

**AGENDA  
BLOOMINGTON TRANSPORTATION COMMISSION  
REGULAR MEETING  
TUESDAY, NOVEMBER 28, 2017 4:00 P.M.  
COUNCIL CHAMBERS, CITY HALL  
109 EAST OLIVE STREET  
BLOOMINGTON, ILLINOIS**

**1. CALL TO ORDER**

**2. ROLL CALL**

**3. PUBLIC COMMENT**

*A public comment period not to exceed thirty (30) minutes will be held during each Board and Commission meeting, as well as all regularly scheduled City Council meetings, Committee of the Whole meetings, meetings of committees and/or task forces (hereinafter "committees") created by the City Council, work sessions, and special meetings of the City Council. Nothing herein shall prohibit the combination of meetings, at which only one public comment period will be allowed.*

*Anyone desiring to address the Board, Commission, Committee or City Council, as applicable, must complete a public comment card at least five (5) minutes before the start time of the meeting. Public comment cards shall be made available at the location of the meeting by City staff at least 15 minutes prior to the start time of the meeting. The person must include their name, and any other desired contact information, although said person shall not be required to publicly state their address information. If more than five individuals desire to make a public comment, the order of speakers shall be by random draw. If an individual is not able to speak due to the time limitation and said individual still desires to address the individuals at a future meeting of the same type, said individual shall be entitled to speak first at the next meeting of the same type. (Ordinance No. 2015-46))*

**4. MINUTES:** Review the minutes of the October 17, 2017 regular meeting of the Bloomington Transportation Commission.

**5. REGULAR AGENDA**

- A. TC-2017-02** – Consideration of a recommendation to City Staff to include intersection modifications at Fairway Drive and Empire Street (IL Route 9) with the resurfacing of Fairway Drive as part of the planned FY2019 Resurfacing Plan.
- B. TC-2017-03** – Consideration of a recommendation to City Council concerning a Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for the intersection of Towanda Barnes Road and Ireland Grove Road.

**6. OLD BUSINESS**

**7. NEW BUSINESS**

- A. INFORMATION** – Ireland Grove Road and Streid Drive traffic signal improvements.

**8. ADJOURNMENT**

For further information contact:  
Philip Allyn, City Traffic Engineer  
Department of Public Works  
Government Center

115 E. Washington Street, Bloomington, IL 61701

Phone: (309) 434-2225 ; Fax: (309) 434-2201; E-mail: pallyn@cityblm.org

**MINUTES**  
**BLOOMINGTON TRANSPORTATION COMMISSION**  
**REGULAR MEETING**  
**TUESDAY, OCTOBER 17, 2017 4:00 P.M.**  
**COUNCIL CHAMBERS, CITY HALL**  
**109 EAST OLIVE STREET**  
**BLOOMINGTON, ILLINOIS**

**MEMBERS PRESENT:** Ms. Angela Ballantini, Ms. Jill Blair, Ms. Maureen (Reenie) Bradley, Ms. Katherine Browne, Mr. Michael Gorman, Ms. Elizabeth Kooba, Ms. Kelly Rumley

**MEMBERS ABSENT:** None

**OTHERS PRESENT:** Mr. David Hales, City Manager; Mr. Steve Rasmussen, Assistant City Manager; Assistant Chief Ken Bays, Police Department; Ms. Cherry Lawson, City Clerk; Mr. George Boyle, City Attorney; Mr. Jim Karch, Director of Public Works; Mr. Kevin Kothe, City Engineer; Mr. Philip Allyn, City Traffic Engineer; Mr. Bill Givens, Traffic Technician

**1. CALL TO ORDER:** Mr. Allyn called the meeting to order at 4:01 pm.

**2. SWEARING IN:** Ms. Lawson swore in/affirmed the members of the Transportation Commission.

**3. ROLL CALL:** Mr. Allyn called the roll. With seven members in attendance, a quorum was established.

**3. PUBLIC COMMENT:**

Mr. Hales addressed the Commission. He thanked the Commission Members for their willingness to serve. In this day and age, everyone is busy in their personal lives, friends, family and work. It's difficult for citizens to serve in an official capacity as the members are on the new Transportation Commission. The City has excellent staff of people that look forward to working with the Commission Members, supporting them, and making it your position as easy as possible. It won't always be easy, decisions won't always be black and white and can be challenging at times. There will be many people with varying opinions on what is right and wrong, what is best, what is not good, etc. It will take sacrifice of time and effort away from other pursuits, but their service will always be appreciated by the City as we know what goes into making good, professional decisions. Staff's Creed is to do the best professional work possible to analyze issues and problems, look at all appropriate options, layout pros and cons and consequences so that the Commission can make a good reasonable decision based on excellent data and research. Thank you for serving and best of luck.

Each Commissioner and Mr. Boyle gave a brief introduction and personal background.

**4. MINUTES:** N/A (No Previous Meeting)

## **5. REGULAR AGENDA**

### **A. Election of Chairman and Vice Chairman**

Mr. Allyn requested nominations for Commission Chairman: Mr. Gorman nominated Mr. Michael Gorman for Commission Chairman, Ms. Bradley seconded the motion. The motion was approved by the Transportation Commission by a unanimous vote via voice vote.

Mr. Allyn turned over the meeting to Mr. Gorman.

Mr. Gorman requested nominations for Commission Vice-Chairman: Ms. Blair nominated Ms. Elizabeth Kooba for Commission Vice-Chairman, Ms. Kooba declined the nomination. Ms. Bradley nominated Ms. Jill Blair for Commission Vice-Chairman, Ms. Kooba seconded the motion. The nomination was approved by the Transportation Commission by a unanimous vote via voice vote.

### **B. Approve 2017 and 2018 Meeting Dates.**

Mr. Allyn presented the proposed Commission Meeting schedule for the remainder of 2017 and all of 2018. Meetings are generally the third Tuesday of the month, with the exception of November 28, 2017.

Ms. Blair motioned to approve the meeting dates. Ms. Rumley seconded the motion. The motion was approved by the Transportation Commission by a unanimous vote via voice vote.

### **C. TC-2017-01 - Consideration of proposed City Code changes to Chapter 29 of the Bloomington City Code, "Motor Vehicles and Traffic":**

- 1. Section 116, 117, 118 (Inclusion of TNC's to references to Taxicabs)**
- 2. Section 148 (Public Carrier Stop locations)**
- 3. Section 153(a) (On-street Accessible Parking Stall Locations)**
- 4. Section 201(d) (Streets with Truck Traffic Prohibited)**

Mr. Allyn discussed the procedure behind this bulk code change. Staff implements changes to various traffic regulations on an emergency or experimental basis and monitors their effectiveness. Implemented minor routine type things can be legally enforced for 180 days and then need to be put into the city code if they are desired to remain. The next step is to have the Commission recommend the proposed changes to the Council, who would then vote to modify the City Code.

Mr. Allyn reviewed the proposed changes. The first group of modifications to Sections 116, 117, 118, and 148 are related to incorporating references to Transportation Network Companies (TNC's) that are similar to taxis. Additional changes to Section 148 pertain to the far north side of Main near Mulberry and Market. This area has been designated for taxi and TNC pickup and drop off during late weekend nights to help with traffic flow and pedestrian safety.

Mr. Allyn indicated the next group of changes are accessible handicap stalls. When requests for handicap stalls are received from residents, Staff will verify proper paperwork and identify a safe place to put the parking spot in front of the requester's home. Periodic reviews are done to verify that the spot is still needed and if it needs to be modified. The proposed Code changes include additions, deletions, or relocations that have been made.

Mr. Allyn reviewed the last group of Code modifications regarding Stewart Street between Evans and Main. A request to restrict truck traffic on that stretch was made due to a noticeable number of trucks using Stewart to access a business instead of the truck route on Lincoln preferred by the business. Stewart Street is 24 feet wide with parking on one side was not conducive to truck traffic. Staff reviewed the site, contacted the local residents and businesses that were affected, and concurred with the truck restriction. It was presented to the Staff Traffic Advisory Committee in effect at that time, who agreed to the restriction. It's been reviewed after implementation and is working effectively.

Ms. Rumley motioned to recommend that City Council Approve the proposed ordinance modifying Sections 116, 117, 118, 148, 153(a), and 201(d) of Chapter 29 (Motor Vehicles and Traffic) of the Bloomington City Code. Ms. Blair seconded the motion.

Ms. Bradley states she noticed in the pages of Code provided that the alley between Taylor and Olive is to be closed. Ms. Bradley indicated that one block of that alley is open to traffic. Mr. Allyn indicated that is the current Code passed in 1977, but it may not necessarily be the same in the field. These discrepancies are one of the types of things we are attempting to clean up. Mr. Boyle stated that because this change to the Code was not on the agenda, we cannot recommend modifying it at this time but that it could be placed on the agenda for a future meeting.

Mr. Gorman asks if any changes related to TNC's need to be made to Chapter 40? Mr. Allyn says most of the language in Chapter 40 was updated in 2015, but did not get added to the location restriction sections in Chapter 29. Mr. Boyle adds that the 1<sup>st</sup> ordinance was put in during 2015 and things have gone smoothly so far, but TNC use is increasing and future modifications may still be needed.

Mr. Boyle states that in addition to the 180 day trail period process, Section 7 of Chapter 29 also give the Traffic Engineer the authority to work with other City Officials including the Police to corporate in ways to carry out duties specified in the ordinance.

Mr. Gorman asks a question for future consideration: very few of the Connect Transit bus stops locations are listed as places where cars can be towed if parked. There are lots of stops around the City that would be beneficial to add to the Code. Mr. Gorman requested Staff review for a recommendation at a future meeting.

Mr. Gorman asked and the three sections relating to stop locations, handicap stalls, and truck bans. Mr. Gorman requested if they could be incorporated into GIS. He sees a benefit for police use in their vehicles. Mr. Bill Givens discusses that handicap spaces are being put in for major streets as resurfacing work is being completed. Minor streets will be included as time allows. The most reliable reference is City Code. Mr. Gorman also inquires about signs being included in GIS. Mr. Givens indicated that all City signs are currently inventoried using GIS for internal use, but that this information is not currently public. Mr. Gorman stated that the City Code may not be the most accessible way for the public to get information.

The motion was approved by the Transportation Commission by a vote of 7-0 with the following votes cast: Ms. Ballantini – yes, Ms. Blair – yes, Ms. Bradley – yes, Ms. Browne – yes, Mr. Gorman – yes, Ms. Kooba – yes, Ms. Rumley – yes.

**D. Open Meetings Act and Freedom of Information Act Presentation.**

Mr. Boyle discusses the acts listed. Both Acts apply to the Commissioners as public officials. The Legal department is available to answer any questions or discuss conflicts. Feel free to contact them. There are a number of gray areas and opinions on any topic and Legal is always willing to answer questions Commissioners may have. Mr. Boyle reminded everyone that within 90 days from the swearing in everyone must sign up and take a training on the Open Meetings Act at the Illinois Attorney General's website. Some items in these Acts can come as a surprise to new members. FAQs for both Acts are in the Commissioners binders. These Acts generally are called the sunshine laws as the public should be understand what is going on and what decisions are being made. The Commission is a public body so if there is a meeting that involves 3 or more members discussing public business, then it falls under the act. Subcommittee meetings also are subject to these Acts. There are specific requirements that must be followed pertaining to meeting notification, keeping of minutes, etc. Due to agenda requirements, items not on the agenda can be discussed, but no decisions can be made. Acts apply to email or other contemporaneous electronic communications when there are replies and ongoing discussions. It's safest to not partake in email or other electronic communications of public business when 3 or more commissioners are involved.

Ms. Blair asks about public business matters on Facebook and other social media sites. Mr. Boyle says it is a gray area. Facebook postings may fall on either side of the line. There is not a definitive answer. Best practice is to look at the article posted on the social media and make a note to bring up at the next meeting rather than commenting directly on the site. Mr. Gorman also commented that it's permissible to talk one on one with regard to the Open Meetings Act. Mr. Boyle confirmed.

Mr. Boyle indicated the Freedom of Information Act says that all public records used by the government are subject to the Act regardless of formation, format or the body who produced them. There are some exceptions, but generally the assumption of secrecy doesn't exist. Best practice is to not write something you would not want to see in the newspaper or the public to have access to. It applies to hard documents as well as emails, texts, or other electronic communications. It applies to content generated on public or private devices. If the document is in possession of the government, it is generally subject to the Act.

Mr. Gorman asks if training is available on FOIA. Mr. Boyle says no training is available as of his knowledge. The City does have a FOIA officer that has received a lot of training that can help with questions.

**6. OLD BUSINESS:** N/A (No Previous Meeting)

**7. NEW BUSINESS**

Mr. Allyn adds that each Commissioner received a binder with various information intended to be a quick reference. For example, it includes the meeting schedule, contact information for the

Commissioners, FAQs for the OMA and FOIA mentioned previously, city map, a list of helpful websites, and other information. Of particular note is a document that gives the Staff interpretation on where the responsibilities of Staff versus the Commission fall. Per the ordinance establishing the Commission, it's tasked with: the Commission looks at things at the Policy level rather than the detail level. This document contains examples of the types of matters that will be handled by the Staff or Commission level.

**8. ADJOURNMENT:** The meeting adjourned at 4:59 pm unanimously by voice vote; motioned by Ms. Rumley and seconded by Ms. Kooba.

Respectfully,

Philip Allyn  
City Traffic Engineer

**CITY OF BLOOMINGTON  
REPORT FOR THE TRANSPORTATION COMMISSION  
NOVEMBER 28, 2017**

<b>CASE NUMBER:</b>	<b>SUBJECT:</b>	<b>ORIGINATING FROM:</b>
TC-2017-02	Potential intersection modifications at Fairway Drive & Empire Street (IL Rte. 9)	Philip Allyn, PE, PTOE City Traffic Engineer
<b>REQUEST:</b>	Consideration of a recommendation to City Staff to include intersection modifications at Fairway Drive and Empire Street (IL Route 9) with the resurfacing of Fairway Drive as part of the planned FY2019 Resurfacing Plan.	
<i>Staff has evaluated potential changes to the intersection that would improve traffic flow, increase safety, and implement the bike lanes suggested in the Bike Master Plan at this location; gained concurrence from IDOT; and is ready to proceed with the project.</i>		

<b>STAFF RECOMMENDATION: Approval</b>
<p><b>Staff recommends the Transportation Commission pass the following motion recommending:</b></p> <p style="padding-left: 40px;"><b>A. That City Staff proceed with Public Involvement in the form of a Public Open House, and, pending positive feedback at the Open House, proceed with including the proposed modifications into the FY2019 resurfacing work. If significant negative feedback is received at the open house, modifications to the project will be evaluated for implementation before moving forward.</b></p>

**1. ATTACHMENTS:**

- a. Location Map
- b. Traffic Study by Lochmuller Group
- c. IDOT Email
- d. Relevant Pages from the Bicycle Master Plan

**2. BACKGROUND AND SUPPLEMENTAL INFORMATION:**

Fairway Drive to the north and south of Empire Street/IL Route 9 currently has an odd lane configuration and becomes congested due to the extremely close proximity of the frontage roads to Empire Street. In addition, Fairway Drive/Regency Drive is in poor condition and is due to be resurfaced between Robinhood Lane and Rust Road as part of the FY2019 Street Resurfacing Program. With this upcoming resurfacing work, staff took the opportunity to evaluate potential changes to the intersection that would improve traffic flow, increase safety for all users, and implement the bike lanes suggested in the Bike Master Plan at this location.

A consultant was hired to evaluate options for this intersection. Their study is attached. As part of the analysis, traffic volume data was gathered at the Fairway intersections, as well as at the intersections to the east (K-mart Crossing) and west (Towanda Drive) for both Empire

Street and the frontage roads as shown on Exhibit 1 of the Study. Alternative intersection configurations, modified traffic control and new connections to area streets were considered as potential means to correct the existing problems at the North Frontage Road. However, given the very close proximity of the road to Empire Street and the limited right-of-way available in the project area, the improvement options focused on implementing left-turn restrictions. Analysis was completed for two alternatives that would each limit the North Frontage Road to right-in/right-out access at its intersection with Fairway Drive, similar to the existing configuration of the South Frontage Road. The primary difference between the options is the inclusion in Option 2 of a new roundabout at the intersection of Robinhood Lane and Fairway to accommodate u-turn movements of vehicles no longer allowed to turn left from the North Frontage Road. In addition to relieving the existing operation constraints along the corridor, bicycle lanes in each direction and updated pedestrian accommodations were desired.

The intersection of Fairway Drive with the North Frontage Road has had a significant number of crashes. The majority of these crashes involve movements to and from the frontage road, resulting in angle or turning crash types. The recommended improvement would eliminate the through and left-turn movements from the frontage road by introducing a raised median along Fairway Drive. Consequently, the safety of the intersection should be significantly improved.

The Study has the following results and recommendations:

1. It is recommended that a raised median be installed to restrict the North Frontage Road to right-in/right-out only movement at its intersection with Fairway Drive. This is similar to the existing configuration of the South Frontage Road.
2. In addition to the median, the lane configuration would be modified to provide a single southbound through lane across Empire Street to provide space for new bicycle lanes in each direction. The lane configuration for the northbound approach would remain unchanged; however, the raised median would need to be reconstructed due to a shift in alignment created by the bicycle lanes. A new pedestrian crossing and associated sidewalk would also be provided across the South Frontage Road.
3. As a potential second phase, a roundabout could be installed at Robinhood Lane to more directly serve diverted left-turn movement from the North Frontage Road. This alternative, shown as Option 2, would cost more and require additional right-of-way, but the roundabout could also have traffic calming benefits.
4. It is recommended that the existing signal phasing and timing at Empire Street and Fairway remain in place with the exception of switching the protected westbound left-turn phase from a leading to a lagging movement during both the morning and afternoon peak periods to allow it to operate more efficiently.

Conceptual Geometric Exhibits are provided at the end of the Study.

The study was submitted to IDOT for concurrence since Empire Street is a state route. IDOT has responded favorably to the proposed modifications. A copy of their response email is attached.

Since the proposed changes will impact the surrounding properties and their access, Staff believes it is important to gain public feedback before proceeding. The recommended next steps would be to host a public open house to receive feedback from the area stake holders. The open house would be advertised with letters sent to property owners in the vicinity of the area as well as usual methods (press release, posting on City website, etc.). After receiving and processing feedback on the project, we would then proceed with developing construction drawings, obtaining the IDOT permit required for work within their right-of-way, bidding and then construction. If the majority of the public feedback is negative, modifications to the project will be evaluated.

The modifications are proposed to be part of the resurfacing work on Fairway Drive/Regency Drive from Robinhood Lane to Rust Road, which is currently planned as part of the FY2019 Resurfacing Plan for the 2018 construction season. The reconstruction of the Robinhood Lane intersection as a roundabout may be considered in the future.

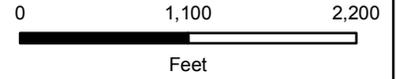
**3. STAFF RECOMMENDATION:**

Staff recommends the Transportation Commission pass the following motion recommending:  
That City Staff proceed with Public Involvement in the form of a Public Open House, and, pending positive feedback at the Open House, proceed with including the proposed modifications into the FY2019 resurfacing work. If significant negative feedback is received at the open house, modifications to the project will be evaluated for potential implementation prior to moving forward.

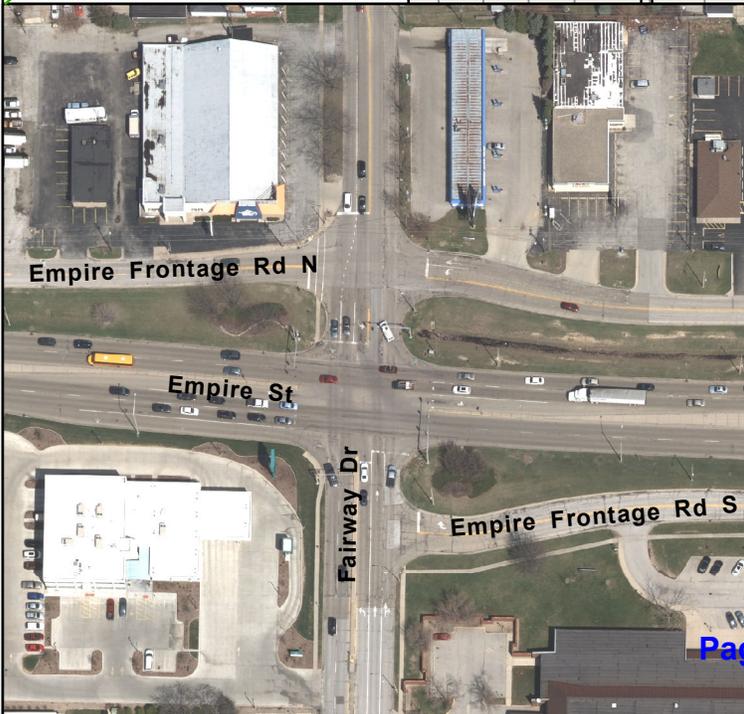
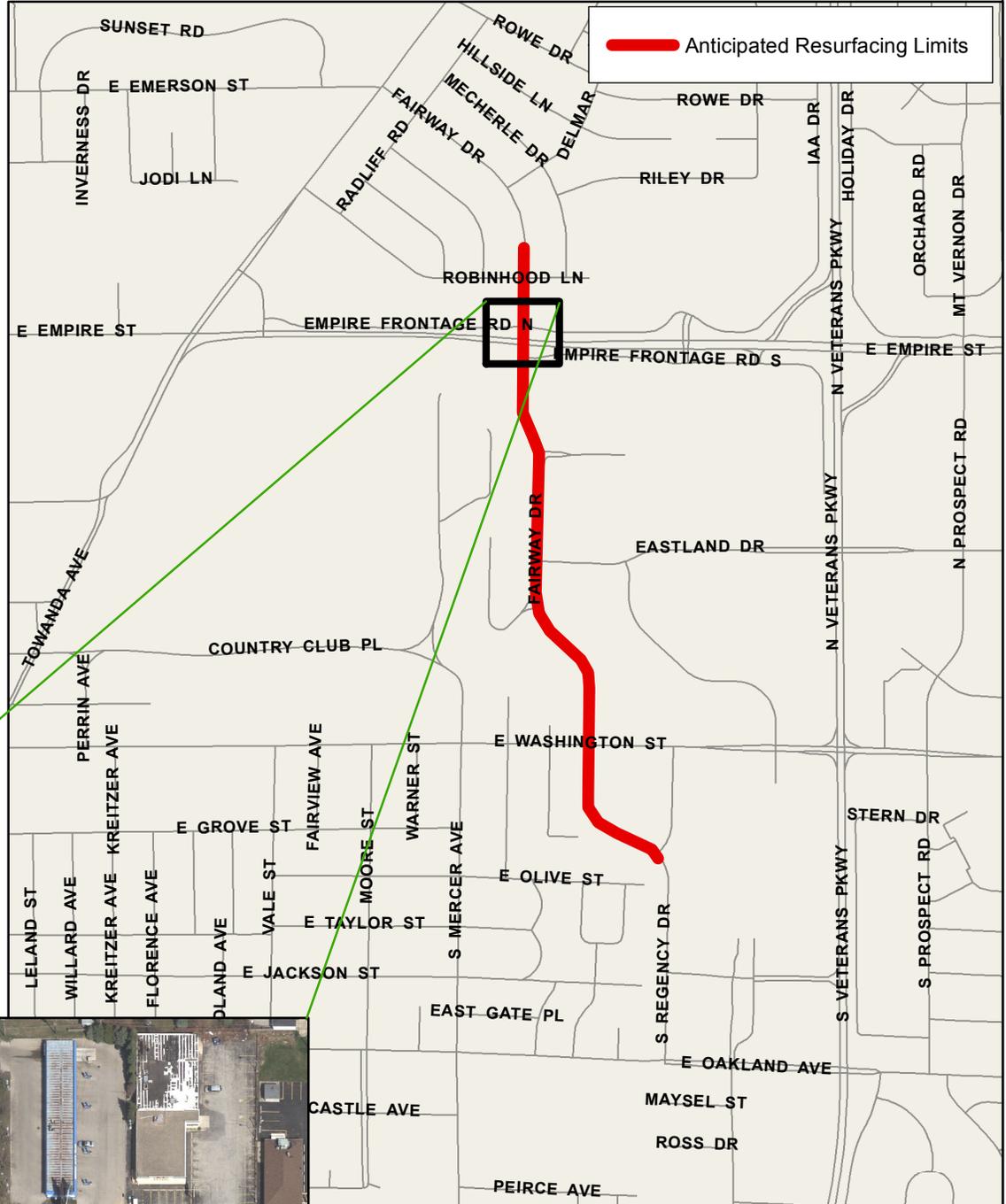
Respectfully submitted,

Philip Allyn, PE, PTOE  
City Traffic Engineer

# Fairway @ Empire



Date: 11/21/2017





This study was requested by the City of Bloomington, Illinois to evaluate alternatives for the addition of bicycle lanes along Fairway Drive through its intersection with Empire Street (Illinois Route 9). While the primary focus of the study was identifying improvement needs along Fairway Drive, analysis was required of the Empire Street corridor from Towanda Service Road to Kmart Eastland Crossing since access changes along Fairway could impact adjacent intersections.

## Existing Conditions

As an initial step in quantifying existing traffic conditions, intersection turning movement counts were performed by City staff. Observations of traffic patterns and operations were also performed during peak periods by Lochmueller Group staff.

Intersection counts were conducted during the morning (6:00 to 9:00 a.m.) and afternoon (3:00 to 6:30 p.m.) peak periods of a typical weekday. The following intersections were included in the study:

1. Empire Street and Towanda Service Drive
2. Empire Street and Fairway Drive
3. Empire Street and Kmart Crossing
4. North Frontage and Towanda Service Drive
5. North Frontage and Fairway Drive
6. North Frontage and Kmart Crossing
7. South Frontage and Fairway Drive
8. South Frontage and Kmart Crossing

It was determined that the peak hours of traffic flow are 7:15 to 8:15 a.m. and 4:15 to 5:15 p.m. The existing intersection turning movement volumes are summarized in **Exhibit 1**.

### *Traffic Observations*

In addition to traffic counts, extensive observations were performed by traffic engineers during peak periods to note areas of congestion, spillbacks and driver behavior within the study area. The observations revealed driver confusion and frustration at the intersection of the North Frontage Road with Fairway Drive, which has three-way stop traffic control wherein northbound traffic does not stop but the other three directions have stop signs.

The intersection is also located less than 100 feet from the signalized intersection with Empire Street, so southbound spillbacks from the signal through the North Frontage Road were observed. In addition, southbound traffic was frequently observed running the stop sign when they had a green light at the Empire intersection.

At the intersection of Empire and Fairway Drive, the westbound left-turn lane was frequently blocked by queues in the westbound through lanes. The westbound left turn has a leading protected phase (green arrow). Consequently, during many cycles in both the morning and afternoon peaks, there were vehicles that were not served by the protected left-turn phase. It appears that changing the westbound left-turn to lagging operations would provide better service for that movement.

The remaining signal phasing appears to operate satisfactorily. Although there were lengthy queues on the eastbound and westbound through approaches on Empire Street, all vehicles were served by the allotted green time during each cycle. The north-south approaches are split-phased so that each is provided green time independently. The phasing sequence is the same during both the morning and afternoon peak periods.

### *Traffic Operational Analysis*

Both VISSIM 9.0 and Synchro 9 were used to evaluate the traffic operations in the study area. VISSIM is a traffic micro-simulation model that replicates complex traffic operations including interactions of closely-spaced signalized intersections, complex roadway systems, and freeway operations. VISSIM is generally considered the most appropriate tool for analyzing such conditions due to its sophisticated modeling of driver behavior reflecting lane-changing and car-following maneuvers.

Intersection capacity analyses were also completed using Synchro 9, which is recognized as one of the most widely-used evaluation tools in traffic engineering and is based upon methodologies outlined in the Highway Capacity Manual (HCM). Where appropriate, conditions were evaluated using both VISSIM and Synchro to capitalize on the strengths of each tool and to compare results across platforms.

The intersections within the study area were evaluated to quantify existing operating conditions. The capacity of an intersection is quantified by the Level of Service (LOS), which is based upon the delay an average vehicle experiences at a particular intersection.

**Table 1** summarizes the criterion for signalized intersections, as defined in the Highway Capacity Manual. LOS C, which is normally used for highway design, represents a roadway with volumes ranging from 70% to 80% of its capacity. However, Level D is considered acceptable for peak period conditions in urban and suburban areas, and LOS E is often considered typical (if not acceptable) for minor street approaches to major suburban roadways.

**Table 1: Intersection Level of Service Thresholds**

Level of Service	Control Delay per Vehicle (sec/veh)
	<b>Signalized</b>
A	< 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

The primary focus on this study was the Fairway Drive corridor. Given the constraints associated with the closely-spaced outer roads on either side of Empire Street, the VISSIM results were most pertinent and are reported.

As shown in **Table 2**, the signalized intersection of Fairway Drive and Empire Street operates satisfactorily and generally provides favorable service for all approaches with the exception of the northbound approach during the morning peak which operates at LOS E.

However, the North Frontage Road intersection is heavily constrained and operates at LOS F during both peak periods. In particular, the southbound approach has lengthy queues and can take more than one signal cycle to clear. As noted in the observations, this intersection has unorthodox traffic control and left-turning motorists in any direction have difficulty finding adequate gaps or perceiving which approach has the right-of-way.

### *Safety Assessment*

The crash records throughout the study area were reviewed with an emphasis on the Fairway Drive corridor. The intersection with the South Frontage Road does not have a significant crash history, which is to be expected given it is restricted to right-in/right-out movements.

The signalized intersection of Fairway with Empire Street has experienced an average of 7 crashes per year between 2011 and 2016. Given the heavy volume of through traffic on Empire Street, this represents a typical volume of crashes. The majority of reported crashes were rear-end, which is also typical at signalized intersections and tend to be lower in severity. In fact, no fatal or serious injury crashes were reported during this time.

The intersection of Fairway with the North Frontage Road has experienced an average of 7.5 crashes per year over the same six-year period. Given the much lower volume of traffic served at this location, this represents a significant safety concern, though no fatal or serious injury incidents were reported. The majority of these crashes were classified as angle or turning crashes, which indicates that movements to/from the side streets were typically involved.

**Table 2A: Existing Conditions – AM Peak Hour**

	LOS	Delay (sec/veh)	Avg Queue (feet)	Max Queue (feet)
<b><i>Empire/ Fairway (Signalized)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>24.2</b>	--	--
Empire WB	C	25.9	76	431
Fairway Dr SB	C	24.1	81	167
Fairway Dr NB	E	63.4	48	155
Empire EB	B	13.5	31	196
<b><i>North Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>F</b>	<b>106.1</b>	--	--
Fairway Dr NB	A	0.0	0	42
NOR WB	C	22.2	0	17
NOR EB	C	16.1	2	58
Fairway Dr SB	F	192.2	405	724
<b><i>South Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>A</b>	<b>5.3</b>	--	--
Fairway Dr SB	A	0.1	0	92
Fairway Dr NB	C	20.6	2	58
SOR WB	F	59.8	0	19

**Table 2B: Existing Conditions – PM Peak Hour**

	LOS	Delay (sec/veh)	Avg Queue (feet)	Max Queue (feet)
<b><i>Empire/ Fairway (Signalized)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>28.3</b>	--	--
Empire WB	D	36.6	127	562
Fairway Dr SB	C	24.4	77	152
Fairway Dr NB	C	22.4	110	183
Empire EB	C	25.4	77	395
<b><i>North Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>F</b>	<b>67.3</b>	--	--
Fairway Dr NB	A	0.1	1	44
NOR WB	C	18.9	0	38
NOR EB	C	19.4	6	96
Fairway Dr SB	F	261.9	595	1029
<b><i>South Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>E</b>	<b>35.8</b>	--	--
Fairway Dr SB	A	0.1	0	97
Fairway Dr NB	E	44.8	6	96
SOR WB	F	240.6	8	57

### *Review of Traffic Forecasting*

Typically, a 20-year traffic forecast is developed and used as the basis for analyzing potential roadway improvements. In order to establish a reasonable growth rate, historic IDOT ADT counts were referenced within the study area, as follows:

#### **Fairway Drive (north of Empire)**

- 2002 – 9,000 ADT
- 2009 – 9,100 ADT
- 2015 – 7,200 ADT

#### **Empire Street (east of Fairway)**

- 2005 – 23,700 ADT
- 2011 – 24,200 ADT
- 2013 – 23,300 ADT
- 2015 – 20,100 ADT

As shown, both Fairway Drive and Empire Street have experienced at most flat traffic growth over the past 10-15 years and may be decreasing in overall volumes. Based on this data, a 0% growth rate was assumed for the design year or, in other words, the traffic analysis for the improvement alternatives was based on existing traffic volumes.

## Alternatives Analysis

Several alternatives were considered for improving Fairway Drive and its intersection with Empire Street. In addition to relieving the existing operational constraints along the corridor, the City also desires to add bicycle lanes in each direction and improve pedestrian connectivity in the area. Also, it is important to address the existing safety concerns at the North Frontage Road.

Alternative intersection configurations, modified traffic control and new connections to area streets were considered as potential means to correct the existing problems at the North Frontage Road. However, given the very close proximity of the road to Empire Street and the limited right-of-way available in the project area, the improvements options focused on implementing left-turn restrictions.

Specifically, two variations were developed that would limit the North Frontage Road to right-in/right-out only movements at its intersection with Fairway Drive. This is similar to the existing configuration of the South Frontage Road.

### OPTION 1 – Left-Turn Restrictions Only

As shown in the attached schematic, this option would include the installation of a raised median from Empire Street beyond the North Frontage Road to restrict left-turn movements. The left turns, which are relatively low in volume, would be diverted to the adjacent intersections with Towanda Drive or K-Mart Crossing.

In addition to the median, the laneage would be modified to provide a single southbound through lane across Empire Street to provide space for the new bicycle lanes in each direction. The laneage for the northbound approach would remain unchanged; however, the raised median would need to be reconstructed due to a shift in alignment created by the bicycle lanes. A new pedestrian crossing and associated sidewalk would also be provided across the South Frontage Road.

These improvements would require some widening along the west side of Fairway Drive between Robinhood Lane and the North Frontage Road, as indicated on the concept drawing.

### OPTION 2 – Left-Turn Restrictions Plus Roundabout at Robinhood Lane

This option would be similar in all aspects to Option 1 except a roundabout would be constructed at the intersection of Fairway Drive and Robinhood Lane. The benefit of the roundabout would be its ability to accommodate diverted left-turn movements from the North Frontage Road as U-turn movements to reduce adverse travel.

For example, a westbound left turn could instead turn right, make a U-turn at the roundabout and proceed south on Fairway Drive. The roundabout could also help to calm traffic and serve

as a gateway into the neighborhood. However, the roundabout would add significant expense and require additional right-of-way from several parcels.

It is recommend that Option 1 be pursued as an initial phase of the project. If desired, the roundabout could be added as a second phase in the future.

### *Forecasted Traffic Operational Analysis*

The forecasted traffic volumes within the study area that would result from the implementation of Option 1 and 2 are summarized in **Exhibits 2 and 3**, respectively.

The operational analysis was repeated assuming implementation of the recommended improvements. It should be noted that the existing signal phasing and timing at Empire Street and Fairway Drive was assumed to remain in place with the exception of switching the protected westbound left-turn phase from a leading to a lagging movement to improve efficiency during both peaks periods (as discussed in the existing conditions observations).

**Table 3** summarizes the results for Option 1 and **Table 4** summarizes the results for Option 2. As shown, both options would significantly improve conditions at the North Frontage Road. In addition, the signalized intersection with Empire Street would continue to operate favorably despite the change in southbound laneage to accommodate the bicycle lanes.

It should be noted that the operational impact of traffic diversions to the adjoining intersections was also evaluated. However, the associated increase in delay at those locations would be nominal.

### *Forecasted Safety Assessment*

As noted previously, the intersection of Fairway Drive with the North Frontage Road has had a significant number of crashes. The majority of these crashes involve movements to/from the frontage road, resulting in angle or turning crash types.

The recommended improvements would eliminate the through and left-turn movements from the frontage road by introducing a raised median along Fairway Drive. Consequently, the safety of the intersection would be significantly improved.

**Table 3A: Forecasted Conditions with Option 1 – AM Peak Hour**

	LOS	Delay (sec/veh)	Avg Queue (feet)	Max Queue (feet)
<b><i>Empire/ Fairway (Signalized)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>24.9</b>	--	--
Empire WB	C	31.2	104	508
Fairway Dr SB	B	13.5	74	186
Fairway Dr NB	D	48.9	36	149
Empire EB	B	15.0	37	200
<b><i>North Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>23.9</b>	--	--
Fairway Dr NB	A	0.0	0	0
NOR WB	A	5.0	0	39
NOR EB	F	54.0	1	48
Fairway Dr SB	E	37.2	11	192
<b><i>South Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>A</b>	<b>3.3</b>	--	--
Fairway Dr SB	A	0.3	0	9
Fairway Dr NB	B	12.6	0	2
SOR WB	C	22.6	0	19

**Table 3B: Forecasted Conditions with Option 1 – PM Peak Hour**

	LOS	Delay (sec/veh)	Avg Queue (feet)	Max Queue (feet)
<b><i>Empire/ Fairway (Signalized)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>31.2</b>	--	--
Empire WB	D	48.8	201	622
Fairway Dr SB	B	14.1	72	185
Fairway Dr NB	C	21.1	109	178
Empire EB	C	26.4	82	409
<b><i>North Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>B</b>	<b>13.0</b>	--	--
Fairway Dr NB	A	0.0	0	20
NOR WB	A	7.6	2	55
NOR EB	F	56.2	2	48
Fairway Dr SB	E	37.3	6	171
<b><i>South Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>D</b>	<b>33.6</b>	--	--
Fairway Dr SB	A	0.1	0	0
Fairway Dr NB	E	43.4	68	367
SOR WB	F	208.1	6	54

**Table 4A: Forecasted Conditions with Option 2 – AM Peak Hour**

	LOS	Delay (sec/veh)	Avg Queue (feet)	Max Queue (feet)
<b><i>Empire/ Fairway (Signalized)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>23.8</b>	--	--
Empire WB	C	30.9	102	492
Fairway Dr SB	B	13.5	93	191
Fairway Dr NB	D	48.9	36	149
Empire EB	B	15.7	39	213
<b><i>North Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>D</b>	<b>29.4</b>	--	--
Fairway Dr NB	A	0.3	0	16
NOR WB	A	5.8	1	59
NOR EB	F	90.4	3	48
Fairway Dr SB	E	35.7	33	232
<b><i>South Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>A</b>	<b>3.3</b>	--	--
Fairway Dr SB	A	0.3	0	9
Fairway Dr NB	B	12.6	0	2
SOR WB	C	22.6	0	19

**Table 4B: Forecasted Conditions with Option 2 – PM Peak Hour**

	LOS	Delay (sec/veh)	Avg Queue (feet)	Max Queue (feet)
<b><i>Empire/ Fairway (Signalized)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>29.5</b>	--	--
Empire WB	D	44.8	173	568
Fairway Dr SB	B	14.3	92	182
Fairway Dr NB	B	17.8	136	183
Empire EB	C	26.8	85	403
<b><i>North Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>C</b>	<b>24.2</b>	--	--
Fairway Dr NB	A	0.7	0	10
NOR WB	A	7.6	3	90
NOR EB	F	145.3	7	52
Fairway Dr SB	D	31.0	31	228
<b><i>South Frontage Rd/ Fairway (Stop Sign)</i></b>				
<b>Overall Intersection</b>	<b>D</b>	<b>33.6</b>	--	--
Fairway Dr SB	A	0.1	0	0
Fairway Dr NB	E	43.4	68	367
SOR WB	F	208.1	6	54

## Summary

- » The intersection of Fairway Drive with the North Frontage Road is constrained due to its very close spacing to Empire Street and the resulting three-way stop traffic control.
- » Several alternatives were considered for improving the Fairway Drive corridor and its intersection with Empire Street. In addition to relieving the existing operational constraints along the corridor, the City also desires to add bicycle lanes in each direction and improve pedestrian connectivity in the area.
- » It is recommended that a raised median be installed to restrict the North Frontage Road to right-in/right-out only movements at its intersection with Fairway Drive. This is similar to the existing configuration of the South Frontage Road.
- » In addition to the median, the laneage would be modified to provide a single southbound through lane across Empire Street to provide space for new bicycle lanes in each direction. The laneage for the northbound approach would remain unchanged; however, the raised median would need to be reconstructed due to a shift in alignment created by the bicycle lanes. A new pedestrian crossing and associated sidewalk would also be provided across the South Frontage Road.
- » As a potential second phase, a roundabout could be installed at Robinhood Lane to more directly serve diverted left-turn movements from the North Frontage Road. This alternative, shown as Option 2, would cost more and require additional right-of-way, but the roundabout could also have traffic calming benefits.
- » It is recommended that the existing signal phasing and timing at Empire Street and Fairway remain in place with the exception of switching the protected westbound left-turn phase from a leading to a lagging movement during both the morning and afternoon peak periods to allow it operate more efficiently.
- » The recommended improvements would improve the efficiency of the corridor and significantly improve safety at the intersection of Fairway Drive and the North Frontage Road.

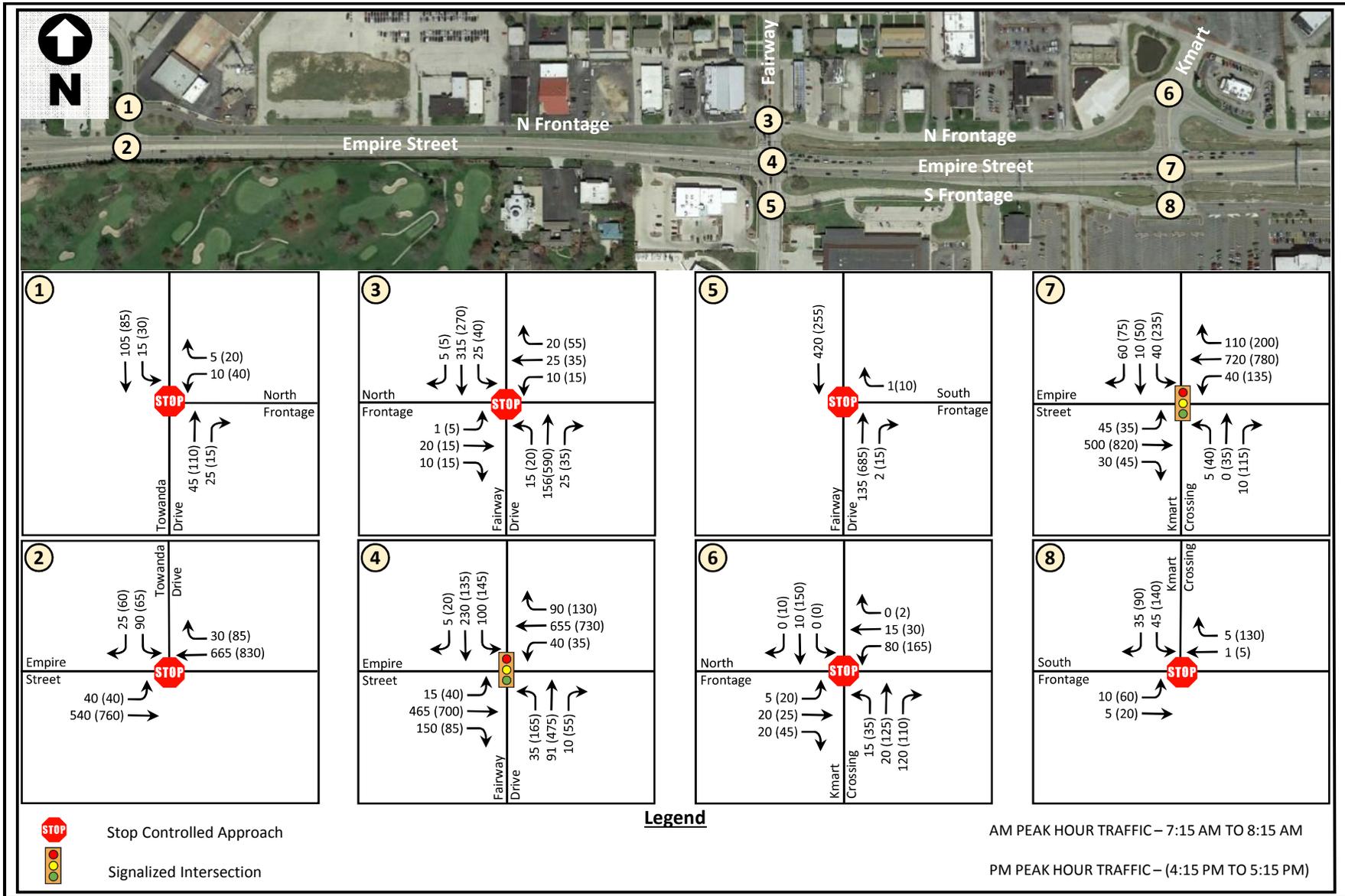


Exhibit 1: Existing Traffic Volumes



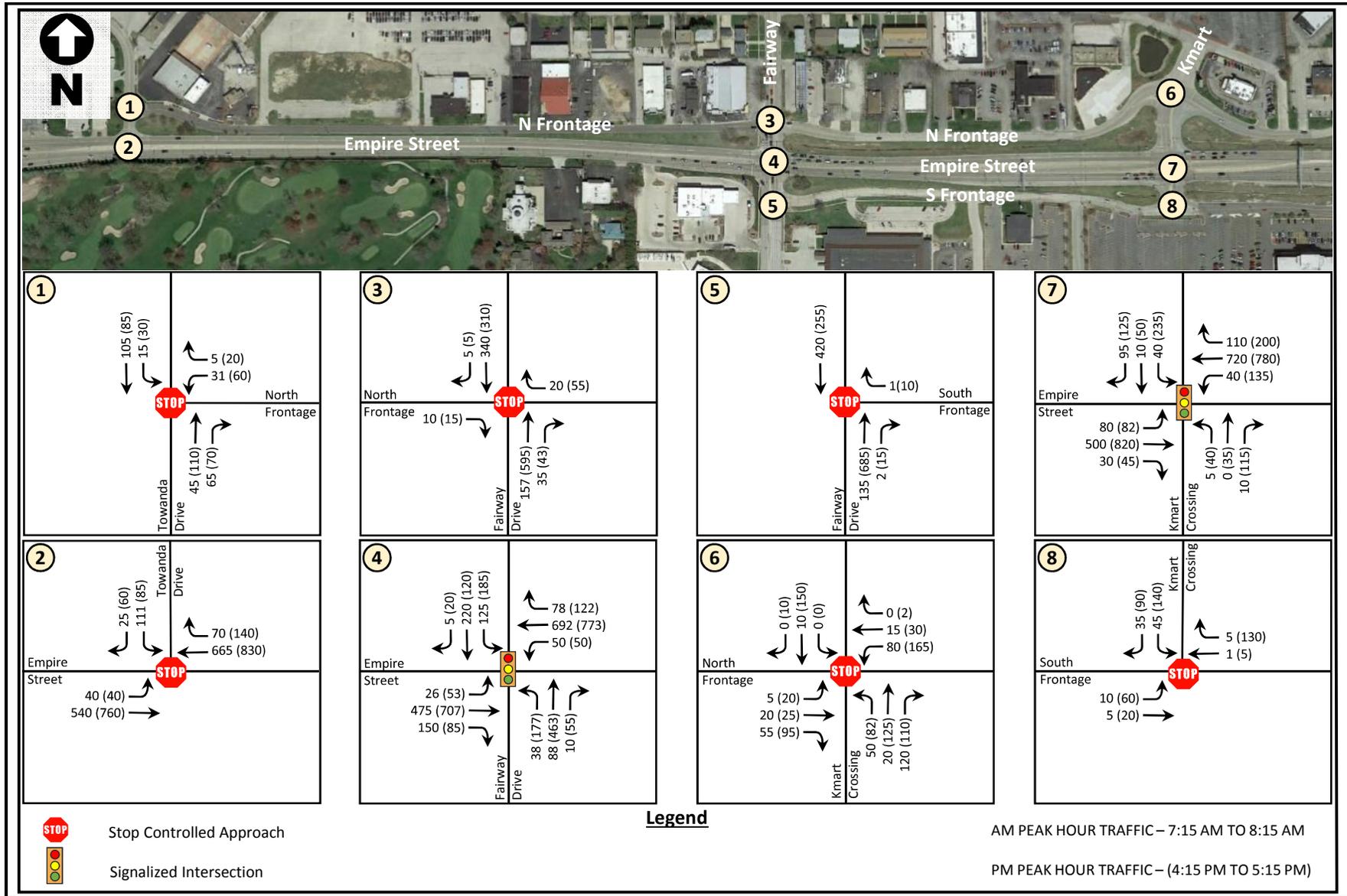


Exhibit 2: Option 1 Traffic Volumes

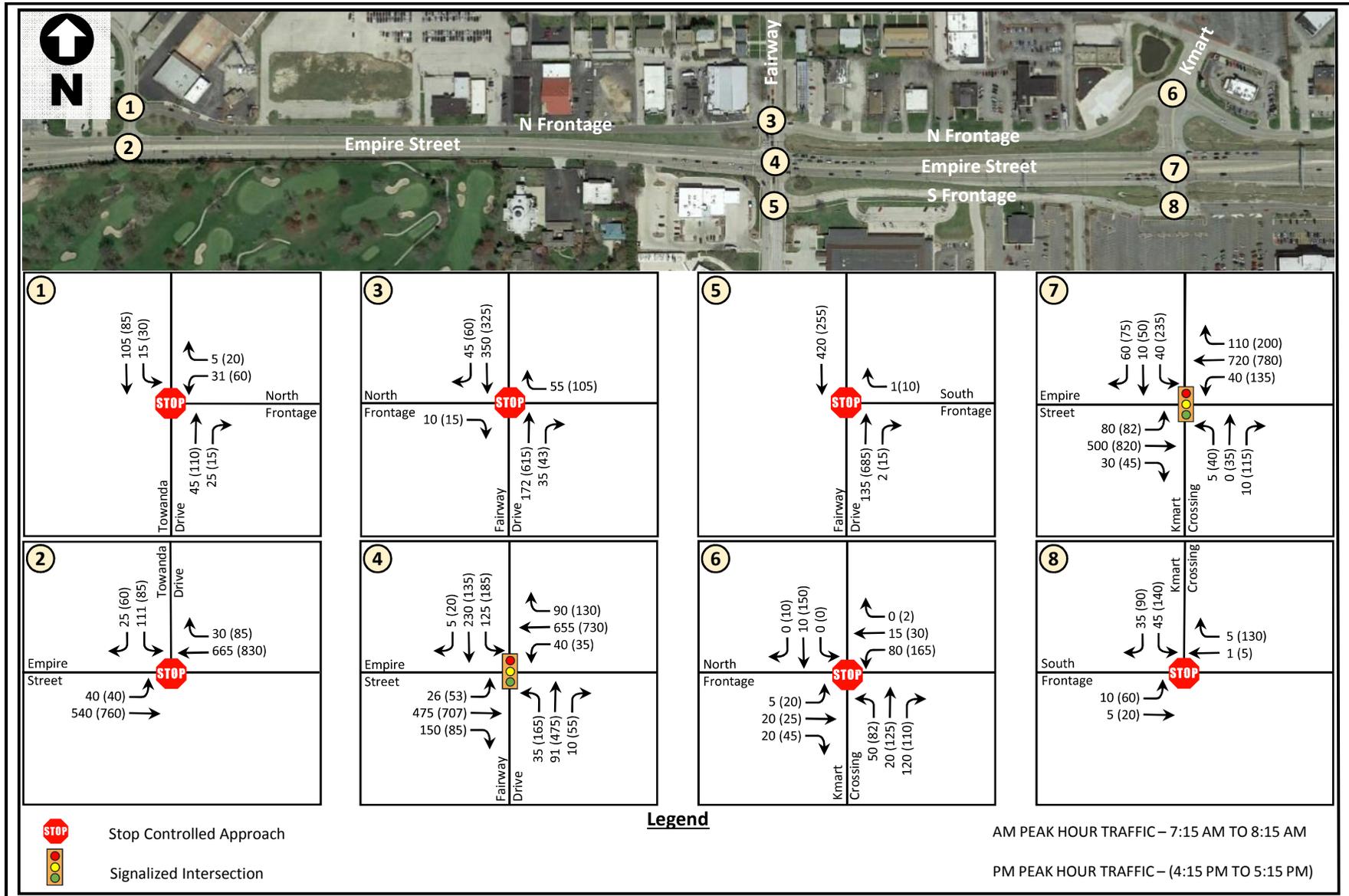
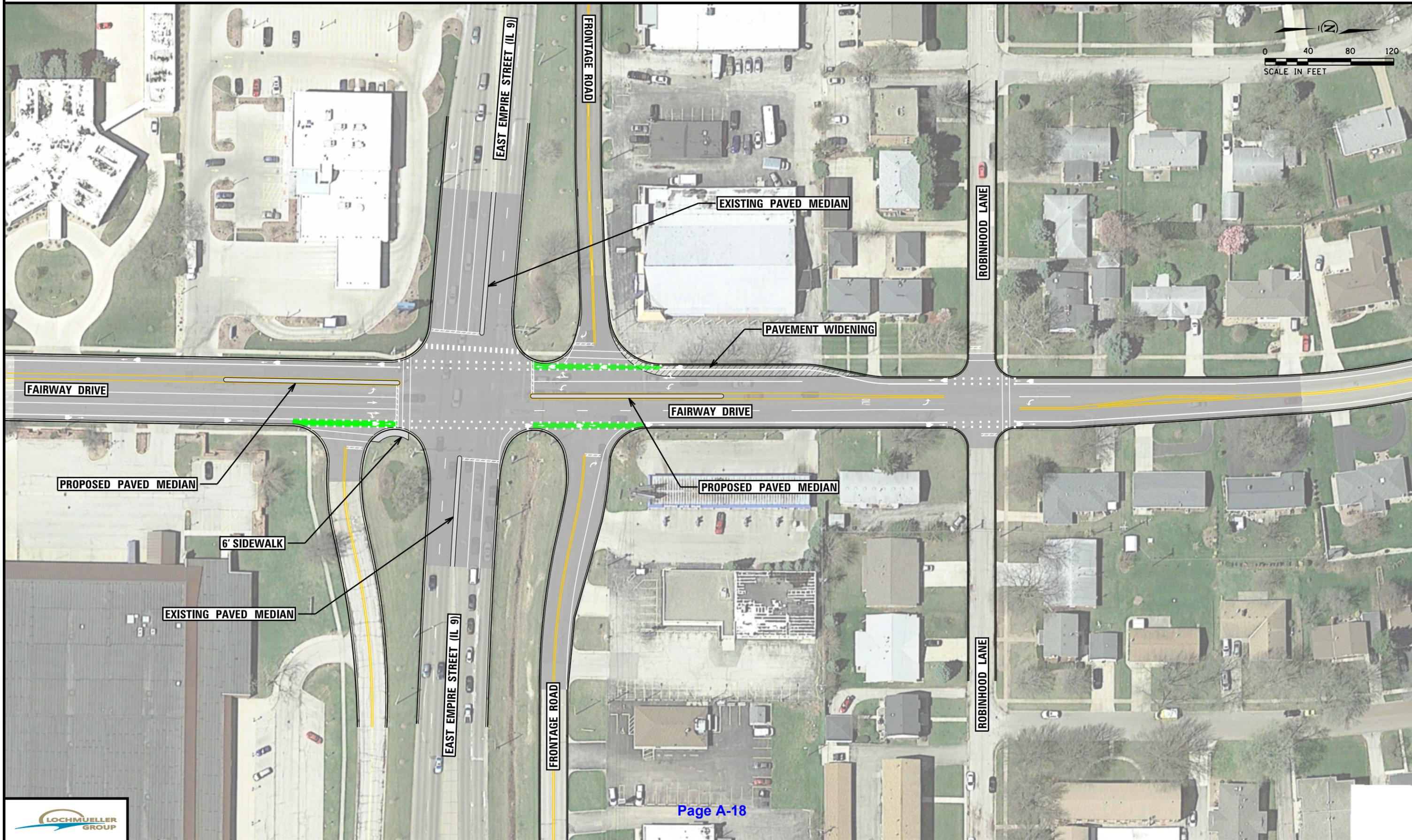
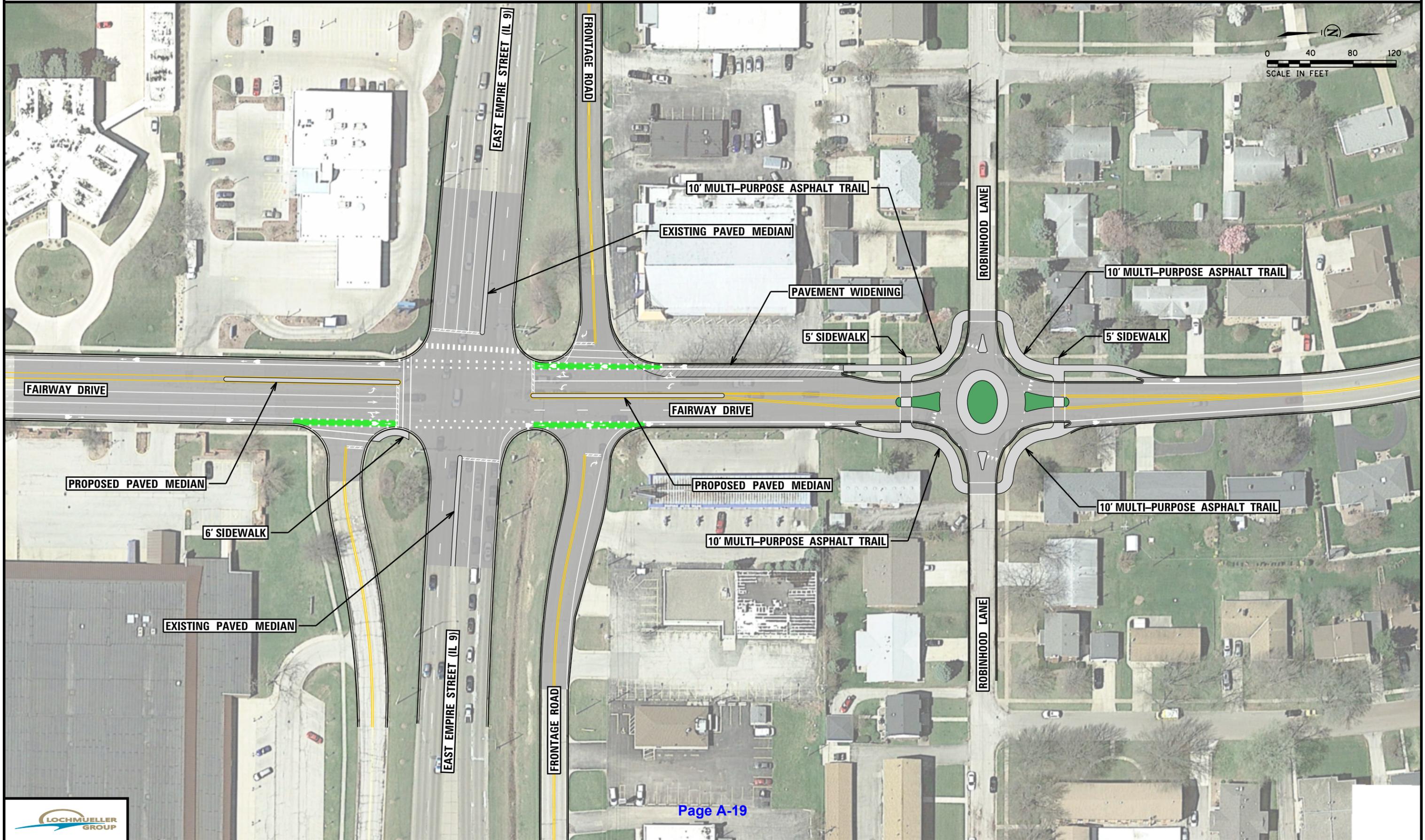


Exhibit 3: Option 2 Traffic Volumes

# OPTION 1



# OPTION 2



**From:** Luke Thoele/Cityblm  
**To:** Phil Allyn/Cityblm@Cityblm

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**Date:** Wednesday, November 15, 2017 01:53PM  
**Subject:** Fw: RE: [External] Bloomington - Empire @ Fairway

---

Luke Thoele, P.E.  
Civil Engineer II  
City of Bloomington  
Public Works Department  
T: 309.434.2225  
F: 309.434.2201  
[lthoele@cityblm.org](mailto:lthoele@cityblm.org)

-----Forwarded by Luke Thoele/Cityblm on 11/15/2017 01:53PM -----

To: Luke Thoele <lthoele@cityblm.org>  
From: "Allen, Jeffery L" <Jeffery.Allen@illinois.gov>  
Date: 10/30/2017 12:54PM  
Cc: Kevin Kothe <kkothe@cityblm.org>, Riechmann B Dustin <driechmann@lochgroup.com>, "Hogan, Brian J" <Brian.Hogan@illinois.gov>, "Burkybile, David H" <David.Burkybile@illinois.gov>  
Subject: RE: [External] Bloomington - Empire @ Fairway

Luke,

Sorry for the delay as I was out of the office this last week. I looked over your proposal and didn't see any negative impacts to the state highway section and we will continue to monitor the area for traffic delays and queueing issues after construction. I do ask that you keep us informed with the design plans so we can make any necessary revisions to our plans on Empire St. Brian Hogan is the lead designer on this project, though we have not begun any phase I designs, we do have it on the horizon. I have also cc'd Dave Burkybile so he is aware of the proposed signal changes you are planning in case he has any additional input. Depending on your funding source you will either need to contact our Local Roads bureau or our Permits section so we can review the plans for the work on Empire.

Thanks,

*Jeffery L. Allen, P.E.*

Geometrics Engineer

IDOT R-3/D-5

[Jeffery.Allen@illinois.gov](mailto:Jeffery.Allen@illinois.gov)

217-466-7219

**From:** Luke Thoele [mailto:lthoele@cityblm.org]

**Page A-20**

**Sent:** Monday, October 23, 2017 11:01 AM  
**To:** Allen, Jeffery L  
**Cc:** Kevin Kothe; Riechmann B Dustin  
**Subject:** [External] Bloomington - Empire @ Fairway

Jeff,

We have had Lochmueller Group study this intersection to look at improving the north leg and adding bike lanes on Fairway. There are no improvements to IL Route 9 proposed except the crosswalk and bike lane pavement markings. We would like to do this work along with our planned resurfacing of Fairway next year. At this time, we would like any feedback you may have and your general approval of this plan.

Thank you.

Luke Thoele, P.E.  
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Public Works Department  
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## 4 Bikeway Network Recommendations

### Introduction

The Bloomington Bicycle Plan proposes an expanded network of bicycle routes to facilitate travel to all sections of the City and beyond. The proposed network builds on the existing Constitution Trail system developed over the years by the City and other agencies. The recommended projects in this section will also help fill gaps, tackle barriers and improve conditions to complete the network. See the earlier Bikeways Guidelines section for more information on how routes and projects were selected.

A major caveat for the vast majority of these recommendations is that both the primary and secondary/other option recommendations assume the existing pavement width. Future reconstruction or expansion projects are opportunities to consider better bike accommodations, especially in those places where the bikeway network’s comfort level target could not previously be met.



*Figure 4.1. Constitution Trail bridge over Oakland Avenue.*

### Understanding the Maps

The plan’s maps provide a snapshot of needs and recommendations.

- **Figure 4.2) Existing Conditions -- Trails and On-Road Comfort Level:** Shows *existing* on-road conditions for bicyclists on studied roads, including, but not limited to, all routes studied for the network. It also provides information on existing trails and sidepaths.
- **Figure 4.3) All Existing and Recommended Bikeways:** Recommended on- and off-road bike facilities, including long-term future projects as well as low priority projects resulting in only a minor improvement or a slightly denser network.
- **Figure 4.4) Existing and High/Medium Priority Recommended Bikeways:** A subset of the map above, without long-term future projects and low priority projects removed.
- **Figure 4.5) Future Conditions -- Trails and On-Road Comfort Level:** Portrays how the off-road trail system and on-road bicycle level of service will change, if the recommended projects are implemented. Only those on-road segments “in the network” are shown.

Consider Lincoln Street as an example in using the maps and the spreadsheet in Appendix 4. The existing conditions map shows various segments ranging from an on-road comfort level of high B to high D, in terms of Bicycle Level of Service. A BLOS of C is considered acceptable for experienced cyclists, as is B for casual adult cyclists – the minimum target of this plan.

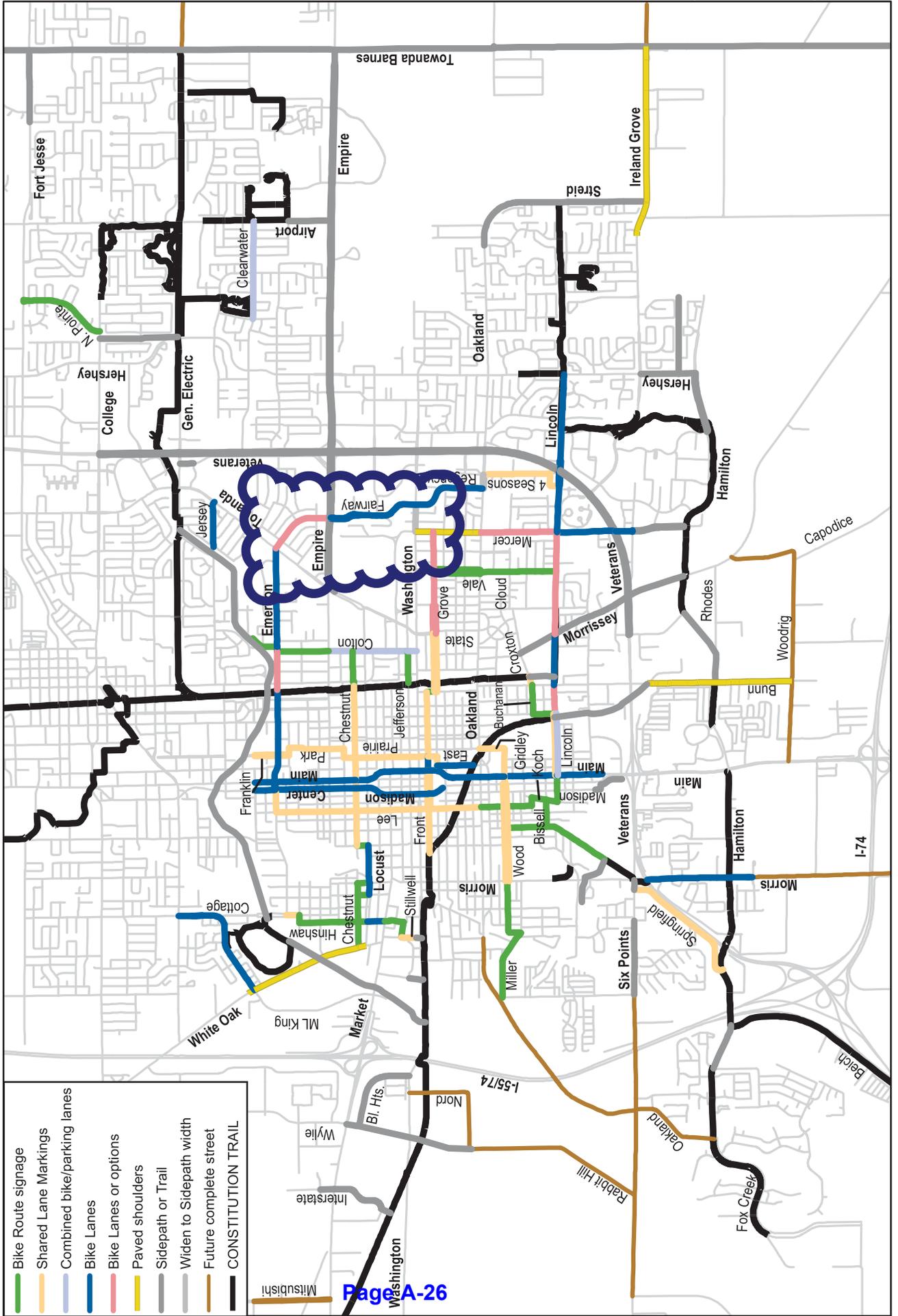
The recommended bikeways maps calls for bike lanes from Mercer to Hershey, with details of the proposed road diet described in the spreadsheet. From Morrissey to Mercer and from the Constitution Trail (by Clayton) to Bunn, bike lanes and one-side parking restriction is the primary recommendation – with the spreadsheet detailing secondary, fallback options. Removing the continuous left turn lane to add bike lanes is the recommendation described for Bunn to Morrissey. Separate recommendations are offered for Main to the Constitution Trail: shared lane markings westbound and combined bike/parking lane eastbound. Finally, Bike Route wayfinding signage is the only recommendation from Koch to Main. Due primarily to network significance and public demand, each segment west of Main is a high priority.

The future conditions map and spreadsheet show that bike lane striping would improve Lincoln from Main to Hershey to at least a High B. The exception is westbound from Main to the Constitution Trail, which remains a C with shared lane markings.





Figure 4.4: Existing and High/Medium Priority Recommended Bikeways





## Understanding the Project List

Extensive data collection on existing bicycling conditions informed the development of this plan. Most of this information, such as roadway geometry, traffic conditions, Bicycle Level of Service, sidewalk coverage, recommendation details and implementation notes, is housed in a spreadsheet that helps create the maps. See Appendix 4 for the entire dataset by road segment.

The table below summarizes recommended projects by road name. Listed at the end are low priority routes less important to the network. When an agency other than the City of Bloomington has jurisdiction and could take the lead on implementation, that agency is listed in the Priority column: *IDOT*, *McLean County*, *Town of Normal*, or *Bloomington-Normal Water Reclamation District (BNWRD)*. Bike facilities would not be installed on township (*Twsp*) roads unless jurisdiction is transferred to the City.

**Table 4.1. Recommended Projects - High and Medium Priorities**

Street	From (N/W)	To (S/E)	On Road Recommendation	Off Road Recommendation	Priority
Albert/East	Grove	Constitution Trail	Bike Lanes		High
Allin	Chestnut	Locust	Bike Route wayfinding signage		Medium
Bissell	Low	Koch	Bike Route wayfinding signage		Medium
BNWRD Trail	Const. Tr. W (Washington)	Const. Tr. N		Trail	High (BNWRD)
BNWRD Trail	Const. Tr. N.	Const. Tr. E.		Trail	Medium (BNWRD)
Buchanan	Clayton	Bunn	Bike Route wayfinding signage		High
Bunn	Lafayette	Veterans		Sidewalk	Medium
Bunn	RR Xing	Hamilton	Paved Shoulders	Sidewalk	High
Bunn	Hamilton	Woodrig	Paved Shoulders		Medium [Twsp]
Caroline	Circle	Washington		Trail link	Medium
Center	Normal border	Locust	Buffered Bike Lanes		High [IDOT]
Chestnut	White Oak	Morris	Bike Route wayfinding signage		Medium
Chestnut	Allin	Center	Shared Lane Markings		Medium
Chestnut	Center	Const. Tr./Linden	Shared Lane Markings		High
Chestnut	Const. Tr./Linden	Colton	Bike Route wayfinding signage		Medium
Clayton	Buchanan	Lincoln	Bike Route wayfinding signage		High
Clearwater	Veterans	N of Mt Vernon		Intersection improvement	Medium
Clearwater	Mill Creek	Airport	Combined Bike/Parking Lanes		Medium
Colton	Emerson	Empire	Bike Route wayfinding signage		Medium
Colton	Empire	Washington	Combined Bike/Parking Lanes		Medium
Const Tr SE extension	Lincoln	Bunn		Trail	High

Street	From (N/W)	To (S/E)	On Road Recommendation	Off Road Recommendation	Priority
Constitution Tr extension	Croxton	Lincoln		Trail	High
Cottage	Normal border	ML King Dr	Bike Lanes (road diet)		Medium
Cottage	Seminary	Forrest	Shared Lane Markings		High
Cottage	White Oak Park north edge	Seminary		Finish Sidewalks, (widen to sidepath)	Medium
Croxton	Bunn	Indianapolis	Shared Lane Markings		High
East	Locust	Olive	Buffered Bike Lanes (road diet)		High [IDOT]
Emerson	Lee	Center	Shared Lane Markings		High
Emerson	Center	Linden	Bike Lanes (road diet)		High
Emerson	Linden	State	Bike Lanes (remove parking) or backup options		High
Emerson	State	Eboch	Bike Lanes		High
Emerson	Eboch	Towanda	Bike Lanes (remove continuous left-turn lane)		High
Empire	Colton	Towanda		Finish Sidewalk	Medium [IDOT]
Empire	Towanda	Airport		Sidepath	High [IDOT]
Empire	Airport	Towanda Barnes		Sidepath	Medium [IDOT]
Ethell	Normal border	Emerson	Bike Route wayfinding signage	Sidewalk	Medium
Fairway	Towanda	Empire	Bike Lanes (remove parking) or backup options		High
Fairway	Empire	Eastland	Bike Lanes (road diet)		High
Four Seasons	Oakland	Lincoln	Shared Lane Markings		Medium
Fox Creek	Danbury	Beich		Sidepath	High
Franklin	Normal border	Emerson	Shared Lane Markings		Medium
Franklin	Emerson	Beecher	Shared Lane Markings		High
Gridley	Wood	Oakland	Shared Lane Markings		High
Grove	Albert	Prairie	Shared Lane Markings		High
Grove	Robinson	State	Shared Lane Markings		High
Grove	State	Vale	Bike Lanes (remove parking) or backup options		High
Grove	Vale	Mercer	Bike Route wayfinding signage		High
Hickory/Koch	Lee	Bissell	Bike Route wayfinding signage		High
Hinshaw/Forrest	Cottage	Locust	Bike Route wayfinding signage		High
Hinshaw	Locust	Market	Bike Lanes		High [IDOT]
Hinshaw/Sheridan	Market	Stillwell	Bike Route wayfinding signage		High
IAA Dr	Vernon	Kurt		Sidepath	High
Interstate	Westgate	S-end		Sidepath	Medium
Ireland Grove	Dover	E of Bear Creek		Sidewalk	Medium
Ireland Grove	E of Bear Creek	Towanda Barnes	Paved Shoulders	Sidewalk or Sidepath	High
Jefferson	Const. Tr./Robinson	Colton	Bike Route wayfinding signage		Medium
Koch	Bissell	Lincoln	Bike Route wayfinding signage		High

## Appendix 4: Road Segment Data

Extensive data collection on existing bicycling conditions informed the development of this plan. Most of this information, such as roadway geometry, traffic conditions, Bicycle Level of Service scores, sidewalk coverage, recommendation details and implementation notes, is housed in the spreadsheet beginning on the next page. The legend for the spreadsheet is below:

### **Segment Definition**

<b>Street</b>	Street name of road segment
<b>From (W/N)</b>	West or North segment end
<b>To (E/S)</b>	East or South segment end

---

### **Existing Conditions**

<b>Lanes</b>	Number of through lanes (excludes center/other turn lanes)
<b>Traffic ADT</b>	Traffic count in vehicles/day. Gray or blue indicate estimates.
<b>Speed Limit</b>	Posted speed limit
<b>Lane Width</b>	Width from lane edge (often the gutter seam/pavement edge) to next lane, in feet
<b>Extra Width</b>	Pavement width from outer lane edge to gutter seam/pavement edge. May include paved shoulders, parking areas, bike lanes.
<b>Gutter Pan</b>	Width of cement gutter pan in feet
<b>Parking Occ%</b>	Estimated % occupancy rate of on-street parking - excludes driveway areas. Averaged over 2-sides unless noted.
<b>% Truck</b>	Estimated % of heavy truck traffic
<b>BLOS score</b>	Bicycle Level of Service score of road segment - measure of on-road comfort level for a range of adult cyclists, as a function of geometry and traffic conditions
<b>BLOS grade</b>	BLOS converted to a grade range. B (or better) might be considered "comfortable" for casual adult cyclists, C (or better) for experienced cyclists
<b>Comments</b>	Further details
<b>Sidewalk Status</b>	Are there sidewalks (SW) or sidepaths (SP) on each side (N-north, S-south, E-east, W-west)

---

### **Recommendations**

<b>Primary Recommendation</b>	Description of the recommendation (if any) considered best for this segment.
<b>Notes and other options</b>	Either further detail on the primary recommendation, or "fallback" recommendation(s) if the primary cannot be achieved.
<b>New BLOS</b>	Shown only if an on-road, primary recommendation bikeway is implemented.

---

### **Implementation**

<b>Public "Votes"</b>	Number of 5-2-13 public brainstorming workshop attendees suggesting this segment
<b>Priority</b>	Recommended implementation priority of segment

Street	From (WIN)	To (E/S)	Lanes	Traffic ADT	Spd Limit	Lane Width	Extra Width	Gutter Pan	Park Occ. %	% Truck	BLOS score	BLOS grade	Comments	Sidewalk Status	Primary recommendation	Notes and Other Options	New BLOS	Public "votes"	Priority
Towanda	Locust	Washington	4	8500	30	11.1	0	0-pvd	0	0.5	3.36	C	CLTL 56.3'. Raised median, turn lanes by Washington, Empire	Some E-SW, some E-SW	Finish sidewalk	Complete W-SW. Widening a SW to SP low priority. BL only possible if CLTL removed.		14	High
State (N-bd)	Washington	Grove	2	4350	30	19	0	0-pvd	40	0	2.79	C		Both SWs	Shared Lane Markings	SLM 4' possible, but somewhat below target.		8	Low
State (S-bd)	Washington	Grove	2	4350	30	11.4	0	0-pvd	0	0	3.27	C		Both SWs	Shared Lane Markings	SLM 11' possible, but well below target.		8	Low
State	Grove	Oakland	2	1950	30	14	0	0-pvd	20	0	2.76	C		Both SWs	Bike Route signage	Bike Route wayfinding signage, but somewhat below target		1	Low
Meadows	Oakland	Maizefield	2	600	30	13	0	0-pvd	10	0	2.19	B	Oakland Xing difficult	None	Bike Route signage	Bike Route wayfinding signage		1	Low
O'Connell	Maizefield	Croxton	2	300	30	12.5	0	0	20	0	2.01	B		None	Bike Route signage	Bike Route wayfinding signage		1	Low
McGregor	Oakland	Croxton	2	1450	30	13.1	0	0-pvd	5	0	2.57	C		Some E-SW, some W-SW	None	Bike Route wayfinding signage, but somewhat below target		3	Low
McGregor	Croxton	Lincoln	2	1300	30	13.1	0	0-pvd	0	0	2.45	B	No S-bd parking, by golf course.	Some E-SW	None	Bike Route wayfinding signage; finish E-SW and possibly add W-SW.		3	Low
McGregor	Lincoln	Lafayette	2	1850	30	13	0	1.3	15	0	2.82	C		Both SWs	None	Bike Route wayfinding signage, but somewhat below target		1	Low
Vale (N-bd)	Washington	Grove	2	700	30	10.3	0	0-pvd	0	0	2.46	B		Both SWs	None	Bike Route wayfinding signage		5	Low
Vale (S-bd)	Washington	Grove	2	700	30	19.7	0	0-pvd	25	0	1.51	B	2-W stop at Grove	Both SWs	None	Bike Route wayfinding signage		5	Low
Vale (N-bd)	Grove	Oakland	2	950	30	10.9	0	0-pvd	0	0	2.55	C	Tough Xing of Oakland	Both SWs	Bike Route signage	Bike Route wayfinding signage, but somewhat below target		5	Medium
Vale (S-bd)	Grove	Oakland	2	950	30	19.1	0	0-pvd	10	0	1.51	B		Both SWs	Bike Route signage	Bike Route wayfinding signage		5	Medium
Vale	Oakland	Lincoln	2	650	30	13.5	0	1.5	5	0	2.11	B	5% S-bd parking, no N-bd. No SWs S of Golden. Needs repaving.	Some E-SW, some W-SW	Bike Route signage	Bike Route wayfinding signage		3	Medium
Capodice	Woodrig	south end	2	1850	45	10.3	0	0	0	0.5	3.25	C		None	Paved shoulders	Paved 3-4' shoulders. Or, rail-trail towards Downs.	2.28	6	Low
Mercer	Country Club	Washington	2	900	30	10.8	0	1.7	0	0	2.54	C		None	None	Bike Route wayfinding signage. Add SW one side.		3	Low
Mercer	Washington	Grove	2	5500	30	13.5	0	1.3	0	0	3.13	C	Parking not allowed. Turn lanes at Washington.	None	Paved shoulders, add sidewalk	Not enough room for BLS. 3-8-11-11-3-8 "shoulders"/fog lines with Bike Route signage possible. Or, BR signage only, but well below target. Add SW on at least one side. See Comments of #1451 for options.	2.31	7	Medium
Mercer	Grove	Oakland	2	6100	30	13.5	0	1.3	0	0	3.18	C	Parking not allowed. Turn lanes at Oakland	None	Paved shoulders, add sidewalk	Not enough room for BLS. 3-8-11-11-3-8 "shoulders"/fog lines with Bike Route signage possible. Or, BR signage only, but well below target. Add SW on at least one side.	2.36	7	Medium
Mercer	Oakland	Lincoln	2	4600	30	18.1	0	0-pvd	0	0	2.31	B	Parking allowed, except by Lincoln, Oakland	None	Bike lanes (remove parking) or backup options; add sidewalk	Low parking - no SLM 4' or 11'; too narrow for CBPLs. 5 BL-13-13-5 possible if no parking. Otherwise, Bike Route wayfinding signage. Add SW on at least one side.	1.28	6	Medium
Mercer	Lincoln	Veterans	4	5200	30	10.9	0	1.3	0	0	3.06	C	Concrete, no parking. Turn lanes at Veterans	Both SWs	Bike lanes (road diet)	Excellent road diet candidate: 5 BL-12-11-12-5. 58 at Veterans allows (W-to-E): 12 RT lane-5 BL-12-12 LT lane-12-5.	1.24	6	High
Mercer	Veterans	Ireland Grove	4	4350	30	11.5	0	1.5	0	0	2.90	C	CLTL 60.3' total + gutters.	Both SWs	Bike lanes (road diet)	Excellent road diet candidate. 5-bd-3; 5 BL-3 buffer-14-16-14-3-5. 5-bd-4; 5 BL-13-12-13-5. Bike lanes can be carried	0.67	4	High
Mercer	Ireland Grove	Lincoln	4	4500	40	11.1	0	1.5	0	0	2.83	C	Divided, concrete, 12' lanes	None	3' Sidewalk	Add SW on at least one side. SP with appropriate		4	High
Fairway	Towanda	Empire	2	8500	30	16.5	0	1.5	2	0	2.93	C	Parking ok. Narrower due to turn lanes by Towanda, Empire	Some E-SW	Bike lanes (remove parking) or backup options	If parking banned, then 5.5 BL (w/ gutter)-12.5-12.5-5.5. Backup: combined bike/parking lanes 7-11-11-7, or Bike Route wayfinding signage only (somewhat below target)	1.57	5	High
Fairway	Empire	Eastland	4	10100	30	10.5	0	1.5	0	0	3.44	C	Painted, raised medians W side of mail - raised stops road diet	E-SW, most W-SW	Bike lanes (road diet)	Consider road diet long term: remove medians. 5 BL (w/ gutter)-12-11 CLTL-12-5 BL. Else: 4' SLMs, but well below target.	1.34	5	High
Regency	Eastland	Washington	4	6400	30	10.5	0	1.5	0	0	3.21	C	Gutters paved for much	Both SWs	Bike lanes (road diet)	Excellent road diet candidate: 5 BL (w/ gutter)-12-11 CLTL-12-5 BL.	1.10	1	High
Regency	Washington	Oakland	4	4000	30	10.5	0	1.5	0	0	2.97	C	Gutters paved for much	Both SWs	Bike lanes (road diet)	Excellent road diet candidate: 5 BL (w/ gutter)-12-11 CLTL-12-5 BL.	1.10	1	High
Four Seasons	N of Crobertin	Lincoln	2	2750	30	14	0	1	0	0	2.70	C	No stoplight at Lincoln	Both SWs	Shared Lane Markings	SLM 4' possible, but somewhat below target. Higher priority if no Veterans W-SW built.		0	Medium
Veterans	College	Vernon/ Gen. Electric	6	45000	45	12	0	1.3	0	1	4.22	D	Divided, turn lanes. 13-14' outer lanes where no R-turn lanes. Constitution Trail underpass.	None	Add sidepath	SP on one side, SW on other, using right corner islands at intersections. Links to Constitution Trail underpass.		6	High
Veterans	Vernon/ Gen. Electric	Empire	6	45000	45	12	0	1.3	0	1	4.22	D	Divided, turn lanes. 13-14' outer lanes where no R-turn lanes. W footings: IAA, E. Holiday & sidewalk link, Clearwater-Empire	None	Add sidepath	Add W-SP (E-side of IAA) E-SW. Clearwater intersection needs N-face Xing, S-face Xing moved to island, and BLS on Clearwater.		5	High
IAA Dr.	Vernon	Kurt	2	6500	30	12	0	1.3	0	0	3.40	C	CLTL 36' + gutters	W-SW	Add sidepath	See Veterans for SP on E-side of IAA.		5	High
IAA Dr.	Kurt	Empire	2	4450	30	13.5	0	1.3	0	0	3.02	C	W frontage road for Veterans	Most W-SW	None	Complete W-SW. See Veterans for SP on E-side of IAA.		5	High
Veterans	Empire	Oakland	6	42000	45	12	0	1.3	0	1	4.18	D	Divided, turn lanes. 13-14' outer lanes where no R-turn lanes. E-side: Eldorado and sidewalks	None	Add sidepath	Add W-SP, complete E-SW. Add SW and Xwalks (using islands) at all intersections. Add BLS to cross streets at Eastland, Washington, Jackson Intersections.		5	High

**CITY OF BLOOMINGTON  
REPORT FOR THE TRANSPORTATION COMMISSION  
NOVEMBER 28, 2017**

<b>CASE NUMBER:</b>	<b>SUBJECT:</b>	<b>ORIGINATING FROM:</b>
TC-2017-03	Potential Intersection Modifications at Towanda Barnes Rd. & Ireland Grove Rd.	City Council (10/23/2017 Meeting)
<b>REQUEST:</b>	Recommendation to City Council regarding a Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for the intersection of Towanda Barnes Road and Ireland Grove Road.	

**STAFF RECOMMENDATION: Approval**

Staff recommends the Transportation Commission pass the following motion recommending:

A. That City Council approve the Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for the intersection of Towanda Barnes Road and Ireland Grove Road and the Mayor and City Clerk be authorized to execute the necessary documents.

**1. ATTACHMENTS:**

- a. Location Map
- b. City Council Packet from October 23, 2017 (abbreviated)
- c. City Council Presentation by PW Director Karch on October 23, 2017
- d. City Council Meeting Minutes from October 23, 2017 (abbreviated)
- e. County Transportation Committee Meeting Minutes from October 3, 2017
- f. Towanda Barnes and Ireland Grove Road 5-year Crash Summary
- g. Intersection Traffic Counts
- h. Intersection Crash Rankings – by Number
- i. Intersection Crash Rankings – by Rate
- j. 2014 Interim (10 year) Intersection Design Study by Farnsworth Group
- k. 2017 Final (20 year) Intersection Design Study by Farnsworth Group
- l. Public Comments received to date

**2. BACKGROUND AND SUPPLEMENTAL INFORMATION:**

An interim design study of the intersection of Ireland Grove Road and Towanda Barnes Road was completed in 2014 as a result of complaints about traffic backups, one crash involving a fatality, and one crash involving serious injury at this intersection. On September 26, 2016, Council created a joint partnership to address the intersection by entering into an

Intergovernmental Agreement with McLean County to split 50/50 the costs of design and reconstruction of the intersection. At the same time the Intergovernmental Agreement was adopted, a Resolution approving the expenditure of \$64,100 of Motor Fuel Tax (MFT) funds was adopted as well to fund the City's portion of the initial engineering. The remaining expenditure by the City to cover its portion of this project is estimated to be \$900,000 and includes the remainder of the City's portion of the project's engineering currently owed to the County, as well as the City's portion of the future estimated costs for right-of-way, utility relocation, and construction. The current total construction estimate is \$1,600,000, half of which would be the City's responsibility.

For additional details regarding the history and current status of the project, please see the attached City Council Packet Memo from the October 23, 2017 meeting, which includes the September 26, 2016 Council Memo and the February 17, 2017 memo from the County Engineer to the McLean County Board of Transportation. In addition, the Minutes from the recent County Transportation Committee Meeting on October 3, 2017 and the power point presentation presented by Public Works Director Karch at the October 23, 2017 City Council meeting are also attached.

When considering the proposed MFT resolution at their October 23, 2017 meeting, the City Council referred the project to the Transportation Commission for a recommendation on the MFT funding resolution. Please see the attached Council Meeting minutes from this meeting. Specific questions that the Council requested are below with Staff's response:

1. *Can the City spend money on better or a wider variety of projects?* There are a very large number of potential projects across the City competing for limited funding. Potential projects include safety improvements, efficiency/capacity improvements, maintenance work, and beautification projects, each with advantages and disadvantages with regard to which is "best". The Staff continually monitors the infrastructure of the City and their recommendation is that this project would be a good use of currently budgeted funds. Given the County is funding 50% of the total project cost, City dollars are stretched further to alleviate one of the most congested intersections in the City and improve safety at a location traveled by tens of thousands of people each day.
2. *How else can the city use MFT funds?* MFT funds can be used on a wide variety of projects, but they must be roadway related and all have strings attached in the form of various state requirements and higher, more conservative design standards. Utilizing MFT funds generally requires a higher level of plan detail and engineering, both during the preliminary and design phases, as well as for construction inspection and material documentation. For example, currently the City uses non-MFT funds to pay for the annual asphalt street resurfacing because it allows greater flexibility on construction methods and material types, typically has lower unit prices, it allows the City to take advantage of new technology, and the simplicity of the work does not require a higher level of effort to achieve satisfactory results. This allows the most efficient use of funds. If we used MFT funds for this resurfacing, additional engineering work (potentially by an outside consultant) would need to be completed to compile a more involved set of bidding documents to IDOT standards and

- incorporating often more conservative design requirements such as minimum lane widths that are unnecessary for a lower volume roadway. In addition, there would be restrictions placed on the material types used, increased construction inspection documentation required (also potentially needing an outside consultant), and loss of flexibility with regard to work location and scope modifications. MFT funds are typically utilized on larger, more complex projects, such as this project, the intersection/traffic signal improvements at Towanda Ave. and Vernon Ave., the Hamilton Road improvements and the Fox Creek Road bridge replacement and associated road work because these projects require the higher level of effort and detail, have higher traffic volumes appropriate for the higher design standards and will see the associated higher unit costs regardless of the funding type.
3. *How many of the crashes at this intersection resulted from speeding?* This information is not available from the crash reports.
  4. *Can we look at what speeds people are traveling?* Average unimpeded travel speeds in the immediate vicinity of the intersection are not easily measured due to the traffic signal regulating the stoppage of traffic. However, the County has collected speed data for the approaches to the intersection. This information is attached. It does appear that there may be an issue of speed enforcement, especially along Towanda Barnes Road. This project alone will likely not have a noticeable effect on speeding.
  5. *Does this intersection improvement alleviate safety concerns at peak hours only?* The greatest benefit would come during the peak hours since those are the times of greatest congestion and the highest volumes of traffic, especially with a reduction in the chance of rear-end crashes associated with congestion. However, the modifications to the intersection should improve the safety of the intersection at all times of day. The addition of the southbound free-flow right turn will change the current right-angle/"T-bone" conflict to a typically less severe sideswipe conflict. The additional eastbound and westbound right turn lanes will separate through and right turn movements, reducing the likelihood of rear-end crashes. The addition of the raised median on the west leg will prevent left turns to/from the east Pony Entrance, which is located within the eastbound left turn lanes. This will reduce the likelihood of head-to-head conflicts between eastbound left turns (Ireland Grove to Towanda Barnes) and westbound left turns (into Pony). All three of these benefits should be realized in off-peak hours as well as peak hours.
  6. *What is the crash data and traffic data during other time periods at this intersection?* Crash data for the intersection from the past 5 years is attached. Hourly breakdowns are provided at the top of the page inside the highlighted box. There were a total of 35 crashes. While most crashes occurred during the morning and evening peak times, when traffic volumes are highest, it should be noted that crashes also occurred during off-peak hours, especially late-morning, early afternoon, and the evening period. Traffic volume data from the preliminary traffic analysis as well as updated traffic volume data collected by the County in September, 2017 is also attached.

7. *What is the timeline for this project, including the timeline for review by the Transportation Commission and final approval by the City Council?* All design engineering is complete and construction documents are ready to be released for bidding. The County is currently proceeding with right-of-way acquisition and utility relocation coordination. The County has discussed the project at its Transportation Committee and is looking for feedback on the interest in the City moving forward with the project. See the attached Minutes from this meeting. Assuming the Transportation Commission recommends approval of the MFT Funding Resolution at the November 28, 2017 meeting, it would likely be brought back to Council for final approval in January, 2018. Following this approval and approval and authorization of funds by the County, the project could be let for bids as soon as right-of way is obtained, potentially as early as spring/summer, 2018.
  
8. *Have the Transportation Commission review and make recommendations on the current proposed project and/or other projects with an equal or greater safety benefit.* Data on safety benefits for all other projects does not currently exist to directly compare, and would consume a significant amount of staff time to evaluate and compile, as most future potential projects do not yet even have a project scope. Projects are evaluated on a case by case basis, with selection based on various criteria such as crash rates, usage volumes, potential funding partnerships and/or grants (County, Town, IDOT, private), public and elected official feedback, and other various factors. A list of the significant projects under current consideration can be found in the recently presented Streets Master Plan.
  
9. *Have the Transportation Commission come up with alternatives to the current proposed project, including other ways to alleviate the concerns at this intersection (i.e. non-MFT design, “congestion ahead” signs, or speed limit reductions) and alternative projects that would have an equal or greater safety benefit.*
  - a. Without MFT funds, a shorter design year could be used rather than the IDOT required 20-year period. This would potentially shorten the proposed turn lanes and reduce the required new pavement. However, as traffic grows into the future, these turn lanes would potentially need to be lengthened at a higher cost due to inflation and without the economy of scale of the larger current project. In addition, significant revisions to the construction drawings would be needed, adding engineering costs to the project.
  
  - b. There is work in distinct locations that could be completed a piece at a time if MFT funds are NOT used for the project. For example, the southbound free flow right turn lane, the eastbound right turn lane, and the widening work on the east leg could all be completed independently of each other. In addition, the existing Ireland Grove Road pavement is planned to be milled and overlaid as part of the project to take advantage of economy of scale with the Contractor. This resurfacing work could be postponed into the future, again at a higher cost, but will not be able to be eliminated indefinitely.

- c. Congestion ahead signs could be placed ahead of the intersection at relatively low cost. However, this will only help warn vehicles as they first encounter the queued vehicles. The likelihood of rear-end crashes between vehicles waiting at the intersection, angle or turning crashes in the intersection, or sideswipes by weaving vehicles will not be reduced. In addition, in locations such as this with a high number of daily commuters, the effectiveness of signage decreases over time as the warning signs people see every day begin to blend into the background, negating in the long-term any benefits that may be realized in the short-term.
- d. Reducing the speed limit below the current 45 mph will likely not have an effect on slowing down drivers since drivers tend to drive at which speed they feel comfortable rather than the posted speed unless there is sufficient enforcement. Typical travel speeds are already greater than the current posted speed. If the speed limit were to be lowered further, safety would likely decrease as some drivers will drive slower, but others will remain at the same speed. This increase in the speed differential will increase weaving and unsafe maneuvers by the faster vehicles.
- e. Staff has already implemented several lower-cost changes to the intersection to improve efficiency and safety.
  - i. On the east leg, a short left turn lane was added in the striped median area to store the occasional westbound left turn vehicle waiting to turn and prevent it from blocking through and right turning vehicles.
  - ii. The west leg was re-marked to provide a dual left turn lane. This allowed two streams of cars to turn left simultaneously, increasing the capacity of the intersection.
  - iii. Signal timings have been adjusted to optimize the overall efficiency of the intersection to the extent possible with the current substandard lane configuration.

10. *Include the minutes from the County Transportation Committee meeting.* These minutes are attached.

11. *Include a copy of the engineering report to outline what safety issues were examined to determine the need for this intersection.* A formal safety study document is not typically prepared for intersection improvements such as this. The crash history is reviewed, patterns are observed and the design of the intersection is completed to correct any deficiencies found. The primary driver and need for the project is to reduce the severe congestion and associated crashes, and therefore increase safety by providing a more efficiently operating intersection. The completed Intersection Design Studies (IDS) for the project are attached, both the initial 10-year Interim IDS from 2014, and the final 20-year IDS ultimately required by IDOT.

12. *Include annual crash data for other intersections with high levels within the City of Bloomington to make a comparison and to show where the greatest safety needs exist within the city. Show the crash data for the ten intersections with the highest crash rate and compare to the crash rate at this intersection.* This data is attached. The most recent 5 year period was reviewed (September, 2012 to September, 2017). When comparing strictly by crash rate (number of crashes per 1,000,000 entering vehicles), this intersection ranks 117th out of 1,314 total intersections with crashes, placing it in the top 10% (note that intersections without any crashes are not included in the total number). When ranked by total number of crashes, this intersection ranks 62<sup>nd</sup> out of 1,314 total intersections with crashes, placing it just inside the top 5%. It is worth noting when evaluating the crash data, that if intersections that are on State or Federal Routes or are 100% private are removed from the list (the intersections shaded yellow on the report), this intersection has the 10<sup>th</sup> most crashes of City intersections over the last 5 years.
13. *What are the additional ongoing maintenance costs of doubling the size of the intersection?* The pavement area within the limits of the project currently maintained by the City is approximately 9,800 SY. This area will likely need to be resurfaced within the next 5-10 years at a cost of \$295,000 in today's dollars if this project does not proceed. The additional widening would add approximately 4,900 SY of pavement that would need to be maintained, adding approximately \$150,000 of resurfacing for a total cost of \$450,000 in today's dollars. However, since the existing pavement will be resurfaced as part of this project, this \$450,000 resurfacing will likely not be needed for at least 15-20 years. Increases in other maintenance work due to the additional pavement (snow plowing, pavement marking and sign replacements, etc.) would not be significant.

Additional impacts to consider include the following:

1. One of the major drivers for this project is to reduce congestion at the intersection. Drivers currently wait up to 4.5 minutes to travel through the intersection, which is among, if not the, worst in the City. The large delays at the intersection result in significant time spent by drivers in a car with the engine idling, resulting in higher emissions of carbon monoxide, carbon dioxide and other gases and unnecessary wasting of fuel. In addition, the time of the drivers and passengers waiting to pass through the intersection prevents them from doing something more valuable with their time.
2. Due to the congestion and delay of vehicles traveling westbound in the morning hours, City residents are choosing to avoid this intersection by traveling north from Benjamin Elementary, Cornerstone Christian Academy and the Grove Subdivision on Township Roads 2100E and 1300N to access Towanda Barnes at 1300N/Oakland Avenue. These roads, which are maintained by the Township, are not constructed to structurally handle this additional traffic and will fail sooner and cost more to maintain. In addition, these roads are narrower, with steeper grades and reduced clear zones and sight distances, presenting a less safe travel condition for higher volumes of vehicles.

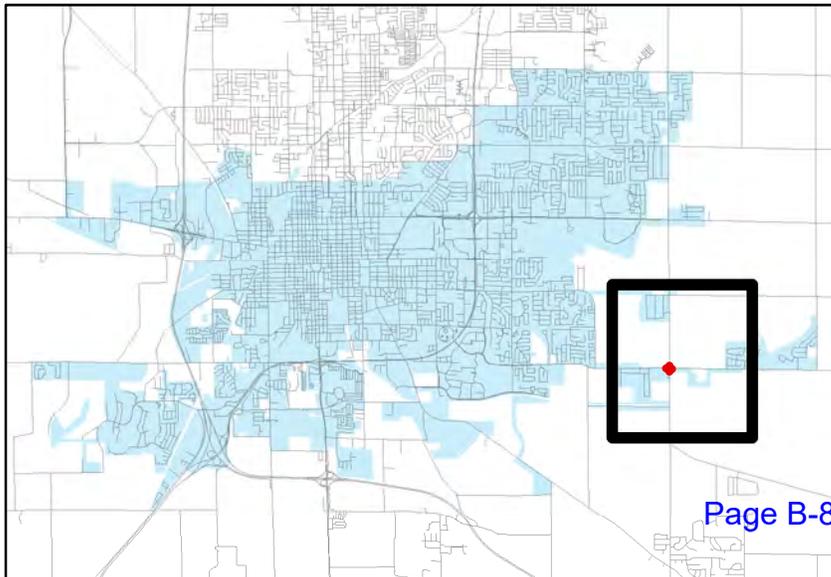
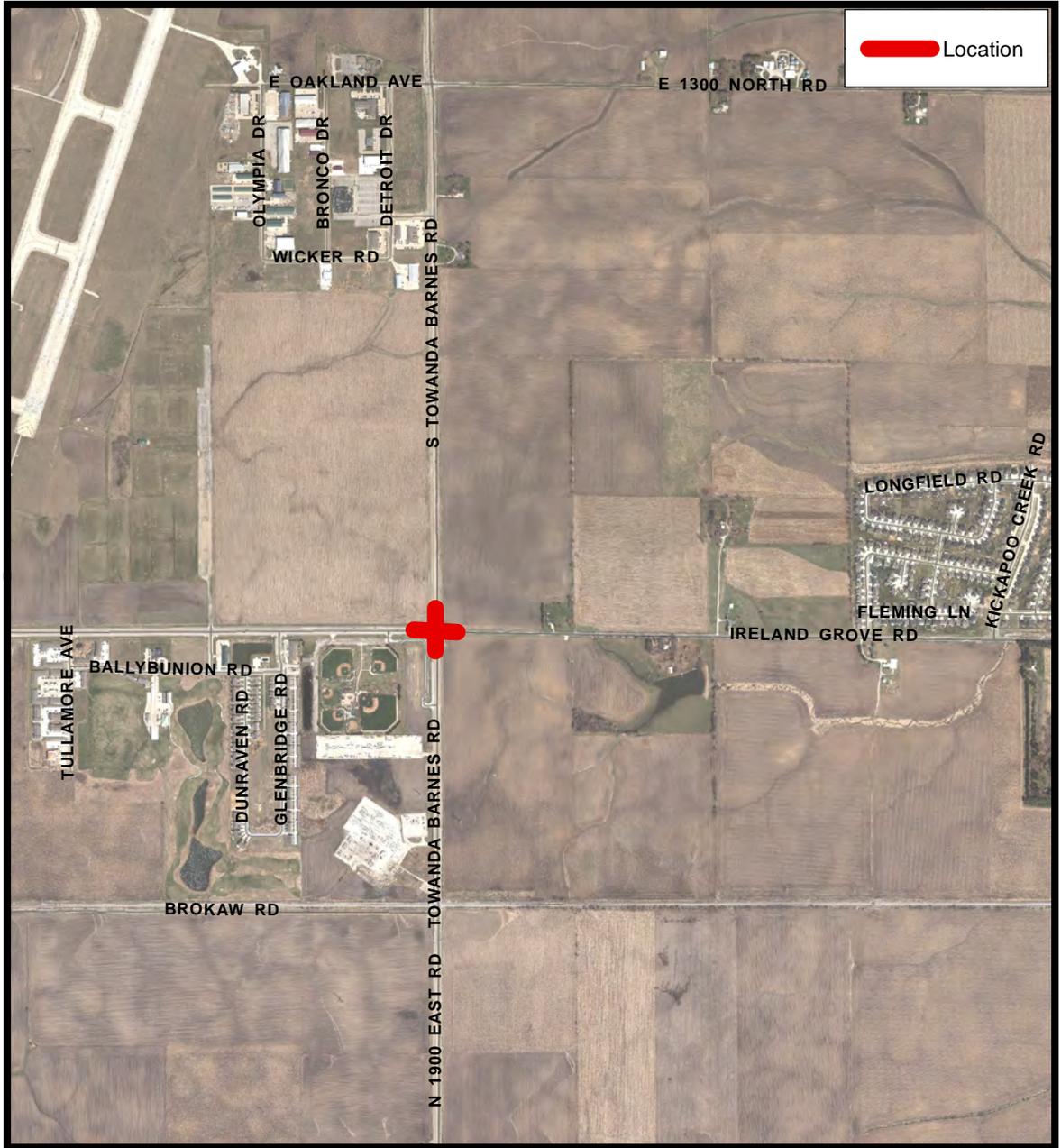
3. Currently, northbound vehicles in the morning peak hour are bypassing the intersection due to the congestion by traveling on a private road through the property southwest of the intersection and exiting to Ireland Grove Road via the east Pony Fields entrance. The proposed raised median on the west leg will restrict lefts turns from this entrance and should severely reduce if not eliminate public traffic on this private property.

**3. STAFF RECOMMENDATION:**

Staff recommends the Transportation Commission pass the following motion recommending: That City Council approve the Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for the intersection of Towanda Barnes Road and Ireland Grove Road and the Mayor and City Clerk be authorized to execute the necessary documents.

Respectfully submitted,

Philip Allyn, PE, PTOE  
City Traffic Engineer





CITY OF  
BLOOMINGTON  
COUNCIL MEETING  
OCTOBER 23, 2017



**CITY COUNCIL MEETING AGENDA**

**CITY COUNCIL CHAMBERS**

**109 E. OLIVE STREET, BLOOMINGTON, IL 61701**

**MONDAY, OCTOBER 23, 2017; 7:00 P.M.**

- 1. Call to order**
- 2. Pledge of Allegiance to the Flag**
- 3. Remain Standing for a Moment of Silent Prayer**
- 4. Roll Call**
- 5. Recognition/Appointments**
  - A. Recognition of Achievement to Colleen Winterland for earning a Certification from the Illinois Public Service Institute; American Public Works Association – Illinois Chapter.
  - B. Appointment of Mark Muehleck to the Planning Commission.
  - C. Appointment of the following individuals to the Public Safety and Community Relations Board William Bennett, Robert Bosquez, Surena Fish, Janet Lancaster, Sally Rudolph, Arthur Taylor, and Jeffery Woodard.

**6. Public Comment**

**7. “Consent Agenda”**

*(All items under the Consent Agenda are considered to be routine in nature and will be enacted by one motion. There will be no separate discussion of these items unless a Council Member, City Manager or Corporation Counsel so requests, in which event, the item will be removed from the Consent Agenda and considered in the Regular Agenda, which is Item #8.*

*The City’s Boards and Commissions hold Public Hearings prior to some Council items appearing on the Council’s Meeting Agenda. Persons who wish to address the Council should provide new information which is pertinent to the issue before them.)*

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**NOTE:** Action may be taken by the City Council on the agenda’s action items (those items listed on the Consent Agenda and Regular Agenda) beyond the motions listed and/or staff recommendations. Ordinances and resolutions listed on the agenda may further be amended and/or revised prior to adoption by the City Council. No action will be taken if the agenda item is listed as only informational.

- M. Consideration of Suspending the Ordinance to Portions of Section 701 of Chapter 31 and Section 26(d) of Chapter 6 to allow moderate consumption of alcohol at Miller Park Pavilion for the wedding reception request of Jason Bader and Lydia Reitz on November 11, 2017. *(Recommend the Ordinance Suspending Portions of Section 701 of Chapter 31 and Section 26(d) of Chapter 6 of the City Code for a Wedding Reception at Miller Park Pavilion on November 11, 2017 be approved, and that the Mayor and City Clerk be authorized to execute the necessary documents.)*
  
- N. Consideration of Suspending the Ordinance to Portions of Section 701 of Chapter 31 and Section 26(d) of Chapter 6 to allow moderate consumption of alcohol at Davis Lodge for the wedding reception request of Jake Carls and Molly Davis on November 11, 2017. *(Recommend the Ordinance Suspending Portions of Section 701 of Chapter 31 and Section 26(d) of Chapter 6 of the City Code for a Wedding Reception at Davis Lodge on November 11, 2017 be approved, and that the Mayor and City Clerk be authorized to execute the necessary documents.)*
  
- O. Consideration of Suspending the Ordinance to Portions of Section 701 of Chapter 31 and Section 26(d) of Chapter 6 to allow moderate consumption of alcohol at Davis Lodge for the wedding reception request of Jeremy Baker and Sara Bailey on November 18, 2017. *(Recommend the Ordinance Suspending Portions of Section 701 of Chapter 31 and Section 26(d) of Chapter 6 of the City Code for a Wedding Reception at Davis Lodge on November 18, 2017 be approved, and that the Mayor and City Clerk be authorized to execute the necessary documents.)*

## 8. “Regular Agenda”

- A. Consideration of a Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for intersection of Towanda Barnes Road and Ireland Grove Road. *(Recommend the Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for intersection of Towanda Barnes Road and Ireland Grove Road be approved and the Mayor and City Clerk be authorized to execute the necessary documents.) (Presentation by Jim Karch, Public Works Director 5 minutes, Council discussion 10 minutes.)*
  
- B. Consideration of an Ordinance providing for the City to petition to annex certain properties located in the City of Bloomington into the Bloomington Normal Water Reclamation District. *(Recommend an Ordinance providing for the City to petition the Bloomington Normal Water Reclamation District to annex the City owned properties Ewing Park I, Ewing Park II and the adjacent City bridle path and further providing and allowing for certain other properties located in said area to join said Annexation Petition and that the Mayor and City Clerk be*

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**NOTE:** Action may be taken by the City Council on the agenda’s action items (those items listed on the Consent Agenda and Regular Agenda) beyond the motions listed and/or staff recommendations. Ordinances and resolutions listed on the agenda may further be amended and/or revised prior to adoption by the City Council. No action will be taken if the agenda item is listed as only informational.



## REGULAR AGENDA ITEM NO. 8A

FOR COUNCIL: October 23, 2017

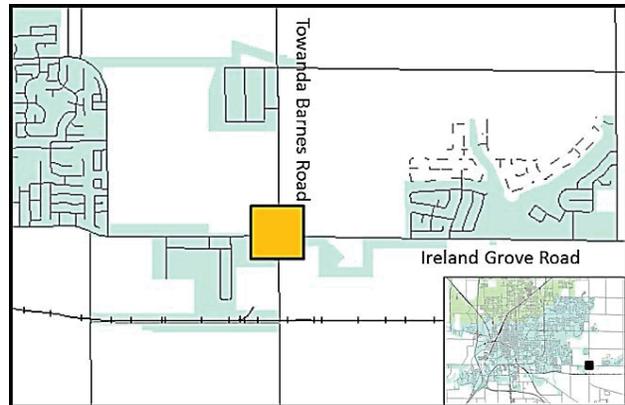
**SUBJECT:** Consideration of a Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for intersection of Towanda Barnes Road and Ireland Grove Road.

**RECOMMENDATION/MOTION:** That the Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for intersection of Towanda Barnes Road and Ireland Grove Road be approved and the Mayor and City Clerk be authorized to execute the necessary documents.

**STRATEGIC PLAN LINK:** 1. Financially Sound City Providing Quality Basic Services, 2. Upgrade City Infrastructure and Facilities

**STRATEGIC PLAN SIGNIFICANCE:** 1e. Partnering with others for the most cost-effective service delivery. 2a. Better quality roads and sidewalks

**BACKGROUND:** An interim design and study of Towanda-Barnes Road at Ireland Grove was completed in 2014 as a result of complaints about traffic backups, one incident involving a fatality, and one incident involving serious injury at this intersection. As the design and study of this intersection progressed, the Illinois Department of Transportation (IDOT) required greater improvements than were originally anticipated. IDOT approval is mandatory for this project, as it uses MFT funds, so the requirements set forth by IDOT were met. This additional scope has increased the design and construction costs of this project. More detailed information regarding the history of the project can be found in the attached September 26, 2016 Council Memo and the attached February 17, 2017 Memo from the County Engineer to the McLean County Board of Transportation.



On September 26, 2016 Council created a joint partnership to address the issue by entering into an Intergovernmental Agreement with McLean County for cost sharing. The cost sharing includes design and reconstruction of the intersection of Towanda Barnes Road at Ireland Grove Road. At that same time the Intergovernmental Agreement was adopted, a Resolution approving the expenditure of \$64,100 of Motor Fuel Tax (MFT) funds was adopted as well.

The estimated remaining expenditures for this project add up to \$900,000. This includes expenditures for monies owed to McLean County for the intersection design study, plans, and construction documents. The amount also includes future estimated costs for right-of-way, utility relocation, and construction. The City currently has \$700,000 in the FY 2018 MFT budget for this project. However, the construction of this project is slated to be completed in FY 2019. Sufficient funds exist in the MFT fund balance to cover the additional \$200,000.

**COMMUNITY GROUPS/INTERESTED PERSONS CONTACTED:** McLean County staff, multi-agency Transportation Technical Committee.

**FINANCIAL IMPACT:** The \$900,000 projection is an estimate for 50% of the cost of the intersection design study, plans, construction documents, right-of-way, utility relocation, and construction for this project.

Approximately \$70,000 of the original FY 2018 Budget of \$700,000 will be committed in FY 2018 out of the Motor Fuel Tax-Street Construction account (20300300-72530). The remainder of \$830,000 will be re-budgeted by the Public Works-Engineering Department and included in the FY 2019 Proposed Budget. Stakeholders can locate the \$700,000 budgeted for FY 2018 in the Budget Book titled “Adopted Other Funds Budget” on pages 10, 293, 296, 301 and 302.

McLean County is the lead agency and the City will reimburse the County for the City’s portion of the project.

**COMMUNITY DEVELOPMENT IMPACT:** NA

**FUTURE OPERATIONAL COST ASSOCIATED WITH NEW FACILITY CONSTRUCTION:** NA

Respectfully submitted for Council consideration.

Prepared by: Luke Thoele, Civil Engineer II  
Michael Hill, Public Works Administration

Reviewed by: Jim Karch, PE CFM, Director of Public Works

Financial & budgetary review by: Chris Tomerlin, Budget Analyst  
Scott Rathbun, Sr. Budget Manager

Legal review by: Jeffrey R. Jurgens, Corporation Counsel

Recommended by:



David A. Hales  
City Manager

**Attachments:**

- PW 2B RESOLUTION Towanda Barnes at Ireland Grove MFT Resolution 20170522
- PW 2C PREVIOUS COUNCIL MEMO Towanda Barnes at Ireland Grove MFT Resolution 20170522
- PW 2D MEMO FROM COUNTY Towanda Barnes at Ireland Grove MFT Resolution 20170522
- PW 2E IGA 09-26-2016 COW MC MFT



 **CITY OF**  
*Bloomington* **ILLINOIS**  
**CONSENT AGENDA ITEM NO. 7E**

FOR COUNCIL: September 26, 2016

**SUBJECT:** Consideration of adopting a Resolution approving Motor Fuel Tax for funding, and an Intergovernmental Agreement with McLean County for cost-sharing for the design, construction and maintenance of improvements to the intersection of Towanda Barnes Road and Ireland Grove Road.

**RECOMMENDATION/MOTION:** That the Resolution be adopted approving the Motor Fuel Tax for funding, approve the Intergovernmental Agreement with McLean County for cost-sharing, and authorize the Mayor and City Clerk to execute the necessary documents.

**STRATEGIC PLAN LINK:** 1. Financially Sound City Providing Quality Basic Services.  
2. Upgrade City Infrastructure and Facilities.

**STRATEGIC PLAN SIGNIFICANCE:**

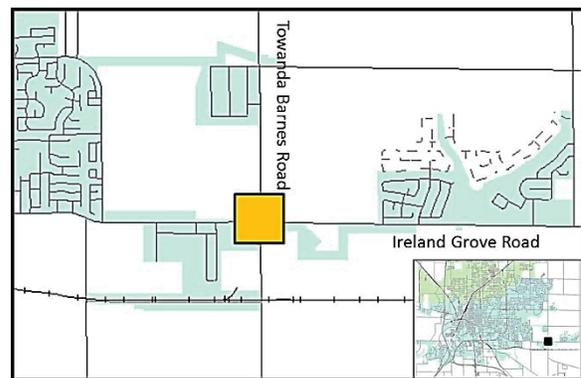
- 1e. Partnering with others for the most cost-effective service delivery.
- 2a. Better quality roads and sidewalks.

**BACKGROUND:**

Towanda Barnes Road and Ireland Grove Road are vital streets on Bloomington's east side. They serve businesses, neighborhoods, and schools within city limits and outside of it. The intersection of the streets straddles city and unincorporated territory. Towanda Barnes Road is a County highway; Ireland Grove Road is a City arterial street. In this instance, and others like it, intergovernmental cooperation and shared costs are vital to implement prudent traffic measures. County government is the controlling agency for this intersection, but its staff confers with City staff over proposed changes.

The intersection becomes congested and backs up during high traffic periods such as morning and evening peak times. The usefulness of a right turn lane on for southbound traffic on Towanda Barnes Road has seemed apparent for some time, and McLean County government oversaw a preliminary engineering study which confirmed this need and justification. This improvement to the intersection is scheduled to occur in the 2017-18 fiscal year.

However, more intersection improvements may be forthcoming. Staff of the two governments note that an already challenging intersection has become still-more congested at peak morning drive time for westbound traffic on Ireland Grove Road. The likely cause of recent increased



congestion is the change to school start times initiated this year at Benjamin Elementary School and other Unit 5 schools.

The proposed Intergovernmental Agreement between the City and County does the following:

- Formalizes plans to proceed with the right-turn lane and associated traffic signal upgrade for southbound Towanda-Barnes Road and obligates the City to pay half of costs for the engineering design, construction and traffic signal maintenance.
- Enables an updated intersection design study for the intersection. This could lead to a more extensive upgrade to the intersection in FY 2017-18
- Updates a 2002 agreement for cost sharing for construction, maintenance, and energy costs at this intersection and four others (Exhibit A). All will be 50-50 cost divisions. The intersections and the cost division are identical to the existing agreement. The update is routine.

After the intersection undergoes further study, the consultant will provide the County and the City with an estimated construction budget. As the extent of work has not been fully determined, there is no cost estimate for the construction of the improvements at this time. The City intends to use state Motor Fuel Tax for its share of the cost, and has budgeted \$400,000 in MFT money for the current fiscal year; \$400,000 will be more than sufficient to cover the City's share of design and right-of-way costs, but will not be not enough to cover the construction. Additional MFT funds will be proposed for the FY 2017-18 budget in order to see completion of the project.

The Intergovernmental Agreement is attached along with an MFT Resolution.

**COMMUNITY GROUPS/INTERESTED PERSONS CONTACTED:** McLean County staff, multi-agency Transportation Technical Committee.

**FINANCIAL IMPACT:** The MFT resolution appropriates \$64,100 for the City's share of the not to exceed \$128,200 engineering study and design contract. \$400,000 for this project is included in the Motor Fuel Tax-Street Construction & Improvement account (20300300-72530) for the work at this intersection. Stakeholders can locate this in the FY 2017 Budget Book titled "Other Funds & Capital Improvement Program" on pages 10, 273, 279, 294 and 295. Additional funds will need to be budgeted in FY 2018 year for construction.

Respectfully submitted for Council consideration.

Prepared by: Stephen Arney, Engineering Technician

Reviewed by: Jim Karch, PE CFM, Director of Public Works

Financial & budgetary review by: Chris Tomerlin, Budget Analyst  
Carla A. Murillo, Budget Manager

Legal review by: Jeffrey R. Jurgens, Corporation Counsel

Recommended by:



David A. Hales  
City Manager

**Attachments:**

- MFT Resolution
- IGA
- IGA Exhibit A

---

Motion: That the Resolution be adopted approving the Motor Fuel Tax for funding, approve the Intergovernmental Agreement with McLean County for cost-sharing, and authorize the Mayor and City Clerk to execute the necessary documents.

Motion: \_\_\_\_\_ Seconded by: \_\_\_\_\_

	Aye	Nay	Other		Aye	Nay	Other
Alderman Black				Alderman Mwilambwe			
Alderman Buragas				Alderman Painter			
Alderman Fruin				Alderman Sage			
Alderman Hauman				Alderman Schmidt			
Alderman Lower							
				Mayor Renner			

**INTERGOVERNMENTAL AGREEMENT  
BETWEEN THE CITY OF BLOOMINGTON AND THE COUNTY OF MCLEAN  
FOR TRAFFIC SIGNAL UPGRADES AT  
TOWANDA BARNES ROAD AND IRELAND GROVE ROAD**

**WHEREAS**, Article VII, Section 10 of the Illinois Constitution and the Illinois Intergovernmental Cooperation Act, 5 ILCS 220\1 *et seq.*, permits and encourages local governments to enter into Intergovernmental Agreements to obtain or share services or to exercise, combine, or transfer powers and functions, and;

**WHEREAS**, the City of Bloomington, hereinafter called "City", is a municipal corporation and the County of McLean, hereinafter called "County", is a body corporate and politic, and;

**WHEREAS**, it is in the best interest of the public health, safety and welfare that traffic studies are performed at intersections of high volume, and;

**WHEREAS**, the County Highway Department has performed an Engineering Study at the intersection of Towanda Barnes Road and Ireland Grove Road, and;

**WHEREAS**, a Right Turn Lane is needed and Traffic Control Signal Upgrades are warranted at the intersection of Towanda Barnes Road and Ireland Grove Road, and;

**WHEREAS**, the City and County agree that the cost of construction and maintenance for the Traffic Control Signals at the intersection of Towanda Barnes Road and Ireland Grove Road should be shared based on the number of legs of the intersection for which each has jurisdiction, and, now:

**THEREFORE**, be it hereby mutually agreed as follows:

1. The County has had the necessary preliminary engineering performed.
2. The City and County agree to proceed with the construction of the right-turn lane and traffic control signal upgrades and the associated necessary work.
3. The construction shall be budgeted for the summer of 2017, and shall be performed after May 1, 2017.
4. The County shall be the lead agency, and has entered into an Engineering Agreement for a final Intersection Design Study (IDS), the Traffic Signal Design and Intersection & Turn Lane Design.
5. The County will take bids and enter into Contract with concurrence from the City, and supervise the construction of the project.

6. The City shall reimburse the County for Fifty percent (50%) of all costs associated with the project as work progresses, including all engineering, construction and right-of-way costs as incurred.
7. It is also hereby mutually agreed to amend "Exhibit A" of the Intergovernmental Agreement for Maintenance of Traffic Control Devices of September 2002, as hereby attached.
8. The City and County agree to pay their respective proportional shares of maintenance and energy costs to operate the signals identified in Exhibit A in the amounts specified and attributable to each entity in Exhibit A.

APPROVED:

ATTEST:

\_\_\_\_\_  
Mayor Tari Renner (date)  
City of Bloomington

\_\_\_\_\_  
Cherry Lawson  
City of Bloomington Clerk

\_\_\_\_\_  
Chairman John D. McIntyre (date)  
McLean County Board

\_\_\_\_\_  
Kathy Michael  
McLean County Clerk

THE LIST OF SIGNALIZED INTERSECTIONS WITHIN THE CORPORATION

THE LEVEL OF MAINTENANCE REFERS TO THE  
TRAFFIC SIGNAL MAINTENANCE PROVISIONS IN EXHIBIT B.

EXHIBIT A  
MASTER AGREEMENT TABLE  
BLOOMINGTON

Loc No	Intersection	MAINTENANCE		ENERGY		Level
		County%	City%	County%	City%	
141	Towanda Barnes Road Ireland Grove Road	50	50	50	50	1
142	Towanda Barnes Road General Electric Road	50	50	50	50	1
143	Towanda Barnes Road Fort Jesse Road	50	50	50	50	1
144	Towanda Barnes Road Oakland Avenue	50	50	50	50	1
145	White Oak Road Dr Martin Luther King Jr Drive	50	50	50	50	1

Approved: September, 2002

Revised: September, 2016



BE IT RESOLVED, by the Council of the City of Bloomington of the Illinois

that the following described street(s) be improved under the Illinois Highway Code:

Table with 4 columns: Name of Thoroughfare, Route, From, To. Row 1: Ireland Grove Road, Towanda Barnes Road intersect

BE IT FURTHER RESOLVED,

1. That the proposed improvement shall consist of Intersection design study, plans, and construction documents.

and shall be constructed wide and be designated as Section 17-00362-00-PV

2. That there is hereby appropriated the (additional Yes No) sum of Sixty-four thousand one hundred dollars Dollars ( \$64,100 ) for the improvement of said section from the municipality's allotment of Motor Fuel Tax funds.

3. That work shall be done by Contract per Intergovernmental Agreement with McLean County ; and, Specify Contract or Day Labor

BE IT FURTHER RESOLVED, that the Clerk is hereby directed to transmit two certified copies of this resolution to the district office of the Department of Transportation.

Approved Date Department of Transportation Regional Engineer

I, Cherry Lawson Clerk in and for the City of Bloomington County of McLean, hereby certify the foregoing to be a true, perfect and complete copy of a resolution adopted by the City Council at a meeting on September 26, 2016 IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this day of (SEAL) City, Town, or Village Clerk



HIGHWAY DEPARTMENT  
102 S Towanda Barnes Road  
Bloomington, IL 61705  
(309) 663-9445 PHONE  
(309) 662-8038 FAX

DATE: February 17, 2017

TO: Chairman Caisley and Members of the McLean County Board Transportation Committee

FROM: Jerry Stokes, County Engineer

**Towanda-Barnes Road (CH 29) – Ireland Grove Intersection Improvements  
Section 13-00168-02-FP**

Due to the development of new subdivisions along Towanda-Barnes Road over the last 15 years, there has been an increase in traffic at the intersection of Towanda-Barnes Road. The majority of the traffic is for State Farm going to Corporate South. After complaints of traffic being backed up on Towanda-Barnes Road in the morning and on Ireland Grove Road in the evening and after one fatality and one serious injury at this intersection, an interim intersection design study was completed in 2014.

Interim Intersection Design Study (2014)

- Interim Design study was for a 10 year projection
- Concluded that dual left turn lanes were needed for the eastbound traffic on Ireland Grove Road turning north on to Towanda-Barnes Road
- Study also determined a free flow right turn lane be added for the southbound leg of Towanda-Barnes Road turning right on to Ireland Grove Road
- After study was completed, City of Bloomington (with concurrence from the Highway Department) made modifications to signals, combined the right and through lanes and made two left hand turn lanes. (Southbound was not addressed)

Engineering Services Agreement (2016)

- Agreement entered with Farnsworth Group to design southbound right turn lane
- Part of scope was to look at updated traffic counts for each turning movement
- Results of updated traffic counts showed some turning movements exceeded the 10-year projected amounts in two years
- To accommodate the am/pm peak flows, which was contributed from Unit 5 changing the start time of Benjamin Elementary School, a right turn lane was needed for the westbound traffic from Ireland Grove Road to Towanda-Barnes.

- A right turn lane was also needed for the eastbound traffic from Ireland Grove to southbound Towanda-Barnes to accommodate the through traffic in the evening hours
- The addition of the turn lanes caused the 2014 Interim Intersection Design Study to be updated and approved by IDOT due to the use of Motor Fuel Tax (MFT) Funds
  - IDOT determined that a complete Intersection Design Study needed to be completed and approved which has 20 year projections

#### Engineering Related Factors

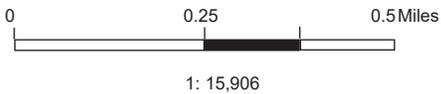
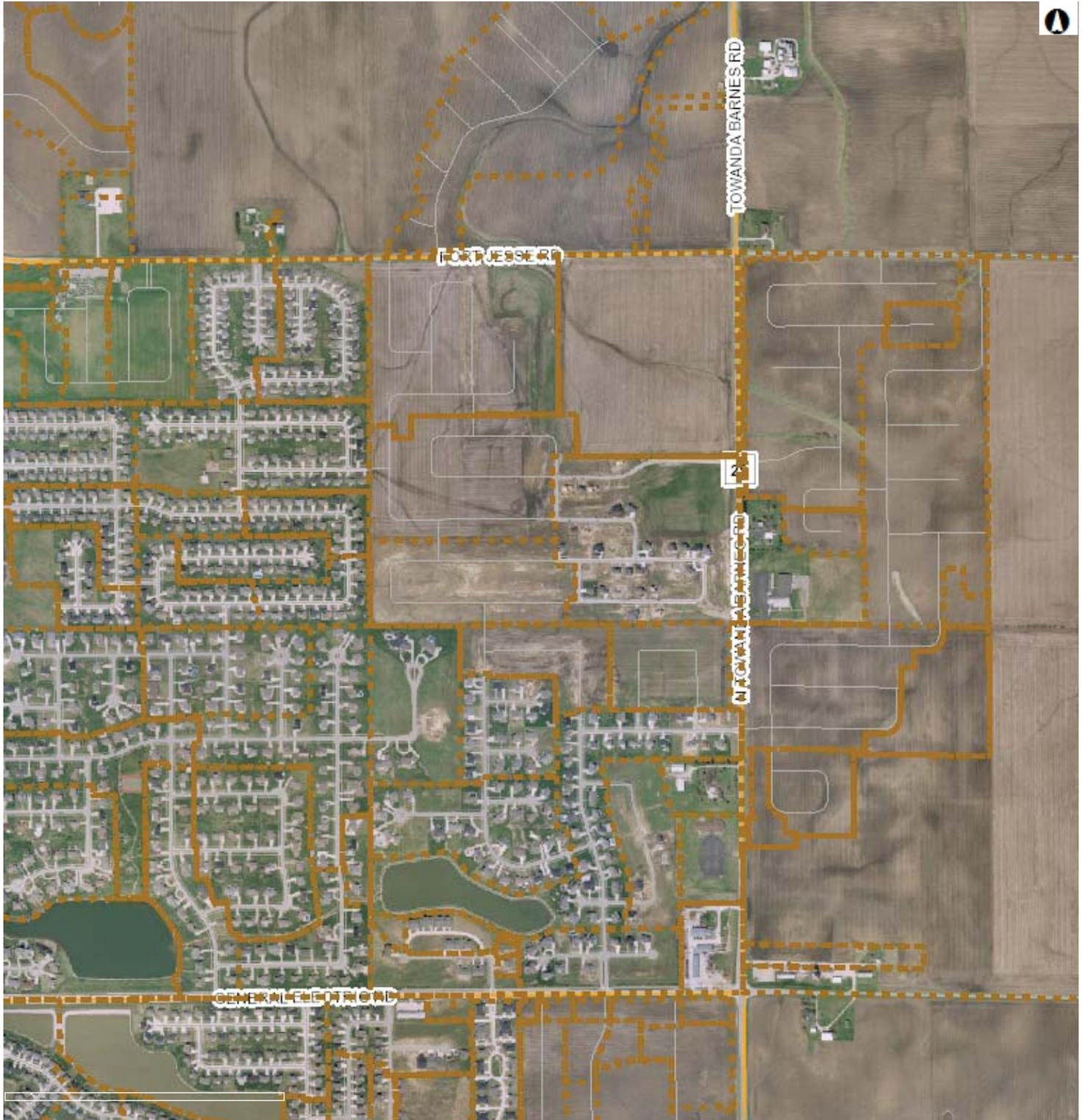
- Traffic has increased on Towanda-Barnes and Ireland Grove
- 33 accidents at this intersection since 2012 due to the increased traffic
- Cornerstone Christian Academy opened 2003, 417 current students with 100% drop-off
- Benjamin Elementary opened 2010, 560 current students
- Grove Subdivision
  - 66% of the subdivision still to be developed
  - Trip generation is increased for future growth based on full build out
- 2% growth on Towanda-Barnes Road, 1.5% growth on Ireland Grove
- The Design Hourly Volumes from the 1999 Intersection Design Study versus the current volume and 2037 volumes from the 2017 Intersection Design Study (See attached)
- See attached aerial maps for 2001 and 2014 for subdivision development along Towanda-Barnes Road

After discussions with the engineering staffs from McLean County and the City of Bloomington, it was determined to accommodate the additional traffic and plan for future traffic instead of having to come back and modify the intersection in 10 years hoping to save money.

## Towanda-Barnes Road - Ireland Grove Road Design Hourly Volumes

		1999 IDS	2017 IDS	2017 IDS
		2019 Design Hourly Volume	Current Design Hourly Volume	2037 Design Hourly Volume
Towanda-Barnes Road	Southbound right turn lane	229 (213)	859 (435)	1,047 (530)
	Southbound thru lane	781 (937)	251 (525)	306 (640)
	Southbound left turn lane	31 (36)	154 (141)	231 (270)
Towanda-Barnes Road	Northbound right turn lane	60 (48)	(35) 35	(53) 75
	Northbound thru lane	968 (798)	538 (363)	656 (443)
	Northbound left turn lane	462 (345)	394 (172)	480 (209)
Ireland Grove Road	Westbound right turn lane	44 (30)	158 (137)	264 (255)
	Westbound thru lane	98 (49)	399 (132)	689 (240)
	Westbound left turn lane	36 (43)	20 (13)	39 (25)
Ireland Grove Road	Eastbound left turn lane	213 (49)	217 (733)	252 (850)
	Eastbound thru lane	49 (109)	179 (259)	262 (499)
	Eastbound right turn lane	347 (493)	79 (293)	92 (340)

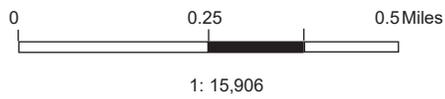
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Notes



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**INTERGOVERNMENTAL AGREEMENT  
BETWEEN THE CITY OF BLOOMINGTON AND THE COUNTY OF MCLEAN  
FOR TRAFFIC SIGNAL UPGRADES AT  
TOWANDA BARNES ROAD AND IRELAND GROVE ROAD**

**WHEREAS**, Article VII, Section 10 of the Illinois Constitution and the Illinois Intergovernmental Cooperation Act, 5 ILCS 220/1 *et seq.*, permits and encourages local governments to enter into Intergovernmental Agreements to obtain or share services or to exercise, combine, or transfer powers and functions, and;

**WHEREAS**, the City of Bloomington, hereinafter called "City", is a municipal corporation and the County of McLean, hereinafter called "County", is a body corporate and politic, and;

**WHEREAS**, it is in the best interest of the public health, safety and welfare that traffic studies are performed at intersections of high volume, and;

**WHEREAS**, the County Highway Department has performed an Engineering Study at the intersection of Towanda Barnes Road and Ireland Grove Road, and;

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4. The County shall be the lead agency, and has entered into an Engineering Agreement for a final Intersection Design Study (IDS), the Traffic Signal Design and Intersection & Turn Lane Design.
5. The County will take bids and enter into Contract with concurrence from the City, and supervise the construction of the project.

6. The City shall reimburse the County for Fifty percent (50%) of all costs associated with the project as work progresses, including all engineering, construction and right-of-way costs as incurred.
7. It is also hereby mutually agreed to amend "Exhibit A" of the Intergovernmental Agreement for Maintenance of Traffic Control Devices of September 2002, as hereby attached.
8. The City and County agree to pay their respective proportional shares of maintenance and energy costs to operate the signals identified in Exhibit A in the amounts specified and attributable to each entity in Exhibit A.

APPROVED:

Tari Renner 9/30/16  
Mayor Tari Renner (date)  
City of Bloomington

John D. McIrtre 9-20-2016  
Chairman John D. McIrtre (date)  
McLean County Board

ATTEST:

Cherry Lawson  
Cherry Lawson  
City of Bloomington Clerk

Kathy Michael  
Kathy Michael  
McLean County Clerk

THE LIST OF SIGNALIZED INTERSECTIONS WITHIN THE CORPORATION

THE LEVEL OF MAINTENANCE REFERS TO THE  
TRAFFIC SIGNAL MAINTENANCE PROVISIONS IN EXHIBIT B.

EXHIBIT A  
MASTER AGREEMENT TABLE  
BLOOMINGTON

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144	Towanda Barnes Road Oakland Avenue	50	50	50	50	1
145	White Oak Road Dr Martin Luther King Jr Drive	50	50	50	50	1

Approved: September, 2002

Revised: September, 2016

# Intersection Improvements: Towanda Barnes Rd at Ireland Grove Rd

Jim Karch, PE CFM  
Director of Public Works



Bloomington City Council Regular Meeting: October 23, 2017

## Project Details

- Add left and right turn lanes to each part of the intersection of Towanda Barnes Road and Ireland Grove Road
- Widen intersection to allow more vehicles per stoplight cycle
  - No plans to widen Ireland Grove Road east of this intersection
- Design approved by IDOT
- Est. \$1.6 million for construction
- Costs split 50/50 with McLean County



## Project Justification: 2004 to 2017 Traffic Data

### Traffic Volume Increase from 2004 to 2017

Towanda Barnes Rd	Year	ADT	Increase	% Increase
North Side of Intersection	2004	10,698	3,846	35.95%
	2017	14,544		
South Side of Intersection	2004	9,531	11	12.00%
	2017	9,542		

Ireland Grove Rd	Year	ADT	Increase	% Increase
West Side of Intersection	2004	7,000	5,073	72.47%
	2017	12,073		
East Side of Intersection	2004	1,855	3,077	165.88%
	2017	4,932		

*Based on 2017 data, approximately 15 million vehicles use this intersection in one year.*

# Project Justification: 2012 to 2017 Crash Data

- Total number of crashes: 36
  - Rear-end crashes: 22
  - Angle / Turning crashes: 13
  - Fixed Object crashes: 1
  - Property Damage: \$54,000+
  - These numbers include 1 fatality from June 2014
- Majority of crashes on Towanda Barnes occur during peak morning traffic
- Majority of crashes on Ireland Grove occur during peak evening traffic

The screenshot shows a news article from The Pantagraph. The headline is "Woman dies following Tuesday morning accident". The byline is "Kevin Barlow kbarlow@pantagraph.com Jun 3, 2014 5". Below the headline is a photograph of a white pickup truck involved in an accident at an intersection. Three police officers in high-visibility vests are standing near the truck, and a police car is visible in the background. Below the photo is a caption: "Bloomington police reconstruct a motorcycle versus truck accident at Ireland Grove Road and Towanda Barnes Road on Tuesday morning. Judith V. Covington, 35, who was riding the motorcycle, died. DAVID PROEBER, The Pantagraph". To the right of the photo are social media sharing icons for Facebook, Twitter, Email, Print, and Bookmark. Below the photo is a map showing the location of the accident at the intersection of Ireland Grove Road and Towanda Barnes Road in Bloomington. To the right of the map is a text block: "BLOOMINGTON — A 35-year-old rural LeRoy woman riding a motorcycle to work died following a collision with a pickup truck Tuesday morning on Bloomington's east side. Judith V. Covington was pronounced dead at 9:30 a.m. in the emergency room at OSF St. Joseph Medical Center,".

## Project Justification: 2012 to 2017 Crash Data

- Same amount of crashes as Towanda Barnes and Route 9
- Three times the amount of crashes when compared to other roads that intersect Towanda Barnes
  - Raab (11 crashes)
  - Fort Jesse (12 crashes)
  - GE (12 crashes)

**SUMMARY MINUTES  
PUBLISHED BY THE AUTHORITY OF THE CITY COUNCIL  
OF BLOOMINGTON, ILLINOIS  
MONDAY, October 23, 2017; 7:00 P.M.**

The Council convened in Regular Session in the Council Chambers, City Hall Building, at 7:00 p.m., Monday, October 23, 2017.

The Meeting was called to order by Mayor Renner.

The Meeting was opened by Pledging Allegiance to the Flag followed by a moment of silent prayer.

Mayor Renner directed the City Clerk to call the roll and the following members of Council answered present:

Aldermen: Jamie Mathy, David Sage, Mboka Mwilambwe, Amelia Buragas, Scott Black, Joni Painter, Diana Hauman, Kim Bray, Karen Schmidt, and Mayor Tari Renner.

Staff Present: David Hales, City Manager, Steve Rasmussen, Assistant City Manager; Jeffrey Jurgens; Corporation Counsel, Cherry Lawson, City Clerk; Patti-Lynn Silva, Finance Director; Brendan Heffner, Chief of Police; Brian Mohr, Fire Chief, Scott Sprouls, IS Director, Nicole Albertson, Human Resource Director; Jim Karch, Public Works Director; Bob Yehl, Water Director; and other City staff were also present.

**Recognition/Appointments**

- A. Recognition of Achievement to Colleen Winterland for earning a Certification from the Illinois Public Service Institute; American Public Works Association – Illinois Chapter.
- B. Appointment of Mark Muehleck to the Planning Commission.
- C. Appointment of the following individuals to the Public Safety and Community Relations Board William Bennett, Robert Bosquez, Surena Fish, Janet Lancaster, Sally Rudolph, Arthur Taylor, and Jeffery Woodard.

**Public Comment**

Angela Scott	Leon Kaeb	Lee Eutsey
Doug Rutter	Aaron LeNeve	Scott Stimeling
Donna Bolen	Judy Stearns	

Mayor Renner wanted clarification on the changes that are coming forward under Chapter 29 pertaining to the bus locations downtown, and he had suggested that there were Bob's Blue Night was given some special attention.

Assistant Police Chief Ken Bays stated that was inaccurate and explained that he had spoken with the sergeant who is in charge of the detail to inquire about how Bob's Blue Night accesses the parking lot.

**Motion by Alderman Black and seconded by Alderman Mwilambwe that an Ordinance be adopted to Codify a Taxicab/TNC Vehicle Stand and Amending Provisions of said Chapter Pertaining to On-Street Accessible Parking Locations and Streets with Truck Traffic Prohibited be adopted, and the Mayor and City Clerk be authorized to execute the necessary documents.**

**Mayor Renner directed the Clerk to call the roll which resulted in the following:**

**Ayes: Aldermen Painter, Mathy, Sage, Mwilambwe, Buragas, Schmidt, Black, Hauman and Bray.**

**Nays: None**

**Motion carried.**

## **Regular Agenda**

The following was presented:

Item 8A: Consideration of a Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for intersection of Towanda Barnes Road and Ireland Grove Road. *(Recommend the Motor Fuel Tax Resolution for an additional \$900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for intersection of Towanda Barnes Road and Ireland Grove Road be approved and the Mayor and City Clerk be authorized to execute the necessary documents.) (Presentation by Jim Karch, Public Works Director 5 minutes, Council discussion 10 minutes.)*

Mr. Karch stated this intersection has been brought to you in September of 2016. There were some preliminary discussions and an intergovernmental agreement that we talked about whenever we are trying to solve what is considered to be the worst crash rate intersection for McLean County.

Mayor Renner asked for clarification as we are not talking about the worst anywhere in the City of Bloomington, just outside of Bloomington and Normal in areas that are lightly populated.

Mr. Karch stated, this would not be within the City of Bloomington's top ten crash rate intersections, but for the County outside of the City of Bloomington, that is correct. When we first discussed this in 2016, that was before we had to comply with a lot of different Motor Fuel Tax intersection design City requirements and were hoping to be able to make this intersection a lot easier to be able to solve some of the traffic concerns that we were seeing.

Alderman Mwilambwe asked about the impact on the intersection of Ireland Grove and Stride Drive, and stated he had received a number of concerns about that.

Alderman Black stated one of the things he tries to do when prioritizing projects is to review the comments from the public feedback. He would rather see some of that \$700,000 that we have already budgeted and potentially up to \$900,000 and go towards multiple projects that we could do throughout our community that make a big impact and stated he would be voting no on this.

Alderman Schmidt state she had been receiving a lot of negative feedback on this and was inclined to make a motion to send this back to our own Transportation Commission.

Alderman Painter asked Mr. Karch to explain what the City could spend most fuel tax money and wanted to know if it could be used to repave our roads.

Mr. Karch responded, traditionally the City of Bloomington has utilized motor fuel tax for our larger infrastructure jobs, but there are a lot of things the City can use Motor Fuel Tax funds on and stated that it could be used to repave road in the City.

Alderman Mathy asked Mr. Karch if knew how many of the crashes were caused by people who were speeding on that road. Mr. Karch replied that he did not know.

Alderman Mathy wondered if this was an overreaction and if there were things we could do like flashing signs that say there is congestion ahead to try to get people to slow down and raise awareness of what we are doing because this is a lot of money to spend on the fringe of the community.

Alderman Bray stated that she felt when talking about public safety and our roads, this is infrastructure. This is the priority. If we need to do things to slow down the speed limit through there, then perhaps that is something we need to do. She added that she would be supportive of sending this back but at the same time, did not see this as some kind of a luxury non-need when again we have heard time and again from our citizens that they prioritize infrastructure and this is it.

Alderman Mwilambwe referenced Alderman Schmidt's proposal to send it back to the Transportation Committee and wanted to be sure in terms of timelines. He echoed what Alderman Bray said in terms of infrastructure and safety because looking at the crash data, we have had one fatality. If this happened to be a school bus, we would have a different conversation. It would include a lot more people so that is something we need to keep in mind, as well.

Jim Karch answered there was a joint intergovernmental meeting today where staff had an opportunity to speak with Chairman McIntyre and the Mayor. They were supportive of allowing some additional vetting of this. From a project perspective, we have discussed with the county engineer, we are still able to, and it is not definitive if it is not tonight.

Alderman Black questioned the motion that has been made. If this were to pass and it gets sent back to the Transportation Commission, what would their charter be to review and make a recommendation on what is presented or to come with alternatives to what has been presented? What does that do to the County's timeline? I do not want to vote on something without thinking about our governmental partners.

Mr. Karch stated, staff would add the item to the next agenda. It would be added to the November Transportation Commission agenda for discussion, and we would ask for them to take some action on it so we can bring that back to the Council for some additional discussion in the next 30, 60 to 90 days.

Mr. Hales stated, it would be helpful for the Transportation Commission to receive a copy of the engineering report that was done and for them look at other City of Bloomington intersections and show the comparative crash data on an annual basis.

Alderman Black recommended including the Transportation Commission bids from the County that were provided.

Alderman Mathy commented that he would like to see some information on what the additional ongoing maintenance costs of doubling the size of the intersection would be.

**Motion by Alderman Schmidt seconded by Alderman Mathy to send this item to the City of Bloomington Transportation Commission to review the engineering report and understand the safety issues regarding Towanda Barnes and Ireland Grove Roads intersections, review the City of Bloomington interactions and compare the five year crash data as well as cost factors for ongoing maintenance of these roads.**

**Mayor Renner directed the Clerk to call the roll which resulted in the following:**

**Ayes: Aldermen Painter, Mathy, Sage, Mwilambwe, Schmidt, Black, Hauman and Bray.**

**Nays: None**

**Recuse: Alderman Amelia Buragas**

**Motion carried.**

The following was presented:

Item 8B: Consideration of an Ordinance providing for the City to petition to annex certain properties located in the City of Bloomington into the Bloomington Normal Water Reclamation District. *(Recommend an Ordinance providing for the City to petition the Bloomington Normal Water Reclamation District to annex the City owned properties Ewing Park I, Ewing Park II and the adjacent City bridle path and further providing and allowing for certain other properties located in said area to join said Annexation Petition and that the Mayor and City Clerk be authorized to execute the necessary documents. (Presentation George Boyle, Assistant Corporation Counsel 5 minutes, Council discussion 10 minutes.)*

ORDINANCE NO. 2017- 95

AN ORDINANCE AUTHORIZING AN ANNEXATION PETITION FOR CERTAIN PROPERTIES LOCATED IN THE CITY OF BLOOMINGTON INTO THE BLOOMINGTON NORMAL WATER RECLAMATION DISTRICT

**Minutes of the Transportation Committee**

The Transportation Committee of the McLean County Board met on Tuesday, October 3, 2017 at 8:00 a.m. in Room 400, Government Center, 115 East Washington Street, Bloomington, Illinois.

Members Present: Chairman Caisley, Members Metsker, Robustelli, Martin, Cavallini and Barnett

Members Absent:

Other Members Present:

Staff Members Present: Mr. Bill Wasson, County Administrator, Mr. Don Knapp, First Assistant State's Attorney Civil, Mr. Eric Schmitt, Administrative Services Ms. Diana Hospelhorn, Recording Secretary

Department Heads Present: Mr. Jerry Stokes, County Engineer, Mr. Luke Hohulin, Assistant County Engineer

Others Present:

Chairman Caisley called the meeting to order at 8:02 a.m. He stated that the first item for action is approval of the minutes from the August 15, 2017 Stand Up Transportation Committee Meeting and the September 5, 2017 Transportation Committee Meeting.

Motion by Cavallini/Martin to recommend approval of the minutes from the August 15, 2017 Stand Up and September 5, 2017 Transportation Committee Meeting.  
Motion carried with Member Barnett abstaining.

Chairman Caisley asked the Committee to review the bills for September 30, 2017. The prepaid total is \$1,403,510.70.

**MCLEAN COUNTY BOARD COMMITTEE REPORT**

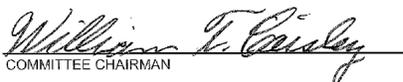
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AS OF 9/30/2017

**EXPENDITURE SUMMARY BY FUND**

**Transportation Committee**

FUND	FUND TITLE	PENDING TOTAL	PREPAID TOTAL	FUND TOTAL
0120	HIGHWAY		\$314,569.18	\$314,569.18
0121	BRIDGE MATCHING FUND		\$688,324.21	\$688,324.21
0123	MOTOR FUEL TAX		\$400,188.85	\$400,188.85
0501	TOWNSHIP MOTOR FUEL TAX		\$428.46	\$428.46
			<hr/>	
			\$1,403,510.70	\$1,403,510.70

  
COMMITTEE CHAIRMAN

Motion by Robustelli/Martin to recommend payment of the September 30, 2017 bills as submitted by the County  
Motion carried.

Chairman Caisley presented items for information – Towanda Barnes Road / Ireland Grove Road Intersection Presentation.

Mr. Stokes gave a presentation on the Towanda Barnes / Ireland Grove Road Intersection. He thanked Administration and Mr. Luke Hohulin for their assistance in preparing this presentation. Mr. Stokes gave an overall history of the growth north of Route 9 from 2001 – 2014 pointing out the subdivision development of 3,400 new residences. He advised that with this traffic, combined with the additional commuter traffic, we began to see congestion and accidents turning right from Towanda Barnes to Ireland Grove Road. An Interim IDS approved by IDOT used 10-year projections and called for a free flow southbound right turn lane with the addition of double left turn lanes for the p.m. traffic going eastbound on Ireland Grove Road. The design project was done in 2014. Signal timings were adjusted and the double left turn lanes were marked but this did not address the southbound Towanda Barnes traffic.

Mr. Stokes went over traffic volume increases from 2004-2017:

Towanda Barnes

- North side of intersection 35.95%
- South side of intersection 0.12%

Ireland Grove Road

- West side of intersection 72.47%
- East side of intersection 165.88%

Mr. Stokes continued with the Accident Data from 2012-2017 noting that the majority of accidents on Towanda Barnes are during the a.m. peak hours and the p.m. peak hours on Ireland Grove Road. There were 36 accidents between 2012-2017 including one fatality. He compared these totals with other major intersections pointing out that the total is three times that of the intersections at Raab Road, Fort Jesse Road and GE Road.

Mr. Stokes stated that Cornerstone Christian Academy, Benjamin Elementary and Evans Junior High School have all contributed to the increase in traffic. He stated that in 2013 Unit 5 Schools did redistricting and in 2016 changed scheduling.

Ms. Metsker asked if the County has any input in regards to the redistricting of Unit 5 schools. She believes that as a stakeholder, traffic patterns should be discussed before redistricting is done. We need to be a part of these conversations. Mr. Stokes responded that there were no conversations with Unit 5 when the redistricting was done. Moving forward the Department will reach out to be included.

Mr. Barnett agreed. The County should be a part of the redistricting conversations. He referenced the problems the Town of Normal experienced when Normal Community High School was built. He suggested that the County Board members also reach out to the members of the School Board.

Mr. Wasson added that the infrastructure costs the Town of Normal incurred were substantial, however the \$7,000,000 road improvement costs that the County incurred to upgrade Towanda Barnes from Fort Jesse to Raab Road was also significant. Neither the Town of Normal nor the County were involved in those conversations. Schools do not currently require any type of special use process to site in those locations.

Ms. Metsker reiterated that she believes that the County should reach out and make the school districts aware of the costs incurred by the County.

Mr. Wasson stated the County does participate and have conversations with school districts when they are given the opportunity. We do not have the authority to bring them to the table each and every time. The system can be improved.

Mr. Robustelli noted that these schools are ultimately being built under the Town of Normal or the City of Bloomington Zoning rules and regulations. He suggested that if their zoning allows for a school in that location, it would at best be a courtesy by the municipality to check with the County for an impact analysis of the County highway system.

Mr. Stokes stated that in 2016 Unit 5 changed their school starting times. This created additional traffic volumes to design hourly volume on the east bound and west bound lanes. The Ireland Grove east leg traffic design hourly volume more than doubled from 2014 – 2017. He advised that the IDOT Design Manual states that “The use of right-turn lanes at intersections can significantly improve operations at any signalized intersections where the right-turning volume is greater than 150 vph...” The intersections peak hour turning movements increased significantly higher than 150 vph when the school starting time changed. With the increased traffic volumes, IDOT was contacted and revisions were needed on the intersection design study. IDOT advised that with these traffic counts, we would have to do a full intersection design study using MFT funding. He stated that the new IDS still required dual left turns and the free flow right but now called for additional right turn lanes on the east bound and west bound Ireland Grove Roads. This required a complete redesign of the intersection.

Mr. Stokes advised that another safety issue is the northbound Towanda Barnes left turning traffic is cutting through the public access road by the Pony Ball Fields. This creates a safety issue when they cross three lanes of traffic at peak times of the day to get on to westbound Ireland Grove Road. He presented a pictorial of the situation.

Ms. Metsker stated that with the possible danger, have we had discussions with the City of Bloomington to block the road to eliminate the situation. Mr. Wasson responded that

this is a commercial subdivision, platted with design and approval of the City of Bloomington. A closure may cause ramifications relative to the owners of the property. Mr. Stokes added that the road is used by the Pony Fields. He advised that the proposed design does include a concrete barrier island on Ireland Grove Road. This will prohibit traffic from turning left onto Ireland Grove Road from the eastern most entrance.

Mr. Schmitt advised that conversations have taken place with the City of Bloomington staff. This intersection is not on their top ten list of intersections, which considers the number of accidents per number of cars using the intersection. This is not a high percentage because of the volume of traffic. He stated that when traffic control signals are placed at an intersection in an urban area, this automatically increases the number of rear-end collisions. These 22 accidents of the 36 accidents are low severity. The remaining 14 are higher severity. We currently have had one fatality. What we have here vs what the City has is here the speed limits are 45 mph with traffic moving at 55 mph -60 mph, increasing the severity. Most City intersections are 30 mph on all four legs.

Mr. Robustelli stated that in the last five years, 75,000,000 people have crossed through this intersection with 36 reported accidents with the majority being rear-end crashes. Mr. Robustelli asked if it is reasonable to have an expectation that we will see 1-3% increased traffic and that these numbers are just what we can expect from high volume intersections. Mr. Schmitt responded that these high volumes of traffic are higher than at Towanda Barnes Fort Jesse Road, GE Road and Raab Road. What makes this more of a problem is the Daily High Volume - DHV. Traffic spread throughout the day creates less conflict. When Unit 5 changed their starting times, the percentage of traffic drastically changed, putting all the traffic going to State Farm, Cornerstone, and Unit 5 Schools there at the same time. This is similar to the problem experienced at Towanda Barnes and Raab Road.

Mr. Hohulin added that when traffic counts were done he looked at the 85<sup>th</sup> percentile, the speed 85% of traffic is traveling. He noted that the 85<sup>th</sup> percentile speed on the southbound leg was 57 mph. The maximum speed was 67 mph. The 85<sup>th</sup> percentile speed on the northbound leg was 55 mph with the maximum being 69 mph. These speeds increase the severity of potential accidents. Getting traffic through the intersections safer and more efficiently is the purpose of the project.

Ideas to help reduce speed were discussed.

Mr. Stokes went through potential alternatives:

- Modify school start times – Cornerstone and Unit 5 were contacted. They are both in support of this project; however changing start times is unrealistic.
- Shorten turn lane storage/lengths.
- Change southbound thru/right lane to right turn lane only.
- Build southbound right turn lane using local funds.

Mr. Stokes stated that it is his recommendation that improvements are needed to the intersection of Towanda Barnes Road and Ireland Grove Road. He summarized these improvements:

- A free-flow right turn lane for the southbound traffic on Towanda Barnes.
- Additional right turn lanes on Ireland Grove Road for the approaches to Towanda Barnes Road.
- Other geometric, drainage and signal improvements.

Mr. Stokes presented two potential intersection improvement costs:

1. Build full intersection improvement – IDOT approved design - \$1.6Million MFT funds – 50/50 split with the City of Bloomington.
2. Mill and repave only Towanda Barnes using \$250,000 local funds. This does not address any safety issues or traffic congestion - 6% increase to another project using MFT funds.

He advised that it is the recommendation the McLean County Highway Department to proceed with Option 1 and improve the intersection of Towanda Barnes Road and Ireland Grove Road according to the Intersection Design Study (IDS) approved by IDOT on April 18, 2017 showing the analysis and configuration of the needed improvements. The IDS shows that the current intersection is over capacity and improvements are necessary to accommodate the existing traffic.

Mr. Stokes stated that Towanda Barnes continues to be a major thoroughfare for commuters from rural McLean County, the City of Bloomington and Town of Normal traveling to major employers and schools located in the area. These improvements are needed to reduce the number and severity of future accidents. This intersection has the highest number of accidents on the County Highway system. The proposed improvements will also relieve the congestion and delays that frequently occur at this intersection

Ms. Metsker asked where the City of Bloomington stands on this project. Mr. Stokes responded that City staff would recommend approval of the project to their Council after action is taken at the County. The County is the lead agency on the project.

Mr. Robustelli stated that after our earlier discussion, the Mayor of Bloomington said there was a communication breakdown. We need some indication that this is still supported. This piece of the puzzle is very important in the decision making process.

Mr. Robustelli referred to Option 2. There are two safety issues that regardless of the outcome that can be addressed:

1. People are driving too fast on Towanda Barnes. Engage the Sheriff and Bloomington Police.
2. Place a no left turn sign on Towanda Barnes to eliminate the pass through problem.

He believes that these safety issues can be addressed now, whether we move forward with the project or not.

Mr. Stokes stated that the Department needs to move forward for approval of the funding to purchase right-of-way and relocate utilities if needed.

Ms. Metsker still questions the City of Bloomington's willingness to move forward on the project.

Mr. Cavallini questioned who should lead in the approval process. He suggested that we have a joint meeting with the City of Bloomington.

Mr. Barnett stated that attending the open house it was clear the City of Bloomington staff is enthusiastically in favor of the project. He also questions the City of Bloomington's elected official's willingness to move forward with this project. He noted that Bloomington's Comprehensive Plan shows a push within the City to focus on regeneration of the core rather than focus on the outer ring of the community. Mr. Barnett would like to postpone Committee action until the City of Bloomington takes action.

Mr. Wasson clarified that, although we are not taking action on the project today, the project is included in the Capital Budget.

Chairman Caisley is in favor of the County moving forward with the project for the safety of the community. We are unable to fund the project without the support from the City of Bloomington.

Mr. Johnson questioned where the project would be if the County passes it and the City of Bloomington does not. Mr. Stokes responded that the project would not move forward without approval from both entities.

Mr. Johnson stated that our approval is showing our commitment to public safety. It is not forcing the City of Bloomington's support.

Ms. Metsker disagreed. She believes that the City of Bloomington would feel the County is forcing the project. Before we make a decision, we have to know where the elected officials stand on the project.

Mr. Johnson asked when the last meeting with the City of Bloomington staff was and what the outcome was. Mr. Stokes responded that they met with the City of Bloomington a week and a half ago to discuss the timing on getting the funding approved. The City will present the proposal to the Council once the County has approval.

Mr. Wasson stated that Administration has had conversations with the Interim Mayor, the City of Bloomington Manager and the Deputy City Manager on this subject. We

recognize that our partner in this project may have different priorities at this time than we do. He advised that the feedback received from City staff and some council members is that they are not sure if they would be able to support the project. No one expressed that the County would be blamed or that there was any negative connotation to the County for doing the work they have done with respect to the intersection.

Mr. Wasson advised that we do need to recognize that as partners in this project, that we may have different priorities at any given time. This does not preclude us from continuing forward with the project or continue communications with the City of Bloomington staff or elected officials.

Ms. Metsker stated that no action is necessary today other than approval of the FY 2018 Recommended Budget.

Mr. Robustelli suggested that Chairman Caisley have a conversation with the Mayor and report back to the Committee.

Mr. Martin stated that he believes we should take a stand and go forward with the project. The signage and enforcement would be advantageous to be done now.

Mr. Stokes stated that the next step would be to present in November Resolutions appropriating funds for MFT and Matching expenditures. At the following Council meeting the City of Bloomington would do the same.

Chairman McIntyre suggested that due to the safety issue, asking for Public support from Unit 5 and State Farm. He stated that the issue is not only speed; it is also time of day and urgency. If the project is not done, the safety problem is still there. We need a solution.

Mr. Robustelli asked if we could get a letter of support from the City of Bloomington Mayor's office. He suggested everything be presented at the November Committee meeting.

Mr. Donald Knapp, First Assistant State's Attorney, Civil stated that it seems to be the will of the Committee to approve the Capital Budget as presented. In November one of two things will be done:

1. Find there is no support from the City of Bloomington and amend the budget to include \$250,000 for option #2.
2. Present the necessary Resolutions to the Committee in November.

Chairman Caisley continued with the Project Summaries.

Mr. Stokes stated that the Trent Bridge on CH 29 was opened to the public on September 27, 2017. All major work is completed. Final paper work is being done.

Mr. Stokes presented the final construction cost of the Towanda Barnes Road resurfacing project reporting the project came in \$100,000 under the original bid.

Mr. Stokes advised that the Roselands Bridge located on CH 8 is open. The Department is finishing the final paperwork. The bridge opened on September 5<sup>th</sup>.

Mr. Stokes reported that the major construction is complete on the Lexington Resurfacing project.

Chairman Caisley continued with the only item for action, the FY 2018 Budget and 5 Year Plan Review.

Mr. Stokes reported that the Highway Department operates primarily from four different tax funds. Three of these are property tax based:

1. 0120 Highway Fund - Primary operating fund used for the day to day operations of the Department.
2. 0121 Bridge Fund - Used for the construction and maintenance of County and Township bridges and culverts.
3. 0122 Matching Tax Fund - Used to match Motor Fuel Tax, Federal and State funds and can only be used for engineering, construction and right-of-way acquisition on construction projects.

The fourth fund, 0123 MFT Fund is derived from the State Motor Fuel Tax. MFT Funds are used for construction and maintenance of our County Highway System. This fund has more regulation regarding its use than the other three funds.

Mr. Stokes presented the FY 2018 Recommended Budget. He stated that the first fund to be addressed is the Highway Fund - 0120. The Highway Fund is the Highway Department's General Operating Fund used for some construction, some salaries, equipment purchases, and daily operations. He added that 75% of the revenue for this fund comes from General Property Tax. The remaining revenue is received from:

- Commodities sold to Townships and Municipalities
- Engineering services provided for Townships
- Equipment Rental reimbursement from Motor Fuel Tax
- Permits and Road Use Agreement fees
- Fund Balance

He presented highlights of the FY 2018 Recommended Budget.

#### REVENUE:

401.0001 General Property Taxes: This line item account went up \$34,000 in the FY 2018 Recommended Budget from \$2,865,636 FY 2017 to \$2,899,958 FY 2018.

EXPENDITURES:

Personnel: 500 Line Items:

Four employees qualify for the Volunteer Retirement Program. Mr. Wasson noted that Administration currently has no signed contracts.

Materials and Supplies

6008.0001 Gasoline/Oil/Diesel Fuel: has decreased 12% from \$300,000 FY 2017 to \$265,000 FY 2018. The decrease reflects lower fuel prices.

621.0001 Non Major Equipment: increased \$5,000, which was moved from Office Equipment.

Contractual Services: have increased due to increases in Capital Improvements, the increase in computer drafting program and includes the tractor lease and durapatch rental.

Capital Assets

Mr. Stokes stated that there are no Capital Improvement projects. Improvements will be more maintenance to County Highways.

Mr. Stokes referred to the handout reflecting the under \$10,000 items to be replaced or added in FY 2018:

	Price Each	Net Budget Cost
➤ 3 New Snow Plows	\$7,500	\$21,000
➤ 3 New Salt Spreaders	\$3,000	\$9,000
➤ Traffic Counters -4	\$1,500	\$6,000
 Sub Total		 \$38,000

Mr. Stokes continued with the over \$10,000 items:

	Price	Trade in	Net Trade in
Tandem Dump Truck			
Cab and Chassis	\$103,000	\$30,000	\$73,000
New dump body, hoist and hydrlics	\$56,000		\$56,000
Hydraulic Wing Plow	\$13,000		\$13,000
Net Budget	\$172,000		\$142,000
 Tandem Dump Truck	 \$103,000	 \$27,000	 \$76,000
New dump body, hoist and hydrlics	\$56,000		\$56,000
Hydraulic Wing Plow	\$13,000		\$13,000
Net Budget	\$172,000		\$145,000

Transportation Committee Minutes

October 3, 2017

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Tandem Dump Truck	\$103,000	\$25,000	\$78,000
New dump body, hoist and hydrlics	\$56,000		\$56,000
Hydraulic Wing Plow	\$13,000		\$13,000
Net Budget	\$172,000		\$147,000
Truck 102	\$27,000	\$4,000	\$23,000
Net Budget			\$23,000
Backhoe w/ hammer	\$145,000	\$65,000	\$80,000
\$45,000 guaranteed buy back			
Net Budget			\$80,000
Backhoe Trailer	\$27,500	\$5,000	\$22,500
Net Budget			\$22,500
Truck 151	\$28,000	\$3,000	\$25,000
Sub Total			\$584,500

Mr. Stokes continued with the Bridge Fund 0121, which is used to fund:

- County Bridges,
- County Culverts,
- 10% of Township Bridges
- 50% of Township Joint Culvert Projects.

He advised that 59% of the revenue for the Bridge Fund comes from property tax.

REVENUE:

General Property Tax increased\$39,000 from \$1,533,175 in FY 2017 to \$1,571,777 in FY 2018. The tax rate is \$0.0472 for the FY 2018 Recommended Budget.

Construction/Maintenance: This line item was budgeted at \$490,000 in the FY 2017 Adopted Budget and is budgeted at \$700,000 in the FY 2018 Recommended Budget. This line item increase represents the increase in reimbursement for joint projects that we will receive from joint culverts and bridges with the townships. The Department is doing a County line project with Tazewell County in 2018. The cost split is 60% McLean County and 40% Tazewell County.

EXPENDITURES:

Contractual Services – Engineering Services for design projects for 2019 construction.

Capital Assets - Construction Roads/Bridges/Culverts – is additional work planned for 2018.

Mr. Stokes continued with the County Matching Tax Fund 0122. He stated that the Matching Tax Fund is used to fund the County's matching portion of Federal, State and Motor Fuel Tax projects. Revenue for this fund comes from the General Property Tax. Mr. Stokes stated that the statute requires that Matching Tax fund can only be used for:

- Construction Expenses
- Engineering Expenses
- Purchase of Right-of-way.

REVENUE:

401.0001 General Property Taxes: This revenue increased \$17,000 from \$1,432,818 in FY 2017 Adopted Budget to \$1,450,000 in FY 2018 Recommended Budget with a tax rate of \$0.0375 per \$100.00 EA the maximum rate.

EXPENDITURES:

Line Item 0810.0001 Construction of County Roads/Bridges and Culverts for FY 2018 is \$1,768,698.

Mr. Stokes stated that 98% of Matching Fund expenses go to construction of roads

Mr. Stokes continued with Motor Fuel Tax Fund 0123. He stated that the Motor Fuel Tax fund is used to fund the Maintenance, Engineering, and Construction of the County Highway System.

Fund: Motor Fuel Tax 0123

Motor Fuel Tax Fund is used on County Highways for

- Maintenance
- Engineering
- Construction

REVENUE:

Revenue comes from our monthly allotments and the County Consolidated Program set up with IDOT. The amount budgeted for our FY 2017 monthly allotments was \$190,000 per month. We are currently averaging \$194,000. FY 2018 Recommended Budget is \$192,000. Per month.

Mr. Stokes advised that the County received \$381,388 from the Consolidated Program in 2017. In FY 2018 this will be cut in half due to the State Budget. The State is taking \$300,000,000 from IDOT to pay series D bonds from Illinois Jobs Now Bill and a portion of the transit activities in the Chicago area. The County will receive approximately \$190,000.

Mr. Robustelli asked how this would affect County Highways in 2018. Mr. Stokes responded that we would need to lower our projected projects. The County does have a balance in the MFT Fund.

*EXPENDITURES:*

Line item 716.0001 Maintenance Roads/Drainage Structures: This line item decreased from \$1,309,665 in FY 2017 to \$1,282,935 in FY 2018.

Line Item 810.0001, Construction of Roads/Bridges and Culverts: increased from \$1,378,258 in FY 2017 to \$1,950,000 In FY 2018.due to the construction work planned for 2018.

Mr. Stokes noted that 76% of MFT Funds expenses go to maintenance and construction of County Highways.

Chairman Caisley thanked Mr. Stokes for a clear and concise presentation of the FY 2018 Recommended Budget.

Mr. Stokes continued with the 2018 Five Year Plan. He referred to the map distributed showing the projects planned in the next five years and the list of Unfunded Projects. He stated that this year the Department implemented another rating system called the PASER Rating. This system provides guidelines for road cracking. PASER gives the Department more guidelines.

Mr. Wasson added that this is an advancement for the Department to utilize tools such as the PASER system. The Highway Department continues to be progressive.

Mr. Wasson noted that due to the information received from the State, the following amendment needs to be made to Fund 0123 Motor Fuel Tax:

Revenue:

0404.0020 County Motor Fuel Tax: decrease revenue by \$180,000 from \$2,663,428 to \$2,483,428.

0400.000 Unappropriated Fund Balance: increase by \$180,000 from \$714,850 to \$894,850.

Ms. Metsker asked how long can we sustain taking funds from the Unappropriated Fund Balance. Mr. Wasson responded that unlike some fund balances, we build fund balance for capital projects in this fund. We will continue to expand our list of Unfunded Projects. We continue to support efforts to increase Motor Fuel Tax allotments.

Mr. Robustelli noted that his vote in support of this FY 2018 Recommended Budget is not necessarily a vote in support of every project on the list. He is still collecting more information as to the Towanda Barnes/ Ireland Grove Road project.

Motion by Metsker/Cavallini to recommend approval of the FY 2018 Budget as Amended and 2018 5 Year Plan Review.  
Motion carried.

Chairman stated that the next meeting of the Transportation Committee will be held on Tuesday, November 7, 2017, Room 400.

Chairman asked if there was any other business to come before the Committee. Hearing none, he adjourned the Transportation Committee meeting at 10:13 a.m.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Diana Hospelhorn". The signature is fluid and cursive, with a large initial "D" and a long, sweeping tail.

Diana Hospelhorn  
Recording Secretary

City of Bloomington, Illinois - Engineering Department Crash Details with Summary

10/1/2012 - 10/1/2017

Police Report Number	Date	Day	Time	Type	Distance	Pri Dir	Injuries				Travel Direction		Action		Surface Condition	Lighting Condition	
							A	B	C	K	Unit 1	Unit 2	Unit 1	Unit 2			
18	Intersection	0	1)	Pedestrian	0	9)	0	0	0	0	0	4	5	28	1) Dry	29	1) Daylight
15	Midblock	0	2)	Pedalcyclist	9	10)	0	1	2	0	2	3	6	6	2) Wet	0	2) Dawn
2	Private Property	0	3)	Train	19	11)	0	2	2	0	2	0	1	1	3) Snow or Slush	0	3) Dusk
35	<b>Total</b>	0	4)	Animal	1	12)	0	3	1	0	1	3	0	0	4) Ice	2	4) Darkness
		0	5)	Overtaken	0	13)	0	4	0	0	0	1	0	0	5) Sand, Mud, Dirt	4	5) Dark, Lighted Rd
		1	6)	Fixed Object	0	14)	0	5	3	0	3	0	0	0	6) Other		
		1	7)	Other Object	4	15)	0	6	1	0	1	0	0				
		0	8)	Non Collision			7	7	3	0	3	0	0				

1907TOWANDA BARNES RD @ IRELAND GROVE RD

Report Number	Date	Day	Time	Type	Distance	Pri Dir	A	B	C	K	Unit 1	Unit 2	Direction	Action	Surface Condition	Lighting Condition	
20121648	10/23/2012	Tue	11:53 AM	TURNING	0	N	0	0	1	0	N	E	TURNING LEFT	STRAIGHT AHEAD	DRY	1	
20130068	1/8/2013	Tue	5:00 PM	REAR END	0	N	0	0	0	0	W	W	OTHER	SLOW/STOP - RIGHT TURN	DRY	5	
20130824	5/18/2013	Sat	9:52 AM	REAR END	300	W	N	0	0	2	0	W	W	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	DRY	1
20130889	5/27/2013	Mon	1:26 PM	ANGLE	0	N	0	3	0	0	E	N	STRAIGHT AHEAD	STRAIGHT AHEAD	DRY	1	
20131056	6/26/2013	Wed	4:51 PM	REAR END	300	E	N	0	0	1	0	E	E	STRAIGHT AHEAD	STRAIGHT AHEAD	DRY	1
20131296	8/8/2013	Thu	7:20 AM	REAR END	0	N	0	0	0	0	SE	SE	TURNING ON RED	TURNING ON RED	DRY	1	
20131781	10/31/2013	Thu	3:44 PM	FIXED OBJECT	2640	E	N	0	0	0	0	W	W	AVOIDING OBJECTS/ETC.	AVOIDING OBJECTS/ETC.	WET	1
20131826	11/7/2013	Thu	8:45 AM	REAR END	0	N	0	0	0	0	E	E	SLOW/STOP IN TRAFFIC	SLOW/STOP IN TRAFFIC	DRY	1	
20140157	1/22/2014	Wed	5:29 PM	REAR END	0	N	0	0	0	0	S	S	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	WET	4	
14-44521	4/11/2014	Fri	4:41 PM	REAR END	0	N	0	0	0	0	E	E	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	DRY	1	
14-44925	4/21/2014	Mon	10:23 AM	REAR END	0	N	0	0	0	0	N	N	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	DRY	1	
14-40729	5/19/2014	Mon	4:50 PM	TURNING	200	W	N	0	0	1	0	S	E	TURNING LEFT	STRAIGHT AHEAD	DRY	1
14-40532	6/3/2014	Tue	9:10 AM	TURNING	0	N	N	0	0	0	1	E	E	TURNING LEFT	STRAIGHT AHEAD	DRY	1
14-44944	6/12/2014	Thu	8:40 PM	ANGLE	0	Y	0	0	0	0	S	W	BACKING	STRAIGHT AHEAD	DRY	5	
14-40541	7/23/2014	Wed	4:59 PM	TURNING	1000	W	N	1	0	0	0	S	E	TURNING LEFT	STRAIGHT AHEAD	DRY	1
14-45562	9/9/2014	Tue	7:10 PM	TURNING	0	N	0	0	0	0	E	E	TURNING RIGHT	TURNING RIGHT	WET	5	
14-40995	12/18/2014	Thu	7:19 PM	REAR END	150	E	N	0	0	1	0	W	W	STRAIGHT AHEAD	STRAIGHT AHEAD	DRY	4
15-58524	3/24/2015	Tue	7:51 PM	ANGLE	0	N	0	0	0	0	N	E	STRAIGHT AHEAD	STRAIGHT AHEAD	DRY	5	
15-60354	6/29/2015	Mon	7:55 AM	REAR END	500	E	N	0	0	0	0	W	W	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	DRY	1
15-61177	11/12/2015	Thu	3:30 PM	REAR END	150	W	N	0	0	0	0	E	E	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	DRY	1
15-56561	11/13/2015	Fri	10:25 AM	OTHER OBJECT	0	Y	0	0	0	0	N	NA	SLOW/STOP - LOAD/UNLO	OTHER	DRY	1	
15-58343	11/17/2015	Tue	7:53 AM	REAR END	1000	N	N	0	0	0	0	S	S	STRAIGHT AHEAD	STRAIGHT AHEAD	WET	1
15-58774	12/9/2015	Wed	7:35 AM	REAR END	130	E	N	0	0	0	0	W	W	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	WET	1
16-60617	2/24/2016	Wed	2:28 PM	REAR END	300	W	N	0	0	0	0	E	E	SKIDDING/ CONTROL LOS	STRAIGHT AHEAD	SNOW OR SLUSH	1
16-58614	3/8/2016	Tue	8:04 AM	REAR END	200	N	N	0	0	0	0	S	S	STRAIGHT AHEAD	PASSING / OVERTAKING	DRY	1
16-58679	7/20/2016	Wed	7:34 AM	REAR END	75	S	N	0	0	0	0	N	N	STRAIGHT AHEAD	STRAIGHT AHEAD	DRY	1
16-58695	8/21/2016	Sun	1:48 PM	ANGLE	0	N	0	1	0	0	0	S	W	STRAIGHT AHEAD	STRAIGHT AHEAD	DRY	1
16-58155	8/9/2016	Tue	1:07 PM	TURNING	60	S	N	0	0	0	0	N	NE	CHANGING LANES	TURNING RIGHT	DRY	1
16-56672	9/8/2016	Thu	7:53 AM	TURNING	0	N	0	0	0	0	0	S	NW	STRAIGHT AHEAD	TURNING LEFT	WET	1
16-61015	9/2/2016	Fri	4:09 PM	REAR END	0	N	0	0	0	0	0	E	E	STRAIGHT AHEAD		DRY	1
17-56232	2/26/2017	Sun	5:16 PM	REAR END	0	N	0	0	0	0	0	S	S	SLOW/STOP IN TRAFFIC	STRAIGHT AHEAD	DRY	1
17-61036	2/22/2017	Wed	8:12 AM	REAR END	75	S	N	0	2	0	0	N	N	STRAIGHT AHEAD	SLOW/STOP IN TRAFFIC	DRY	1
17-72139	5/10/2017	Wed	7:12 AM	TURNING	0	N	0	0	0	0	0	NE	NE	STRAIGHT AHEAD	TURNING LEFT	DRY	1

Police

Report Number	Date	Day	Time	Type	Dist- ance	Dir	Pri Prop	Injuries A	B	C	K	Travel Unit 1	Direction Unit 2	Action Unit 1	Unit 2	Surface Condition	Lighting Condition	
17-59467	6/22/2017	Thu	8:10 AM	TURNING	0	N	N	0	0	1	0	W	S	TURNING LEFT		STRAIGHT AHEAD	DRY	1
17-57281	7/21/2017	Fri	3:11 PM	SIDESWIPE SAME DIRECTION	0	N	N	0	0	0	0	N	N	STRAIGHT AHEAD		STRAIGHT AHEAD	DRY	1

# Towanda Barnes & Ireland Grove Hourly Traffic Counts

Taken on Sept. 6 - 7, 2017

Traffic Counts Taken: 9/06 - 09/07/2017		Towanda Barnes Road North of Ireland Grove Road				Towanda Barnes Road South of Ireland Grove Road				Ireland Grove Road West of Towanda Barnes Road					Ireland Grove Road East of Tow-Bar Road	
		SBDL	SBPL	NBPL	NBDL	NBDL	NBPL	SBPL	SBDL	WBPL	WBDL	EBLTL (outside)	EBLTL (inside)	EBDL	WB	EB
12:00 AM	1:00 AM	14	9	10	3	1	11	10	8	4	1	0	2	6	3	6
1:00 AM	2:00 AM	5	6	2	2	1	2	5	3	1	3	0	2	1	2	2
2:00 AM	3:00 AM	0	3	2	1	1	2	3	0	2	2	0	1	1	1	2
3:00 AM	4:00 AM	6	4	6	4	4	7	6	5	5	1	2	1	2	2	1
4:00 AM	5:00 AM	13	8	48	26	20	34	8	5	12	9	5	10	3	15	1
5:00 AM	6:00 AM	60	39	64	41	30	66	43	27	55	50	4	15	23	47	11
6:00 AM	7:00 AM	323	134	155	130	100	189	119	87	242	279	25	41	75	158	51
7:00 AM	8:00 AM	619	290	375	270	152	280	154	97	558	662	74	94	205	487	258
8:00 AM	9:00 AM	467	150	280	224	121	149	124	91	331	428	40	83	96	221	120
9:00 AM	10:00 AM	224	99	173	133	100	124	87	106	112	150	23	45	81	98	60
10:00 AM	11:00 AM	159	111	174	123	100	145	107	98	73	121	32	45	110	89	86
11:00 AM	12:00 PM	202	146	207	148	81	160	142	117	125	142	45	77	137	94	128
12:00 PM	1:00 PM	250	188	200	142	96	162	152	128	144	164	32	66	144	99	83
1:00 PM	2:00 PM	223	138	161	115	95	136	141	123	93	125	26	65	112	62	94
2:00 PM	3:00 PM	207	164	168	121	87	146	167	139	115	132	41	100	199	126	166
3:00 PM	4:00 PM	285	279	382	219	141	242	288	223	169	224	108	187	333	260	260
4:00 PM	5:00 PM	357	346	500	310	128	240	376	267	143	282	234	358	467	191	339
5:00 PM	6:00 PM	468	358	446	299	166	230	331	246	180	359	181	291	343	213	275
6:00 PM	7:00 PM	275	243	221	173	114	159	205	177	88	211	79	157	196	130	185
7:00 PM	8:00 PM	221	181	191	154	86	131	152	111	96	147	27	96	157	78	154
8:00 PM	9:00 PM	155	111	99	67	44	85	89	94	58	113	8	55	110	38	117
9:00 PM	10:00 PM	94	62	65	50	27	46	59	60	29	47	5	25	57	22	54
10:00 PM	11:00 PM	33	28	26	16	12	26	25	20	20	22	2	11	29	10	17
11:00 PM	12:00 AM	20	15	13	13	9	10	11	8	6	15	1	2	13	6	10
<b>Totals</b>		<b>4680</b>	<b>3112</b>	<b>3968</b>	<b>2784</b>	<b>1716</b>	<b>2782</b>	<b>2804</b>	<b>2240</b>	<b>2661</b>	<b>3689</b>	<b>994</b>	<b>1829</b>	<b>2900</b>	<b>2452</b>	<b>2480</b>
		<b>14544</b>				<b>9542</b>				<b>12073</b>					<b>4932</b>	

**Key**

NB = Northbound      DL = Drive Lane  
 EB = Eastbound      PL = Passing Lane  
 SB = Southbound    LTL = Left Turn Lane  
 WB = Westbound

**MORNING TRAFFIC COUNTS AT INTERSECTION OF TOWANDA BARNES RD AND IRELAND GROVE RD  
COUNTS TAKEN TUESDAY, SEPTEMBER 27, 2016**

<b>Passenger Cars</b>														
TIME INTERVAL	SBRT PC	SBTH PC	SBLT PC	WBRT PC	WBTH PC	WBLT PC	NBRT PC	NBTH PC	NBLT PC	EBRT PC	EBTH PC	EBLT PC	TOTAL PC	TOTAL TRAFFIC
6:30-6:45 AM	68	40	10	14	26	4	1	41	50	18	8	20	300	305
6:45-7:00 AM	109	43	8	14	33	3	3	63	55	28	7	29	395	402
7:00-7:15 AM	121	44	24	19	46	2	3	64	59	12	23	37	454	461
7:15-7:30 AM	156	54	30	29	69	6	10	113	67	16	45	54	649	664
7:30-7:45 AM	173	38	33	33	101	6	5	103	85	14	44	41	676	693
7:45-8:00 AM	187	54	37	32	100	2	10	133	118	16	28	48	765	778
8:00-8:15 AM	175	42	19	34	67	3	2	72	47	18	29	36	544	553
8:15-8:30 AM	144	46	10	30	54	6	2	85	43	8	6	38	472	490
8:30-8:45 AM	95	42	13	13	18	3	4	80	48	12	12	30	370	386
8:45-9:00 AM	74	40	12	14	23	1	2	65	24	16	6	40	317	323
Peak Hr PC Total	691	188	119	128	337	17	27	421	317	64	146	179	2,634	

<b>Trucks and Buses</b>														
TIME INTERVAL	SBRT TR & BUS	SBTH TR & BUS	SBLT TR & BUS	WBRT TR & BUS	WBTH TR & BUS	WBLT TR & BUS	NBRT TR & BUS	NBTH TR & BUS	NBLT TR & BUS	EBRT TR & BUS	EBTH TR & BUS	EBLT TR & BUS	TOTAL TR & BUS	
6:30-6:45 AM	0	1	0	0	1	0	0	2	0	0	0	1	5	
6:45-7:00 AM	2	0	0	0	0	0	1	3	0	0	1	0	7	
7:00-7:15 AM	1	2	1	1	2	0	0	0	0	0	0	0	7	
7:15-7:30 AM	0	5	2	0	0	0	1	1	0	0	4	2	15	
7:30-7:45 AM	0	1	2	5	1	0	0	6	0	0	1	1	17	
7:45-8:00 AM	0	5	1	0	1	0	0	2	0	2	1	1	13	
8:00-8:15 AM	0	3	0	1	0	0	0	3	0	1	0	1	9	
8:15-8:30 AM	4	4	1	0	1	1	2	2	1	2	0	0	18	
8:30-8:45 AM	1	4	0	0	0	0	0	4	1	1	3	2	16	
8:45-9:00 AM	1	2	0	0	0	0	0	1	0	0	1	1	6	
Peak Hr TR & Bus Total	0	14	5	6	2	0	1	12	0	3	6	5	54	

<b>Peak Hr Veh Total</b>	<b>691</b>	<b>202</b>	<b>124</b>	<b>134</b>	<b>339</b>	<b>17</b>	<b>28</b>	<b>433</b>	<b>317</b>	<b>67</b>	<b>152</b>	<b>184</b>		<b>2,688</b>
<b>% Peak Hr TR &amp; Bus</b>	<b>0%</b>	<b>7%</b>	<b>4%</b>	<b>4%</b>	<b>1%</b>	<b>0%</b>	<b>4%</b>	<b>3%</b>	<b>0%</b>	<b>4%</b>	<b>4%</b>	<b>3%</b>		<b>2%</b>

AM Peak Hour Factor = 0.86

**EVENING TRAFFIC COUNTS AT INTERSECTION OF TOWANDA BARNES RD AND IRELAND GROVE RD  
COUNTS TAKEN TUESDAY, SEPTEMBER 27, 2016**

**Passenger Cars**

TIME INTERVAL	SBRT PC	SBTH PC	SBLT PC	WBRT PC	WBTH PC	WBLT PC	NBRT PC	NBTH PC	NBLT PC	EBRT PC	EBTH PC	EBLT PC	TOTAL PC	TOTAL TRAFFIC
3:00-3:15 PM	35	69	26	15	20	0	4	43	19	27	25	61	344	366
3:15-3:30 PM	33	65	18	28	28	6	4	48	17	47	54	66	414	425
3:30-3:45 PM	40	85	21	35	44	9	4	75	36	34	37	83	503	516
3:45-4:00 PM	43	82	21	25	24	5	6	78	22	41	36	97	480	487
4:00-4:15 PM	52	93	13	16	26	1	5	70	21	56	38	146	537	557
4:15-4:30 PM	62	117	27	24	17	8	4	73	19	69	63	145	628	636
4:30-4:45 PM	40	107	25	27	21	5	5	72	24	63	69	159	617	627
4:45-5:00 PM	63	97	32	30	24	0	7	77	33	74	55	168	660	666
5:00-5:15 PM	110	106	23	30	37	1	7	64	37	64	38	152	669	676
5:15-5:30 PM	134	107	33	26	29	2	6	72	43	47	58	139	696	704
5:30-5:45 PM	65	81	24	21	31	1	7	74	27	34	30	115	510	514
5:45-6:00 PM	54	87	25	26	23	2	4	72	24	33	36	112	498	502
Peak Hr PC Total	347	417	113	113	111	8	25	285	137	248	220	618	2,642	

**Trucks and Buses**

TIME INTERVAL	SBRT TR & BUS	SBTH TR & BUS	SBLT TR & BUS	WBRT TR & BUS	WBTH TR & BUS	WBLT TR & BUS	NBRT TR & BUS	NBTH TR & BUS	NBLT TR & BUS	EBRT TR & BUS	EBTH TR & BUS	EBLT TR & BUS	TOTAL TR & BUS
3:00-3:15 PM	6	3	0	0	1	1	0	5	2	0	0	4	22
3:15-3:30 PM	3	4	0	1	0	0	0	2	0	0	0	1	11
3:30-3:45 PM	0	4	0	0	1	2	0	1	0	3	1	1	13
3:45-4:00 PM	1	3	3	0	0	0	0	0	0	0	0	0	7
4:00-4:15 PM	2	1	0	1	0	3	2	6	2	0	2	1	20
4:15-4:30 PM	0	3	0	1	0	0	0	3	0	0	0	1	8
4:30-4:45 PM	0	1	0	1	0	1	2	4	0	0	0	1	10
4:45-5:00 PM	0	1	0	0	1	1	0	1	1	1	0	0	6
5:00-5:15 PM	1	1	0	2	0	1	1	0	0	0	0	1	7
5:15-5:30 PM	2	2	0	0	0	0	0	2	0	0	0	2	8
5:30-5:45 PM	1	0	0	1	0	1	1	0	0	0	0	0	4
5:45-6:00 PM	0	1	1	0	0	0	0	0	0	1	1	0	4
Peak Hr TR & Bus Total	3	5	0	3	1	3	3	7	1	1	0	4	31

<b>Peak Hr Veh Total</b>	<b>350</b>	<b>422</b>	<b>113</b>	<b>116</b>	<b>112</b>	<b>11</b>	<b>28</b>	<b>292</b>	<b>138</b>	<b>249</b>	<b>220</b>	<b>622</b>		<b>2,673</b>
<b>% Peak Hr TR &amp; Bus</b>	<b>1%</b>	<b>1%</b>	<b>0%</b>	<b>3%</b>	<b>1%</b>	<b>27%</b>	<b>11%</b>	<b>2%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>		<b>1%</b>

# City of Bloomington, Illinois - Engineering Department Crash Summary

Ranks 62 out of 1,314 total intersections with reported crashes - Top 4.7% (ranked by number of crashes)

Decreasing Order on Total  
10/1/2012 - 10/1/2017

Shaded intersections are on State Routes or are 100% private.

	Rate	Total	Crash Breakdown			Injuries			
			Intersection	Midblock	Private	A	B	C	K
<b>Grand Total</b>		10394	5876	2629	1889	286	631	897	8
VETERANS PKWY @ EMPIRE ST	1.331	232	160	56	16	9	15	30	0
VETERANS PKWY @ CLEARWATER AVE	0.882	206	79	88	39	7	8	24	0
VETERANS PKWY @ EASTLAND DR	0.739	170	67	83	20	4	12	11	0
MORRISSEY DR @ VETERANS PKWY	1.328	169	110	40	19	1	6	15	0
HERSHEY RD @ EMPIRE ST	1.576	161	100	44	17	4	23	12	0
VETERANS PKWY @ WASHINGTON ST	0.726	157	77	60	20	6	10	15	0
VETERANS PKWY @ GENERAL ELECTRIC/VERNON	0.600	157	70	74	13	0	2	12	0
VETERANS PKWY @ OAKLAND AVE	0.845	145	90	44	11	1	7	12	0
TRUCKERS LN @ MARKET ST	1.193	121	52	16	53	0	4	9	0
COMMERCE PKWY @ VETERANS PKWY	0.994	116	59	47	10	5	11	9	0
MT VERNON DR @ EMPIRE ST	1.340	88	56	19	13	2	4	11	0
EAST ST @ WASHINGTON ST	1.416	77	62	13	2	4	4	6	1
BROWN ST @ MARKET ST	0.927	72	35	12	25	1	3	5	0
CAROLINE ST @ MARKET ST	0.642	71	25	18	28	3	6	4	0
MAIN ST @ EMERSON ST	0.852	68	38	16	14	4	3	7	0
TOWANDA AVE @ EMPIRE ST	0.891	67	43	16	8	4	10	6	0
MAIN ST @ HAMILTON RD	0.550	66	22	28	16	3	2	5	0
MAIN ST @ VETERANS PKWY	0.606	62	34	28	0	1	1	2	0
EASTLAND LOTS PARKING LOT	0.000	60	0	3	57	0	0	3	0
REGENCY DR @ WASHINGTON ST	1.507	59	45	9	5	1	8	9	0
HERSHEY RD @ GENERAL ELECTRIC RD	0.858	57	39	14	4	1	1	12	0
CENTER ST @ EMERSON ST	1.013	56	41	12	3	2	4	5	0
GETTYSBURG DR @ EMPIRE ST	0.950	55	31	17	7	1	2	13	0
TOWANDA BARNES RD @ EMPIRE ST	1.233	53	48	5	0	1	5	6	0
CENTER ST @ MACARTHUR AVE	1.676	52	48	4	0	5	11	7	1
MERCER AVE @ VETERANS PKWY	0.456	52	31	16	5	2	0	6	0
AIRPORT RD @ GENERAL ELECTRIC RD	0.739	52	30	16	6	7	3	6	0
PROSPECT RD @ EASTLAND DR	0.843	51	27	8	16	2	3	7	0
MARTIN LUTHER KING DR @ MARKET ST	0.572	51	22	24	5	0	7	3	0
MAIN ST @ EMPIRE ST	0.783	50	34	9	7	4	7	8	0
MORRIS AVE @ VETERANS PKWY	0.575	49	33	15	1	0	7	4	0
VETERANS PKWY @ COLLEGE AVE	0.060	49	7	26	16	0	3	2	0
MAIN ST @ LOCUST ST	0.963	48	39	7	2	4	4	5	0
VETERANS PKWY @ EMPIRE ST EAST	0.683	48	29	11	8	2	2	3	0
EASTPORT DR @ EMPIRE ST	0.000	48	27	18	3	1	1	6	0
J C PKWY @ MARKET ST	0.510	47	12	2	33	0	4	0	0
WYLIE DR/BLM HEIGHTS RD @ MARKET ST	0.846	46	29	6	11	3	2	2	0

# City of Bloomington, Illinois - Engineering Department Crash Summary

Decreasing Order on Total

10/1/2012 - 10/1/2017

	Rate	Total	Crash Breakdown			Injuries			
			Intersection	Midblock	Private	A	B	C	K
VETERANS PKWY @ IRELAND GROVE RD	0.510	45	38	4	3	0	2	7	0
VETERANS PKWY @ HAMILTON RD	0.000	45	33	10	2	2	3	2	0
PROSPECT RD @ WASHINGTON ST	1.129	45	32	8	5	2	0	2	0
MAIN ST @ WOOD ST	0.967	45	27	9	9	1	0	0	1
MAIN ST @ MACARTHUR AVE	1.300	44	38	5	1	0	4	5	0
CENTER ST @ EMPIRE ST	0.812	44	35	9	0	0	3	4	0
CLINTON ST @ OAKLAND AVE	0.701	44	25	17	2	1	1	3	0
MORRISSEY DR @ RHODES LN	1.786	43	35	7	1	3	17	8	0
VETERANS PKWY @ LINCOLN ST	0.347	42	28	14	0	1	2	6	0
EAST ST @ FRONT ST	0.688	42	25	6	11	2	2	3	0
I A A DR @ VERNON AVE	0.757	41	32	8	1	1	1	0	0
HERSHEY RD @ OAKLAND AVE	0.718	41	32	8	1	1	6	3	0
CENTER ST @ OAKLAND AVE	0.774	41	25	13	3	2	9	5	0
CENTER ST @ LOCUST ST	0.698	39	32	6	1	0	1	1	0
EASTLAND COMMONS PARKING LOT	0.000	39	1	1	37	0	0	0	0
MADISON ST @ WASHINGTON ST	0.707	38	29	8	1	3	6	10	0
MAIN ST @ OAKLAND AVE	0.668	38	28	3	7	4	5	4	0
CENTER ST @ WALNUT ST	0.700	38	26	11	1	1	3	1	0
BRICKYARD DR @ VETERANS PKWY	0.301	38	21	8	9	1	2	3	0
FOUR SEASONS RD @ OAKLAND AVE	0.401	38	15	10	13	0	0	6	0
FAIRWAY DR @ EMPIRE ST	0.245	38	15	15	8	0	1	5	0
MORRIS AVE @ SIX POINTS RD	1.055	37	28	6	3	1	0	2	0
I55 ON/OFF RAMP EAST @ MARKET ST	0.668	35	30	5	0	0	1	4	0
CIRA DR EAST @ EMPIRE ST	0.000	35	19	4	12	1	2	3	0
TOWANDA BARNES RD @ IRELAND GROVE RD	0.597	35	18	15	2	1	6	7	1
WILLIAMSBURG DR @ EASTLAND DR	0.000	34	29	3	2	0	0	10	0
TOWANDA AVE @ LOCUST ST	0.777	34	25	4	5	0	3	1	0
AIRPORT RD @ EMPIRE ST	0.613	34	25	9	0	2	2	4	0
LEE ST @ MACARTHUR AVE	3.689	33	32	1	0	2	5	7	0
MAIN ST @ R T DUNN DR	0.548	33	20	8	5	0	0	5	0
TOWANDA AVE @ EMERSON ST / FAIRWAY DR	0.601	32	24	3	5	0	1	4	0
MADISON ST @ MARKET ST	0.541	32	20	4	8	0	3	3	0
CLINTON ST @ EMPIRE ST	0.594	32	20	11	1	1	3	2	0
MAIN ST @ MULBERRY ST	0.000	32	11	16	5	0	2	0	0
CLINTON ST @ WASHINGTON ST	0.638	31	25	2	4	2	4	2	0
CENTER ST @ WOOD ST	0.541	31	17	13	1	9	2	2	0
CLINTON ST @ LOCUST ST	0.411	31	16	10	5	0	1	3	0
VETERANS PKWY @ JUMER DR	0.107	31	8	5	18	0	0	5	0

# City of Bloomington, Illinois - Engineering Department Crash Summary

Ranks 117 out of 1,314 total intersections with reported crashes - Top 8.9% (ranked by crashes per million vehicles)

Decreasing Order on Rate

10/1/2012 - 10/1/2017

	Rate	Total	Crash Breakdown			Injuries			
			Intersection	Midblock	Private	A	B	C	K
<b>Grand Total</b>		10394	5876	2629	1889	286	631	897	8
LEE ST @ MACARTHUR AVE	3.689	33	32	1	0	2	5	7	0
EVANS ST @ WALNUT ST	3.344	13	4	8	1	0	0	1	0
MASON ST @ MULBERRY ST	3.286	8	6	2	0	0	0	0	0
PRAIRIE ST @ CHESTNUT ST	2.196	10	8	1	1	0	1	1	0
MCLEAN ST @ WALNUT ST	1.836	7	6	1	0	0	1	0	0
MORRISSEY DR @ RHODES LN	1.786	43	35	7	1	3	17	8	0
PRAIRIE ST @ DOUGLAS ST	1.711	7	5	1	1	0	0	3	0
BUNN ST @ LINCOLN ST	1.707	22	20	2	0	1	5	2	1
CENTER ST @ MACARTHUR AVE	1.676	52	48	4	0	5	11	7	1
ALLIN ST @ MACARTHUR AVE	1.609	13	11	2	0	1	2	1	0
HERSHEY RD @ EMPIRE ST	1.576	161	100	44	17	4	23	12	0
REGENCY DR @ WASHINGTON ST	1.507	59	45	9	5	1	8	9	0
ALLIN ST @ OAKLAND AVE	1.446	15	13	2	0	0	2	5	0
EAST ST @ WASHINGTON ST	1.416	77	62	13	2	4	4	6	1
MAIN ST @ MARKET ST	1.394	21	17	4	0	0	1	1	0
SPRINGFIELD RD @ TANNER ST	1.381	8	3	2	3	0	0	0	0
EUCLID AVE @ WASHINGTON ST	1.355	28	25	2	1	1	8	4	0
MT VERNON DR @ EMPIRE ST	1.340	88	56	19	13	2	4	11	0
VETERANS PKWY @ EMPIRE ST	1.331	232	160	56	16	9	15	30	0
MORRISSEY DR @ VETERANS PKWY	1.328	169	110	40	19	1	6	15	0
MAIN ST @ MACARTHUR AVE	1.300	44	38	5	1	0	4	5	0
CLAYTON ST @ BELL ST	1.289	4	4	0	0	0	0	0	0
CLINTON ST @ DOUGLAS ST	1.253	7	3	2	2	0	0	0	0
MCLEAN ST @ CHESTNUT ST	1.242	7	5	2	0	0	0	0	0
MCGREGOR ST @ CROXTON AVE NORTH	1.238	9	4	3	2	0	0	0	0
TOWANDA BARNES RD @ EMPIRE ST	1.233	53	48	5	0	1	5	6	0
LEE ST @ OAKLAND AVE	1.221	20	15	5	0	1	1	2	0
MADISON ST @ OAKLAND AVE	1.212	11	10	0	1	1	0	2	0
TRUCKERS LN @ MARKET ST	1.193	121	52	16	53	0	4	9	0
ALLIN ST @ WASHINGTON ST	1.169	23	18	5	0	1	4	0	0
LEE ST @ CHESTNUT ST	1.166	14	13	0	1	2	0	2	0
PROSPECT RD @ WASHINGTON ST	1.129	45	32	8	5	2	0	2	0
EUCLID AVE @ OAKLAND AVE	1.112	15	15	0	0	1	0	4	0
EAST ST EAST @ MULBERRY ST	1.106	2	2	0	0	0	0	0	0
PRAIRIE ST @ WALNUT ST	1.084	7	5	2	0	0	0	0	0
LOW ST @ BISSELL ST	1.077	3	3	0	0	0	0	0	0
ALLIN ST @ OLIVE ST	1.069	10	6	4	0	0	1	3	0

# City of Bloomington, Illinois - Engineering Department Crash Summary

Decreasing Order on Rate

10/1/2012 - 10/1/2017

	Rate	Total	Crash Breakdown			Injuries			
			Intersection	Midblock	Private	A	B	C	K
MCLEAN ST @ FRONT ST	1.066	11	8	3	0	0	1	1	0
MORRIS AVE @ MACARTHUR AVE	1.062	23	21	2	0	0	0	2	0
FOUR SEASONS RD @ LINCOLN ST	1.056	19	13	5	1	0	2	3	0
MORRIS AVE @ SIX POINTS RD	1.055	37	28	6	3	1	0	2	0
ALLIN ST @ CHESTNUT ST	1.053	4	3	0	1	0	0	0	0
CLINTON ST @ BELL ST	1.043	1	1	0	0	0	0	0	0
CENTER ST @ JEFFERSON ST	1.031	11	9	2	0	0	0	0	0
PRAIRIE ST @ MULBERRY ST	1.019	4	4	0	0	0	1	0	0
CENTER ST @ EMERSON ST	1.013	56	41	12	3	2	4	5	0
ROOSEVELT AVE @ MONROE ST	1.002	4	3	0	1	1	0	0	0
COMMERCE PKWY @ VETERANS PKWY	0.994	116	59	47	10	5	11	9	0
MAIN ST @ WOOD ST	0.967	45	27	9	9	1	0	0	1
MAIN ST @ LOCUST ST	0.963	48	39	7	2	4	4	5	0
GETTYSBURG DR @ EMPIRE ST	0.950	55	31	17	7	1	2	13	0
HERSHEY RD @ HAMILTON RD	0.942	12	8	2	2	0	0	0	0
BROWN ST @ MARKET ST	0.927	72	35	12	25	1	3	5	0
CLINTON ST @ FRONT ST	0.926	21	20	1	0	1	4	1	0
PRAIRIE ST @ LOCUST ST	0.895	17	14	1	2	0	3	1	0
MAIN ST @ LINCOLN ST	0.893	23	19	4	0	0	2	2	0
TOWANDA AVE @ EMPIRE ST	0.891	67	43	16	8	4	10	6	0
FAIRWAY DR @ EMPIRE FRONTAGE RD NORTH	0.890	28	21	5	2	0	1	4	0
ALLIN ST @ SEMINARY AVE	0.887	16	12	4	0	1	3	1	0
VETERANS PKWY @ CLEARWATER AVE	0.882	206	79	88	39	7	8	24	0
MCCLUN ST @ GROVE ST	0.862	13	11	2	0	0	0	1	0
ALLIN ST @ MONROE ST	0.859	5	4	1	0	0	0	0	0
HERSHEY RD @ GENERAL ELECTRIC RD	0.858	57	39	14	4	1	1	12	0
LEE ST @ WASHINGTON ST	0.855	25	19	3	3	1	2	4	0
MAIN ST @ EMERSON ST	0.852	68	38	16	14	4	3	7	0
ROBINSON ST @ GROVE ST	0.851	14	9	1	4	0	2	1	0
CLINTON BLVD @ EMERSON ST	0.849	28	24	3	1	1	3	1	0
WYLIE DR/BLM HEIGHTS RD @ MARKET ST	0.846	46	29	6	11	3	2	2	0
VETERANS PKWY @ OAKLAND AVE	0.845	145	90	44	11	1	7	12	0
PROSPECT RD @ EASTLAND DR	0.843	51	27	8	16	2	3	7	0
HERSHEY RD @ IRELAND GROVE RD	0.816	26	18	8	0	1	4	3	0
CENTER ST @ EMPIRE ST	0.812	44	35	9	0	0	3	4	0
CENTER ST @ MARKET ST	0.805	14	11	0	3	1	2	0	0
HERSHEY RD @ RAINBOW AVE	0.800	26	18	7	1	3	1	8	0
OAK ST @ LOCUST ST	0.787	13	11	1	1	0	0	3	0

# City of Bloomington, Illinois - Engineering Department Crash Summary

Decreasing Order on Rate

10/1/2012 - 10/1/2017

	Rate	Total	Crash Breakdown			Injuries			
			Intersection	Midblock	Private	A	B	C	K
MAIN ST @ EMPIRE ST	0.783	50	34	9	7	4	7	8	0
PRAIRIE ST @ JEFFERSON ST	0.779	6	3	1	2	0	0	0	0
TOWANDA AVE @ LOCUST ST	0.777	34	25	4	5	0	3	1	0
CENTER ST @ OAKLAND AVE	0.774	41	25	13	3	2	9	5	0
I A A DR @ VERNON AVE	0.757	41	32	8	1	1	1	0	0
AIRPORT RD @ GENERAL ELECTRIC RD	0.739	52	30	16	6	7	3	6	0
VETERANS PKWY @ EASTLAND DR	0.739	170	67	83	20	4	12	11	0
LEE ST @ MARKET ST	0.736	20	17	3	0	2	1	3	0
VETERANS PKWY @ WASHINGTON ST	0.726	157	77	60	20	6	10	15	0
HERSHEY RD @ OAKLAND AVE	0.718	41	32	8	1	1	6	3	0
MADISON ST @ MACARTHUR AVE	0.715	6	5	1	0	0	0	0	0
WHITE OAK RD @ MARTIN LUTHER KING DR	0.710	25	14	6	5	2	2	2	0
MADISON ST @ WASHINGTON ST	0.707	38	29	8	1	3	6	10	0
BEICH RD @ BEICH RD	0.705	19	9	10	0	1	2	1	0
CLINTON ST @ OAKLAND AVE	0.701	44	25	17	2	1	1	3	0
CENTER ST @ WALNUT ST	0.700	38	26	11	1	1	3	1	0
COTTAGE AVE @ SEMINARY AVE	0.700	10	8	1	1	0	0	0	0
CENTER ST @ LOCUST ST	0.698	39	32	6	1	0	1	1	0
EAST ST @ FRONT ST	0.688	42	25	6	11	2	2	3	0
HERSHEY RD @ COLLEGE AVE	0.688	28	21	5	2	1	4	1	0
MORRISSEY DR @ LINCOLN ST	0.683	28	15	7	6	0	2	1	0
VETERANS PKWY @ EMPIRE ST EAST	0.683	48	29	11	8	2	2	3	0
ROOSEVELT AVE @ OLIVE ST	0.672	14	4	1	9	0	0	2	0
MORRIS AVE @ WASHINGTON ST	0.670	26	18	6	2	1	0	2	0
MAIN ST @ OAKLAND AVE	0.668	38	28	3	7	4	5	4	0
I55 ON/OFF RAMP EAST @ MARKET ST	0.668	35	30	5	0	0	1	4	0
K-MART EASTLAND X-OVER @ EMPIRE FRONTAGE R	0.662	18	14	1	3	1	0	0	0
TOWANDA AVE @ TOWANDA SERVICE RD	0.659	19	16	3	0	0	3	2	0
FELL AVE @ EMERSON ST	0.648	15	14	0	1	2	2	2	0
CAROLINE ST @ MARKET ST	0.642	71	25	18	28	3	6	4	0
CLINTON ST @ WASHINGTON ST	0.638	31	25	2	4	2	4	2	0
EAST ST @ JEFFERSON ST	0.636	20	18	1	1	1	1	3	0
GRIDLEY ST @ FRONT ST	0.622	8	7	1	0	0	2	0	0
LEE ST @ EMERSON ST	0.621	13	9	4	0	0	1	2	0
AIRPORT RD @ EMPIRE ST	0.613	34	25	9	0	2	2	4	0
GRIDLEY ST @ OAKLAND AVE	0.612	27	16	4	7	3	0	1	0
ROOSEVELT AVE @ MARKET ST	0.609	12	9	0	3	1	0	0	0
TOWANDA BARNES RD @ GENERAL ELECTRIC RD	0.608	19	16	2	1	3	1	3	0

# City of Bloomington, Illinois - Engineering Department Crash Summary

Decreasing Order on Rate

10/1/2012 - 10/1/2017

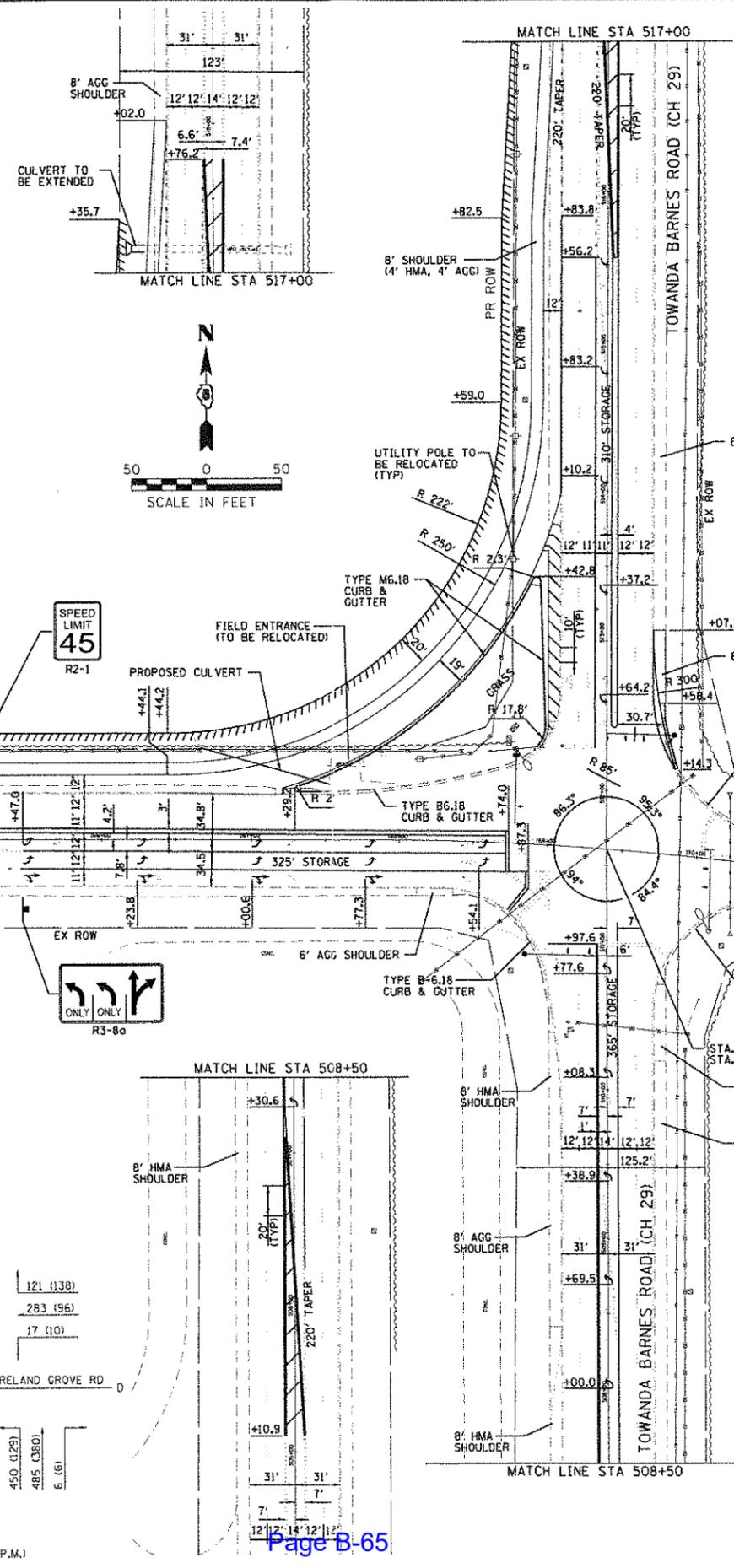
	Rate	Total	Crash Breakdown			Injuries			
			Intersection	Midblock	Private	A	B	C	K
MAIN ST @ VETERANS PKWY	0.606	62	34	28	0	1	1	2	0
TOWANDA AVE @ EMERSON ST / FAIRWAY DR	0.601	32	24	3	5	0	1	4	0
VETERANS PKWY @ GENERAL ELECTRIC/VERNON	0.600	157	70	74	13	0	2	12	0
TOWANDA BARNES RD @ IRELAND GROVE RD	0.597	35	18	15	2	1	6	7	1
CLINTON ST @ EMPIRE ST	0.594	32	20	11	1	1	3	2	0
HERSHEY RD @ CLEARWATER AVE	0.590	25	17	7	1	1	2	2	0
MAIN ST @ WASHINGTON ST	0.587	21	13	7	1	1	1	2	0
ALLIN ST @ LOCUST ST	0.586	15	10	4	1	2	1	3	0
MORRIS AVE @ VETERANS PKWY	0.575	49	33	15	1	0	7	4	0
MARTIN LUTHER KING DR @ MARKET ST	0.572	51	22	24	5	0	7	3	0
GRIDLEY ST @ MARKET ST	0.559	1	1	0	0	0	0	0	0
MERCER AVE @ OAKLAND AVE	0.557	30	20	1	9	0	2	2	0
COLTON AVE @ LOCUST ST	0.554	20	12	6	2	0	2	1	0
MCLEAN ST @ MONROE ST	0.552	4	3	1	0	0	0	0	0
MAIN ST @ MONROE ST	0.552	11	4	6	1	0	0	0	0
MAIN ST @ HAMILTON RD	0.550	66	22	28	16	3	2	5	0
HINSHAW AVE @ MARKET ST	0.549	20	16	4	0	0	1	1	0
PRAIRIE ST @ WASHINGTON ST	0.548	16	12	4	0	1	1	3	0
MAIN ST @ R T DUNN DR	0.548	33	20	8	5	0	0	5	0
LEE ST @ WOOD ST	0.546	9	7	2	0	0	1	0	0
CENTER ST @ WOOD ST	0.541	31	17	13	1	9	2	2	0
MADISON ST @ MARKET ST	0.541	32	20	4	8	0	3	3	0
ELDORADO RD @ OAKLAND AVE	0.540	27	20	2	5	1	2	1	0
CENTER ST @ WASHINGTON ST	0.536	15	12	3	0	0	0	1	0
MERCER AVE @ LINCOLN ST	0.535	16	11	2	3	1	1	0	0
HERSHEY RD @ LINCOLN ST	0.533	13	12	1	0	1	0	3	0
MCLEAN ST @ WASHINGTON ST	0.528	13	12	0	1	0	2	2	0
LINDEN ST @ EMERSON ST	0.526	27	16	10	1	0	0	2	0
MAIN ST @ WALNUT ST	0.511	27	13	7	7	0	2	2	0
J C PKWY @ MARKET ST	0.510	47	12	2	33	0	4	0	0
WESTERN AVE @ LOCUST ST	0.510	12	8	4	0	0	1	1	0
VETERANS PKWY @ IRELAND GROVE RD	0.510	45	38	4	3	0	2	7	0
COTTAGE AVE @ MARTIN LUTHER KING DR	0.504	11	8	1	2	0	0	5	0
STATE ST @ GROVE ST EAST	0.502	7	6	1	0	0	0	1	0
MAIN ST @ CHESTNUT ST	0.496	16	13	3	0	0	2	3	0
MERCER AVE @ WASHINGTON ST	0.494	14	13	1	0	1	1	2	0
LINDEN ST @ LOCUST ST	0.491	10	10	0	0	0	0	0	0
PRAIRIE ST @ MARKET ST	0.490	3	2	1	0	0	0	0	0

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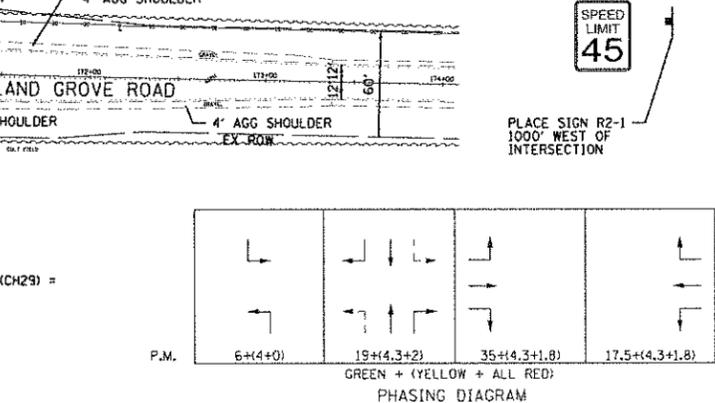
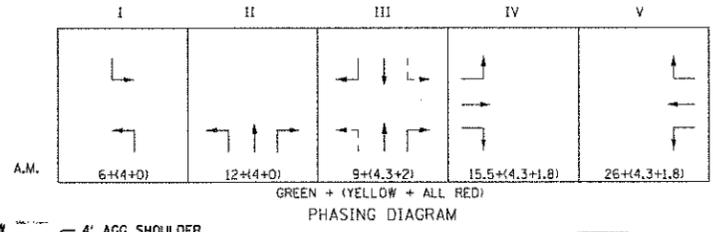
CAPACITY DESIGN STUDY										
5/4 PHASE	AREA OTHER				PEAK HOUR FACTOR		0.88 AM / 0.96 PM		2014	2024
95/100 SEC. CYCLE	AVERAGE INTERSECTION DELAY				A.M. 4.49 SEC.		INTERSECTION LEVEL		A.M. D	
SIGNAL TYPE ACTUATED	PROGRAM USED HCS 2010				P.M. 41.8 SEC.		OF SERVICE		P.M. D	
APPROACH	(A) TOWANDA BARNES SB	(B) TOWANDA BARNES NB	(C) IRELAND GROVE RD EB	(D) IRELAND GROVE RD WB	N/A	N/A	N/A	N/A	N/A	N/A
BUS STOP CONDITION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PARKING MANEUVER/HR.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PEDESTRIANS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARRIVAL TYPE	3	3	3	3	3	3	3	3	3	3
LANE UTILIZATION FACTOR	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BASE SATURATION FLOW	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
D - DISTANCE	161'	307'	N/A	361'	235'	315'	473'	17'	375'	
LANE GROUP	L	T	R	L	TR	L	TR	L	TR	
LANE WIDTHS	11'	11', 12'	12'	14'	2@12'	2@12'	11'	11'	12'	
GREEN TIME (SECONDS)	A.M. 15	9		27	21	15.5	15.5	26	26	
	P.M. 25	19		25	19	35	35	17.5	17.5	
C/C RATIO	A.M. 0.16	0.09		0.35	0.26	0.16	0.16	0.27	0.27	
	P.M. 0.25	0.19		0.25	0.19	0.35	0.35	0.18	0.18	
LANE GROUP DELAY (SECONDS)	A.M. 42.3	50.6		50.7	31.3	35.4	54.9	25.4	52.9	
	P.M. 30.9	51.9		38.5	38.1	27.5	52.3	34.2	50.7	
V/C RATIO	A.M. 0.65	0.68		0.93	0.57	0.35	0.83	0.04	0.91	
	P.M. 0.39	0.82		0.67	0.57	0.61	0.93	0.03	0.78	
LEVEL OF SERVICE	A.M. D	D		D	C	D	D	C	D	
	P.M. C	D		D	D	C	D	C	D	
2024 30TH MAX. HOUR TRAFFIC	A.M. 154	202		450	491	174	213	17	404	
	P.M. 94	556		129	386	722	542	10	234	
2014 8TH MAX. HOURLY TRAFFIC	A.M. 161			443		184			200	
	P.M. 293			233		599			116	

NOTE: SOUTHBOUND RIGHT TURN IS FREE FLOWING

D-DISTANCE IS CALCULATED FROM:  $STORAGE LENGTH (FT) = \frac{(1-G/C)DHV(1+ZTRUCKS/100)X25}{(C \times CYCLES PER HOUR) \times TRAFFIC LANES}$

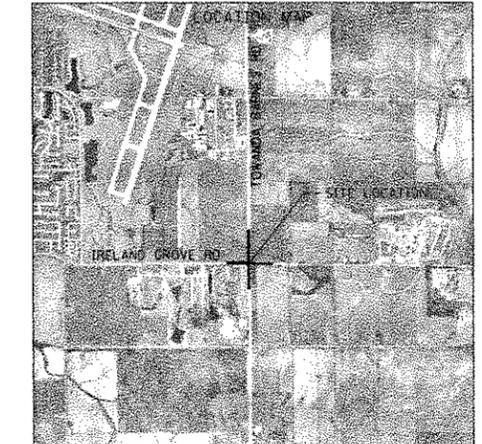
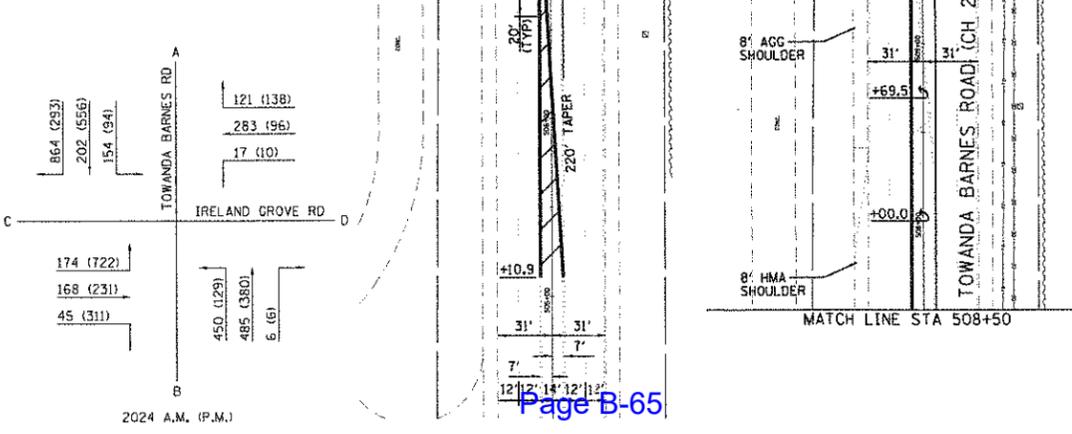


- ### ELEMENTS CONTROLLING DESIGN
- DESIGN DESIGNATION: FAU 6431 TOWANDA BARNES RD (CH 29) - MINOR ARTERIAL ADT = 17,400 20,900  
 FAU 6370 IRELAND GROVE RD - MINOR ARTERIAL ADT = 15,900 18,800
  - TOWANDA BARNES RD / CH 29 IS THE PREFERENCE ROUTE
  - ANTICIPATED YEAR OF CONSTRUCTION: 2014
  - TRAFFIC CONTROL IS TRAFFIC SIGNALS. EXISTING SIGNALS ARE TO BE MODERNIZED.
  - DESIGN CRITERIA: RECONSTRUCTION - IDOT BDE MANUAL
  - DESIGN VEHICLE: WB-65
  - TRUCK ROUTE DESIGNATION: TOWANDA BARNES RD (CH 29) CLASS III  
 IRELAND GROVE ROAD
  - DESIGN SPEED: 50 MPH 50 MPH  
 POSTED SPEED: 45 MPH 45 MPH
  - PEDESTRIAN USAGE: N/A BICYCLE USAGE: N/A
- ### GENERAL NOTES
- PROFILES ARE NOT PROVIDED SINCE APPROACH GRADES ARE LESS THAN 1%.
  - AN 8' SHOULDER (4' PAVED AND 4' AGG.) IS TO BE USED ON OUTER EDGE OF TURNING ROADWAY.
  - TYPE M-6.18 CURB AND GUTTER TO BE USED ON CORNER ISLAND. NORTH AND WEST NOSES TO BE RAMPED.
  - ALL DIMENSIONS ARE SHOWN EOP TO EOP UNLESS OTHERWISE NOTED.
  - AUTOTURN VERSION 7 WAS USED TO DESIGN THE PROPOSED RADII.
  - R.O.W. IS SUBJECT TO REVISION DURING THE PREPARATION OF FINAL PLANS.
  - PAVEMENT MARKING SHALL CONFORM TO DISTRICT POLICY, IDOT STANDARD DETAILS AND MCLEAN COUNTY AND CITY OF BLOOMINGTON STANDARD DETAILS.
  - THIS INTERSECTION MEETS THE IDOT INTERSECTION SIGHT DISTANCE POLICY.
  - DESIGN EXCEPTIONS: A. LEVEL OF SERVICE FOR MOVEMENTS AND INTERSECTION (DUE TO INTERIM IDS DESIGN).  
 B. MEDIAN WIDTH FOR EB LEFT TURN LANES (USE EXISTING PYMT WIDTH).  
 C. LARGE CORNER ISLAND: a. M-6.24 & M-6.06 CC&G ARE NOT USED (USE M-6.18 TO TIE INTO EXISTING B-6.18 CC&G ON SOUTH EDGE)  
 b. VARIED GUTTER WIDTH (STARTED WITH THE EXISTING 1.5' INSTEAD OF 2')  
 c. SOUTH EDGE OF ISLAND TO BE CURVED TO ALLOW FOR RIGHT TURNS AT THE INTERSECTION.  
 D. TURN LANE LENGTH FOR WB LEFT TURN LANE (THRU D-DIST) (EXISTING TO REMAIN).  
 E. DUAL LEFT TURN RECEIVING MIN. THROAT WIDTH (EXISTING SIGNAL EQUIPMENT TO REMAIN FOR INTERIM IDS DESIGN).  
 F. DUAL LEFT TURN MIN. INSIDE RADIUS (EXISTING TO REMAIN FOR INTERIM IDS DESIGN).
  - NEED FOR SEPARATE LIGHTING FOR RAISED MEDIAN NOSES AND SIGNAL EQUIPMENT MODIFICATIONS TO BE EVALUATED DURING PHASE II PLAN PREPARATION.



### TRAFFIC DATA

MOVE-MENT	YEAR 2014 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30TH MAX HOUR	ESTIMATED PERCENT INCREASE BY 2024	YEAR 2024 30TH MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY	YEAR 30TH MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.			A.M.	P.M.		A.M.	P.M.
AB	166	456	3%	22%	202	556			
AD	126	77	2%	22%	154	94			
AC	703	240	1%	22%	864	293			
BA	398	312	2%	22%	485	380			
BC	369	106	1%	22%	450	129			
BD	5	5	0%	20%	6	6			
CD	145	199	2%	16%	168	231			
CA	150	622	1%	16%	174	722			
CB	39	268	1%	16%	45	311			
DC	244	83	1%	16%	283	96			
DB	15	9	4%	12%	17	10			
DA	104	119	1%	16%	121	138			
TOTAL A	1653	1826			2000	2183	2024 ADT =	20,900	
TOTAL B	992	1156			1205	1392	2024 ADT =	13,000	
TOTAL C	1656	1518			1984	1782	2024 ADT =	18,800	
TOTAL D	639	492			749	575	2024 ADT =	6,600	



### INTERIM INTERSECTION DESIGN STUDY

FAU ROUTE 6431 (TOWANDA BARNES RD/CH 29)  
 WITH FAU ROUTE 6370 (IRELAND GROVE RD)

SEC. NO. 13-00168-02-FP PROJ. NO. \_\_\_\_\_  
 SCALE 1" = 50' COUNTY MCLEAN \_\_\_\_\_  
 S/JN: \_\_\_\_\_ REV. NO. \_\_\_\_\_

DESIGNED BY PHILIP S. ALLYN (FARNSWORTH GROUP) DATE 10/31/14

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 MCLEAN COUNTY HIGHWAY DEPT.

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 CITY OF BLOOMINGTON

CADD FILE NAME: [ ] I.D.S. SHEET 1 OF 1

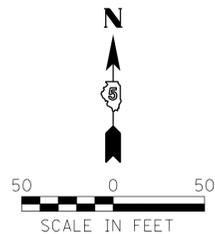
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**CAPACITY DESIGN STUDY**

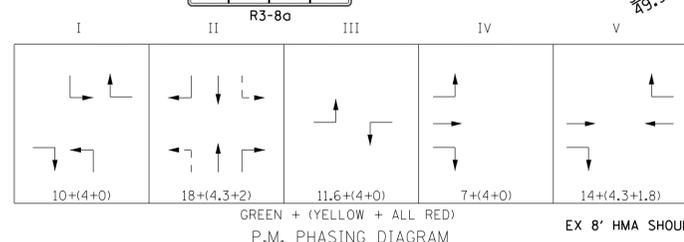
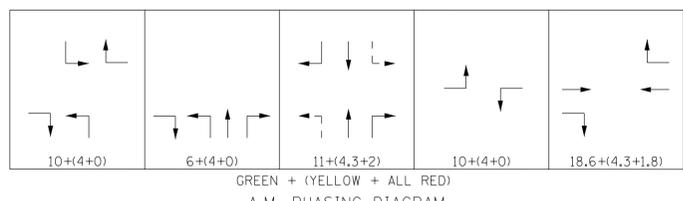
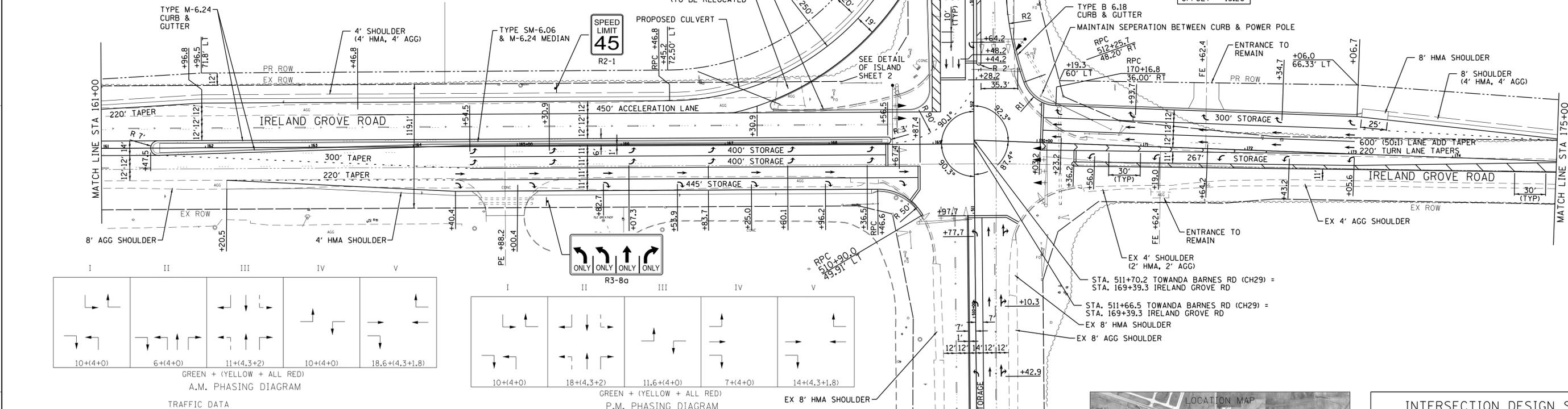
5/4 PHASE		AREA OTHER				PEAK HOUR FACTOR 0.86 AM / 0.95 PM					
80/85 SEC. CYCLE		AVERAGE INTERSECTION DELAY				A.M. 41.8 SEC.		INTERSECTION LEVEL		A.M. D	
SIGNAL TYPE ACTUATED		PROGRAM USED HCS 2010				P.M. 34.1 SEC.		OF SERVICE		P.M. C	
APPROACH	(A) TOWANDA BARNES SB	(B) TOWANDA BARNES NB	(C) IRELAND GROVE RD EB	(D) IRELAND GROVE RD WB							
BUS STOP CONDITION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PARKING MANUEVER/HR.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PEDESTRIANS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARRIVAL TYPE	3	3	3	3	3	3	3	3	3	3	3
LANE UTILIZATION FACTOR	1.0	1.0	1.0	1.0	1.0	0.971	1.0	1.0	1.0	0.952	1.0
BASE SATURATION FLOW	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
D - DISTANCE	214'	303'	N/A	353'	325'	396'	444'	258'	38'	297'	223'
LANE GROUP	L	T	R	L	TR	L	T	R	L	T	R
LANE WIDTHS	11'	20' 12'	12', 19'	14'	20' 12'	20' 11'	11'	11'	11'	20' 12'	12'
GREEN TIME (SECONDS)	A.M. 20	10		24	14	15.5	15.5	25.5	19	19	22
	P.M. 26	16		26	16	24.5	24.5	34.5	12	12	29
G/C RATIO	A.M. 0.26	0.14		0.41	0.26	0.12	0.23	0.48	0.12	0.23	0.36
	P.M. 0.33	0.21		0.33	0.21	0.27	0.29	0.41	0.14	0.16	0.28
LANE GROUP DELAY (SECONDS)	A.M. 43.2	43.4		40.7	42.1	37.3	33.2	11.5	31.6	52.5	20.9
	P.M. 40.5	47.8		29.2	35.8	52.6	53.1	19.4	32.2	32.1	27.4
V/C RATIO	A.M. 0.84	0.74		0.93	0.86	0.69	0.72	0.14	0.20	0.96	0.53
	P.M. 0.84	0.85		0.70	0.70	0.97	0.94	0.54	0.11	0.43	0.58
LEVEL OF SERVICE	A.M. D	D		D	D	D	C	B	C	D	C
	P.M. C	D		C	D	D	D	B	C	C	C
2037 30TH MAX. HOUR TRAFFIC	A.M. 231	306		1,047	480	252	262	92	39	689	264
	P.M. 270	640		530	209	850	499	340	25	240	255
2017 8TH MAX. HOURLY TRAFFIC	A.M. 594			443		255				451	
	P.M. 551			276		718				240	

NOTE: SOUTHBOUND RIGHT TURN IS FREE FLOWING

D-DISTANCE IS CALCULATED FROM:  $STORAGE\ LENGTH\ (FT) = \frac{(1-G/C)DHV(1+T)TRUCKS/100(2X25)}{(*\ CYCLES\ PER\ HOUR) * (*\ TRAFFIC\ LANES)}$

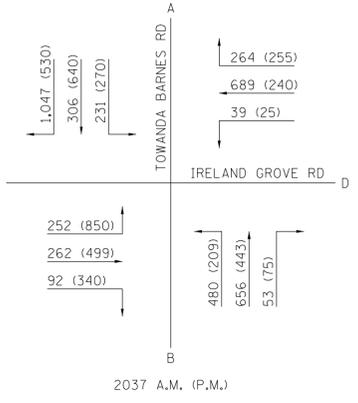


FREE-FLOW:  
 R=250'  
 W=19'  
 e=4%  
 DESIGN SPEED = 30 MPH



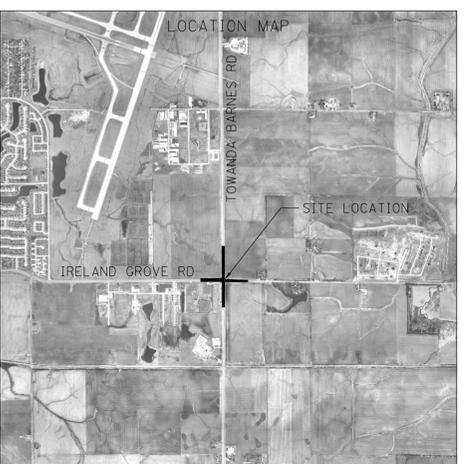
**TRAFFIC DATA**

MOVE-MENT	YEAR 2017 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2024	YEAR 2027 30th MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY 2037	YEAR 2037 30th MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.			A.M.	P.M.		A.M.	P.M.
AB	206	430	3%		251	525		306	640
AD	169	214	2%		197	240		231	270
AC	705	357	1%		859	435		1,047	530
BA	442	298	3%		538	363		656	443
BC	323	141	1%		394	172		480	209
BD	40	62	9%		46	68		53	75
CD	208	421	2%		233	457		262	499
CA	187	631	1%		217	733		252	850
CB	68	253	1%		79	293		92	340
DC	570	201	1%		625	219		689	240
DB	33	21	13%		36	23		39	25
DA	217	214	3%		239	233		264	255
TOTAL A	1,926	2,144			2,301	2,529		2,756	2,988
TOTAL B	1,112	1,205			1,344	1,444		1,626	1,732
TOTAL C	2,061	2,004			2,407	2,309		2,822	2,668
TOTAL D	1,237	1,133			1,376	1,240		1,538	1,364



- ELEMENTS CONTROLLING DESIGN**
- DESIGN DESIGNATION: FAU 6431 TOWANDA BARNES RD (CH 29) - MINOR ARTERIAL ADT = 20,350 (N LEG) 28,700 (S LEG) 11,600 (S LEG) 16,800 (S LEG)
  - FAU 6370 IRELAND GROVE RD (WEST) - MINOR ARTERIAL ADT = 20,300 (W LEG) 27,500 (W LEG)
  - FAU 6370 IRELAND GROVE RD (EAST) - MAJOR COLLECTOR ADT = 11,850 (E LEG) 14,500 (E LEG)
  - TOWANDA BARNES RD / CH 29 IS THE PREFERENCE ROUTE
  - ANTICIPATED YEAR OF CONSTRUCTION: 2017
  - TRAFFIC CONTROL IS TRAFFIC SIGNALS. EXISTING SIGNALS ARE TO REMAIN WITH MINOR MODIFICATIONS.
  - DESIGN CRITERIA: RECONSTRUCTION - IDOT BLR MANUAL
  - DESIGN VEHICLE: WB-65 (WB-55 TO/FROM EAST LEG)
  - TRUCK ROUTE DESIGNATION: TOWANDA BARNES RD (CH 29) CLASS III TOWANDA BARNES (CH 29) IRELAND GROVE ROAD
  - DESIGN SPEED: 50 MPH 50 MPH
  - POSTED SPEED: 45 MPH 45 MPH
  - PEDESTRIAN USAGE: N/A BICYCLE USAGE: N/A

- GENERAL NOTES**
- PROFILES ARE NOT PROVIDED SINCE APPROACH GRADES ARE LESS THAN 1%.
  - AN 8' SHOULDER (4' PAVED AND 4' AGG.) IS TO BE USED ON OUTER EDGE OF TURNING ROADWAY.
  - TYPE M-6.06 & M-6.24 CURB & GUTTER TO BE USED ON CORNER ISLAND. NORTH AND WEST NOSES TO BE RAMPED. TYPE B-6.18 CURB & GUTTER USED ON RADI. TYPE SM-6.24 MEDIAN (6.06 ALONG LEFT TURN LANE) TO BE USED FOR RAISED MEDIAN.
  - ALL DIMENSIONS ARE SHOWN EOP TO EOP UNLESS OTHERWISE NOTED.
  - AUTOTURN VERSION 9 WAS USED TO DESIGN THE PROPOSED RADI.
  - R.O.W. IS SUBJECT TO REVISION DURING THE PREPARATION OF FINAL PLANS.
  - PAVEMENT MARKING SHALL CONFORM TO DISTRICT POLICY, IDOT STANDARD DETAILS AND MCLEAN COUNTY AND CITY OF BLOOMINGTON STANDARD DETAILS.
  - THIS INTERSECTION MEETS THE IDOT INTERSECTION SIGHT DISTANCE POLICY.
  - DESIGN EXCEPTIONS: A. LEVEL OF SERVICE FOR MOVEMENTS AND INTERSECTION. B. 28' MEDIAN WIDTH FOR EB DUAL LEFT TURN LANES (CLOSER MATCH TO EXISTING APPROACH WIDTH). C. LARGE CORNER ISLAND: SOUTHEAST NOSE 20' RADI. INSTEAD OF 5' TO ALLOW FOR EMERGENCY RIGHT TURNS AT THE INTERSECTION.
  - NEED FOR SEPARATE LIGHTING FOR RAISED MEDIAN NOSES AND SIGNAL EQUIPMENT MODIFICATIONS TO BE EVALUATED DURING PHASE II PLAN PREPARATION.
  - ENTRANCES SHALL CONFORM TO THE "POLICY ON ACCESS TO STATE HIGHWAYS."
  - SCOPE OF WORK: ADDITION OF EB RIGHT TURN LANE & SB FREE-FLOW RIGHT TURN LANE, WIDENING OF EAST LEG FOR ADDITIONAL THRU LANE & RIGHT TURN LANE & LENGTHENING OF LEFT TURN LANE.



**INTERSECTION DESIGN STUDY**

FAU ROUTE 6431 (TOWANDA BARNES RD/CH 29)  
 WITH FAU ROUTE 6370 (IRELAND GROVE RD)

SEC. NO. 13-00168-02-FP PROJ. NO. \_\_\_\_\_  
 SCALE 1" = 50' COUNTY MCLEAN  
 SJN : \_\_\_\_\_ REV. NO. \_\_\_\_\_

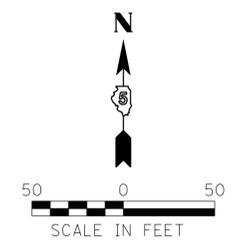
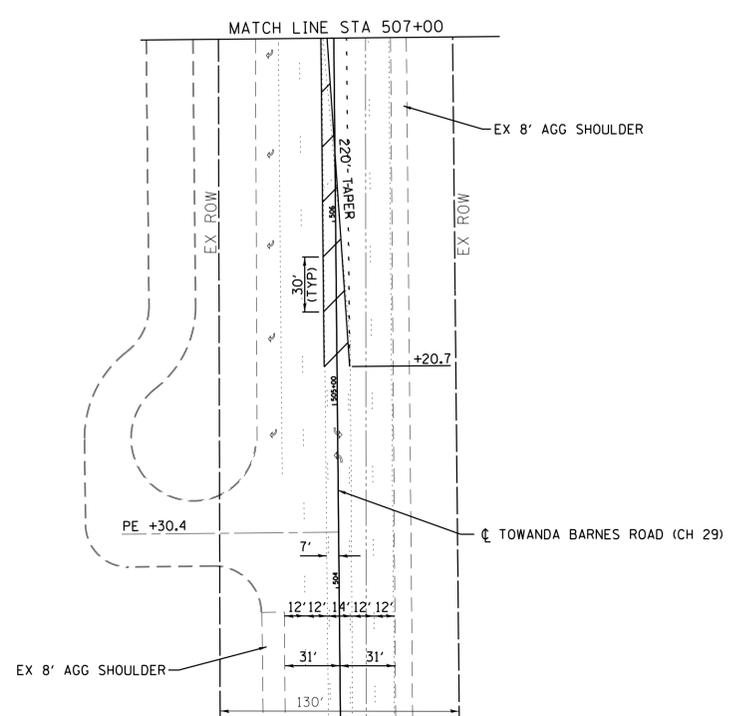
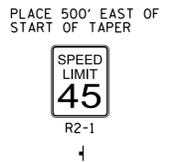
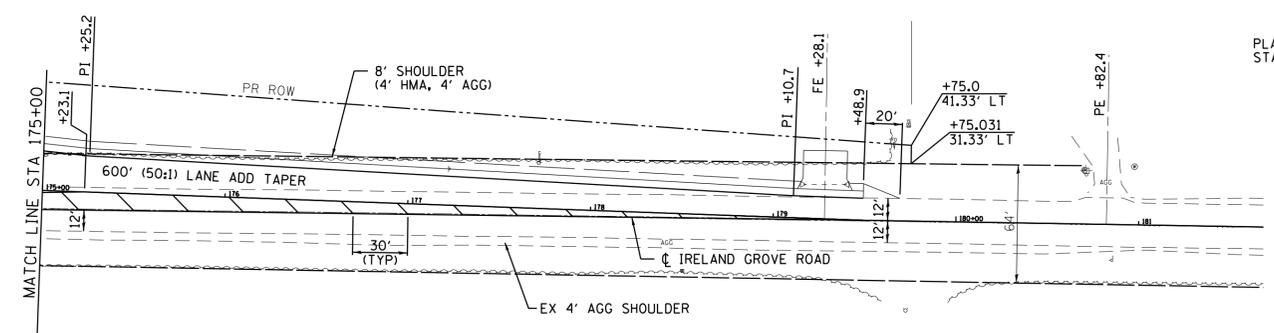
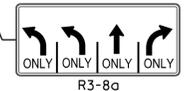
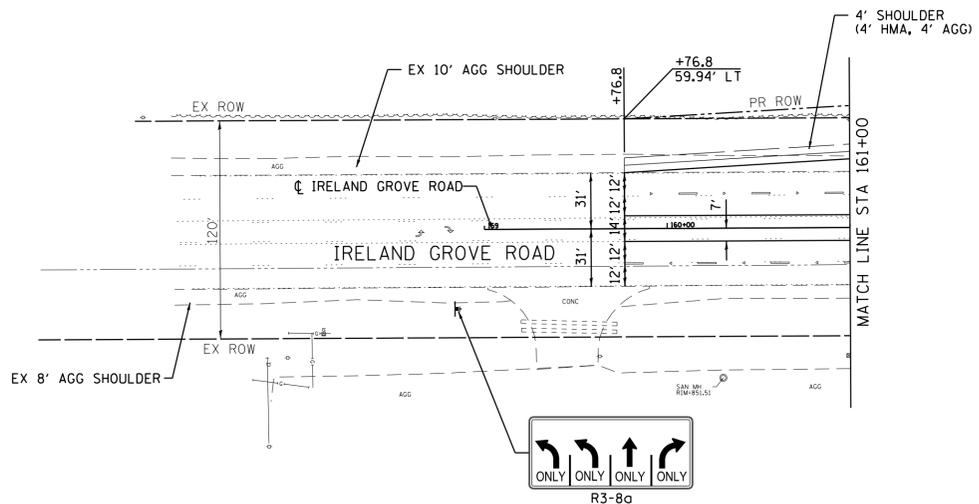
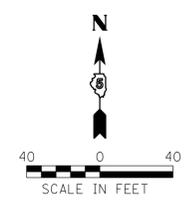
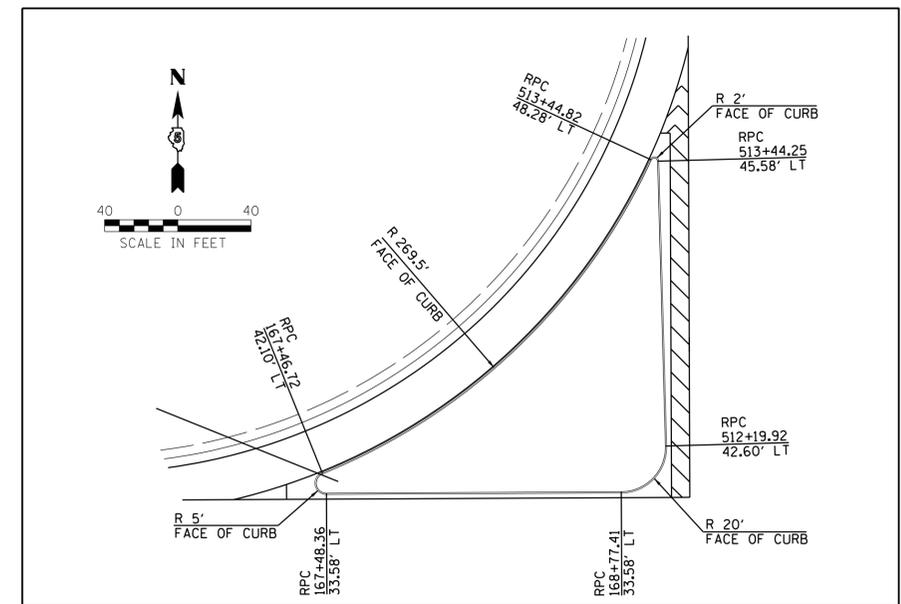
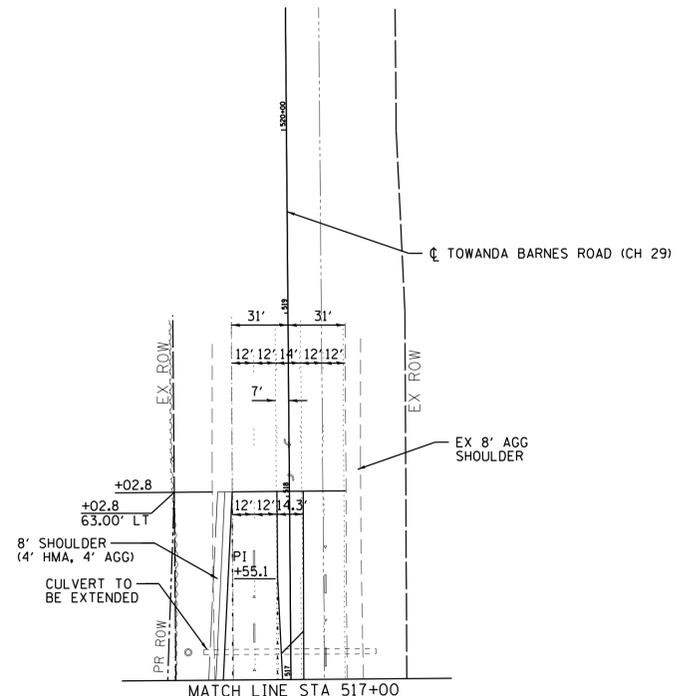
DESIGNED BY PHILIP S. ALLYN (FARNSWORTH GROUP) DATE 2/3/17

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 MCLEAN COUNTY HIGHWAY DEPT.

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 CITY OF BLOOMINGTON

CADD FILE NAME : ( ) I.D.S. SHEET 1 OF 3

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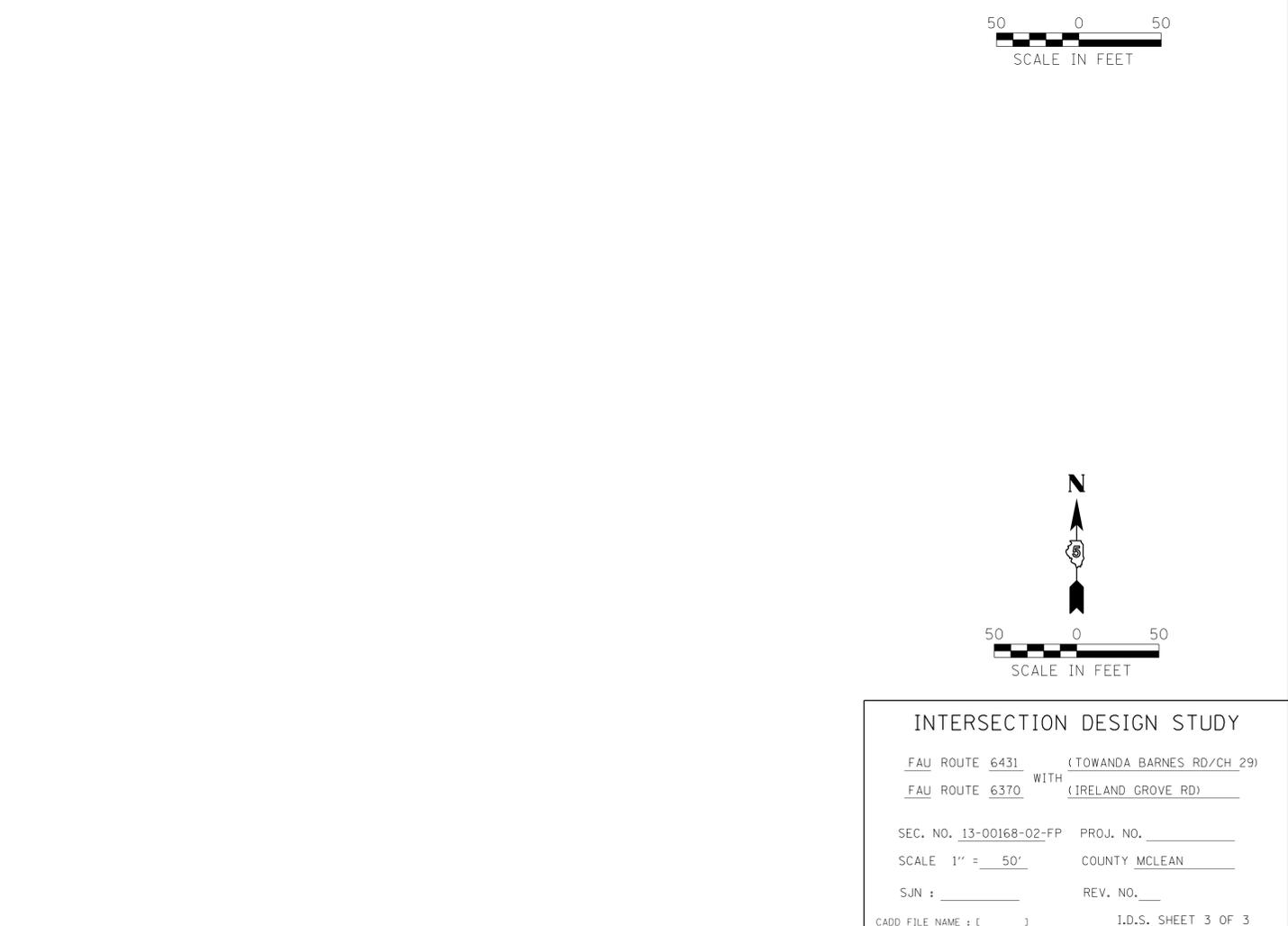
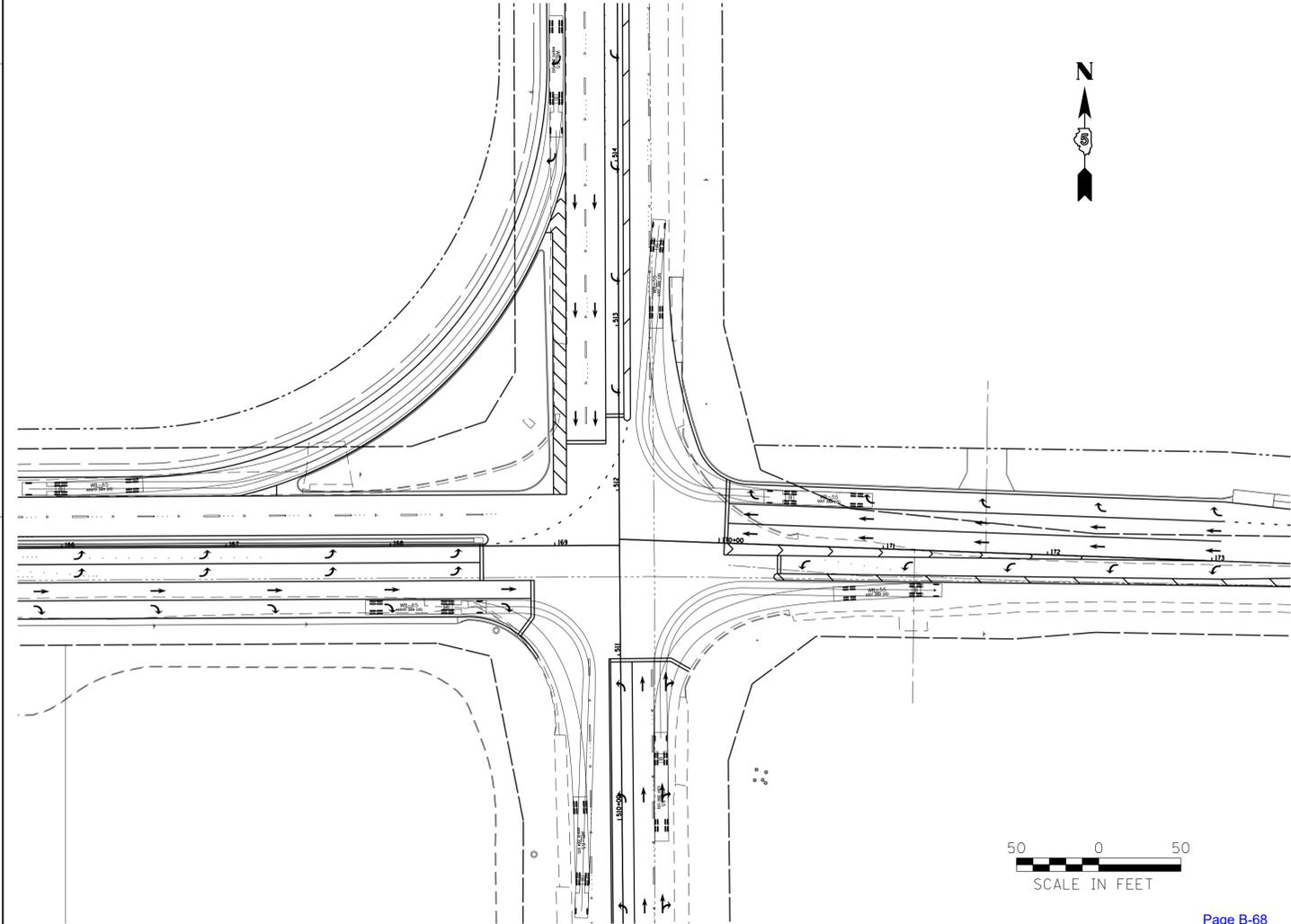
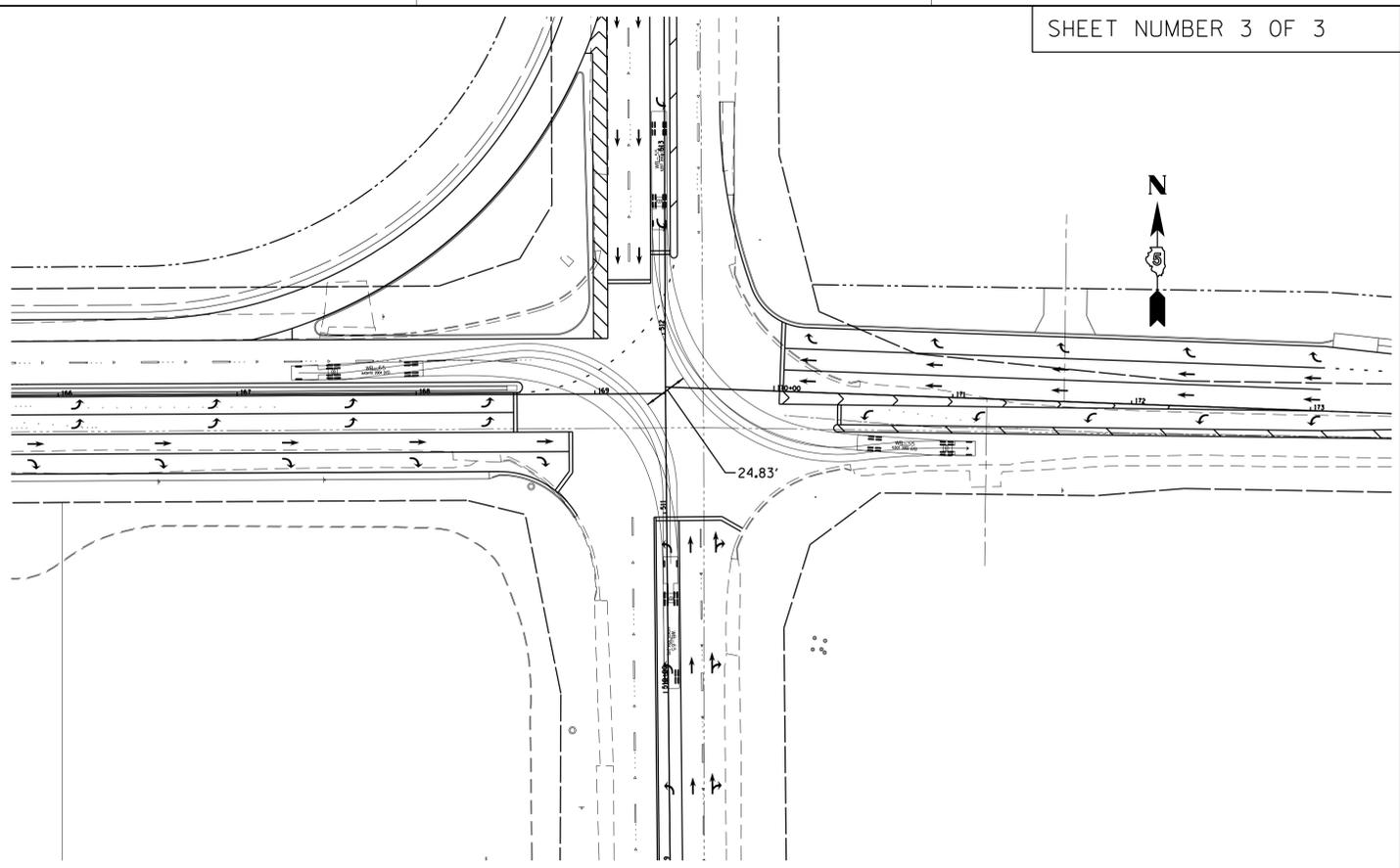
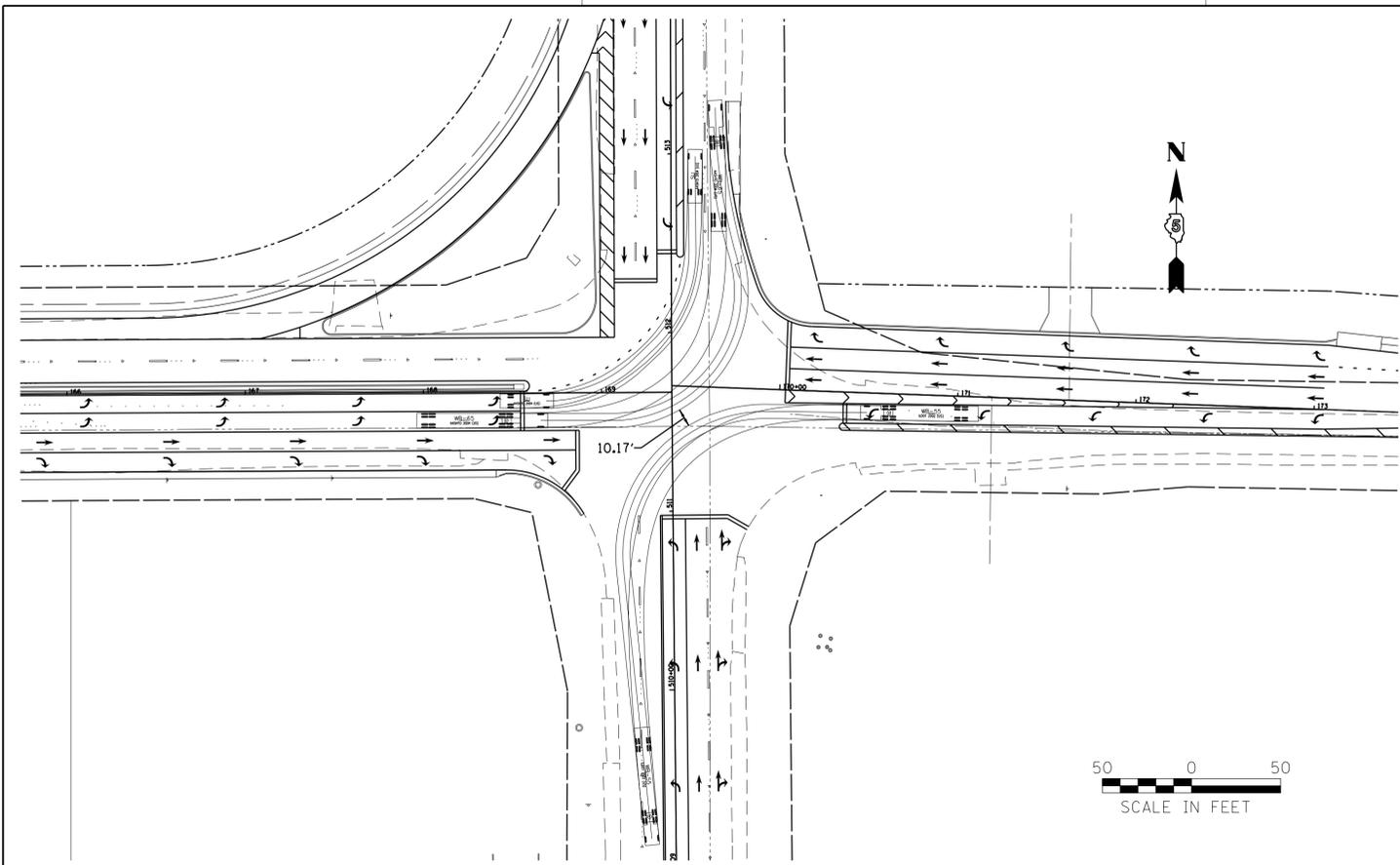
**INTERSECTION DESIGN STUDY**

FAU ROUTE 6431 (TOWANDA BARNES RD/CH 29)  
 WITH  
 FAU ROUTE 6370 (IRELAND GROVE RD)

SEC. NO. 13-00168-02-FP PROJ. NO. \_\_\_\_\_  
 SCALE 1" = 50' COUNTY MCLEAN  
 SJN : \_\_\_\_\_ REV. NO. \_\_\_\_\_

CADD FILE NAME : [ ] I.D.S. SHEET 2 OF 3

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PLOT SCALE = 50.00000 / 1"  
USER NAME = dremmer



**INTERSECTION DESIGN STUDY**

FAU ROUTE 6431 (TOWANDA BARNES RD/CH 29)  
WITH  
FAU ROUTE 6370 (IRELAND GROVE RD)

SEC. NO. 13-00168-02-FP PROJ. NO. \_\_\_\_\_  
SCALE 1" = 50' COUNTY MCLEAN  
SUN : \_\_\_\_\_ REV. NO. \_\_\_\_\_  
CADD FILE NAME : ( ) I.D.S. SHEET 3 OF 3



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## PUBLIC COMMENT

### Towanda Barnes Rd (CH 29) & Ireland Grove Rd (COB) Intersection Improvements

#### Public Information Meeting

McLean County Highway Department, South Garage – September 13, 2017, 5:00pm to 7:00pm

**Comment #1:** As a (newly in June) resident and as a basic traveler thru that intersection for the past 10 years (kids at Benjamin, kids at soccer fields, kids at Evans). Traffic can get very congested adding time and difficulty to get to locations as needed. As a mom with young drivers, I find that having the west bound Ireland Grove (crossing to Towanda Barnes) difficult for them to navigate. I believe that the proposal offered would be a great improvement to traveling in this intersection. It should have been done when Benjamin was build & the city approved the Grove Sub-division.

**Comment #2:** After talking to Jim Karch, I feel this may be a good idea. I think the State Farm traffic will flow better. ???

**Comment #3:** Glad to find out what they are going to do. I think this should help the morning traffic going to State Farm. Jim Karch was very helpful.

**Comment #4:** The proposed changes look fine. My new concern is the intersection of Streid & Ireland Grove. Turning east onto Ireland Grove at school / rush hour is already a tough thing, but with the free-flowing traffic now coming from T-B (Towanda Barnes) onto Ireland Grove, it will be far more dangerous! Please put in a light at Streid / Ireland Grove!

**Comment #5:** This needs to get approved immediately! Can they start yet this year?

**Comment #6:** Currently it is a dangerous intersection that our family travels at least 4 times a day. We support the proposed changes for better traffic flow. Today it usually takes me sitting at the light at least twice to get through. Because of this drivers are running red lights to make it through causing a dangerous situation and delays in the next traffic to start moving. Would like to see the bulk of the construction be done in the summer when school is out. **PLEASE VOTE YES TO APPROVE!!**

**Comment #7:** Yes, I'm for the R (right) turn lane proposal; but, not until the right turn lane is reinstated from Ireland Grove Road south onto Towanda Barnes Rd. Also, move the utility boxes, on the NW (northwest) corner of the intersection, can't see to the N (north) when trying to turn south onto Towanda Barnes from Ireland Grove Road. "Get 'er done"!!

**Comment #8:** We saw these email addresses from the public meeting announcement for Wed, Sep 13<sup>th</sup>. Since Ireland Grove is clearly getting busier in that stretch, we would like to draw your attention to the intersection with Streid. We have had to use this intersection daily, for several years now, on way to work. When waiting to turn left from Streid onto Ireland Grove, traffic coming from further right is hidden by the bend. This makes it more hazardous than any of the other intersections there. We would like to know of any plans you have to ease that situation, rather than make a suggestion at this time. We would have liked to discuss, but do not know if the scheduled meeting will have time to spare for this. Do let us know your thoughts.

**Comment #9:** Unfortunately, I cannot make this evenings meeting. However, I can attest, coming from the Grove subdivision headed West towards State Farm on Ireland Grove Road, there are often wait times of 15-20 minutes to get through the stop light. There is an enormous need for this intersection to be widened to handle more traffic east/west on Ireland Grove Road.

**Comment #10:** Hello! I am very excited to see the conversation taking place about the intersection of Towanda Barnes Rd and Ireland Grove Rd. I am unfortunately unable to attend the meeting next Wednesday, as I teach Religious Ed at St Pat's and that is the first night that we have class.

I have lived out here in the Grove, on Longfield Rd for over 3 years. I moved out here to be close to Benjamin Elementary school, to be certain that my children wouldn't be redistricted as they could in a neighborhood that is further from the school (I used to live in Eagle Crest East). The Grove has grown significantly in the past three years. The section of the neighborhood behind the school has even added two streets! Our neighbors are raising families, going to work, volunteering the community and paying taxes. They should NOT have to sit in traffic on Ireland Grove road through three lights every morning, to get across Towanda Barnes!

Since the school times have changed (at the beginning of the 2016-2017 school year), the time that parents and buses are dropping off at Benjamin Elementary and Cornerstone Christian Academy overlap with the time many adults are heading out to work. This has created a LOT more traffic on Ireland Grove Rd between 7:30 and 8am then there ever used to be. It doesn't help that people are in a hurry in the morning: I have driven by several car accidents at that intersection. No wonder Unit 5 has so many late buses! The intersection backs up around 2:30-2:45pm as well, but there isn't nearly as much volume as in the morning.

My suggestions for the intersection are as follows:

1. Add a right hand turn lane coming from Ireland Grove Rd westbound, onto Towanda Barnes Rd northbound.
2. Upgrade the timers on the lights. (For example, the green light should be longer from 3:30-5:30 for the folks coming to the intersection from State Farm corporate south. That same green light should not be 2 minutes long at 9am!)
3. If people could walk or ride their bikes, there would be fewer cars on the roads. Connecting the Grove to Corporate South via bike path would be the way to go, especially since the Streid Dr section of the Constitution Trail is so close! Maybe now is the time to add a bike lane/trail, crosswalks and signals! Think of the future!!!

Please email me with any further questions. Have a nice day!

Thank you for your time and for your consideration.

**Comment #11:** Last year it was decided to make south bound Towanda Barnes turning onto Ireland Grove a non-stop right turn. Why is it that anything that is needed to help State Farm traffic okay without considering everyone else? Think about residents who live along these roads also. I don't know what is planned but it will affect residents in Dunraven Subdivision, Kate Kids, Subway, Surgery Center, El Toro and golf course. It is hard enough now to get onto Ireland Grove now. We are lucky that the stoplight gives a little break, so we can get onto Road. Why does Ireland Grove have a 55 speed limit; while Route 9, Fort Jesse, and GE Road have a Speed limit of 45mph to Towanda Barnes?

**Comment #12:** I live in the Grove subdivision and have to turn right from Ireland Grove on to Towanda Barnes every morning. The wait time in the mornings can be anywhere between 5-10 minutes when I leave for work at 7:30AM Monday-Friday. It would be extremely beneficial for there to be a right turn lane as many others are also turning right but get stuck behind those going straight west on Ireland Grove. Thank you.

**Comment #13:** Yes, this needs to happen ASAP. This would save many accidents that occur on a weekly/monthly basis especially since the city is expanding in that direction. Thank you.

**Comment #14:** Please see the attached, public comments regarding the public meeting on Wednesday, September 13, 2017 regarding the proposed improvements to Towanda Barnes Road and Ireland Grove Road Intersection. Thank you for your consideration.

Add street lights on Ireland Grove Rd on the East side once you cross Towanda Barnes. There are no street lights until you travel at least one mile on Ireland Grove Rd. This is dangerous as there are narrow streets, dips on the side of the road and a minimal hill that makes it hard to see oncoming cars in the opposite direction when dark.

**Comment #15:** I am concerned about the "Proposed improvements include a free-flow right turn lane on southbound Towanda Barnes Road, additional right turn lanes on Ireland Grove Road for the approaches to Towanda Barnes Road..."

If the free-flow right turn lane on southbound Towanda Barnes Road is constructed, then you will be moving the traffic congestion farther west, creating more traffic concerns on Ireland Grove intersections of: Oakland Ave & Streid Road. Congestion will also be with the roads from Old Farm Lakes and White Eagle subdivision: Bay View Ln, Bear Creek Dr, Ballyshannon Dr, Shaunessey Dr, Stonebrook Ct, and Dover Rd.

I am very familiar with the Streid Road intersection with Ireland Grove, from about 7:00am until 8:30am, the traffic westbound on Ireland Grove, make it very, very difficult to turn left (eastbound) from Streid Rd onto Ireland Grove. With the speed limit of 55 changing to 45 at Streid Road, unfortunately many drivers are drastically exceeding the speed limit which makes a left turn from Streid Road even more difficult. Currently with the lights at Towanda Barnes and Ireland Grove Rd, the timing allows some break in the flow of traffic. However, my concern is, if there is no "break in the action", then it will be almost impossible to turn onto westbound Ireland Grove from Streid.

If you proceed to put a free-flow right turn lane, then you need to look farther west on Ireland Grove to provide safer intersections at Streid Rd and farther west. You need to look at putting traffic signal lights at the Streid & Ireland Grove intersection, and/or better signage, and caution lights.

Again, changes to Towanda Barnes & Ireland Grove Road intersection will have dire consequences of more accidents and congestion farther west, especially at the Streid Rd & Ireland Grove intersection.

**Comment #16:** I am unable to attend the September 13th meeting and want to provide comments on the proposed improvements. I have also attached the comment form PDF file.

I support adding an additional, dedicated right turn lane from Ireland Grove to TB (Towanda Barnes) southbound. I support adding an additional dedicated right turn lane from TB (Towanda Barnes) Southbound to Ireland Grove westbound. I believe the traffic load at peak times supports this proposal. Additionally, I'd ask that light timing for Towanda Barnes be addressed to keep traffic flowing. Currently traffic leaving a green light and driving the speed limit, get to the next intersection in time to hit a yellow or red light, which impedes the flow of traffic.

I support the proposed changes including a free-flow right turn lane on southbound Towanda Barnes Road, and additional right turn lanes on Ireland Grove Road for the approaches to Towanda Barnes Road, along with other geometric, drainage and signal improvements. As a commuter who uses these roads each day, I feel this would provide a much needed improvement for the intersection as traffic has increased quite a bit.

I also would like to ask that as signal improvements are considered, please look into light timing. As a frequent driver on Towanda Barnes, I find that I often leave a green light, only to arrive at the next intersection as the light turns yellow or red. Thank you for your time.

**Comment #17:** I cannot attend the open house meeting next week, but I'd like to share thoughts about the improvements on the Towanda Barnes Ireland Grove intersection. The additional right turn lane on southbound Towanda would greatly help the flow especially during rush hour. Additional turn lanes on Ireland Grove would also be helpful. I hope this project is completed soon. It would be a welcomed improvement.

**Comment #18:** I'm pleased to hear there is consideration to improve the right hand turning options at this intersection. This is definitely needed for westbound traffic on Ireland Grove Rd (Coming from the Grove subdivision) and for southbound traffic on Towanda Barnes. The last improvement included lane changes, which I believe greatly improved east bound traffic flow (two left hand turning lanes) on Ireland Grove Rd. I am hopeful this next change will be just as advantageous.

**Comment #19:** Hi! I am absolutely in favor of the proposed improvements to the Towanda Barnes & Ireland Grove intersection. You did a great job when you created 2 left turn lanes from Ireland Grove to Towanda Barnes. THANK YOU (that was previously awful!), and the other improvements will be a great addition. I use this intersection approximately 10-12 times a week, despite living in Normal. Thank you for making improvements! Can't wait!!

**Comment #20:** Hi. I was not able to make the meeting last night about the future plans for the Towanda Barnes / Ireland Grove intersection. I have lived in the Charterwood Farms subdivision, which is south of said intersection for 25 years. In this time, I have seen many improvements, especially with the widening of Towanda Barnes Road. However, one "improvement" that was made in effect took the right turn lane away (turning south on Towanda Barnes from eastbound Ireland Grove). For those of us who live to the south, this was not an improvement. I realize it was done to help the after work traffic. However, there looks to be plenty of room to widen the lane to once again have a bit more room for those turning right. So, I am requesting that this be part of the discussion at the Oct 3 meeting.

**Comment #21:** Unfortunately I can't make the date, but did want to pass along a suggestion. I travel the road daily and at different times. I know going southbound in the morning can get backed up due to everyone turning west, but I don't think it is enough to warrant a new turn lane being built. As an alternative, making these two changes would be a big help.

1. Add a signal to the southwest corner (for southbound traffic) that includes a turn arrow that can be green when eastbound traffic signal is green.
2. Make the right southbound lane right turn only at that intersection (must be done in combination with #1 to be effective).

The right lane is basically used as turn only today except for the random car, so this should have very little impact on southbound traffic. This doesn't solve the issues of westbound traffic, but I think would solve southbound issues for a low cost compared to expanding to an additional lane. Thanks.

**Comment #22:** I reside on Rachel Ct, Bloomington. For the past fourteen years I have been an IT consultant and each day I travel throughout central & east central Illinois. When I leave my residence I head either to Route 9 or Route 150, depending on my work for the day, both by way of Ireland Grove and Towanda Barnes. I would love to see improvements made to the intersection of Towanda Barnes and Ireland Grove Road. I may not be able to attend the meeting this week as I will be out of town for work, but I wanted to email nonetheless.

The intersection – particularly turning west onto Ireland Grove when you're heading south on Towanda Barnes can be maddening if it is hit during peak usage times. A dedicated turn lane or easy-turn-merge curve would be a significant benefit. Plus, a wide enough easy-flow curve would negate the need to relocate all those telecommunications & turn signal relay boxes on the NW corner of that intersection, quite close to the road.

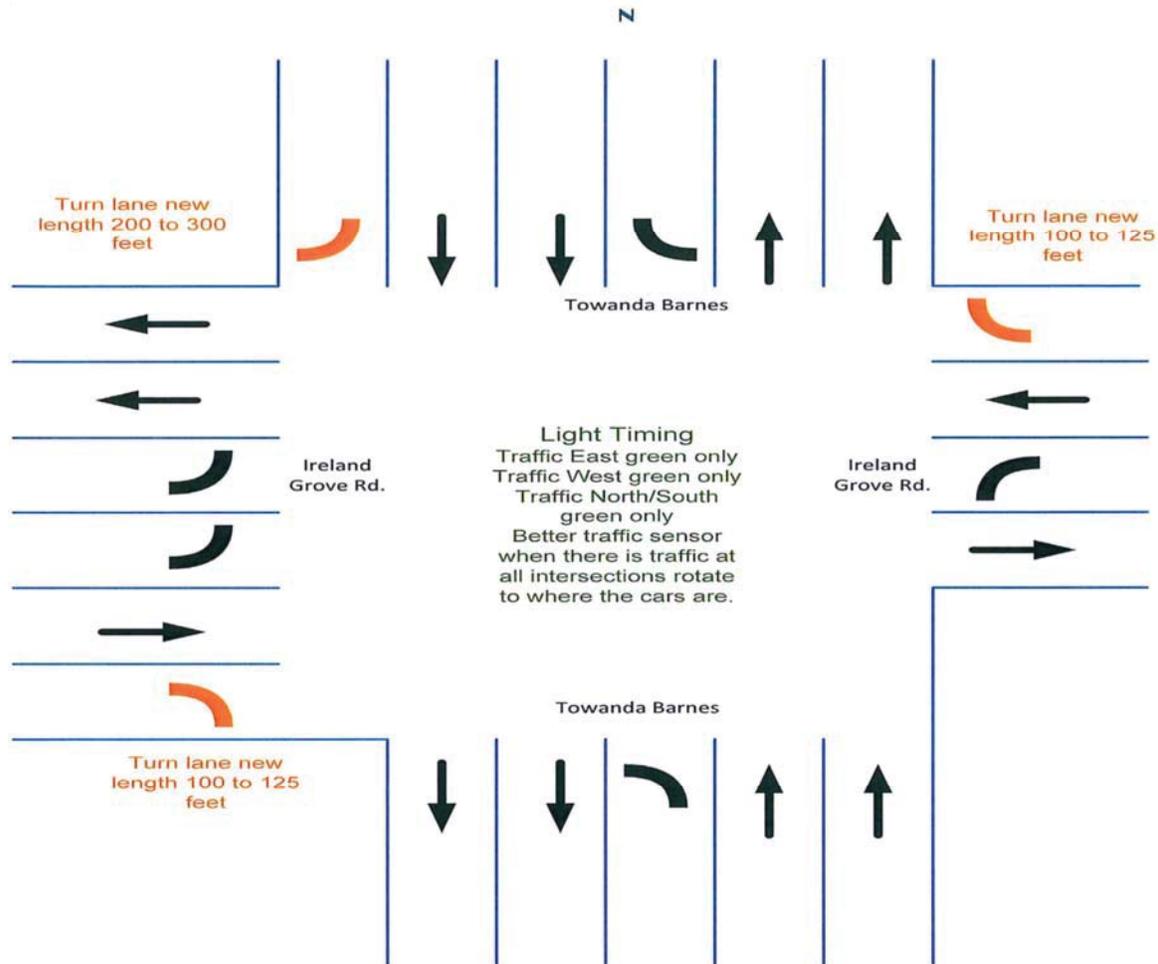
Furthermore, I would love to see a stoplight at the intersection of Ireland Grove Road and Streid Drive, where for four hours a day it becomes practically unusable. If you're heading south on Streid and attempting to turn east onto Ireland Grove it's a crapshoot of being able to during the morning and evening commute hours.

Additionally, it would seem to make sense to consider possibly relocating part of Abraham Road, near Streid & Ireland Grove, and make Abraham run directly into Streid and a 4-way stoplight be installed. As traffic needs grow on that south side by the school there, making Abraham a more direct route (and making it more driver-friendly) with a stoplight & relocating it to line up into Streid & Ireland Grove head-on might be worth researching, albeit likely difficult.

Lastly, I am pleased to hear that it sounds like Hershey will finally be extended down to 150, is that correct? Excited for that to happen.

In closing though, I would like to reiterate my desire for the intersection of Towanda Barnes & Ireland Grove Road to be improved.

**Comment #23:**



**Comment #24:** I have to admit I have mixed feelings about this project. On the positive side, the improvements could contribute to improving the efficiency and safety of the intersection. I live in the Groves of Kickapoo Creek Subdivision. I pass through the intersection often twice or more per day to go to work and other activities. I see long lines of cars waiting to go north on Towanda Barnes from either direction of Ireland Grove, and the morning line of cars coming south on T-B (Towanda Barnes) waiting to turn west on I-G (Ireland Grove). All of this waiting and idling wastes gas and pollutes the air. I have also witnessed accidents and near accidents. I am aware of at least one death at the intersection since we moved to the Grove in 2011. I have seen people,

impatient from waiting at the intersection do very stupid things, like passing traffic on the left waiting to go straight on I-G to turn right in front of the waiting string of cars!!

On the negative side, the City of Bloomington has many financial challenges. Would their share of the project be better spent to pay down the pension deficits, or improve other roads that are traveled by more residents? For example, GE Road from Veterans Parkway to T-B may be structurally sound, but is awful to travel due to the tilting slabs of concrete. The wear and tear contributes to increased maintenance expenses for residents and the city (city vehicles). There are other examples too.

Bottom line, I defer to the professional engineers from Bloomington and McLean County to make the decision. If the expense to do this project is warranted to improve the safety and efficiency of the intersection for a sufficient number of residents, then I support the project. Otherwise, if this is only a project to address concerns of a minimal number of vocal residents, then I do not.

**CITY OF BLOOMINGTON  
REPORT FOR THE TRANSPORTATION COMMISSION  
NOVEMBER 28, 2017**

<b>CASE NUMBER:</b>	<b>SUBJECT:</b>	<b>SUBMITTED BY:</b>
<b>INFORMATION</b>	<b>Proposed Traffic Signals at Streid Drive and Ireland Grove Road</b>	<b>Philip Allyn, PE, PTOE City Traffic Engineer</b>
<b>PETITIONER'S REQUEST:</b>	<b>Item submitted as information for the Transportation Commission. Any feedback or comments are welcome.</b>	

<b>STAFF RECOMMENDATION: N/A</b>
<b>Staff submits the following information to the Commission. Any comments or feedback is appreciated.</b>

**1. ATTACHMENTS:**

- a. Location Map**
- b. MUTCD Traffic Signal Warrant Pages**
- c. Crash History Report**
- d. Signal Warrant Summary**
- e. Span Wire Photos**

**2. BACKGROUND AND SUPPLEMENTAL INFORMATION:**

The Engineering Department Staff receives requests from time to time for various modifications to existing traffic control and regulations. In accordance with Chapter 29, Section 8, Staff contacts the petitioner, evaluates the request, contacts other potentially effected residents as needed, reviews applicable information/code/regulations, and if advantageous to the general public, incorporates a change on an Emergency and/or Experimental Basis. The modifications are reviewed by Staff several months after implementation, and either removed, modified, or when successful results are achieved, requested to be implemented into City Code. Traffic regulation modifications installed on an Emergency and/or Experimental basis are only enforceable for 180 days unless City Code is modified with their inclusion.

Multiple comments and requests have been received by the City to review the intersection of Streid Drive and Ireland Grove Road. Of particular concern is the ability of residents to safely turn southbound from Streid Drive onto Ireland Grove Road. While sight distance does not appear to be an issue, the high volume of traffic on Ireland Grove Road presents difficulties in drivers having adequate gaps to turn, especially to the left. The petitioners requested that the City install traffic signals.

Ireland Grove Road consists of 5 lanes, two in each direction and a center turn lane at this location. In addition, there is a westbound right turn lane. Streid Drive is two lanes (one in each direction) north of the intersection, but widens to separate southbound left and right turn lanes at the intersection. There are stop signs on Streid Drive only.



Staff collected and reviewed past crash data for the intersection. A summary of this data is attached. Over the past five years, there have been 9 crashes, with no more than 2 in any given year. Not included in the attached 5-year report, the 9<sup>th</sup> crash occurred in October of this year and has not yet been included in the database. In reviewing the crash data, the rate of crashes relative to the traffic volumes at the intersection is not noticeably higher than average. Similarly, there did not appear to be a pattern of crash types indicating a geometric or other deficiency of the intersection other than what is typically associated with intersections not performing efficiently.

As specified in Federal Regulations, the Manual on Uniform Traffic Control Devices (MUTCD) is the national standard for all traffic control devices installed on any street, highway, bikeway or private road open to public travel. It contains nine warrants to be reviewed as the backbone of the investigation of the need for a traffic signal. The satisfaction of a traffic signal warrant or warrants does not in itself require the installation of a traffic signal; however, they do provide a strong indication of when signals may be advantageous pending other outside factors.

Existing traffic volumes at the intersection were obtained on September 21, 2017, and compiled for the analysis of the MUTCD warrants. A summary of the results is attached.

- Warrant 1 consists of three subparts and requires that traffic volumes reach a minimum threshold for at least eight hours during a typical day. If any of the subparts

are met, then the warrant is considered met. At this intersection, 1A volumes were met for 10 hours, 1B volumes were met for 8 hours, and the 1A&B combination volumes were met for 10 hours. **Warrant 1 is considered to be met.**

- Warrant 2 requires that traffic volumes reach a minimum threshold for at least four hours during a typical day. At this intersection, the four-hour volume threshold was met for 7 hours, thus **Warrant 2 is considered to be met.**
- Warrant 3 requires that traffic volumes reach a minimum threshold during the Peak Hour of a typical day. At this intersection, the peak hour volume threshold was met for 5 hours, thus **Warrant 3 is considered to be met.**
- Warrant 4 requires that both vehicular roadway traffic volumes and pedestrian volumes reach certain thresholds. At this intersection, there is essentially no pedestrian activity and thus **Warrant 4 is NOT met.**
- Warrant 7 relates to crash experience and requires both a minimum volume of vehicular traffic and five or more reported crashes in a 12-month period, of types susceptible to correction by a traffic control signal, with each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash. Applicable crashes did not exceed 5 in any 12-month period of the past 5 years reviewed, and thus **Warrant 7 is NOT met.**
- Warrant 5 (School Crossing), Warrant 6 (Coordinated Signal System), Warrant 8 (Roadway Network), and Warrant 9 (Intersection Near a Grade Crossing (Railroad)) are not applicable to this intersection and thus are NOT met.

Staff visited the site and visually verified the noticeable backups on Streid Drive throughout the morning hours and in the evening hours. While this intersection is included in the long-range plan as part of a larger project with Abraham Road and Hamilton Road, there are currently no plans or money specifically budgeted for improvements this or next fiscal year. However, since multiple traffic signal warrants are met by a significant margin, Staff began to explore possibilities for installing signals at this intersection.

Other signalization projects currently planned for the next couple years are being re-evaluated to determine whether this intersection should move higher on the priority list. Modifying this intersection to an all-way stop is not feasible due to the high volumes on Ireland Grove Road and the uneven traffic distribution between Streid Drive and Ireland Grove Road.

Staff continued to research out of the box ideas to deal with our infrastructure needs yet maintain required standards. One option that is currently being explored is the installation of signal heads on span wire rather than on mast arms as an interim pilot project. Four poles will be set, one in each quadrant, with cables stretched between them. Signal heads will be hung from the cables rather than on mast arms and wires will be run along the cables connecting the signal heads to the controller eliminating the need to install underground conduits.

Several newer technologies are being looked at for potential incorporation including LED signal heads, a low-voltage controller and solar panels for power. Equipment specifics are still being researched and finalized, however, it is anticipated that traffic signals should be able to be installed at this location meeting Federal MUTCD standards for a fraction of the cost of a typical permanent type installation by a contractor. By utilizing City Staff for portions of the installation, purchasing equipment directly from suppliers, and eliminating high cost mast arms and all underground work, significant savings should be realized. It is estimated that this work should be able to be completed for less than \$70,000. For comparison, new signals built traditionally, would likely cost at least \$300,000 for the signal work alone.

Staff anticipates finalizing design in the next month, allowing construction to be completed this spring, and potentially earlier with favorable weather. For a traditional installation, construction would not be able to be completed until fall, 2018 at the earliest. In addition to design work and the bidding process, the project would also be delayed due to the time required to obtain materials. Mast arms in particular often have up to six to nine months of lead time for manufacturing.

An additional benefit is the ability to cheaply modify the equipment as needed once other intersection modifications are warranted. For example, as the development in the area directly to the south continue, Hamilton Road likely will be ultimately extended to Towanda Barnes Road and Abraham Road will be realigned to create a 4-leg intersection at Streid Drive. This interim signal configuration will be easily replaced with permanent equipment at that time designed for the final intersection layout, rather than relocating permanent equipment installed previously.

Staff believes this approach will be successful, leading to similar methods being considered in the future at other locations to lower infrastructure costs or delay more expensive signal systems until additional funding is available.

The most significant downside with this proposal is the aesthetic of the span wire system. In Central Illinois, span wire signal installations are typically used only as a short term, temporary installation as part of a larger roadway construction project, meaning this system will look different than what most people are used to seeing for a longer term. However, nationally, span wire systems can be fairly common. Attached is a photo of a similar span wire system installed at an intersection on the north side of Peoria on IL Route 40 (Knoxville Ave.) and the eastbound exit ramp from Route 6.

The current intent is to have Bodine Electric set the poles, connect the span wires and drive the down-guy supports. City Electricians will install the signal heads, controller, and wiring and complete the electrical work. The City currently is under contract with Bodine Electric on an as-needed basis for miscellaneous work that City crews are not equipped to complete. Also included in the current budget is the purchase of new and/or replacement traffic signal equipment. Adequate funds remain in both budget items to appear to cover the proposed work at this intersection as well as leave a remainder for contingency needs later in the fiscal year.

**3. STAFF RECOMMENDATION:**

Staff submits the following information to the Commission. Any comments or feedback is appreciated.

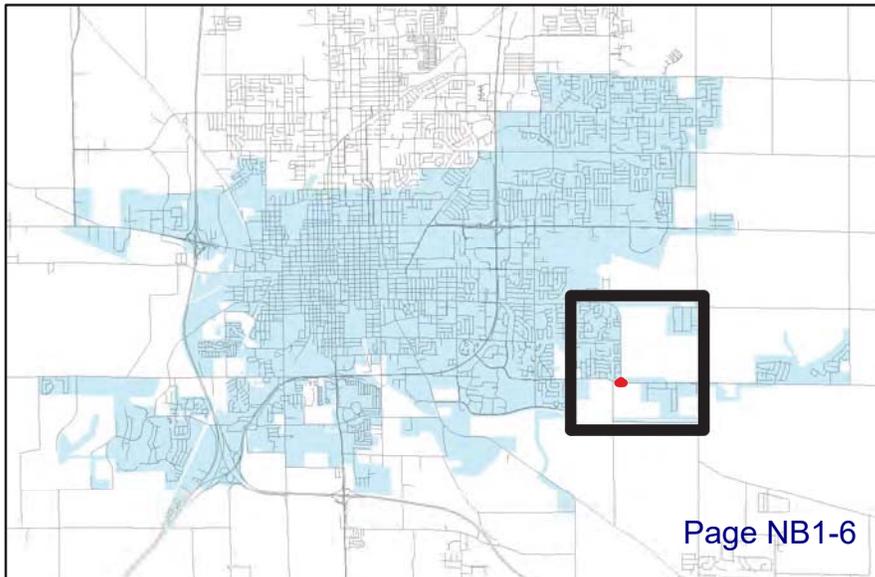
Respectfully submitted,

Philip Allyn, PE, PTOE  
City Traffic Engineer

# Streid Dr @ Ireland Grove Rd



0 650 1,300  
Feet  
Date: 11/21/2017



## CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

### Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

#### Standard:

- 01 An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.
- 02 The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:
- Warrant 1, Eight-Hour Vehicular Volume
  - Warrant 2, Four-Hour Vehicular Volume
  - Warrant 3, Peak Hour
  - Warrant 4, Pedestrian Volume
  - Warrant 5, School Crossing
  - Warrant 6, Coordinated Signal System
  - Warrant 7, Crash Experience
  - Warrant 8, Roadway Network
  - Warrant 9, Intersection Near a Grade Crossing
- 03 The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

#### Support:

- 04 Sections 8C.09 and 8C.10 contain information regarding the use of traffic control signals instead of gates and/or flashing-light signals at highway-rail grade crossings and highway-light rail transit grade crossings, respectively.
- Guidance:*
- 05 A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.
- 06 A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.
- 07 A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow.
- 08 The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2.
- 09 Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.
- 10 Similar engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.
- 11 At a location that is under development or construction and where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into stop-and-go operation to determine if the signal is justified. If not justified, the signal should be taken out of stop-and-go operation or removed.
- 12 For signal warrant analysis, a location with a wide median, even if the median width is greater than 30 feet, should be considered as one intersection.

## Option:

- 13 At an intersection with a high volume of left-turn traffic from the major street, the signal warrant analysis may be performed in a manner that considers the higher of the major-street left-turn volumes as the “minor-street” volume and the corresponding single direction of opposing traffic on the major street as the “major-street” volume.
- 14 For signal warrants requiring conditions to be present for a certain number of hours in order to be satisfied, any four sequential 15-minute periods may be considered as 1 hour if the separate 1-hour periods used in the warrant analysis do not overlap each other and both the major-street volume and the minor-street volume are for the same specific one-hour periods.
- 15 For signal warrant analysis, bicyclists may be counted as either vehicles or pedestrians.

## Support:

- 16 When performing a signal warrant analysis, bicyclists riding in the street with other vehicular traffic are usually counted as vehicles and bicyclists who are clearly using pedestrian facilities are usually counted as pedestrians.

## Option:

- 17 Engineering study data may include the following:
- A. The number of vehicles entering the intersection in each hour from each approach during 12 hours of an average day. It is desirable that the hours selected contain the greatest percentage of the 24-hour traffic volume.
  - B. Vehicular volumes for each traffic movement from each approach, classified by vehicle type (heavy trucks, passenger cars and light trucks, public-transit vehicles, and, in some locations, bicycles), during each 15-minute period of the 2 hours in the morning and 2 hours in the afternoon during which total traffic entering the intersection is greatest.
  - C. Pedestrian volume counts on each crosswalk during the same periods as the vehicular counts in Item B and during hours of highest pedestrian volume. Where young, elderly, and/or persons with physical or visual disabilities need special consideration, the pedestrians and their crossing times may be classified by general observation.
  - D. Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements at the location under study. These persons might not be adequately reflected in the pedestrian volume count if the absence of a signal restrains their mobility.
  - E. The posted or statutory speed limit or the 85<sup>th</sup>-percentile speed on the uncontrolled approaches to the location.
  - F. A condition diagram showing details of the physical layout, including such features as intersection geometrics, channelization, grades, sight-distance restrictions, transit stops and routes, parking conditions, pavement markings, roadway lighting, driveways, nearby railroad crossings, distance to nearest traffic control signals, utility poles and fixtures, and adjacent land use.
  - G. A collision diagram showing crash experience by type, location, direction of movement, severity, weather, time of day, date, and day of week for at least 1 year.
- 18 The following data, which are desirable for a more precise understanding of the operation of the intersection, may be obtained during the periods described in Item B of Paragraph 17:
- A. Vehicle-hours of stopped time delay determined separately for each approach.
  - B. The number and distribution of acceptable gaps in vehicular traffic on the major street for entrance from the minor street.
  - C. The posted or statutory speed limit or the 85<sup>th</sup>-percentile speed on controlled approaches at a point near to the intersection but unaffected by the control.
  - D. Pedestrian delay time for at least two 30-minute peak pedestrian delay periods of an average weekday or like periods of a Saturday or Sunday.
  - E. Queue length on stop-controlled approaches.

**Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume**

## Support:

- 01 The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.
- 02 The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.
- 03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

**Standard:**

- 04 The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:
- A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection;
  - B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Option:

- 05 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Guidance:

- 06 The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

**Standard:**

- 07 The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:
- A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection;
  - B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

**Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume**

**Condition A—Minimum Vehicular Volume**

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

**Condition B—Interruption of Continuous Traffic**

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>	100% <sup>a</sup>	80% <sup>b</sup>	70% <sup>c</sup>	56% <sup>d</sup>
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

<sup>a</sup> Basic minimum hourly volume

<sup>b</sup> Used for combination of Conditions A and B after adequate trial of other remedial measures

<sup>c</sup> May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

<sup>d</sup> May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

## Option:

- 08 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

**Section 4C.03 Warrant 2, Four-Hour Vehicular Volume**

## Support:

- 01 The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

**Standard:**

- 02 **The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.**

## Option:

- 03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

**Section 4C.04 Warrant 3, Peak Hour**

## Support:

- 01 The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

**Standard:**

- 02 **This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.**
- 03 **The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:**
- A. **If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:**
    1. **The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and**
    2. **The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and**
    3. **The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.**
  - B. **The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.**

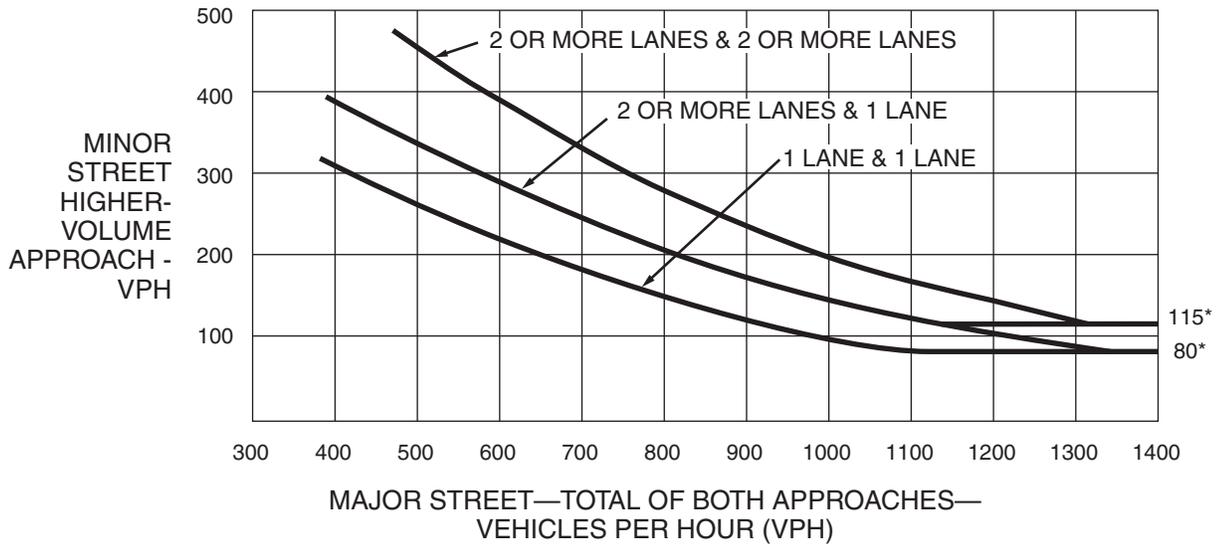
## Option:

- 04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in the second category of the Standard.
- 05 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

*Guidance:*

- 06 *If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.*

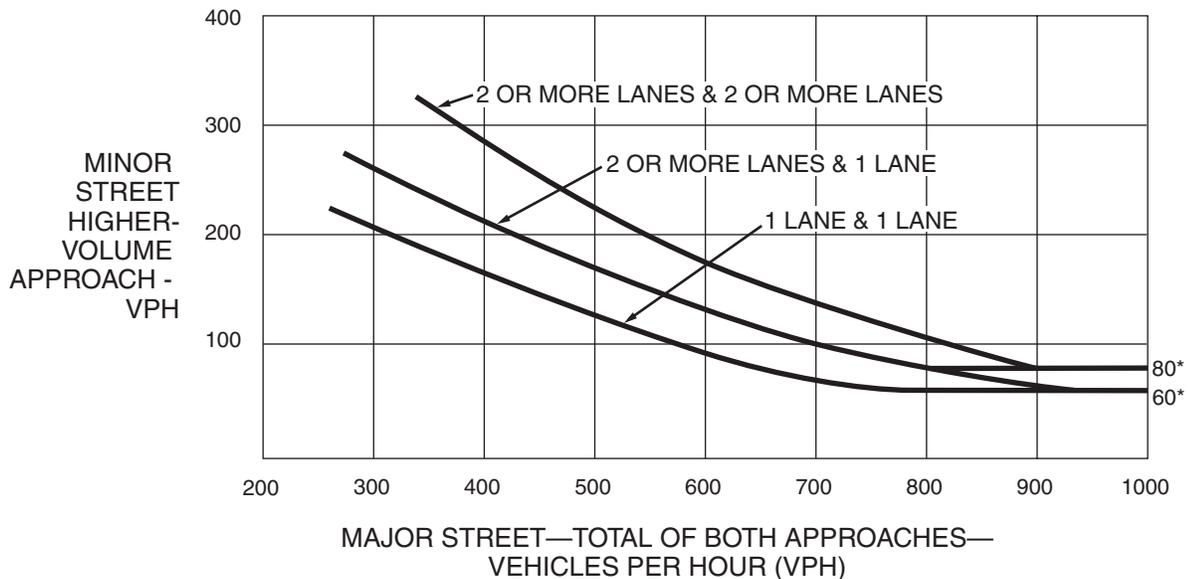
**Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume**



\*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

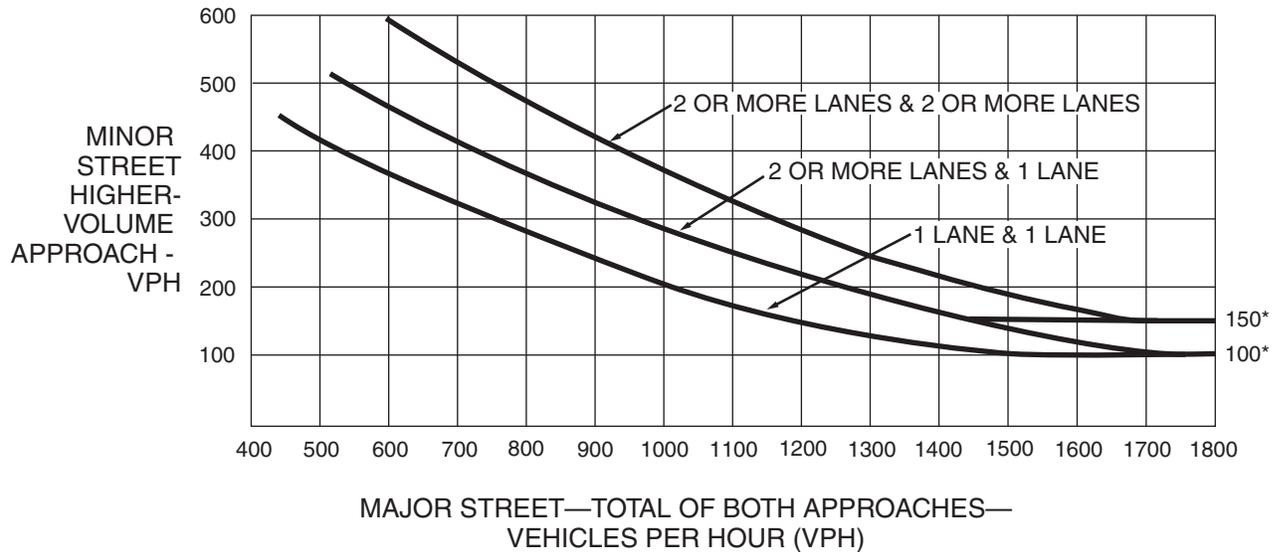
**Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)**

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



\*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

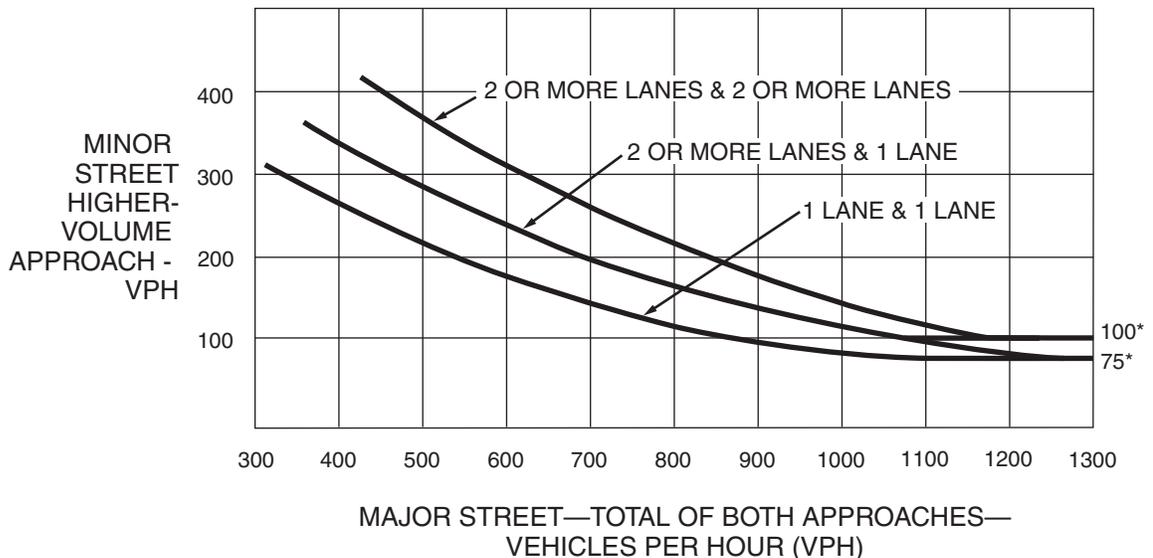
**Figure 4C-3. Warrant 3, Peak Hour**



\*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

**Figure 4C-4. Warrant 3, Peak Hour (70% Factor)**

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



\*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

**Section 4C.05 Warrant 4, Pedestrian Volume****Support:**

01 The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

**Standard:**

02 **The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:**

- A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or
- B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.

**Option:**

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 35 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-6 may be used in place of Figure 4C-5 to evaluate Criterion A in Paragraph 2, and Figure 4C-8 may be used in place of Figure 4C-7 to evaluate Criterion B in Paragraph 2.

**Standard:**

04 **The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

05 **If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E.**

**Guidance:**

06 *If this warrant is met and a traffic control signal is justified by an engineering study, then:*

- A. *If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.*
- B. *If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs, and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.*
- C. *Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.*

**Option:**

07 The criterion for the pedestrian volume crossing the major street may be reduced as much as 50 percent if the 15th-percentile crossing speed of pedestrians is less than 3.5 feet per second.

08 A traffic control signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provide gaps of adequate length for pedestrians to cross the street.

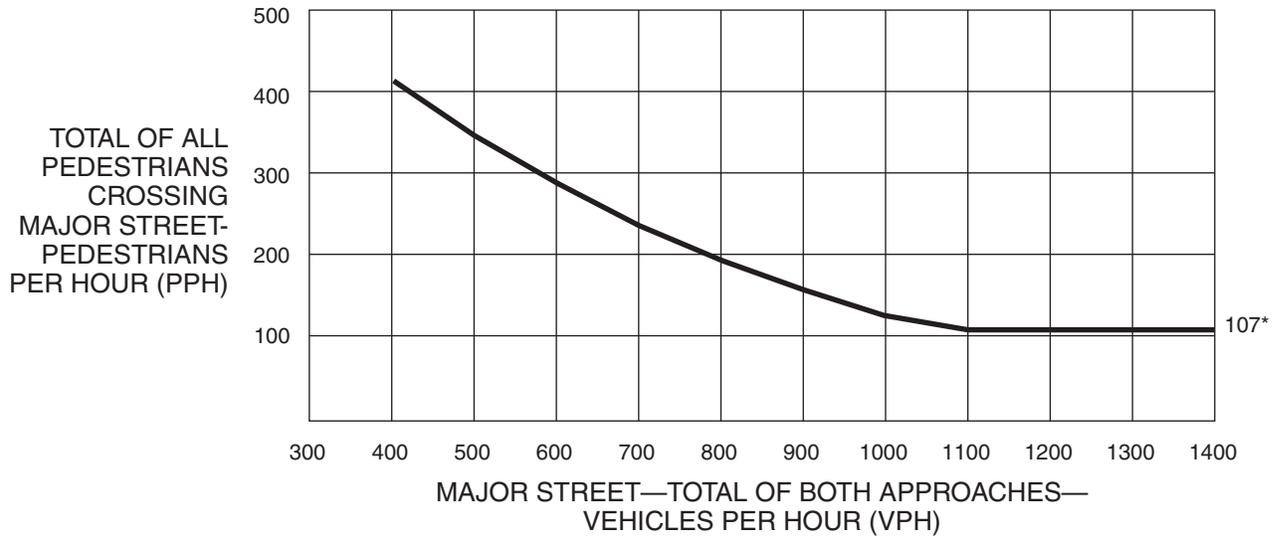
**Section 4C.06 Warrant 5, School Crossing****Support:**

01 The School Crossing signal warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purposes of this warrant, the word "schoolchildren" includes elementary through high school students.

**Standard:**

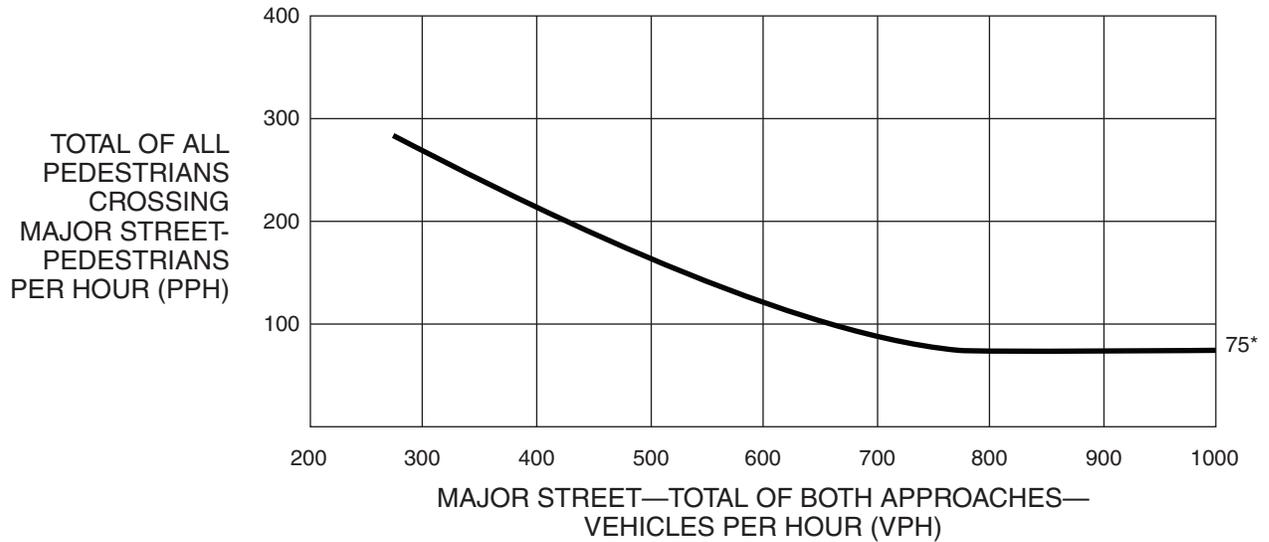
02 **The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of schoolchildren at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.**

**Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume**



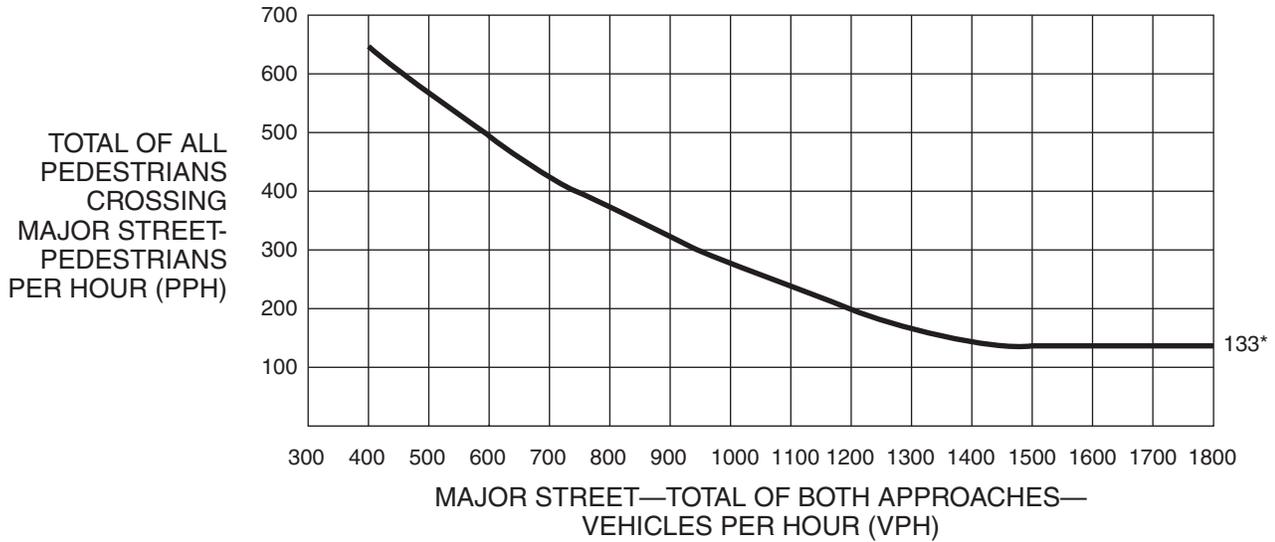
\*Note: 107 pph applies as the lower threshold volume.

**Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)**



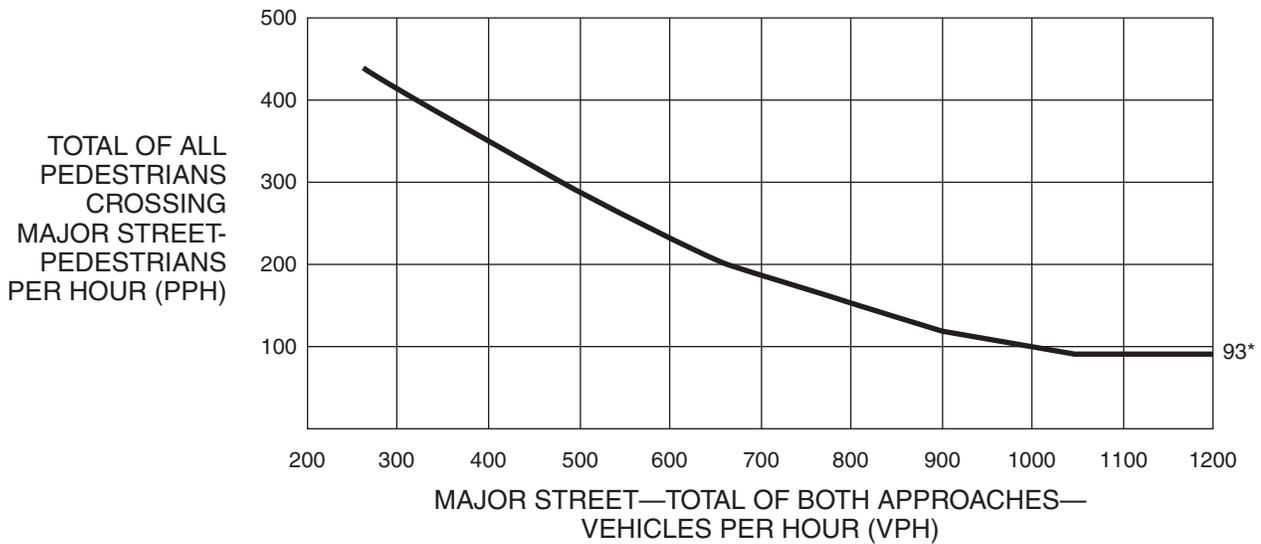
\*Note: 75 pph applies as the lower threshold volume.

**Figure 4C-7. Warrant 4, Pedestrian Peak Hour**



\*Note: 133 pph applies as the lower threshold volume.

**Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)**



\*Note: 93 pph applies as the lower threshold volume.

- 03 **Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.**
- 04 **The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

*Guidance:*

- 05 *If this warrant is met and a traffic control signal is justified by an engineering study, then:*
- A. *If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.*
  - B. *If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs, and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.*
  - C. *Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.*

#### **Section 4C.07 Warrant 6, Coordinated Signal System**

**Support:**

- 01 Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.

**Standard:**

- 02 **The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:**
- A. **On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.**
  - B. **On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.**

*Guidance:*

- 03 *The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1,000 feet.*

#### **Section 4C.08 Warrant 7, Crash Experience**

**Support:**

- 01 The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

**Standard:**

- 02 **The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:**
- A. **Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and**
  - B. **Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and**
  - C. **For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.**

Option:

- 03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

#### **Section 4C.09 Warrant 8, Roadway Network**

Support:

- 01 Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.

**Standard:**

- 02 **The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:**
- A. **The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or**
  - B. **The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).**
- 03 **A major route as used in this signal warrant shall have at least one of the following characteristics:**
- A. **It is part of the street or highway system that serves as the principal roadway network for through traffic flow.**
  - B. **It includes rural or suburban highways outside, entering, or traversing a city.**
  - C. **It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.**

#### **Section 4C.10 Warrant 9, Intersection Near a Grade Crossing**

Support:

- 01 The Intersection Near a Grade Crossing signal warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

*Guidance:*

- 02 *This signal warrant should be applied only after adequate consideration has been given to other alternatives or after a trial of an alternative has failed to alleviate the safety concerns associated with the grade crossing. Among the alternatives that should be considered or tried are:*
- A. *Providing additional pavement that would enable vehicles to clear the track or that would provide space for an evasive maneuver, or*
  - B. *Reassigning the stop controls at the intersection to make the approach across the track a non-stopping approach.*

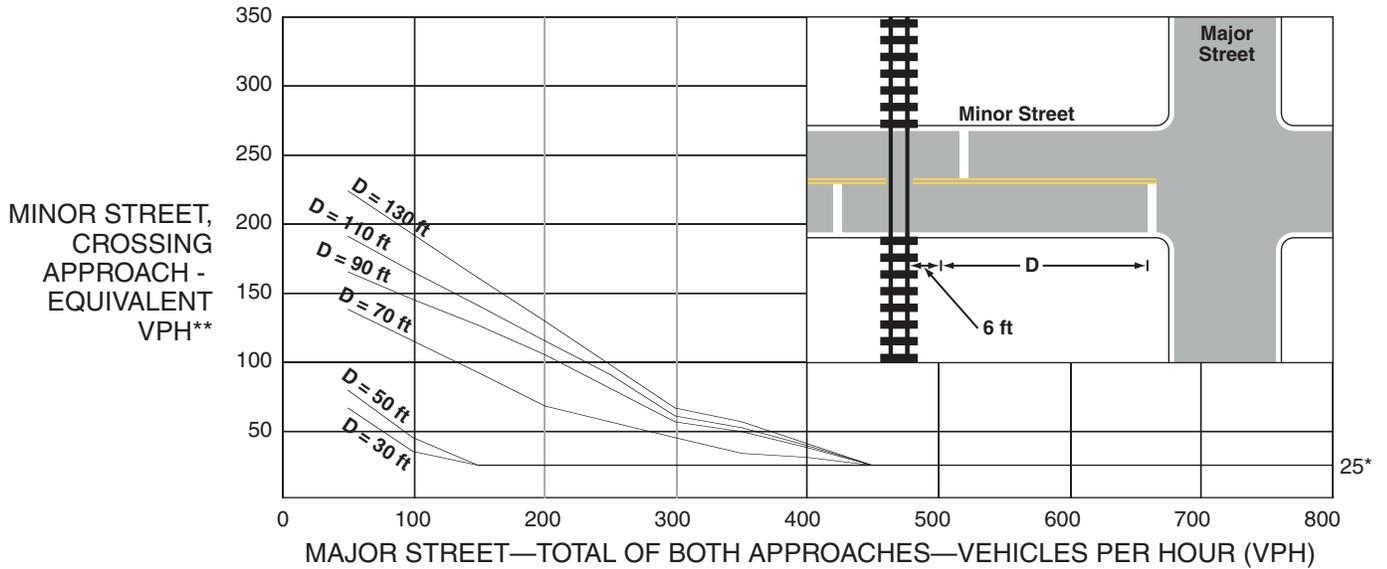
**Standard:**

- 03 **The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:**
- A. **A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and**
  - B. **During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13.**

*Guidance:*

- 04 *The following considerations apply when plotting the traffic volume data on Figure 4C-9 or 4C-10:*
- A. *Figure 4C-9 should be used if there is only one lane approaching the intersection at the track crossing location and Figure 4C-10 should be used if there are two or more lanes approaching the intersection at the track crossing location.*

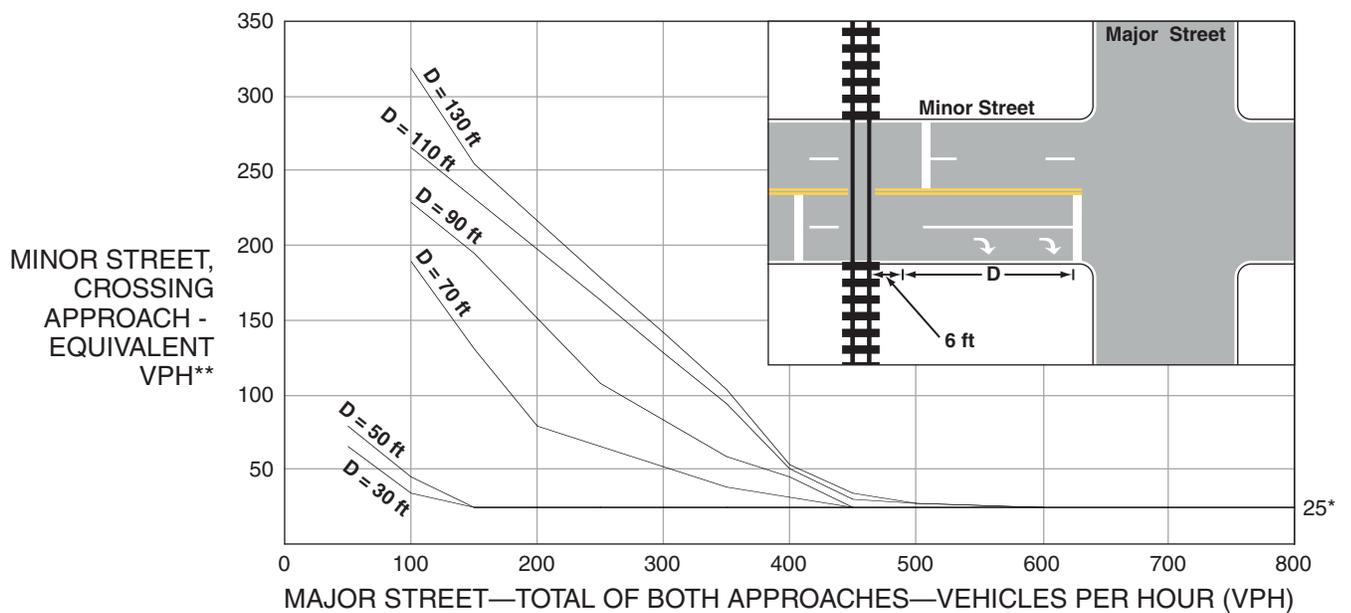
**Figure 4C-9. Warrant 9, Intersection Near a Grade Crossing (One Approach Lane at the Track Crossing)**



\* 25 vph applies as the lower threshold volume

\*\* VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

**Figure 4C-10. Warrant 9, Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)**



\* 25 vph applies as the lower threshold volume

\*\* VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

- B. After determining the actual distance *D*, the curve for the distance *D* that is nearest to the actual distance *D* should be used. For example, if the actual distance *D* is 95 feet, the plotted point should be compared to the curve for *D* = 90 feet.
- C. If the rail traffic arrival times are unknown, the highest traffic volume hour of the day should be used.

Option:

- 05 The minor-street approach volume may be multiplied by up to three adjustment factors as provided in Paragraphs 6 through 8.
- 06 Because the curves are based on an average of four occurrences of rail traffic per day, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-2 for the appropriate number of occurrences of rail traffic per day.
- 07 Because the curves are based on typical vehicle occupancy, if at least 2% of the vehicles crossing the track are buses carrying at least 20 people, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-3 for the appropriate percentage of high-occupancy buses.
- 08 Because the curves are based on tractor-trailer trucks comprising 10% of the vehicles crossing the track, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-4 for the appropriate distance and percentage of tractor-trailer trucks.

**Standard:**

- 09 **If this warrant is met and a traffic control signal at the intersection is justified by an engineering study, then:**
  - A. The traffic control signal shall have actuation on the minor street;
  - B. Preemption control shall be provided in accordance with Sections 4D.27, 8C.09, and 8C.10; and
  - C. The grade crossing shall have flashing-light signals (see Chapter 8C).

*Guidance:*

- 10 *If this warrant is met and a traffic control signal at the intersection is justified by an engineering study, the grade crossing should have automatic gates (see Chapter 8C).*

**Table 4C-2. Warrant 9, Adjustment Factor for Daily Frequency of Rail Traffic**

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

**Table 4C-3. Warrant 9, Adjustment Factor for Percentage of High-Occupancy Buses**

% of High-Occupancy Buses* on Minor-Street Approach	Adjustment Factor
0%	1.00
2%	1.09
4%	1.19
6% or more	1.32

\* A high-occupancy bus is defined as a bus occupied by at least 20 people.

**Table 4C-4. Warrant 9, Adjustment Factor for Percentage of Tractor-Trailer Trucks**

% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

Police Report Number	Date	Day	Time	Type	Dist-ance	Dir	Pri Prop	A	B	C	Injuries		Travel Direction		Action		Surface Condition	Lighting Condition		
											Injury	Property	Unit 1	Unit 2	Unit 1	Unit 2			Unit 1	Unit 2
6	Intersection	0	1)	Pedestrian	0	9)	Parked Vehicle	0	:12-1A	0	:8-9A	1	:4-5P	7	1) Dry	7	1) Daylight			
1	Midblock	0	2)	Pedalcyclist	0	10)	Turning	0	:1-2A	0	:9-10A	0	:5-6P	0	2) Wet	0	2) Dawn			
1	Private Property	0	3)	Train	0	11)	Rear End	0	:2-3A	0	:10-11A	0	:6-7P	0	3) Snow or Slush	0	3) Dusk			
8	Total	0	4)	Animal	0	12)	Side Swipe Same Direction	0	:3-4A	1	:11-12P	0	:7-8P	1	4) Ice	1	4) Darkness			
		0	5)	Overturned	0	13)	Side Swipe Opposite Dir	0	:4-5A	0	:12-1P	1	:8-9P	0	5) Sand, Mud, Dirt	0	5) Dark, Lighted Rd			
		3	6)	Fixed Object	0	14)	Head On	0	:5-6A	1	:1-2P	0	:9-10P	0	6) Other					
		0	7)	Other Object	0	15)	Angle	1	:6-7A	0	:2-3P	0	:10-11P							
		0	8)	Non Collision	0			0	:7-8A	0	:3-4P	0	:11-12A							
		Injury Totals																		
		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																		
		1978 STREID DR @ IRELAND GROVE RD																		
20121581	10/10/2012	Wed	6:33 AM	FIXED OBJECT	0	W	N	0	0	0	W	STRAIGHT AHEAD	OTHER	OTHER	DRY	DRY	1			
20121800	11/17/2012	Sat	11:36 AM	ANGLE	0	N	0	0	0	0	S	TURNING LEFT	STRAIGHT AHEAD	STRAIGHT AHEAD	DRY	DRY	1			
20131216	7/23/2013	Tue	4:15 PM	REAR END	0	N	0	0	0	0	S	STRAIGHT AHEAD	STRAIGHT AHEAD	SLOW/STOP - LEFT TURN	DRY	DRY	1			
20132160	12/29/2013	Sun	1:00 PM	FIXED OBJECT	100	E	N	0	0	0	SE	SE	OTHER	ICE	ICE	ICE	1			
15-44178	1/21/2015	Wed	9:23 AM	TURNING	0	N	0	0	0	0	S	TURNING LEFT	STRAIGHT AHEAD	DRY	DRY	1				
15-56391	12/3/2015	Thu	8:04 AM	TURNING	0	N	0	0	0	0	S	TURNING RIGHT	TURNING RIGHT	DRY	DRY	1				
16-63568	2/28/2016	Sun	8:13 PM	FIXED OBJECT	800	E	Y	0	0	0	E	SKIDDING/ CONTROL LOS	OTHER	DRY	DRY	4				
17-39310	9/19/2017	Tue	8:07 AM	TURNING	0	N	0	0	0	0	S	TURNING LEFT	CHANGING LANES	DRY	DRY	1				

# City of Bloomington Public Works Dept.

Traffic Engineering Division

Traffic Signal Warrant Report

Study Name : **StreidDr@IrelandGrove2017**

Study Date : **11/06/17**

## Signal Warrants - Summary

### Major Street Approaches

**Eastbound: Ireland Grove Rd**

Number of Lanes: **2**

Approach Speed: **45**

Total Approach Volume: **5,475**

**Westbound: Ireland Grove Rd**

Number of Lanes: **2**

Approach Speed: **55**

Total Approach Volume: **7,084**

### Minor Street Approaches

**Northbound: None**

Number of Lanes: **1**

Total Approach Volume: **0**

**Southbound: Streid Dr**

Number of Lanes: **1**

Total Approach Volume: **2,011**

### Warrant Summary (Rural values apply.)

<b>Warrant 1 - Eight Hour Vehicular Volumes</b> .....	<b>Satisfied</b>
<b>Warrant 1A - Minimum Vehicular Volume</b> .....Satisfied	
Required volumes reached for 10 hours, 8 are needed	
<b>Warrant 1B - Interruption of Continuous Traffic</b> .....Satisfied	
Required volumes reached for 8 hours, 8 are needed	
<b>Warrant 1 A&amp;B - Combination of Warrants</b> .....Satisfied	
Required volumes reached for 11 hours, 8 are needed	
<b>Warrant 2 - Four Hour Volumes</b> .....	<b>Satisfied</b>
Number of hours (7) volumes exceed minimum >= minimum required (4).	
<b>Warrant 3 - Peak Hour</b> .....	<b>Satisfied</b>
<b>Warrant 3A - Peak Hour Delay</b> .....Satisfied	
Number of hours (28) volumes exceed minimum >= required (1). Delay data not evaluated.	
<b>Warrant 3B - Peak Hour Volumes</b> .....Satisfied	
Volumes exceed minimums for at least one hour.	
<b>Warrant 4 - Pedestrian Volumes</b> .....	<b>Not Evaluated</b>
<b>Warrant 5 - School Crossing</b> .....	<b>Not Evaluated</b>
<b>Warrant 6 - Coordinated Signal System</b> .....	<b>Not Satisfied</b>
No adjacent coordinated signals are present	
<b>Warrant 7 - Crash Experience</b> .....	<b>Not Satisfied</b>
Number of accidents (2) is less than minimum (5). Volume minimums are met.	
<b>Warrant 8 - Roadway Network</b> .....	<b>Not Satisfied</b>
Major Route conditions not met. One or more volume requirement met.	
<b>Warrant 9 - Intersection Near a Grade Crossing</b> .....	<b>Not Evaluated</b>

# City of Bloomington Public Works Dept.

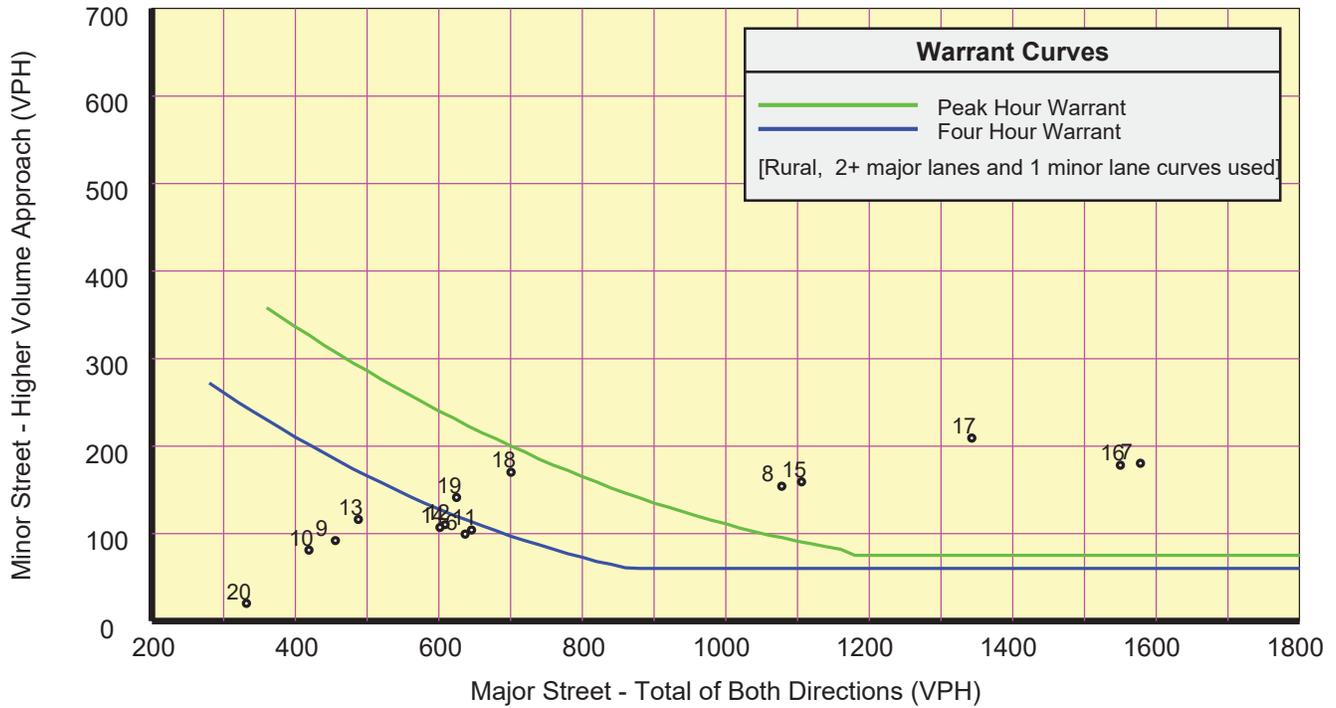
Traffic Engineering Division

Traffic Signal Warrant Report

Study Name : **StreidDr@IrelandGrove2017**

Study Date : **11/06/17**

## Signal Warrants - Summary



### Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor Vol	Dir	War 1A			War 1B			War 1A&B		
				Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	NB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
01:00	0	0	NB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
02:00	0	0	NB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
03:00	0	0	NB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
04:00	40	9	SB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
05:00	154	30	SB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
06:00	637	99	SB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
07:00	1,578	180	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
08:00	1,078	154	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
09:00	456	92	SB	420-Yes	105-No	Major	630-No	53-Yes	Minor	504-No	84-Yes	Minor
10:00	419	81	SB	420-No	105-No	---	630-No	53-Yes	Minor	504-No	84-No	---
11:00	646	104	SB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
12:00	609	110	SB	420-Yes	105-Yes	Both	630-No	53-Yes	Minor	504-Yes	84-Yes	Both
13:00	488	116	SB	420-Yes	105-Yes	Both	630-No	53-Yes	Minor	504-No	84-Yes	Minor
14:00	602	107	SB	420-Yes	105-Yes	Both	630-No	53-Yes	Minor	504-Yes	84-Yes	Both
15:00	1,106	159	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
16:00	1,550	178	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
17:00	1,343	209	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
18:00	701	170	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
19:00	625	141	SB	420-Yes	105-Yes	Both	630-No	53-Yes	Minor	504-Yes	84-Yes	Both
20:00	332	20	SB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
21:00	194	51	SB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
22:00	1	1	SB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
23:00	0	0	NB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---

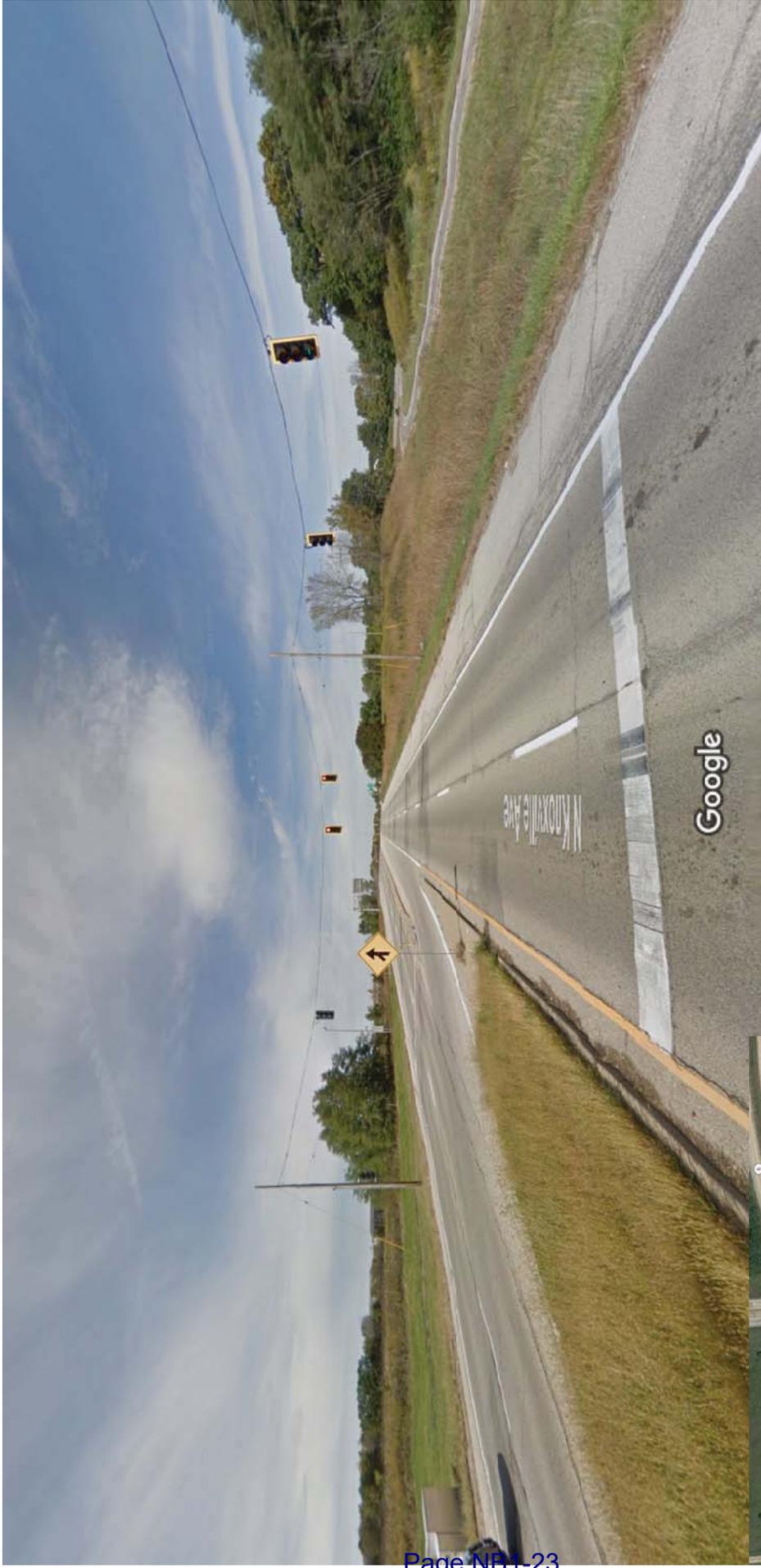


Image capture: Oct 2016 © 2017 Google





Map data ©2017 Google 20 ft

Measure distance  
 Total distance: 145.31 ft (44.29 m)