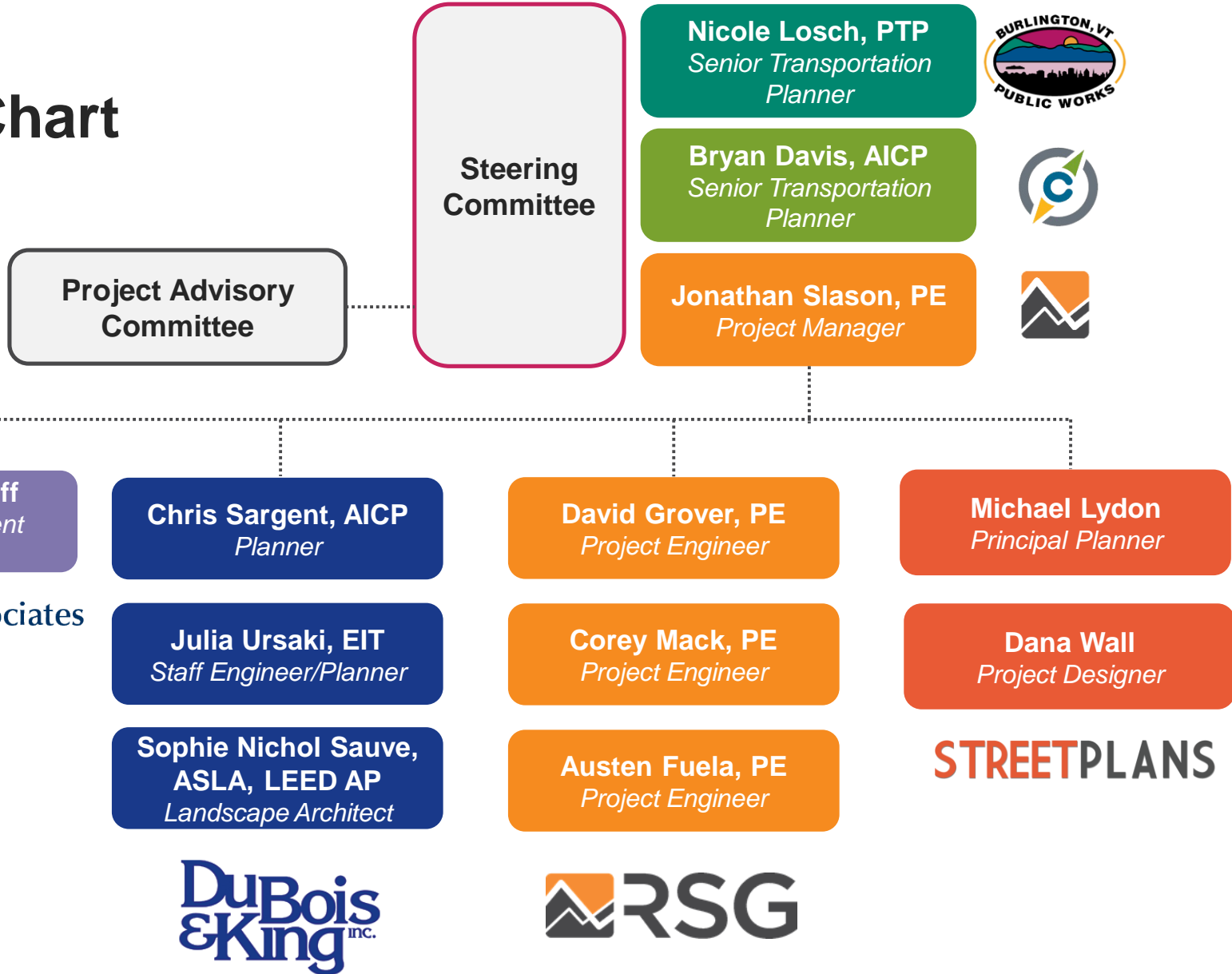


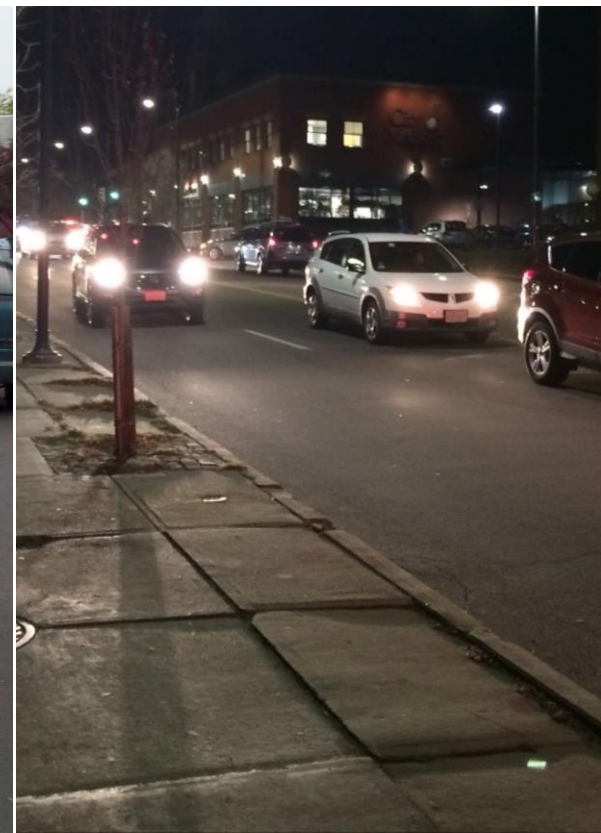


WINOOSKI AVE

TRANSPORTATION STUDY

Org Chart





Winooski Ave Transportation Study

Public Meeting #3 | Evaluation

November 13, 2019

Public Meeting #3

- 1) Welcome**
- 2) Background on the project**
- 3) Study context and existing conditions**
- 4) Project Options**
 - a) Development process**
 - b) Evaluation Process**
 - c) Concept Corridor and Intersection Options**
 - d) Next Steps**
 - Implementation Plan**
 - Final Report**

What is this study?

A comprehensive **transportation study** of the **entire Winooski Avenue corridor**, developing **multimodal improvement strategies** that address **safety, capacity, and connectivity**.

Final deliverable: An actionable implementation plan with near-term and longer-term recommendations.

Why Are We Studying Winooski Avenue?

- Heavily used corridor featuring diverse land uses, but a **comprehensive corridor study has not yet been conducted**.
- A geographic **gateway to the City** but does not feel that way.
- **Multimodal** facilities are **inconsistent** and not **intuitive** to use.
- **Seven of the 20 priority intersections** identified in planBTV Walk Bike are along Winooski Avenue.
- **16% of bicycle crashes and 17% of pedestrian crashes** in the City in the past five years were along Winooski Avenue. **Six VTrans High Crash Locations** occur along the corridor – 4 intersections and 2 segments.
- Earlier transportation plans identified that reconnecting Pine St, St. Paul would create additional **opportunities for changes** to Winooski Avenue.
- **planBTV Walk Bike** calls for protected bike lane(s) the entire length of the corridor in its 5-year action plan, but a course of action and a holistic understanding of how to approach that goal have not yet been investigated.

Corridor Vision

- Traveling along and across Winooski Avenue will be **safe, inviting, and convenient** for people of all ages and abilities using any mode of transportation.
- **Walking and bicycling will be viable and enjoyable** ways to travel this corridor. Improvements will encourage active travel and alternatives to personal vehicle use.
- **Businesses will flourish** with an activated streetscape and convenient access along and near Winooski Avenue.
- The **mobility and parking needs will be balanced** for property owners, residents, businesses and the greater transportation system.
- The street can **adapt** to changes to the transportation system and land use

Study Process

1. Existing Conditions and Corridor Vision

- Public Meeting #1 September 5, 2018

2. Alternatives Development

- Public Meeting #2 June 4, 2019

3. Alternatives Refinement and Evaluation

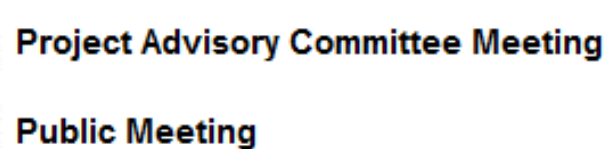
- PAC Meeting #6 October 22, 2019

- Public Meeting #3 Today

4. Draft Report and Implementation Plan

- Public Meeting #4 (with City Council) early 2020

5. Final Report and Implementation Plan





How Did We Get Here?

Past Studies & Plans

Past Studies and Plans

PLANS:



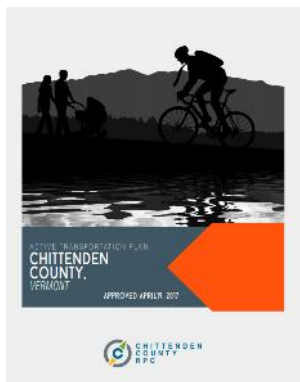
*Great Streets
Downtown Standards*



GMT NextGen Plan



PlanBTV Walk Bike



*CCRPC Active
Transportation Plan*



*VTrans On-Road
Bicycle Plan*



*PlanBTV Downtown
& Waterfront*

STUDIES:

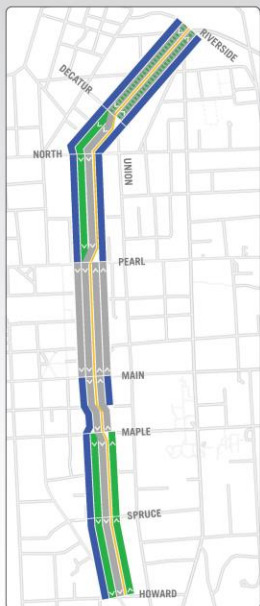
- Winooski-Howard-St. Paul Intersection Scoping Study (2018)
- Winooski Ave Circulation Study Technical Assessment (2017)
- N. Winooski Ave & Archibald Street Intersection: Pedestrian Safety and Mobility Evaluation (2011)
- South Winooski Ave Lane Reduction (2002)
- Downtown One-Way to Two-Way Memo (2000)



Where have we been?

Schematics – 13 Variations!

EXISTING

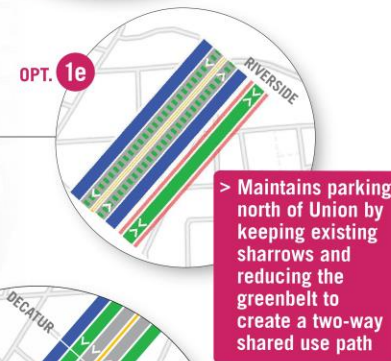
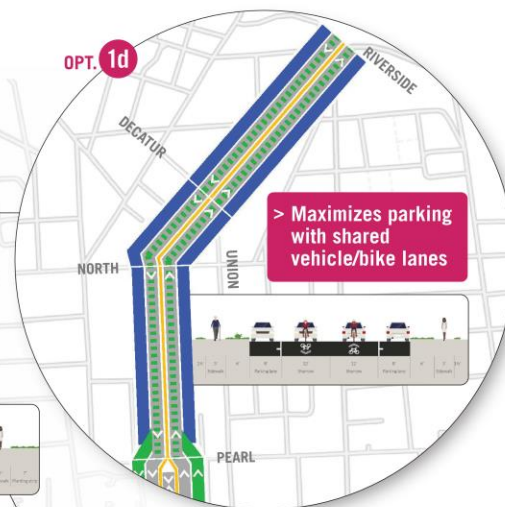
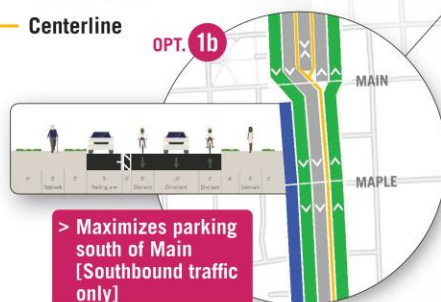


ALTERNATIVE 1



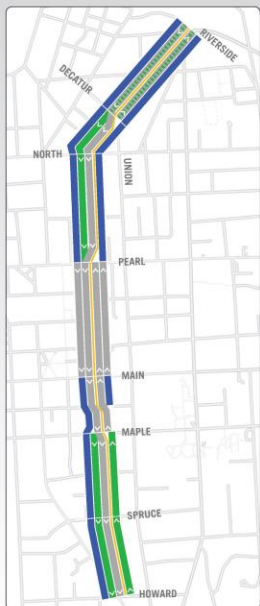
LEGEND

- Widening
- Parking
- Bike Lanes
- Shared Lanes
- Vehicle Lanes
- Centerline



ALTERNATIVE 2

EXISTING



LEGEND

- Widening
- Parking
- Bike Lanes
- Shared Lanes
- Vehicle Lanes
- Centerline

OPT. 2c

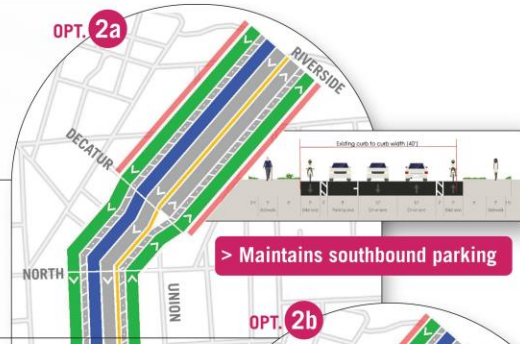


> Creates a curbed median between intersections that will allow left turns onto College, Bank, and Cherry Streets

ALT. 2

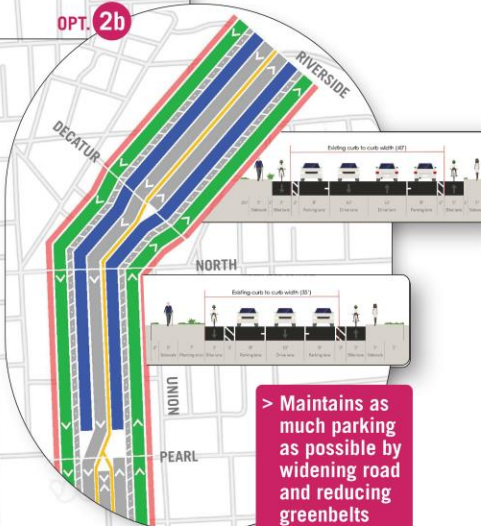


OPT. 2a



> Maintains southbound parking

OPT. 2b



> Maintains as much parking as possible by widening road and reducing greenbelts

2a-2b



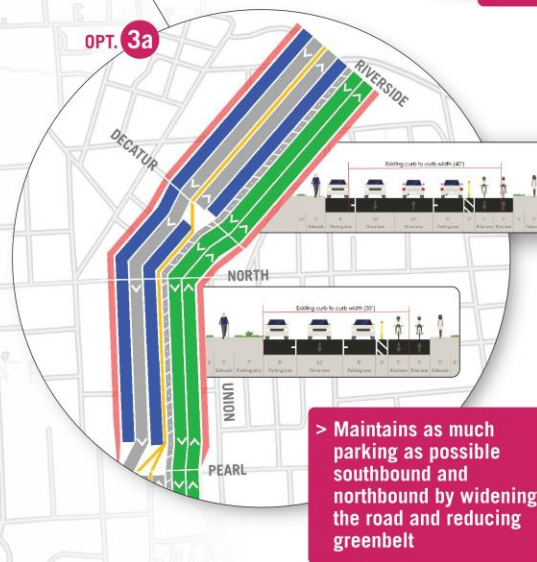
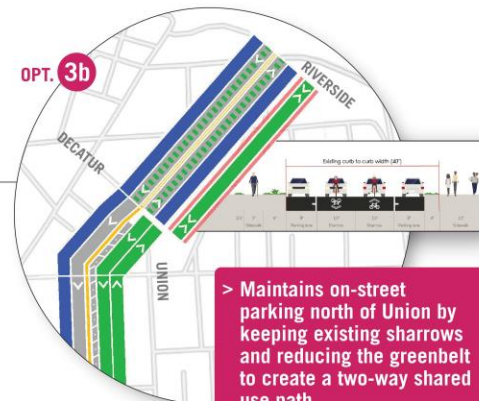
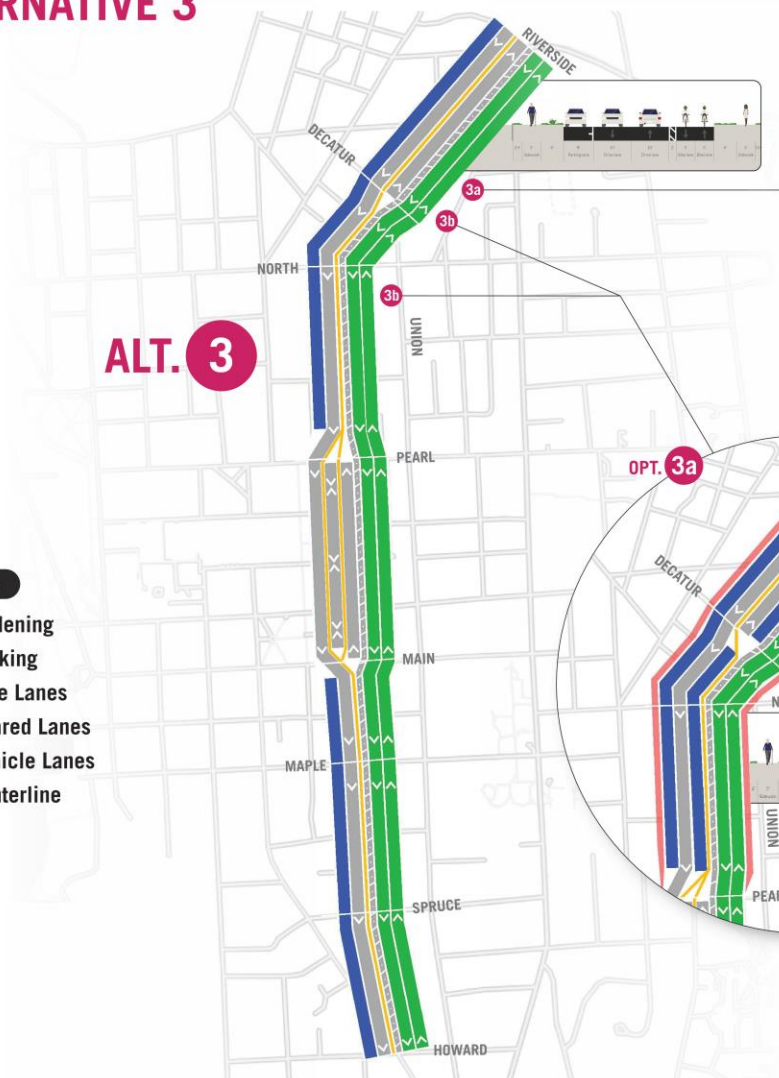
ALTERNATIVE 3



LEGEND

- Widening
- Parking
- Bike Lanes
- Shared Lanes
- Vehicle Lanes
- Centerline

ALT. 3



What We've Heard

Continuous, dedicated bike lanes are critical, and protected is preferred.

There is a high demand for parking on North Winooski.

Main to Pearl is aggressive / stressful / dangerous / unattractive.

Street trees and green strips are crucial for an inviting corridor.

13 Variations & Intersection Concepts

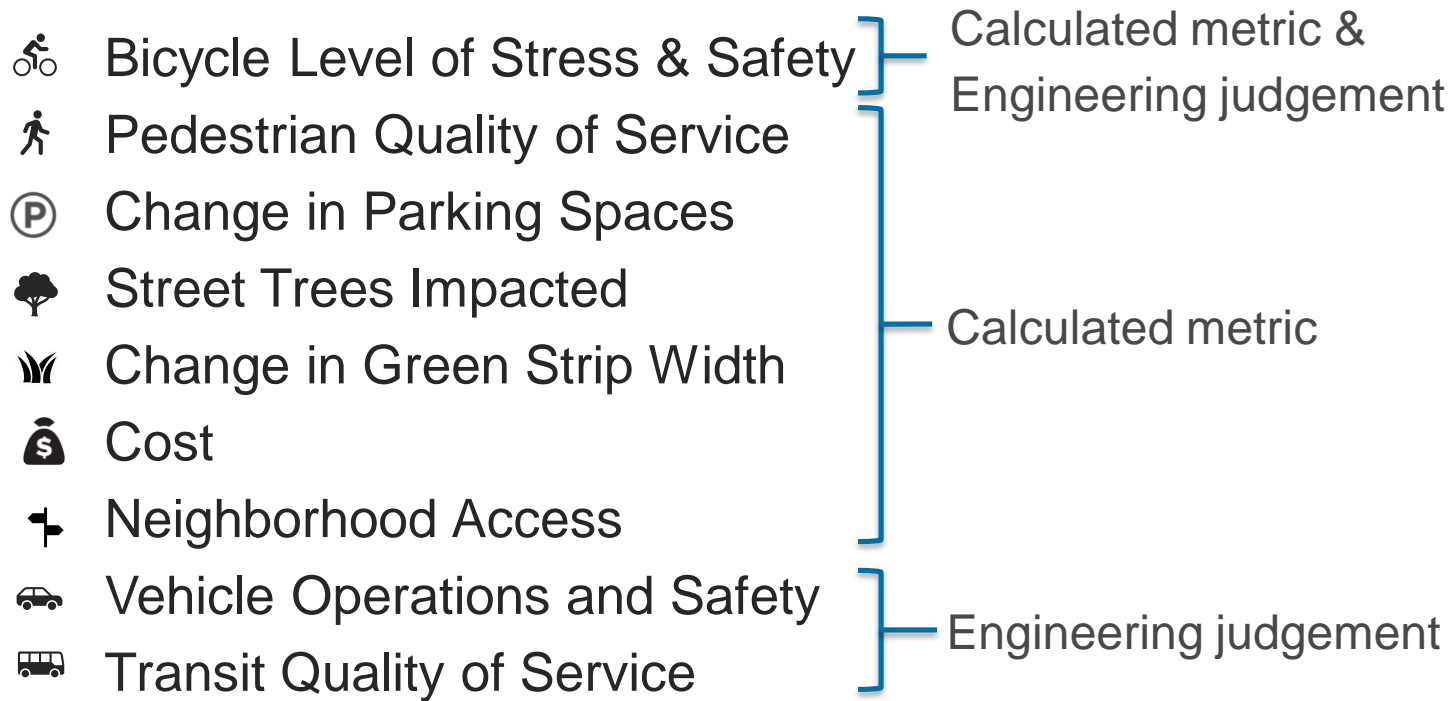


Evaluation Criteria



**Corridor & Intersection Options:
Near-term and Long-term**

Final Corridor Evaluation Criteria



Near-Term &
Long-Term
Options

Functional, practical, balanced
and consistent

Final Corridor Evaluation Criteria

	Bike LTS with Driveway Density Factor	Ped quality of service	Parking change	Street trees impacted	Change in green strip width (LF)	Cost	Neighborhood Access	Vehicle Operations & Safety	Transit	Evaluation Ranking	
1										1	1
1A										8	1A
1B										2	1B
1C										5	1C
1D										4	1D
1E										3	1E
2										7	2
2A										11	2A
2B										13	2B
2C										6	2C
3										9	3
3A										10	3A
3B										12	3B

Color scale indicates how far **Good** or **Poor** the Variation performs relative to the corridor average.

Intersection Evaluation Criteria

- Right of Way Impact
- Vehicle operations (delay & capacity)
- Vehicle safety
- Non-vehicular operations (delay & capacity)
- Non-vehicular safety
- Reduces intersection complexity
(number of lanes, conflict points)
- Reduces ped/bike exposure
(shortens crossing distance, fewer conflicts through intersection)
- Bike infrastructure (maintained through intersection / drops at intersection)
- Vehicle speed reduction
- Parking impact
- Transit and Freight access
- Utility impact (overhead, underground)

Intersection Evaluation Criteria

Criteria	Main Street		College/Bank/Cherry		Pearl Street	
	Signal	Single Lane Roundabout	Signal	Mini-Roundabout	Signal	Single Lane Roundabout
Overall						
Right of Way Impact						
Vehicle operations (delay & capacity)						
Vehicle safety						
Non-vehicular operations (delay & capacity)						
Non-vehicular safety						
Reduces intersection complexity (number of lanes, conflict points)						
Reduces ped/bike exposure (shortens crossing distance, fewer conflicts through intersection)						
Bike infrastructure (maintained through intersection / drops at intersection)						
Vehicle speed reduction						
Parking impact						
Transit and Freight access						
Utility impact (overhead, underground)						

Color scale indicates magnitude of **positive** or **beneficial** attributes or **negative** attributes.

Intersection Evaluation Criteria

Criteria	North Street		Union/Decatur		Archibald		Riverside	
	Signal	Mini-Roundabout	All-Way Stop	Mini-Roundabout	Signal	Mini-Roundabout	Signal	Single Lane Roundabout
Overall								
Right of Way Impact								
Vehicle operations (delay & capacity)								
Vehicle safety								
Non-vehicular operations (delay & capacity)								
Non-vehicular safety								
Reduces intersection complexity (number of lanes, conflict points)								
Reduces ped/bike exposure (shortens crossing distance, fewer conflicts through intersection)								
Bike infrastructure (maintained through intersection / drops at intersection)								
Vehicle speed reduction								
Parking impact								
Transit and Freight access								
Utility impact (overhead, underground)								

Color scale indicates magnitude of **positive** or **beneficial** attributes or **negative** attributes.



Review the Corridor & Intersection Options

Applying the Corridor Vision for Shorter-term Options

- Improves safety and convenience for all users
 - Re-allocates road space between Main Street and Pearl Street
 - Shortens intersection crossings and calms traffic at intersections
- Creates connected, contiguous north-south bike facilities
- Retains existing parking along west side of the corridor
- Improves business and resident access for all modes by making it two-way north of North Street

Intersection Concepts

Intersection	Short-term Option	Other Possibilities
Main St	Tightened signal - Eliminate right-turn lanes (southbound, westbound)	1-lane traditional roundabout - Requires ROW - Adjacent redevelopment unknown
College St	Improve Signalized Intersection	Mini-roundabout considered but unlikely to function well
Bank St	Improve Signalized Intersection	Mini-roundabout considered but unlikely to function well
Cherry St	Improve Signalized Intersection	Mini-roundabout considered but unlikely to function well
Pearl St	Tighten signal	
North St	Mini-roundabout	Tightened Signal - Bump outs and improve bike lanes
Union/Decatur St	Mini-roundabout	Maintain all-way stop
Archibald St	Tightened signal - Short cycle length	All-way stop
Riverside St	Signal improvements	

Riverside Avenue to North Street

Looking
north toward
Riverside
Avenue.



Highlights

- Retains west side parking (76 spaces)
- removes east side parking (64 spaces)

Stormwater opportunities

Pedestrian improvements at intersections

Connectivity:

- Two-way vehicle lanes
- Northbound and southbound bike lanes



A **parking management plan** will be conducted to identify strategies on managing the Winooski Ave parking (such as time limits, loading zones, etc.).

North Street to Pearl Street

Looking
north toward
North Street.



Highlights

- Retains west side parking (46 spaces)
- removes east side parking (45 spaces)

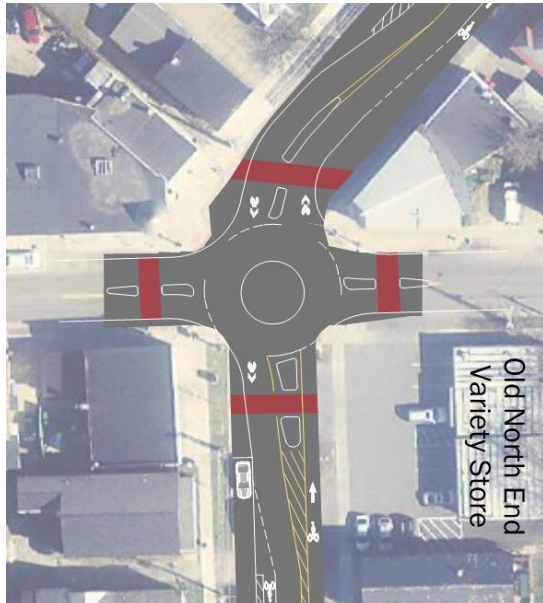
Retains southbound vehicle lane

Creates northbound and southbound bike lanes

Stormwater opportunities

Pedestrian improvements at intersections

A **parking management plan** will be conducted to identify strategies on managing the Winooski parking (such as time limits, loading zones, etc.).



Pearl Street to Main Street

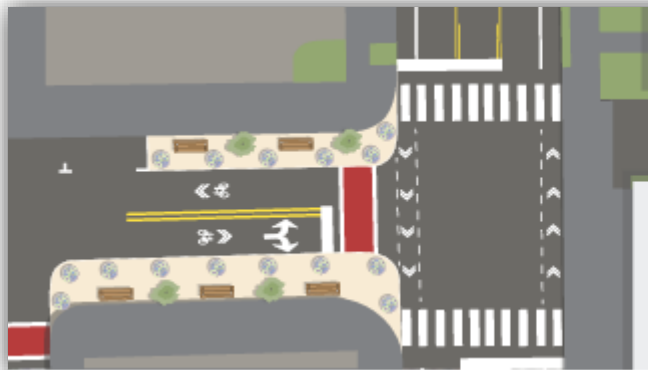


Highlights

Improves utilization and safety of existing road capacity, enhances quality of service for pedestrians, and reduces stress for bicyclists.

Connectivity:

- Two-way vehicle lanes
- Two-Way-Left-Turn-Lane
- Northbound and southbound bike lanes



PILOT TEST IMPROVEMENTS AT THE INTERSECTION OF SOUTH WINOOSKI AVENUE AND BANK STREET

Use paint or epoxy-gravel mix and planters to extend the north and south side sidewalk at the intersection of Bank Street and South Winooski; Ban right turn on red and provide a lead pedestrian interval.

Main Street to King Street



Highlights

- Retains west side parking (13 spaces)
- eliminates east side parking (12 spaces)

Maintains two-way vehicle traffic

Creates new northbound and southbound bike lanes

King Street south to Howard Street



Highlights

Retains west side parking (87 spaces)

One-lane southbound vehicle lane

Northbound and southbound bike lanes

Opportunities for Longer-term Options

- Responsive to changes in land use, parking demand and management strategies and other significant projects, such as Great Streets projects.
- Maintains the option to widen the road to increase vehicle parking supply, provide space for protected bike lanes, and/or improve the pedestrian amenities.

North Street to Pearl Street – Opportunity in the Future



Highlights

Widens roadway

Continuity

- Two-way vehicle lanes from Main to Riverside.
- Northbound and southbound bike lanes

West side parking – same as near-term concept (45 spaces removed on east side)

Main Street to King Street – Opportunity in the Future



Opportunity to revise parking regulations to improve turnover or benefit to local land uses.

Highlights

Protected bicycle facilities

Reduces vehicle lanes to southbound only.

Likely to improve operational efficiency of Main Street signal.

Retains west side parking (13 spaces)
- eliminates east side parking (12 spaces)



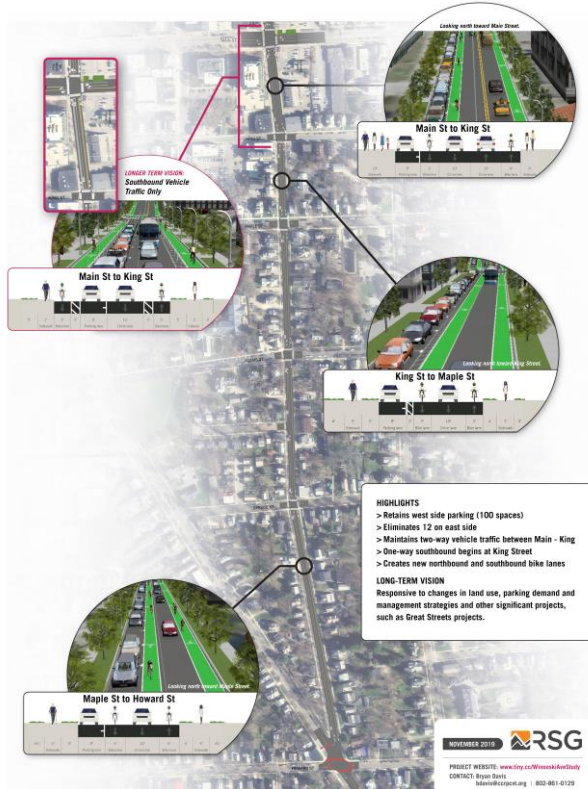
Next Steps Toward Implementation

3 Segments can be pursued independently

South



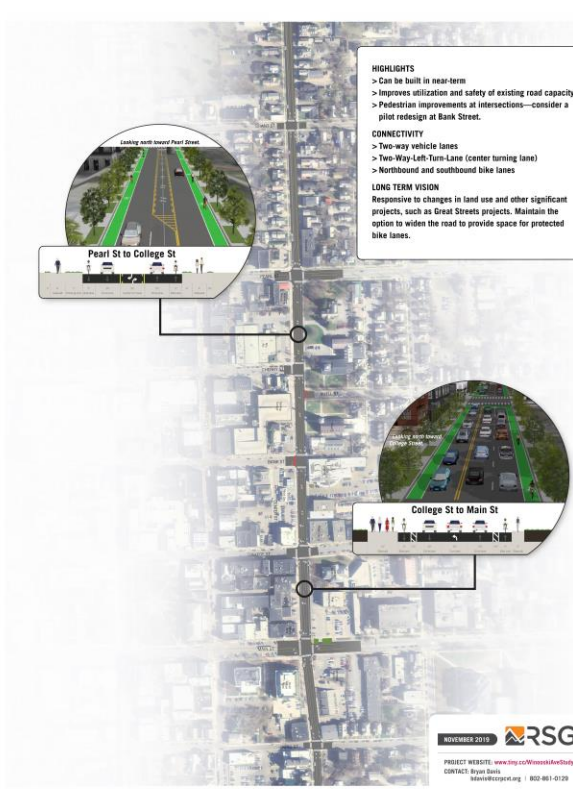
SOUTH END (MAIN ST TO HOWARD ST)



Downtown



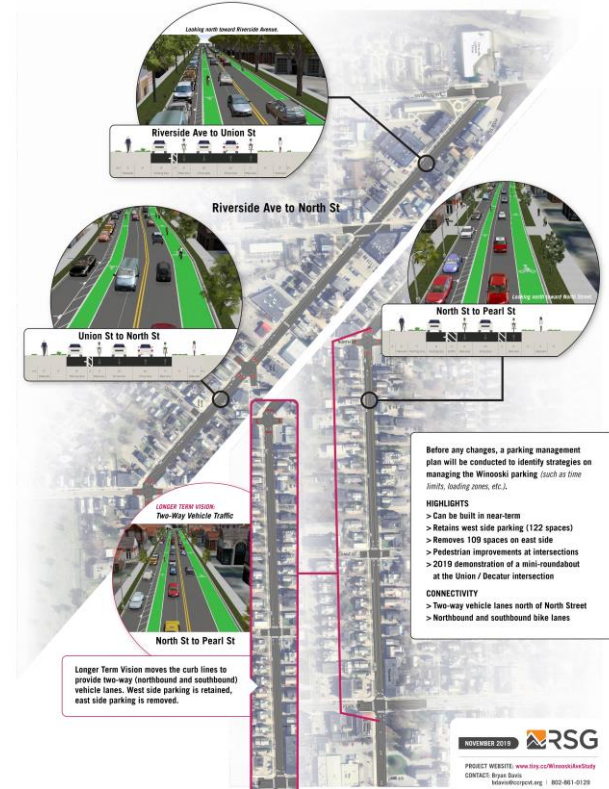
DOWNTOWN (PEARL ST TO MAIN ST)



North



NORTH END (RIVERSIDE AVE TO PEARL ST)



Concept Implementation Strategy

South

- Initiate preliminary design and engineering
- Engage with Main to King around parking loss
- Engage with local community about closing northbound travel between King and Maple.

Downtown

- Initiate preliminary design and engineering
- Pursue community and stakeholder engagement to address a number of challenges in the corridor

North

- Conduct Parking Management Plan
- Engage with community on impacts of proposal
- Test intersection configurations through pilots

earlier

Timeline

later



Comments and Input

What you tell us tonight?

- **Feedback:** the **good**, the **bad**, the **ugly**
 - How does these impact you?
 - Any thoughts on where modifications should occur?
- **What do we need to do to make these plans happen?**
 - Inform the implementation plan.
 - What should happen first?
 - What does a Parking Management Plan look like to you?





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Steering Committee



Communities Planning Together



Third Sector Associates

Consultant Team