Grand Forks - East Grand Forks
METROPOLITAN
PLANNING ORGANIZATION

TECHNICAL ADVISORY COMMITTEE MEETING

WEDNESDAY, JUNE 9TH, 2021 – 1:30 P.M.

East Grand Forks City Hall Training Room/Zoom

PLEASE NOTE: Due to ongoing public health concerns related to COVID-19 the Grand Forks/East Grand Forks Metropolitan Planning Organization (GF/EGF MPO) is encouraging citizens to provide their comments for public hearing items via e-mail at info@theforksmpo.org. The comments will be sent to the Technical Advisory Committee members prior to the meeting and will be included in the minutes of the meeting. To ensure your comments are received and distributed prior to the meeting, please submit them by 5:00 p.m. one (1) business day prior to the meeting and reference the agenda item your comments addresses.

MEMBERS

Peterson/Kadrmas _____
Ellis _____
Bail/Emery _____
Brooks/Halford _____
Riesinger _____

Mason/Hopkins_____
Zacher/Johnson _____
Kuharenko/Williams _____
Bergman _____

West _____
Magnuson _____
Sanders _____
Christianson _____

1. CALL TO ORDER

2. CALL OF ROLL

3. DETERMINATION OF A QUORUM

4. MATTER OF APPROVAL OF THE MAY 12, 2021 MINUTES OF THE TECHNICAL ADVISORY COMMITTEE

5. MATTER OF UPDATE ON FUTURE BRIDGE TRAFFIC IMPACT STUDY ..... ALLIANT

6. MATTER OF APPROVAL OF CONSULTANT FOR PAVEMENT MANAGEMENT SYSTEM UPDATE ..... KOUBA

7. OTHER BUSINESS
    - A. 2021 Annual Work Program Project Update
        1) East Grand Forks Land Use Plan Update
        2) Grand Forks Land Use Plan Update
        3) Aerial Photo Update
        4) Transit Development Plan RFP
    - B. State Transportation Plan Update
    - C. Special Technical Advisory Committee Meeting June 23rd.

8. ADJOURNMENT

PROCEEDINGS OF THE
TECHNICAL ADVISORY COMMITTEE
Wednesday, May 12th, 2021

CALL TO ORDER

Earl Haugen, Chairman, called the May 12th, 2021, meeting of the MPO Technical Advisory Committee to order at 1:33 p.m.

CALL OF ROLL

On a Call of Roll the following members were present via Zoom: David Kuharenko, Grand Forks Engineering; Ryan Brooks, Grand Forks Planning; Wayne Zacher, NDDOT-Local Government; Jason Peterson, NDDOT-Grand Forks; Ryan Riesinger, Airport Authority; Steve Emery, East Grand Forks Engineering; Nancy Ellis, East Grand Forks Planning; Jon Mason, MnDOT-District 2; Nick West, Grand Forks County Engineer; and Dale Bergman, Cities Area Transit.

Absent: Brad Bail, Stephanie Halford, Jason Peterson, Jesse Kadrmas, Michael Johnson, Lane Magnuson, Lars Christianson, and Patrick Hopkins.

Guest(s) present: Sandy Norby, Grand Forks Resident; Anna Pierce, MnDOT-St. Paul; Tim Burkhardt, Alliant Engineering; and Mike Kondziolka, Alliant Engineering.

Staff: Earl Haugen, GF/EGF MPO Executive Director; Teri Kouba, GF/EGF MPO Senior Planner; and Peggy McNelis, GF/EGF MPO Office Manager.

DETERMINATION OF A QUORUM

Haugen declared a quorum was present.

INTRODUCTIONS

Haugen stated that we do have someone in the audience today, so he would ask that everyone please state their name and the agency they are representing.

MATTER OF APPROVAL OF THE APRIL 14TH MINUTES OF THE TECHNICAL ADVISORY COMMITTEE

Kuharenko referred to Page 3 of the minutes and pointed out that the motion for Item 5 should state "…TA Project Along 32nd Ave. So…".

MOVED BY KUHARENKO, SECONDED BY BROOKS, TO APPROVE THE APRIL 14TH, 2021 MINUTES OF THE TECHNICAL ADVISORY COMMITTEE, AS CORRECTED.

MOTION CARRIED UNANIMOUSLY.

MATTER OF NEW DEFINITION OF T.I.P. REGIONALLY SIGNIFICANT

Haugen reported that, as you recall, we spent a couple of months discussing this; NDDOT and the three MPOs worked together on trying to develop a common definition. He stated that included in the staff report is the latest update; NDDOT is staying with their original definition for regionally significant, and how it will affect primarily in their rural areas of the State of North Dakota. He added that the three MPOs will adopt something that is slightly different for each unique MPO, but common in that it is defined that it is three different items, and so on the front page you can see the three different ones; and you have seen this before, so the motion that we are asking for today is to officially recommend that the MPO Executive Policy Board adopt these into our T.I.P. Procedural Manual so that we can then work with the NDDOT and partnering agencies on identifying what projects in our T.I.P. document warrant these new regionally significant definitions. He said that included in the packet was the section of our T.I.P. Procedural Manual in which these changes are being highlighted, and again the NDDOT outside of the three MPO study areas will be using their definition of regionally significant. He added that MPOs are using a common one that might have some unique, slight modifications; the one that we are adopting here in Grand Forks/East Grand Forks he believes is exactly the same, word for word, perhaps as the one adopted in Fargo/Moorhead.

Kuharenko asked if there had been any additional comments come out of Fargo COG or Bismarck MPOs regarding this definition. Haugen responded that he isn't aware of any.

MOVED BY KUHARENKO, SECONDED BY ELLIS, TO APPROVE FORWARDING A RECOMMENDATION TO THE MPO EXECUTIVE POLICY BOARD THAT THEY APPROVE THE NEW DEFINITION OF REGIONAL SIGNIFICANT IN RELATION TO T.I.P. PROJECTS, AS PRESENTED.

Voting Aye:	***Brooks, Mason, Zacher, Kuharenko, Peterson, Ellis, Emery, and Riesinger.***
Voting Nay:	***None.***
Abstain:	***None.***
Absent:	***Bail, Halford, Bergman, Sanders, Kadrmas, Christianson, Hopkins, Johnson, West, and Magnuson.***

Haugen said that, assuming the MPO Executive Policy Board follows suit next Wednesday on this, our next T.I.P./S.T.I.P. cycle we will be utilizing this regional significant definition. He added that we have already implemented the phasing for all of the non-regionally significant projects, those will continue, so if you think you might have something it would be best to get in contact with us early and often so we can work it out and make sure we have properly implemented this regional significant definition.

Zacher commented that he would like to make one point that for the non-regionally significant projects there will be four tables, or four areas; one for each year, and then each year will be broken into the four phases also.

MATTER OF APPROVAL OF RFP FOR TRANSIT DEVELOPMENT PLAN

Kouba reported that this is the kick-off to the update of our Metropolitan Transportation Plan, and so this is taking over where the last Transit Development Plan left off, so we are looking at the years 2022 to 2027. She added that in this RFP we are also going to ask that the consultant look at a ten-year outlook as well so that we have a greater horizon and understanding of the needs of our transit system. She said that we will be looking at range of service, route evaluation, capital, and financial alternatives. She added that they are hoping that the public involvement and outreach will be a focus in this plan as well.

Kouba commented that East Grand Forks had added some additional 5307 funding toward this project, and we have a budget of $225,000 available for the consultant.

MOVED BY ELLIS, SECONDED BY BROOKS, TO APPROVE FORWARDING A RECOMMENDATION TO THE MPO EXECUTIVE POLICY BOARD THAT THEY APPROVE THE REQUEST FOR PROPOSALS (RFP) FOR THE TRANSIT DEVELOPMENT PLAN, AS PRESENTED.

Voting Aye:	***Brooks, Mason, Zacher, Kuharenko, Peterson, Ellis, Emery, and Riesinger.***
Voting Nay:	***None.***
Abstain:	***None.***
Absent:	***Bail, Halford, Bergman, Sanders, Kadrmas, Christianson, Hopkins, Johnson, West, and Magnuson.***

MATTER OF UPDATE ON FUTURE BRIDGE TRAFFIC IMPACT STUDY

Haugen reported that included in the staff report are four items that we will touch on.

A. 2nd Ad Hoc Group Meeting – May 14th

He said that the first one is just to let everyone know that next Friday morning is the second meeting of the Ad Hoc Group; the presentation that was prepared for that meeting was included in the packet and it is all stuff that we have already reviewed and commented on at one time or another, so we weren't intending on spending a lot of time on it today.

B. Revised Transportation Conditions Technical Memo

Haugen stated that the second item is; we have asked you previously to look at the traffic network facilities that are out there, Tech Memo #2: Existing and Future Conditions, was posted on the www.forks2forksbridge.com/info website. He referred to the memo and commented that, again, this is displaying the basic conditions of facilities that are out there. He added that this

draft has incorporated all of the comments they have received and has been updated to represent the latest and greatest information. He said that it is still open for some review, but hopefully there aren't too many more changes that will be necessary since we have already had a one-time chance to do that.

C. New Traffic Counts Technical Memo

Haugen stated that the third item is regarding the traffic turning counts, traffic counts that Alliant is currently working on. He said that Alliant will take over for a brief presentation on this item. He added that the Tech Memo for this item is included in the packet as well.

Burkhardt said that, again, this is the traffic methodology, it isn't the exciting traffic results and full feature forecast detail that everyone is waiting for, but it does show you where we are headed. He referred to the schedule overview and gave a brief update on where they are at on the project schedule. He then referred to the Tasks and Deliverables Status slide and pointed out that it shows what has been completed, what is currently being worked on, and what will be coming up.

Kondziolka stated that he will talk through Tech Memo 3A that they have completed. He said that it is really focusing specifically on the traffic volumes developed for the study, so he will just go through data sources, look at the methodology that they have for any adjustments to get the existing volume data set, and then take a look at the regional traffic patterns, and then also look at their forecasting methodology and the volumes as well.

Kondziolka referred to a slide presentation and went over it briefly (a copy is included in the file and available upon request).

Presentation ensued.

Kondziolka commented that one component is looking at the regional traffic patterns, or trips starting and ending in Grand Forks or East Grand Forks going across the river. He stated that ATAC conducted an Origin-Destination analysis using StreetLight, using data from March through October of 2019; and this was done looking at trips that were crossing all of the river crossing bridges connecting Grand Forks and East Grand Forks. He said that what they did was that they isolated the data specifically for the Point Bridge, and what is shown on the maps are concentrated areas where more trips are either starting or ending going from east to west or west to east. He added that this is included in the report or the Tech Memo and it kind of provides a little bit of regional context to where are the trips that are using the Point Bridge going to or coming from and it helps to show where the demand is, and the darkest areas are those that are closest to the bridge, but outside of that you can see, on the Grand Forks side there is a kind of a darker concentration in the southwest area and that is useful information to know, where we have some demand that is using the Point Bridge that is coming from a more southern area from each of the cities where there might be some demand that might be able to use a new river crossing bridge south of the Point Bridge.

Kuharenko said that he knows that we have data points on 24th Avenue South, 32nd Avenue South, and 4th Avenue; are there any concerns that we don't have, especially kind of looking at this Origin-Destination information, is there any concern that we don't have any information on 17th Avenue South. Kondziolka responded that this is going to capture everything within the entire zone, it will capture every trip that starts on every cross-street within the traffic analysis zone, although he may not be understanding the question right if that doesn't answer it, but this is capturing every trip that is within one of the highlighted areas, it is assigned to one of the zones so it is represented in the graph. Kuharenko said that he knows we've got, in our tech memos, various intersections where we are doing turning movement counts, so you have that data as well; but is missing 17th Avenue, that connection from Washington to Belmont, an issue at all; in looking at this data, especially considering that you've got some of those darker colors just south of 17th Avenue, between 17th and 24th. Kondziolka responded that, if he is understanding correctly, the trips that are using 17th going east and west are represented within the data set here, it is just whether they are getting shown in one TAZ or the other. Burkhardt commented that all the locations where we are doing counts at intersections, we have that listed in the Tech Memo. Kondziolka stated that we don't have the full list on the presentation here, this is a partial list, so for the origin-destination analysis all trips that are using 17th are captured in here, and then for the larger traffic analysis, internal traffic shifts resulting from the different bridge alternatives, are being captured on a regional scale, or trips that are using Belmont or Washington are all getting captured within the data set that we have. Burkhardt said that he was trying to ask what he thinks Mr. Kuharenko is asking; did we have any data counts on 17th Avenue, does our intersection list include 17th. Kondziolka responded that 17th is not included on the list, we have east-west corridors at 4th, 24th, and 32nd, and we have primarily east-west connections that are going to be influenced by traffic that is using bridges, it is going to be primarily using that 32nd connection for the southern 32nd alternative and then the 24th connection gets primarily used at the Elks Drive which is going to capture the east-west impacts, but we still get accumulative impacts on each of the roadway segments, the north-south segments that would be attributed to the 17th east-west traffic as well.

Kuharenko commented then, that we don't have much of a concern of having to do 17th is kind of what he got out of that primarily because of traffic being shipped over to 24th or 32nd. Kondziolka responded that that is correct, adding that the major shifts that they are seeing in the forecasts are being more concentrated on the major east-west roads that are closest to the bridge connections, which would be the 24th and 32nd roadways.

Kondziolka reported that kind of what the methodology to develop these forecast turning movement volumes was they used the Travel Demand Model output that was produced by A.T.A.C., and this is consistent with the prior River Crossing Analysis Study. He said that they were provided forecast turning volumes resulting from the Travel Demand Model for three scenarios; the no build being no additional new river bridges, a bridge at Elks Drive, and a bridge at 32nd Avenue, and they were provided forecast daily volumes for 2030 and 2045 forecast years in addition to the base year of 2015, so they used that data to scale their turning movement volumes based on the differences that were being shown in the Tech Memo for each of these roadway segments starting with the study intersection and then at the bridges and near the bridges there is going to be some shift in traffic patterns so they developed turning movements

based on the daily volumes they were seeing from the forecasts in order to develop new turning movement counts; what is shown in the figure is the 32nd Avenue Bridge, so that connection over on Rhinehart there isn't an existing intersection to develop the turning movements so they went through and kind of distributed traffic to capture the changes in original patterns so they would be associated with the river bridges.

Kondziolka said that wraps up the methodology they used it to develop their 2030 and 2045 volumes for each of the three scenarios, and that is what is presented at the end of that Tech Memo 3A. Burkhardt added that they are presenting all the details and then they are walking through each intersection, so if you have that memo you will see there is a lot of interesting data. He said that they did have some back and forth with Mr. Haugen, as the person on the ground, to kind of review some of the numbers and make some adjustments for what we expect the future might look like based on the forecast, so just in case you are wondering what any of the circles has in it, feel free to ask them any questions you might have as you look at those.

Burkhardt asked if there were any questions. There were none. Haugen stated that the intent would be to ask for feedback from the Technical Advisory Committee over the next two weeks. Burkhardt asked if that time schedule for feedback works for Mr. Kondziolka. Kondziolka responded that it would, but the sooner the better would be preferred. He added that they want to make sure that we are all comfortable with our volumes, of course, before we add them to the analysis, so the sooner the better.

D. Bridge Capacity Growth Needed Scenarios

Haugen reported that one of the things we discussed last month was trying to show a growth scenario that would say that a two lane bridge being built would be beyond capacity, so included in the packet are a couple of graphics to give us some sense of what additional growth would have to occur for that forecast to come about.

Haugen stated that there are a series of four maps; two of them are showing what we already assume to be the growth happening by 2045.

Haugen referred to the maps and pointed out that the first map depicts the housing growth in both communities, and as you can see we have both internal infill occurring and then we also have some periphery growth occurring as well; the second map depicts employment growth, adding that this information is already built in to our travel demand model already so we are building off that scenario to show a considerable amount of employment growth would have to occur, again out in the periphery to get us to a forecasted volume on either of these river crossings to be at capacity. Haugen commented that these have been run both with and without a Merrifield Bridge, and again, as we are finding out and keep repeating to you; Merrifield in our modeling does not attract much of the city-to-city traffic movements that Elks or 32nd are needing to satisfy the transportation facilities for that movement, and so we aren't seeing significant differences in the forecasted growth with Merrifield or without Merrfield at these river crossings.

Haugen stated that he did preview these maps with both planning staff and we seem to have some reasonableness of comfort that they are depicting considerable more growth would have to occur, and these are generally the areas that would be anticipated the growth would be.

E. Safe Kids Grand Forks Surveys

Haugen said that we don't have any information on this item, but it has to deal with the Safe Kids school surveys. He stated that they had a meeting Monday with the Grand Forks School District to iron out and finalize the survey. He said that he had communication with Safe Kids personnel both yesterday and today, but he hasn't received any feedback from them, and last he heard is that next week they are going to implement the surveys. He added that there is a Safe Kids meeting tomorrow so maybe we will find out then, if not before, the status of that.

Haugen stated that those are the four items they wanted to cover. He said that there is an Ad Hoc Group meeting scheduled for Friday morning at Grand Forks City Hall Council Chambers at 9:30 a.m. He added that the information/invitation is included in this packet that we will be sharing with them, and he is requesting that you review this new Tech Memo 3A and give feedback on it.

Kuharenko commented that he currently only sees on the website memo one and memo two, is memo 3A going to be added to the website or just in what we have in the packet. Haugen responded that on the www.forks2forksbridge.com/info site the memos are posted after we have had the review and comment by the Technical Advisory Committee.

Information only.

Nick West, Grand Forks County Engineer, joined the meeting at 2:15 p.m.

OTHER BUSINESS

A. 2021 Annual Work Program Project Update

Haugen reported that this is our monthly project progress report on the various activities we are doing.

1) Grand Forks Land Use Plan

Haugen stated that both land use plans are progressing, adding that yesterday there was a big public workshop on the Grand Forks side. He commented that there is a survey available until June 4th at: www.gf2050plan.com.

2) East Grand Forks Land Use Plan

Haugen said that on the East Grand Forks side they also had a survey and did receive comments. He reiterated that East Grand Forks is about 6 to 8 months ahead with their Land Use Plan update so currently there are some draft goals and policies that the consultant, city, and MPO staff have reviewed.

Haugen referred to the progress report and commented that we just had a discussion on the Future Bridge and Pavement Management. He reiterated that the RFQ is out and the proposals for the Pavement Management project are due May 21st, so we assume that in June we will be asking the MPO Board to take action on engaging a consultant to get our pavement management up to date. He said that we also just took action on the RFQ for the Transit Development Plan; and the images and LIDAR have been captured and they are in the processing phase.

Information only.

B. State Transportation Plan Update

Haugen reported that this item covers both State Transportation updates. He referred to the packet and pointed out that Minnesota did provide some information regarding engagement opportunities for you to participate; particularly about electric vehicles. He said that since the packet went out a separate Constant Contact e-mail went out and he hopes you received some story boards about transportation on the Minnesota side.

Haugen stated that on the North Dakota side he believes they are about to finalizing and release the final Statewide Transportation Connection document.

Kuharenko said that he knows that we just saw the Transportation Development Plan update, and it looks like it is on the same timeline as the Bike/Ped update; when can we expect to see the RFP for the Bike/Ped Update. Haugen responded that it should be out the latter part of this year.

Information only.

C. Earmarks

Haugen commented that last month we spent some time talking about earmarks; since then all of the requests have been on the House side and have been published. He said that neither of our two House representatives in our area provided or submitted any member designated projects. He added that the Senate side is open and active, so if there are any earmark requests that people want to try on the Senate side, there is opportunity for you.

Information only.

ADJOURNMENT

MOVED BY BROOKS, SECONDED BY KUHARENKO, TO ADJOURN THE MAY 12TH, TECHNICAL ADVISORY COMMITTEE MEETING AT 2:19 P.M.

MOTION CARRIED UNANIMOUSLY.

Respectfully submitted by,

Peggy McNelis, Office Manager

Grand Forks - East Grand Forks
METROPOLITAN
PLANNING ORGANIZATION

MPO Staff Report

Technical Advisory Committee:

June 9, 2021

MPO Executive Board:

June 16, 2021

RECOMMENDED ACTION: Update on Future Bridge Traffic Impact Study

TAC RECOMMENDED ACTION: Update on Future Bridge Traffic Impact Study

Matter of the Update on Future Bridge Traffic Impact Study.

Background: Alliant Engineering will not be participating in the TAC meeting There are 2 particular items that will be discussed.

First, regarding traffic counts, Alliant has drafted a Tech Memo outlining the counts that are being used for the traffic operations analysis. As you will read, we have initiated this Study during a pandemic. Traffic is lighter than "normal". Also, not all intersections have had counts done at the same time. The Tech Memo addresses how these issues are being proposed to be addressed to establish "normalized" traffic counts. The attached Tech Memo incorporates all the comments/feedback we received. It has been posted to the project website.

Alliant and MPO staff are requesting a special TAC meeting for Wednesday, June 23rd. The purpose is to go over the draft traffic operations tech memo, which is the follow-up to the above mentioned Tech Memo. A draft of this will be provided prior to the June 23rd meeting.

The 3rd meeting of the Ad Hoc Group is trying to be scheduled during mid-July. Two attempts have been made without success of finding a date/time all can meet. We will keep trying.

Findings and Analysis:

- NONE

Support Materials:

- Draft Tech Memo on Traffic Counts.

Transmittal Information	
To:	Earl Haugen (Grand Forks-East Grand Forks MPO)
From:	Tim Burkhardt, AICP (Alliant Engineering) Mike Kondziolka, PE, PTOE (Alliant Engineering)
Date:	6/4/2021
Subject:	Technical Memorandum #3-A: Existing and Forecast Future Traffic Volumes

1. Introduction

This is the third in a series of technical memorandums for the Grand Forks-East Grand Forks Future Bridge Traffic Impact Study. It presents the first portion of the traffic analysis—a summary of the data and methodology used to develop the existing and future traffic volumes for the analysis. A fourth technical memorandum (Technical Memorandum #3-B) will follow, completing section 3 with the results of the traffic operations and safety analysis.

2. Existing and Future Conditions

Refer to Technical Memorandum #2 for documentation of the existing and future conditions assessment, including the transportation system and infrastructure, the built and natural environment, and land use.

3. Traffic Analysis

A traffic analysis is being completed to assess the traffic operations and safety performance of the roadway network on both sides of the Red River in Grand Forks and East Grand Forks to assess existing conditions, forecast 2030 conditions, and forecast 2045 conditions under scenarios with no new bridge (No Build), a new river bridge at Elks Dr (Elks Dr Bridge), or a new bridge at 32nd Ave S (32nd Ave Bridge).

3.1 EXISTING TRAFFIC VOLUMES AND PATTERNS

The data sources, methodology, and resulting existing and forecast traffic volumes along with the regional traffic patterns for trips using the Point Bridge are presented in the following sections.

3.1.1 Existing Traffic Volumes

3.1.1.1 Data Sources

Existing turning movement volumes from prior traffic studies and/or agency counts were used for this analysis at intersections where existing data was available. Turning movement counts for multiple of the study intersections were provided by the Grand Forks-East Grand Forks MPO. Turning movement volumes at the signalized intersections on Washington St S were collected using the online NDSU Traffic Analysis tool, which utilizes count data from traffic signal-mounted cameras at signalized intersections. Alliant collected new turning movement counts for intersections and time periods where existing data was not available. Alliant staff

collected video data for the new counts locations and was processed by MioVision to develop turning movement volumes for the analysis area. **Table 3-1** shows the turning movement volume data source and count date for each of the study intersections.

Table 3-1. Existing Turning Movement Volume Data Sources

Intersection	City	Source	Data Date
32nd Ave & Washington St	Grand Forks	NDSU Online Data Tool	Oct 2019
32nd Ave & Cherry St	Grand Forks	New Counts	Feb 2021
32nd Ave & Belmont Rd	Grand Forks	MPO	May 2017
24th Ave & Washington St	Grand Forks	NDSU Online Data Tool	Oct 2019
24th Ave & Cherry St	Grand Forks	New Counts	Feb 2021
24th Ave & Belmont Rd	Grand Forks	AM-New Counts/PM-MPO	AM-Feb 2021/PM-May 2018
Belmont Rd & Elks Dr	Grand Forks	AM-New Counts/PM-MPO	AM-Feb 2021/PM-May 2018
Demers Ave & Washington St	Grand Forks	NDSU Online Data Tool	Oct 2019
4th Ave & Cherry St	Grand Forks	MPO	April 2017
4th Ave & Belmont Rd	Grand Forks	MPO	April 2017
Bygland Rd (CR 72) & 1st St	East Grand Forks	New Counts	Feb 2021
Bygland Rd (CR 72) & Rhinehart Dr	East Grand Forks	New Counts	Feb 2021
Rhinehart Dr & Greenway Blvd	East Grand Forks	AM-New Counts/PM-MPO	AM-Feb 2021/PM-May 2018
Rhinehart Dr & 190th St	East Grand Forks	Inferred from Adjacent Int.	N/A
Bygland Rd (CR 72) & Greenway Blvd	East Grand Forks	AM-New Counts/PM-MPO	AM-Feb 2021/PM-April 2017
Bygland Rd (CR 72) & 190th St	East Grand Forks	New Counts	Feb 2021
TH 220 & Harley (CR 72)	East Grand Forks	New Counts	Feb 2021
TH 220 & US 2	East Grand Forks	New Counts	Feb 2021

The intersection of Rhinehart Dr SE & 190th St SW was added to the study area after counts were collected. Daily volumes at this intersection are less than 100 vehicles per day on each approach. Due to the low volumes, peak hour turning movement counts were inferred from the count data at the adjacent intersections where data was available.

3.1.1.2 Existing Volume Development

Adjustment factors were developed to bring all turning movement volumes from the different data sources to a cohesive baseline existing condition. The new turning movement counts collected by Alliant were gathered in February of 2021 during the COVID-19 pandemic. Traffic volumes during the pandemic were generally lower than pre-pandemic levels. Using intersection turning movement volumes from the NDSU Traffic Analysis online tool, peak hour turning movement volumes prior to the pandemic (2019) were collected at study intersections on Washington St S. The combined 2019 peak hour volumes were compared to the combined new 2021 peak volumes at the same locations. As shown in **Figure 3-1**, the 2019 volumes were higher in the AM and PM peak periods by 3.5% and 8.7%, respectively. In order to reflect expected "normal" traffic volume conditions, the new 2021 peak hour turning movement counts were scaled up by applying these adjustment factors. For the purposes of this analysis, all existing (2021) conditions traffic volumes reflect 2019 traffic volume levels prior to the COVID-19 pandemic.

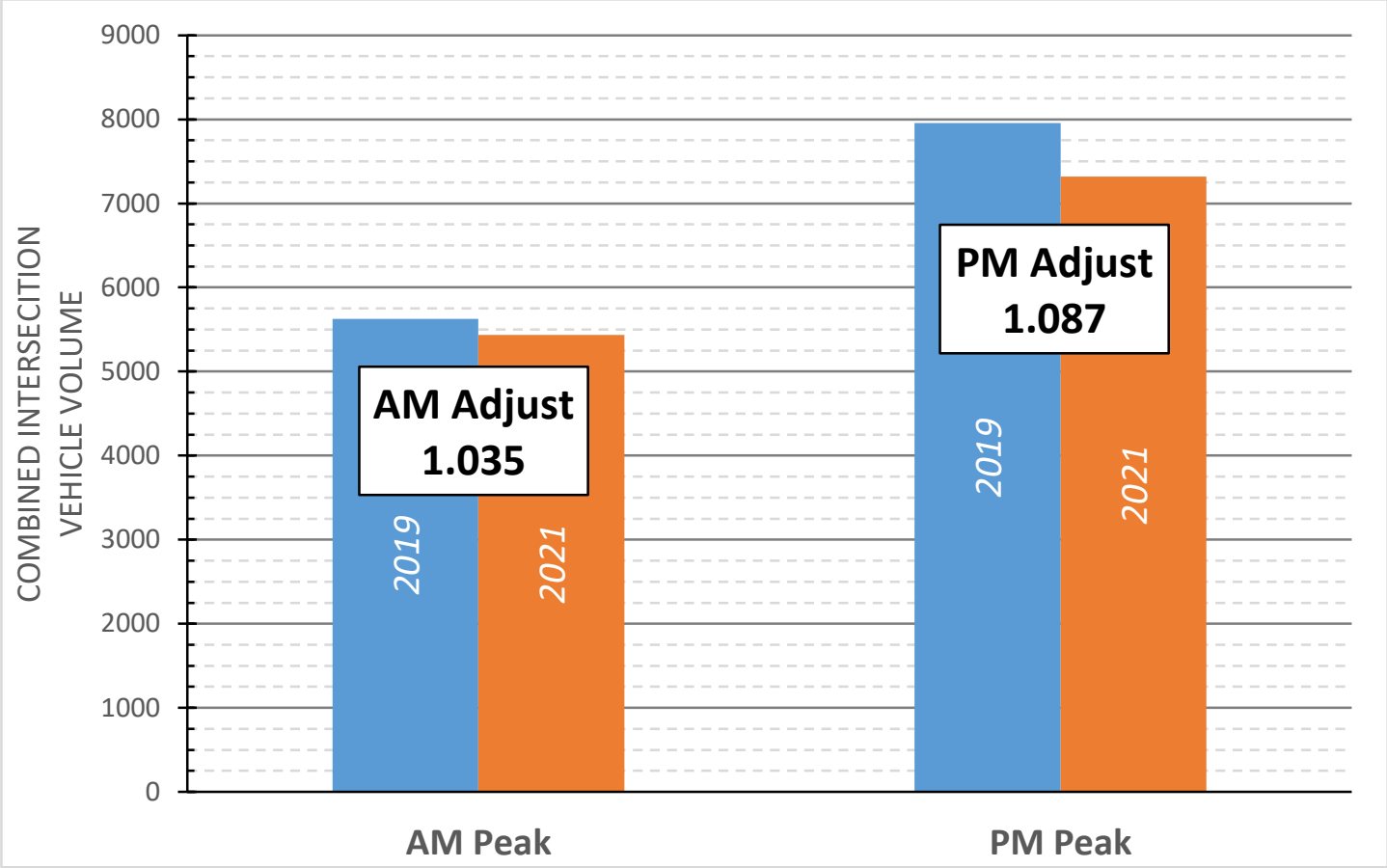


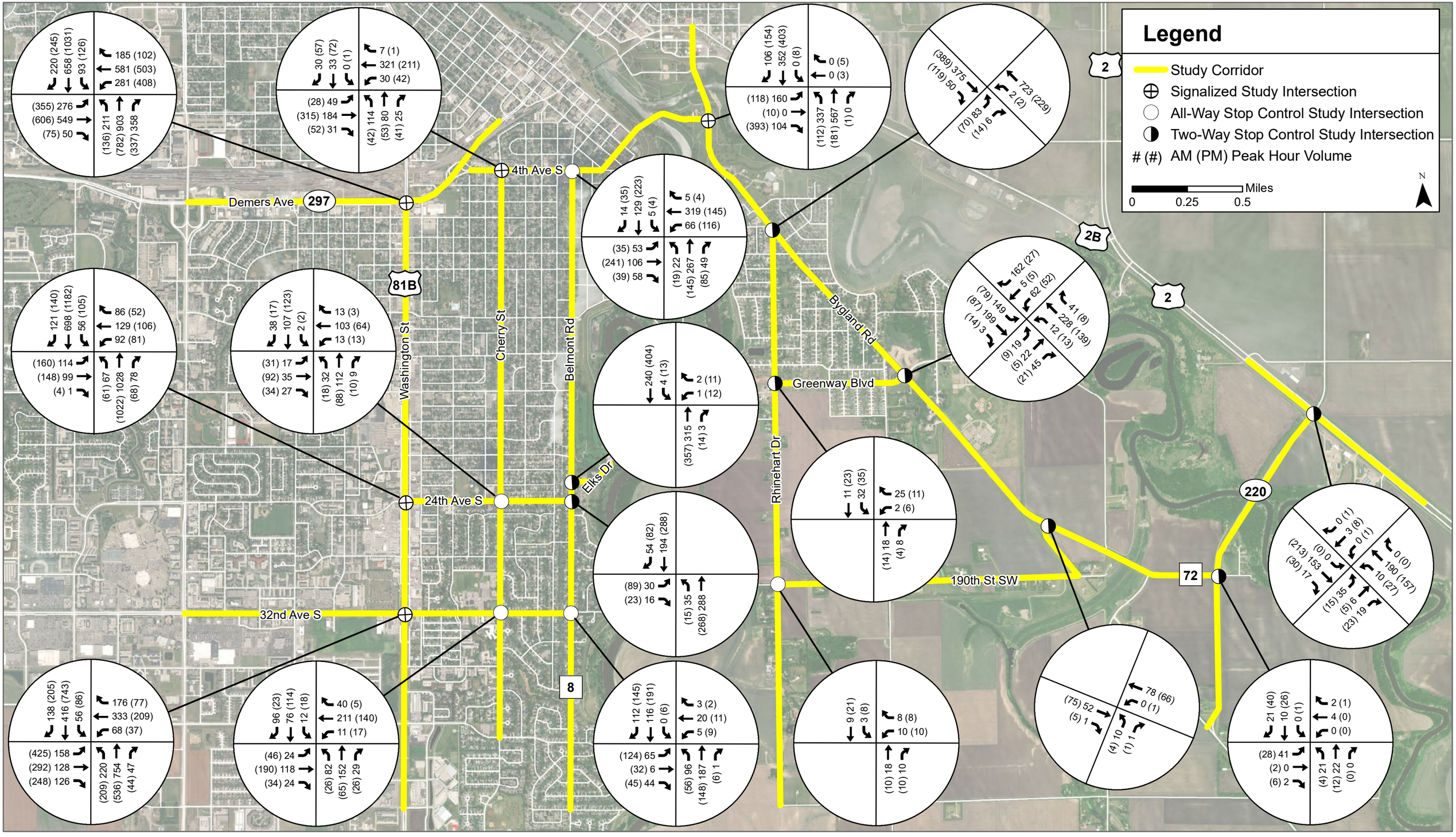
Figure 3-1. COVID-19 Peak Period Volume Adjustment Factors

For intersections that had MPO volume data from 2018 or older, historical AADT data was pulled from the North Dakota Traffic Data and MnDOT Traffic Mapping online applications to grow counts to "normal" existing (2019) volume levels based on historical volume trends. The historical daily traffic volumes collected are shown in **Table 3-2.** The historical volumes were used to develop annual growth rates for each intersection, which were then used to grow the turning movement counts to expected 2019 levels.

Table 3-2. Historical Volume Trend Analysis

Year	Belmont & 32nd	Belmont & 24th/Elks	Belmont & 4th	Cherry & 4th	Greenway & Rhinehart	Greenway & Bygland
2019	-	-	-	-	2,430	-
2018	11,450	6,200	14,085	16,840	-	-
2017	-	-	-	-	2,430	3,430
2015	11,045	6,760	12,745	16,710	-	-
2013	9,815	6,305	10,660	14,835	2,295	3,340
2010	9,670	6,030	11,040	15,085	-	-
Annual Rate	**2.13%**	**0.35%**	**3.09%**	**1.39%**	**0.96%**	**0.67%**

The adjusted existing turning movement volumes are provided in **Figure 3-2**.



Future Bridge Traffic Impact Study

ALLIANT

Figure 3-2
Existing Traffic Volumes

Source: ESRI World Imagery Basemap

3.1.1.3 Existing Traffic Patterns

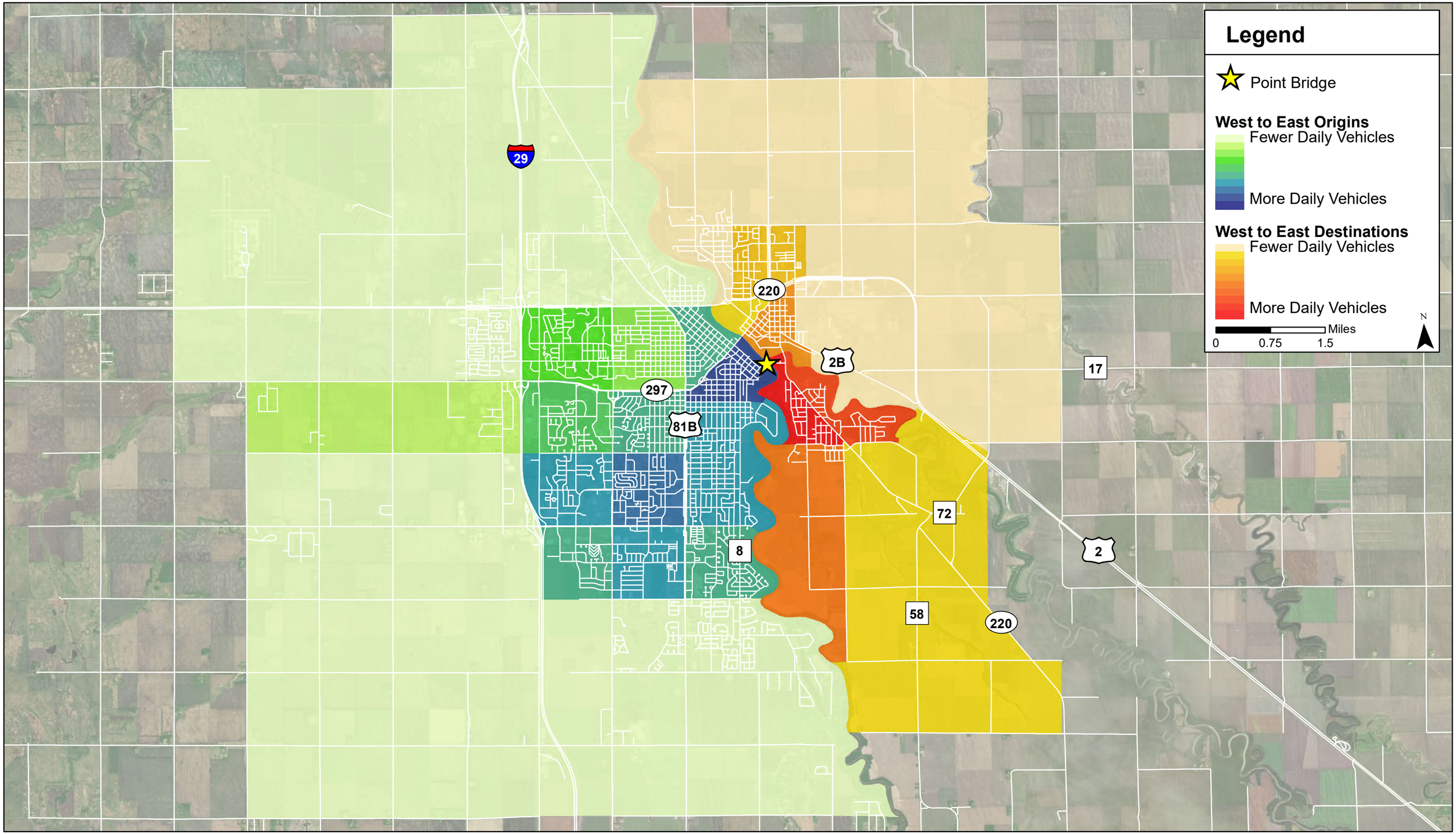
To demonstrate the traffic patterns of travelers crossing the existing bridges between Grand Forks and East Grand Forks, the Advanced Traffic Analysis Center (ATAC) at North Dakota State University ran a StreetLight origin-destination analysis between Grand Forks and East Grand Forks. The analysis determined the average daily vehicle trips that started in each traffic analysis zone (TAZ) on one side of the river, traveled across one of the bridges between the cities, and ended in a TAZ on the opposite side of the river. Of the three bridges near the study area, the data for trips using the Point Bridge was isolated to show the regional traffic patterns that would be influenced be the addition of a new river crossing at Elks Dr or 32nd Ave S.

The results of the analysis are provided in two figures showing origin-destination densities for each direction across the bridge. **Figure 3-3** shows trips starting in Grand Forks and traveling east across the bridge to East Grand Forks, and **Figure 3-4** shows trips starting East Grand Forks traveling west across the bridge to Grand Forks. The darker zones reflect TAZs where more trips begin or end, and the lighter zones reflect TAZs with less tips beginning or ending within them.

The West to East analysis shows that most trips originated east of I-29 in the southern portion of Grand Forks between Demers Ave (ND 297) and 47th Ave S. The downtown area between Demers Ave and 8th Ave S was the highest trip-generating origin TAZ. The most common destination for these trips were to the neighborhoods south of the Red Lake River, near Bygland Rd SE (old Hwy 220).

The East to West analysis was a near mirror of the West to East analysis, with most trips beginning in the neighborhoods near Bygland Rd SE between 1st St SE and Greenway Blvd SE, and ending south of Demers Ave and east of I-29. The primary destination TAZs were between I-29 and Washington St S to the north of 32nd Ave S and south of 17th Ave S.

These results indicate that a sizeable portion of trips currently using the Point Bridge would be expected to use a new river bridge to the south of the point bridge.

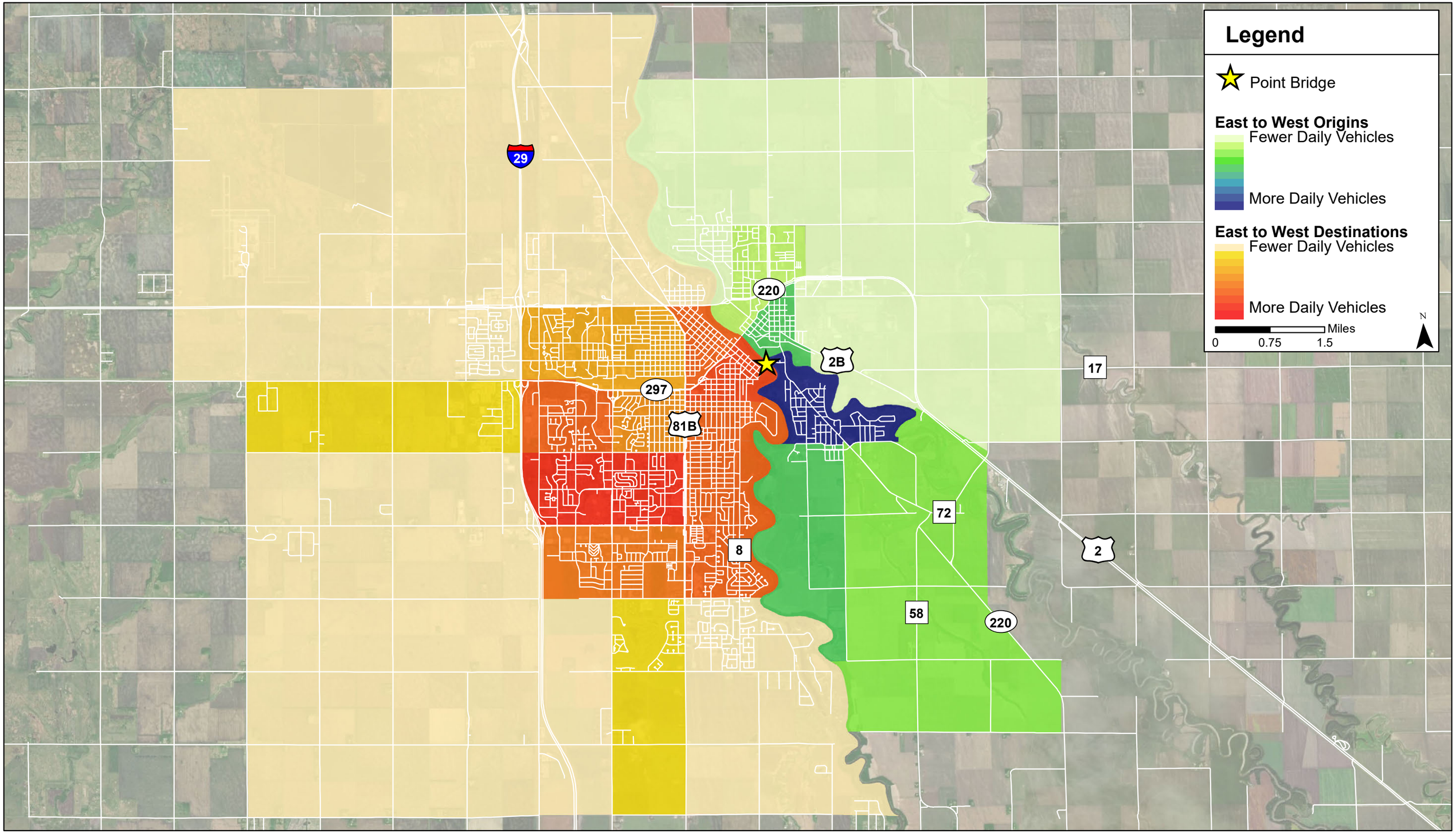


Future Bridge Traffic Impact Study

ALLIANT

Figure 3-3
Point Bridge Traffic Patterns
West to East Origins/Destinations

Source: ESRI World Imagery Basemap



Future Bridge Traffic Impact Study

ALLIANT

Figure 3-4
Point Bridge Traffic Patterns
East to West Origins/Destinations

Source: ESRI World Imagery Basemap

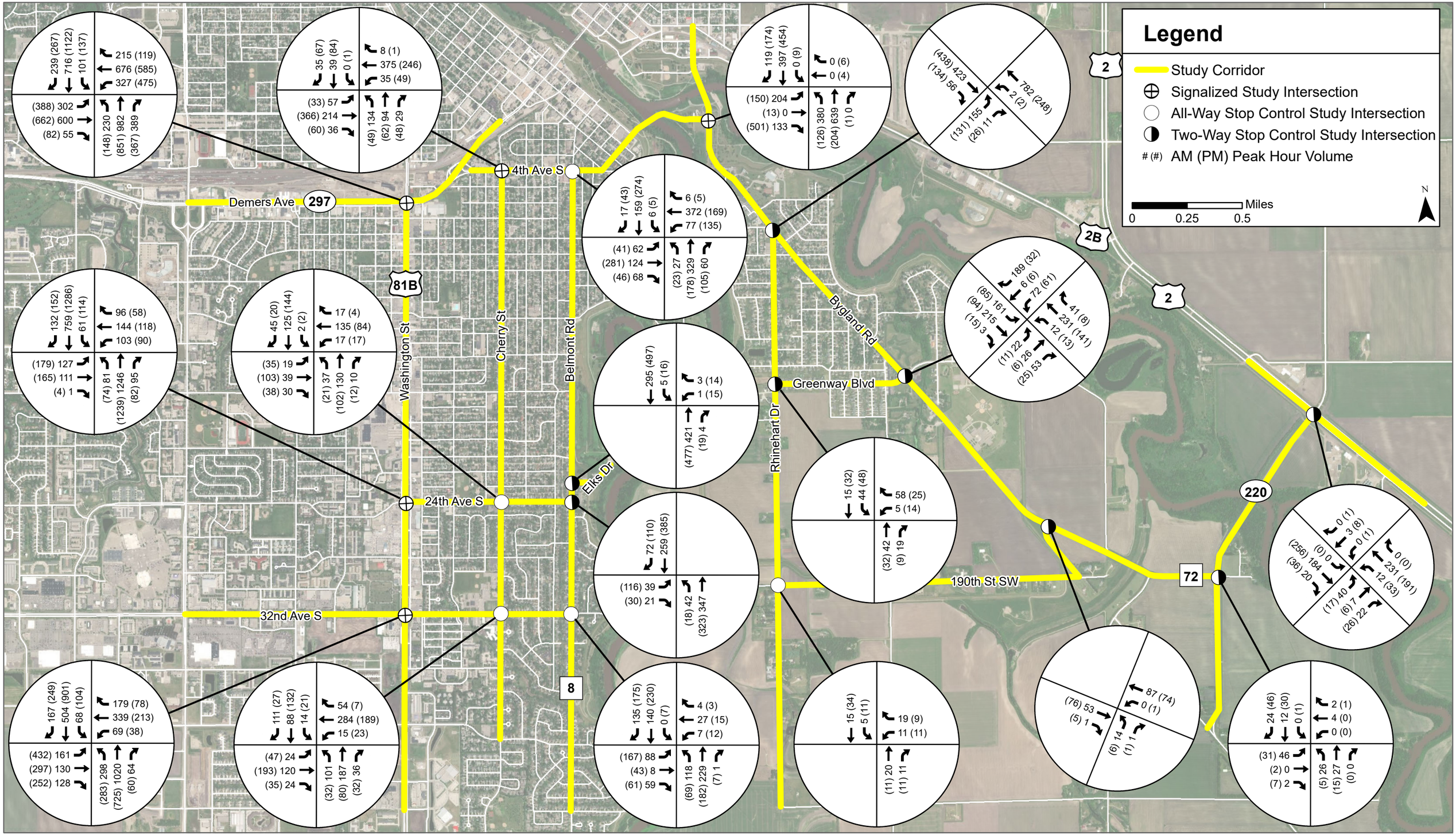
3.1.2 Future Traffic Volumes

Future daily traffic volume forecasts for the study roadway segments were developed by ATAC using travel demand modeling for the years 2030 and 2045 for scenarios including no new river bridge (No Build), a new river bridge at Elks Dr (Elks Dr Bridge), and a new river bridge at 32nd Ave S (32nd Ave Bridge). The travel demand model output included AADT volumes for the 2015 base year, 2030 forecast year, and 2045 forecast year along all major street segments in the project area.

Using the forecast data provided by ATAC, growth rates were developed by comparing the base (2015) modeled segment volumes to the segment volumes for each of the forecast years under the three scenarios. These growth rates were then applied to each intersection approach to scale the existing turning movement volumes to forecast levels in 2030 and 2045 under the three scenarios. Two growth factors were calculated for each segment: one based on model-to-model growth from 2015 to 2030, and one based on model-to-model growth from 2015 to 2045. The growth rates were applied to the 2021 turning movement volumes to develop the forecast turning movement volumes.

In the Elks Dr Bridge and 32nd Ave Bridge scenarios, a new study intersection was added where the bridge would connect to Rhinehart Dr SE in East Grand Forks. Build scenario forecast turning movement volumes for these proposed future intersections and the intersections on Belmond Rd where the new bridge would connect (Elks Dr and 32nd Ave S) were derived from the travel demand model forecast ADTs based on peak hour traffic characteristics for the existing Point Bridge.

The No Build scenario forecast volumes are provided in **Figures 3-5 and 3-6**, the Elks Dr Bridge scenario forecast volumes are provided in **Figures 3-7 and 3-8,** and the 32nd Ave Bridge scenario forecast volumes are provided in **Figures 3-9 and 3-10.**

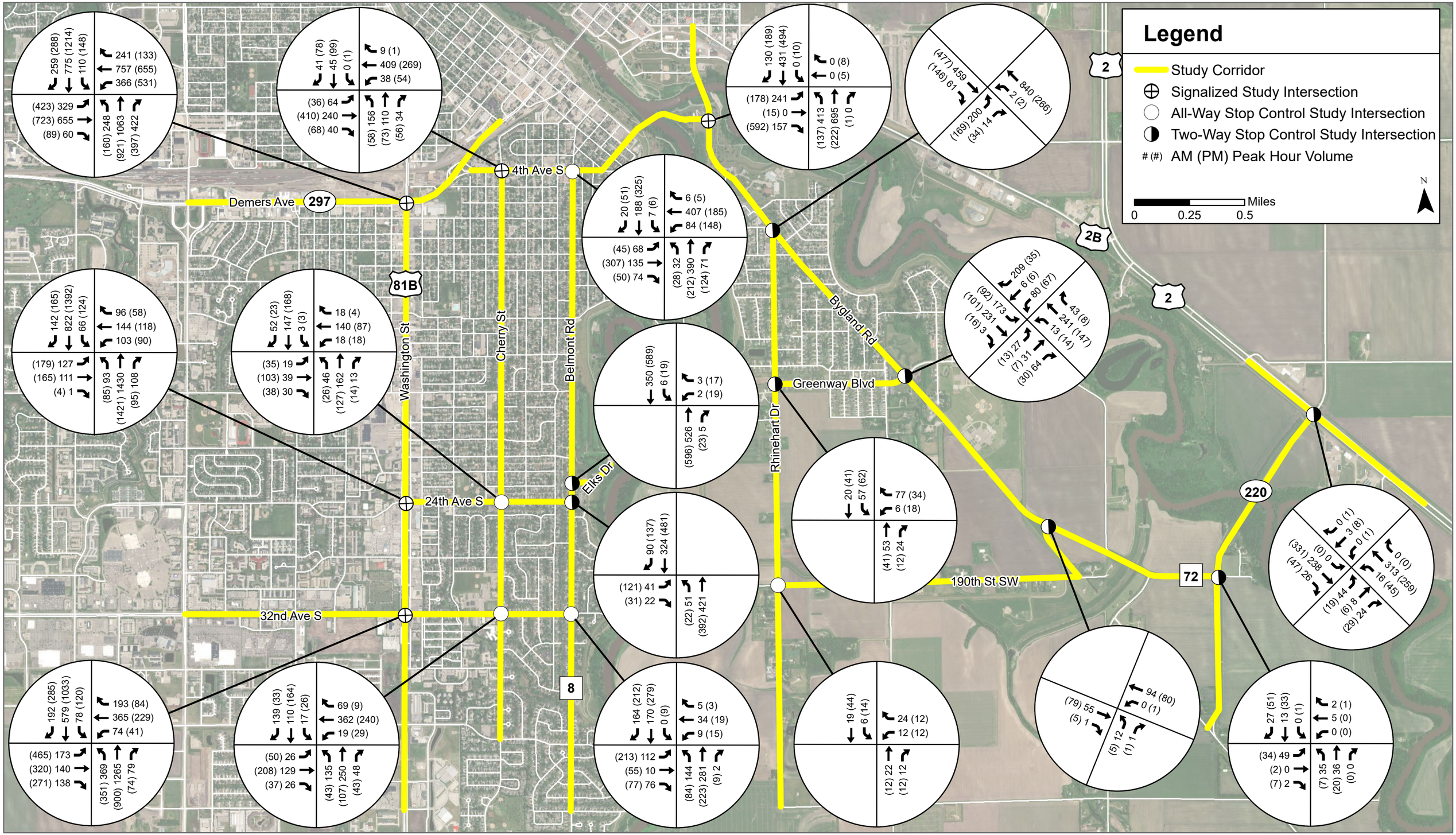


Future Bridge Traffic Impact Study

ALLIANT

Figure 3-5
Forecast 2030 No Build Traffic Volumes

Source: ESRI World Imagery Basemap

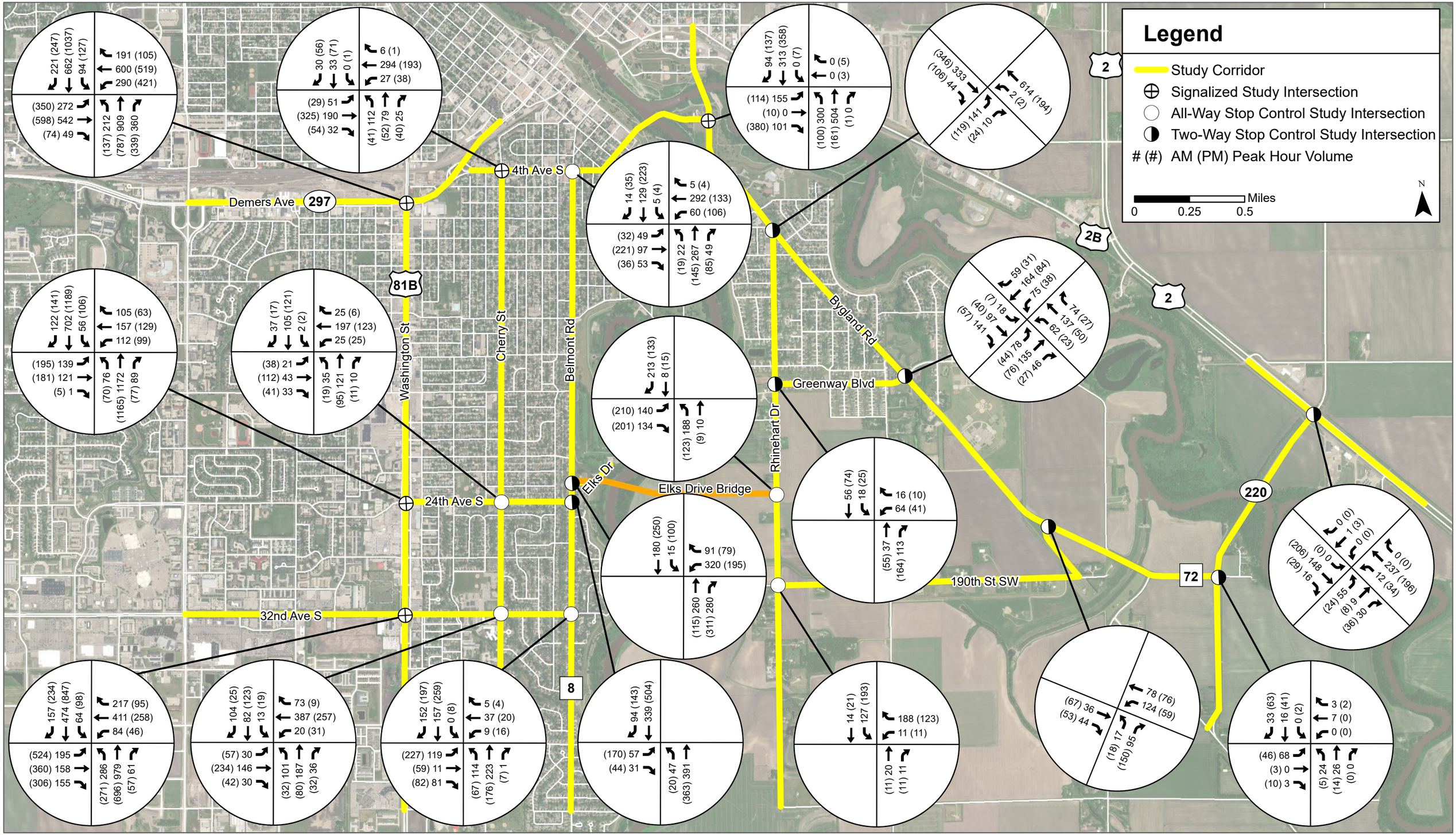


Future Bridge Traffic Impact Study

ALLIANT

Figure 3-6
Forecast 2045 No Build Traffic Volumes

Source: ESRI World Imagery Basemap



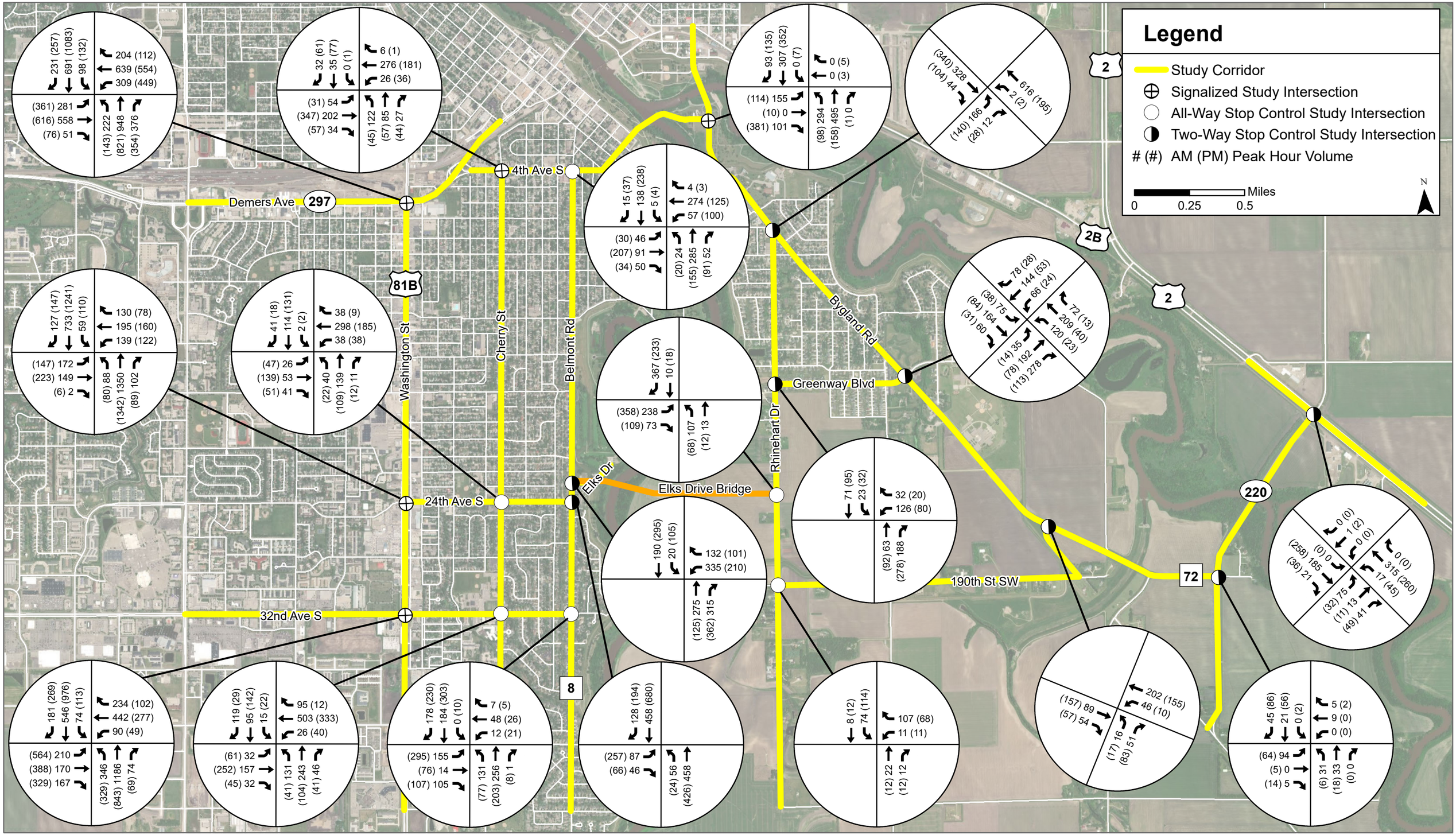
Future Bridge Traffic Impact Study

ALLIANT

Figure 3-7

Forecast 2030 Elks Drive Bridge Traffic Volumes

Source: ESRI World Imagery Basemap



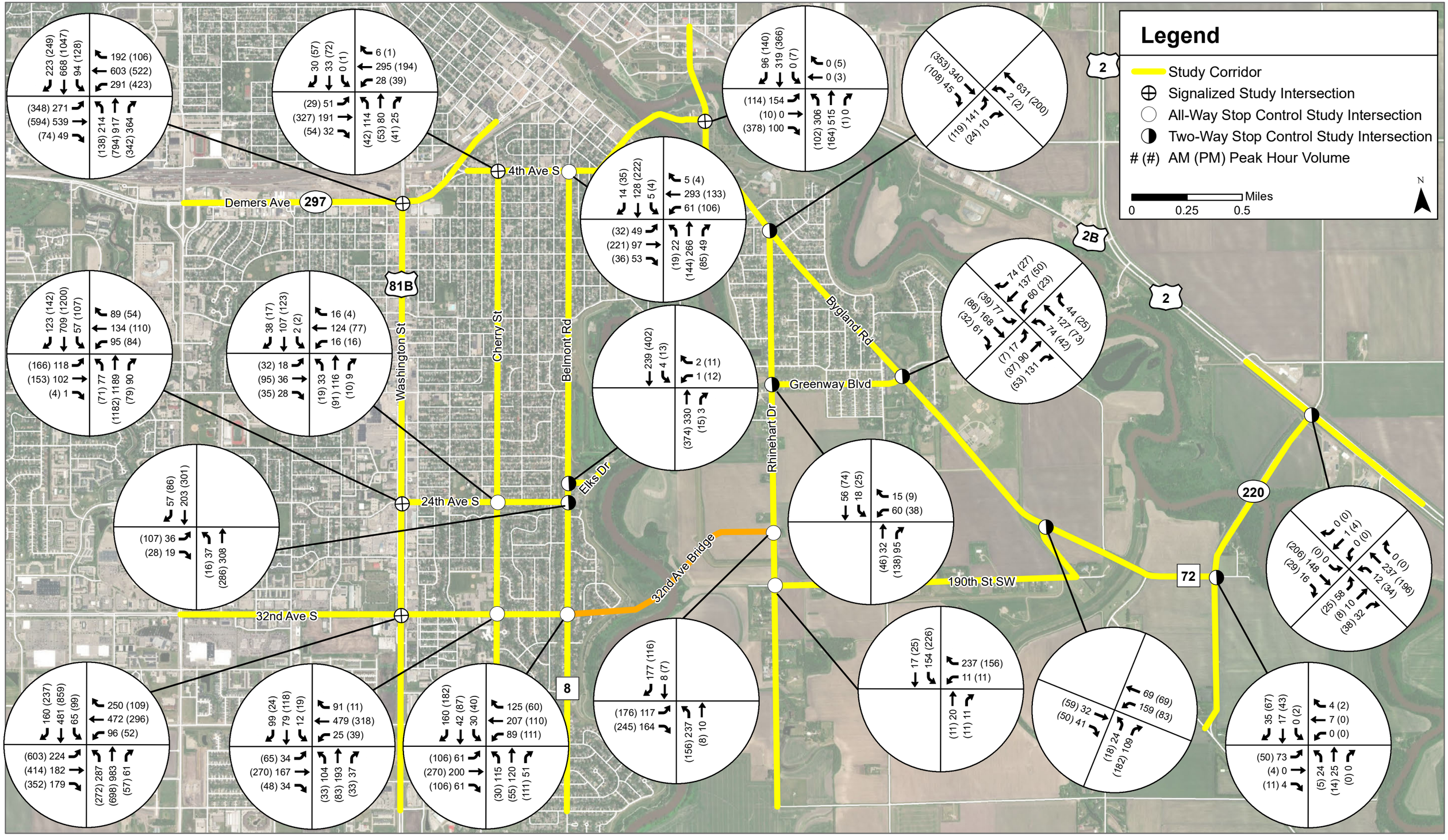
Future Bridge Traffic Impact Study

ALLIANT

Figure 3-8

Forecast 2045 Elks Drive Bridge Traffic Volumes

Source: ESRI World Imagery Basemap



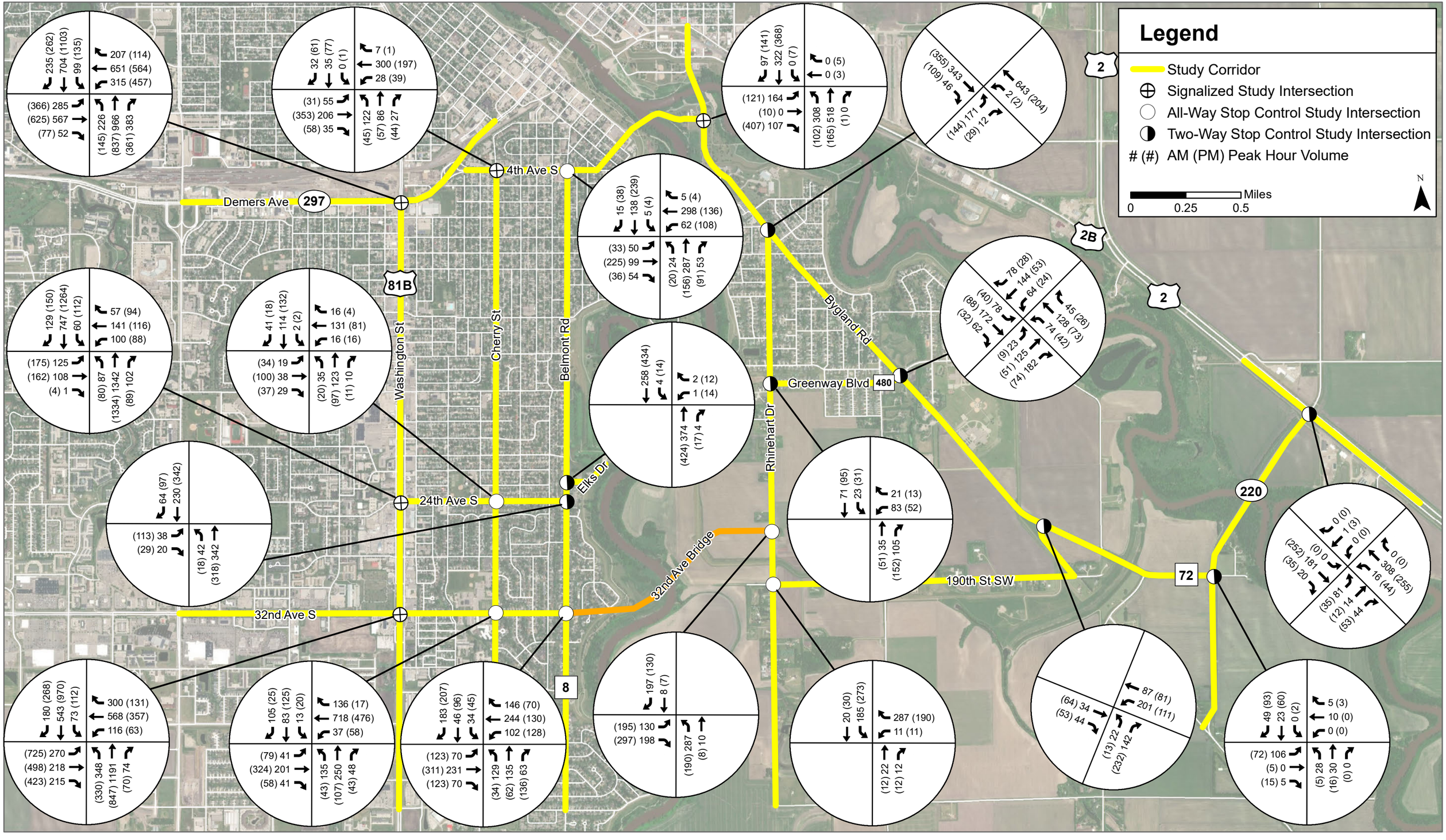
Future Bridge Traffic Impact Study

ALLIANT

Figure 3-9

Forecast 2030 32nd Avenue Bridge Traffic Volumes

Source: ESRI World Imagery Basemap



Future Bridge Traffic Impact Study

ALLIANT

Figure 3-10

Forecast 2045 32nd Avenue Bridge Traffic Volumes

Source: ESRI World Imagery Basemap

Grand Forks - East Grand Forks
METROPOLITAN
PLANNING ORGANIZATION

MPO Staff Report

Technical Advisory Committee:

June 9, 2021

MPO Executive Board:

June 16, 2021

RECOMMENDED ACTION: Approve Contract for the Pavement Conditions and Analysis Report with GoodPointe Technology, with Grand Forks local road approval given by Grand Forks City Council.
TAC RECOMMENDED ACTION:

Matter of Approval of Contract for the Pavement Conditions and Analysis Report.

Background:
The scope of work in the Request for Quotes (RFQ) for this project is for a data collection on arterial and collector roads in both direction in the Cities of Grand Forks and East Grand Forks. This is approximately 253 miles. Once the data is collected the pavement condition can be analyzed and a report written. This will help the MPO make recommendation for Performance targets in the future, that are mandated by federal law, as well as help prioritizing projects in the 2050 Metropolitan Transportation Plan (MTP).

In the past the Cities have also done the local roads in one direction to help in deciding maintenance and preservation project priorities. This is approximately 153 miles for Grand Forks and 41 miles for East Grand Forks. The MPO has been asked to include an option for the Cities to have the local roads done as well at the Cities expense. This is being included in the RFQ as well this time.

The RFQ was advertised starting April. 23rd, with quotes due by May 21st by noon. Only one quote was received at that time from GoodPointe Technology. NDDOT was asked if we could proceed with the single quote. They gave approval to continue with our RFQ process as if we received more. The selection committee met on May 27th. The first question I asked the committee was if there were any inconsistencies in the quote that would eliminate GoodPointe's quote or if the RFQ should be released again. The committee felt that the quote was providing what the RFQ asked for and that there were no known reasons to release the RFQ again. The quote was scored based on the criteria in the RFQ by each committee member, with scores coming in between middle and high. With no others GoodPointe's quote was the best overall.

The Committee had a question about being able to view the PCI and IRI together in the same graph. GoodPointe stated that they were working on adding this to the program, but

it would take a little time. There was a discussion of using metric vs. English measurements and GoodPointe said that they could do a conversion if it was desired by the Cities. A final question was to combine the PCI and the IRI to have a single rating. Engineering committee staff and GoodPointe were both unsure if that would work. GoodPointe stated that if the Cities could settle on a formula that would give a combined score could be created, they would put it into the database.

The budgeted cost for the arterials and collectors was $58,000. GoodPointe's quote came in at $57,906. The local roads for Grand Forks were quoted at $31,442. They felt the need to bring this cost to City Council. They would give final approval of the cost on June 21st. The local roads for East Grand Forks were quoted at $8,936. This was with in their budgeted amount so will go forward without taking it back to the City Council.

Collection of the imagery would start in July with data being delivered by the beginning of November. Import of the data will begin around that time, with scenarios being run in November and December. The final report is due to the MPO for final approval by February 25th.

Findings and Analysis

- UPWP identifies the completion of Pavement Condition and Analysis Report.
- The NDDOT QBS process was followed.

Support Materials:

- Contract Scope of Work and Schedule
- Contract Costs

PROPOSED SCOPE OF SERVICES

TASK 1. PROJECT INITIATION AND PROGRESS REPORTING

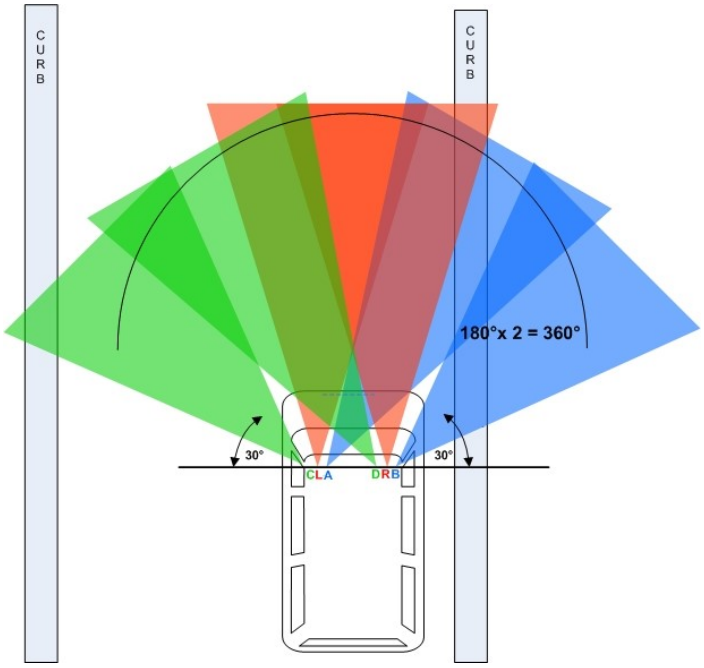
Once the notice of selection has been received, the first step in this project will be to have a project kickoff meeting with project staff to establish and document the specific scope of work to be performed based on the RFP specifications and any options selected. Monthly progress reports will be provided to the MPO by the end of the day, on the first Thursday of the month, for the duration of this project.

TASK 2. COLLECT DIGITAL IMAGE DATA

Our team will meet this project's critical inventory and condition survey requirements by providing ***sub-meter coordinate accuracy coupled with an asset feature extraction process that does not require follow-up field inspections***.

Our data collection van will utilize the following 6-camera configuration as pictured:

Stereo Pair	Purpose
A/B:	Forward/Right to capture pavement shoulder condition, curb/gutter, sidewalk and most traffic signs.
C/D:	Forward/Left to capture median signs and pavements to left field of view.
L/R:	Forward view, primarily for pavement surveys



Imaging Arterials and Collector Roadways in Both Directions of Travel
In this project each roadway segment in the functionally classified network will be imaged in both directions of travel, to provide us with a comprehensive, 360-degree view of the pavement surface and right-of-way. This enables us to image the network (and related infrastructure such as traffic signs) as the traveling public would view it, rather than trying to image the opposing lane with a rear-facing camera and to extract more detailed data for infrastructure assets located in your right of way. Local roadways will be imaged in a single direction, as specified in the RFP.

DIGITAL IMAGE ACQUISITION

All designated roadway routes specified in this project would be driven by one or more specially equipped data collection vehicles such as the following pictured:

The actual data collection process makes use of the latest digital imaging and Global Positioning System (GPS)/Inertial Navigational System (INS) technology to capture accurate feature location coordinates and a digital record of each visible feature simultaneously.

GPSVision data collection vehicles

All imagery is captured with multiple full-frame progressive scan digital color cameras that take high-resolution (1600 pixels x 1200 lines) jpeg images at pre-set intervals along the designated routes.

While not a moving video of the route, images are sequenced to simulate a full video log along each street.

Maximizing Your ROI on the GPSVision Images
For this project, the set of geo-referenced JPG images that we will be collecting to produce the PCI survey results can be exported for additional use. For example, the right of way images could be integrated with an in-house GIS application, to maximize the return on investment (ROI) realized by the MPO and the member cities, in this project.

QUALITY ASSURANCE PLAN

"You cannot inspect quality into a product (or service)--it is already there."

W. Edwards Demming, The father of the American Quality Management.

As it relates to this pavement condition data collection project, if we collect 450 miles of pavement condition data for this project and then were to do, say a 1% quality control (QC) inspection (@5 miles) and show you the results after the fact, this QC effort will effectively do nothing to improve the quality of the remaining 99% (or 445 miles) of survey data that we had already collected for the project. In other words, we cannot inspect quality into a product (or service) once it has already been created or delivered.

Therefore, it is the intent of our GoodPointe Quality Assurance (QA) procedures to ensure that each of our technicians is competently trained before starting the project and that we provide ongoing refresher training to our staff to ensure that we are consistent in our rating procedures (i.e. the assignment of distress types, severity levels, and quantities) for the local conditions for any custom survey procedures, etc. and that we keep our raters freshly rotated between their work in the field and in the office doing data entry.

This consistency training involves bringing multiple raters out into the field and doing a walk- through calibration survey, to ensure that our raters are consistently rating distresses-, severity levels, and quantities, within an accepted level of variation. We also encourage the "when in doubt, write it out" policy, which encourages our raters to take detailed notes and flag individual surveys for a closer re-inspection if they observe pavement distress formations that appear out of the normal.

Since we have evaluated the Grand Forks and East Grand Forks networks previously, we do have additional QC checks available to us in this project. Based on known dates of construction, we can establish an expectation of PCI results to target PCI survey results which are outside the normally expected variation of pavement performance for the indicated pavement's life cycle.

For example, if we know a residential roadway pavement (asphalt surface type) was newly reconstructed two (2) years ago, we might expect the PCI to be in the 95 to 100 range. However, if the resulting survey PCI=70, then the section would be flagged for QC review to confirm the quality of the condition survey and/or to document any extenuating circumstances (e.g. accidental pavement damage due to heavy construction vehicles, etc.).

QUALITY CONTROL PROCEDURES

The resources that are required to provide our quality control services are already included in the quoted per mile rate of the pavement condition survey; For GoodPointe Technology projects that involve surface condition surveys, the QC Survey Lead (for this project, Tony Nguyen) is assigned the responsibility of providing field quality control services.

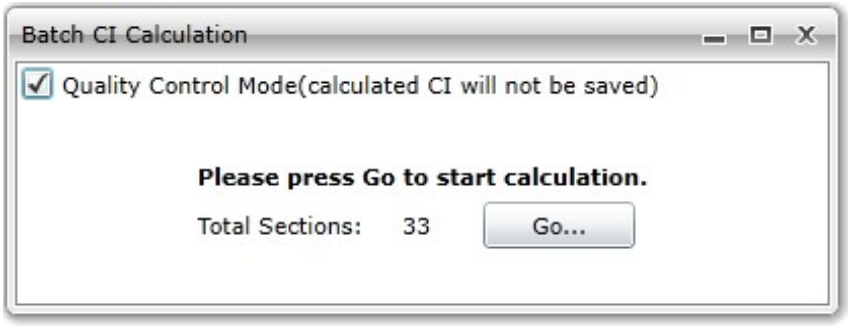
A Project Kickoff Meeting will be held prior to the start of data collection operations for your staff to meet with lead GoodPointe staff to review the data collection and quality control procedures proposed for this project. During this field meeting, pavement distress types and severity levels will be reviewed with the City and the technical staff assigned to the project.

GoodPointe will randomly assign repeat surveys in the initial phase of the data extraction operations at the distress/severity level.

After the completion of the quality control review period, the GoodPointe project team will internally discuss the results of the repeat surveys. Based on the results of this quality control review, our project engineer will apply corrective action, which will include, but not be limited to, adjustment of the survey/sampling procedures, follow-up calibration training for the distress type/severity levels involved, and, possible rotation/replacement of raters.

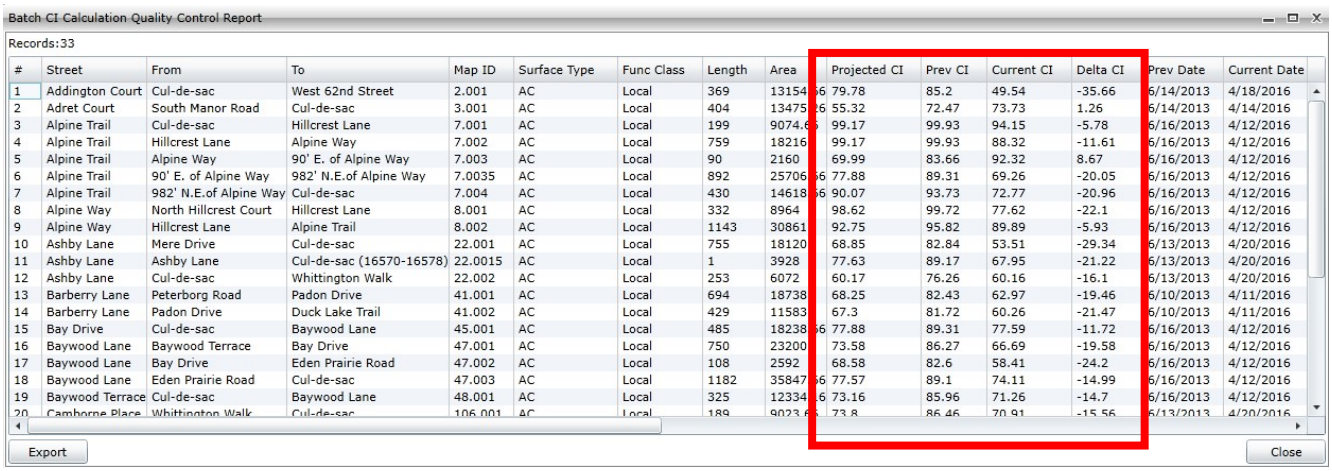
ICON QUALITY CONTROL REPORT

Over the past thirty years, we have developed and have continually refined our Infrastructure CONsultant (ICON) Pavement Management System (PMS) software in coordination with our active ICON user group. A prime example of this is our Quality Control *Batch CI Calculation* report, which enables us to automatically capture and present meaningful QA/QC information to help ensure that the collected system data provides a true representation of the actual pavement conditions in the field.



Once the condition data has been imported into the ICON program, clicking the 'Go' button generates a quality control report spreadsheet which compiles the essential inventory, condition, and latest paving project history information for each roadway section in the batch.

The condition data included in this report includes the: Current PCI (i.e. the PCI from the current survey); Previous PCI (i.e. the PCI from the most recent, previous survey), and Projected PCI (i.e. the expected PCI based on the pavement performance curve established within the ICON program.



Batch CI Calculation Quality Control Report

Records:33

#	Street	From	To	Map ID	Surface Type	Func Class	Length	Area	Projected CI	Prev CI	Current CI	Delta CI	Prev Date	Current Date
1	Addington Court	Cul-de-sac	West 62nd Street	2.001	AC	Local	369	13154.56	79.78	85.2	49.54	-35.66	6/14/2013	4/18/2016
2	Adret Court	South Manor Road	Cul-de-sac	3.001	AC	Local	404	13475.56	55.32	72.47	73.73	1.26	6/14/2013	4/14/2016
3	Alpine Trail	Cul-de-sac	Hillcrest Lane	7.001	AC	Local	199	9074.6	99.17	99.93	94.15	-5.78	6/16/2013	4/12/2016
4	Alpine Trail	Hillcrest Lane	Alpine Way	7.002	AC	Local	759	18216	99.17	99.93	88.32	-11.61	6/16/2013	4/12/2016
5	Alpine Trail	Alpine Way	90' E. of Alpine Way	7.003	AC	Local	90	2160	69.99	83.66	92.32	8.67	6/16/2013	4/12/2016
6	Alpine Trail	90' E. of Alpine Way	982' N.E.of Alpine Way	7.0035	AC	Local	892	25706.56	77.88	89.31	69.26	-20.05	6/16/2013	4/12/2016
7	Alpine Trail	982' N.E.of Alpine Way	Cul-de-sac	7.004	AC	Local	430	14618.56	90.07	93.73	72.77	-20.96	6/16/2013	4/12/2016
8	Alpine Way	North Hillcrest Court	Hillcrest Lane	8.001	AC	Local	332	8964	98.62	99.72	77.62	-22.1	6/16/2013	4/12/2016
9	Alpine Way	Hillcrest Lane	Alpine Trail	8.002	AC	Local	1143	30861	92.75	95.82	89.89	-5.93	6/16/2013	4/12/2016
10	Ashby Lane	Mere Drive	Cul-de-sac	22.001	AC	Local	755	18120	68.85	82.84	53.51	-29.34	6/13/2013	4/20/2016
11	Ashby Lane	Ashby Lane	Cul-de-sac (16570-16578)	22.0015	AC	Local	1	3928	77.63	89.17	67.95	-21.22	6/13/2013	4/20/2016
12	Ashby Lane	Cul-de-sac	Whittington Walk	22.002	AC	Local	253	6072	60.17	76.26	60.16	-16.1	6/13/2013	4/20/2016
13	Barberry Lane	Peterborg Road	Padon Drive	41.001	AC	Local	694	18738	68.25	82.43	62.97	-19.46	6/10/2013	4/11/2016
14	Barberry Lane	Padon Drive	Duck Lake Trail	41.002	AC	Local	429	11583	67.3	81.72	60.26	-21.47	6/10/2013	4/11/2016
15	Bay Drive	Cul-de-sac	Baywood Lane	45.001	AC	Local	485	18238.56	77.88	89.31	77.59	-11.72	6/16/2013	4/12/2016
16	Baywood Lane	Baywood Terrace	Bay Drive	47.001	AC	Local	750	23200	73.58	86.27	66.69	-19.58	6/16/2013	4/12/2016
17	Baywood Lane	Bay Drive	Eden Prairie Road	47.002	AC	Local	108	2592	68.58	82.6	58.41	-24.2	6/16/2013	4/12/2016
18	Baywood Lane	Eden Prairie Road	Cul-de-sac	47.003	AC	Local	1182	35847.56	77.57	89.1	74.11	-14.99	6/16/2013	4/12/2016
19	Baywood Terrace	Cul-de-sac	Baywood Lane	48.001	AC	Local	325	12334.56	73.16	85.96	71.26	-14.7	6/16/2013	4/12/2016
20	Camborne Place	Whittington Walk	Cul-de-sac	106.001	AC	Local	189	9023.6	73.8	86.46	70.91	-15.56	6/13/2013	4/20/2016

Export Close

Batch CI Quality Control Report from the City's ICON pavement management system

In the event that there is significant amount of variation between the 'Today's Projected PCI' and the latest PCI, we can perform a follow-up check on the PCI survey and/or consider a recalibration of the pavement performance curve for the indicated combination (of surface type, functional class and structural strategy).

In the event that there is significant amount of variation between the 'Previous PCI' and the 'Current PCI' for the amount of time elapsed between the two surveys, then these results can be flagged for review with the City and/or further follow-up action.

TASK 3. DELIVER PCI AND IRI ROUGHNESS DATA

PROPOSED PAVEMENT CONDITION SURVEY METHODOLOGY

The digital image data will be used to facilitate a quantitative pavement condition survey, in which the various pavement distresses will be digitally measured from the data collected in the survey.

The required surface condition assessment for this project will be based upon the standard survey distress definition as specified in the methodology of ASTM 6433-20, by the American Society for Testing and Materials (ASTM). The assessment will provide a calculated Pavement Condition Index (PCI) for each pavement management inventory section (e.g., per street block) evaluated in the survey.

For the bituminous pavements within the selected area of evaluation, the following pavement surface condition distresses and their related quantities will be recorded:

- **Alligator Cracking**
- **Bleeding**
- **Block Cracking**
- **Depression**
- **Edge Cracking**
- **Joint Reflection Cracking**
- **Patching**
- **Polished Aggregate**
- **Potholes**
- **Shoving**
- **Slippage Cracking**
- **Swell**

- **Bumps and Sags**
- **Corrugation**
- **Lane/Shoulder Drop Off**
- **Long. & Trans. Cracking**
- **Railroad Crossing**
- **Rutting**
- **Weathering/ Raveling**

Any Portland Cement Concrete (PCC) pavements located within the selected project area will have the following pavement surface condition distresses and their related quantities recorded:

- **Blow up/ Buckling**
- **Corner Break**
- **Divided Slab**
- **Durability Crack**
- **Faulting**
- **Joint Seal**
- **Lane/Shoulder Drop Off**
- **Linear Cracking**
- **Patching (Large)**
- **Patching (Small)**
- **Polished Aggregate**
- **Popouts**
- **Pumping**
- **Punchout**
- **Railroad Crossing**
- **Scaling**
- **Shrinkage**
- **Spalling Corner**
- **Spalling Joint**

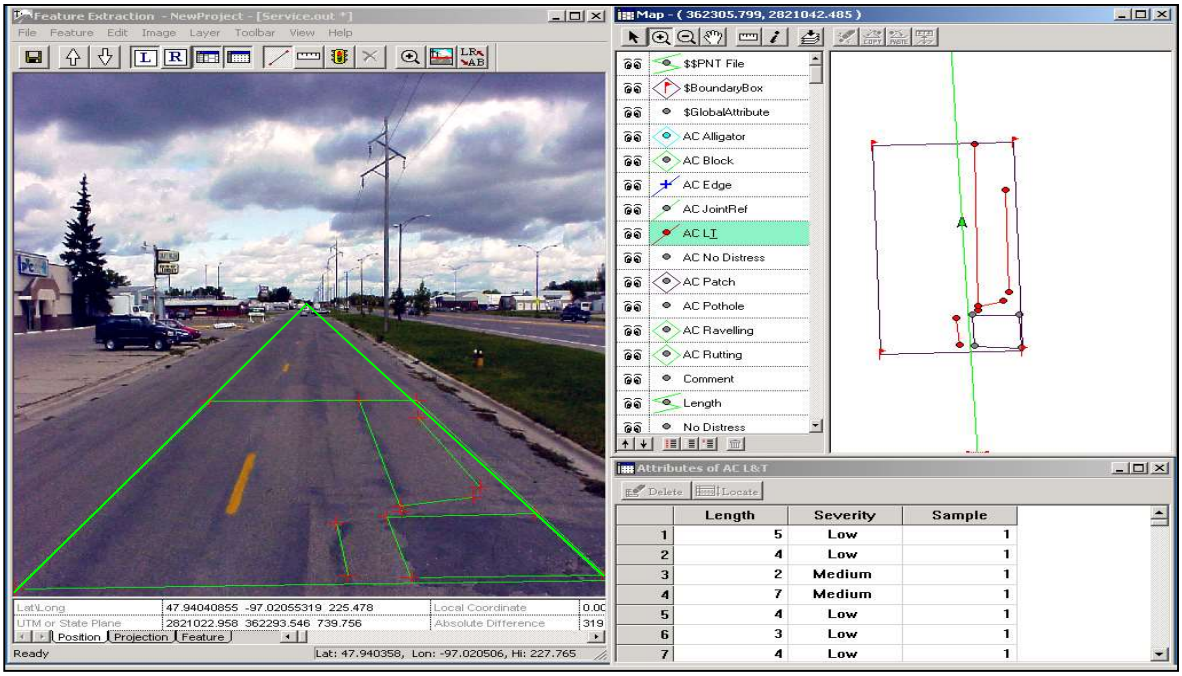
Using our proprietary feature extraction software, the measured distress data is then registered in an underlying relational database along with its corresponding GPS (xyz) coordinates. Utilizing the existing link between the City pavement management system and GIS, the resulting pavement condition data may then be linked, formatted, and imported into each City's ICON pavement management database for PCI calculation.

Traffic and Safety

Field data collection will be performed conforming to all traffic laws and will adhere to all traffic control and safety related procedures deemed necessary by the Client for the protection of the public personnel and our crew members. The GPSVision™ system is equipped with flashing amber lights that are readily visible from the front, sides and rear of the vehicle. The GPSVision™ van is able operate at traffic speeds and there is no unnecessary stopping or blocking of traffic during operation.

With the assistance of client-supplied data and maps, we will develop an efficient general drive plan and schedule. Based on the general drive plan and the previous data collection status, the field data collection team will update the daily drive plan.

The data collection crew will operate the GPSVision™ van according to the daily drive and operational plan. The survey continues following the electronic map that shows previous day survey progress against the Client-supplied electronic maps. Blocked road sections, construction zones, detours and other diversions from the correct travel lane are examples of events that can be marked and can be excluded from the calculations in the final deliverable tables.



Screen Capture of the Feature Extraction (FE) Application Displaying Pavement Distress

LaserScan™ System Overview

We have developed the GPSVision LaserScan™ system for our survey vehicles and associated hardware modules which are vehicle independent, allowing us to provide the best vehicle and data collection system for the task at hand rather than building and maintaining expensive customized vehicles. The result is a less expensive and more robust asset management data collection platform than has been available in the past.

Roughness (IRI) Data

Roughness or ride quality data is most commonly measured and expressed in terms of the International Roughness Index (IRI), however, it can be reported in qualitative terms (good, fair, poor, etc.) based on the data collection plan and models developed for this project. The IRI scale is linearly proportional to roughness. If all of the elevation values in a measured profile are increased by some percentage, then the IRI increases by exactly the same percentage. An IRI of 0.0 means the profile is perfectly flat. There is no theoretical upper limit to roughness, although pavements with IRI values above 8 m/km are nearly impassable except at reduced speeds.

Based on the data collection plan established for this project, roughness data will be collected using the LTI LaserScan™ system.

Longitudinal Profiling

Roughness data is collected using a Class 1 inertial laser profiler as defined by ASTM E-950. Triangulation lasers measure the height between the vehicle and pavement surface to <0.05mm, while the quality accelerometers establish vehicle movement allowing that movement to be removed for the laser height measurement, thus establishing profile in the wheel paths. This can be done at highway speeds (60mph).

The laser profiler software can calculate International Roughness Index (IRI) as well as store the wheel path profile in real-time. These indices can be summarized or calculated at user-defined intervals. Standard intervals are typically 50 feet for suburban agencies and one-tenth mile intervals for highway agencies.

Rutting Data
The ASTM-PCI methodology proposed for this project incorporates the pavement distress of "rutting", which is an area-based, load-related distress that indicates a structural deficiency in Asphalt Concrete (AC) pavement. The extent of detected rutting is measured in units of square feet (ft^2) and according to the three severity levels of low-, medium- and/or high-severity, in accordance with the ASTM-PCI methodology. The rutting data detected to be present in both wheel paths will be recorded for transfer into the pavement condition database for additional analysis and reporting.

The proposed LaserScan™ profiler technology also includes a laser line projection system to measure rutting across the entire traveled lane. With this system, rutting can automatically be detected, measured, and recorded to millimeter precision. This approach is more repeatable than rut bar-based methods of data collection that typically have fewer than 10 points across the lane because the maximum depth of the rut can be determined regardless of the vehicle's actual path in the lane.

One of the many benefits of using the GPSVision LaserScan™ system methodology is that our generated output is more practical for daily use. Beyond processing rutting data as an input for calculating the PCI score for each PMS inventory unit, since the LaserScan™ data is spatially controlled, the City will have the benefit of being able to query the rutting results to display on a GIS map for additional analysis, mapping, and project planning.

The image below shows the rutting values presented as a rutting line that travels with the profile of the pavement. This information can be used to create specific repair and maintenance plans and to give the user a better feel for the location and presence of rutting issues as an additional source of information beyond the calculated section PCI.

For this project: Rutting and IRI data is to be collected concurrently with the georeferenced digital imaging data and will be delivered for each designated route in this project.

Deliverable: The final set of IRI data will be delivered in ESRI shapefile format and queried into each City's ICON pavement management system for ongoing reference.

TASK 4. IMPORT DATA TO ICON PAVEMENT MANAGEMENT DATABASE

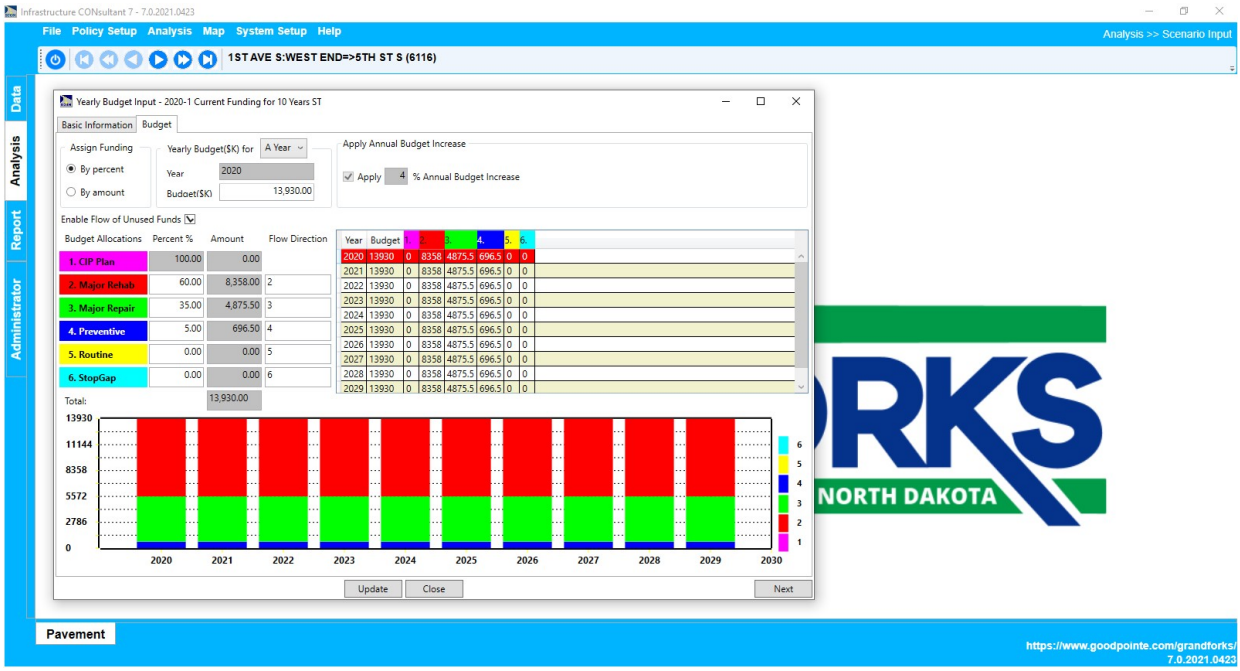
GoodPointe will import the pavement condition data that is collected in this project, into each City's ICON Pavement Management System, which is hosted at our data center on our Amazon Web Services (AWS) Cloud Server. The ICON program will be used to batch-calculate the PCI for the distress data collected in this project.

TASK 5. RUN PAVEMENT MANAGEMENT SCENARIOS

GoodPointe will provide the required consulting services to generate a prioritized maintenance, repair, and rehabilitation plan using the ICON software.

These analysis scenarios will be built upon the pavement management policy/scenario settings already established by the City in coordination with GoodPointe in our previous work with each City:

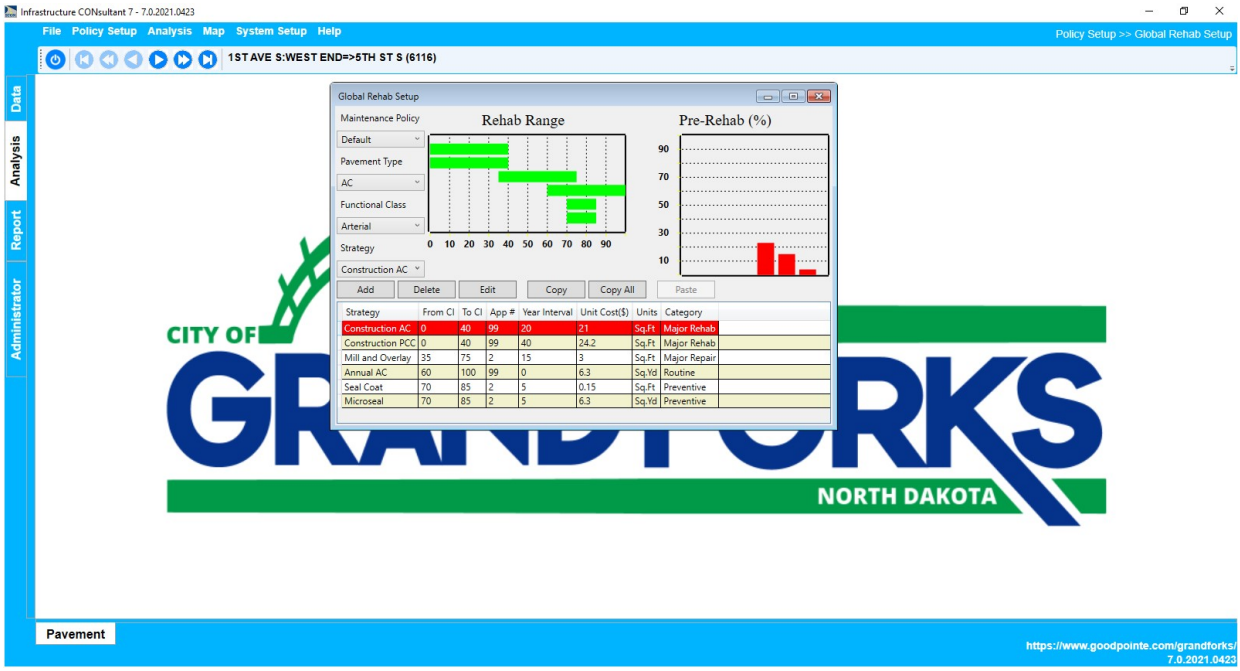
- Show the projected effects of maintaining current investment levels for 10 years;
- Increase the annual budget by 1.5% over the next 10 years; and,
- Maintain the current average PCI level for the next 10 years;



Screen capture of the Scenario Input screen from the Grand Forks ICON 7 program

Under this task we will informally interview City staff to gather the necessary information to update the 'Global Rehab Setup' of the ICON program to reflect each City's current maintenance, repair, and rehabilitation policy, paving strategies, application parameters, unit costs, etc. in response to the updated PCI distribution from the 2021 survey.

The 2021 PCI histogram/distribution charts of the various pavement surface types and functional class designations that we will prepare for the Task 6. project summary report, will be presented to the City to help inform these Global Rehab Policy setups, to ensure that we are accurately and aggressively targeting the City's pavement maintenance, repair, and rehabilitation backlog needs.



Screen capture of the Global Rehab Setup screen in the Grand Forks ICON 7 program

Additional consulting assistance beyond the RFP scope may be provided in the following areas according to the bill rates specified in this proposal, in the following areas:

- Data entry and import of the paving projects performed in recent years (as determined from digital files, hardcopy maps, etc.), registering the improved pavement condition into the ICON database.
- Receiving and entering the City's Proposed Paving Projects (CIP List) and proposed project costs into the Predetermined Plan of ICON.
- Reviewing the City's pavement historical performance data and update the corresponding pavement performance models in ICON, as necessary.
- Documenting any perceived trends in pavement condition, queried out of the historical database tables of ICON for inclusion in the project summary report.

Note: The above items are offered as a preliminary suggestion for consideration in this project.

TASK 6. PREPARE AND PRESENT PROJECT SUMMARY REPORT

A high-impact executive summary DRAFT report will be prepared and delivered to the MPO for review and acceptance. This report will summarize the procedures used and information collected in this project and will highlight:

- Current inventory mileage totals of the network according to the reporting categories defined for this project (pavement type, functional class, network levels, etc.).
- The Pavement Condition data will be tabulated and exported according to CFR §490.311
- The current pavement condition of the network according into the reporting categories mentioned above (e.g. PCI histogram distributions by surface type and functional class) and summary information to show the overall trends in pavement condition over the course of previous pavement surface condition surveys, as applicable.
- The results of the multiyear budget scenario analysis performed on each network.
- The presentation of the final report will be made to the member agencies of the MPO in person or by web-based video conference.
- **Draft Report will be submitted between January 7 – February 3, 2022**
- **Final Report will be submitted on or before February 25, 2022.**

The completed report will be delivered to the City in digital format (e.g. MS Word, Adobe PDF) for storage and future use the City.

TASK 7. ICON PAVEMENT MANAGEMENT SOFTWARE TRAINING

Under this task GoodPointe will provide customized ICON software training to the staff of Grand Forks and East Grand Forks:

Overview Training: covers infrastructure management principles, field inventory definitions and distress survey procedures, data entry, report generation and integration of the system into your agency's infrastructure-related decision process.

Detailed Training: covers set up of ICON parameters, navigating the pavement management system, data entry, retrieval and modification, and maintenance policy set-up procedures, followed by data entry and modification procedures for network and section definition, multi-year budget scenario analysis, multi-year project planning and system data maintenance.

PROJECT SCHEDULE

Task	Activity	June 2021	July	August	Sept	Oct	Nov	Dec	January 2022	Feb
1	Project Initiation & Progress Reporting									
2	Collect Digital Image Data									
3	Deliver PCI and IRI Roughness Data									
4	Import Data into ICON Database									
5	Run Pavement Management Scenarios									
6	Summary Report/ Project Documentation									
7	ICON Pavement Management System Training									
		June	July	August	Sept	Oct	Nov	Dec	January	Feb

* NOTE: the start and duration of field operations is weather-dependent; an estimated twelve (12) clear weather days are required to collect the @700 lane miles of data in this project.

STATEMENT OF CURRENT WORKLOAD

GoodPointe has a significant amount of flexibility and capacity in our consulting and data collection operations to facilitate the proposed scope of work. GoodPointe maintains a fleet of three (3) GPSVision data collection vehicles, one of which will be called to mobilize to the Grand Forks/East Grand Forks area to proceed with data collection as soon as the notice to proceed has been issued.

Our current contracted *data collection* workload includes both right of way digital imaging projects and manual/walking pavement condition surveys, the latter of which are primarily based in the Twin Cities Metropolitan area. We are currently under contract and working on seventeen (17) manual/walking condition survey projects for roadways, parking lots, trails/sidewalks, in the Twin Cities Metropolitan area.

We are currently under contract to complete three (3) GPSVision imaging projects (smaller than the proposed MPO project), by early-summer.

All staff proposed for this project are fully available to work on this proposed project.

E. DBE/MBE PARTICIPATION

GoodPointe Technology is an equal opportunity employer that is committed to diversity and inclusion in the workplace. We prohibit discrimination and harassment of any kind based on race, color, sex, religion, sexual orientation, national origin, disability, genetic information, pregnancy, or any other protected characteristic as outlined by federal, state, or local laws.

This policy applies to all employment practices within our organization, including hiring, recruiting, promotion, termination, layoff, recall, leave of absence, compensation, benefits, training, and apprenticeship. GoodPointe Technology makes hiring decisions based solely on qualifications, merit, and business needs at the time.

For this project, we searched the North Dakota DOT database of registered DBE/MBE firms (https://www.dot.nd.gov/pacer/qualified.htm) for potential teaming partners that would add value to the specific deliverables of the RFP but were unsuccessful in our search.

F. COST QUOTES

The following table summarizes the MPO Costs in the the required format:

1. Direct Labor	Hours	X	Rate	=	Total
Name, Title, Function	0	X	$ -	=	$ -
Kadlec_Tony, Project Manger, Task 1	10	X	$ 40.13	=	$ 401
Kadlec_Tony, Project Manager, Task 4	8	X	$ 40.13	=	$ 321
Nguyen_Tony,Tech Specialist I, Task 4	20	X	$ 31.77	=	$ 635
Kadlec_Tony, Project Manager, Task 5	3	X	$ 40.13	=	$ 120
Kadlec_Marata, Tech Specialist I, Task 5	4	X	$ 31.77	=	$ 127
Dahlgren_Darwin, Principal, Task 6	6	X	$ 50.17	=	$ 301
Kadlec_Tony, Project Manager, Task 6	8	X	$ 40.13	=	$ 321
Kadlec, Marata, Tech Specialist I, Task 6	8	X	$ 31.77	=	$ 254
					$ 2,481
2. Overhead (1.6 or 160%)					$ 3,970
3. General & Administrative Overhead					$ -
4. Subcontractor Costs					$ 3,913
5. Materials and Supplies Costs					$ -
6. Travel Costs					$ -
7. Fixed Fee (15%)					$ 1,555
8. Miscellaneous Costs					
Task 2. Digital Image Data Collection					$ 18,932
Task 3. Deliver PCI and IRI and Roughness Data (less subcontractor costs)					$ 27,054
Total Cost					$ 57,906

The following table summarizes the proposed Not-to-Exceed budgeted cost to complete the proposed scope of work for the MPO, City of Grand Forks, and the City of East Grand Forks.

GoodPointe Technology
Technical Cost Proposal
2021 Pavement Conditions and Analysis Report for Grand Forks-East Grand Forks MPO
Version A.1

May 21, 2021

Task	Description		Units	Quantity	Rate	MPO	Grand Forks	E. Grand Forks
1	**Project Initiation and Progress Reporting**							
	Project Initiation	Project Manager	Hours per Agency	2	$120	$240	$ 240	$240
	Progress Reporting	Project Manager	Hours	8	$120	$960		
					Task 1. Subtotal:	**$1,200**	**$0**	**$0**
2	**Collect Digital Image Data**							
	MPO Functionally Classified Roadways		Miles	252.43	$75	$18,932		
	City of Grand Forks Local Roadways		Miles	153.01	$75		$ 11,476	
	City of East Grand Forks Local Roadways		Miles	40.48	$75			$3,036
					Task 2. Subtotal:	**$18,932**	**$11,476**	**$3,036**
3	**Deliver PCI and IRI Roughness Data**							
	MPO Functionally Classified Roadways		Miles	252.43	$125	$31,554		
	City of Grand Forks		Miles	153.01	$125		$ 19,126	
	City of East Grand Forks		Miles	40.48	$125			$5,060
					Task 3. Subtotal:	**$31,554**	**$19,126**	**$5,060**
4	**Import Data to ICON Pavement Management Database**							
		Project Manager	Hours	8	$120	$960		
		Tech Specialist I	Hours	20	$95	$1,900		
					Task 4. Subtotal:	**$2,860**	**$0**	**$0**
5	**Run Pavement Management Scenarios**							
		Project Manager	Hours per Agency	3	$120	$360	$ 360	$360
		Tech Specialist I	Hours	4	$95	$380		
					Task 5. Subtotal:	**$740**	**$360**	**$360**
6	**Prepare and Present Project Summary Report**							
		Principal Engineer	Hours	6	$150	$900		
		Project Manager	Hours	8	$120	$960		
		Tech Specialist I	Hours	8	$95	$760		
					Task 6. Subtotal:	**$2,620**	**$0**	**$0**
7	**ICON Pavement Management Software Training**							
		Project Manager	Hours Per Agency	4	$120		$ 480	$480
					Task 6 Subtotal:	**$0**	**$480**	**$480**
					Total Not-to-Exceed Budget Per Agency	**$57,906**	**$31,442**	**$8,936**
					Agency	**MPO**	**Grand Forks**	**E. Grand Forks**
					Cost Per Mile	**$229**	**$205**	**$221**

MPO UNIFIED PLANNING WORK PROGRAM -UPDATE , 2021

TABLE OF CONTENTS- UPDATE JUNE, 2021

TRANSPORTATION PLAN UPDATE AND IMPLEMENTATION ACTIVITIES

AREA	TASK	%	ORIGINAL COMPLETION DATE	PROJECTED COMPLETION DATE
Grand Forks Land Use Plan Update	Website is live: www.gf2050plan.com Survey is also online at websiteand to date has over 800 responses. Public Workshop was held May 11th. With light particpation	45%	31-Dec-21	30-Mar-22
East Grand Forks Land Use Plan Update	Second survey and wiki mapping summaries of input were posted on the website. Goals/Policies are scheduled for review by Steering Committee on June 24th. Www.egfplan.org	69%	30-Jun-21	31-Dec-21
Future Bridge Traffic Impact Study	Ad Hoc Group met May 14th. Website established: www.forks2forksbridge.com Traffic Operations memo out for comments.	32%	31-Dec-20	30-Dec-21
Pavement Management System Update	One submittal was received and is being recommended for authorizing contract during June meetings.	18%	31-Dec-21	30-Dec-21
Transit Development Program TDP	RFP is out for consideration; due date is June 18th	10%	31-Mar-22	31-Mar-22
Aerial Photo	LiDAR has been captured; the aerial photo has been captured; processing is now taking place	50%	30-Nov-21	30-Nov-21
Traffic Count Program	On-going	90%	On-going	