Appropriations (1 – 5 years)

Preliminary Costs:

The scope of this study will not include a detailed analysis of construction costs. It is difficult to know at this stage how much a grade separation project would cost because of all of the unknowns and variables affecting the cost. At this point no cost data has been prepared for property acquisition, utility impacts, railroad impacts, etc. In addition, there is no certainty of what to expect for inflation of construction costs today vs. 15 years from now. Rough preliminary cost estimates for engineering, right of way acquisition and construction could fall in the \$30 to \$50 million range in today's dollars.

Project Funding:

This project would only be possible with federal funding along with a local match. Typically these types of projects are funded with 80% federal and 20% local funds. At this point no funds have been allocated or programmed beyond this Feasibility Study.

OPPORTUNITIES FOR PUBLIC INPUT

Please pick up a comment sheet at the sign in table. You may leave your comments at the meeting or offer comments after you leave and mail them.

Written comments should be submitted by May 31, 2007 to:

Mr. Dain Miller, PE
Ulteig Engineers, Inc.
3350 38th Ave. S.
Fargo, ND 58104-7079

or faxed to:
(701) 280-8739

You may e-mail comments to:
dain.miller@ulteig.com

Mr. Miller's phone number is:
(701) 280-8568



11th Street Railroad Grade Separation Project Development Process & Estimated Timetable May 2007

Project Phase	Approximate Duration	Estimated Year of Completion	
		Funding	Project
Complete Feasibility Study	6 - 9 months		2007
Secure Funding for Preliminary Engineering & EA (Accomplished through Congressional Appropriation Process)	1 - 5 years	2008 - 2012	
Complete Preliminary Engineering & EA/EAW or EIS	2 years		2010 - 2014
Obtain FONSI/Negative Declaration	6 months - 1 year		2011 - 2015
Secure Funding for Final Design & ROW Acquisition (Accomplished through Congressional Appropriation Process)	1 - 5 years	2009 - 2017	
Complete Final Design & ROW Acquisition/Property Purchases	2 years		2013 - 2019
Secure Funding for Construction (Accomplished through Congressional Appropriation Process)	2 - 5 years	2011 - 2022	
Complete Construction	2 years		2015 - 2024

Definitions

- EA** = Environmental Assessment
- EAW** = Environmental Assessment Worksheet
- EIS** = Environmental Impact Statement
- FONSI** = Finding of No Significant Impact
- ROW** = Right-of-Way

To: Project File – UEI Project № 106.0754
From: Dain Miller, PE
Matt Kinsella, PE
CC: Bob Zimmerman, Tom Trowbridge, Peter Doll, Brian Gibson, David Overbo,
Mark Waisanen, Bobby Oare, Steve Grabill, Mike Johnson, Leif Thorson,
Spencer Arndt, Lynn Leibfried
Date: June 18, 2007
Re: **Summary of May 22, 2007 Public Meeting #1**
11th Street Railroad Grade Separation Feasibility Study

Meeting Summary

Public Meeting #1 for the **11th Street Railroad Grade Separation Feasibility Study** was held from 5:00 pm to 7:00 pm on May 22, 2007 at the Hjemkomst Center, 202 1st Ave N, Moorhead. The meeting format was open house, with a formal presentation and group Q & A session at 6:00 pm. A copy of the meeting agenda and attendance roster is attached.

Approximately 30 property owners, business representatives, and local residents attended the meeting. Bob Zimmerman and Tom Trowbridge, and Deb Martzahn of the City of Moorhead (City), Brian Gibson of FM Metro COG, Dain Miller, Matt Kinsella, and Mike Johnson of Ulteig Engineers, and Bobby Oare of HDR represented the project team at the public meeting.

The purpose of the public input meeting was:

- To review and present:
 - Study objectives and approach
 - Present alternative concepts
 - Review project development process and timeline
- To receive public input on the feasibility study

Meeting attendees reviewed exhibits that were displayed on easels, and discussed project issues with staff. An information handout was also provided to all attendees.

During the formal presentation, Dain Miller of Ulteig Engineers summarized the feasibility study objectives, explained the project approach, reviewed the alternative concepts, and described the study findings and project timetable.

Public Comments and Questions

The following questions and comments were noted from attendees during both the open house session and the group Q & A session that followed the formal presentation.

- *Will pedestrians and bicycles be able to use the underpass also?* **Yes**
- *Why isn't the underpass being proposed at 14th Street, where the business impacts are less significant?* **All existing at-grade crossing locations were evaluated and compared using criteria agreed upon by the project Study Review Committee. The final three locations were 8th St, 11th St, and 14th St. Ultimately, the criteria showed that 11th St is the most logical location for the underpass when all aspects are considered.**
- *Have the issues related to rebuilding the intersections at 11th St/Main Ave and 11th St/1st Ave on steeper grades been considered (Such as increased accidents at intersections, problems with sight lines due to fences/retaining walls, etc.)?* **These issues have not been addressed during this study, since the scope of this feasibility study does not include a traffic analysis or detailed design. These are legitimate issues however, and would need to be fully considered and addressed in future planning studies and during the design process.**
- *Why does 1st Ave N need to be lowered more than Main Ave?* **Since the RR tracks are closer to the 1st Ave N intersection than to the Main Ave intersection, the roadway profile for 11th St is not able to come back up as quickly near 1st Ave N, which causes that intersection to be lower than Main Ave.**
- *Will road widths change for 11th St, Main Ave, Center Ave, or 1st Ave N?* **It is possible that road widths could change for all streets mentioned. However, this will not be known for certain until a traffic analysis is completed, which is outside the scope of this feasibility study.**
- *How far back will side street impacts extend?* **Impacts to side streets vary depending on the concept, but will most likely be anywhere from 200 feet to 1000 feet back from the intersection with 11th St.**
- *What are the cost differences for constructing a tunnel vs. constructing bridges?* **At this point in the project development process it is difficult to say with any certainty what the cost difference would be, but it is possible that a tunnel could be more expensive than separate bridges.**

- *How does the potential consolidation of the 2 railroad lines affect this underpass study? Wouldn't it be easier and have fewer impacts if the underpass only needed to go under 1 set of tracks rather than 2 sets? Yes, it would be easier to cross only 1 set of tracks. However, the RR consolidation study is on a separate development time table than this project, and it cannot be assumed at this point that the consolidation will even happen. Therefore, the study must assume the more conservative scenario, that 11th St would have to cross both RR lines.*
- *Why wasn't an 11th Street overpass above the RR tracks considered? An overpass would need to be approximately 28-30 feet into the air due to the 23-foot track clearance requirements and bridge structure depth. Raising 11th St to this height would result in much more significant impacts to surrounding property and access and loss of local street connections, and would also push the touch-down points even further to the north and south. Due to these reasons, an overpass was not considered feasible as part of this study. However, if this project continues through the NEPA environmental process, an overpass option would need to be evaluated equally with other feasible alternatives to meet the requirements of the NEPA process.*
- *What considerations are provided for the economic impacts to businesses both during and after construction? The NEPA process does provide consideration for these economic impacts to businesses in its evaluation criteria. These considerations would be detailed during the environmental study.*
- *With the underpass dropping so far into the ground, won't there be flooding issues? Design of the storm sewer system would definitely include a lift station, and would attempt to minimize any chances of flooding as much as possible. Typically an underpass would be designed to handle a 25-year or 50-year storm event.*
- *Will project costs be assessed to the public? How large will the assessment district be for a project like this? Under current policy, costs for this type of project are not assessed to the public. However, assessment policies are subject to change, and the use of special assessments for this type of project is allowable at the City Council's discretion. If some of the costs were assessed, the assessment district likely would be quite large.*
- *Will BNSF have to pay part of the project costs? Are they supportive of the project? BNSF has participated in this study and is supportive of the project. Regarding cost sharing, BNSF often shares in the cost for a project such as this that replaces at-grade crossings with grade-separated ones. However, it is too early in the process to know for certain if BNSF would share in the cost, and if so, what their portion of the cost would be.*
- *What will happen with the fire station on 1st Ave N? Impacts to the fire station are a definite concern with all the concepts. It is possible that access and circulation on*

the fire station property will have to be modified to work with the lowered roadway profiles. Relocating the fire station would also be a possibility.

- *For the tunnel options, would the area above the tunnel be usable once construction is completed?* **Yes, one benefit of the tunnel option is that some of the area above the tunnel can be developable after construction is complete.**

- *Why will it take so long before this project can be constructed?* **The handout that was provided during the meeting shows the numerous milestones that must be achieved before a project like this can be constructed. The most significant of these is funding, but there are also a number of environmental hurdles that would need to be attained.**

DATE: May 22, 2007

TIME: 5:00 pm - 7:00 pm

LOCATION: Hjemkomst Center, Moorhead, MN

SUBJECT: Moorhead 11th Street Railroad Grade Separation Study - Public Input Meeting

ATTENDANCE ROSTER

	NAME	ADDRESS/BUSINESS	PHONE
1.	Dain Miller	Ulteig Engineers, Inc.	280-8568
2.	Matt Kinsella	Ulteig Engineers, Inc.	280-8672
3.	Clifford Basak		233 3703
4.	Doug Basak	1020 Center Ave.	233-3008
5.	Will Schermerhorn	1010 MAIN AVE	233-2541
6.	Marr Degerness	1100 2nd Ave S	306-8034
7.	Tom Trombridge	City of Moorhead	299-5395
8.	John E Arnold	Haps TV 1104 Main Ave	233-3904
9.	Steve Basak	1020 Center Ave	233-4775
10.	Dan Durr	1010 Main Ave	280-0010
11.	J. Shane Mercer	Fargo	418-4801
12.	DEAN HORNBAKER	101 11 th St S	293-3566
13.	BRIAN GIBSON	FM COG	232-3242
14.	Mike Odegaard	1125 10 1/2 St N	233-0237
15.	Doug Bink	CB Elect 1020 C. Ave	233-4775
16.	Tim Geiselhart	Real All of FM	233-1559
17.	WINT JANSON	1001 Center Ave	236-1911
18.	Jude Oetters	1001 Center Ave	236-1911
19.	ROGER RICHARDS	8th + Main	233 3421
20.	BERNIE BAUSCH	823 MAIN AVE	233-7197
21.	KITA L. Dickelman	1024 Center Avenue	236-7201
22.	Richard Dickelman	"	"
23.	Phyllis Bobe Litzman	1007 12 th Ave S	233-3720

DATE: May 22, 2007

TIME: 5:00 pm - 7:00 pm

LOCATION: Hjemkomst Center, Moorhead, MN

SUBJECT: Moorhead 11th Street Railroad Grade Separation Study - Public Input Meeting

ATTENDANCE ROSTER

	NAME	ADDRESS/BUSINESS	PHONE
24.	JERRY BURDESKI	1119 13 ST N	291-0512
25.	MARK G...	2405 ST N S	234-1960
26.	DAVID ...	1201 CENTER AVE	233-6131
27.	Marlo Sloan ^{mutson}	1221 1ST AVE N	2366248
28.	MIKE McCARTHY	401 37 AVE S	233-3074
29.	SKIP (REX) WOOD	708 SO. 9TH ST	233-2001
30.	JASON LINK	4116 10TH ST S.	880-1369
31.	Gretta Link	" "	301-4521
32.	Randy A. Bank	3701 O'KPOA ST N	236-7271
33.	Larry Carlson	1912 55TH AVE N, MN	236-5075
34.	Mike Metzger		
35.			
36.			
37.			
38.			
39.			
40.			
41.			
42.			
43.			
44.			
45.			
46.			

(2)

MAY 22, 2007 COMMENT CARD

(Please return by May 31, 2007)

PUBLIC INPUT MEETING: Moorhead 11th Street Railroad Grade Separation Feasibility Study

NAME (please print): Jammie M. Yak ADDRESS (please print): 1121 10 1/2 St. N.

Toby V. Yak

MHD

(Comments may also be submitted by email to: Dain.Miller@Ulteig.com, or Fax to: (701) 280-8739

I wish to offer the following comments: This is certainly a need as
the North often feels cut off from the rest of
Moorhead and businesses. I question why it
will take so many years for this to happen.
Is there not a way to speed up the
process? I think this is a definite
safety issue - even greater than the quiet zone -
why do we rush across the tracks? - Because trains
can take 15 minutes or longer to pass and we are
stuck. I am also wondering if there will
be special assessments and to whom. And will
businesses be relocated and compensated?

Please leave your comment sheet with us
tonight or mail your comments by May 31, 2007 to:

Dain Miller, P.E.
Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

HOLLAND'S LANDSCAPING & GARDEN CENTER
1201 CENTER AVE. MOORHEAD, MN 56560
(218) 233-6131 FAX (218) 233-6132

MAY 30, 2007

Dain Miller, P.E.
Ulteig Engineers, Inc.
3350 38th Ave South
Fargo, ND 58104-7079

Dear Sir,

We are writing this letter in regards to the 11th Street Railroad Grade Separation Feasibility Study. Your presentation on May 22nd was very well introduced. We feel, however, that this is not the right direction for the City of Moorhead. The grade separation would, in fact, destroy the character of downtown Moorhead. The idea that it is important to reduce the car to railroad intersections and traffic flow is vital to growth in the city. However it is also important to have businesses to shop in; family owned business that are the life blood of this community.

Your proposed underpass would ruin the look of downtown Moorhead. To lower the grade of 11th and Center by twenty feet, with retention ponds in downtown Moorhead, is an economic and environmental hazard.

The relocation of more than twenty businesses that would probably not stay in Moorhead, if forced to move, would be an economic detriment to the city. With the property taxes and sales tax that these businesses generate, we pay for schools and infrastructure in the city. Would the proposed underpass make up for the loss of revenue to the city? We don't think so.

We feel that you should look to other options that would be less costly to the city and would preserve the integrity of downtown Moorhead. We feel strongly that this project should not move forward. However, if it must be done, the location of 14th street would have less economic impact.

RECEIVED

MAY 31 2007

ULTEIG ENGINEERS
FARGO ND

Six months ago we moved our business from Highway 75 to the corner of 11th and Center. We bought this building that had been neglected for fifty years and turned it into a destination spot for downtown Moorhead. When we were looking for a place to buy we thought about moving to Fargo or Dilworth, but decided to stay in Moorhead because the business was started here thirty five years ago and we felt that it was an important part of the community. We would like to stay in this location and not be forced out because of a road construction project.

We hope that you will consider this letter and the impact that this proposed project will have, not only for us, but for all businesses that will be affected, and for the whole community of Moorhead.

Sincerely,
Mike and Sarah Liljestrand, owners
Holland's Landscaping & Garden Center

Forward to-
Mayor Mark Voxland
Councilwoman Nancy Otto

TRE Investments

**1001 Center Avenue, Suite D
P.O. Box 996
Moorhead, MN 56561-0996
218-236-1911 or 701-293-0041**

May 29, 2007

Dain Miller, P.E.
Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Re: 11th Street Railroad Grade Separation Feasibility Study
Moorhead, Minnesota

Dear Mr. Miller:

We appreciated your presentation Tuesday evening and also the forwarding of the three concept drawings for the above study. We recognize the complexity of a project of this nature, which affects a multitude of businesses and property owners.

The following are our concerns with respect to the property we own at 11th Street and Main Avenue and at 1001 Center Avenue.

Midtown at Main – 11th Street and Main Avenue:

Elimination of egress to our site from Main Avenue is unacceptable to us. We have retail tenants who rely solely on traffic for their business. Eliminating the left turn entrance from the southbound lane of 11th Street compounds the egress problem to the site. It also appears that a portion of the parking lot adjacent to 11th Street would be taken eliminating several parking stalls.

1001 Center Avenue – Center Avenue and 10th Street:

The railroad "Quiet Zone" has eliminated access to our property from the South on 10th Street. During that process, access from 11th Street was also to be eliminated, which we asked to have remain open, which it has. The underpass eliminates access to our site from 11th Street. It also eliminates the center access from Center Avenue, leaving only access from the north on 10th Street. Having only one access from one direction, when we had three accesses from four directions previously, is unacceptable to us.

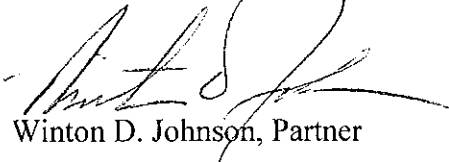
Winton D. Johnson Ron Ohe Harlan Ormbreck

Dain Miller
May 29, 2007
Page 2

It seems the proposal for 11th Street negatively impacts more businesses than necessary. Why not consider 14th Street? Center Avenue is already depressed under the existing railroad and the number of businesses impacted by an underpass at that location is considerably less than on 11th Street.

Sincerely,

TRE INVESTMENTS



Winton D. Johnson, Partner

cc: Bob Zimmerman, Moorhead City Engineer

RECEIVED
MAY 30 2007
ULTEIG ENGINEERS
FARGO ND

5/28/07 10:16 AM

Dain Miller, P.E.
Ulteig Engineers, Inc
3350 38th Avenue South
Fargo, ND 58104-7079

Dear Sir:

We are writing in answer to your request for input on the 11th Street underpass project in Moorhead.

Your presentation on May 22nd was very well organized and presented.

Perhaps our first concern should be directed not to you, but to the City of Moorhead and Metrocog. Our question is this: If there is truly an interest in considering input from concerned parties wouldn't it have been more prudent to ask for that input PRIOR to expending time, effort, and money on only one location – and that location chosen by you?

We do not understand many of the concerns of engineers. May we also suggest that engineers do not always understand the concerns of entrepreneurs. One of the most successful entrepreneurs of the metro area was Ted Hornbacher. It takes a certain amount of faith to take the risk of starting a business.

Hornbacher's 11th Street location generates more traffic than any business in town. M.J. Capelli's (across the street in the former Walgreen location) has just made a huge investment in remodeling that location. Mike and Sarah Lilestrand have just expended a huge amount of time, money and sweat equity in moving their Hollands Nursery from Highway 75 North to the corner of 11th Street and Center Avenue. How do you suppose they felt when they got your letter?

As they say in the business: It's location, location, location. All of these businesses (and others) would be severely impacted by this project.

Could you at least compare the impact of a 14th Street location?

Sincerely, *Phyllis C. Litherland*
Phyllis C. Litherland
1002 12th Avenue South
Moorhead, MN 56560

RECEIVED

MAY 30 2007

ULTEIG ENGINEERS
FARGO ND

Matt Kinsella

From: Matt Kinsella
Sent: Thursday, May 24, 2007 2:42 PM
To: 'mcdev@702com.net'
Cc: Dain Miller
Subject: 11th Street Feasibility Study - JPGs of public meeting exhibits

Linda,

I tried to send you the exhibit drawings this morning (see message below), but I used an incorrect e-mail address, sorry for the confusion. The 3 drawings are attached to this e-mail. Please respond and let me know that you received this OK. Thanks.

Matt Kinsella, PE
Transportation Engineer

Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Direct Phone: 701.280.8672
Cell Phone: 701.306.8499
Fax: 701.280.8739
E-mail: Matt.Kinsella@Ulteig.com

This message may contain privileged and confidential information. If you think, for any reason, this message may have been addressed to you in error, please reply to me as soon as possible.

From: Matt Kinsella
Sent: Thursday, May 24, 2007 10:17 AM
To: 'mcd@702com.net'
Cc: Dain Miller
Subject: 11th Street Feasibility Study - JPGs of public meeting exhibits

Linda,

Thanks again for attending the 11th Street Feasibility Study public meeting and providing your input on the project. Dain Miller mentioned to me that you requested copies of the 3 concept exhibits that were shown at the meeting. I have attached 3 JPG files to this e-mail, 1 for each alternative.

You should be able to print them to whatever size you require. If you do have any problems or difficulties with printing, please give me a call (contact info is below) and I would be happy to send you hard copies of the exhibits. Thanks Linda.

Matt Kinsella, PE
Transportation Engineer

Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Direct Phone: 701.280.8672
Cell Phone: 701.306.8499
Fax: 701.280.8739
E-mail: Matt.Kinsella@Ulteig.com

7/23/2007

Matt Kinsella

From: Matt Kinsella
Sent: Thursday, May 24, 2007 10:23 AM
To: 'smercer@forumcomm.com'
Subject: 11th Street Feasibility Study - JPGs of public meeting exhibits

Shane,

Dain Miller mentioned to me that you requested copies of the 3 concept exhibits that were shown at the 11th Street Feasibility Study public input meeting. I have attached 3 JPG files to this e-mail, 1 for each alternative.

Hopefully these files will work for your needs. If you need the exhibits in a different file format, or need anything else related to the project, please do not hesitate to contact Dain or me at the phone numbers or e-mail address listed below and I would be happy to assist you. Thanks Shane.

Matt Kinsella, PE
Transportation Engineer

Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Direct Phone: 701.280.8672
Cell Phone: 701.306.8499
Fax: 701.280.8739
E-mail: Matt.Kinsella@Ulteig.com

This message may contain privileged and confidential information. If you think, for any reason, this message may have been addressed to you in error, please reply to me as soon as possible.

7/23/2007

Matt Kinsella

From: Matt Kinsella
Sent: Thursday, May 24, 2007 10:20 AM
To: 'degernessm@mail.glassdr.com'
Subject: 11th Street Feasibility Study - JPGs of public meeting exhibits

Marv,

Thanks again for attending the 11th Street Feasibility Study public meeting and providing your input on the project. As you requested, here are copies of the 3 concept exhibits that were shown at the meeting. I have attached 3 JPG files to this e-mail, 1 for each alternative.

You should be able to print them to whatever size you require. If you do have any problems or difficulties with printing, please give me a call (contact info is below) and I would be happy to send you hard copies of the exhibits. Thanks Marv.

Matt Kinsella, PE
Transportation Engineer

Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Direct Phone: 701.280.8672
Cell Phone: 701.306.8499
Fax: 701.280.8739
E-mail: Matt.Kinsella@Ulteig.com

This message may contain privileged and confidential information. If you think, for any reason, this message may have been addressed to you in error, please reply to me as soon as possible.

7/23/2007

vel to Washing-
7 can go Sept. 7.
roject coordina-
gs announced

nor Flights are
nwide effort to
II veterans to
orial on the
1 Washington.

DAY AM radio
id she was
t a North Da-
nearing about a
n North Caroli-
overwhelming
rans and their
May flight, two
be arranged.

more than
1 raised for the

nt to thank the
all the support
us in raising
oint is we need
Briggs said.

ght committee
Northwest Air-
Boeing 747 air-
trips, each of
about 430 pas-
said.

who traveled
n May - Noo-
ach, Charles
Vally Bucking-
uesday's event
he additional

veterans who
the May flight
VD with news
event, a CD
the trip and a

Forum reporter
701) 235-7311



Dave Wallis / The Forum

Annie Bergen dances with Rockin' Robot as she and her kindergarten classmates are entertained with a visit Tuesday from Penny & Pals at Oak Grove Lutheran School. Today is the last day of school for the students before summer break.

5-23-07

Project ideas on track

Moorhead intersection estimated to cost \$30M to \$50M

By J. Shane Mercer
smercer@forumcomm.com

Consultants for Moorhead and the Fargo-Moorhead Council of Governments rolled out ideas Tuesday for a project that would route 11th Street in Moorhead under two sets of railroad tracks.

A preliminary estimate for this grade separation is between \$30 million and \$50 million, Moorhead City Engineer Bob Zimmerman said. The most likely source of funding would be a federal appropriation.

Tuesday's public input meeting at which the designs were displayed was part of a feasibility study.

The project, which is still in the preliminary stages, would affect 11th Street where the road intersects First Avenue North, Center Avenue and Main Avenue.

Fargo-based Ulteig Engineers and HDR Engineering, a national firm, presented three design options.

One of the designs would lower 11th Street from Main Avenue through Center Avenue and to First Avenue North. The railroad tracks would be left at their current levels so motor traffic could pass underneath.

In a second design, 11th Street would be lowered, but Center Avenue would remain at its current level. In this scenario 11th Street would pass under Center Avenue and the tracks. Center Avenue and 11th Street would no longer intersect.

A third option is similar to the second, but, in it a new street would be constructed to connect Center Avenue with 11th Street.

Dain Miller of Ulteig Engineers said the project would provide better access for emergency vehicles and relieve some traffic congestion.

The grade separation would also be safer and more convenient, Zimmerman said.

There would be property acquisition if the project is built, and that acquisition could be significant, Zimmerman said.

The project is a lengthy one. The feasibility study is to be complete by August, Zimmerman said. Staff will likely bring options from the study before the Moorhead City Council in September.

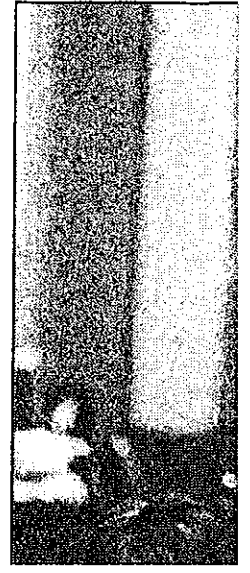
Even if the council pursues the grade separation, getting the project done will take years. The shortest time frame for completion would be eight to 10 years, Zimmerman said. And that's optimistic. According to an estimated timetable provided at Tuesday's open house, it could be 2024 before the project wraps up.

The proposed project is part of a more comprehensive rail safety program, which also includes the quiet zone project now under way.

Readers can reach Forum reporter
Shane Mercer at (701) 451-5734

fully and suggest
remove specific
tions from spendin.
"Through the lin
I think we can get
into the shape tha
signed, with the
exception of the tax
lently said.

It was the session
late Monday that p
most legislative
recent years. With



Rep. Morrie Lannan House floor. Legisla signs the half-dozer

DFLe on Mo

Weather g

By J. Shane Mercer
smercer@forumcom

Leaders in the Farmer-Labor party by Moorhead on Tue ing the Minnesot ture's work to f House Speaker Anderson Kelliher "basic values nesotans."

Kelliher, DFL-Mi noted the DFL-cont islatre's efforts care, property tax r gy and education.

The speaker was State Senate major Larry Pogemiller, neapolis, State Sen tant Majority Leac Clark, DFL-St. Cl House Majority Le Sertich, DFL-Chish Clark said schools will see an i

ia's impact on kids explored

warned about influence of TV, video games on children

Richards
ncomm.com

a technology ickly, if you s it. ences of on- sion, instant al Web sites s on today's et be visible. media experts ration," said o works with eapolis-based ite on Media "It's difficult ep up. It's dif- ts to manage. beginning to

Tips for monitoring children's media use

- ▶ Set time limits. Put your family on a TV diet. Use TV coupons or schedule television "appointments." Limit game playing to one hour a day.
- ▶ Know the content. Talk to your kids about what they're watching on TV and experiencing online. Become familiar with a video game and its ratings before you buy it. Rent and play it yourself.
- ▶ Have some house rules. Turn TVs off during meal time. Require that homework and chores be done before game playing.
- ▶ Do not put televisions, video game consoles or computers in children's bedrooms where they can shut the door.
- ▶ Watch shows together as a family. Play and enjoy games with your child.
- ▶ Remind children people

they meet on the Internet are strangers. E-mailing personal information needs permission. Meeting online "friends" in person requires adult supervision.

▶ Talk to kids about the television shows they watch, what's going on in the game they're playing or the messages they receive online.

Source: The National Institute on Media and the Family

was founded by her father, Dr. community liaison.

Erin Walsh said media is

completing an examina- developed and adminis- by the National League uring. the nearly 1,000 U.S. educators who hold the nation, only five teach in esota and one in North a.

preter for the U.S. Depart- ment of State in Washington. He then taught French for a year at UCLA before joining the MSUM languages depart- ment in 1975. Mitra joined the MSUM fac- ulty in 1986. She graduated from Jadavpur University in Calcutta and North Dakota

new seed facility on Highway 46 near Kindred, N.D. Hours at the new facility will be 7 a.m. to 7 p.m. daily during the spring planting season; other times are avail- able by appointment. For more information or to set up an appointment, call (866) 481-7333.

Solving sinus prob



Why keep taking over-the-counter medicine for temporary relief from sinus problems? With Dr. Porter's expertise in endoscopic surgical techniques, you can find fast and lasting relief from postnasal drip, sinus headaches, sinus infections, nosebleeds, tearing problems and nasal blockage.

- Outpatient procedure in state-of-the-art surgery center or local hospital

WILLIAM C. PORTER, MD EAR, NOSE & THROAT

Setting the Valley's standard for patient-focused care

CALL (701) 235-0161 • TOLL-FREE (866) 481-7333

100 S. 4TH ST., SUITE 608, FARGO, ND 58103 • www.williamporter.com
(IN THE PROFESSIONAL BUILDING, ACROSS FROM THE DOWNTOWN HOTEL)

VALON
download



Forum classifieds
looking for - fast!

PUBLIC INPUT MEETING

Tuesday, May 13th
Hjemkomst Center - 202 1st Ave N, Moorhead
Oak Room

TOPIC: Downtown Moorhead Railroad Grade Separation Study

Notice is hereby given that the City of Moorhead, FM Metro COG, and Ulteig Engineers will hold a public input meeting at the Hjemkomst Center, Oak Room at 202 1st Avenue North, Moorhead.

The meeting will begin at 5:00pm with an open house and end at 7:00pm on Tuesday, May 13, 2008. A formal presentation will be given at 6:00pm with opportunities to review project materials before and after the presentation.

- **Meeting Purpose:** To provide information and to obtain comments from all interested persons on the feasibility and issues related to a possible underpass at 11th Street or 14th Street below the 2 sets of railroad tracks in downtown Moorhead.
- **Project Areas:** 11th St - from 2nd Ave S to 2nd Ave N
14th St - from 2nd Ave S to 2nd Ave N
Main Ave, Center Ave, & 1st Ave N - from 10th St to 15th St
- **Issues:** Potential property and access impacts, traffic mobility, street connectivity, railroad crossing safety, emergency vehicle access

All interested persons are invited to participate in this meeting. Requests for special facilities to assist disabled persons' involvement in this meeting should be submitted by May 9, 2008.

If you are unable to attend but still wish to provide comments, please submit comments by May 23, 2008. Comments or requests for special facilities should be directed to Dain Miller at 3350 38th Ave S, Fargo 58104, email Dain.Miller@Ulteig.com, phone (701) 280-8568.

000187232r1

Home delivery has never been easier
To start a Forum subscription call 241-5555

The Forum

of Fargo-Moorhead

Forum
05/10/2008
Page C10

DIGITAL EUREKA





NOTICE OF PUBLIC INPUT MEETING

TO: Resident or Business Owner

FROM: Robert Zimmerman, PE, City Engineer - City of Moorhead
Dain Miller, PE, Project Manager - Ulteig Engineers, Inc.

DATE: April 28, 2008

SUBJECT:

Public Input Meeting
Downtown Moorhead Railroad Grade Separation Feasibility Study

Location: Hjemkomst Center – 202 1st Avenue North, Moorhead
Oak Room

Date: Tuesday, May 13, 2008 **Time:** 5:00 pm to 7:00 pm

PROJECT LOCATION: 11th St – from 2nd Ave S to 2nd Ave N
14th St – from 2nd Ave S to 2nd Ave N
Main Ave, Center Ave, & 1st Ave N – from 10th St to 15th St

Dear Resident or Business Owner:

The City of Moorhead, the Fargo-Moorhead Metropolitan Council of Governments, and Ulteig Engineers, Inc. invite you to attend a public input meeting which will be held at the Hjemkomst Center, Oak Room at 202 1st Avenue North, Moorhead.

The meeting will begin at 5:00 p.m. with an open house and end at 7:00 p.m. on **Tuesday, May 13, 2008**. A formal presentation will be given at 6:00 p.m. with opportunities to review project materials before and after the presentation.

- **Meeting Purpose:** To provide information and to obtain comments from all interested persons on the feasibility and issues related to a **possible underpass at 11th Street or 14th Street** below the 2 sets of railroad tracks in downtown Moorhead.
- **Issues:** Potential property and access impacts, traffic mobility, street connectivity, railroad crossing safety, emergency vehicle access

All interested persons are invited to participate in this meeting. Requests for special facilities to assist disabled persons' involvement in this meeting should be submitted by May 9, 2008.

If you are unable to attend the meeting but still wish to provide comments, please submit your comments by May 23, 2008. Comments or requests for special facilities should be directed to Dain Miller at 3350 38th Ave. S., Fargo, ND 58104, e-mail Dain.Miller@Ulteig.com, or by telephone at (701) 280-8568.

PUBLIC INPUT MEETING

Tuesday, May 13th
Hjemkomst Center – 202 1st Ave N, Moorhead
Oak Room

**TOPIC: Downtown
Moorhead Railroad
Grade Separation Study**



Agenda
Public Input Meeting #2

Downtown Moorhead Railroad Grade Separation Feasibility Study
Moorhead, Minnesota

May 13, 2008 5:00 pm to 7:00 pm

Presented by **Ulteig Engineers, Inc.** on behalf of the

City of Moorhead
and the
Fargo-Moorhead Metropolitan Council of Governments

Hjemkomst Center – Oak Room
202 1st Avenue North
Moorhead, Minnesota

5:00 pm **Open House** (please review the project displays)

6:00 pm **Formal Presentation**
Purpose of Tonight's Meeting
Update from Last Public Meeting
Project Background and Project Needs
Study Objectives / Approach
Comparison of 11th Street and 14th Street
Preliminary Findings of the Study
Project Status and Timelines
Open Discussion

6:30 pm **Open House** (please review the project displays)

7:00 pm **Adjourn Meeting**



Ulteig



PUBLIC INPUT MEETING NO. 2

City of Moorhead, Minnesota
May 13, 2008

Downtown Moorhead Railroad Grade Separation Feasibility Study





MEETING PURPOSE

This public input meeting is being held to inform the public and businesses that a railroad grade separation Feasibility Study in the downtown area is currently being prepared on behalf of the City of Moorhead and the FM Metropolitan Council of Governments. **This is the second Public Input Meeting for this project. The first meeting was held during May 2007.**

1. TO HELP THE PUBLIC UNDERSTAND:

- The role of a Feasibility Study in the overall project development process
- The location of the Study area
- Why a Feasibility Study for a possible railroad grade separation is being prepared
- The alternatives being studied
- The schedule of this study and future engineering efforts before a project is built

2. TO GIVE THE PUBLIC AN OPPORTUNITY FOR INPUT ON:

- Other issues that exist within the study area
- How the alternatives impact them or the city
- Potential new or revised alternatives

STUDY BACKGROUND & NEED

In the interest of improving emergency vehicle response times, increasing safety for pedestrians and cyclists, and reducing traffic delays in the downtown area, the City of Moorhead has determined that now is the time to start analyzing a location for a possible grade separation of the roadway and pedestrian facilities from the railroad tracks in downtown Moorhead.

BACKGROUND AND NEEDS SUMMARY

- Reduce train-vehicle exposures in downtown Moorhead
- Enhance safety for pedestrians and cyclists
- Reduce potential delays to emergency vehicle response times that exist today
- Reduce traffic congestion and delays as traffic volumes increase in downtown Moorhead

STUDY OBJECTIVES & APPROACH

A Feasibility Study is only the beginning of the process before a project is actually considered for programming for future funding and implementation. A more detailed preliminary engineering and environmental documentation effort would precede any actual detailed design and eventual construction project.

STUDY OBJECTIVES AND APPROACH

- Form a Study Review Committee (SRC) representing various governmental agencies
- Determine if a railroad grade separated crossing is feasible in downtown Moorhead
- Consider all at-grade crossing locations initially & eliminate obvious non-feasible locations
- Narrow the focus of the study to the most feasible location
- Identify the impacts of railroad grade separated crossings at the most feasible location
- Develop concept alternatives for the grade separated crossings at the most feasible location
- Get input from the public
- Provide a document to help elected officials secure funding for future project development

PRELIMINARY STUDY FINDINGS

Although no concepts have been completely eliminated from future consideration, the Feasibility Study has narrowed the study focus to the most feasible location by consensus of the Study Review Committee. These alternatives may be eliminated or revised during this study or in future preliminary engineering studies. Some preliminary results of the study include:

MOST FEASIBLE LOCATION ANALYSIS PROCESS

- Fatal Flaw Matrix narrowed possible locations to **8th Street, 11th Street, and 14th Street**
- Initial screening, analysis, and public comment showed the **two most feasible locations as 11th Street and 14th Street**
- Screening criteria used to compare 11th Street and 14th Street:
 1. Property Impacts & Business Relocation
 2. Emergency Vehicle Access
 3. Traffic Capacity / Mobility / North-South Connectivity thru town
 4. Constructability / Utility Impacts
 5. Costs & Economics (Right of Way and Construction)
 6. Railroad Issues (Temporary Shoofly Construction, Train-Vehicle Exposures)
 7. Safety Impacts (Based on history of accidents, injuries and fatalities)
- **11th Street is identified as the most feasible location (see insert for 11th Street and 14th Street comparison results)**

ALTERNATIVE CONCEPT DEVELOPMENT AT 11TH STREET

- Three alternative concepts have been developed at 11th Street:
 1. Lower 11th Street, build bridges at KO Line and Prosper Lines (Lower Center Avenue to connect to 11th Street)
 2. Lower 11th Street, build continuous tunnel under KO and Prosper Lines (No connector ramp between 11th Street and Center Avenue)
 3. Lower 11th Street, build tunnel under KO and Prosper Lines (Build connector ramp between 11th Street and Center Avenue)
- Main Avenue and 11th Street intersection will be lowered 5 to 7 feet
- 1st Avenue North and 11th Street intersection will be lowered 10 to 12 feet
- Probable construction limits and right of way impacts developed
- Preliminary railroad shoofly layouts developed for KO and Prosper tracks

FREQUENTLY ASKED QUESTIONS

- **If feasible, when will this project be built?**
Answer: Many factors affect the timing of a potential construction project of this magnitude. The most significant factor is the availability of funding. Realistically securing funding and following the project development process from preliminary design to environmental documentation to final design to construction could take anywhere from 8 to 20 years. (See the separate handout showing the typical project development process and estimated time frames)
- **What is a Train-Vehicle Exposure?**
*Answer: A common statistic in assessing risk is train crash exposure. Crash exposure is derived from multiplying the number of trains moving through an at-grade crossing on a daily basis by the average daily traffic volume (vehicles) at the crossing.
(example: 11th Street / K.O. Subdivision Line – 63 trains X 6,500 ADT = 409,500 exposures¹)*
- **How many Train-Vehicle Exposures does it take to justify a grade separation crossing?**
Answer: MnDOT's (Minnesota Department of Transportation) standards for train-vehicle exposures is 300,000 for justification of a grade separated crossing.
- **How many trains per day come through the City of Moorhead?**
Answer: Currently the KO Subdivision line (main tracks) carries nearly 70 trains per day and the Prosper Subdivision line (furthest north tracks) carries around 30 trains per day.
- **How will traffic in downtown Moorhead be affected by a grade separation project?**
Answer: The scope of the Feasibility Study does not include any traffic operations analysis. However, it would be safe to say that eliminating some delays due to traffic congestion could be expected by having a railroad grade separated crossing in the downtown area.

¹Information based on 2000 ADT Traffic Volumes and the FM Rail Corridor Consolidation Study 2004, TKDA, Inc.



Ulteig

PROJECT SCHEDULE, COSTS, & FUNDING

SCHEDULE:

- This is the final Public Input Meeting for the Feasibility Study
- Feasibility Study will be finalized in July 2008
- Study will be presented to City Council for adoption
- Next Step? Secure funding for Preliminary Engineering / Environmental Assessment via Congressional Appropriations (1 – 5 years)

PRELIMINARY COSTS:

The scope of this study does not include a detailed analysis of construction costs. There are a number of unknowns and variables that could affect the project cost:

- Funding availability and timing
- Property acquisition
- Business relocations
- Utility needs and impacts
- RR operational needs and impacts
- Construction cost inflation
- Property value fluctuation

Rough preliminary cost estimates for engineering, property acquisition, and construction are approximately:

- 11th Street: \$30 to \$35 million
- 14th Street: \$35 to \$40 million

PROJECT FUNDING:

This project would only be possible with federal funding along with a local match. Typically these types of projects are funded with 80% federal and 20% local funds. At this point no funds have been allocated or programmed beyond this Feasibility Study.

OPPORTUNITIES FOR PUBLIC INPUT

Please pick up a comment sheet at the sign in table.

We welcome all comments by **May 23, 2008**:

- Feel free to leave your comments with us tonight;
- Please mail comments to:
Mr. Dain Miller, PE
Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079
- Comments can be emailed to:
dain.miller@ulteig.com
- Fax comments to:
(701) 237-3191
- Mr. Miller can be reached by phone at:
(701) 280-8568





WHAT WE HEARD AT THE LAST MEETING

We received valuable input from the people that attended the 1st public meeting in May 2007. Many of the comments focused on the 14th Street location. Examples of what we heard included:

- Why is 11th Street considered as a more feasible location for the underpass than 14th Street?
- Wouldn't there be fewer impacts to businesses and properties at 14th Street than at 11th Street?

We listened to your comments, and went back to analyze the 14th Street location in more detail. Tonight, we are presenting those findings to you.

FINDINGS FROM THE 14TH STREET ANALYSIS

Conclusion: 14th Street is a less desirable location for an underpass when compared to 11th Street. The following table compares the two locations.

● More Favorable

● Less Favorable

= Relatively Equal

11 th Street		Criteria	14 th Street	
●	11 Potential Property Acquisitions 5.7 Acres	Property Impacts/Business Relocations	●	13 Potential Property Acquisitions 6.3 Acres
		Costs		
●	\$3.5 - \$4.0 million (approx.)	- Right-of-Way Costs	●	\$3.0 - \$3.5 Million (approx.)
●	\$26.5 - \$31.0 million (approx.)	- Construction/Engineering Costs	●	\$32.0 - \$36.5 Million (approx.)
		Traffic Capacity/Mobility		
=	2005 ADT = 4,400 vehicles	- Traffic Volumes	=	2005 ADT = 3,900 vehicles
●	¼ mile closer to downtown	- Proximity to Downtown	●	¼ mile further from downtown
●	Continuous from 28 th Ave S to Wall Street	- North-South Continuity	●	Continuous from 28 th Ave S to 15 th Ave N
=	Impacts to 1 st Ave N grades more significant	Constructability/Utility Issues	=	More storm sewer required, fewer impacts to 1 st Ave N grades
		Railroad Issues		
●	Less temporary track, Less impact to track operations	- Shoofly Construction	●	Approx. \$2.0 - 2.5 million more, 2 times as much temporary track
●	555,200 exposures eliminated	- Train/Vehicle Exposures	●	363,500 exposures eliminated
●	Switches unaffected	- Coordination with BNSF Operations	●	More impacts to switches and existing rail operations
=		Safety Impacts	=	
=	Response times faster to southwest	Emergency Vehicle Access	=	Response times faster to southeast

Downtown Moorhead Railroad Grade Separation Project Development Process & Estimated Timetable May 2008

Project Phase	Approximate Duration	Estimated Year of Completion	
		Funding	Project
Complete Feasibility Study	3 - 6 months		2008
Secure Funding for Preliminary Engineering & EA (Accomplished through Congressional Appropriation Process)	1 - 5 years	2009 - 2013	
Complete Preliminary Engineering & EA/EAW or EIS	2 years		2011 - 2015
Obtain FONSI/Negative Declaration	6 months - 1 year		2012 - 2016
Secure Funding for Final Design & ROW Acquisition (Accomplished through Congressional Appropriation Process)	1 - 5 years	2010 - 2018	
Complete Final Design & ROW Acquisition/Property Purchases	2 years		2014 - 2020
Secure Funding for Construction (Accomplished through Congressional Appropriation Process)	2 - 5 years	2012 - 2023	
Complete Construction	2 years		2016 - 2025

Definitions

- EA** = Environmental Assessment
- EAW** = Environmental Assessment Worksheet
- EIS** = Environmental Impact Statement
- FONSI** = Finding of No Significant Impact
- ROW** = Right-of-Way

To: Project File – UEI Project № 106.0754
From: Dain Miller, PE
Matt Kinsella, PE
CC: File, Bob Zimmerman, Tom Trowbridge, Peter Doll, Brian Gibson, David Overbo,
Mark Waisanen, Bobby Oare, Leif Thorson, Spencer Arndt, Lynn Leibfried
Date: May 22, 2008
Re: **Summary of May 13, 2008 Public Meeting #2**
Downtown Moorhead Railroad Grade Separation Feasibility Study

Meeting Summary

Public Meeting #2 for the **Downtown Moorhead Railroad Grade Separation Feasibility Study** was held from 5:00 pm to 7:00 pm on May 13, 2008 at the Hjemkomst Center, 202 1st Ave N, Moorhead. The meeting format was open house, with a formal presentation and group Q & A session at 6:00 pm. A copy of the meeting agenda and attendance roster is attached.

Approximately 25 property owners, business representatives, and local residents attended the meeting. Bob Zimmerman and Tom Trowbridge from the City of Moorhead (City), Brian Gibson from FM Metro COG, Dain Miller, Matt Kinsella, and Jon Rudnick from Ulteig Engineers represented the project team at the public meeting.

The purpose of the public input meeting was:

- To review and present:
 - Study objectives and approach
 - Update on the 14th Street analysis performed since the last public meeting
 - Present alternative concepts
 - Review project development process and timeline
- To receive public input on the feasibility study

Meeting attendees reviewed exhibits that were displayed on easels, and discussed project issues with staff. An information handout was also provided to all attendees.

During the formal presentation, Dain Miller from Ulteig Engineers summarized the feasibility study objectives, explained the project approach, explained how the project team heard the public comments from the 1st meeting and went back to take a closer look at 14th Street, compared the options at 11th Street and 14th Street, reviewed the alternative concepts, and described the study findings and project timetable.

Public Comments and Questions

The following questions and comments were noted from attendees during both the open house session and the group Q & A session that followed the formal presentation.

- *Can train speeds be reduced on the RR lines during construction of an underpass?* **BNSF has stated that train speeds of 25 mph on the Prosper Line and 50 mph on the KO Line must be allowed for in the temporary shoofly track design.**
- *Why is the grade separation with the RR tracks an underpass, and not an overpass?* **An overpass would need to be approximately 28-30 feet into the air due to the 23-foot track clearance requirements and bridge structure depth. Raising either 11th St or 14th St to this height would result in much more significant impacts to surrounding property and access and loss of local street connections, and would also push the touch-down points even further to the north and south. Due to these reasons, an overpass was not considered feasible as part of this study. However, as this project continues through the development process, an overpass option would need to be evaluated equally with other feasible alternatives to meet the requirements of the federal National Environmental Policy Act (NEPA) process.**
- *Regarding the 80% federal/20% local funding split, how will the local portion be assessed to the public? How large will the assessment district be for a project like this?* **Depending on City policy at the time of project implementation, the assessments could be as little as zero (if enough funding is available), or a portion of the costs would be assessed. If some of the costs were assessed, the assessment district likely would be quite large, and would likely pull in a mix of business and residential areas as project benefactors.**
- *Are the costs based on 2008 dollars or future dollars?* **2008 dollars.**
- *Could the City levy a sales tax increase to help fund a project such as this?* **The City of Moorhead does not have the authority to levy sales tax increases. The State of Minnesota does not allow this practice, unlike the State of North Dakota (the City of Fargo has done this in the past).**
- *Comment: An underpass at 11th Street or 14th Street will take business away from the downtown area around 4th to 8th Street, and these areas will not benefit from this project.*
- *How was the 21st Street underpass project funded?* **80% federal, 20% local.**
- *Is the draft Feasibility Study document available for public review? Where can the public view the document?* **The document will be available for public viewing once it is finalized. Since it is currently in draft form it is not yet available. Once completed, the document can be viewed at City Hall, FM Metro COG, and on the City website (<http://www.ci.moorhead.mn.us>)**

DATE: May 13, 2008

TIME: 5:00 pm - 7:00 pm

LOCATION: Hjemkomst Center, Moorhead, MN

SUBJECT: Downtown Moorhead Railroad Grade Separation Study - Public Input Meeting

ATTENDANCE ROSTER

	NAME	ADDRESS/BUSINESS	PHONE
1.	Dain Miller	Ulteig Engineers, Inc.	280-8568
2.	Matt Kinsella	Ulteig Engineers, Inc.	280-8672
3.	Jon Ruonick	ULTEIG ENGINEERS	280-8634
4.	Henry A. Valochenski		233 2925
5.	DAVE KOST	CONT. LEASING	701-799-6773
6.	John Challey	1249 2nd St NW, Fargo	701-233-8045
7.	Tom Trowbridge	City of Moorhead	299-5395
8.	John Anderson	Tom's Car Wash	233 5450
9.	Deanne, Durrk	Don's Car Washes	701-866-4100
10.	Samuel	Don's Car Washes	701-866-4104
11.	Pete Marinini	SHOP-N-WASH	236-7812
12.	Deanne Durrk	1400 14th ST	233-8073
13.	Rob Gage	Lindsay / Edwards ¹³²⁴ _{10th Ave}	253-4655
14.	Tom Drey	" "	233-8455
15.	Dennis Lock	MUFFLER MAN	233 5100
16.	WINT JOHNSON	1001 CENTER AVE	236-1911
17.	Dan Hicks	700 12th St N	701-795-6556
18.	Harry Carlson	1912-55th Ave N	218-236-5075
19.	Richard	Richard @ 8th Ave	218 233 2421
20.	Pat Olson	1234 1st Ave N	218-233-4411
21.	Fred Wright	2316 56th ST	(218) 236-1143
22.	Palma Wright	"	"
23.	Sam Bond	1314 64th Ave N	235-5233

DATE: May 13, 2008

TIME: 5:00 pm – 7:00 pm

LOCATION: Hjemkomst Center, Moorhead, MN

SUBJECT: Downtown Moorhead Railroad Grade Separation Study – Public Input Meeting

ATTENDANCE ROSTER

	NAME	ADDRESS/BUSINESS	PHONE
24.	PAT Kowalchuk	1417 1st Aven ^{Roosevelt Home}	233-3300
25.	Bar Belfer	2000 1ST AVE S	233 6161
26.	Brian Hillman	Metro CCG	
27.	Randy Reiman	417 11 TH ST. S. MOORHEAD	233-1172
28.	Pat Reema	417 11 TH ST S	233-1172
29.	Merlo Sloan	1221 1st Aven	236 6248
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			
41.			
42.			
43.			
44.			
45.			
46.			

MAY 13, 2008 COMMENT CARD

(Please return by May 23, 2008)

PUBLIC INPUT MEETING: Downtown Moorhead Railroad Grade Separation Feasibility Study

NAME (please print): Dennis Loock muffler man

ADDRESS (please print): 1335 Center Ave

Moorhead MN 56560

(Comments may also be submitted by email to: Dain.Miller@Ulteig.com, or by fax to: 701.237.3191)

I wish to offer the following comments: _____

would like copy of LAYOUTS,

CONCEPT #1 IS BEST,

WHAT IS GOING TO HAPPEN WHEN DETOUR

TRAFFIC IS ROUTED AROUND OUR BUSINESS

Please leave your comment sheet with us tonight, or mail your comments by May 23, 2008 to:

**Dain Miller, PE
Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079**

PUBLIC INPUT MEETING: Downtown Moorhead Railroad Grade Separation Feasibility Study

NAME (please print): Pat Kovash

ADDRESS (please print): Kovash Marine

1417 1st Ave N

(Comments may also be submitted by email to: Dain.Miller@Ulteig.com, or by fax to: 701.237.3191)

I wish to offer the following comments: Why would you put a underpass
on 14th st that ends on A one way Going South?
14th will not help out Downtown Moorhead underpass
Needs to split the difference to help traffic.

How will property taxes be divided who will be impacted

What would the purpose cost be in 2015-2020?

Please leave your comment sheet with us tonight, or mail your comments by May 23, 2008 to:

Dain Miller, PE
Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

MAY 13, 2008 COMMENT CARD

(Please return by May 23, 2008)

PUBLIC INPUT MEETING: Downtown Moorhead Railroad Grade Separation Feasibility Study

NAME (please print): ~~Henry~~ Henry

ADDRESS (please print): Volochenko

(Comments may also be submitted by email to: Dain.Miller@Ulteig.com, or by fax to: 701.237.3191)

I wish to offer the following comments: 14th is a better location in my
opinion for schools, cost of property.

Please leave your comment sheet with us tonight, or mail your comments by May 23, 2008 to:

**Dain Miller, PE
Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079**

HOLLAND'S LANDSCAPING & GARDEN CENTER
1201 CENTER AVE. MOORHEAD, MN 56560
(218) 233-6131 FAX (218) 233-6132

To Whom It May Concern-

May 13, 2008

This letter is regarding the Downtown Moorhead Railroad Grade Separation Feasibility Study taking place this evening. We are not able to attend this meeting, but we would like our letter written on May 30, 2007, entered into record. We still feel that to build an underpass at 11th Street would ruin downtown Moorhead, and many businesses in its path. Thank you for your consideration of our opinion on this matter.

Mike and Sarah Liljestrand, owners
Holland's Landscaping & Garden Center

HOLLAND'S LANDSCAPING & GARDEN CENTER
1201 CENTER AVE. MOORHEAD, MN 56560
(218) 233-6131 FAX (218) 233-6132

MAY 30, 2007

Dain Miller, P.E.
Ulteig Engineers, Inc.
3350 38th Ave South
Fargo, ND 58104-7079

Dear Sir,

We are writing this letter in regards to the 11th Street Railroad Grade Separation Feasibility Study. Your presentation on May 22nd was very well introduced. We feel, however, that this is not the right direction for the City of Moorhead. The grade separation would, in fact, destroy the character of downtown Moorhead. The idea that it is important to reduce the car to railroad intersections and traffic flow is vital to growth in the city. However it is also important to have businesses to shop in; family owned business that are the life blood of this community.

Your proposed underpass would ruin the look of downtown Moorhead. To lower the grade of 11th and Center by twenty feet, with retention ponds in downtown Moorhead, is an economic and environmental hazard.

The relocation of more than twenty businesses that would probably not stay in Moorhead, if forced to move, would be an economic detriment to the city. With the property taxes and sales tax that these businesses generate, we pay for schools and infrastructure in the city. Would the proposed underpass make up for the loss of revenue to the city? We don't think so.

We feel that you should look to other options that would be less costly to the city and would preserve the integrity of downtown Moorhead. We feel strongly that this project should not move forward. However, if it must be done, the location of 14th street would have less economic impact.

Six months ago we moved our business from Highway 75 to the corner of 11th and Center. We bought this building that had been neglected for fifty years and turned it into a destination spot for downtown Moorhead. When we were looking for a place to buy we thought about moving to Fargo or Dilworth, but decided to stay in Moorhead because the business was started here thirty five years ago and we felt that it was an important part of the community. We would like to stay in this location and not be forced out because of a road construction project.

We hope that you will consider this letter and the impact that this proposed project will have, not only for us, but for all businesses that will be affected, and for the whole community of Moorhead.

Sincerely,
Mike and Sarah Liljestrand, owners
Holland's Landscaping & Garden Center

Forward to-
Mayor Mark Voxland
Robert Zimmerman, PE, City Engineer

Matt Kinsella

From: Matt Kinsella
Sent: Thursday, May 15, 2008 2:43 PM
To: 'mhdmufman@aol.com'
Subject: 14th Street Underpass Concept - JPEG of meeting exhibit
Attachments: 14th Street.jpg

Dennis,

It was a pleasure visiting with you at the public meeting on Tuesday evening. As you requested during the meeting, I have attached a JPEG file of the 14th Street underpass concept exhibit that was displayed at the meeting.

You should be able to print the drawing at whatever size you require. If you do have any problems with the file or any difficulties with printing, please give me a call (contact info is below) and I would be happy to send you a hard copy of the exhibit. Thanks Dennis.

Matt Kinsella, PE
Transportation Engineer

Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Direct: 701.280.8672
Cell: 701.306.8499
Fax: 701.237.3191
E-mail: Matt.Kinsella@Ulteig.com

This message may contain privileged and confidential information. If you think, for any reason, this message may have been addressed to you in error, please reply to me as soon as possible.

Matt Kinsella

From: Matt Kinsella
Sent: Thursday, May 15, 2008 2:44 PM
To: 'leodeeh@yahoo.com'
Subject: 14th Street Underpass Concept - JPEG of meeting exhibit
Attachments: 14th Street.jpg

Leo,

It was a pleasure visiting with you at the public meeting on Tuesday evening. As you requested during the meeting, I have attached a JPEG file of the 14th Street underpass concept exhibit that was displayed at the meeting.

You should be able to print the drawing at whatever size you require. If you do have any problems with the file or any difficulties with printing, please give me a call (contact info is below) and I would be happy to send you a hard copy of the exhibit. Thanks Leo.

Matt Kinsella, PE
Transportation Engineer

Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Direct: 701.280.8672
Cell: 701.306.8499
Fax: 701.237.3191
E-mail: Matt.Kinsella@Ulteig.com

This message may contain privileged and confidential information. If you think, for any reason, this message may have been addressed to you in error, please reply to me as soon as possible.

Matt Kinsella

From: Matt Kinsella
Sent: Friday, May 16, 2008 8:28 AM
To: 'mcdev@702com.net'
Cc: Dain Miller
Subject: Downtown Moorhead RR Underpass Study - JPEGs of meeting drawings
Attachments: 11th Alternative1.jpg; 11th Alternative2.jpg

Linda,

Wint Johnson requested that we send these electronic files to you, representing the exhibits that were shown at the Downtown Moorhead RR Underpass public meeting on Tuesday evening, May 13th.

I will be sending you a total of 4 JPEGs -- 2 attached to this e-mail, and 2 attached to a 2nd e-mail to follow this one. The files show 3 underpass concepts at 11th Street, and 1 underpass concept at 14th Street.

Please respond and let me know that you received this e-mail. You should be able to print the exhibits to whatever size you require. If you do have any problems with the files or difficulties with printing, please give me a call (contact info is below) and I would be happy to send you hard copies of the exhibits. Thanks Linda.

Matt Kinsella, PE
Transportation Engineer

Ulteig Engineers, Inc.
3350 38th Avenue South
Fargo, ND 58104-7079

Direct: 701.280.8672
Cell: 701.306.8499
Fax: 701.237.3191
E-mail: Matt.Kinsella@Ulteig.com

This message may contain privileged and confidential information. If you think, for any reason, this message may have been addressed to you in error, please reply to me as soon as possible.



LETTER OF TRANSMITTAL

3350 38th Avenue South
Fargo, ND 58104-7079
Phone: (701) 280-8500
Fax: (701) 237-3191

DATE:	May 28, 2008
JOB No.	106.0754
ATTENTION:	Sherry Rousseau
RE:	Downtown Moorhead Railroad Grade Separation Feasibility Study

TO:	Sherry Rousseau
	1106 5th Ave S
	Moorhead, MN 56560

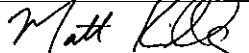
- WE ARE SENDING YOU: Attached Under separate cover via the following items:
- Shop Drawings Prints Plans Samples
- Specifications Copy of Letter Change Order
- Other

COPIES	DATE	No.	DESCRIPTION
1	May 2008	1	Materials from public meeting

THESE ARE TRANSMITTED AS CHECKED BELOW:

- For Approval Approved As Submitted Re-Submit copies for approval
- For Your Use Approved As Noted Submit copies for distribution
- As Requested Returned for Corrections Return corrected prints
- For Review & Comment For Your Signature
- FOR BIDS DUE: PRINTS RETURNED AFTER LOAN TO US

REMARKS:	Sherry – Please call me at 701.280.8672 with any questions. Thanks for your interest in the project.

COPY TO:	Dain Miller, File	SIGNED:	Matt Kinsella, PE 
----------	-------------------	---------	---

Appendix C

Conceptual Cost Estimates

DOWNTOWN MOORHEAD RAILROAD GRADE SEPARATION FEASIBILITY STUDY
CITY OF MOORHEAD, MN
CONCEPTUAL COST ESTIMATES FOR ALTERNATIVES
REVISED: MAY 13, 2008
(2008 Dollars)

	8TH STREET	11TH STREET	14TH STREET
DESCRIPTION	KO AND PROSPER	KO AND PROSPER	KO AND PROSPER
ROADWAY CONSTRUCTION			
Excavation, Grading, and Paving	\$6,000,000.00	\$5,000,000.00	\$4,500,000.00
Retaining Walls	\$2,000,000.00	\$1,000,000.00	\$1,250,000.00
Signals & Lighting	\$1,000,000.00	\$700,000.00	\$600,000.00
Signing & Pavement Marking & Detouring	\$400,000.00	\$300,000.00	\$350,000.00
NEW BRIDGE / STRUCTURAL	\$9,000,000.00	\$9,000,000.00	\$9,000,000.00
SHOOFLY CONSTRUCTION	\$2,000,000.00	\$850,000.00	\$2,850,000.00
UNDERGROUND UTILITIES			
Sanitary Sewer and Watermain	\$1,000,000.00	\$700,000.00	\$500,000.00
Storm Sewer, Lift Station, and Retention	\$2,000,000.00	\$2,500,000.00	\$3,250,000.00
MISC. UTILITY RELOCATION	\$1,500,000.00	\$650,000.00	\$500,000.00
SUBTOTAL	\$24,900,000.00	\$20,700,000.00	\$22,800,000.00
Contingency and Unlisted Items (20%)	\$4,980,000.00	\$4,140,000.00	\$4,560,000.00
CONSTRUCTION SUBTOTAL	\$29,880,000.00	\$24,840,000.00	\$27,360,000.00
Engineering (15%)	\$4,482,000.00	\$3,726,000.00	\$4,104,000.00
Administration (5%)	\$1,494,000.00	\$1,242,000.00	\$1,368,000.00
CONSTRUCTION / ENGINEERING SUBTOTAL	\$35,856,000.00	\$29,808,000.00	\$32,832,000.00
RIGHT OF WAY / BUSINESS RELOCATION COST			
Right-of-Way & Easement Acquisition	\$6,000,000.00	\$3,000,000.00	\$2,800,000.00
Business Relocation	\$750,000.00	\$675,000.00	\$600,000.00
	7-10 businesses	9 businesses	8 businesses
Right of Way / Business Relocation Subtotal	\$6,750,000.00	\$3,675,000.00	\$3,400,000.00
GRAND TOTAL (ROUNDED)	\$42,700,000	\$33,500,000	\$36,300,000

Notes:

Land Costs (from City of Moorhead):

Along 11th St: \$15/SF (Main Ave)
 \$10/SF (Center Ave)
 \$6/SF (1st Ave N)

Along 8th St: 25% more than 11th St rates

Along 14th St: 25% less than 11th St rates