

Wellington Circle Study



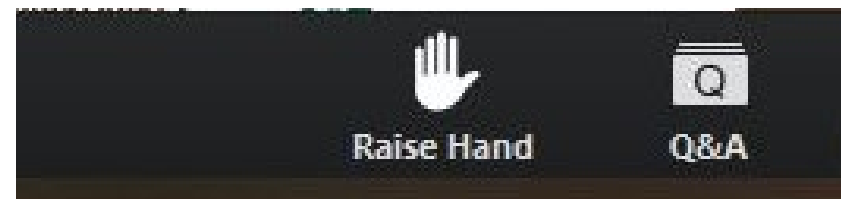
Public Meeting #2

December 15, 2022

Ground Rules

- This meeting is being recorded
- Technical Support: Sara Stoja, sstoja@hntb.com
 - Zoom support: 888-799-9666
- To participate “Raise Hand”, Q&A, or dial *9 if joining by phone
 - Study team will unmute you to share a comment verbally
 - Q&A for submission of written questions/comments

Bottom Panel of
Zoom Screen



Comment
Verbally

Written
Question/Comment

Agenda

- Study Process
- Issues & Opportunities
- Alternatives Development and Review
- Alternatives Analysis
- Public Comment
- Next Steps



STUDY PROCESS

Study Overview

- Conceptual planning study to evaluate existing and future multimodal transportation conditions at Wellington Circle
- Examine ways to redesign Wellington Circle to provide better connectivity and improve multimodal mobility throughout the area of the City of Medford and surrounding region
- Develop short-, medium-, and long-term recommendations that will be included in a Final Report

Study Process



Project Goals & Objectives Inform Alternatives Development

Study Process

Safety

- Reduce speeds
- Reduce conflict points between modes
- Dedicate space for pedestrians & bicyclists

Mobility/Access

- Provide facilities for pedestrians, bicyclists, and transit
- Improve connectivity to Wellington Station
- Mitigate traffic congestion

Connectivity

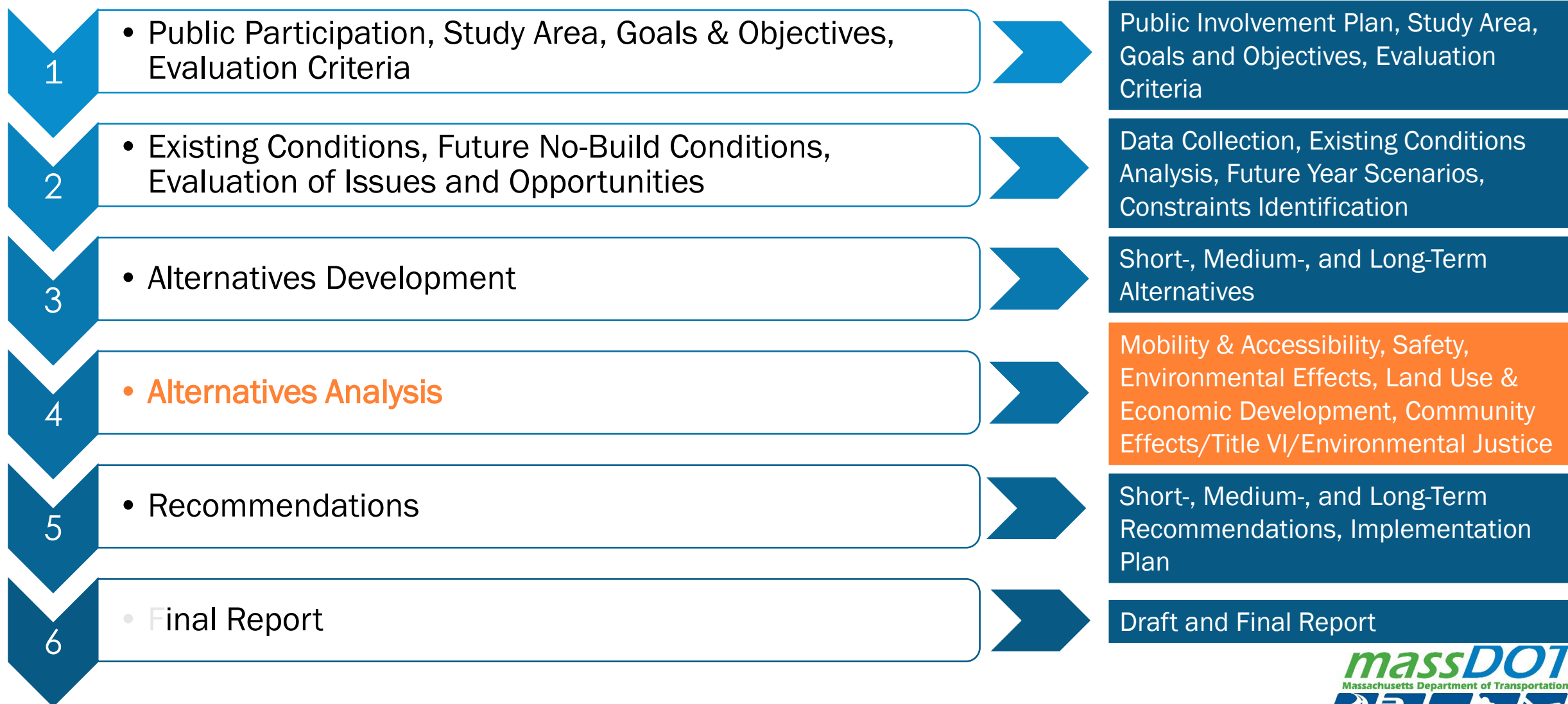
- Promote active transportation
- Reduce travel delays
- Improve access and circulation

Quality of Life

- Enhance attractiveness
- Minimize public health & environmental impacts
- Provide fair and equitable treatment for environmental justice populations

Study Process

Study Process





WELLINGTON STA
RIVERS EDGE DR



EXIT ONLY

ISSUES & OPPORTUNITIES

Issues, Constraints and Considerations

Issues & Opportunities

- Safety – crashes involving a pedestrian occurred at most Circle intersections
- Multimodal connectivity – limited by wide roadways and multiple lanes of traffic
- Multimodal accommodations – lack of accommodations are a barrier to local destinations, including Wellington Station
- Vehicular congestion – particularly east of the Circle, causing delay for both private vehicles and buses
- Physical constraints
 - Historic Preservation: Roadways comprising Wellington Circle are parkways under historic designation
 - Environmental: Alternatives development process will need to consider impacts to natural elements such as waterways and mature trees



Opportunities

- Right-of-way – Wide roadways, buffers, and sidewalks may provide space for multimodal facilities.
- Changing land use – Increasing transit-oriented and mixed-used development around Wellington Station may increase opportunity for short trips to be taken by walking and biking.
- Access to Open Space – The proximity of state parks and multiuse paths to Wellington Circle present opportunity to improve access to open space and recreation.
- Compounding gains – Together, safety and connectivity improvements may also reduce congestion, improve public health, support active transportation, and improve the experience for walkers, bikers, and transit users.

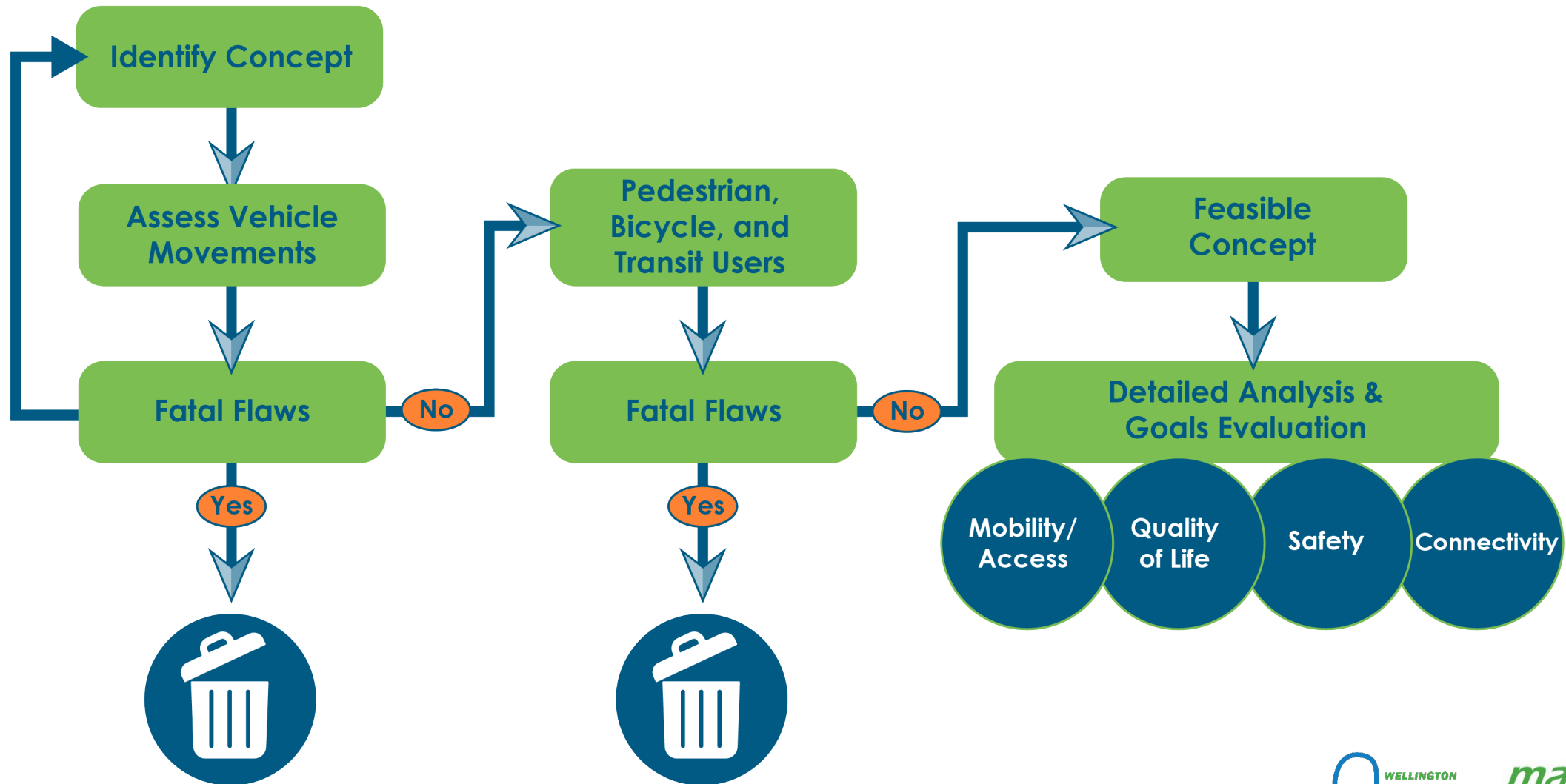
Issues & Opportunities





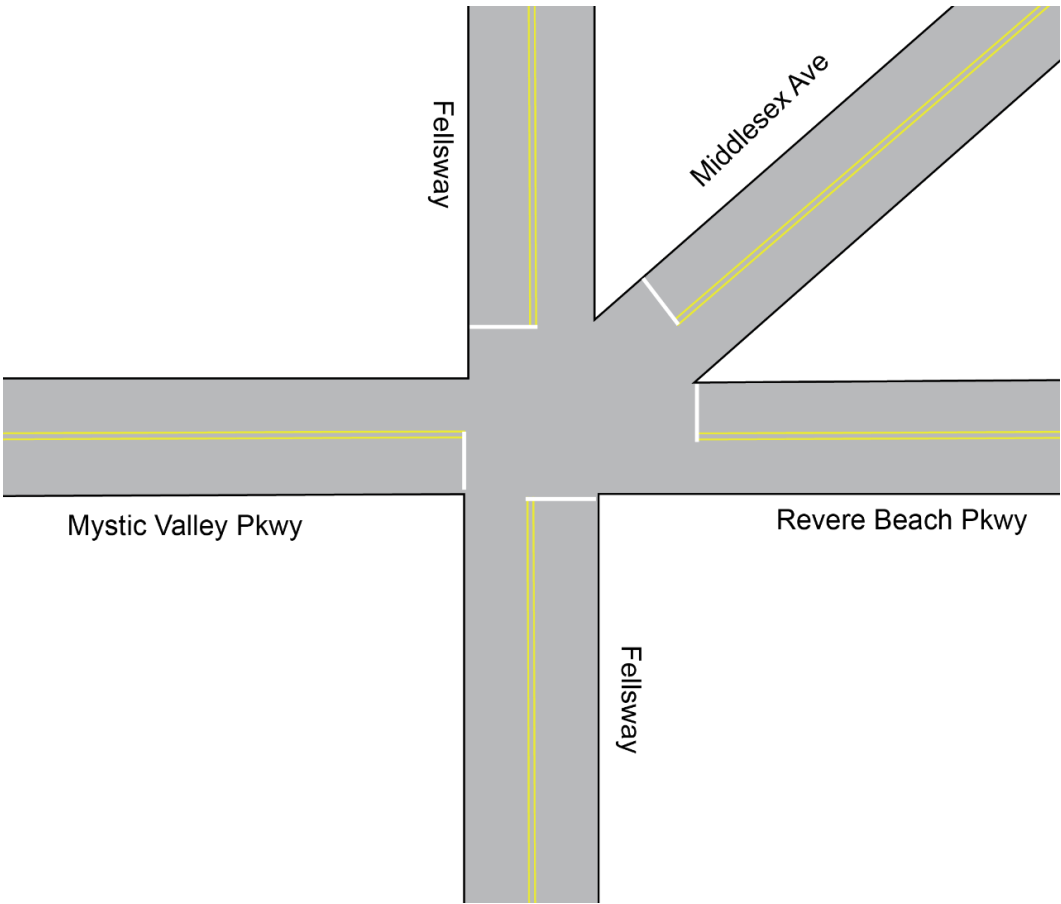
ALTERNATIVES DEVELOPMENT AND REVIEW

Process/Methodology



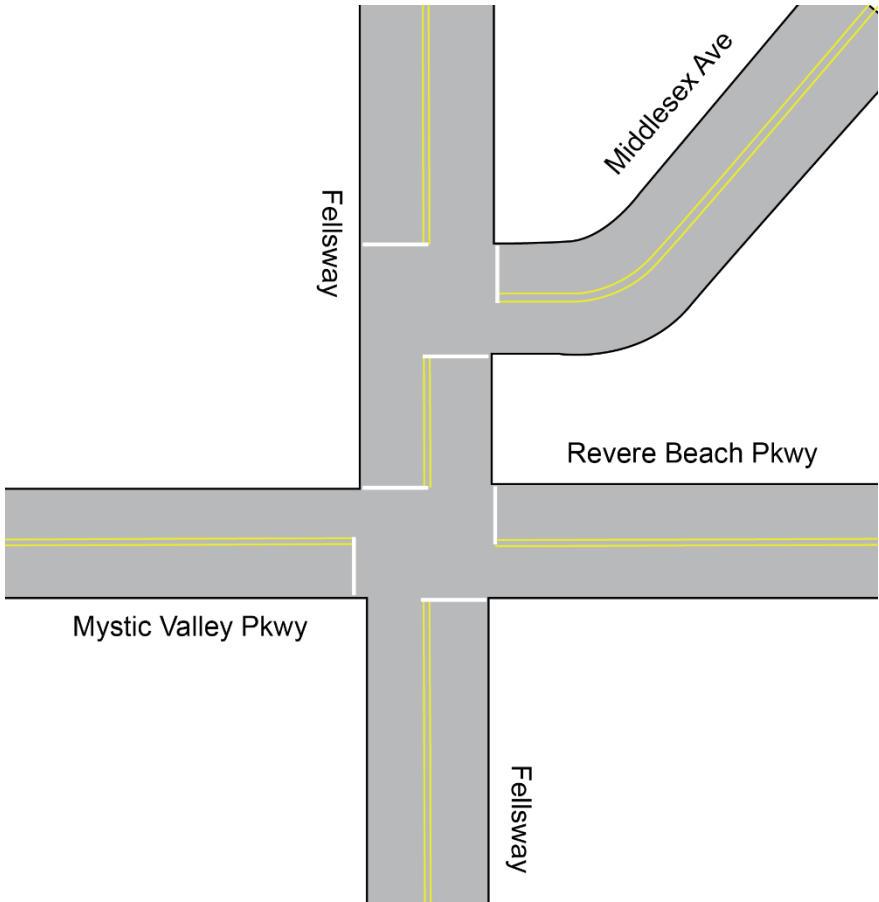
Basic Concepts

5-leg Intersection



For illustration purposes only

Middlesex at Fellsway Intersection

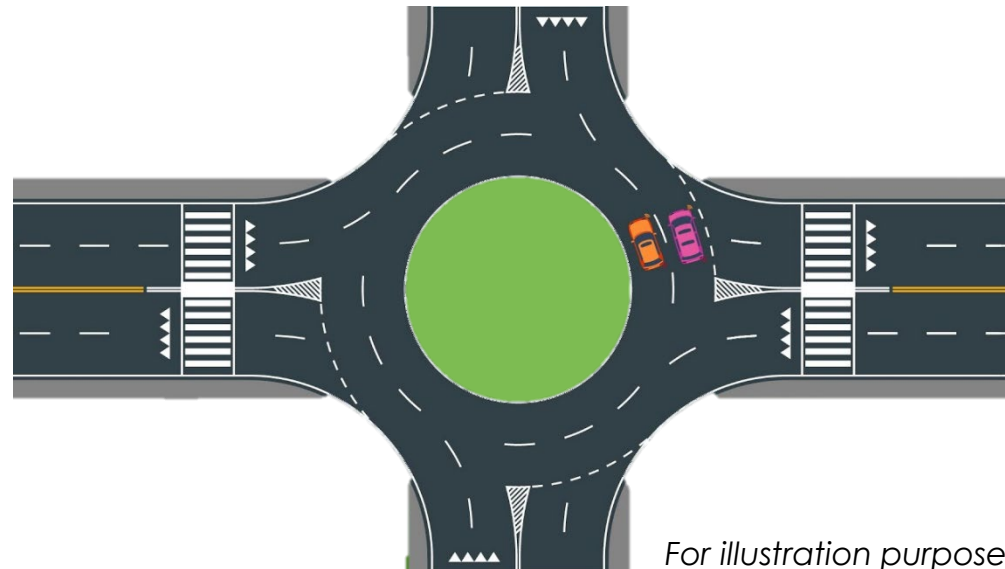


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Roundabout Concept

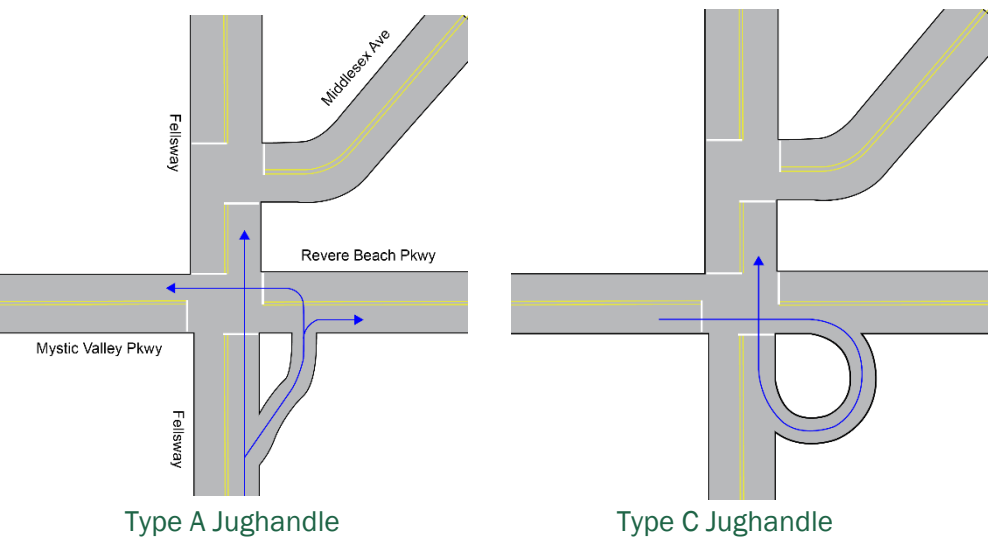
- Various multi-lane roundabout concepts considered
- Circulating volumes exceed capacity of all multi-lane roundabout configurations
- Fatal flaw: Volumes exceed threshold for basic roundabout concepts



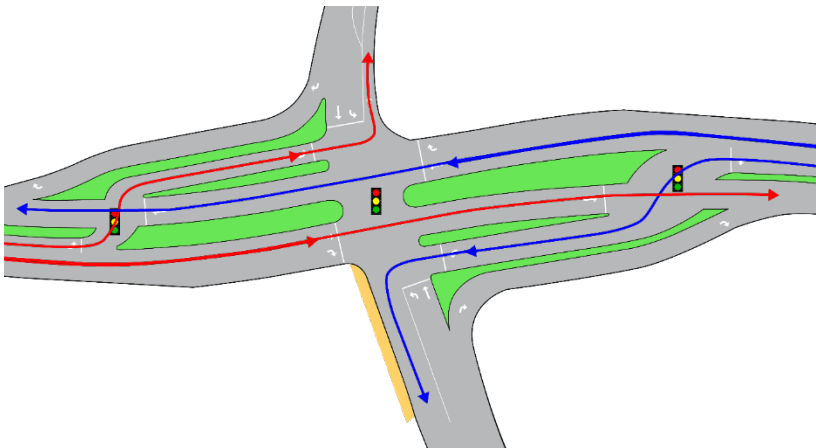
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Advanced Concepts

Jughandle

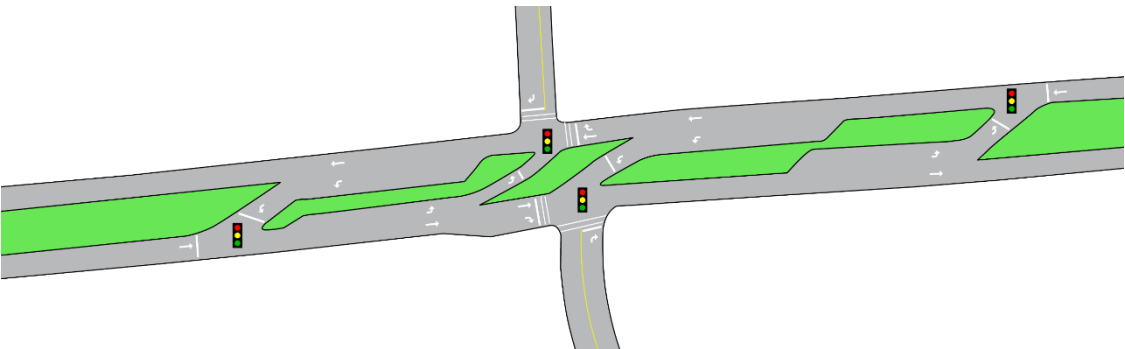


Continuous Flow Intersection

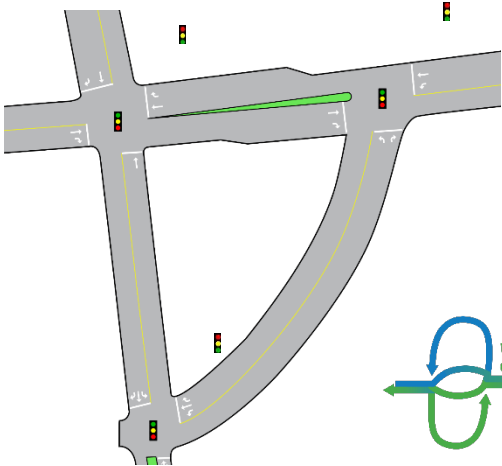


East-West Continuous Flow Intersection w/channelized right turns

Restricted Crossing U-Turn (RCUT)



Quadrant Roadway



- Develop traffic projections and analysis
- Refinement of cross section and access (lane designation, sidewalks, bike lanes, driveways)
- Addition of bus lane for transit-enhanced alternative
- Consideration of pedestrian bridge

Short/Medium-Term Alternatives



Short/Medium-Term Alternative Option A

Alternatives Development
& Review

- Removes right turn channelization
- Relocates Middlesex Avenue
- Prohibits eastbound left turns
- Impacts:
 - Small improvements to bicycle and pedestrian access and connectivity
 - Increases open space
 - Degrades right turn operations

Cost: \$6.2 M



Short/Medium-Term Alternative Option B

Alternatives Development
& Review

- Maintains channelized right turns for the EB and WB directions to accommodate right turn volumes
- Signalizes right turn lane crosswalks
- Impacts:
 - Small improvements to bicycle and pedestrian access and connectivity
 - Increases open space

Cost: \$6.2 M



Long-Term Alternative: At-Grade



At-Grade Alternative: Dual Quadrant



At-Grade Alternative: Dual Quadrant



“Square”
Concept

Cost: \$36.7 M



At-Grade Alternative: Dual Quadrant



“Triangle”
Concept

Cost: \$36.7 M



At-Grade Alternative: Dual Quadrant

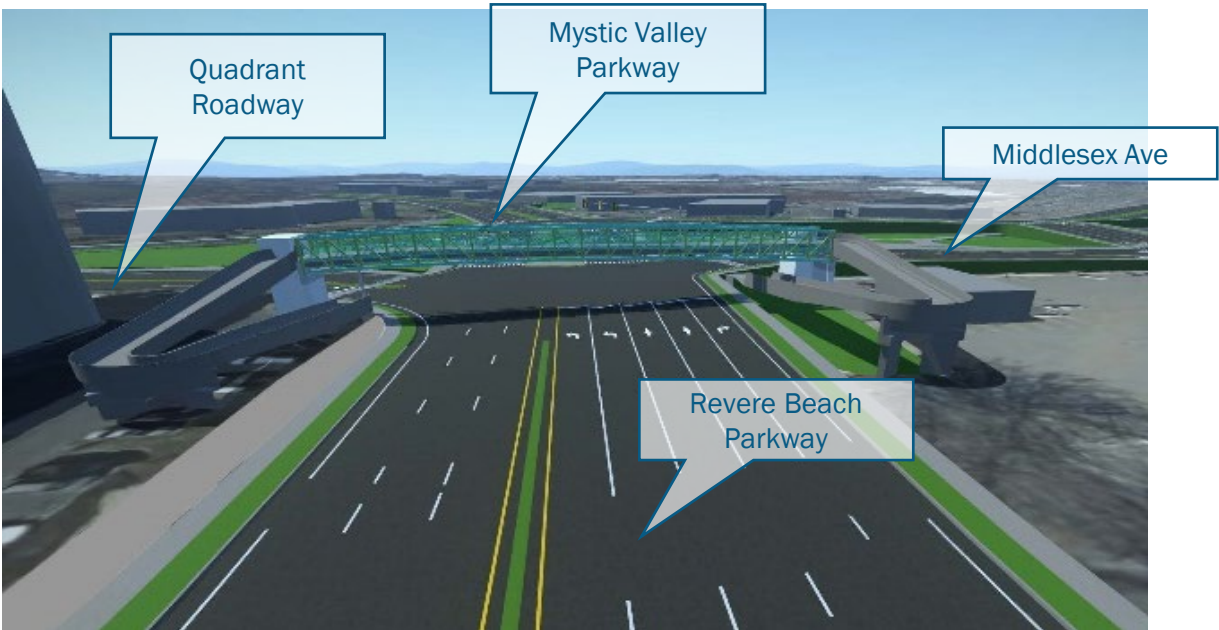
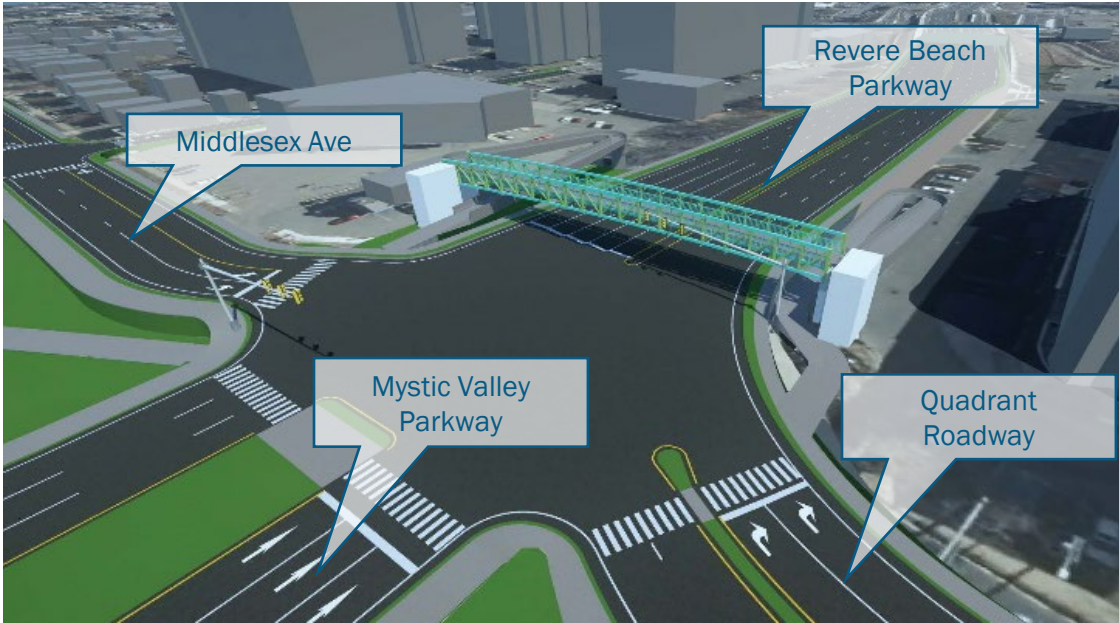


“Transit
Enhanced”
Concept

Cost: \$38.3 M



At-Grade Option: Pedestrian Bridge



Could be added to any at-grade alternative

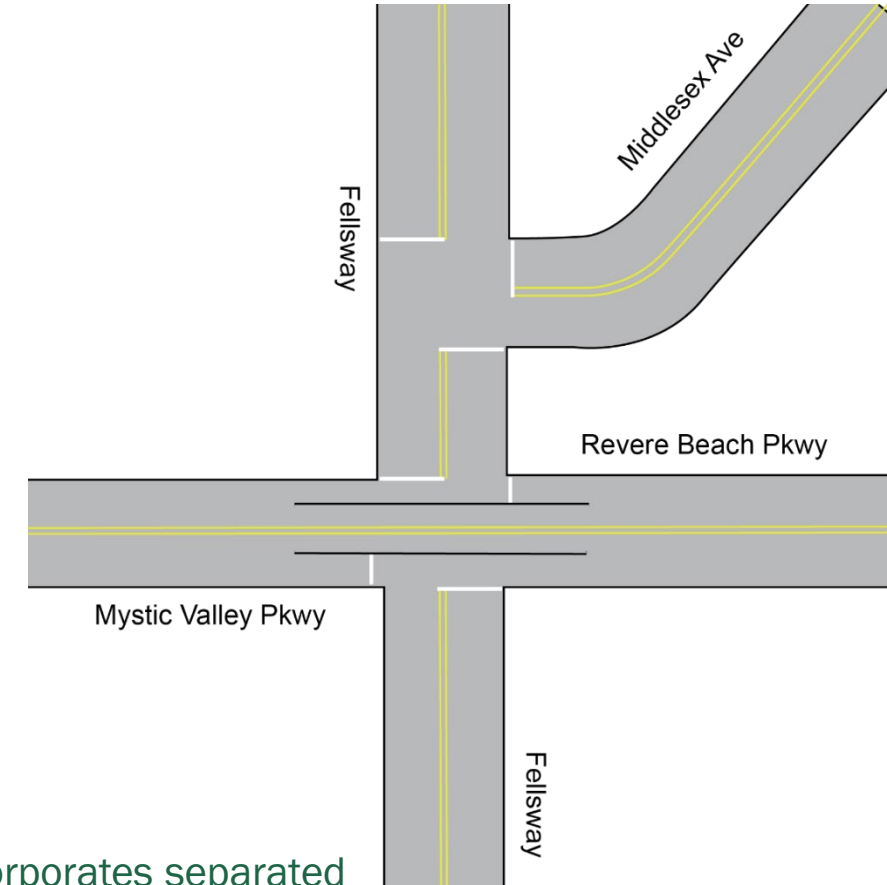
Cost: \$35.7 M

Long-Term Alternative: Grade-Separated



Grade-Separated Alternative

- East ↔ West and South ↔ East connections considered due to higher thru volumes.
- South ↔ East more complex construction with curved structured and remaining at-grade intersection larger than with east ↔ west thru grade separation.
- No advantages over simpler East ↔ West grade separation
- Underpass concept did not move forward due to cost, utility disruptions, and flooding risk during storms



Incorporates separated
Middlesex/Fellsway
intersection

For illustration purposes only



Grade-Separated Single Quadrant

Alternatives Development
& Review



Cost: \$176.9 M

Grade-Separated Single Quadrant

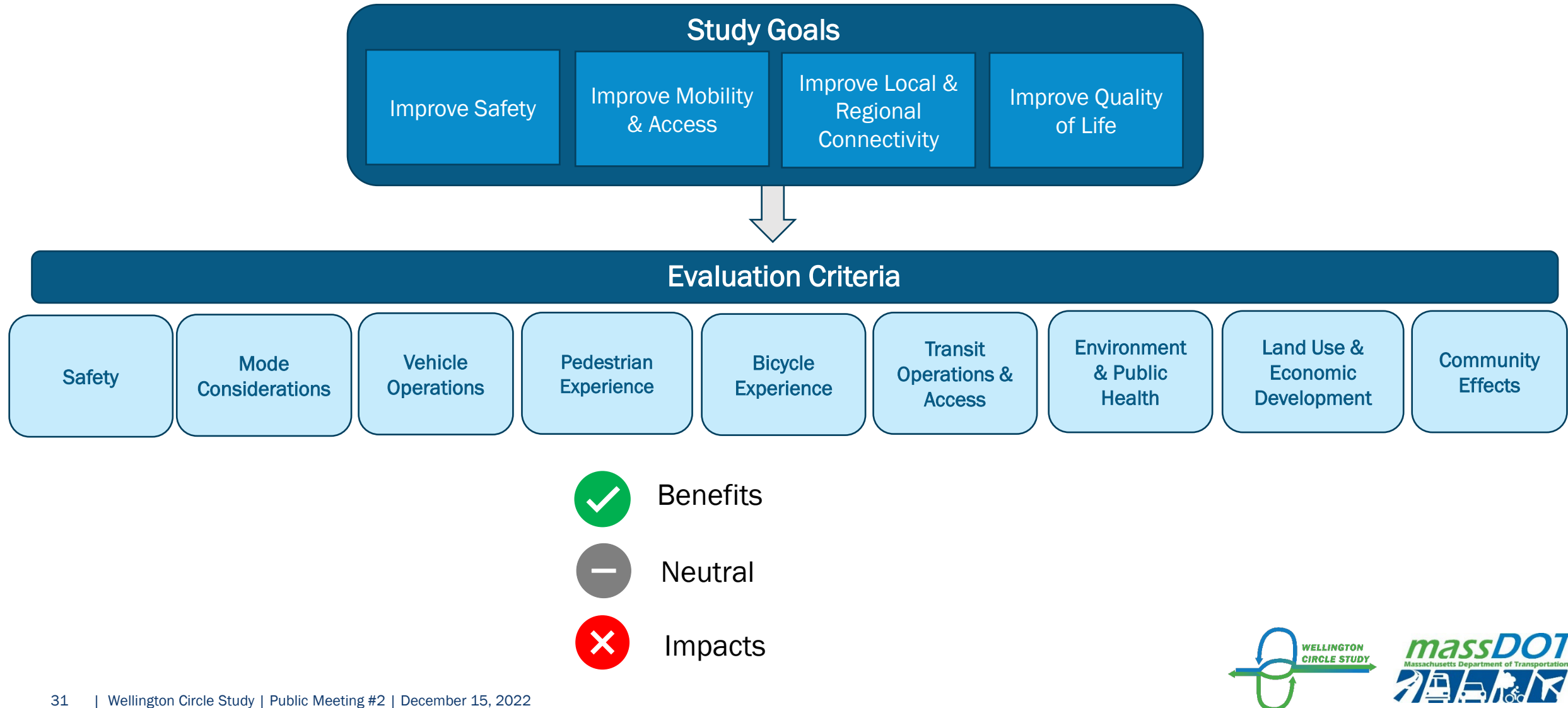


Looking south



ALTERNATIVES EVALUATION

Evaluation Criteria Framework



Improve Safety



Safety – Key Design Elements



Wider pedestrian facilities, enhanced crossings, protected pedestrian phasing



Protected/buffered bike lanes to reduce conflict points



Accessible bus stops with multimodal connections



Safety – Summary

- All build alternatives expected to reduce crashes relative to existing conditions
- Short/medium-term improvements expected to result in minor reduction in crashes
- Among build alternatives, grade-separated results in fewer conflict points than at-grade alternatives





Improve Mobility & Access

Improve Local & Regional Connectivity



Mode Considerations

Alternatives Evaluation

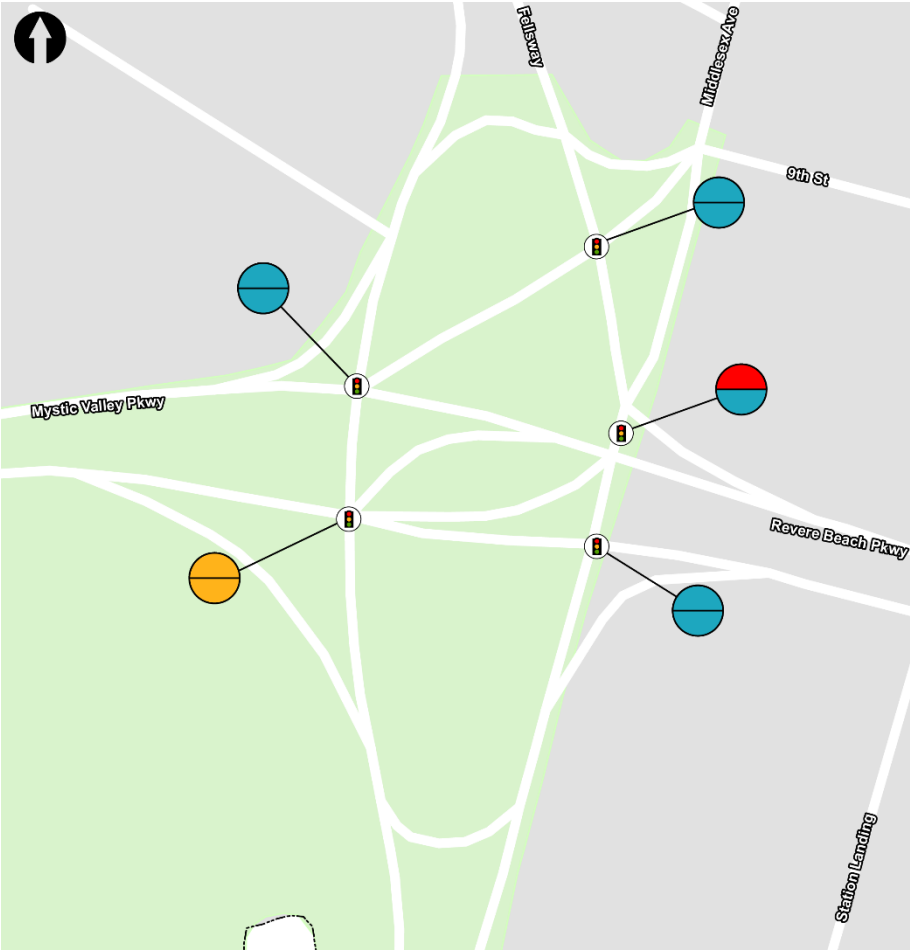
				
	Drive	Transit	Walking	Biking
Short/Medium-Term	—	—	✓	—
Long-Term At-Grade	✗	—	✓	✓
Long-Term At-Grade Transit Enhanced	✗	✓	✓	✓
Long-Term Grade-Separated	✓	—	—	✓

- ✓ Benefits
- Neutral
- ✗ Impacts

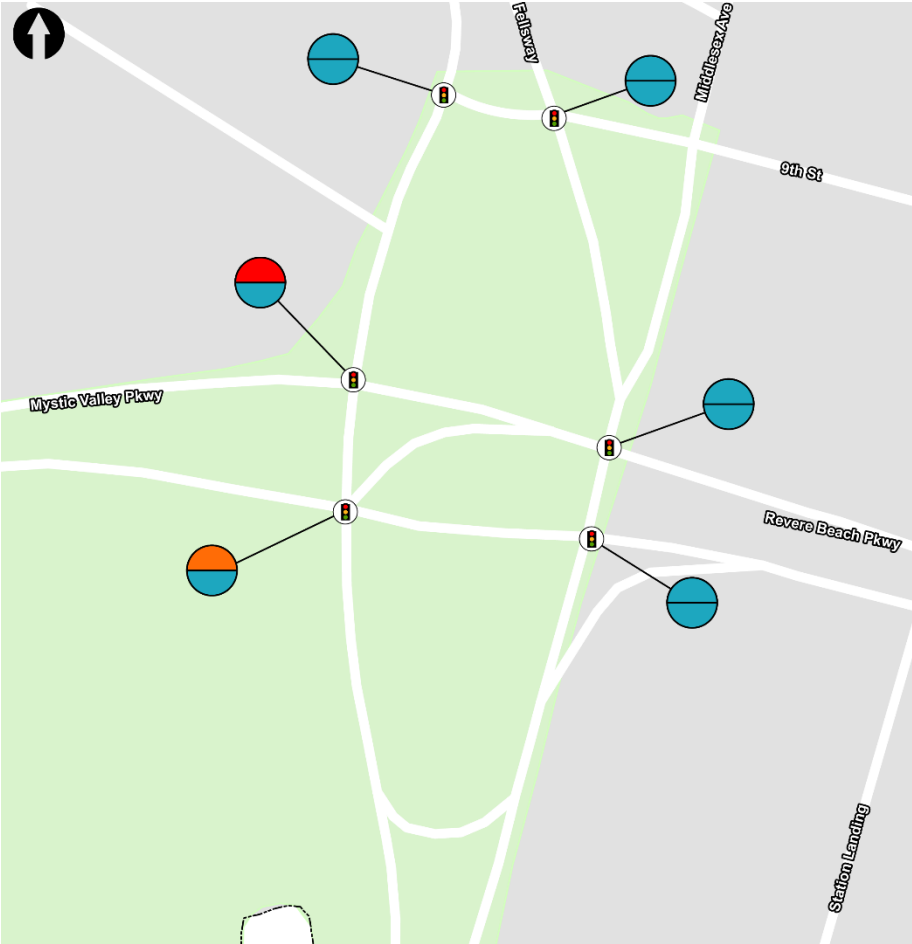
Operations Summary

- Existing Circle maximizes vehicle lanes
- Alternatives simplify geometry, resulting in easier wayfinding
- At-grade alternatives vehicle capacity reduced due to fewer lanes
- All alternatives significantly enhance pedestrian and bike experience

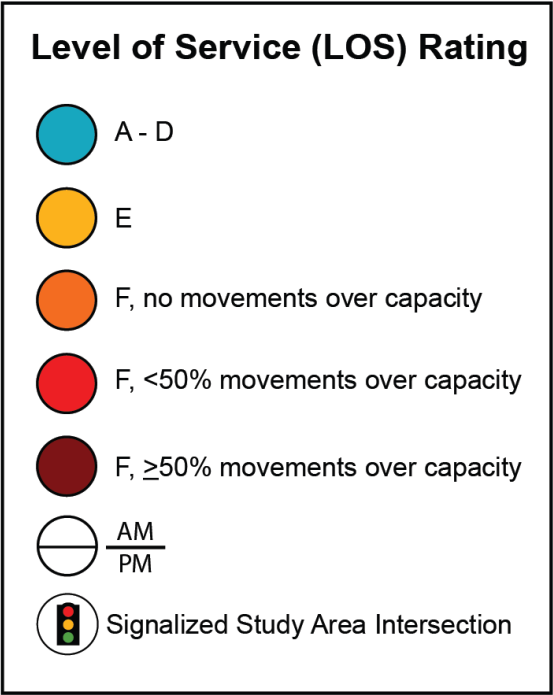
Vehicle Operations



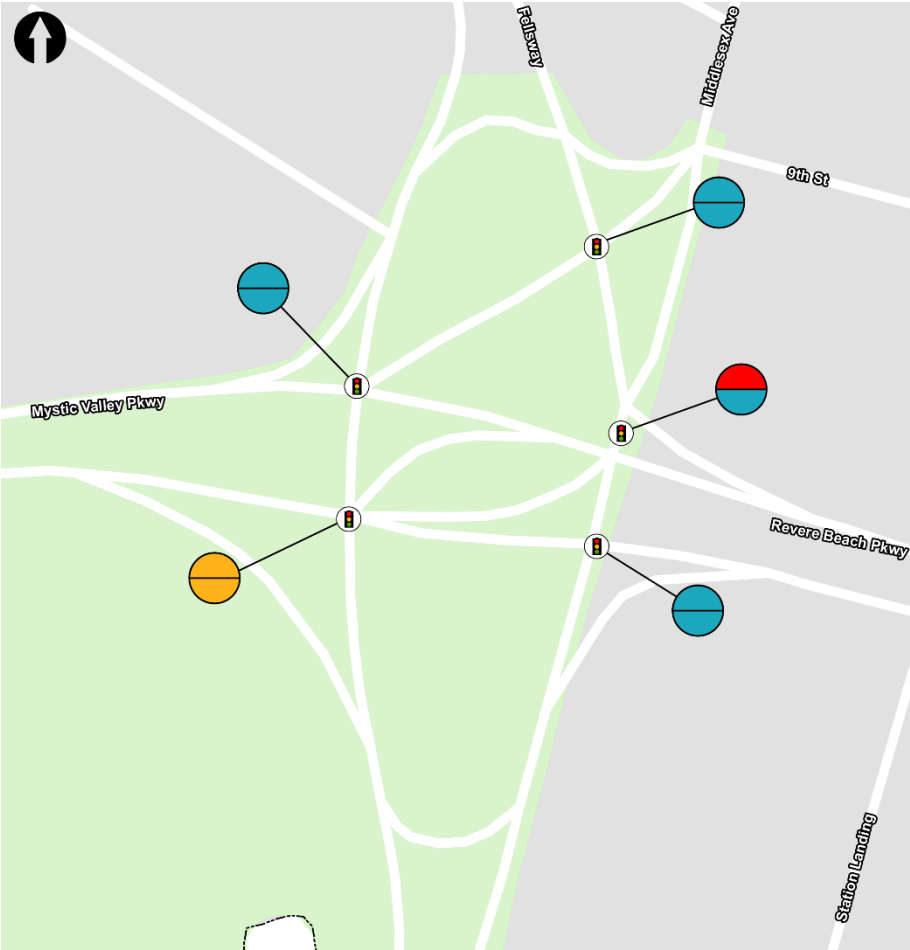
Existing (2020)



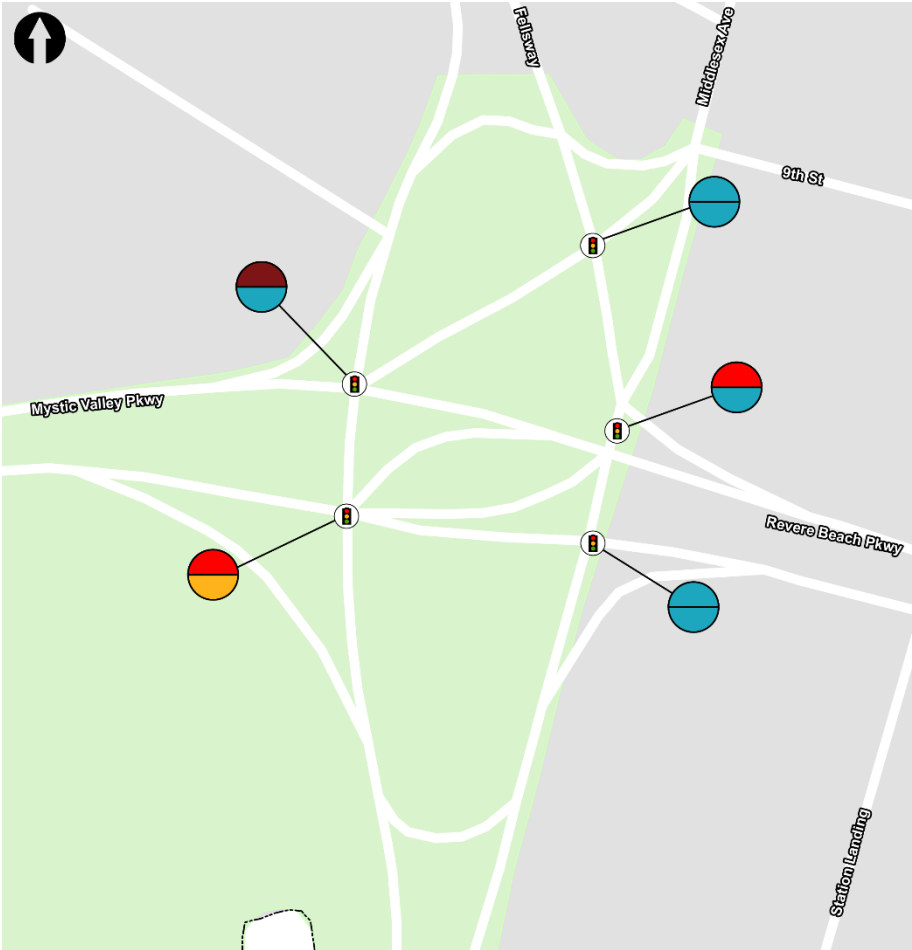
Short-Term Option A (2020)



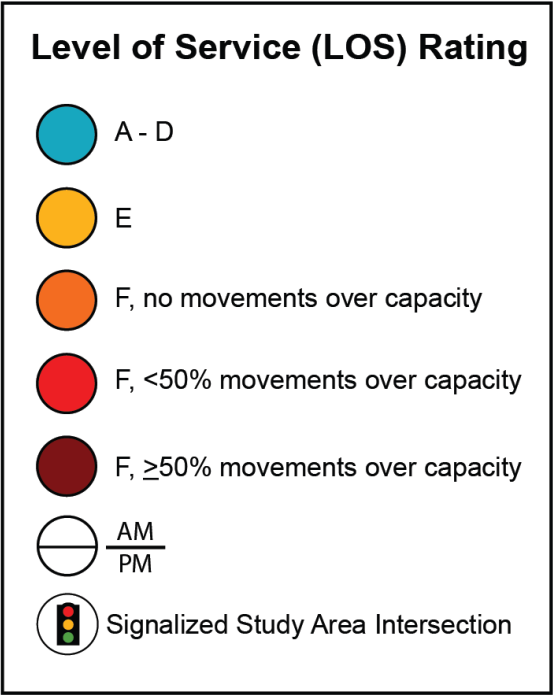
Vehicle Operations



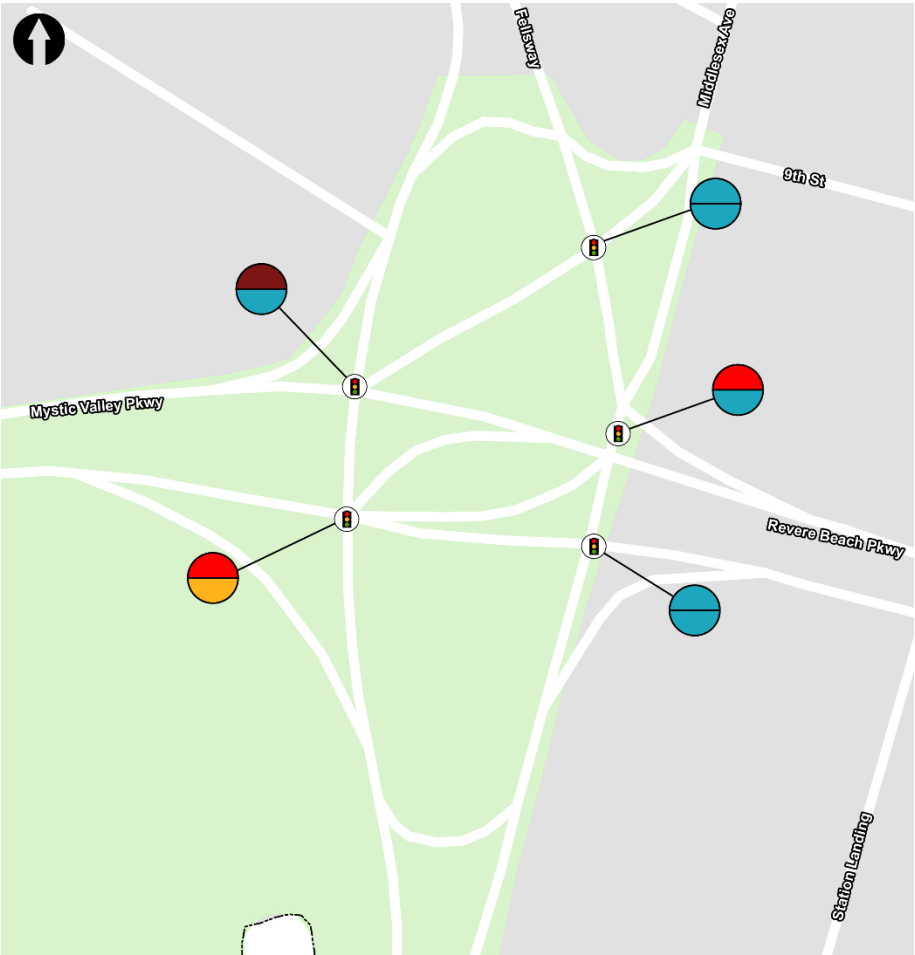
Existing (2020)



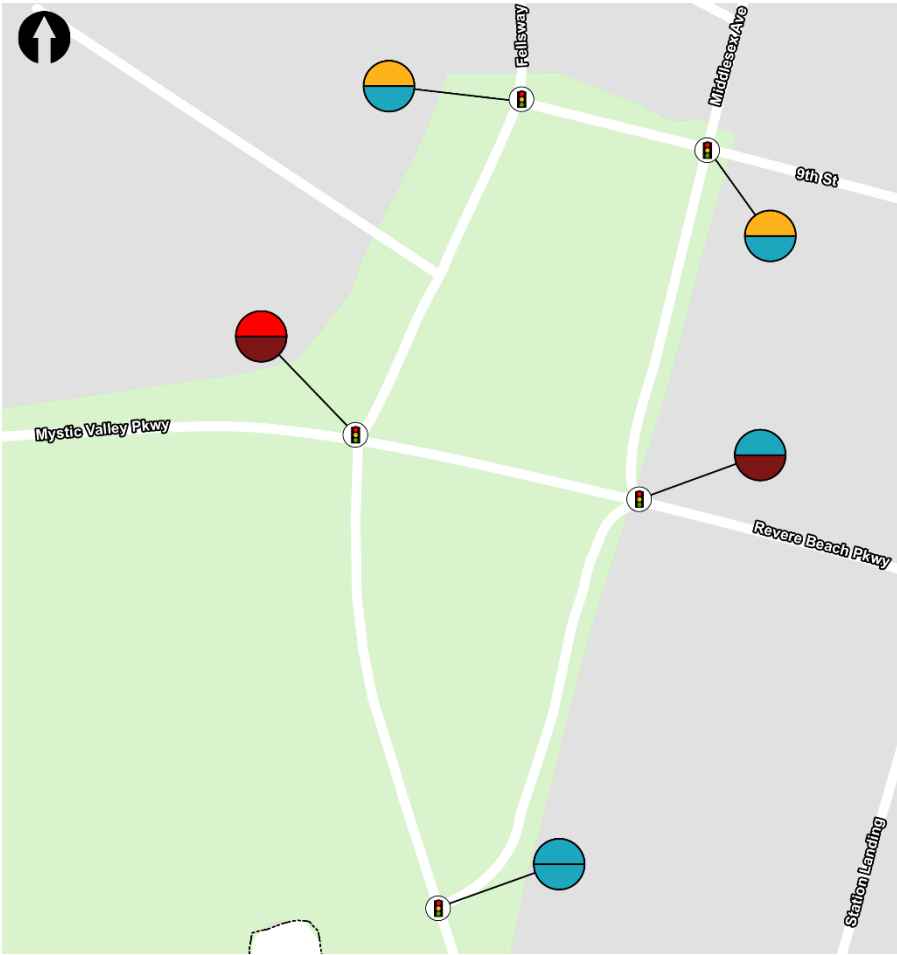
No Build (2040)



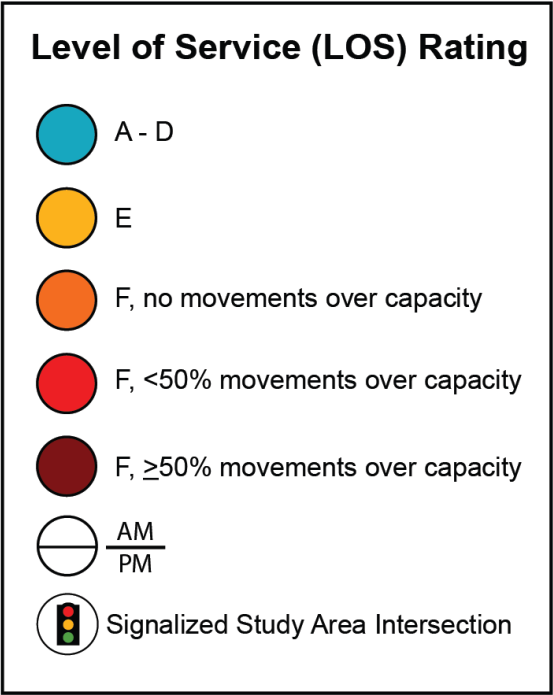
Vehicle Operations



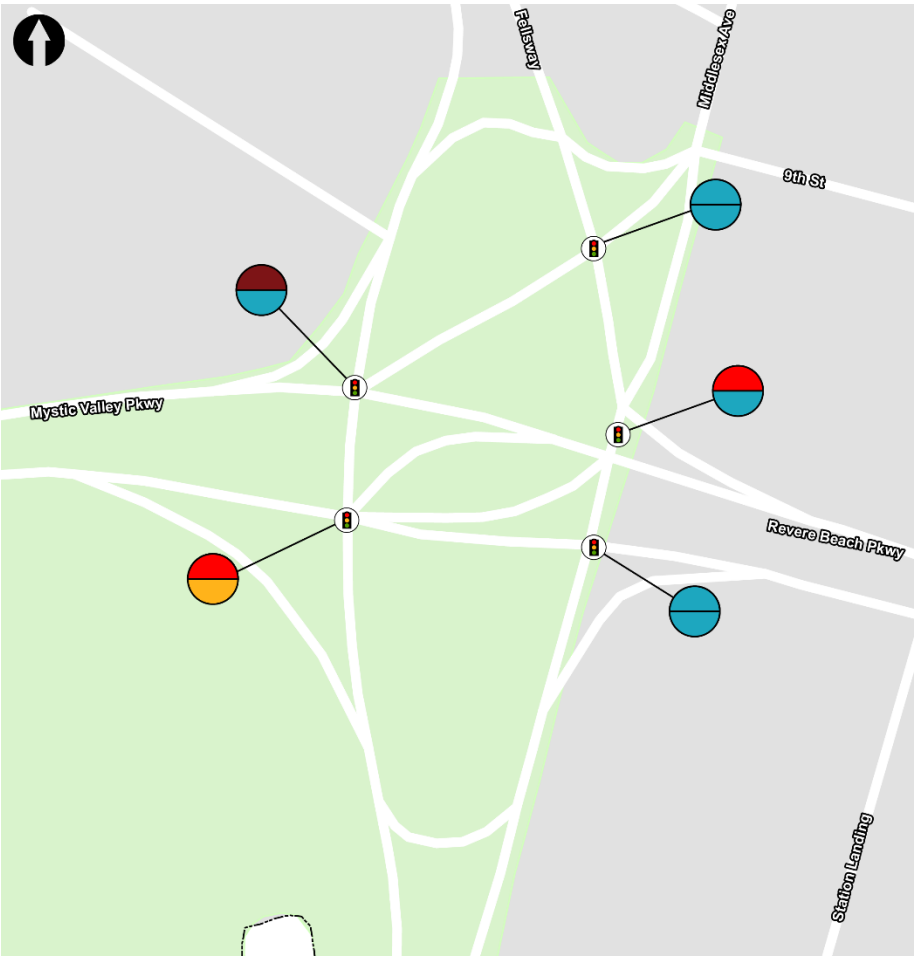
No Build (2040)



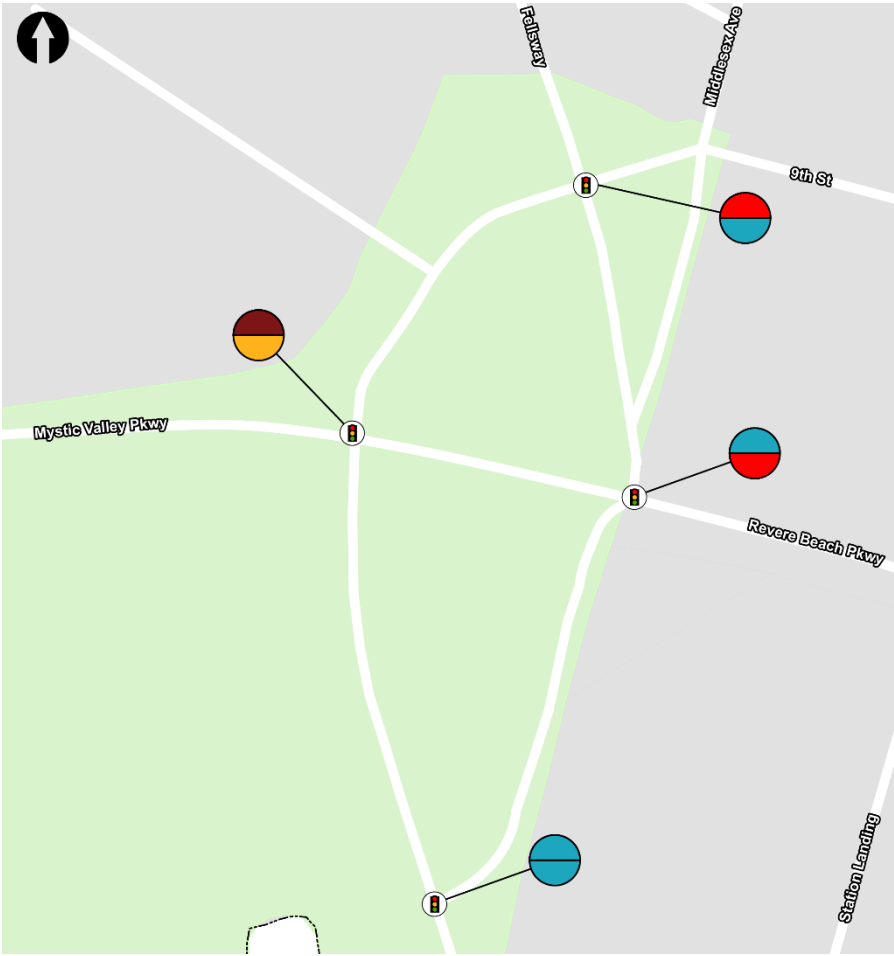
At-Grade Square (2040)



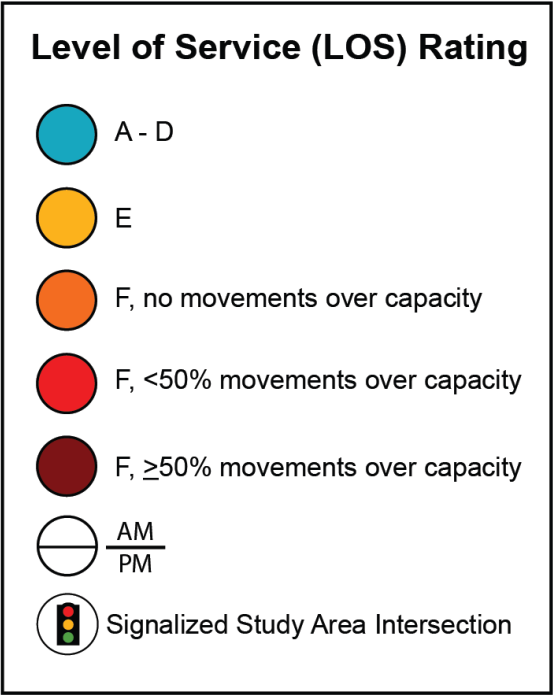
Vehicle Operations



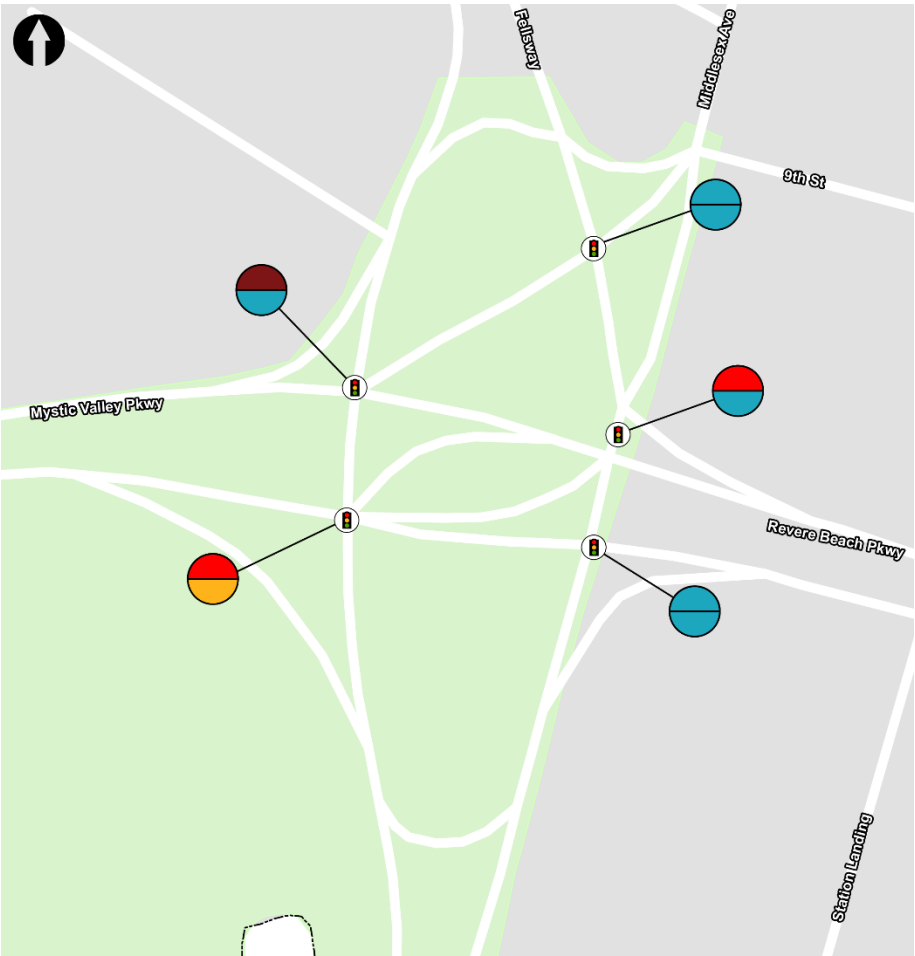
No Build (2040)



At-Grade Triangle
w/ Transit Enhancements (2040)



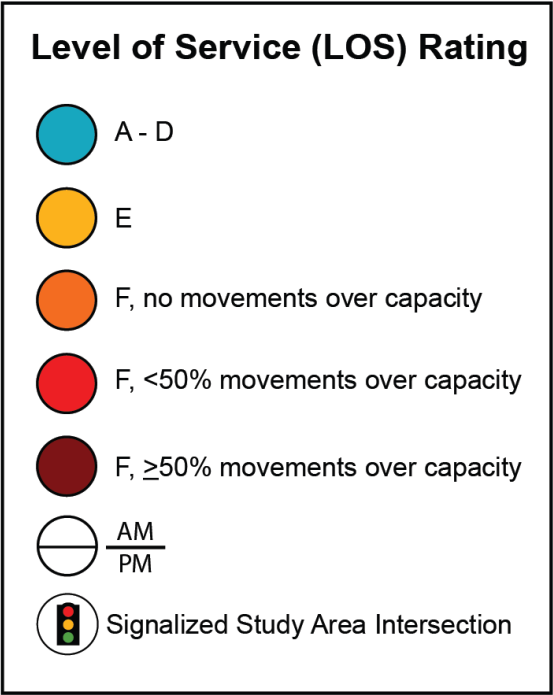
Vehicle Operations



No Build (2040)



Grade-Separated (2040)
(surface roads only)



Pedestrian Connectivity

Alternatives
Evaluation



Short/Medium-Term Alternatives



Improved crossings along
desire lines

Pedestrian Connectivity

Alternatives Evaluation



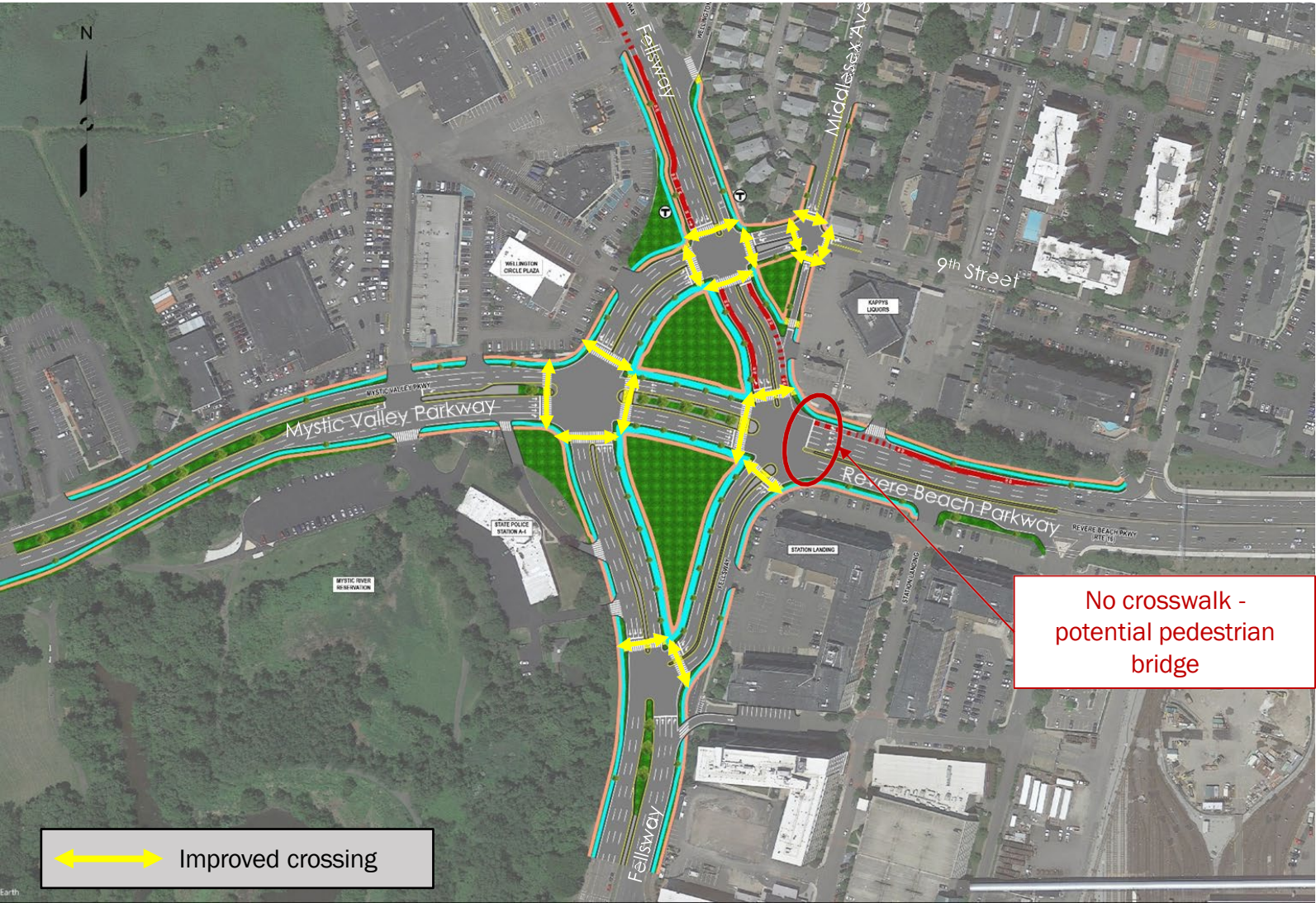
Long-Term At-Grade Alternative - Square



Improved crossings along
desire lines

No crosswalk -
potential pedestrian
bridge

At-Grade Alternative: Dual Quadrant



Long-Term
At-Grade Alternative –
Triangle/Transit
Enhanced

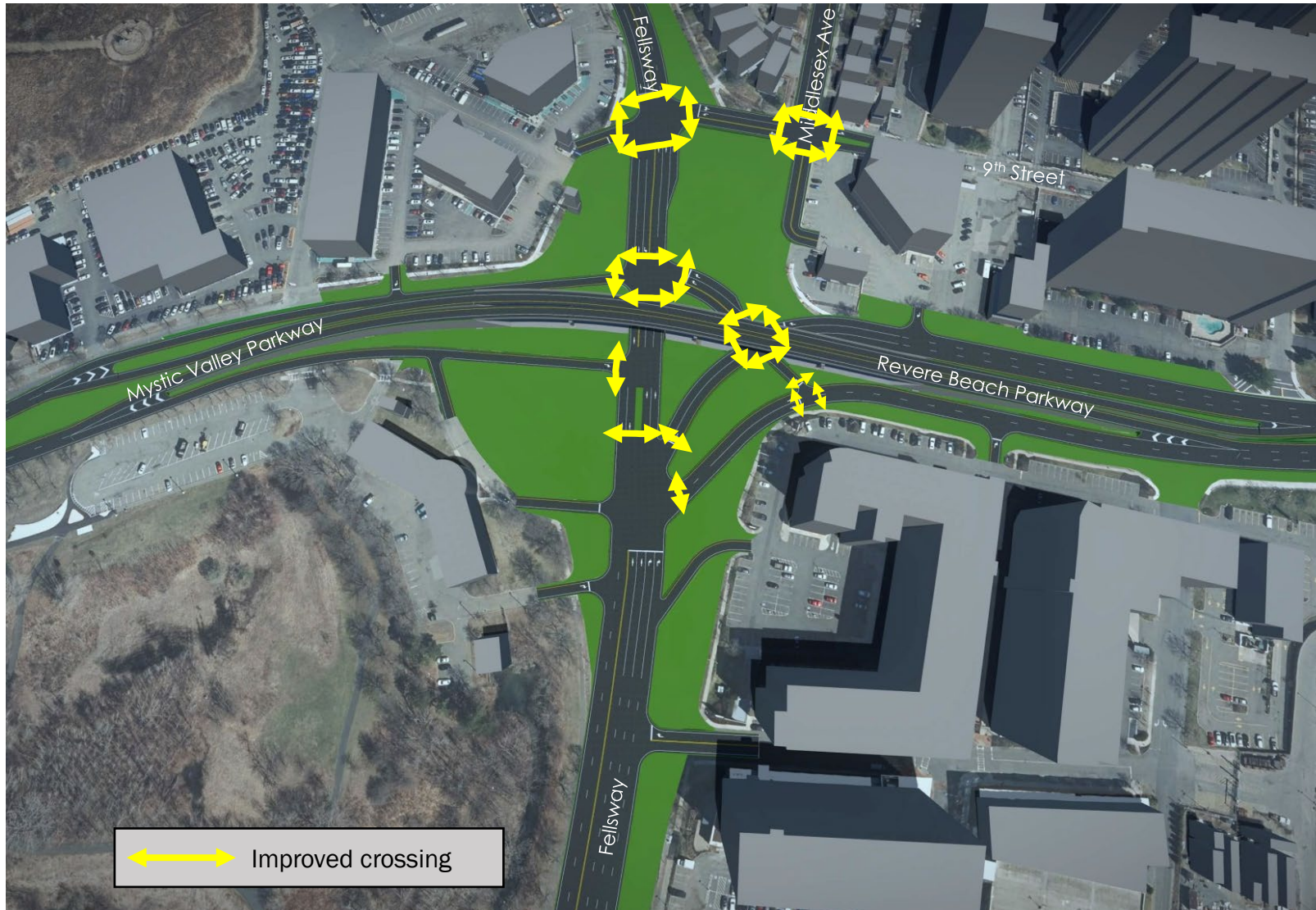


Improved crossings along
desire lines

No crosswalk -
potential pedestrian
bridge



Pedestrian Connectivity

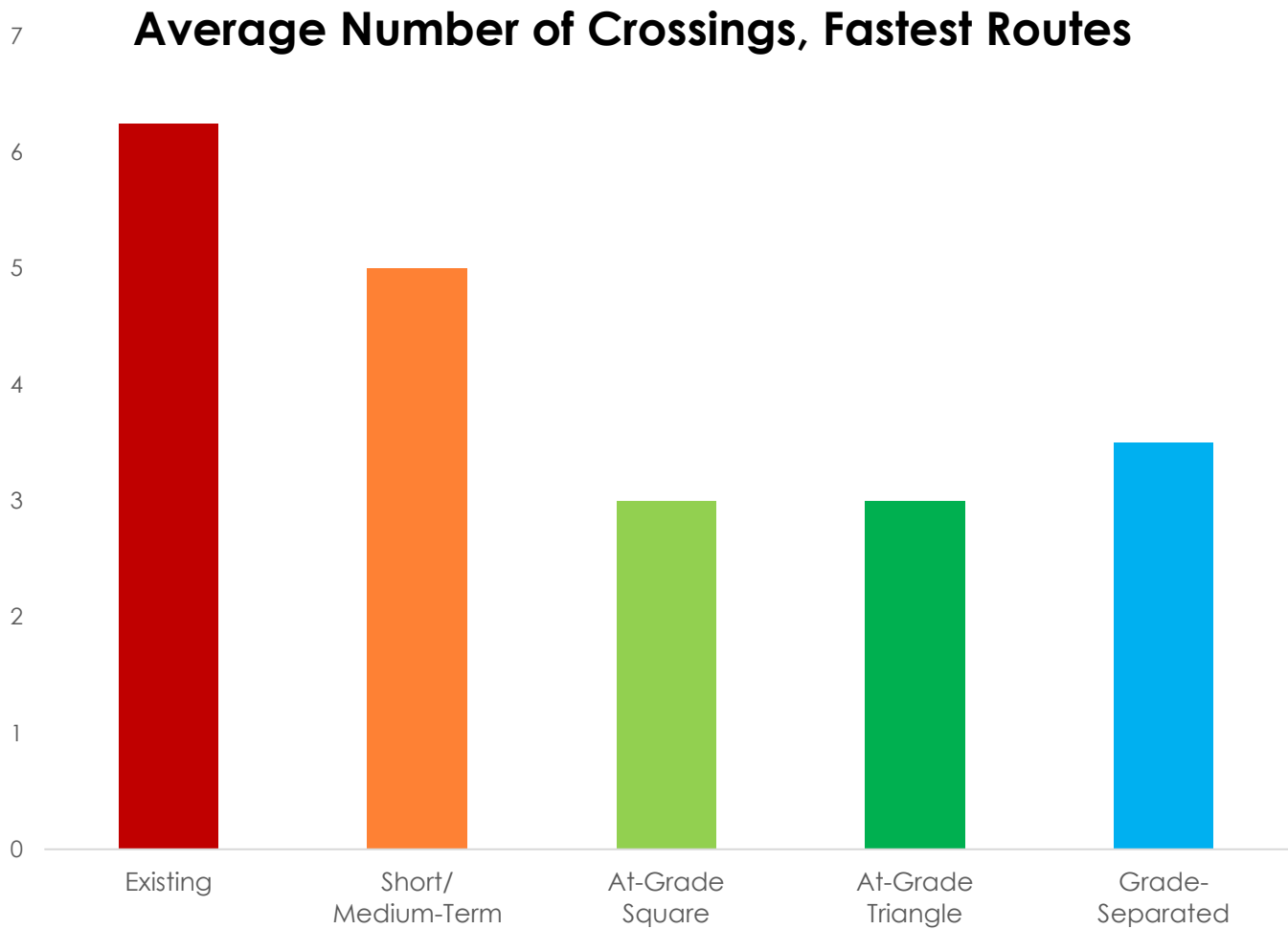


Long-Term Grade-Separated Alternative

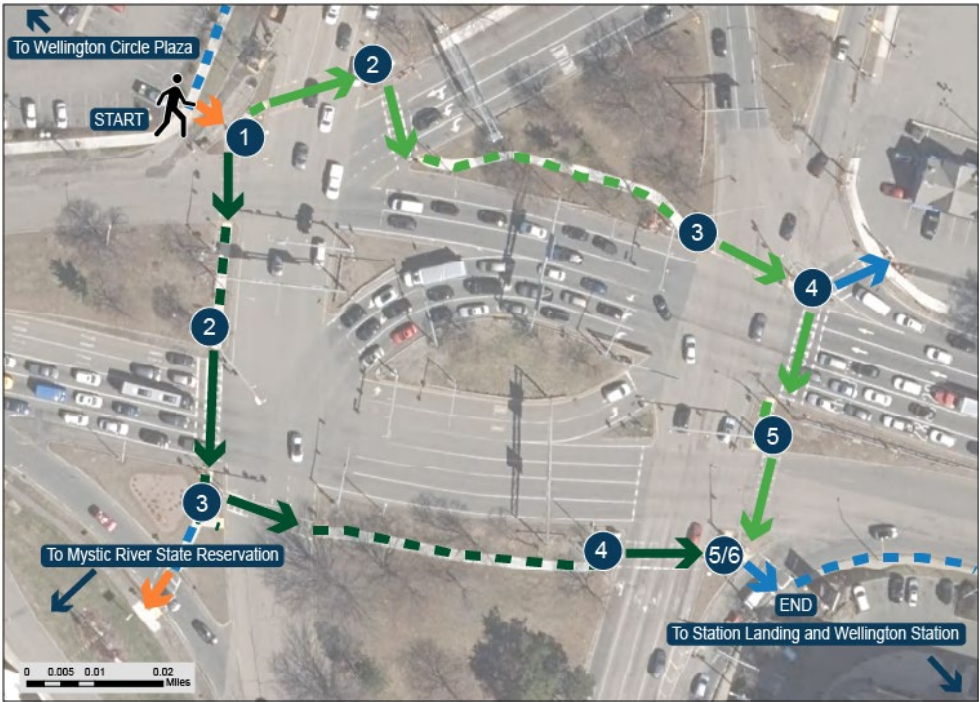


Improved crossings along
desire lines

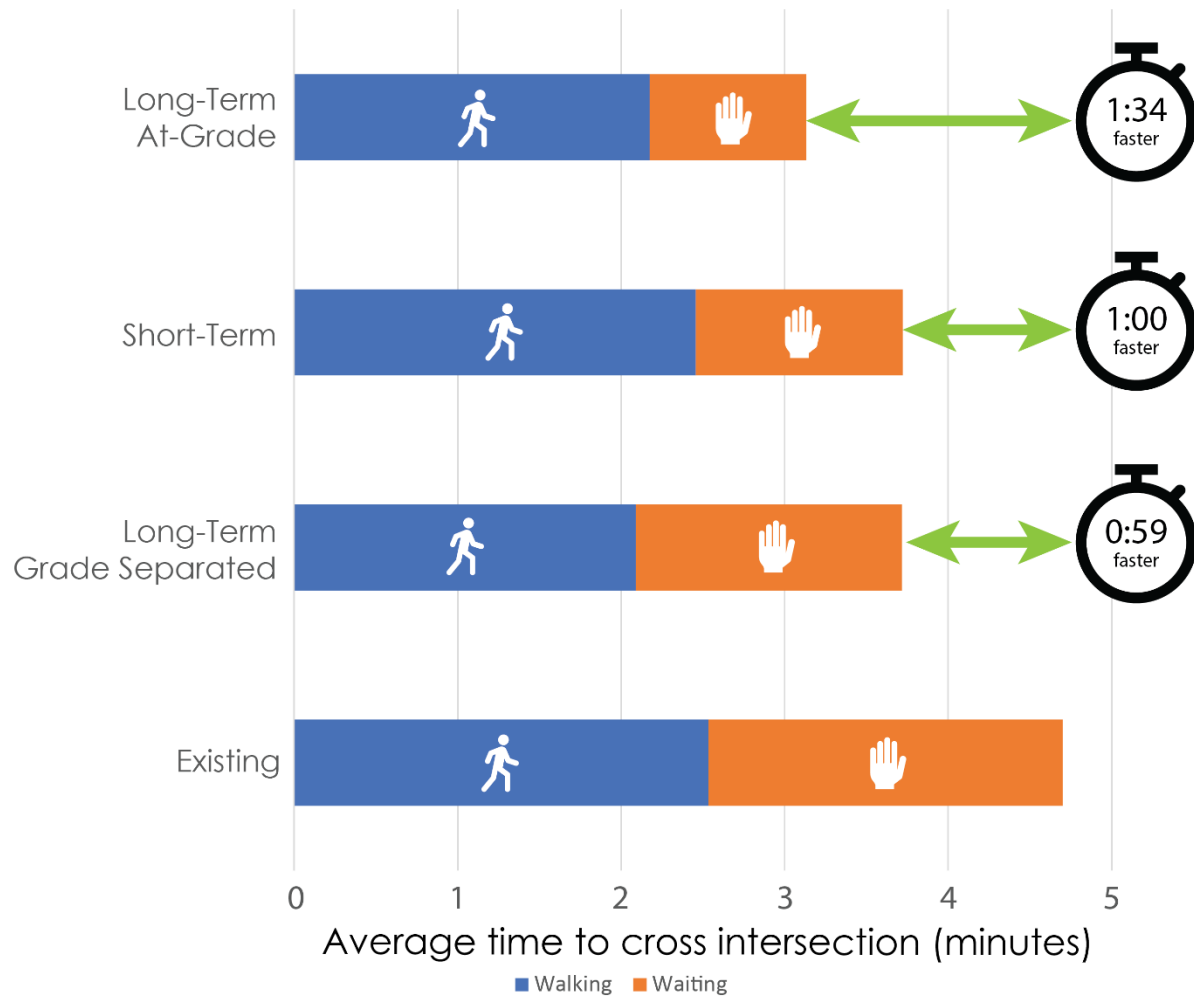
Pedestrian Connectivity



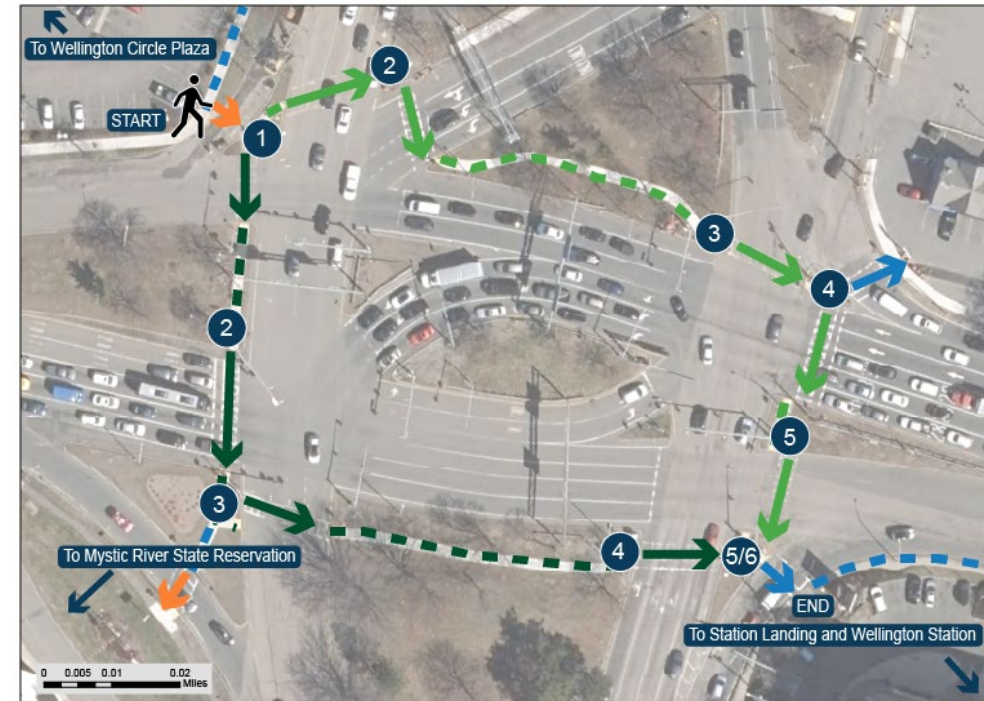
✓ Fewer pedestrian crossings than existing for all alternatives



Pedestrian Travel Time Savings



Faster pedestrian travel times than existing for all alternatives

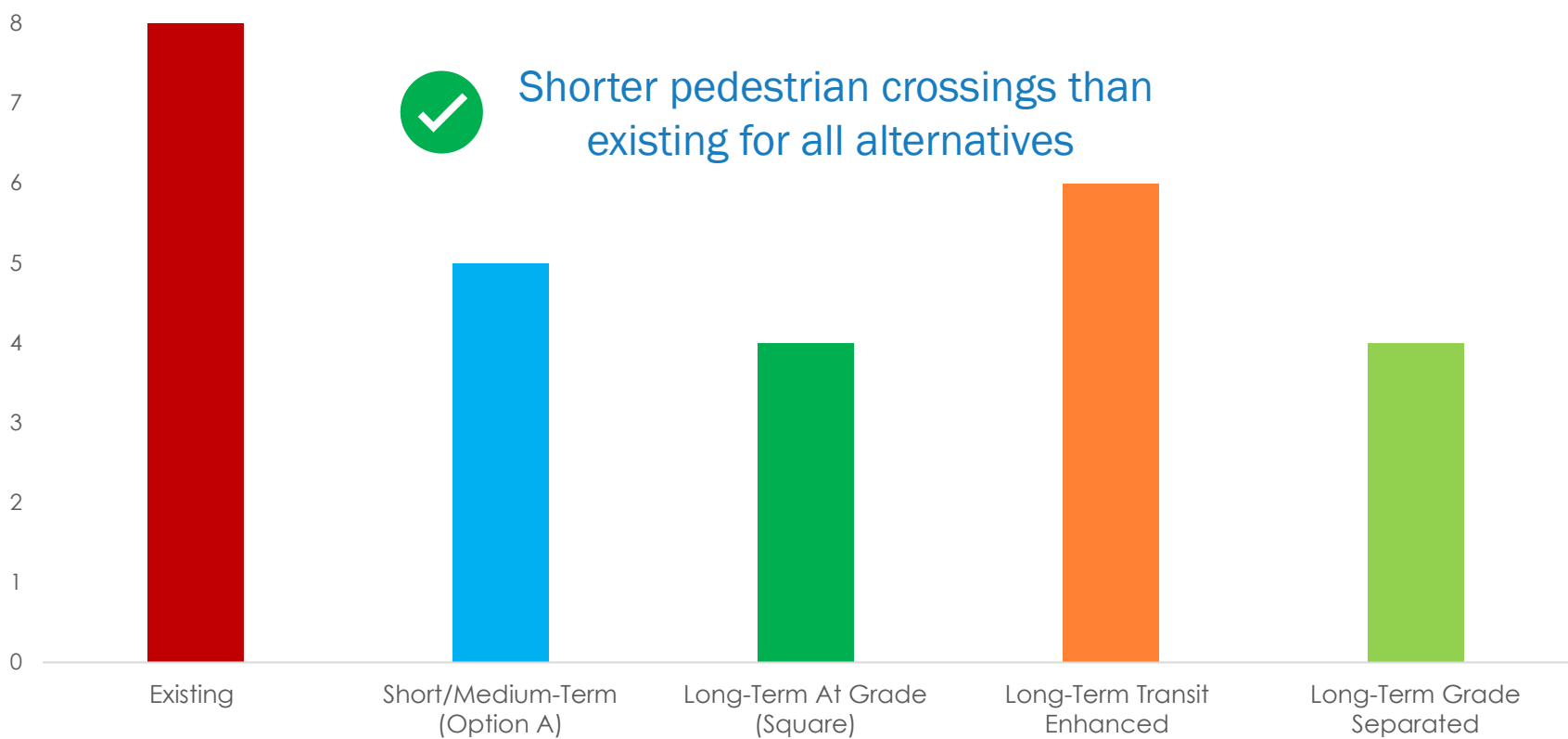


Crossing between northwest and southeast

Walk speed of 4 feet/second

Pedestrian Experience

Number of Pedestrian Crossings >3 lanes without refuge island

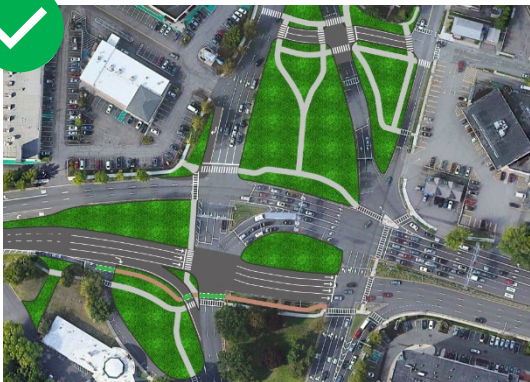


Existing – 8 lane crossing across Fellsway



Long-Term Alternatives

Pedestrian Experience



Combined Short/Medium-Term Concepts



At-Grade Dual Quadrant – Square



At-Grade Dual Quadrant – Transit Enhanced



More opportunity to provide pleasant visual and landscaped surroundings



Grade-Separated Single Quadrant



Elevated roadway creates unpleasant environment for pedestrians



Bicycle Connectivity



Short/Medium-Term Alternative



Slightly better west to east
bike connectivity than
existing

Legend

- Two-Way Buffered Bike Lane
- Dedicated Bike Lane
- Buffered Bike Lane
- Off-Street Path
- Planned Bike Lane
- Planned Off-Street Path



Bicycle Connectivity



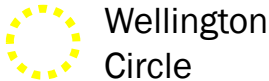
Long-Term Alternatives



More east/west and
north/south bike connectivity
than existing

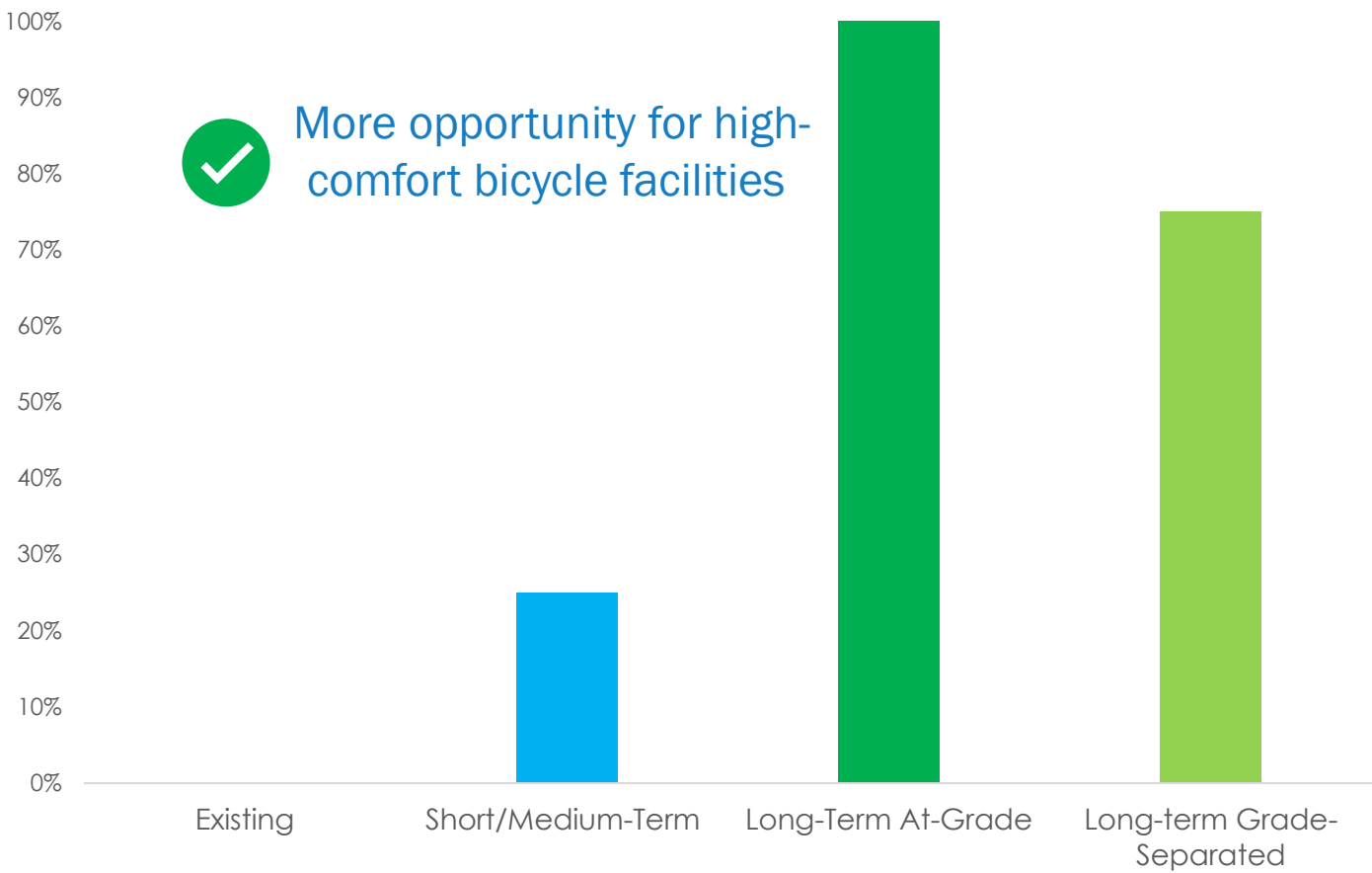
Legend

- Two-Way Buffered Bike Lane
- Dedicated Bike Lane
- Buffered Bike Lane
- Off-Street Path
- Planned Bike Lane
- Planned Off-Street Path



Bicycle Experience

Ability to Provide High-Comfort Bicycle Facility*



Existing – Biker on sidewalk (no bike lane)

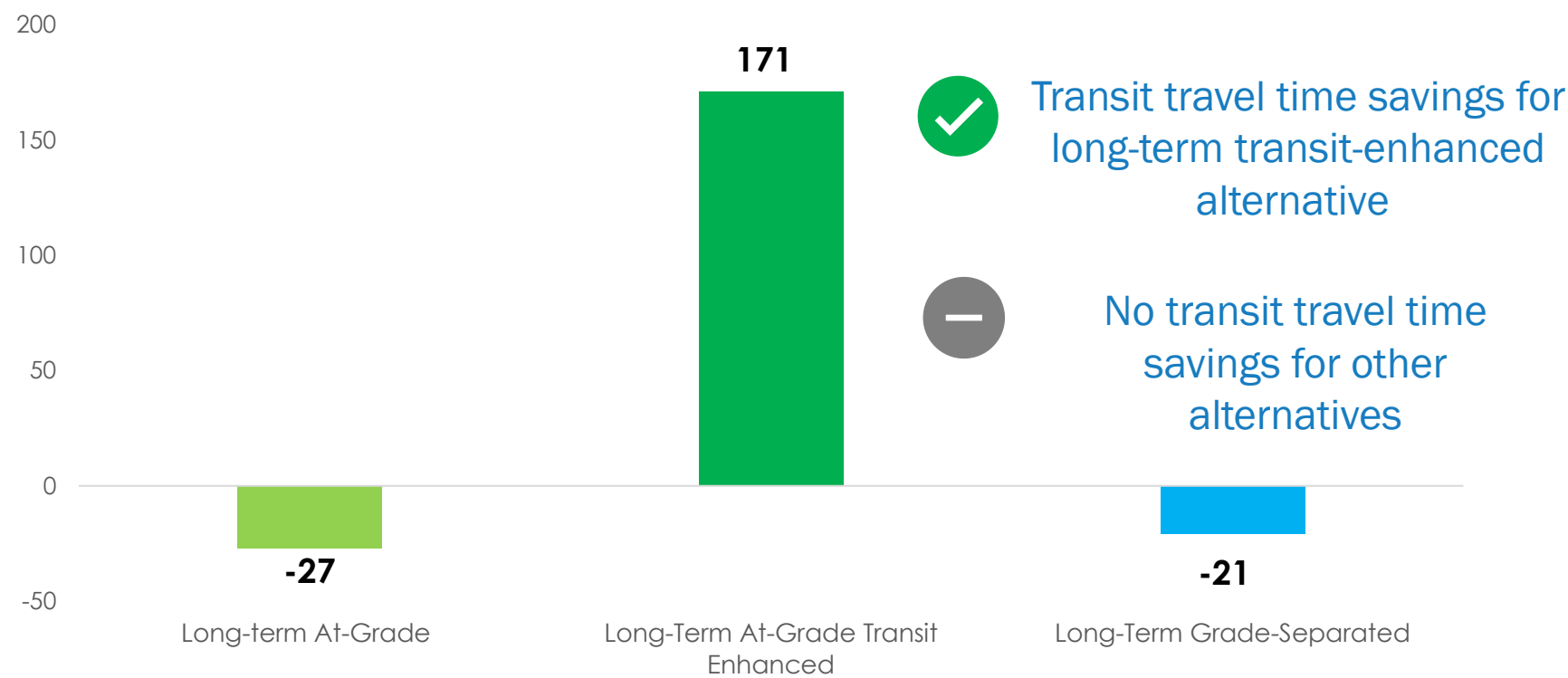


Alternatives
(separated bike lanes)

*Approximate percentage of approaches that have ability to provide high comfort bicycle facility



Estimated Savings in Round Trip Transit Time to and from Wellington Station (in seconds)



Travel time savings are more significant in the inbound direction towards Wellington station, where buses make a left turn between Fellsway and Mystic Valley Parkway

*Time savings apply to points north and west of the intersection of Fellsway with Riverside Avenue



Improve Quality of Life



Environmental

Alternatives Evaluation

Category	Short/Medium Term	Long-Term At-Grade	Long-Term Grade-Separated
Wetlands	–	–	–
Waterbodies	–	–	–
Chapter 91/Tidelands	–	–	–
Floodplains	–	–	×
Open Space and Recreational Areas	✓	✓	×
Hazardous Materials and Sites	–	–	–
Climate Change/Resiliency	✓	✓	×
Historic and Archaeological Resources	✓	✓	×

Long-Term Grade Separated Alternative has worse environmental outcomes











At-Grade Alternatives have better environmental outcomes



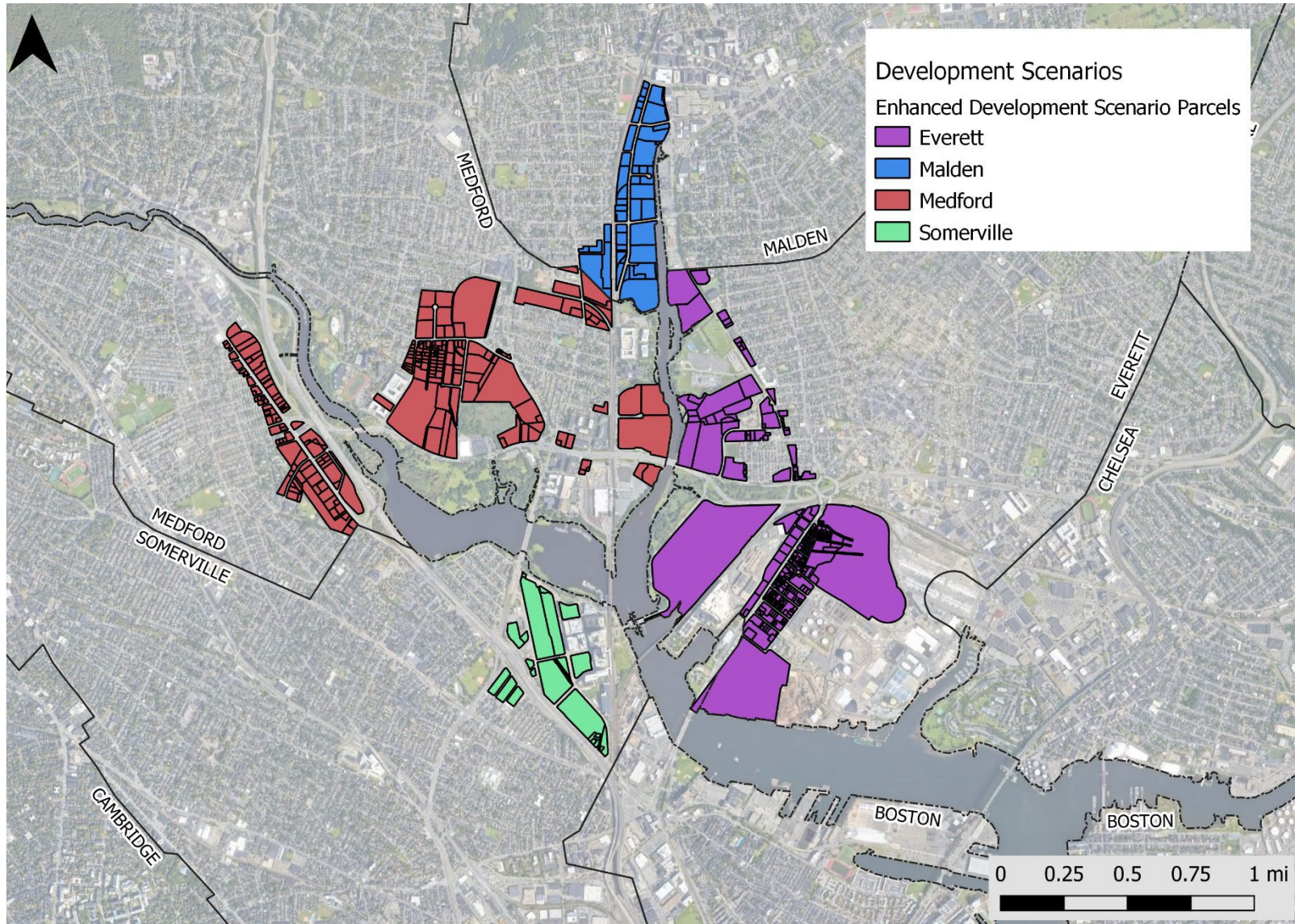
✓ Benefits – Neutral × Impacts

Land Use & Economic Development












	Short/Medium-Term	Long-Term At-Grade	Long-Term At-Grade Transit Enhanced	Long-Term Grade-Separated
Consistency with Medford Master Plan				
Maintains Access (driveways)				

Enhanced Development Potential

Alternatives Evaluation



- Reflects communities' consideration of denser, mixed-use development
- Potential to create additional travel demand
- Need to increase travel via alternative modes

	Short/Medium-Term	Long-Term At-Grade	Long-Term At-Grade Transit Enhanced	Long-Term Grade-Separated
Air quality*	N/A			
Active transportation facilities and connectivity				
Safety				

*CTPS regional modeling results. Do not include short/medium-term or triangle alternatives. Improvements in air quality attributed to USEPA's national control programs and other standards for fuel efficiency



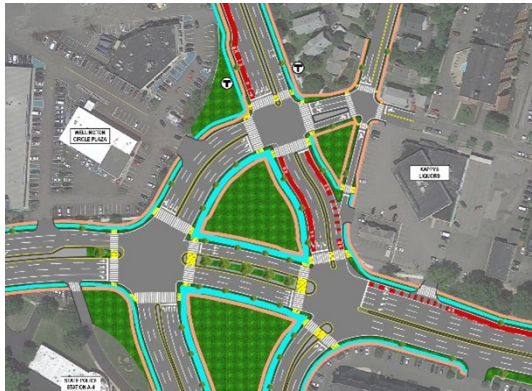
Community Cohesion



Combined Short/Medium-Term Concepts



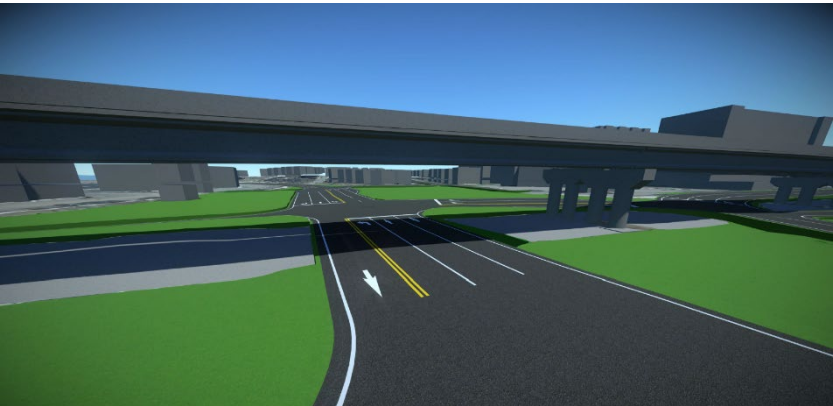
At-Grade Dual Quadrant – Square



At-Grade Dual Quadrant – Transit Enhanced



Reduces barriers for people between neighborhoods



Grade-Separated Single Quadrant



Example barrier created by McGrath Highway/McCarthy Overpass in Somerville



Reduces physical barriers for people, but creates visual barrier between neighborhoods




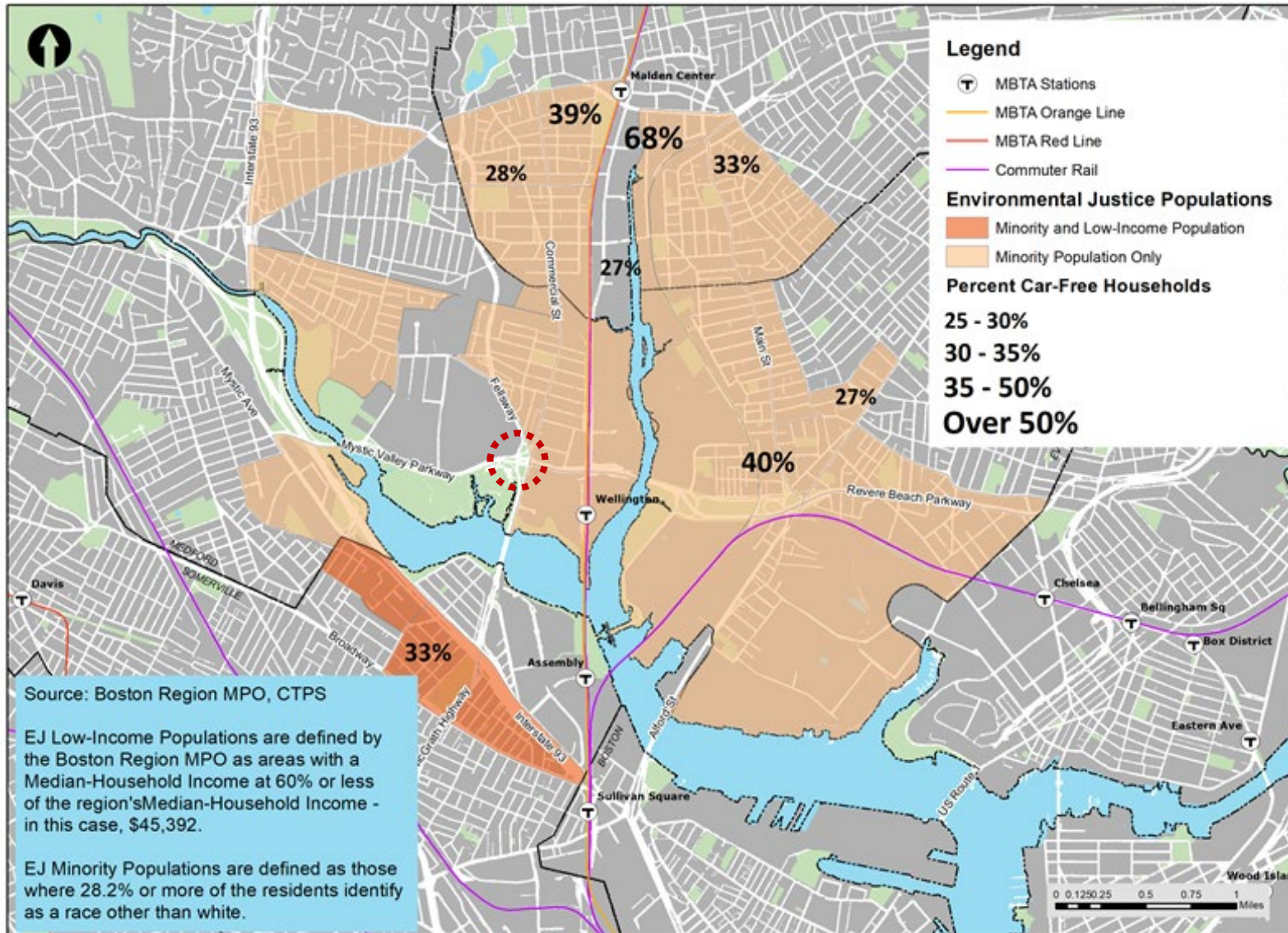
Environmental Justice

Alternatives Evaluation

- No disproportionate negative impacts
- Benefits car-free, minority, and low-income households by improving multimodal connections to Wellington Circle



 Wellington Circle



Alternatives Analysis Summary

Alternatives Evaluation

Evaluation Criteria	Short/Medium Term	Long-Term At-Grade	Long-Term At-Grade Transit Enhanced	Long-Term Grade-Separated
Safety	✓	✓	✓	✓
Vehicle Operations	✗	✗	✗	✓
Pedestrian Experience	✓	✓	✓	—
Bicycle Experience	—	✓	✓	✓
Transit Operations & Access	—	—	✓	—
Environment & Public Health	✓	✓	✓	✗
Land Use & Economic Development	✓	✓	✓	—
Community Cohesion	✓	✓	✓	—
Environmental Justice	✓	✓	✓	✓
Cost Estimate	\$6.2 M	\$36.7 M	\$38.3 M	\$176.9 M

✓ Benefits

— Neutral

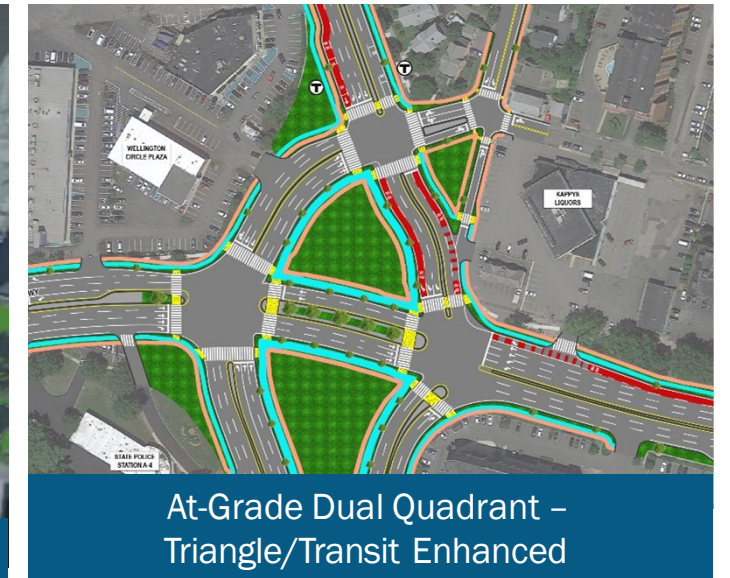
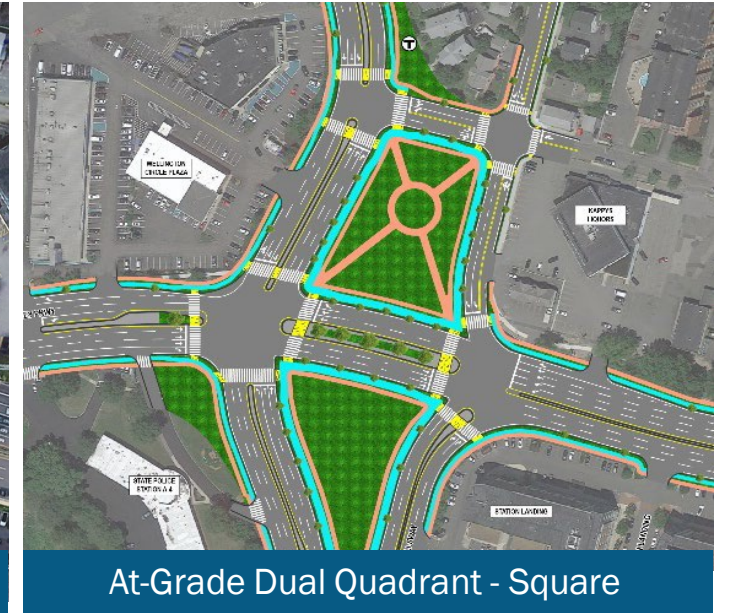
✗ Impacts



PUBLIC COMMENT

Discussion

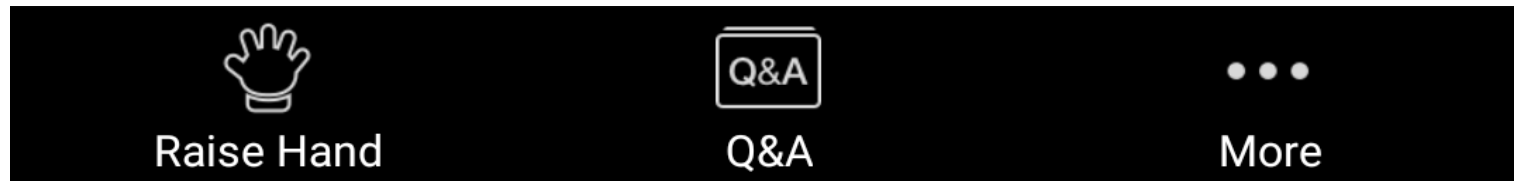
- Short/Medium- Term
- Long-Term At-Grade
- Long-Term Grade-Separated



Public Comment

- Use Q&A to submit questions/comments in writing
- Press the “Raise Hand” button to share a question/comment verbally

Bottom Panel of
Zoom Screen



- If you are participating by phone only, you can press the star button then nine (*9) to raise your hand
- Comments may also be shared throughout the process via the [study comment form](#)



WELLINGTON STA
RIVERS EDGE DR

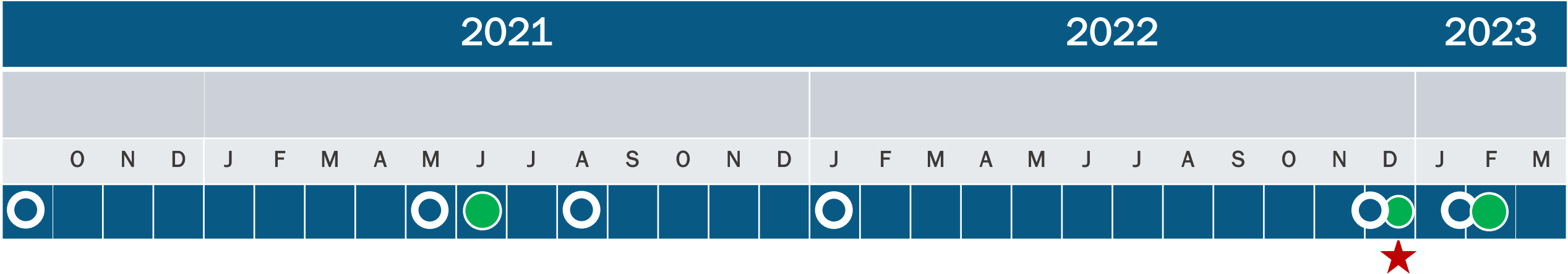
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NEXT STEPS


Study Schedule

Next Steps



 Working Group Meeting

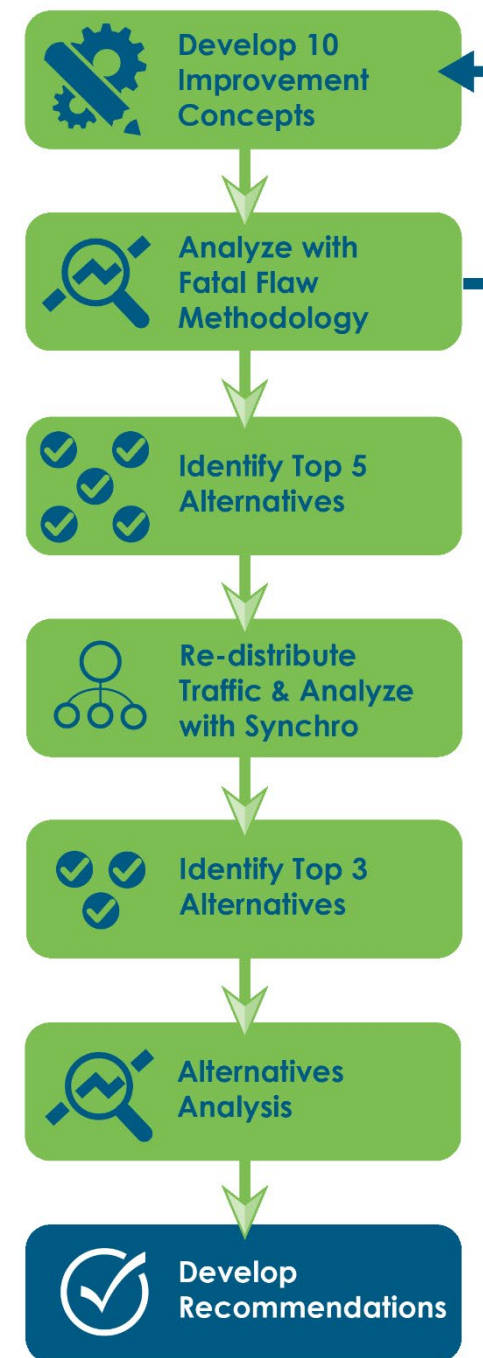
 Virtual Public Engagement

 Today



Next Steps

- Public Input
- Develop Recommendations



Next Steps

Next Steps

Next Steps

- Next Working Group Meeting: Winter 2023
 - Presentation of Recommendations
- Next Public Meeting: Winter 2023
 - Presentation of Recommendations

More Information:

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Project Website: <https://www.mass.gov/wellington-circle-study>

