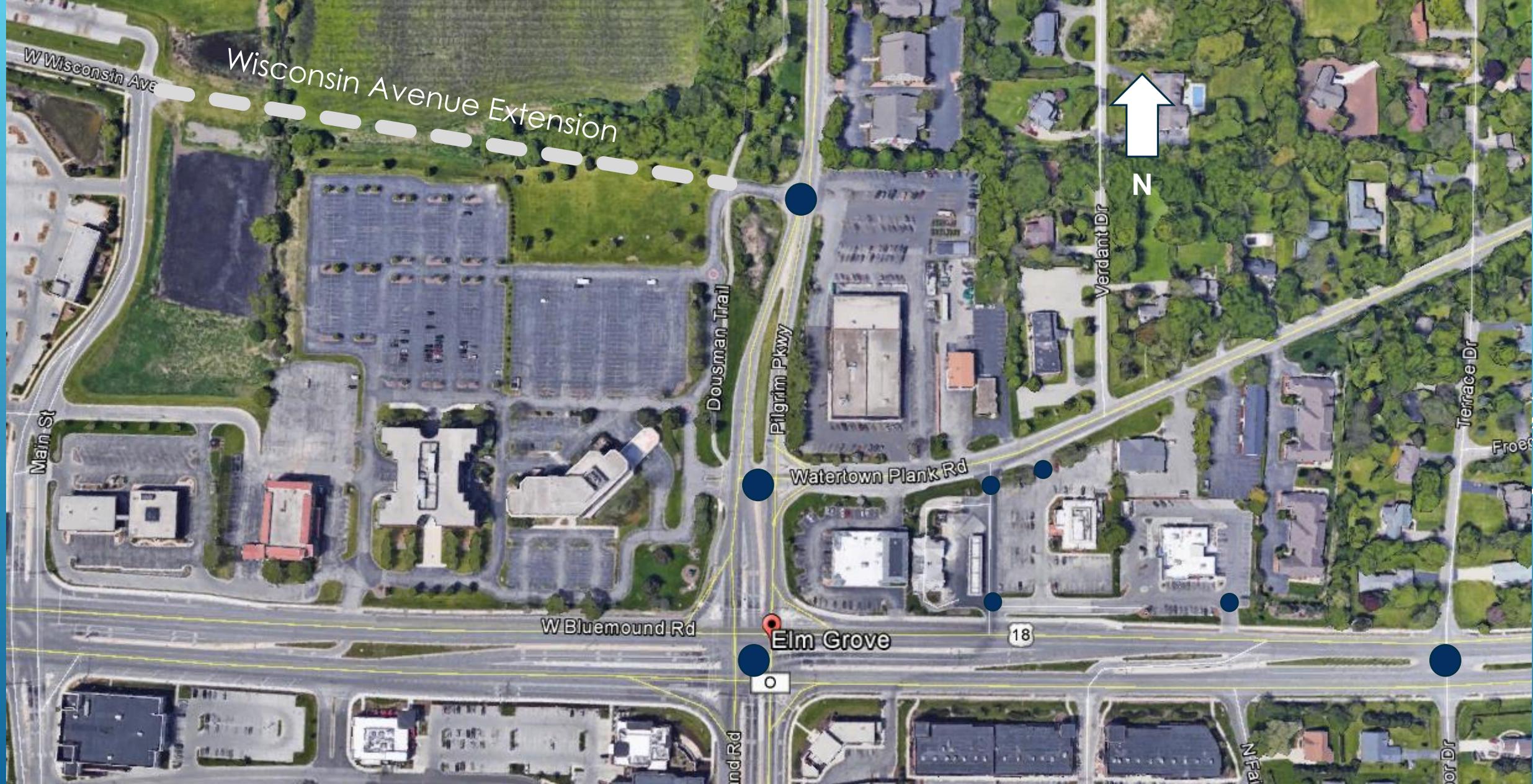


WISCONSIN AVENUE EXTENSION SECOND PUBLIC INFORMATION MEETING

March 28, 2017



MEETING AGENDA

- **Introductions**
- **Study Background**
- **Alternatives Studied**
- **Recommended Alternative**
- **Discussion**

STUDY BACKGROUND

- ▶ **The Wisconsin Department of Transportation, based on traffic safety concerns, may in the future remove the Pilgrim Parkway traffic signals at Watertown Plank Road and restrict traffic movements to northbound and westbound right turns.**

Ayres Associates Traffic Observations:

1. Eastbound Bluemound left turn to Pilgrim Parkway regularly backs into Bluemound intersection from Watertown Plank Road signals (up to 4 cars)
2. Southbound Pilgrim Parkway traffic sometimes backs into Watertown Plank Road intersection from Bluemound Road
3. Other Traffic Concerns
 1. Traffic diversion on Terrace Drive
 2. Terrace Drive right turn conflicts with eastbound Bluemound Road U-turns
 3. Minor cut-through traffic observed in Bakers Square and Mobil parking lots

RELATED TRAFFIC DATA

Selected Peak Hour Traffic Volumes:

- Watertown Plank Road westbound left turn = 350 vph
- North Shore Bank eastbound right turn = 100 vph
- Ace Hardware driveway (2-way volume) = 110 vph

- Pilgrim Parkway southbound left turn at Watertown Plank Road = 65 vph
- Pilgrim Parkway northbound right turn at Watertown Plank Road = 380 vph

- Bluemound Road eastbound left turn at Pilgrim Parkway = 645 vph
- Pilgrim Parkway = 2,410 vph
- Bluemound Road = 4,640 vph

RELATED TRAFFIC DATA

Intersection Spacing:

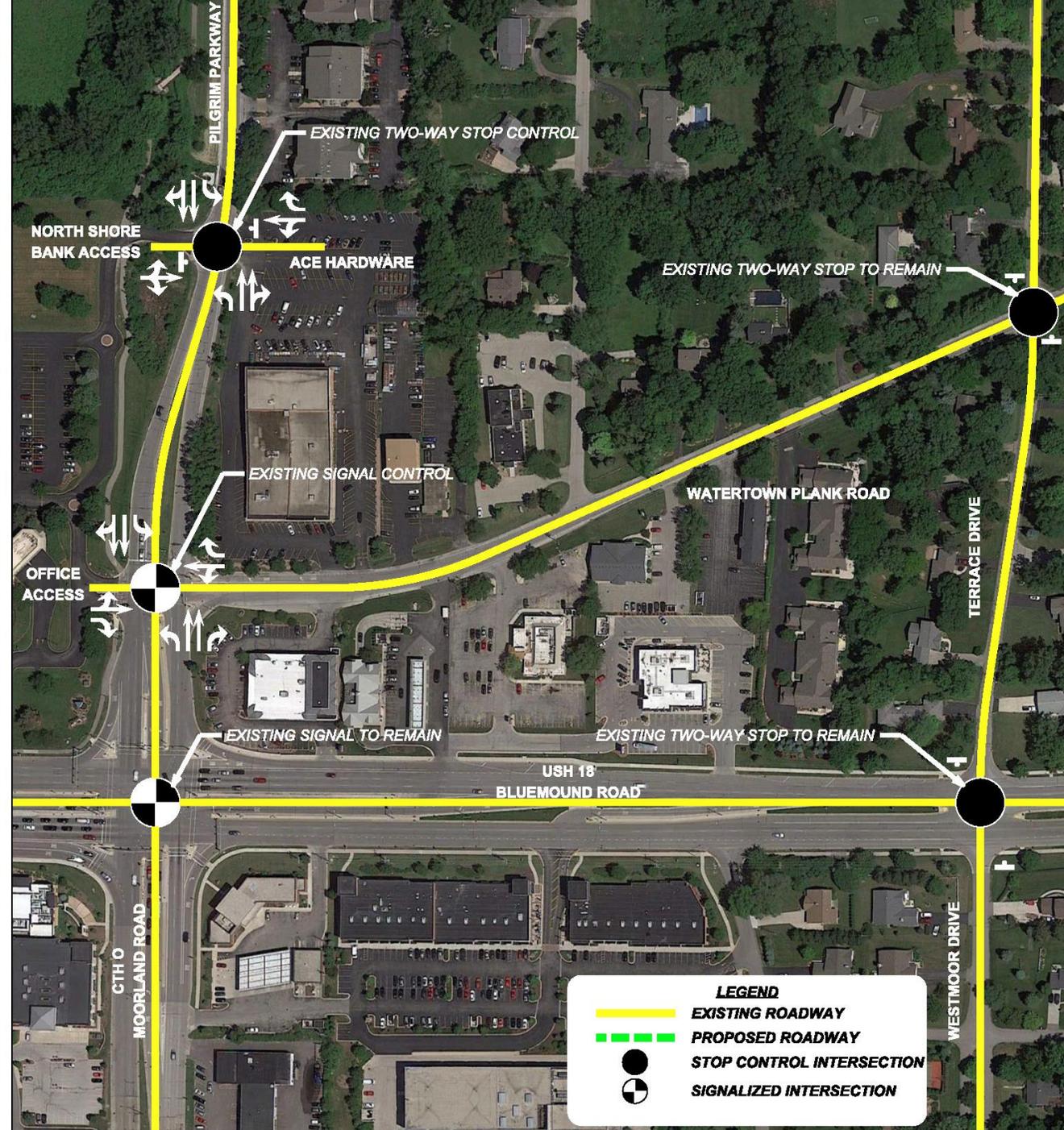
- Bluemound to Watertown Plank Road
= 325 feet
- Watertown Plank Road to Wisconsin Ave
= 535 feet

WISCONSIN AVENUE ALTERNATIVES

Scenario	Description
1	Existing Condition (DO NOTHING)
2	Extension with 2-way stop signs
3	Extension with traffic signals
4	Extension with removal of Watertown signals but allow right turns and northbound left A – with signals at Wisconsin Avenue B – with roundabout at Wisconsin Avenue
5	Extension with realigned Watertown Plank Road and Watertown cul-de-sac A – with signals at Wisconsin Avenue B – with roundabout at Wisconsin Avenue, (removed from consideration based on comments from last open house)

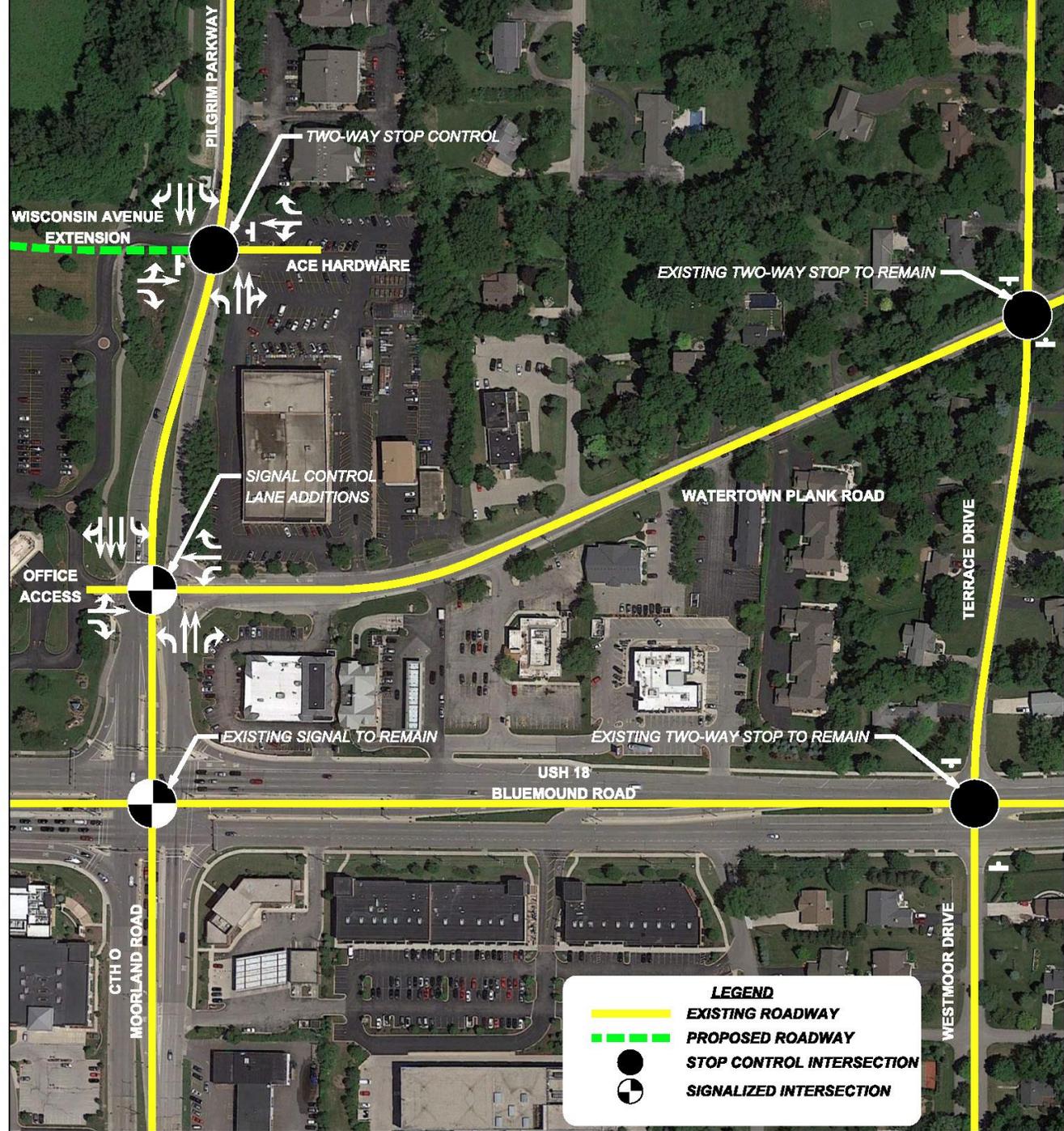
Alternative 1 (Do Nothing)

Not Acceptable due to
safety and congestion

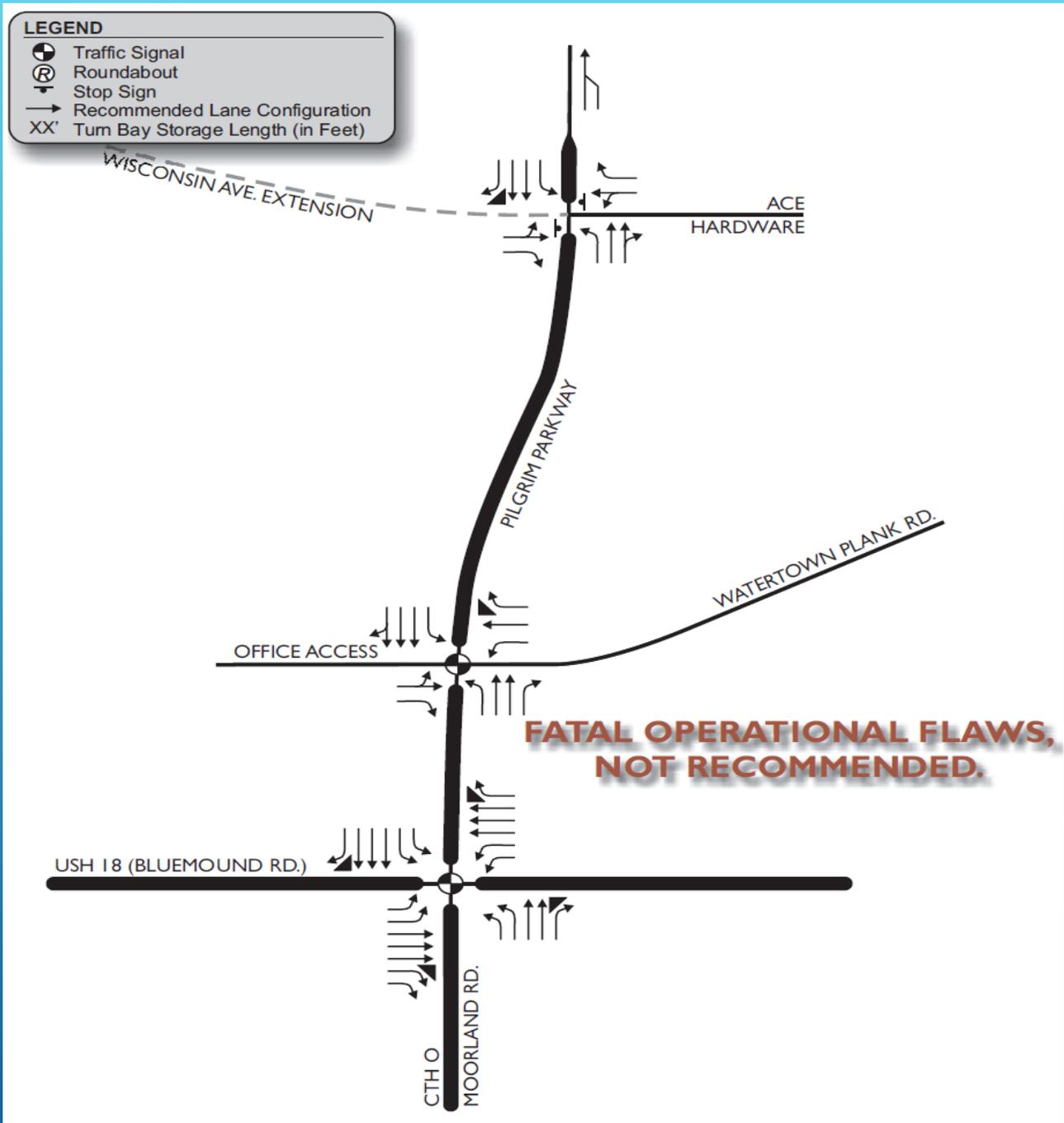


Alternative 2 (Wisconsin Ave Extension with Stop Sign Control)

*Not Acceptable due to
safety and congestion*

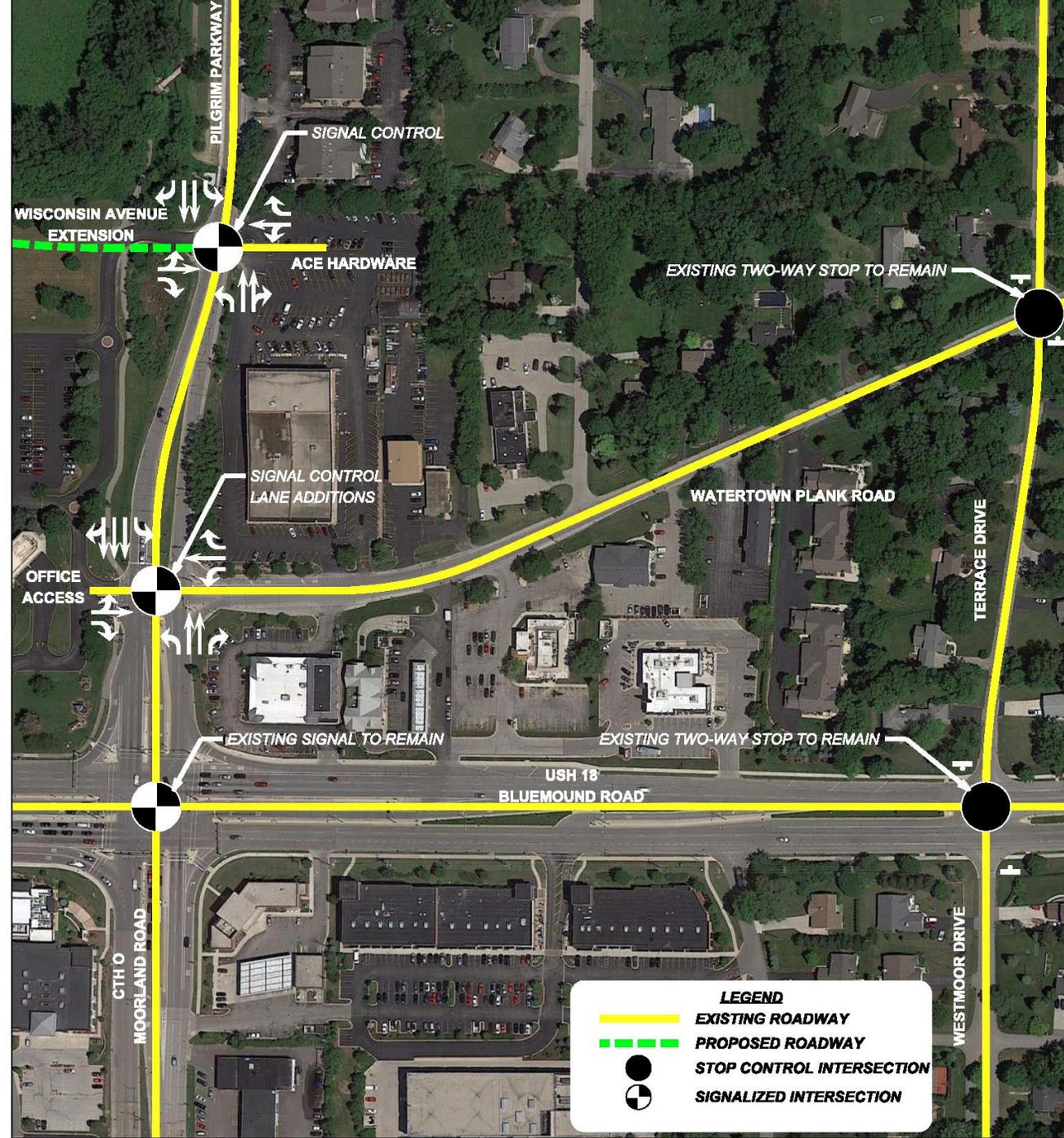


Alternative 2 Intersection Improvements



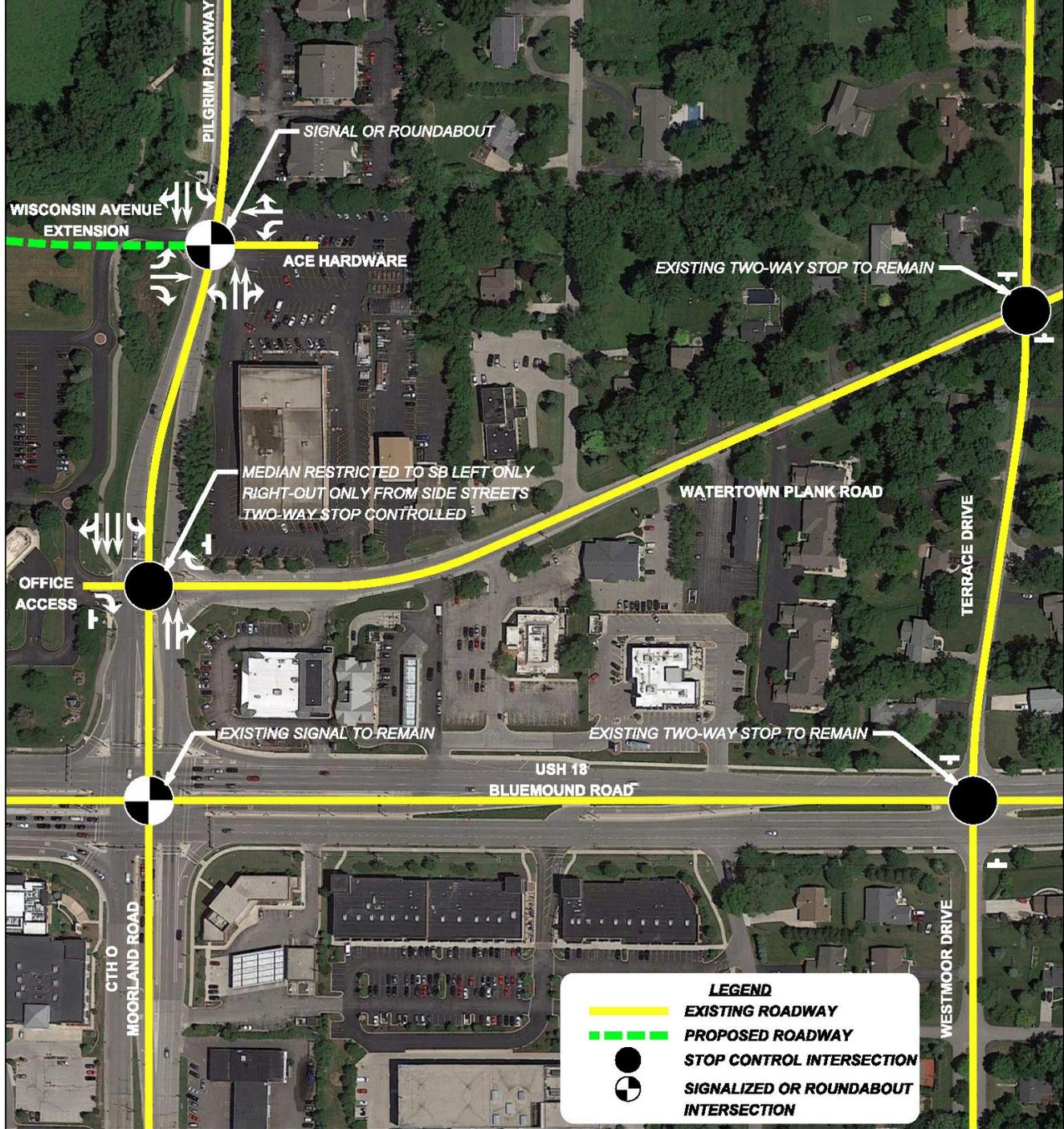
Alternative 3 (Wisconsin Ave Extension with Signals)

*Not Acceptable due to
safety and congestion*



Alternatives 4A & 4B (Wisconsin Ave Extension with No Westbound Left Turn and Stop Signs)

Functionally Acceptable



Alternative 4A Signalized Intersection Design Concept

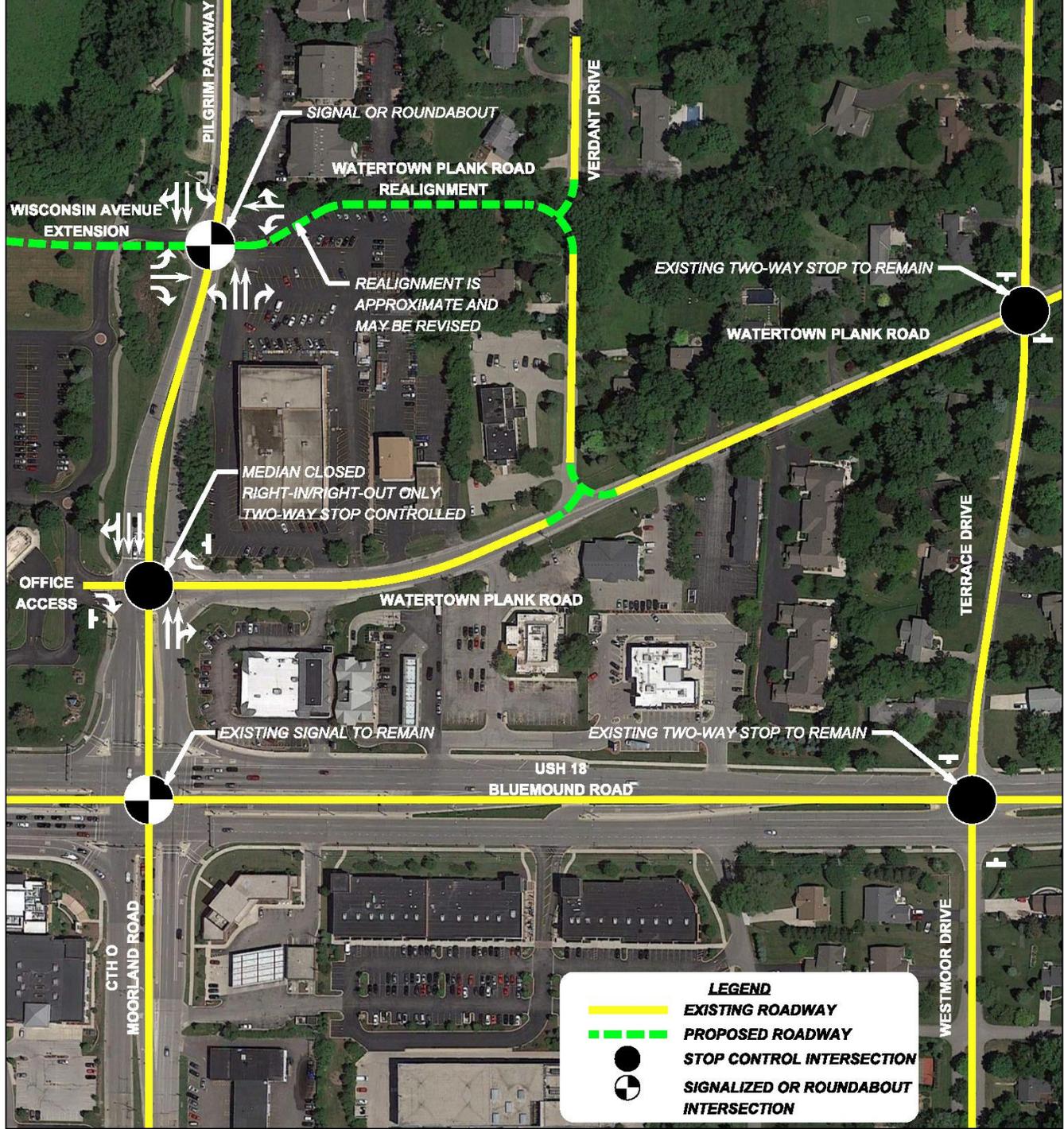


Alternative 4B Roundabout Design Concept (Removed from Consideration)



Alternatives 5A & 5B – (Wisconsin Ave Extension with Relocated Watertown Plank Road)

Functionally Acceptable



Updated Alternative 5B

Functionally / Acceptable



WISCONSIN AVENUE ALTERNATIVES 1-3 PROS/CONS

<u>Alternative</u>	<u>Description</u>
1	<ul style="list-style-type: none">a. Bluemound queues extend into Watertown Plank Road intersectionb. Cannot fit required turn lane lengths between intersections <p><i>Not Acceptable due to safety and congestion</i></p>
2	<ul style="list-style-type: none">a. LOS 'F' operation and delays exceeding 3-minutes <p><i>Not Acceptable due to safety and congestion</i></p>
3	<ul style="list-style-type: none">a. Bluemound queues extend into Watertown Plank Road intersectionb. Cannot fit required turn lane lengths between intersections <p><i>Not Acceptable due to safety and congestion</i></p>

WISCONSIN AVENUE ALTERNATIVE 4 PROS/CONS

Option

Description

Signals

- a. Eliminates Watertown Plank Road left turn movement
- b. Creates northbound U-turn at Wisconsin Avenue extension
- c. Encourages traffic diversion to neighborhood streets
- d. Requires cut-through traffic mitigation on Terrace Drive
- e. Creates traffic gaps for Development north of Ace Hardware

Functionally Acceptable

Roundabout

- a. Larger environmental impacts than Signal option
- b. Does not provide traffic gaps for Development north of Ace Hardware
- c. Similar impacts to Signal option

Functionally Acceptable (removed from consideration)

WISCONSIN AVENUE ALTERNATIVE 5 PROS/CONS

Option

Description

Signals

- a. Maintains full Watertown Plank Road access to Pilgrim Parkway
- b. Creates traffic gaps for Development north of Ace Hardware
- c. Eliminates existing Watertown Plank Road left turn movements
- d. Eliminates direct access to Ace Hardware driveway
- e. Reduces North Shore access to right in/right out
- f. Requires right-of-way for realigned Watertown Plank Road

Functionally Acceptable

Roundabout

- a. Larger environmental impacts than Signal option
- b. Does not provide traffic gaps for Development north of Ace Hardware
- c. Similar impacts to Signal option

Functionally Acceptable (Removed from consideration)

Terrace Drive Southbound Right Turn Traffic Diversion Impact

Existing Peak Hour Volumes

- * Morning Peak = 70 vph
- * Evening Peak = 60 vph

With Diversion Peak Hour Volumes

- * Morning Peak = 145 vph
- * Evening Peak = 140 vph

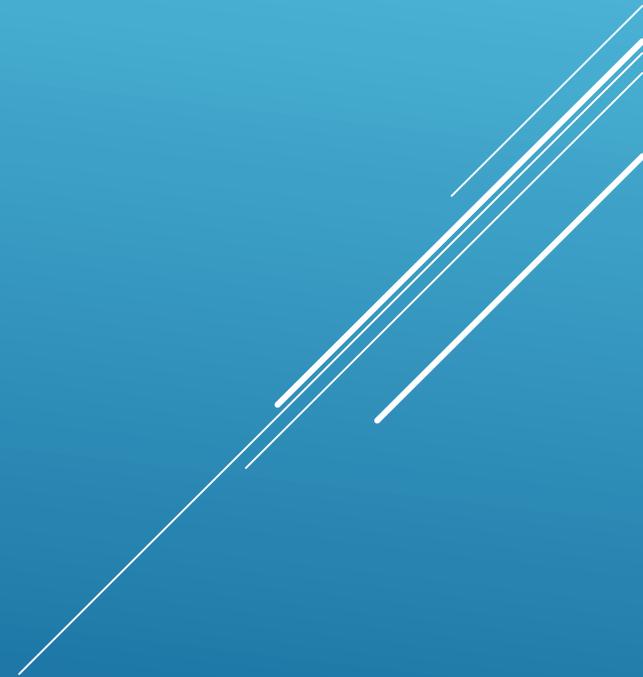
CUT-THROUGH TRAFFIC MITIGATION OPTIONS

1. Prohibit southbound right turns at Bluemound Road
2. Prohibit northbound left turns from Watertown Plank Road
3. Cul-de-sac Terrace Drive at Bluemound Road
4. Convert Terrace Drive to collector street and purchase adjacent properties
5. Construct Alternative 5 with a relocated Watertown Plank Road

DISCUSSION



ALTERNATIVE OPERATING STATISTICS



Alternative 1

Year 2031 Scenario 1 Peak Hour Operating Conditions With Recommended Geometrics and Traffic Control

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Pilgrim Parkway/Moorland Road & Bluemound Road	Traffic Signal	AM	D	C	A	E	C	C	F	D	D	E	E	D
		PM	F	D	B	E	D	C	F	E	D	E	F	C
Pilgrim Parkway & Watertown Plank Road/Office Access	Traffic Signal	AM	B	B	B	C	C	B	A	A	A	A	A	A
		PM	B	B	B	D	D	B	B	B	D	C	B	B
Pilgrim Parkway & Office Access/ Ace Hardware	Two-Way Stop Sign	AM	C	C	C	C	C	A	B	*	*	A	*	*
		PM	C	C	C	D	D	A	A	*	*	B	*	*

Notes: (-) indicates a movement that is not possible or is prohibited.

(*) indicates a movement that is not controlled or is free-flow.

Alternative 2

Year 2031 Scenario 2 Peak Hour Operating Conditions
With Recommended Geometrics and Traffic Control

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Pilgrim Parkway/Moorland Road & Bluemound Road	Traffic Signal	AM	D	C	A	E	C	C	F	E	D	F	F	D
		PM	F	D	B	E	D	C	F	F	D	F	F	D
Pilgrim Parkway & Watertown Plank Road/Office Access	Traffic Signal	AM	B	B	B	C	B	B	B	B	B	A	A	A
		PM	B	B	B	D	B	B	B	B	D	B	B	B
Pilgrim Parkway & Wisconsin Avenue Extension/Ace Hardware	Two-Way Stop Sign	AM	F	F	C	F	F	A	B	*	*	A	*	*
		PM	F	F	B	F	F	A	B	*	*	A	*	*

Notes: (-) indicates a movement that is not possible or is prohibited.

(*) indicates a movement that is not controlled or is free-flow.

Alternative 3

Year 2031 Scenario 3 Peak Hour Operating Conditions With Recommended Geometrics and Traffic Control

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Pilgrim Parkway/Moorland Road & Bluemound Road	Traffic Signal	AM	D	C	A	E	C	C	F	E	D	F	F	D
		PM	F	D	B	E	D	C	F	F	D	F	F	D
Pilgrim Parkway & Watertown Plank Road/Office Access	Traffic Signal	AM	B	B	B	C	B	B	B	B	B	A	A	A
		PM	B	B	B	D	B	B	B	B	D	B	B	B
Pilgrim Parkway & Wisconsin Avenue Extension/Ace Hardware	Traffic Signal	AM	C	C	B	B	B	B	A	A	A	B	B	B
		PM	C	C	B	B	B	B	A	A	A	B	B	B

Notes: (-) indicates a movement that is not possible or is prohibited.

(*) indicates a movement that is not controlled or is free-flow.

Alternative 4A & 4B

Year 2035 Scenario 4 Peak Hour Operating Conditions With Recommended Geometrics and Traffic Control

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Pilgrim Parkway/Moorland Road & Bluemound Road	Traffic Signal	AM	E	D	B	E	D	D	D	D	F	E	E	B
		PM	E	E	D	E	D	B	F	E	D	E	E	C
Pilgrim Parkway & Watertown Plank Road/Office Access	Two-Way Stop Sign	AM	-	-	B	-	-	B	-	*	*	A	*	*
		PM	-	-	B	-	-	B	-	*	*	A	*	*
Pilgrim Parkway & Wisconsin Avenue Extension/Ace Hardware	Traffic Signal	AM	C	C	C	C	C	C	A	A	A	A	B	B
		PM	C	C	D	C	C	C	B	A	A	B	C	C
	Roundabout	AM	A	A	A	A	A	A	A	A	A	A	A	A
		PM	B	B	C	B	B	B	B	B	B	B	B	B

Notes: (-) indicates a movement that is not possible or is prohibited.

(*) indicates a movement that is not controlled or is free-flow.

Alternative 5A & 5B

Year 2035 Scenario 5 Peak Hour Operating Conditions
With Recommended Geometrics and Traffic Control

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Pilgrim Parkway/Moorland Road & Bluemound Road	Traffic Signal	AM	E	D	B	E	D	D	D	D	F	E	E	B
		PM	E	E	D	E	D	B	F	E	D	E	E	C
Pilgrim Parkway & Watertown Plank Road/Office Access	Two-Way Stop Sign	AM	-	-	B	-	-	-	-	*	*	-	*	*
		PM	-	-	B	-	-	-	-	*	*	-	*	*
Pilgrim Parkway & Wisconsin Avenue Extension/Ace Hardware	Traffic Signal	AM	C	C	C	C	C	C	A	A	A	B	B	B
		PM	D	C	C	C	C	C	C	A	A	B	C	C
	Roundabout	AM	A	A	A	B	B	B	A	A	A	A	A	A
		PM	D	D	D	C	C	C	B	B	B	B	B	B

Notes: (-) indicates a movement that is not possible or is prohibited.

(*) indicates a movement that is not controlled or is free-flow.

TRAFFIC SIGNALS VS ROUNDABOUT PROS/CONS

Traffic Signals

- Creates traffic gaps for cars exiting driveways north of Wisconsin Avenue
- Potentially less environmental impacts
- Easier to use for sight-impaired pedestrians
- Serves as a southbound traffic metering tool to Bluemound Road intersection
- Requires eastbound Wisconsin Avenue 'No Turn on Red' restriction to accommodate northbound U-turns

Roundabouts

- Safer than traffic signals with less severe crashes
- Operates at a higher Level of Service with reduced queuing
- Does not provide metered traffic breaks