

# Final Report

# Fargo Main Avenue Corridor Study

from 25th Street to Red River

Fargo-Moorhead Metropolitan Council of Governments May

May 2013



# Fargo - Main Avenue Corridor Study Fargo, North Dakota

FINAL REPORT

Prepared for: Fargo-Moorhead Metropolitan Council of Governments

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# Introduction

### **1. Study Area**

The City of Fargo, North Dakota Department of Transportation (NDDOT), and the Fargo-Moorhead Metropolitan Council of Governments (Metro COG) are project partners in the development of the Fargo-Main Avenue Corridor Study in the City of Fargo, North Dakota (see Figure 1). The nearly two-mile Main Avenue study corridor extends from 25th Street to the Red River (see Figure 2). The roadway is designated as US Highway 10 and is part of the National Highway System. Main Avenue is a principal arterial roadway within the City of Fargo that handles through traffic on the highway system and serves as a gateway into Fargo's downtown, with front-facing properties and businesses along the entire corridor.

Main Avenue is primarily a five-lane roadway with two lanes in each direction and either a continuous center left-turn lane or turn lanes provided at the major intersections. The corridor narrows to a four-lane roadway in the middle of the study area between 18th Street and University Drive, with two lanes of travel in each direction and no turn lanes provided.

#### 2. STUDY OBJECTIVES AND MAJOR TASKS

The key study outcome is to identify, evaluate, and recommend future Main Avenue alternatives to be carried forward for further analysis in a future environmental document. The two main objectives of the study include the following:

- 1. Identify and define the future multimodal improvement needs for the Main Avenue Corridor
- 2. Coordinate with the TH 10, TH 75, and Center Avenue Corridor analyses

A companion study, the Minnesota Department of Transportation (MnDOT) Trunk Highway (TH) 10, TH 75, and Moorhead Center Avenue Corridor Studies, was completed at the same time as this effort (see Figure 2). Similar to this study, the Minnesota study was also led by Metro COG. This consistency of staff and oversight ensured that any improvements being planned in Minnesota are compatible with the improvements being planned in North Dakota.

The Fargo-Main Avenue Corridor Study was initiated in year 2011. SRF Consulting was retained to assist with technical analysis, public input, and final documentation of the corridor study.





The project partners and consultant team completed the following tasks as part of this corridor study:

- 1. Identified existing conditions
- 2. Developed future traffic patterns
- 3. Analyzed existing and future no build traffic conditions
- 4. Identified existing and future issues along the corridor
- 5. Established a vision and design parameters for the corridor
- 6. Developed a purpose and need statement
- 7. Developed a series of planning-level alternatives
- 8. Solicited public input throughout the study
- 9. Evaluated the planning-level alternatives including cost estimates
- 10. Identified alternatives to move forward for future environmental review
- 11. Developed one aesthetic concept
- 12. Gathered additional input from the public regarding these alternatives
- 13. Documented implementation steps

#### **3. PRELIMINARY ISSUES IDENTIFIED**

The project partners identified the need for a corridor study due to the poor condition of the underground utilities within downtown Fargo, including the study portion of Main Avenue. These utilities will need to be completely replaced within the next 10 years, which closely aligns with the remaining useful life of the existing roadway. At the time of utility improvements, a full roadway reconstruction will be required. The City of Fargo and NDDOT are using the corridor study to identify transportation issues along the corridor that could be mitigated during reconstruction.

Figure 3 shows some of the key issues identified at the beginning of the study (a more detailed analysis was completed later in the study process). The numbered list below corresponds to locations on Figure 3. The issues are statements as they were made early in the project. Data collected for this study, combined with stakeholder input based on this initial list, helped to develop and document the need for the project.

- 1. From 18th Street to University Drive, the roadway section narrows to a four-lane section with no left turn lanes; right-of-way (ROW) is limited in this segment.
- The Burlington Northern Santa Fe (BNSF) KO subdivision closely parallels Main Avenue, limiting
  opportunities for cross street access to the north. Signal operations along Main Avenue east of
  University Drive are often interrupted due to preemption of the traffic signals from the active
  railroad crossing signals.
- 3. One additional railroad underpass should be considered in the downtown (the most likely location is at 4th Street).
- 4. To improve access to the downtown area, a northbound counter flow lane should be considered between Main Avenue and NP Avenue at the University Drive underpass.
- 5. The 10th Street underpass crosses under Main Avenue for northbound traffic, but Main Avenue does not have immediate access to northbound 10th Street.



- 6. Metro COG and the City of Fargo are developing a preferred land use plan for portions of the corridor; the traffic analysis and access management alternatives need to consider the new land use plan.
- 7. Roadway capacity improvements may be limited by historic properties, such as the Fargo Park District building and the Masonic Block.
- 8. The only curbside parking in the corridor is on the south side of Main Avenue immediately east of 8th Street to approximately 5th Street. This segment is four lanes with parking (left-turn lanes are provided at Broadway). It currently carries approximately 15,200 vehicles per day. The project team will work with the adjacent business to discuss options that reduce or eliminate this parking.
- 9. The conversion of the NP Avenue/1st Avenue one-way pair to two-way operations may affect Main Avenue traffic volumes.
- 10. The North Dakota State University (NDSU) downtown campus and residential development in the downtown area have increased the pedestrian/bicycle activity and Metro Area Transit (MATBUS) ridership.
- 11. The general drainage pattern splits at 10th Street with drainage to the west going to Drain 3, and drainage to the east going to the Red River. The project team will also work with the City of Fargo to determine sanitary sewer and water system upgrades that would need to be addressed with the reconstruction.
- 12. Flood protection needs to be considered when alternatives are developed, especially east of 4th Street. The intersection of 2nd Street is susceptible to flooding during major flood events. Improvements may include earthen levees, roadway grade raises, or flood walls.

#### **4. STAKEHOLDER INVOLVEMENT PROCESS**

As part of the Fargo-Main Avenue Corridor Study, a large public involvement effort helped promote effective decision-making by fostering a cooperative spirit among local, metropolitan, and state partners, as well as review agencies and key stakeholders. Some of the key public involvement activities included:

- 1. Study Review Committee (SRC) meetings
- 2. Public input meetings
- 3. Property owner meetings
- 4. Project website
- 5. Project Facebook page
- 6. Presentations
  - o Downtown Community Partnership
  - o Fargo Planning Commission and City Commission
  - o NDDOT Management
- 7. Solicitation of Views letters (early environmental coordination)

#### Study Review Committee (SRC) Meetings

The SRC was composed of technical staff from the City of Fargo, NDDOT, and Metro COG. The SRC met five times during the study process to provide input and help guide the study process. Members of the SRC included:

Wade Kline	Metro COG	Jim Hinderaker	City of Fargo – Planning
Peggy Harter	Metro COG	Kristy Schmidt	City of Fargo - Engineering
Joe Nigg	Metro COG	Mark Bittner	City of Fargo – Engineering
Bob Walton	NDDOT – Fargo District	Jeremy Gorden	City of Fargo – Engineering
Michael Johnson	NDDOT – Local Government	April Walker	City of Fargo – Engineering
Bob Stein	City of Fargo - Planning	Julie Bommelman	City of Fargo – Transit
Ben Dow	City of Fargo – Public Works	Mike Hahn	Downtown Community Partnership
		Mike Williams	Fargo City Commissioner

#### Public Input and Property Owner Meetings

The project team held three public input meetings to inform the general public about the study process, gather input on needed corridor improvements, and to review the study's recommendations. Meeting announcements were distributed through a variety of channels, including the Fargo Forum, Metro COG press releases, the project website, and the project Facebook page.

In addition to the public outreach described above, individual property owners along the Main Avenue corridor were mailed letters inviting them to participate in small group meetings to gather focused input. There were three property owner meetings held throughout the study process to hear the unique concerns related to property owners, such as parking, access, and traffic safety. Comment cards were available at both the public input and property owner meetings. In addition, participants were encouraged to contact Metro COG with any questions or input related to the study. Comments and discussion from the public input and focus group meetings can be found in Appendix A.

#### **Project Website and Facebook Pages**

The project website and Facebook pages were ways to publicize public input meetings and provide an on-demand depository of project information. The Facebook page was intended to engage the public or project stakeholders in an innovative manner relative to traditional methods.

In addition, for individuals who could not attend the public input meetings in person, the meetings were made available via Facebook and the website to listen to the presentations live via a webcast. Webcast participants could submit questions during the public meeting and the presenter could respond during the meeting for the online participants and those present in person. The webcasts were made available online for later consumption as well. Public meeting handouts, project deliverables, and other pertinent information were also posted on the project website for stakeholders to access at any time during the study process.







Figure 5: Project Facebook Page

#### Presentations

Three meetings were held with key agency/stakeholder groups throughout the study process to present study findings and to gather input on the alternatives developed. First, a brown bag meeting was held with the City of Fargo Planning and City Commission, which included a presentation on the study process up to the point where alternatives were developed. Second, the Downtown Community Partnership held a regular meeting at Metro COG's office where Metro COG staff presented the project. Third, the alternatives were presented to NDDOT Management in Bismarck to gather input and buy-in on the process and recommendations.

#### Solicitation of Views Letters (early environmental coordination)

The study team initiated early coordination with local, state, and federal agencies regarding the corridor study. A letter requesting agency review of the project was mailed to 54 local, state, and federal agencies on June 6, 2012. This letter follows the format provided by NDDOT that is typically used as part of their environmental process. This effort was completed to inform the preliminary corridor alternative evaluation process, especially in terms of the assessment of potential environmental impacts. Agency responses received were considered in the alternative evaluation matrices. The agency responses received from this coordination will be used to inform further agency coordination and environmental documentation that will be undertaken during future steps of the project development process.

# Chapter A: Needs Assessment

This needs assessment chapter is a comprehensive analysis of the existing and forecasted conditions along the Main Avenue corridor from 25th Street South to the Red River. The assessment draws upon data collected along the corridor, technical analysis of future condition data by the SRC, review of existing planning documents, and input received from SRC, property owners, and public input meetings. The following areas were analyzed in this assessment:

- 1. Bicycle and pedestrian facilities
- 2. Bicycle and pedestrian crashes
- 3. Transit
- 4. Transportation demand management (TDM)
- 5. Parking utilization
- 6. Access
- 7. Vehicle crashes
- 8. Traffic operations
- 9. Intelligent transportation systems (ITS)

- 10. Pavement and utilities
- 11. Main Avenue Bridge flood protection
- 12. Land use
- 13. Corridor Land Dynamics & Subject to Change Analysis
- 14. Historic resources
- 15. Environmental justice
- 16. Related planning documents
- 17. Public input on corridor issues
- 18. Summary of key issues/constraints/ opportunities

#### **<u>1. BICYCLE AND PEDESTRIAN FACILITIES</u>**

#### **Existing Bicycle Facilities**

While there are sidewalks along both sides of Main Avenue, there are no identified bicycle facilities along this corridor (see Figure 6). Due to the issues described later in this document (e.g., lack of sidewalk widths, heavy traffic commercial area), future bike lanes are not recommended along the corridor. Instead, this analysis examines viable parallel routes within 1/8 mile of the corridor (approximately from 2nd Avenue South to 2nd Avenue North).

Shared use paths are currently located along the west side of the Red River, Island Park, Jefferson West Park, and 25th Street South. In addition, there are shared lane markings on 6th Street North from NP Avenue to 6th Avenue North. There is an existing bike lane on First Avenue South from 21st Street to University Drive.

#### **Existing Pedestrian Facilities**

The "signature" Main Avenue Bridge over the Red River provides one of the best pedestrian/bicycle connections in the entire region. It provides wide paved areas, interpretive signs, and connections to the park system and trails on either side of the river. West of the Red River, Main Avenue has sidewalks on both sides of the street. Using these sidewalks, pedestrians can access the many commercial businesses located on the corridor. However, there are a number of challenges faced by pedestrians along Main Avenue including:

- 1. Many private commercial access points resulting in unsafe conditions
- 2. Wide intersections with heavy traffic increase concerns for elderly or less mobile pedestrians (the City of Fargo is currently allocating approximately \$100,000 per year to install detectable warning panels at crosswalks)
- 3. Narrow sidewalk widths, especially when there is no building setback or no buffer between the street and the sidewalk, create American Disabilities Act (ADA) issues
- 4. Narrow sidewalk widths are present at grade-separated railroad crossings (e.g., 2nd Street and the BNSF mainline) and minimize the pedestrian experience
- 5. Due to the limited ROW, light poles and fire hydrants are located in the middle of the sidewalk in many cases and create obstacles for pedestrians/bicyclists (ADA issues)
- 6. Lack of pedestrian safety improvements around the at-grade railroad crossing at Main Avenue and 23rd Street
- 7. Lack of plantings, trees, benches (except on the south side of Main Avenue between 8th and 9th Streets) reduce the pedestrian experience
- 8. Maintenance of sidewalks is lacking along some segments creating safety and ADA concerns
- 9. The south side of Main Avenue just east of 25th Street has a narrow concrete sidewalk adjacent to a wide band of decorative red bricks; this layout is inconsistent with the surrounding sidewalks and reduces the potential usable space for pedestrians, resulting in ADA issues

#### Future Bicycle Facilities and Identified Gaps

The 2011 Metro COG Bicycle and Pedestrian Plan categorize planned future bicycle facilities in both the five-year and long-term time horizons. These bike facilities are located on parallel routes to Main Avenue and include 2nd Avenue South, 1st Avenue South, NP Avenue, and 1st Avenue North (see Figure 6). The Plan also identifies gaps in the bicycle network.



Table 1 presents identified bicycle and pedestrian gaps in the study area. The numbers on the left side of the table correspond with locations shown in Figure 6. Additional gaps were studied as part of this corridor study. While many of the existing and planned bicycle facilities in the area run east-west, few of them run north-south. One of the reasons for this lack of north-south routes may be attributed to atgrade conflicts with the BNSF mainline, which is just north of Main Avenue. There is a general lack of vehicular crossings of the railroad tracks in the study area, and some of these crossings (especially the grade-separated crossings) do not have the ROW width to accommodate new trails. Moreover, bicyclists using the at-grade crossings must be aware of the 50-70 trains per day that use the tracks, and the increased safety and trip delays that may result. In addition, bicyclists face challenges accessing the Main Avenue Bridge from downtown, Island Park, and Main Avenue.

#	Identified Gap	Termini	<b>Proposed Facility</b>	Rationale
1	University Dr	3rd Ave S	Shared use path	• Good option for another north-south
	Trail (crosses	to 1st Ave	on the sidewalk	crossing of the BNSF mainline given the wide
	Main Ave)	N		sidewalks under the railroad overpass
				• Connects to Metro Area Transit bus shelters
				creating transit opportunities
				Connects to existing/planned east-west trails
2	Broadway	Main Ave	Pedestrian	• Fills a north-south gap in pedestrian facilities
	Drive	to NP Ave	bridge over Main	• Creates connectivity between Broadway
	Skybridge		Avenue and the	Drive and the Island Park area
	(crosses Main		BNSF mainline	• Connects the Island Park parking structure
	Ave)			with the Ground Transportation Center
3	2nd St S	One block	Sidewalk	• Fills in a critical gap in the sidewalk network
	Sidewalk	east of		• Reduces pedestrian confusion due to the
	Extension	4th St S		sidewalk ending at a major intersection
	(parallels and	to Main		(Main Ave and 2nd St S)
	connects to	Ave		• Creates connectivity for better access to the
	Main Ave)			YMCA and adjacent parks
4	NP Ave	2nd St N	Bicycle lane or	• Fills a gap across the Red River between
	(parallel to	to Red	shared lane	Fargo and Moorhead
	Main Ave)	River	markings	<ul> <li>Supports active living guidelines</li> </ul>
				• Uses lower traffic volume roadway that is
				safer than Main Avenue

#### Table 1: Identified Gaps and Facility Recommendations

The proposed facility recommendations will resolve identified gaps and will connect existing/planned trail segments to one another. At the same time, they will connect major destinations identified in the 2011 Metro COG Bicycle and Pedestrian Plan as potential generators of bicycle traffic. Some of these areas include transit stops, downtown Fargo, the YMCA, and other recreational opportunities such as pools and tennis courts. As such, these proposed bicycle and pedestrian facilities will help to facilitate and encourage active living among residents and local workers. At the same time, the improvements will encourage the concept of complete streets, in which streets are designed to accommodate multiple

modes of travel. Given the high traffic volumes and lack of available ROW on Main Avenue, parallel roadways can also be used to accomplish complete street objectives with regard to bike facilities.

The 2010 North Dakota State University (NDSU) Bicycle and Pedestrian Study examines connections between the main NDSU campus, downtown campus, downtown core, and adjacent residential neighborhoods. The area analyzed for the NDSU Study extends as far south as NP Avenue (one block north of Main Avenue). Figure 6 also shows the major recommendations proposed as part of the study, including short and long range improvements, as well as intersection upgrades.

#### 2. BICYCLE AND PEDESTRIAN CRASHES

Bicycle and pedestrian crashes were analyzed using five years of data. Within 1/8 of a mile of the corridor there were 23 reported bicycle or pedestrian incidents between 2005 and 2009 (see Figure 7 and Table 2). Seventeen of these 23 crashes (74 percent) took place along the Main Avenue corridor from 25th Street to the Red River, with the majority of these incidents taking place at intersections. Main Avenue intersections with multiple incidents include 10th Street, 7th Street, and 4th Street.

Table 2 presents characteristics of the 23 crashes such as the type of crash. The numbers in the far left column in Table 2 correspond to specific locations in Figure 7. The following data shows:

- 1. All of the crashes involved injuries
- 2. Only nine out of 23 (39 percent) crashes were with pedestrians, while the remaining 14 crashes (61 percent) were with bicycles
- 3. Fifteen out of the 23 crashes (65 percent) were intersection related
- 4. Eleven out of the 23 crashes (48 percent) involved a vehicle crashing into either a bicycle or pedestrian
- 5. Twelve of the 23 crashed (52 percent) were reported as a non-collision with a vehicle



	Bicycle or		Relation to	
#	Pedestrian	Location	Intersection	Type of Crash
		Main Ave between 27th St N &		
1	Bicycle	25th St N	Non-Junction	Angle
2	Bicycle	Main Ave & 25th St	Intersection	Non-Collision w/Vehicle
		Just south of Main Ave &		
3	Bicycle	21st St S	Alley/Driveway	Right Angle
4	Bicycle	Main Ave & 16th St S	Intersection	Non-Collision w/Vehicle
		Just north of Main Ave &		
5	Pedestrian	University Dr N	Non-Junction	Non-Collision w/Vehicle
6	Bicycle	Main Ave & University Dr N	Intersection	Non-Collision w/Vehicle
7	Pedestrian	NP Ave N & 10th St N	Intersection	Head On
8	Bicycle	NP Ave N & 8th St N	Intersection	Angle
9	Bicycle	Main Ave & 10th St N	Intersection	Angle
10	Bicycle	Main Ave & 10th St N	Intersection	Non-Collision w/Vehicle
11	Pedestrian	Just east of 10th St N	Non-Junction	Non-Collision w/Vehicle
12	Bicycle	1st Ave & 9th St S	Intersection	Angle
13	Bicycle	Main Ave and 8th St N	Intersection	Angle
14	Pedestrian	NP Ave N & Roberts St	Intersection	Non-Collision w/Vehicle
15	Pedestrian	Main Ave & 7th St S	Intersection	Head On
16	Bicycle	Main Ave & 7th St S	Intersection	Angle
		Just north of Main Ave &		
17	Bicycle	Broadway	Non-Junction	Rear End
		Broadway between NP Ave N &		
18	Pedestrian	Main Ave	Non-Junction	Non-Collision w/Vehicle
		Just west of NP Ave N &		
19	Pedestrian	Broadway	Non-Junction	Non-Collision w/Vehicle
		Just North of NP Ave N &		
20	Pedestrian	4th St N	Non-Junction	Angle
21	Bicycle	Main Ave & 4th St N	Intersection	Non-Collision w/Vehicle
22	Pedestrian	Main Ave & 4th St N	Intersection	Non-Collision w/Vehicle
23	Bicycle	Main Ave & 2nd St N	Intersection	Non-Collision w/Vehicle

#### **Table 2: Bicycle and Pedestrian Crashes**

#### **3. TRANSIT**

#### **Existing Transit**

Metro Area Transit (MAT) is the fixed-route transit service provider for the Fargo-Moorhead Metropolitan Area. MATBUS service includes 21 fixed routes that operate year-round, and additional four seasonal routes that service NDSU during the academic school year.

There is limited transit service on Main Avenue (Route 2 uses Main Avenue in Moorhead, crosses the Red River into North Dakota, and only travels as far west as 2nd Street). However, there are a number of routes that operate within three blocks of Main Avenue or cross the corridor (see Figure 8).



These transit routes include:

1.	Route 1	6.	Route 16
2.	Route 4	7.	Route 17
3.	Route 13 (A and B)	8.	Route 18

- 4. Route 14
- 5. Route 15

- Devite 22
- 9. Route 33

The majority of these routes service downtown Fargo, which is identified as a major transit generator for the region, according to the 2012-2016 Metro COG Transit Development Plan (TDP). In addition, there are a number of other transit facilities within walking distance of Main Avenue. There are five passenger bus shelters within three blocks of Main Avenue and the Ground Transportation Center (a major transfer point) is only one block north of the corridor at the intersection of NP Avenue and 5th Street (see Figure 8).

#### <u>Future Transit</u>

The Metro COG TDP recommends future transit improvements, including some that affect Main Avenue. Future improvements include:

- Further implement transit signal priority for MAT buses in Fargo
- Improve on-time performance of Route 1 by rerouting it to use the Main Avenue Bridge and the 2nd Street underpass, so that buses do not have to use an at-grade railroad crossing of the BNSF mainline. The alignment of Route 1 should also be interlined with Route 3 in south Moorhead to further improve on-time performance throughout the entire route
- Various modifications to the routes serving the Ground Transportation Center (11-13 and 15-18) to improve on-time performance, increase ridership, and eliminate duplicative service

As detailed in the 2009 Transit Signal Priority Project – Phase II, it was recommended that consideration be given to reconfiguring the Main Avenue and 2nd Street intersection over the long-term so that there are two left-turn lanes from southbound 2nd Street to eastbound Main Avenue, resulting in improved transit operations.

#### 4. TRANSPORTATION DEMAND MANAGEMENT (TDM)

#### Existing TDM Strategies

In addition to fixed-route transit service near the corridor, parallel bicycle facilities, and pedestrian facilities along the corridor, multiple Transportation Demand Management (TDM) strategies have been implemented within the Main Avenue study area. In recent years, MAT added bicycle racks to buses to provide bicycle and transit riders another option. Implementation of the U-Pass System, which gives NDSU students, faculty, and staff unlimited, free access to the system, has increased MAT fixed-route ridership. Sanford Health's M3TRO pass program, which provides an employer subsidized transit pass to employees, has also been successful. Intelligent Transportation System infrastructure, such as vehicle detection, was installed on Main Avenue to help optimize traffic operations at signalized intersections.

TDM strategies, such as the addition of Transit Signal Priority, were also implemented along Broadway Drive.

#### Future TDM Strategies

As addressed in the 2009 Metro COG Long Range Transportation Plan (LRTP), Metro COG conducted a Transportation Management Association (TMA) Survey in 2007 to determine the existing level of participation in TDM strategies (e.g., adjusting shift start/end times, telecommuting, transit opportunities) and the level of interest in the potential development of a local TMA. The survey also collected data on exemplary TDM efforts across the U.S. Metro COG staff conducted public surveys and one-on-one surveys with several major regional employers.

The survey results point out that bicycling and walking are limited in the Fargo-Moorhead region due to the winter weather conditions, and note that transit acts as a supplement to bicycling and walking as forms of transportation. It also notes that major employers are a possible target market for initial TDM strategies.

As part of the TMA Feasibility Survey, Metro COG surveyed 961 employees from seven different major regional employers. Some of the significant findings from the survey include:

- Fifty-five percent of those surveyed lived within five miles of their place of employment.
- Over 20 percent of respondents said that they would never shift modes of transportation from their private vehicle, regardless of the price of gasoline. Another 26 percent indicated that they would only shift modes if gasoline is more than five dollars a gallon.
- The most commonly mentioned (25 percent) incentive for walking or biking to work was "more sidewalks or bike paths near home or place of employment."
- Seventy-five percent of respondents indicated that either reduced-cost bus passes, free bus passes, or the ability to use their employee ID to ride the bus for free would incentivize them to use transit.

Metro COG collects metropolitan jobs data every five years in order to prepare for the next Long Range Transportation Plan. Through this process, large employers in the metropolitan area are identified. Data collected for the 2009 LRTP was used by Metro COG to identify employers willing/likely to participate in the development of a Transportation Management Association for the area. Major Fargo employers that are located in proximity to the Main Avenue corridor include ABC Seamless, Border States Electric, the City of Fargo, NDSU, RDO Equipment Company, Sanford Health, and Vanity Corporation (see Figure 9).

The Metro COG TDP also emphasizes the formation of TMAs in order to effectively broaden the reach and bolster the effects of TDM programs. Additionally, the TDP recommends the expansion of outreach to employers to identify financial incentives, vanpool needs, partners for bulk pass purchase agreements, and to distribute MATBUS information.



Additional TDM recommendations for MATBUS and Metro COG to consider include:

- Investigation of carpooling programs, especially those that use social networking tools, which are attractive to younger users and integrate a component of real-time ride matching for impromptu rides (e.g., Zimride)
- Investigation of car-sharing programs (e.g., Zipcar)
- Monitoring the demand for vanpools
- Reduction of parking demand along major transit corridors through the integration of transit investments into all comprehensive land use planning efforts

#### **5. PARKING UTILIZATION**

#### Existing Parking

The City of Fargo provides multiple parking options along the Main Avenue corridor. These parking options include two public parking lots, three on-street locations, and numerous opportunities, particularly south of Main Avenue. The focus of this study related to parking is between 8th Street South and 5th Street South.

Parking utilization data was collected in August 2010 at the on-street and side street locations during the middle of the week in the mid-morning, mid-afternoon, and evening. The public parking lots were not analyzed due to the associated permit parking fee, which limits who uses them. Time restrictions and number of handicap spaces were also recorded. An average daily percentage was calculated to determine the concentration of the parking along the corridor (see Figure 10).

The highest average daily parking utilization was approximately 50 percent, which occurred on the south side of Main Avenue on the west side of 8th Street and between 7th Street South and 6th Street South (both on-street and off-street parking). Three areas north of Main Avenue (along the east and west sides of Broadway and near the NDSU Renaissance building) also experienced high parking utilization.

It should be noted that the public expressed concern over the removal of parking a few years ago for the center left turn lane improvement between 9th Street and 10th Street.

#### **Future Parking**

The parking utilization results were used during discussions with the SRC. The main discussion topics were the on-street and off-street parking utilization and the impacts of removing parking along Main Avenue.

## Parking Utilization Figure 10

# Main Avenue Corridor Study



### 6. Access

Access plays a critical role in how roadway facilities operate. A high frequency of access points along a given segment of roadway can reduce capacity and adversely affect operations. Main Avenue is a principal arterial that serves major east-west traffic movement through Fargo and is expected to provide safe and efficient movement of vehicles to connect local and regional activity centers, placing a greater emphasis on mobility than access. According to the City of Fargo General Development Standards – Roadway Access and Driveways, Main Avenue should have shared access driveways wherever possible and a minimum spacing of 600 feet between driveways and intersections, which results in nine (9) access points per mile. Existing conditions or lot sizes limit the application of these two standards.

The Main Avenue corridor has a high frequency of access points along the corridor (approximately 141 along Main Avenue, and 17 along adjacent side streets), resulting in approximately 79 access points per mile (see Figure 11 and Figure 12). Although it is not possible to reduce the access in a built out corridor from 79 to nine (9) access points per mile; access modifications should be considered when possible.

It should be noted that access closure, or consolidation, recommendations were not made as part of the corridor study. The Study Review Committee (SRC) debated heavily on access locations and it was decided to remove them from consideration as part of this study; their respective locations will be finalized during project development.





#### 7. VEHICLE CRASHES

A crash analysis was performed for key intersections and roadway segments along the project study corridor, based on data obtained from the NDDOT crash database for the three year time period of January 2008 to December 2010. Table 3 summarizes the 288 reported crashes that occurred at the key intersections and segments along the corridor (see Figure 13). Review of the various crash types indicates that approximately 1/2 of the crashes along the Main Avenue corridor were rear end crashes. These types of crashes are typical along corridors with a high number of signalized intersections with a high number of access points and no dedicated turn lanes.

	6			<b>C</b> . <b>L</b>		
Main Avanua Intersections	Left	Anglo	Rear End	Side-	Othor	Total
25th Street South		Angle	20	swipe	6 Clief	10Lai //1
19th Street South	4	1	30	L	0	41
	1	12	Z	0	7	4
Oniversity Drive South	9	13	14	ð	1	51
10th Street South		2	1		1	4
8th Street South	1	2	4	1		8
7th Street South			2	2		4
Broadway Drive	6	4	5	1		16
4th Street South	3	7	3	1	4	18
2nd Street South	3		16		2	21
Subtotal	27	29	77	14	20	167
Main Avenue Segments		-	-			
Between 25th Street and 18th Street		1	6	3	5	15
Between 18th Street and University Drive	4	4	27	16	11	62
Between University Drive and 10th Street	1		6			7
Between 10th Street and 8th Street	2	4	16	1		23
Between 8th Street and 7th Street				1		1
Between 7th Street and Broadway Drive			1	3		4
Between Broadway Drive and 4th Street	1			1		2
Between 4th Street and 2nd Street		1	1	1	1	4
Between 2nd Street and Red River			2		1	3
Subtotal	8	10	59	26	18	121
Tatal	25	20	126	40	20	200
lotal	35	39	130	40	58	288

#### Table 3: Summary of Crash Types



In addition to reviewing the specific types of crashes that occur along the corridor, the overall intersection and segment crash rates were calculated. The overall intersection or segment crash rates were then compared to typical crash rates for intersections or segments with similar characteristics. NDDOT does not publish crash rates by type of roadway or traffic control. Therefore, typical crash rates published by the MnDOT were used for comparison purposes.

Table 4 summarizes the corresponding crash rates that were calculated for the key intersections or segments along the study corridor. Results shown in Table 4 indicate that there are two intersections and one segment that have a crash rate higher than typical for intersections or segments with similar characteristics. However, a higher than typical crash rate does not necessarily indicate a significant crash problem. Therefore, the critical crash rates were calculated to determine the statistical significance of the above average crash rates. If the calculated crash rate is below the critical crash rate, crashes that occurred are typically due to the random nature of crashes and not a geometric design or traffic control issue. As shown in Table 4, there is one intersection and one segment with higher crash rates than the calculated critical crash rates. This indicates that there is a significant crash issue at these locations and mitigation should be considered.

Main Auguro Interrections	Grachas	Calculated	Typical	Critical Crash
	Crashes	Crash Rate	Crash Rate	Kale
25th Street South	41	0.94	0.8	1.04
18th Street South	4	0.16	0.8	1.12
University Drive South	51	1.22	0.8	1.04
10th Street South	4	0.19	0.4	0.65
8th Street South	8	0.34	0.8	1.13
7th Street South	4	0.19	0.8	1.15
Broadway Drive	16	0.67	0.8	1.13
4th Street South	18	0.76	0.8	1.13
2nd Street South	21	0.69	0.8	1.09
Main Avenue Segments				
Between 25th Street and 18th Street	15	1.36	3.3	4.995
Between 18th Street and University	62	4.69	5.4	7.334
Between University Drive and 10th	7	1.70	3.3	6.216
Between 10th Street and 8th Street	23	7.72	3.3	6.80
Between 8th Street and 7th Street	1	0.68	5.4	11.881
Between 7th Street and Broadway Drive	4	2.55	5.4	11.645
Between Broadway Drive and 4th Street	2	0.77	3.3	7.079
Between 4th Street and 2nd Street	4	1.27	3.3	6.688
Between 2nd Street and Red River	3	0.62	1.5	3.390

#### Table 4: Summary of Crash Rates

\*Typical crash rates published by MnDOT.

The crash severity rate took into account the number of crashes that occurred over a three year period, the amount of vehicle exposure, and the level of crash severity of each crash (Fatal; Injury Category A, B, or C; and Property Damage). Results of the crash severity analysis shown in Table 5 indicate that four intersections along Main Avenue, 25th Street, University Drive, Broadway Drive, and 4th Street, had a crash severity rate higher than typical for intersections with similar characteristics. Also, the segment between 10th Street and 8th Street had a crash severity rate higher than typical for segments with similar characteristics.

Main Avenue Intersections	Crashas	Calculated	Typical	
25th Street South	/1	1 /13		
18th Street South	41	0.32	1.1	
University Drive South	51	2.07	1.1	
10th Street South	4	0.18	1.1	
8th Street South	8	0.33	1.1	
7th Street South	4	0.38	1.1	
Broadway Drive	16	1.17	1.1	
4th Street South	18	1.51	1.1	
2nd Street South	21	1.01	1.1	
Main Avenue Segments				
Between 25th Street and 18th Street	15	2.51	4.6	
Between 18th Street and University Drive	62	6.58	7.4	
Between University Drive and 10th Street	7	3.37	4.6	
Between 10th Street and 8th Street	23	11.86	4.6	
Between 8th Street and 7th Street	1	0.7	7.4	
Between 7th Street and Broadway Drive	4	2.45	7.4	
Between Broadway Drive and 4th Street	2	1.52	4.6	
Between 4th Street and 2nd Street	4	1.9	4.6	
Between 2nd Street and Red River	3	1.43	7.4	

#### Table 5: Summary of Crash Severity Rates

\*Typical severity rates published by MnDOT

A particular segment that stands out based on this analysis is the segment of 18th Street to University Drive. Although this segment does not present itself to have a crash or severity rate greater than a comparable "typical" rate, the number of crashes and the crash and severity rates for this segment should be considered. Because the segment is a four-lane undivided roadway, the crash and severity rate is expected to be higher; however, that alone should not be considered acceptable. The majority of the Main Avenue corridor is a five-lane roadway, which reduces the likely of rear end and side-swipe crashes. The 18th Street to University Drive segment has a high number of each of these crash types that can be mitigated with the alternative roadway type (five-lane facility).
# **8. TRAFFIC OPERATIONS**

A total of 12 key intersections were examined along Main Avenue. The following key intersections were included in the analysis:

- 1. 25th Street
- 2. 21st Street
- 3. 18th Street
- 4. University Drive
- 5. 12th Street
- 6. 10th Street

- 7. 9th Street
- 8. 8th Street
- 9. 7th Street
- 10. Broadway Drive
- 11. 4th Street
- 12. 2nd Street

The purpose of the operations analysis is to determine how the corridors currently operate, identify the future capacity, access, and safety needs and recommend potential improvements where necessary. Traffic operations were reviewed at each of the key intersections under existing and future year 2035 a.m. and p.m. peak hour traffic conditions with the existing roadway geometry.

#### **Existing Conditions**

#### **Traffic Control**

Current traffic controls along Main Avenue include side-street stop at the following intersections: 21st Street, 12th Street, 10th Street, and 9th Street. All other key intersections are signalized.

#### **Corridor Capacity**

Congestion on the existing roadway system is judged to exist when the ratio of traffic volume to roadway capacity (v/c ratio) approaches or exceeds 1.0. The ratio of volume to capacity provides a measure of congestion along a stretch of roadway and can help determine where roadway improvements, access management, transit service, or demand management strategies should be implemented. It does not, however, provide a basis for determining the need for specific intersection improvements.

Table 6 provides a method to evaluate roadway capacity. For each facility type, the typical planninglevel, average daily traffic (ADT) capacity ranges and maximum ADT volume ranges are listed. These volume ranges are based upon guidance from the Highway Capacity Manual (HCM) and professional engineering judgment. A range is used since the maximum capacity of any roadway design (v/c = 1) is a theoretical measure that can be affected by its functional classification, traffic peaking characteristics, access spacing, speed, intersection node geometry and other roadway characteristics. Further, to define a facility's "daily capacity," it is recommended that the top of each facility type's volume range be used. This allows for capacity improvements that can be achieved by roadway performance enhancements. Another useful capacity analysis index is the level of traffic that a facility can accommodate before it is defined as approaching its capacity limit. A segment of road is noted as "approaching capacity" when the observed daily volume equals or exceeds 85 percent of daily capacity (v/c > 0.85). This level of traffic volume is also presented in Table 6 by facility type.

The Main Avenue corridor falls within two roadway classifications, one as a five-lane (four-lane divided with turn lanes) and the second as a four-lane undivided urban facility. The four-lane undivided urban facility section is bounded by 18th Street to University Drive. Existing annual average daily traffic (AADT) range from 15,000 vehicles per day (vpd) to 22,600 vpd with the v/c ranges from 0.47 - 0.71. Please note that the four-lane undivided urban section carries approximately 21,200 vpd, which corresponds to a v/c of 0.96. The existing five-lane sections provide sufficient capacity to accommodate current traffic volumes; however, the four-lane undivided section is well within the approaching capacity and nearly over capacity. Figure 14 presents the daily traffic volumes for Main Avenue.

	Daily Capacity Ranges	Approaching Capacity
Facility Type	(AADT) *	(85% of ADT)
Two-lane undivided urban	8,000 - 10,000	8,500
Two-lane undivided rural	14,000 - 15,000	12,750
Three-lane urban (two-lane divided with turn lanes)	14,000 - 17,000	14,450
Four-lane undivided urban	18,000 - 22,000	18,700
Five-lane urban (four-lane divided with turn lanes)	28,000 - 32,000	27,200
Four-lane divided rural	35,000 - 38,000	32,300

#### Table 6: Planning-Level Roadway Capacities by Facility Type

\* Derived from the *Highway Capacity Manual 2000* 

The shaded row identify the facility type that exist along Fargo Main Avenue

## Intersection Capacity Analysis

A review of the existing conditions was completed to determine if any operational or geometric issues currently exist along the Main Avenue corridor. To determine the existing capacity at each intersection, a.m. and p.m. peak hour turning movement counts were reviewed. Peak hour turning movement counts along Main Avenue were collected by the City of Fargo in February, March, and September of 2011.

The BNSF KO subdivision rail runs parallel to Main Avenue throughout the study area, impacting key intersections along Main Avenue, including: 8th Street, Broadway Drive, and 4th Street. Based on field observations and data collected regarding the number of trains per day through this area, two trains were assumed during the peak hour, each lasting for five minutes.



An operations analysis was conducted for the a.m. and p.m. peak hours at the key intersections to determine how traffic currently operates in the study area. Signalized intersections were analyzed using the Synchro/SimTraffic software, while unsignalized intersections were analyzed using a combination of Synchro/SimTraffic software and the HCM. It should be noted that where unsignalized intersections are in close proximity to signalized intersections, the signalized intersections have a significant impact on the overall operations of the unsignalized intersections. To account for this situation, Synchro/SimTraffic results were reported for the unsignalized intersections as well as the signalized.

Capacity analysis results identify a Level of Service (LOS) which indicates the quality of traffic flow through an intersection. Intersections are given a ranking from LOS A through LOS F. The LOS results are based on average delay per vehicle. The delay threshold values are shown in Table 7. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates an intersection where demand exceeds capacity, or a breakdown of traffic flow. LOS A through C is generally considered acceptable by drivers in the Fargo-Moorhead area. For purposes of this analysis LOS A through C is considered near capacity and LOS E-F is considered over capacity.

LOS Designation	Signalized Intersection Average Delay/Vehicle (seconds)	Unsignalized Intersection Average Delay/Vehicle (seconds)
А	< 10	< 10
В	10-20	10-15
С	20-35	15-25
D	35-55	25-35
E	55-80	35-50
F	80 <	50 <

Table 7: Level of Service Criteria for Signalized and Unsignalized Intersections

For side-street stop controlled intersections, special emphasis is given to providing an estimate for the LOS of the minor approach. The traffic operations at an unsignalized intersection with side-street stop control can be described in two ways. First, consideration is given to the overall intersection LOS. This takes into account the total number of vehicles entering the intersection and the capability of the intersection to support those volumes. Second, it is important to consider the delay on the minor approach. Since the mainline does not have to stop, the majority of delay is attributed to the side-street approaches.

Results of the existing operations analysis shown in Table 8 indicate that all key intersections currently operate at an acceptable overall LOS C or better during the a.m. peak hour, with existing traffic controls and geometric layout. However, during the p.m. peak hour, the intersection of Main Avenue and 25th Street operates at LOS D (near capacity).

Internetien	Level of Service	
Intersection	A.M. Peak	P.M. Peak
29th Street	A	В
25th Street	С	D
21st Street *	A/C	A/C
18th Street	В	С
University Drive	С	С
12th Street *	A/A	A/B
10th Street *	A/B	A/C
9th Street *	A/A	A/B
8th Street	A	В
7th Street	A	A
Broadway Drive	В	В
4th Street	С	С
2nd Street	В	C

Table 8: Existing Peak Hour Capacity Analysis Level of Service Results

\* Represents an unsignalized intersection. Overall intersection LOS is shown followed by the worst approach LOS.

There were a number of queuing issues observed along the corridor during the a.m. and p.m. peak hours. The queuing issues are characterized in two ways, those that are approaching significance (200 - 250 feet) and those that are considered significant already (greater than 250 feet). The following notes summarize the operations analysis findings and specifically, the significant queues (the areas with queues approaching significance and those already significant are presented in Figure 15 and Figure 16 for the a.m. and p.m. peaks).

#### A.M. Peak Hour Queuing Issues:

- 1. 25th Street
  - eastbound through movement queues 285'
  - o northbound through movement queues of 320'
- 2. 18th Street
  - o eastbound through movement queues of 355'
- 3. University Drive
  - o eastbound through movement queues of 395'





#### P.M. Peak Hour Queuing Issues:

- 1. 29th Street
  - westbound through movement queues of 250'
- 2. 25th Street is operating near capacity during the p.m. peak hour with an overall delay of approximately 40 seconds (LOS D)
  - o southbound queues extend back 525'
    - southbound approach delay is approximately 50 seconds
    - heavy southbound right-turn movement extends beyond its storage capacity 42 percent of the time (95th percentile queues of 355')
  - westbound through movement queues of 290'
- 3. 18th Street
  - eastbound through movement queues of 390'
  - westbound through movement queues of 285'
- 4. University Drive has an overall LOS C (approximately 30 seconds)
  - o eastbound through movement queues extend back 400'
    - eastbound right-turn lane extends beyond storage capacity 11 percent of the time
  - o southbound through movement queues of 265'
- 5. Broadway Drive
  - o southbound queues of 465'
- 6. 4th Street
  - eastbound through traffic queues block entry into the eastbound left-turn lane storage
     13 percent of the time
  - westbound through traffic queues block entry into the westbound left-turn lane storage
     33 percent of the time
  - o southbound queues of 535'
- 7. 2nd Street
  - o southbound queues extend back 330'
    - 39 percent of the time the vehicles queue back the storage distance of approximately 90'
  - o eastbound through queues extend back 330'
    - eastbound right-turn lane is blocked 39 percent of the time from the eastbound through traffic

## Year 2035 Conditions

Future area traffic growth is expected to impact the study area operations. To determine the extent of the impacts and recommend potential improvements, as necessary, a future operations analysis was completed. The following information details the future operations of the corridor.

#### Year 2035 Forecasts

To develop future year 2035 traffic forecasts, a growth factor was applied to the existing peak hour turning movement counts. Two methods were reviewed as part of the year 2035 traffic forecast development: a review of the historical AADT volumes provided by NDDOT and MnDOT and the Fargo-Moorhead LRTP. Historical AADT volumes indicate that some locations present declining traffic volumes within the last 5-10 years. In addition, the traffic maps in the LRTP show little to no growth in the year 2015 to 2035 period; however, decreases in traffic volumes compared to existing conditions are not expected over the next 20-25 years. Therefore, an intermediate growth rate of one-half percent is appropriate for the built environment surrounding the study corridor (taking into account both the traffic volume changes and population growth shown in the LRTP). This level of growth was affirmed by the SRC prior to moving forward with the analysis. Figure 17 presents the resultant year 2035 daily traffic volumes for Main Avenue. Appendix B contains a technical memorandum outlining the forecast development.

#### Year 2035 No Build Corridor Capacity

The capacity along Main Avenue under year 2035 no build conditions was based on the existing roadway system. Similar to the methodology described previously, the future volumes were reviewed to determine if future capacity deficiencies will develop.

Recall that the Main Avenue corridor falls within two roadway classifications, one as a five-lane (fourlane divided with turn lanes) and the second as a four-lane undivided urban facility. Future 2035 AADTs range from 17,200 vpd to 25,600 vpd within the five-lane sections, resulting in v/c ranges from 0.54 -0.80. Specifically within the four-lane section the volume reaches 24,000 vpd, corresponding to a v/c of 1.09. Therefore, the existing roadway provides sufficient capacity to accommodate forecast traffic volumes within the five-lane sections of roadway; however, the four-lane section is clearly over capacity under future conditions. The ratio of volume to capacity provides a measure of congestion along a stretch of roadway and can help determine where roadway improvements, access management, transit service, or travel demand management strategies should be implemented. It does not, however, provide a basis for determining the need for specific intersection improvements.

## Year 2035 No Build Corridor Capacity Analysis

Signal timing for all signalized intersections was optimized for the year 2035 no build analysis. Traffic controls and geometric layout were assumed to remain the same as existing conditions.



Results of the year 2035 no build analysis shown in Table 9 indicate that 25th Street will continue to operate at a LOS D during the p.m. peak hour. All other key intersections will operate at an acceptable overall LOS C or better during the a.m. and p.m. peak hours.

Intersection	Level of Service	
intersection	A.M. Peak	P.M. Peak
29th Street	A	В
25th Street	C	D
21st Street *	A/C	A/C
18th Street	C	C
University Drive	C	C
12th Street *	A/A	A/C
10th Street *	A/B	A/C
9th Street *	A/B	A/B
8th Street	В	В
7th Street	A	А
Broadway Drive	В	В
4th Street	С	С
2nd Street	С	C

Table 9: 2035 No Build Peak Hour Capacity Analysis with Signal Improvements

\* Represents an unsignalized intersection. Overall intersection LOS is shown followed by the worst approach LOS.

The queuing issues observed under existing conditions are expected to degrade as time passes and traffic volumes increase along the corridor during the a.m. and p.m. peak hours. As explained earlier, the queuing issues are characterized in two ways, those that are approaching significance (200 - 250 feet) and those that are considered significant already (greater than 250 feet). The following notes summarize the operations analysis findings and specifically, the significant queues (the areas with forecasted queues approaching significance or significant are presented in Figure 18 and Figure 19 for the a.m. and p.m. peaks).





#### A.M. Peak Hour Queuing Issues:

- 1. 29th Street
  - eastbound through movement queues of 260'
- 2. 25th Street will operate at a LOS C (approximately 35 seconds)
  - eastbound through queues extend back 420'
  - o northbound through queues extend back 310'
    - northbound right-turn lane storage blocked 10 percent of the time

#### 3. 18th Street

- o eastbound through movement queues extend back 440'
- 4. University Drive
  - o eastbound through movement queues extend back 460'
- 5. 8th Street
  - o eastbound through movement queues extend back 280'
- 6. Broadway Drive
  - o northbound queues of 255'
- 7. 4th Street/Main Avenue
  - o eastbound through movement queues of 285'
    - eastbound right-turn lane queues extend past available storage 11 percent of the time
  - o westbound through movement queues of 260'
    - westbound through movement queues block entry into westbound left-turn lane 30 percent of the time
  - o northbound through movement queues of 250'
    - northbound through movement queues block entry into northbound right-turn lane 9 percent of the time
  - o southbound queues extend back 250'

#### P.M. Peak Hour Queuing Issues:

- 1. 29th Street
  - westbound through movement queues extend back 280'
- 2. 25th Street will operate at a LOS D (approximately 45 seconds)
  - eastbound through queues extend back 400'
  - westbound through queues extend back 410'
    - westbound through queues block left-turn lane storage 21 percent of the time
    - westbound through queues block right-turn lane storage 19 percent of the time

- o southbound queues extend back 790'
  - southbound right vehicle queues extend beyond available storage 45 percent of the time
- 3. 18th Street
  - o eastbound through movement queues extend back 435'
  - westbound through movement queues extend back 305'
- 4. University Drive will operate at a LOS C (approximately 30 seconds) during the p.m. peak
  - Eastbound through queues extend back 480'
    - eastbound right-turn lane is blocked 16 percent of the time
  - o south bound queues extend back 355'
    - southbound right-turn lane extends beyond available storage 8 percent of the time
- 5. 8th Street
  - o southbound queues extend back 305'
- 6. Broadway Drive
  - o eastbound through movement queues extend back 265'
    - eastbound left-turn lane extends beyond available storage 11 percent of the time
  - o southbound queues extend back 465'
- 7. 4th Street/Main Avenue
  - o eastbound through movement queues extend back 265'
    - eastbound through queues block entry into the eastbound left-turn lane storage
       12 percent of the time
  - westbound through traffic queues block entry into the westbound left-turn lane storage
     31 percent of the time
  - o southbound queues extend back 535'
- 8. 2nd Street/Main Avenue
  - o southbound queues extend back 410'
    - southbound left-turn queues extend beyond available storage 41 percent of the time during the p.m. peak hour
  - o eastbound queues extend back 275'
    - eastbound through movement queues block entry into eastbound right-turn lane 49 percent of the time

# 9. INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

## Existing Infrastructure

Vehicle detectors along Main Avenue collect traffic information in order to improve the performance of traffic signals at 25th Street and University Drive.

Closed Circuit Television (CCTV) surveillance cameras, which assist with real-time monitoring of traffic, signal performance, and incident management on Main Avenue, are located at the intersections of 25th Street, 4th Street, and Broadway Drive.

## **Future Deployment**

The 2008 Fargo-Moorhead ITS Plan identifies the deployment of additional ITS infrastructure as an essential tool to achieve higher levels of regional coordination in the areas of traffic management, operations, incident response, security, and the distribution of real-time information to travelers.

The ITS Plan designates Main Avenue as a high priority corridor for the implementation of enhanced vehicle detection systems to enable better monitoring of transportation system performance. In addition to the existing detectors, which are only able to monitor vehicle movements near signals, the strategy includes the implementation of detectors at mid-block locations throughout the corridor. These additional detectors between signals would increase the accuracy of traffic volume and flow data collection, determine locations of recurring congestion, and further increase the performance of the signals.

The ITS Plan also identifies the need for coordinated operation of integrated traffic signal systems to maximize mobility throughout the corridor and the region. This strategy incorporates a shift away from independent agency operation of the multiple signal systems in the region, which are notably problematic at uncoordinated, adjacent intersections.

Additional deployment of CCTV surveillance at the Main Avenue intersections of University Drive and 2nd Street is also addressed in the ITS Plan. These additional cameras would provide real-time information on traffic operations and aid in efficient incident management. Furthermore, the 2011 Metro COG Traffic Operations Incident Management Strategy also calls for the future implementation of at-grade train detection at the following intersections of the BNSF mainline: 8th Street, Broadway, and 4th Street. This detection will reduce congestion caused by train movements by informing drivers of the presence of a train and directing them (via eastbound Dynamic Message Signs (DMS) between 25th Street and University Drive) to the nearest grade-separated crossing.

# **10. PAVEMENT AND UTILITIES**

NDDOT plans to reconstruct the entire Main Avenue Corridor over time. A light lift resurfacing was completed in 2009 throughout the corridor, but was a temporary fix to the roadway. Furthermore, a temporary earthen levee has been constructed across 2nd Street during major flood events in the past, and any reconstruction of the Main Avenue and 2nd Street intersection needs to be cognizant of these flood protection needs.

The City of Fargo also has underground utility needs along the corridor. The storm sewer needs inlet manholes and inlet drop lines to the trunk sewer line. Additionally, there are multiple breaks in the water main between the 800 and 1500 blocks of Main Avenue, which will require full replacement at the time of a future Main Avenue reconstruction.

# **<u>11. MAIN AVENUE BRIDGE – FLOOD PROTECTION</u>**

The Main Avenue Bridge, connecting Fargo to Moorhead, serves as a key linkage across the Red River. The bridge was reconstructed in 2003. The linkage has played an especially significant role in recent flood events because it was constructed high enough so that it can be used as a regional evacuation route. It is one of the few bridges in the entire metropolitan area that can remain open during major floods, so its value to the region is high.

# 12. LAND USE

## Existing Land Use

Two predominant transition zones are currently present on the corridor. Existing land use patterns from 25th Street to 15th Street are more industrious (light, heavy, manufacturing, automobile, etc.); whereas from 15th Street to 9th Street, patterns become more oriented toward commercial/retail uses, and residential uses additionally become more noticeable.

From approximately 9th Street to 4th Street, the existing land use patterns are more consistent with a downtown area and then quickly transition to a more industrial and less dense form east of 4th Street to the Red River. Land uses on 1st Avenue South are largely transitional from the industrial uses on the north side of the roadway to a mix of residential and industrial uses on the south side of the road (especially west of University Drive).

A majority of the parcels within 1/4 mile of Main Avenue are privately held, including a small number of railroad properties and railroad leased properties. Publicly held properties are more focused towards the core downtown area and are inclusive of facilities such as the Ground Transportation Center, Island Park, Park District Administrative Offices, and parking facilities.

In terms of the railroad leases, these properties are owned by the BNSF Railroad and any entity wanting to use the land must obtain a temporary use agreement or enter into a short- or long-term lease. Although the exact terms of these agreements are unknown for the four properties adjacent to Main Avenue, these parcels occupy a large percentage of acreage that directly abuts the north side of Main Avenue and ownership structure of these parcels could play an important role in any transitions and evolution of the Main Avenue Corridor.

## Future Land Use

Aside from the goals, strategies, objectives and policies outlined within the 1995 Comprehensive Policy Plan and 2007 Growth Plan, the City of Fargo does not have an established future land use plan for the Main Avenue corridor study area. Land use decisions are referenced to the city's zoning, which is essentially represented in the existing land use map. Although this may be the city's intent, typically, zoning maps should be configured to reflect the city's vision for future land uses based on documented goals, strategies, objectives, and policies. Applicable land use goals and objectives pursuant to the 1995 Comprehensive Policy Plan and the 2007 Growth Plan are found in the Related Planning Documents section of this chapter.

# **13. CORRIDOR LAND DYNAMICS & SUBJECT TO CHANGE ANALYSIS**

The Metro COG 2013 Corridor Land Dynamics & Subject to Change Analysis was prepared as a supplemental planning and research memorandum to inform this corridor study. The primary intent of the memo is to provide parcel-level analysis of stable and transitional properties ("subject to change"), and corresponding needs and issues. This analysis will inform corridor study decision-making relative to roadway design concepts, ROW, multi-modal integration, future growth opportunities/land use policy, and planning horizon full-build conditions. For additional background and detail, the full memorandum can be found in Appendix C.

## Land v. Improvement Value Analysis

In regard to economic redevelopment and investment opportunity along the corridor, the analysis shows that 109 of 503 parcels in the study area (28 percent of the land area) have land values in excess of improvement values, generally indicating underutilized properties that are suitable for redevelopment or re-investment. Furthermore, 201 parcels have land to improvement values of \$50,000 or less. The analysis results, paired with a review of existing plans in the corridor study area, note that there are major opportunities for this downtown area and the transportation decisions need to be made with an acute understanding of a greater vision for these corridors as it relates to land use, economic development, parcel productivity and the degree of desirability for a functional downtown environment.

## Right-of-Way Encroachment Analysis

The analysis of potential right-of-way (ROW) encroachment issues in the memo indicates that there may be buildings or structures on private property that are possibly encroaching on ROW along the Main Avenue corridor. ROW encroachment refers to a structure, improvement (above grade), or a building on private property, which is not completely contained within the parcel boundaries and thus encroaches into public roadway ROW. Encroachments into public ROW are somewhat common (especially on older corridors) and usually do not create an issue. However, the encroachment data can serve as an important planning analysis tool as transportation alternatives are considered, reviewed, and vetted.

A description of the existing lane configuration and on-street parking along Main Avenue is listed in Table 10. Through a review of parcel data, GIS data, and 2011 aerial photography, 78 parcels (15 percent of the 503 parcels) were identified within the corridor study area with a possible ROW encroachment. A majority of these possible encroachments appear to be located on both sides of Main Avenue in the blocks between University Drive and 4th Street. As noted in Table 10, the existing roadway configuration along this segment of the corridor includes five traffic lanes, continuous two-way left turn lanes, and no existing on-street parking.

	Main Avenue Corridor Segments			
	25th St to 18th St	18th St to University Dr	University Dr to 8th St	8th St to 2nd St
Section	5 lanes with	4 lanes with limited left	5 lanes with	4 lanes with limited
(lanes)	continuous 2-way	turn lanes	continuous 2-way left	left turn lanes (some
	left turn lanes		turn lanes	2-way continuous
				left turn lanes)
<b>On-Street</b>	None	None	None	Curbside parking on
Parking				south side of Main
				Ave, 8th St to 6th St

## Table 10: Existing Roadway Sections and On-Street Parking

It is important to note that the identification of these parcels with a potential ROW encroachment was not based on survey accurate data. Subsequently, these parcels should be reviewed as *possible* ROW encroachment locations in the Alternative Evaluation process when addressing ROW acquisition and impacts for potential intersection improvements, turn lanes, or intersection alignment.

# **14. HISTORIC RESOURCES**

Preliminary archaeological, cultural, and historic resources near the Main Avenue corridor were identified through data provided by Metro COG and the City of Fargo. Additional classification of historic districts and sites currently registered on the National Register of Historic Places was completed with data extracted from the National Parks Service website. These preliminary resources are displayed on Figure 20. Additional analysis and identification of sites will be completed as part of the environmental documentation phase of this process. This may include discovery of new sites that were not previously identified in any of the above-mentioned resources.



Eleven known historical districts, sites, and park and recreation areas are located within 1/8 mile of the Main Avenue corridor. Six of these sites are identified on the National Register of Historic Places, and include:

- 1. Union Storage Building
- 2. Downtown Fargo District
- 3. Masonic Block
- 4. Knerr and Floyd Block, McHench Building, and Webster and Cole Building (8th Street Block)
- 5. Northern Pacific Railway Depot
- 6. DeLendrecie's Department Store

Three sites of regional historic importance are located within 1/8 miles of the corridor. These sites include:

- 1. First Methodist Church
- 2. First Church of Christ School
- 3. Grand Stand

Two park and recreation areas are also located within 1/8 mile of the corridor, including:

- 1. Island Park
- 2. Riverfront District

The identification and proper consideration of these sites is necessary to ensure that impacts to known or previously identified archaeological, cultural, and historic resources are minimized as part of the evaluation of the corridor alternatives. Furthermore, the alternatives selected for implementation must be in compliance with the following legislation:

- Department of Transportation Act of 1966, Section 4(f), which pertains to the preservation of all publically-owned public parks, waterfowl and wildlife refuges, and all historic areas (49 U.S.C. 303; 23 U.S.C. 138)
- 2. National Historic Preservation Act (NHPA) of 1966, Section 106, which protects cultural resources that are on or eligible for the National Register of Historic Places (NRHP)
- 3. Archaeological Resources Protection Act of 1979, which applies to archaeological resources on tribal lands and non-tribal lands under Federal jurisdiction

## **15. Environmental Justice**

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs receiving federal financial assistance. Title VI states that "no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." In 1994, President Clinton issued Executive Order 12898, which states that each federal agency "shall make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

In an effort to comply with Executive Order 12898, 2006-2010 American Community Survey and 2010 Census data was used to identify the concentrations of low-income and minority populations along the corridor, respectively, in an effort to limit disproportionate impacts to these communities.

Following the methodology used in the 2012 Metro COG Metropolitan Profile – Transportation Surveillance and Monitoring Report, minority population concentrations were determined from the 2010 Census block-level data in which 25 percent or more of the total population self-reported a race other than "single-race white." Within the 1,515 residential blocks in the City of Fargo, 117 blocks fall within these race criteria to be considered a predominantly minority block. Within the 43 residential blocks partially or completely within 1/8 mile of the Main Avenue corridor, eight blocks (19 percent) have a predominantly minority population (see Figure 21).

Low income population concentrations were determined from 2006-2010 block group-level data in which 25 percent or more of the total population was below 125 percent of the U.S. Department of Health and Human Services poverty threshold. Within the 75 block groups in the City of Fargo, 21 block groups fall within these income criteria to be considered a predominantly low-income block group. Within the eight block groups partially or completely within 1/8 mile of the Main Avenue corridor, four block groups (50 percent) have a predominantly low-income population (see Figure 22).



# Figure 21

Main Avenue Corridor Study





# **16. RELATED PLANNING DOCUMENTS**

## Fargo-Moorhead Downtown Framework Plan Update (2007)

Metro COG, along with the Cities of Fargo and Moorhead, developed the 2007 Fargo-Moorhead Downtown Framework Plan Update. This document is an addendum to the 1999 Fargo Renaissance Zone Development Plan and the separate Fargo and Moorhead Downtown Framework plans prepared in 2000. It describes new ideas while reinforcing redevelopment goals and objectives for the downtown areas from previous studies. The update's major recommendations for Main Avenue include various enhancements to the accessibility, walkability, and economic vitality of the Main Avenue corridor.

For the improvement of pedestrian safety, walkability, and connectivity, the update specifically calls for the addition of streetscape treatments along Main Avenue and the construction of a Skybridge (pedestrian connection) over the BNSF mainline at Main Avenue and Broadway Drive.

The update also calls for mixed-use development along the corridor (commercial on the ground floor, residential and/or office space above, and parking integrated into the developments below grade). The objective for providing these mixed-use guidelines is to promote infill development/redevelopment from Broadway Drive to the Red River.

## Fargo 2007 Growth Plan

The 2007 Growth Plan notes that the 'core' area of the City of Fargo has primarily developed as a series of neighborhoods. The plan describes a "neighborhood" as "the unit of the city where we most often find a connection with other people and create real community." Although the growth plan primarily focuses on outward expansion and the transition of uses in these areas, the plan does outline the existing neighborhood structure, including a majority of the more recognized neighborhoods which are situated adjacent to or near the Main Avenue corridor.

The corridor study area encompasses or intersects four of these distinct neighborhoods, including Madison/Unison Park, Jefferson/Carl Ben, Hawthorne/Roosevelt and Downtown. The Plan notes that a majority of residents' daily needs should be met within these neighborhoods, which "indicates a commitment to planning for neighborhood commercial and retail uses adjacent to each neighborhood." Further, the Plan highlights the importance of a connected city, or "one that takes every opportunity to link separate parts of the city together into a cohesive whole."

## Metro COG Long Range Transportation Plan (2009)

The Metro COG Long Range Transportation Plan (LRTP) provides a comprehensive, long-range vision for the Fargo-Moorhead regional transportation system. The LRTP identifies issues in the regional transportation system, such as future capacity constraints, and provides recommendations for future action.

The LRTP's discussion of roadway system needs includes the designation of Regionally Significant Transportation Infrastructure (RSTI). These routes are existing or future arterial roadways that carry large volumes of traffic, including freight. The roadways are generally higher speed facilities that are important to the metropolitan area because of their ability to function as evacuation routes during times of natural or man-made disasters. Main Avenue was designated as a RSTI route for these reasons.

In addition to the RSTI designation, the following recommendations in the LRTP apply to Main Avenue:

- 1. Recognition of rail-induced travel delays (KO subdivision) must be made and addressed to achieve efficient traffic operation on the region's arterials in the future
- 1. Continue to assess interest in the development of a Transportation Management Association in Downtown Fargo
- 2. Rehabilitate Main Avenue pavement and enhance as a Complete Street; add pedestrian enhancements and update lighting

Other recommendations within the LRTP that are applicable to the Main Avenue corridor include:

- 1. Strengthening the linkage of land-use and transportation planning
- 2. Creating overlapping systems for pedestrians, transit, vehicles, and bicycles that provide for ease of movement within and between neighborhoods
- 3. Improving roadway and intersection safety for automobiles, bicyclists, and pedestrians
- 4. Supporting a higher measure of safety for corridors that cross major barriers such as rivers, interstate highways, and railroad tracks
- 5. Providing appropriate bicycle and pedestrian facilities adjacent and parallel to roadways, including sidewalks on both sides of each roadway, ADA compliant sidewalk curb-cuts at new intersections, and continued retrofitting of existing intersections to comply with ADA standards
- 6. Closing gaps in the bicycle network
- 7. Provide ADA compliant sidewalk curb-cuts at new intersections and continue retrofitting older intersections to make them ADA compliant
- 8. Encouraging and promoting public art
- 9. Establishing consistency with the metropolitan access management guidelines
- 10. Enhancing regional coordination of traffic signal operations on arterials
- 11. Utilizing Travel Demand Management practices as appropriate

## Metro COG Complete Streets Policy Statement (2010)

The 2010 Metro COG Complete Streets Policy Statement addresses complete streets for the Fargo-Moorhead metropolitan area. The policy statement provides information on this planning, design, construction, and operations process that fully integrates and balances the needs of users of all modes, ages, and abilities. Additionally, it addresses the context sensitive nature of Complete Streets that may lead a complete street in one neighborhood to look very different from a complete street in another neighborhood, even though both are designed to balance the safety and convenience for everyone using the public ROW.

The policy statement also addresses the successful achievement of the complete streets vision, which would result in the creation of a complete transportation network for all modes of travel (as opposed to trying to make each street perfect for every traveler). Additionally, implementation may result in fewer crashes, lower severity crashes, public health improvements related to less air, water, and noise pollution, as well as lower overall transportation costs for the public.

The Complete Streets Policy Statement directly encourages jurisdictions within the MPO to adopt a Complete Streets policy at the local level. Widespread adoption of the policy at the state and local level was also addressed, including the state of Minnesota, which passed a Complete Streets law in 2010.

## Interstate Operations Study – Phase II (2011)

The 2011 Interstate Operations Study (Phase II) was developed by Metro COG. The study addresses upcoming future needs on the Interstate system (I-29 and I-94) as a result of significant growth and increased traffic volumes in the Fargo-Moorhead metropolitan area over the past few decades.

The study recommends the Hybrid Alternative 2, which recommends TDM, transit, and land use improvements for non-Interstate arterials, including Main Avenue, to reduce demand for interstate highway infrastructure.

## Metro COG Traffic Operations Incident Management Strategy (2011)

The 2011 Metro COG Traffic Operations Incident Management Strategy (TOIMS) was created to identify a list of roadway, ITS, policy, and protocol improvements to enhance the transportation of people and goods in and out of the Fargo-Moorhead metropolitan area in the event of an incident or emergency.

The TOIMS maintains Main Avenue's designation as a RSTI roadway from the 2009 Metro COG LRTP and further refines the RSTI concept. It also identifies issues along corridors within the RSTI network that reduce the ability for the corridors and network to function efficiently. Finally, the TOIMS recommends ITS improvements for the region. One of the proposed ITS improvements for Main Avenue was at-grade detection to alert drivers and emergency responders to reroute and use a grade-separated crossing when a train is blocking the intersection.

## Fargo Comprehensive Plan - GO 2030 (2012)

The City of Fargo's official policy for future growth and development, GO 2030, envisions a "vibrant and sustainable city with a high quality of life, robust economy, and welcoming community atmosphere." In order to move the City's future growth and development in the direction of this vision, a list of catalysts were created through a public process and input from the steering and technical committees. These

catalysts, which are ideas to accelerate development and enhance the quality of life, are integrated into the Plan's guiding principles.

The Active Living Streets catalyst is particularly relevant to Main Avenue, which is designated as an Active Living Street from 42nd Street through the Red River. Active Living Streets have the potential to support multiple modes of transportation and become great public spaces with attractive streetscapes. These streets can support pedestrians, recreational and advanced bicyclists, transit, and automobiles.

Improvements identified in the GO 2030 Comprehensive Plan related to the successful operation of Main Avenue as an Active Living Street include:

- 1. Prioritization of pedestrian and bicycle streetscape improvements when upgrading infrastructure, including bicycle way-finding signage
- 1. Installation of signs, traffic controls, and crossing facilities that make it clear to traffic that bicycle and pedestrian traffic is on equal par with vehicular traffic
- 2. Conversion of NP Avenue and 1st Avenue North to two-way streets to reduce traveler confusion, VMT, and vehicle travel speeds, which assists in increasing pedestrian safety and enhancing the visibility of retail establishments to create a more vibrant, active street
- 3. Inclusion of 10-foot off-street side paths or eight-foot multi-use paths along reconstructed streets that did not originally accommodate them, and on-site connections to sidewalks and bicycle paths to enhance connectivity to neighborhoods, activity centers, employment areas, and districts in Fargo

Additional measures applicable to the Main Avenue corridor that are identified in the GO 2030 Comprehensive Plan include:

- Placement of way-finding and downtown identity features along University Drive and 10th Street
- 1. Improvement of access to the 7th Avenue North corridor from Main Avenue (across the BNSF Railroad tracks) and 12th Avenue North, as well as the improvement of corridor identity
- Incorporate ITS features into roadway improvement projects leading to and from downtown Fargo to ensure that traffic flow along these corridors can be monitored and maximized by a future TOC

Finally, the draft GO 2030 Comprehensive Plan also identifies this project, the Main Avenue Corridor Study, as one that should be referenced for its further examination of corridor land use patterns, redevelopment, corridor identity, signature street characteristics, and way-finding opportunities that would significantly improve the Main Avenue corridor as an entrance to downtown Fargo.

# **17. PUBLIC INPUT ON CORRIDOR ISSUES**

In addition to the existing and future condition needs analysis, comments on issues were sought from the public, stakeholders, and the technical staff. This input process identified the following corridor issues:

- 1. Limited ROW, buildings close to road
- 2. Need thru lanes to reduce intersection congestion at various locations along the corridor
- 3. Customers have difficulty with access (turning movements)
- 4. Prefer fewer driveway accesses but wider ones for truck movements
- 5. Possibility for some property redevelopment; need to coordinate access modifications
- 6. Need to maintain good customer access for property viability
- 7. Storm water drainage issue creates some flooding
- 8. Need to retain existing on-street parking
- 9. Frustration over removal of parking in the past along Main Avenue
- 10. Sidewalk blockage due to snow storage issues
- 11. Create a new parking ramp near 8th Street
- 12. Railroad pre-emption affects downtown traffic signals
- 13. Improved pedestrian facilities/access
- 14. 10th Street curb extensions affect vehicle turning movements
- 15. Water main breaks affect corridor reliability
- 16. Issues with offset access points
- 17. In general there are too many turning movements without enough turn lanes
- 18. Need to reconstruct corridor
- 19. Incorporate bicycle/pedestrian improvements
- 20. In the future, may no longer need signal and pedestrian crossing at 7th Street/Depot for Senior Center, pull-in lane could be replaced with landscaping
- 21. Corridor needs landscaping/aesthetic treatments
- 22. Recognize cultural/historic properties along corridor
- 23. Consider bike/pedestrian grade separation of railroad between 25th Street and University Drive
- 24. Consider a contra-flow lane at University Drive
- 25. Transit service along corridor is not warranted
- 26. Turn bays need to be extended
- 27. Signal at 18th Street may no longer be needed
- 28. Entrance/exit of traffic from 4th Street underground parking ramp is affected by Main Avenue corridor congestion
- 29. Consider ITS solutions for railroad conflicts
- 30. Consider adjusting corridor signal timing
- 31. Certain key business activity affects corridor mobility due to multiple accesses and no turn lanes
- 32. Water, sewer, storm sewer under segments of the corridor need to be replaced
- 33. Crashes along corridor are high

- 34. Continuous left thru lane section (from 18th Street to University Drive) would reduce crashes and improve mobility
- 35. Consider modifying access, use different spacing standards for existing and redeveloped properties
- 36. Certain businesses are increasing pedestrian activity along/crossing corridor
- 37. A parallel bike lane exits along 1st Avenue South
- 38. Much of corridor does not comply with ADA standards
- 39. Remove fire hydrants and light poles from the sidewalks

## **18. SUMMARY OF KEY ISSUES/CONSTRAINTS/OPPORTUNITIES**

A brief summary of the key issues, identified by the previous technical analysis and stakeholder input is provided below:

- 1. Pavement/utility replacement
- 1. Traffic operational signals, turning movement problems, etc.
- 2. Access conflicts
- 3. Crash concerns
- 4. Bike gap and pedestrian facility improvement
- 5. Congestion/mobility impediments, especially at intersections and four-lane sections without turn lanes
- 6. Connections to north/south travel routes
- 7. Redevelopment opportunities
- 8. Parking needs
- 9. Railroad conflicts
- 10. Aesthetics/landscaping limited

This information was used to establish a Purpose and Need Statement for Main Avenue, as well as a Corridor Vision and Design Parameters to guide the alternative development process, as presented in the following study chapters.

# Chapter B: Purpose and Need Statement

The preparation of a Purpose and Need Statement (PNS) is an essential step in defining a potential project and providing guidance for future analysis. Defining the scope and depth of the issues and the reasons for a project provides a focus to guide stakeholders, officials and the public in sorting through various alternatives. The PNS can also help build consensus among various stakeholder groups, business people, landowners, modal interests, each of which are likely to view the corridor from a different perspective. Finally, the PNS can help select an alternative(s) for more detailed analysis in a future environmental document.

Thus, one of the principle objectives of the Main Avenue Corridor Study was to assess, early in the project development process, if sufficient transportation needs along the corridor exist, or are anticipated in the future. If so, the PNS can also help define the magnitude of the problems, determine if the needs document a purpose for the project, and if further analysis (e.g., alternative development and evaluation) should continue.

Since any major future Main Avenue corridor improvements will likely seek federal funding, pertinent Federal Highway Administration (FHWA) transportation purpose and need guidelines were used to help define needs.

The purpose and need analysis utilized the existing conditions data, the future conditions technical analysis, and stakeholder public input received early in the study process, as documented in the earlier Needs Assessment portion of the project.

# **<u>1. PURPOSE OF THE PROPOSED PROJECT</u>**

The purpose of the proposed project(s) is to mitigate identified system deficiencies (utilities, traffic operations), safety issues (access and crash), and capacity constraints (deficient roadway geometry and ROW) on Main Avenue in order to provide a safe and efficient regional transportation corridor connecting Fargo, ND to Moorhead, MN.

# **2. NEED FOR THE PROJECT**

The need for the multimodal transportation improvements and the relationship to regional transportation need is based on the transportation analyses completed as part of this study. The SRC determined sufficient need was identified to justify continuation of the Main Avenue Corridor Study process and to warrant the development of future corridor improvement concepts.

It was determined that future corridor planning and improvements should address the following critical needs and considerations:

- 1. System deficiencies
- 2. Safety
- 3. Capacity/mobility
- 4. System linkage
- 5. Modal relationships
- 6. Social or economic goals
- 7. Other environmental factors

Those identified with bold text indicate primary needs; others identified are considered secondary supporting needs (i.e., opportunities for other system improvements within the project study area that may be able to be addressed, if feasible, concurrent with addressing the primary needs). Additional important considerations are identified in italics. The long-term transportation needs are summarized in the matrices that follow.

It is important to note, based on direction from FHWA-ND (including guidance within 23 Code of Federal Regulations (CFR) 450 Appendix A), that critical elements of this corridor-level planning study, if developed appropriately, can be "linked" directly into the National Environmental Policy Act (NEPA) process. It is the position of Federal, State, and Metropolitan Planning Organization (MPO) officials within the state of North Dakota that corridor level planning studies may identify, and may delete from future consideration, alternatives that do not meet this purpose and need statement. However, the corridor study will not select a "preferred alternative," as this determination can only be made during the NEPA phase of the project.

This purpose and need statement and the subsequent corridor study recommendations are intended as a planning tool to initiate the identification of suitable and feasible alternatives for Main Avenue improvements. The corridor study results will inform staff and elected officials so that sound land use, economic development, and transportation planning decisions made during the planning phase can be fully linked with, and integrated into, the NEPA phase of the project.

FHWA P/N Guidelines	Specific Corridor Need Identified	Documentation of Need
System Deficiencies       Pavement/Utility Replacement       • NDDOT has plans to reconstruct resurfacing in 2009 was a tem along the corridor: storm sewer sewer line, and multiple breaks Main Ave require full replaceme         • Intersection of Main Ave and 2 levee constructed across 2nd St	<ul> <li>NDDOT has plans to reconstruct the entire Main Ave Corridor over time; (light lift resurfacing in 2009 was a temporary fix. The City has underground utility needs along the corridor: storm sewer needs inlet manholes and inlet drop lines to trunk sewer line, and multiple breaks in sanitary sewer between 800 and 1500 blocks of Main Ave require full replacement at time of Main Ave reconstruction)</li> <li>Intersection of Main Ave and 2nd St has to be protected from flooding (an earthen levee constructed across 2nd St during major floods)</li> </ul>	
	Traffic Operations	<ul> <li>Queues at intersections (if left turn bays exist today, they are usually less than 200', and currently queues exceed 250' at 6 of 13 key intersections; by 2035 No-Build condition, 8 of 13 intersections will have queuing problems)</li> <li>Delays associated with railroad signal pre-emption (reduces corridor capacity due to traffic queues extending around corner onto Main Ave; approximately 2-3 trains during PM peak hour)</li> <li>Delays associated with trains affecting coordinated traffic signal timing (current signal timing program needs additional phase for when signals go into preempt to accommodate trains between 8th and 2nd Aves)</li> <li>Delays created by train's backup north/south collectors (4th St southbound backs up and affects underground parking exit/entrance)</li> <li>ITS deployment (a high priority detection corridor and signal interconnect – 2008 ITS Plan; at-grade train detection, CCTV, pedestrian countdown timers, signal interconnect, DMS, video detection, and vehicle detection are possible deployments)</li> </ul>

	Specific Corridor Need	
FHWA P/N Guidelines	Identified	Documentation of Need
System Deficiencies	ROW	<ul> <li>Possible ROW encroachment (Corridor Land Dynamics &amp; Subject to Change Analysis indicates there may be buildings or structures on private property that are possibly encroaching on road ROW. The majority of these parcels are located between University Dr and 4th St)</li> <li>Limited ROW (60') exists at various locations throughout the corridor, making it difficult to accommodate roadway and pedestrian needs</li> </ul>
Safety	Access	• Public and private access along corridor exceeds standard for urban core established by Fargo code - 600' (there are approximately 79 access points per mile vs. standard of 9 per mile; e.g., access is 9 times greater than standard)
	Crashes	<ul> <li>High vehicle crash locations at intersections and along corridor segments (288 crashes between 2008-2010; rear end predominant crash – type 47%; the intersection of University Dr and the segment of Main Ave between 10th St and 8th St exhibit crash rates that exceed critical crash rate per MEV for the 5 lane facility; and the severity rate is above average at four intersections – 25th St, University Dr, Broadway Dr, 4th St and one segment - 10th St to 8th St)</li> <li>High number of crashes (62) between 18th St and University Dr</li> <li>Bicycle/pedestrian crashes (23 bike/ped crashes between 2005-2009 - 9 pedestrian, 14 bicycle; 65% were intersection related; 52% did not involve a vehicle; 2 each at 25th St, University Dr, 7th St, and Broadway Dr; 3 at 10th St)</li> </ul>
Capacity/Mobility	Congestion	<ul> <li>V/C ratios exceed corridor segment capacity in the Four-lane undivided section</li> <li>Delay at key intersection (Level of Service (LOS) at 25th St is D - 38 seconds of delay/vehicle and by year 2035, assuming signal timing optimization is installed, it will remain LOS D - 46 seconds of delay/vehicle)</li> <li>High number of access points between intersections, (see "access" section) with no right turn lanes (reduces corridor mobility, as well as causes safety problems at 4th St, Mexican Village, and McDonald's access points)</li> </ul>
System Linkage	Connectivity	<ul> <li>Key linkage across the Red River (especially during flood events, Main Ave and bridge is a metro evacuation route)</li> <li>Railroad impediment for north-south movements across the BNSF mainline</li> </ul>

FHWA P/N Guidelines	Specific Corridor Need Identified	Documentation of Need
Modal Relationships	Pedestrian, Bicycle, and Transit Facilities	<ul> <li>Pedestrian issues, as sidewalk system along corridor is not compliant with ADA standards (narrow, sometimes obstructed pavement is cracked and uneven, and protected crossings are limited)</li> <li>Bicycle system has gaps (especially crossing Main Ave and the railroad between Broadway and 4th St; NP and 1st Ave N are parallel reliever routes with future improvements could use the NP/Center Ave Bridge)</li> <li>Transit facilities (the Metro COG TDP does not call for transit along Main Ave, but roadway design should not preclude future transit operations)</li> <li>Transportation Demand Management (TDM) (implementation of strategies among large employers, such as the City of Fargo, Sanford, NDSU, Border States Electric, Vanity Corp., RDO Equipment Co., and ABC Seamless, may be possible)</li> </ul>
Social or Economic Goals	Local Plan Consistency	<ul> <li>Redevelopment planning underway (City/Metro COG have developed the Fargo-Moorhead Downtown Framework Plan Update (2007), the Go2030 Fargo Comprehensive Plan, and the Corridor Land Dynamics &amp; Subject to Change Analysis (2013). Recommendations for Main Ave include: envisioning the corridor as a 'gateway' to Downtown Fargo, promoting infill development/redevelopment from Broadway to the Red River, mixed use and higher densities, context sensitive design, neighborhood connectivity, gateway features at 8th St, wider sidewalks, decorative lighting, and the transition of underperforming parcels – 2 identified opportunity areas).</li> </ul>
	Neighborhood Linkages	<ul> <li>Connectivity between adjacent neighborhoods (e.g., downtown Fargo, Island Park, residential neighborhoods)</li> <li>Lack of north/south bicycle and pedestrian facilities due to at-grade conflicts with the BNSF mainline, lack of ROW width to accommodate new trails on grade-separated vehicular crossings</li> </ul>
Social or Economic Goals	Corridor Aesthetics	<ul> <li>Aesthetics (potential exists for greater corridor landscaping, as Main Ave is a gateway corridor, streetscape treatments, especially for the eastern part of the corridor should include trees, plantings, lighting, banners, public art, burying overhead utilities, screening outdoor storage uses, and creating buffers between conflicting land uses)</li> </ul>
Social or Economic	Parking	• Maintenance of existing customer parking is considered highly desirable for

FHWA P/N Guidelines	Specific Corridor Need Identified	Documentation of Need
Goals		downtown redevelopment
	Agency/Public Input	<ul> <li>Positive agency, interest group, and public input suggested there were needs along the corridor that should be addressed (i.e., ADA pedestrian and roadway mobility improvements)</li> <li>General understanding that corridor improvements would come with property impacts</li> <li>Access to jobs (a public comment supports a transit route along Main Ave)</li> </ul>
Other Environmental Factors	Historic/Cultural Resources	<ul> <li>Some archaeological, cultural, and historic resources are located near the corridor (Metro COG, the City of Fargo, and data from the National Register of Historic Places show 11 known historic districts, sites, and park and recreation areas located within 1/8 mile of the corridor)</li> </ul>
	Environmental Justice	• Impacts to low-income and minority communities (U.S. Census and American Community Survey data show eight minority blocks (19 percent) and four low-income block groups (50 percent) within 1/8 mile of the corridor)
	Active Living Considerations	• Bicycle and pedestrian impediments (corridor is designated as an Active Living Street within the Go2030 Fargo Comprehensive Plan, which recommends the promotion of active living lifestyles through design, which may include complete street design elements)
# Chapter C: Corridor Vision and Design Guidance

To provide the basis for the development of preliminary alternative concepts, a corridor vision (including design parameters) for the Fargo-Main Avenue Corridor was developed. The vision and design guidelines were prepared in accordance with a number of recently completed local and state planning and objectives, in response to the previous technical analysis, and in consideration of the Purpose and Need Statement.

# **1. CORRIDOR VISION**

The SRC established and affirmed the following vision statement for the Main Avenue Corridor's long-term function:

Main Avenue is designated as a National Highway System (NHS), RSTI, and NDDOT Regional System corridor. As such, it currently functions as an urban principal arterial. Adequate intersection geometrics and capacity are required to meet these designations, and serve both intercity and regional trips, while providing satisfactory linkages to north/south arterials and connections to Minnesota. Further, high crash locations must be addressed to ensure corridor safety, and access should be modified to support safety improvements and improve corridor mobility. Additionally, system management techniques (e.g., ITS deployments, enhanced signal coordination), corridor aesthetics, and opportunities for flood protection and drainage/utility improvements should be incorporated into future corridor design.

Main Avenue has also been designated by the Fargo Comprehensive Plan – GO 2030 as an "active living street." Active living streets have the potential to support multiple modes of transportation and become great public spaces with attractive streetscapes. Additionally, the Metro COG Complete Streets Policy Statement supports the adoption of a Complete Streets Policy at the local level and implementation of design that fully integrates and balances the needs of users of all modes, ages, and abilities. Therefore, modal considerations, especially pedestrian (sidewalk), must also be upgraded to fill existing network gaps, enhance connectivity to Fargo neighborhoods, commercial centers, and districts, and to meet ADA requirements in this high-volume pedestrian area.

While the functionality of the Main Avenue corridor as described above is important from a transportation planning perspective, it is imperative to understand the unique character and context of Main Avenue. The corridor's future vision must foster a closer relationship between roadway function and adjacent land use and related characteristics.

Main Avenue is a gateway to Fargo and the metropolitan area's central business districts of both Fargo and Moorhead, and as such provides perspective on the area's history and its continuing evolution into the future.

Main Avenue reflects the diversity of the metropolitan area with a mix of local businesses and shops which are reflective of the changing cultural demographic of the area. Main Avenue is emerging as a business incubator for services aimed at New Americans, and hosts several culturally-oriented shops and services. Main Avenue also supports many small businesses and services which cater to the wider metropolitan marketplace, with mainly owner operated establishments.

The current land use shifts from warehousing/industrial on the west to highway commercial to downtown retail, and then to professional office, entertainment, and related commercial uses on the east. These transitions along the corridor showcase the diverse and changing nature of the Main Avenue Corridor. Each segment of Main Avenue from 25th Street to 2nd Street boasts its own unique traits and characteristics. The corridor's land use patterns offer opportunities for private sector investment to further support the continual evolution of the Main Avenue corridor.

Future roadway related improvements have the potential to either support or hinder opportunities for the continuation of existing business uses along the corridor. Corridor planning along Main Avenue needs to be responsive to the corridor land dynamics as described in the Corridor Land Dynamics & Subject to Change Analysis (2013) completed by Metro COG. This analysis documents existing conditions, current land uses, and recent planning objectives. It also presents two opportunity areas for redevelopment along the corridor. Underutilized parcels in this area offer many opportunities for private sector investment, and the roadway planning should recognize this potential.

Thus, future corridor plans should seek to provide a balance between ensuring Main Avenue continues to support interregional mobility while addressing its active living streets designation, the unique context of the adjacent land use, and related redevelopment opportunities.

# 2. POTENTIAL DESIGN GUIDANCE AND SELECTED DESIGN GUIDANCE

After consideration of public input and previous study analyses, design guidance was prepared by the SRC. Since corridor characteristics transition from west to east, the design guidance for discrete corridor segments was tailored to meet specific segment needs. Some design parameters were prescribed by past planning efforts (e.g., functional classification, intersection/signals driveway spacing), some were defined by good engineering or planning practices or regulation (e.g., design/posted speed, intersection geometry, typical section, ADA compliance) and for others (e.g., LOS, aesthetics, TDM, ITS, pedestrian, bicycle and transit facilities, and parking), the SRC reviewed technical options.

However, due to the special nature of Main Avenue, the SRC determined that typical urban principal arterial design guidance (i.e., potential design guidance in the table on the following page) did not appropriately address the unique function, context, or opportunities along the Main Avenue corridor as described in the corridor vision. Therefore, the SRC chose to modify the potential design guidance, and in turn prepared "selected design guidance" for use in the development of corridor alternatives. The existing conditions, potential design guidance, and the selected design guidance are summarized in greater detail, by corridor segment, in Appendix D.

# Chapter D: Development of Alternatives

The key outcome of this study is to identify, evaluate, and recommend future Main Avenue alternatives to be carried forward for further analysis in a future environmental document. In order to accomplish this task, a range of conceptual corridor alternatives were developed.

# **1. ALTERNATIVE DEVELOPMENT PROCESS**

The development process was multifaceted using a range of inputs, including technical data, public comments, the purpose and need statement, the corridor vision, design parameters, and direction from the SRC. Some of the issue areas considered included:

- 1. Pavement and utility replacement
- 2. Traffic operations
- 3. Right-of-way
- 4. Access
- 5. Crashes
- 6. Congestion
- 7. Pedestrian, bicycle, and transit facilities
- 8. Local plan consistency

- 9. Neighborhood linkages
- 10. Corridor aesthetics
- 11. Parking
- 12. Agency/public input
- 13. Historic/cultural resources
- 14. Environmental justice
- 15. Active living considerations
- 16. Cost

The study team then facilitated a SRC meeting at which the committee members identified initial corridor alternatives. This meeting was a brainstorming session meant to consider virtually all potential options. Based on the alternatives developed by the SRC, the study team divided the corridor into four segments for purposes of this evaluation (see Figure 23). The four segments consist of: Segment 1 (25th Street to 21st Street), Segment 2 (21st Street to University Drive), Segment 3 (University Drive to 4th Street), and Segment 4 (4th Street to 2nd Street).

An initial screening process was employed to eliminate alternatives that could not meet the project's overall purpose or had some other fatal flaw. For instance, a three-lane roadway was one of the conceptual ideas considered for Main Avenue. However, this option would not function well because existing and 2035 traffic volumes are higher than the daily capacity ranges for three-lane facilities (14,000 to 17,000 AADT). In addition, traffic operations, safety, and side-street gaps would not be acceptable if Main Avenue were reconstructed to a three-lane roadway. Another conceptual idea was to add a median in the existing four-lane section (18th Street to University Drive), with gaps in the median at the public street intersections. However, this option was also dismissed because it would not provide adequate access to the businesses along this segment of Main Avenue, many of which currently have direct access to Main Avenue.



Overall, there were seven build alternatives and eight sub-alternatives that were developed. The subalternatives generated are small design changes, such as a mid-block pedestrian crossing, that are compatible with any of the build alternatives for that particular segment.

The concepts developed by the SRC were compared against the No Build Alternative in each of the four segments. The No Build Alternatives evaluated as part of this study do not make any changes or improvements to Main Avenue. However, the City of Fargo has identified that the utilities need to be replaced within the next 10 years, which will require roadway reconstruction. Access modifications or reductions were identified for each alternative. Final closures or modifications are considered a detailed design element and will be identified during the environmental documentation phase.

# **2. DESCRIPTION OF ALTERNATIVES**

Each alternative is described on the following pages corresponding with its respective corridor segment.

**No Build Alternative** – Maintains the existing five-lane roadway with continuous two-way left turn lanes.

Build Alternative A (see Figure 24) – Reconstructs the current lane configuration (five lanes with continuous two-way left turn lanes) in addition to extending turn lanes at 25th Street to reduce queues and improve mobility. This also includes signage for the westbound curbside lane to improve lane utilization.



Figure 24: Build Alternative A (Segment 1)

### Segment 2 (21st Street to University Drive)

No Build Alternative – Maintains the existing four-lane roadway with limited left turn lanes.

Build Alternative A (see Figure 25) – Acquires the majority of the parcels on the north side of Main Avenue, provides for various public uses, constructs a 10-foot wide multiuse path that improves the sidewalks to ADA compliance, improves boulevard aesthetic, and reconstructs the roadway to a five-lane section with continuous two-way left-turn lanes. Significantly reduces access points to improve safety.

Build Alternative B (see Figure 26) – Acquires the majority of the parcels on the south side of Main Avenue, constructs a 10-foot wide multiuse path that improves the sidewalks to ADA compliance, improves boulevard aesthetic, and reconstructs the roadway to a five-lane section with continuous two-way left-turn lanes. Allows for redevelopment on the south side of Main Avenue and significantly reduces access points to improve safety.



Figure 25: Build Alternative A (Segment 2)



Figure 26: Build Alternative B (Segment 2)

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Build Alternative C (see Figure 27) – Acquires the majority of the parcels on the south and north sides of Main Avenue, builds shared parking lots on the north side of the roadway with access at public street intersections, constructs a 10-foot multiuse path that improves the sidewalks to ADA compliance, improves boulevard aesthetic, and reconstructs the roadway to a five-lane section with continuous two-way left-turn lanes. Allows for redevelopment on both sides of Main Avenue and significantly reduces access points to improve safety.

Build Alternative D (see Figure 28) – Acquires many of the parcels on the north side of Main Avenue and reconstructs the roadway with its existing four-lane section, while improving the sidewalks to ADA compliance. Allows for redevelopment on the north side of Main Avenue and significantly reduces access points to improve safety.



Figure 27: Build Alternative C (Segment 2)



Figure 28: Build Alternative D (Segment 2)

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**Build Subalternative University Drive Counter Flow** (see Figure 29) – A subalternative for each Build Alternative is to include a University Drive counter flow configuration (four southbound lanes and one northbound lane), which provides two-way access to the railroad grade underpass and improves north-south connectivity. Note the northbound lane would terminate at NP Avenue.



Figure 29: Build Subalternative University Drive Counter Flow (Segment 2)

## Segment 3 (University Drive to 4th Street)

No Build Alternative – Maintains five-lane roadway with continuous two-way left turn lanes.

Build Alternative A (see Figure 30) – Adds a raised median west and painted median east of 8th Street and removes the existing signal at 7th Street. Note that the median west of 8th Street would be eliminated if the Mexican Village access could be restricted to right-in only. This alternative reconstructs the roadway with the existing five-lane section that includes continuous two-way left-turn lanes and removes parking west of 7th Street and east of Broadway. Improved wayfinding signage is recommended to highlight access to the 10th Street underpass.



Figure 30: Build Alternative A (Segment 3)

Build Subalternative Mid-Block Pedestrian Crossing (see Figure 31) – A subalternative that could be included with Build Alternative A is a mid-block pedestrian crossing between 11th Street and 9th Street. Build Subalternative Parking Addition (see Figure 31) – A subalternative that could be included with Build Alternative A is the addition of parking on the south side of Main Avenue between 8th Street and 7th Street. Build Subalternative 7th Street Median (see Figure 31) – A subalternative that could be included with Build Alternative A is a raised median from 8th Street through the 7th Street intersection, which limits the intersection movements to right-in/right-out.

Build Subalternative Parking Removal (see Figure 31) – A subalternative that could be included with Build Alternative A is removal of parking on the south side of Main Avenue between 7th Street and Broadway.

Build Subalternative Westbound Right-Turn Lane (see Figure 31) – A subalternative that could be included with Build Alternative A is a westbound right-turn lane at Broadway.

Build Subalternative Skywalk (see Figure 31) – A subalternative that could be included with Build Alternative A is a pedestrian skywalk from the structured parking ramp (just east of Broadway) that would go over Main Avenue and the BNSF Railroad and connect to the Ground Transportation Center.



Figure 31: Six Subalternatives – Mid-Block Crossing, Parking Addition, 7th Street Median, Parking Removal, West-Bound Right-Turn Lane, and Skywalk (Segment 3)

# Segment 4 (4th Street to 2nd Street)

**No Build Alternative** – Maintains five-lane roadway with two-way left turn lanes, except where a median is present.

**Build Alternative A** (see Figure 32) – Reconstructs the current lane configuration of five lanes with two-way left turn lanes, except where a median is present. In addition, sidewalks are improved to comply with ADA standards and the channelization of the 2nd Street southbound right-turn lane is improved (removing the westbound acceleration lane), and the eastbound to southbound channelized right-turn lane at 2nd Street is removed.



Figure 32: Build Alternative A (Segment 4)

Build Subalternative 2nd Street (see Figure 33) – A subalternative that could be included with Build Alternative A is improvements to 2nd Street (between Main Avenue and NP Avenue) including dual southbound left-turn lanes, a median, and a widened sidewalk on the west side of 2nd Street.



Figure 33: Subalternative 2nd Street (Segment 4)

# **3. ALTERNATIVE MODIFICATIONS / OTHER CONCEPT CONSIDERATIONS**

The alternatives shown on the previous pages are modified versions of the original concepts. After the preliminary alternative layouts were developed, they were reviewed by technical staff, NDDOT, Metro COG, and the other local jurisdictions. The alternatives were revised and reviewed a number of times through the development process. The final alternative designs presented served as the basis for the evaluation, which is discussed in the next chapter.

The alternatives were also reviewed by the property owners along the corridor as part of the third smallgroup meeting. In addition, a letter was sent to 54 agencies requesting input as part of a solicitation of views (SOV) early notification process. While the letters were mailed prior to the development of the alternatives, responses received from these agencies affected the designs of the alternatives, as well as the evaluation of these alternatives. The SOV process and agency responses are discussed in more detail in Appendix E.

Two more significant ideas were considered, but not carried forward based on preliminary analysis and review: the 4th Street Underpass and 10th Street South improvements to US 81 North. The right-of-way impacts, geometric design considerations, and potential costs rendered the 4th Street Underpass not feasible. See Appendix F for the background related to the 4th Street assessment. The existing ease of use and network route in place for the 10th Street South connection resulted in costly improvements or consideration not being necessary, except for wayfinding.

# Chapter E: Evaluation of Alternatives

The primary activities completed as part of the alternative evaluation process include preparing evaluation criteria, assessing the impacts for each alternative, ranking the alternatives, and presenting the ranking's rationale in an evaluation matrix. As part of this process, a recommended alternative was selected for each of the four corridor segments, which will be moved forward into a future environmental stage of the project.

# **1. EVALUATION FACTORS TIED TO PURPOSE AND NEED STATEMENT**

The foundation for the alternative evaluation was the purpose and need statement. Evaluation factors were developed based on these guiding principles (i.e., System Deficiencies, Safety, Capacity Mobility, Modal Relationships, and Social and Economic Goals). The evaluation matrix shows the direct relationship between the purpose and need factors and the measurable criteria used to evaluate the alternatives. In addition, other non-purpose and need related factors (Other Environmental Factors) were established by the SRC to be used in the evaluation process. These goals were guided, in part, by comments received as part of the early agency coordination process. The 20 screening criteria include:

### System Deficiencies

- 1. Coordinate with future pavement and underground utility (sanitary, storm sewer, and water main) replacement needs along corridor
- 2. Reduce the number of intersections with greater than 250-foot queues
- 3. Reduce vehicle delay caused by trains
- 4. Deploy ITS equipment to improve corridor operations
- 5. Minimize ROW acquisition

### <u>Safety</u>

- 1. Improve compliance with access spacing guidelines
- 2. Implement improvements that reduce unsafe roadway geometrics for vehicles
- 3. Implement improvements that reduce unsafe roadway geometrics for pedestrians/bicycles

### <u>Capacity/Mobility</u>

- 1. Reduce delay at key intersections
- 2. Reduce delay along roadway mainline

### Modal Relationships

- 1. Improve sidewalks and intersections to ADA compliant standards
- 2. Improve north/south bicycle connectivity through/along the corridor and do not preclude transit

### Social or Economic Goals

- Compatibility with Fargo-Moorhead Downtown Framework Plan (2007), the Go2030 Fargo Comprehensive Plan (2012), and the Corridor Land Dynamics and Subject to Change Analysis (2013)
- 2. Support connections to adjacent neighborhoods
- 3. Provide context sensitive design streetscape treatments
- 4. Minimize parking impacts
- 5. Address any major concerns from agencies, public interest groups, or the public

### **Other Environmental Factors**

- 1. Minimize impacts to known/previously identified archaeological, cultural, and historic resources
- 2. Limit disproportionate impacts to Environmental Justice communities (i.e., low-income, minority) along the corridor
- 3. Promote active living lifestyles through design, which may include complete street design elements

## 2. EVALUATION SCORING

Alternatives were evaluated based on a qualitative estimate of each alternative's ability to address the evaluation factors. Each alternative was assigned a rank relative to its ability to meet the criteria. The rating system was as follows:

5	Good; meets criteria well
4	Acceptable; but relatively less desirable than 5
3	Neutral; marginally meets criteria
2	Less desirable; considers criteria
1	Poor; fails to meet criteria

After the ranking system was applied to each of the evaluation criteria, the scoring for each screening criterion was summed so that a unique total score could be assigned to each of the alternatives. In each segment of Main Avenue, the No Build and Build Alternative(s) were compared to one another using the technical evaluation scoring system.

While the Subalternatives were scored against the 20 criteria, the total scores could not be compared to the No Build Alternative, Build Alternatives, or other Subalternatives, because each is a standalone improvement that improves a small area of the corridor, such as an intersection. Instead, the Subalternatives were developed so that they were compatible with both the No Build and Build Alternatives. The Subalternatives were either recommended or dismissed as part of the evaluation process.

The scoring and reasoning was presented in a detailed evaluation matrix, which provides an explanation for the scoring. For example, the number of access points that will be affected are noted, as well as the estimated number of square feet of private ROW that is needed for each alternative. The detailed evaluation matrices can be found in Appendix G. A multifaceted review process vetted the evaluation matrix criteria. The evaluation matrix was reviewed by Metro COG staff as well as by the SRC.

The following tables display a breakdown of the number of times each alternative scored a 1, 2, 3, 4, or 5 and the corresponding point totals. The higher the technical evaluation score, the better the alternative is valued. The highest scoring alternative for each segment is the one that best meets the purpose and need criteria and other environmental factors. Table 11 shows the point summary for Segments 1 and 2 of Main Avenue, while Table 12 details Segments 3 and 4. For ease of reading, the subalternatives for each segment are shaded with a gray background.

Again, the evaluation matrix demonstrates a direct link between the purpose and need factors and the criteria. In addition, three of the 20 criteria are other environmental criteria that are outside of the purpose and need statement, but were deemed important by the SRC.

	S	egment 1 – 25	th St to 21st	t St		Segment 2 – 21st St to University Dr										
Alternative Ranking	No I	Build	E Alter	Build native A	No	Build	Bı Altern	uild ative A	Bı Altern	uild ative B	B Alter	Build native C	Bi Altern	uild ative D	Build Sub Unive Count	alternative rsity Dr er Flow
	Count	Point Total	Count	Point Total	Count	Point Total	Count	Point Total	Count	Point Total	Count	Point Total	Count	Point Total	Count	Point Total
5	0	0	2	10	0	0	6	30	6	30	7	35	1	5	1	5
4	0	0	9	36	0	0	8	32	8	32	8	32	9	36	3	12
3	13	39	8	24	8	24	3	9	3	9	2	6	4	12	13	39
2	6	12	1	2	6	12	3	6	3	6	2	4	6	12	2	4
1	1	1	0	0	6	6	0	0	0	0	1	1	0	0	1	1
Total Points:	5	52		72	2	12	-	77	7	77		78	(	55	(	51

# Table 11: Alternative Evaluation Matrix Point Summary for Segments 1 and 2

# Table 12: Alternative Evaluation Matrix Point Summary for Segments 3 and 4

	Segment 3 – University Dr to 4th St												Segment 4 – 4	th St to 2nd St						
					Bu	ıild													Bu	uild
Alternative			Bu	ild	Subaltern	ative Mid-	Build Suba	alternative	Build Suba	alternative	Build Suba	alternative	Build Suba	alternative			Bu	uild	Subalte	ernative
Ranking	No B	Build	Altern	ative A	Block P	ed Xing	7th St	Median	Parking	Removal	WB Right-	Turn Lane	Sky	walk	No	Build	Altern	ative A	2n	d St
		Point		Point		Point		Point		Point		Point		Point						
	Count	Total	Count	Total	Count	Total	Count	Total	Count	Total	Count	Total	Count	Total	Count	Point Total	Count	Point Total	Count	Point Total
5	0	0	0	0	1	5	0	0	0	0	1	5	0	0	0	0	0	0	2	10
4	0	0	11	44	3	12	5	20	2	8	3	12	7	28	0	0	11	44	5	20
3	11	33	7	21	16	48	15	45	17	51	13	39	12	36	13	39	9	27	13	39
2	9	18	2	4	0	0	0	0	1	2	3	6	1	2	7	14	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Points:	5	1	6	9	6	5	6	5	6	51	6	2	6	66	5	3	7	'1	e	59

# Chapter F: Alternatives to Carry Forward

As part of the evaluation process, alternatives were selected in each of the four segments to be compared against the No Build Alternative in the environmental documentation stage of the project. The discussion of whether or not the No Build Alternative met the project's purpose and need was merely meant to serve as the beginning of the framework used to support the need for improvements in the corridor. Furthermore, where multiple alternatives were considered for a segment the SRC selected a singular alternative that it felt best fit the needs of that segment. While others may be carried forward for consideration during the future environmental stage of the project, this singular alternative is the initial recommendation of the guiding committee of this study. During a future environmental stage of the project, the alternatives that were not eliminated in this evaluation process will be compared to the No Build Alternative. Subalternatives moving forward from the evaluation process will also be meshed into the select Build Alternative for each segment and evaluated as a composite Build Alternative in the next stage of project development.

The alternatives were evaluated by the SRC and Main Avenue property owners in meetings on August 23, 2012. Project managers reviewed the alternatives with the NDDOT Management Team and FHWA representatives in a meeting in Bismarck on November 6, 2012. Input was also gathered from the City of Fargo Commission at a presentation and discussion held on November 15, 2012. See Appendix H for the technical memorandum regarding the alternative evaluation process.

The ROW cost<sup>1</sup> estimated for each alternative is based on the assessed land and building value of each parcel. Metro COG provided all assessed property values and the impacts were added up cumulatively by corridor segment. Construction cost estimates were developed for each corridor segment and alternative as well. A 40 percent contingency/risk and administration cost was applied to both the ROW and construction costs. Furthermore, the construction costs are presented in future year of opening dollars (potentially year 2017, segments 3/4 and year 2018, segments 1/2). See Appendix I for the detailed construction cost estimates.

Recommendations for the four segments include the following:

<sup>&</sup>lt;sup>1</sup> Both ROW cost and construction cost were estimated as part of the evaluation process. The ROW cost was based on the assessed land and building value for each parcel. These costs do not include relocation costs.

### Segment 1: 25th Street to 21st Street

Based on the technical evaluation score, cost, and public comments, the SRC recommends Build Alternative A in Segment 1 (see Table 13). This Build Alternative addresses 25th Street issues identified in the purpose and need statement, such as existing and year 2035 peak hour queues greater than 250 feet, as well as an unacceptable LOS under both existing and 2035 No Build conditions. Main Avenue's intersection with 25th Street is important because 25th Street is one of the few grade-separated railroad crossings along the corridor. These aforementioned issues are addressed by extending the turn lanes at 25th Street, which reduces queues and improves corridor mobility. Furthermore, Build Alternative A received mostly positive comments from the public.

Both Build Alternative A and the No Build Alternative will be advanced to the environmental stage of project development.

Alternative	Technical Evaluation Score *	Cost **	Total Cost	Public Comments	SRC Ranking
No Build	52	\$0M (construction) \$0M (ROW)	\$0	None Received	Not Recommended
Build Alternative A	72	\$2.4M (construction) \$122k (ROW)	\$2.5M	Mostly Positive	Recommended

### **Table 13: Segment 1 Evaluation Summary**

\* The higher the technical evaluation score, the better the alternative is valued.

\*\* Both ROW cost and construction cost were estimated as part of the evaluation process, which includes a 40 percent risk and administration cost. The ROW cost was based on the assessed land and building value for each parcel. These costs did not include relocation costs. The construction costs are year of opening costs.

### Segment 2: 21st Street to University Drive

Build Alternative A was recommended for Segment 2 (see Table 14). This alternative solves the capacity issue identified (Main Avenue has only four lanes between 18th Street and University Drive) by constructing a five-lane section. It will also increase safety because turning vehicles currently block the through lanes as they wait to make a safe left- or right-turn into one of the many accesses along this segment. The No Build Alternative and Alternative D do not solve the capacity needs of the corridor because they do not expand the segment from a four-lane to a five-lane section. Note that Alternatives B and C also provide the additional capacity necessary to serve traffic needs.

Build Alternative A, B, and C all construct a 10-foot wide multiuse path, bring the sidewalks into compliance with ADA standards, and improve aesthetics. In addition, they all reduce access points to improve safety for motorists, bicyclists, and pedestrians. Build Alternative A is recommended because it has fewer ROW impacts, particularly on existing businesses. This option acquires the majority of parcels on the north side of Main Avenue, whereas Build Alternative B acquires the majority of the parcels on the south side of Main Avenue (where there are more buildings), and Build Alternative C acquires the majority of the parcels on both sides of the roadway. Acquiring the ROW on the north side of Main Avenue is preferable because there are fewer redevelopment opportunities on this side of the roadway due to the limited developable area between Main Avenue and the BNSF Railroad. This area will be used

instead for other public uses. Build Alternative A is also less costly than Build Alternatives B and C and was more positively favored by the public and SRC.

Build Alternative D is not recommended for further review due to it not meeting the defined purpose and need for the project. Furthermore, governmental agency review to this point has not supported this alternative. This alternative has ROW impacts and does not mitigate the crash and capacity issues, it would likely not be supported for use of federal aid. The University Drive Counter Flow Subalternative was not recommended because it would likely restrict capacity and be inconsistent with the rest of University Drive in the area, which is a one-way roadway.

Build Alternatives A, B and C, and the No Build Alternative will be advanced to the environmental stage of project development.

	Technical Evaluation		Total	Public	
Alternative	Score *	Cost **	Cost	Comments	SRC Ranking
No Build	42	\$0M (construction) \$0M (ROW)	\$0	Mixed	5
Build Alternative A	77	\$4.9M (construction) \$2.4M (ROW)	\$7.3M	Mostly Positive	Recommended
Build Alternative B	77	\$5.2M (construction) \$6.6M (ROW)	\$11.8M	Mostly Negative	3
Build Alternative C	78	\$6.2M (construction) \$8.3M (ROW)	\$14.5M	Mixed	2
Build Alternative D	65	\$4.9M (construction) \$1.7M (ROW)	\$6.6M	Mostly Negative	4
Subalternative University Drive Counter Flow	61	Minimal cost (construction) \$1.2M (ROW)	Minimal	Mixed	Not Recommended

### Table 14: Segment 2 Evaluation Summary

\* The higher the technical evaluation score, the better the alternative is valued.

\*\* Both ROW cost and construction cost were estimated as part of the evaluation process, which includes a 40 percent risk and administration cost. The ROW cost was based on the assessed land and building value for each parcel. These costs did not include relocation costs. The construction costs are year of opening costs.

## Segment 3: University Drive to 4th Street

Based on the technical evaluation score, cost, and public comments, the SRC recommends Build Alternative A for Segment 3 (see Table 15). This option adds a median east and west of 8th Street, which will alleviate identified crash issues between 10th Street and 8th Street. The option also removes the 7th Street and Main Avenue intersection traffic signal, which is not connected to the railroad preemption cycle. Therefore, removing this signal will improve congestion and delays. Finally, Alternative A reconstructs the sidewalks so that they are ADA compliant. The No Build Alternative does not solve any of these issues. A number of Subalternatives were also evaluated in Segment 3 with the SRC recommending the Mid-Block Crossing, Parking Addition between 8th Street and 7th Street, and continued consideration of the westbound right-turn lane at Broadway. The Mid-Block Crossing Subalternative received mostly positive comments from the general public because it provides a safer crossing of Main Avenue between 11th Street and 9th Street. Currently, there are no safe crossings within the five-block area between 8th Street and University Avenue, but many bicycles and pedestrians want to cross Main Avenue to access the businesses on the north side of the roadway. In fact, 10th Street was one of only three intersections on the corridor where there were multiple bicycle/pedestrian crashes between 2005 and 2009.

The Parking Addition Subalternative adds three to four parking stalls to the existing seven stalls along the south side of Main Avenue from 8th Street to 7th Street. The need for convenient parking near the storefront was expressed by corridor businesses.

	Technical		Tatal	Dublia	
Alternative	Evaluation Score *	Cost **	Cost	Comments	SRC Ranking
No Build	48	\$0M (construction) \$0M (ROW)	\$0	None Received	Not Recommended
Build Alternative A	69	\$3.6M (construction) \$196k (ROW)	\$3.8M	Mostly Positive	Recommended
Subalternative Mid- Block Crossing	65	Minimal cost (const) N/A (ROW)	Minimal	Mostly Positive	Recommended
Subalternative Parking Addition	61	Minimal cost (const) N/A (ROW)	Minimal	Mostly Positive	Recommended
Subalternative 7th Street Median	65	Minimal cost (const) N/A (ROW)	Minimal	Mixed	Not Recommended
Subalternative Parking Removal	61	Minimal cost (const) N/A (ROW)	Minimal	Mostly Negative	Not Recommended
Subalternative WB Right-Turn Lane	62	\$0.28M (construction) \$56k (ROW)	\$0.34M	Mostly Positive	Mixed Recommendation
Subalternative Skywalk	66	\$7M (construction) Unknown (ROW)	Unknown	Mostly Positive	Recommended (Separate Project)

**Table 15: Segment 3 Evaluation Summary** 

\* The higher the technical evaluation score, the better the alternative is valued.

\*\* Both ROW cost and construction cost were estimated as part of the evaluation process, which includes a 40 percent risk and administration cost. The ROW cost was based on the assessed land and building value for each parcel. These costs did not include relocation costs. The construction costs are year of opening costs.

Finally, the westbound right-turn lane Subalternative was recommended to be carried forward because it provides extra queuing space, especially when a train is present, for westbound Main Avenue drivers making the right-turn onto Broadway. This extra queuing space also improves traffic operations around the intersection. However, it should also be noted that widening Main Avenue at this intersection makes it more difficult for pedestrians to cross the roadway in this high volume area.

The 7th Street Median Subalternative and the Parking Removal Subalternative were not recommended. The 7th Street Median Subalternative was not recommended because it received mixed feedback from the public and restricts vehicles wanting to make a left-hand turn from 7th Street onto westbound Main Avenue. The Parking Removal Subalternative was not recommended because it would remove parking stalls between 7th Street and Broadway; this block had some of the highest parking utilization in the area according to the August 2010 parking utilization data collected as part of this study.

The Skywalk Subalternative was recommended due to its ability for pedestrians to safely cross over Main Avenue and the BNSF Railroad tracks. However, SRF recommended that the skywalk be pursued outside of the corridor improvements and will not be brought forward into the next steps of environmental documentation.

Build Alternative A; the Mid-Block Crossing, Parking Addition between 8th Street and 7th Street, and continued consideration of the Westbound Right-turn Lane at Broadway; and the No Build Alternative will be advanced to the environmental stage of the project. The three recommended subalternatives will be incorporated into Build Alternative A as part of future evaluations. It should be noted that the Parking Addition Subalternative adds back parking between 8th Street and 7th Street that is removed in Build Alternative A. However, the underutilized parking east of Broadway will still be removed.

## Segment 4: 4th Street to 2nd Street

The SRC recommends Build Alternative A and the 2nd Street Subalternative for Segment 4 (Table 16). Build Alternative A improves the sidewalks in Segment 4 to ADA standards. In addition, by improving the channelization of the 2nd Street southbound right-turn lane, safety for pedestrians and vehicles will be enhanced compared to the No Build Alternative.

The 2nd Street Subalternative is also recommended. This option adds the dual 2nd Street southbound left-turn lanes that are described in the Metro COG TDP to improve the on-time performance of Route 1. This improvement will also improve traffic operations at the intersection. The No Build year 2035 traffic forecasts show southbound 2nd Street left-turn queues extending beyond the available storage capacity 41 percent of the time during the p.m. peak hour. In addition, southbound queues on 2nd Street extend back 410 feet for this intersection in 2035. The 2nd Street Subalternative also widens the sidewalk on the west side of 2nd Street. The 2nd Street railroad underpass was identified as an area that was hazardous to pedestrians.

Build Alternative A, the 2nd Street Subalternative, and the No Build Alternative will be advanced to the environmental stage of the project. Any differences between the 2nd Street Subalternative and Build Alternative A such as differences in channelization will use the layout for the 2nd Street Subalternative.

	Technical					
	Evaluation			Public		
Alternative	Score <sup>*</sup>	Cost <sup>**</sup>	Total Cost	Comments	SRC Ranking	
No Ruild	E 2	\$0M (construction)	¢Ω	None	Not	
	55	\$0M (ROW)	ŞU	Received	Recommended	
Build Altornativo A	71	\$2.3M (construction)	60 0M	Mostly	Recommended	
bullu Alternative A	/1	\$0M (ROW)	32.3IVI	Positive		
Subalternative	60	\$1M (construction)	62 2NA	Mostly	Recommended	
2nd Street	09	\$0M (ROW)	Ş2.2IVI	Positive		

### **Table 16: Segment 4 Evaluation Summary**

\* The higher the technical evaluation score, the better the alternative is valued.

\*\* Both ROW cost and construction cost were estimated as part of the evaluation process, which includes a 40 percent risk and administration cost. The ROW cost was based on the assessed land and building value for each parcel. These costs did not include relocation costs. The construction costs are year of opening costs.

This chapter has described how each of the alternatives and subalternatives were evaluated. The upcoming implementation chapter will describe the next steps in the process for securing environmental approvals and project funding.

# Chapter G: Aesthetic Design Considerations

As an added design element of the concept alternatives developed and presented thus far, a conceptual rendering of potential streetscape improvements that could be applied to a representative segment of the Main Avenue corridor has been prepared. Segment 2 of the Main Avenue corridor provides the opportunity to develop significant landscaping/streetscaping elements; therefore, a conceptual rendering was developed for this segment. Additionally, gateway signage, streetscape or landscape elements could be incorporated as well to highlight the entrance into the downtown as shown below.

The typical section for this segment and alternative contains a significant amount of green space on the north side of the roadway. Recall that Build Alternative A for segment 2 includes the acquisition of the entire north side of the roadway between 18th Street and University Drive. The railroad requires a 25 foot offset from the centerline of their tracks; from this point to the south the typical section ranges up to 210 feet. This includes a linear park and multiuse trail on the north side, boulevard space on either side of the road, a five-lane roadway, and six foot sidewalk with an additional 2 foot utility buffer on the south side of the roadway.

Figure 34 displays the artistic rendering of the potential landscape / streetscape for this segment. The railroad authority may require a fence to delineate the north park boundary; a decorative screen fence could be implemented here to better fit the context of the park.

Other aesthetic elements should be incorporated into segments 3 and 4 under the design phase to incorporate the downtown atmosphere.





Enhanced Roadway Paving









Section A-A View Figure 34

Main Avenue Streetscape Opportunities

Main Avenue Corridor Study



# Chapter H: Implementation and Next Steps

# **1. IMPLEMENTATION**

The No Build alternatives evaluated as part of this study do not make any changes or improvements to Main Avenue. However, the City of Fargo has identified that the utilities need to be replaced within the next 10 years, which will require roadway reconstruction. The City has indicated that they will need a Federal Aid project to reconstruct this roadway and that this project is the City's highest priority project for Regional Highway System funding. The corridor is eligible for 80 percent federal, 10 percent state, and 10 percent City of Fargo funding configuration. Federal Aid has currently been programmed to year 2016 and does not include these Main Avenue improvements.

In addition to federal funding opportunities, there are state funds that may be available to apply to the reconstruction of Main Avenue. The City of Fargo is responsible for funding any utility replacement work associated with the Main Avenue reconstruction project, and utility costs were not included in the estimates provided.

It is the City's intent and desire to move segments 3 and 4 ahead first, with segments 1 and 3 to follow after that. This is due to the condition the utilities from University Drive to the Red River.

## Federal Funding Opportunities

The City of Fargo will likely continue to submit an application for Federal Aid to fund the reconstruction of Main Avenue between 25th Street and the Red River until it is received. Because the corridor is on the Regional Highway System, it is eligible for an 80 percent federal, 10 percent state, and 10 percent City of Fargo funding split. The utilities would not be eligible for Federal Aid and would be the City of Fargo's responsibility.

There are a number of federal aid programs that Main Avenue would qualify for. The following areas of focus for this plan are provided relative to MAP-21 programs, including:

• <u>Surface Transportation Program (STP)</u>

Improvements to Main Avenue would be eligible for STP funds including NDDOT Regional Roads and Urban Roads program funds.

• <u>NHPP – National Highway Performance Program</u>

The improvement of Main Avenue would address overall infrastructure condition, safety, mobility and freight movement along this National Highway System (NHS) roadway, consistent with Metropolitan and Statewide planning. These funds are allocated by NDDOT.

### HSIP – Highway Safety Improvement Program

Main Avenue was demonstrated to have safety issues along the 2.5 mile study segment. Improvements recommended as part of this corridor study would address these issues and mitigate safety concerns. Developing a five-lane section between 18th Street and University Drive would alleviate some of the safety concerns through this area, as well as improve the approach to the University Drive intersection. The improvements recommended between 10th Street and 8th Street would serve to improve this segments crash incidence. HSIP funds are a statewide competitive grant, which are solicited annually.

### • TAP – Transportation Alternatives Program

The segment 2 improvements that include a linear park and trail network would qualify for the TAP under MAP-21. This program replaces Transportation Enhancements (TE), Recreational Trails Program (RTP) and Safe Routes to School (SRTS).

### **State Funding Opportunities**

Beyond the federal funding opportunities, the City of Fargo recently received (early 2013) funds from the State related to the energy tax surplus for infrastructure funding. While these 2013 funds may be applied to other transportation needs within the City, the State Legislature may allocate them again in the future at which time the City may choose to apply them to Main Avenue.

# **2. NEXT STEPS**

The documentation contained in this Final Report will be used by Metro COG, NDDOT, and the City of Fargo to guide future discussions and decisions regarding the Main Avenue corridor. In addition, the corridor study results will inform staff and elected officials so that sound land use, economic development, and transportation planning decisions made during the planning phase can be fully linked with, and integrated into, the NEPA phase of the project.

The recommendations put forth in this document represent the general consensus of the project partners and the stakeholders involved. In addition, recommendations reflect the information available and the technical analysis completed at this point in the overall project development process.

As mentioned above, any major future Main Avenue corridor improvements will likely seek federal funding. As a result, pertinent FHWA guidelines were used to develop a purpose and need statement, identify alternatives, and screen alternatives that did not meet this purpose and need statement. However, this corridor study does not select a "preferred alternative," as this determination can only be made during the NEPA phase of the project. Instead, a recommended alternative was selected in each of the four Main Avenue segments. The recommended alternatives and any other build alternatives that were not eliminated in this evaluation process will be compared to the No Build Alternatives during a future environmental stage of the project (see Table 17).

Alternative	Does the Alternative Move Forward?
-Segment 1-	
No Build	Yes
Build Alternative A	Yes
-Segment 2-	
No Build	Yes
Build Alternative A	Yes
Build Alternative B	Yes
Build Alternative C	Yes
Build Alternative D	No
Subalternative University Drive Counter Flow	No
-Segment 3-	
No Build	Yes
Build Alternative A	Yes
Subalternative Mid-Block Crossing	Yes
Subalternative Parking Addition	Yes
Subalternative 7th Street Median	No
Subalternative Parking Removal	No
Subalternative WB Right-Turn Lane	Yes
Subalternative Skywalk	Future Consideration
-Segment 4-	
No Build	Yes
Build Alternative A	Yes
Subalternative 2nd Street	Yes

Appendix A: Public Meeting Minutes



SRF No. 0117482

### **RECORD OF MEETING**

### Fargo-Main Ave & TH 10, TH 75, & Center Ave Corridor Studies

First Study Review Committee Meeting Thursday, September 8, 2011 10:30 AM - 2:30 PM City of Fargo Commission Chambers

Members in Attendance:

Representing:

Wade Kline	FM Metro COG
Peggy Harter	FM Metro COG
Kevin Mackey	FM Metro COG
Jim Hinderaker	City of Fargo – Planning
Bob Stein	City of Fargo – Planning
Mark Bittner	City of Fargo – Engineering
Jeremy Gorden	City of Fargo – Engineering
Ben Dow	City of Fargo – Public Works
Julie Bommelman	City of Fargo – Transit
Mike Hahn	Downtown Community Partnership
Bob Walton	NDDOT – Fargo District
Michael Johnson	NDDOT
Bob Zimmerman	City of Moorhead – Engineering
Tom Trowbridge	City of Moorhead – Engineering
Lori Van Beek	City of Moorhead – MATBUS
Dave Overbo	Clay County
Shiloh Wahl	MnDOT – D4
Roger Olson	Concordia College
Stan Thurlow	City of Dilworth – Planning
Craig Vaughn	SRF Consulting Group, Inc.
Rick Lane	SRF Consulting Group, Inc.
Brian Shorten	SRF Consulting Group, Inc.
Sara Schmidt	SRF Consulting Group, Inc.
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### Welcome and Introductions

Mr. Kline welcomed the group and introduced everyone.

Mr. Lane opened the meeting with a brief overview of the meeting and explained that future Fargo and Moorhead/Dilworth Study Review Committee (SRC) meetings will be held on separate days; however, for the project kickoff meeting, it was determined that a joint meeting would be most efficient.

# Review of the Scope of Work for the Studies, QA/QC Plan, and the Proposed Schedule for the Studies

Mr. Shorten went through the organization chart, study process, QA/QC, and project schedule. He said Mr. Vaughn is the lead engineer for both study efforts (North Dakota and Minnesota sides). There was a little delay in the study process with the Minnesota government shutdown, but SRF plans to complete the study as originally planned (October/November 2012). There will be separate Moorhead focus group meetings for each of the three corridors. It was decided at a later date that there would be one Moorhead focus group meeting for all three corridors.

### **Review Existing Conditions**

Mr. Vaughn started out this discussion by stating SRF would appreciate any comments or additions to the existing conditions portion of the corridor studies.

### • Fargo - Pedestrian/Bicycle Facilities and Gaps

Mr. Vaughn said the focus of the corridor was 1/4 mile wide (1/8 mile of each side of the corridor). Mr. Lane noted that Woodrow Wilson High School is not operating as a school anymore and should be removed from graphics and as a destination. Mr. Shorten asked if there was a need for identified gap #1 and if it is logical. Mr. Bittner said identified gap #1 does not have pedestrian/bicycle volumes that would warrant expenditure for grade separated crossing. He would also like identified gap #2 to be reviewed again. Mr. Kline suggested looking at the NDSU Bicycle and Pedestrian Access Study for gap #2 and 10th Street could be another option instead of University Drive.

### • Moorhead/Dilworth - Pedestrian/Bicycle Facilities and Gaps

Mr. Trowbridge is concerned about crossing the railroad tracks for the identified gap #2. He is not sure if a bicyclist could utilize the quiet zone pedestrian maze or if there would need to be an on street crossing. Mr. Trowbridge and Mr. Bittner mentioned how there is a pedestrian build-up at Dairy Queen (NE quadrant of TH 75/Main Avenue). Ms. Van Beek mentioned that it is very difficult to see bicycles at the southwest corner of Center Avenue/8th Street (TH 75/TH 10). Mr. Trowbridge said Campbell Technology is working on the railroad pre-empt and flashing yellow arrows. Mr. Vaughn said this feature would not affect pedestrian/bicycle movements unless something was done in the signal phasing. Mr. Vaughn mentioned there is a current SRF project to improve the ADA/ITS/Signal along TH10 and TH 75 and he also described the identified gaps along the corridors. Mr. Shorten asked if the 11th Street underpass was still a project the City of Moorhead is considering? Mr. Zimmerman responded the City is, but the underpass would be expensive. Mr. Kline suggested having gap #2 cross the railroad tracks at 4th or 5th Street instead of 8th Street and then also extend gap #1 to 4th or 5th Street. Mr. Shorten added the 3rd/4th Street underpass could be utilized, as well.

### • Fargo - Bicycle and Pedestrian Crashes

Mr. Vaughn described how changes to the bicycle/pedestrian facilities will play a key role in the corridor concept alternatives and that the crashes will be looked into further. Ms. Harter said Metro COG reviewed the bicycle/pedestrian vs. vehicle crashes, and that a lot of the crashes were injury (not property damage). She would like SRF to investigate what the cause of the crashes was and see if they can be mitigated. SRF can obtain more specific data from Metro COG. Mr. Vaughn added almost all of the crashes were at intersections. Mr. Walton noted that the sight

lines were improved on the University Drive underpass in 2007 and on the 10th Street underpass in 2010. So the past data may not be accurate because of the recent roadway improvements.

### • Moorhead/Dilworth - Bicycle and Pedestrian Crashes

Mr. Vaughn mentioned there was a fatality at the intersection of TH 75/24th Avenue South, and that this crash will be looked at further by SRF. It was mentioned that this crash is located outside of the study area.

### • Fargo - Transit Facilities

Mr. Kline would like SRF to look at the southbound to eastbound double left turn at 2<sup>nd</sup> Street to see if geometrics and operations will work. Ms. Van Beek pointed out that Route 2 is hard to see on the Fargo Transit graphic and that an additional "No. 2 box" should be shown.

### • Moorhead/Dilworth - Transit Facilities

Ms. Van Beek pointed out that Route 2 is hard to see on the Moorhead Transit graphic and that there is an additional "No. 1 Box" that should be removed near 14th Street and 2nd Avenue South.

### • Fargo – Parking Utilization

Mr. Vaughn began this discussion by stating the graphic is a summary of the entire day, and in the report the data will be broken down by the three time periods collected. SRF will add parking utilization for the Island Park Parking Ramp after additional data is received from and discussed with the City of Fargo. Mr. Stein added there is metered and contract/permit parking in this ramp. Mr. Walton asked if the utilization percentage ranges were that close to each other? Mr. Vaughn responded yes they have very small range differences. Mr. Lane mentioned the areas analyzed were near Main Avenue, so if parking on Main Avenue needed to be removed, the potential parking area for replacement parking is in close proximity to Main Avenue. A new restaurant opened on the corner of Main Avenue and 6th Street/Broadway, so parking near this location may see an increase. It was discussed that parking near Renaissance Hall (NDSU) on 8<sup>th</sup> Street North, north of Main Avenue was not accurate because the data was collected before college was in session. Mr. Vaughn said SRF will recount the parking near this building. Mr. Stein felt that the parking utilization percentages were reasonable.

### • Moorhead/Dilworth - Parking Utilization

Mr. Vaughn explained that there are a few items that need to be updated on the Moorhead side. Ms. Van Beek mentioned that it is tight for buses to use 5<sup>th</sup> Street between Center Avenue and Main Avenue, mainly near Scheel's. Mr. Thurlow noted, in Dilworth the eleven spaces on the east side of Main Street should be removed as well as the two eastern parking areas on TH 10 (refer to Figure 14).

### • Fargo - Access Inventory

Mr. Vaughn described that the colored access points represented different access types and that if an access was slightly skewed or directly across the roadway from another access (even with a different access type) it was counted as one access. He mentioned a few cleanup items needed to occur near 21st Street and stressed the large amount of access points along the corridor. Mr. Walton asked if the access per mile calculation was per side; Mr. Vaughn responded no, just access per mile. Ms. Harter pointed out that SRF had detailed excel sheets with information about each access and Mr. Vaughn stated that these will be included in the report. Mr. Walton

### Record of Meeting Fargo-Main Ave & TH 10, TH 75, & Center Ave Corridor Studies

stated some access points may need to be larger for trucks, which may make it difficult to consolidate. Mr. Vaughn said City of Fargo standards were used in Fargo, while MnDOT standards were used in Moorhead/Dilworth. Mr. Bitner asked if streetscape was a factor? Mr. Lane responded yes, street furniture, lighting, etc. will be included in the recommended alternative. Mr. Bitner would like to have more green space and Mr. Hahn would like the corridor aesthetics to be improved west of University Drive.

### • Moorhead/Dilworth - Access Inventory

Mr. Thurlow stated that much of the residential properties have access from the alley south of TH 10 and that the access directly onto TH 10 is underused. Ms. Schmidt confirmed this through observations taken in the field while collecting that data. Mr. Trowbridge recommended moving the "urban/urbanizing" boundary to 14th Street instead of 8th Street. Mr. Lane and Mr. Vaughn agreed and SRF will make the change. Mr. Vaughn pointed out the addition of a future HAWK signal at the intersection of TH 75 and 10th Avenue and proposed fencing near this location. He explained how access management is critical near colleges and universities, and access modifications could occur if context (land use) changes allowed it.

### • Fargo - Vehicle Crashes

Mr. Vaughn described the calculated, average, and critical crash rates. Mr. Walton asked if the severity rates were calculated? Mr. Vaughn responded no, but SRF can add them to the crash analysis. Mr. Vaughn noted that one fatality occurred throughout the Main Avenue study corridor (it was at the intersection of Main and 25th Street and was alcohol related), but it occurred in 2007, which was outside of the three-year range analyzed. University Drive was an intersection that had a high number of crashes. Ms. Schmidt added there were a lot of crashes at this intersection related to snowy/icy conditions. Ms. Bommelman asked how the vehicle and pedestrian crash years compared? Ms. Harter said the pedestrian/bicycle data's was obtained from 2005 to 2009. Mr. Dow said that the 2010 pedestrian crash data was almost completed. Ms. Harter asked if the NDDOT's data included pedestrian crashes, and Ms. Schmidt confirmed that it only includes vehicle crashes.

### • Moorhead/Dilworth - Vehicle Crashes

Mr. Wahl asked if the severity rates (Ks and As) were taken into account? Mr. Vaughn said no, not in these calculations, but SRF can add them to the crash analysis.

### Additional Data Collection

Mr. Vaughn described the intersections that turning movement counts will be completed at. These will be conducted by City of Fargo staff on the North Dakota side and by SRF staff on the Minnesota side in the upcoming weeks. It was agreed upon to add the intersection of Main Avenue and 21st Street to the turning movement count locations in Fargo. Mr. Kline noted ICE reports will be conducted at the intersections of TH 10/CSAH 9 (40th Street) and TH 10/7th Street NE to determine if they qualify for the installation of traffic signals.

### 2035 Traffic Forecasts

There was discussion about the NP and 1st Avenue North Corridor Development Plan and how it would relate to this corridor study. Mr. Lane stated that SRF can meet with Metro COG to discuss if different volumes and/or scenarios should be reviewed as part of the corridor study. Ms. Harter mentioned Main

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Avenue's volumes have been going down historically and a +0.5% growth rate was agreed upon by all parties involved (NDDOT, City of Fargo, MnDOT, City of Moorhead, and Metro COG,). Mr. Vaughn summarized how the growth rates would be applied to the existing traffic data. The +0.5% will be applied to the 2010 AADT volumes and the 2011 turning movement counts while taking the NP and 1st Avenue North Corridor Development Plan into account. Mr. Walton asked if the Moorhead side will change too due to changes in the Fargo one-ways? Mr. Vaughn and Ms. Harter responded yes they will change too.

### Land Use

Mr. Kline described how Metro COG proposed a method to change analysis to see how many businesses are changing and/or upgrading to NDDOT and MnDOT. The data collection for this will analyze land use changes in the corridor. Metro COG will distribute surveys/questionnaires to the property owners. Ms. Harter added the main purpose of this analysis is to determine if additional right of way will be needed, if corridor conditions will change, etc. based on direct feedback from the property owners. Mr. Kline stated this will create an opportunity for underdeveloped properties to redevelop. A preliminary analysis will be brought to the SRC groups at their third meeting and at the small group/focus group meetings in the spring of 2012. SRF does not need to wait for Metro COG to complete the analysis, and that they will work together on this additional portion of the study. Overall, review of the current businesses will help to evaluate impact from proposed alternatives.

### **Public Participation**

Mr. Shorten discussed the early public involvement program. He explained due to the number of corridors, the Minnesota portion of the study will be split into five or six sections. It was agreed upon to have the next set of meetings (SRC, Focus Groups, Small Groups, and Public Input Meetings) on Tuesday, November 15th through Thursday, November 17th. Ms. Harter said Metro COG will have a link available on their website for the public and Committee members to download meeting documents. Mr. Vaughn described how Facebook will be utilized in this project by providing weekly or bi-weekly study updates about meetings, current tasks being performed, etc. He also stated that no comments will be accepted via Facebook. Ms. Harter added the Facebook sites will be very informative and Mr. Kline said they will focus on public involvement items.

### **Next Steps**

Mr. Shorten described the next steps for the corridor studies and the information that will be presented at the next SRC meetings. Mr. Lane asked if SRF has missed anything so far, in terms of key locations, conditions, outcomes, or relevant data. Ms. Harter said the Fargo-Main Avenue portion of the study should incorporate non-compliant ADA issues. Mr. Lane responded SRF will make sure the pedestrian and bicycle components address the ADA problems. Mr. Stein added the corridor is not very pedestrian friendly and the quality of the sidewalks on the north side of Main Avenue is poor, which could be a reason why it is not utilized very much. Ms. Harter noted that about half of the pedestrian/bicycle crashes are non-vehicle related. Mr. Hinderaker said the volume of pedestrian/bicycle use from 25th Street to University Drive is low and the dangerous conditions could be another reason why it is not used often. He would like to see the sidewalks become inviting so people will want to use them. Ms. Harter asked if the affects of the railroads and vehicle queuing in turning lanes and through lanes will be reviewed? Mr. Lane responded ITS options for the railroad pre-emption and complete streets will be incorporated into
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the studies. Mr. Johnson reminded the group about the NDDOT noise policy revisions and to urge SRF check to see if the Fargo-Main Avenue study would have to follow this policy.

#### **Action Items**

SRF will continue its existing conditions analysis (e.g., special issues for each corridor) and report findings at the next SRC meetings

#### Fargo - Pedestrian/Bicycle Facilities

- SRF will remove identified gap #1 from the study (completed)
- SRF will review identified gap #2 (potential revised location could be 10th Street North) (completed)

#### Moorhead/Dilworth - Pedestrian/Bicycle Facilities

- SRF will extend identified gap #1 to 4th Street (completed)
- SRF will move identified gap #2 to 4th Street (completed)

#### **Fargo - Transit Facilities**

SRF will add a "No. 2 box" and "route line" on Main Avenue (completed)

#### **Moorhead - Transit Facilities**

- SRF will remove the "No. 1 box" southwest of 2nd Avenue/14th Street intersection (completed)
- SRF will add a "No. 2 box" and "route line" on Main Avenue (completed)

#### **Fargo - Parking Utilization**

- SRF will request Island Park Parking Ramp data from the City of Fargo and insert Average Daily Parking Utilization percentage into Figure 4 (not yet completed)
- SRF will recount parking near Renaissance Hall (NDSU) on 8<sup>th</sup> Street North and insert Average Daily Parking Utilization percentage into Figure 4 (parking spaces have been recounted)

#### **Moorhead - Parking Utilization**

SRF will edit Figures 11, 13, and 14 (completed)

#### Fargo - Access Inventory

SRF will edit Figure 5 (3 access modifications) (completed)

#### **Moorhead - Access Inventory**

SRF will move the "urban/urbanizing" boundary from 8th Street to 14th Street and recalculate the TH 10 access computations (completed)

#### Fargo - Vehicle Crashes

SRF will calculate severity crash rates (completed)

#### **Moorhead - Vehicle Crashes**

SRF will calculate severity crash rates (completed)

#### Additional Data Collection

- The City of Fargo will collect turning movement count data at the intersection of Main Avenue and 21st Street while performing other counts along the corridor (completed)
- SRF will collect turning movement count data in Moorhead and Dilworth within the next three weeks (completed)

#### 2035 Traffic Forecasts

A meeting will be held to further discuss the level of integration of the NP and 1st Avenue North Corridor Development Plan

If there are any additions or corrections to these minutes, please contact Ms. Schmidt of SRF at (701) 237-0010.

RL/SS

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SRF No. 0117482

## **RECORD OF MEETING**

#### Fargo-Main Avenue Corridor Study

Second Study Review Committee Meeting Tuesday, November 15, 2011 9:00 AM - 11:00 AM Metro COG Conference Room

Members in Attendance: Wade Kline Peggy Harter Jim Hinderaker Bob Stein Jeremy Gorden Ben Dow Julie Bommelman Bob Walton Michael Johnson Craig Vaughn Rick Lane Brian Shorten

Representing: FM Metro COG FM Metro COG City of Fargo – Planning City of Fargo – Planning City of Fargo – Engineering City of Fargo – Public Works City of Fargo – MATBUS NDDOT – Fargo District NDDOT SRF Consulting Group, Inc. SRF Consulting Group, Inc.

#### **1.** Welcome and Introductions

Peggy Harter provided an overview and introductions were made.

#### 2. Discuss Existing and 2035 Conditions

Rick Lane and Craig Vaughn discussed information mailed to the SRC earlier:

## • **<u>Updated Information</u>**:

- Bike/Pedestrian
- Transit
- Parking Utilization
- Access
- Vehicle Crashes

#### • New information:

- Existing and Forecast-year 2035 Traffic Operations and Traffic Control Review

#### • <u>SRC Comments (and SRF responses):</u> Julie Bommelman

- Public preference of transit service along Main Avenue (comment came through City of

#### www.srfconsulting.com

Moorhead). Julie Bommelman confirmed that transit route planning is not moving forward along Main Avenue corridor; TDP reviewed this and found it was not warranted.

## **Bob Walton**

- Queuing on Main Avenue/South University Drive is a problem because eastbound right turn lane may need to be longer.

#### Jeremy Gorden

- Signal at 18<sup>th</sup> Street should be checked for warrants. It was installed a long time ago and may no longer be warranted. Also look at adjacent property needs and access.

- Eastbound to northbound left turn lanes are spilling into through lanes (particularly at 8<sup>th</sup> Street and Broadway Drive); westbound right turn lane on 8<sup>th</sup>Street/Broadway Drive also has spillover issue.

- Surprised that 8<sup>th</sup> Street /Main Avenue doesn't show more queuing

- Eastbound queues to go northbound; some others said it recovers quickly

## **Craig Vaughn**

- Explained how SRF modeled trains going through twice during the peak hour

- The group would like to see a screenshot with the modeled train crossing.

## Julie Bommelman

- Southbound on 4<sup>th</sup> Street backs-up through the NP Avenue intersection often [people are getting into/out of the underground parking on west side of 4<sup>th</sup> Street between tracks and NP Avenue]

- Difficulty exiting from the underground parking lot.

-Screen capture of model would be powerful for public consumption.

## **Rick Lane:**

-Consider using ITS for alternate routes when trains are present – would prevent high amount of leap-frogging that occurs around the corridor.

## Jeremy Gorden

- Suggested review of the need for signals at 7<sup>th</sup> Street. May have issues/need for signal with pedestrian traffic and senior center needs.

- Should consider removing westbound left turn at 7<sup>th</sup> Street, unless we can get a turn bay in.

## **Rick Lane**

-Consider an additional signal timing phase for when signals go into preempt for trains. Since 7<sup>th</sup> Street is not in pre-empt, it could be tied into 8<sup>th</sup> Street to run east/west green while the other signals are in pre-empt.

## Wade Kline

-What is the desire for eastbound/westbound movements to get access to 10<sup>th</sup> Street?

-Route is already signed via 9<sup>th</sup> Street

-Are there more cost efficient options to get to 10<sup>th</sup> Street?

## Group

-  $25^{\text{th}}$  Street – existing LOS is **D**; queues are significant in the southbound direction – are queues underestimated?

- 0.5% annual growth was discussed and accepted

- 2035 PM Peak; – major queuing issues on north approach; Group thinks existing PM peak backs up past  $1^{st}$  Avenue North already in 2011.

- 2035 PM Peak; more queuing issues on 8<sup>th</sup> Street, Broadway Drive, 4<sup>th</sup> Street, and 2<sup>nd</sup> Street.

## Wade Kline

- Are there better opportunities to provide access from Main Avenue to northbound 10<sup>th</sup> Street?

- Specific access points may be affecting intersections (e.g. specifically, ones without designated turn lanes; may benefit by adding them into the model. Examples include parking lots of 4<sup>th</sup> Street, Mexican Village, McDonald's.)

## Jeremy Gordon

– Potential need to model 16<sup>th</sup> Street by the M & H gas station (16<sup>th</sup> Street and Main Ave). Traffic counts don't currently exist at location; peak hour data at 4<sup>th</sup> Street, 25<sup>th</sup> Street, and 18<sup>th</sup> Street would also be helpful.

## 3. Discuss Draft Purpose and Need/Corridor Vision

Brian Shorten presented draft information mailed earlier to SRC:

## • <u>Purpose and Need Vision Discussion and Comments:</u> Bob Walton

- NDDOT and City think they have pavement data requested -Michael will look for info - Main Avenue had a light resurfacing in 2009

## Jeremy Gorden

- City utilities – water, sewer, and storm sewer all need to be replaced.

## **Bob Walton**

- Fargo and NDDOT plan to coordinate pavement/utility replacement.
- Could look at % of panels needing replacement, as documentation

- Change S. University or N. University to just "University" in text.

## **Ben Dowe**

– Will provide better information regarding city utilities.

## **Peggy Harter**

- Add total number of crashes along entire segment

- Need to get bicycle route for college circulator

- Show a bicycle crossing the railroad at Main Avenue between Broadway Drive and 4<sup>th</sup> Street

## Jeremy Gorden

- Suggested addition of aesthetics to Vision categories

-University Drive to 18<sup>th</sup> Street corridor does not show a need for capacity. However, continuous left turn lanes would benefit the high number of accesses. Possibilities exist for expansion to north.

- University Drive to18<sup>th</sup> Street - crash types should be reviewed more closely; 62 crashes in .57 miles on this segment; no left turn lanes on Main except 18<sup>th</sup> Street and University Drive

## **Michael Johnson**

- Will send Metro COG construction history

- Could have access standard of 600' for redevelopment of 600' and 300' for existing development; reduction of 10-15% is still achievable

## **Bob Walton**

- What is O-D for the corridor - is it being used as Business Highway 10?

- Metro COG/SRF should be able to pull this data from a select link analysis.

## **Bob Stein**

- Certain types of businesses along Main Avenue are increasing pedestrian crossings of the railroad.

## Wade Kline

- Note parallel bike lane on 1<sup>st</sup> Avenue South

- Also, note transit is provided within <sup>1</sup>/<sub>4</sub> mile on 1<sup>st</sup> Avenue and NP Avenue; this should be included under existing conditions.

- Land use review will focus on potential opportunities along the Main Avenue corridor

## **Peggy Harter**

- Crash table has a typo for "thru-stop" shown as "thur stop"

- 10<sup>th</sup> Street/Main Avenue is a side street stop

- Will provide updated bike/pedestrian map to SRF (re: gap identification along Broadway Drive to Main Avenue to 4<sup>th</sup> Street in Moorhead)

## <u>Other General Purpose/Need and Vision Comments:</u>

- Revise P/N Modal Relations, note much of corridor is non-compliant with ADA

- Move transit routing bullet to "Other Considerations" category in P/N

- Add total number of B/P crashes along corridor to P/N safety category
- Revise transit route vision (existing) to show current routes
- Delete reference to 18<sup>th</sup> Street underpass in system linkage.

#### 4. Discuss Public Input Opportunities

- Rick Lane presented other input opportunities to be held this week:

-Public meeting - Tuesday evening

-Small group meetings Wednesday morning

#### 5. Review Next Steps

- Craig Vaughn noted the subsequent study actions:

-Review and Incorporate Public Feedback

-Prepare Issue Identification/Needs Assessment Tech Memo

-Update Purpose & Need/Corridor Vision

-Begin Developing Alternatives

-Plan for Next SRC Meeting February 2012

#### 6. Adjournment

Meeting was adjourned at 11:30a.m.

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## **RECORD OF MEETING**

**Fargo Main Ave Corridor Study** Small Group and Public Input Meetings

## **I. Small Group Summary**

The four business small group meetings took place on November 16, 2011, at the Park District Depot in Fargo. The main purpose of the meetings was to introduce the project to small business owners adjacent to the Main Avenue study corridor and solicit input on existing conditions along Main Avenue. These small business owners were notified of the meeting through a number of channels including the following:

- Fargo Forum advertisement
- Metro COG press release
- Letter to all property owners along the corridors
- Project website
- Project Facebook page

The four separate small group meetings lasted 50 minutes, and ran from 8:00 AM to 12:00 PM. Presenters gave an overview of the project and took questions from the attendees. Before and after the presentation, project team members stood alongside approximately 20 large display boards placed throughout the room. This set up offered meeting participants an opportunity to talk one-on-one with project staff regarding the material shown on the display boards.

The small business owners were encouraged to stay involved with the project through a number of methods including:

- Comment cards
- Future business small group meetings
- Project website
- Project Facebook page
- Contacting Peggy Harter at Metro COG

In addition to Metro COG and SRF Consulting staff, approximately 16 people attended the small group meetings, and are noted below:

8:00 AM: Peggy Harter Wade Kline Craig Vaughn Rick Lane Mark Rustad Matt Rustad Representing: FM Metro COG FM Metro COG SRF Consulting Group, Inc. SRF Consulting Group, Inc. 2231 Main St. 2231 Main St. Seth Dye

9:00 AM Peggy Harter Wade Kline Craig Vaughn Rick Lane Mike Beaton Craig Boisjolie Barry Beier Mike Hanson Jim Beinovich

<u>10:00 AM</u>

Peggy Harter Wade Kline Craig Vaughn Rick Lane Jennifer Albrecht John Albrecht Brad Taberg Robert Jensen

11:00 Attendees: Peggy Harter Craig Vaughn Rick Lane Georgia Bettenhausen Wes Bettenhausen Lisa Bortneu-Wiser Mark Richman First National Pawn

Representing: FM Metro COG FM Metro COG SRF Consulting Group, Inc. SRF Consulting Group, Inc. No data Site On Sound Applied Tech Applied Tech Daylie CAD

Representing: FM Metro COG FM Metro COG SRF Consulting Group, Inc. SRF Consulting Group, Inc. Albrecht Prop. Albrecht Prop. Executive Auto Diamond Vogel

Representing: FM Metro COG SRF Consulting Group, Inc. SRF Consulting Group, Inc. Gateway Cenex Gateway Cenex Bortneu FLP Prop. Valley Realty

#### A. Input from Small Business Groups

- First National Pawn – PM queues back up in westbound direction past their driveway between 3-6p.m. Cannot turn to head east in the PM; Eastbound turn lane needs stubbing, also could shorten length (North of 25<sup>th</sup> Street and Main Avenue, near BNSF tracks)

- Retail Lumber Business has difficulty getting into and out of current reconfigured access; Northbound and westbound AM queues (Main Avenue and 25<sup>th</sup> Street South)

- 2231 Main Avenue (car rental company) – unable to turn left out of property in AM, noon, PM peaks.

- Difficult to turn left (east) onto roadway. Would prefer one larger access point instead of two narrow ones; need to accommodate semis.

- Multiple access points are used for large vehicle movement; Grade at driveway access is an issue due to bottoming out; would prefer a wider access on the east (Main Avenue and 15<sup>th</sup> Street South)

- Doyle's Cab – everything is operating well (14<sup>th</sup> Street and Main Avenue)

- 1342 and 1330 Main Avenue – Lost an access at 1330 with the last improvements, and don't want to lose more access. Both properties are for sale. (14<sup>th</sup> Street and Main Avenue)

- Plans to make parcels into a professional building along University Drive; recommended putting access onto 1<sup>st</sup> Avenue. South (1<sup>st</sup> Avenue South and University Drive North)

- Possible Market – City of Fargo may be planning a market in the northwest quadrant of Main Avenue and University Drive

- Vogel Enterprises – has 2 access points, including larger driveway on east side (Northeast corner of University Drive North and Main Avenue)

- 11<sup>th</sup> Street/Main Avenue storm sewer drainage issues – 11<sup>th</sup> Street flooding west into Curt's Lock and Key Garage; Water main breaks on 11<sup>th</sup> (11<sup>th</sup> Street South and Main Avenue)

- Noticing high westbound to southbound lefts at 11<sup>th</sup> Street to avoid the left turn on University Drive (11<sup>th</sup> Street South and 1<sup>st</sup> Avenue South)

- 10<sup>th</sup> Street curb extension – vehicles can't turn onto the east side slip ramp (Northeast corner of 10<sup>th</sup> Street and 1<sup>st</sup> Avenue South)

- Parking was removed a few years ago for the center left turn lane. Owners received no notification and no supplemental parking was provided. Only limited number of parking spots along 9<sup>th</sup> Street and they aren't available often. [Includes 914/916 Red Ravin Coffee Shop, 910 – Michael Orchard Studio, Gin Templeton (artist), Janet Flaum (artist), 4 photographers]. (10<sup>th</sup> Street and Main Avenue)

- General issue with snow removal on Main Avenue – no place for snow storage. Sidewalks get cleaned and plows push snow back up on the sidewalks from the roadway (Main Avenue near 9<sup>th</sup> Street; comment from parishioner from First Methodist Church of Fargo)

- 700 block frontage/720 building – parking is tight; all existing parking needs to be kept. Would it be possible to create parking ramp somewhere in the 8<sup>th</sup> Street corridor? (7/8<sup>th</sup> Street South and Main Avenue) - 4<sup>th</sup> Street intersection when signals are in train pre-empt, the northbound left turn arrow isn't coming up often (4<sup>th</sup> Street South and Main Avenue). This intersection could use some signal timing changes.

- Issue with offset access. Westbound lefts into Frying Pan are blocking access across the street. Need improved pedestrian access; acceleration lane at 2<sup>nd</sup> Street is unnecessary and dangerous for pedestrian crossings at ramp. (2<sup>nd</sup> Street to 4<sup>th</sup> Street, and NP Avenue)

## **II. Public Input Meeting Summary**

The public input meeting took place on November 15, 2011, at the Park District Depot in Fargo. The main purpose of the meeting was to inform the public of the study and solicit input on existing conditions along Main Avenue. The public was notified of the meeting through a number of channels including the following:

- Fargo Forum advertisement
- Metro COG press release
- Letter to all property owners along the corridors
- Project website
- Project Facebook page

The public meeting open house lasted from 5:30 PM to 7:00 PM, with a 30-minute presentation at 6:00 PM. Presenters gave an overview of the project and took questions from the audience. A live webcast was also offered for meeting participants who were not able to attend in person. Webcast participants could also ask questions of the presenters (links to the webcast are available on the project website and Facebook page as a resource for stakeholders). Before and after the presentation, project team members stood alongside approximately 20 large display boards placed throughout the room. This set up offered meeting participants an opportunity to talk one-on-one with project staff regarding the material shown on the display boards.

The public was encouraged to stay involved with the project through a number of methods including:

- Comment cards
- Future public input meetings
- Project website
- Project Facebook page
- Contacting Peggy Harter at Metro COG

In addition to Metro COG and SRF Consulting staff, approximately 14 people attended the public input meeting, and are noted below:

<u>Attendees:</u>	<u>Representing:</u>
Peggy Harter	FM Metro COG
Wade Kline	FM Metro COG
Katie White	FM Metro COG
Craig Vaughn	SRF Consulting Group, Inc.
Rick Lane	SRF Consulting Group, Inc.
Brian Shorten	SRF Consulting Group, Inc.
Craig Vaughn	SRF Consulting Group, Inc.
Bob Walton	NDDOT
Michael Johnson	NDDOT
Mark Bittner	City of Fargo - Engineering
Jeremy Gorden	City of Fargo - Engineering
Craig Boisjolie	Site On Sound
Dain Miller	Apex Energy Group
Mike Bittner	No data
Richard Nymark	Nymark Properties
John Albrecht	Albrecht Properties
Jennifer Albrecht	Albrecht Properties
Jim Ohnstad	OK Tire Inc.
Todd Ladene	Curt's Lock

#### A. Presentations:

Formal presentation was followed by one-on-one discussions of boards/map.

#### **Peggy Harter**

- Welcome and introductions

#### **Rick Lane**

- Presentation on study corridors, project sponsors, schedule, study goals

#### Craig Vaughn

- Presentation on existing and future traffic conditions/analysis

#### **Brian Shorten**

- Presentation of identified corridor issues

#### **Peggy Harter**

- Presentation of ongoing land use analysis

#### **Brian Shorten**

- Presentation on Purpose and Need/Corridor Vision, Ways to Stay Involved, and Next Steps

## **<u>B. Input from Public</u>**

- NDDOT, City of Fargo, and FM Metro COG have plans to reconstruct Main Avenue
- Need Metro COG and B/P routes; incorporate into Purpose and Need/Vision text

- Park District staff see no need for signal at senior center due to diminishing role of Senior Center at Depot in the future (thus, no need for crossing)

- Pull-in lane no longer needed, could be replaced with landscaping.
- Provide a corridor landscaping plan for recommended alternative
- Consider historic/cultural resource impacts along Main Avenue.
- Consider corridor aesthetics
- Consider a pedestrian/bike grade separation between 25<sup>th</sup> Street and University
- Consider a contra-flow lane at University Drive
- Review old 18<sup>th</sup> Street underpass study recommendations



SRF No. 0117482

## **RECORD OF MEETING**

#### Fargo-Main Avenue Corridor Study

Study Review Committee Meeting #3 Wednesday, February 22, 2012 1:00 P.M. - 4:30 P.M. Metro COG Conference Room

Members in Attendance: Wade Kline Peggy Harter Joe Nigg Jim Hinderaker Bob Stein Jeremy Gorden Mark Bittner Kristy Schmidt Ben Dow Bob Walton Michael Johnson Craig Vaughn Rick Lane Representing: FM Metro COG FM Metro COG FM Metro COG City of Fargo – Planning City of Fargo – Planning City of Fargo – Engineering City of Fargo – Public Works NDDOT – Fargo District NDDOT SRF Consulting Group, Inc.

#### 1. Welcome and Introductions

Rick Lane provided an overview of the meeting purpose and introductions were made.

#### 2. Discuss Subject to Change Analysis

Joe Nigg provided an overview of the "Subject to Change" analysis that Metro COG staff completed for the study. The subject to change analysis is a document that from a land use and socioeconomic perspective, identifies stable properties v. potential transitional(ing) properties along the corridor. The analysis provides an opportunity to consider parcel level needs/issues juxtaposed with corridor design issues. Additionally, the analysis provides a mechanism in which future growth can be quantified for impacts/opportunities respective to access, vehicle level of service (LOS), corridor capacity needs, and land use and zoning policies. The following comments were made by the SRC regarding the analysis:

#### SRC Comments (and general discussion):

Jim Hinderaker noted that he felt the subject to change analysis was well done and had the following comments:

- The City of Fargo's "GO 2030 Plan" identifies that the study corridor as an active living corridor which needs a better entrance feature to the downtown area, needs to address all modes of transportation, needs to include arts and culture as well as aesthetics for this corridor and needs to increase density.
- Main Avenue could be a good candidate for "Design Commercial" Zoning District, which incorporates multi-use zoning (commercial/residential), but has not yet been adopted. All major developers in the community are on the committee.

Other group discussion included:

- Discussion about the potential land use plans for the strip north of Main Avenue between 18th Street and University Drive.
- SRC likes the idea of redeveloping the parcels north of University Drive between University Drive and 18th Street and creating an entry into downtown as well as a linear park. Further research is needed regarding the acquisition of these parcels.
- Property north of railroad and immediately west of University Drive is City R/W. Ben Dow will send documentation on R/W to Bob Walton. ACTION

## 3. Utility Update

Rick Lane provided a high level overview of the attachment documenting the underground utility status. Ben Dowe had previously provided a summary of the utility information for both water main and storm sewer. The water main along the study corridor from 22nd to 2nd Street has had numerous breaks over the past 50+ years and is in need of replacement. The main line trunk of the storm sewer is in good condition and only the inlet manholes and drop lines need replacement.

Upon review of the utility status, Mr. Dowe provided a major update to the status of the utilities along the corridor:

- Sanitary and storm sewers are in good condition from 25th Street to University Drive.
- Sanitary sewer is in very poor condition east of 10th Street, and televising could not continue.
- Storm sewer is in very poor condition to the east of University Drive, and will require reconstruction. However, sewer seems to be in moderate condition to the west of University Drive, and will only require a retrofit.
- There is a steam tunnel that crosses under Main Avenue near 7th Street.
- Substantial utility work needed (all new utilities with a full reconstruct).
- An updated utility outline will be distributed (Ben can provide additional documentation). ACTION

## 4. Corridor Vision/Design Guidance Review

Rick Lane provided an overview of the changes to the "Corridor Vision/Design Guidance" memo. This document includes a series of tables for different elements along the corridor. These elements include the corridors functional class, speed, right of way section, intersection geometry, signal spacing, parking, access, etc. The table then identifies the existing conditions, design guidelines, and selected design guidance for each corridor. The intent of the tables was to

help guide conceptual level design decisions for the study corridor. This document had been reviewed by the SRC at the previous committee meeting. The table had been updated to include the "Selected Design Guidance" column and a few additional corridor elements. The "Selected Design Guidance" column recognizes that within the fully developed corridor it is often difficult to get the corridors up to current design guidance. The "Selected Design Guidance" criteria offers a more realistic design criteria when considering things such as access spacing, etc. No comments were recorded by SRC. Metro COG may submit additional comments offline.

## 5. Layout Review/Conceptual Alternative Discussion

SRF, Metro COG, the City of Fargo, and NDDOT had met prior to the development of the conceptual alternatives to discuss potential alternatives that would respond to the existing and forecast year issues identified along the study corridor. Craig Vaughn facilitated the review of the conceptual alternative layouts

## **General comments (not segment related)**

- One of the issues identified within the study is to move utilities (street lights, hydrants, etc. out of the pedestrian facilities. The SRC discussed that having the street lights on the outside of sidewalk reduces the likeliness of them being hit by vehicles. However, for ease of utility access, the preference is to have utilities more accessible on the backside of the curb. Hydrants may be a concern. A 2-foot utility space will be provided along the corridor between the back of curb and the 6-foot minimum pedestrian walking area.
- Building footprint layer in GIS may be better to use than parcel boundary to indicate R/W boundary.
- On the typical sections it would be preferred to change the lane widths to 11-feet and use the additional width elsewhere. This would reduce the overall width of the roadway for pedestrians to cross and may assist with traffic calming. The SRC agreed to the idea of 11-foot lane widths except for the continuous center left turn lane. It was decided that the continuous center left turn lanes should be shown in the typical sections as 13-feet wide. The outside though lanes will be shown as 11-feet with a 1.5-foot gutter width for a total lane width of 12.5 feet.
- The SRC noted that they did not see any alternatives which included aesthetic improvements. SRF responded that aesthetic improvements would be a component of the study but would not be drafted until the study identifies which alternatives/concepts to carry forward.

## 25th Street to 18th Street:

- Typical Section: 12' lanes with minimum 6' wide sidewalk (preferably 8') and 2' outside for vertical utilities, such as street lights and hydrants. 8' space could include 2' patterned/colored buffer, which leaves 2' for utilities.
- Basic typical section: Could reduce the inside thru lane to 11' and use the additional foot elsewhere. ACTION

#### Record of Meeting Fargo-Main Ave Corridor Study

 25th Street intersection: Extend the westbound to northbound outside thru/right turn lane further east beyond the median. The purpose of this extension would be to better utilize and identify this lane as a westbound through lane and help improve operations at this intersection. Extension would require some right of way acquisition.
 ACTION

## Kristy Schmidt

 It would be nice to add more green space/aesthetics on this base alternative for 25th Street through University.

## Rick Lane

• The "Gateway" was discussed for near 18th Street, and the sub-alternatives may address this by including some aesthetic fencing and parking lot screening.

## Bob Walton

• Are any of the buildings on the north side of Main Avenue historic? Possibly the old Roadsters building?

## Joe Nigg

 Did not believe any buildings were designated as historic, but will check and followup with SRC. ACTION

## **<u>18th Street to University Drive:</u>**

The Base Alternative for this section of the study corridor should show a 5-lane section throughout and not a 4-lane section as a portion of it currently exists today. The 4-lane section would be represented by the no-build option. The 5-lane section is needed to assist with the reduction of crashes and to accommodate left turners for the high number of access points along this section of corridor. The Base Option of this then takes only from the north side, and includes greenway on the north side. ACTION

ROW requirements for Base Alternative:

- Minimum 25' set back from center of rail
- Variable 60-80' green space area
- 10' shared use path and 10' boulevard space
- 2-12.5' curb lanes, 2-11' through lanes, 1-13' center left-turn lane
- 10' boulevard, 6' sidewalk and 2' of clear space on the backside of the sidewalk
- Total of 158' to 178' of R/W needed

## Mark Bittner

• Look into an Alternative that widens the corridor to the south of its existing alignments and creates more developable parcels on the north side of the road.

### Group

- The SRC decided to develop Alternative 1whichprovides development opportunities on both the north and south side of the road. **ACTION**
- A cross section of the updated Base Alternative and Alternative 1 will be prepared and shared with the SRC. ACTION
- The SRC prefers wider boulevards on the south side of Main Avenue, with a minimum width of 10' instead of 7' that was presented at the meeting. **ACTION**
- NDDOT clarified that an option such as Alternative 1 would need to be justified by the projects purpose and need. The study will need to identify the corridors needs for such an impactful alternative.

## **University Drive Counter-Flow:**

The University Drive counter-flow alternative shows changing the furthest east lane on University Drive between NP and Main Avenue to a northbound lane which counters the flow of traffic from the existing southbound one-way. The main benefit of the counterflow lane is to provide an additional underpass location to move traffic from the south to the north side of the railroad tracks when a train is present in the downtown. The following comments were made in regards to the concept:

- The City of Fargo felt this worked well when it was used during the reconstruction of the 10th Street underpass.
- NDDOT commented that FHWA and NDDOT have not been supportive of this concept due to sight and grade issues as well as the driver unexpectancy of four southbound lanes v. one northbound lane.
- NDDOT also commented that the 5 southbound lanes were built to support future traffic volumes to acceptable LOS operations under prior traffic analysis.
- The SRC agreed that the concept should be carried forward for public comment.
- The SRC noted that the southbound left lanes should be shown as a through/left turn lane. ACTION
- SRF will analyze the lane setup in Synchro to show how it operates. ACTION
- NDDOT commented that if the City were to go through with such an alternative prior to getting the state's support, the state would have the right to take University Drive off the state system.

## **10th Street and Main Avenue Connection:**

The SRC discussed that this project should explore a better connection to10th Street from Main Avenue. The following ideas were considered regarding this concept:

- The group discussed the concept of constructing a partial interchange to make a better Main Avenue/10th Street connection. This option would be very high cost and would be impactful to many historic building.
- Improved signing could be implemented to indicate how to better access this route.
- Some feel the route is signed well today and works relatively well already.
- No additional layout modifications will be made at this time. Only discussion occurred regarding this.

## East of University Drive

The corridor typical section from University Drive to 8th Street showed 6' sidewalk on both sides of the road, with 5-12' lanes of traffic (including a center left turn lane). Based on discussion presented earlier herein, the recommended section for this area will be:

- 6' sidewalk and 2' space on back of curb for utilities (both sides of the road)
- 2-12.5' curb lanes, 2-11' through lanes, 1-13' center left-turn lane
- Total R/W need is 76'
- NOTE: this has the potential to impact the existing R/W boundaries through a portion of the corridor (will confirm the impact location). **ACTION**

Some of the alternatives that were discussed east of University Drive include the following:

- Extend the median further west of Mexican Village just to the property boundary w/ BNSF. This would allow for a longer eastbound to northbound left turn lane onto 8th Street. ACTION
- Show a sub-alternative with a median thru 7th Street with a right-in/right-out access. This gives a longer eastbound left turn lane onto Broadway. **ACTION**
- Split Depot parking N-S with parking along the north side of the lot and additional green space along the south side of the lot. The depot may not need as much parking now that the senior citizen facilities have moved out of this building.
- Remove the westbound right turn lane at Broadway Drive and show it as an optional inset. Some members of the SRC felt that it should not be included because it only adds more pavement width to the roadway at a popular pedestrian crossing. Other members of the SRC felt it was important to leave in as westbound to northbound right turners stack up in the outside through lane when a train is present, which greatly reduces the usable capacity of the roadway. ACTION
- Remove the eastbound right turn lane at Main Avenue/2nd Street and make it a thru/right turn lane. The removal of this channelized right turn lane should work well operationally as it is a small number of vehicles making this movement and it improves the pedestrian crossing at this intersection. The SRC suggested that SRF also include alternatives that clean up other pedestrian issues with this intersection. ACTION
- 2nd Street from NP Avenue: review the option of removing the median through the underpass and widening the west sidewalk. Show this as an inset alternative if possible. The inside median actually is in place to provide relief from the overhead bridge structure (bridge piers rise vertically on the inside median). This median cannot be narrowed to provide additional space to widen the sidewalk on the Westside (needed to provide protection from bridge piers). ACTION
- Review the ability to provide southbound dual left turn lanes at Main Avenue/2nd Street (ATAC looked at this; Wade Kline also has). May require split phasing of the traffic signal which overly impacts the intersection operation at other times of the day. Some members of the committee felt the existing operation was most efficient without impacting motorists at other times of the day; with the dual southbound left turn lanes they would likely need to be implemented using a shared left and through/left turn lane configuration, which in turn would require split phase of the

intersection. Running the intersection signal timing in split phase will negatively impact certain approaches of the intersection at other times of the day when the dual left turn lane capacity is not needed. Current conditions and queues are manageable as is. **ACTION** 

## 4th Street Railroad Grade Separation

SRF had been asked as part of the study to examine the option of identifying an additional railroad grade separation location. At a previous SRC meeting, other locations were ruled out and the consultant team was given the task of laying out a railroad grade separation alternative at 4th Street. The following was identified and discussed as part of the SRC meeting regarding the 4th Street railroad grade separation alternative:

- SRF provided a technical memorandum as a handout to the SRC. The memorandum identified that many properties would need to be acquired due to the grade changes and lack of site access from Main Avenue and 4th Street.
- The SRC questioned if whether or not a project such as this would be cost-beneficial due to its close proximity to the 2nd Street underpass.
- SRF responded that they did not feel that a 4th Street underpass would be costbeneficial due to both the number of property impacts and the close proximity of the 2nd Street underpass.
- The SRC decided not to take this concept any further to the public and instead to just include conceptual layouts with the tech memo information and basic cost information within the study to explain why the concept would not be carried forward within or past the study. ACTION
- The SRC also commented that instead of looking at a new underpass location, dollars may be better spent improving both traffic and pedestrian facilities at the existing 2nd Street underpass, if possible.

#### Additional SRF Follow-up:

Revisit closed access recommendations to ensure they are correct. ACTION

#### 6. Adjournment

- Meeting adjourned
- SRC intends to host a Brown Bag planning session after the PIM in April/May 2012.
- 7. UPDATE After the SRC meeting it was decided that the changes to the conceptual alternatives had changed enough that another SRC meeting should be held prior to taking the layouts to the public. The public and small group meetings scheduled at the end of March were postponed and instead the SRC will meet at Metro COG's conference room on Wednesday March 28, 2012 at 1:00 p.m.

SRF No. 0117482



## **RECORD OF MEETING**

#### Fargo-Main Avenue Corridor Study

Study Review Committee Meeting #4 Wednesday, March 28, 2012 1:00 P.M. - 4:30 P.M. Metro COG Conference Room

Members in Attendance: Wade Kline Peggy Harter Joe Nigg Jim Hinderaker Bob Stein Jeremy Gorden Kristy Schmidt Ben Dow Bob Walton Michael Johnson Craig Vaughn Rick Lane

Representing: FM Metro COG FM Metro COG FM Metro COG City of Fargo – Planning City of Fargo – Planning City of Fargo – Engineering City of Fargo – Engineering City of Fargo – Engineering City of Fargo – Public Works NDDOT – Fargo District NDDOT SRF Consulting Group, Inc. SRF Consulting Group, Inc.

#### 8. Welcome and Introductions

Rick Lane provided an overview of the meeting purpose and introductions were made.

#### 9. Layout Review/Conceptual Alternative Discussion

The layouts discussed at this meeting have gone through one iteration of SRC review already. The purpose of this meeting is to further refine the alternatives prior to presenting to the public for their input. Craig Vaughn facilitated the review of the conceptual alternative layouts. All comments listed below are in the order they were discussed and noted.

- Rick Lane noted that there are a couple of parcels that may be impacted by the base alternative east of 17th Street. SRF may be able to modify the curvature of the roadway slightly at this location to minimize this impact further. But some parcel boundary impact may still result. Review parcel impacts at this location. **ACTION**
- Craig commented to the group that in general the travel lanes are all 11 feet throughout the corridor.
  - The group responded that they were ok with 11 foot lanes.
  - As an exception to this, the center left-turn lane is 13 feet throughout.
  - Jeremy Gordon thinks this width is excessive.
  - Bob Walton likes the 13 foot width to accommodate the two way friction and larger trucks.

- Craig reviewed the typical sections for the base condition and the alternative condition being proposed between 18th Street and University Drive.
  - The group discussed reducing the 10 foot multiuse path on the south side of the road to 6 feet. This is because the 10 foot path will not match in anywhere.
  - The group discussed maximizing the pedestrian area where we are able to do so.
  - Agreed to reduce the path on the south side to 6 feet.
  - The 10 foot setback distance for the buildings from the back of curb may not be enough; 20 feet may be required for extensive commercial developments.
  - Need to check with FHWA on 11 foot lanes if we are having property impacts anyways. FHWA sometimes allows 11 foot lanes if it reduces ROW impacts.
  - We need to note that with the 5-lane alternative additional ROW is needed. Even further, in order to make the corridor segment from 18th Avenue to University Drive pedestrian ADA compliant additional ROW is needed.
  - Under the green space alternative the park board will be responsible for maintenance.
- Kristy asked how an alternative will be selected.
  - Peggy and Craig explained that the alternatives will be evaluated using select evaluation criteria.
  - The SRC will weigh-in on the technical evaluation process and costs will be incorporated as part of the process.
  - Peggy noted that two key questions being asked with this study are what are the costs and subsequent benefits of the alternative selected and how much can the tax base be increased with resulting development that occurs adjacent to the roadway when it's finished? How the tax base increase is calculated and determined needs to be discussed amongst project management team. Review assessed value and impacts.
- Group noticed that the roadway still has a slight S-curve in it to avoid impacting parcels to the south more than it already does. Under the alternative scenario where parcels to the south are being impacted anyway, removing this curve would be good and may end up creating parcels that are still very developable. However, we need to make sure that we tie down at the two ends of this segment (18th Avenue and University Drive).
- Bob Walton asked if a five-lane alternative could be developed between 18th Street and University Drive, with widened sidewalks within the existing right-of-way (ROW). NO.
- On the layout that shifts the roadway to the south, show the impacted properties.
- Need to know assessed cost of properties with the different alternatives to present to the planning and city commissions – although this will not include the relocation costs.
- Michael Johnson says that the FHWA will not contribute money to a project that is solely for redevelopment purposes.
  - The environmental documentation will need to do a comparative analysis to assess/compare impacts, including costs.
  - The group discussed putting together a preliminary review packet for FHWA to review prior to presenting this further in order to get some initial response.
  - OR should this be taken the City Planning Commission first for their response?

- Agreed to put together a formal letter sent to Michael Johnson's attention requesting the DOT to review and provide initial response on the layouts. ACTION
- Rick Lane walked the group through a change to the alternative development scenario with the redevelopment of both the north and south sides of the road (between 18th Street and University Drive). The north side would have access to parking lots from each of the corresponding city streets and buildings would be developed adjacent to parking lots off of these access points.
- The group generally liked this alternative better than what was originally developed.
  - The base alternative will be considered the green space alternative with the north side of the road being acquired.
  - The first alternative will be redevelopment of both sides of the existing roadway and realigning the S-curve in the road to its fullest.
  - The second alternative will be replacing in kind the four lane roadway that exists today with the addition of widened pedestrian accommodations.
- Craig went over the University Drive alternative layout inset.
  - It was presented that this alternative is expected to operate acceptably from a traffic operations standpoint. See attached handout.
  - Most of the group was generally ok with this alternative.
  - The alternative would likely need an additional two feet of space to the turn lane in.
  - Concern over how to delineate the lane to keep people from driving down the opposing lanes.
  - Bob Walton said that the DOT had previously expressed some reservation with this option due to safety, design implications, physical barrier needs, lane balancing, and sight distance concerns. This background should be included in the project report documentation when this University Drive alternative is documented. ACTION
- The group supported the other layout components from University Drive to 2nd Street.
- At 2nd Street the group asked if southbound dual left-turn lanes could be reviewed again. The southbound volumes at this location are significant during the peak hours/periods. In order to widen the sidewalk on the west side of the road the approach would need to be reduced to one lane. Given the significant peak hour volumes this is not anticipated to operate well. SRF will analyze this condition. **ACTION** 
  - NOTE: After the SRC, during review of this alternative, SRF would propose to reduce the inner median space protecting the bridge piers and install a vertical barrier (concrete jersey barrier or guardrail) to obtain the additional space desired to widen the sidewalk on the west side of the 2nd Street. This is being proposed as an alternative because the one lane southbound approach will not operate acceptably. Should be able to recover 2 feet at a minimum.
- Also look into representing the southbound right turn within the intersection rather than with the large corner radius that is shown southbound approaching the intersection. Removing this large corner radius would maybe open an opportunity to provide better access to the northwest corner parcel. SRF will review the feasibility of this right-turn lane change (physically, considering a large truck needing to turn here). ACTION

## 10. Adjournment

- Meeting adjourned
- Tentatively set the next SRC meeting to host a Brown Bag planning session in mid May (May 23rd). The PIM meeting will be conducted this same day.

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SRF No. 0117482



## **RECORD OF MEETING**

#### Fargo-Main Avenue Corridor Study

Project Overview Meeting #1 Planning Commissioners Wednesday, May 23, 2012 11:30 P.M. - 1:00 P.M. Fargo Public Library

Metro COG staff and their project consultant team, SRF Consulting Group, Inc., presented the Fargo Main Avenue Corridor Study from 25th Street to the Red River at a Planning Commission Brown Bag meeting on May 23, 2012. The meeting was held at the Fargo Downtown Public Library. The purpose of the meeting was to present the corridor study existing conditions, issues, and preliminary alternatives to City staff, the Planning Commission, and the City Commission to inform them and receive feedback on the current progress of the corridor study.

Below is a general record of comments received at the public input meeting as recorded by project staff present at the meeting.

- Commissioner Williams keep in mind the potential for a skyway connection across Main Avenue at the parking ramp.
- Jan Ulferts Stewart (Fargo Planning Commission)
  Where is the nearest senior center to downtown if it will no longer be in the Depot building? At the Fargo Hjemkomst Center; the Depot location did not have high attendance.
- Commissioner Wimmer likes the sub-alternative to make 7th Street right-in/right-out.
- Received general support from Planning and Commissioners for the median across 7th Street to facilitate the right-in/right-out.
- Layout Note: show the signal icon at 4th Street and keep the parking lot shown for the Depot parking.
- Bob Stein and Jeremy Gorden the westbound right-turn lane from Main Avenue to northbound Broadway widens the roadway for pedestrian crossings creating an impediment. While it provides benefit for the motoring public when a train is blocking the Broadway crossing.
- Rick Lane reviewed the 4th Street Underpass alternative(s) that was/were reviewed. High cost and significant impacts versus low usage with close proximity to 2nd Street underpass were factors against this alternative.
- Mark B could an access be added to the west side of the BNSF property? Yes, there is nothing in the design that would preclude an access from being added at this location; however, it would be right-in/right-out given the proposed median through this area.
- The University Drive counterflow lane configuration was presented and discussed.
  - Mark B are we showing something with this alternative that we are not prepared to build and implement?

- Bob W. has a concern with the 4-1 split and the unique left-turn this creates to go north. The intersection was built five years ago for future traffic volumes. How have the volumes changed between then and now?
- Ben D. expressed concern for how to plow this piece of roadway. If the City moves forward with this alternative the state may recommend taking US 81 off the regional system, which would need FHWA approval.
- In review of the alternatives between 18th Street and University Drive, Mark B. said that another alternative that should be shown is only taking from the south side of Main Avenue and leaving the north side intact.
- The north side property acquisitions would cost less and impact less property owners.
- A number of people said that they did not like any of the alternatives between 18th Street and University Drive (2-3 people).
- Jan Ulferts Stewart– asked if we could consider putting the pedestrian facilities behind the parcels on the north side of Main Avenue. There was some additional discussion about the pros/cons of doing this, i.e., safety, routing, connecting to other facilities, etc.
- Meeting adjourned near 1 p.m.

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## **RECORD OF MEETING**

#### Fargo-Main Avenue Corridor Study

Study Review Committee Meeting #5 Thursday, August 23, 2012 1:00 P.M. - 4:30 P.M. Metro COG Conference Room

Members in Attendance: Wade Kline Peggy Harter Joe Nigg Jim Hinderaker Bob Stein Jeremy Gorden Kristy Schmidt Ben Dow April Walker RC Stein Bob Walton Michael Johnson Craig Vaughn Rick Lane Representing: FM Metro COG FM Metro COG FM Metro COG City of Fargo – Planning City of Fargo – Planning City of Fargo – Engineering City of Fargo – Engineering City of Fargo – Public Works City of Fargo – Public Works City of Fargo Fargo Planning NDDOT – Fargo District NDDOT SRF Consulting Group, Inc.

#### **11. Welcome and Introductions**

Peggy Harter provided an overview of the meeting purpose and introductions were made. The purpose of the meeting was to review the evaluation of alternatives and to gain SRC consensus on recommended alternatives/subalternatives for the Main Avenue corridor.

#### **12. Review of Public Comments**

Craig Vaughn summarized the comments received at the small group and public input meetings on May 23rd, as well as the brownbag to City of Fargo staff, Planning Commission, and the City Commission on the same day. The SRC also discussed the comments received at the August 23rd small group meeting.

#### 13. Review Corridor Alternative Evaluation Matrix

The following discussion details SRC comments on the alternatives.

#### Main Avenue Segment 1

• The SRC recommended Alternative A.

## Main Avenue Segment 2

- Jeremy Gordon asked about putting a 4-lane roadway back in with a sidewalk on one side of the roadway.
  - Complete a cost estimate of this **ACTION**
- April has there been a legal opinion on which side of the road should be acquired?
- Rick Lane the cost of ROW acquisition is based on assessed value; this needs to be clearly defined in the final report. ACTION
- April the value of the land arguments and future lawsuits may argue that the north side is being taken to benefit the south side.
- Could we work with the people that need to be relocated and put them right back on the corridor?
- The 3-lane option is a bad ideas according to Bob Walton
  - Wade Kline do we know how a 3-lane will operate?
  - The corridor study *must* have a narrative that discusses the 3-lane being considered and dismissed for various reasons; planning level thresholds; traffic operations, safety for sidestreet gap acceptance, etc. **ACTION**
- Wade commented that we are not considering other management options (transit, TDM, etc.); instead, we are trying to engineer our way out of the congestion issue with capacity.
- We need a narrative for the 4-lane with sidewalk on one side of the roadway and cost compared to Alternative D.
  - What are the lighting impacts, building impacts and proximity to the roadway edge?
- April noted that the City might be changing their access policy to only 1 access per property – any second access will require a permit.
  - Don't show access on layouts it will be a detail determined during design.
     ACTION
  - Remove all access points from being shown; remove the "close" boxes too.
     ACTION
  - We cannot determine how much access is being improved.
- Add narrative regarding median consideration between 18th Street and University Drive.
   ACTION
- Bob reiterated that NDDOT does not support the University Drive Counterflow.
- The SRC would like to leave the University Drive Counterflow on for further study.
  - Rick noted that this alternative will have a more qualitative rank/discussion about it, and it will receive a *low rank*. ACTION
- Remove the University Drive image from the A, B, C, and D layouts and show as its own Subalternative. ACTION
- The Group performed an impromptu ranking of the four alternatives between 18th Street and University Drive (don't drop any alternatives until the NDDOT Management has reviewed it):
  - 1. A 37
  - 2. C 29
  - 3. B 22
  - 4. D 20

## Main Avenue Segment 3

- Add in parking west of 7th Street
  - Will get about 3-4 stalls **ACTION**
- Move the pedestrian crossing west of 10th Street ACTION
- Do not eliminate parking between 7th and Broadway in Alternative A.
   It needs to stay in the study from the state's perspective.
- Make sure we write up the skywalk such that it would need to be a separate City of Fargo project. ACTION
- Add the 10th Street/US 81 signage boxes and call outs **ACTION**

#### Main Avenue Segment 4

• The 2nd Subalternative was favored by the SRF over Alternative A.

#### 14. Aesthetic Design Concepts

- Decorative lighting make it consistent with current theme between University Drive and 18th Street and more pedestrian scale east of University Drive.
- Add color concrete in the 2' utility/hard scape.
- Add a gateway feature at 18th Street.
- Incorporate low perennials.
- There was a question on enhanced roadway paving.
- Carry the back of curb colored paver/pavement from Broadway to Main Avenue.
- Parking lot screening is questionable.
- The 10' boulevard areas should be mostly grass and trees.

#### 15. Next Steps

• The next SRF meeting will take place between December and February.

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Appendix B: Traffic Forecast Summary



## DRAFT MAIN AVENUE/TH 10/TH 75/CENTER AVENUE TRAFFIC FORECAST SUMMARY

Metro COG August 29, 2011 SRF No. 0117482

## INTRODUCTION

This summary was developed to help identify the long-term growth trends along the Main Avenue and TH 10/TH 75/Center Avenue corridors in the Fargo-Moorhead metropolitan area. The following information summarizes the different methodologies that were reviewed in order to arrive upon a year 2035 daily traffic forecast growth rate.

## HISTORICAL ANNUAL AVERAGE DAILY TRAFFIC VOLUMES

First a review of historical annual average daily traffic (AADT) volumes throughout the study corridors was completed to better understand traffic volume growth trends within the past decade. Table 1 shows the historical AADT volumes at key locations along the Main Avenue and TH 10/TH 75/Center Avenue corridors as well as the average percent change per year (compounded annual rate). Note that the historical AADT information was obtained from readily available NDDOT and MnDOT resources.

	Annual Av							
Location	(	% Growth/Year						
	Year 2000	Year 2005	Year 2010					
Fargo (Main Avenue)								
River Crossing	23,400	17,700	22,355	-0.5%				
West of Broadway Drive	18,800	16,200	18,655	-0.1%				
West of University Drive	25,700	19,500	21,190	-1.9%				
Location	Vear 2001	Vear 2005	Vear 2009	% Growth/Vear				
Location		1 cai 2005	1 cai 2007	70 010 will/ 1 cai				
TH 10 (Main Avenue)								
River Crossing	22,500	23,400	20,600	-1.1%				
4th Street to TH 75	17,300	18,000	16,300	-0.7%				
TH 10/TH 75 Common Section								
Main Avenue to Center Avenue	10,600	11,700	11,600	+1.1%				
8th Street to 11th Street	9,300	11,300	10,900	+2.0%				
TH 10 (East of TH 75 North)								
West of 28th Street	23,100	21,700	21,500	-0.9%				
West of Main Street	13,000	11,800	14,600	+1.5%				
TH 75								
7th Avenue to 12th Avenue	14,800	15,600	15,300	+0.4%				
12th Avenue to 20th Avenue	16,500	17,300	18,300	+1.3%				
Center Avenue (West of 8th Street)								
4th Street to 7th Street	7,300	8,000	7,700	+0.7%				

## Table 1Historical Traffic Volume Comparison

Based on the data shown in Table 1, average daily traffic (ADT) volumes have fluctuated with a range of growth (positive and negative) throughout the study corridors over the past decade. The following bullets further summarize the area traffic growth patterns (again, note that all stated percentages are compound annual growth rates):

- ADTs along Main Avenue (in Fargo) and TH 10 (in Moorhead west of 8th Street) have decreased by approximately 0.1 to 1.9 percent per year over the past 10-year period
- ADTs along the common section of TH 10/TH 75 from Main Avenue to 11th Street have increased by approximately 1.1 to 2.0 percent per year over the past 10-year period
- ADTs along TH 10 (east of TH 75) range from negative 0.9 percent per year to positive 1.5 percent per year over the past 10-year period
- ADTs along TH 75 (south of Main Avenue) have increased by approximately 0.4 to 1.3 percent per year over the past 10-year period
- ADTs along Center Avenue (west of 8th Street) have increased by approximately 0.7 percent per year over the past 10-year period

Although ADTs along Main Avenue have been decreasing over the past 10 years, a closer review of area river crossings was completed to determine if the volume changes are a result of less travel or area travel pattern shifts. Table 2 shows the historical AADTs and percent change per year for the Main Avenue, NP Avenue/Center Avenue, 1st Avenue, and Interstate 94 (I-94) river crossings. This comparison indicates an overall growth in traffic across the river as a whole within the past 10 years.

Location	Annual Ave	rage Daily Tra ehicles per da	Change	Percent Change per	
	Year 2000	Year 2005	Year 2010	(+/-)	Year
1st Avenue	16,600	16,600	12,290	-4,310	-3.0%
NP Avenue/Center Avenue	9,400	7,600	4,100	-5,300	-8.0%
Main Avenue	23,400	17,700	22,355	-1,045	-0.5%
Interstate 94	49,800	62,000	64,000	14,200	+2.5%
Total	99,200	103,900	102,745	+3,545	+0.35%

# Table 2Historical River Crossing Traffic Volume Comparison

While the majority of the river crossing growth is associated with the I-94 crossing and the decreases crossing the river are through the downtown area, the fact remains that traffic crossing the river is showing slight growth (although trending to the south).

## METRO COG LONG RANGE TRANSPORTATION PLAN (LRTP)

Next the Metro COG *Long Range Transportation Plan* (December 2009) year 2035 traffic forecasts were reviewed to identify how traffic is projected to grow (or not) from a regional model perspective. The traffic forecasts for years 2015 and 2035 were compared in an effort to identify growth along the study corridors. The study corridor segments were outlined and the year 2015 and 2035 traffic volumes recorded with the annual growth rate over the 20-year period computed (see Figure 1 in the attachment).

A high-level review of this information indicates similar growth trends to the historical AADT comparison; ADTs are decreasing along Main Avenue in Fargo and generally increasing on TH 10/TH 75/Center Avenue. The LRTP indicates Main Avenue growth ranges from 0.0 percent to negative 1.0 percent, averaging negative 0.4 percent. TH 10 in Moorhead ranges from 0.0 percent to 1.6 percent, with an average of 0.6 percent. TH 75 in Moorhead ranges from 0.0 percent to negative 0.4 percent (given the two data points). Considering all growth observed throughout the study corridors an average annual growth rate of 0.13 to 0.17 percent was calculated.

The LRTP also provided population growth forecasts for the communities in the region. For the 25-year period from 2005 to 2030, the City of Fargo is projected to grow at an annual rate of 1.3 to 1.5 percent, the City of Moorhead at 1.5 to 1.7 percent, and the region at 1.6 to 1.9 percent. While these growth rates are substantially higher than the roadway growth rates described previously, future development maps in the LRTP show this growth is expected to occur outside of the currently developed areas of the region, along the fringes of the existing metropolitan area.

A number of conclusions may be drawn from these observations. First, the population growth rate forecasts for Fargo and Moorhead are approximately 1.5 percent annually. This indicates the highest level of growth that might reasonably be expected on study area roadways. Second, average growth rates based on forecast traffic volumes were found to be near zero, and in some cases negative. This indicates that while population growth is projected in the region, the increases in forecast traffic are expected to occur in the surrounding areas, rather than the developed areas of the study corridors.

## OTHER TRAFFIC FORECAST EFFORTS

Year 2035 traffic forecasts were developed for a portion of the study area in 2008 within downtown Fargo. These forecasts were completed as part of the *NP Avenue and 1st Avenue North Corridor Development Plan*. The findings of this study indicated a similar decreasing volume trend along Main Avenue. Although the study recognized this trend, year 2035 traffic forecasts were developed using an approximate 0.5 percent growth rate per year (compounded annually). An increasing growth factor was used because this study was/is looking to identify redevelopment opportunities in the downtown area that will invigorate the area and increase overall "traffic" within the downtown area. In addition, Metro COG is conducting a land use study whereby they are reviewing potential redevelopment opportunities throughout the Fargo-Moorhead area, and along the study corridors discussed herein, to determine where development/redevelopment opportunities are possible. Traffic forecasts associated with this set of corridor studies should take this effort into account when projecting potential growth for the area.

## FORECAST RECOMMENDATION

Based on this review, it is recommended that a positive 0.5 percent growth rate (compounded annually) be used in development of future year 2035 traffic volumes along the Main Avenue and TH 10/TH 75/Center Avenue study corridors. While the traffic maps in the LRTP show little to no growth in the 2015 to 2035 period, decreases in traffic volumes compared to existing conditions are not expected to be sustainable over a 20 year period.

Additionally, the recommended growth rate is still lower than the population growth rates expected in the region. Therefore, intermediate growth for the area in the range of 0.5 percent is appropriate for the built environment surrounding the study corridors, taking into account both the traffic volume changes and population growth shown in the LRTP.

It should be noted that Figure 1 in the attachment identifies both the compounded annual growth rate and the linear growth rate for each of the corridor segments. In most instances the difference between the two is negligible.

An argument could be made to use a higher growth rate in particular growth areas or areas where historical trends indicate higher growth. In this event the growth rate should not exceed population growth projections.

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Attachment 1

## Fargo Main Avenue & MnDOT TH 10/75 Corridors

## Growth Rate Forecast Development

## Figure 1

Location		Transportation Plan Published Volumes			
Fargo Main Avenue					
Segment	2010 AADT	2015 Forecast	2035 Forecast	Annual Growth Rate (Compound)	Annual Growth Rate (Linear)
25th St to University Dr	22,600	20,100	19,343	-0.2%	-0.2%
University Dr to 10th St	19,000	16,600	13,467	-1.0%	-0.9%
10th St to Broadway	18,700	14,100	13,007	-0.4%	-0.4%
Broadway to 2nd St	15,200	13,800	13,912	0.0%	0.0%
2nd St to Red River	22,400	18,700	16,245	-0.7%	-0.7%
<u>TH 10 Corridor</u>					
	2010	2015	2035	Annual	Annual
Segment	AADT	Forecast	Forecast	Growth Rate	Growth Rate
	20 000	0.000	0.000	(Compound)	(Linear)
1st St to TH 75 (south)	20,600	8,000	8,863	0.5%	0.5%
TH 75 (SOUTH) to 11th St	16,900	5,700	7,508	1.4%	1.6%
11th St to 14th St	10,900	10,500	10,586	0.0%	0.0%
14th St to TH 75 (north)	15,200	10,300	10,413	0.1%	0.1%
24th St to CD 0	21,600 17 E40	27,800	50,879 28,601	0.5%	0.0%
CP 0 to CP 4E	14,540	20,300	28,001	0.4%	0.4%
CR = 10 CR = 43	12,000	23,000	23,422	0.4%	0.4%
7th St to TH 336	10,600	19,000	22,009	0.8%	0.8%
TH 75 Corridor					
Segment	2010 AADT	2015 Forecast	2035 Forecast	Annual Growth Rate (Compound)	Annual Growth Rate (Linear)
Main Ave to 4th Ave	16,300	11,300	Not Shown	(   / / / / / / / /	· /
4th Ave to 12th Ave	17,200	14,100	13,002	-0.4%	-0.4%
12th Ave to 20th Ave	18,300	20,400	20,234	0.0%	0.0%
		Average Growth Rate		0.13%	0.17%

## Population Growth Rate Forecast

			<u>Annual</u>	<u>Annual</u>
Location	<u>Year 2005</u>	<u>Year 2030</u>	Growth Rate	Growth Rate
			(Compound)	<u>(Linear)</u>
Fargo	97,610	135,050	1.3%	1.5%
Moorhead	34,230	49,110	1.5%	1.7%
Region	174,369	257,160	1.6%	1.9%
Appendix C: Corridor Land Dynamics & Subject to Change Analysis

# Corridor Land Dynamics & Subject to Change Analysis Main Avenue (25<sup>th</sup> St to Red River)

Document: Draft (December 2011), FINAL (February 2013)

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**Introduction.** As part of the Fargo Main Avenue Corridor Study (2<sup>nd</sup> St to 25<sup>th</sup> St) this memorandum has been prepared to analyze specific corridor *land dynamics*; with the overarching intent to establish a *subject to change analysis* and *future land use plan* which will be used to inform corridor study decision making relative to roadway design concepts, right-of-way (issues/needs), multi-modal integration and planning horizon full-build conditions.

#### History.

**Front Street.** Until 1955 and for nearly 100 years previous, this segment of Main Avenue was originally recognized as Front Street and served as one of the first <u>major business</u> and automobile thoroughfares in the Metropolitan Area. The name change was initiated by a group of business owners in the area based on archived articles published by the Fargo Forum; however it is important to note that Front Street is an east/west roadway and should be labeled as an "avenue" per Fargo's street standardization ordinance of 1887. Further, the timing is rather curious as it coincides with a bill signed by President Eisenhower which created the National System of Interstate and Defense Highways and the Federal Aid Highway Act of 1956 which appropriated the funding for the freeway system.

**US Highway 10.** This segment of the Main Avenue corridor is part of US Route 10, formalized in 1926 per the Federal Aid Act of 1925. The US Highway numbering system was a collaborative effort between the American Association of State Highway Officials (AASHO) and the Department of Agriculture's Bureau of Public Roads to standardize routes for mobility; with the network based on

primary intercity roads. US Route 10 was one of the original long haul highways which ran from Detroit Michigan to Seattle Washington; however, as the interstate system became a reality certain sections of US Highway were decommissioned or truncated. As I-94 was aligned and constructed, the segment of US 10 (Main Avenue) through the Fargo-Moorhead Metropolitan Area from Moorhead to West Fargo was decommissioned and designated as an 'Interstate 94 Business Route'.

The picture to the right shows Front Street circa 1940, looking west from Broadway. To note, two-lane road section with parallel parking on both sides of the roadway and center tracks for street cars. A semi-analogous land use pattern appears to carry through to the picture's horizon on the south side of Front Street; possibly to 9<sup>th</sup> Street or beyond.



Fargo - Front Street looking west from Broadway (approximately 1940)

**Applicability.** This memorandum is intended to analyze specific land dynamics with the principal objective to establish a *subject to change analysis* and ultimately a *future land use plan*. The subject to change analysis is defined as follows:

**Subject to Change Analysis.** From a land use and socioeconomic perspective, identification of stable properties versus potential transitional(ing) properties; thereby providing an opportunity to consider parcel level needs/issues juxtaposed with corridor design issues. Additionally, providing a mechanism whereby future growth can be quantified for impacts/opportunities respective to access, level of service (LOS), corridor capacity and land use/zoning policies.

**How will this analysis be applied?** The first question in regards to the *subject to change analysis* is whether the property is primed for redevelopment, improvements or expansion and whether the property is stable or unstable, based on a variety of characteristics which are detailed in subsequent sections of this memorandum. The second question relates to how these pockets or areas of instability

should transition to meet the vision of the City. This element will be conceptualized in the *future land use plan*; to be considered, developed and coordinated with Fargo's Comprehensive Plan and in conjunction with transportation decisions as set forth in the corridor study.

For <u>stable properties</u>, are there opportunities to work with the owner to re-arrange parking lots, signage, acquire ROW to facilitate implementation of corridor improvements? Are there improvements and decisions that would increase the productivity and viability of this corridor and adjacent parcels/neighborhoods from an economic development, business and community perspective?

For <u>unstable properties</u>, how should these parcels and/or aggregate areas transition to meet the vision of the city (i.e. land uses, transportation, architectural, etc.) and as important, what impacts (ROW, access, traffic operations, etc.) should be considered and/or addressed with the 'transportation' specific corridor alternatives?

The subject to change analysis will provide the framework for establishing the corridor future land use plan; and both components as a whole are intended to be used in harmony to inform transportation and traffic operation decisions pursuant to the Main Avenue Corridor Study as well as subsequent project level compatibility reviews (i.e. redevelopment, infill, permitting, etc.).

**Summary, 2007 Fargo-Moorhead Downtown Framework Plan Update.** In 2007, under the guidance of Maxfield Research Inc. the City of Fargo and City of Moorhead completed the Fargo-Moorhead Downtown Framework Plan Update (2007 Framework Plan). This document was prepared as an update to the 2000 Fargo/Moorhead Redevelopment Plan and the 1999 Fargo Renaissance Zone Redevelopment Plan. The 2007 update was developed under the broad vision to maximize the potential for complimentary growth between both downtown zones, establish a framework for an improved urban form/sense of place and to further focus improvements to increase market synergy and urban vitality while encouraging compact growth. The 2007 Framework Plan included a number of goals, objectives and 'next steps'; many of which have already been implemented or accomplished to some degree and/or many others that remain applicable and obtainable. Outlined below are a few of these goals and objectives that should remain at the forefront of discussion as transportation and operational decisions are made relative to Main Avenue in Fargo. It is important to note that a majority of these goals, objectives and **catalysts** are meant to improve the physical environment which will eventually catalyze public investment, revitalization and growth (consistent with a vision).

- 1. <u>Main Avenue as a Gateway</u>. Emphasis should be placed on consistency and connectivity to development in Moorhead; the corridor should be envisioned as a 'gateway' to Downtown and thereby access, walkability and the economic viability of the area is critical; leverage and extend the success of downtown onto Main Avenue; look for ways to improve connectivity between core Downtown and Island Park/Main Avenue areas.
- 2. <u>10<sup>th</sup> Street (north of Main Ave to RR underpass</u>). This component of the plan discusses the importance of infill development/redevelopment north of Main Avenue between 10<sup>th</sup> St N and University Dr. and the importance of support for continued NDSU campus development in this area. This concept would be consistent with market findings within the 2007 Framework Plan which strongly suggests that Fargo should focus on uses and catalyst projects that promote retail, housing stock variety and independent businesses. The document additionally notes that as the area transitions to a more 'destination oriented' feel the demand for housing, goods and services will significantly increase.
- 3. <u>Riverfront Development</u>. The 2007 Framework Plan discusses opportunities to further collaborate and capitalize on riverfront development and specific sites. Although these opportunities on the Fargo side are mostly applicable to civic uses and sites adjacent to 2<sup>nd</sup> St, the plan does note the importance of greenway, streetscape and physical environment connectivity on Main Avenue between both cities. Recent floods and efforts to increase flood protection in the Metropolitan Area has likely reduced the emphasis on riverfront development (at least in the short term).
- 4. <u>One Way Conversion</u>. Converting NP Avenue and 1<sup>st</sup> Avenue one-way pairs to two-way traffic has been a consideration within a number of studies over recent years. Recently, the City of Fargo has acted upon and concurred with a 2+1 alternative. The 2007 Framework Study notes that this conversion will improve Downtown wayfinding, create roads that are suited for all modes of travel while also enhancing the economic potential of these corridors and the Downtown core.
- 5. <u>Other</u>. In addition, the 2007 Framework Plan notes a series of smaller findings that should be considered as factors in determining the ultimate long range vision and implementation plan for Main Avenue. The plan discusses the importance of pedestrian connections and the strengthening of intermodal connections; however, one design parameter that is clearly stated reads: "Downtown should be built and designed to appeal to the pedestrian's experience first and foremost". Is Main Avenue considered a part and/or extension of Downtown? Other findings suggest the importance of diversity in uses, designing for all modes of transportation and ensuring that parking meets the needs of the desired vision but does not consume valuable 'developable' land.

In sum, the content and recommendations within the 2007 Framework Study remain applicable, especially as the City of Fargo and project partners consider the long term vision and alternatives for this important corridor.

**Demographics.** The following section establishes a *general* demographic overview for the Fargo-Moorhead Metropolitan Area and also sets forth a more detailed *micro* demographic overview for the corridor study area. The corridor sub-area is analyzed at the Census tract level as certain demographic, housing and socio-economic data is not available at lower block or block-group geographies.

<u>Metropolitan Demographic Overview</u>. The Fargo-Moorhead Metropolitan Statistical Area (MSA), which consists of Cass County ND and Clay County MN in its entirety, had a 2010 population of 208,777. More geographically specific and memorandum applicable (and as outlined in Figure 1) the urban area population reached 173,468 according to the 2010 decennial Census. Population, household and employment growth rates for Fargo and Moorhead have been strong over the last few decades, and remain strong as shown in trends between 2000 and 2010.

Figure 1.	Census Bureau (decennial)					McKibben Estimate				Census Bı	ireau		McK	ibben Est	imate
	Population Population Change Population Forecasts		Households 203		2035	Jobs									
City	1990	2000	2010	1990-2000	2000-2010	2015	2035		2000	2010	(McKibben)		2000	2010	2035
Fargo	74,111	90,599	105,549	22.20%	16.50%	112,870	142,740		39,268	46,791	61,347	1 [	77,502	90,010	117,860
West Fargo	12,287	14,940	25,830	21.60%	72.80%	27,840	28,870		5,771	10,348	12,079		6,061	7,623	8,955
Moorhead	32,295	32,177	38,065	-0.40%	18.20%	40,920	51,670		11,660	14,304	19,381		13,375	14,846	19,071
Dilworth	2,562	3,001	4,024	17.10%	34%	4,440	5,190		1,160	1,595	2,084		1,205	1,385	1,625
Urban Total	121,255	140,717	173,468	16.10%	23.20%	186,070	228,470		57,859	73,038	94,891		98,143	113,864	147,511
Rural Cass	16,479	17,599	18,399	4.50%	4.50%	22,430	29,580		6,276	10,799	11,578		3,310	3,295	3,614
Rural Clay	15,565	16,120	16,910	3.60%	4.90%	18,650	23,410		5,850	8,060	8,294		3,372	3,308	3,377
MSA Total	153,269	174,367	208,777	13.70%	19.70%	227,150	281,460		69,985	91,897	114,764		104,825	120,467	154,502

Source: US Census Bureau; 2006 McKibben Demographic Forecast for the Fargo-Moorhead Metropolitan Statistical Area

<u>Micro (sub-area)</u> <u>Demographic Overview</u>. As noted above, the following sub-area demographic analysis is based on Census 'tract' data. The analysis utilizes data from four (4) tracts which are directly contiguous to the segments of Main Avenue that are being considered as part of the corridor study, as further detailed within Map 1.0. It is important to note that these identified tracts do

not necessarily produce an accurate representation of the Main Avenue "trade area" and/or any other similar associations. The analysis is intended to establish a profile of important demographic variables which could play a role in helping to define a vision for the corridor and/or in further vetting certain alternatives for suitability. For a majority of the analyses below, tract level data is contrasted and compared to overall data stratification for the City of Fargo as a whole.

Data used within this micro analysis is a combination of the 2010 decennial Census and the 2006-2010 American Community Survey (ACS). The ACS figures are 'estimates' whereas the 2010 Census figures are 'official counts'; thereby specific attention should be given to sources and references throughout this document.

<u>Acreage</u>. Census Tracts 6, 7, 8.01 and 8.02 represent approximately 3,306 acres. Compared to City of Fargo these tracts comprise approximately 11% of incorporated acreage (30,752.53) within Fargo.

<u>Population</u>. The four Census tracts account for an estimated population of 14,899 per the 2006-2010 ACS. This represents

approximately 15% of the Fargo population as compared to the 2010 decennial Census population counts.



Source: US Census Bureau; Metro COG (2012)

#### Figure 2

Population by Tract				
Tract	Pop.			
Tract 6	5,338			
Tract 7	1,600			
Tract 8.02	3,035			
Tract 8.01	4,926			

Figure 2 (left) defines the population estimates by individual Census tract.

<u>Housing Occupancy and Tenure</u>. Based on 2006-2010 ACS data there are approximately 8,129 housing units within the boundaries of the four identified Census tracts. This represents approximately 17% of Fargo's housing unit stock which is estimated at 48,924 units. Data shown within Figure 3 (next page) appears to identify some minor variations between the stratification of units within these Census tracts as compared to the city as whole. From a tenure perspective, owner-occupied housing units within the City of Fargo account for approximately 45% of the units while owner-occupied units within the study sub-area account for only 34% of the occupied housing units. Additional detail is outlined within Figure 3 and 4 (next page).

Source: 2006-2010 ACS

#### Figure 3

Housing Type _ Sub Area Tracts					
	<u>Units</u>	<u>% of Total</u>			
Total Housing Units	8,129	n/a			
Occupied Housing Units	7,695	94%			
1 unit detached	2,663	32%			
1 unit attached	215	3%			
2 units	414	5%			
3 or 4 units	466	6%			
5 to 9 units	824	10%			
10 to 19 units	1,090	13%			
20 (+) units	2,145	26%			
Mobile	312	4%			

	Housing Type _ City of Fargo						
		<u>Units</u>	<u>% of Total</u>				
	Total Housing Units	48,924	n/a				
	Occupied Housing Units	46,681	95%				
	1 unit detached	17,943	37%				
	1 unit attached	4,054	8%				
	2 units	850	2%				
	3 or 4 units	1,901	4%				
0	5 to 9 units	3,190	7%				
	10 to 19 units	5,258	10%				
	20 (+) units	14,719	30%				
	Mobile	1,009	2%				

Housing Tenure				
	<u>Units</u>	<u>% of Total</u>		
Total Housing Units (Tracts)	8,129	n/a		
Occupied Housing Units	7,695	n/a		
Owner Occupied	2,626	34%		

total	Housing Tenure				
IIUN		<u>Units</u>	<u>% of Total</u>		
ousing	Total Housing Units (City of Fargo)	48,924	n/a		
ų.	Occupied Housing Units	46,681	n/a		
	Owner Occupied	21,007	45%		

Source: 2006-2010 American Community Survey (ACS)

Housing Stock Value. The following tables represented in Figure 4 (right) identify the value of owner-occupied units within the study sub-area. To note, these values are self-reported and do not necessarily reflect market, assessed or any other value; however, for the purposes of this analysis the data does provide some insight into unit characteristics within the sub-area as compared to the remainder of the city. Of interest, 41% of owner-occupied homes within the study sub-area are valued at \$99,000 or below and nearly 88% are valued at \$149,999 or below; which is extremely inconsistent with data at the city level. With consideration to the above figures, the median housing unit value for an owner-occupied housing unit within the study sub-are is \$153,575 whereas overarching city data shows a median value at \$146,600. Other highlighted details ascertain that Census Tract 8.01 includes 11 owner-occupied housing units which are valued at 1 million or more, which represents approximately 20% of this housing market within Fargo (located within a Tract that represents only 1.3% of incorporated city acreage).

100% of 'occupied

Income / Median Household Income (MHI). The following table (Figure 5) shows median household income, mean household income and per capita income by Census Tract contrasted against the city as a whole, per 2006-2010 ACS data. In sum, household incomes and individual incomes are well below the median and mean thresholds for Fargo.

#### Figure 5

Income						
Description	Median HH Income	Mean HH Income	Per Capita Income			
Tract 6	Tract 6 31,250		15,787			
Tract 7 16,875		30,595	25,769			
Tract 8.01 30,673		47,357	27,374			
Tract 8.02	Tract 8.02 33,198		19,355			
Tract (Aggregate)	27,999	38,790	22,071			
City of Fargo	41,558	58,857	26,997			

Source: 2006-2010 American Community Survey

Figure 4

100% of 'occupied

Housing Unit VALUE _ Sub Area Tracts					
VALUE	<u>Units</u>	<u>% of Total</u>			
Owner Occupied Units	2,626	n/a			
less than \$50,000	266	10%			
\$50,000 to \$99,999	835	31%			
\$100,000 to \$149,999	961	37%			
\$150,000 to \$199,999	301	11%			
\$200,000 to \$299,999	170	7%			
\$300,000 to \$499,999	31	1%			
\$500,000 to \$999,999	51	2%			
\$1,000,000 or more	11	1%			

Median (dollars)

Housir

VAI

g Unit VALUE _ City of Fargo						
UE	<u>Units</u>	<u>% of Tot</u>				
upied Units	21,007	n/a				
\$50,000	1,039	5%				
\$99,999	2,946	14%				

\$153,575

Owner Occupied Units	21,007	n/a
less than \$50,000	1,039	5%
\$50,000 to \$99,999	2,946	14%
\$100,000 to \$149,999	7,063	34%
\$150,000 to \$199,999	4,718	22%
\$200,000 to \$299,999	3,536	17%
\$300,000 to \$499,999	1,347	6%
\$500,000 to \$999,999	283	1%
\$1,000,000 or more	75	1%

Median (dollars) \$146,600

Source: 2006-2010 ACS

Multi-Family (Apartment) Vacancy Rates. Apartment vacancy rates are based

on a quarterly survey of apartment owners and managers in the Metropolitan Area. According to the survey prepared September 1, 2011 by Appraisal Services Inc.; trends show that apartment vacancies continue to increase in both the greater Metropolitan Area and the City of Fargo. Specific to surveyed areas that align with corridor study sub-area tracts, there appears to be a gradual increase in multi-family vacancy rates within the study sub-area. Vacancy rates applicable to the sub-area are shown at 5.6% in 2009 and 6.0% in 2010 as compared to 5.1% in 2009 and 5.8% in 2010 for Fargo.

Fargo 2006 Growth Plan: "A City of Neighborhoods" and a "Connected City". As denoted in the adopted 2006 Growth Plan the City of Fargo 'core' area has primarily developed as a series of neighborhoods. The plan describes a "neighborhood" as "the unit of the city where we most often find a connection with other people and create real community". Although the growth plan primary focuses on outward expansion and the transition of uses in these areas; the plan does outline the existing neighborhood structure (see Map 2), a majority of the more recognized neighborhoods which are situated adjacent or near the Main Avenue corridor. The corridor study sub-area encompasses or intersects four of these distinct neighborhoods inclusive of: Madison/Unison Park, Jefferson/Carl Ben, Hawthorne/Roosevelt and Downtown. The 2006 Growth Plan notes that a majority of daily needs should be met within these neighborhoods which "indicates a commitment to planning for neighborhood commercial and retail uses adjacent to each neighborhood". Further, the plan highlights the importance of a connected city, or in other words "one that takes every opportunity to link separate parts of the city together into a cohesive whole".

Analysis from this Section to REMEMBER. The following provides a brief summary of important analysis points from this *DEMOGRAPHIC* section of the memorandum.

1. The study sub-area population represents approximately 15% of the overall population for the City of Fargo which is significant considering the study sub-area acreage and its proximity to major corridors;

#### Map 2



Source: 2007 Growth Plan (City of Fargo)

- 2. Housing types in this sub-are are currently more oriented towards multiple-unit dwellings (2 to 19 units), accommodate a lower owner-occupied percentage and median/mean 'housing unit' income than Fargo as a whole; however, the median home 'value' is above the median value for the city (which to a degree is bolstered by the rather large percentage of homes with a value above \$500,000 in this sub-area);
- 3. Multi-family (apartment) vacancy rates have slowly increased within the study sub-area over the past two years;
- 4. The applicable segment of this Main Avenue Corridor Study (2<sup>nd</sup> St to 25<sup>th</sup> St) is directly adjacent to a number of core neighborhoods and both directly/indirectly serves the transportation, service, retail and economic needs of these populations.

**Existing Conditions.** This section outlines a series of existing condition details which are intended to provide insight into existing land use patterns adjacent to the corridor and analysis respective to zoning classifications and what is exactly considered permissible under the current Fargo *Land Development Code*.



Source: Metro COG (2012)

displaying the data in a more readable form; and to provide a mechanism in which transitions and patterns are more discernible. Based on Map 3 it appears that two predominant transition zones (a and b) are currently present on the corridor. Existing land use patterns from 25<sup>th</sup> St to 15<sup>th</sup> St are more industrious (light, heavy, manufacturing, automobile, etc.) whereas from 15<sup>th</sup> St to 8<sup>th</sup> St patterns become more commercial/retail orientated and residential uses additionally become more noticeable. From (approx.) 9<sup>th</sup> St to 4<sup>th</sup> St the existing land use patterns are more consistent with a downtown area and then quickly transition to a more industrial and less dense form east of 4<sup>th</sup> St to the Red River (note Riverfront Development objectives on pg. 2 per 2007 Framework Study). Land uses on 1<sup>st</sup> Avenue S are largely transitional from the more industrial type uses on the north side of the roadway to a mix of residential and industrial uses on the south side of the road (especially west of University Dr.).

Map 4 (right) displays existing ownership throughout this stretch of the Main Avenue corridor. From this map, it is evident that a majority of the parcels are privately held (red). Of interest is the rather small footprint of railroad properties (gray) although railroad 'leased' properties do occupy some important stretches of the corridor between (see yellow) 15th St and 18th St. Publicly held properties are more focused towards the core downtown area and are inclusive of facilities such as the Ground





Map 4

Transportation Center (GTC), Island Park, Park District Administrative Offices and parking facilities (both surface and gradeseparated). In terms of the railroad leases (yellow) these properties are owned by the BNSF Railway and any entity wanting to use the land must obtain a temporary use agreement or some type of short-term or long-term lease. Although the exact terms of these agreements are unknown for the four (4) properties adjacent to Main Avenue, as noted above, these parcels occupy a large percentage of acreage that directly abuts Main Avenue and ownership structure of these parcels could play an important role in any transitions or use patterns shifts on this roadway, if any.

Zoning Classifications and Land Development Code Considerations. Excluding broad goals, strategies, objectives and policies outlined within the 1995 Comprehensive Policy Plan and 2006 Growth Plan, the city does not have an established future land use plan for this area or corridor sub-area. Land use decisions are referenced to the city's zoning map (see Map 5) which external to the Downtown Mixed-Use District (DMU) classification; the zoning map essentially represents an existing land use map. Although this may be the city's intent, typically, zoning maps should be configured to directly reflect the city's vision relative to the sub-area based on documented goals, strategies, objectives and policies. Outlined below are a few goals/objectives pursuant to the 1995 Comprehensive Policy Plan. To note, a summary of applicable elements from the 2006 Growth Plan are detailed on pg. 5 of this memorandum.

- Downtown Future Land Use and Development (Policy Letter 108). "Retail and commercial development in Fargo has currently focused more on the edge of the City or in new areas, with public financing of improvement and massive investments into corridors." The city should "encourage downtown development of all types...including full range of residential housing" and "As a vision for future use and development of the downtown area emerges, diverse and quality development is needed to ensure its success as the mixed-use center of the community".
- 2. Condition of the Periphery of the Downtown (Policy Letter 113). The city "...should define redevelopment areas in and <u>around</u> the central business district and categorize those areas..." based on identified needs, inclusive of redevelopment, conversion and preservation.
- 3. *Downtown Plan* (Policy Letter 403). The city should **"facilitate an Area Plan.....to guide land use development decisions"** relative to land use transitions, stimulation of commercial enterprises/investments, transportation and neighborhood revitalization.
- 4. *Improve Housing Stock* (Policy Letter 210). The city should **"identify areas of diminishing condition and target those areas with more aggressive programs..." to ensure and encourage protection of established residential neighborhoods.**

Map 5 (right) displays the city's zoning map as applicable to the study corridor and Figure 6 establishes a general framework of what exactly is permissible under the existing Fargo Land Development Code. Considerations include: a synopsis of permitted/conditional uses and allowances relative to height, FAR/density, setbacks, parking regulations and access/driveway spacing standards. The study corridor currently shows the Downtown Mixed-Use District (DMU/purple) and the General Commercial (GC/red) as the two predominant zoning designations in the study sub-area. The GC designation covers a large percentage of acreage between 25th St and University Dr while the DMU designation accommodates virtually all study related parcels east of University Dr.



#### Figure 6

			Land Development Co	ode Specifics			
			Zoning Dist	rict / Classification			
<u>Category</u>	Multi-Dwelling MR-2	Multi-Dwelling MR-3	General Commercial GC	Limited Commercial LC	Limited Industrial LI	Downtown Mixed-Use DMU	
District Description	Primarily intended to accommodate higher density than single family districts and may include attached, detached or multiple unit structures.	Primarily intended to accommodate higher density than single family districts and may include attached, detached or multiple unit structures.	The GC District is structured to accommodate a full range of commercial uses inclusive of retail, office and services.	The LC District is primarily intended for low intensity retail, office, sales and service uses.	The LI District is primarily intended to accommodate light industrial uses inclusive of manufacturing, wholesale, warehouse and distribution facilities.	This District is designed to accommodate virtually any use ranging from commercial, cultural, governmental and residential.	
Location Specifics	1 <sup>st</sup> Ave S (southside) between 18 <sup>th</sup> St and University Dr.	1 <sup>st</sup> Ave S (southside) between 16 <sup>th</sup> St and 10 <sup>th</sup> St	Large % of parcels between 25th St to University Dr (mostly on the northside of Main Avenue)	Main Ave (northside) 14 <sup>th</sup> St to University Dr and a few spots on 1 <sup>st</sup> Ave S (southside)	Large % of parcels on Main Ave (southside) from 25 <sup>th</sup> St to University Dr.	University Dr to Red River	
Permitted & Conditional Use Summary	MR-2 and MR-3 allow the full range of residential uses and religious institutions as use by right and a variety of conditional (or w/ use specific standards) inclusive of daycare facilities, group living, health care and community service. The only difference between MR-2 and MR-3 is variation in the applicability of day care standards.	MR-2 and MR-3 allow the full range of residential uses and religious institutions as use by right and a variety of conditional (or w/ use specific standards) inclusive of daycare facilities, group living, health care and community service. The only difference between MR-2 and MR-3 is variation in the applicability of day care standards.	Beyond differences in dimension standards (see columns below) the differences between these districts from a permitted use perspective are more discrete. Some of the more important characteristics are outlined below:         Residential Uses: All four Districts allow the assortment of residential housing units with the exception of mobile home parks.         Retail/Sales/Service: These uses are permitted within all four Districts.         Industrial, Manufacturing, Production, Warehouse/Freight, Wholesale: Mostly conditional uses within the DMU and GC Districts and permitted uses within the LI District. These uses are not permitted in the LC District.         Adult Entertainment: Not permitted in the DMU or LC Districts whereas they are permitted (subject to use-specific standards within the GC and LI Districts.         Y       Vehicle Repair and Service: Permitted in all four districts; however, use specific standards apply in the DMU and LC Districts.         Y       Storage Facilities: Self-service storage facilities are permitted uses within the GC and LI District.         Y       Storage Facilities: Self-service storage facilities are permitted uses within the DMU District.         Mining: Mining (i.e. extraction of mineral or aggregate from the ground for off-site use) is a permitted use in the LI District.				
Height	1 to 3 stories (maximum 45 feet)	1 to 5 stories (maximum 60 feet)	n/a	60 feet unless residential protection standards apply	n/a	n/a	
FAR/Density	20 du/acre	24 du/acre	n/a	n/a	n/a	n/a	
Minimum Front Setbacks	25 feet	25 feet	20 feet	10 feet	20 feet	0 feet	
Parking Regulations	1.25 per efficiency; 2.0 per 1-bedroom or larger *	1.25 per efficiency; 2.0 per 1-bedroom or larger *	rr Generally range from 1 per 200 square feet to 1 per 500 square feet to 1 per 500 square feet depending on use type use type				
Access / Design Spacing Standards	Collector or higher designations	Collector or higher designations; particularly when adjacent to arterial roadways	shared and/or limited access onto minor arterial or principal arterial roadways (min. spacing of 600 feet between driveways	shared and/or limited access onto minor arterial or principal arterial roadways (min. spacing of 600 feet between driveways	shared and/or limited access onto minor arterial or principal arterial roadways (min. spacing of 600 feet between driveways	shared and/or limited access onto minor arterial or principal arterial roadways (min. spacing of 600 feet between driveways	
Max. Building Coverage	35%	35%	85%	55%	85%	100%	

Land Dynamics Analysis. As previously noted in the Applicability section, this memorandum is intended to determine the threshold for stable and transitioning properties through the analysis of specific land dynamics. The overall memorandum concept is formatted such that once the *subject to change analysis* is completed it will show pockets or areas (likely aggregated) of instability; then, these pockets/areas can be analyzed relative to the corresponding city vision and can be conceptualized into a *future land use plan* (see following sections).

Appraised Value. Pursuant to the North Dakota Century Code (see Chapter 49-17 and 57) the city assessor is required to value or appraise property at its <u>full</u> and <u>true</u> value (or referenced as appraised value) each year. According to 57-02-01 true and full value is defined as the "value determined by considering the earning or productive capacity, if any, the market value, if any, and all other matters that affect the actual value of the property to be assessed." As set forth in the City of Fargo Assessment Department Annual Report (dated April 13, 2010) for the 2010 assessment year the total appraised value for the City of Fargo was \$8,463,544,000 with a taxable value at approximately \$323,119,516 after applied assessment ratios, exemptions and property class multipliers per statute. Parcels within the study sub-area calculate to an approximate total appraised value of \$181,492,700 or about <u>2%</u> of the overall appraised value for Fargo. Parcels shown within Map 6 represent approximately 344 acres or 1.1% of city incorporated limits. Map 6 (below) displays appraised value (2010) by parcel under specific stratification ranges which are intended to identify parcels with an appraised value that is significantly less than the appraised value for a similar assessment class. For comparison purposes and to ensure value differentiation is properly considered per assessment classifications, Map 6 utilizes 2012 median figures for residential and commercial parcels. In this circumstance, the dataset is nonsymmetrical and therefore the median will show a more accurate result. As a whole, the City of Fargo has median appraisal value of \$142,500 and a mean appraised value of \$266,976 whereas the study sub-area has 503 parcels with a median appraisal value of <u>\$112,400</u> and a mean appraised value of \$360,810.

What does this mean? Since it is difficult to compare the sub-area appraised value percentage with data pursuant to the DEMOGRAPHIC section due to differences in applied geographies; the data shows that for a 2 mile corridor in the heart of the city with a large percentage of the properties zoned as commercial/industrial, the market share at 2% signifies that a number of underperforming lots exist with lower relative appraisal values as compared to other areas of the city (per median value) mixed with a number of parcels that have very high appraised values.



#### Map 6

<u>Land v Improvement Value</u>. A critical element to any *subject to change analysis* is a comparison (by percentage) of appraised land value to appraised improvement value, specific to individual properties. Typically, if the land value is greater than the improvement (or building[s]) value then it is a fairly clear indicator that the property is underutilized and suitable for

Source: Metro COG (2012)

redevelopment or re-investment. Map 7 (below) identifies land value v improvement value under three distinct stratifications. To note:

- 1. Of the 503 parcels contained within the boundaries of the study sub-area, 109 parcels have land values in excess of improvement values. These 109 parcels account for approximately 96 acres (or 28% of study area) and an appraised value of \$10,104,600 (or 5.5% of study area).
- 2. Of the 503 parcels, 201 have land to improvement values at \$50,000 or less. <u>These 201 parcels account for approximately 139 acres (or 40% of study area) and an appraised value of \$17,291,100 (or 9.5% of study area)</u>.



Map 7

Source: Metro COG (2012)

Parcel Size. A majority of the parcels in excess of 1 acre are located east of 7th St and west of University Drive. In downtown areas larger lots generally have a higher potential for redevelopment or re-investment as they are easier for developers and investors to work with. Of the 503 parcels within the study area, 60 parcels are greater than 1 acre in size and these properties account for 160 acres (or 47%) of the study area. Map 8 (right) identifies parcels in excess of 1 acre (brown). Contrasted against Map 6 (appraised value) and Map 7 (Land v Improvement Value) there appears to be some correlation between these larger parcels and lower appraisal values and lower land to improvement value ratios, especially areas west of

Map 8





University Drive. As shown within the existing ownership map (see pg. 6, Map 4) a large percentage of the property within the study area is held under private ownership, a factor that can impact the ability to assemble properties in areas with groupings of parcels under 1 acre (i.e. 18<sup>th</sup> St S to 7<sup>th</sup> St S, mainly south side of Main Ave).

Right-of-Way Encroachments. This ROW encroachment data is based strictly on parcel data, GIS data and 2011 aerial photography and is not based on survey accurate data. Therefore, Map 9 (right) should be reviewed as a 'possible' ROW encroachment map and used as a planning tool only, supplemental to the other data contained within this memorandum. According to the data, there are 78 parcels (or 15% of the 503 parcels) within the study sub-area with a possible ROW encroachment. What does this mean exactly, and what does it mean relative to the context of this analysis? In this circumstance, the ROW encroachment would refer to a structure, improvement (above grade) or a building on

#### Map 9



Source: Metro COG (2012)

private property which is not completely contained within the parcel boundaries and thus encroaches into public roadway rightof-way. Encroachments into public ROW are somewhat common (especially on older corridors) and generally speaking do not usually create an issue. Encroachments of this nature usually exist due to surveying error, illegal subdivision of property, construction without permits or in areas of cities where corridors are older (i.e. survey tools were not as accurate and not as much attention was given to building placement as corridors were platted and developed). In terms of this analysis, the ROW encroachments provide another layer of technical detail that can be used to identify possible opportunity areas and parcels that are *subject to change* but they can also serve as an important planning analysis tool as transportation alternatives are considered, reviewed and vetted. Based on Map 8, a majority of the encroachments appear in the blocks between University Dr and 4<sup>th</sup> St adjacent to both sides of Main Avenue.

#### Property Condition

Assessment. To provide further understanding of property investment levels on Main Avenue this memorandum utilizes assessor derived property condition assessments to provide insight into the condition of improvements at the parcel level. According to the City of Fargo Assessment Department the property condition attribute is a mechanism to determine how well the property is maintained. There are six (6) property condition classifications within the Fargo system, as defined in detail below. To note, Map 10 does not include any properties under the "poor condition" classification. In addition, the property condition

#### Map 10



Source: Metro COG (2012)

assessment is only applicable to properties directly adjacent to the Main Avenue corridor and does not include the entirety of the study sub-area pursuant to other maps within this memorandum.

- 1. No Condition Assigned. Property that has no improvements, is state assessed and/or is exempt.
- 2. Fair Condition. Majority of the structure is in need of immediate repair to make the property functional.
- 3. Average Condition. Property is maintained to an extent. Some deferred maintenance or minor repair is needed.
- 4. *Good Condition.* All property characteristics are well maintained, many having been overhauled and repaired as soon as they show any signs of deterioration.

5. *New Condition.* This class is reserved for structures built within four (4) years of appraisal date and assumes the improvement is consistent with the condition of a new improvement. An older, renovated property could fall within this classification.

As shown in Map 10, there are only a few properties adjacent to the Main Avenue corridor which have a property condition of 'new' or 'good' and only five (5) which fit under the 'fair condition' definition (arrows); as a majority of the properties are classified as 'average'. Parcels assigned 'no condition' do not have any improvements, are state assessed (ex. railroad properties) and/or have an exempt status; many of which happen to be railroad properties in this sub-area.

Analysis from this Section to REMEMBER. The following provides a brief summary of important analysis points from the *EXISTING CONDITIONS* and *LAND DYNAMICS ANALYSIS* sections of the memorandum.

- There are two dominant land use transition areas on the corridor. The first zone is noticeable between 15<sup>th</sup> St and 8<sup>th</sup> St where uses begin to transition from more industrial/heavy commercial uses to light commercial and some retail. The second zone is apparent just west of 4<sup>th</sup> St where the downtown quickly transitions to a more industrial and less dense form.
- 2. A majority of the properties within the study sub-area are privately held and the larger parcels (1+ acre or more) are generally west of University Dr. These parcels west of University Dr tend to show lower appraisal values and lower land to improvement values which is likely due to some of the applied industrial uses.
- 3. The Downtown Mixed-Use (DMU) District and the General Commercial (GC) District are the two predominant zoning designations in the corridor sub-area. Although four (4) different non-residential zoning districts are present within the corridor sub-area, there are only subtle differences relative to certain permitted uses (i.e. industrial uses, adult entertainment, vehicle service/repair, storage facilities and mining).
- 4. According to appraisal data the sub-area (representing 1.1% of city incorporated acreage) accounts for 2% of the total appraised value of the city; however, based on median appraisal data there is a large quantity of underperforming parcels (201 of 503 study sub-area parcels, representing nearly 50% of the sub-area acreage have a land to improvement value of \$50,000 or less).

**Subject to Change.** As a summation of the data and analysis provided within the previous section (*land dynamics analysis*) the following map represents the composite *subject to change analysis*. As previously noted, the analysis is intended to show pockets or areas of instability based on a detailed review of existing land uses, ownership patterns, appraised value, land to improvement value ratios, parcel size, property condition and input per questionnaires completed at early public meetings. It is important to acknowledge that the *subject to change* map is mostly aggregated at the block level and is not necessarily parcel specific. Therefore, parcels may be included in "opportunity areas" or areas identified as "unstable"; however, individual parcels within the blocks may be "stable".

#### Map 11



Two distinct 'opportunity' areas are outlined within Map 10, denoted as opportunity area 'a' and 'b'.

Opportunity Area 'a'. Opportunity area 'a' primarily encompasses acreage adjacent to Main Avenue and 1st Ave S between 18th St S and 8th St S, and also acreage adjacent to 10th St N between 1st Ave N and 2nd Ave S. As discussed in previous sections of this memorandum, blocks within this area accommodate a high percentage of industrial/heavy commercial uses and from a mobility standpoint they are strictly automobile focused (see questionnaire summary for additional information). Blocks between University Dr and 8th St S as well as larger parcels adjacent to 10th St N appear to be in great position to attract and accommodate increased density (both residential and commercial) and could be logical extensions of the significant investment, improvements and resurgence of the recognized limits of downtown Fargo (Broadway to 8th St S on the southside of Main Ave). Existing land use transitions on 1st Ave S (north side to south side) between light industrial/commercial uses to residential uses are rather rugged and unpolished (especially University Dr to 18th St) and/or are underutilized from a density and building coverage perspective (specifically University Dr to 8th St). To note, according to the draft GO2030 Comprehensive Plan (see Map 12, right) Main Avenue is identified as a "active living" corridor and additionally a majority of the sub-area is included within a "strategic density area"; which suggests the area will absorb additional infill/redevelopment and will become unique, dense and multi-modal.





Source: draft City of Fargo GO2030 Comprehensive Plan, Big Ideas Map

*Opportunity Area 'b'*. This opportunity area is a little trickier to quantify as the data only identifies the area on the north side of Main Avenue, essentially between 4<sup>th</sup> St and 2<sup>nd</sup> St, as 'unstable'. From Broadway east on Main Avenue the downtown feel evaporates quickly, although a few parcels on the north side have structures with some character. Although parcels on the south side of Main Avenue appear productive per the analysis, these are large parcels with uses that include a gas/service station, strip mall (w/ a majority of the structure setback 175+ feet) and a large (internally focused) apartment housing complex. As submitted on pg. 2 of this memorandum, the 2007 Framework Plan strongly suggests the corridor (i.e. this entrance point to the city) should be envisioned as a 'gateway' whereby access, walkability and economic viability are the critical components. The question remains is the opportunity or vision in this area an extension of downtown whereby redevelopment and re-investment further capitalizes on the 15,000 to 22,000 vehicles per day (vpd) on this corridor, combined with increased connectivity to Moorhead's downtown area to increase access for other modes of transportation and to ultimately initiate a corridor scheme that is not one dimensional in respect to mobility, as currently exists?

**Future Land Use Plan.** With the *subject to change analysis* complete, the question remains: how do these pockets or areas transition to meet the vision of the city for this corridor? Using elements (i.e. goals, objectives, strategies), key findings and recommendations from the 1995 Comprehensive Policy Plan, *draft* GO2030 Comprehensive Plan, 2006 Growth Plan, 2007 Framework Plan and to a degree the Fargo Land Development Code; a general vision has been formulated through this memorandum and *subject to change analysis* which is conceptualized within the following Future Land Use Plan (see Map 13, below). Future land use designations have been based on zoning district designations and their associated characteristics as currently configured and set forth within the Fargo Land Development Code.

**Intended Use.** As clearly established in the *APPLICABILITY* section of this memorandum, the Future Land Use Plan is intended to be used in cooperation with the *subject to change analysis* to inform transportation and traffic operation decisions pursuant to the overarching Main Avenue corridor study. Additionally, the future land use plan should also be used, at minimum, as a guide to further inform: (a) short and long range land use decisions; (b) economic development principles, objectives and strategies; (c) opportunities for public/private investment; (d) incentive programs; and (e) any necessary land development code revisions.

<u>Alternatives</u>. For the purposes of this memorandum, two future land use plan concepts have been developed. The second concept is more representative of a sub-alternative as it sets forth a divergence in use type on the north side of Main Avenue between (approximately) 18<sup>th</sup> St and University Dr. The open space concept is constructed to establish improved connectivity and use of the existing greenway/trail system which links the Main Avenue corridor to Jefferson and Carl Ben neighborhoods. Three of the seven properties identified as future "open space" are leased railroad properties (see Map 3, pg. 6). Further, this corridor ROW pinch point appears to be an appropriate location if the city was intending to identify a more formalized and announced entrance/gateway into the "Downtown", assuming use transitions and downtown expansion as envisioned in this memorandum.

#### Key Considerations, Explanations and Details.

*Why extend the DMU District from University Dr to 23^{nd} St S.* This is an extremely important question as it forms the framework of the future land use plan, from two perspectives. First, extending the DMU district [or creating a new/similar district] from University Dr to  $23^{rd}$  St (mainly adjacent to the Main Ave corridor) will signify that the city has a long range vision for the corridor which will constitute incremental land use change with the intent of increasing

connectivity and consistency with the existing Downtown core; with the basis for these changes firmly established within the *subject to change analysis* as well as other adopted/referenced planning studies. Secondly, from a technical angle, the DMU district is the most flexible district in regards to permitted and conditional uses. The existing zoning district for many of these parcels is Light Industrial (LI) or General Commercial (GC). Consistent with these districts, the DMU district allows industrial uses (i.e. warehouse, manufacturing, production, freight, wholesale, etc.) as conditional use and this process will provide the city with a little more flexibility respective to the intensity and impact of these uses; which is critically important to facilitate any meaningful change on the corridor. The only other option would be the Limited Commercial (LC) district which does not allow industrial uses. Further, under the DMU district self-storage facilities would not be permitted (use allowed under GC and LI districts) and would eliminate potential inconsistent uses such as adult entertainment (subject to use-specific standards in GC and LI; not permitted in LC) and mining/mineral extraction (permitted in LI as a conditional use but not allowed in GC) while also requiring use-specific standards for vehicle repair/service (permitted in GC and LI without the standards). As summarized in the zoning permitted use table on pg. 7 of this memorandum, the four districts (DMU, GC, LI, LC) allow the assortment of residential housing units and retail, sales and services with the major differences and rationale outlined above.

The DMU District and Maximum Building Coverage and Parking Requirements. The only major concern or issue is a few of the dimensional standards within the DMU district may be somewhat inconsistent or incompatible with the realities of any possible 'future' redevelopment or investment on the corridor, especially west of University Dr. Pursuant to the land development code, the DMU district sets forth a maximum building coverage at 100% and parking requirements are exempt. Regardless of cited goals/objectives to establish an "active living" street or more balanced corridor, it appears unrealistic to assume these dimensional standards would relate accordingly to the context of a redeveloped corridor. In sum, there may need to be an overlay or secondary dimensional standards for parcels proximal and/or west of University Dr; which is always dependent to a degree on the level of consideration given to on-street parking on the corridor.

*How do the changes apply by zone district?* As previously noted, the two major districts adjacent to the Main Avenue corridor are the GC and LI districts. Outlined below is a brief summary of what the district transitions would mean from a dimensional and use perspective. For other district comparisons, see pg. 7 (permitted use summary) and pg. 7 (existing City of Fargo zoning district map)

#### Changes from GC to DMU

- Increased allowance for maximum building coverage from 85% (GC) to 100% (DMU);
- Adult entertainment would not be permitted in the DMU district;
- Use-specific standards for vehicle repair and vehicle service would apply in the DMU district, which are basically written in city code to limit the size of the operation;
- Storage facilities would not be permitted in the DMU district.

#### Changes from LI to DMU

- Increased allowance for maximum building coverage from 85% (LI) to 100% (DMU);
- Mining/mineral extraction would not be permitted in the DMU district;
- Adult entertainment would not be permitted in the DMU district;
- Use-specific standards for vehicle repair and vehicle service would apply in the DMU district, which are basically written in city code to limit the size of the operation;
- Storage facilities would not be permitted in the DMU district.

#### SEE FUTURE LAND USE PLAN FOLLOWING PAGE

#### Map 13



Source: Metro COG (2012)

**Questionnaire Summary.** In coordination with corridor study early public input meetings (November 2011) a series of small group meetings were held with landowners, tenants and interested persons along Main Avenue. The meetings were utilized to facilitate discussion on the following points and more importantly to establish an understanding of:

- 1. Current business operations and/or use of the property;
- 2. Projected future business operations or use of property;
- 3. Issues and needs associated with current traffic patterns/operations on study corridors;
- 4. Corridor conditions relative to bike/pedestrian access, ROW, vehicular access, etc.

Although these early focus group meetings were unfortunately lightly attended, some important information, issues and needs were gleaned from the discussions and from the associated questionnaire. The questionnaire was distributed to property owners and tenants abutting the study area with the intent that it would serve as notice for the meetings and also provide an opportunity for those individuals unable to attend a forum in which comments, feedback and information could be submitted.

**Questionnaire Results**. Only seventeen (17) completed surveys were returned to Metro COG, which is unfortunate especially given the complexities and importance of this corridor. However, the returned surveys did identify and shed some insight into certain issues while also highlighted a few ideas.

*Mobility.* Question 7 on the survey asked how customers and staff access the business, with options split between personal vehicle, transit, walking and bicycle. All 17 surveys noted that individuals access their business by personal vehicle whereas only 2 recognized transit and 5 recognized bicycle use.

*Parking.* Of the 17 respondents, 10 noted that existing parking met the needs of their business while 5 stated that existing parking did not meet their needs. It is also interesting to note that 4 respondents specifically identified the need for on-street parking.

Access. According to the 17 respondents, for the most part there is adequate access (i.e. openings, driveways, etc.) to parcels and businesses on Main Avenue. Related to access, a number of respondents mentioned on-street parking and parking availability as an issue (see *parking*, above).

Transportation. Comments arising from the 17 respondents relative to transportation include:

- Need for center turn lane and/or turn lanes at specific locations;
- Afternoon peak volumes create issues at Main Ave and 25th St intersection;
- Pedestrian safety is a major issue especially considering vehicle speeds on the corridor;
- Inadequate curb and snow removal space;
- NP Avenue and 1st Avenue should be better utilized to reduce congestion;
- Access to the front of businesses is critical and should be improved;
- Need more pedestrian traffic and this should be a priority.

Ideas. The following ideas or suggestions were submitted by survey respondents:

- Grade separated overpass for pedestrians to cross Main Avenue and the railroad tracks;
  - Outdoor pedestrian spaces (i.e. skating rink, plaza, open space, etc.)

#### References.

City of Fargo 2006 Growth Plan (Atelier Heamavihio)

2007 Fargo-Moorhead Downtown Framework Plan Update (Short Elliott Hendrickson, Inc.; Camiros, Ltd; Maxfield Research Inc. and Metro COG)

City of Fargo Land Development Code, Effective Date February 17, 1998

City of Fargo Assessment Department Annual Report, Dated April 13, 2010

1995 City of Fargo Comprehensive Policy Plan

Quarterly Report on Apartment Vacancies for the Fargo-Moorhead Metropolitan Area, Dated September 1, 2011 (Appraisal Services, Inc.)

2011 Fargo-Moorhead Metropolitan Profile (Metro COG)

2010 Census and 2006-2010 American Community Survey

http://www.cityoffargo.com/CityInfo/FargoHistory/

http://www.lileks.com/fargo/index.html

http://www.fargo-history.com/

Appendix D: Design Guidance Matrices

	Fargo - Main Avenue Design Guidance													
Comidou Elemente	Seg	ment 1-25th St to 18th	h St	Segm	ent 2-18th St to Univ	ersity Dr	Segme	nt 3-University Dr to 8	8th St	Segment 4-8th St to 2nd St				
Corridor Elements	Existing Conditions	Potential Design	Selected Design	Existing	Potential Design	Selected Design	Existing	Potential Design	Selected Design	Existing	Potential Design	Selected Design		
		Guidance	Guidance	Conditions	Guidance	Guidance	Conditions	Guidance	Guidance	Conditions	Guidance	Guidance		
Functional Class	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA	PA		
Speed (Design/Posted)	30/30 mph	30/30 mph	30/30 mph	30/30mph	30/30 mph	30/30 mph	30/30 mph	30/30 mph	30/30 mph	30/30 mph	30/30 mph	30/30 mph		
Section	5 lane, continuous	5 lane, continuous	Maintain 5 lane	4 lane, no left	5 lane, continuous	5 lane, continuous	5 lane,	5 lane, continuous	5 lane,	4 lane, with left	4 lane with left	5-lane continuous 2-		
(ROW/lanes/parking)	2-way left turn lane	2-way left turn	Continuous 2-way	turn lanes	2-way left turn	2-way left turn	continuous 2-way	2-way left turn	2-way left turp	turn lanes at Broadway Dr	turn lanes at	from 8th to 4th St		
		lane		University Dr	require building	require building		laites	lane	bioadway bi		maintain 4-lane with		
					acquisition	acquisition						left turn lane 4th to		
												2nd St		
Intersection Geometry	Main Ave & 25th St:	RR underpass	Main Ave & 25th	Main Ave &	Building &	Main Ave &	Main Ave & 12th	No major	Main Ave &	Main Ave & 8th	Improve signal	Main Ave & 8th St:		
(ROW/lanes)	(single channelized-	creates constraints	St: (extend	University Dr, SB	geometry limits	University Dr	St.: (single left	intersection	12th St:	St: (single left	timing &	(maintain single left		
	right all directions,	for northbound/	westbound dual	one-way: (single	ability to add	(develop EB left	WB);	geometry	(maintain single	WB/EB, single	coordination at	WB/EB, single right		
	double left	southbound turn	left turn lanes	right eastbound	southbound right	turn lane on Main	Main Ave & 10th	problems	left WB);	right SB);	4th Street.	SB); Main Ave & 7th		
	easthound single	bay distances	develop dedicated	/ southbound, single left	turn lane capacity	left turn lane &	(single right NB)		10th St NB	St · (no turn		could be stringed out		
	left northbound/		westbound right	westbound /		convert to single	Main Ave & 9th		one-way:	lanes)		through this		
	southbound);		turn lane, maintain	southbound)		NB through lane	St: (single left		(maintain single	Main Ave &		intersection, remove		
	Main Ave & 21st		single channelized-			("counter flow"),	WB/EB)		right NB); Main	Broadway Dr:		signal); Main Ave &		
	St/18th St: (single		right in all			convert SB through			Ave & 9th St:	(single left		Broadway Dr:		
	left westbound/		directions,			lane to shared			(maintain single	WB/EB, single		(develop single WB		
	eastbound)		maintain double			through- right,			IELT WB/EB)	right SB); Main Ave & 4th		right turn lane,		
			westbound/eastbo			right FB/SB, single				St: (single left all		WB/FB, maintain		
			und, single			left WB/SB)				directions, single		single right SB); Main		
			northbound/			. ,				right NB); & GTC		Ave & 4th St: (single		
			southbound); Main							underground		left all directions,		
			Ave & 21st St/18th							parking		single right NB); &		
			St (single left							entrance/ exit		GTC underground		
			westbound/							St: (single left &		parking entrance/		
			eastboundy							single free-rights		alternative not		
										all directions)		feasible		
												Main Ave & 2 <sup>nd</sup> St:		
												(maintain single left &		
												single free-rights all		
												directions); tighten		
Signal Spacing/	½ mile	1/2 mile	1/2 mile	½ mile	½ mile	<sup>1</sup> / <sub>4</sub> mile	¼ mile	¼ mile	1⁄4 mile	¼ mile – RR	¼ mile – revise	<sup>1</sup> / <sub>4</sub> mile – implement		
Coordination	72 mile	72 mile	/2 111110	72 mile	/2 mile	72 mile	74 mile	74 mile	74 mile	preemption	signal timing to	signal timing changes		
										affects signal	better	to better		
										timing	accommodate	accommodate		
											preemption;	preemption; remove		
											assess need for	signal at 7th St		
Darking	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed	None allowed	Curbside parking	Signal at 7th St.	Curbside parking on		
raikiiig	None anowed			NOTE anowed	NOTE anowed	None anowed	None anowed	NOTE anowed	None allowed	on south side of	necessary	south side of Main		
										Main Ave. 8th to	necessary	8th St to Broadway Dr		
										5th St				
Access (primary,	Excessive, 9 times	300' (goal) for	Improve	Excessive, 9	300' (goal) for	Improve	Excessive, 9 times	300' (goal) for	Improve	Excessive, 9	300' (goal) for	Improve compliance		
secondary, private)	higher than	redevelopment	compliance with	times higher	redevelopment	compliance with	higher than	redevelopment	compliance	times higher	redevelopment	with access spacing		
	standard of 9	areas; 15%	access spacing	than standard of	areas; 15%	access spacing	standard of 9	areas; 15%	with access	than standard of	areas; 15%	guidelines		
	accesses per mile	reduction from	guidelines	9 accesses per	reduction from	guidelines	accesses per mile	reduction from	spacing	9 accesses per	reduction from			
		or 300-600' where		inite	or 300-600'			or 300-600' where	guidelines	inite	or 300-600' where			
		possible			where possible			possible			possible			

	Fargo - Main Avenue Design Guidance												
Corridor Flomonto	Se	egment 1-25th St to 1	.8th St	Segment 2-18th St to University Dr			Segm	ent 3-University Dr t	o 8th St		Segment 4-8th St to 2nd St		
Corndor Elements	Existing Conditions	Potential Design Guidance	Selected Design Guidance	Existing Conditions	Potential Design Guidance	Selected Design Guidance	Existing Conditions	Potential Design Guidance	Selected Design Guidance	Existing Conditions	Potential Design Guidance	Selected Design Guidance	
Rail Grade Separations	Underpass at 25th St	Maintain existing	Maintain existing	None	None	None	Underpasses at University Dr & 10th St.	Maintain existing	Maintain existing	Underpass at 2nd St	Review potential underpass at 4th St	Maintain existing underpass at 2nd St; 4th St underpass not feasible	
LOS (all 2035 info assumes signal timing optimization)	LOS A-C; D at 25th St (2011)	Improve LOS rating at key intersections, or at a minimum reduce degradation	Minimize LOS and per vehicle delay degradation	LOS C (2011)	Improve LOS rating at key intersections, or at a minimum reduce degradation	Improve LOS rating at key intersections and along this corridor segment	LOS A-C (2011)	Improve LOS rating at key intersections, or at a minimum reduce degradation	Improve LOS rating at key intersections and along this corridor segment	A-C (2011)	Improve LOS rating at key intersections, or at a minimum reduce degradation	Improve LOS rating at key intersections and along this corridor segment	
Jurisdiction	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	NDDOT	
Pedestrian/ADA	Sidewalks narrow sometimes obstructed	PROWAG compliant	PROWAG compliant; address existing pedestrian impediments	Sidewalks narrow, sometimes obstructed	PROWAG compliant	PROWAG compliant; address existing pedestrian impediments	Sidewalks narrow, sometimes obstructed	PROWAG compliant	PROWAG compliant; address existing pedestrian impediments	Sidewalks narrow, sometimes obstructed	PROWAG compliant	PROWAG compliant; address existing pedestrian impediments	
Bicycle	Intersecting bike facilities on 25th St & Jefferson West Park; parallel bike lanes on 1st Ave S	Planned parallel routes on 1st Ave S & 2nd Ave S; gaps identified on 1st Ave N	Due to ROW constraints & traffic volumes, use parallel routes for bicycle facilities; use way- finding signs where needed; fill 1st Ave N gap	None on Main Ave or parallel routes	Planned parallel route on 1st Ave S; gaps identified on 1st Ave N & University Dr	Due to ROW constraints & traffic volumes, use parallel routes for bicycle facilities; use way- finding signs where needed; emphasize use of University Dr RR underpass; fill 1st Ave N gap	None on Main Ave or parallel routes; high number of bike crashes at 10th St. & Main Ave	Planned parallel routes on 1st Ave S, NP Ave, & 1st Ave N	Due to ROW constraints & traffic volumes, use parallel routes for bicycle facilities; use way- finding signs where needed	Trails in Island Park & along Red River; limited bike access to Main Ave Bridge	Planned parallel routes on 1st Ave S, NP Ave, & 1st Ave N; gaps identified along Broadway Dr & 2nd St S	Due to ROW constraints & traffic volumes, use parallel routes for bicycle facilities; use way-finding signs where needed; emphasize use of Broadway Dr as a RR crossing; fill gaps on Broadway Dr & 2nd St S; use NP/Center Ave bridge to connect college campuses on either side of the Red River	
Transit Routes	Route 17 runs on a parallel roadway (3rd Ave N)	There is a documented interest in adding transit on Main Ave	Do not preclude future transit operations with roadway design	Routes 15 & 18 cross Main at University Dr with nearby transit stops; Route 17 runs on a parallel roadway (3rd Ave N)	There is a documented interest in adding transit on Main Ave	Do not preclude future transit operations with roadway design	Routes 14, 15, & 18 cross Main Ave at 10th St with nearby transit stops; Routes 13a, 13b, 14, 15, & 18 run on a parallel roadway (NP Ave)	There is a documented interest in adding transit on Main Ave	Do not preclude future transit operations with roadway design	Route 14 crosses Main Ave at 4th St with nearby transit stops; GTC is one block north of Main Ave; Routes 13a, 13b, 14, 15, & 16 run on a parallel roadway (NP Ave)	There is a documented interest in adding transit on Main Ave	Do not preclude future transit operations with roadway design	

	Fargo - Main Avenue Design Guidance												
Corridor Elements		Segment 1-25th St	to 18th St	Segment 2-18th St to University Dr			S	egment 3-University	Dr to 8th St	Segment 4-8th St to 2nd St			
	Existing Conditions	Potential Design Guidance	Selected Design Guidance	Existing Conditions	Potential Design Guidance	Selected Design Guidance	Existing Conditions	Potential Design Guidance	Selected Design Guidance	Existing Conditions	Potential Design Guidance	Selected Design Guidance	
ITS	Detection & CCTV at Main Ave & 25th St	High priority detection corridor & signal interconnect (2008 ITS Plan)	Incorporate vehicle detection & signal interconnect with each traffic signal in order to run a unified coordinated traffic signal system along Main Ave; in addition, include mainline detection between signals to determine congestion "hot spots"; where appropriate deploy video detection in conjunction with the traffic signal revisions to provide real time assessment of corridor operations; include pedestrian countdown timers with all signal revisions along the corridor; deploy DMS/CMS facing eastbound traffic to inform drivers of potential blocked RR crossing ahead	Detection at Main Ave & University Dr	CCTV at Main Ave & University Dr, high priority detection corridor, & signal interconnect (2008 ITS Plan)	Incorporate vehicle detection & signal interconnect with each traffic signal in order to run a unified coordinated traffic signal system along Main Ave; in addition, include mainline detection between signals to determine congestion "hot spots"; where appropriate deploy video detection in conjunction with the traffic signal revisions to provide real time assessment of corridor operations; include pedestrian countdown timers with all signal revisions along the corridor; deploy DMS/CMS facing eastbound traffic to inform drivers of potential blocked RR crossing ahead	None	High priority detection corridor & signal interconnect (2008 ITS Plan)	Incorporate vehicle detection & signal interconnect with each traffic signal in order to run a unified coordinated traffic signal system along Main Ave; in addition, include mainline detection between signals to determine congestion "hot spots"; where appropriate deploy video detection in conjunction with the traffic signal revisions to provide real time assessment of corridor operations; include pedestrian countdown timers with all signal revisions along the corridor	CCTV at Main Ave & 4th St & Broadway Dr	CCTV at Main Ave & 2nd St, high priority detection corridor, & signal interconnect (2008 ITS Plan); At-grade train detection at BNSF mainline & 8th St S, Broadway Dr, & 4th St S (2011 Traffic Operations Incident Management Strategy)	Incorporate vehicle detection & signal interconnect with each traffic signal in order to run a unified coordinated traffic signal system along Main Ave; in addition, include mainline detection between signals to determine congestion "hot spots"; where appropriate deploy video detection in conjunction with the traffic signal revisions to provide real time assessment of corridor operations; include pedestrian countdown timers with all signal revisions along the corridor	
TDM Strategies	None	Implement various TDM strategies	Seek cooperation of large employers such as Sanford, NDSU, Border States Electric, Vanity Corp., & ABC Seamless regarding adjusting shift start/end times, telecommuting, transit opportunities, etc.	None	Implement various TDM strategies	Seek cooperation of large employers such as Sanford, NDSU, Border States Electric, & ABC Seamless regarding adjusting shift start/end times, telecommuting, transit opportunities, etc.	None	Implement various TDM strategies	Seek cooperation of large employers such as the City of Fargo, Sanford, NDSU, & RDO Equipment Co. regarding adjusting shift start/end times, telecommuting, transit opportunities, etc.	None	Implement various TDM strategies	Seek cooperation of large employers such as the City of Fargo, Sanford, NDSU, & RDO Equipment Co. regarding adjusting shift start/end times, telecommuting, transit opportunities, etc.	

	Fargo - Main Avenue Design Guidance												
	Seg	ment 1-25th St to 18	3th St	Segment 2-18th St to University Dr			Segment 3-University Dr to 8th St			Segment 4-8th St to 2nd St			
Corridor Elements	Existing	Potential Design	Selected Design	Existing	Potential Design	Selected Design	Existing	Potential Design	Selected Design	Existing	Potential Design	Selected Design Guidance	
	Conditions	Guidance	Guidance	Conditions	Guidance	Guidance	Conditions	Guidance	Guidance	Conditions	Guidance		
Aesthetics	Ranges from	Provide context	CSD streetscape	Ranges from	Provide context	Significant CSD	Ranges from	Provide context		Ranges from	Provide context		
(including Art)	limited to none	sensitive design		limited to none	sensitive design	streetscape	limited to none	sensitive design	CSD streetscape	limited to none	sensitive design	CSD streetscape	
		streetscape			streetscape	included due to		streetscape			streetscape	·	
		treatments			treatments	ROW acquisition		treatments			treatments		
Land Use, Zoning, and	Land use-	General	General	Land use-	Downtown Mixed	Downtown	Land use-	Downtown	Downtown Mixed	Land use-	Downtown Mixed	Downtown Mixed Use	
Neighbornood	Industrial &	25th St to 22rd	Commercial from	Lonductrial	of Main Aver	wixed Use on	Transportation &	Nixed Use	Use District;	Transportation,	use District;	living corridor with	
LIIIKage	zoning-General	St Downtown	Downtown Mixed	zoning-General	Onen Space on	Main Ave: Open	Mixed Use:	promote as an	promote as an	Mixed Lise	promote as an	streetscape and gateway	
	Commercial &	Mixed Lise east	Lise east of 23rd	Commercial &	north side and	Space on north	zoning-	active living	corridor: undate	Industrial	corridor	treatments: vertical mixed use	
	Light Industrial	of 23rd St	St: promote as an	Light Industrial	notential gateway	side and	Downtown Mixed	corridor	lighting: promote	zoning-	contaol	(below grade parking ground	
		promote as an	active living		treatment:	potential	Use District		as a complete	Downtown		floor commercial, and office/	
		active living	corridor; update		neighborhood	gateway			street corridor	Mixed Use		residential uses above); grade	
		corridor	lighting; promote		connection via	treatment;			(consider all modes	District		separated pedestrian	
			as a complete		trail from	neighborhood			on Main Ave or			connection over BNSF main	
			street corridor		Jefferson & Carl	connection via			adjacent			line; update lighting; promote	
			(consider all		Ben	trail from			roadways);			as a complete street corridor	
			modes on Main		neighborhoods to	Jefferson & Carl			underperforming			(consider all modes on Main	
			Ave or adjacent		Main Ave;	Ben			parcels may			Ave or adjacent roadways);	
			roadways);		promote as an	neighborhoods			transition to higher			extension of downtown	
			underperforming		active living	to Main Ave;			densities			Fargo; increased connection	
			parcels may		corridor	promote as an			(identified as an			to Moorhead; identified	
			transition to			active living			opportunity area			opportunity area for	
			higher densities			corridor; update			for			redevelopment	
			(Identified as an			lighting;			redevelopment)				
			for			complete street							
			redevelopment)			corridor							
			redevelopmentj			(consider all							
						modes on Main							
						Ave or adjacent							
						roadways);							
						underperforming							
						parcels may							
						transition to							
						higher densities							
						(identified as an							
						opportunity area							
						for							
						redevelopment)							

Appendix E: Memorandum on Agency Coordination Process and Responses





# MEMORANDUM

TO: Members of the Transportation Technical Committee, Wade E. Kline, Executive Director, Metro COG Peggy Harter, Senior Transportation Planner, Metro COG

- FROM: Brian Shorten, SRF Consulting Group, Inc. Steve Peterson, SRF Consulting Group, Inc.
- DATE: August 23, 2012
- SUBJECT: FARGO MAIN AVENUE CORRIDOR STUDY AGENCY COORDINATION PROCESS AND RESPONSES

On behalf of the Fargo-Moorhead Metropolitan Council of Governments (Metro COG), SRF Consulting Group, Inc. initiated early coordination with local, state, and federal agencies regarding the Fargo Main Avenue Corridor Study.

This effort was completed to inform the preliminary corridor alternative evaluation process, especially in terms of the assessment of potential environmental impacts. Agency responses received to-date were considered in the alternative evaluation matrices.

Because of the planning nature of this corridor study, specific projects that evolve from this effort will need to advance through future design and appropriate environmental documentation. The agency responses received from this coordination will be used to inform further agency coordination and environmental documentation that will be undertaken during these steps of the project development process.

### **Agency Coordination Process**

A letter requesting agency review of the project was mailed to 54 local, state, and federal agencies on June 6, 2012 (see attachments). A 30-day review/comment period was provided to these agencies (responses were accepted for two months after the letter was mailed, since this was the start of the evaluation process):

- 1.702 Communications
- 2. AT&T
- 3. Burlington North Santa Fe Railroad
- 4. Cable-One
- 5. Cass County
- 6. Cass County Commission
- 7. Cass County Electric Cooperative
- 8. Cass County Emergency Management9. Cass County Highway Department
- 10. Cass County Sheriff's Department
- 11. CenturyLink
- 12. City of Fargo
- 13. Dakota Carrier Network
- 14. Fargo Moorhead West Fargo Chamber of Commerce
- 15. Fargo Park Board
- 16. Fargo Park District
- 17. Fargo School District No. 1
- 18. Federal Aviation Administration
- 19. Federal Emergency Management Agency (FEMA)
- 20. Federal Railroad Administration
- 21. Grand Forks Air Force Base
- 22. Greater Fargo-Moorhead Economic **Development Corporation**
- 23. Idea One
- 24. Indian Affairs Commission
- 25. Midcontinent Communications
- 26. Minot Air Force Base Cable Affairs Office
- 27. ND Aeronautics Commission
- 28. ND Association of Counties

- 29. ND Department of Emergency Services
- 30. ND Department of Health
- 31. NDDOT Cultural Resources Section
- 32. ND Forest Service
- 33. ND Game & Fish Department
- 34. ND Geological Survey
- 35. ND Parks & Recreation Department (NDPRD)
- 36. ND State Water Commission
- 37. ND Tourism Division
- 38. Soil Conservation Committee
- 39. Sprint
- 40. US Army Corps of Engineers 41. US Department of Agriculture
- 42. US Department of Commerce Economic Development Administration
- 43. US Department of Energy
- 44. US Department of Housing and Urban Development
- 45. US Department of the Interior Bureau of Indian Affairs
- 46. US Department of the Interior Bureau of Reclamation
- 47. US Environmental Protection Agency -Region 8
- 48. US Fish & Wildlife Service
- 49. US Geological Survey
- 50. US Representative Rick Berg
- 51. US Senator John Hoeven
- 52. US Senator Kent Conrad
- 53. Windstream
- 54. Xcel Energy

# Agency Response Summary

Seven agency responses have been received over the past two months. No agencies expressed environmental concerns that will need to be addressed in future stages of the project, including:

1. City of Fargo – Office of the Mayor: The response indicated that Mayor Walaker was concerned about rumored corridor study alternatives that include the removal of businesses and unnecessary widening of Main Avenue.

Immediately following the receipt of the June 21, 2012 dated response, the Office of the Mayor was contacted via Metro COG to address the Mayor's concerns and clarify misconceptions about the corridor study.

**2. FEMA:** FEMA's response indicated that if the project is located within a mapped Special Flood Hazard Area (SFHA), any development (in these areas) requires further consideration.

Per recommendation of the FEMA response, Ron C. Strand, the Floodplain Manager for the City of Fargo, was contacted to review the project information and provide appropriate guidance regarding the impact that the project might have to the regulations and policies of the National Flood Insurance Program. The Floodplain Manager's Office provided floodplain and floodway maps of the project area. These maps indicate that the project is located within a 100-year SFHA. However, Mr. Strand determined that no further guidance was necessary.

A Floodplain Ordinance Permit will need to be issued prior to the beginning of project construction.

**3. NDDOT – Cultural Resources Section:** The response notes that because the project could have cultural, environmental, and possibly even utility concerns or adverse effects on NDDOT highways, future project work should be coordinated with the District Engineer. Additionally, if any work needs to be done on highway right-of-way, appropriate permits and risk management documents will need to be obtained from the District Engineer, Robert Walton.

**4. North Dakota Geological Survey:** The response noted that the project is located in the Glacial Lake Agassiz Plain and is under as much as 100 feet of soft and expansive glacial-lake clays. Additionally, a link to several geologic mapping studies completed in the Fargo area by the North Dakota Geological Survey was provided (<u>www.dmr.nd.gov/ndgs</u>).

**5. North Dakota Parks and Recreation Department:** The North Dakota Parks and Recreation Department recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats are undisturbed in the project area.

A review of the project impact to Land and Water Conservation Fund (LWCF) project sites returned no potential for section 6(f) property acquisition. The closest section 6(f) property is Island Park, which is one block south of the Main Avenue corridor. Should the project require utility relocation on LWCF rlands, the agency must be consulted prior to any action taken.

The ND Natural Heritage biological conservation database was also reviewed. Based on the review, multiple plants and animal species of concern were identified within project area.

Rare plant species located within the project area include:

i. Downy Hawthorn (8 km precision – last observed in 1913)

- ii. Downy Phlox (8 km precision last observed in 1891)
- iii. Wolf's Spikerush (2 km precision last observed in 1901)
- iv. Zigzag Goldenrod (2 km precision last observed in 1937)

Rare animal species located within the project area include:

- i. American Peregrine Falcon (2 km precision last observed in 1990)
- ii. Greater Redhorse (100 m precision last observed in 1974)
- iii. Logperch (2 km precision last observed in 1982)
- iv. Northern Mockingbird (8 km precision last observed in 1946)
- v. Whip-poor-will (8 km precision last observed in 1919)
- vi. Yellow-billed Cuckoo (2 km precision last observed in 1964)

**6. US Department of the Army:** The response noted that all correspondence was forwarded to the U.S. Army Corps of Engineers St Paul District Office. Additionally, it noted that any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of Army authorization under Section 404 of the Clean Water Act.

For a detailed review of permit requirements, preliminary and final project plans should be coordinated with the Corps' Bismarck Regulatory Office.

**7. U.S Department of the Interior – Bureau of Indian Affairs – Great Plains Region:** The response noted that the agency has no objections to the project regarding environmental or cultural resource impacts on Tribal or individual landholdings for which the Bureau is responsible.

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Attachments: 1. Example Project Review Request Letter 2. Project Location Map

cc: Craig Vaughn, SRF Consulting Group, Inc. Rick Lane, SRF Consulting Group, Inc.

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SRF No. 7482.01



June 6, 2012

Mr. Bob Christensen Cultural Resource Specialist Cultural Resource Section ND Department of Transportation 608 E. Boulevard Ave. Bismarck, ND 58505-0700

# PROJECT NO.: N/A, PCN: N/A SOLICITATION OF VIEWS (SOV) LETTER FARGO MAIN AVENUE CORRIDOR STUDY CASS COUNTY

The Fargo-Moorhead Metro COG (Metro COG), in cooperation with the North Dakota Department of Transportation (NDDOT), the City of Fargo, and the Federal Highway Administration (FHWA), is conducting the Fargo Main Avenue Corridor Study, which extends from 25th Street to the Red River in the City of Fargo, North Dakota (see enclosed map). Metro COG has retained SRF Consulting Group, Inc. to complete this corridor planning study.

The study began with a preliminary assessment of the corridor to determine if sufficient transportation needs exist, or were anticipated in the future. Based on this analysis, an initial purpose and need statement was prepared, and subsequently, the Study Review Committee (SRC) determined that sufficient need was identified to justify continuation of the Main Avenue Corridor Study planning process.

Preliminary alternatives for corridor improvements have been developed, based on resultant data from the technical analysis, and comments received from early public input meetings. Some of the preliminary alternatives include: access closures and modifications, turn lane additions/improvements, ADA intersection improvements, changes in intersection control, ITS improvements, roadway alignment shifts, etc. It should be noted that the "roadway shifts" would result in property acquisition. Additionally, preliminary alternatives include improvements to bicycle/pedestrian facilities and future MAT Bus transit system modifications in the study areas.

The corridor study results will inform staff and elected officials, so that sound land use, economic development, and transportation planning decisions can be made in the short term, while longer term activities (e.g. preliminary design, Project Concept Report (PCR), etc.) are completed within the actual National Environmental Policy Act (NEPA) process. However, it is the position of FHWA, NDDOT, and Metro COG officials, based on direction from FHWA-ND Division (including guidance within 23 Code of Federal Regulations (CFR) 450 Appendix A), that this corridor-level planning study may identify, and may delete from future consideration, alternatives that do not meet the stated purpose and need for the project. Nonetheless, these

officials also understand that the corridor study may not select a "preferred alternative," as this determination can only be made during the NEPA phase of the project. Similarly, the Main Avenue Corridor Study will not determine the need for an Environmental Assessment or a Draft Environmental Impact Statement.

To ensure that all social, economic, and environmental effects are considered early in this project development process, we are soliciting your views and comments on the preliminary corridor improvements. We are particularly interested in any property that your department or agency may own or have an interest in and is adjacent to the proposed roadway improvements. We would also appreciate being made aware of any proposed development you may be contemplating along the proposed roadway facility. Such information will be helpful as we evaluate preliminary alternatives.

It is requested that any comments or information be forwarded to our office on or before July 6, 2012. If no reply is received by this date, it will be assumed that you have no comment on this project at this time.

If further information is desired regarding the proposed roadway improvements, please contact Steve Peterson of SRF Consulting Group, Inc. at 763-475-0010 ext. 6929 or <u>speterson@srfconsulting.com</u> in Minneapolis, Minnesota.

Sincerely, SRF CONSULTING GROUP, INC.

Steve loterson

Steve Peterson, AICP Senior Transportation Planner

SP/kn



# **Attachment 2: Project Location Map**

Appendix F: 4th Street Feasibility Review



# Fargo – Main Avenue Corridor Study 4th Street Underpass Feasibility

Metro COG February 8, 2012 SRF No. 0117482

An investigation was completed to review the feasibility of a grade-separated crossing at 4th Street similar to the existing underpass at University Drive. At the University Drive location the elevation of the railroad tracks is approximately 10 ft above Main Avenue. At the 4th Street location the track elevation is roughly the same as Main Avenue; therefore, in order to grade separate 4th Street and the railroad tracks not only would 4th Street need to be reconstructed from 1st Avenue to NP Avenue, but Main Avenue would also need to be reconstructed from approximately 500' east and west of 4th Street. This determination assumes the new railroad bridge would have a seven foot structure depth, the minimum clearance of 4th Street under the bridge would be 16 feet-6 inches and the maximum profile grade to lower 4th Street would be 5 %.

A number of properties would need to be acquired due to the grade change and lack of site access from Main Avenue and 4th Street. This includes the building just south of the railroad on the east side of 4th Street, the gas station on the southeast corner of 4th Street and Main Avenue, and the parking garage north of the tracks on 4th Street. The following photos show the existing grades of the area and the impacted buildings.

It is the consultants conclusion that this alternative should not be pursued further. Based on discussions with Steering Review Committee members this alternative was determined to not be feasible and thus should not be considered further.

# <image>

# PROPERTY SOUTH OF THE RAILROAD ON THE EAST SIDE OF 4TH STREET



# PARKING GARAGE NORTH OF THE TRACKS ON 4TH STREET

The significant grade change at this location would restrict access to both the top and lower levels of the parking garage.



GAS STATION IN THE SOUTHEAST QUADRANT OF MAIN AVENUE AND 4TH STREET





AREA OF RECONSTRUCTION SHOWN IN PURPLE.

Appendix G: Alternative Evaluation Matrices

			Segment 1 – 2	5 <sup>th</sup> St to 21 <sup>st</sup> St							
FHWA P/N Guidelines	Specific Corridor Need	Criteria	No Build	Build Alternative A	No Build	Build Alternative A	Build Alternative B	Build Alternative C	Build Alternative D	Build Subalternative University Dr Counter Flow	Notes
System	Pavement and Utility	Griteria	2	4	2	4	4	4	4	3	10000
Deficiencies	<ul> <li>Replacement</li> <li>NDDOT plans to reconstruct Main Ave over time</li> <li>Fargo's storm sewer needs various spot improvements along the corridor, and the sanitary sewer needs replacement between 800 and 1500 blocks of Main Ave at time of reconstruction</li> </ul>	Coordinate with future pavement and underground utility (sanitary and storm sewer) replacement needs along corridor	Do-nothing	Full pavement and utility replacement with project implementation	Do-nothing	Full paven	nent and utility replace	ment with project impl	ementation	N/A	All build alternatives will replace the pavement and utilities
	Traffic Operations		2	4	2	4	4	4	4	5	
	• Queues at intersections currently exceed 250' at 6 of 13 key intersections; 2035 No Build 8 of 13 intersections will have queues exceeding 250'	Reduce the number of intersections with greater than 250' queues	Do-nothing	Queues are improved from No Build condition (not below threshold)	Do-nothing	No geometric imp redu	provements to the key ce EB/WB queues sig	intersections; signal tin nificantly (still exceed)	University Dr counter flow and geometric improvements reduce eastbound queues at University Dr and eastbound left-turn queues at 8 <sup>th</sup> St and Broadway Dr	Queues are reduced due to a combination of geometric improvements and signal timing optimization and coordination	
			3	3	2	2	2	2	2	4	
	• Capacity reduction and delays due to railroad signal pre-emption	Reduce vehicle delay caused by trains (University Dr counter flow)	"3" here represer	nts not applicable	University Dr remains one-way southbound Provides au unde						Segment 2 can reduce RR impact with counter flow subalternative
			3	4	3	4	4	4	4	3	
	• ITS deployment (a designated high priority detections corridor)	Deploy ITS equipment to improve corridor operations	Do-nothing	Deploy Dynamic Message Signs	Do-nothing		Deploy Dynam	ic Message Signs	·	N/A	All build alternatives have the potential for ITS deployment
			Segment $1 - 25^{th}$ St to $21^{st}$ StSegment $2 - 21^{st}$ St to University Dr								
------------------------	---	--	---	--	------------	--	--	--	--	--	---
ELIMA D/N				Duild		Puild	Puild	Puild	Puild	Build Subalternative	
Guidelines	Specific Corridor Need	Criteria	No Build	Alternative A	No Build	Alternative A	Alternative B	Alternative C	Alternative D	Flow	Notes
System Deficiencies	Right-of-Way           • Some private property		3	2	3	2	2	1	2	3	
	may already be encroaching on public ROW along north end of corridor; private property may be needed for various improvements	Minimize ROW acquisition	Do-nothing	10,000 s.f. of private property; includes land and buildings	Do-nothing	296,000 s.f. of private property; includes land and buildings	364,000 s.f. of private property; includes land and buildings	605,000 s.f. of private property; includes land and buildings	235,000 s.f. of private property; includes land and buildings	N/A	Each segment has a corresponding improvement associated with it
Safety	Access		3	4	1	5	5	5	4	3	
	<ul> <li>Access exceeds standards (Fargo Code) by 9 times</li> <li>High number of access points between intersections with no right and left-turn lanes increases crash potential.</li> </ul>	Improve compliance with access spacing guidelines	Do-nothing	Close 1 access point	Do-nothing	Close 37 access points	Close 33 access points	Close 45 access points	Close 24 access points	N/A	Any reduction in access is positive; significant reduction (Segment 2) is very positive
	Crashes		2	5	2	5	5	5	2	1	
	<ul> <li>High vehicle crash rates, especially at University Dr and Main Ave intersections between 10<sup>th</sup> St and 8<sup>th</sup> St; severity rate is above average at 4 intersections.</li> </ul>	Implement improvements that reduce unsafe roadway geometrics for vehicles	Do-nothing	Extend WB right and left turn lanes to reduce queues and remove vehicles from blocking through lanes	Do-nothing	Implement five-lar confl	ne roadway section to a icts with left turning ve	reduce through lane ehicles	No change proposed to the mainline roadway section	University Dr counter flow increases vehicular conflicts and potential confusion with lane geometry	Geometric changes to Main Ave constitute a reduction in unsafe conditions
			3	3	3	5	5	5	4	2	
	• Pedestrian and bicycle crashes	Implement improvements that reduce unsafe roadway geometrics for pedestrians and bicycles	Do-nothing	Geometric improvements do not improve nor degrade safety	Do-nothing	Improvements inclu	ide ADA compliance a along Main Avenue	nd 10' multiuse path	Improvements include ADA compliance only	University Dr counter flow increases vehicular/pedestrian/ bicycle conflicts	

			Segment 1 – 2	.5 <sup>th</sup> St to 21 <sup>st</sup> St	Segment 2 – 21 <sup>st</sup> St to University Dr						
FHWA P/N Guidelines	Specific Corridor Need	Criteria	No Build	Build Alternative A	No Build	Build Alternative A	Build Alternative B	Build Alternative C	Build Alternative D	Build Subalternative University Dr Counter Flow	Notes
Capacity/	Congestion		2	3	2	4	4	4	4	3	
Mobility	<ul> <li>Delay at key intersection (existing LOS at 25<sup>th</sup> St/Main Ave is D – 38 seconds; 2035 No Build LOS D – 46 seconds</li> </ul>	Reduce delay at key intersections	Do-nothing	Minimal delay improvements	Do-nothing	Signal timin (1	ng modifications impro 8 <sup>th</sup> St improves signifi	ove corridor mobility an icantly LOS C → LOS	nd efficiency A)	University Dr counter flow and geometric improvements have minimal impact to delay at University Dr	The majority of the LOS values do not change from one alternative to the next (or No Build to Build)
		Reduce delay along	3	4	1	4	4	4	2	3	
	<ul> <li>Delay along roadway mainline</li> </ul>	roadway mainline (applicable to roadway geometric improvement)	Do-nothing	Minimal mainline improvement	Do-nothing	Improvement	includes a five-lane re	Dadway section	Only replaces existing four-lane roadway section	N/A	
Modal Deletionshine	Pedestrian, Bicycle,		1	5	1	5	5	5	5	3	
kelationsnips	<ul> <li>Much of corridor not compliant with ADA</li> </ul>	Make sidewalks and intersections ADA compliant	Do-nothing	Sidewalks will be upgraded to ADA standards	Do-nothing	;	Sidewalks will be upg	raded to ADA standard	s	N/A	ADA compliance includes sidewalk widths and curb ramp returns
			2	3	1	4	4	4	3	4	All build alternatives adhere
	<ul> <li>Bicycle/ pedestrian gaps and crossings issue along corridor</li> </ul>	Improve north/south bicycle connectivity through/along the corridor and do not preclude transit	Do-nothing	Will not preclude transit	Do-nothing	Constructs a five-la	ne roadway section ar path along Main Ave	nd a 10 foot multiuse	Will not improve mainline geometry or bicycle accommodations along Main Ave; will preclude transit	Closes bicycle gap by providing NB on- street access to NP Ave	to not precluding transit, except for Segment 2/Alternative D Only Segment 2/Alternatives A, B, C and counter flow subalternative include bicycle accommodations
Social or	Local Plan Consistency		3	4	1	4	4	5	2	3	
Goals	• Redevelopment planning identifies specific corridor recommendations	Compatibility with Fargo-Moorhead Downtown Framework Plan (2007), the Go2030 Fargo-Moorhead Comprehensive Plan, Corridor Land Dynamics and the Subject to Change Analysis (2012)	Do-nothing does not move toward the plans' objectives	Manages adjacent property access	Do-nothing does not move toward the plans' objectives	Manages adjacent j provides opportu redevel	property access and inity for property lopment	Significantly manages adjacent property access and provides opportunity for property redevelopment	Only manages pedestrian access along Main Ave (improvement over do-nothing)	N/A	Doing something is more compatible with the planning document objectives than nothing at all
	Neighborhood		3	3	3	3	3	3	3	4	
	<ul> <li>Connectivity needs between neighborhoods</li> </ul>	Support connections to adjacent neighborhoods	Do-nothing	No change	Do-nothing		No c	hange		University Dr counter flow improves north/south vehicular linkage	Roadway and sidewalk connections can support connections to adjacent neighborhoods

			Segment $1 - 25^{th}$ St to $21^{st}$ St     Segment $2 - 21^{st}$ St to University Dr								
FHWA P/N Guidelines	Specific Corridor Need	Criteria	No Build	Build Alternative A	No Build	Build Alternative A	Build Alternative B	Build Alternative C	Build Alternative D	Build Subalternative University Dr Counter Flow	Notes
Social or	Corridor Aesthetics		3	4	2	5	5	5	4	3	
Economic Goals	• Main Ave is a gateway corridor and should present a more welcoming appearance	Provide context sensitive design streetscape treatments	Do-nothing	CSD streetscape included	Do-nothing	Significant CSD st	treetscape included due	e to ROW acquired	CSD streetscape included	N/A	All build alternatives will include streetscape improvements
	Parking		3	3	3	3	3	4	3	3	
	• Maintenance of customer parking is considered highly desirable for downtown redevelopment	Minimize parking impacts	Do-nothing	No change	Do-nothing	No cl	hange	Adds parking with redevelopment	No change	N/A	If parking is not removed or changed, "3" is given; if parking is added, "4" is given; if parking is removed, "2" is given
	Agency/Public Input		3	4	3	4	4	4	4	2	
	• Multiple agencies, numerous public interest groups, and the public have a stake in corridor transportation issues	Address any major concerns from agencies, public interest groups, or the public	Do-nothing	Public comments are generally positive toward proposed improvements; some people have expressed concern over the removal of businesses and the widening of Main Ave; agency comments were considered and will be further evaluated in future NEPA document	Do-nothing	Public comments are have expressed conce agency comments	e generally positive tov ern over the removal o s were considered and docu	ward proposed improve f businesses and the wi will be further evaluate ument	ements; some people idening of Main Ave; ed in future NEPA	NDDOT strongly opposes this improvement; City of Fargo staff want it considered for further evaluation	
End of FHWA P/N Guidelines											

Other Environmental Factors												
			Segment 1 – 2	25 <sup>th</sup> St to 21 <sup>st</sup> St		1	Segment $2 - 21^{st}$	St to University Dr			-	
Other Environmental Factors	Specific Corridor Need	Criteria	No Build	Build Alternative A	No Build	Build Alternative A	Build Alternative B	Build Alternative C	Build Alternative D	Build Subalternative University Dr Counter Flow	Notes	
	Historic/Cultural	Minimize impacts to	3	3	3	3	3	3	3	3		
	<ul> <li>Resources</li> <li>Some archaeological, cultural, and historic resources are located near the corridor</li> </ul>	known/previously identified archaeological, cultural, and historic district/resources	Do-nothing	No impact	Do-nothing		No in	mpact		N/A		
	<b>Environmental Justice</b>	Limit	3	3	3	2	2	2	2	3		
	<ul> <li>A number of corridor segments serve Environmental Justice communities</li> <li>A number of corridor segments serve Environmental Justice communities</li> <li>Environmental Justice communities</li> <li>Environmental Justice communities</li> </ul>		Do-nothing	No impact	Do-nothing	Pote	Potential impact between 18th St and University Drive			N/A		
	Active Living	Description and in a line in a	2	4	1	5	5	5	4	3		
	<ul> <li>Impediments currently exist to biking and walking along corridor</li> </ul>	lifestyles through design, which may include complete street design elements	Do-nothing	Improved sidewalk facilities; no bicycle accommodations	Do-nothing	Improved sidewa	lk facilities and bicycle	e accommodations	Improved sidewalk facilities; no bicycle accommodations	N/A	Improving sidewalks and/or providing bicycle facilities help promote active living and complete street theory	

			Segment 3 – University Dr to 4 <sup>th</sup> St						Seg	gment $4 - 4^{\text{th}}$ St to 2	2 <sup>nd</sup> St		
FHWA P/N Guidelines	Specific Corridor Need	Criteria	No Build	Build Alternative A	Build Subalternative Mid-Block Ped Xing	Build Subalternative 7 <sup>th</sup> St Median	Build Subalternative Parking Removal	Build Subalternative WB Right-Turn Lane	Build Subalternative Skywalk	No Build	Build Alternative A	Build Subalternative 2 <sup>nd</sup> St	Notes
System	Pavement and		2	4	3	3	3	3	3	2	4	3	
Deficiencies	<ul> <li>Utility Replacement</li> <li>NDDOT plans to reconstruct Main Ave over time</li> <li>Fargo's storm sewer needs various spot improvements along the corridor, and the sanitary sewer needs replacement between 800 and 1500 blocks of Main Ave at time of reconstruction</li> </ul>	Coordinate with future pavement and underground utility (sanitary and storm sewer) replacement needs along corridor	Do-nothing	Full pavement and utility replacement with project implemen- tation			N/A			Do-nothing	Full pavement and utility replacement with project implementation	Full pavement and utility replacement with project implemen- tation	All build alternatives will replace the pavement and utilities
	<b>Traffic Operations</b>		2	4	3	3	3	5	3	3	4	4	
	• Queues at intersections currently exceed 250' at 6 of 13 key intersections; 2035 No Build 8 of 13 intersections will have queues exceeding 250'	Reduce the number of intersections with greater than 250' queues	Do-nothing	EB a.m. peak queues reduced within threshold		N/A		Reduced EB a.m. peak queues; WB right-turn lane at Broadway Dr lessens queues and impacts to mainline	N/A	Do-nothing	Improved EB/WB queuing during both peak hours	Southbound lane geometry improvements at 2 <sup>nd</sup> St reduce eastbound and southbound queues during the p.m. peak	Queues are reduced due to a combination of geometric improvements and signal timing optimization and coordination
			3	3	3	3	3	3	3	3	3	3	
	• Capacity reduction and delays due to railroad signal pre- emption	Reduce vehicle delay caused by trains (University Dr counter flow)			"3" he	ere represents not a	pplicable	1		"3" he	re represents not ap	pplicable	
			3	4	3	3	3	3	3	3	4	3	
	• ITS deployment (a designated high priority detections corridor)	Deploy ITS equipment to improve corridor operations	Do-nothing	Deploy Dynamic Message Signs			N/A			Do-nothing	Deploy Dynamic Message Signs	N/A	All build alternatives have the potential for ITS deployment

			Segment 3 – University Dr to 4 <sup>th</sup> St							Segment $4 - 4^{\text{th}}$ St to $2^{\text{nd}}$ St		2 <sup>nd</sup> St	
FHWA P/N Guidelines	Specific Corridor Need	Criteria	No Build	Build Alternative A	Build Subalternative Mid-Block Ped Xing	Build Subalternative 7 <sup>th</sup> St Median	Build Subalternative Parking Removal	Build Subalternative WB Right-Turn Lane	Build Subalternative Skywalk	No Build	Build Alternative A	Build Subalternative 2 <sup>nd</sup> St	Notes
System	Right-of-Way		3	2	3	3	3	2	2	3	3	3	
Deficiencies	• Some private property may already be encroaching on public ROW along north end of corridor; private property may be needed for various improvements	Minimize ROW acquisition	Do-nothing	9,000 s.f. of private property; land only		N/A		2,000 s.f.	Unknown s.f.	Do-nothing	0 s.f. of private property	0 s.f. of private property	Each segment has a corresponding improvement associated with it
Safety	Access		2	4	3	3	3	3	3	3	4	3	
	<ul> <li>Access exceeds standards (Fargo Code) by 9 times</li> <li>High number of access points between intersections with no right and left- turn lanes increases crash potential.</li> </ul>	Improve compliance with access spacing guidelines	Do-nothing	Close 6 access points			N/A			Do-nothing	Close 1 access point	N/A	Any reduction in access is positive
	Crashes		2	4	3	4	4	4	3	2	4	4	
	• High vehicle crash rates, especially at University Dr and Main Ave intersections between 10 <sup>th</sup> St and 8 <sup>th</sup> St; severity rate is above average at 4 intersections.	Implement improvements that reduce unsafe roadway geometrics for vehicles	Do-nothing	Implement median west of 8 <sup>th</sup> St and remove signal at 7 <sup>th</sup> St	No impact on vehicle safety	Further reduces potential for vehicular conflict	Parking removal reduces vehicle conflict	WB right-turn lane at Broadway Dr	N/A	Do-nothing	Recon-figure channelization of SB right-turn at 2 <sup>nd</sup> St	Reconfigure channel- ization of SB right turn at $2^{nd}$ St and reconfigure lane geometry north of Main Ave on $2^{nd}$ St	Geometric changes to Main Ave constitute a reduction in unsafe conditions
			2	4	5	4	3	2	4	2	4	5	
	• Pedestrian and bicycle crashes	Implement improvements that reduce unsafe roadway geometrics for vehicles	Do-nothing	Medians included at 8 <sup>th</sup> St	Mid-block crossing significantly reduces crash potential between 10 <sup>th</sup> St and 8 <sup>th</sup> St	Median included at 7 <sup>th</sup> St	N/A	Wider roadway crossing	Grade separation	Do-nothing	Pedestrian improvements	Widen sidewalk north of Main Ave on west side of 2 <sup>nd</sup> St	

			Segment 3 – University Dr to 4 <sup>th</sup> St							Segment $4 - 4^{\text{th}}$ St to $2^{\text{nd}}$ St		2 <sup>nd</sup> St	
FHWA P/N Guidelines	Specific Corridor Need	Criteria	No Build	Build Alternative A	Build Subalternative Mid-Block Ped Xing	Build Subalternative 7 <sup>th</sup> St Median	Build Subalternative Parking Removal	Build Subalternative WB Right-Turn Lane	Build Subalternative Skywalk	No Build	Build Alternative A	Build Subalternative 2 <sup>nd</sup> St	Notes
Capacity/	Congestion		2	3	3	3	3	3	3	2	3	3	
Mobility	<ul> <li>Delay at key intersection (existing LOS at 25<sup>th</sup> St/Main Ave is D – 38 seconds; 2035 No Build LOS D – 46 seconds)</li> </ul>	Reduce delay at key intersections	Do-nothing	Reduced EB a.m. peak LOS			N/A			Do-nothing	Reduced EB/W both pea	B delay during k hours	The majority of the LOS values do not change from one alternative to the next (or No Build to Build)
	,	Reduce delay along	3	3	3	3	3	4	3	3	3	3	
	<ul> <li>Delay along roadway mainline</li> </ul>	roadway mainline (applicable to roadway geometric improvement)	Do-nothing	Minimal impact		N/A		WB right-turn lane	N/A	Do-nothing	Minimal impact	N/A	
Modal	Pedestrian, Bicycle,		2	4	3	3	3	3	3	2	4	5	
Relation- ships	<ul> <li>and Transit</li> <li>Facilities</li> <li>Much of corridor not compliant with ADA</li> </ul>	Make sidewalks and intersections ADA compliant	Do-nothing	Sidewalks widths mostly meet standards; all curb ramps will also be upgraded			N/A			Do-nothing	Sidewalks will be upgraded to ADA standards	Additional improvement north of Main Ave on 2 <sup>nd</sup> St	ADA compliance includes sidewalk widths and curb ramp returns
	Bicvcle/		2	3	4	4	3	2	4	2	3	3	
	pedestrian gaps and crossings issue along corridor	Improve north/south bicycle connectivity through/along the corridor and do not preclude transit	Do-nothing	Will not preclude transit	Improves corridor crossings issue	Provides pedestrian refuge	N/A	Wider pedestrian crossing	Grade separation	Do-nothing	Will not preclude transit	N/A	All build alternatives adhere to not precluding transit
Social or	Local Plan		3	4	3	3	3	3	4	3	4	3	
Economic Goals	<ul> <li>Redevelopment planning identifies specific corridor recommendations</li> </ul>	Compatibility with Fargo-Moorhead Downtown Framework Plan (2007), the Go2030 Fargo- Moorhead Comprehensive Plan, Corridor Land Dynamics and the Subject to Change Analysis (2012)	Do-nothing does not move toward the plans' objectives	Manages adjacent property access		N	/A		Was recommended in long-term planning documentation	Do-nothing does not move toward the plans' objectives	Manages adjacent property access	N/A	Doing something is more compatible with the planning document objectives than nothing at all
	Neighborhood		3	3	3	3	3	3	4	3	3	4	
	<ul> <li>Linkages</li> <li>Connectivity needs between neighbor- hoods</li> </ul>	Support connections to adjacent neighborhoods	Do-nothing	No change		N	/A		Skywalk bridges Main Ave increases pedestrian connectivity	Do-nothing	No change	Improves sidewalk and increases pedestrian connectivity	Roadway and sidewalk connections can support connections to adjacent neighborhoods

				Segment 3 – University Dr to 4 <sup>th</sup> St							gment $4 - 4^{\text{th}}$ St to	2 <sup>nd</sup> St	
FHWA P/N Guidelines	Specific Corridor Need	Criteria	No Build	Build Alternative A	Build Subalternative Mid-Block Ped Xing	Build Subalternative 7 <sup>th</sup> St Median	Build Subalternative Parking Removal	Build Subalternative WB Right-Turn Lane	Build Subalternative Skywalk	No Build	Build Alternative A	Build Subalternative 2 <sup>nd</sup> St	Notes
Social or	Corridor Aesthetics		3	4	3	3	3	3	4	3	4	3	
Economic Goals	• Main Ave is a gateway corridor and should present a more welcoming appearance	Provide context sensitive design streetscape treatments	Do-nothing	CSD streetscape included		N	[/A			Do-nothing	CSD streetscape included	N/A	All build alternatives will include streetscape improvements
	Parking		3	3	3	3	2	3	3	3	3	3	
	• Maintenance of customer parking is considered highly desirable for downtown redevelopment	Minimize parking impacts	Do-nothing	No change	N	7/A	Removes approx. 10 parking spaces between 7 <sup>th</sup> St and Broadway Dr	N	7/A	Do-nothing	No cł	lange	If parking is not removed or changed, "3" is given; if parking is added, "4" is given; if parking is removed, "2" is given
	Agency/Public		3	4	4	4	4	4	4	3	4	4	
	<ul> <li>Multiple agencies, numerous public interest groups, and the public have a stake in corridor transportation issues</li> </ul>	Address any major concerns from agencies, public interest groups, or the public	Do-nothing	Public comr concern over th	Public comments are generally positive toward proposed improvements; some people have expressed concern over the removal of businesses and the widening of Main Ave; agency comments were considered and will be further evaluated in future NEPA document					Do-nothing	Public comment positive towa improvements; so expressed com removal of bus widening of Ma comments were will be furthe: future NEPA	ts are generally ird proposed ome people have acern over the inesses and the in Ave; agency considered and r evaluated in A document	
	End of FHWA P/N Guidelines												

	Other Environmental Factors												
					Segmen	t 3 – University D	Pr to 4 <sup>th</sup> St			Seg	gment $4 - 4^{th}$ St to 2	2 <sup>nd</sup> St	
Other Environ- mental Factors	Specific Corridor Need	Criteria	No Build	Build Alternative A	Build Subalternative Mid-Block Ped Xing	Build Subalternative 7 <sup>th</sup> St Median	Build Subalternative Parking Removal	Build Subalternative WB Right- Turn Lane	Build Subalternative Skywalk	No Build	Build Alternative A	Build Subalternative 2 <sup>nd</sup> St	Notes
	Historic/Cultural		3	2	3	3	3	3	3	3	3	3	
	<ul> <li>Resources</li> <li>Some archaeological, cultural, and historic resources are located near the corridor</li> </ul>	Minimize impacts to known/previously identified archaeological, cultural, and historic district/resources	Do-nothing	Potential impact to BNSF office building, Fargo Park District (Northern Pacific Depot)			N/A			Do-nothing	No ir	npact	
	Environmental	Limit disproportionate	3	3	3	3	3	3	3	3	3	3	
• A nu corri serv Justi	<ul> <li>A number of corridor segments serve Environmental Justice communities</li> </ul>	impacts to Environmental Justice communities (low- income, minority) along the corridor	Do-nothing	No impact			N/A			Do-nothing	No ir	npact	
	<ul> <li>Active Living Considerations</li> <li>Impediments currently exist to biking and walking along corridor</li> </ul>	Promote active living lifestyles through design, which may include complete street design elements	2	4	4	4	3	3	4	2	4	4	Improving sidewalks and/or providing bicycle facilities help promote active living and complete street theory

# Appendix H: Technical Memorandum for North Dakota Department of Transportation and the City of Fargo



## Technical Memoradum for NDDOT and the City of Fargo

# Fargo Main Avenue Corridor Study from 25th Street to 2nd Street

Fargo-Moorhead Metropolitan Council of Governments Fall 2012



# 1. Project Background

The City of Fargo, North Dakota Department of Transportation (NDDOT), and the Fargo-Moorhead Metropolitan Council of Governments (Metro COG) are project partners in the development of the Fargo-Main Avenue Corridor Study from 25th Street to the Red River (see Figure 1). The project partners identified the need for a corridor study due to the poor condition of the underground utilities within the downtown, including the study portion of Main Avenue. These utilities will need to be completely replaced within the next 10 years. A full roadway reconstruction will be required due to many utilities being located directly under the roadway. The City and NDDOT are using the corridor study to identify transportation issues along the corridor that could be mitigated during reconstruction.

Main Avenue between 25th Street and the Red River is designated as US Highway 10 and is on the National Highway System. It is a principal arterial roadway within the City of Fargo that handles through traffic on the highway system and serves as a gateway into Fargo's downtown, with front-facing properties and businesses along the entire corridor. The corridor is a five-lane roadway between 25th Street and 18th Street and University Drive and the Red River, with two lanes in each direction and either a continuous center left-turn lane or turn lanes provided at the major intersection. The corridor narrows to a four-lane roadway in the middle of the study area between 18th Street and University Drive, with two lanes of travel in each direction and no turn lanes provided.

The Fargo Main Avenue Corridor study was initiated in year 2011. SRF Consulting was retained to assist with technical analysis, public input, and final documentation of the corridor study. The project partners and consultant team have completed the following tasks:

- 1. Identified existing conditions.
- 2. Developed future traffic patterns.
- 3. Analyzed existing and future traffic conditions.
- 4. Identified existing and future issues along the corridor.
- 5. Established a vision and design parameters for the corridor.
- 6. Developed a purpose and need statement.
- 7. Developed a series of planning level alternatives.
- 8. Solicited public input throughout the study.
- 9. Evaluated the planning level alternatives.



#### Figure 1. Project Location Map

Fargo Main Avenue Corridor Study

# 2. Study Corridor Issues

After existing and future traffic conditions were analyzed, the study team identified the following issues:

### Deficient Utilities and Poor Pavement Conditions

The deficient condition of utilities is a primary factor in the need to reconstruct the Main Avenue corridor. The City examined underground utilities along the corridor and determined that the storm sewer requires inlet manholes and inlet drop lines to the trunk sewer line. Additionally, there are multiple breaks in the sanitary sewer between the 800 and 1500 blocks of Main Avenue, which will require full replacement at the time Main Avenue is reconstructed.

The International Roughness Index (IRI) measures the smoothness of roadways. The higher the IRI, the rougher the road is for drivers. Roads with an IRI value greater than 145 are considered poor. The IRI for Main Avenue falls into the poor category, as it received a score of 171 in year 2010. From years 2003 to 2010, Main Avenue has scored in the poor category each year.

## High Number of Access Points

Currently, there are 141 direct access points along Main Avenue within the corridor study limits. This results in approximately 79 access points per mile. The high frequency of access points has negatively impacted safety and traffic operations along the corridor, especially between 18th Street and University Drive where there are no designated left-turn lanes.



### Congestion at Intersections and along Segments

Currently, six of 13 key intersections along the corridor have queuing issues, with queues greater than 250 feet in the peak hour. With year 2035 traffic volumes on today's corridor (the no build scenario), eight of the 13 key intersections would have queuing issues. The intersection of 25th Street also shows unacceptable levels of service (LOS) under both existing and future year 2035 no build conditions. This means that the average delay for vehicles traveling through this intersection is greater than what is considered acceptable.



The current traffic volumes (year 2010) along the corridor range from approximately 15,000 to 22,000 vehicles per day (vpd). The future year 2035 traffic volumes along the corridor range from 17,000 to 25,000 vpd. The higher volume of daily traffic is between 25th Street and University Drive where LOS issues have been identified at the 25th Street intersection and capacity issues have been observed in the four-lane roadway section between 18th Street and University Drive. Due to the combination of the lack of left-turn lanes and high number of access points in the four-lane section, turning vehicles are blocking the through lanes as they wait to make a safe turning movement. This reduces the available through capacity of the roadway and creates a weaving pattern along the corridor as through vehicles frequently change lanes to move around left- and rightturning vehicles.

## High Vehicle Crash Locations

At the beginning of the corridor study, crash data was collected for the key intersections and segments along the study corridor. Three years (year 2008 through 2010) of crash data was received from NDDOT. There are high vehicle crash locations at intersections and along corridor segments. Identified crash issues include:

- 1. There were 288 crashes between year 2008 and 2010, with 47 percent being rear-end crashes.
- 2. The intersection of University Drive and the segment of Main Avenue between 10th Street and 8th Street exhibits crash rates that exceed critical crash rates per million entering vehicles (MEV) for a fivelane facility.
- 3. The severity rate is above average at four intersections: 25th Street, University Drive, Broadway, and 4th Street.
- 4. The severity rate is above average for one segment: 10th Street to 8th Street.
- 5. The segment between 18th Street and University Drive had 62 crashes within the three-year period. The segment did not exceed the average crash rate for a typical four-lane roadway section. However, the crash rate is much higher than most of the other segments along the corridor.



## Railroad Proximity Creating Poor System Continuity and Periodic Congestion

The close proximity of the Burlington Northern Santa Fe (BNSF) Rail Line, which is parallel to the north side of Main Avenue, creates issues with system continuity and periodic congestion when a train is present. The continuity of downtown is divided by the railroad tracks. When a train is present, it blocks many of the at-grade crossings, which causes trip delays and forces people to use either the University Drive/10th Street one-way underpasses or the 2nd Street underpass. The key intersections also experience increased congestion. Often times westbound vehicles waiting to turn to cross the rail line to go north of Main Avenue either do not have a right-turn lane or exceed the length of the turn bay, blocking a through-lane of traffic. This creates congestion.



It was also noted during the study that the 7th Street and Main Avenue intersection traffic signal is not connected to the railroad pre-emption cycle since it does not control a crossing of the railroad. Therefore, traffic signal coordination after a train passes through downtown is out of sync with the 7th Street traffic signal, creating additional congestion and delays.



### Bicycle and Pedestrian Safety and Mobility

Bicycle and pedestrian crashes were analyzed using five years of data. Within 1/8 mile of the corridor, there were 23 reported bicycle or pedestrian crashes between year 2005 and 2009. Seventeen of these 23 crashes (74 percent) took place along the Main Avenue corridor from 25th Street to the Red River, with the majority of these crashes taking place at intersections. Main Avenue intersections with multiple crashes include 10th Street, 7th Street, and 4th Street. In addition, the following statistics were calculated:

- All crashes involved injuries with nine of the crashes involving pedestrians (39 percent) and 14 involving bicycles (61 percent).
- Fifteen of the 23 crashes (65 percent) were intersection related.
- Eleven of the 23 crashes (48 percent) involved a vehicle crashing into a bicycle or pedestrian; the other 12 crashes (52 percent) did not involve a motor vehicle.



It was also determined that sidewalk systems along the corridor are not compliant with ADA standards; they are very narrow and sometimes obstructed with utilities. The public input process also noted the need for a protected pedestrian crossing of Main Avenue between 8th Street and 10th Street.

## Limited Existing Right-of-Way

The existing Main Avenue right-of-way ranges from 59 feet to 117 feet in the study area. The majority of corridor right-of-way is between 60 and 80 feet wide and then widens at major intersections, such as 25th Street and 2nd Street. Due to the narrow right-of-way, sidewalks are not ADA compliant and some private buildings encroach on public right-of-way. Therefore, all build alternatives have varying degrees of right-of-way impacts.

## Land Use and Transportation Linkages

It is a challenge to accommodate high volumes of traffic (Main Avenue is a US Highway and is on the National Highway System) and develop a downtown corridor that has front-facing businesses with the need to accommodate pedestrians and bicyclists.



In addition, the narrow width of developable land along the north side of Main Avenue between the roadway and the railroad is an issue. The railroad requires a minimum building setback from the tracks, and the remaining narrow width of land limits the opportunity for redevelopment. Any shift of Main Avenue to the south to create more developable land north of the roadway would have negative impacts to businesses along the south side.

## Parking

Parking utilization data was collected mid-week in August 2011 at on-street and side street locations during the mid-morning, afternoon, and evening. Public parking lots were not analyzed due to the associated permit parking fee, which limits their use. Time restrictions and the number of handicap spaces were also recorded.

The highest average daily parking utilization was approximately 50 percent, which occurred on the south side of Main Avenue between 7th Street and Broadway and on three side streets between 1st Avenue South and Main Avenue (on the west side of 8th Street, east side of 7th Street, and the west side of Broadway). Three areas north of Main Avenue, along the east and west sides of Broadway and near the NDSU Renaissance building on 8th Street also experienced high parking utilization.



Although the parking analysis indicated that there is not a shortage of parking along the corridor, most business owners expressed a desire to either retain or add parking directly in front of their property. The concern is that people within the area would like to park very close to their destination as opposed to having to walk several blocks from a nearby parking space or lot.



# 3. Alternatives Development & Evaluation

The key study outcome was to identify, evaluate, and recommend future Main Avenue alternatives to be carried forward for further analysis in a future environmental document. To accomplish this task, a range of conceptual corridor alternatives were developed with the intent of mitigating previously identified issues along the corridor. The alternatives also took into account the vision and design parameters established for the corridor.

Based on the alternatives developed by the Study Review Committee (SRC), the study team divided the corridor into four segments. The concepts developed by the SRC were compared against the No Build Alternative for each segment.

The foundation for alternatives evaluation was the purpose and need statement. Evaluation factors were developed based on these guiding principles, environmental factors, cost, and public input. An initial screening process was employed to eliminate alternatives that could not meet the project's overall purpose and need or environmental factors, were cost-prohibitive, lacked community support, or had other fatal flaws. At the conclusion of the study, a recommended alternative will be selected for each segment, which can then be moved forward into a future environmental documentation stage of the project.

Alternatives were evaluated based on a qualitative estimate as to each alternative's relative rank in addressing the evaluation factors and then assigned a rank relative to its ability to address the criteria. The rating system is as follows:

5	Good; meets criteria well
4	Acceptable; but relatively less desirable than "5"
3	Neutral; marginally meets criteria
2	Less desirable; considering criteria
1	Poor; fails to meet criteria

The alternative evaluation process and outcomes were vetted by the SRC and the public. On the following pages, each alternative is described and then technical evaluation scores, cost, public comments, and SRC ranking are summarized. The right-of-way (ROW) cost estimated for each alternative is based on the assessed land and building value for each parcel. These costs do not include relocation costs. Metro COG provided all assessed property values and the impacts were added up cumulatively by corridor segment.

Comments received by the general public were categorized as follows: 1) None Received, 2) Mostly Positive, 3) Mostly Negative, or 4) Mixed Positive and Negative. The SRC ranking is based on a straw poll conducted during the SRC evaluation meeting. Each subalternative was discussed at length with first, second, third, etc. rankings applied where applicable, followed by additional discussion. Finally, each alternative was given a statement of recommended, not recommended, or mixed recommendation.

### Segment 1. 25th Street to 21st Street

**No Build Alternative:** Maintains the existing fivelane roadway with continuous two-way left-turn lanes. **Build Alternative A:** Reconstructs the current lane configuration (five lanes with continuous two-way left-turn lanes) in addition to extending turn lanes at 25th Street to reduce queues and improve mobility. See Figure 2 for Build Alternative A.

Alternative	Technical Evaluation Score*	Cost	Public Comments	SRC Ranking
No Build	52	Construction: \$0 ROVV: \$0	None Received	Not Recommended
Build Alternative A	72	Construction: \$2.0M ROW: \$87K	Mostly Positive	Recommended

#### Table 1. Segment 1 Evaluation Summary

\* The higher the technical evaluation score, the better the alternative is valued.



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### Segment 2. 21st Street to University Drive

**No Build Alternative:** Maintains the existing fourlane roadway with limited left-turn lanes.

**Build Alternative A:** Acquires the majority of the parcels on the north side of Main Avenue, provides for various public uses, constructs a 10-foot-wide multiuse path that improves the sidwalks to ADA compliance, improves boulevard aesthetic, and reconstructs the road-way to a five-lane section with continuous two-way left-turn lanes. Significantly reduces access points to improve safety.

**Build Alternative B:** Acquires the majority of the parcels on the south side of Main Avenue, constructs a 10-foot-wide multiuse path that improves the sidwalks to ADA compliance, improves boulevard aesthetic, and reconstructs the roadway to a five-lane section with continuous two-way left-turn lanes. Allows for redevelopment on the south side of Main Avenue and significantly reduces access points to improve safety.

**Build Alternative C:** Acquires the majority of the parcels on the north and south sides of Main Avenue, provides the potential for shared parking lots on the

north side of the roadway with access at public street intersections, constructs a 10-foot-wide multiuse path that improves the sidwalks to ADA compliance, improves boulevard aesthetic, and reconstructs the roadway to a five-lane section with continuous two-way left-turn lanes. Allows for redevelopment on both sides of Main Avenue and significantly reduces access points to improve safety.

**Build Alternative D:** Acquires a number of the parcels on the north side of Main Avenue and reconstructs the roadway with its existing four-lane section, while improving the sidewalks to ADA compliance. Allows for some redevelopment on the north side of Main Avenue and reduces access points to improve safety.

**Build Subalternative University Drive Counter Flow:** A subalternative for each build alternative is to include a University Drive counter flow configuration, which provides two-way access to the railroad grade underpass and improves north-south connectivity.

See Figures 3 – 6 for Build Alternatives A – D and Figure 7 for the University Drive Build Subalternative.

Alternative	Technical Evaluation Score*	Cost	Public Comments	SRC Ranking
No Build	42	Construction: \$0 ROW: \$0	Mixed (Positive & Negative)	5
Build Alternative A	77	Construction: \$4.0M ROW: \$1.7M	Mostly Positive	Recommended
Build Alternative B	77	Construction: \$4.3M ROW: \$4.7M	Mostly Negative	3
Build Alternative C	78	Construction: \$5.0M ROW: \$5.9M	Mixed	2
Build Alternative D	65	Construction: \$4.0M ROW: \$1.2M	Mostly Negative	4
Subalternative University Drive Counter Flow	61	Construction: Minimal Cost ROW: \$0	Mixed	Not Recommended

#### Table 2. Segment 2 Evaluation Summary

\* The higher the technical evaluation score, the better the alternative is valued.





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### Segment 3. University Drive to 4th Street

**No Build Alternative:** Maintains the existing fivelane roadway with continuous two-way left-turn lanes.

**Build Alternative A:** Adds a raised median west and painted median east of 8th Street and removes the existing signal at 7th Street. This alternative reconstructs the roadway with the existing five-lane section that includes continuous two-way left-turn lanes and removes parking west of 7th Street and east of Broadway.

**Build Subalternative Mid-Block Pedestrian Crossing:** A subalternative that could be included with Build Alternative A is a mid-block pedestrian crossing between 11th Street and 9th Street.

**Build Subalternative Parking Addition:** A subalternative that could be included with Build Alternative A is the addition of parking on the south side of Main Avenue between 8th Street and 7th Street.

**Build Subalternative 7th Street Median:** A subalternative that could be included with Build Alternative A is a raised median from 8th Street through the 7th Street intersection, which limits the intersection movements to right-in/right-out only. **Build Subalternative Parking Removal:** A subalternative that could be included with Build Alternative A is the removal of parking on the south side of Main Avenue between 7th Street and Broadway.

**Build Subalternative Westbound Right-Turn Lane:** A subalternative that could be included with Build Alternative A is a westbound right-turn lane at Broadway.

**Build Subalternative Skywalk:** A subalternative that could be included with Build Alternative A is a pedestrian skywalk from the structured parking ramp (just east of Broadway) that would go over Main Avenue and the BNSF Railroad and connect to the Ground Transportation Center.

See Figure 8 for Build Alternative A and Figure 9 for the Build Subalternatives.

Alternative	Technical Evaluation Score*	Cost	Public Comments	SRC Ranking
No Build Alternative	48	Construction: \$0 ROVV: \$0	None Received	Not Recommended
Build Alternative A	69	Construction: \$3.1M ROW: \$140K	Mostly Positive	Recommended
Subalternative Mid-Block Crossing	65	Construction: Minimal Cost ROW: N/A	Mostly Positive	Recommended
Subalternative Parking Addition	61	Construction: Minimal Cost ROW: N/A	Mostly Positive	Recommended
Subalternative 7th Street Median	65	Construction: Minimal Cost ROW: N/A	Mixed	Not Recommended
Subalternative Parking Removal	61	Construction: Minimal Cost ROW: N/A	Mostly Negative	Not Recommended
Subalternative WB Right-Turn Lane	62	Construction: \$0.24M ROW: \$40K	Mostly Positive	Mixed Recommendation
Subalternative Skywalk	66	Construction: \$6M ROW: Unknown	Mostly Positive	Recommended (Separate Project)

#### Table 3. Segment 3 Evaluation Summary

\* The higher the technical evaluation score, the better the alternative is valued.

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Figure 8 Build Alternative A (Segment 3)



Figure 9 Six Subalternatives: Mid-Block Crossing, Parking Addition, 7th Street Median, Parking Removal, West-Bound Right-Turn Lane, and Skywalk (Segment 3)



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### Segment 4. 4th Street to 2nd Street

**No Build Alternative:** Maintains the existing fivelane roadway with two-way left-turn lanes, except where a median is present.

**Build Alternative A:** Reconstructs the current lane configuration of five lanes with two-way left-turn lanes, except where a median is present. In addition, sidewalks are improved to comply with ADA standards, the channelization of the 2nd Street southbound right-turn lane is improved, and the eastbound channelized right-turn lane at 2nd Street is removed.

**Build Subalternative 2nd Street:** A subalternative that could be included with Build Alternative A is improvements to 2nd Street (between Main Avenue and NP Avenue); including dual southbound left-turn lanes, a median, and a widened sidewalk on the west side of 2nd Street.

See Figure 10 for Build Alternative A and Figure 11 for the Build Subalternative.

Alternative	Technical Evaluation Score*	Cost	Public Comments	SRC Ranking
No Build	53	Construction: \$0 ROW: \$0	None Received	Not Recommended
Build Alternative A	71	Construction: \$1.9M ROW: \$0	Mostly Positive	Recommended
Subalternative 2nd Street	69	Construction: \$2.8M ROW:\$0	Mostly Positive	Recommended

#### Table 4. Segment 4 Evaluation Summary

\* The higher the technical evaluation score, the better the alternative is valued.

### Other Alternatives Considered

Development of the alternatives presented in this report included consideration of other ideas along the way. Many of these ideas were relatively inconsequential turn lane or minor geometric considerations. Two more significant ideas were considered, but not carried forward based on preliminary analysis and review: the 4th Street Underpass and 10th Street South Improvements to US 81 North. The right-of-way impacts, geometric design considerations, and potential costs rendered the 4th Street Underpass not feasible. The existing ease of use and network route in place resulted in the 10th Street South improvements being unnecessary except for improved wayfinding (shown in Figures 8 and 9).





# 4. Public Involvement

As part of the Fargo Main Avenue Corridor Study, a large public involvement effort was conducted, including the creation of a Study Review Committee (SRC); property owner, public input, and Downtown Community Partnership meetings; and a presentation to members of the Fargo Planning Commission and City Commission.

The SRC was composed of technical staff from the City of Fargo, NDDOT, and Metro COG. The SRC met five times during the study process to provide input and help guide the study process.

In addition, the project team held three meetings with property owners adjacent to the corridor. Property owners were informed of corridor conditions and issues, and they provided input on the alternatives developed for the study.

Two public input meetings were conducted to gather input on needed corridor improvements and to inform stakeholders about the study process and findings.

A brown bag meeting was also held with the City of Fargo Planning and City Commission, which included a presentation on the study process up to the point where alternatives were developed.

Finally, the Downtown Community Partnership held a regular meeting at Metro COG's office where Metro COG staff presented a similar presentation.





## 5. Project Implementation & Input Solicitation

The No Build alternatives evaluated as part of this study do not make any changes or improvements to Main Avenue. However, the City of Fargo has identified that the utilities need to be replaced within the next 10 years, which will require a roadway reconstruction. The City has indicated that they will need a Federal Aid project to reconstruct this roadway and that this project is the City's highest priority project for Regional Highway System funding. Federal Aid has been currently programmed to year 2016 and does not include these Main Avenue improvements. The City of Fargo will likely continue to submit an application for Federal Aid to fund the reconstruction of Main Avenue between 25th Street and the Red River until it is received. Because the corridor is on the Regional Highway System, it is eligible for an 80 percent federal, 10 percent state, and 10 percent City of Fargo funding split. The utilities would not be eligible for Federal Aid and would be the City of Fargo's responsibility.

#### **Project Alternatives Feedback**

At this time, the project team would appreciate **feedback from both NDDOT management staff and City of Fargo Commission members** to determine if any of the project alternatives or subalternatives, as presented in this technical memorandum, should be deemed not feasible and not be moved forward for consideration during project development.

If a project alternative is deemed not feasible, reasoning as to why it is considered not feasible should be included.

Example reasons may include:

- a. Does not respond to the purpose and need or project issues.
- b. Does not meet the intent of previously adopted plans/projects.
- c. Is not deemed beneficial considering the project cost.

## 6. Potential US 10 Reroute Discussion

As project alternatives are being considered, there may also need to be discussion regarding the effects of moving the US 10 designation to I-94. This option was first discussed more than 10 years ago, and possible solutions to impacts on the North Dakota side were discussed with local governments at that time.

It was brought up again at the September 20, 2012, MnDOT meeting during the study of redesignating TH 75. Three of the redesignation alternative alignments being evaluated for TH 75 are routing it along I-94 to 20th Street, 34th Street, or TH 336 and then further north. During the meeting, MnDOT officials recalled the earlier discussions about rerouting US 10 from TH 336 to the Red River to run concurrently with I-94. A change such as this would require buy-in from NDDOT, so that US 10 would continue on I-94 west of the Red River.

Some questions to consider include:

- 1. If the Highway 10 designation is removed, would Main Avenue stay on the NDDOT's Secondary Regional System with the 80/10/10 funding split?
- 2. If Main Avenue were to come off the Secondary Regional System, would NDDOT improve the roadway with the 80/10/10 funding split before removing it?
- 3. How would the removal of the Highway 10 designation from Main Avenue affect other local jurisdictions (such as, Fargo, West Fargo, or Cass County)?
- 4. If the Highway 10 designation is moved to I-94, would NDDOT consider Main Avenue as Business US 10 (Main Avenue is already Business I-94)?
- 5. If the Highway 10 designation is moved to I-94, would Main Avenue remain on the NHS system?
- 6. If Main Avenue remains a state road after the Highway 10 designation is removed, would it be more difficult to secure funds for improvements on the Main Avenue bridge (since the roadway will likely be turned back to a county road or city street on the Minnesota side of the Red River)?

Appendix I: Corridor Construction Cost Estimates

#### **FARGO - MAIN AVENUE SEGMENT 1 ALTERNATIVE A**

Concept Cost Estimate (based upon 2011 bid price information)

Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

				TOTAL	
			UNIT	EST.	EST.
ITEM DESCRIPTION		UNIT	PRICE	QUANTITY	AMOUNT
PAVING AND GRADING COSTS					
GrP 1a Excavation - common & subgrade		cu. yd.	\$6.00	8,700	\$52,200
GrP 2d Granular Subgrade (CV)		cu. yd.	\$14.00	4,400	\$61,600
GrP 3e County Road Pavement	(1)	sq. yd.	\$30.00	13,100	\$393,000
GrP 4a Concrete Median	(2)	sq. yd.	\$35.00	300	\$10,500
GrP 4b Concrete Walk / Bituminous Trail	(2)	sq. yd.	\$15.00	2,400	\$36,000
GrP 4C ADA Pedestrian Curb Ramp		each	\$1000.00	4 000	¢70.000
GIP 5 Concrete Curb and Gutter	(2)		\$15.00	4,800	\$72,000
	(3) e.	sq. yu.	\$3.00	14,900	\$44,700 \$670,000
	5.				\$070,000
Drainage, urban (15% range 10.20%)		100/			¢66.000
Dr 5 Drainage - urban (15% range 10-30%)		10%			\$00,000 \$66,000
Dr 8 Landscaping		2%			\$00,000 \$13,000
					\$145,000
	03101	CONTROL			\$145,000
SCI 1 Signala (permanant)		aaab	¢200.000	1	¢200.000
SGL 4 Mainline Lighting (permanent)		each	\$200,000	1	\$200,000 \$64,000
SUBTOTAL SIGNAL AND LIGHTING COSTS:					\$264,000
SIGNING & STRIPING COSTS					<i> </i>
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.32	\$11 200
SGN 2 Mainline Striping		mile	\$5.000	0.32	\$1,600
SUBTOTAL SIGNING & STRIPING COSTS:					\$12,800
SUBTOTAL CONSTRUCTION COSTS:					\$1,091,800
MISCELLANEOUS COSTS					
M 1 Mobilization		5%			54,000
M 2 Non Quantified Minor Items (10% to 30%)		15%			163,000
M 7 Temporary Pavement & Drainage		5%			54,000
M 8 Traffic Control		3%			32,000
SUBTOTAL MISCELLANEOUS COSTS:					\$303,000
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:					\$1,394,800
1 Contingency or "risk" (10% to 30%)		15%			209,000
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:					\$1,603,800
DESIGN ENG. & CONSTRUCTION ADMIN. Lump Sum 25%					400,000
SUBTOTAL OTHER PROJECT COSTS					400,000
TOTAL PROJECT COST (based upon 2011 bid price information)					2,001,982

NOTE: (1) Assumes 8" bituminous and 10" aggregate base.
(2) Includes aggregate base class 5.
(3) Includes existing median removal areas and proposed sidewalk/trail areas.



#### **FARGO - MAIN AVENUE SEGMENT 2 ALTERNATIVE A**

#### Concept Cost Estimate (based upon 2011 bid price information) Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

				TOTAL			
			UNIT	EST.	EST.		
ITEM DESCRIPTION		UNIT	PRICE	QUANTITY	AMOUNT		
PAVING AND GRADING COSTS							
GrP 1a Excavation - common & subgrade		cu. yd.	\$6.00	17,700	\$106,200		
GrP 2d Granular Subgrade (CV)	(4)	cu. yd.	<u>\$14.00</u>	8,900	<u>\$124,600</u>		
GrP 3e County Road Pavement	(1)	sq. yd.	\$30.00	26,500	\$795,000		
GrP 4b Concrete Walk / Bituminous Trail	(2)	sq. yu.	\$35.00 \$15.00	6 600	\$99,000		
GrP 4c ADA Pedestrian Curb Ramp	(2)	each	\$1000.00	0,000	\$33,000		
GrP 5 Concrete Curb and Gutter		lin. ft.	\$15.00	7,800	\$117,000		
GrP 8a Removals - Pavement	(3)	sq. yd.	\$3.00	28,500	\$85,500		
SUBTOTAL PAVING AND GRADING C	COSTS:				\$1,327,300		
DRAINAGE, UTILITIES AND EROSION CONTROI							
Dr 5 Drainage - urban (15% range 10-30%)		10%			\$132,000		
Dr 7 Turf Establishment & Erosion Control	-	10%			\$132,000		
Dr 8 Landscaping		2%			\$27,000		
SUBTOTAL DRAINAGE, UTILITIES AN	ID ERC	SION CONTR	ROL		\$291,000		
SIGNAL AND LIGHTING COSTS							
SGL 1 Signals (permanent)	-	each	\$200,000	2	\$400,000		
SGL 4 Mainline Lighting (permanent)		mile	\$200,000	0.75	\$150,000		
SUBTOTAL SIGNAL AND LIGHTING C	COSTS:				\$550,000		
SIGNING & STRIPING COSTS							
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.75	\$ <u>26,250</u>		
SGN 2 Mainline Striping		mile	\$5,000	0.75	\$3,750		
SUBTOTAL SIGNING & STRIPING CO	STS:				\$30,000		
SUBTOTAL CONSTRUCTION COSTS	:				\$2,198,300		
MISCELLANEOUS COSTS							
M1 Mobilization		5%			110,000		
M 2 Non Quantified Minor Items (10% to 30%)		<u>15%</u>			331,000		
M 7 Temporary Pavement & Drainage		<u> </u>			66,000		
	ς.	570			\$617 000		
	ithout (	Contingonov			\$2,815,200		
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:				\$2,015,500			
1 Contingency or "risk" (10% to 30%) 15%				423,000			
ESTIMATED TOTAL CONSTRUCTION COSTS P		\$3,238,300					
<b>DESIGN ENG. &amp; CONSTRUCTION ADMIN.</b>		Lump Sum	25%		810,000		
SUBTOTAL OTHER PROJECT COSTS					810,000		
TOTAL PROJECT COST (based upon 2011 bid price information)					4,048,648		

NOTE: (1) Assumes 8" bituminous and 10" aggregate base.
(2) Includes aggregate base class 5.
(3) Includes existing median removal areas and proposed sidewalk/trail areas.



#### **FARGO - MAIN AVENUE SEGMENT 2 ALTERNATIVE B**

#### Concept Cost Estimate (based upon 2011 bid price information) Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

	TOTAL				
			UNIT	EST.	EST.
ITEM DESCRIPTION	UNIT	PRICE	QUANTITY	AMOUNT	
PAVING AND GRADING COSTS					
GrP 1a Excavation - common & subgrade		cu. yd.	\$6.00	19,400	\$116,400
GrP 2d Granular Subgrade (CV)	(	cu. vd.	\$14.00	9,700	\$135,800
GrP 3e County Road Pavement	(1)	sq. yd.	\$30.00	29,000	\$870,000
GrP 4a Concrete Median	(2)	sq. yd.	\$35.00	100	\$3,500
GrP 4b Concrete VValk / Bituminous Trail	(2)	<u>sq. ya.</u>	\$15.00	6,400	\$96,000
GIP 4C ADA Pedestinan Curb Ramp		lip ft	\$1000.00	9 700	¢120 500
GrP 8a Removals - Pavement	(3)		\$3.00	31,000	\$93,000
SUBTOTAL PAVING AND GRADI		<u>sq. yu.</u>	ψ3.00	51,000	\$1 445 200
DRAINAGE, UTILITIES AND EROSION CONT					¢1,110,200
Dr 5 Drainage - urban (15% range 10-30%)		10%			144000
Dr 7 Turf Establishment & Frosion Control		10%			<u>\$144,000</u>
Dr 8 Landscaping		2%			\$29,000
SUBTOTAL DRAINAGE, UTILITIE	S AND	EROSION CO	ONTROL		\$317,000
SIGNAL AND LIGHTING COSTS	-				+- )
SGL 1 Signals (permanent)		each	\$200.000	2	\$400.000
SGL 4 Mainline Lighting (permanent)		mile	\$200,000	0.75	\$150,000
SUBTOTAL SIGNAL AND LIGHTI	NG CO	STS:			\$550,000
SIGNING & STRIPING COSTS					
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.75	\$26,250
SGN 2 Mainline Striping		mile	\$5,000	0.75	\$3,750
SUBTOTAL SIGNING & STRIPING	G COST	S:			\$30,000
SUBTOTAL CONSTRUCTION CO	STS:				\$2,342,200
MISCELLANEOUS COSTS					
M 1 Mobilization		5%			116,000
M 2 Non Quantified Minor Items (10% to 30	<u>)%)</u>	15%			351,000
M 7 Temporary Pavement & Drainage		5%			116,000
M 8   I raffic Control	0070	3%			70,000
SUBTOTAL MISCELLANEOUS CO	0515:				653000
ESTIMATED TOTAL CONSTRUCTION COST	<b>FS</b> with	out Continge	ency:		\$2,995,200
1 Contingency or "risk" (10% to 30%)	15%			449,000	
ESTIMATED TOTAL CONSTRUCTION COST		\$3,444,200			
DESIGN ENG. & CONSTRUCTION A	25%		862,000		
SUBTOTAL OTHER PROJECT COST			862,000		
TOTAL PROJECT COST (based upo		4,305,255			

NOTE:

Assumes 8" bituminous and 10" aggregate base.
 Includes aggregate base class 5.
 Includes existing median removal areas and proposed sidewalk/trail areas.



#### **FARGO - MAIN AVENUE SEGMENT 2 ALTERNATIVE C**

#### Concept Cost Estimate (based upon 2011 bid price information) Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

				Т	TOTAL		
			UNIT	EST.	EST.		
ITEM DESCRIPTION		UNIT	PRICE	QUANTITY	AMOUNT		
PAVING AND GRADING COSTS							
GrP 1a Excavation - common & subgrade		cu. yd.	\$6.00	19,600	\$117,600		
GrP 2d Granular Subgrade (CV)		cu. yd.	\$14.00	9,900	<u>\$138,600</u>		
GrP 3e County Road Pavement	(1)	sq. yd.	\$30.00	29,600	\$888,000		
GP 4a Concrete Median	(2)	sq. ya.	\$35.00 \$15.00	6 700	\$3,500 \$100,500		
GrP 4c ADA Pedestrian Curb Ramp	(2)	each	\$1000.00	0,700	\$100,500		
GrP 5 Concrete Curb and Gutter		lin ft	\$15.00	11 800	\$177,000		
GrP 8a Removals - Pavement	(3)	sa. vd.	\$3.00	31.000	\$93,000		
SUBTOTAL PAVING AND GRADING C	OSTS:		+	,	\$1,784,200		
DRAINAGE, UTILITIES AND EROSION CONTROI	_			1			
Dr 5 Drainage - urban (15% range 10-30%)		10%			\$179,000		
Dr 7 Turf Establishment & Erosion Control		10%			\$179,000		
Dr 8 Landscaping		2%			\$36,000		
SUBTOTAL DRAINAGE, UTILITIES AN	ID ERC	SION CONTR	ROL		\$394,000		
SIGNAL AND LIGHTING COSTS							
SGL 1 Signals (permanent)		each	\$200,000	2	\$400,000		
SGL 4 Mainline Lighting (permanent)		mile	\$200,000	0.75	\$150,000		
SUBTOTAL SIGNAL AND LIGHTING C	COSTS:				\$550,000		
SIGNING & STRIPING COSTS			<u>+</u>				
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.75	\$ <u>26,250</u>		
SGN 2 Mainline Striping		mile	\$5,000	0.75	\$3,750		
SUBTOTAL SIGNING & STRIPING CO	STS:				\$30,000		
SUBTOTAL CONSTRUCTION COSTS					\$2,758,200		
MISCELLANEOUS COSTS							
M 1 Mobilization		5%			137,000		
M 2 Non Quantified Minor Items (10% to 30%)		15%			413,000		
M 2 Traffic Control		5%			137,000		
	s.	3%			82,000 \$769,000		
	ithout (	Contingency			\$3 527 200		
4 Contingency or "rick" (10% to 20%)				<b>\$3,327,200</b>			
					527,000		
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:				1	\$4,054,200		
DESIGN ENG. & CONSTRUCTION ADMIN	Lump Sum	25%		1,013,000			
SUBTOTAL OTHER PROJECT COSTS					1,013,000		
TOTAL PROJECT COST (based upon 2011 bid price information)					5,066,010		

NOTE: (1) Assumes 8" bituminous and 10" aggregate base.
(2) Includes aggregate base class 5.
(3) Includes existing median removal areas and proposed sidewalk/trail areas.



#### **FARGO - MAIN AVENUE SEGMENT 2 ALTERNATIVE D**

#### Concept Cost Estimate (based upon 2011 bid price information) Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

				Т	TOTAL		
			UNIT	EST.	EST.		
ITEM DESCRIPTION		UNIT	PRICE	QUANTITY	AMOUNT		
PAVING AND GRADING COSTS							
GrP 1a Excavation - common & subgrade		cu. yd.	\$6.00	17,600	\$105,600		
GrP 2d Granular Subgrade (CV)		cu. yd.	<u>\$14.00</u>	8,800	<u>\$123,200</u>		
GrP 3e County Road Pavement	(1)	sq. yd.	\$30.00	26,400	\$792,000		
GrP 4a Concrete Median	(2)	sq. yd.	\$35.00	100	\$3,500		
GIP 40 CONCIERE Walk / Diruminous main	(2)	sy. yu.	\$15.00 \$1000.00	5,500	<i>φ</i> 02,300		
GrP 5 Concrete Curb and Gutter		lin ft	\$1000.00	8 600	\$129,000		
GrP 8a Removals - Pavement	(3)	sa vd	\$3.00	31,000	\$93,000		
SUBTOTAL PAVING AND GRADING C	OSTS:	<u> </u>	φ0.00	01,000	\$1.328.800		
DRAINAGE, UTILITIES AND EROSION CONTROL	_				+ ,,		
Dr 5 Drainage - urban (15% range 10-30%)		10%			\$133,000		
Dr 7 Turf Establishment & Erosion Control		10%			\$133,000		
Dr 8 Landscaping		2%			\$27,000		
SUBTOTAL DRAINAGE, UTILITIES AN	ID ERC	SION CONTR	ROL		\$293,000		
SIGNAL AND LIGHTING COSTS							
SGL 1 Signals (permanent)		each	\$200,000	2	\$400,000		
SGL 4 Mainline Lighting (permanent)		mile	\$200,000	0.75	\$150,000		
SUBTOTAL SIGNAL AND LIGHTING C		\$550,000					
SIGNING & STRIPING COSTS							
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.75	\$26,250		
SGN 2 Mainline Striping		mile	\$5,000	0.75	\$3,750		
SUBTOTAL SIGNING & STRIPING CO	STS:				\$30,000		
SUBTOTAL CONSTRUCTION COSTS	-				\$2,201,800		
MISCELLANEOUS COSTS							
M 1 Mobilization		5%			109,000		
M 2 Non Quantified Minor Items (10% to 30%)		15%			330,000		
M 7 Temporary Pavement & Drainage		5%			109,000		
		3%			66,000 \$614,000		
	<b>5</b> .	<u> </u>			\$014,000		
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:					\$2,815,800		
1 [Contingency or "risk" (10% to 30%)		15%			423,000		
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:					\$3,238,800		
DESIGN ENG. & CONSTRUCTION ADMIN.		Lump Sum	25%		810,000		
SUBTOTAL OTHER PROJECT COSTS					810,000		
TOTAL PROJECT COST (based upon 2011 bid price information)					4,048,935		

NOTE: (1) Assumes 8" bituminous and 10" aggregate base.
(2) Includes aggregate base class 5.
(3) Includes existing median removal areas and proposed sidewalk/trail areas.


#### **FARGO - MAIN AVENUE SEGMENT 3 ALTERNATIVE A**

## Concept Cost Estimate (based upon 2011 bid price information) Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

				TOTAL			
			UNIT	EST.	EST.		
ITEM DESCRIPTION		UNIT	PRICE	QUANTITY	AMOUNT		
PAVING AND GRADING COSTS							
GrP 1a Excavation - common & subgrade		cu. yd.	\$6.00	12,500	\$75,000		
GrP 2d Granular Subgrade (CV)	(4)	cu. yd.	<u>\$14.00</u>	6,200	\$86,800		
GrP 3e County Road Pavement	(1)	sq. ya.	\$30.00	18,600	<u>\$558,000</u>		
GrP 4b Concrete Walk / Bituminous Trail	(2)	sq. yu.	\$35.00 \$15.00	4 400	<u>5,500</u> 000 338		
GrP 4c ADA Pedestrian Curb Ramp	(2)	each	\$1000.00	-,О	ψ00,000		
GrP 5 Concrete Curb and Gutter		lin. ft.	\$15.00	5,900	\$88,500		
GrP 8a Removals - Pavement	(3)	sq. yd.	\$3.00	21,700	\$65,100		
SUBTOTAL PAVING AND GRADING C	COSTS:				\$942,900		
DRAINAGE, UTILITIES AND EROSION CONTROI	L						
Dr 5 Drainage - urban (15% range 10-30%)		10%			\$95,000		
Dr 7 Turf Establishment & Erosion Control		10%			\$95,000		
Dr 8 Landscaping		2%			\$19,000		
SUBTOTAL DRAINAGE, UTILITIES AN	ID ERC	SION CONTR	ROL		\$209,000		
SIGNAL AND LIGHTING COSTS							
SGL 1 Signals (permanent)		each	\$200,000	2	\$400,000		
SGL 4 Mainline Lighting (permanent)		mile	\$200,000	0.53	\$106,000		
SUBTOTAL SIGNAL AND LIGHTING C	COSTS:				\$506,000		
SIGNING & STRIPING COSTS							
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.53	<u>\$18,550</u>		
SGN 2 Mainline Striping		mile	\$5,000	0.53	\$2,650		
SUBTOTAL SIGNING & STRIPING CO			\$21,200				
SUBTOTAL CONSTRUCTION COSTS:					\$1,679,100		
MISCELLANEOUS COSTS							
M 1 Mobilization		5%			83,000		
M 2 Non Quantified Minor Items (10% to 30%)		15%			251,000		
M 7 Temporary Pavement & Drainage		5%			83,000		
	2.	3%			\$467,000		
		\$407,000					
ESTIMATED TOTAL CONSTRUCTION COSTS w	m	\$2,146,100					
1 Contingency or "risk" (10% to 30%)		15%			323,000		
ESTIMATED TOTAL CONSTRUCTION COSTS P		\$2,469,100					
DESIGN ENG. & CONSTRUCTION ADMIN.		Lump Sum	25%		619,000		
SUBTOTAL OTHER PROJECT COSTS		619,000					
TOTAL PROJECT COST (based upon 20		3,089,525					

NOTE: (1) Assumes 8" bituminous and 10" aggregate base.
(2) Includes aggregate base class 5.
(3) Includes existing median removal areas and proposed sidewalk/trail areas.



#### **FARGO - MAIN AVENUE SEGMENT 4 ALTERNATIVE A**

## Concept Cost Estimate (based upon 2011 bid price information) Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

				Т	TOTAL	
			UNIT	EST.	EST.	
ITEM DESCRIPTION		UNIT	PRICE	QUANTITY	AMOUNT	
PAVING AND GRADING COSTS						
GrP_1a Excavation - common & subgrade		cu. yd.	\$6.00	5,900	\$35,400	
GrP 2d Granular Subgrade (CV)	(4)	cu. yd.	<u>\$14.00</u>	3,100	\$43,400	
GIP 3e County Road Pavement	(1)	sq. ya.	\$30.00	9,000	\$270,000	
GIP 44 CONCrete Wellan GrP 4b Concrete Walk / Bituminous Trail	$\frac{(2)}{(2)}$	sq. yu.	\$35.00 \$15.00	2 000	\$21,000	
GrP 4c ADA Pedestrian Curb Ramp	(2)	each	\$1000.00	2,000	\$30,000	
GrP 5 Concrete Curb and Gutter		lin. ft.	\$15.00	4,100	\$61,500	
GrP 8a Removals - Pavement	(3)	sa. vd.	\$3.00	10,900	\$32,700	
SUBTOTAL PAVING AND GRADING C	<b>*</b>		\$494,000			
DRAINAGE, UTILITIES AND EROSION CONTROL	-					
Dr 5 Drainage - urban (15% range 10-30%)		10%			\$49,000	
Dr 7 Turf Establishment & Erosion Control		10%			\$49,000	
Dr 8 Landscaping		2%			\$10,000	
SUBTOTAL DRAINAGE, UTILITIES AN	ID ERC	SION CONTR	ROL		\$108,000	
SIGNAL AND LIGHTING COSTS						
SGL 1 Signals (permanent)		each	\$200,000	2	\$400,000	
SGL 4 Mainline Lighting (permanent)		mile	\$200,000	0.24	\$48,000	
SUBTOTAL SIGNAL AND LIGHTING C	OSTS:				\$448,000	
SIGNING & STRIPING COSTS						
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.24	\$8,400	
SGN 2 Mainline Striping		mile	\$5,000	0.24	\$1,200	
SUBTOTAL SIGNING & STRIPING CO			\$9,600			
SUBTOTAL CONSTRUCTION COSTS			\$1,059,600			
MISCELLANEOUS COSTS						
M 1 Mobilization		5%			\$53,000	
M 2 Non Quantified Minor Items (10% to 30%)		<u>15%</u>			<u> </u>	
M 2 Troffic Control		5% 20/			\$53,000	
	s.	3%			\$32,000 \$297 000	
	I	\$1 356 600				
1 Contingonou or "risk" (10% to 20%)		¢202.000				
			-		φ203,000	
ESTIMATED TOTAL CONSTRUCTION COSTS PI	ī	\$1,559,600				
DESIGN ENG. & CONSTRUCTION ADMIN	۱.	Lump Sum	25%		\$390,000	
SUBTOTAL OTHER PROJECT COSTS		\$390,000				
TOTAL PROJECT COST (based upon 20		\$1,948,386				

NOTE: (1) Assumes 8" bituminous and 10" aggregate base.
(2) Includes aggregate base class 5.
(3) Includes existing median removal areas and proposed sidewalk/trail areas.



## FARGO - MAIN AVENUE SEGMENT 4 SUBALTERNATIVE 2nd STREET

### Concept Cost Estimate (based upon 2011 bid price information) Prepared By: SRF Consulting Group, Inc., Date 07/10/2012

				TOTAL		
			UNIT	EST.	EST.	
ITEM DESCRIPTION		UNIT	PRICE	QUANTITY	AMOUNT	
PAVING AND GRADING COSTS						
GrP 1a Excavation - common & subgrade		cu. yd.	\$6.00	10,200	\$61,200	
GrP 2d Granular Subgrade (CV)	(1)	cu. yd.	\$14.00	5,200	\$72,800	
GrP 3e County Road Pavement	(1)	sq. yd.	\$30.00	15,300	\$459,000	
GrP 4a Concrete Median	(2)	sq. yd.	\$35.00	1,400	\$49,000	
GIP 40 Concrete Walk / Bituminous Trail	(2)	sq. ya.	\$15.00	2,500	\$37,500	
GIP 40 ADA Pedestilian Curb Ramp		lin ft	\$1000.00	6 800	\$102,000	
GrP 8a Removals - Pavement	(3)	sa vd	\$3.00	17 100	\$51,300	
SUBTOTAL PAVING AND GRADING C	17,100	\$832,800				
DRAINAGE, UTILITIES AND EROSION CONTROL		<b>,</b>				
Dr.5 Drainage - urban (15% range 10-30%)		10%			\$83,000	
Dr 7 Turf Establishment & Erosion Control		10%			\$83,000	
Dr 8 Landscaping		2%			\$17,000	
SUBTOTAL DRAINAGE, UTILITIES AN	ROL		\$183,000			
SIGNAL AND LIGHTING COSTS						
SGL 1 Signals (permanent)		each	\$200,000	2	\$400,000	
SGL 4 Mainline Lighting (permanent)		mile	\$200,000	0.41	\$82,000	
SUBTOTAL SIGNAL AND LIGHTING C	COSTS:				\$482,000	
SIGNING & STRIPING COSTS						
SGN 1 Mainline Signing (C&D)		mile	\$35,000	0.41	\$14,350	
SGN 2 Mainline Striping		mile	\$5,000	0.41	\$2,050	
SUBTOTAL SIGNING & STRIPING CO	STS:				\$16,400	
SUBTOTAL CONSTRUCTION COSTS:					\$1,514,200	
MISCELLANEOUS COSTS						
M 1 Mobilization		5%			\$76,000	
M 2 Non Quantified Minor Items (10% to 30%)		15%			<u>\$228,000</u>	
M 7 Temporary Pavement & Drainage		<u>5%</u>			\$76,000	
	2.	3%			\$45,000	
		¢4,020,200				
		\$1,939,200				
1 [Contingency of "risk" (10% to 30%)		15%			\$291,000	
ESTIMATED TOTAL CONSTRUCTION COSTS P		\$2,230,200				
DESIGN ENG. & CONSTRUCTION ADMIN	۷.	Lump Sum	25%		\$557,000	
SUBTOTAL OTHER PROJECT COSTS		\$557,000				
TOTAL PROJECT COST (based upon 20		\$2,788,439				

NOTE: (1) Assumes 8" bituminous and 10" aggregate base.
(2) Includes aggregate base class 5.
(3) Includes existing median removal areas and proposed sidewalk/trail areas.



Appendix J: Resolution of Support – Fargo City Council

# Resolution of Support Regarding the Main Avenue Corridor Study (25<sup>th</sup> Street to the Red River)

WHEREAS, the Fargo-Moorhead Metropolitan Council of Governments (Metro COG) is responsible for the planning and development of a safe and functional multimodal transportation system for the FM Metropolitan area;

**WHEREAS**, Metro COG, as the metropolitan planning organization (MPO), is designated by the Governors of North Dakota and Minnesota to maintain the metropolitan area's transportation planning process in accordance with federal regulations;

WHEREAS, Metro COG has undertaken the task of developing a corridor study on Fargo's Main Avenue from 25<sup>th</sup> Street to the Red River which served to identify investment needs along the corridor; and

WHEREAS, the Study was developed in cooperation with the North Dakota Department of Transportation (NDDOT) since Main Avenue is also designated as US Highway 10 and is on the Regional Roadway system; and

WHEREAS, the Study developed an implementation plan identifying a time frame of two phases of improvements along the Main Avenue corridor and potential sources of federal aid which can be pursued for funding; and

WHEREAS, the Study identified local utility infrastructure needs in which the City of Fargo will be solely responsible for funding; and

**WHEREAS**, the City is aware that the planning level alternatives that have been determined to move forward for further review are not necessarily what will be constructed for the future project, but will have final consideration in a future environmental document; and

**THEREFORE BE IT RESOLVED**, that the Fargo City Commission does hereby support the findings and recommendations of the Fargo Main Avenue Corridor Study as the locally developed plan to guide future investments in the Study area.

Dennis Walaker, Mayor

Attest - Steve Sprague, City Auditor

Date

Date