



Department of Transportation

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Subject: Staff Comments on North Stoughton Rd Design Alternatives, version 3.

Background

The Wisconsin Department of Transportation (WisDOT) is performing a corridor study of North Stoughton Road, from Highway 30 north to the US 51 interchange with I-39/90/94. WisDOT plans to release an environmental document in the spring of 2024, with the project appearing before the State's Transportation Projects Commission for enumeration (funding) in late 2024.

Stoughton Road is very highway oriented, and is one of the most hazardous streets in Madison. It is fully within the jurisdiction of WisDOT, and does not have connecting highway status. Conversely, East Washington Ave. which connects with Stoughton Rd, has shared jurisdiction and is of vital interest to the City. Madison has implemented Transit Oriented Development overlay zoning on top of East Washington Ave. in an effort to spur dense, active, and urban land uses that decrease VMT and create places people want to be. East Washington Ave has seen considerable redevelopment, with the section near Stoughton Rd poised for future investment. It is important that the Stoughton Road project support this transition rather than hinder it.

Consequently, the Stoughton Road project presents both opportunities and risks for the City. The following bullets provide general goals for intersections along the corridor.

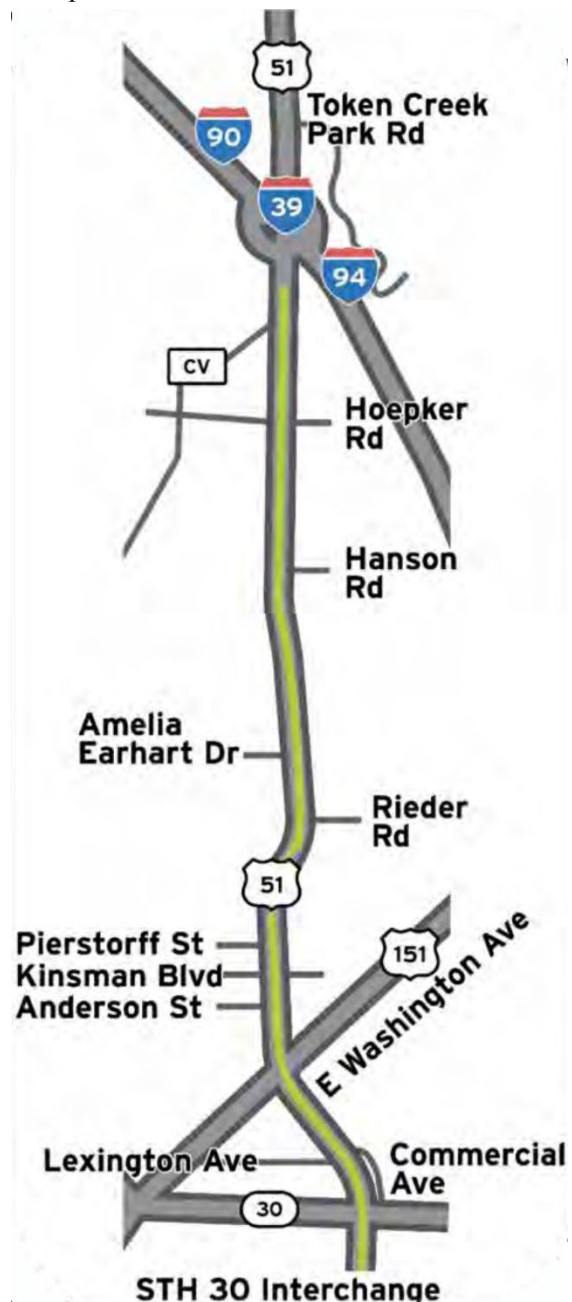
General Intersection Comments (North to South)

Hoepker Rd – Hoepker Road provides access to businesses in this area and is a key route between Madison's northside and Madison's northeast side/Sun Prairie, and may be the site of a future interchange with I-39/90/94. Consequently, alternatives with full access to all movements on Stoughton Road are recommended.

Hanson Rd – Hanson Road provides access to businesses in the City's Center for Industry & Commerce, is as a primary entrance to the American Center. Metro Transit's satellite facility is also on Hanson Rd, and will be used to house electric BRT buses. Therefore, staff recommends intersection alternatives that preserve all movements.

Amelia Earhart Dr – Amelia Earhart Dr is used as a primary entrance to commercial air functions. The preservation of all intersection movements is recommended.

Rieder Road – Rieder Rd is already access restricted, with the



Westbound to Southbound movement prohibited. Staff recommends preservation of all remaining movements.

Pierstorff St, Kinsman Blvd, and Anderson St – These streets all serve the Madison College area. At least one of the Pierstorff and Kinsman Blvd intersections should maintain all movements. Anderson St is used by Bus Rapid Transit to cross to Mendota St. Without this cross access, BRT would need to be rerouted. Preservation of this movement is critical. Staff encourage interaction with Madison College and the Air National Guard regarding their access needs.

East Washington Ave – This intersection is very important to the future urban nature of East Washington Ave, and is addressed in the Hawthorne Truax Plan. Staff recommendations regarding the alternatives are discussed in more detail within this memo.

Lexington Ave – This intersection provides an important entrance to downtown shopping, a neighborhood, and several city facilities. It also discussed in more detail within this memo.

Highway 30 Interchange – This existing interchange is the beginning of an expressway section of US 51 that spans south of the project through the Milwaukee St and Cottage Grove Rd interchanges. The interchange functions reasonably well and staff are unsure if further improvements are needed.

East Washington Ave Intersection

Stoughton Road is a highway and it would require considerable disinvestment, such as removal of the Milwaukee St and Cottage Grove Road interchanges, to make it a street. While north-south bicycle and pedestrian access is important, it is not as important as the need for pedestrian and bicycle access in the east-west direction. Conversely, East Washington Ave is a street with driveways and side streets directly adjacent to the Stoughton Road intersection. It is important that the “street” characteristic of East Washington Ave be preserved in concepts and alternatives. If extra mobility is provided to address capacity considerations, it should be provided in the north south direction. It is also acknowledged that while Stoughton Road is a highway, the adjacent at-grade intersections of Lexington Ave and Anderson Street will pose problems with safety and speed.

WisDOT will have their “design vehicle” for all of these concepts. Madison views the vulnerable user as the “design vehicle” for how appropriate each concept is in this context. Those traveling via motor vehicle typically have much shorter trip duration as those traveling by transit or other modes. They also have the added protection of their vehicle when in a crash. It is important for the visually impaired, children on bicycles, those with mobility challenges be able to safely navigate the intersection with a minimum of delay.

The Hawthorne Truax Plan provides goals for the Stoughton Road/East Washington Ave intersection. They include the following:

3. Work with Wisconsin DOT to ensure the future form of the Hwy 51 corridor aligns with the City’s vision for transportation and land use. The design should address the following concerns:

- Utilize post-pandemic travel forecasts to avoid over-building and adding excess capacity.*
- The design should be a human-scaled urban connection that minimizes pedestrian crossing distances and motor vehicle speeds.*
- Ensure the intersection designs are comfortable, safe and convenient for bikes and pedestrians. Particular needs are at East Washington Avenue, Lexington Avenue, and Anderson Street.*
- The design should not further divide communities and should maintain a strong visual connection across the corridor. If grade separation is needed, East Washington Avenue should remain at its current elevation and Hwy 51 should be sunk below.*
- Maintain local street connections and property access from East Washington. If the design removes access from Hwy 51 for properties between East Washington Avenue and Anderson/ Mendota Streets, add a local street between Mendota Street and East Washington Avenue to facilitate redevelopment on a connected street network.*
- The design should support existing and future redevelopment by limiting right-of-way expansion. If additional right-of-way is needed, the City should work with the WisDOT to acquire surplus parcel remnants and facilitate redevelopment through a request for proposal process.*

As mentioned previously, the City of Madison has implemented a Transit Oriented Design Overlay along East Washington Ave. in an effort to focus dense mixed use developments along the East Washington Ave corridor. Redevelopment along the East Washington corridor has already considerably augmented both housing and employment opportunities. This portion of East Washington Ave is poised for redevelopment and alternative concepts should not preclude future opportunities.

WisDOT has developed numerous concepts for this intersection.

The following questions were developed to evaluate the concepts based on the Hawthorne Truax Plan:

1. Does the concept provide a human scaled urban connection?
2. Does the concept provide an urban connection that provides comfortable, safe, and convenient pedestrian bicycle connections? This includes:
 - a. Minimize pedestrian crossing distances.
 - b. Provide direct, easy to follow pedestrian paths
 - c. Provide direct, easy to follow bicycle paths.
3. Does the concept minimize the loss of street access on East Washington Ave?
4. Does the concept minimize the loss of business and residential access?
5. Does the concept minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses along East Washington Ave?

Concept 1

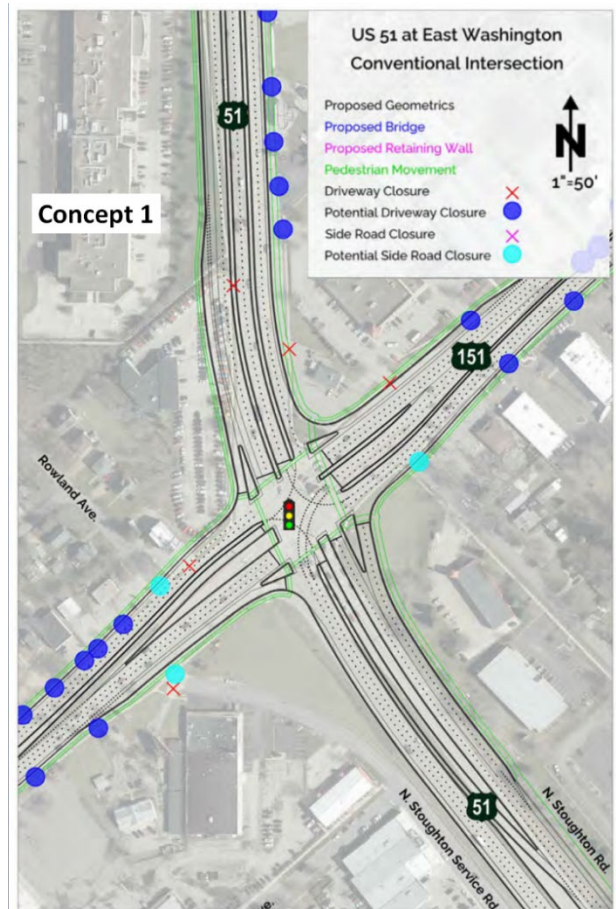
Concept 1 is the only at-grade conventional intersection that uses signals. It expands the intersection, mostly by adding channelization and islands. The lane configurations remain similar to what exists today. Regarding satisfying City objectives:

1. Provide a human scale intersection?

The existing Stoughton Rd and East Washington Ave intersection is poor with long crossing distances for pedestrians and bicycles. The proposed concept is similar to what exists with similar numbers of lanes. While poor, Concept 1's at-grade crossing is perhaps better and more urban than many of the concepts that have been presented.

2. Provide a safe comfortable urban intersection?
 - a. Minimize pedestrian crossing distances.
 - b. Provide direct pedestrian paths
 - c. Provide direct bicycle paths.

This concept has relatively straight forward pedestrian and bicycle paths. Crossing distances are slightly longer due to increased island size. With the high volumes on both East Washington Ave and Stoughton Rd, it is important that pedestrians are able to cross each approach in a single phase, without having to use an island as a refuge. We encourage WisDOT to reconsider the need for the SBRT and EBRT slip lanes at East Washington & Stoughton Road. These slip lanes add complexity and delay to the pedestrian crossing.



We also encourage WisDOT to maintain some type of access between the North Stoughton Service Road and East Washington Ave.

3. Minimize the loss of street access?

The concept has up to three potential side road closures due to policy reasons. Because this access loss is policy rather than a geometric necessity, and these side road access have existed for decades as right-in/right-out driveways, staff recommend that these accesses be preserved.

4. Does the concept minimize the loss of business and residential access?

This concept has numerous potential access removals, again for policy reasons rather than geometric. The loss of

these access points would result in numerous relocations and require that land remain vacant for lack of access. As with street access, staff recommend that these accesses be preserved as right-in/right-out.

5. Does the alternative minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses?

As mentioned, if potential access closures occur it would result in numerous relocations. Staff recommend these accesses be preserved. This would allow both preservation of uses and future redevelopment in most quadrants of the intersection.

Concept 2

Concept 2 creates a [quadrant intersection](#), where left turns at the East Washington Ave and Stoughton Rd are relocated to adjacent intersections about 500 feet from the main intersection. This increases the capacity of the intersection without requiring a grade separation. The adjacent graphic illustrates left turn movements that reduce the number of signal phases that need to occur. Sometimes there are non-compliance issues with the left turn prohibition. An example of a quadrant interchange exists in [Huntersville North Carolina](#).

1. Provide a human scale intersection?

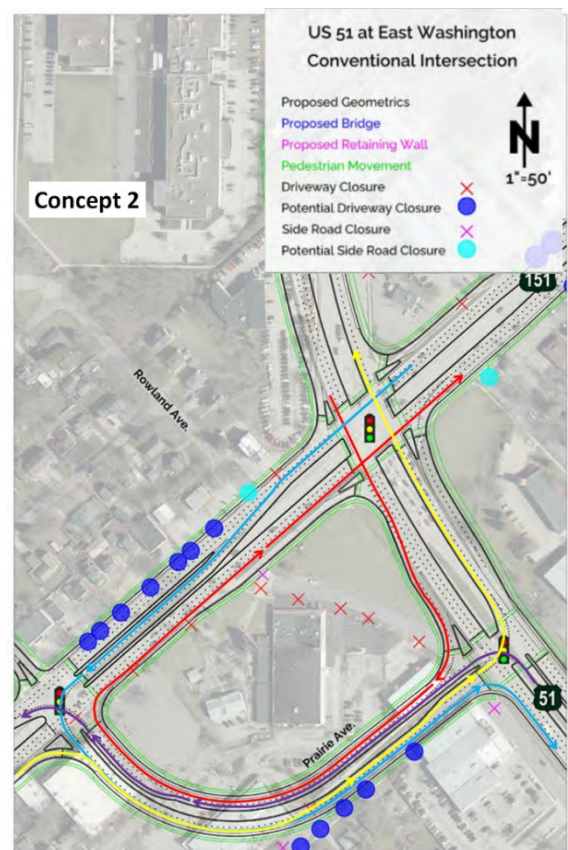
This concept, while adding one intersection to East Washington, reduces the size of the Stoughton Road/East Washington Ave intersection and keeps all movements at one level.

2. Provide a safe comfortable urban intersection?
 - a. Minimize pedestrian crossing distances.
 - b. Provide direct pedestrian paths
 - c. Provide direct bicycle paths.

This concept has relatively straightforward pedestrian and bicycle paths. Crossing distances could be shorter due to reduced number of lanes that need to be crossed. We would encourage WisDOT to narrow the very large median islands that increase crossing distances and clearance times. While another intersection is added, the signal timing for both intersections would be more straightforward with fewer turning phases. As mentioned previously, with the high volumes on both East Washington Ave and Stoughton Rd, it is important that pedestrians are able to cross each approach in a single phase, without having to use an island as a refuge.

3. Minimize the loss of street access?

The concept has up to two potential side road closures due to policy reasons, and a realignment of the North Stoughton Rd Service Road. Because this access loss is policy rather than a geometric necessity, and these side road access have existed for decades as right-in/right-out driveways, staff recommend that these accesses be preserved. Staff also recommend access be allow on Prairie Ave, so that parcel would be available for redevelopment.



4. Does the concept minimize the loss of business and residential access?

This concept has numerous potential access removals, again for policy reasons rather than geometric. As with the previous alternative, staff recommend that these accesses be preserved as right-in/right-out as they have currently existed for decades. It is important for access to be preserved on Prairie Ave so that land parcels on both sides are able to host active land uses.

5. Does the alternative minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses?

As mentioned, if potential access closures occur it would result in numerous relocations. Staff recommend these accesses be preserved as right-in/right-out. It is likely portions of the shopping mall in the southwest quadrant could be relocated. It is important that this parcel maintain active uses through the preservation of some type of access. Because this intersection type does not have grade differentials that mandate access closure, there may be more opportunity for active land uses adjacent to the corridor.

Concept 3

Concept 3 creates an eschelon (or partial jughandle) intersection where the southbound through movement is elevated and removed from the intersection. The [intersection of Junction Road with Mineral Point Road](#) (shown) is a good example of an eschelon intersection in the Madison area.

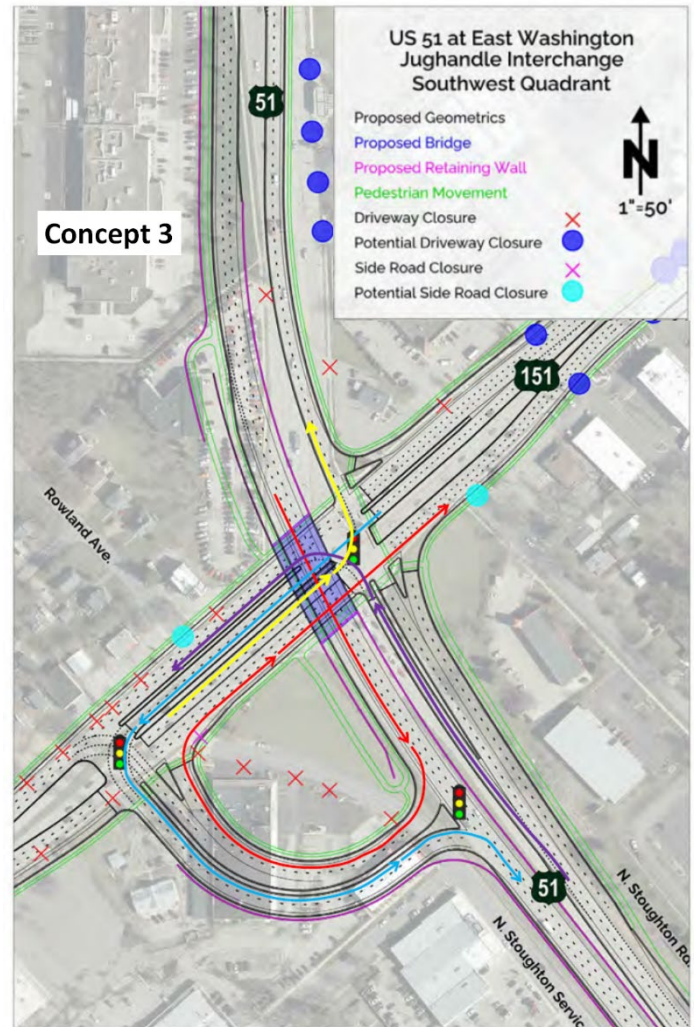
1. Provide a human scale intersection?

While grade separating one movement, this jughandle still incorporates signals in the northbound, southbound, eastbound and westbound directions. It adds intersection capacity without introducing a freeway interchange. This helps preserve urban speeds, and probably would not encourage speeding between up and downstream signalized intersections.

2. Provide a safe comfortable urban intersection?

- Minimize pedestrian crossing distances.
- Provide direct pedestrian paths
- Provide direct bicycle paths.

This concept reduces the number of lanes a pedestrian has to cross in the east-west direction by half, and eliminates many of the conflicting left turns from the signal timing. East-West pedestrian and bicycle routing is straightforward and direct. Extra efforts



are needed to provide pedestrian/bicycle connectivity in the north-south direction on the west side of the intersection. This includes, but is not limited to a signalized crossing on the west side of the jug handle intersection with East Washington. This was accomplished at Junction Rd/Mineral Point Rd through a spiraled path grade separation. The City of Madison recommends improving bike connectivity from neighborhoods south of East Washington to destinations and the Madison bike network north of East Washington.

3. Minimize the loss of street access?

The concept has up to two potential side road closures due to policy reasons. Again, staff recommends maintaining these sideroad access points as right-in/right-out.

4. Does the concept minimize the loss of business and residential access?

This concept has numerous confirmed access removals. Some of these access removals are necessary due to grade changes, and the southwest quadrant ramp construction. Madison requests WisDOT re-evaluate the listed access removals in the westbound East Washington direction to see if all are necessary. These confirmed access removals would create a strip of relocations, and the ensuing vacant undevelopable land, that is not beneficial.

5. Does the alternative minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses.

The access closures in the northeast quadrant would relocate Walgreens, an important area business. Since the grade separated lanes are in the southbound direction, there should be no additional grade challenges with providing access to Walgreens. Measures should be taken to preserve this access and business. Similarly, westbound East Washington Ave would have all accesses removed – resulting in a strip of relocations and corresponding vacant undevelopable land. Yet, there appears to be no great profile differential on East Washington Ave that would mandate these access closures. Staff recommend these accesses be preserved as right-in right-out to the extent possible. The southwest quadrant would be relocated, and there are no alternatives to this relocation. Yet, with the preservation of access, the northeast and southeast quadrants could remain active land uses. The southbound horizontal curve is designed so that it could relocate 3571 Stoughton Road. This building should be preserved.

Concept 4

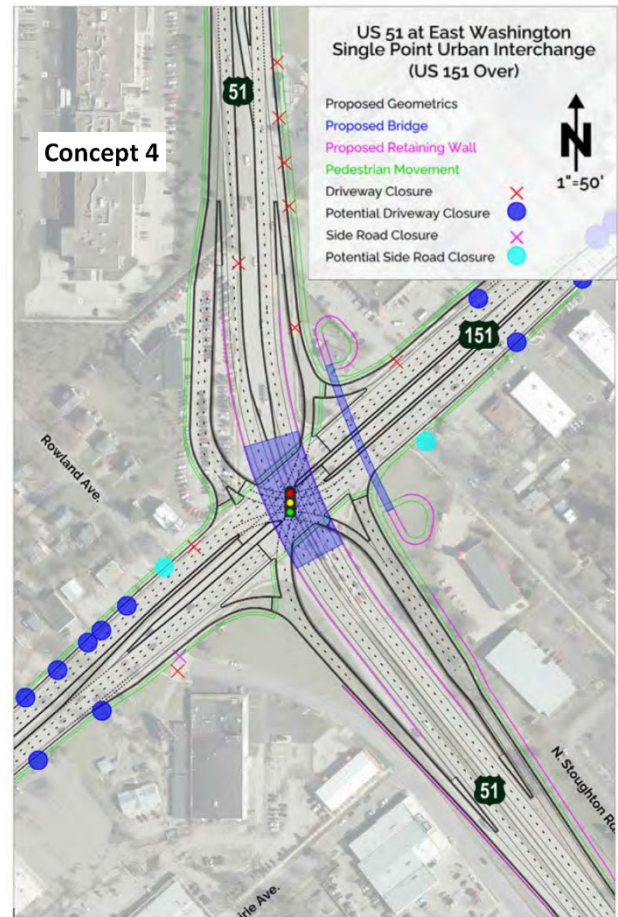
Concept 4 creates a Single Point Urban Interchange (SPUI) where all ramp movements are bent to a single intersection, rather than two intersections as is typical with a traditional diamond interchange. With this alternative, the through movements run north south on US 51 – the dominant direction, and East Washington Ave experiences signal controlled ramp terminal intersection. The east approach has a grade separated pedestrian/bike crossing traveling north-south. The Madison area has a SPUI at the [Verona Road/Beltline interchange](#), shown in the adjacent figure. Madison has had challenges with interchanges followed with at-grade or signalized intersections, such as with Aberg Ave and Schlemgen. This alternative would create a similar situation with Stoughton Road and the East Washington Ave interchange and the Anderson St signalized intersection.

1. Provide a Human Scale Intersection?

This concept is one of the more impactful concepts. It constructs a freeway interchange between two signalized intersections, which will likely create speeding problems in the urban street section to the north. Examples of where isolated interchanges pose similar challenges exist at Aberg and the at-grade intersections north of this interchange.

2. Provide a safe comfortable urban intersection?
- Minimize pedestrian crossing distances.
 - Provide direct pedestrian paths
 - Provide direct bicycle paths.

This concept technically reduces the number of lanes a pedestrian has to cross in the east-west direction, but there are multiple islands a pedestrian would have to travel through. Single Point Interchanges are very poor for crossings in the grade separated direction because there are no traffic gaps in the turning or through movements. Consequently, this movement must be handled through a grade separated pedestrian crossing. At the Verona Road Interchange, this is handled with a tunnel on the south approach. At the US 51/East Washington interchange, pedestrian crossing would be accommodated on the east approach through a spiraled ramp. No accommodations would be provided on the west approach. There is concern that some pedestrians would cross at-grade in the north-south direction to avoid the indirection of the pedestrian bridge on the east approach, and the total lack of north-south pedestrian accommodations on the west approach. Madison has had poor compliance/usage of the pedestrian bridge similar to this proposal crossing East Washington Ave at Marquette



St.

Pedestrian crossings in the East – West direction would be broken into 4 separate crossings which would add substantial signal delay to the pedestrian crossing. Vulnerable users, such as the visually challenged or young bike riders, would have difficulty traveling through the interchange. The pedestrian crossings of some slip lanes shown may pose a hazard as people crossing on foot often disobey pedestrian signals when the crossing distance is short and delay high.

3. Minimize the loss of street access?

The concept has up to two potential side road closures due to policy reasons. Again, staff recommends maintaining these sideroad access points as right-in/right-out.

4. Does the concept minimize the loss of business and residential access?

This concept has numerous confirmed access removals. Some of these access removals are necessary due to grade changes associated with the ramps. It is likely most entities in the northeast quadrant (Walgreens) would need relocation. Additionally, most businesses on the east side of Stoughton Rd and north of East Washington would lose access and be relocations.

For East Washington, Madison requests WisDOT evaluate the potential access removals in the westbound East Washington direction to see if all are necessary. If realized, these access removals would create a strip of relocations, and the ensuing vacant undevelopable land, that is not beneficial.

6. Does the alternative minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses?

Unavoidable access closures in the northeast quadrant would relocate Walgreens, an important area business, and businesses north of Walgreens. Similarly, westbound East Washington Ave would likely have accesses removed because of their proximity to a freeway ramp terminal. This would result in a strip of relocations and corresponding vacant undevelopable land. Staff recommend these accesses be preserved as right-in right-out to the extent possible.

Note: If WisDOT feels that some type of interchange alternative must be brought forward, an alternative to the Single Point Urban Interchange could be a tight diamond interchange with north-south being the dominant direction. Staff had previously provided negative comments to WisDOT regarding a tight diamond, but a tight diamond decreases complexity with pedestrian and bicycle routing.

Concept 5

Concept 5 creates a somewhat unconventional grade separated roundabout where East Washington travels over Stoughton Road. An example of this exists, with the grade separation reversed, in [Lathan New York](#). A similar example also exists in the Madison area near the [Verona Road frontage roads](#), although this roundabout carries less traffic without a through movement. The dominant direct is east-west (rather than north-south), which introduces a freeway treatment in an urban freeway. While an intriguing design, this concept functions essentially as a tight diamond interchange with roundabout terminals.

1. Provide a Human Scale Intersection?

This concept is also one of the more impactful concepts. It constructs a somewhat unconventional interchange with the east-west direction being the dominant direction. The interchange is placed between two signalized intersections on East Washington Ave. This introduces a freeway treatment between two urban intersections. This could encourage speeding between signals on East Washington.

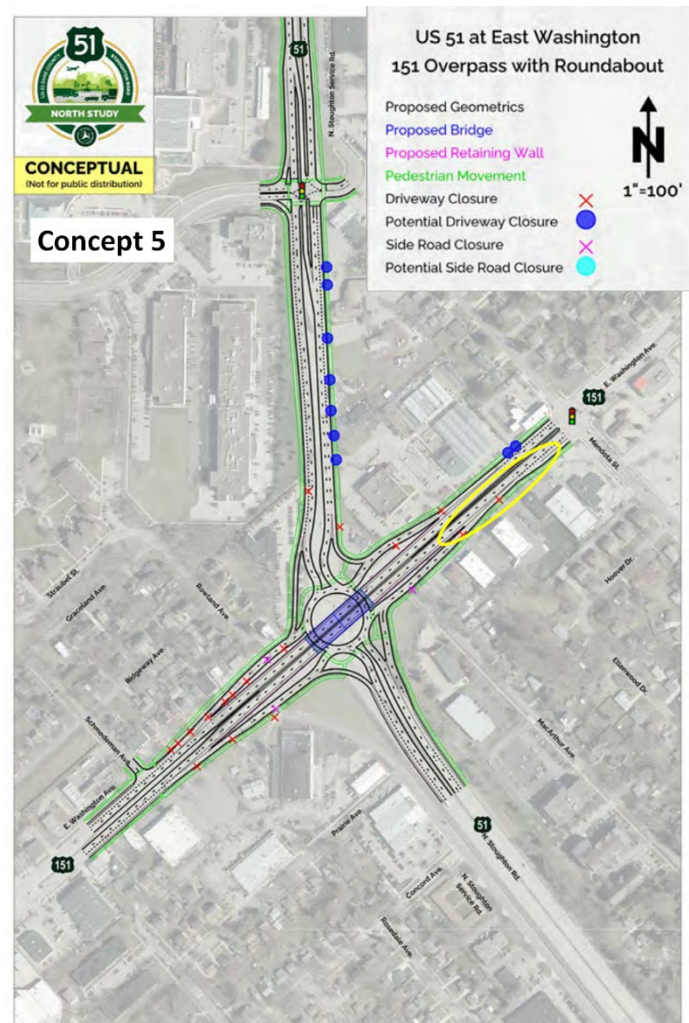
2. Provide a safe comfortable urban intersection?
 - a. Minimize pedestrian crossing distances.
 - b. Provide direct pedestrian paths
 - c. Provide direct bicycle paths.

Concept 5 has pedestrians and cyclists cross the intersection at the depressed roundabout level. Pedestrian crossings at roundabouts tend to be indirect, and the roundabout bypass lanes in the intersection accentuate this challenge. North-south crossings would have fewer vehicles and more traffic gaps to cross. East-west pedestrians would have to cross larger traffic volumes without the aid of a traffic signal. Bicycle traffic would have very indirect routing through the interchange unless they chose to take a lane. Because of the bypass lanes, a cyclist would likely need to stop and wait 4 times to travel east-west through the roundabout.

Madison requests WisDOT reconsider the need for slip lanes for the EBRT, SBRT, and WBRT directions. Some may be needed for truck turning radii, but the extent that they can be reduced or eliminated would reduce speeds.

3. Minimize the loss of street access?

The concept has three confirmed and unavoidable access street closures



Functionally Concept 5 would operate in a similar manner to the County N interchange in Cottage Grove

4. Does the concept minimize the loss of business and residential access?

This concept has numerous confirmed access removals. Some of these access removals are necessary due to grade changes associated with the ramps. It is likely most entities in the northeast quadrant (Walgreens) would need relocation. Additionally, most properties west of Stoughton Rd and north of East Washington would lose access and be relocations.



The grade separated roundabout on the Verona Rd frontage roads provides a similar facility, with much lower traffic volumes

For East Washington, Madison requests WisDOT evaluate the potential access removals in the westbound East Washington direction to see if all are necessary. If realized, these access removals would create a strip of relocations, and the ensuing vacant undevelopable land, that is not beneficial.

5. Does the alternative minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses?

Unavoidable access closures in the northeast quadrant would relocate Walgreens, an important area business, and businesses north of Walgreens. Similarly, westbound East Washington Ave would likely have accesses removed because of their proximity to a freeway ramp terminal. This would result in a strip of relocations and corresponding vacant undevelopable land. Staff recommend these accesses be preserved as right-in right-out to the extent possible.

Concept 6

Concept 6 creates an unconventional grade separated roundabout where all turning movements are brought to the top and served with a roundabout, while the East Washington Ave and Stoughton Rd through movements are served with a signalized intersection at a lower level. There is no dominant movement, both Stoughton Road and East Washington Ave would have to travel through a signalized intersection. This is a very creative design, however staff could not find a comparable intersection/interchange anywhere. The signalized intersection may contradict driver expectation since the connection looks like an interchange, yet there are signals for the through movements. Drivers on either East Washington Ave or Stoughton Road would see the off-ramps for the interchange and assume they have uninhibited through right of way through the interchange, when in reality they are subject to a signal. This unconventional design could lead to more crashes.

1. Provide a Human Scale Intersection?

This concept is also one of the more impactful concepts. It constructs a grade separated intersection between two signalized intersections on East Washington Ave. The signal for through movements would be unexpected, yet would be consistent with up and down stream signals on both East Washington and Stoughton Road.

2. Provide a safe comfortable urban intersection?
- Minimize pedestrian crossing distances.
 - Provide direct pedestrian paths
 - Provide direct bicycle paths.

Concept 6 has pedestrians and cyclists cross the intersection at the raised roundabout level. Pedestrian crossings at roundabouts tend to be indirect, and the roundabout bypass lanes in the intersection accentuate this challenge. Because all through movements are removed and depressed, crossing travel volumes for pedestrians and cyclists are much more manageable.

Bicycle traffic would have very indirect routing through the interchange unless they chose to take a lane. Because

of the bypass lanes, a cyclist would likely need to stop and wait 4 times to travel east-west through the roundabout.

3. Minimize the loss of street access?

The concept has three confirmed and unavoidable access street closures. Some type of connection (not shown) would be needed for the Stoughton Rd frontage road.

4. Does the concept minimize the loss of business and residential access?

This concept has numerous confirmed access removals. Some of these access removals are necessary due to grade changes associated with the ramps. It is likely most entities in the northeast quadrant (Walgreens) and northwest quadrant (residences) would need relocation. Additionally, most businesses on the east side of Stoughton Rd and north of East Washington would lose access and be relocations.

If realized, these access removals would create a strip of relocations, and the ensuing vacant undevelopable land, that is not beneficial.

6. Does the alternative minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses?

Unavoidable access closures in the northeast quadrant would relocate Walgreens and businesses north of Walgreens. Similarly, westbound East Washington Ave would likely have accesses removed because of their proximity to a freeway ramp terminal. This would result in a strip of relocations and corresponding vacant undevelopable land. Staff recommend these accesses be preserved as right-in right-out to the extent possible. Grade changes and ramps would prevent access in almost all quadrants, relocating many businesses and preventing new development.

Concept 7

Concept 7 is very similar to Concept 6 in that it takes all turning movements out of the intersection and raises them. Instead of using a roundabout for the turning movements, it uses a tightly spaced couplet with short-cycle signals. Preliminary modeling by Madison staff indicate this couplet would work. An example of this surface couplet concept can be seen at in [Turkey](#), without the grade separated movements. Other examples can be seen at this [link](#).

The benefits and impacts of this concept are very similar to Concept 6, except the signalized intersections for turning movements would provide simpler and more direct routes for pedestrians and bicycles. As mentioned with Concept 6, the signalized intersection for through movements could be unexpected for what appears to be an interchange and lead to more crashes.

1. Provide a Human Scale Intersection?

This concept is also one of the more impactful concepts. It constructs a grade separated intersection between two signalized intersections on East Washington Ave. As mentioned, the signal for through movements would be unexpected, yet would be consistent with up and down stream signals on both East Washington and Stoughton Road.

2. Provide a safe comfortable urban intersection?
 - a. Minimize pedestrian crossing distances.
 - b. Provide direct pedestrian paths
 - c. Provide direct bicycle paths.

Concept 7 has pedestrians and cyclists cross the intersection at the raised mini couplet level. The crossings are direct and straight forward, and the short-cycle signal timing would not create a lot of delay. Generally pedestrian crossing with this concept are better than those for Concept 6.

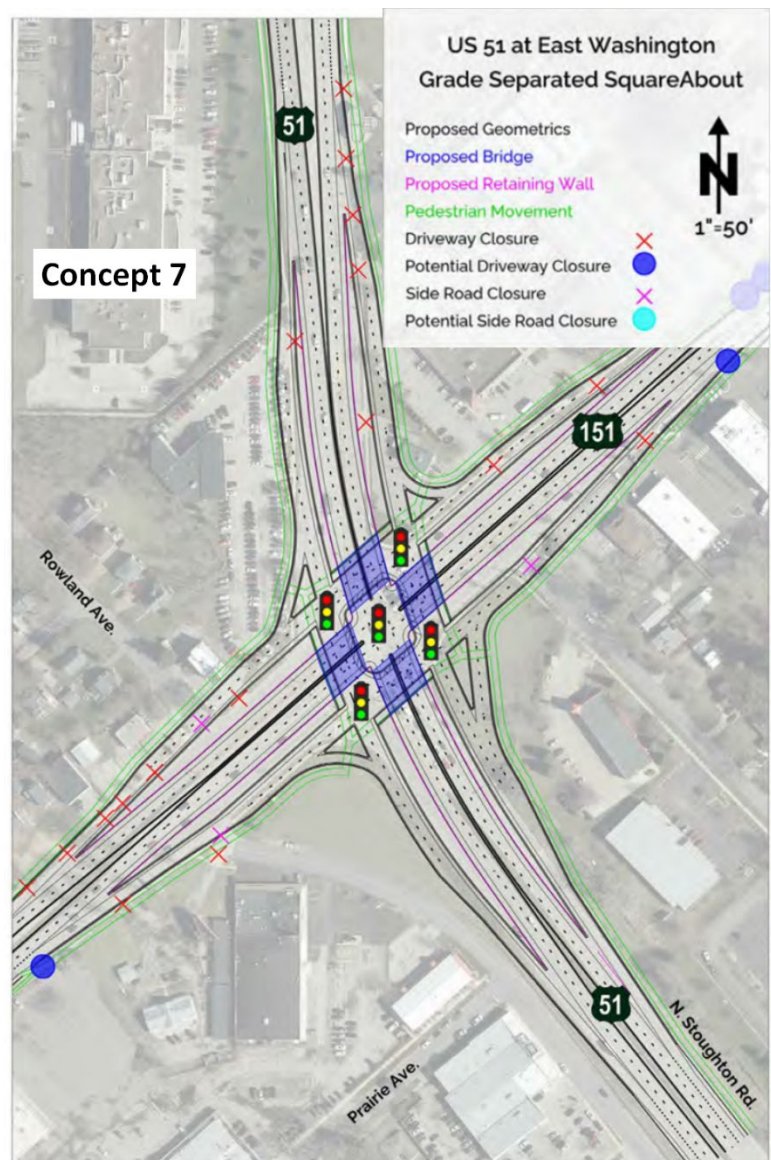
Because all through movements are removed and depressed, crossing travel volumes for pedestrians and cyclists are much more manageable.

3. Minimize the loss of street access?

The concept has three confirmed and unavoidable access street closures. Some type of connection (not shown) would be needed for the Stoughton Rd frontage road.

4. Does the concept minimize the loss of business and residential access?

This concept has numerous confirmed access removals. Many of these access removals are necessary due to grade changes associated with the ramps. It is likely most entities in the northeast quadrant (Walgreens) and northwest quadrant (residences) would need relocation. Additionally, most businesses on the east side of Stoughton Rd and north of East Washington would lose access and be relocations.



If realized, these access removals would create a strip of relocations, and the ensuing vacant undevelopable land, that is not beneficial.

5. Does the alternative minimize relocations of important neighborhood businesses/destinations? Does it foster active land uses?

Unavoidable access closures in the northeast quadrant would relocate Walgreens and businesses north of Walgreens. Similarly, westbound East Washington Ave would likely have accesses removed because of their proximity to a freeway ramp terminal. This would result in a strip of relocations and corresponding vacant undevelopable land. Staff recommend these accesses be preserved as right-in right-out to the extent possible. Grade changes and ramps would prevent access in almost all quadrants, relocating many businesses and preventing new development.

Concept	1	2	3	4	5	6	7
	At-grade	Quadrant	Jughandle SW	SPUI	Grade Sep Roundabout EW over	Grade Sep Roundabout Turning mvmts over	Grade Sep Square Turning mvmts over
Human Scale Intersection?							
Comfortable, Safe, Convenient Ped/Bike							
• Crossing distances							
• Directness							
• Crossing Volumes							
Maintain local street connections							
Support existing and future redevelopment							
• Minimize loss of business access							
• Minimize relocations							
Lower vehicle speeds							
Driver Expectation Safety							
Further Investigation?	Yes	Yes	Yes				Possibly

Staff Recommendation of Stoughton Rd/East Washington Ave Concepts Warranting Further Study

Finding acceptable alternatives is challenging. Stoughton Road has expressway characteristics that put the road between a freeway and a highway. Conversely, East Washington Ave is an urban street and should be maintain this character, with direct and straightforward pedestrian and bicycle connections.

As mentioned, Madison is focusing efforts on East Washington to create greater densities, more transit oriented development, and more supporting uses. Just one block away a large housing development being constructed, and more will follow. A human scale East Washington Ave is imperative.

If WisDOT requires the investigation of some type of intersection expansion, staff recommend the following intersections be considered for further study.

Investigation Recommended

Maintaining existing conditions, or even reducing approach width, should be a consideration within the alternatives. Some of the I-39/90/94 alternatives remove up to 30,000 vpd from the East Washington Ave intersection. With a significant volume reduction such as this, a standard at-grade intersection could be sufficient. If WisDOT modeled this

intersection with the I-39/90/94 Alt 5 diverted forecast volumes, a smaller intersection could be sufficient.

Concept 1 – At Grade Intersection. While crossing distances are long, this is one of the few intersections that does not involve a grade separation and provides appropriate scale. Crossings are straight forward in all four quadrants

Concept 2 – Quadrant Intersection – Also a creative intersection design that does not require a grade separation. While introducing another intersection, the actual crossing distance at East Washington Ave/Stoughton Rd is reduced. And pedestrian conflicts with left turn conflicts are removed. Non-compliance with left turn prohibitions could be a problem.

Concept 3 – Jug Handle Intersection. Initially this concept seems impactful. Yet on further evaluation, most pedestrian crossings are short, direct, with less conflicting traffic volume. Impacts are constrained primarily to one quadrant. And both East Washington Ave and Stoughton Rd maintain one signal through the intersection – helping to keep speeds moderate. All pedestrian crossings are straightforward. Staff do recommend a north-south crosswalk be included at the west ramp of the jug-handle to accommodate pedestrian/bicycle movements not using the grade separated

Neutral

Concept 7 – Grade Separated Square-about. This concept has a few advantages, including straight forward and short pedestrian crossing distances and reduced conflicting traffic volumes. However there are also drawbacks. The signal for through movements on both Stoughton Road and East Washington Ave is unconventional for what otherwise would look like a traditional interchange. Drivers on either East Washington Ave or Stoughton Road would see the off-ramps for the interchange and assume they have uninhibited through right of way through the interchange, when in reality they are subject to a signal. This could increase crashes. Additionally, it is unclear how cyclists would be routed through the ramp areas on each approach. Ramps associated with the concept would eliminate access in all four quadrants – limiting active land uses.

Dismissal Recommendation

Drawbacks of the other concepts that led to non-recommendation to bring forward include the following:

Concept 4 – Single Point Urban Interchange – This interchange is impactful as it introduces a freeway interchange. The Single Point Urban Interchange design has poor east-west pedestrian/bike routing and challenging north-south pedestrian/bike routing. It poses some of the greatest challenges to the vulnerable user of all the concepts being considered. A visually challenged, or school age student, would have substantial difficulty navigating the interchange. In its current form it is not all ages and abilities.

Concept 5 – Grade Separated Roundabout Interchange – This interchange is also impactful as it introduces a freeway interchange, with full access removals along the ramps. The roundabout configuration would be particularly challenging for pedestrians and cyclists in the east-west direction, in that they would have to cross over 60,000 vpd of Stoughton Rd volumes waiting for traffic gaps within the roundabout.

Concept 6 – Grade Separated Roundabout for Turning Movements – This interchange has the same drawbacks as Concept 7 with the unconventional signal for through movements on East Washington and Stoughton Road. Yet it also has the challenges and indirection that roundabouts pose for pedestrians and cyclists. Access closures required by the ramps would also limit active land uses in all four quadrants.

Lexington/Commercial Stoughton Road Intersection

This intersection is directly adjacent to the signalized Highway 30 ramps and a crossing of a WSOR rail line that would be used for future passenger rail if implemented. Amtrak has indicated that a grade separation of the WSOR line would be advantageous.

Pre 1990 this intersection was grade separated, but a reconstruction in the 1990s converted it to an at-grade intersection. Neighborhoods lie to the west of the intersection, while Walmart, a small neighborhood, and city services such as yard waste drop off lie to the east.

WisDOT has developed four concepts for this intersection.

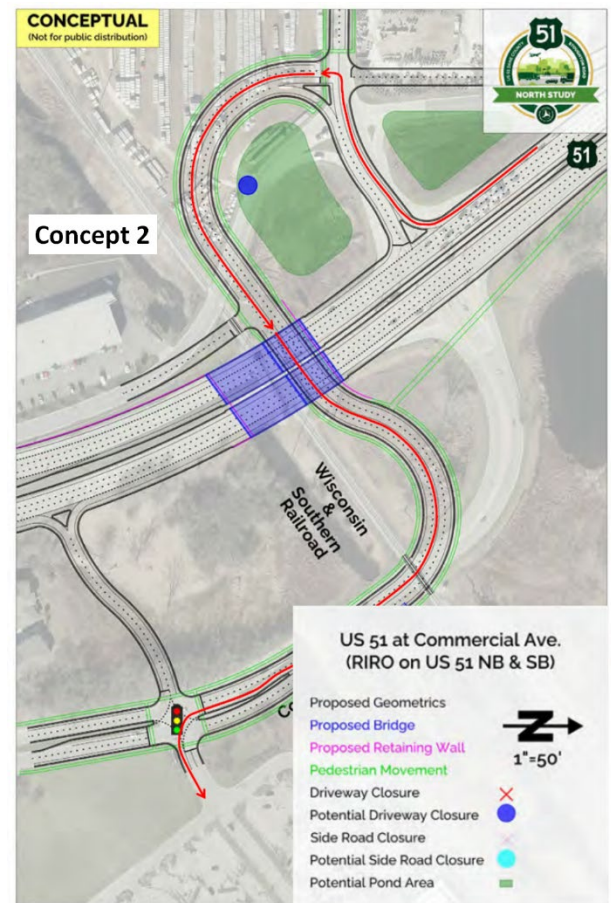
Concept 1- maintains the current at-grade intersection. It realigns the west Stoughton Road Frontage Road intersection to provide slightly more vehicle storage. Concept 1 also provides pedestrian accommodations through the intersection.

The realignment of the North Stoughton Service road provides very modest throat distance improvements for the impacts generated. Staff recommend revising this portion of the alternative.



Concept 2 – creates a jug-handle in the northwest and southeast quadrants, with traffic accessing Lexington and Commercial Ave through right-in/right-out entrances on both north and southbound Stoughton Rd. Traffic crossing Stoughton Road is handled by a street traveling under Stoughton Road and adjacent to the WSOR railway. Pedestrians and cyclist would cross Stoughton Rd via this street connection. This provides a better and less stressful bicycle and pedestrian crossing than what currently exists. Concept 2 grade separates Stoughton Road from a possible future passenger rail line.

Concept 3 creates a jug-handle in the northwest and northeast quadrants. Traffic would access Lexington and Commercial Ave via a signalized intersection north of the current crossings. Traffic from Lexington to Commercial Ave would travel on a street connection under Stoughton Rd and adjacent to the WSOR railway. Pedestrians and cyclists would cross Stoughton Rd via this street connection. This provides a better and less stressful bicycle and pedestrian crossing than what currently exists. Concept 3 grade separates Stoughton Road from a possible future passenger rail line.



Concept 4 constructs a partial cloverleaf interchange in the northwest and northeast quadrants. Traffic would access Stoughton Road through freeflowing ramps. Lexington Ave would access Commercial Ave through a street connection under Stoughton Road. Pedestrians and cyclists would also travel across Stoughton Road on this connecting street. Stoughton Road would be grade separated over a potential future passenger rail line with a separate bridge.

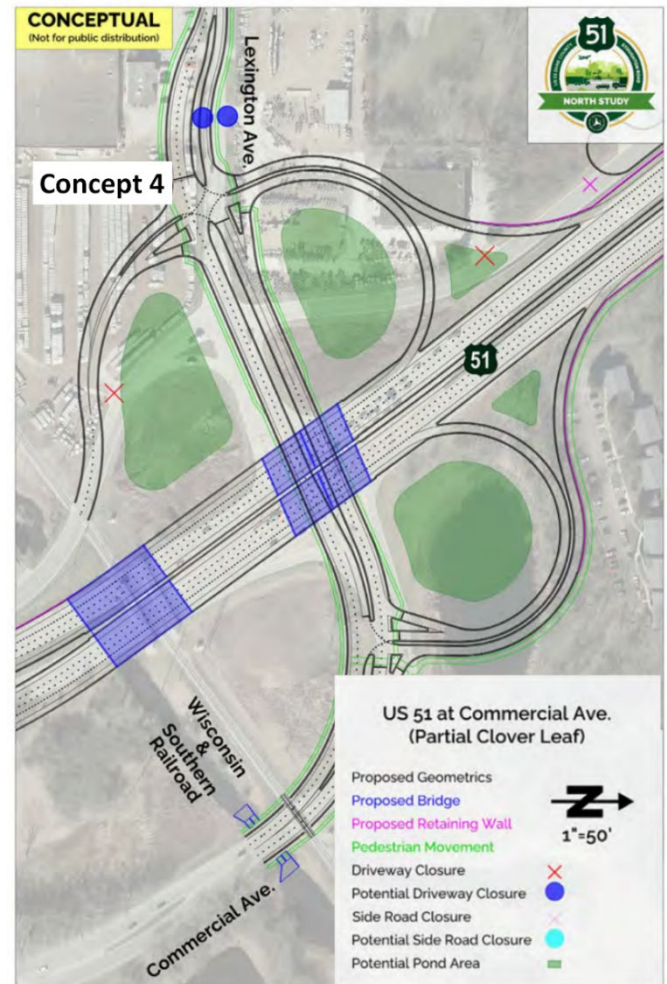
Staff Recommendations

Concept 4 places a freeflowing interchange ramps just 0.3 miles from the signalized Highway 30 ramp terminals, and 0.4 miles the signalized East Washington Ave intersection. The freeflowing ramps are contrary to the intersection control both up and down stream and could lead to higher speeds and more severe crashes. Concept 4 also requires two bridges and has greater right of way impacts. Therefore Concept 4 is not recommended.

Concepts 2 and 3 both provide a grade separated WSOR crossing, and therefore could provide benefits if passenger rail is brought to the Madison area. These alternatives also provide a less stressful crossing for pedestrians and cyclists. Staff have no strong preference between concepts.

General Bicycle and Pedestrian Staff Comments

Generally, all intersections should comply with “All Ages and Abilities” criteria. As mentioned, protecting and accommodating the vulnerable user is a community value.



Other opportunities staff previously asked that WisDOT consider include:

1. Is there an opportunity to install a grade separated ped/bike crossing of Stoughton Road south of Highway 30, that would connect the Marsh Shared Use path with the Autumn Ridge Trail?
2. Since there is already a grade separation at Highway 30, could a north-south shared use path be installed on the west side of Stoughton Rd that connects the Marsh Path with Commercial Ave/N Stoughton Road Service Road.
3. Could space be reallocated along Commercial Ave/N Stoughton Road Service Road to provide a protected pedestrian/bicycle facility running north south on the west side of Stoughton Road.
4. Better, safer crossing of Lexington Ave/Commercial Ave is necessary, along with protected facilities to Walmart/Nakoosa Trail. This request/consideration seems to be included in the concepts WisDOT provided.
5. Is there a way to connect Mac Arthur Road area with Commercial Ave to provide access to Walmart?
6. A protected shared use path along Stoughton Road on the east side from East Washington Ave all the way to Anderson/County CV (north of Hoepker) could provide substantial value. We recognize that Dane County Airport has expressed reservations regarding constructing a multi-use path within Runway Protection Zones (RPZ) on Stoughton Rd. Staff question why providing travel accommodations for 15,000 motor vehicles per day is considered a compatible land use, yet providing travel accommodations for 300 to 500 bicycles per day is considered an incompatible land use in the RPZ. This seems inconsistent on US DOT's recent focus on climate and active transportation.
7. While perhaps this is part of the Interstate project, a pedestrian overpass of I-94 at Anderson Road (south of Token Creek Park) would provide connectivity to Token Creek Park and Sun Prairie.

8. Generally lower posted speeds on Stoughton Rd at any location that has an at-grade crossing used by pedestrians.