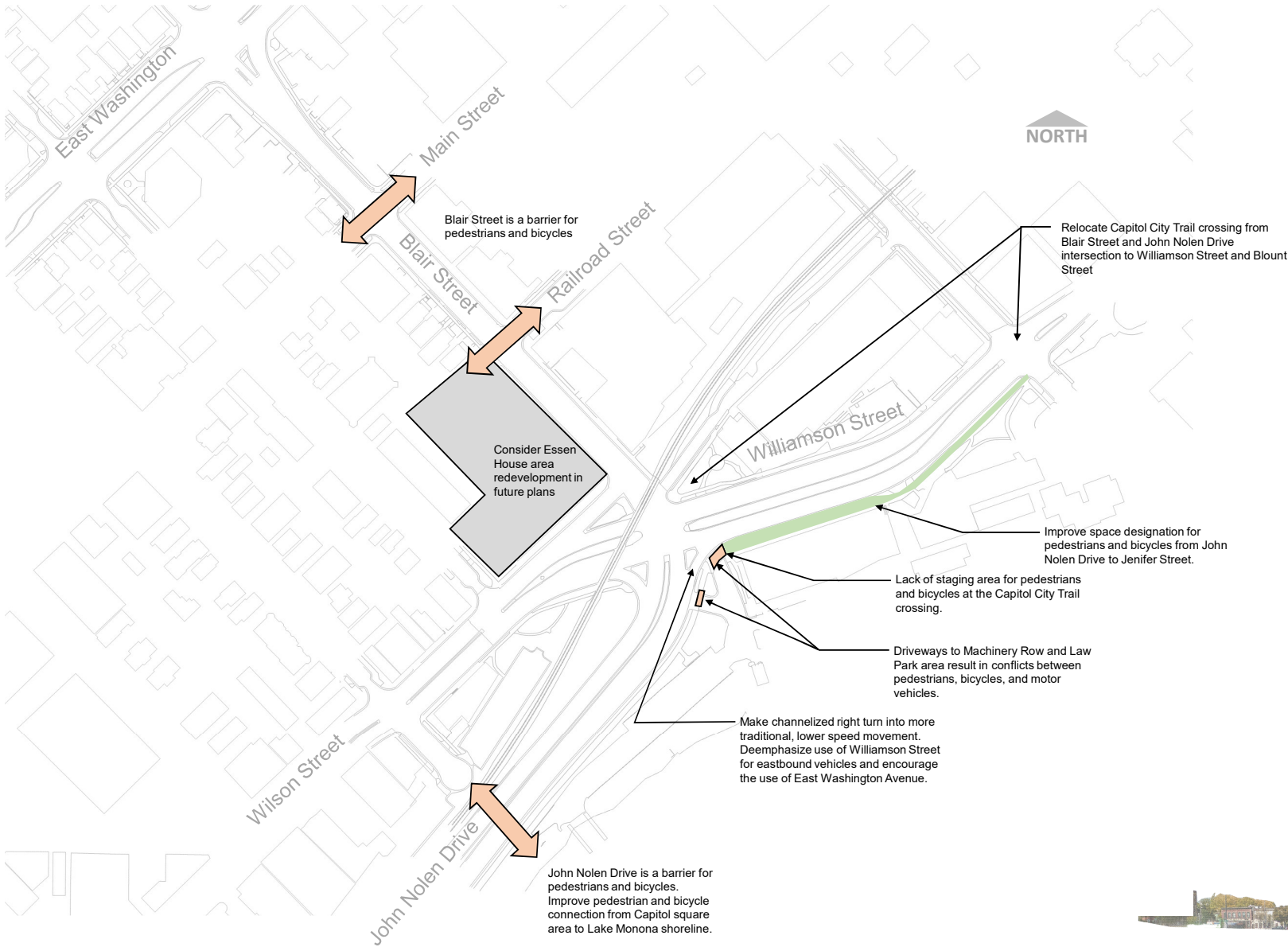
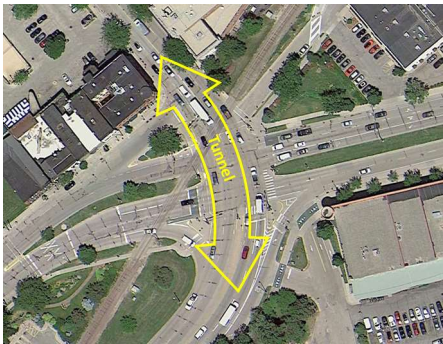


Blair/Williamson Intersection Expressed Needs



John Nolen/Blair/Williamson/Wilson Tunnel Alternative

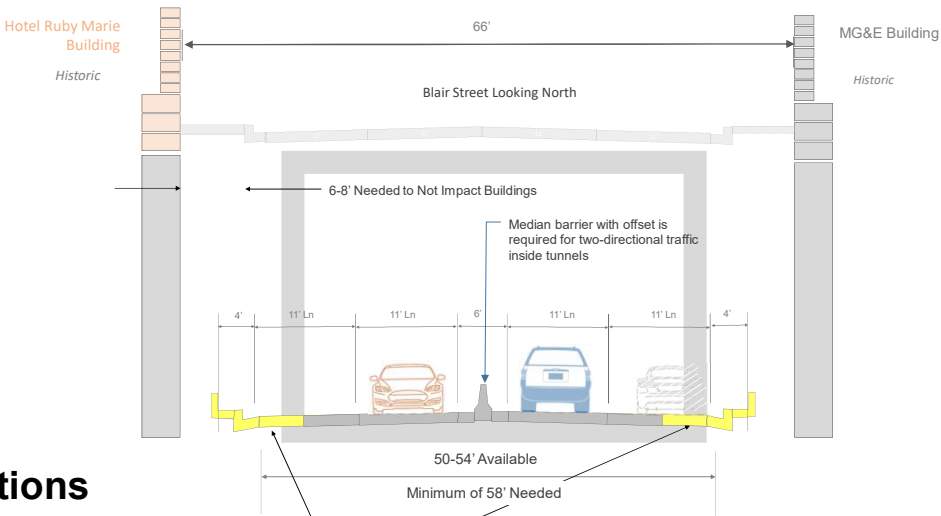
1. Concept



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

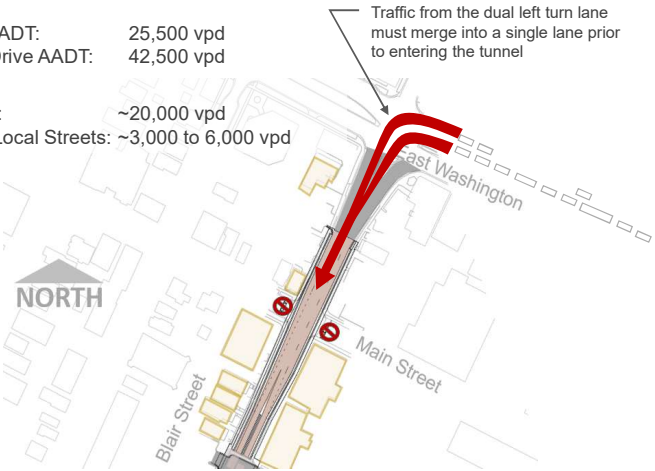


Dismissed

3. Constraints – Traffic Operations

Average Annual Daily Traffic (AADT):

<u>Existing</u>	
Blair Street AADT:	25,500 vpd
John Nolen Drive AADT:	42,500 vpd
<u>Estimated</u>	
Tunnel AADT:	~20,000 vpd
Diversion to Local Streets:	~3,000 to 6,000 vpd

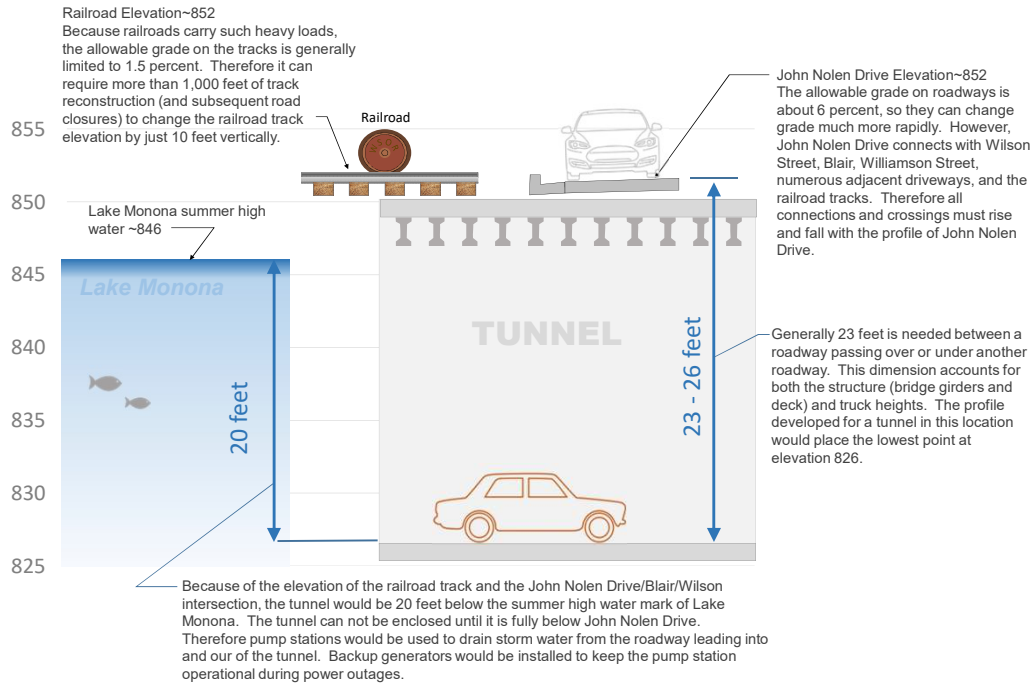


The dual left-turn movement from East Washington Ave. must merge to a single lane prior to entering the tunnel. Based on the estimated turning volume, this substandard merge length will result in unbalanced lane usage on East Washington Avenue. Modeling indicates that this left turn queue would backup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

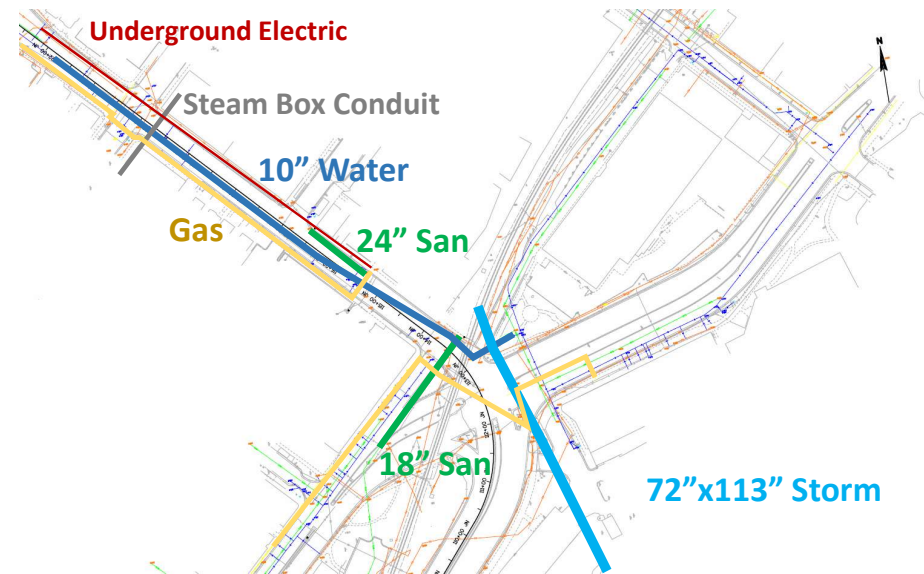


John Nolen/Blair/Williamson/Wilson Tunnel Alternative

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.

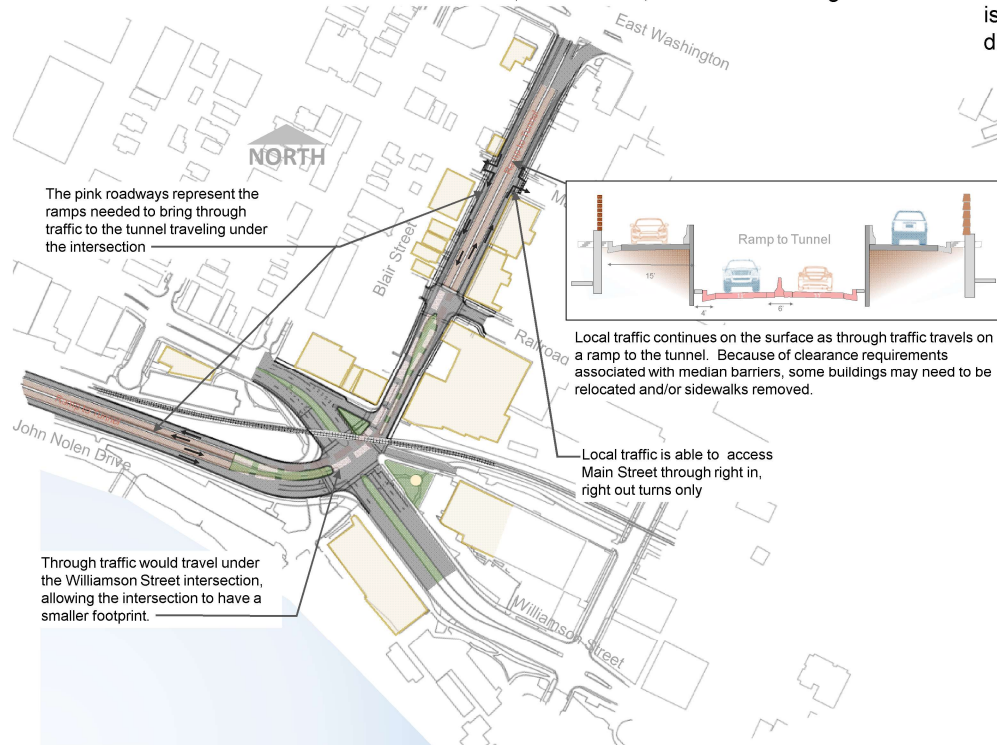
Dismissed



Tunnels

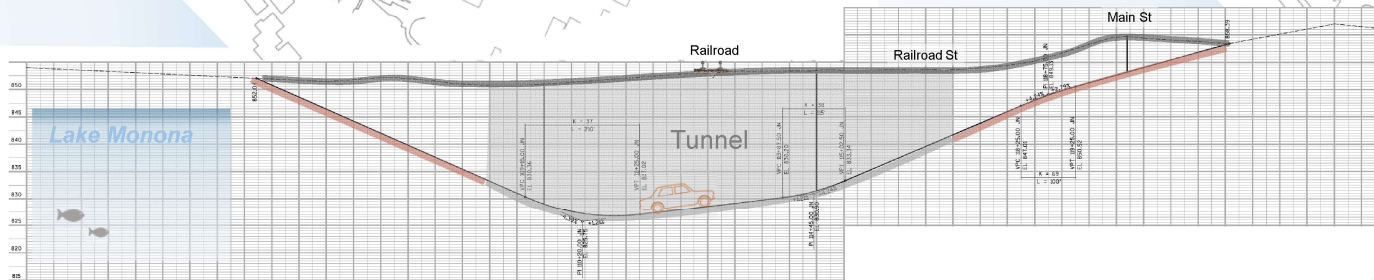
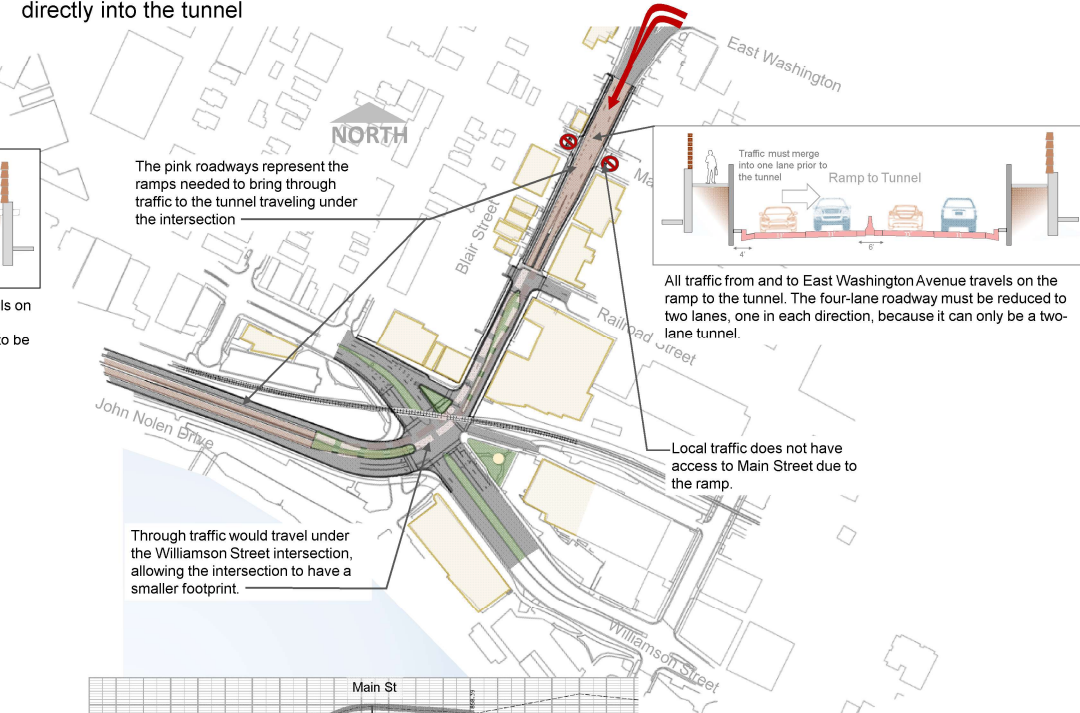
Option 1

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



Option 2

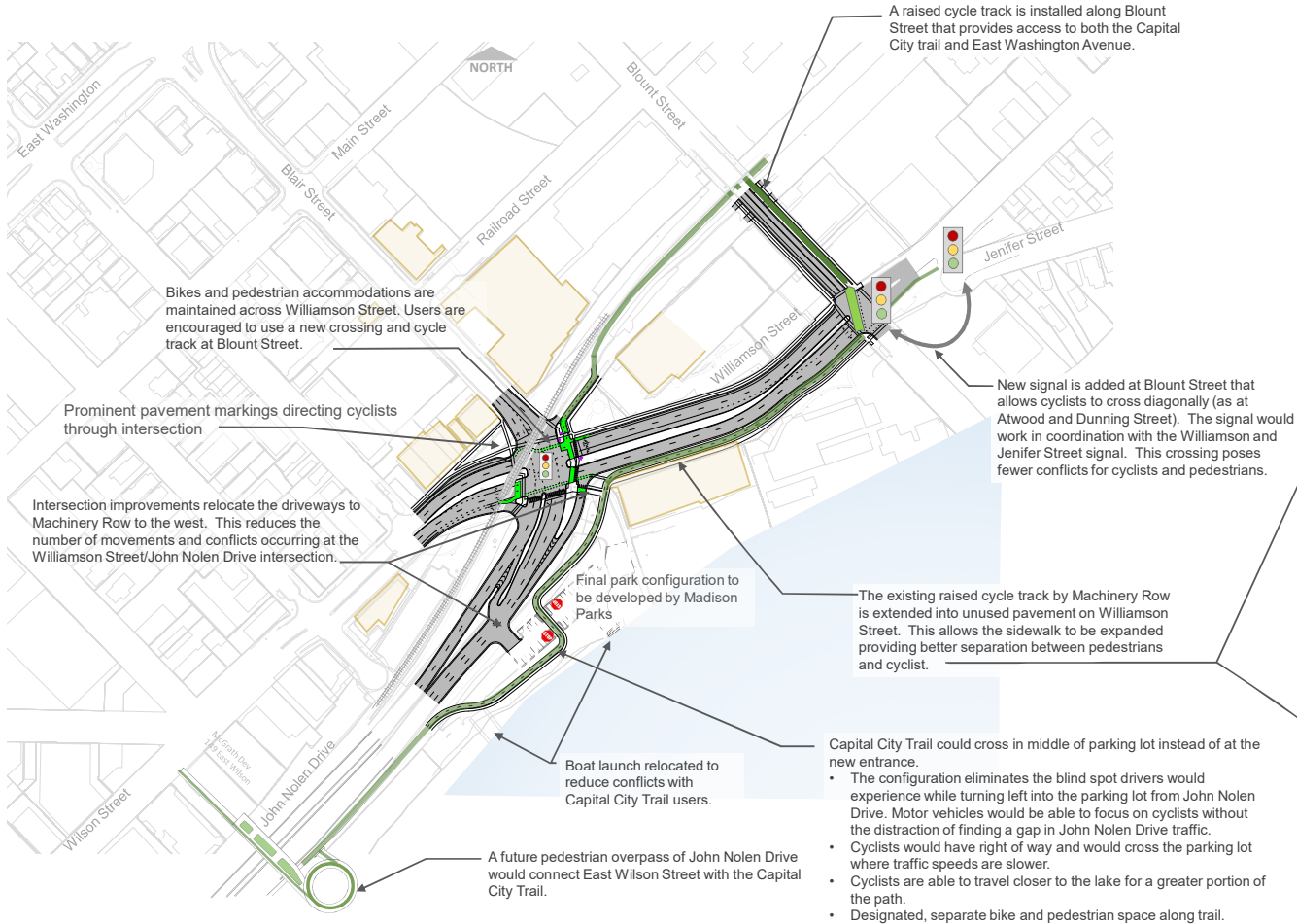
Maintains local surface access to Railroad Street. Access to Main Street is closed. The connection to and from East Washington Avenue flows directly into the tunnel



Dismissed



Bike Routing



Existing



Expanded Pedestrian Area

Recommended



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.
- Includes signalized diagonal crossing and cycle track on Blount Street.


Motor Vehicles

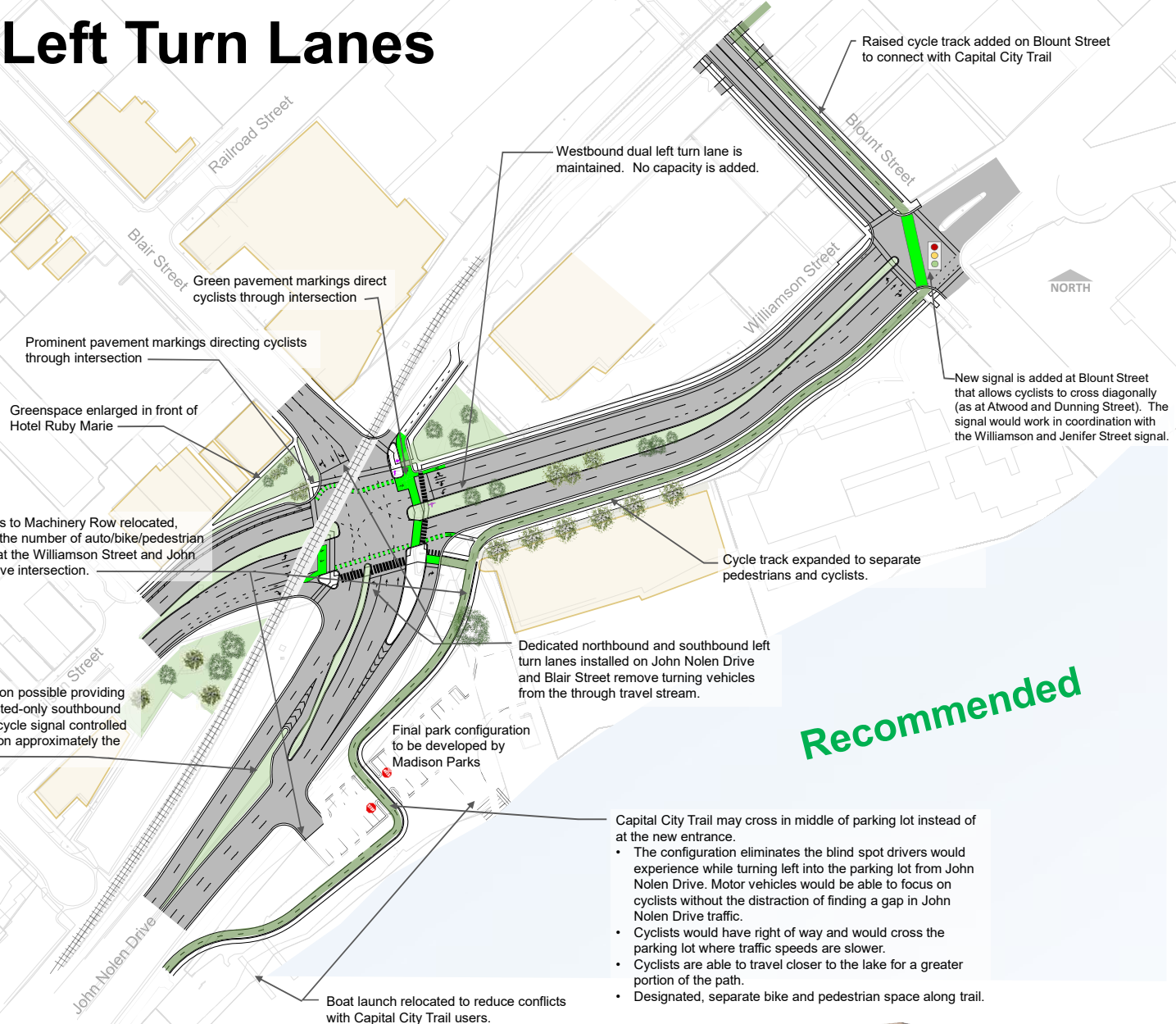
- Improves overall intersection LOS from F to D. Not all congestion and queuing is eliminated.
- Removes NB and SB left turning vehicles on John Nolen Drive and Blair Street from the through travel stream, reducing crashes.
- Relocates and combines Machinery Row/Law Park driveways.

Other

- Enlarges greenspace in front of Hotel Ruby Marie.
- Stormwater features to be established during final design.
- Left-in to Machinery Row/Law Park could be signalized.
- Relocates boat launch, final Law Park details TBD.

Driveways to Machinery Row relocated, reducing the number of auto/bike/pedestrian conflicts at the Williamson Street and John Nolen Drive intersection.

 Note: Alternate configuration possible providing a partial signal with protected-only southbound left-turn phasing, and a bicycle signal controlled Capital City trail crossing on approximately the existing alignment.



Alt 1 Revisions Responding to Public Comments

Greenspace in front of Hotel Ruby Marie is enlarged, yet loading zone/parking is maintained.

Connection to the Capital City Trail is improved by:

- Providing green epoxy guidance for cyclists through the intersection.
- Separating pedestrians and cyclists
- Providing better delineation for the Capital City trail along the alley way north of the Gateway center

Intersection is shifted to the **west** to make room for the NB and SB left turn lane.

Left turn lanes remove turning vehicles from through traffic stream

Median space is not reallocated to cycle track area in front of Machinery Road because it would eliminate median landscaping and potential for stormwater treatment.

NB to EB right turn radii is tightened to reduce travel speeds. Channelization remains due to high number of right-turning vehicles (~870 in the PM peak) requiring signal time during westbound left-turn, and the need for vehicle storage space separate from through traffic.

Staging area added for pedestrians and cyclists to keep them from blocking the Capital City Trail

NB to EB porkchop island is maintained and enlarged to:

- Separate the right-turning vehicle vs pedestrian movements
- Provide a larger refuge for bicycles and pedestrians.

Park configuration to be developed by Madison Parks

Island provided to:

- Provide refuge for pedestrians.
- Provide space for signage or signalization.
- Prevent left turns out of parking lot.

Recommended



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
- Stormwater features to be established during final design



Dismissed



Alt 1 and Alt 9 Comparison – Expressed Needs

Expressed Concern/Evaluation Factor	Alt 1 – Add NBL, SBL	Alt 9 – One-Way Couplet
John Nolen Drive is a barrier for pedestrian/bicycle access to the lake.	<ul style="list-style-type: none"> Ped/bike access to lake is enhanced when combined with proposed ped/bike overpass 	<ul style="list-style-type: none"> Reduced when combined with proposed overpass
Reduce Speeds of Northbound Right-Turns	<ul style="list-style-type: none"> Smaller radii on northbound right-turn channelization should reduce right turn travel speeds. 	<ul style="list-style-type: none"> Providing a dual right turn lane for the northbound to eastbound movement requires larger radii and consequently may increase speeds.
Discourage Use of Williamson Street for Longer Trips	<ul style="list-style-type: none"> Use of Williamson Street for longer trips is likely to remain unchanged from current conditions 	<ul style="list-style-type: none"> Directing all northbound traffic down Williamson Street until Blount Street may conflict with these goals.
Reduce Conflicts at Machinery Row Driveways	<ul style="list-style-type: none"> Relocated parking lot access and realigned bike path reduces the number of conflicts at the intersection. 	<ul style="list-style-type: none"> Relocated parking lot access and realigned bike path reduces the number of conflicts at the intersection.
Provide Off-Path Staging Area for North-South bikes/peds crossing Williamson Street	<ul style="list-style-type: none"> Additional staging area provided with the modified northbound right-turn channelization 	<ul style="list-style-type: none"> Modest staging area may be possible with dual channelized northbound through/right-turn.
Better Delineate Bicycle versus Pedestrian Space along south side of Williamson Street between Blair Street and Jennifer Street	<ul style="list-style-type: none"> Reallocation of space along the Machinery Row cycle track provide better delineation, and more room, for pedestrians and bicycles. 	<ul style="list-style-type: none"> Reallocation of space along the Machinery Row cycle track provide better delineation, and more room, for pedestrians and bicycles.
Relocate Capital City Trail Crossing of Williamson Street from Blair Street to Blount Street	<ul style="list-style-type: none"> Achieved with signalized diagonal crossing and cycle track connection along Blount Street. Existing Capital City Trail crossing at Blair Street intersection remains. 	<ul style="list-style-type: none"> Achieved with signalized diagonal crossing and cycletrack connection along Blount Street. Existing Capital City Trail crossing at Blair Street is eliminated.
Improve Pedestrian and Bicycle Access Across Blair Street	<ul style="list-style-type: none"> Blair Street is easier to cross for pedestrians and bikes if Main Street signal is implemented. 	<ul style="list-style-type: none"> Blair Street is easier to cross for pedestrians and bikes because Blair Street carries about 50 percent less traffic. One-way operation on Blair Street also provides larger gaps in traffic.



Alt 1 and Alt 9 Comparison – Additional Measures

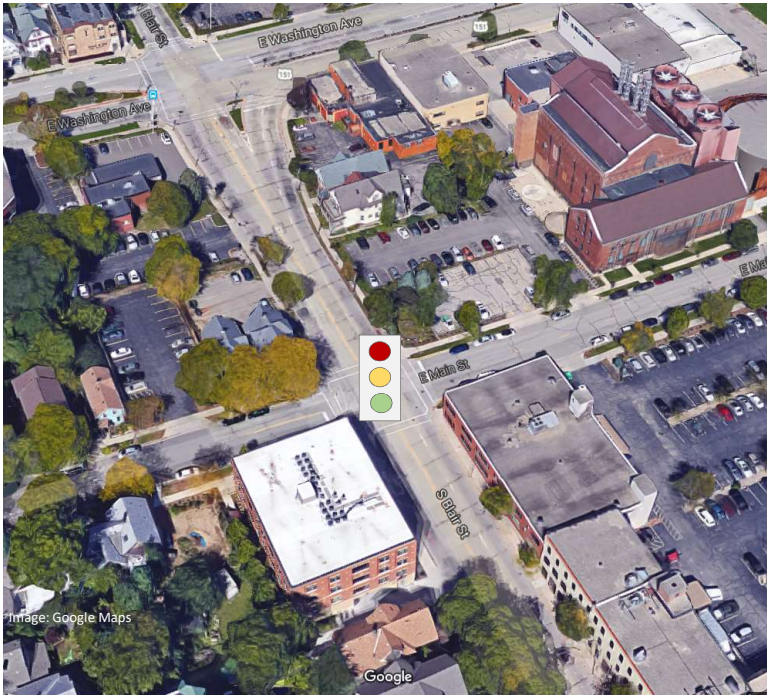
Evaluation Factor	Alt 1 – Add NBL, SBL	Alt 9 – One-Way Couplet
Accommodations for Pedestrians and Bicycles	<ul style="list-style-type: none"> Enhanced accommodations for pedestrians and bicycles through: <ul style="list-style-type: none"> Reallocation of space along Machinery Road cycle track Relocating parking lot driveway to minimize ped/bike/auto conflicts at intersection. Better delineation of connection of Wilson Street to Capital City Trail for bicycles and pedestrians. 	<ul style="list-style-type: none"> One-way Blair Street may allow for more space to be dedicated to terrace, pedestrian, and/or bicycle accommodations. Enhanced accommodations along John Nolen Drive and Williamson Street Increased traffic volumes along Williamson Street between Blair Street and Blount Street.
Transit	<ul style="list-style-type: none"> No significant impacts. 	<ul style="list-style-type: none"> 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. Higher traffic volumes along eastbound Williamson Street between Blair Street and Blount Street which carries 4 weekday routes. No significant impacts to current routing.
Motor Vehicles	<ul style="list-style-type: none"> Modest improvement to delays and queuing compared to a Do Nothing scenario. 	<ul style="list-style-type: none"> Lower delay and queuing during the AM peak hour than Alt 1 Higher delay and queuing during the PM peak hour than Alt 1
Stakeholder and Alder Comments	<ul style="list-style-type: none"> Generally positive 	<ul style="list-style-type: none"> Generally negative
Cost	<ul style="list-style-type: none"> \$3.7 Million 	<ul style="list-style-type: none"> \$6.0 Million
Additional Considerations	<ul style="list-style-type: none"> Reduced crashes with the addition of left-turn bays. 	<ul style="list-style-type: none"> Reduced crashes with the addition of left-turn bays. 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.
Result	Recommended	Dismissed



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.

2. Pros and Cons

Mode	Pros	Cons
Pedestrians and Bicycles	<ul style="list-style-type: none">Provides a signal controlled crossing that stops Blair Street motor vehicle traffic to allow pedestrians and bicyclists to cross at Main Street.	<ul style="list-style-type: none">May draw more motor vehicle traffic to Main Street which is currently a low volume local street.
Transit	<ul style="list-style-type: none">No current Metro routes use the intersection. May provide new routing options for Metro routes due to improved access.	<ul style="list-style-type: none">None.
Motor Vehicle Traffic Operations	<ul style="list-style-type: none">Improved access for Main Street movements.Total motor vehicle delays are acceptable.	<ul style="list-style-type: none">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	<ul style="list-style-type: none">None.	<ul style="list-style-type: 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.

Recommended



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

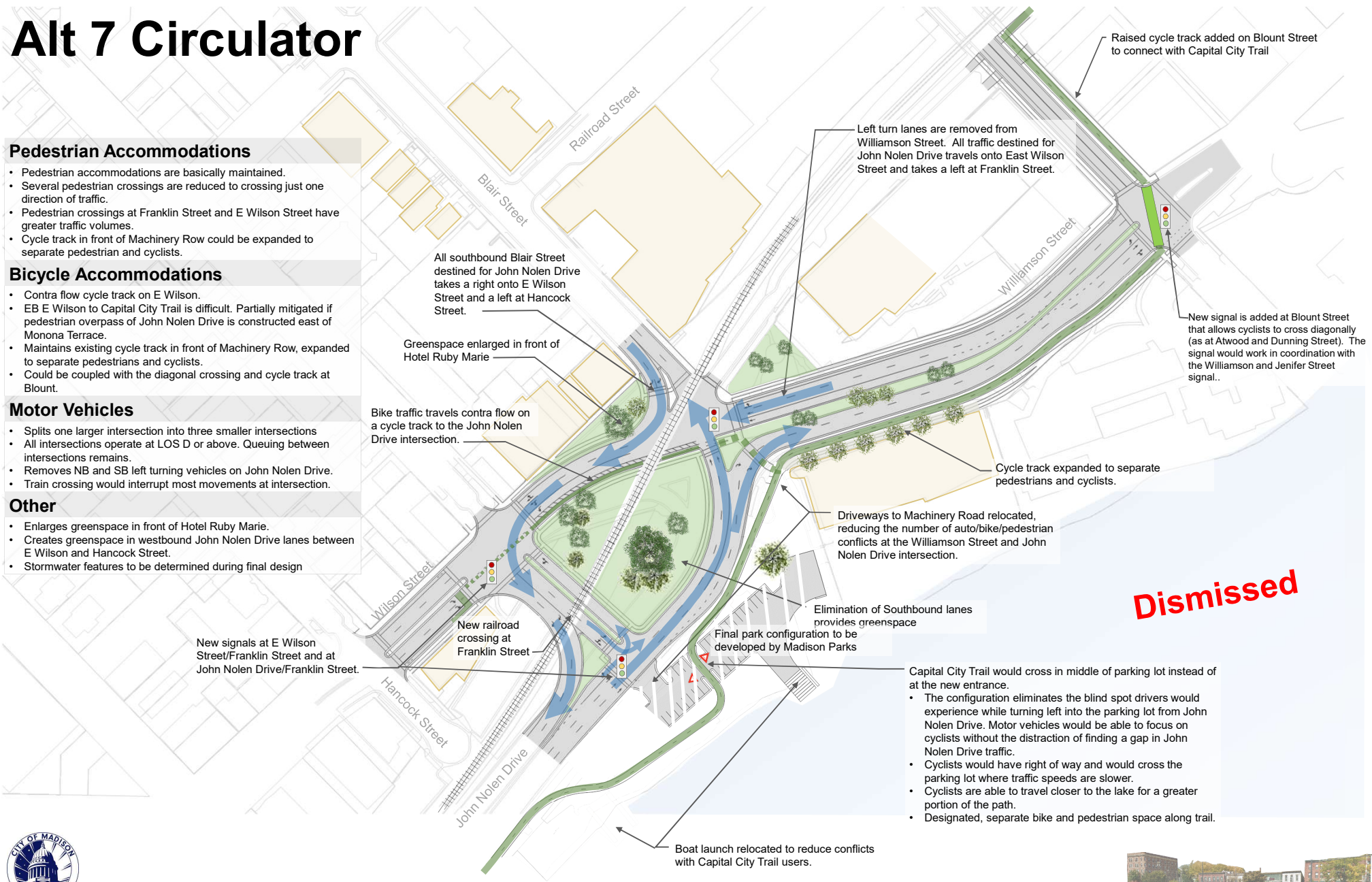
- Contra flow cycle track on E Wilson.
- EB E Wilson to Capital City Trail is difficult. Partially mitigated if pedestrian overpass of John Nolen Drive is constructed east of Monona Terrace.
- Maintains existing cycle track in front of Machinery Row, expanded to separate pedestrians and cyclists.
- Could 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.
- Stormwater features to be determined during final design



Dismissed

