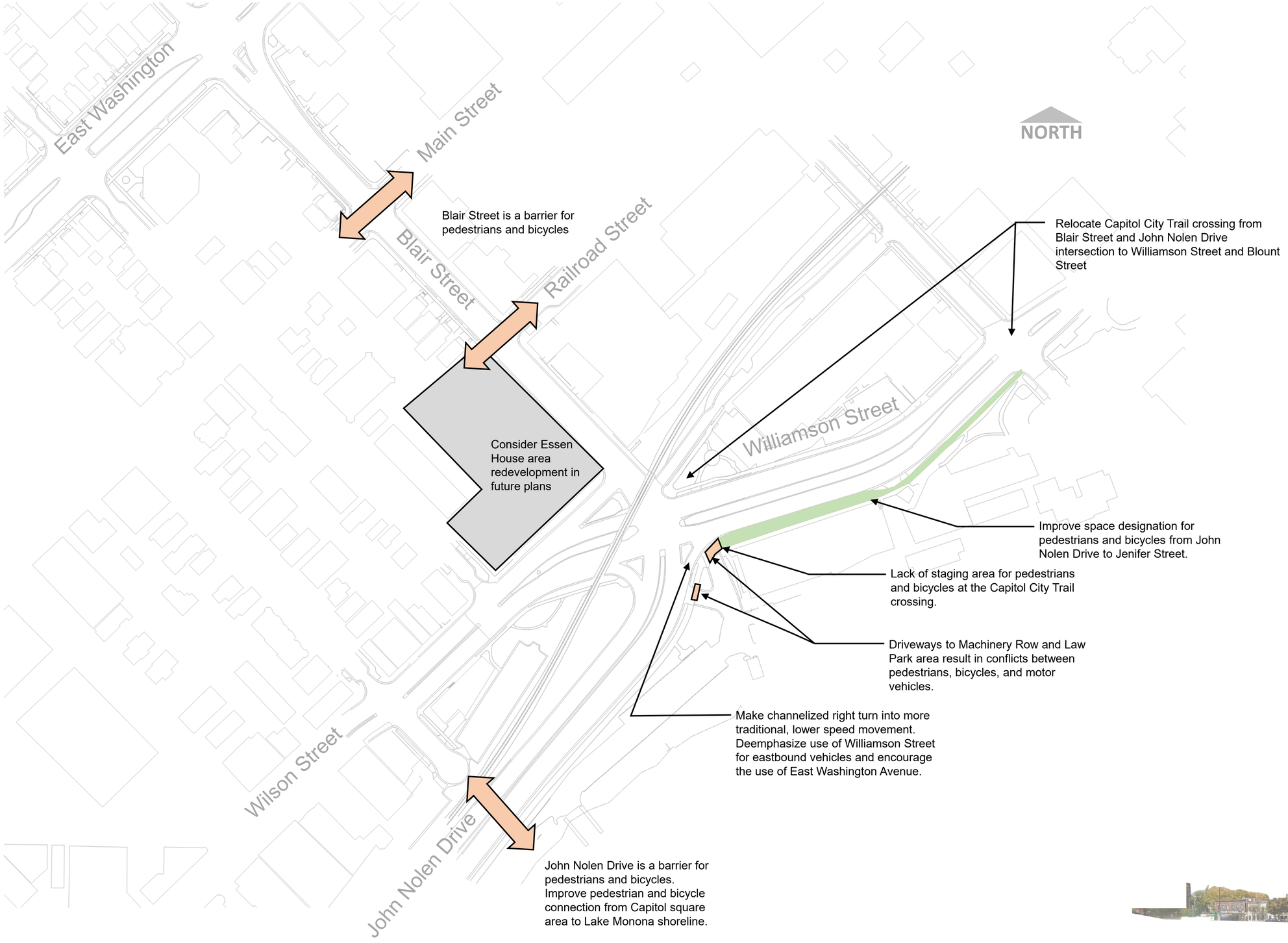
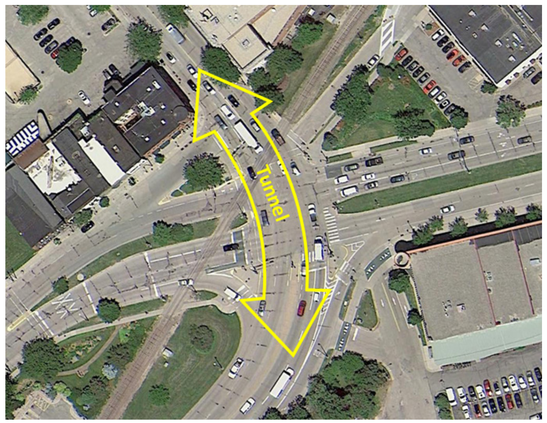
Blair/Williamson Intersection Expressed Needs



John Nolen/Blair/Williamson/Wilson Tunnel Alternative

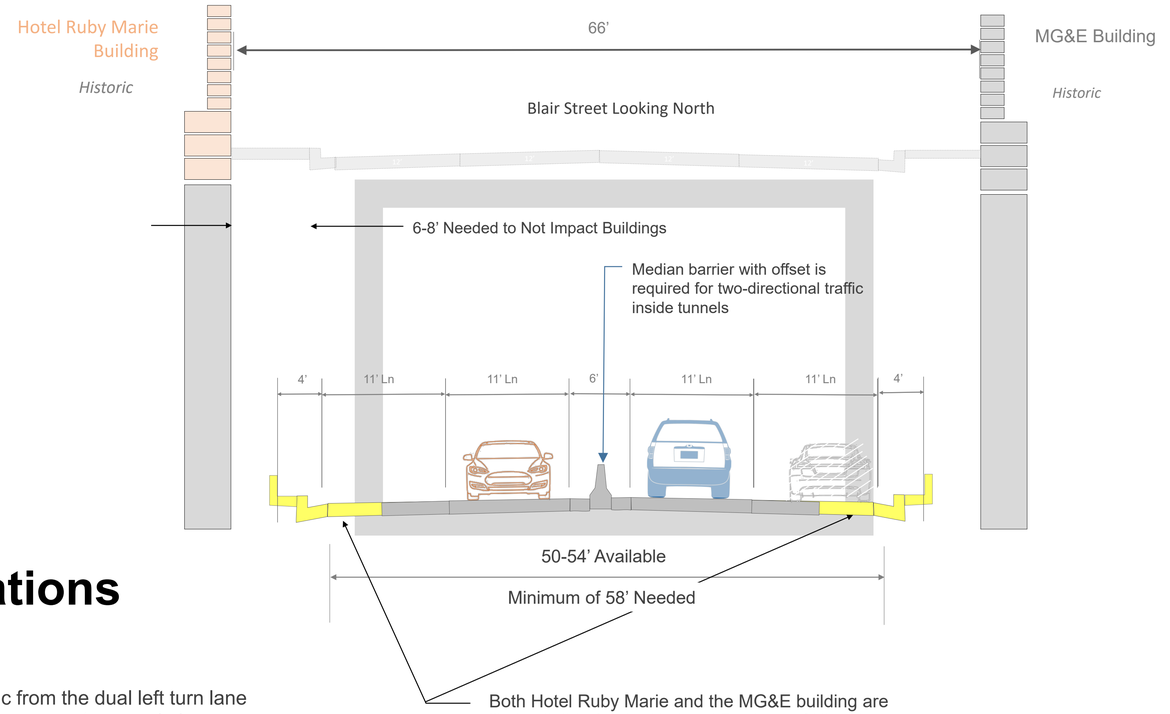
1. Concept



The John Nolen/Blair/Williamson/Wilson intersection is a hub for pedestrians, bicycles, and motor vehicles including transit. It is a focal point for all modes as they travel to the square, adjacent shops, and across the isthmus and is complicated by the fact that an active railroad line passes through the middle of it.

Because of this, some have suggested constructing a tunnel that would travel from John Nolen Drive, along Blair, and to East Washington. This tunnel could remove a large amount of motor vehicle traffic, making the intersection more friendly for pedestrians, bicyclists, and local motor vehicle trips.

2. Constraints - Buildings



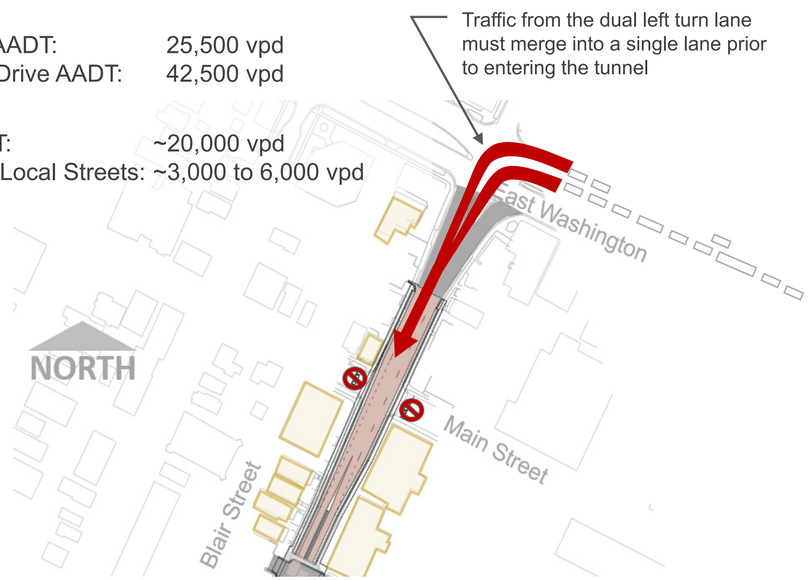
Both Hotel Ruby Marie and the MG&E building are likely eligible for the National Register of Historic Places. This designation would provide protections to the buildings and likely limit the right of way width to 66 feet. Because of clearance requirements, only a two-lane bi-directional tunnel would be able to fit under Blair Street.

3. Constraints – Traffic Operations

Average Annual Daily Traffic (AADT):

Existing
Blair Street AADT: 25,500 vpd
John Nolen Drive AADT: 42,500 vpd

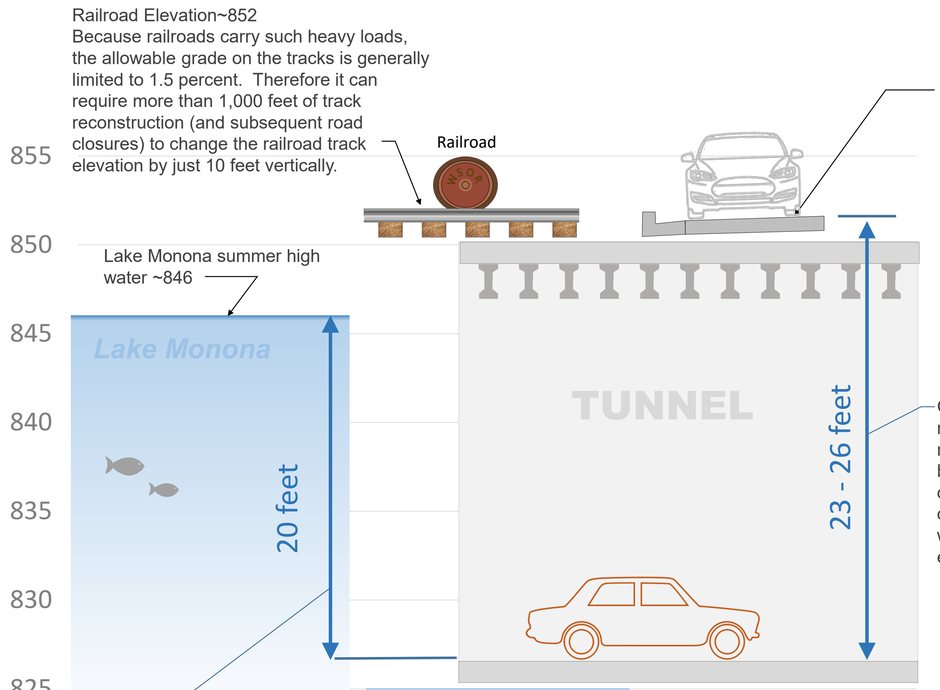
Estimated
Tunnel AADT: ~20,000 vpd
Diversion to Local Streets: ~3,000 to 6,000 vpd



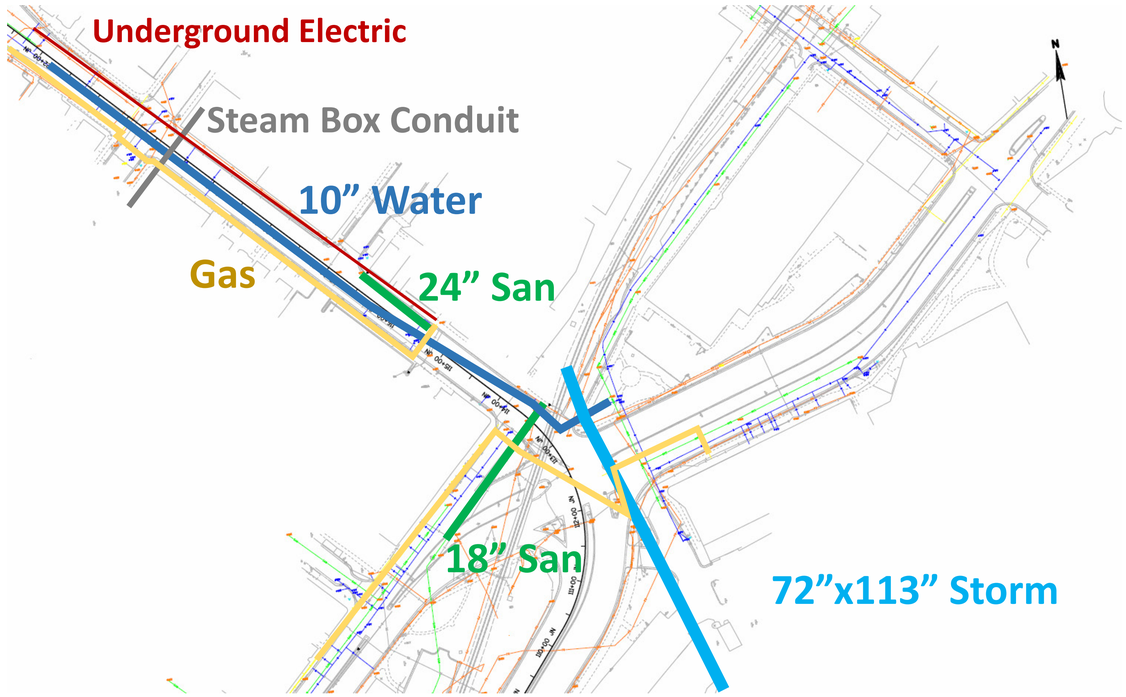
The dual left-turn movement from East Washington Ave. must merge to a single lane prior to entering the tunnel. Based on the estimated turning volume, this substandard merge length will result in unbalanced lane usage on East Washington Avenue. Modeling indicates that this left turn queue would will backup through the Blount Street and Livingston Street intersections, and possibly farther.

John Nolen/Blair/Williamson/Wilson Tunnel Alternative

4. Constraints - Elevation



5. Constraints – Utilities

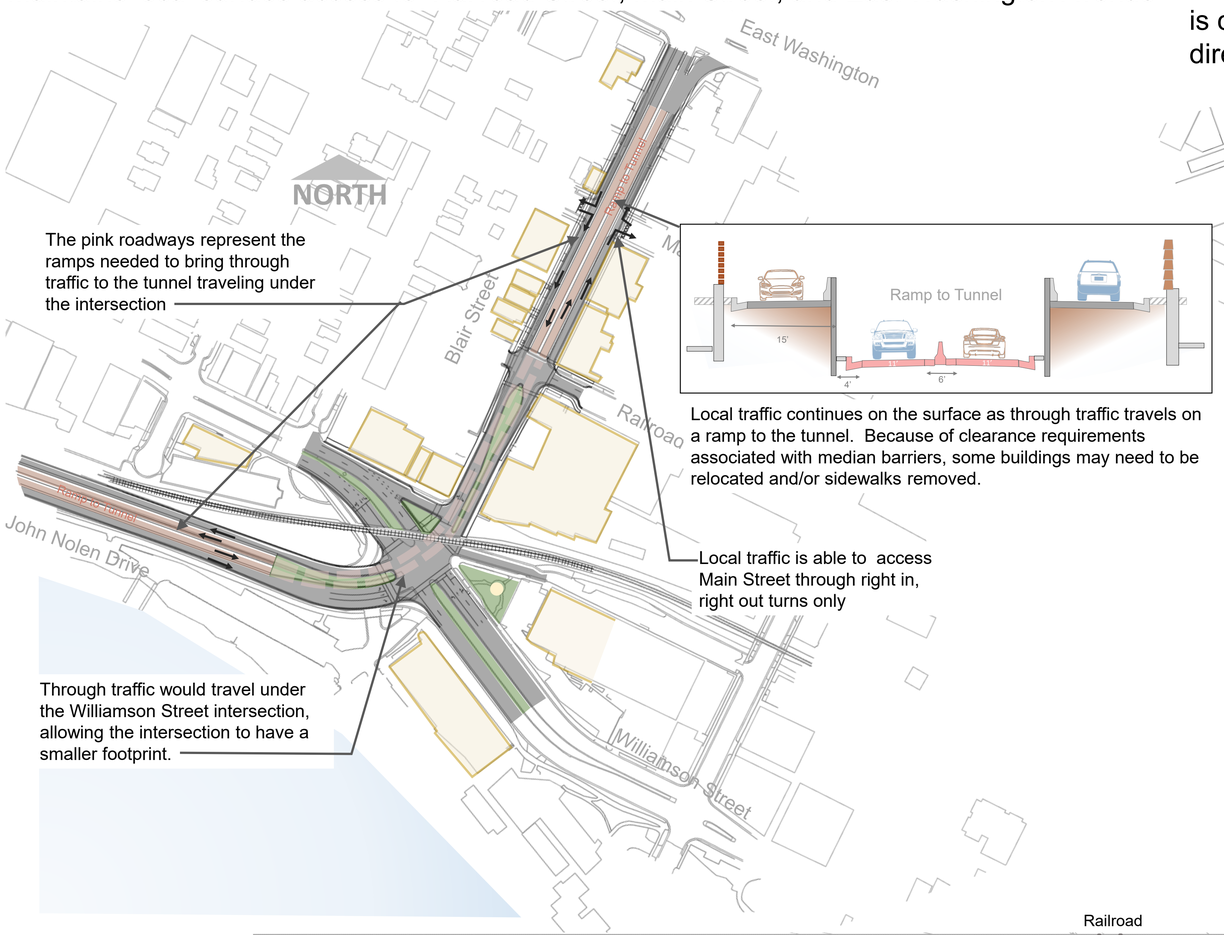


Utilities exist along Blair Street and through the intersection, including a steam box conduit associated with the Capitol power plant. Some utilities, such as underground electrical lines and water lines are difficult yet possible to relocate. Other utilities, such as storm sewer and sanitary sewers, rely on a constant grade to allow them to drain by gravity. These utilities are not easily relocated or lowered without installing pump stations. Of particular concern at this location is the 72 inch by 113 inch storm sewer draining to Lake Monona.

Tunnels

Option 1

Maintains local surface access to Railroad Street, Main Street, and East Washington Avenue

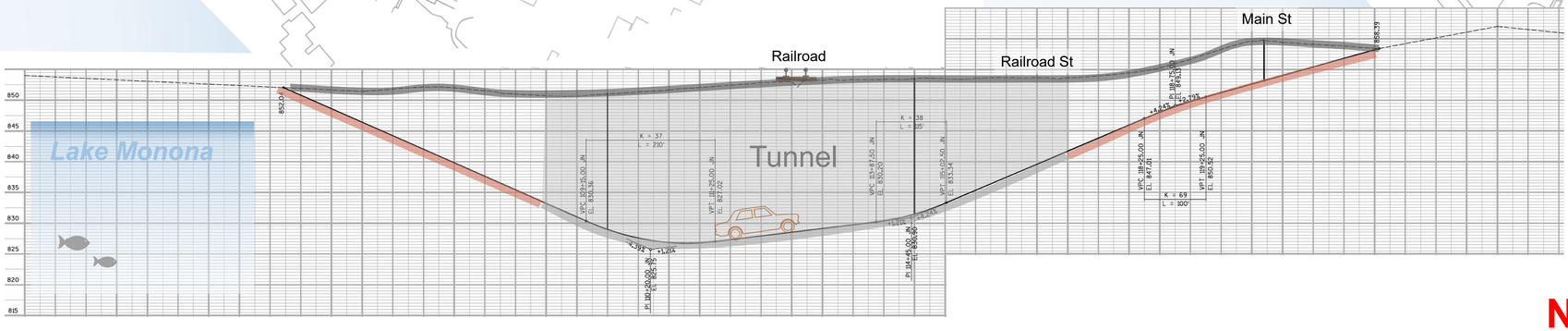


The pink roadways represent the ramps needed to bring through traffic to the tunnel traveling under the intersection

Local traffic continues on the surface as through traffic travels on a ramp to the tunnel. Because of clearance requirements associated with median barriers, some buildings may need to be relocated and/or sidewalks removed.

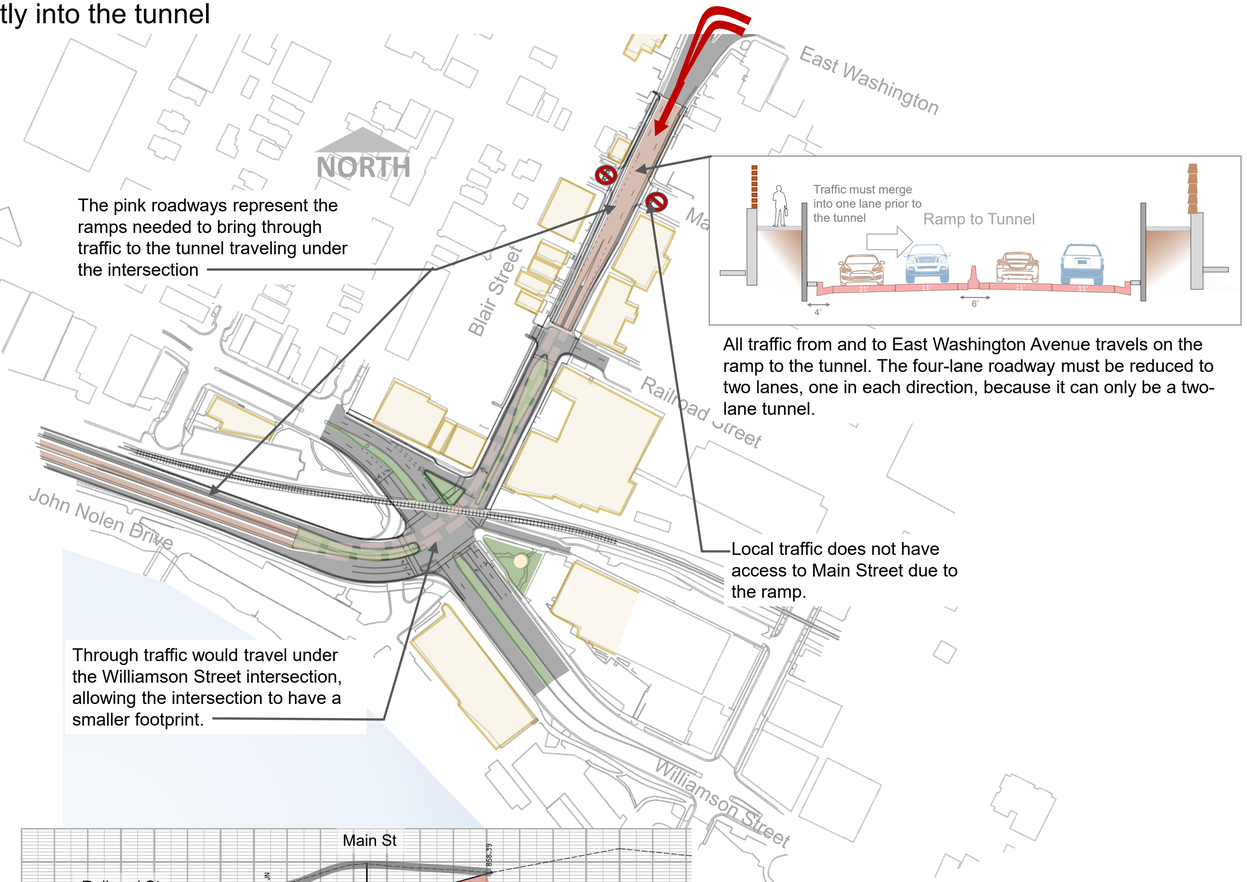
Local traffic is able to access Main Street through right in, right out turns only

Through traffic would travel under the Williamson Street intersection, allowing the intersection to have a smaller footprint.



Option 2

Maintains local surface access to Railroad Street. Access to Main Street is closed. The connection to and from East Washington Avenue flows directly into the tunnel



The pink roadways represent the ramps needed to bring through traffic to the tunnel traveling under the intersection

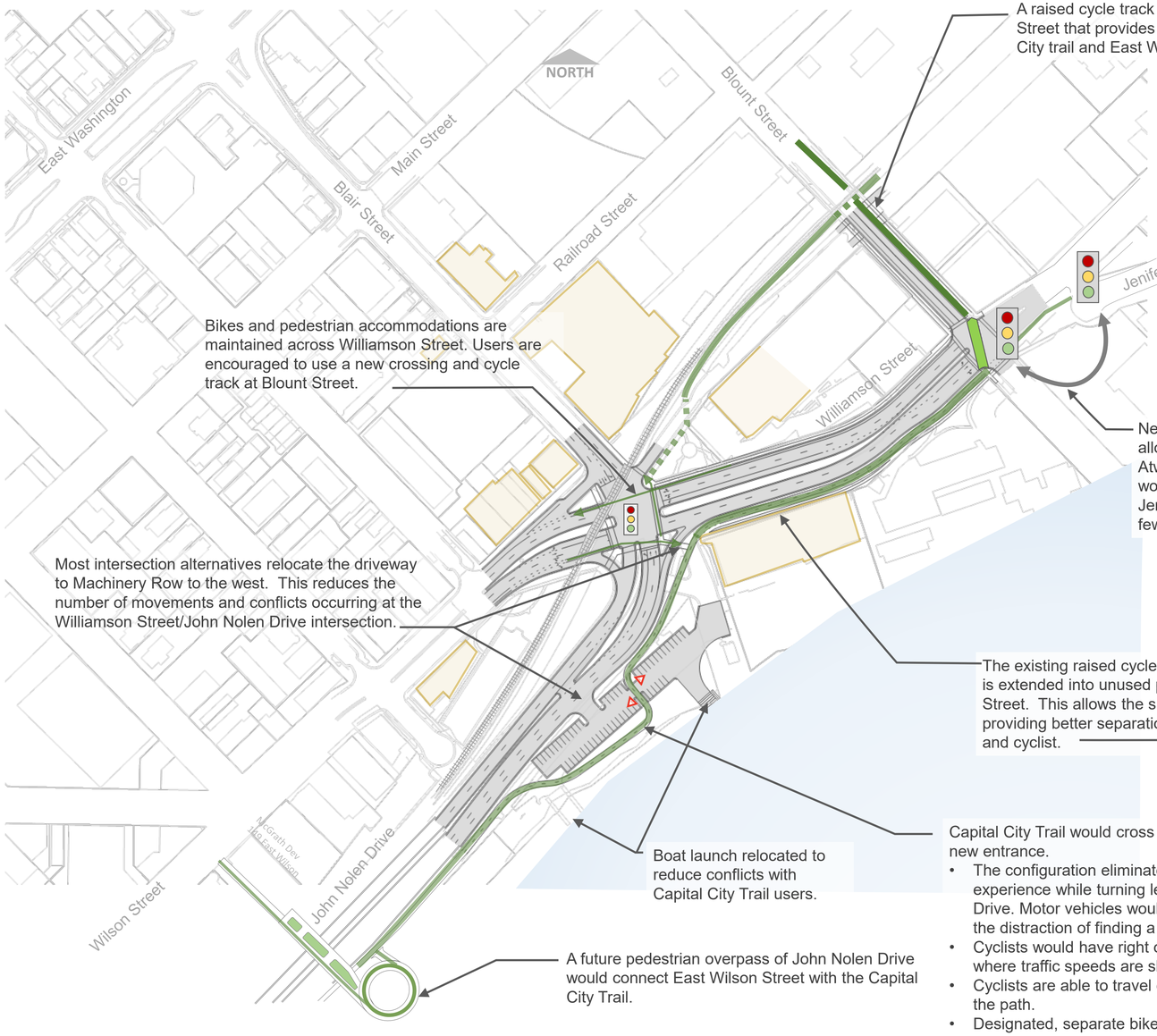
All traffic from and to East Washington Avenue travels on the ramp to the tunnel. The four-lane roadway must be reduced to two lanes, one in each direction, because it can only be a two-lane tunnel.

Local traffic does not have access to Main Street due to the ramp.

Through traffic would travel under the Williamson Street intersection, allowing the intersection to have a smaller footprint.

<u>Not</u> Recommended for Further Study

Bike Routing



A raised cycle track is installed along Blount Street that provides access to both the Capital City trail and East Washington Avenue.

Bikes and pedestrian accommodations are maintained across Williamson Street. Users are encouraged to use a new crossing and cycle track at Blount Street.

New signal is added at Blount Street that allows cyclists to cross diagonally (as at Atwood and Dunning Street). The signal would work in coordination with the Williamson and Jenifer Street signal. This crossing poses fewer conflicts for cyclists and pedestrians.

Most intersection alternatives relocate the driveway to Machinery Row to the west. This reduces the number of movements and conflicts occurring at the Williamson Street/John Nolen Drive intersection.

The existing raised cycle track by Machinery Row is extended into unused pavement on Williamson Street. This allows the sidewalk to be expanded providing better separation between pedestrians and cyclist.

Boat launch relocated to reduce conflicts with Capital City Trail users.

Capital City Trail would cross in middle of parking lot instead of at the new entrance.

- The configuration eliminates the blind spot drivers would experience while turning left into the parking lot from John Nolen Drive. Motor vehicles would be able to focus on cyclists without the distraction of finding a gap in John Nolen Drive traffic.
- Cyclists would have right of way and would cross the parking lot where traffic speeds are slower.
- Cyclists are able to travel closer to the lake for a greater portion of the path.
- Designated, separate bike and pedestrian space along trail.

A future pedestrian overpass of John Nolen Drive would connect East Wilson Street with the Capital City Trail.

Existing

Expanded Pedestrian Area

Recommended for Further Study

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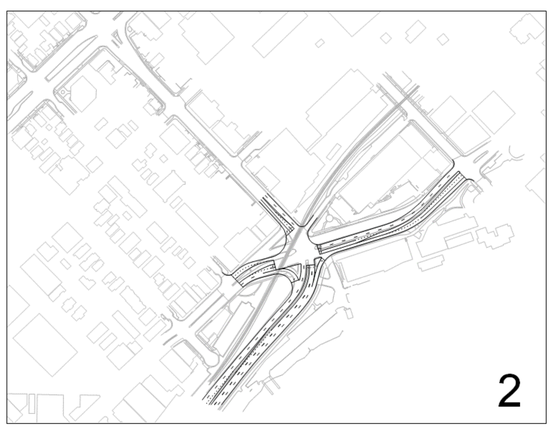
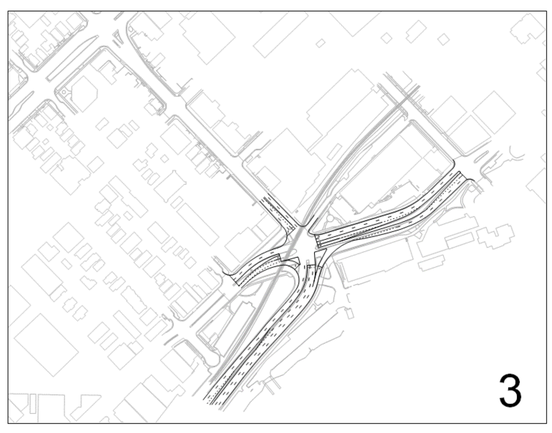
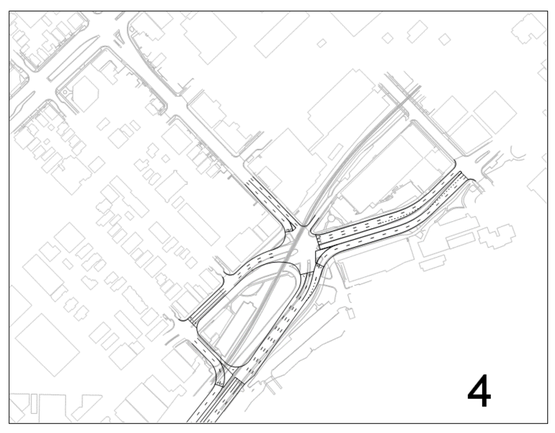
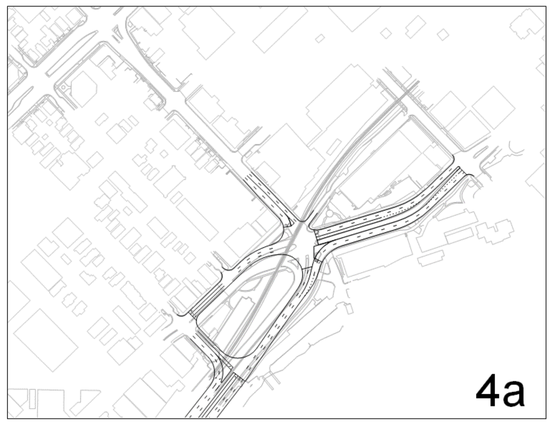
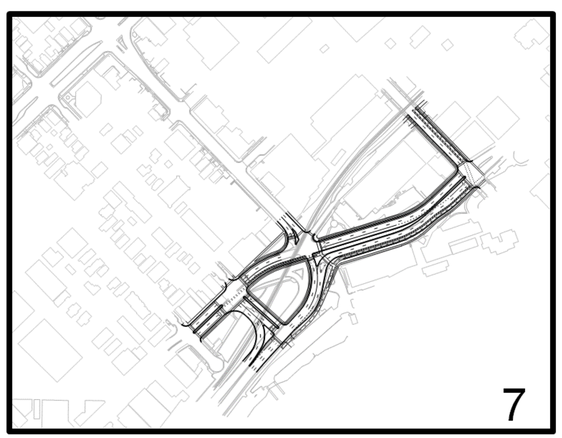
Several At-grade Motor Vehicle Alternatives Evaluated











Alt 1 NB and SB Left Turn Lanes

Pedestrian Accommodations

- Maintains existing pedestrian crossings of Williamson, Wilson, and John Nolen Drive.
- Cycle track in front of Machinery Row expanded to separate pedestrian and cyclists.

Bicycle Accommodations

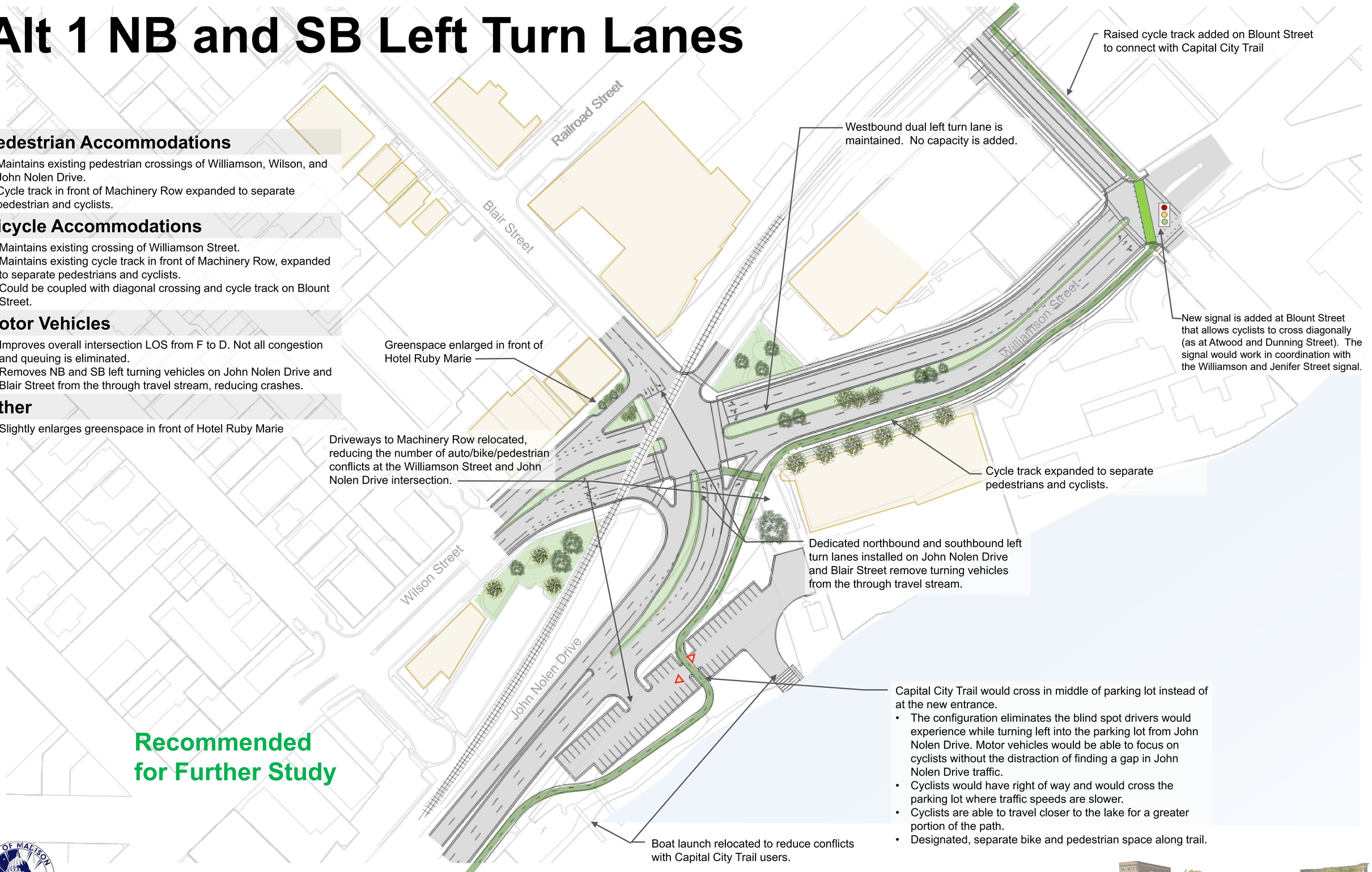
- Maintains existing crossing of Williamson Street.
- Maintains existing cycle track in front of Machinery Row, expanded to separate pedestrians and cyclists.
- Could be coupled with diagonal crossing and cycle track on Blount Street.

Motor Vehicles

- Improves overall intersection LOS from F to D. Not all congestion and queuing is eliminated.
- Removes NB and SB left turning vehicles on John Nolen Drive and Blair Street from the through travel stream, reducing crashes.

Other

- Slightly enlarges greenspace in front of Hotel Ruby Marie



Recommended for Further Study

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Alt 7 Circulator

Pedestrian Accommodations

- Pedestrian accommodations are basically maintained.
- Several pedestrian crossings are reduced to crossing just one direction of traffic.
- Pedestrian crossings at Franklin Street and E Wilson Street have greater traffic volumes.
- Cycle track in front of Machinery Row could be expanded to separate pedestrian and cyclists.

Bicycle Accommodations

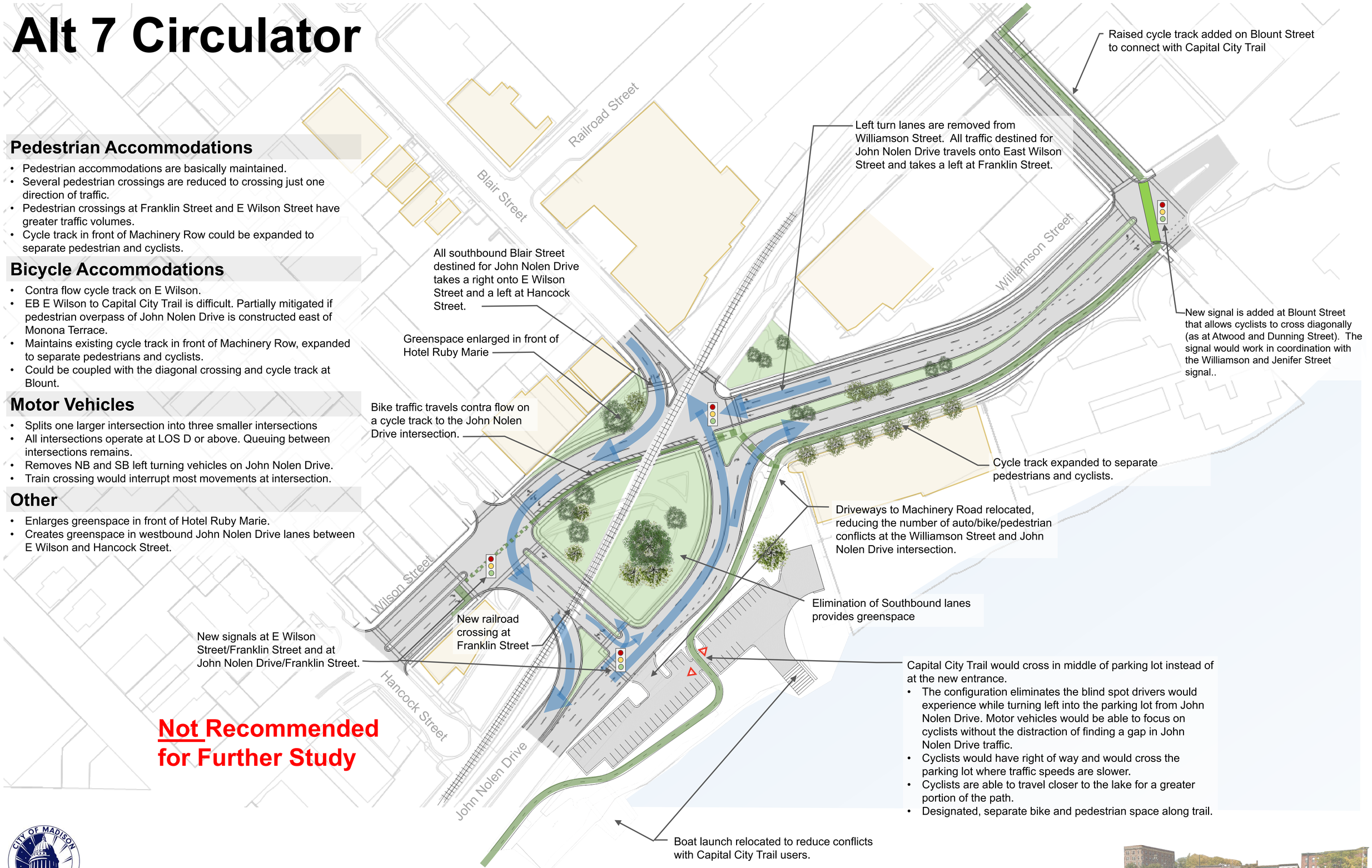
- Contra flow cycle track on E Wilson.
- EB E Wilson to Capital City Trail is difficult. Partially mitigated if pedestrian overpass of John Nolen Drive is constructed east of Monona Terrace.
- Maintains existing cycle track in front of Machinery Row, expanded to separate pedestrians and cyclists.
- Could be coupled with the diagonal crossing and cycle track at Blount.

Motor Vehicles

- Splits one larger intersection into three smaller intersections
- All intersections operate at LOS D or above. Queuing between intersections remains.
- Removes NB and SB left turning vehicles on John Nolen Drive.
- Train crossing would interrupt most movements at intersection.

Other

- Enlarges greenspace in front of Hotel Ruby Marie.
- Creates greenspace in westbound John Nolen Drive lanes between E Wilson and Hancock Street.



Not Recommended for Further Study

Alt 8 Westbound Triple Left

Pedestrian Accommodations

- Maintains existing pedestrian crossings of Williamson, Wilson, and John Nolen Drive.
- Cycle track in front of Machinery Row could be expanded to separate pedestrian and cyclists.

Bicycle Accommodations

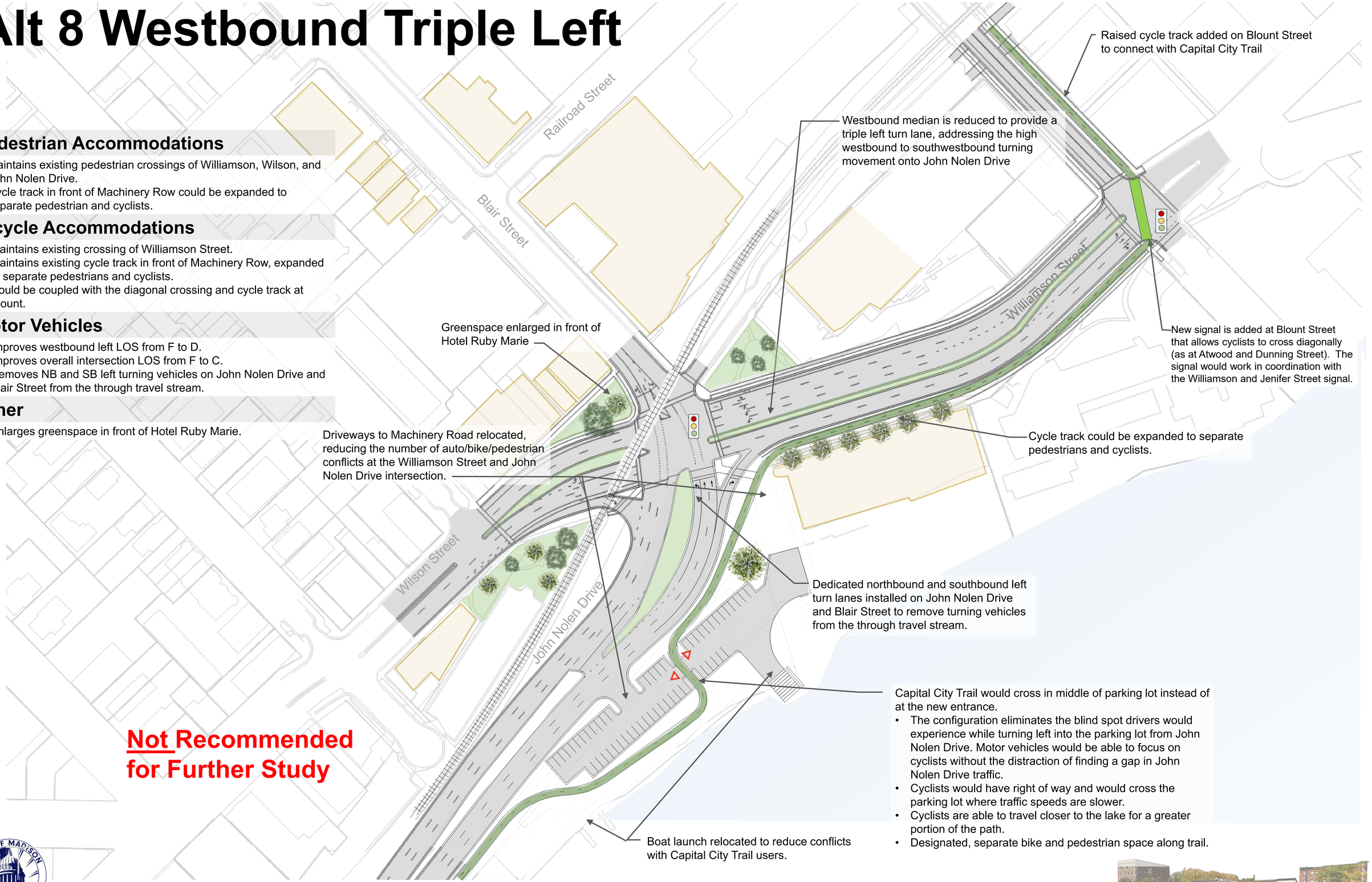
- Maintains existing crossing of Williamson Street.
- Maintains existing cycle track in front of Machinery Row, expanded to separate pedestrians and cyclists.
- Could be coupled with the diagonal crossing and cycle track at Blount.

Motor Vehicles

- Improves westbound left LOS from F to D.
- Improves overall intersection LOS from F to C.
- Removes NB and SB left turning vehicles on John Nolen Drive and Blair Street from the through travel stream.

Other

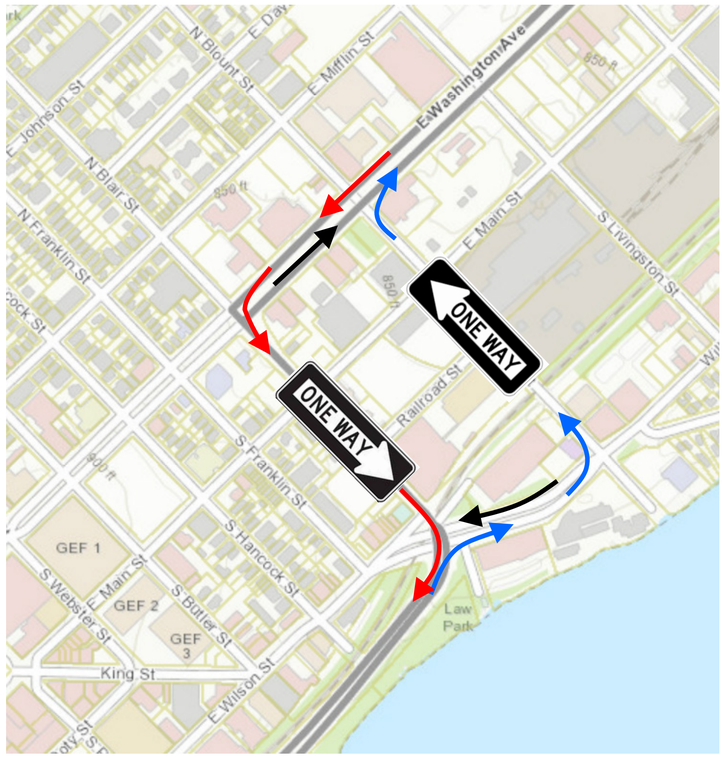
- Enlarges greenspace in front of Hotel Ruby Marie.



Not Recommended for Further Study

Alt 9 One-way Couplet

1. Concept



The one-way couplet alternative creates a one-way pair between East Washington Avenue and Williamson Street using Blair Street to carry inbound traffic and Blount Street to carry outbound traffic. All northbound John Nolen Drive traffic destined for Railroad Street, Main Street, and East Washington Avenue would make a right-turn on to Williamson Street followed by a left-turn on to Blount Street.

2. Pros and Cons

Mode	Advantages	Disadvantages
Pedestrians and Bicycles	• One-way Blair Street may allow for more space to be dedicated to terrace, pedestrian, and/or bicycle accommodations. • One-way Blount Street may provide an opportunity to reorganize the street section to find the appropriate balance between pedestrian and bicycle facilities, on-street parking, and motor vehicle travel lanes.	• Higher conflicting traffic volumes for the Capitol City trail crossing at Blair Street/ John Nolen Drive. • Increased traffic volumes along Williamson Street between Blair Street and Blount Street.
Transit	• Lower traffic volumes eastbound along East Washington Avenue between Blair Street and Blount Street which carries 9 weekday routes and has a bus stop at the southeast corner at Blount Street. • No significant impacts to current routing.	• Higher traffic volumes along eastbound Williamson Street between Blair Street and Blount Street which carries 4 weekday routes.
Motor Vehicle Traffic Operations	• Lower delay and queuing during the AM peak hour than modest conventional expansion (adding left-turn bays for John Nolen Drive and Blair Street).	• Higher delay and queuing during the PM peak hour than modest conventional expansion (adding left-turn bays for John Nolen Drive and Blair Street).
Additional Considerations	• Spreads traffic burden among two streets instead of one.	• Perception of encouraging John Nolen Drive northbound/ eastbound traffic to use Williamson Street instead of East Washington Avenue.

Alt 9 One-way Couplet

Pedestrian Accommodations

- Maintains existing pedestrian crossings of Williamson, Wilson, and John Nolen Drive.
- Cycle track in front of Machinery Row expanded to separate pedestrian and cyclists.

Bicycle Accommodations

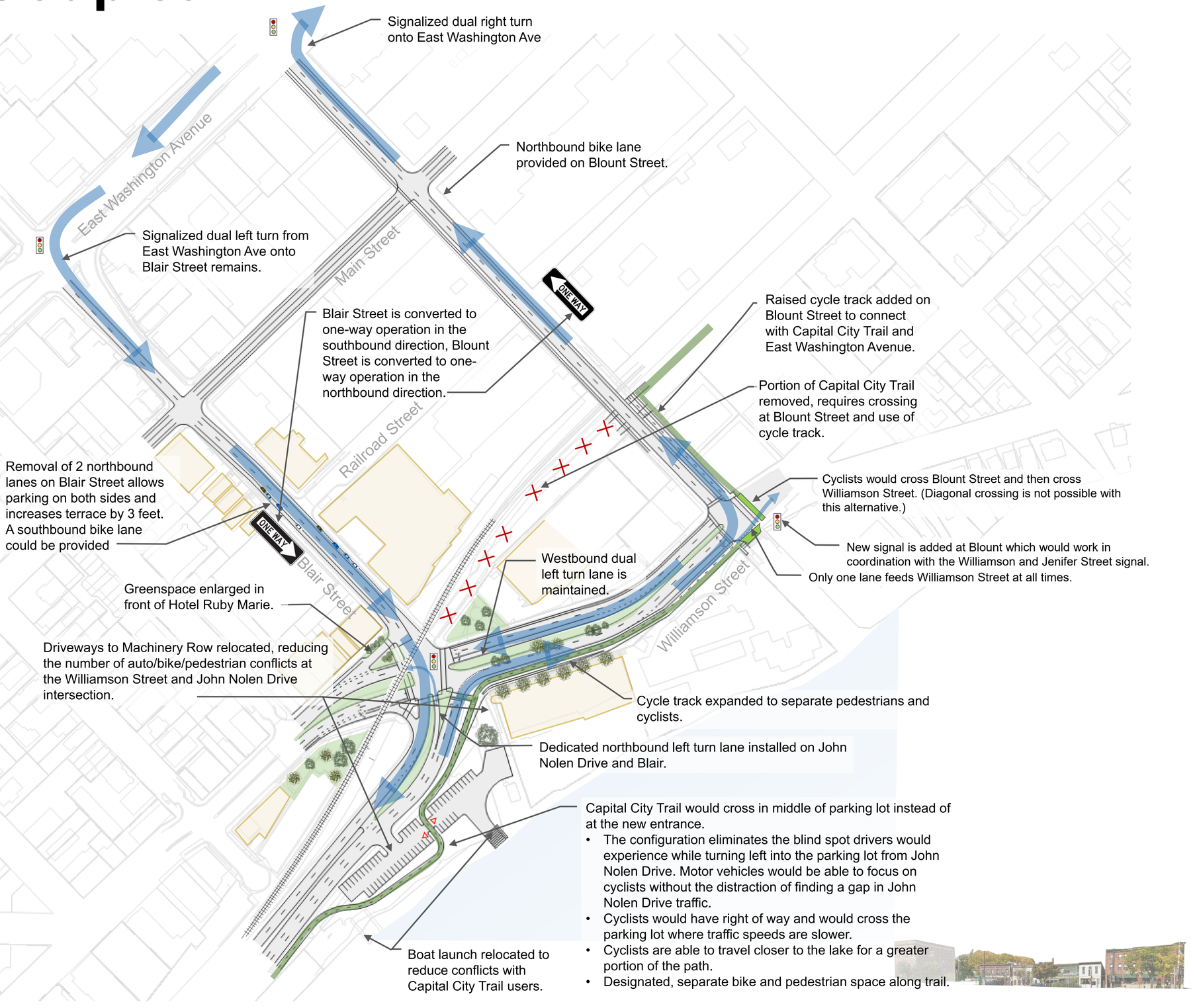
- Removes portion of Capital City trail and requires use of cycle track and crossing at Blount Street.
- Maintains existing cycle track in front of Machinery Row, expanded to separate pedestrians and cyclists.

Motor Vehicles

- Blair Street is converted to one-way southbound operation.
  - Frees up room for parking on both sides or parking on one side and a bike accommodation on the other side.
  - Increases terrace on both sides by about 3 feet.
- Blount Street is converted to one-way northbound operation.
- Improves overall intersection LOS for multiple intersections to LOS C or D.
- Removes NB left turning vehicles on Blair Street that block through vehicles today.

Other

- Slightly enlarges greenspace in front of Hotel Ruby Marie



Recommended for Further Study

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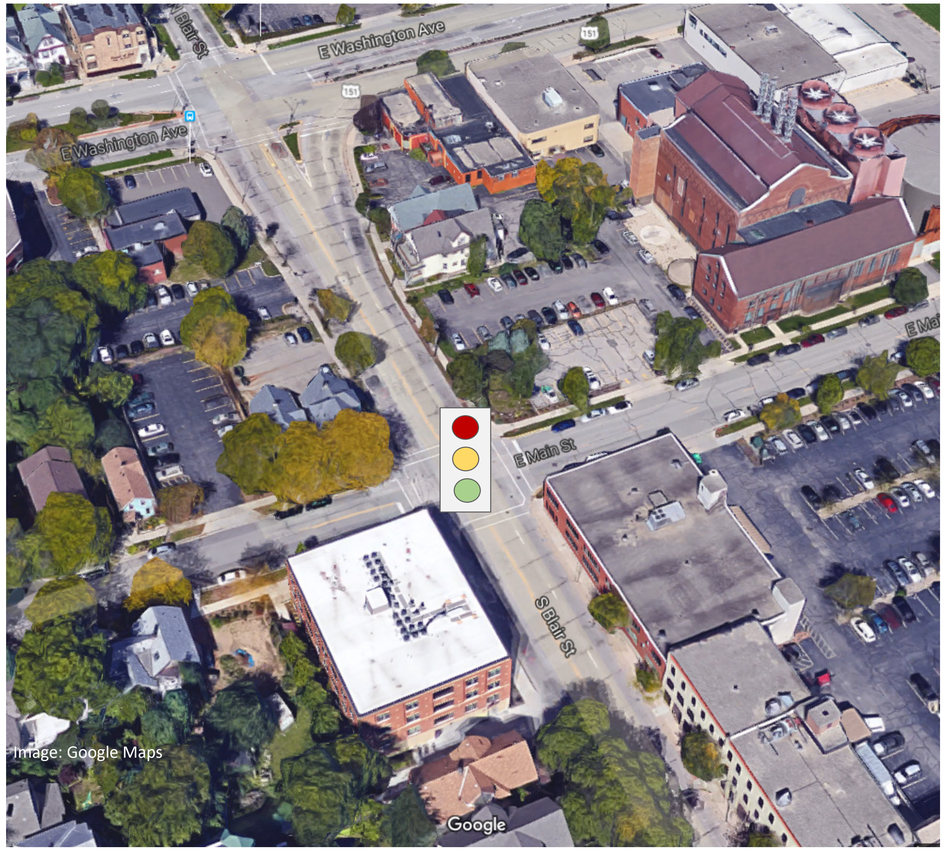
Traffic Signal at Main Street and Blair Street

Images: Google Maps

1. Concept



One of the comments received during the first public meeting stated that crossing Blair Street at Main Street on foot or on a bicycle is challenging during peak travel times. One option to improve east-west mobility for pedestrians, bicycles, and motor vehicles would be to install a traffic signal. The tradeoff is increased motor vehicle delays, congestion, and queuing for traffic on Blair Street.

The inability to provide left-turn bays on Blair Street at this signalized intersection is a potential safety concern. If installed, consideration could be given to prohibiting left-turns from Blair Street on to Main Street, perhaps during peak times only.

Recommended for Further Study

2. Pros and Cons

Mode	Pros	Cons
Pedestrians and Bicycles	• Provides a signal controlled crossing that stops Blair Street motor vehicle traffic to allow pedestrians and bicyclists to cross at Main Street.	• May draw more motor vehicle traffic to Main Street which is currently a low volume local street.
Transit	• No current Metro routes use the intersection. May provide new routing options for Metro routes due to improved access.	• None.
Motor Vehicle Traffic Operations	• Improved access for Main Street movements. • Total motor vehicle delays are acceptable.	• Higher queuing for Blair Street movements, including the potential for southbound Blair Street traffic to back into East Washington Avenue. • Potential for increased safety concerns due to inability to provide left-turn bays on Blair Street. • Northbound Blair Street traffic at East Washington Avenue likely to back into Main Street signal. • May need to consider prohibiting northbound and southbound left-turns from Blair Street on to Main Street.
Additional Considerations	• None.	• Buildings are close to or right on the back of sidewalk in three of the four intersection quadrants, making placement of signal equipment challenging and potentially more costly.