

**HIGHWOOD DRIVE  
INTERSECTION AND  
CORRIDOR STUDY  
NEIGHBORHOOD OPEN HOUSE  
FEBRUARY 10, 2014**



**WELCOME**

# INTRODUCTION

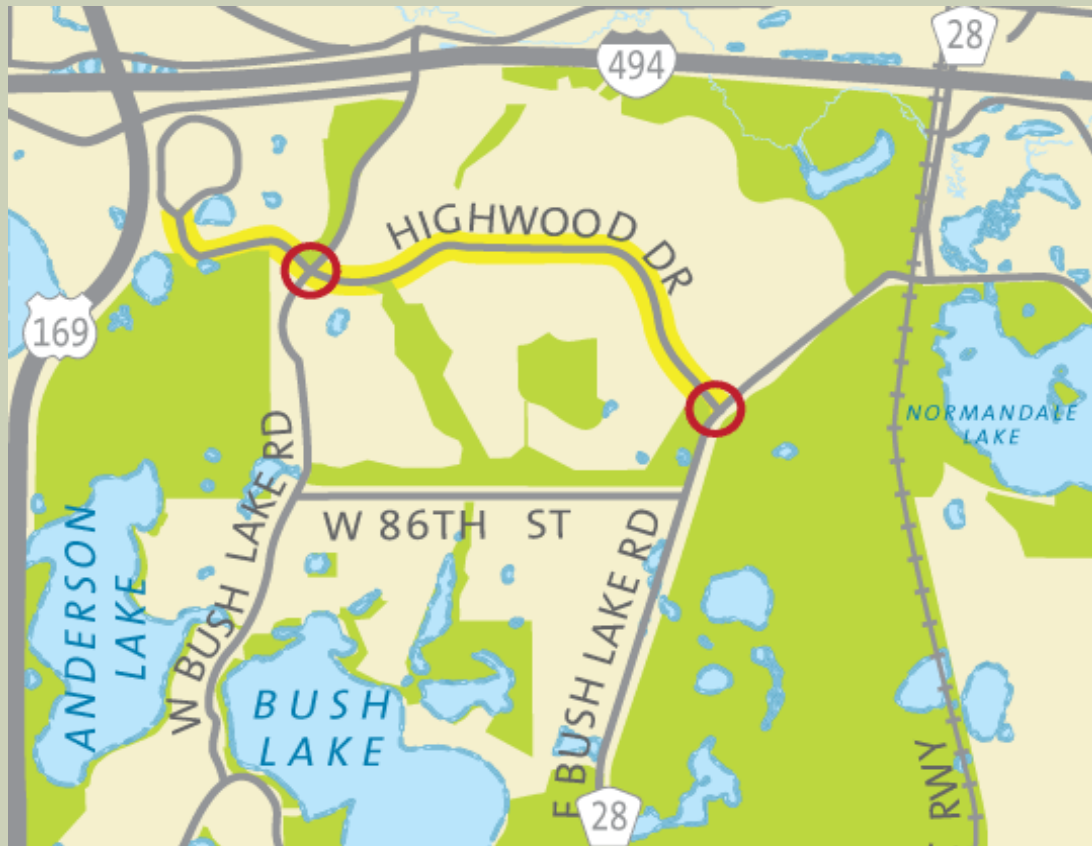
- The City of Bloomington is conducting the Highwood Drive Intersection and Corridor Study to determine the future design section and intersection control needs for the corridor
- Study limits are from East Bush Lake Road to the west terminus near US Highway 169
- A Study Advisory Committee has been formed to guide the study, review materials and provide feedback

# BACKGROUND

- Construction of the US 169/I-494 interchange was substantially completed in December of 2012
- The US 169 and Highwood Drive intersection was eliminated and a cul-de-sac was constructed
- Marth Road has been modified from a one-way road to a two-way road

# BACKGROUND

- It is anticipated that these modifications will continue to alter travel routes/patterns in the area



# STUDY GOALS

- Develop an intersection control plan at the Highwood Drive intersections at East Bush Lake Road and West Bush Lake Road
- Identify near or medium term improvements at the Highwood Drive and East Bush Lake Road intersection
- Develop a roadway cross-section/lane configuration that will optimize use of the existing roadway for all modes of transportation, as well as aesthetics

# STUDY GOALS

- Address pedestrian crossing safety concerns along the corridor
- Evaluate and address speeding concerns along the corridor, if necessary
- Identify and address other concerns along the corridor
  - East Bush Lake Road and 86th Street Intersection
  - Delay on Highwood Drive at East Bush Lake Road
  - Sight Distance at Telegraph Road

# CONCEPT DEVELOPMENT

- Corridor and intersection options have been developed with the following considerations:
  - Multi-modal use
  - Aesthetics
  - Vehicle and pedestrian safety
  - Traffic operations
  - Input received from the Public Open House held in October 2013



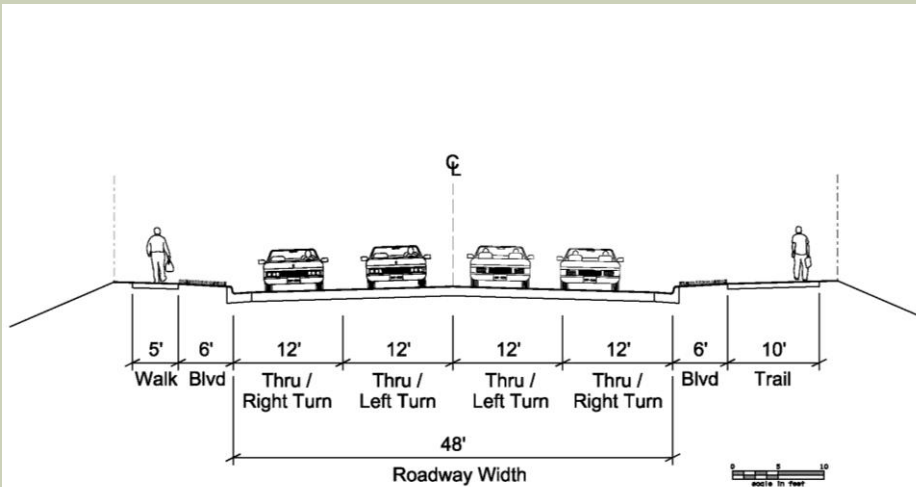
# HIGHWOOD DRIVE CORRIDOR

## ■ Corridor Options

- Option A – Four-Lane Undivided Roadway with Multi-Use Trail on South Side
- Option B – Two-Lane Parkway with Left-Turn Lanes at Key Intersections and Multi-Use Trail on South Side
- Option C – Two-Lane Roadway with Left-Turn Lanes at Key Intersections, On-Street Bike Lanes and Multi-Use Trail on South Side

# HIGHWOOD DRIVE CORRIDOR

## Option A – Four-Lane Undivided Roadway with Multi-Use Trail on South Side



# HIGHWOOD DRIVE CORRIDOR

## Option A – Four-Lane Undivided Roadway with Multi-Use Trail on South Side

### Pros

- Maintains existing roadway
- Accommodates future traffic volumes
- Enhances travel for bicyclists and pedestrians with multi-use trail

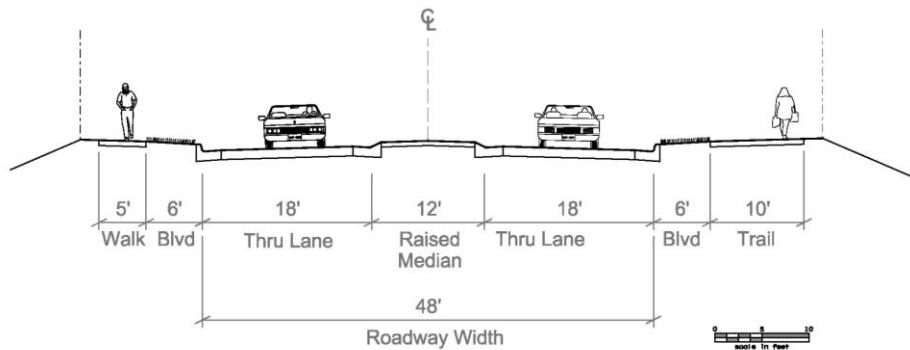
### Cons

- Roadway capacity is not in line with the traffic it serves
- Lack of facility for commuter bicyclist
- Does not enhance roadway aesthetics



# HIGHWOOD DRIVE CORRIDOR

## Option B – Two-Lane Parkway with Left-Turn Lanes at Key Intersections and Multi-Use Trail on South Side



# HIGHWOOD DRIVE CORRIDOR

## Option B – Two-Lane Parkway with Left-Turn Lanes at Key Intersections and Multi-Use Trail on South Side

### Pros

- Provides traffic calming benefits
- Provides a parkway setting
- Accommodates future traffic volumes
- Enhances travel for bicyclists and pedestrians with multi-use trail

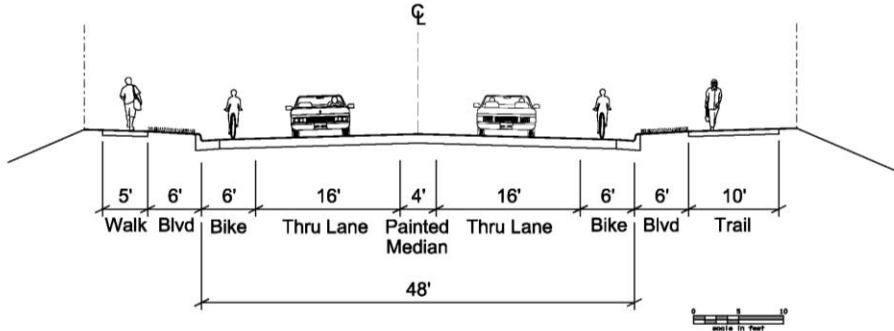
### Cons

- Emergency vehicle concerns
- Lack of facility for commuter bicyclist



# HIGHWOOD DRIVE CORRIDOR

## Option C – Two-Lane Roadway with Left-Turn Lanes, On-Street Bike Lanes and Multi-Use Trail on South Side





# HIGHWOOD DRIVE CORRIDOR

## Option C – Two-Lane Roadway with Left-Turn Lanes, On-Street Bike Lanes and Multi-Use Trail on South Side

### Pros

- Provides traffic calming benefits
- Accommodates future traffic volumes
- Enhances travel for bicyclists and pedestrians with multi-use trail
- Enhances travel for commuter bicyclists
- Slight sight distance improvement at Telegraph Road

### Cons

- Does not enhance roadway aesthetics



# HIGHWOOD DRIVE CORRIDOR

- **Multi-Modal Components**
  - **Multi-Use Trail**
  - **Pedestrian Crossings**
  - **On-Street Bike Lanes**



# EAST BUSH LAKE ROAD INTERSECTION

- **Intersection Options at East Bush Lake Road**
  - **Option 1 – New Traffic Signal with Existing Roadway**
  - **Option 2 – New Traffic Signal with Four Lanes**
  - **Option 3 – Multi-Lane Roundabout**

# EAST BUSH LAKE ROAD INTERSECTION

## Option 1 – New Traffic Signal with Existing Roadway

### Pros

- Overall acceptable traffic operations
- Fits within existing right-of-way

### Cons

- Excessive delay for vehicles on the Highwood Drive approach
- Long northbound queues in the a.m. peak period
- Long southbound queues in the p.m. peak period



# EAST BUSH LAKE ROAD INTERSECTION

## Option 2 – New Traffic Signal with Four Lanes

### Pros

- Overall acceptable traffic operations
- Addresses vehicle delays on Highwood Drive approach
- Addresses long northbound queues in the a.m. peak period
- Addresses long southbound queues in the p.m. peak period
- Fits within existing right-of-way
- Includes southbound right-turn lane at 86th Street

### Cons

- Trail impact in northwest quadrant



# EAST BUSH LAKE ROAD INTERSECTION

## Option 3 – Multi-Lane Roundabout

### Pros

- Overall acceptable traffic operations
- Addresses vehicle delays on Highwood Drive
- Addresses northbound queues in the a.m. peak period
- Addresses southbound queues in the p.m. peak period
- Includes southbound right-turn lane at 86th Street

### Cons

- Trail impact in northwest quadrant
- Right-of-way impacts in southwest quadrant



# WEST BUSH LAKE ROAD INTERSECTION

- Intersection Options at West Bush Lake Road
  - Option 1 – All-Way Stop Control
  - Option 2 - Single-Lane Roundabout

# WEST BUSH LAKE ROAD INTERSECTION

## Option 1 – All-Way Stop Control

- Can work with any corridor option
- Fits within existing right-of-way
- Overall traffic operations are acceptable



# WEST BUSH LAKE ROAD INTERSECTION

## Option 2 – Single-Lane Roundabout

- Can work with any corridor option
- Minimal right-of-way impacts west of West Bush Lake Road
- Overall traffic operations are acceptable



# NEXT STEPS

- Study Advisory Committee meeting to discuss open house feedback
- Select preferred options for the intersections and corridor
- Present study findings and recommendations to City Council
- Study Report



# COMMENTS/FEEDBACK

Please provide your input on the proposed intersection and corridor options

# CONTACT INFORMATION

## Website

- [www.ci.bloomington.mn.us](http://www.ci.bloomington.mn.us)

keyword: Highwood Study

## City Contact

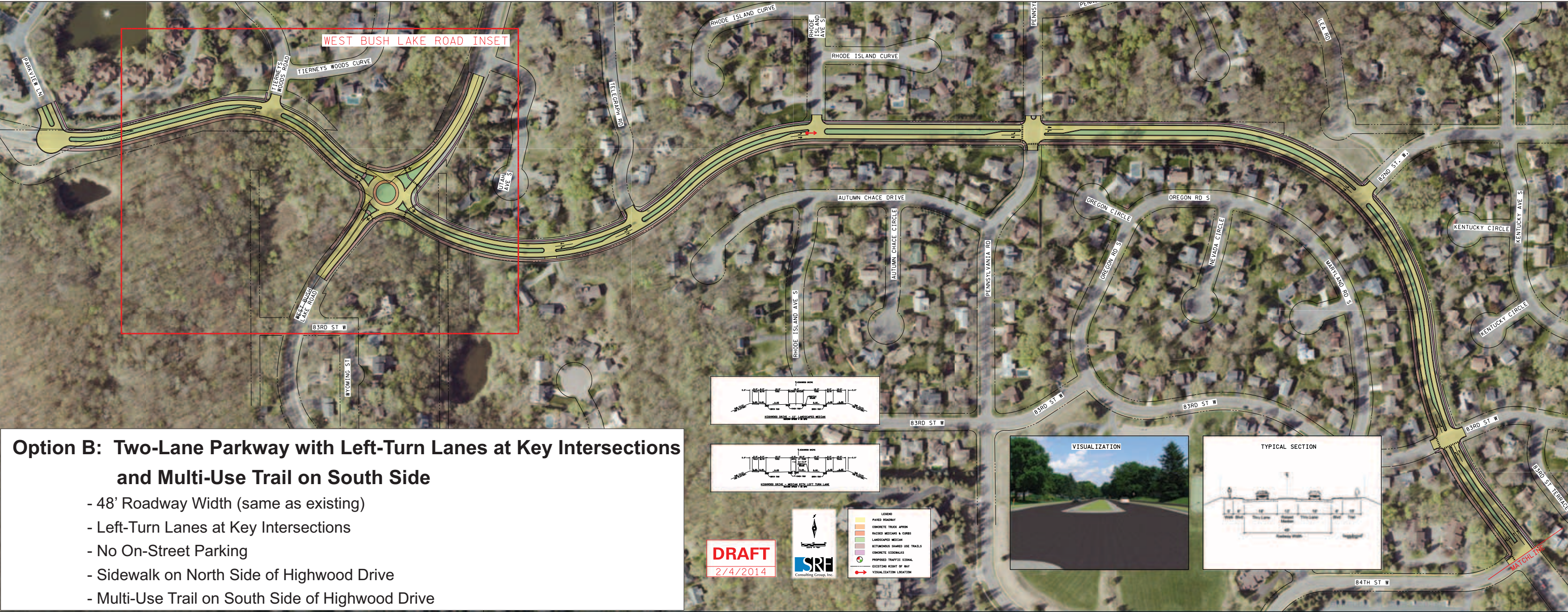
- Amy Marohn, P.E. 952-653-4532

Paul Jarvis 952-563-4548





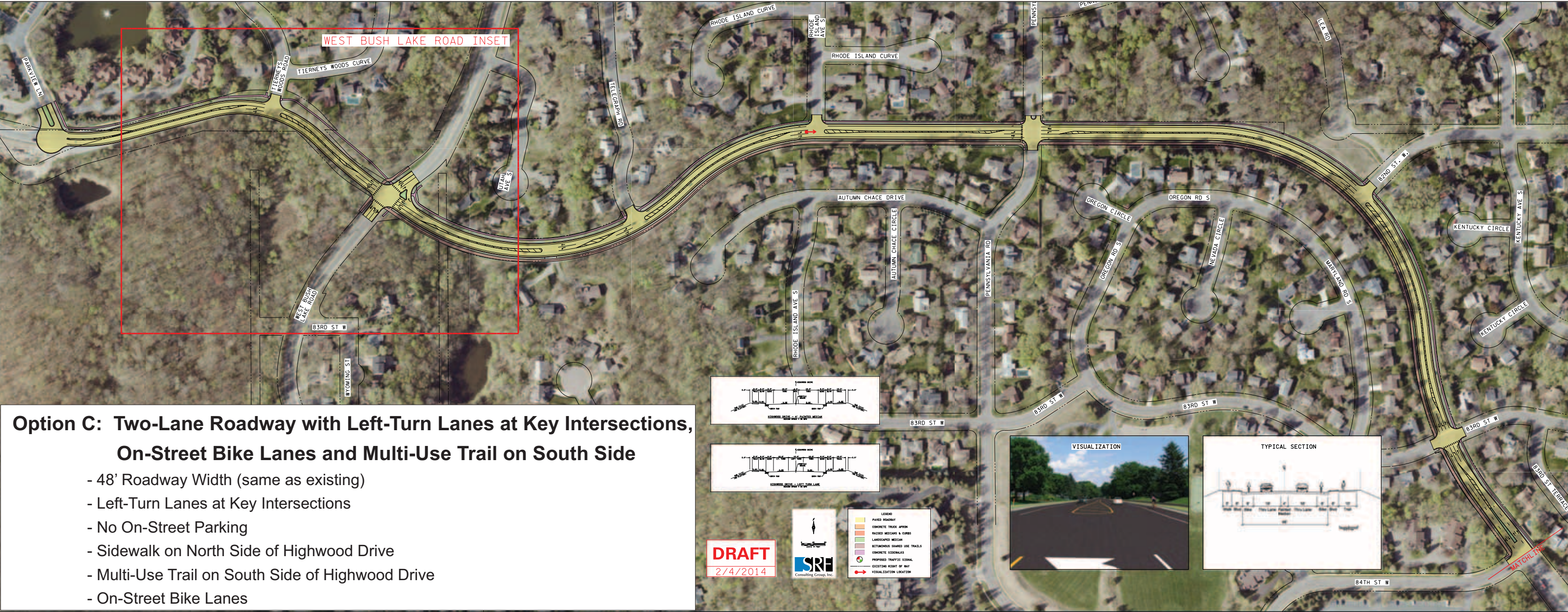




**Option B: Two-Lane Parkway with Left-Turn Lanes at Key Intersections and Multi-Use Trail on South Side**

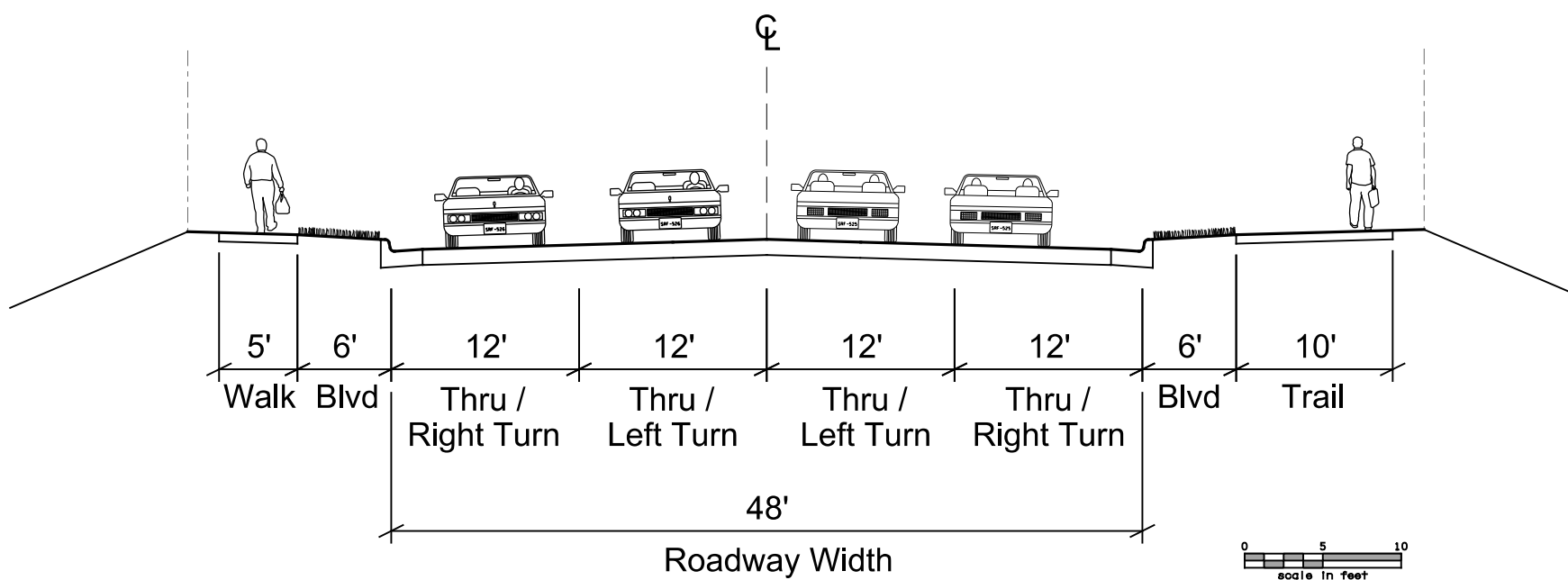
- 48' Roadway Width (same as existing)
- Left-Turn Lanes at Key Intersections
- No On-Street Parking
- Sidewalk on North Side of Highwood Drive
- Multi-Use Trail on South Side of Highwood Drive



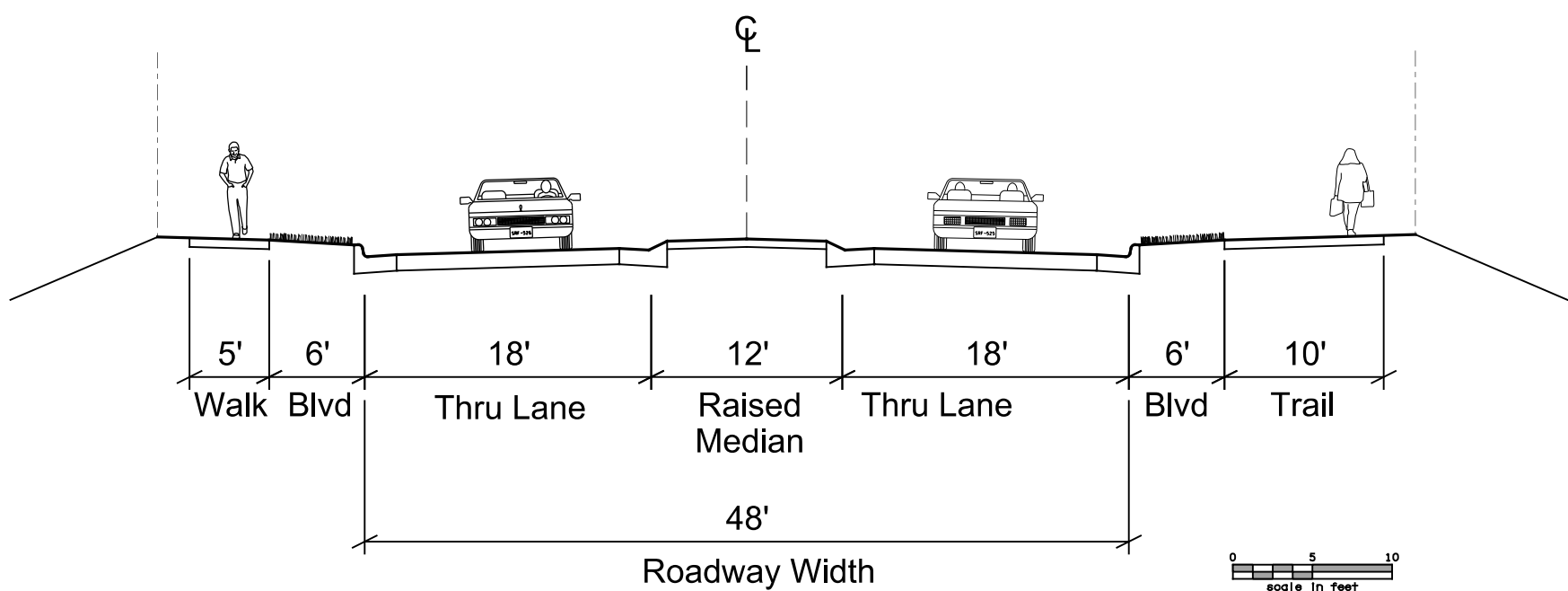




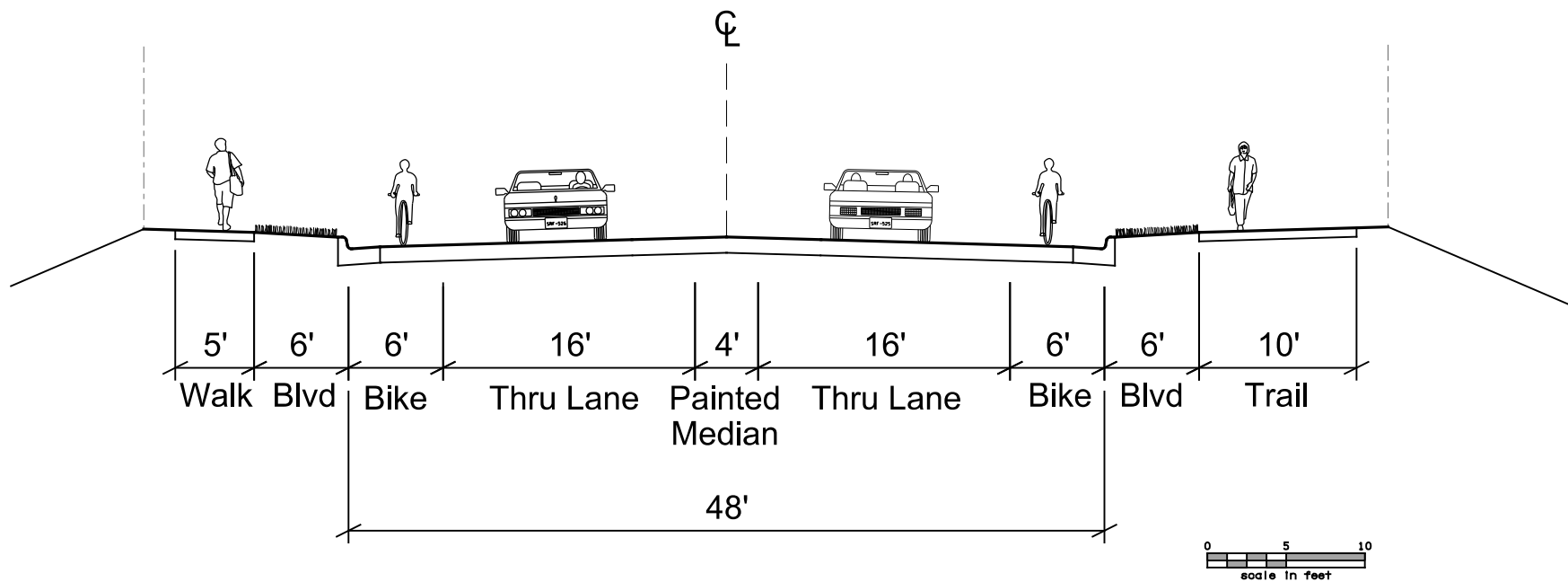
# Option A - Four-Lane Undivided Roadway with Multi-Use Trail on South Side



# Option B - Two-Lane Parkway with Left-Turn Lanes at Key Intersections and Multi-Use Trail on South Side



# Option C - Two-Lane Roadway with Left-Turn Lanes at Key Intersections and Multi-Use Trail on South Side



H:\Projects\8207\TS\Public Involvement\Public Open House 140210\Typicals.cdr



### Option 1: New Traffic Signal with Existing Roadway

### Option 1: New Traffic Signal with Existing Roadway

- Two-Lane Section with Turn-Lanes
- Acceptable Overall Traffic Operations
- Excessive Delay on Highwood Drive Approach
- Long Northbound Queues in the A.M. Peak Period
- Long Southbound Queues in the P.M. Peak Period

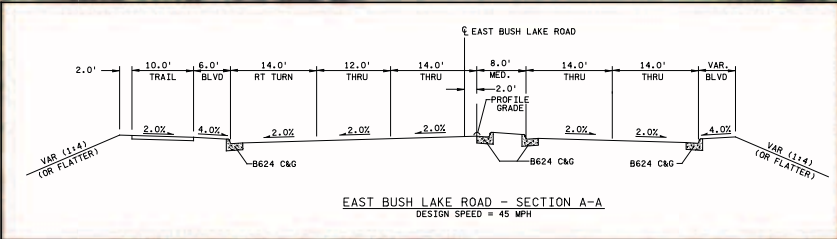




# East Bush Lake Road/Highwood Drive Intersection

## Option 2: New Traffic Signal with Four Lanes

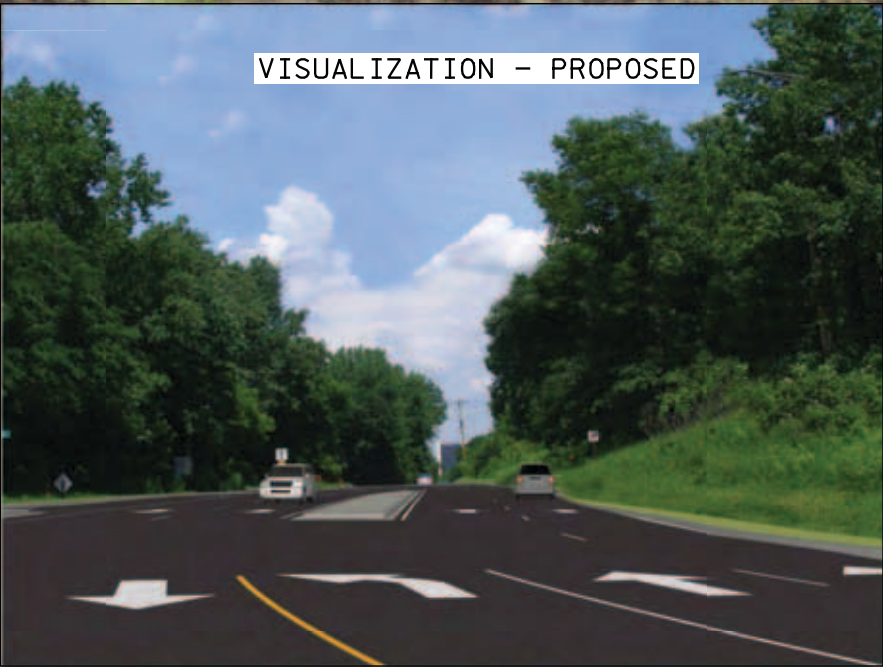
- Four-Lane Section with Turn-Lanes
- Fits within Existing Right-of-Way
- Acceptable Traffic Operations
- Southbound Right-Turn Lane at 86th Street



VISUALIZATION - EXISTING CONDITIONS

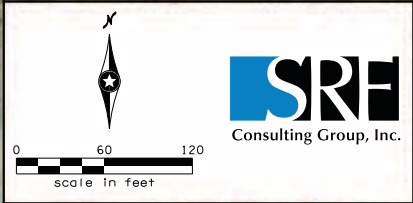


VISUALIZATION - PROPOSED



**DRAFT**

2/3/2014



**SRE**  
Consulting Group, Inc.

### LEGEND

- PAVED ROADWAY
- CONCRETE TRUCK APRON
- RAISED MEDIANS & CURBS
- LANDSCAPED MEDIAN
- BITUMINOUS SHARED USE TRAILS
- CONCRETE SIDEWALKS
- PROPOSED TRAFFIC SIGNAL
- EXISTING RIGHT OF WAY
- VISUALIZATION LOCATION



- Four-Lane Section
- Minimal Right-of-Way Impacts in Southwest Quadrant
- Acceptable Traffic Operation
- Southbound Right-Turn Lane at 86th Street



5:21:02 PM  
2/3/2014  
C:\Users\jonesr\Documents\Projects\207\CAD\_BIM\LAYOUT\207 - Loc-EBLR-2\oneRAB.dgn



- Works with any Corridor Option
- Fits within Existing Right-of-Way
- Acceptable Traffic Operations



- Works with any Corridor Option
- Minimal Right-of-Way Impacts
- Acceptable Traffic Operations







## Highwood Drive Intersection and Corridor Study COMMENT SHEET

Public Open House – Monday, February 10, 2014

---

Name: \_\_\_\_\_

Address: \_\_\_\_\_

### Corridor Options

On a scale of 1 to 3 (1 being the best, 3 being the worst) please rank the following roadway options:

Option A	1	2	3
Four-Lane Undivided Roadway with Multi-Use Trail on South Side			

---

Option B	1	2	3
Two-Lane Parkway with Left-Turn Lanes at Key Intersections and Multi-Use Trail on South Side			

---

Option C	1	2	3
Two-Lane Roadway with Left-Turn Lanes at Key Intersections, On-Street Bike Lanes and Multi-Use Trail on South Side			

---

### Off-Road Multi-Use Trail

This option is a stand-alone feature that could be added to any of the corridor options. Please comment on the value you think that this would add.

---

---

### On-Street Bike Lanes

This option could be provided with either Option B or Option C. Please comment on the value you find is added if on-street bike lanes are provided.

---

---

# Highwood Drive/East Bush Lake Road Options

On a scale of 1 to 3 (1 being the best, 3 being the worst) please rank the following intersection options:

<b>Option 1</b>	<b>1</b>	<b>2</b>	<b>3</b>
New Traffic Signal with Existing Roadway			

---

<b>Option 2</b>	<b>1</b>	<b>2</b>	<b>3</b>
New Traffic Signal with Four Lanes			

---

<b>Option 3</b>	<b>1</b>	<b>2</b>	<b>3</b>
Multi-Lane Roundabout			

# Highwood Drive/West Bush Lake Road Options

On a scale of 1 to 2 (1 being the best, 2 being the worst) please rank the following intersection options:

<b>Option 1</b>	<b>1</b>	<b>2</b>
All-Way Stop Controlled		

---

<b>Option 2</b>	<b>1</b>	<b>2</b>
Single-Lane Roundabout		

---

Please provide your input on the study results and boards presented at the open house. For comments related to the options, please explain why you support or dislike a specific option.

**Comments:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_