

VILLAGE OF ELM GROVE  
COMMITTEE OF THE WHOLE  
MONDAY, AUGUST 29, 2016 - 5:30 P.M. \* PARKVIEW ROOM

**1. Review Of Volunteer Recognition Event**

**2. Review Of Pool And Park Plans**

**Repair of kiddie pool vs splashpad - funding - capital budget/fundraising  
Shade cover for playground and pool areas**

Documents:

[\*elm grove splashpad opt1 3d.pdf\*](#)

**3. Review Wisconsin Avenue Extension**

Documents:

[\*wi avenue information.pdf\*](#)

**4. Other Business**

**5. Adjourn**

Any person who has a qualifying disability as defined by the Americans with Disabilities Act who requires that the meeting or materials for the meeting has to be in an accessible location or format must contact the Village Clerk, Mary S. Stredni, at 262-782-6700 or 13600 Juneau Boulevard by 3:00 PM Friday prior to the meeting so that any necessary arrangements can be made to accommodate your request.

NOTICE: It is possible that members of, and possibly a quorum of, other governmental bodies of the Village may be in attendance at the above stated meeting to gather information. No action will be taken by any governmental body at the above stated meeting other than the governmental body specifically referred to in the above notice.



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**Elm Grove Splashpad®, WI**  
Revision 00 - Option 01 - 23213

View 1





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**Elm Grove Splashpad®**, WI  
Revision 00 - Option 01 - 23213

View 2









**A CLEAR  
SOURCE  
OF  
FUN**



# MEMO

TO: Public Works Committee  
FROM: David De Angelis  
DATE: August 19, 2016  
RE: Wisconsin Avenue Extension

Over the past several years the Village has been exploring the request for the extension of Wisconsin Avenue from the City of Brookfield to connect to Pilgrim Parkway in the Village of Elm Grove. Throughout this time there have been several traffic studies done by firms retained by Brookfield and Elm Grove. This memo is an attempt at summarizing the issues and some of the findings into a single location for the ease of review and discussion. The two principal components to consider for the review of the extension are the potential for traffic alleviation on Bluemound Road and the ability to control the situation with the Watertown Plank Road signal locally versus after the fact of having the DOT assume control of the intersection in balance with local road and resident/business impacts.

The issues that surround the extension of Wisconsin Avenue include the following, in no particular order:

1. Elimination of traffic signal at Watertown Plank Road eliminating left turns for west bound Watertown Plank Road
2. Business access impacts
3. Traffic Impacts to Pilgrim Parkway
4. Traffic Impacts to Watertown Plank Road
5. Traffic Impacts to Terrace Drive
6. Loss of control of Watertown Plank Road Intersection to the State Department of Transportation (DOT)
7. Design of new intersection

The Table below summarizes the current and estimated traffic for the area intersections.

<b>INTERSECTION</b>	<b>ANNUAL AVERAGE DAILY TRAFFIC</b>	<b>ANNUAL AVERAGE DAILY TRAFFIC ADJUSTED FOR DIVERTED TRAFFIC</b>
Bluemound & Pilgrim	18,500	17,100
Watertown Plank & Pilgrim	5600	4200
Wisconsin & Pilgrim	12,000	12,000
Terrace & Bluemound	1673	2793

There have been two intersection designs considered for the extension. A fully signalized intersection and a roundabout. There are two designs attached to this memo for illustration of those alternatives. The signalized intersection provides timed traffic breaks and a smaller footprint but limited ability for U-turn truck traffic while the roundabout provides better opportunity for U-turn traffic for delivery trucks and continuous traffic flow but has a much larger footprint. Both alternatives require changes to the ingress/egress point for the Ace Hardware and the adjacent commercial buildings.

There has also been discussion on maintaining the signals at Watertown Plank Road and Pilgrim and only eliminating the signal at the entrance to the North Shore Bank Property. The evaluation of this alternative did not see any significant improvement to the intersection operation. (TES report February, 2016)

There has been considerable discussion regarding alternatives for Terrace Drive and the traffic that would be diverted to that location. Attached to this memo is a letter of review from TES that summarizes those alternatives and evaluates their effectiveness.

The Village has also been concerned about the potential of the DOT taking over the Watertown Plank Road and Pilgrim intersection due to conflicts and impeding traffic flow on US 18. This issue has been raised on many occasions by the DOT with the implication that if the situation significantly deteriorates the DOT would consider assuming the responsibility and ownership of the intersection. In effort to forestall such actions the Village has cooperated with the DOT in integrating the Bluemound and Watertown Plank intersections together through their new adaptive signal system. While this is working currently there is not a recognition of this as being a permanent solution. The Village Board did request a legal opinion from its legal counsel regarding the DOT's ability to assume control. The Attorney submitted an opinion which concluded they did have the authority to do so if warranted by the adverse impacts to their highway. (de la Mora opinion March 2, 2016)

This memo is not intended to be entirely comprehensive but only a summary of the main issues. There are multiple reports that go into greater detail and depth on all of these issues which Village Staff will place on the Village Website for review and direct access.

If there are any questions please do not hesitate to contact me.



August 17, 2016

David De Angelis, Village Manager  
Village of Elm Grove  
13600 Juneau Blvd  
Elm Grove, WI 53122

Re: Watertown Plank Road Diversion Traffic

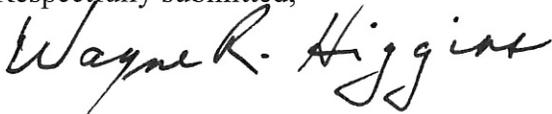
As part of the review for impact of the City of Brookfield proposal to extend Wisconsin Avenue to Pilgrim Parkway, there is an impact to traffic on Terrace Drive between Bluemound Road and Watertown Plank Road and the respective intersections. A separate exhibit was prepared for the comparison of traffic that currently exists on Village streets and the distribution of diverted traffic resulting from the restriction of westbound Watertown Plank Road at Pilgrim Parkway. The westbound traffic would be required to turn right at Pilgrim Parkway travel north to a roundabout at Wisconsin Ave and Pilgrim Parkway and then return south to access Moreland Road to travel south or Bluemound Road to travel west. This generates diversion traffic to Bluemound Road and Terrace Drive is expected to handle the diversion traffic much as it does now.

In order to restrict diverted traffic on Terrace Drive between Watertown Plank Road and Bluemound Road some alternatives have been proposed.

1. Cul de sac Terrace Drive: This would work best to close it at Watertown Plank Road and leave local traffic maintain access at Bluemound Road. Another alternative suggested was cul de sac at both ends. Requiring residents to use Froedtert Drive to Rosedale Drive as alternate access. It would improve the safety for U-turns on eastbound Bluemound Road.  
Besides local access for residents along Terrace Drive; it serves traffic to reach Elm Grove Lutheran Church for Services, School and Child Care activities. Restricting this through traffic will cause dispersion of the traffic to other streets connecting to Wisconsin Avenue as a travel alternative. Providing recommended travel brochures to the Church could aide in encouraging drivers to use Sunny Slope Road entering or exiting or Pilgrim Parkway entering and then Watertown Plank as alternative routes.
2. A restriction in Bluemound Road median has been proposed that would prevent north-south through traffic. The median "pork chop" design would in my opinion have little impact since the 7:15 to 8:15 Am peak has no vehicles making this movement and 4:45 to 5:45 PM peak has 1 from the north and 1 from the south. There are no vehicles from the south that cross Bluemound to Terrace in either the AM or PM peak hour from TES traffic counts.
3. The modification to shorten the Bluemound Road median west at Terrace Drive has been presented to WisDOT staff with no commitment to do so. This would reduce intersection conflicts by separation of north-south turning traffic from eastbound U-turning vehicles.

4. Another consideration is to restrict traffic movements southbound at Terrace Drive and Bluemound Road to right turn in and out. Implementation is through a median “pork chop” type barrier. This will improve traffic flow for the diverted traffic by reducing the queue due to only needing gaps in westbound traffic for right turns. The 5 vehicles in the AM peak and 10 vehicles in the PM peak that turn left or go straight would be diverted to another location. There are no vehicles from the south that cross Bluemound to Terrace in either the AM or PM peak hour from TES traffic counts.

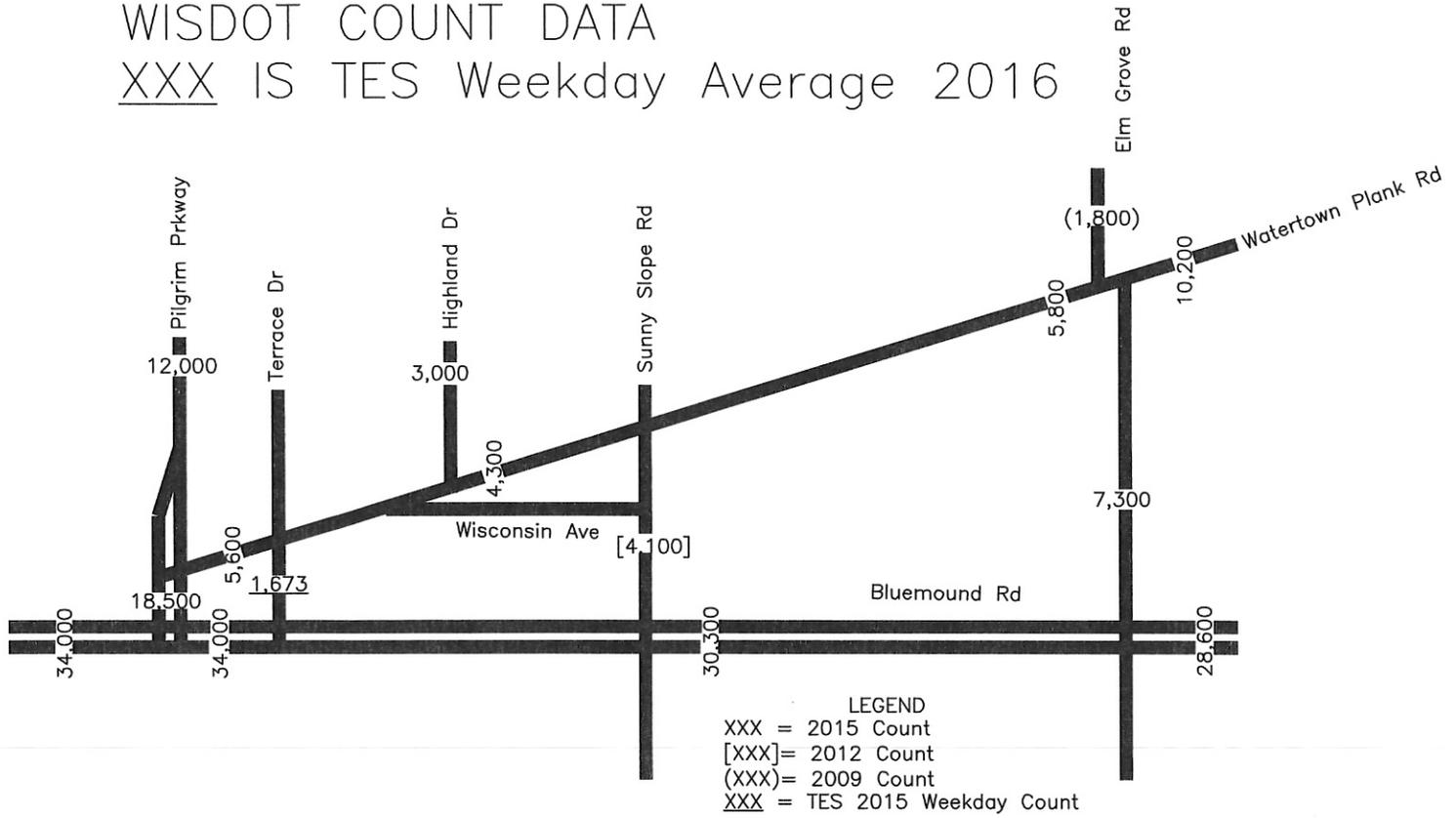
Respectfully submitted,

A handwritten signature in black ink that reads "Wayne R. Higgins". The signature is written in a cursive style with a large, sweeping initial 'W'.

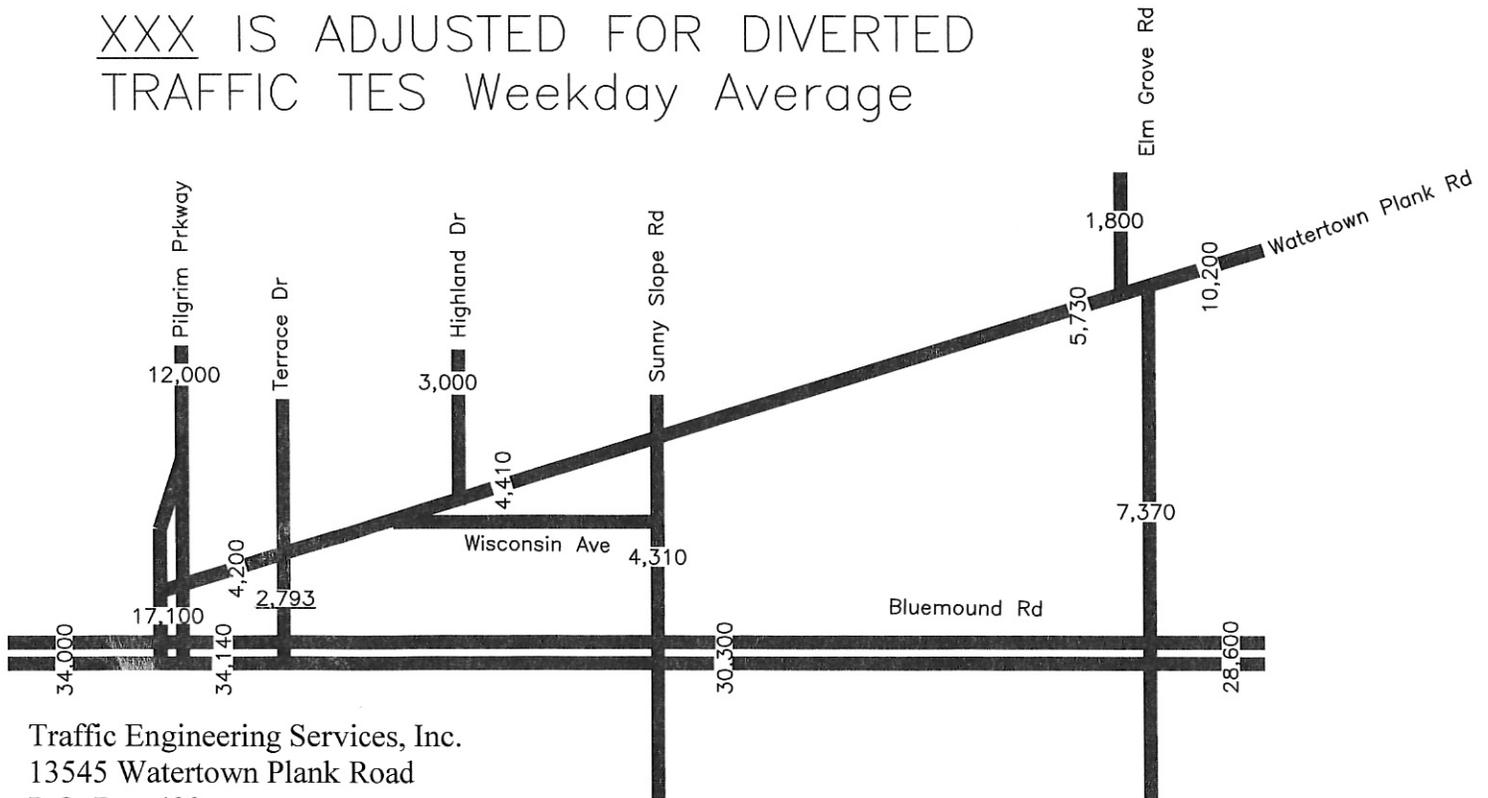
Wayne R. Higgins, PE, PTOE  
President

Enclosure

Annual Average Daily Traffic (AADT)  
 WISDOT COUNT DATA  
 XXX IS TES Weekday Average 2016



ADJUSTED FOR DIVERTED TRAFFIC  
 AADT WISDOT COUNT DATA  
 XXX IS ADJUSTED FOR DIVERTED  
 TRAFFIC TES Weekday Average



Traffic Engineering Services, Inc.  
 13545 Watertown Plank Road  
 P.O. Box 423  
 Elm Grove, WI 53122

**LOCATION:** Terrace and Buemound Road  
**DATE COLLECTED:** Wednesday, July 23, 2014  
**COLLECTED BY:** Traffic Engineering Services, Inc.  
**AM PEAK**

CARS (Unshifted)

START TIME	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			U-TURN	TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT		
7:15 AM	1	0	16	1	213	0	0	0	1	9	322	0	11	574
7:30 AM	1	0	18	1	266	2	0	0	2	8	400	1	15	719
7:45 AM	1	0	22	0	377	3	0	0	0	9	458	3	12	888
8:00 AM	2	0	15	1	277	2	0	0	0	7	369	1	8	683
TOTAL	5	0	71	3	1133	7	0	0	3	33	1549	5	46	2864

TRUCKS

START TIME	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			U-TURN	TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT		
7:15 AM	0	0	0	0	5	0	0	0	0	0	5	0	0	10
7:30 AM	0	0	0	0	7	0	0	0	0	0	4	0	0	11
7:45 AM	0	0	0	0	3	0	0	0	0	0	6	0	0	9
8:00 AM	0	0	0	0	2	0	0	0	0	0	6	0	0	8
TOTAL	0	0	0	0	17	0	0	0	0	0	21	0	0	38

TOTAL VOLUME

START TIME	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			U-TURN	TOTAL
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT		
7:15 AM	1	0	16	1	218	0	0	0	1	9	327	0	11	584
7:30 AM	1	0	18	1	273	2	0	0	2	8	404	1	15	730
7:45 AM	1	0	22	0	380	3	0	0	0	9	464	3	12	897
8:00 AM	2	0	15	1	279	2	0	0	0	7	375	1	8	691
TOTAL	5	0	71	3	1150	7	0	0	3	33	1570	5	46	2902

FROM NORTH - TERRACE  
 FROM EAST - BLUEMOUND  
 FROM SOUTH - Westmoor  
 FROM WEST - BLUEMOUND

% TRUCKS= 1.31  
 PHF= 0.81

**LOCATION:** Terrace and Buemound Road  
**DATE COLLECTED:** Wednesday, July 23, 2014  
**COLLECTED BY:** Traffic Engineering Services, Inc.  
**PM PEAK**

CARS (Unshifted)

START TIME	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			TOTAL		
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT			
4:45 PM	3	0	13	1	526	2	1	0	3	0	11	343	1	12	914
5:00 PM	1	1	14	0	565	0	0	0	1	0	9	450	3	20	1063
5:15 PM	5	0	15	1	508	2	1	2	0	1	13	442	3	22	1010
5:30 PM	0	0	14	0	522	2	1	3	1	3	13	397	1	28	985
TOTAL	9	1	56	2	2121	6	3	6	1	8	46	1632	8	82	3972

SINGLE UNIT TRUCKS (Bank 1)

START TIME	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			TOTAL		
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT			
4:45 PM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	1	0	2	0	0	0	0	0	0	2	0	0	5
5:15 PM	0	0	0	0	3	0	0	0	0	0	0	2	0	0	5
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2
TOTAL	0	0	1	0	10	0	0	0	0	0	0	5	0	0	16

SEMI TRUCKS (Bank 2)

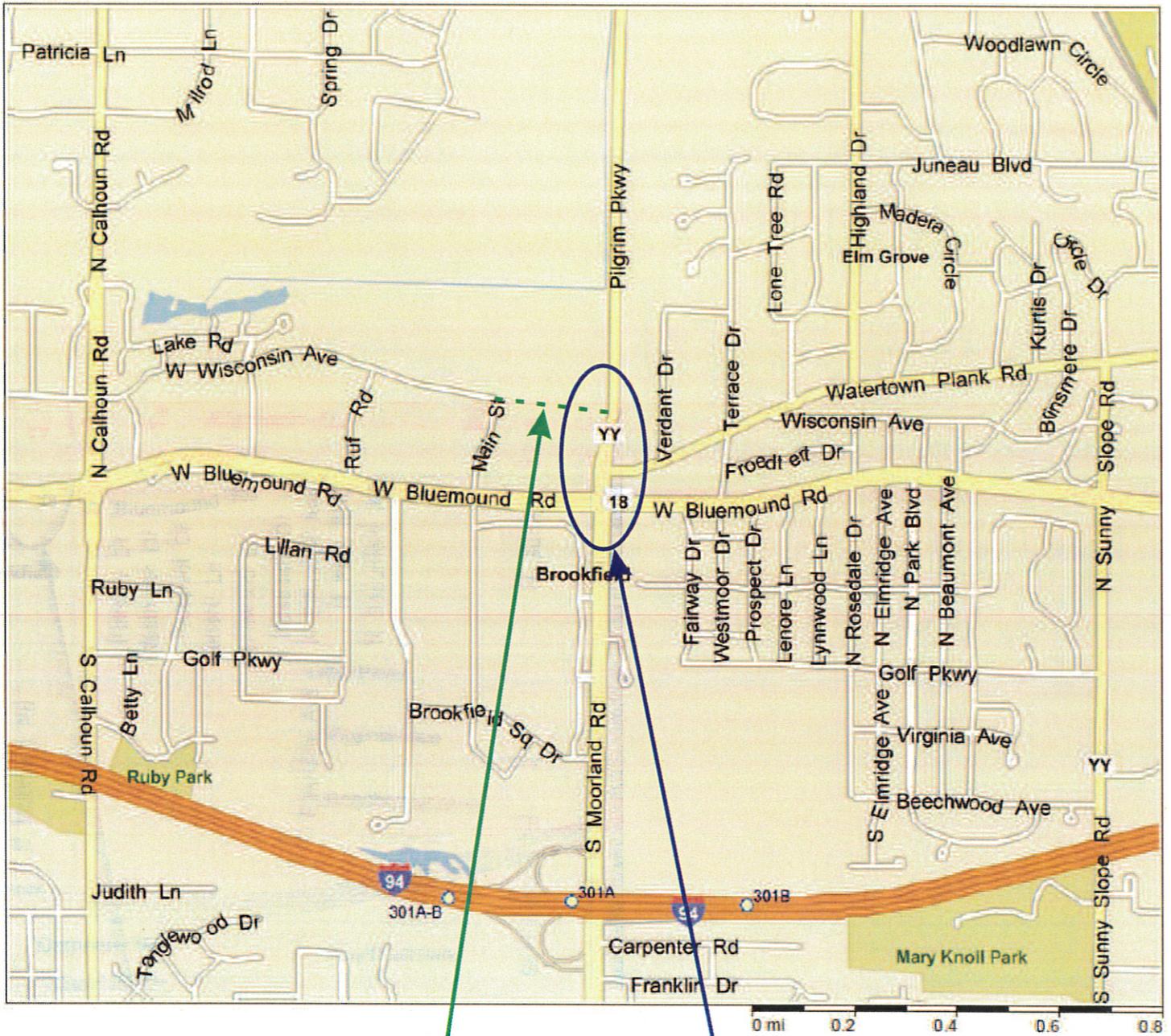
START TIME	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			TOTAL		
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT			
4:45 PM	0	0	0	0	4	0	0	0	0	0	0	1	0	0	5
5:00 PM	0	0	1	0	2	0	0	0	0	0	0	2	0	0	5
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	2	0	0	4
5:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
TOTAL	0	0	1	0	10	0	0	0	0	0	0	5	0	0	16

TOTAL VOLUME

START TIME	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			TOTAL		
	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT			
4:45 PM	3	0	13	1	534	2	1	0	3	0	11	344	1	12	923
5:00 PM	1	1	16	0	569	0	0	0	1	0	9	454	3	20	1073
5:15 PM	5	0	15	1	513	2	1	2	0	1	13	446	3	22	1019
5:30 PM	0	0	14	0	525	2	1	3	1	3	13	398	1	28	989
TOTAL	9	1	58	2	2141	6	3	6	1	8	46	1642	8	82	4004

FROM NORTH - TERRACE  
 FROM EAST - BLUEMOUND  
 FROM SOUTH - WESTMOOR  
 FROM WEST - BLUEMOUND

% TRUCKS= 0.80  
 PHF= 0.93



**Wisconsin Avenue  
Extension**

**Study Area  
Intersections**

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**TRAFFIC  
ANALYSIS &  
DESIGN, INC.**



Exhibits: 03-18-11

**EXHIBIT 1  
STUDY AREA MAP  
...  
BROOKFIELD, WISCONSIN**



NOT TO SCALE

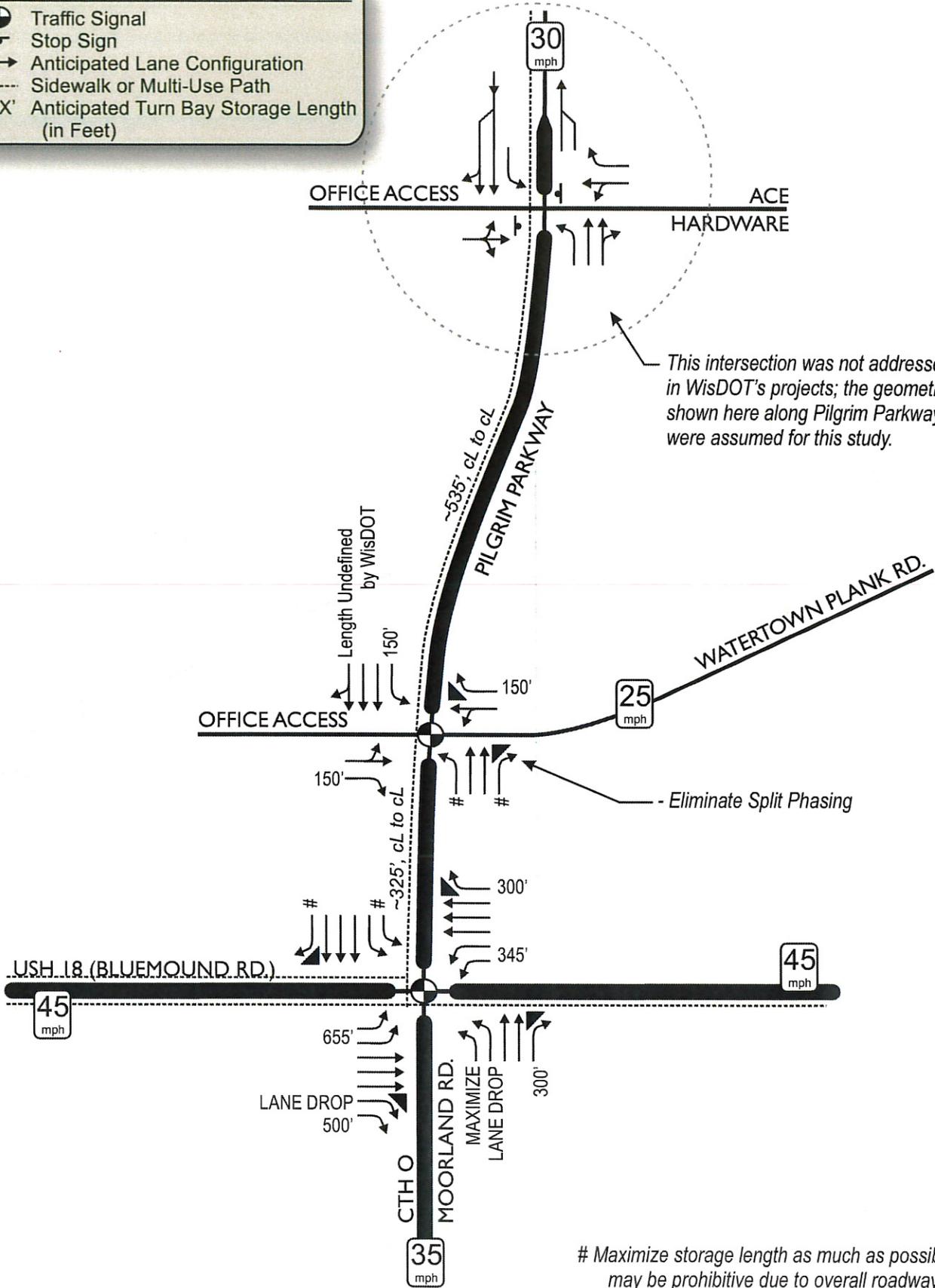


Imagery ©2016 Google, Map data ©2016 Google 200 ft



**LEGEND**

-  Traffic Signal
-  Stop Sign
-  Anticipated Lane Configuration
-  Sidewalk or Multi-Use Path
-  XX' Anticipated Turn Bay Storage Length (in Feet)



# Maximize storage length as much as possible. Storage may be prohibitive due to overall roadway design.

