

# North Avenue Corridor Study Public Workshop #3

St. Mark's Church

May 20, 2014

7:00 PM



**PARSONS  
BRINCKERHOFF**

# Meeting Agenda

- **Welcome** (*Nicole Losch, DPW*)
- **Presentation** (*Joe Barr, PB*)
  - Status of Corridor Study
  - Recap Project Goals, Objectives, and Outreach
  - Intersection and Cross Section Concepts
  - Description of Open House Format
- **Open House Evaluation**
  - Segment 1:** *Plattsburg Ave to Shore Rd*
  - Segment 2:** *Shore Rd to VT 127 Ramps*
  - Segment 3:** *VT 127 Ramps to Institute Rd*
  - Segment 4:** *Institute Rd to Washington St*
  - Segment 5:** *Washington St to North St*
- **Report on Segment Evaluation, Wrap up, Next Steps**
- **Adjourn**

# Study Goal

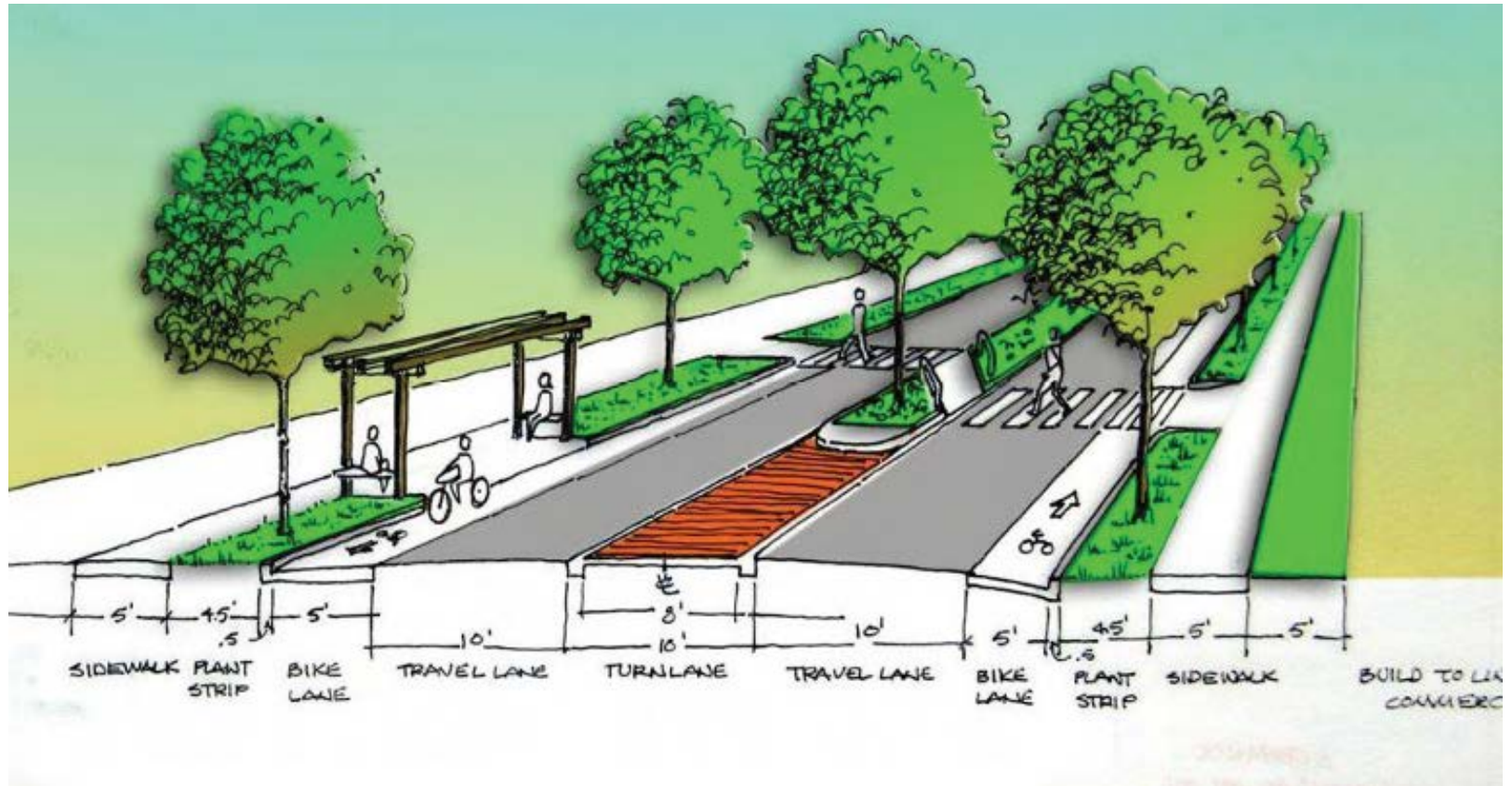
The study is evaluating North Avenue from a **Complete Streets** perspective and developing recommendations for remaking the corridor to accommodate all users.





# What Are Complete Streets?

Streets designed to safely accommodate all users regardless of age, ability or modal preference - pedestrians, bicyclists, motorists, and bus riders



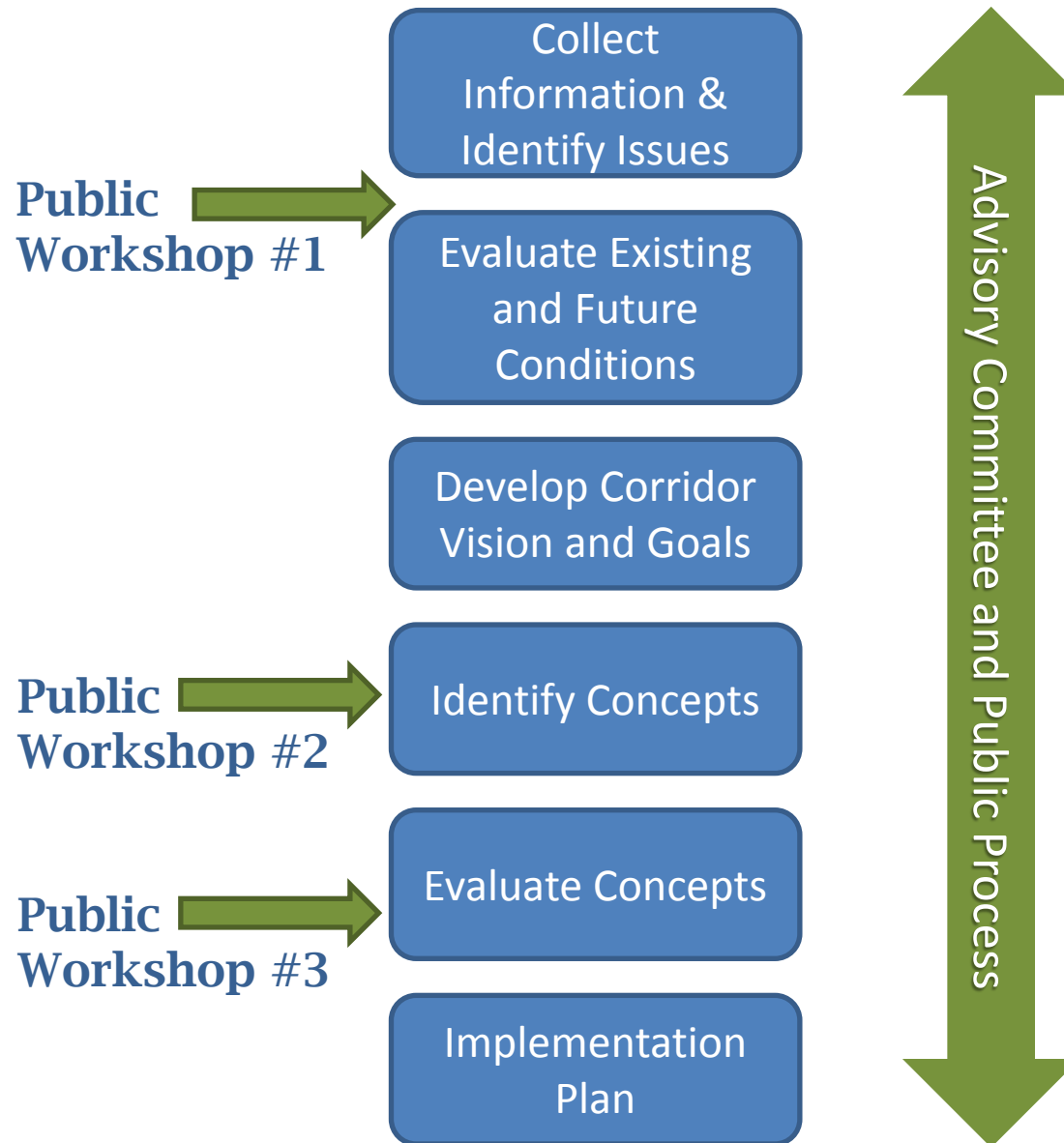
# Corridor Vision

North Avenue will provide for **safe, inviting, and convenient travel for all users of all ages and abilities**—including motorists, pedestrians, bicyclists, and public transportation riders. The **need to move people through the corridor will be balanced with the need to provide access to homes, businesses, and local institutions.** The corridor will develop into an **attractive public space** through creative streetscape, signage, and other site design features. The corridor will become **more livable and desirable by promoting social interaction and public health.**

# Goals for Proposed Improvements

- Remake the North Ave corridor into a Complete Street that accommodates the safe and efficient travel for all users of all abilities and provides transportation choices.
- Improve safety for all users.
- Provide a range of convenient and efficient travel options and improve multimodal connections.
- Develop strategies that support vibrant and livable neighborhoods in the New North End; enhance the quality of life of residents and visitors; and support sustainable economic growth.

# North Ave Study Process



# Feedback From February Public Workshop

- After a summary presentation, **four breakout groups** reviewed intersection and cross section concepts
- **General feedback:**
  - Desire consistency throughout the corridor
  - Prefer separated bicycle facilities
  - Desire more crosswalks, greater pedestrian visibility
  - Concern over impacts to trees, planting strip
  - Concern over plowing and snow storage
  - Desire connections to existing paths



# Corridor Concepts

- **Intersections:**

- Plattsburg Ave
- Shore Rd/Heineberg Rd
- Ethan Allen Shopping Center
- Ethan Allen Pkwy
- VT 127 Ramps
- Institute Rd
- North St

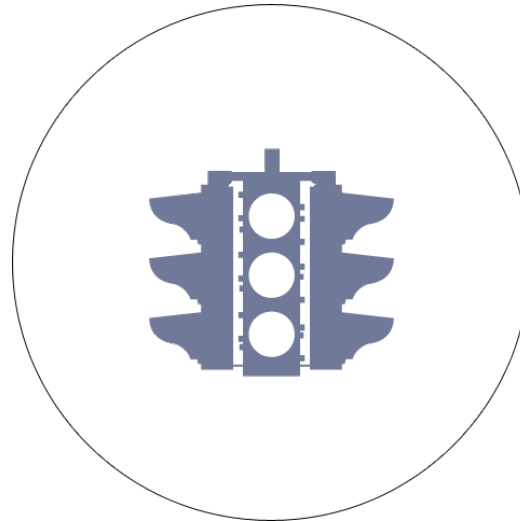
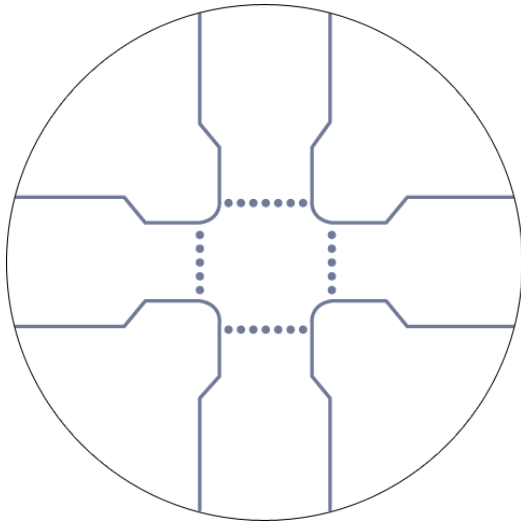
- **Cross Sections:**

- Short-Term Improvements (Concept A)
- Five Medium- to Long-Term Concepts (Concepts B-F)

# Intersection Concepts

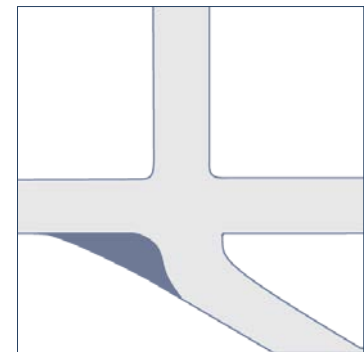
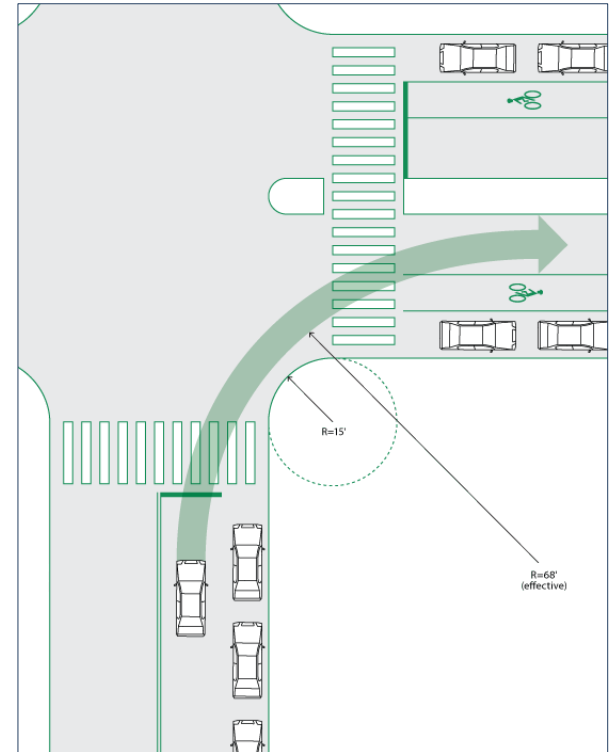
# Intersections: Design Principles

- **Compact** intersections
- Pedestrian facilities **on all approaches**
- **Continuous** bicycle facilities through intersections
- Supports **placemaking**




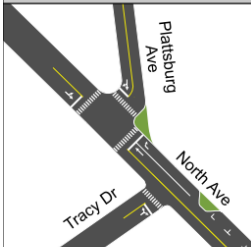
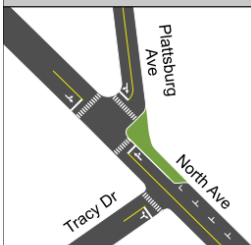
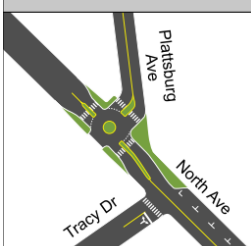
# Intersections: Complete Streets Toolbox

- Narrowed vehicle lanes (10.5')
- Tightened actual and effective curb radii
- Curb extensions
- Crosswalks on all approaches
- Leading pedestrian/bicycle intervals
- Tabled intersections
- Roundabouts/mini-roundabouts
- Gateway treatments
- Colored pavement



# Intersections: Recent Revisions

- **Plattsburg Ave:** Concept that removes NB right turn lane
- 4-lane concepts for **Shore Rd**, **Ethan Allen Shopping Center**, **Ethan Allen Pkwy**, and **VT 127**
- **Ethan Allen Pkwy:** Partial 2-lane roundabout
- **North St:**
  - Right in, right out at parking lot
  - South crosswalk pedestrian refuge

North Avenue Corridor Study	
	
Plattsburg Avenue Intersection Concepts	
Concept 1	
	<b>Modifications:</b> <ul style="list-style-type: none"><li>• High-speed right eliminated</li><li>• 5-second leading pedestrian interval</li></ul> <p>Green if you prefer this concept, or Red if you do not prefer this concept.</p>
Concept 2	
	<b>Modifications:</b> <ul style="list-style-type: none"><li>• Same as Concept 1, but NB right-turn lane removed</li></ul> <p>Green if you prefer this concept, or Red if you do not prefer this concept.</p>
Concept 3	
	<b>Modifications:</b> <ul style="list-style-type: none"><li>• Mini-roundabout with NB right-turn lane removed</li><li>• Gateway treatments</li><li>• NB right-turn lane removed</li></ul> <p>Green if you prefer this concept, or Red if you do not prefer this concept.</p>



# Plattsburg Ave Intersection Concepts

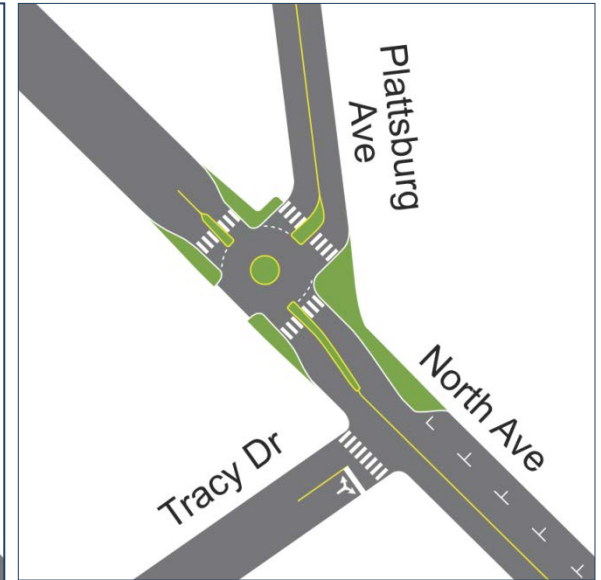
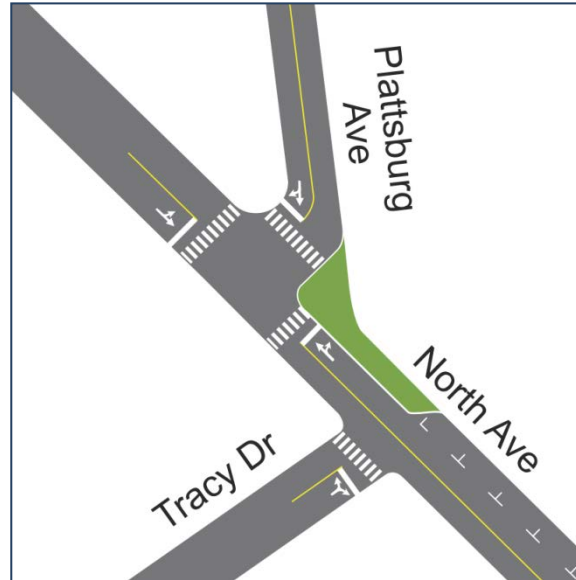
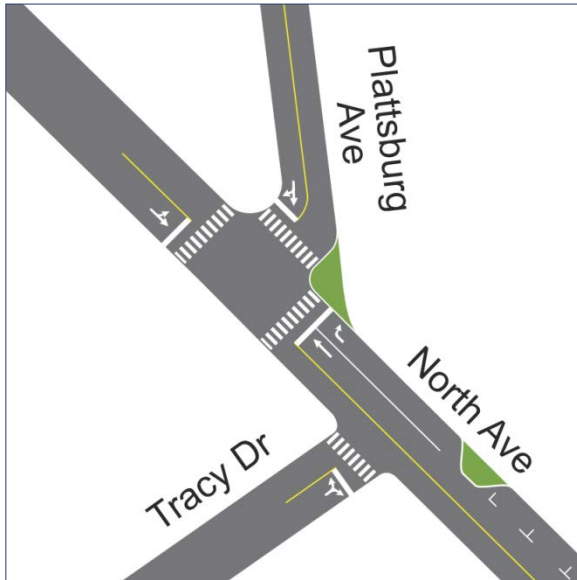


Plattsburg Ave

North St

# Plattsburg Ave Intersection Concepts

Concept 1	Concept 2	Concept 3
<ul style="list-style-type: none"><li>• High-speed right eliminated</li><li>• 5-second leading pedestrian interval</li></ul>	<ul style="list-style-type: none"><li>• Same as Concept 1, but NB right turn removed</li></ul>	<ul style="list-style-type: none"><li>• Mini-roundabout</li><li>• Gateway treatments</li><li>• NB right turn removed</li></ul>





# Shore Rd/Heineberg Rd Intersection Concepts



Plattsburg Ave

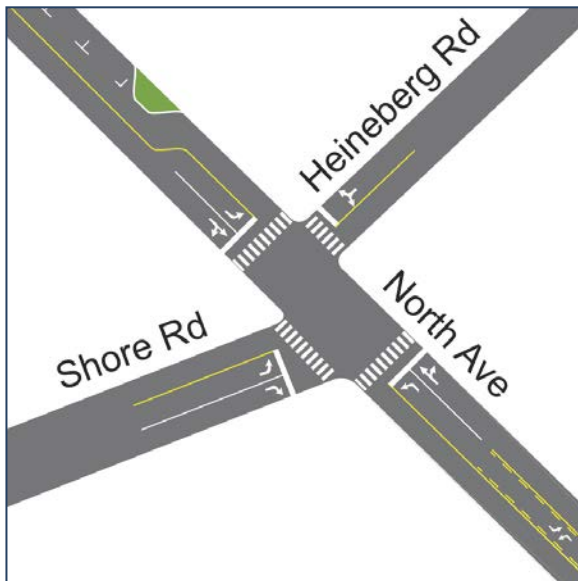
Shore Rd/Heineberg Rd

North St

# Shore Rd/Heineberg Rd Intersection Concepts

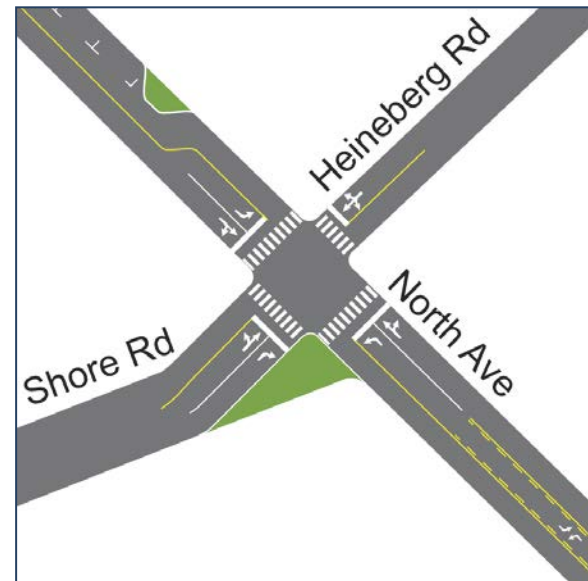
## 3-Lane Concept 1

- 5-second leading pedestrian interval
- Crossing times long enough for seniors
- No right on red
- Split phasing



## 3-Lane Concept 2

- 5-second leading pedestrian interval
- Crossing times long enough for seniors
- No right on red
- Shore Rd realignment

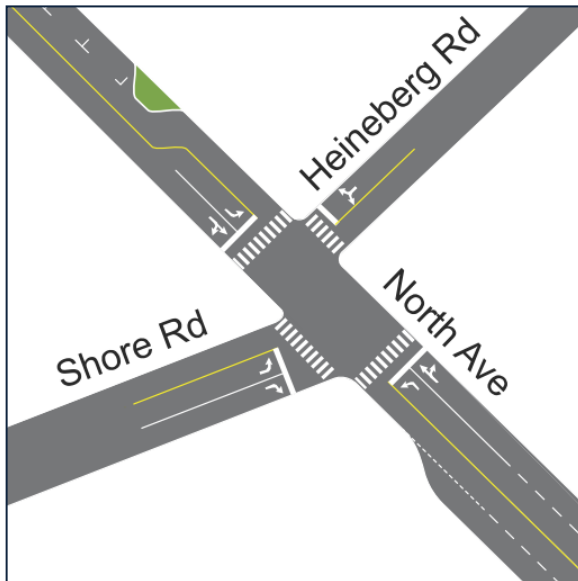




# Shore Rd/Heineberg Rd Intersection Concepts

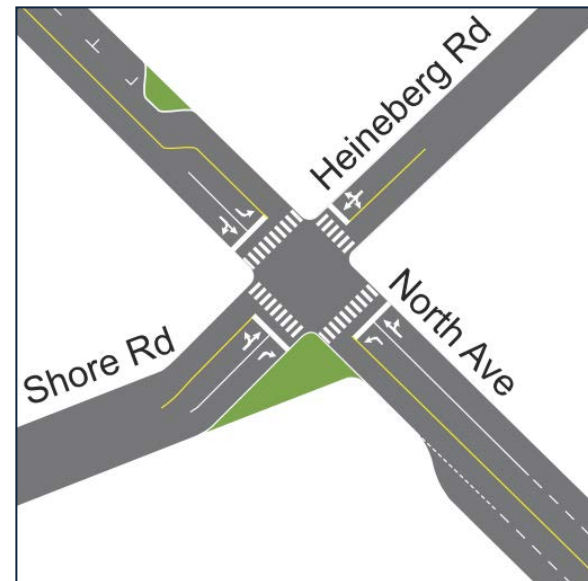
## 4-Lane Concept 1

- 5-second leading pedestrian interval
- Crossing times long enough for seniors
- No right on red
- Split phasing



## 4-Lane Concept 2

- 5-second leading pedestrian interval
- Crossing times long enough for seniors
- No right on red
- Shore Rd realignment





# Ethan Allen Shopping Center Intersection Concepts



Plattsburg Ave

Ethan Allen Shopping Center

North St

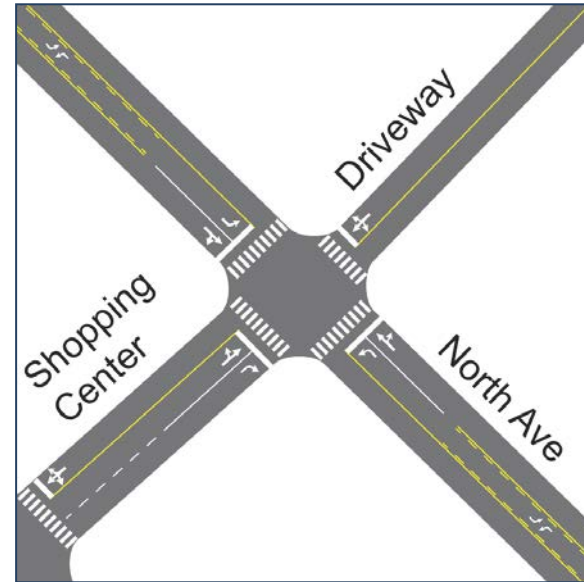
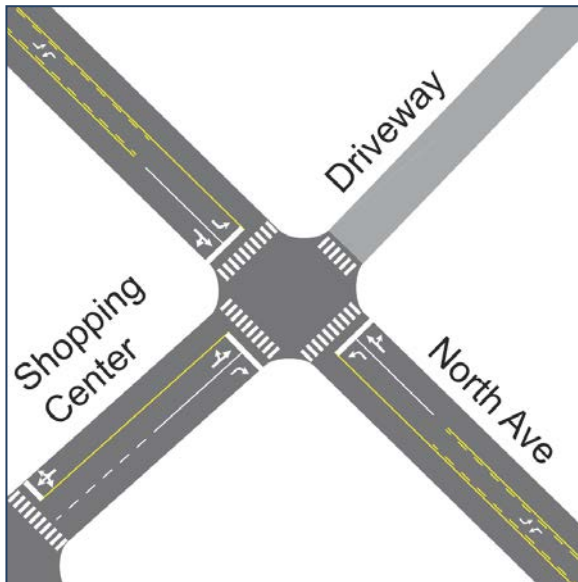
# Ethan Allen Shopping Center Intersection Concepts

## 3-Lane Concept 1

- 5-second leading pedestrian interval
- Crossing times long enough for seniors
- No right on red

## 3-Lane Concept 2

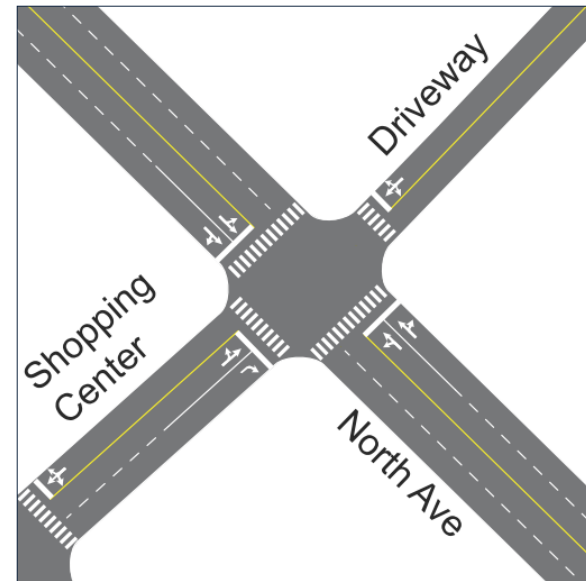
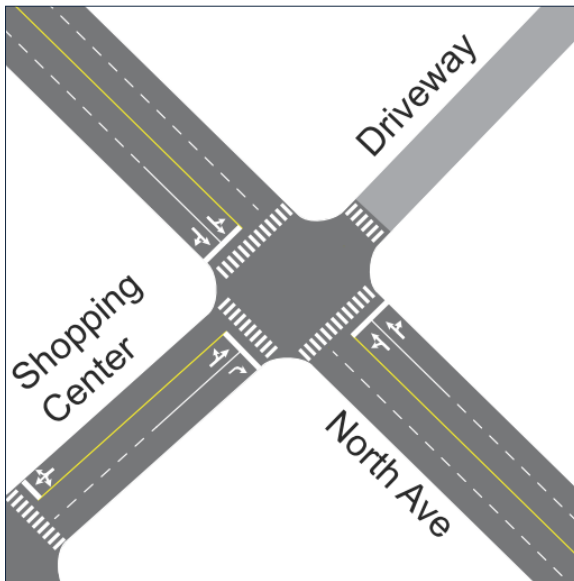
- Same as Concept 1
- Driveway reconstruction



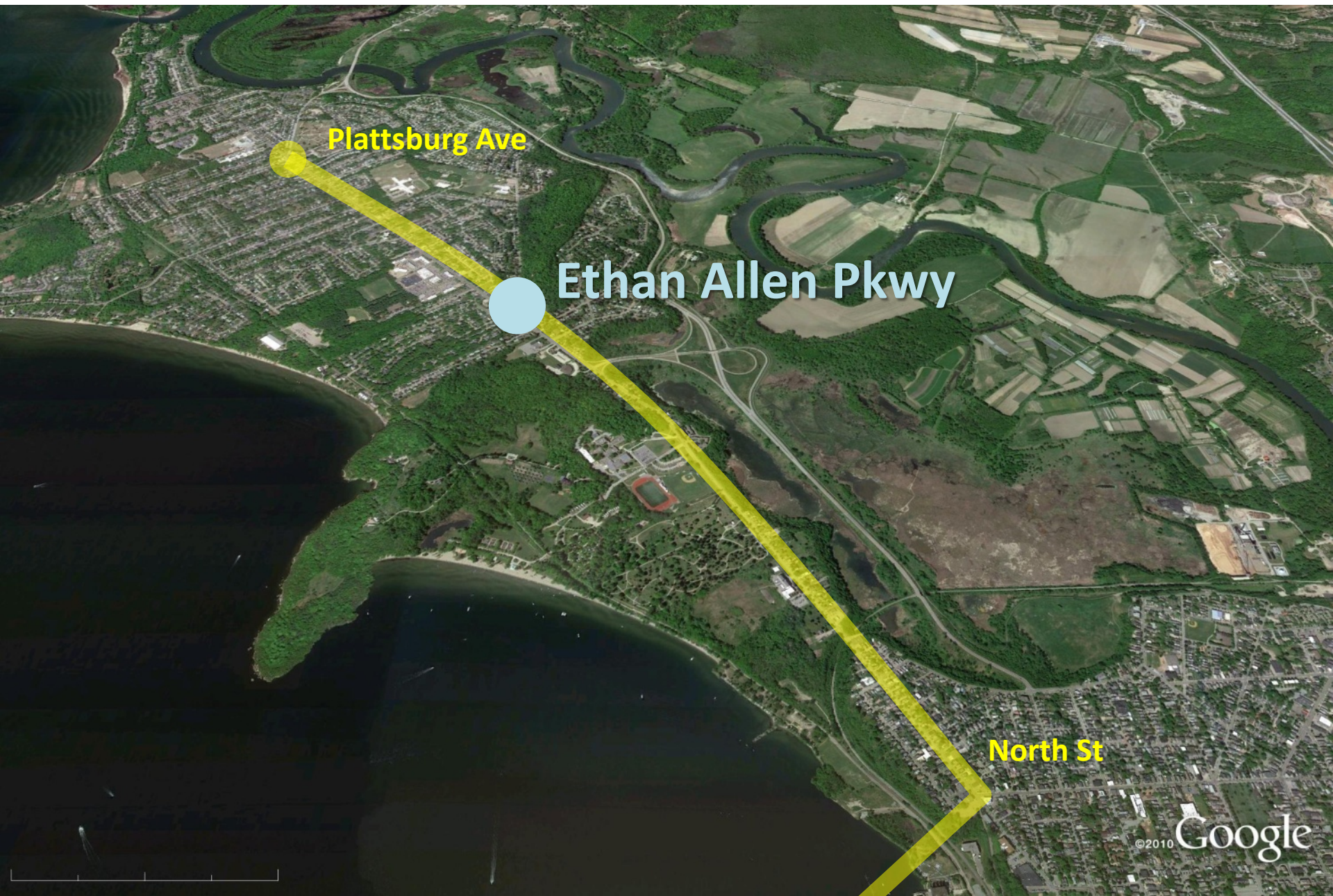


# Ethan Allen Shopping Center Intersection Concepts

4-Lane Concept 1	4-Lane Concept 2
<ul style="list-style-type: none"><li>• 5-second leading pedestrian interval</li><li>• Crossing times long enough for seniors</li><li>• No right on red</li></ul>	<ul style="list-style-type: none"><li>• Same as Concept 1</li><li>• Driveway reconstruction</li></ul>



# Ethan Allen Pkwy Intersection Concept

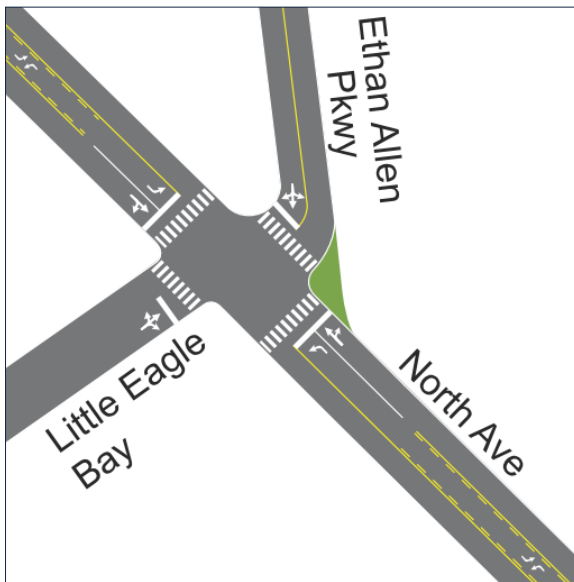




# Ethan Allen Pkwy Intersection Concept

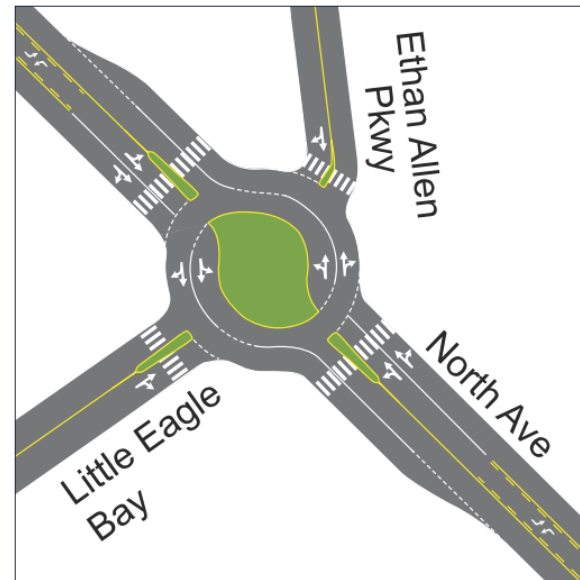
## 3-Lane Concept 1

- 5-second leading pedestrian interval
- Include Little Eagle Bay in signal
- Relocated Ethan Allen Park entrance



## 3-Lane Concept 2

- Partial two-lane roundabout, no flare on approaches
- Relocated Ethan Allen Park entrance

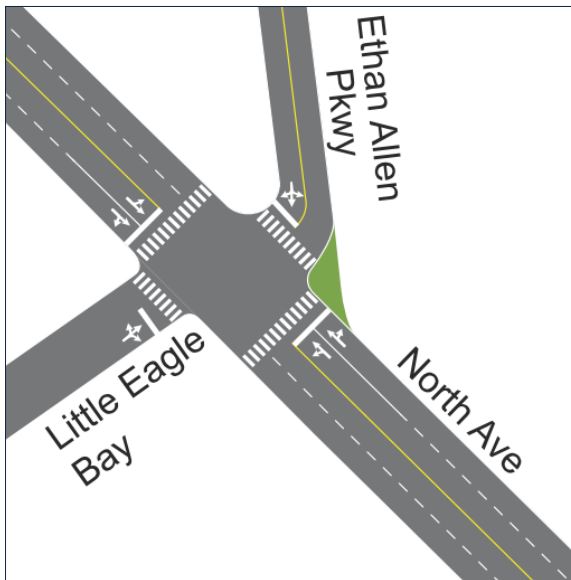




# Ethan Allen Pkwy Intersection Concept

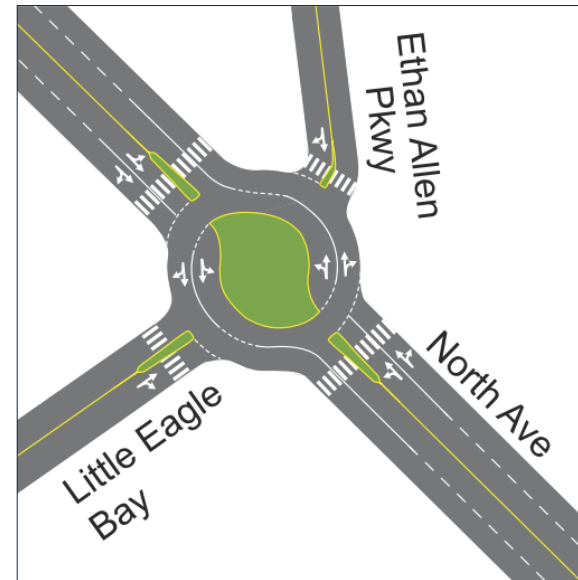
## 4-Lane Concept 1

- 5-second leading pedestrian interval
- Include Little Eagle Bay in signal
- Relocated Ethan Allen Park entrance

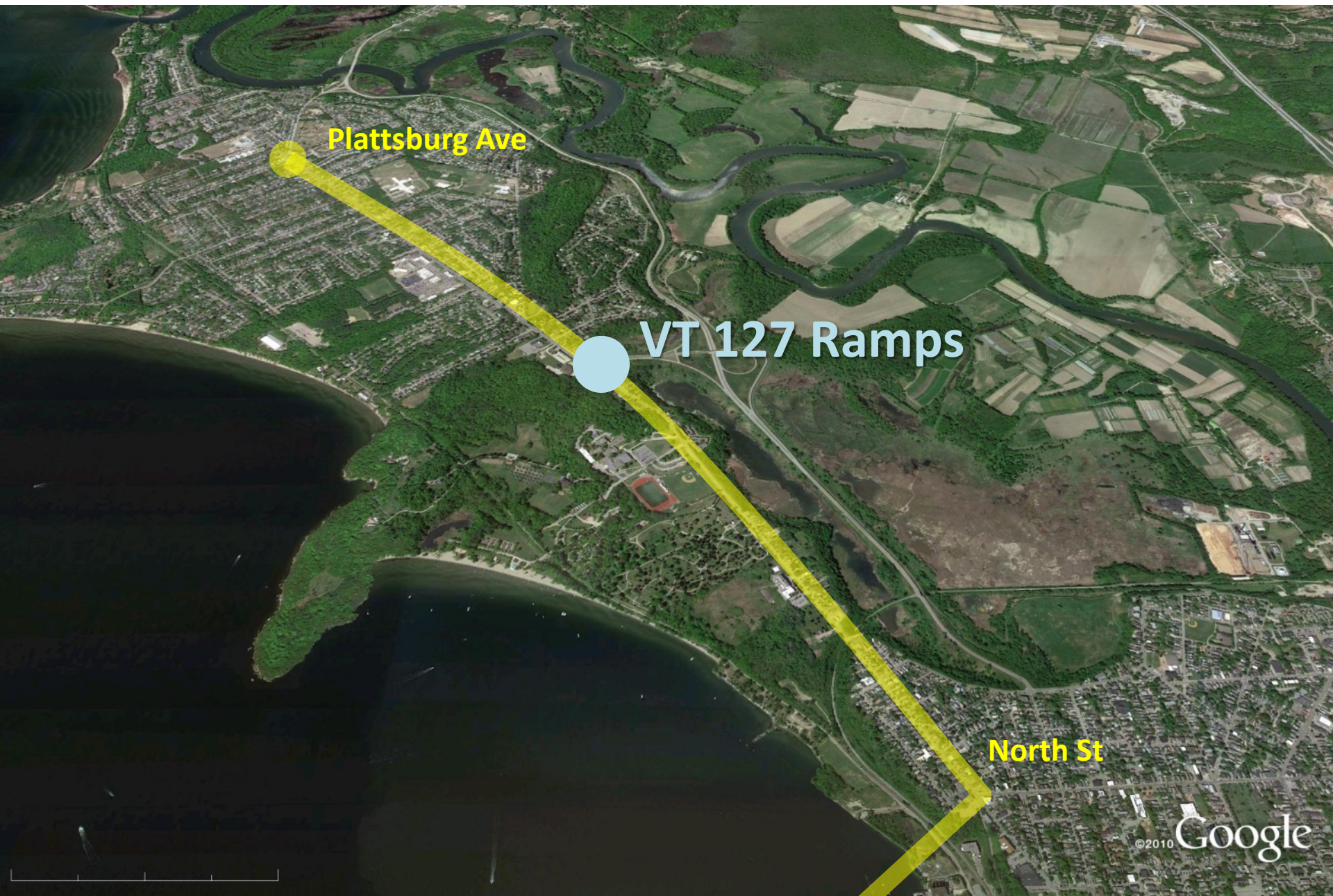


## 4-Lane Concept 2

- Partial two-lane roundabout, no flare on approaches
- Relocated Ethan Allen Park entrance



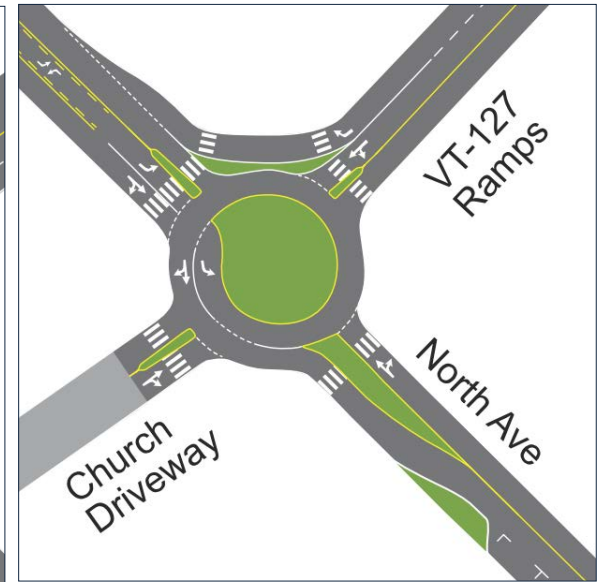
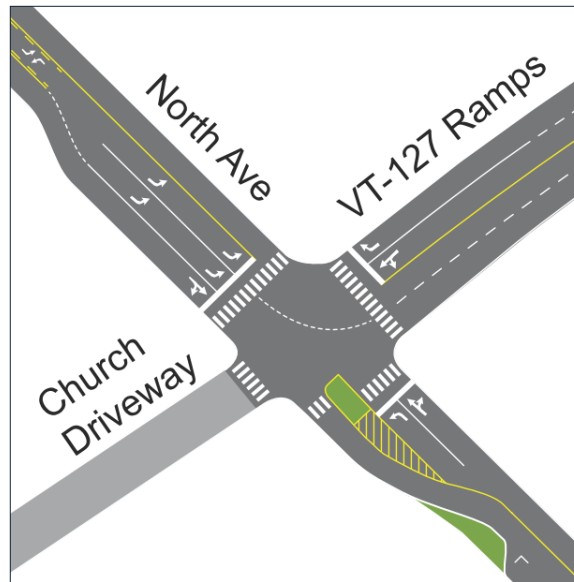
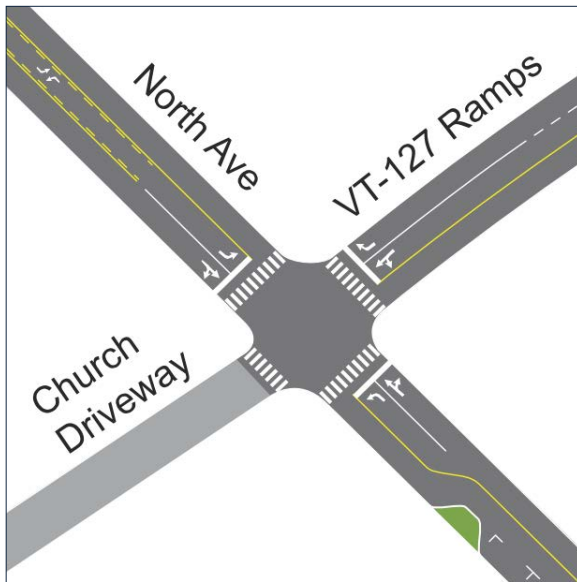
# VT 127 Intersection Concepts





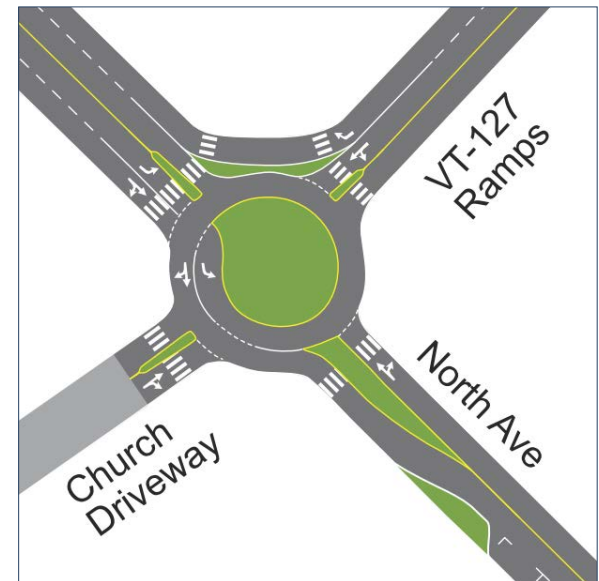
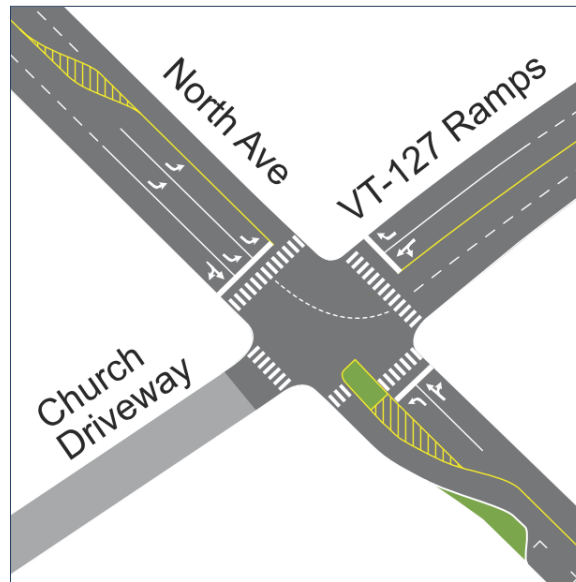
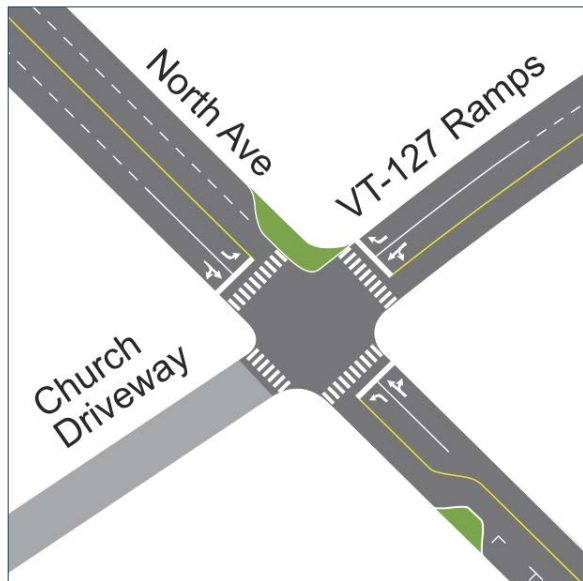
# VT 127 Intersection Concepts

3-Lane Concept 1	3-Lane Concept 2	3-Lane Concept 3
<ul style="list-style-type: none"><li>• Removal of high-speed NB and WB right turns</li><li>• 5-second leading pedestrian interval</li></ul>	<ul style="list-style-type: none"><li>• Removal of high-speed NB and WB right turns</li><li>• Dual SB left-turn lanes</li><li>• 5-second leading pedestrian interval</li></ul>	<ul style="list-style-type: none"><li>• Removal of high-speed NB right turn</li><li>• Roundabout with dual SB and WB approach lanes, no flare on approaches</li></ul>



# VT 127 Intersection Concepts

4-Lane Concept 1	4-Lane Concept 2	4-Lane Concept 3
<ul style="list-style-type: none"><li>• Removal of high-speed NB and WB right turns</li><li>• 5-second leading pedestrian interval</li></ul>	<ul style="list-style-type: none"><li>• Removal of high-speed NB and WB right turns</li><li>• Dual SB left-turn lanes</li><li>• 5-second leading pedestrian interval</li></ul>	<ul style="list-style-type: none"><li>• Removal of high-speed NB right turn</li><li>• Roundabout with dual SB and WB approach lanes, no flare on approaches</li></ul>





# Institute Rd Intersection Concept

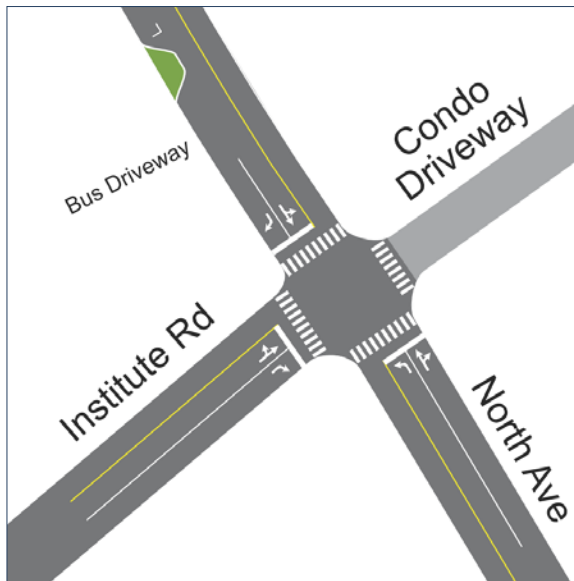




# Institute Rd Intersection Concept

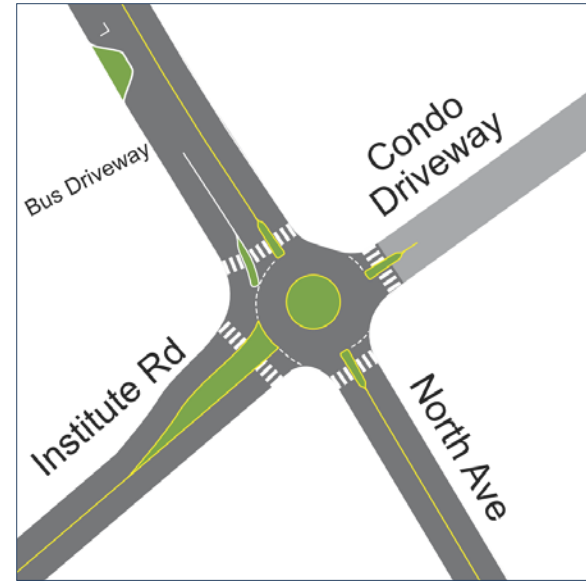
## Concept 1

- 5-second leading pedestrian interval
- No right on red
- Relocated NB bus shelter to far side of intersection



## Concept 2

- Single-lane roundabout with SB right-turn lane, no flare on approaches



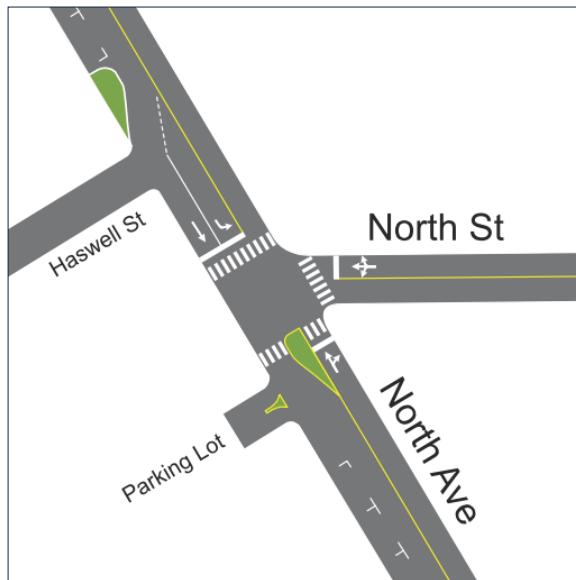
# North St Intersection Concepts





# North St Intersection Concepts

Concept 1	Concept 2
<ul style="list-style-type: none"><li>• 5-second leading pedestrian interval</li><li>• No right on red</li><li>• Parking lot right in, right out</li><li>• Pedestrian refuge</li><li>• Split phasing</li></ul>	<ul style="list-style-type: none"><li>• 5-second leading pedestrian interval</li><li>• No right on red</li><li>• Parking lot right in, right out</li><li>• Pedestrian Refuge</li><li>• Protected/permitted SB left turns</li><li>• Gateway treatments</li></ul>



# Cross Section Concepts




# Cross Sections: Design Principles

- Design for **all modes of travel**
- **25 mph speed limit**, reinforced with **traffic calming** elements
- **Consistent** transportation facilities
- Parking, when present, on **one side**
- Sidewalk/planting strip **flexibility**



# Cross Sections: Consistent 25 MPH Corridor

Higher Speeds = Higher Injury Severity = **Lower Safety for All Users**

Speed (mph)	Stopping Distance (ft)	Fatality Risk (%)	Peripheral Vision of Driver
20-25	40	5	
30-35	75	45	
40+	118	85	

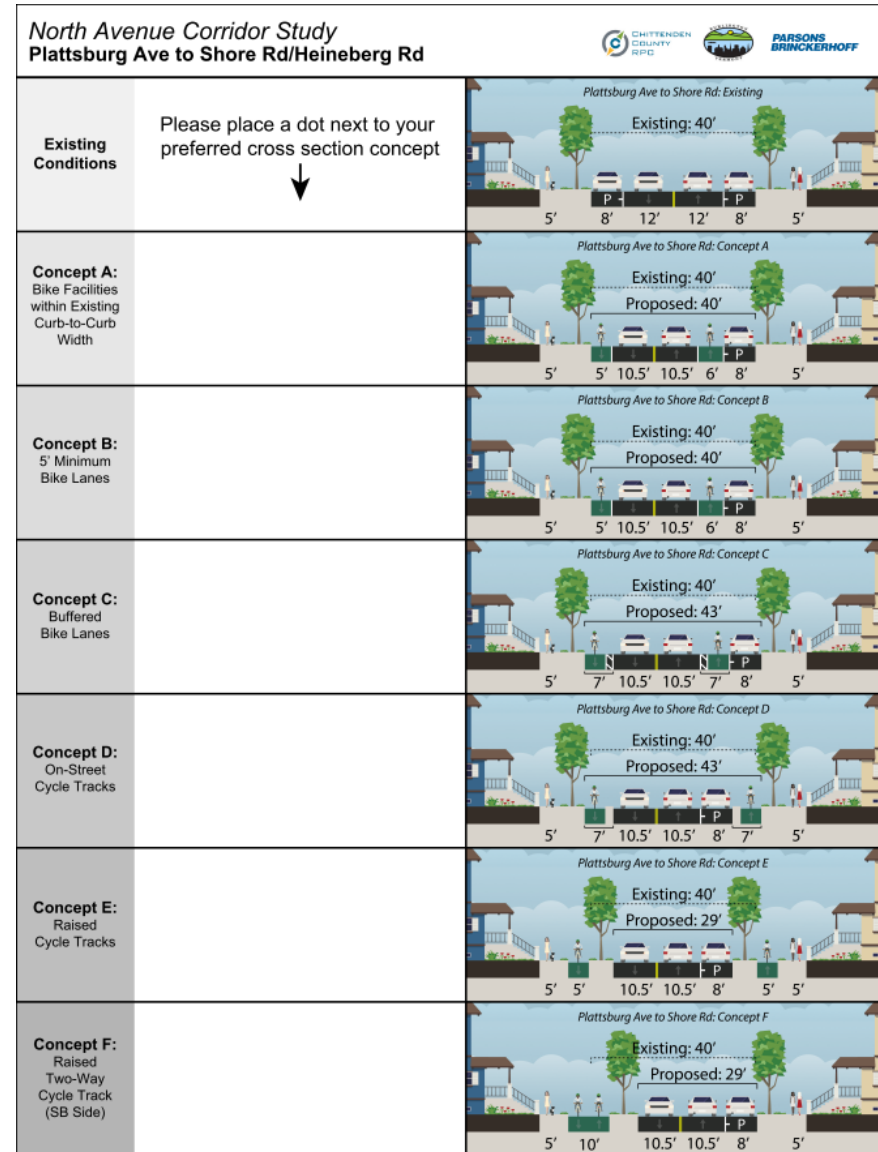
# Cross Sections: Complete Streets Toolbox

- Narrowed vehicle lanes (10.5')
- Curb extensions and chokers
- Mid-block crossings with pedestrian refuge islands
- Marked on-street parking
- Parking chicane
- Bus bulbs



# Cross Sections: Recent Revisions

- Vehicle lanes = 10.5'
- **Added Option F for all Segments:** Raised two-way cycle track (10')
- **Shore Road to VT 127:** Added evaluation of a 4-lane cross section for this segment
- **Institute Rd to Washington St:** Curb-to-curb width enough for buffered bike lanes in Options A & B (In this case, Option A = B = C)
- **Washington St to North Ave:** added option A2 (5' northbound bike lane)



# Concepts: Typical Cross Sections

Corridor-wide	Existing	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F
25 mph Speed Limit, 10.5' Vehicle Lanes, and...	N/A	Bike Facilities in Existing Roadway Width	5' Min. Bike Lanes	Buffered Bike Lanes	Cycle Tracks	Raised Cycle Tracks	Raised Two-Way Cycle Track (SB Side)
Segment	Curb-to-Curb Width (ft)*						
Plattsburg Ave to Shore Rd	40	Same	Same	43	43	29	29
Shore Rd to VT 127 Ramps	40	Same	41/50	45/54	45/54	31/40	31/40
VT 127 Ramps to Institute Rd	40	Same	Same	43	43	29	29
Institute Rd to Washington St	35	Same	Same	Same	Same	21	21
Washington St to North St	33	Same	40	43	43	29	29

**\*Note: Consistent 66 ft. total right-of-way along North Ave**

# Concept A Example: Plattsburg Ave to Shore Rd

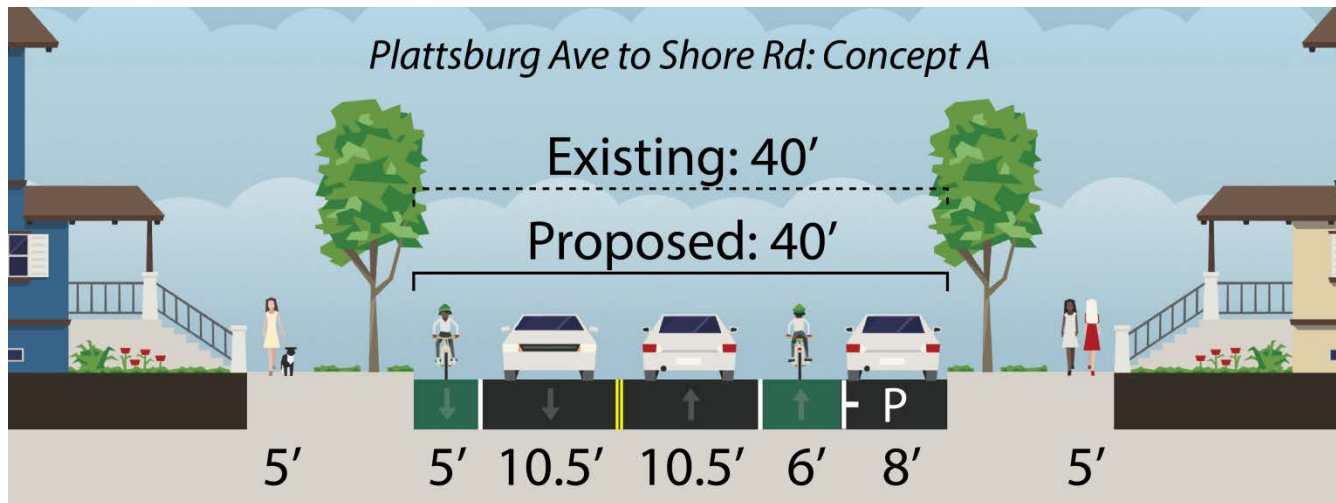
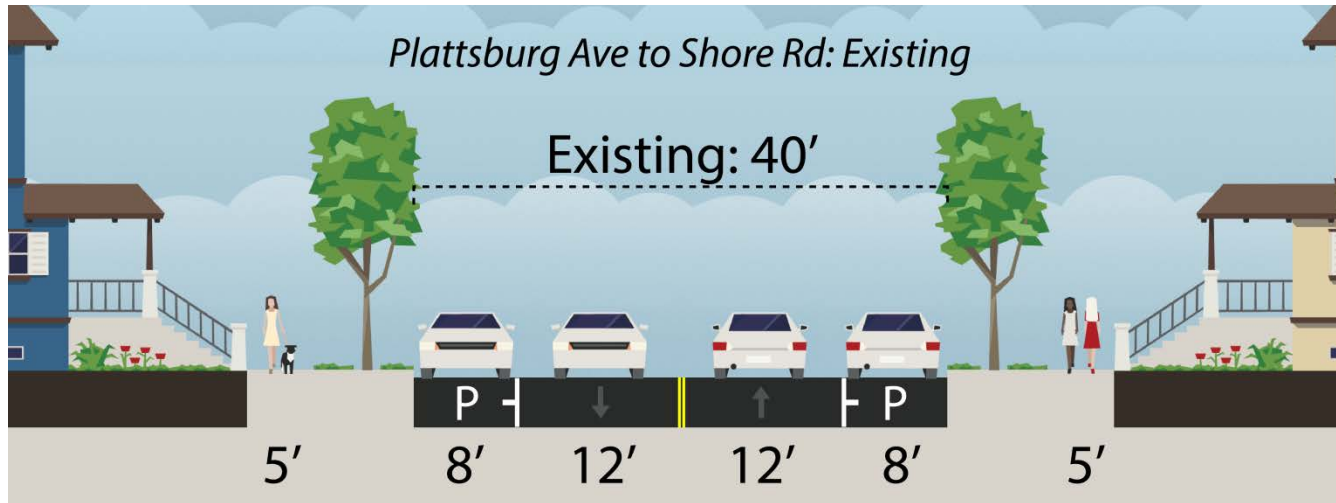
## Concept A: Work Within Existing Curbs

Corridor-wide	Existing	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F
25 mph Speed Limit, 10.5' Vehicle Lanes, and...	N/A	Bike Facilities in Existing Roadway Width	5' Min. Bike Lanes	Buffered Bike Lanes	Cycle Tracks	Raised Cycle Tracks	Raised Two-Way Cycle Track (SB Side)
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# Concept A Example: Plattsburg Ave to Shore Rd

## Concept A: Work Within Existing Curbs



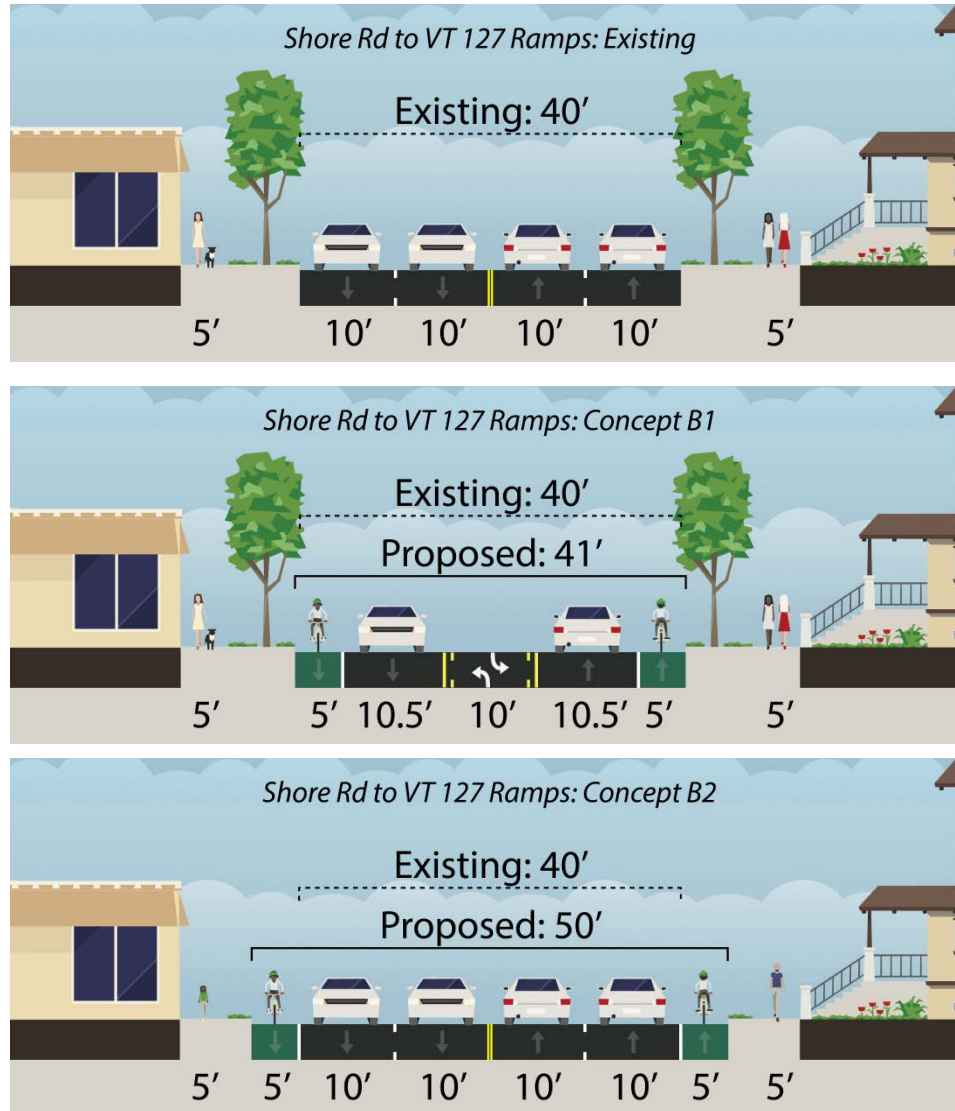
# Concept B Example: Shore Rd to VT 127 Ramps

## Concept B: 5' Bike Lanes

Corridor-wide	Existing	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F
25 mph Speed Limit, 10.5' Vehicle Lanes, and...	N/A	Bike Facilities in Existing Roadway Width	5' Min. Bike Lanes	Buffered Bike Lanes	Cycle Tracks	Raised Cycle Tracks	Raised Two-Way Cycle Track (SB Side)
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# Concept B Example: Shore Rd to VT 127 Ramps

## Concept B: 5' Bike Lanes





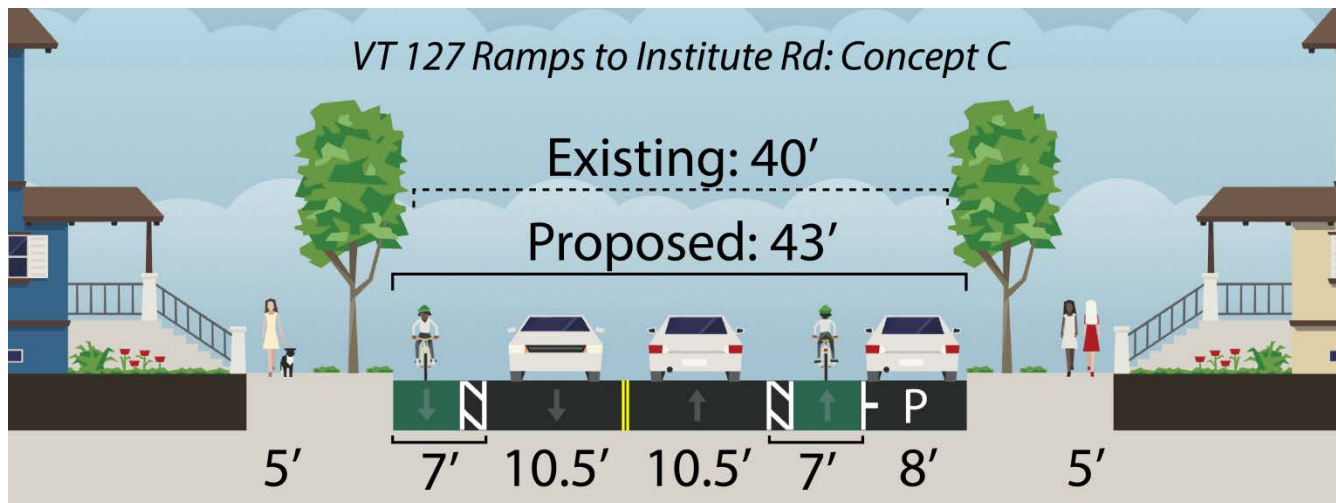
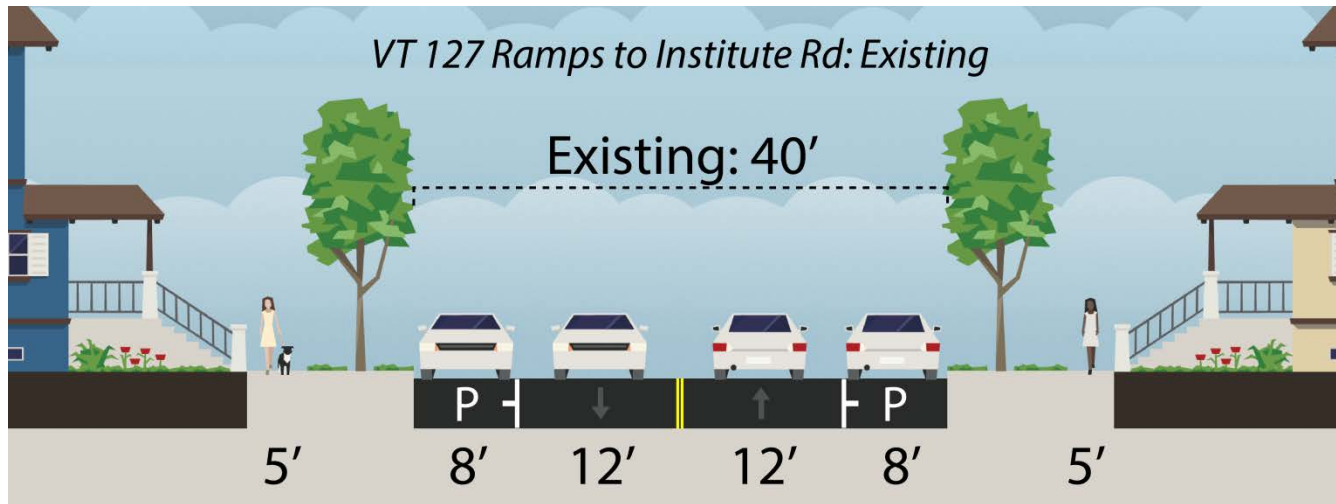
# Concept C Example: VT 127 Ramps to Institute Rd

## Concept C: 5' Bike Lanes with 2' Buffers

Corridor-wide	Existing	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F
25 mph Speed Limit, 10.5' Vehicle Lanes, and...	N/A	Bike Facilities in Existing Roadway Width	5' Min. Bike Lanes	Buffered Bike Lanes	Cycle Tracks	Raised Cycle Tracks	Raised Two-Way Cycle Track (SB Side)
Segment	Curb-to-Curb Width (ft)						
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Institute Rd to Washington St	35	Same	Same	Same	Same	21	21
Washington St to North St	33	Same	40	43	43	29	29

# Concept C Example: VT 127 Ramps to Institute Rd

## Concept C: 5' Bike Lanes with 2' Buffers



# Concept D Example: Institute Rd to Washington St

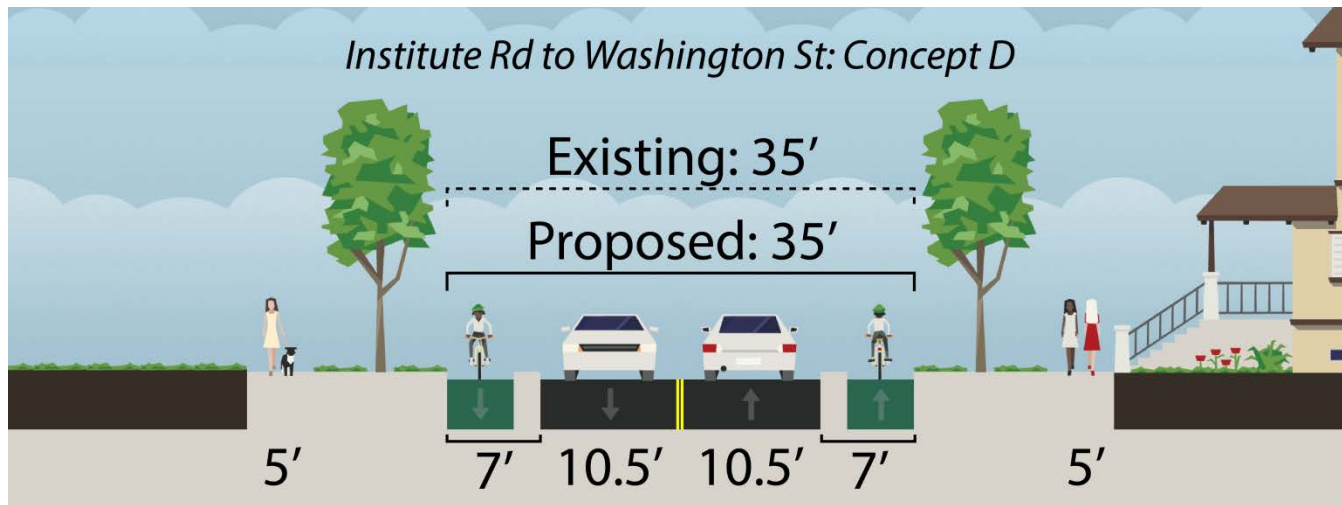
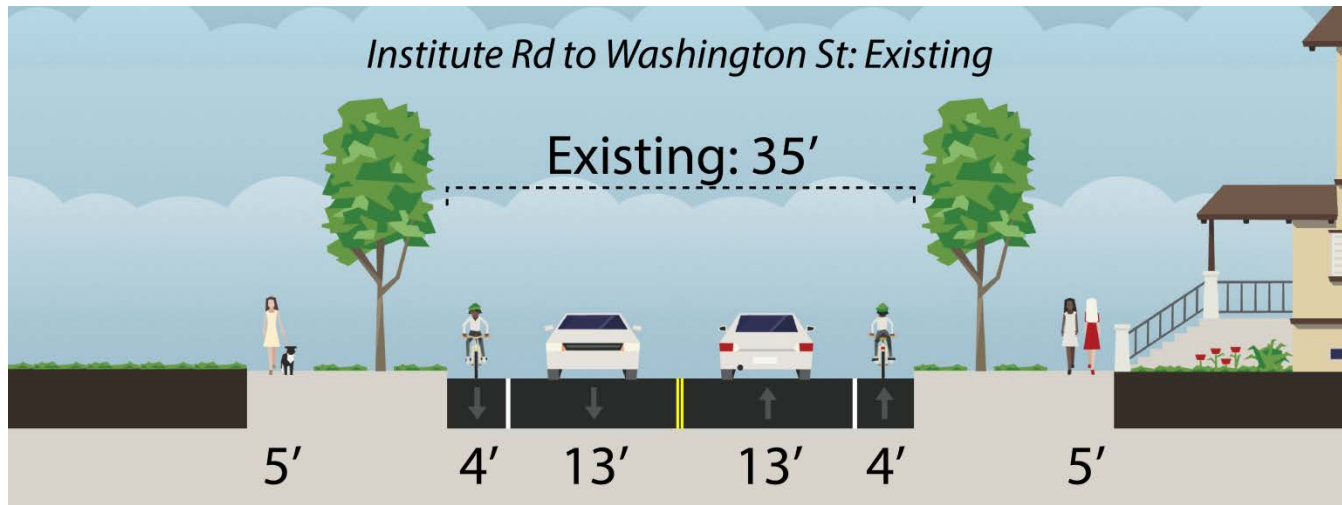
## Concept D: 5' Cycle Tracks with 2' Mountable Curbs

Corridor-wide	Existing	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F
25 mph Speed Limit, 10.5' Vehicle Lanes, and...	N/A	Bike Facilities in Existing Roadway Width	5' Min. Bike Lanes	Buffered Bike Lanes	Cycle Tracks	Raised Cycle Tracks	Raised Two-Way Cycle Track (SB Side)
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Institute Rd to Washington St	35	Same	Same	Same	Same	21	21
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# Concept D Example: Institute Rd to Washington St

## Concept D: 5' Cycle Tracks with 2' Mountable Curbs



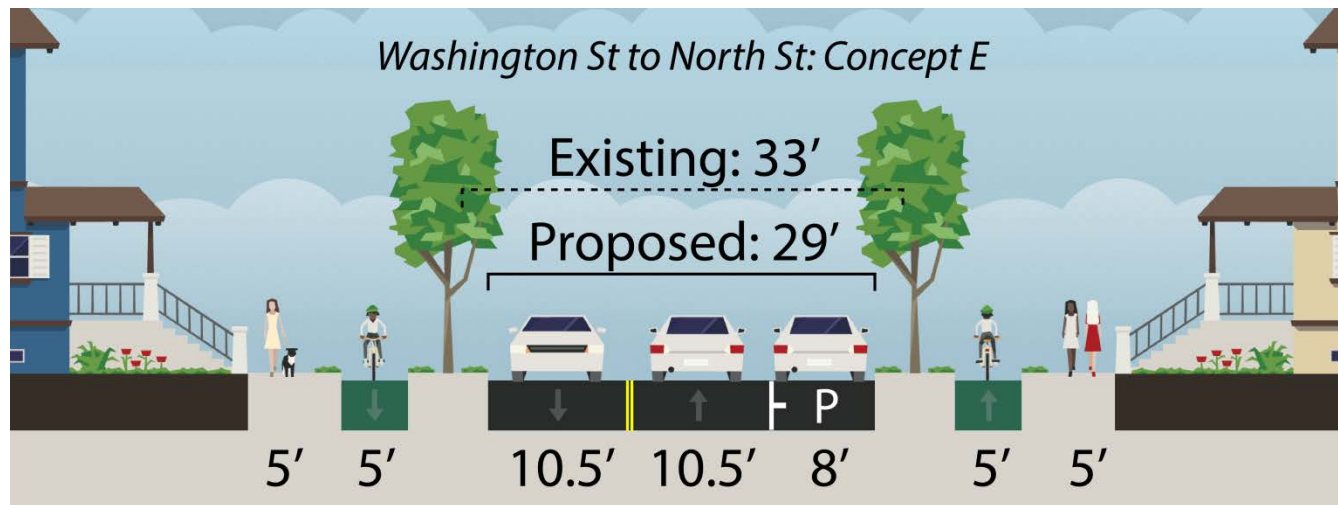
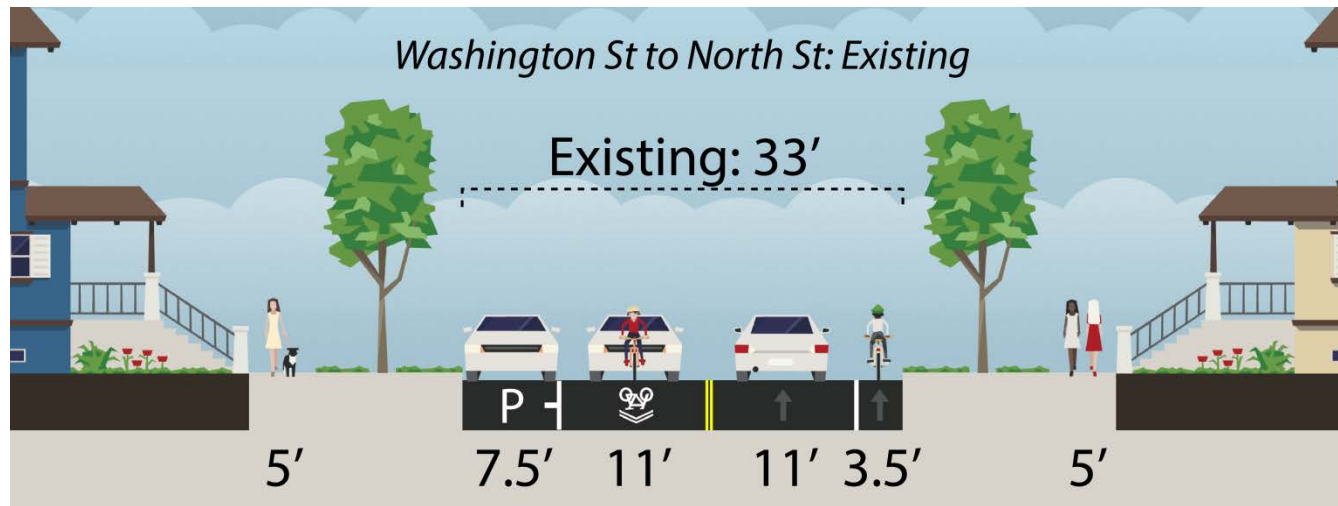
# Concept E Example: Washington St to North St

## Concept E: 5' Raised Cycle Tracks

Corridor-wide	Existing	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F
25 mph Speed Limit, 10.5' Vehicle Lanes, and...	N/A	Bike Facilities in Existing Roadway Width	5' Min. Bike Lanes	Buffered Bike Lanes	Cycle Tracks	Raised Cycle Tracks	Raised Two-Way Cycle Track (SB Side)
Segment	Curb-to-Curb Width (ft)						
Plattsburg Ave to Shore Rd	40	Same	Same	43	43	29	29
Shore Rd to VT 127 Ramps	40	Same	41/50	45/54	45/54	31/40	31/40
VT 127 Ramps to Institute Rd	40	Same	Same	43	43	29	29
Institute Rd to Washington St	35	Same	Same	Same	Same	21	21
Washington St to North St	33	Same	40	43	43	29	29

# Concept E Example: Washington St to North St

## Concept E: 5' Raised Cycle Tracks





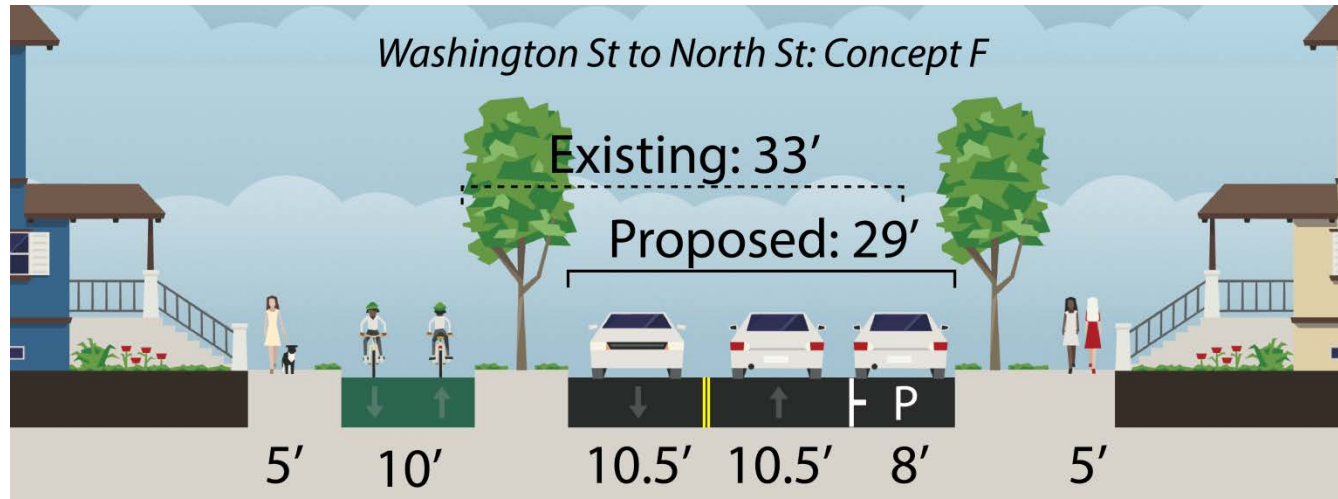
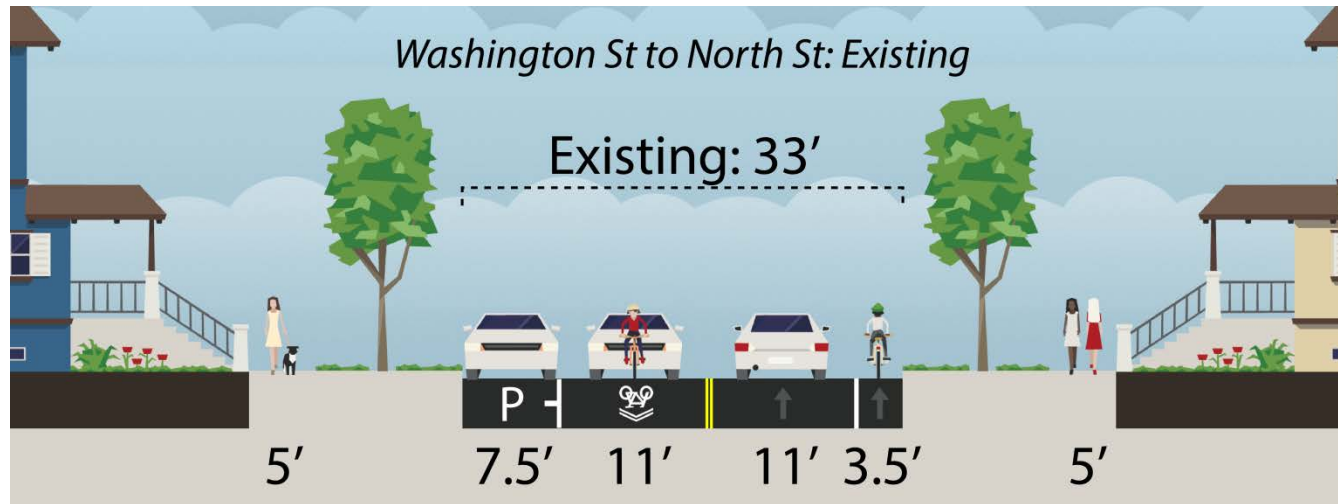
# Concept F Example: Washington St to North St

## Concept F: 10' Raised Two-Way Cycle Track (SB Side)

Corridor-wide	Existing	Concept A	Concept B	Concept C	Concept D	Concept E	Concept F
25 mph Speed Limit, 10.5' Vehicle Lanes, and...	N/A	Bike Facilities in Existing Roadway Width	5' Min. Bike Lanes	Buffered Bike Lanes	Cycle Tracks	Raised Cycle Tracks	Raised Two-Way Cycle Track (SB Side)
Segment	Curb-to-Curb Width (ft)						
Plattsburg Ave to Shore Rd	40	Same	Same	43	43	29	29
Shore Rd to VT 127 Ramps	40	Same	41/50	45/54	45/54	31/40	31/40
VT 127 Ramps to Institute Rd	40	Same	Same	43	43	29	29
Institute Rd to Washington St	35	Same	Same	Same	Same	21	21
Washington St to North St	33	Same	40	43	43	29	29

# Concept F Example: Washington St to North St

## Concept F: 10' Raised Two-Way Cycle Track (SB Side)



# **Crosswalks & Complete Streets Treatments**

# Crosswalks & Complete Streets Treatments

- From the *Burlington Street Design Guidelines*
- Crosswalks:
  - At **all** signalized intersection approaches
  - At **bus stop pairs**
  - **Regular intervals** of 300 to 400 ft
- Complete Street Treatments:
  - **Intersections:** Curb extension, raised intersection, leading pedestrian interval, gateway treatments, bike box, two-stage left turn for cyclists
  - **Cross sections:** On-street parking, bus bulb, curb extension, neckdown/choker, mid-block crossing



# Open House Evaluation

# Open House Evaluation

**Segment 1:** *Plattsburg Ave to Shore Rd*

**Segment 2:** *Shore Rd to VT 127 Ramps*

**Segment 3:** *VT 127 Ramp to Institute Rd*

**Segment 4:** *Institute Rd to Washington St*

**Segment 5:** *Washington St to North St*

## ***Open House Format***

- **Two votes per board** for intersections and cross sections:
  - Place **green** check/hash mark next to your **preferred** cross section and intersection concept (one green mark per board)
  - Place **red** check/hash mark next to your **least preferred** cross section and intersection concept (one red mark per board)
- Note your preferred locations for complete street treatments by marking the map with a marker

# Thoughts to Keep in Mind

- What role do you want North Ave to play in your community?
- Think about corridor from two perspectives:
  - Your personal perspective
  - The perspective of your neighbors/community
- There needs to be some level of consistency throughout the corridor
- Multimodal/multiuser definition of what makes a street work

# Thoughts to Keep in Mind

- **Consider the study goals** when you select your preferred concepts:
  - Improves safety for all users
  - Balances transportation choices
  - Improves multimodal connectivity
  - Consistent facilities throughout corridor
  - Supports vibrant and livable community
  - Supports sustainable economic growth



*Thank You!*