

## History

For over 25 years the intersections of Millpond Road and County AB with US 12/18 have posed a significant safety problem for Dane County residents.

With the initial designs of the Beltline interchange, WisDOT considered a Millpond Road (Meier Road) overpass and County AB interchange. Those concepts were dropped from the Beltline interchange project in 2016 with the downsizing of the reconstruction. WisDOT proposed an \$80 million reconstructed Beltline interchange and received environmental approval in 2019. WisDOT is currently moving forward with improvements to the interchange. During the 2018 environmental process of the Beltline interchange, Madison strongly advocated for a grade separated solution to address the significant safety problems at Millpond Road and County AB.

WisDOT recommended a County AB interchange, in their US 12/18 Freeway conversion environmental document. The environmental document was approved, but the corresponding improvements were not officially mapped. This environmental document is being used as the basis for the current County AB interchange efforts.

## Safety

From 2014 to 2018 the intersections were responsible for 90 crashes, 36 injuries, and 2 fatalities. The intersections rank second and third in severity for intersection crash history in Madison of the over 1600 intersections evaluated within Madison. Combined, these two intersections would rank as the highest injury and fatality intersection within the City of Madison. Millpond Road ranks third statewide for injury severity among stop controlled intersections, and when combined with County AB, the intersection is the highest statewide for injury severity.

In WisDOT's recent study of the two intersections, they identified both of the intersections as having extremely high Potential for Safety Improvement (PSI). The Millpond Rd intersection has the 3rd highest Total Potential for Safety Improvement in the state for two-way stop controlled intersections. If combined with County AB, the Total Potential for Safety Improvement is the highest for two way stop controlled intersections in the entire state.

## Current Situation

Approval of the Development Plan for the Ho-Chunk Nation highlighted the safety concerns posed by these two intersections. The proposed plan would eventually increase daily traffic from the current 7,000 vehicles per day to 17,000 vehicles per day. Inherent in the approval is the requirement that "The PD District plan shall not create traffic or parking demand disproportionate to the facilities and improvements designed to meet those demands."

In 2019), WisDOT indicated that they would study grade separated solutions. The County AB interchange was not in current WisDOT budget, and was not required as part of the Beltline interchange project. After review, WisDOT found that these intersections were among the most dangerous in the state and would qualify for Federal Highway Safety Improvement Program (HSIP) funds.

## Proposal

WisDOT investigated numerous solutions with the current County AB interchange proposal being the recommended project. Reasons for their County AB interchange recommendation include:

- The County AB interchange is consistent with WisDOT's plan for the corridor as a freeway facility. It satisfies AASHTO spacing standards associated with the I-39/Beltline freeway to freeway (system) interchange.
- The County AB interchange provides a safety benefit for both County AB and Millpond Road. Much of the funding being considered for the improvement uses Federal Highway Safety Improvement Program (HSIP) funding, which requires a favorable cost-benefit analysis.
- County AB is a minor arterial, and therefore serves a regional function.
- The MPO's Regional Transportation Plan identifies the Reiner Road/Sprecher Road/County AB corridor as a future principle arterial that includes the County AB interchange project.
- The County AB interchange is consistent with Madison's land use plan. It is called for in the Yahara Hills Neighborhood Development Plan, and correspondingly, the Comprehensive Plan.
- The County AB interchange solution was supported by multiple government stakeholders surrounding the interchange.

## Other Considerations

### Meier Road Overpass

The Meier Road overpass can be officially mapped by Madison so that it can be implemented in the future. This overpass is called for in the Yahara Hills Neighborhood Development Plan. WisDOT did not select the Meier Road over pass for immediate construction because:

- The overpass would not provide a safety benefit to both the County AB and Millpond Road intersections. Therefore, the safety benefits may not be as advantageous for the HSIP funding source.
- If constructed as an overpass with accompanying connections to US 12/18 ( often called a jug-handle to provide access to Millpond Road), the connections would need to be removed as freeway conversion of US 12/18 is anticipated in the future. WisDOT did not want to invest in infrastructure that would later be removed.
- Meier Road is classified as a local road and does not exist between US 12/18 and Femrite. Meier Road would probably continue with the local road classification with the overpass and would not have the same regional benefit as County AB.
- There would be wetland impacts with building Meier Road north of US 12/18. (These potential impacts are one reason the City of Madison has not extended Meier Road.)

### US 12/18 Freeway

The County AB interchange would construct a freeway type of intersection on the east side of I-39/94. Madison's DOT staff do not believe it is responsible to encourage at-grade crossings (ped, bike, or motor vehicle), on the US 12/18 facility because of the safety risks associated with the high speeds. US 12/18 is under WisDOT's jurisdiction with a plan for freeway conversion of this section of the highway.

### At Grade (no overpass) Solutions

A J-turn (or RCUT) was investigated by WisDOT as a low-cost interim solution. A J-turn has vehicles make a right turn, and then a U-turn a quarter of a mile away. This is an effective expressway solution in rural situations. Madison DOT staff had concerns regarding this solution because.

- This application of a J-turn would require up to 6,700 vehicles making a U-turn on US 12/18 on a daily basis.
- This application of a J-turn would have projected side road volumes 3.6 times the recommended maximum by Federal Highway Administration. It would also have side road volumes 4.5 to 13 times greater than any J-turn application within the state of Wisconsin.

The County AB interchange is cost-effective based on the reduction of fatalities and severe injuries. The HSIP funding source requires a cost-benefit analysis, which weighs the benefits of lives saved and injuries prevented over the cost of the improvement. The County AB interchange ranks well with this analysis and qualifies for HSIP funding.

### Signalization

Sometimes signals are installed on expressways as an interim measure. An example is Highway 19 and US 12 northwest of Madison. Signal installations typically lead to more crashes, but may reduce the number of angle crashes with severe injuries depending on the application. Iowa DOT replaced signals on Hwy 20 with an interchange due to the crash numbers. The Millpond Road location is not optimal because installing signals 0.4 miles from the end of a system (freeflow) ramp interchange:

- May be counter intuitive to driver expectations coming from a freeway facility.
- Does not meet AASHTO's access guideline for system interchanges.
- Does not meet WisDOT's 1-mile standard (ramp gore to ramp gore) interchange spacing.
- Would be difficult to sign "signal ahead" on system interchange ramps.

### Lower Speed

Some expressway-like facilities should be converted to urban roadways with a lower speed limit. An example in the Madison area is Packers Avenue. It is unlikely that this section of US 12/18 would become an urban street with a lower speed limit.

- US 12/18 is not under Madison's jurisdiction. WisDOT manages the highway as part of the National Highway System and their plans are ultimately for freeway conversion, for which they have an approved environmental document for the concept.
- The AASHTO access spacing guideline for system interchanges would prevent new access (driveways and intersections) from being introduced on US 12/18 at least until after County AB.
- US 12/18 is constructed as an expressway with a 70 mph design speed. The posted speed limit could be lowered, but drivers often drive the comfortable speed of the facility. Reconstruction of US 12/18 to an urban street (with a lower design speed) is outside Madison's jurisdiction.
- Adjacent land uses do not provide an urban street context typically associated with lower speeds. The landfill on the north provides a long stretch without driveways or access points.

The frontage road system and golf course on the south provides a similar situation. East of County AB, land uses are primarily rural and unlikely to urbanize in the near future.

#### Pedestrian and Bicycle Access

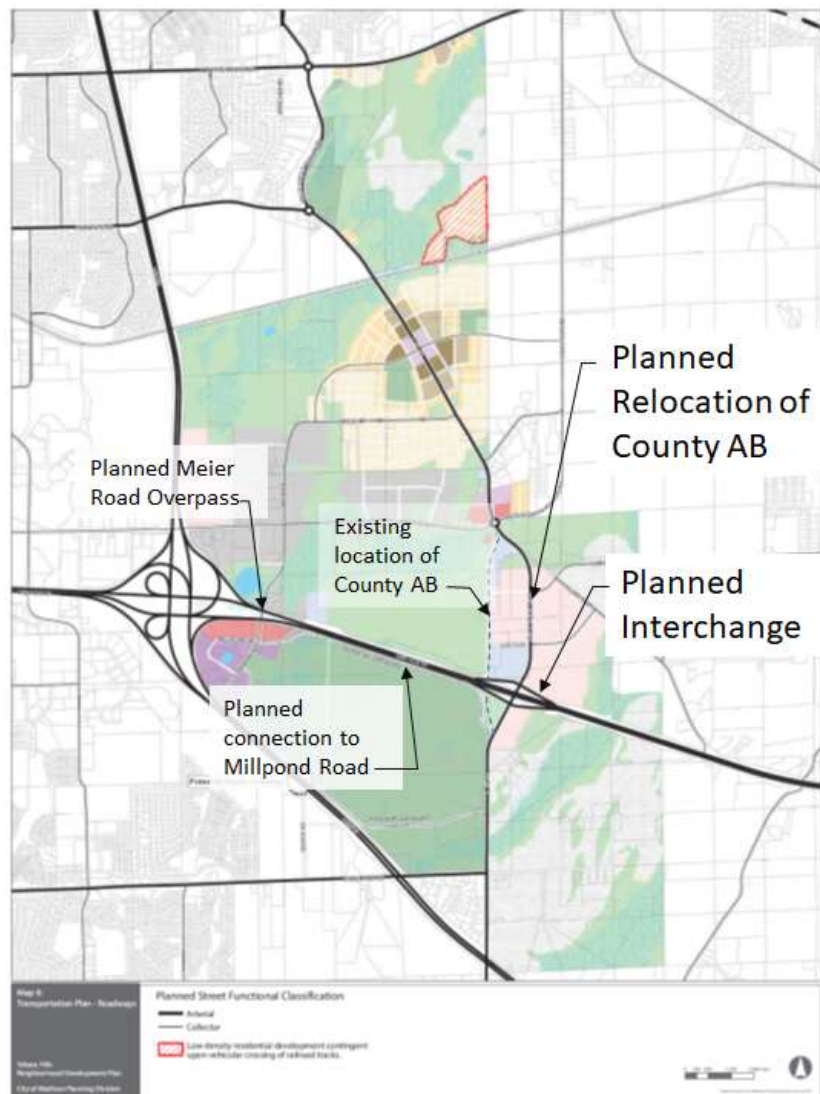
Pedestrian and bike access is included in both Madison's Yahara Hills Development plan and in WisDOT's typical sections for County AB and Millpond Road.

Pedestrian bicycle access to areas in the vicinity of the Ho-Chunk properties would be provided both by County AB interchange and/or by a future Meier Road overpass. County AB would be a more direct route from planned residential uses, yet would involve indirection south of US 12/18 to access businesses. A Meier Road overpass would be more direct for areas west of I-39/94. A Meier Road overpass could be officially mapped but is not being funded through WisDOT monies. WisDOT feels this connection is a local responsibility because of:

- Its classification as a local road.
- It does not extend beyond Femrite Road to US 12/18 currently and;
- It currently serves mostly agricultural properties for its 1.5 mile length.

The City of Madison includes the Meier Road overpass in the Yahara Hills Neighborhood Plan. Meier Road would serve primarily industrial uses on the south and west portions of the roadway. As Meier Road approaches County AB, it would serve residential uses. Meier Road is not planned to connect with neighborhoods to the northwest.

The City of Madison could include a Meier Road overpass in its Capital Budget. Initial WisDOT estimates had costs of about \$15 million for this improvement. A bicycle crossing could cost less, but still be in the millions of dollars. This investment would have to be weighed against other bike and street network needs for land uses that currently exist, such as the Autumn Ridge crossing of Highway 30.



*Yahara Hills Neighborhood Development Plan*

