

**2.0**  
**SUMMARY OF CONSIDERED ALTERNATIVES**

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The Alternatives Section describes the alternative development and evaluation process. The alternative that best satisfies the project Purpose and Need while minimizing impacts to the natural and built environment is selected as the Preferred Alternative. The Preferred Alternative in this LS SDEIS is the same as stated in the 2010 FEIS with some minor design modifications at intersections as a result of the normal final design process+. Portions of the Alternatives Section have been updated as follows:

- Section 2.2 has been updated to reflect what was incorporated in the 2010 ROD.
- As design progressed after the ROD, some design modifications were made as part of the normal project development process. The majority of these design modifications were in response to public input and include the following:
  - There is an additional proposed roadway connection between Hilltop Road and Whispering Springs Road.
  - The access road in the southeast quadrant of the County UU interchange has been shortened.
  - One access road has been removed and another shortened in the southwest quadrant of the County UU interchange.
  - County K north of WIS 23 has been shifted to the west to accommodate plans of St. Mary's Springs Academy.
  - Access treatments have been determined for all intersections through the corridor.
- Updated traffic counts were taken in 2012 and WisDOT updated its traffic forecasting methodology. Since the forecasts were lower than those presented in the 2010 FEIS, an updated screening analysis of alternatives, including those previously dismissed from detailed review, was completed. The updated screening analysis has been included as Section 2.6. The screening analysis included a reexamination of each alternative, including a new "Hybrid Alternative," against the Purpose and Need criteria. Detailed information on that screening criteria is provided in Section 1.5.

+Design refinements are minor changes to roadway alignments, access configurations, slope limits, etc. that normally occur during the design process as more information is obtained and more design has been performed. The refinements do not change the fundamental concept of the project nor do they fundamentally change the impact conclusions presented within the NEPA process.

Maroon text signifies updates addressing changed conditions or analysis, clarifications, or additional information. Items that are considered revisions that target specifically identified issues in the January 19, 2012 Notice of Intent to prepare an LS EIS are shown in blue text.

For tables and figures, the title of the Table or Figure has been shown in maroon or blue to indicate whether it has been revised since the 2010 FEIS.

## 2.1 DEVELOPMENT OF ALTERNATIVES

The Council on Environmental Quality (CEQ) recognizes in its regulations for implementing the NEPA that many alternatives may exist that address a project's Purpose and Need. The WIS 23 project team identified several possible improvement concepts for the study corridor, but to remain consistent with the CEQ's goal of fostering better and shorter EISs, only reasonable alternatives are presented and evaluated in detail in the EIS.

Reasonable alternatives are those that are practical and feasible from systemwide engineering, environmental, and economic standpoints relative to meeting the Project Purpose and Need. As discussed in Section 1, reasonable alternatives for improving WIS 23 are those that meet the objectives of the *Corridors 2030 State Highway Plan*. The objectives of the *Corridors 2030 State Highway Plan* include serving the economic and social needs of the region and assisting the state's economic development potential.

2.2 PROJECT DEVELOPMENT PROCESS–DEIS THROUGH ROD

The WIS 23 project development process is depicted in Figure 2.2-1. There are six main phases, the alternative screening phase, the alternatives presented in the 2004 Draft Environmental Impact Statement (DEIS), the alternatives presented in the 2009 SDEIS, the alternatives presented in the 2010 FEIS, the Preferred Alternatives presented in the ROD, and the alternatives presented in this LS SDEIS. The alternatives presented in this LS SDEIS are the same as those presented in the 2010 FEIS and ROD.

Alternative Screening

In the early stages of the project, WisDOT staff worked with the Public Advisory Committee (PAC) to develop broad improvement concepts. The PAC was created from local officials and volunteers at the public informational meeting (PIM). These concepts included the No-Build Alternative, other measures such as transit and Transportation System Management (TSM), and Build Alternatives. While these will be discussed briefly in Section 2.3, only Build-4-Lane Alternatives met enough of the project Purpose and Need (substantially met Purpose and Need criteria) to move into the alternative development phase to be presented in the DEIS. The No-Build Alternative was also presented in the 2004 DEIS to comply with CEQ regulations and to serve as a baseline for comparison. An updated examination of lower build alternatives was performed for this LS SDEIS and is described in Section 2.6.

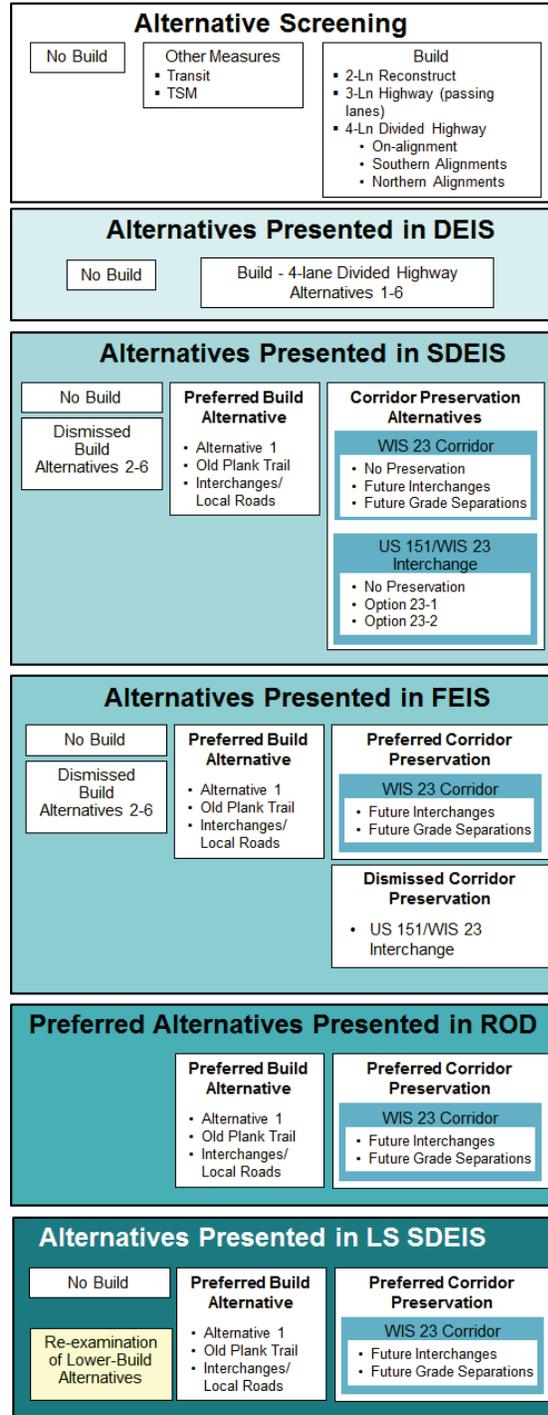
Several alignments were considered during the development of the Build-4-Lane Alternative. These alignments were shown on aerial mosaics and were presented to regulatory agencies, local officials, and the WIS 23 PAC. Comparisons of environmental effects, comments received from the PIMs, and citizen input were used to refine alternatives. Only those alternatives considered to be reasonable were carried forward into the 2004 DEIS.

A. Alternatives Presented in the 2004 DEIS

In the 2004 DEIS, six Build-4-Lane alternatives were presented. Of the 6 alternatives, the last 3 were variations of the third alternative. Therefore, three alternatives were analyzed in greater detail. These three alternatives included combinations of off- and on-alignment corridors. The 2004 DEIS provided an evaluation of broad corridors and schematic access arrangements to provide a reasonable representation of the impacts.

B. Alternatives Presented in the 2009 SDEIS

Based on the comments and information gathered with the release of the 2004 DEIS, WisDOT selected Alternative 1 as the Preferred Build Alternative for the WIS 23 corridor. Following comments from the public, agencies, and WisDOT departments, additional components were added to the Preferred Build Alternative to enhance its function and meet community needs. These added components include



extending a multiuse trail alongside WIS 23 and providing grade-separated interchanges/connections at several high-use intersections. Specifically, the Preferred Build Alternative includes:

1. Alternative 1, which expands WIS 23 to a 4-lane divided highway on the existing alignment.
2. Associated interchanges and local roads near Fond du Lac including the County K Jug-handle, the County UU interchange, the extension of Lynn Avenue, and an alternate access to Ledgewood Drive.
3. Extension of the Old Plank Road Trail, which is a multiuse trail parallel to and south of the WIS 23 roadway.
4. Local road improvements, including the Triple T and Pit Road connection, Coary Lane extension, Twinkle Lane extension, and Sandstone Lane extension.

The 2009 SDEIS document also evaluated corridor preservation measures. WisDOT also seeks to implement corridor preservation measures that preserve future right of way where roadway improvements are likely to be needed. This corridor preservation is accomplished through the official mapping provisions under §84.295(10) of the Wisconsin State Statutes. With the preserved right of way, communities and residents are able to acknowledge long-term transportation needs in their comprehensive plans. The preserved right of way prevents development in areas needed by future transportation improvements, decreasing the cost of those improvements and reducing impacts to land-owners. Once a future right of way area is officially mapped under §84.295(10), property owners must give the WisDOT 60-days notice before erecting or altering any structure within the mapped area. WisDOT then has the option to purchase the land needed for future right of way purposes.

There are two project elements for which WisDOT considered corridor preservation. The first focused on the WIS 23 corridor and what land may be needed for future interchanges and overpasses. The second corridor preservation project element focused on the US 151/WIS 23 interchange. The adjacent US 151 Fond du Lac bypass corridor preservation study investigated the interchange alternatives for this connection, yet the connection more fully falls within the logical termini of this WIS 23 project. Therefore, these corridor preservation measures were incorporated into the 2009 SDEIS and 2010 FEIS. The following paragraphs summarize the alternatives for both corridor preservation project elements.

1. WIS 23 Corridor
  - a. No corridor preservation.
  - b. Corridor preservation—Includes land for future interchanges at the County A, County G<sup>1</sup>, and County W intersections and grade separations at the Scenic View Drive, Hillview Road, Tower Road, Sugarbush Road, and 7 Hills Road intersections. Other intersections along the corridor will be at-grade with right-in/right-out access or cul-de-sacs.
2. US 151/WIS 23 Interchange
  - a. No corridor preservation.
  - b. Corridor preservation for system interchange Option 23-1, which travels through the southeast interchange quadrant.
  - c. Corridor preservation for system interchange Option 23-2, which travels through the northeast, northwest, and southwest interchange quadrants.

### C. Preferred Alternatives Presented in the 2010 FEIS

Based on the comments and information gathered with the release of the SDEIS, WisDOT selected the preferred alternatives. Specifically, the Preferred Build Alternative includes:

1. Alternative 1, which expands WIS 23 to a 4-lane divided highway on the existing alignment.
2. Associated interchanges and local roads near Fond du Lac including the County K Jug-handle, the County UU interchange, the County G interchange, the extension of Lynn Avenue, and an alternate access to Ledgewood Drive. A roundabout would also be included at the intersection of WIS 23 and Wisconsin American Parkway.
3. Extension of the Old Plank Road Trail, which is a multiuse trail parallel to and south of the WIS 23 roadway.

<sup>1</sup> Note: The County G interchange was evaluated for corridor preservation in the 2009 SDEIS, but physical improvements to upgrade the intersection to an interchange are now part of the Preferred Build Alternative. Also, a Hillview Road grade separation was evaluated for corridor preservation in the 2009 SDEIS, but is no longer being considered for corridor preservation.

4. Local road improvements including the Triple T and Pit Road connection, Coary Lane extension, Twinkle Lane extension, and Sandstone Lane extension.

The Corridor Preservation Preferred Alternative includes:

1. WIS 23 Corridor  
Corridor preservation—Includes land for future interchanges at the County A and County W intersections and grade separations at the Scenic View Drive, Tower Road, Sugarbush Road, and 7 Hills Road intersections. Other intersections along the corridor will be at-grade with right-in/right-out access or cul-de-sacs.
2. US 151/WIS 23 Interchange  
No Corridor Preservation—The US 151/WIS 23 Interchange No Preservation Alternative does not preserve any right of way for anticipated future system interchange improvements at this connection. Land adjacent to the existing diamond interchange will be unencumbered by official mapping. If future transportation improvements need land with structures, WisDOT will have to purchase the land and structures and relocate any businesses or residences.

#### D. Preferred Alternatives Presented in the ROD

The ROD was signed on September 27, 2010, and included the same Preferred Build Alternative and Preferred Corridor Preservation Alternative contained in the 2010 FEIS.

## 2.3 ALTERNATIVE SCREENING

### A. General

Early in the project development process, several alternatives were screened from a range of alignments developed during data gathering and reviewed at PIMs (see Section 6.2 of the 2010 FEIS and Section 7 of this LS SDEIS for public involvement related to the project). The screening process consisted of the following:

- Comparison and evaluation of alternative alignments for ability to provide local, regional, and statewide transportation service consistent with *Corridors 2030*.
- Comparison of the alternatives ability to reduce regional and local traffic conflicts, improve safety, reduce congestion, and provide an acceptable operational LOS.
- Consideration of citizen and local government input through PIMs and individual property owner contacts.
- Consideration of alternatives that avoid or minimize environmental impacts.
- Evaluation of area economic and population data for compliance with the requirements of Executive Order 12898, Environmental Justice.
- Agency coordination including the identification of wetlands and environmentally sensitive areas along the alternative alignments.
- Historical and archaeological investigations to identify resources eligible for the National Register of Historic Places.
- Consideration of indirect and cumulative effects of the project.
- Estimation and consideration of each alternative's cost and related economic effects.
- Consideration of air and noise impacts.
- Consideration of impacts on existing businesses, residences, and farms.



Figure 2.3-1 No-Build Alternative

As part of the alternative development process, a PIM was held to give the general public an opportunity to suggest and help develop possible alternatives.

In 2012, WisDOT reexamined alternatives that did not involve full capacity expansion. This reexamination is described in Section 2.6 and Appendix B of this LS SDEIS.

#### B. No-Build (No Change)

The No-Build Alternative involves the continued use of the existing WIS 23 without reconstruction or enhancements of the existing roadway (see Figure 2.3-1). This option would not address traffic capacity or traffic operation problems.

Advantages of the No-Build Alternative include the following:

- Right of way acquisition would not be necessary.
- Relocation of residences or businesses caused by construction would not occur.
- Impacts to environmentally sensitive areas would be avoided.
- Infrastructure costs would be lower.

Disadvantages of the No-Build Alternative include the following:

- Current and future traffic congestion on the existing route would not be addressed.
- Increasing traffic volumes would cause traffic operations to deteriorate and create safety problems along the route.
- WIS 23 would not **have** highway system continuity between the 4-lane US 151 and the 4-lane section of WIS 23 to the east.
- WIS 23 would not fulfill **operational objectives** for a Connector route in Wisconsin's *Corridors 2030 State Highway Plan* linking the economic and tourism centers.
- This alternative does not address the dangerous mix of slow-moving farm vehicles and their difficulty crossing highway traffic.
- The 235 existing access points would continue to create crash potential along WIS 23.
- Air and noise impacts to the area would increase with access problems and traffic congestion.
- Future real estate acquisition would be more difficult and more expensive as development continues on WIS 23.
- LOS **remains at LOS D through the design year 2035.**

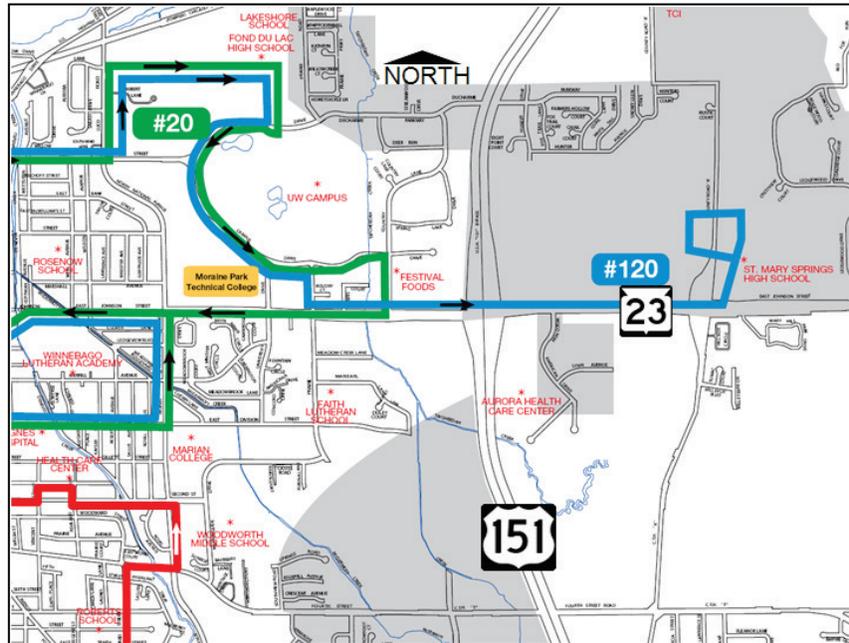
In 2012, WisDOT reexamined alternatives that did not involve full capacity expansion to see if the changed future conditions allowed these alternatives to satisfy the project Purpose and Need. See Section 2.6 for a description regarding the reasons for the reexamination. Part of this analysis included a reexamination of the No-Build alternative. The Purpose and Need screening criteria described in Section 1.5 of this LS SDEIS were used in the updated screening of the lower-build and 4-lane alternatives. Each criterion is directly linked to a component of the project Purpose and Need contained in the 2010 FEIS. Questions were used to indicate how well an alternative satisfied the project Purpose and Need. Table 2.3-1 summarizes how well the No-Build Alternative addresses each component of the project Purpose and Need. More information is available in Appendix B of this LS SDEIS. Because this alternative does not satisfy any criteria, it was dismissed from consideration. The No-Build Alternative is still carried forward in the document as a baseline for comparison.

<b>Table 2.3-1 No-Build Alternative Purpose and Need Screening</b>	
<b>Purpose and Need Criteria Question/Alternative</b>	<b>No-Build</b>
<b>1. System Linkage and Route Importance</b> a. Does the alternative adequately address truck traffic needs resulting from WIS 23's designation as a long truck route? b. Does the alternative provide system continuity?	<p style="text-align: center;"><b>No</b></p> There are limited opportunities for passing and few climbing lanes. <p style="text-align: center;"><b>No</b></p> The US 151 and WIS 23 Connector from Fond du Lac to Sheboygan is a mixture of 2-lane and 4-lane facility types.
<b>2. Transportation Demand/ Regional Economic Development</b> a. Does the alternative reduce travel time? b. Does the alternative provide for more predictable travel?	<p style="text-align: center;"><b>No</b></p> Average speed during 2015 peak hours is 46 mph. <p style="text-align: center;"><b>No</b></p> Traffic is impeded by slow moving agricultural, truck, and recreational vehicles.
<b>3. Legislative and Transportation Planning History</b> a. Is the alternative consistent with and/or reflected in local land use and transportation plans? b. Is the alternative consistent with Wisconsin State Statute 84.013(3)(ra)?	<p style="text-align: center;"><b>No</b></p> Contradicts MPO long-range plans. <p style="text-align: center;"><b>No</b></p> Does not add 5 lane miles to WIS 23 corridor.
<b>4. Existing and Future Traffic Volumes and Resulting Operations</b> a. Does the alternative improve WIS 23 mainline operational efficiency and mobility by meeting LOS requirements of a Corridors 2030 Connector Route? (Goal = LOS C in 2035 or numeric LOS of less than 4.0 in 2035) b. Does the alternative provide a reasonable LOS for vehicles trying to access WIS 23? (WisDOT seeks to provide an LOS D at all intersections. The more highly used intersections of County G, County UU, and County W provide a metric of how well this criterion is satisfied.)	<p style="text-align: center;"><b>No</b></p> WIS 23 mainline operates at LOS D before 2035. <p style="text-align: center;"><b>No</b></p> The left-turn and through movements at major intersections are, or soon will be, experiencing substantial delays.
<b>5. Highway Geometry</b> a. Does the alternative incorporate the appropriate design criteria for the roadway classification?	<p style="text-align: center;"><b>No</b></p> Shoulder widths are substandard in some locations.
<b>6. Access Management</b> a. Does the alternative reduce the number of hazardous movements (left turns or crossing from sideroads) at public access points through the installation of access restrictions or interchanges? b. Does the alternative reduce the number of private access points through right of way acquisition? c. Does the alternative designate and preserve land for future access modifications, such as overpasses and interchanges, through official mapping?	<p style="text-align: center;"><b>No</b></p> All existing intersections remain. <p style="text-align: center;"><b>No</b></p> Private access points remain <p style="text-align: center;"><b>No</b></p>
<b>7. Improve Safety</b> a. Does the alternative adequately address WIS 23 mainline safety? b. Does the alternative address intersection safety? (eg the reduction of angle crashes)	<p style="text-align: center;"><b>No</b></p> No safety countermeasures are introduced. <p style="text-align: center;"><b>No</b></p> No safety countermeasures are introduced.
<b>8. Accommodations for Non-motorized Travel</b> a. Does the alternative provide accommodations for nonmotorized travel?	<p style="text-align: center;"><b>No</b></p> No additional accommodations are provided for nonmotorized users.

C. Non-Highway Alternatives Including Transit (Dismissed)

## 1. Transit and Alternate Modes

Transportation needs can be addressed through the use of light rail, mass transit, and nonmotorized travel modes. The implementation and/or expansion of any one of these modes must be economically reasonable and viable. Presently, there is no rail passenger service or public bus transit in the project area except for Fond du Lac Transit (see Figure 2.3-2). According to transit provider web sites (11/2012), there is currently no direct intercommunity bus service between Fond du Lac and Sheboygan. Air service is limited to small aircraft. In Wisconsin's



**Figure 2.3-2 Fond du Lac Transit Routes**

Connections 2030 Long-Range Multimodal Transportation Plan this WIS 23 corridor, the Kettle Country Corridor, is designated as a priority route for intercity bus. Connections 2030 also calls for the extension of the Old Plank Road Trail west to Fond du Lac and park and ride lots placed at 3 locations along the corridor.

The Transit and Alternate Mode alternative would increase provisions for bicycles by connecting the Old Plank Road Trail facility in Sheboygan County with the bicycle/pedestrian path on the US 151 bypass of the city of Fond du Lac. Presently, bicycle groups use the local roads with lower traffic volumes. This road network does not currently provide a continuous east-west route through this corridor. This alternative also would provide three park and ride lots along the corridor and assumes daily intercity bus service.

This alternative cannot independently satisfy the project Purpose and Need because it does not reduce volumes enough to improve service levels. Reasons this alternative is not able to remove substantial amounts of traffic from WIS 23 include the following:

- It is difficult to create large traffic reductions because the number of intercommunity trips is small. According to the American Community Survey's 2006-2010 year estimates, just 2 percent of Fond du Lac County residents commute to Sheboygan County for work and just 0.9 percent of Sheboygan County residents commute to Fond du Lac for work. Many of these intercounty work trips would use WIS 23. Yet, these low percentages suggest it would be difficult to remove substantial volumes of work-based trips from WIS 23.
- The park and ride lots promote ride sharing and reduce the number of vehicle trips along the corridor, yet their affect on overall volume would be limited. Current designs for the Park and Ride lots provide about 100 spaces. If these Park and Ride lots were fully used, they would remove up to 100 trips, or about 1 percent of WIS 23 traffic. This is not enough of a traffic reduction to provide a measurable difference in traffic operations.
- The extension of the Old Plank Road Trail enhances facilities for nonmotorized modes, but it is not likely to provide substantial traffic reductions on WIS 23. As mentioned, there are only small numbers of intercounty work trips that could be captured. Additionally, the long travel distances of 18 miles or more between urban centers make this corridor less than ideal for capturing commuting work trips.
- Intercity bus service between Fond du Lac and Sheboygan is incorporated in the Connections 2030 Long-Range Multimodal Plan. Since no intercity bus service between Fond du Lac and Sheboygan currently exists, economic viability and ridership may be challenging. If as many as four intercity daily trips could be instituted, it could remove up to 175 trips from WIS 23, or

about 1.75 percent. While providing a measureable mobility benefit, this traffic reduction is not large enough substantially to improve WIS 23 operation levels to levels satisfactory for a Corridors 2030 Connector.

Additionally, the Transit and Alternate Mode alternative does not address other nonoperational components of the project Purpose and Need, such as safety, system linkage, and access management. For these reasons, this alternative was dismissed. Components of this alternative, however, are brought forward in other alternatives, including the Preferred Alternative. The Preferred Alternative, discussed in Section 2.7 of this LS SDEIS, includes the Old Plank Road Trail extension as well as the construction of Park and Ride lots at the County UU and County G interchanges.

2. TSM

Transportation Systems Management (TSM) consists of low-cost improvements to increase the traffic flow on the existing highway. The goal of TSM is to increase the efficiency of the existing transportation system with a minimum of undesirable social and economic impacts and transportation investment. Examples of TSM actions include:

- Improved or innovative roadway designs
- Transit assessments
- Improved signage or signal arrangement
- Targeted traffic enforcement
- Access management
- Incident response plans
- Intelligent transportation systems (ITS)

Because it is broad-based, TSM actions include measures discussed in other alternatives in this LS SDEIS, including the Transit and Alternate Mode Alternative as well as the 2-Lane alternatives.

TSM measures that could be implemented on WIS 23 include:

- Restricting and/or removing private access points to the highway.
- Adding turn lanes and pavement marking for auxiliary lanes at high volume intersections.
- Adding traffic signals at high volume intersections.
- Adding bicycle and pedestrian facilities.
- Adding Park and Ride lots.
- Adding passing lanes.

Many of these TSM actions are evaluated in other alternatives of this LS SDEIS and several components are incorporated in the Preferred Alternative. TSM improvements are not independently able to fully address the project Purpose and Need. Table 2.3-2 summarizes how TSM measures do not fully address the project Purpose and Need factors described in Section 1.5 of this LS SDEIS. A more completed description of the evaluation criteria is described in Appendix B of this LS SDEIS.

<b>Purpose and Need Criteria Question/Alternative</b>	<b>Transportation System Management</b> (includes passing lanes)
<b>1. System Linkage and Route Importance</b> a. Does the alternative adequately address truck traffic needs resulting from WIS 23's designation as a long truck route? b. Does the alternative provide system continuity?	<p style="text-align: center;"><b>Partially</b></p> There are more opportunities for passing and the dispersal of platoons. <p style="text-align: center;"><b>No</b></p> WIS 23 Connector from Fond du Lac to Sheboygan remains a mixture of 2-lane, passing lane, and 4-lane facility types.
<b>2. Transportation Demand/ Regional Economic Development</b> a. Does the alternative reduce travel time? b. Does the alternative provide for more predictable travel?	<p style="text-align: center;"><b>No</b></p> Average speed during 2015 peak hours is 47 mph with a travel time savings over the No-Build Alternative of about 10 seconds. <p style="text-align: center;"><b>No</b></p> Passing lanes could be available for about 10 percent of the route, yet they would require drivers to wait for gaps in the opposing travel stream to travel around slow-moving vehicles.
<b>3. Legislative and Transportation Planning History</b> a. Is the alternative consistent with and/or reflected in local land use and transportation plans?	<p style="text-align: center;"><b>Partially</b></p> Improves the mobility of WIS 23, yet does not provide the 4-lane expansion mentioned in the MPO plans.

<b>Table 2.3-2 TSM Purpose and Need Screening</b>	
<b>Purpose and Need Criteria Question/Alternative</b>	<b>Transportation System Management</b> (includes passing lanes)
b. Is the alternative consistent with Wisconsin State Statute 84.013(3)(ra)?	<b>Partially</b> Does not add one or more lanes of highway for at least 5 miles, but does address roadway significance with passing lanes
<b>4. Existing and Future Traffic Volumes and Resulting Operations</b> a. Does the alternative improve WIS 23 mainline operational efficiency and mobility by meeting LOS requirements of a Corridors 2030 Connector Route? (Goal = LOS C in 2035 or numeric LOS of less than 4.0 in 2035) b. Does the alternative provide a reasonable LOS for vehicles trying to access WIS 23? (WisDOT seeks to provide an LOS D at all intersections. The more highly used intersections of County G, County UU, and County W provide a metric of how well this criterion is satisfied.)	<b>No</b> Westbound and eastbound WIS 23 for both segments of the corridor operate at LOS D in 2035.  <b>Partially</b> High volume intersections possibly signalized could provide reasonable access, but low-volume intersection side-road movements operate at LOS E or worse in 2035.
<b>5. Highway Geometry</b> a. Does the alternative incorporate the appropriate design criteria for the roadway classification?	<b>Possibly</b> Depending on the desired level of investment, roadway could be reconstructed to standards for Design Class A2 (2-lane). If reconstructed, cross section would not be able to provide capacity to maintain LOS C in 2035.
<b>6. Access Management</b> a. Does the alternative reduce the number of hazardous movements (left turns or crossing from sideroads) at public access points through the installation of access restrictions or interchanges? b. Does the alternative reduce the number of private access points through right of way acquisition? c. Does the alternative designate and preserve land for future access modifications, such as overpasses and interchanges, through official mapping?	<b>Partially</b> High-use intersections could be signalized, providing some protection for hazardous movements. However, signals on high-speed facilities often are undesirable for safety reasons. <b>Partially</b> Some private access points removed <b>Possibly</b> Land could be preserved for future higher investment alternatives
<b>7. Improve Safety</b> a. Does the alternative adequately address WIS 23 mainline safety?  b. Does the alternative address intersection safety? (eg the reduction of angle crashes)	<b>Partially</b> Countermeasures introduced addressed run-off, rear-end, and same-direction sideswipe crashes. <b>Partially</b> A median refuge could be provided for vehicles making a left or crossing maneuver from a side road. Signals could reduce the potential for angle crashes at high volume intersections.
<b>8. Accommodations for Non-motorized Travel</b> a. Does the alternative provide accommodations for nonmotorized travel?	<b>Yes</b> Separate trail for nonmotorized users could be provided through Old Plank Road trail extension.

Generally, TSM measures are not able to provide enough traffic volume reduction or operational benefits to allow the existing WIS 23 facility to operate satisfactorily. Also, the lower investment roadway improvements do not provide enough benefits to the WIS 23 roadway. Because the TSM does not fully meet the project Purpose and Need, it was dismissed. Components of this strategy are evaluated in other alternatives and incorporated in the Preferred Alternative. TSM components included in the Preferred Alternative include Park and Ride lots as well as the extension of the Old Plank Road Trail.

D. Reconstruct Existing 2-Lane Highway (Dismissed)

This alternative would reconstruct the existing roadway in rural areas and construct auxiliary turn lanes at intersections. Much of this portion of WIS 23 was reconstructed with geometry improvements in 1989 with some strip right of way acquisitions. Although these geometric improvements have enhanced safety, the increasing traffic volumes, mix of truck and farm machinery traffic, and remaining poor intersection layout diminish traffic safety. In the urban areas, alternatives include widening for left- and right-turn lanes, geometric improvements at intersections, and possible additions of traffic signals.

While this alternative addresses the pavement infrastructure needs of the WIS 23 facility, it has the same drawbacks in meeting the project Purpose and Need as the No-Build Alternative. The Purpose and Need screening presented in Table 2.3-1 for the No-Build Alternative would be applicable for this alternative. Because this alternative does not satisfy any of the Purpose and Need screening criteria, it was dismissed from consideration

E. 2-Lane Roadway with Passing Lanes

In 2006, WisDOT examined the passing lane alternative as an interim solution before full reconstruction to a 4-lane facility. WisDOT prepared a report that compared two passing lane options with the 4-lane expansion alternative. Option 1 maintained a 2-lane roadway, with passing lanes, the full length of the corridor from 2015 to 2025, then in 2025, the full corridor would be converted to a 4-lane expressway. Option 2, a 4-lane expressway on the western portion of the corridor from County UU to County G and a 2-lane roadway with passing lanes for the remainder of the corridor, would be constructed in 2015. Then in 2025, the entire corridor would be converted to a 4-lane expressway. Option 3, which is Alternative 1 in this document, would construct a 4-lane expressway on existing alignment for the entire corridor in 2015. Figure 2.3-3 shows Options 1 and 2 in the initial 2015 construction year. As mentioned, Option 3 is described as Alternative 1 in the report. The text of the 2-Lane Roadway with Passing Lanes evaluation can be found in Appendix J of the 2010 FEIS.

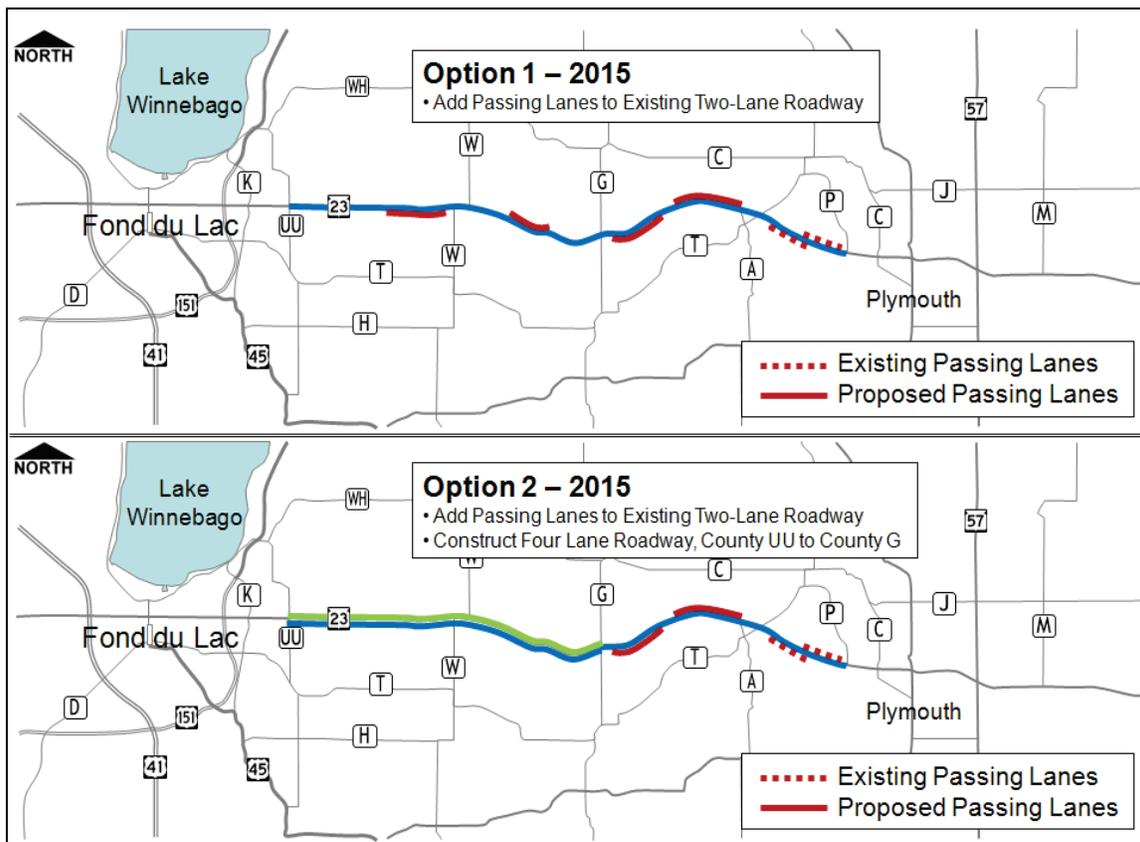


Figure 2.3-3 2-Lane with Passing Lane Roadway Options

The conclusions of the 2-Lane Roadway with Passing Lane studies, which were included in the 2009 SDEIS and 2010 FEIS, were that the passing lane alternative did not fulfill the Purpose and Need of the project and was not carried forward for detailed study as a long-term solution.

In 2012, WisDOT reexamined the 2-Lane Roadway with Passing Lanes alternative as well as a hybrid Expansion/Passing Lane alternative to see whether alternatives that did not include capacity expansion could satisfy the project Purpose and Need. A summary of the analysis is discussed in Section 2.6. A more complete review of the analysis is included in Appendix B of this LS SDEIS. The reexamination found that the various implementations of 2-lane alternatives could not fully satisfy the project Purpose and Need. Therefore this alternative was not carried forward.

#### F. Northern 4-lane Roadway Alternatives (Dismissed)

Consideration was also given to northern alternative routes such as following County P into the village of Glenbeulah to avoid the Kettle Moraine State Forest. The routes would then follow Glen Road westerly connecting into existing WIS 23 near Taft or Tower Roads. This alternative was not studied further because local officials felt it was too far away from the existing roadway and the impacts to the Northern Unit of the Kettle Moraine State Forest were greater. Other variations of this alternative would be to leave the existing alignment near Greenbush and follow a route adjacent to Sunrise Road westerly to Golf Course Road and into the existing highway near County UU. This alternative would accomplish the same goals of a southern alternative (see Alternative 3 discussion in Section 2.4B.3) with greater impact to wetlands, more residential relocations, and higher costs. The northern route alternatives were not carried forward for study as the initial review of environmental resources showed the impacts to be much greater than other viable options. See Figure 2.3-4.

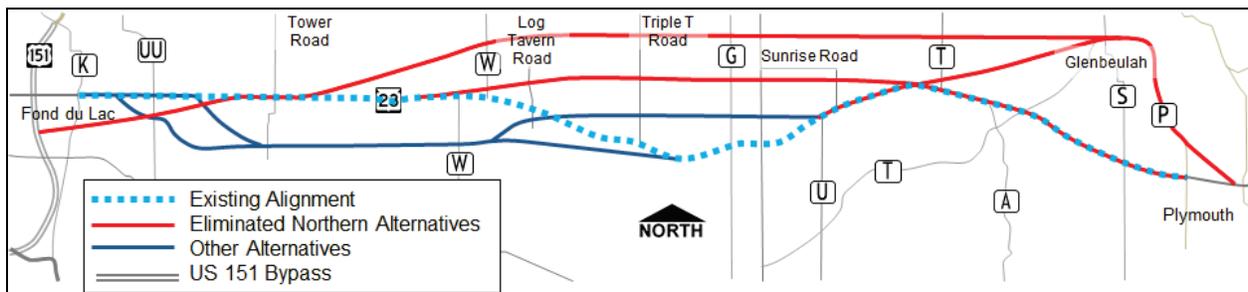


Figure 2.3-4 Initial 4-lane Roadway Alternatives

## 2.4 ALTERNATIVES PRESENTED IN 2004 DEIS

### A. No-Build Alternative

As mentioned in the Alternative Screening Section, the No-Build Alternative does not meet the project Purpose and Need, but it was brought forward in the DEIS to comply with CEQ regulations and to serve as a baseline for comparison.

### B. WIS 23 Corridor Build Alternatives

The total length of the existing WIS 23 corridor is about 19 miles. The 2004 DEIS considered six alternatives. These alternatives start about 0.5 miles west of County K in the city of Fond du Lac and extend easterly along the existing alignment approximately 0.7 miles to the top of the Niagara Escarpment. From that point, the alternatives run either along the existing roadway or on a relocation alignment to County U in Sheboygan County. Each alternative follows the existing highway alignment beginning just east of County U in Sheboygan County easterly for about 6.2 miles until ending at County P near the city of Plymouth. The alternative alignments are comprised of different component segments, as shown in Figure 2.4-1. These component segments have been since grouped into alternatives.<sup>2</sup>

<sup>2</sup> Prior meetings, documents, and discussions mention Alternatives A, B, C, D, and E. From here forward, maps and discussions will refer to A through E as segments within an alternative. The alternatives will be referred to as Alternative 1 (Segment A), Alternative 2 (Segment A-B-A), Alternative 3 (Segment A-C-B-A), Alternative 4 (A-D-C-B-A), Alternative 5 (A-C-E-B-A), and Alternative 6 (A-D-C-E-B-A). In general, Alternatives 3, 4, 5, and 6 have nearly the same impacts throughout the study corridor, as Segment C remains in each, and are only slightly different at the connections to Segment A and B. Discussion within this document will be such that any of the Alternatives 3 through 6 could be substituted for another while only Alternative 3 is being referred to. Figure 2.4-1 summarizes the segment locations.

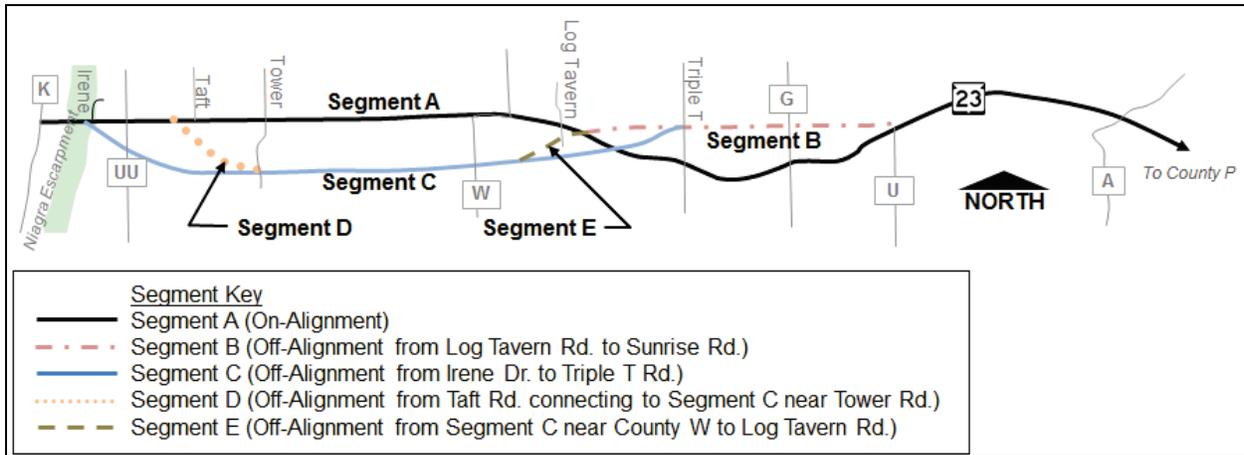


Figure 2.4-1 DEIS Alternative Development Component Segments

Alternatives 4 through 6 were represented as the third major alternative (Alternative 3) in the DEIS. Alternatives 4, 5, and 6 mostly differ on the connection options on the west and center portions of the corridor. In general, Alternatives 3, 4, 5, and 6 have nearly the same impacts throughout the study corridor and therefore were combined in the analysis.

1. Alternative 1–Highway Expansion Along Existing Roadway (Preferred Alternative)

Alternative 1 is approximately 19.1 miles long (see Figure 2.4-2). This alternative uses as much of the existing roadway as possible by using it for one set of lanes. Alternative 1 would be built as an expressway with private driveway and public road access limited at certain locations when possible. Turn lanes would be incorporated at any crossroad intersections of WIS 23. An urban expressway section would be constructed near the Fond du Lac section from the US 151 bypass of Fond du Lac to County UU. **Reduced speeds would be posted through this section because of the urban cross section.**

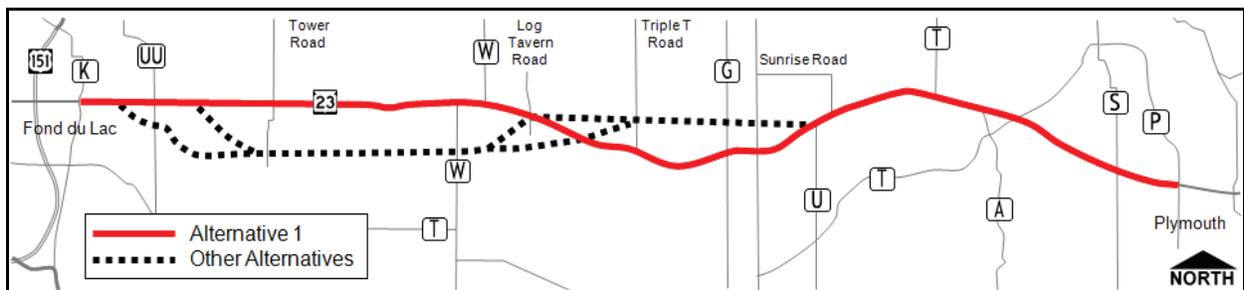


Figure 2.4-2 Alternative 1

2. Alternative 2–Highway Expansion Along the Existing Roadway with a 4-Mile Relocation Between Log Tavern Road and Sunrise Road

Alternative 2 is approximately 18.8 miles long. This alternative has the same termini as Alternative 1 and uses the existing highway except for approximately 4.6 miles of new roadway **on relocation** between Log Tavern Road and Sunrise Road. **This relocated segment is about 0.5 to 0.7 miles north of WIS 23** (see Figure 2.4-3 for the location of this alternative). A high concentration of private and farm access points is avoided by this relocation segment. In addition, WIS 23 in this section has several side roads that intersect WIS 23 on curves or have steep approaches to the highway. The relocated section **would** have no private access and avoids this problematic portion of the existing roadway. WisDOT would **build overpasses** or close some of the existing crossroads. Consideration would be given to providing right of way for a future interchange at County G. The relocated segment crosses a high quality cedar swamp. Preliminary reviews by the Wisconsin Department of Natural Resources (WDNR) found unique cedar swamp conditions in the Forest township that would **require** a bridge crossing. Alignment modifications were also made to reduce impacts to this area (see Figure 2.4-4). Correspondence from the WDNR related to the cedar swamp was provided in Appendix D of the 2009 SDEIS.

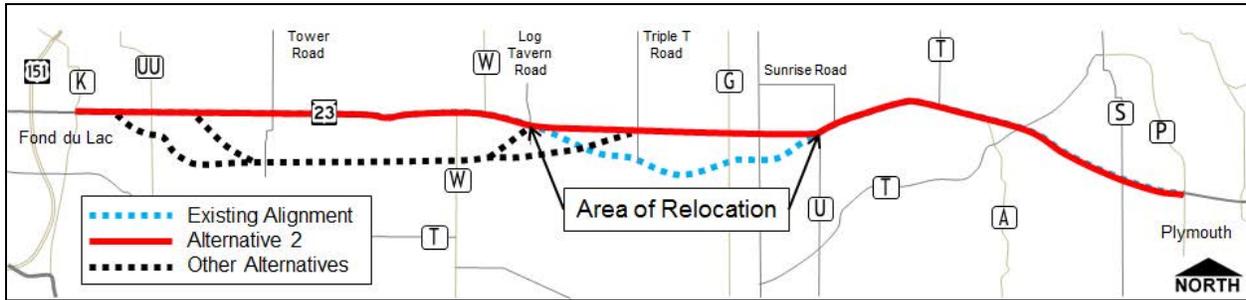


Figure 2.4-3 Alternative 2

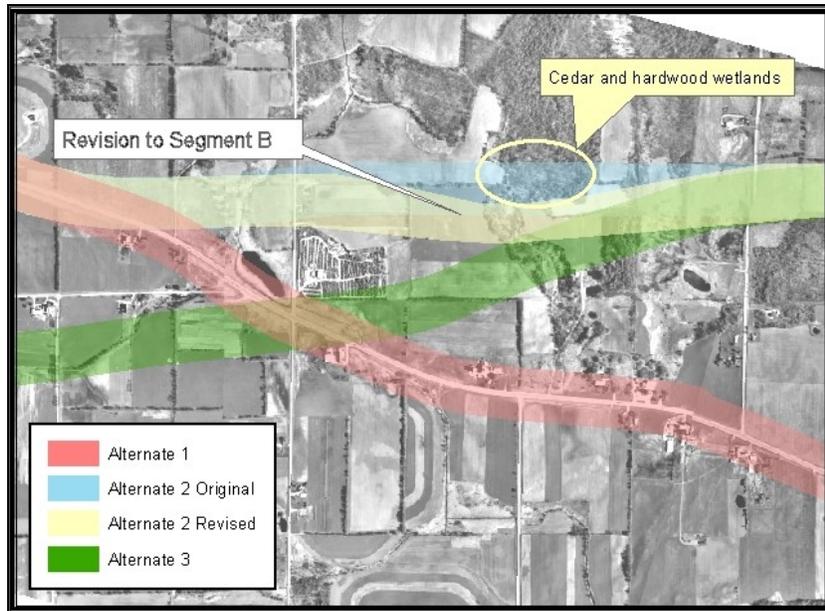


Figure 2.4-4 Alternative 2 Modifications

3. Alternative 3 (Includes Related Alternatives 4, 5, and 6)–Highway Expansion, Convertible to a Freeway; On Relocation from County UU to Sunrise Road; Segments C and D–West End Connections; Segments C and E–East End Connections.

This alternative will be either 19 or 19.1 miles long, depending upon the west end connections (see Figures 2.4-5, 2.4-6, 2.4-7, and 2.4-8). As mentioned, Alternatives 3 through 6 have been combined and are represented by Alternative 3 in this document. They are similar in that they all create an off-alignment corridor 1/2 mile south of the existing alignment on the west portion of the corridor. Alternatives 3 through 6 also have impacts that are within 5 to 10 percent of each other with the main difference being how the connection to the existing alignment is treated. By representing these 4 alignments in one alternative the complexity of the document is reduced. Alternative 3 uses the least amount of existing highway, compared to Alternatives 1 and 2, and would likely be built as a freeway section where the new road would be on relocation. This alternative also uses the Segment B section of new roadway 0.5 to 0.7 miles north of WIS 23, avoiding the high crash section of WIS 23 described in Alternative 2. As with the other alternatives, this option stays on-alignment from Sunrise Road through the uplands up the Kettle Moraine State Forest to the project termini near Plymouth. In this section, improving the roadway to freeway status would greatly impact residents and the public lands in the area. This alternative provides two scenarios for connecting WIS 23 into the urbanized area east of the city of Fond du Lac. Segment C allows the relocation of WIS 23 to begin between County K and County UU, with an interchange at County UU located about one-half mile south of the existing intersection (see Figures 2.4-5 and 2.4-6). Segment E would allow for an interchange at the existing County UU/WIS 23 location and the highway relocation to begin about three-quarters of a mile east of the interchange (Alt 5). Segment C allows for this relocated section to continue easterly north of Chickadee Road, crossing WIS 23 near Pit Road. Segment D similarly continues easterly north of Chickadee Road with a crossing of WIS 23 near Log Tavern Road. Figures 2.4-5 to 2.4-8 show all four Alternatives and highlight how they differ from Alternative 3.

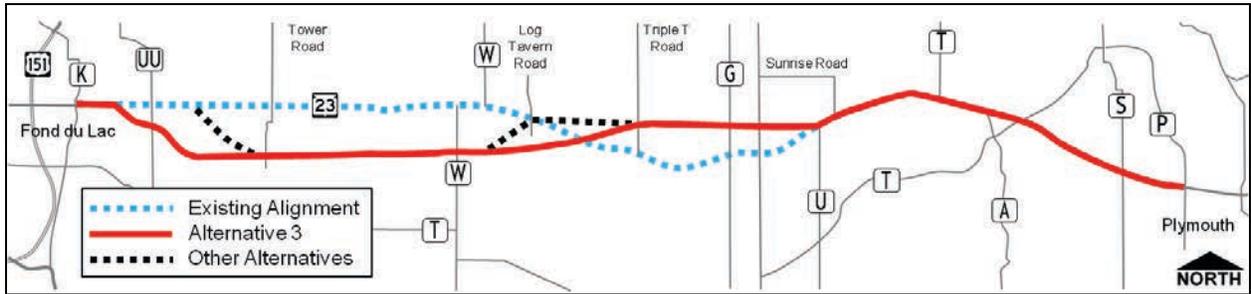


Figure 2.4-5 Alternative 3

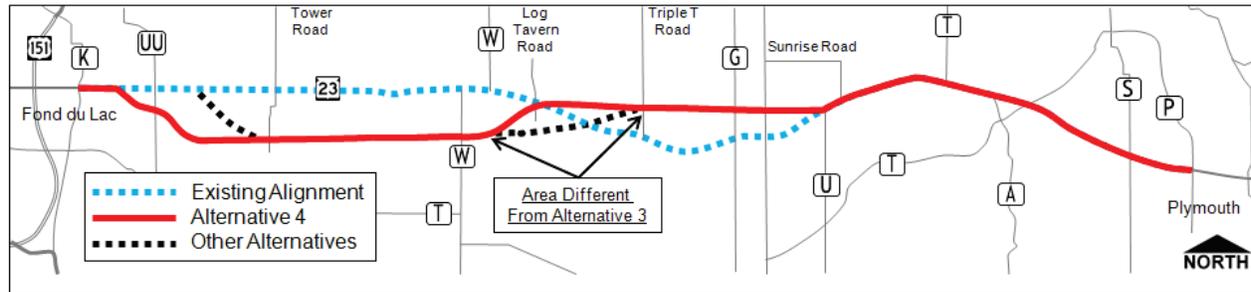


Figure 2.4-6 Alternative 4

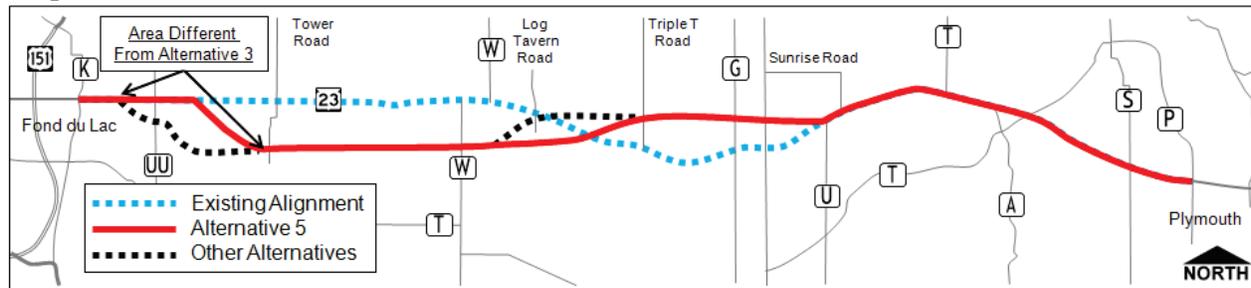


Figure 2.4-7 Alternative 5

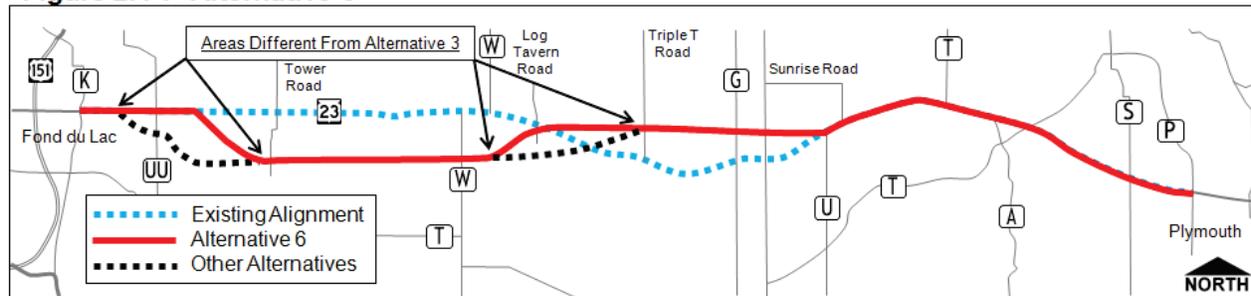


Figure 2.4-8 Alternative 6

**2.5 ALTERNATIVES PRESENTED IN 2009 SDEIS AND 2010 FEIS**

Figure 2.5-1 illustrates the alternatives presented in the 2009 SDEIS and 2010 FEIS and the following paragraphs briefly describe the alternatives.

A. No-Build Alternative

As mentioned in the Alternative Screening and DEIS Alternatives Sections, the No-Build Alternative was included in the 2009 SDEIS and 2010 FEIS, although it does not meet the project Purpose and Need. It was brought forward to comply with CEQ regulations and to serve as a baseline for comparison.

### B. Dismissed DEIS Build Alternatives

Alternatives 2 through 6, each having an off-alignment component, were described in Section 2.4. They were dismissed from further evaluation. Reasons for their dismissal included the increased impacts that occur with an off-alignment corridor. These impacts include:

- Increased right of way requirements.
- Increased farm severances.
- Greater number of roadway corridors.

The greater impacts associated the off-alignment corridors did not outweigh the advantages of greater access control. The evaluation of Alternatives 2 through 6 was presented in the 2004 DEIS and 2009 SDEIS and is included in Section 2.4 for comparison purposes.

### C. Preferred Build Alternative

The Preferred Build Alternative consists of the 4-lane expansion, local roads, and interchanges, as well as the Old Plank Road Trail. Section 2.7 describes the Preferred Build Alternative in greater detail. Between the publishing of the 2009 SDEIS and the 2010 FEIS, the County G interchange was moved from the Preferred Corridor Preservation Alternative to the Preferred Build Alternative to address stakeholder comments.

### D. Corridor Preservation Alternatives

Corridor preservation seeks to preserve right of way for transportation improvements that are likely to be needed in the future. The preservation most often takes the form of official mapping, either by the local jurisdiction or by WisDOT. In mapping the areas likely to be needed for future transportation improvements, development within those areas can be minimized or avoided. This reduces costs for WisDOT, who would have to purchase those land improvements when the future transportation improvement is implemented. It also reduces impacts to property owners, who would have to replace or relocate investments on their property with the implementation of the transportation improvement. In Wisconsin Statute 84.295 (10), WisDOT is given the authority to establish locations and right of way widths for future freeways or expressways. With this statute, after future right of way locations have been established, any property owner wishing to erect or alter a structure within that right of way must give WisDOT 60 days' notice before beginning that construction. WisDOT will then have the option to purchase that right of way before the improvements being made. The statute also states that if notice is not given to WisDOT, compensation will not be made by WisDOT for structure improvements occurring within the corridor preservation area.

For WIS 23, there are two corridor preservation project elements. The first is the WIS 23 corridor and the future interchanges and grade separations that could be needed to improve corridor mobility and safety. The second corridor preservation project element is the US 151/WIS 23 connection. This connection joins two Connector Routes within the *Corridors 2030 State Highway Plan*. Normally these types of connections warrant high-mobility, free-flowing ramps that are typical of a system interchange.

#### 1. WIS 23 Corridor

##### a. No Corridor Preservation

The WIS 23 No Corridor Preservation Alternative does not preserve any right of way for anticipated future transportation improvements along the corridor. Land adjacent to the corridor will be unencumbered by official mapping. Landowners will be able to erect or improve structures within the footprint that may be needed for future right of way, provided they adhere to applicable local zoning codes. If future transportation improvements need this land with structures, WisDOT will have to purchase the land and structures and relocate any businesses or residences.

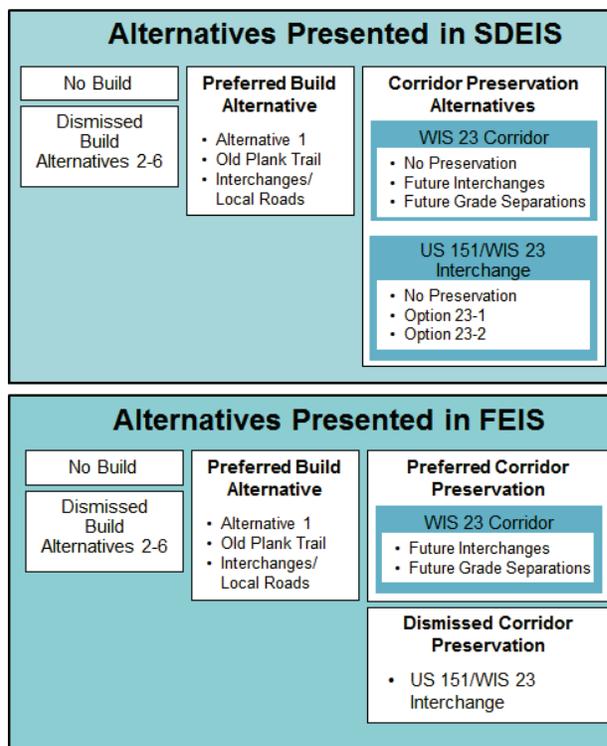


Figure 2.5-1 Alternatives Presented in 2009 SDEIS and 2010 FEIS

b. Corridor Preservation (Preferred)

The Preferred WIS 23 Corridor Preservation Alternative implements corridor preservation at key intersections and local road connections. These WIS 23 corridor preservation measures will preserve right of way needed to remove access from WIS 23 or improve the access type. The actual construction of these access modifications will occur when operational and safety needs dictate. From Wisconsin American Parkway east to County P, the land needed to construct two diamond interchanges will be preserved. The locations of these interchanges include the Loehr Road/County W north intersection and the County A intersection. Additionally, the Preferred WIS 23 Corridor Preservation Alternative preserves the right of way needed for grade separations at Tower Road, 7 Hills Road, Scenic View Drive, and Sugarbush Road.

2. US 151/WIS 23 Connection

The US 151 Fond du Lac Bypass corridor preservation study began studying different system interchange types for the connection between US 151 and WIS 23. As mentioned in Section 1 of this document, this is a junction between two Connector Routes in the *Corridors 2030 State Highway Plan*. Ultimately the connection between these important highways warrants a free-flowing interchange, which gives priority to these movements. The *US 151 Fond du Lac Bypass Preservation Study* looked at 11 interchange options, presented them publically several times, and interacted with resource agencies. From that screening, two interchanges were brought forward for further consideration. Information on the other system alternatives considered may be obtained from the screening report on file with WisDOT. Because this US 151 interchange is a WIS 23 connection, the interchange better falls within the logical termini of this project. The following paragraphs describe the corridor preservation options being considered for this connection.

a. No Corridor Preservation (Preferred)

The US 151/WIS 23 Connection No Corridor Preservation Alternative does not preserve any right of way for anticipated future system interchange improvements. Land adjacent to the existing diamond interchange will be unencumbered by official mapping. Landowners will be able to erect or improve structures within the footprint that may be needed for future right of way, provided they adhere to applicable local zoning codes. If future transportation improvements need land with structures, WisDOT will have to purchase the land and structures and relocate any businesses or residences.

For the US 151/WIS 23 interchange, No Corridor Preservation is the Preferred Alternative. Reasons for this selection include the following:

- Operations modeling indicates the current diamond interchange with conventional improvements can operate at satisfactory LOS until the year 2045. Additional improvements under the interchange bridges may be able to extend its life for 5 to 10 more years. The full need for the improvement is likely not to be realized for 35 to 45 years.
- The effects of mapping on properties within the footprint are substantial. Option 23-1 severs an existing business park that is currently marketing parcels within the footprint. Mapping this option would eliminate the marketability of these parcels and, unless they were purchased by WisDOT, would place an undue hardship on the owner. Option 23-2 has less dramatic effects on property owners yet still removed the utility of their land for 35 to 45 years.
- There are limited monies available for right of way purchases associated with corridor preservation measures of this magnitude. Because anticipated improvements are far into the future and there are many current statewide needs, it is unlikely that additional monies could be allocated toward right of way purchases associated with this corridor preservation.
- The span of 35 to 45 years is a distant planning horizon with greater uncertainties than the typical 20-year planning horizon. Economic, energy, and transportation conditions could be substantially different than what exists today, reducing or changing the need for improvements.

## b. Corridor Preservation for Option 23-1 (System Ramps in the Southeast Quadrant.)

This Corridor Preservation Alternative would preserve right of way needed for the system interchange Option 23-1. It is not anticipated that construction of Option 23-1 would occur before 2030. Option 23-1 would be a two-level free-flow connection between US 151 and WIS 23 located in the southeast quadrant of the existing US 151/WIS 23 diamond interchange. If this option were constructed, the northbound-to-eastbound and westbound-to-southbound traffic would have free-flowing ramps. Figure 2.5-2 illustrates this interchange. If constructed, the existing US 151/WIS 23 diamond interchange would remain to serve local traffic. Additionally, the Wisconsin American Parkway/Johnson Street (Old WIS 23) intersection could remain as an at-grade intersection or roundabout. East of the Wisconsin American Parkway intersection, Johnson Street would transition to on- and off-ramps for the WIS 23 freeway. The ramps to the County K Jug-handle would be removed and redirected to the Wisconsin American Parkway intersection. If Option 23-1 were constructed, County T could be, yet does not need to be, grade-separated over the US 151 Bypass. Option 23-1 also does not preclude a half-diamond interchange at County T should its need be justified. Figure 2.5-3 illustrates a larger image of Option 23-1.

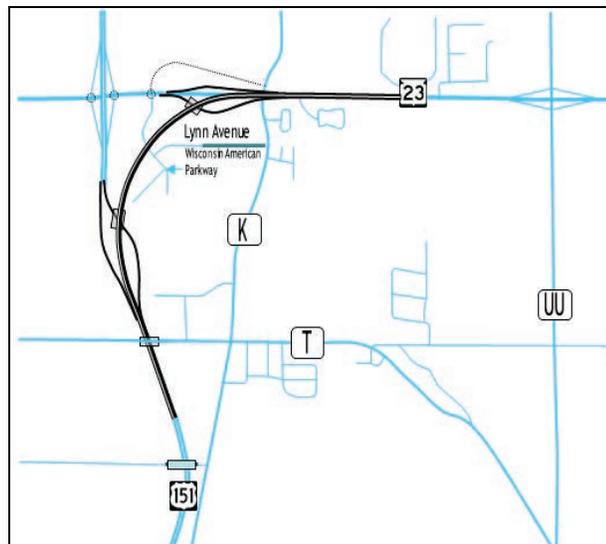


Figure 2.5-2 Option 23-1 System Interchange

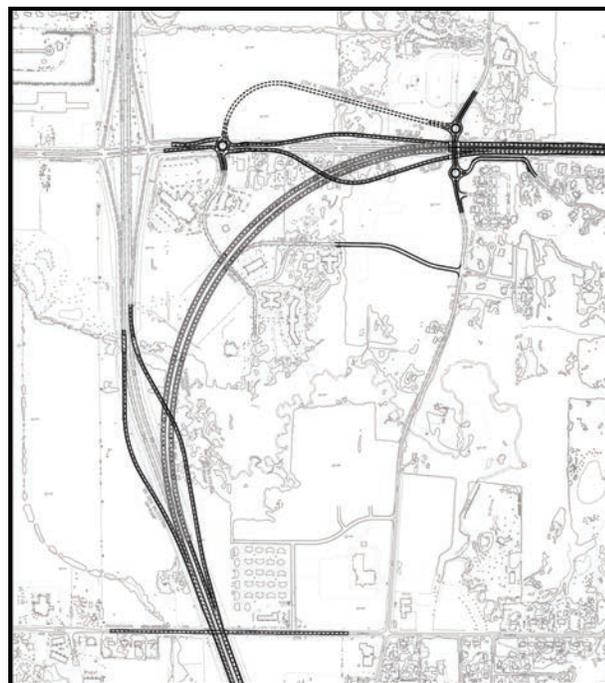


Figure 2.5-3 Option 23-1 System Interchange

c. Corridor Preservation for Option 23-2 (System Ramps over Existing US 151/WIS 23 Interchange.)

This Corridor Preservation Alternative would preserve right of way needed for the system interchange Option 23-2. It is not anticipated that construction of Option 23-2 would occur before 2030. If constructed, Option 23-2 would be a three-level free-flow connection between US 151 and WIS 23 located directly above the existing US 151/WIS 23 diamond interchange. Figure 2.5-4 schematically illustrates this interchange. As with Option 23-1, if constructed, the existing US 151/WIS 23 interchange would remain to serve local traffic. Similarly, the Wisconsin American Parkway intersection would remain as an intersection or roundabout. As with Option 23-1, this option also would reroute the ramps at the County K Jug-handle to the Wisconsin American Parkway intersection. At-grade intersections and driveways would be eliminated along WIS 23. All other access treatments associated with Option 23-1, including the County T overpass, are applicable to Option 23-2. Figure 2.5-5 illustrates Option 23-2 in more detail.

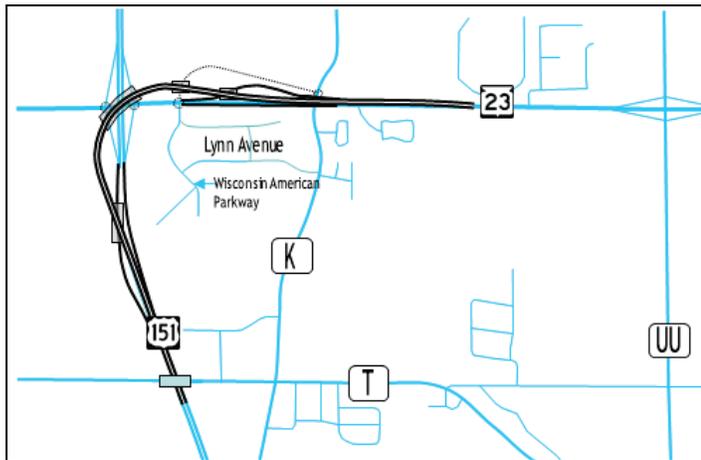


Figure 2.5-4 Option 23-2 System Interchange

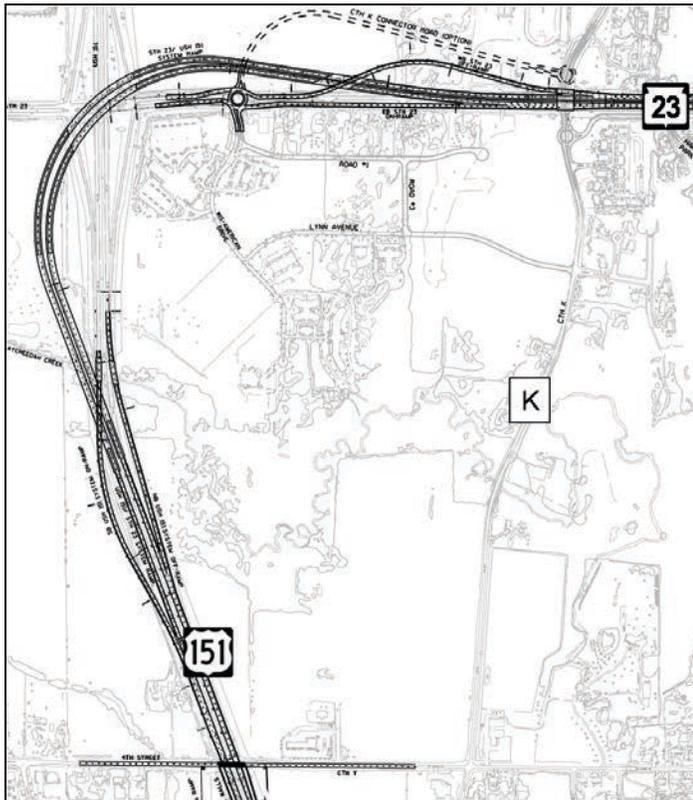


Figure 2.5-5 Option 23-2 System Interchange

## 2.6 REEXAMINATION OF INITIALLY SCREENED ALTERNATIVES

Since the completion of the 2010 FEIS and ROD, a Transportation Demand Model (TDM)<sup>3</sup> was developed for the Northeast Region that expands the ability of WisDOT to model network changes in traffic forecasts. Also, in recent years traffic volumes on many state highways have not grown at the same rate as in previous nonrecession years. These two factors combined to produce 2035 traffic forecasts that are lower than those presented in the 2010 FEIS. In 2012, WisDOT reexamined alternatives that did not involve full capacity expansion to see if the changed future conditions allowed these alternatives to satisfy the project Purpose and Need. This section provides an enhanced summary of the analysis for 2-lane alternatives that were eliminated from detailed study in the initial EIS process because they did not satisfy the project Purpose and Need. Additionally, the updated traffic forecasts are included in the discussion and evaluation.

### A. Description of Alternatives

#### 1. No-Build

The No-Build Alternative used in the updated screening is the same one described in Section 2.3.B. It involves the continued use of the existing WIS 23 without reconstruction or enhancements of the existing roadway with possible minor restoration types of activities that maintain the same typical section and alignment of the highway.

#### 2. Passing Lane Without Left-Turn Lanes

As mentioned, passing lane alternatives were evaluated by WisDOT in a report prepared in May 2006, contained in Appendix J of the 2010 FEIS. While WIS 23 is not designated as a passing lane corridor in the state highway plan, current traffic forecasts indicate design-hour volumes fall within the thresholds where passing lanes could be considered. WisDOT has criteria for locating passing lanes to provide optimal operational benefits as found in WisDOT's Facilities Development Manual (FDM) 11-15-10.

The Passing Lane Without Left-Turn Lanes alternative adds 4 passing lanes, 2 for eastbound travel and 2 for westbound travel in addition to the existing 2 climbing lanes west of County P in Sheboygan County. With this alternative, passing lane lengths and locations were developed to provide maximum passing opportunities (see Figure 2.6-1).

The Passing Lane Without Left-Turn Lanes alternative would upgrade side-road intersections with the appropriate intersection type in WisDOT's FDM. However, under this alternative, left-turn lanes on WIS 23 would not be provided as part of the intersection upgrades because this would decrease the amount of roadway available for passing.<sup>4</sup> A new jug-handle intersection would be provided at County K to address crashes and higher traffic volumes at this intersection. The jug-handle has a grade separation with bridges to carry WIS 23 over County K with the access to County K being right-in/right-out, which eliminates dangerous crossing and left-turning maneuvers. Figure 2.6-1 schematically illustrates passing lane placement and the location of the County K Jug-handle while Figure 2.6-2 illustrates the typical section through a passing lane segment.



**Figure 2.6-1 Passing Lane Without Left-Turn Lanes Alternative**

<sup>3</sup> Transportation Demand Models are computerized network models that link trips generated by land uses to traffic volumes experienced on roadway links. They are a useful tool in developing traffic forecasts.

<sup>4</sup> Providing left turn lanes requires the installation of a median for a portion of the highway, reducing the ability to pass in these locations.

3. Passing Lane With Left-Turn Lanes

The Passing Lane With Left-Turn Lanes alternative has the same characteristics as the previously described alternative with the passing lanes in the same locations. This alternative adds a left-turn lane for WIS 23 traffic at the higher volume intersections of Tower Road, 7 Hills Road, County W south, County W north, County G, County U, County T, County A, and County S. According to FDM guidelines, most WIS 23 side road intersections do not have traffic volumes that warrant the installation of left-turn lanes.<sup>5</sup> This alternative includes left-turn lanes because they provide a safety feature. The left-turn lane provides a refuge for left-turning vehicles removing them from exposure to the through travel stream. Adding the left-turn refuge requires the development of a median for 0.2 miles of mainline for each side of the side-road intersection, which decreases the amount of roadway that is available for passing. Figure 2.6-3 illustrates a typical configuration of a WIS 23 T-intersection with a left-turn lane and associated median; the median associated with the left-turn lane also provides a median refuge for side-road vehicles (passenger cars) crossing or making a left onto WIS 23.

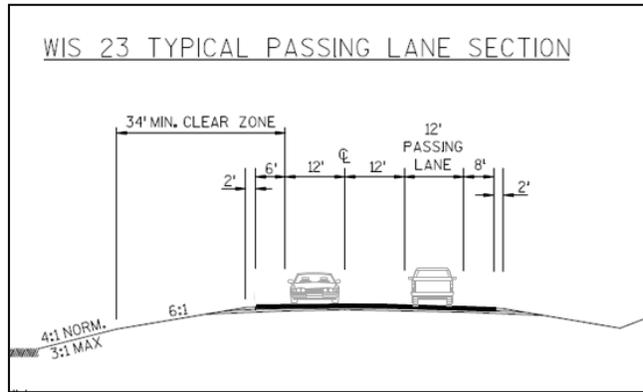


Figure 2.6-2 Passing Lane Typical Section

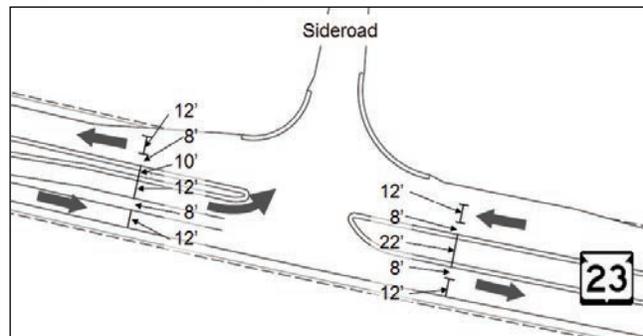


Figure 2.6-3 Typical Left-Turn Layout

4. Hybrid 4-Lane to County G, Passing Lane County G to County P

The Hybrid alternative was developed to see if partial capacity expansion could satisfy the project Purpose and Need with the revised and lower traffic volume forecasts since traffic volumes/forecasts vary along the corridor. It provides a 4-lane divided highway for about 12 miles from US 151 in Fond du Lac to County G. A jug-handle intersection would be provided at County K. Diamond interchanges would be provided at County UU and County G. East of County G, WIS 23 would be a 2-lane roadway with passing lanes for the remaining 7 miles. Figure 2.6-4 schematically illustrates this alternative.

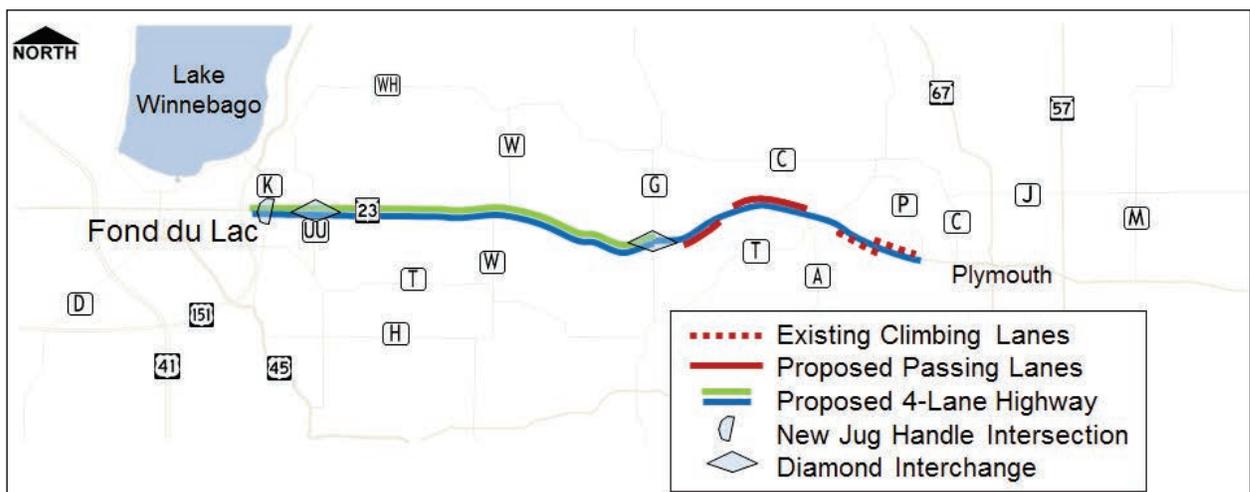
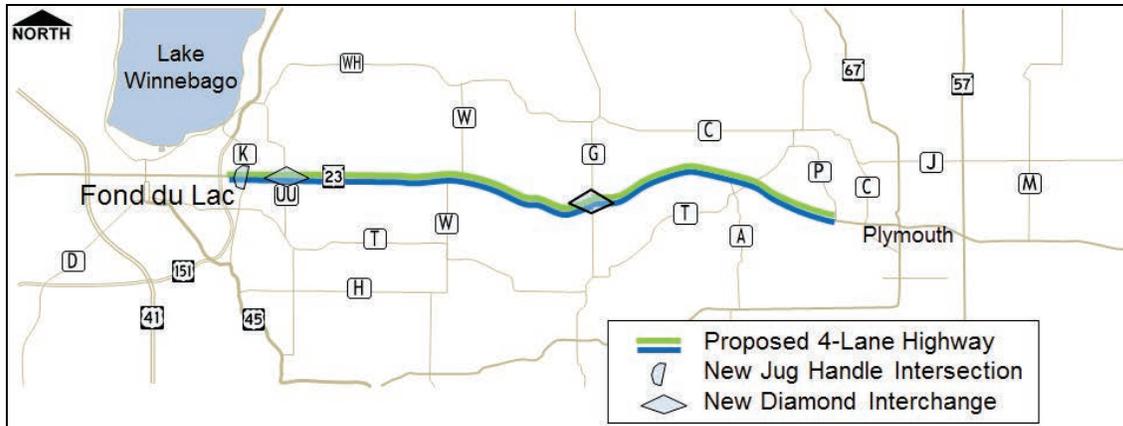


Figure 2.6-4 Hybrid 4-Lane to County G, 2-Lane County G to County P Alternative

<sup>5</sup> FDM 11-25-5 provides warrants for the installation of left-turn lanes on rural highways.

### 5. 4-Lane Build On-Alignment

The 4-Lane Build On-Alignment Alternative evaluated is the Preferred Alternative described in the 2010 FEIS and ROD and in Section 2.7 of this LS SDEIS. This alternative would provide a 4-lane divided highway on the existing alignment for the full length of the project. It includes interchanges at County UU and County G as well as a jug-handle at County K (see Figure 2.6-5). J-Turns are proposed at 6 high-volume intersections; 7 Hills Road, County W, County U, Sugarbush Road, County A, and County S. The J-Turn intersection design only allows right-in/right-out/left-in movements and removes the most hazardous left-out and through movements from the intersection. A J-Turn is best installed on 4-lane divided highways because the radius needed for a large truck to make a U-turn is too great to install on a 2-lane roadway that does not have a median. The J-turn design is shown in Figure 2.6-6. The typical roadway section for this alternative is shown in Figure 2.7-1.



**Figure 2.6-5 4-Lane Build On-Alignment**



**Figure 2.6-6 J-turn Design**

### 6. Other Features

All the alternatives, except for the No-Build alternative,<sup>6</sup> would officially map lands needed for future transportation improvements along WIS 23 such as overpasses and interchanges as discussed in Section 2.7 of this LS SDEIS.

The 2010 FEIS investigated corridor preservation for a system interchange at the US 151/WIS 23 connection. The No Corridor Preservation Option was selected because the advantages associated with the corridor preservation did not outweigh the disadvantages (see discussion Section 2.5.D).

The build alternatives that were in the updated screening have the opportunity to provide bicycle accommodations either through a wide paved shoulder or through the extension of the Old Plank Road Trail, a multiuse path. The analysis assumed the alternatives would include the extension of the Old Plank Road Trail, from where it currently ends near Greenbush to the Prairie Trail in Fond du Lac. Figure 2.6-7 schematically illustrates the location of the proposed Old Plank Road Trail Extension.

<sup>6</sup> If the No-Build alternative were selected as the Preferred Alternative, WisDOT could evaluate whether to pursue corridor preservation measures for future improvements.

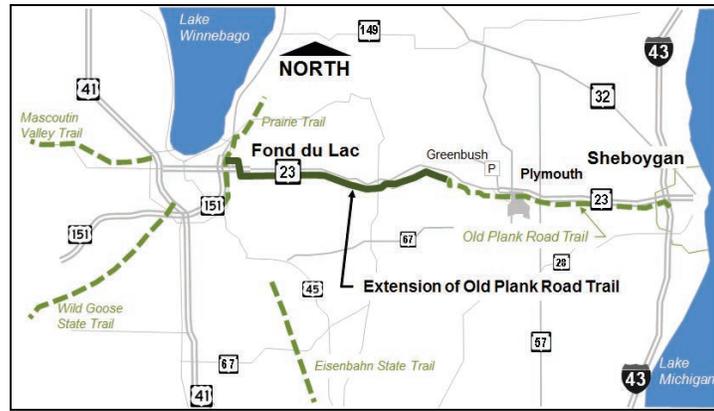


Figure 2.6-7 Old Plank Road Trail Extension

B. Evaluation

1. Traffic Volumes

The recently completed Northeast TDM provides greater opportunity to forecast traffic volume variations between alternatives that have different capacities. This enhanced capability along with statewide changes in traffic growth trends were used to produce updated 2035 traffic volume forecasts. See Appendix A for more information. Figure 2.6-8 schematically illustrates the traffic volume variations between the five alternatives that were reevaluated.

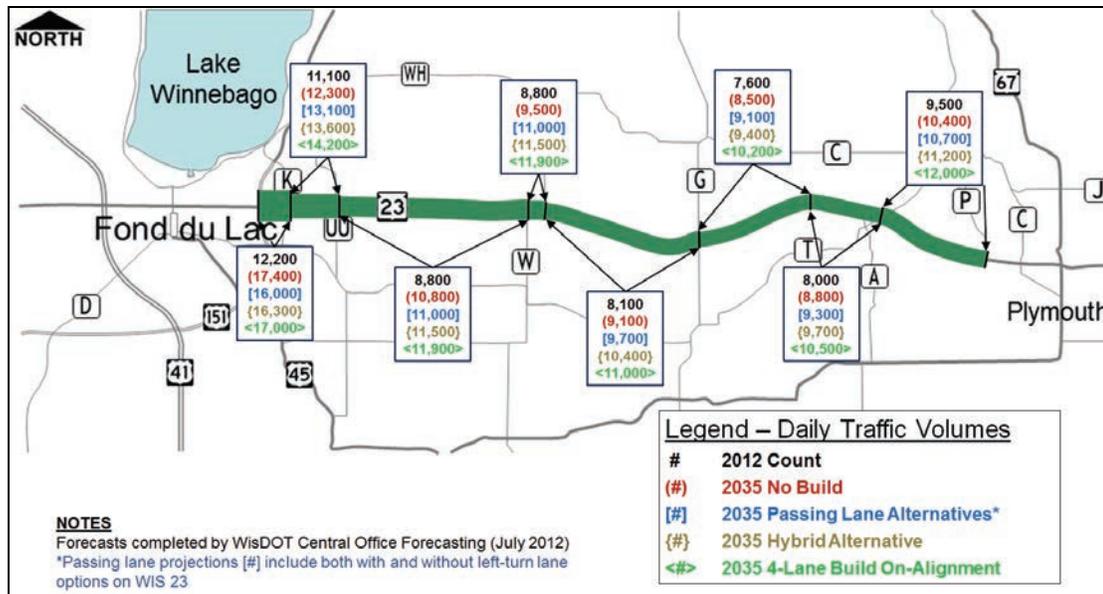


Figure 2.6-8 Updated 2035 Forecast Volumes

Alternatives that do not involve full 4-lane expansion have lower 2035 traffic volume forecasts than the 4-lane Build On-alignment Alternative. The lower travel speeds on WIS 23 associated with these alternatives cause travelers to select other corridors. Each subsequent increase in capacity leads to higher travel speeds and higher 2035 traffic volumes. The congestion and travel speeds of the 2-lane WIS 23 alternatives may also cause employers and residents to make locational choices over time that decrease traffic volumes on this corridor.

2. Evaluation

The Purpose and Need screening criteria described in Section 1.5 of this LS SDEIS were used in the updated screening of the lower-build and 4-lane alternatives. Each criterion is directly linked to a component of the project Purpose and Need contained in the 2010 FEIS. The 5 alternatives were analyzed against the 8 criteria and were incorporated in a report that is included as Appendix B of this LS SDEIS. Table 2.6-1 on page 2-26 summarizes how well each of the 5 alternatives associated with the updated screening address the 8 project Purpose and Need criteria categories. WIS 23 traffic operations, which is one of the 8 Purpose and Need criteria categories, also has a strong influence on

some of the other Purpose and Need criteria categories. Table 2.6-2 provides a more detailed evaluation of the traffic operations of the 5 alternatives. LOS D is highlighted to indicate that the alternative falls below the operational goals for a Corridors 2030 Connector route. The table breaks the corridor into two segments because volumes are slightly higher west of County G than east of County G. Breaking the corridor into sections provides a more accurate analysis of each section. The table also lists the percent time spent following. For two-lane roadways, this measure influences the level of service for roadway operations.

Table 2.6-2 Operational Analysis Results

CTY UU to CTY G										
	Passing Lane Alternatives									
	2-Lane No Build		Passing Lanes Without Left Turn Lanes		Passing Lanes With Left Turn Lanes		Hybrid 4-Lane to CTY G, Passing Lane CTY G to CTY P		4-Lane Build On-Alignment	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound*	Westbound*	Eastbound*	Westbound*
% Following 2015	76.4%	76.6%	64.1%	63.7%	65.4%	65.1%	---	---	---	---
LOS 2015 (Numeric)	4.76	4.77	3.94	3.91	4.03	4.01	---	---	---	---
LOS 2015	D	D	C	C	D	D	A	A	A	A
% Following 2025	78.2%	78.4%	67.4%	67.1%	68.7%	68.3%	---	---	---	---
LOS 2025 (Numeric)	4.88	4.89	4.16	4.14	4.25	4.22	---	---	---	---
LOS 2025	D	D	D	D	D	D	A	A	A	A
% Following 2035	78.4%	78.6%	68.8%	68.3%	69.9%	69.5%	---	---	---	---
LOS 2035 (Numeric)	4.89	4.91	4.25	4.22	4.33	4.30	---	---	---	---
LOS 2035	D	D	D	D	D	D	A	A	A	A
Year LOS passes from C to D First Year C to D both directions	2012	2012	2017	2018	2013	2013	---	---	---	---
	2012		2017		2013		---		---	

\*4-Lane Freeway Analysis

CTY G to CTY P										
	Passing Lane Alternatives									
	2-Lane No Build		Passing Lanes Without Left Turn Lanes		Passing Lanes With Left Turn Lanes		Hybrid 4-Lane to CTY G, Passing Lane CTY G to CTY P		4-Lane Build On-Alignment	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound*	Westbound*
% Following 2015	73.1%	73.8%	64.7%	64.1%	67.1%	66.9%	64.8%	64.0%	---	---
LOS 2015 (Numeric)	4.54	4.59	3.98	3.94	4.14	4.13	3.99	3.93	---	---
LOS 2015	D	D	C	C	D	D	C	C	A	A
% Following 2025	74.2%	74.9%	67.0%	66.3%	69.4%	69.0%	68.1%	67.3%	---	---
LOS 2025 (Numeric)	4.61	4.66	4.13	4.09	4.29	4.27	4.21	4.15	---	---
LOS 2025	D	D	D	D	D	D	D	D	A	A
% Following 2035	76.4%	77.1%	69.0%	68.5%	71.2%	71.1%	69.7%	69.2%	---	---
LOS 2035 (Numeric)	4.76	4.81	4.27	4.23	4.41	4.41	4.31	4.28	---	---
LOS 2035	D	D	D	D	D	D	D	D	A	A
Year LOS passes from C to D First Year C to D both directions	2012	2012	2017	2017	2012	2012	2016	2016	---	---
	2012		2017		2012		2016		---	

3. Screening of Alternatives

a. No-Build Alternative

The No-Build Alternative did not satisfy any of the screening criteria but was brought forward as a baseline for comparison.

b. Passing Lane Without Left-turn Lanes and c. Passing Lane With Left-turn Lanes Alternatives

The Passing Lane Without Left-Turn Lanes and Passing Lane With Left-Turn Lanes alternatives did not fully satisfy any of the 8 Purpose and Need criteria, even with lower forecast traffic volumes. Under the Transportation Demand criterion, the passing lane alternatives only increase travel speeds during the peak hour by 1 mile per hour to 48 mph, substantially below 55 mph posted speed limit. Under the Existing and Future Traffic Volume and Resulting Operations criterion, the mainline LOS on WIS 23 remains at D, below the Corridors 2030 operational goals for a Connector Route. Similarly, crossing and left-turn movements at key intersections operate at LOS E or worse with the passing lane alternatives (see Appendix B).

The passing lane alternatives partially satisfy some screening criteria, yet the extent to which they address screening criteria is limited. Under the Safety criterion, important safety countermeasures such as the provision of a median, J-turns, and interchanges at higher use intersections, are not able to be incorporated into the alternatives. Under the Transportation Demand criterion, opportunities for passing remain limited even with the passing lanes and make travel less predictable. Platoons would continue to form behind slow-moving vehicles, trucks, and farm vehicles.

The passing lane alternatives would have fewer direct right of way impacts and indirect effects than the 4-lane alternatives being considered, even with the right of way that has already been purchased for the expansion project.<sup>7</sup> But the passing lane alternatives fail to satisfy the majority of the Purpose and Need criteria and provide only marginal benefits over the current No-Build 2-lane facility. For these reasons, they are not brought forward for further consideration in this LS SDEIS.

c. Hybrid 4-lane to County G, Passing Lane County G to County P Alternative

The Hybrid 4-lane to County G, Passing Lane County G to County P alternative satisfies more components of the project Purpose and Need than the passing lane alternatives. This alternative provides measurable benefits in travel time helping it to partially satisfy the Transportation Demand criterion. Also, because with this alternative the 4-lane expansion extends to County G, interchanges can be built at the most highly used intersections of County UU and County G. There are 15 questions addressing the 8 Purpose and Need criteria and the Hybrid alternative fully satisfies 5 and partially satisfies 9 questions.

Much of the Hybrid alternative's partial satisfaction of screening criteria is because of the 4-lane portion of the alternative. The remaining 7 miles of the 2-lane portion do not meet key Purpose and Need criteria. The County G to County P section of the alternative continues to operate at LOS D, failing to satisfy the operational goals of a Corridors 2030 Connector. The Hybrid alternative also does not satisfy the system continuity portion of the System Linkage criterion. WIS 23 would be a 4-lane facility for the 33-mile corridor from US 151 in Fond du Lac to I-43 in Sheboygan except for the 7-mile 2-lane roadway from County G to County P, despite the fact that traffic volumes are only 10 to 15 percent lower than the adjacent 4-lane section (Figure 2.6-9). This change in facility type is contrary to driver expectations, creates a short 2-lane segment without logical termini, and has limited reasons justifying the capacity reduction. It could also promote unsafe driver behavior at the end points of the 2-lane section. As the cross section narrows to one lane in each direction, drivers must jockey for position. Operational and safety deficiencies on this 7-mile 2-lane segment will eventually require a subsequent project. It is prudent to address these deficiencies at the same time as other portions of the corridor are being improved, rather than delaying construction and right of way that will need to occur eventually. For these reasons this alternative was not brought forward for further consideration in this LS SDEIS.



**Figure 2.6-9 Hybrid Alternative System Continuity**

<sup>7</sup> Since the ROD, WisDOT has been purchasing right of way along the corridor. Prior to the ROD, WisDOT also purchased some right of way through the hardship acquisition process. On prolonged studies, property owners may be eligible for hardship acquisition. Affected property owners may make a formal request to WisDOT to purchase their property as a "hardship." The owner must show that the marketability of the property has been adversely affected by the proposed plan and that a prolonged delay in the acquisition will cause them undue economic hardship. Once WisDOT receives such a request, WisDOT considers the request and follows the procedures for Early and Advanced Acquisitions in accordance with the WisDOT Real Estate Program Manual (WisDOT, August 2012,) [https://trust.dot.state.wi.us/extntgtwy/dtid\\_real\\_estate/rep/rep.htm](https://trust.dot.state.wi.us/extntgtwy/dtid_real_estate/rep/rep.htm) and 23 CFR Section 710 Subpart E.

d. 4-Lane Build On-alignment Alternative

The 4-Lane Build On-alignment Alternative met all the Purpose and Need criteria. This alternative provides satisfactory LOS C or above in the 2035 design year and addresses operations and safety at high volume intersections. Because this alternative still satisfies all the Purpose and Need criteria, it remains the Preferred Alternative in this LS DEIS.

Table 2.6-1 summarizes how each of the 5 alternatives that were reevaluated address the 8 Purpose and Need screening criteria. Appendix B provides the full screening report.

Table 2.6-1 WIS 23 SEIS Alternative Summary Evaluation Matrix

Purpose and Need Criteria Question/Alternative	No Build	Passing Lane Without Left Turn Lanes	Passing Lane With Left Turn Lanes (and Median Refuge)	Hybrid 4-Lane to County G Passing Lane County G to County P	4-Lane Build On-Alignment
Average 2035 AADT County UU to County G	10,300	10,860	10,860	11,450	11,980
Average 2035 AADT County UU to County P	9,350	9,800	9,800	10,210	11,010
<b>1. System Linkage and Route Importance</b>					
a. Does the alternative adequately address truck traffic needs resulting from WIS 23's designation as a long truck route?	No There are limited opportunities for passing and few climbing lanes.	Partially There are more opportunities for passing and the dispersal of platoons.	Partially There are more opportunities for passing and the dispersal of platoons.	Partially The 4-lane portion from US 151 to County G keeps platoons from forming. East of County G, there are more opportunities for passing yet platoons still form.	Yes Additional through lanes keep platoons from forming.
b. Does the alternative provide system continuity?	No The US 151 and WIS 23 Connector from Fond du Lac to Sheboygan is a mixture of 2-lane and 4-lane facility types.	No WIS 23 Connector from Fond du Lac to Sheboygan remains a mixture of 2-lane, passing lane, and 4-lane facility types.	No WIS 23 Connector from Fond du Lac to Sheboygan remains a mixture of 2-lane, passing lane, and 4-lane facility types.	No WIS 23 Connector from Fond du Lac to Sheboygan remains a mixture of 2-lane, passing lane, and 4-lane facility types.	Yes WIS 23 Connector from Fond du Lac to Sheboygan has a consistent 4-lane facility type from Fond du Lac to Sheboygan.
<b>2. Transportation Demand/ Regional Economic Development</b>					
a. Does the alternative reduce travel time?	No Average speed during 2015 peak hours is 46 mph.	No Average speed during 2015 peak hours is almost 46 mph with a travel-time savings over the No-Build Alternative of about 20 seconds.	No Average speed during 2015 peak hours is 47 mph with a travel time savings over the No-Build Alternative of about 10 seconds.	Partially The 4-lane section provides free-flow speeds. The County G to County P section will continue to have average speeds of just over 47 mph during 2015 peak periods. Travel times savings over the No-Build Alternative during 2015 peak periods is about 3 minutes 40 seconds.	Yes A full 4-lane facility provides free-flow speeds throughout the corridor. Travel times savings over the No-Build Alternative during 2015 peak periods is about 6 minutes 20 seconds.
b. Does the alternative provide for more predictable travel?	No Traffic is impeded by slow moving agricultural, truck, and recreational vehicles.	No Passing lanes are available for 4 of the 36 lane miles, requiring drivers to wait for gaps in the opposing travel stream to travel around slow-moving vehicles.	No Passing lanes are available for 4 of the 36 lane miles, requiring drivers to wait for gaps in the opposing travel stream to travel around slow-moving vehicles.	Partially For approximately 24 of the 36 lane miles there is opportunity to pass slow-moving vehicles	Yes A 4-lane facility provides the opportunity for high-speed traffic to travel around slow-moving vehicles.
<b>3. Legislative and Transportation Planning History</b>					
a. Is the alternative consistent with and/or reflected in local land use and transportation plans?	No Contradicts MPO long-range plans.	Partially Improves the mobility of WIS 23, yet does not provide the 4-lane expansion mentioned in the MPO plans.	Partially Improves the mobility of WIS 23, yet does not provide the 4-lane expansion mentioned in the MPO plans.	Partially Improves the mobility of WIS 23 and provides the 4-lane expansion discussed in the Fond du Lac Area MPO plan. It does not contain the 4-lane expansion discussed in the 2035 update to the Sheboygan Area Plan.	Yes Improvement is consistent with that mentioned in both the Fond du Lac Area MPO and Sheboygan Area MPO plans
b. Is the alternative consistent with Wisconsin State Statute 84.013(3)(ra)?	No Does not add 5 lane miles to WIS 23 corridor.	Partially Does not add one or more lanes of highway for at least 5 miles, but does address roadway significance with passing lanes.	Partially Does not add one or more lanes of highway for at least 5 miles, but does address roadway significance with passing lanes.	Yes More than 5 lane miles are added to WIS 23.	Yes More than 5 lane miles are added to WIS 23.
<b>4. Existing and Future Traffic Volumes and Resulting Operations</b>					
a. Does the alternative improve WIS 23 mainline operational efficiency and mobility by meeting LOS requirements of a Corridor 2030 Connector Route? (Goal = LOS C in 2035 or numeric LOS of less than 4.0 in 2035)	No WIS 23 mainline operates at LOS D before 2035.	No Westbound and eastbound WIS 23 for both segments of the corridor operate at LOS D in 2035.	No Westbound and eastbound WIS 23 for both segments of the corridor operate at LOS D in 2035.	Partially County UU to County G operates at LOS A in 2035. Westbound and eastbound WIS 23 from County G to County P (the end with passing lanes) operate at LOS D in 2035.	Yes WIS 23 mainline will operate at LOS A in both directions in 2035.
b. Does the alternative provide a reasonable LOS for vehicles trying to access WIS 23? (WisDOT seeks to provide an LOS D at all intersections. The more highly used intersections of County G, County UU, and County W provide a metric of how well this criterion is satisfied.)	No The left-turn and through movements at major intersections are, or soon will be, experiencing substantial delays.	No Multiple side-road movements operate at LOS E or worse in 2035.	No Multiple side-road movements operate at LOS E or worse in 2035.	Yes Side-road movements will operate at LOS C or better in 2035.	Yes Side road movements will operate at LOS C or better in 2035.

Table 2.6-1 WIS 23 SEIS Alternative Summary Evaluation Matrix

Purpose and Need Criteria Question/Alternative	No Build	Passing Lane Without Left Turn Lanes	Passing Lane With Left Turn Lanes (and Median Refuge)	Hybrid 4-Lane to County G Passing Lane County G to County P	4-Lane Build On-Alignment
<p><b>5. Highway Geometry</b>                      a. Does the alternative incorporate the appropriate design criteria for the roadway classification?</p>	<p><b>No</b>                      Shoulder widths are substandard in some locations.</p>	<p><b>Partially</b>                      Roadway is reconstructed to standards for Design Class A2 (2-lane), yet cross section is not able to provide enough capacity to maintain LOS C in 2035.</p>	<p><b>Partially</b>                      Roadway is reconstructed to standards for Design Class A3 (4-lane) and A2 (2-lane), yet cross section is not able to maintain LOS C in 2035.</p>	<p><b>Partially</b>                      Roadway is reconstructed to standards for Design Class A3 (4-lane) and A2 (2-lane), yet cross section is not able to maintain LOS C in 2035.</p>	<p><b>Yes</b>                      Roadway is reconstructed to standards for Design Class A3 (4-lane)</p>
<p><b>6. Access Management</b>                      a. Does the alternative reduce the number of hazardous movements (left turns or crossing from side roads) at public access points through the installation of access restrictions or interchanges?</p>	<p><b>No</b>                      All existing intersections remain.</p>	<p><b>No</b>                      All existing intersections remain except for five intersections in the Fond du Lac urban area. Some intersections are improved with the used of left-turn lanes.</p>	<p><b>No</b>                      All existing intersections remain except for five intersections in the Fond du Lac urban area. Some intersections are improved with the used of left-turn lanes.</p>	<p><b>Partially</b>                      All intersections from County K to County G are improved, limited, or removed. From County G to County P all intersections remain.</p>	<p><b>Yes</b>                      All intersections except for five low-volume intersections are improved, limited, or removed.</p>
<p>b. Does the alternative reduce the number of private access points through right of way acquisition?</p>	<p><b>No</b>                      Private access points remain</p>	<p><b>Partially</b>                      Some private access points removed</p>	<p><b>Partially</b>                      Some private access points removed</p>	<p><b>Partially</b>                      Many private access points removed from County K to County G.                      Some private access points removed from County G to County P.</p>	<p><b>Yes</b>                      Many private access points removed from County K to County P</p>
<p>c. Does the alternative designate and preserve land for future access modifications, such as overpasses and interchanges, through official mapping?</p>	<p><b>No</b></p>	<p><b>Yes</b></p>	<p><b>Yes</b></p>	<p><b>Yes</b></p>	<p><b>Yes</b></p>
<p><b>7. Improve Safety</b>                      a. Does the alternative adequately address WIS 23 mainline safety?</p>	<p><b>No</b>                      No safety countermeasures are introduced.</p>	<p><b>Partially</b>                      Countermeasures introduced address only run off and same direction side-swipe crashes.</p>	<p><b>Partially</b>                      Countermeasures introduced address run-off, rear-end, and same-direction side-swipe crashes.</p>	<p><b>Yes</b>                      From County K to County G countermeasures introduced address all major type of crashes (head on, sideswipe opposite direction, same direction sideswipe, rear end, and run off).                      From County G to County P, countermeasures introduced address only run-off and same-direction sides-wipe crashes</p>	<p><b>Yes</b>                      Countermeasures introduced address all major type of crashes (head on, sideswipe opposite direction, same direction sideswipe, rear end, and run off).</p>
<p>b. Does the alternative address intersection safety? (eg the reduction of angle crashes)</p>	<p><b>No</b>                      No safety countermeasures are introduced.</p>	<p><b>No</b>                      No safety countermeasures are introduced for angle crashes.</p>	<p><b>Partially</b>                      A median refuge is provided for vehicles making a left or crossing maneuver from a side road.                      No other safety countermeasures are introduced for angle crashes.</p>	<p><b>Partially</b>                      This alternative provides countermeasures that include removing street access, interchange or J-turn construction, and the provision of a median refuge for intersections from US 151 to County G</p>	<p><b>Yes</b>                      This alternative provides countermeasures that include removing side-road access, interchange or J-turn construction, and the provision of a median refuge for intersections throughout the corridor.</p>
<p><b>8. Accommodations for Non-motorized Travel</b>                      a. Does the alternative provide accommodations for nonmotorized travel?</p>	<p><b>No</b>                      No additional accommodations are provided for nonmotorized users.</p>	<p><b>Yes</b>                      Paved shoulders allow cyclist to ride adjacent to traffic. A separate trail could be constructed if additional right of way is purchased.</p>	<p><b>Yes</b>                      Paved shoulders allow cyclist to ride adjacent to traffic. A separate trail could be constructed if additional right of way is purchased.</p>	<p><b>Yes</b>                      County K to County G has separate trail for nonmotorized users. County G to County P has paved shoulders that allow cyclist to ride adjacent to traffic. A separate trail could be constructed if additional right of way is purchased.</p>	<p><b>Yes</b>                      Separate trail for nonmotorized users is provided.</p>

## 2.7 PREFERRED BUILD ALTERNATIVE DESCRIPTION

### A. WIS 23 Mainline

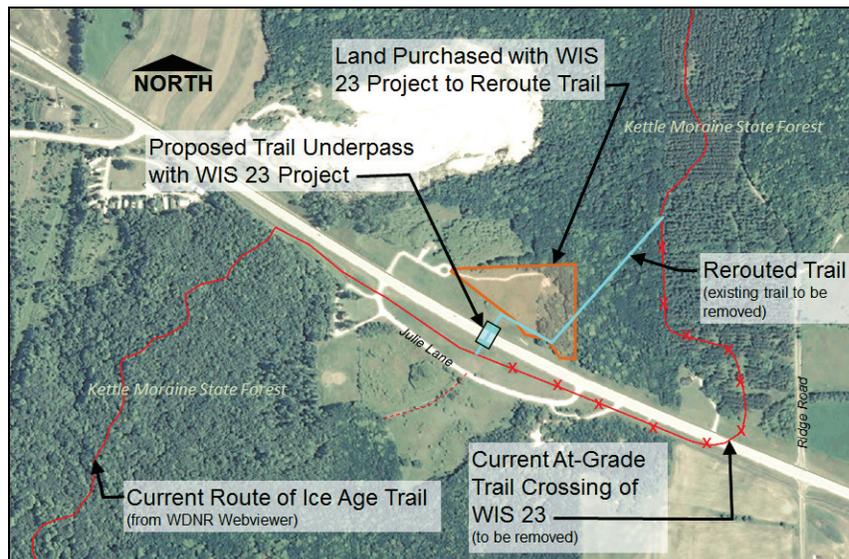
#### 1. Cross Section

The Preferred Build Alternative constructs a full 4-lane divided highway on the existing alignment for the full length of the project. From US 151 (**Wisconsin American Parkway**) to County UU, WIS 23 will have a suburban cross section. This includes four 12-foot lanes, 6-foot inside shoulders, 10-foot outside shoulders, and an 18-foot median with mountable curb. The outside edges may flow into either a rural section with a ditch or **use** mountable curb and gutter. The design speed for this section of roadway will be 55 mph and posted for 45 mph. Figure 2.7-1 illustrates this cross section.

From County UU east to County P in Sheboygan County, WIS 23 will have a typical expressway cross section. This includes four 12-foot lanes, 6-foot inside shoulders, 10-foot outside shoulders, and a 60-foot median. Generally, the existing roadbed will carry the eastbound lanes, and the westbound lanes will be constructed north of the existing roadway. The exception to this is between County W and Division Street, where the new lanes will be south of the existing roadbed. Figure 2.7-1 illustrates this cross section. The **area required** for the Preferred Build Alternative and the corridor preservation can be seen in Figures 2.7-13 to 2.7-25.

#### 2. Ice Age Trail (IAT) and State Equestrian Trail

The IAT and the State Equestrian Trail **are joined as** they cross WIS 23 at the Kettle Moraine Forest. **A snowmobile trail also crosses WIS 23 at this location.** The IAT is an important trail, one of only eight National Scenic Trails, and Wisconsin's only scenic trail. The IAT, the Equestrian Trail, **and the Kettle Moraine State Forest are all** considered 4(f) **resources** that require impact evaluation according to federal law. Avoidance of the trails was first considered, with minimization and mitigation of the impacts to follow. Since the IAT and State Equestrian Trail cross perpendicular to WIS 23 and the **Kettle Moraine State Forest is located on both sides of WIS 23**, there is no opportunity to avoid the trails. As agreed to by state and federal agencies (see Section 4.6 for impact descriptions and **Section 5 for Section 4(f) Evaluations**), the IAT and State Equestrian Trail will travel under WIS 23. The underpass trail will provide a clear width of 20 feet and a minimum vertical clearance of 12 feet for the combined trails. The proposed crossing would be located near Julie Lane (see Figure 2.7-2).



**Figure 2.7-2 Ice Age Trail Proposed Crossings**

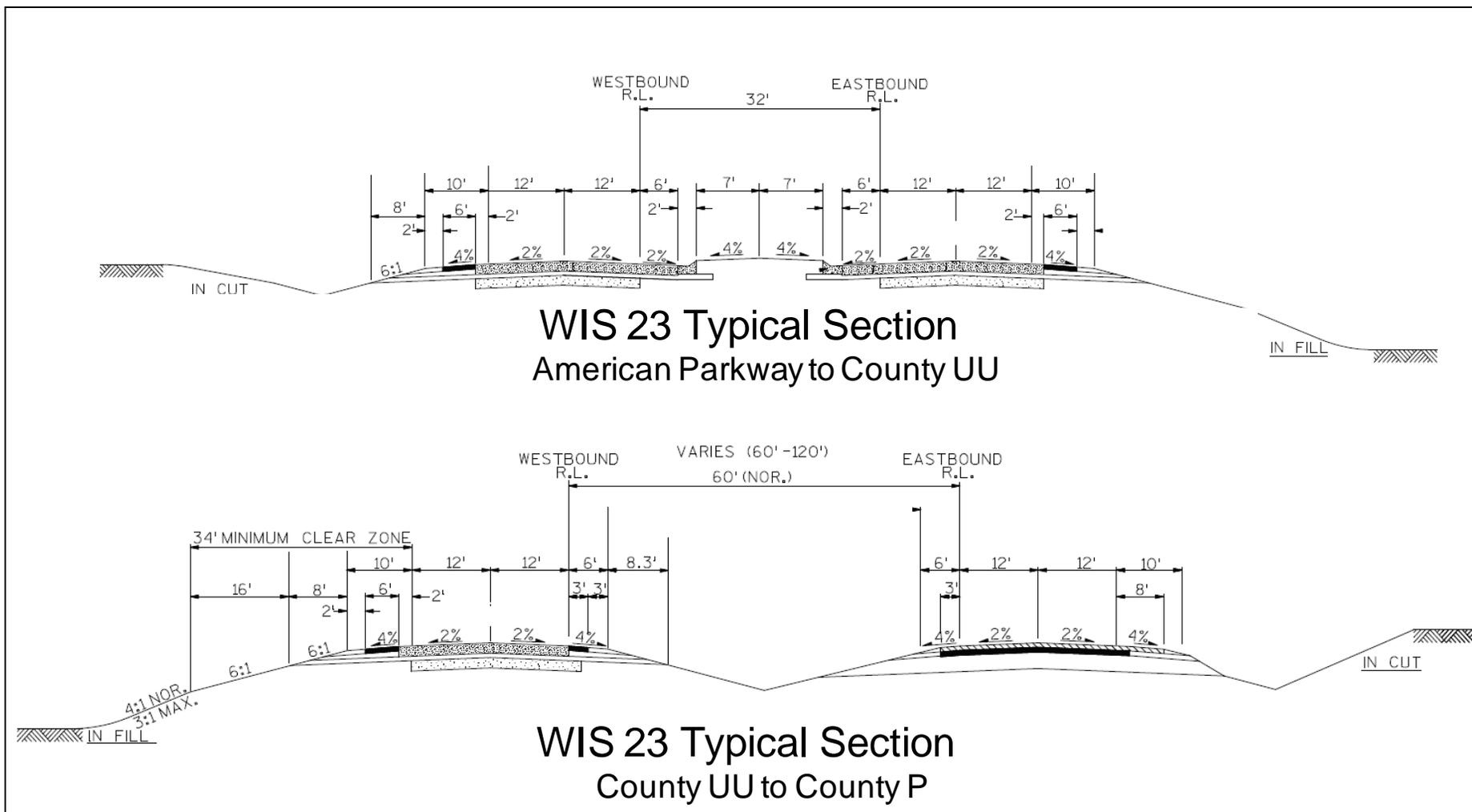
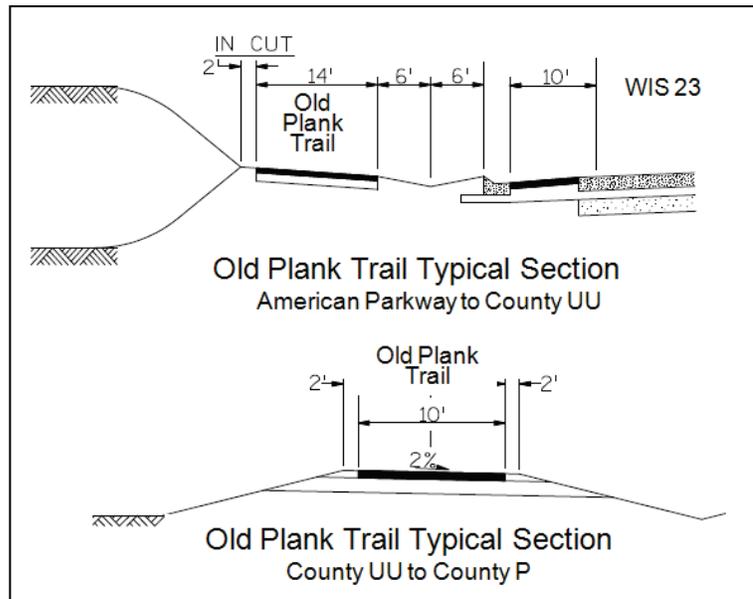


Figure 2.7-1 WIS 23 Typical Sections

### B. Old Plank Road Trail Extension

The existing Old Plank Road Trail currently connects the city of Sheboygan with the town of Greenbush on the northern limits of the cities of Sheboygan Falls and Plymouth and the village of Kohler. This existing trail is located within state-owned highway right of way and is maintained by the Sheboygan County Planning and Parks Department. Sheboygan County documents the possible extension of the trail to Fond du Lac County in the Old Plank Road Trail Plan, 1991. The US 151 bypass of the city of Fond du Lac constructed a multiuse trail along the bypass roadway that connects the Wild Goose State Trail south of the city and the WIS 149 trail in Peebles. The Fond du Lac County Board passed a resolution supporting a trail connecting the US 151 trail with the Old Plank Road Trail in Sheboygan County. The town of Empire and Sheboygan County also support the trail extension.

In response to these existing plans and actions made by local governments, WisDOT has incorporated an extension of the Old Plank Road Trail in the Preferred Build Alternative. The trail will generally be located within the proposed roadway right of way on the south side of the 4-lane expansion. Figure 2.7-3 illustrates the Old Plank Road Trail typical section being considered on the WIS 23 project from Wisconsin American Parkway to County UU and from County UU to County P in Sheboygan County. Starting at the west end of the project, the trail will be located along the north side of WIS 23 to County UU, where it will cross to the south side of WIS 23. The trail will have a 10-foot-wide asphaltic surface. WisDOT will work with WDNR, Fond du Lac and Sheboygan Counties, town boards, bicycle advocates, and residents to provide a connection between the Fond du Lac urban area and the Old Plank Road Trail. The real estate and grading costs for the trail will be funded by WisDOT. Local jurisdictions may fund the paving and maintenance of the trail. Figures 2.7-13 through -25 at the end of this section illustrate the location of the trail.



**Figure 2.7-3 Old Plank Road Trail Typical Section**

### C. Local Roads–Interchanges–Access Control

The proposed changes to local road connections and access to WIS 23 and the proposed construction of interchanges may result in some increased response times for emergency medical services (EMS) and fire department vehicles. However, decisions on access changes, placement of median breaks, and the design of J-Turns that will minimize fire or EMS indirection will be incorporated in the final design.

#### 1. Access Controls Between US 151 and County UU

In this urbanizing segment of the project corridor, the objectives of preserving both mobility and access conflict with each other. In an effort to preserve the future investment in WIS 23 improvements, the Preferred Build Alternative constructs a jug-handle intersection at County K, diamond interchanges at County UU and County G, and a roundabout at Wisconsin American Parkway. Several side roads could have their direct access to WIS 23 removed but are provided alternate access via frontage roads and other local connections. Proposed access controls between US 151 and County UU are shown in Figure 2.7-4.

A roundabout at Wisconsin American Parkway would provide access to the Wisconsin American Development from WIS 23. The roundabout would eliminate dangerous T intersection and left-turning maneuvers. This type of connection is shown in Figure 2.7-5.

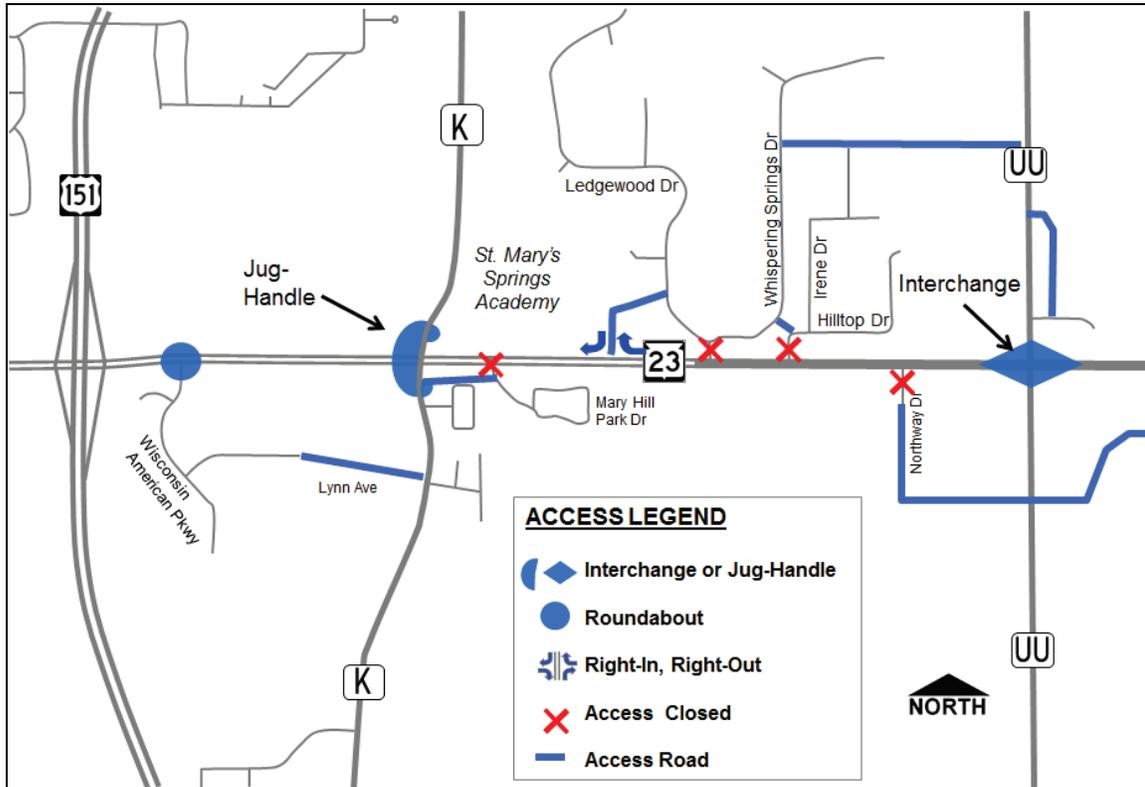


Figure 2.7-4 Proposed Access Control Between US 151 and County UU

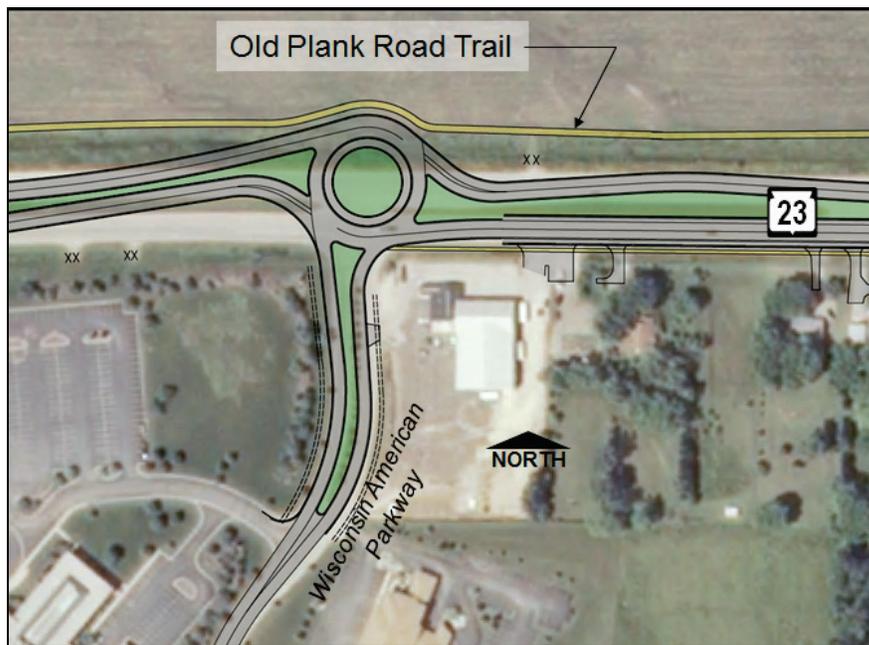
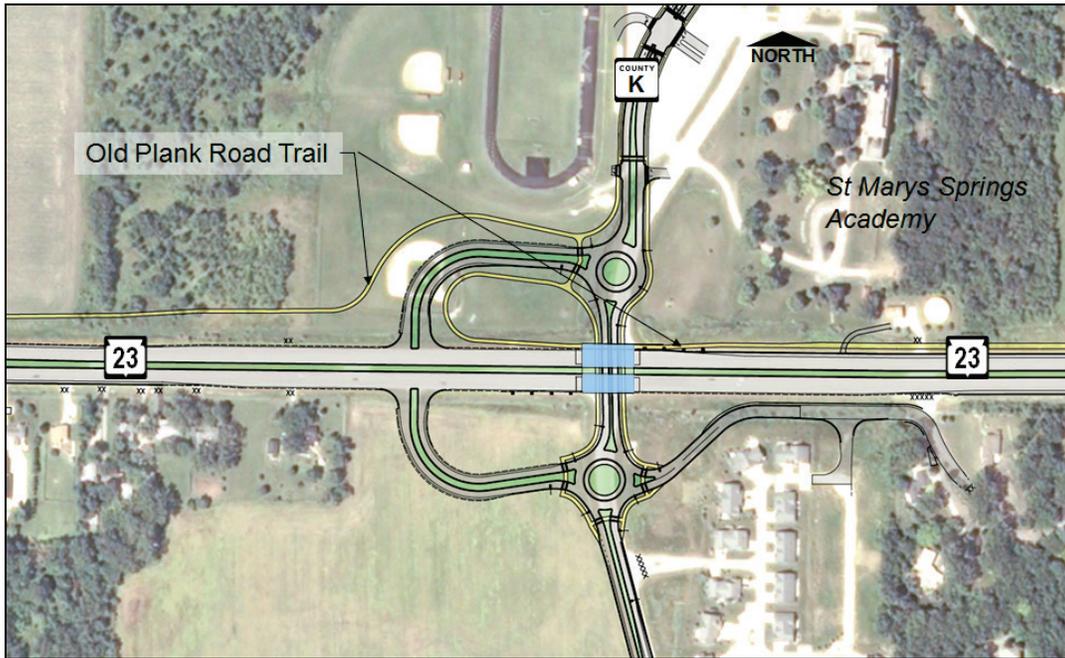


Figure 2.7-5 Wisconsin American Parkway Roundabout

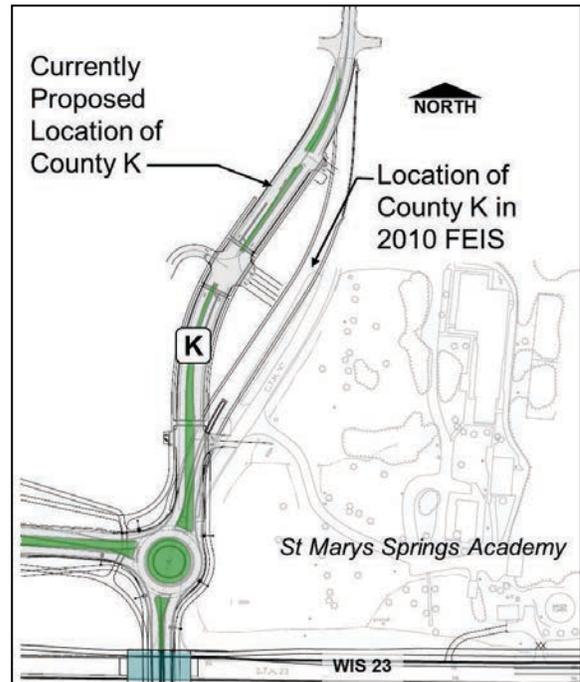
The County K jug-handle would include overpasses for WIS 23 over County K. West of County K, traffic would have access on and off WIS 23 to County K using dedicated right-turn lanes. The access to and from County K would be right-in/right-out, which eliminates dangerous crossing and left-turning maneuvers. This type of connection is shown in Figure 2.7-6 (with a modified County K alignment). Roundabouts are being proposed for the jug-handle terminals at County K. This type of connection allows full access from and to WIS 23. For example, for an eastbound WIS 23 vehicle to travel north on County K, they would take a right turn at the jug-handle and travel to County K. The vehicle then would take a left onto County K and travel under WIS 23. A northbound County K vehicle desiring to travel westbound on WIS 23 would travel north under WIS 23, take a left at the jug-handle intersection, and then make a right turn onto WIS 23. Because some local roadways will either have

their access removed or have access restricted to right-in/right-out status only, the County K Jug-handle will become the primary access to the St. Mary's Springs Academy and the Whispering Springs area.



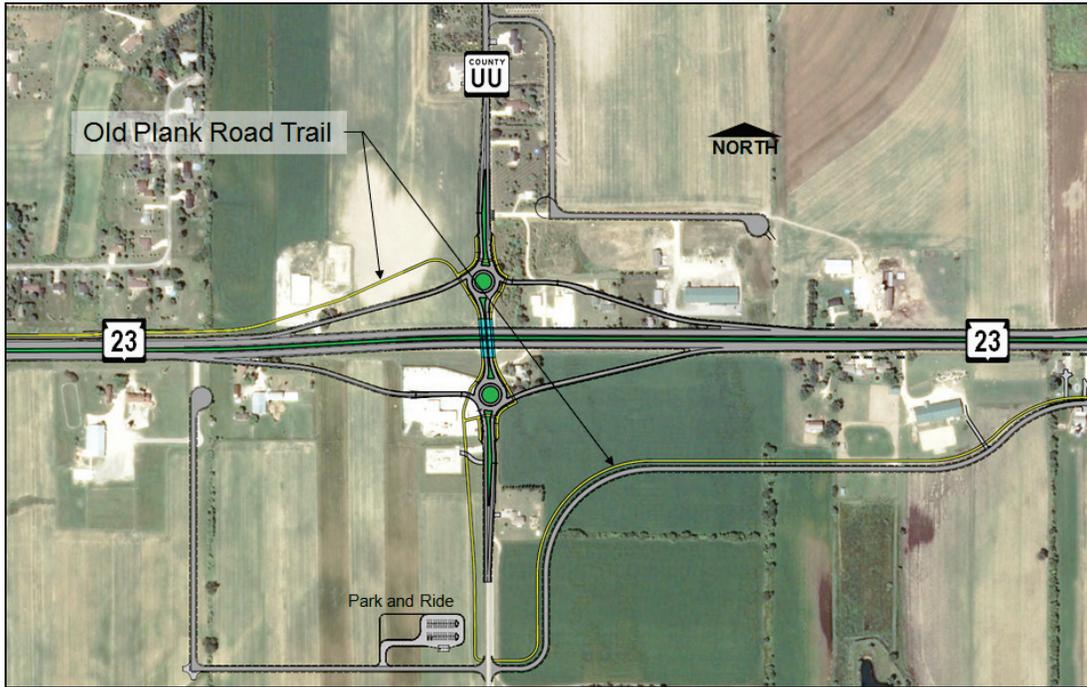
**Figure 2.7-6 Proposed County K Jug-Handle**

Since the publishing of the 2010 FEIS, design modifications have been made to the alignment in the northeast quadrant of County K at the request of St. Mary's Springs Academy. The alignment of County K has been shifted to the west north of the roundabout. Refinements are part of the normal final design process as more geometric and topographic information is obtained and more input is received from property owners. Figure 2.7-6 reflects the proposed County K jug-handle with design modifications. Figure 2.7-7 illustrates how the current design differs from that shown in the 2010 FEIS.



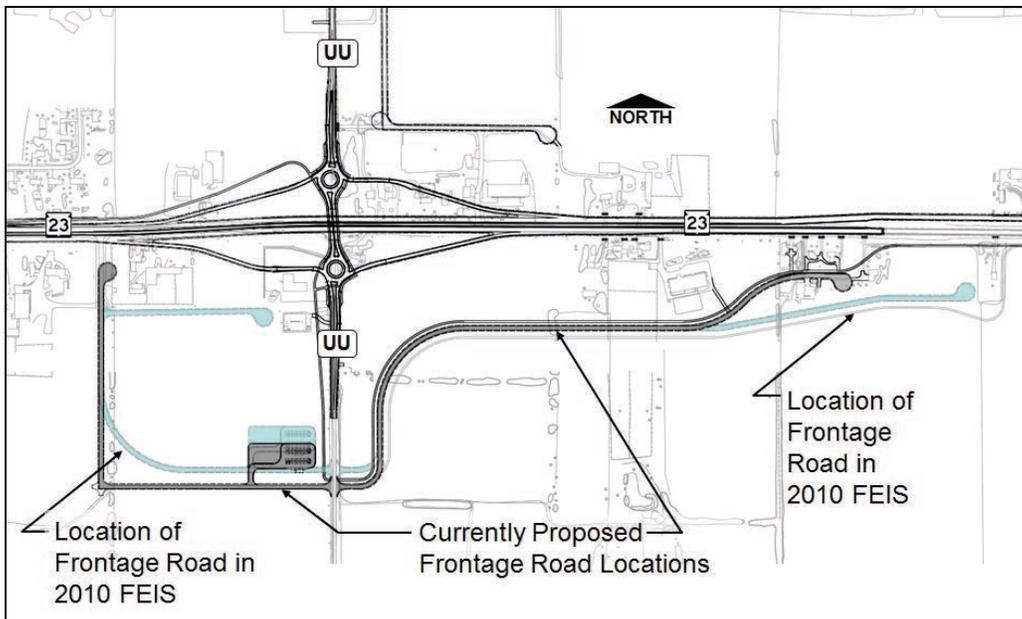
**Figure 2.7-7 County K Alignment Revision**

The County UU Interchange is also part of the Preferred Build Alternative. This type of **interchange** connection is more conventional and will accommodate all traffic movements. Several access roads will be placed adjacent to the interchange to provide access to adjacent parcels. **Roundabout** ramp terminals are being proposed.



**Figure 2.7-8 Proposed County UU Interchange**

Since the publishing of the 2010 FEIS as part of normal design refinements, the frontage road locations have been modified to reduce impacts. The frontage road in the southeast quadrant of the interchanges has been shifted slightly south and shortened. The frontage road configuration in the southwest quadrant of the interchange has been shifted slightly south and realigned from a sweeping curve to a 90-degree intersection. Figure 2.7-8 illustrates the currently proposed interchange. Figure 2.7-9 compares the currently proposed frontage road locations to those shown in the 2010 FEIS.



**Figure 2.7-9 County UU Interchange Frontage Road Locations**

The County G Interchange is part of the Preferred Build Alternative. Like the County UU interchange, this interchange will accommodate all traffic movements and several access roads will be placed adjacent to the interchange to provide access to adjacent parcels. Figure 2.7-10 provides an illustration of the interchange. Roundabout ramp terminals are being proposed.

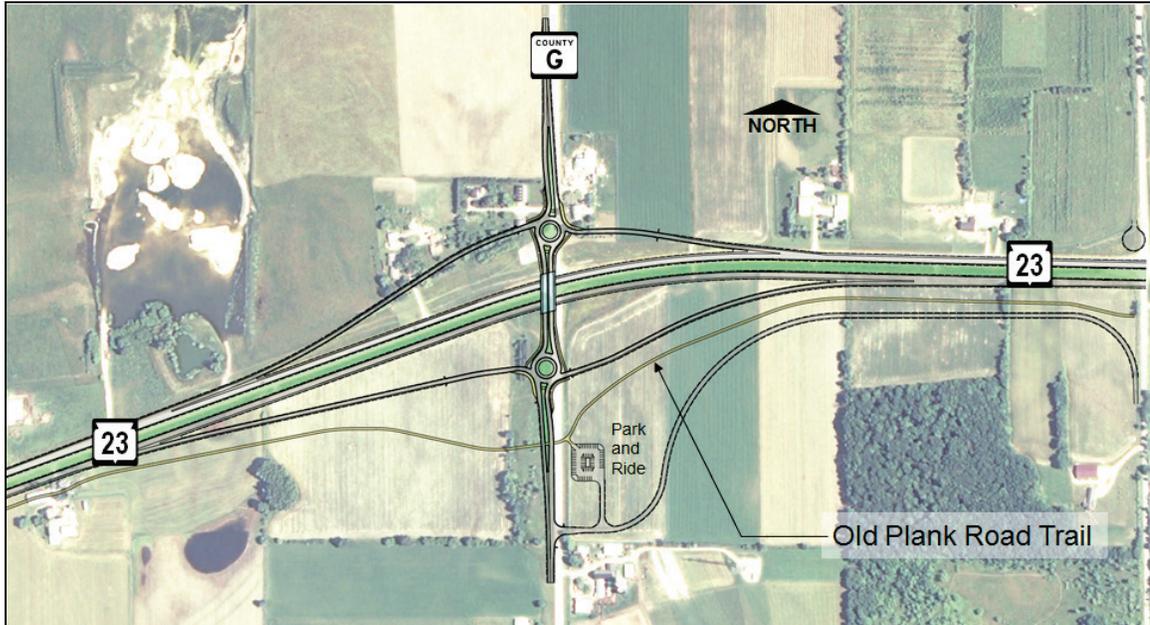


Figure 2.7-10 County G Interchange

2. Local Road Connections and Extensions

The Preferred Build Alternative includes local road connections and extensions near County P in Sheboygan County to enable the closure of direct access points onto WIS 23. Valley Lane will be extended to connect with Twinkle Lane. The 2010 FEIS also showed extending Sandstone Lane to connect to Inez Court as well as extending Coary Lane to connect with Sandstone Lane; these connections are no longer being proposed. Figure 2.7-11 schematically illustrates the currently proposed connections and extensions.

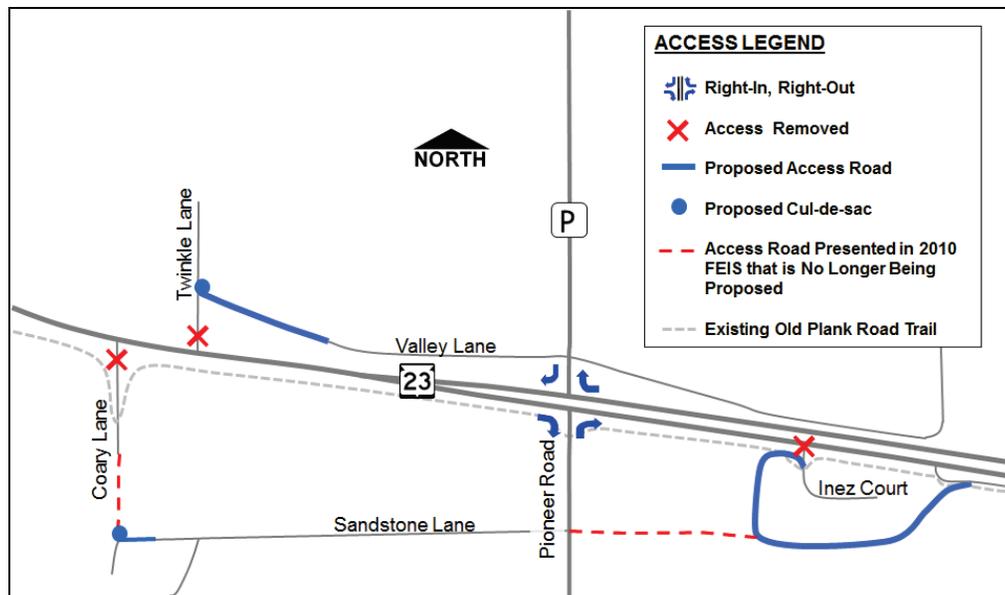


Figure 2.7-11 Local Road Connections and Extensions

### 3. Access Controls Between Taft Road and County P

The project team studied access on public streets between Taft Road and County P. Several safety enhancements have been considered to **mitigate** geometric deficiencies and exposure to cross traffic and **enhance** conductivity to local roads. These enhancements include road closures, restricted median crossings, right-in/right-out, dedicated left-turn bays in the median, and dedicated U-turns. Construction of wider medians (120-foot-**wide** stop-control) was evaluated but was dismissed because of higher environmental impacts and high crash rates found on similar intersections in Wisconsin. J-turns are being **proposed** at several high-volume intersections. This intersection **design** only allows right-in/right-out/left-in movements and removes the most hazardous movements from the intersection. Drivers that want to turn left or travel **across WIS 23** on the side road must take a right and then take a U-turn at an appropriate distance from the intersection. This type of intersection has been successfully used in several states to improve intersection safety and was a recommended measure for this project from a road safety audit. **The J-turn concept** is shown in Figure 2.7-12. Other at-grade intersection treatments **are also being proposed at intersections throughout the corridor**. Proposed access controls are listed in Table 2.7-1 for the Preferred Build Alternative. Intersecting roadways are listed **from west to east**.



Figure 2.7-12 J-Turn Design

<b>Table 2.7-1 Access Treatments<sup>8</sup></b>	
<b>Intersection</b>	<b>Access Treatment</b>
Wisconsin American Drive	Multi-Lane Roundabout
County K	Jug-handle
Whispering Springs Drive	RI/RO
HillTop Drive	Cul-de-sac
County UU	Diamond Interchange
Taft Road	RI/RO
Tower Road North	J-turn
Tower Road South	RI/RO
Poplar Road North	RI/RO
Poplar Road South	RI/RO
7 Hills Road North	J-turn
7 Hills Road South	J-turn
Hinn Road	RI/RO
County W South	J-turn
County W North	J-turn
Loehr Rd	RI/RO
Log Tavern Road North	At-grade T intersection
Log Tavern Road South	Cul-de-sac
Triple T	Rerouted to Pit Road South
Pit Rd North	At-grade Intersection
Pit Rd South	At-grade Intersection
Banner Rd	Cul-de-sac
Triple T Rd North	At-grade T intersection
Hillview Rd North	RI/RO with Dedicated Left-In
Hillview Rd South	RI/RO
Hickory Road	Cul-de-sac
County G	Diamond Interchange
Division Rd North	Cul-de-sac
Division Rd South	Access Road to County G
Chickadee Dr	RI/RO
County U	J-turn
Sunrise Rd	At-grade T intersection
Spring Valley Dr	At-grade T intersection
Scenic View Dr North	At-grade Intersection
Scenic View Dr South	At-grade Intersection
County T	J-turn
Plank Rd–West	RI/RO
Sugarbush Road North	RI/RO with Dedicated Left In
Sugarbush Road South	RI/RO with Dedicated Left In
County A North	J-turn
County A South	J-turn
Plank Rd–East	RI/RO
Castle Rock Court	At-grade Intersection
Julie Court West	At-grade Intersection
Julie Court East	Cul-de-sac
Ridge Rd North	Cul-de-sac
Ridge Rd South	At-grade T-intersection
County S North	J-turn
County S South	J-turn
Coary Lane	Removed from WIS 23
Twinkle Lane	Removed from WIS 23
County P North and South	At-grade intersection
Inez St	At-grade T intersection
Branch Road	Removed from WIS 23–Extended to Inez Court

<sup>8</sup> Access treatments have been modified because as a result of the detailed design refinements that are part of the normal project development process.

## 2.8 PREFERRED CORRIDOR PRESERVATION ALTERNATIVE

### A. WIS 23 Corridor

For the WIS 23 corridor, the Preferred Alternative is WIS 23 Corridor Preservation. This preserves the right of way needed for future interchanges and grade separations.

These include:

1. Grade separation (overpass) at Tower Road
2. Cul-de-sacs at Poplar Road
3. Grade separation (overpass) at 7 Hills Road
4. Cul-de-sac at County W south and Hinn Road
5. Rerouting of County W south to County W north roughly along Poplar Road and Loehr Road
6. Diamond interchange at County W north intersection.
7. Grade separation (overpass) at Scenic View Drive
8. Cul-de-sac at Plank Road
9. Grade separation at Sugarbush Road
10. Diamond interchange at County A

These preservation areas are illustrated in Figures 2.7-13 through 2.7-25. Section 2.9 lists the reasons for this selection

### B. US 151/WIS 23 Connection

For the US 151/WIS 23 Connection, the Preferred Alternative is No Corridor Preservation. This option does not use official mapping to preserve right of way needed for future transportation improvements. The alternative is described in Section 2.5, and Section 2.9 lists the reasons for this selection.

## 2.9 REASONS FOR SELECTION OF PREFERRED ALTERNATIVES

### A. Build Alternative

WisDOT confirms the selection of the Preferred Build Alternative as described in the 2010 Record of Decision for this project. The Preferred Build Alternative seeks to address concerns voiced by a variety of constituencies, jurisdictions, and agencies. While not able to comprehensively satisfy every entity, the Preferred Build Alternative does balance concerns with Purpose and Need objectives. The purpose of the proposed action is to serve existing and projected traffic volumes, provide opportunities to reduce motor vehicle demand, and improve operational efficiency and safety for local and through traffic while minimizing environmental impacts. The following summarizes key reasons for the selection of the Preferred Build Alternative.

- The Preferred Build Alternative best satisfies the Purpose and Need screening criteria. Other alternatives that did not provide capacity expansion could not provide LOS that satisfied expectations for a Corridors 2030 Connector route. These other alternatives also did not satisfy system linkage, safety, economic development, and 5 other Purpose and Need screening criteria as well as the Preferred Build Alternative.
- The Preferred Build Alternative will improve the highway facility's ability to meet current design standards for this Connector route.
- The Preferred Build Alternative increases the traffic mobility by adding capacity and minimizing public and private access.
- The Preferred Build Alternative will provide a safe and dependable highway connection to and from regional communities while reducing conflicts between local and through traffic. Access control will minimize private entrances, and turn lanes and median refuges will be provided at intersections to improve safety.
- A 4-lane expressway on the existing alignment received support from the majority of the public input, was backed unanimously by the Policy Advisory Committee, and received consensus approval by local officials.

- The Preferred Build Alternative received support from most of the state and federal agencies. They expressed support for Alternatives 1 and 2 over Alternatives 3 through 6. They suggested investigating an interim solution of adding passing lanes **before** construction of Alternative 1.
- The Preferred Build Alternative meets the needs of the project while minimizing adverse impacts to farmland, wetlands, historical resources, and archaeological sites. Needed right of way and project costs are also minimized by the **on-alignment** Preferred Build Alternative **rather than the off-alignment build alternatives**.
- The Preferred Build Alternative implements several key recommendations of the **July 2003 Value Planning Study** (a copy is provided in Appendix E of the 2010 FEIS). The *Value Planning Study* is used to review the project through an organized, multidisciplinary process designed to find alternative ways to achieve the project's necessary and desired functions. **Recommendations from the study included maintaining a suburban section (inside median curbs and outside ditches) from County K through County UU, building 4-lanes, and grade separating the Ice Age Trail.**
- The extension of the Old Plank **Road** Trail is consistent with the local jurisdictions' plans for multiuse trail development along the WIS 23 corridor between Greenbush and the city of Fond du Lac.

#### B. Corridor Preservation Alternatives

The selection of the Corridor Preservation Alternatives seeks to address concerns voiced by a variety of constituencies, jurisdictions, and agencies while preserving roadway mobility and safety. Like the Preferred Build Alternative, the Preferred Corridor Preservation Alternatives were selected to balance concerns with Purpose and Need objectives.

For the WIS 23 Corridor Preservation Alternatives, **WisDOT confirms the selection of Corridor Preservation as the Preferred Alternative as described in the 2010 ROD for this project.** Reasons for this selection include the following:

- WIS 23 Corridor Preservation will protect right of way for transportation improvements that are likely to be needed in the future. In preserving these areas for future transportation improvements, development within those areas can be minimized or avoided, reducing costs for WisDOT.
- WIS 23 Corridor Preservation, while having some current effect on property owners, will reduce impacts to the property owners in the long term. Without corridor preservation, these property owners may invest in improvements that may later need to be removed or relocated for transportation improvements.
- Implementation of the improvements associated with the WIS 23 Corridor Preservation measures is likely to occur within the 20-year planning horizon<sup>9</sup>. Therefore, right of way that is preserved will be used in the relatively near future.
- WIS 23 Corridor Preservation measures will facilitate future access reductions. Without preserving right of way needed for future access roads, development could make access removal prohibitively expensive. This in turn would diminish the future safety and mobility of the corridor.

For the US 151/WIS 23 Connection, **WisDOT confirms the selection of the No Corridor Preservation Option as described in the 2010 ROD for this project.** Reasons for this selection include the following:

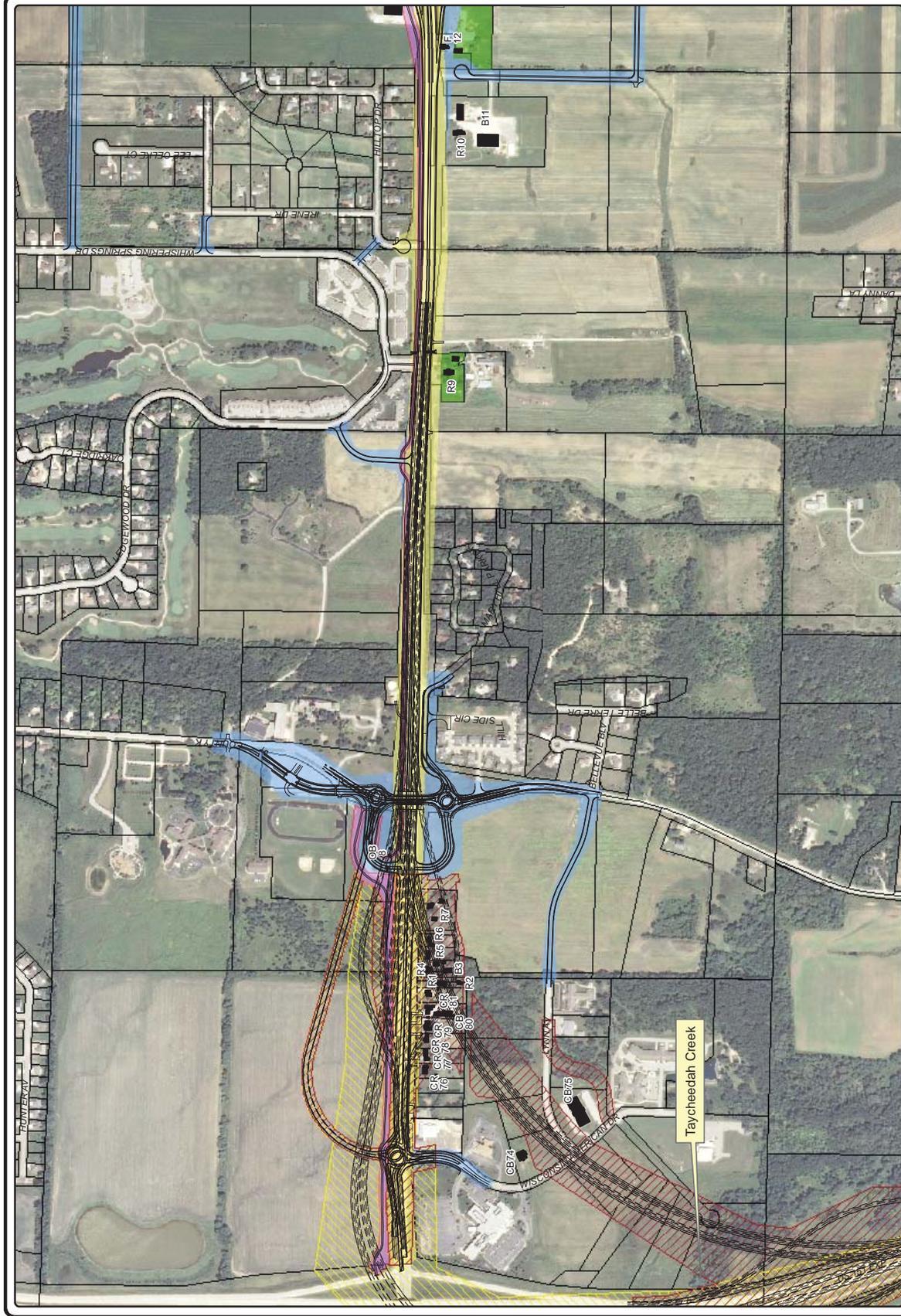
- Operations modeling indicates the current diamond interchange with conventional improvements can operate at a satisfactory LOS until the year **2060**. The full need for the improvement is likely not to be realized for **almost 50 years**.
- The effects of mapping on properties within the footprint are substantial. Option 23-1 severs an existing business park that is currently marketing parcels within the footprint. Mapping this option

<sup>9</sup> Most preservation measures are associated with access safety improvements. Access improvements that improve safety are a WisDOT priority and are regularly considered in the development of the transportation program.

would eliminate the marketability of these parcels and, unless they were purchased by WisDOT, would place an undue hardship on the owner. Option 23-2 has less dramatic effects on property owners yet still removed the utility of their land for **almost 50 years**.

- There are limited monies available for right of way purchases associated with corridor preservation measures of this magnitude. Because anticipated improvements are far into the future and there are many current statewide needs, it is unlikely that additional monies could be allocated toward right of way purchases associated with this corridor preservation.
- Time frame of **40 to 50 years** is a distant planning horizon with greater uncertainties than the typical 20-year planning horizon. Economic, energy, and transportation conditions could be substantially different than what exists today, reducing or changing the need for improvements.

Because of these reasons, the benefits derived from US 151/WIS 23 corridor preservation do not appear to outweigh the impacts to property owners and/or WisDOT right of way funding levels. If and when system interchange improvements are warranted or appear to be warranted, these measures can be reinvestigated.



**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative
- 4-Lane Expansion
- RW Needed for Build Alternative Interchanges/Local Road
- RW Needed for Build Alternative Old Plank Trail
- Excess RW Purchased
- Existing Old Plank Trail

R = Residential Relocation  
 B = Business Relocation  
 F = Farm Relocation  
 OB = Outbuilding

**CORRIDOR PRESERVATION ALTERNATIVE**

- Preservation of RW for Interchanges/Grade Separation/Local Road
- Preservation of RW for Option 23-1
- Preservation of RW for Option 23-2
- CR = Residential Property within Preservation Area
- CB = Business Property within Preservation Area
- CF = Farm Property within Preservation Area
- COB = Outbuilding



**PROJECT ID 1440-13/15-00**  
**WISCONSIN STATE**  
**HIGHWAY 23**  
**FOND DU LAC TO**  
**PLYMOUTH**

**WISCONSIN DEPARTMENT**  
**OF TRANSPORTATION**

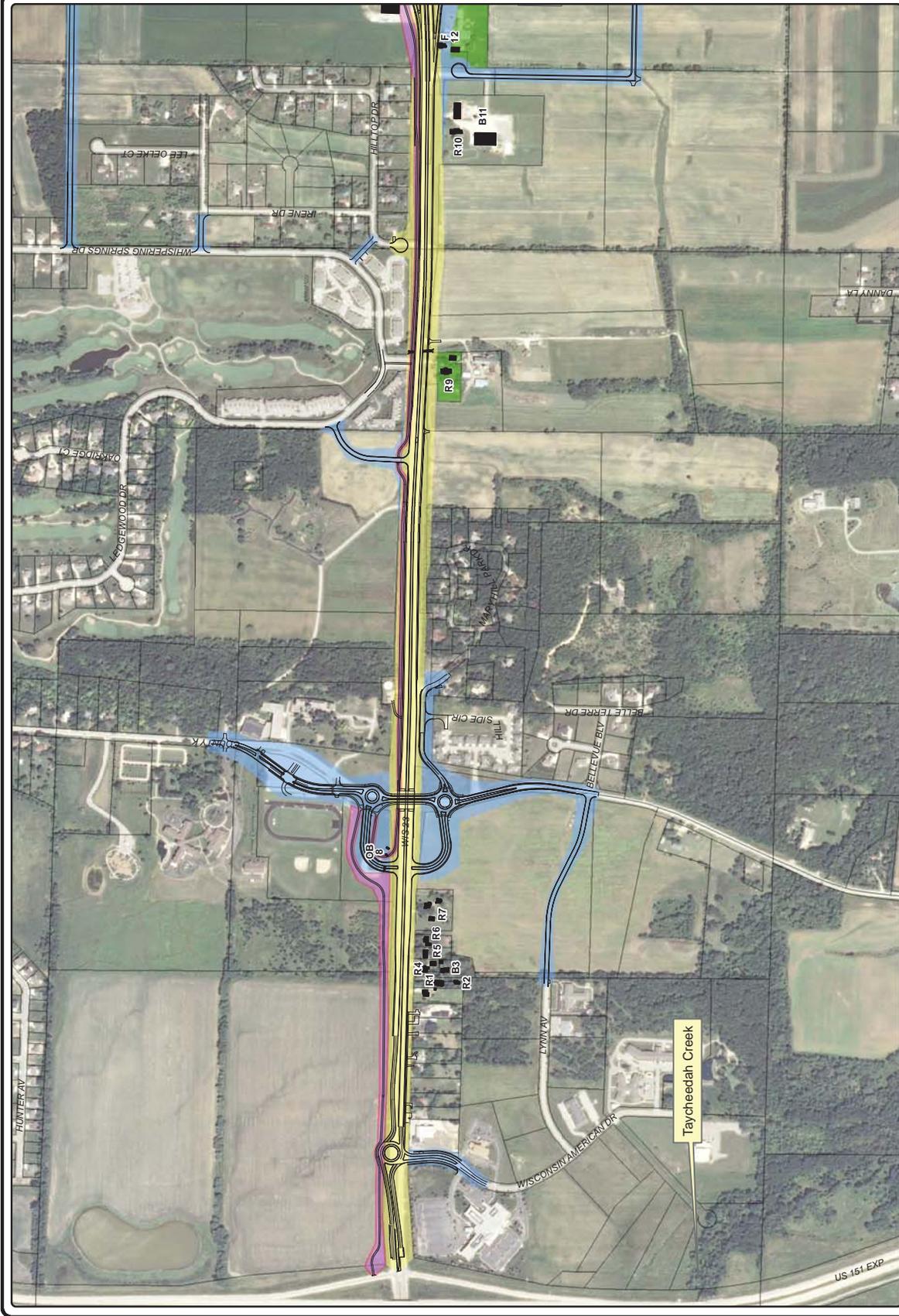
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**Figure 2.7-13**

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- Legend**
- BUILD ALTERNATIVE**
- RW Needed for Build Alternative 4-Lane Expansion
  - RW Needed for Build Alternative Interchanges/Local Road
  - RW Needed for Build Alternative Old Plank Trail
  - Excess RW Purchased
  - Existing Old Plank Trail
- CORRIDOR PRESERVATION ALTERNATIVE**
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**HIGHWAY 23**

**FOND DU LAC TO**  
**PLYMOUTH**

**WISCONSIN DEPARTMENT**  
**OF TRANSPORTATION**

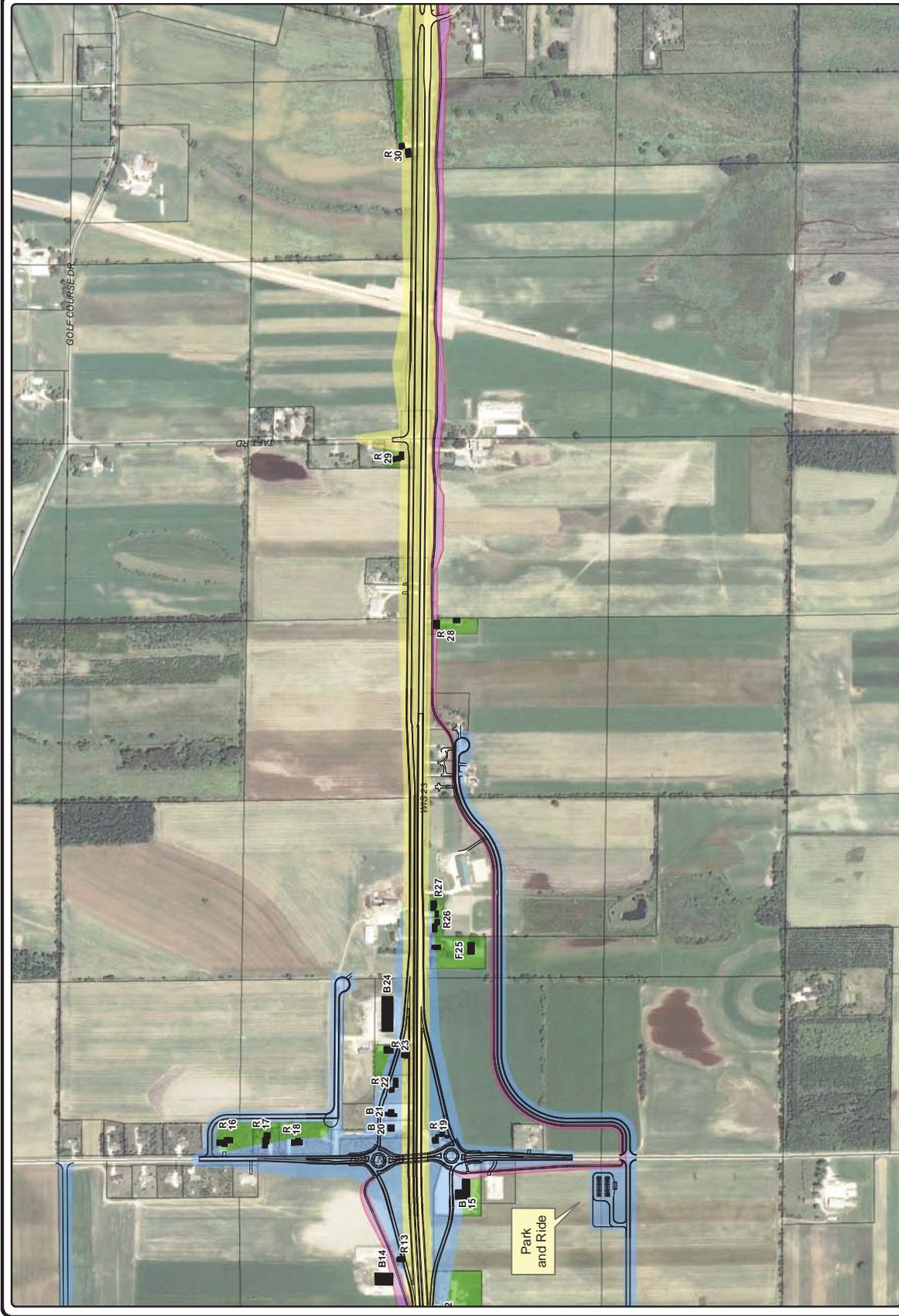
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**SHEBOYGAN COUNTIES,**  
**WISCONSIN**



**Figure 2.7-14**

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**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative 4-Lane Expansion
- RW Needed for Build Alternative Interchanges/Local Road
- RW Needed for Build Alternative Old Plank Trail
- Excess RW Purchased
- Existing Old Plank Trail

R = Residential Relocation  
 B = Business Relocation  
 F = Farm Relocation  
 OB = Outbuilding

**CORRIDOR PRESERVATION ALTERNATIVE**

- Preservation of RW for Interchanges/Grade Separation/Local Road
- Preservation of RW for Option 23-1
- Preservation of RW for Option 23-2

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**PROJECT ID 1440-13/15-00**  
**WISCONSIN STATE**  
**HIGHWAY 23**

**FOND DU LAC TO**  
**PLYMOUTH**

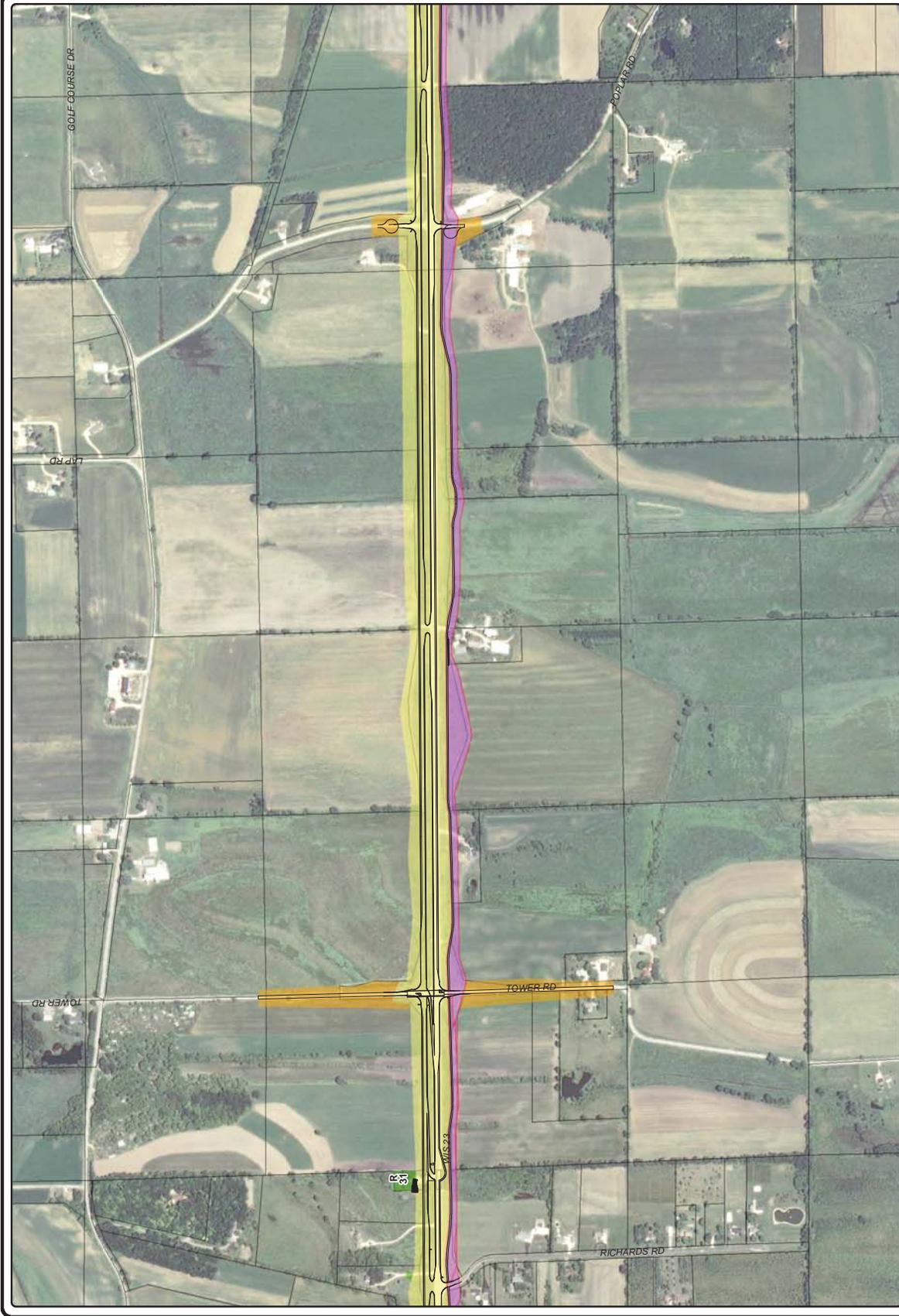
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**SHEBOYGAN COUNTIES,**  
**WISCONSIN**



**Figure 2.7-15**

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**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative
- 4-Lane Expansion
- RW Needed for Build Alternative Interchanges/Local Road
- RW Needed for Build Alternative Old Plank Trail
- Excess RW Purchased
- Existing Old Plank Trail

**CORRIDOR PRESERVATION ALTERNATIVE**

- R = Residential Relocation
- B = Business Relocation
- F = Farm Relocation
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**CORRIDOR PRESERVATION ALTERNATIVE**

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**HIGHWAY 23**

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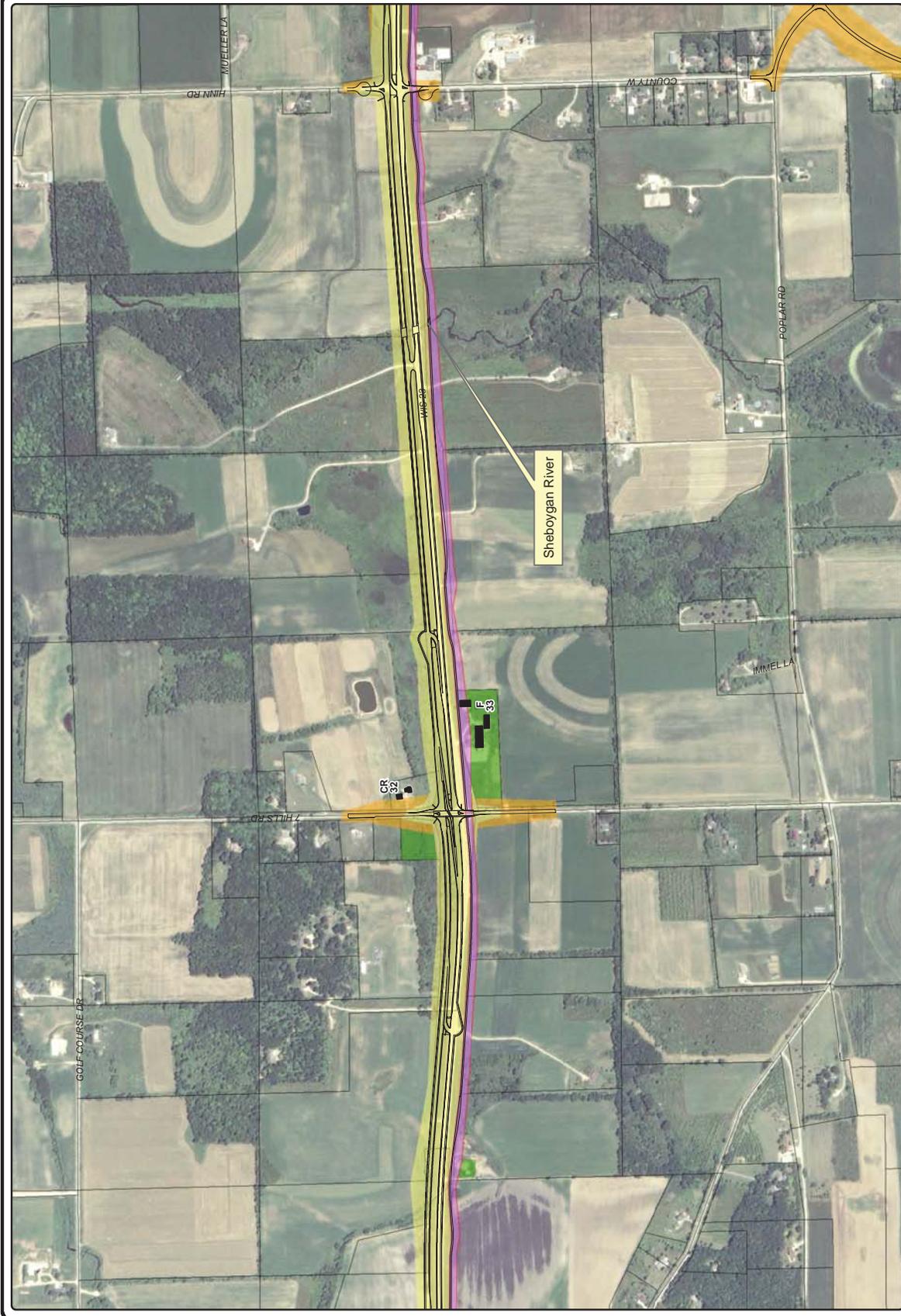
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**Figure 2.7-16**

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- Legend**
- BUILD ALTERNATIVE**
- RW Needed for Build Alternative
  - 4-Lane Expansion
  - RW Needed for Build Alternative Interchanges/Local Road
  - RW Needed for Build Alternative Old Plank Trail
  - Excess RW Purchased
  - Existing Old Plank Trail
- CORRIDOR PRESERVATION ALTERNATIVE**
- R = Residential Relocation
  - B = Business Relocation
  - F = Farm Relocation
  - OB = Outbuilding
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  - CB = Business Property within Preservation Area
  - CF = Farm Property within Preservation Area
  - COB = Outbuilding
- CORRIDOR PRESERVATION ALTERNATIVE**
- Preservation of RW for Interchanges/Grade Separation/Local Road
  - Preservation of RW for Option 23-1
  - Preservation of RW for Option 23-2



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HIGHWAY 23**

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PLYMOUTH**

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SHEBOYGAN COUNTIES,  
WISCONSIN**



**Figure 2.7-17**

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**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative
- 4-Lane Expansion
- RW Needed for Build Alternative Interchanges/Local Road
- RW Needed for Build Alternative Old Plank Trail
- Excess RW Purchased
- Existing Old Plank Trail

**CORRIDOR PRESERVATION ALTERNATIVE**

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**WISCONSIN STATE**  
**HIGHWAY 23**

**FOND DU LAC TO**  
**PLYMOUTH**

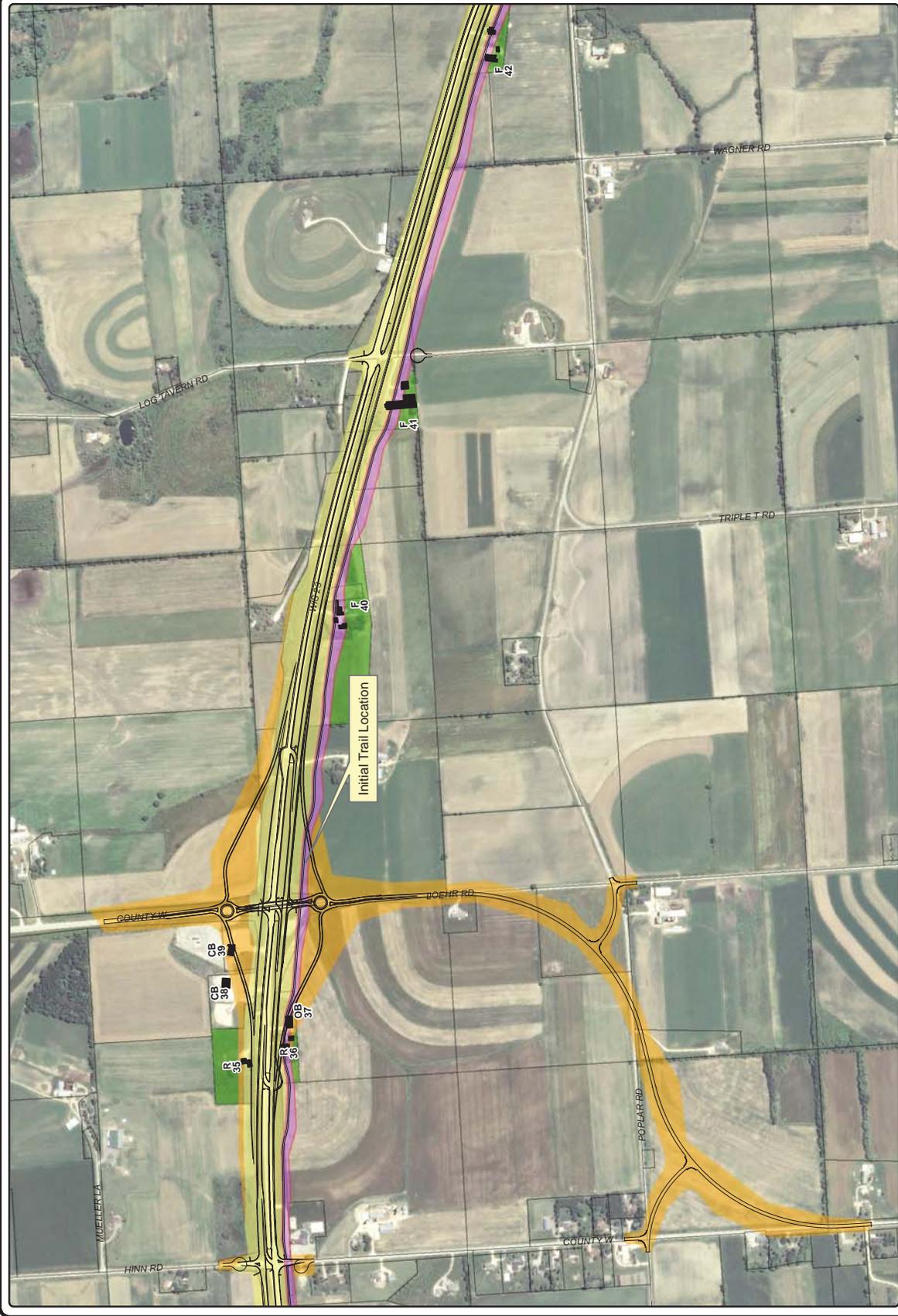
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**OF TRANSPORTATION**

**FOND DU LAC AND**  
**SHEBOYGAN COUNTIES,**  
**WISCONSIN**

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**Figure 2.7-18**

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**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative
- 4-Lane Expansion
- RW Needed for Build Alternative Interchanges/Local Road
- RW Needed for Build Alternative Old Plank Trail
- Excess RW Purchased
- Existing Old Plank Trail

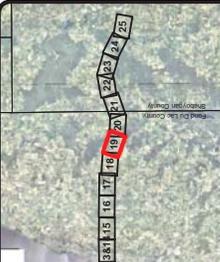
**CORRIDOR PRESERVATION ALTERNATIVE**

- CR = Residential Relocation
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**Preservation of RW for Interchanges/Grade Separation/Local Road**

- Preservation of RW for Option 23-1
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**HIGHWAY 23**

**FOND DU LAC TO PLYMOUTH**

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**FOND DU LAC AND SHEBOYGAN COUNTIES, WISCONSIN**

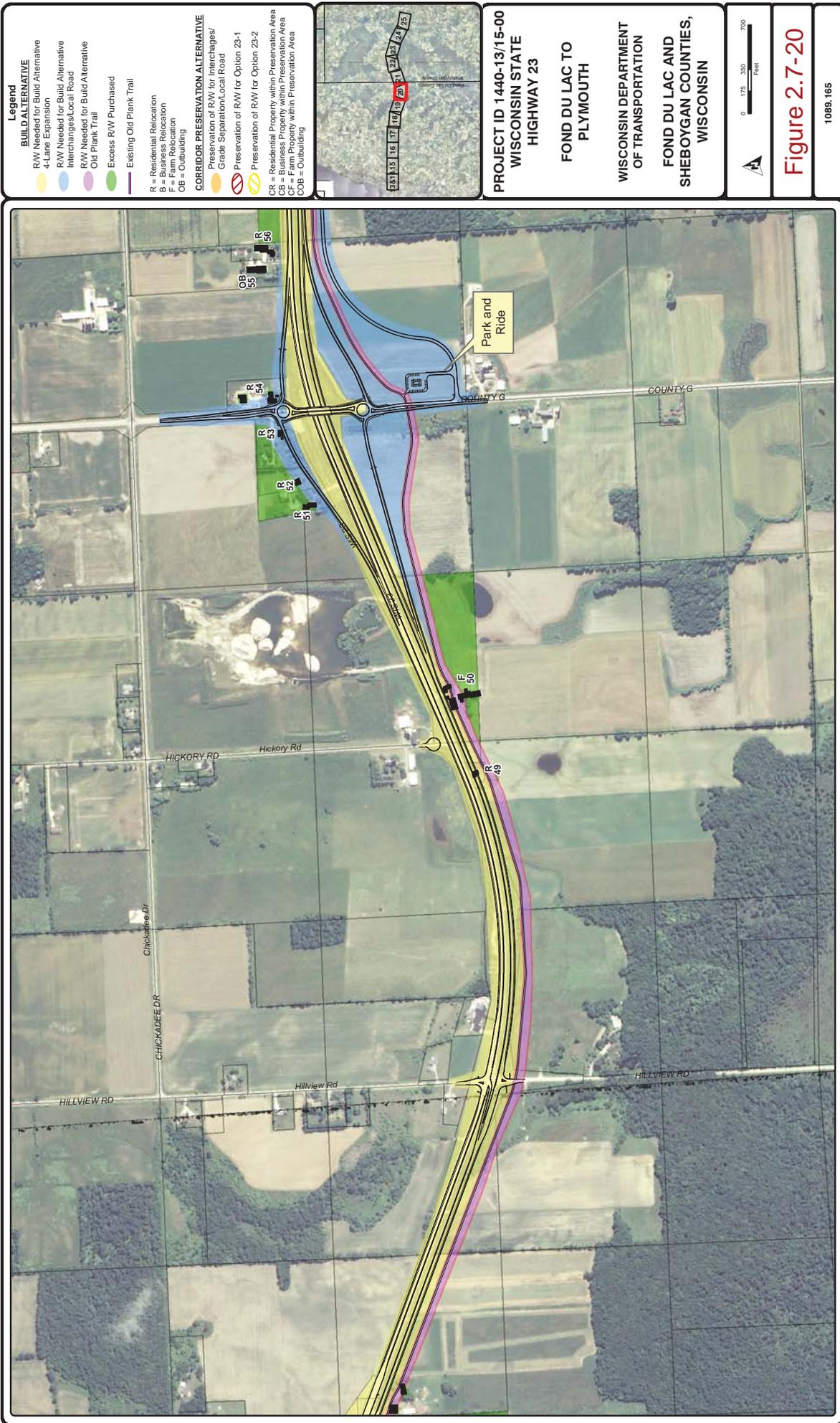
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**Figure 2.7-19**

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- Legend**
- BUILD ALTERNATIVE**
- RW Needed for Build Alternative
  - 4-Lane Expansion
  - RW Needed for Build Alternative Interchanges/Local Road
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**Figure 2.7-21**

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**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative
- 4-Lane Expansion
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**Preservation of RW for Interchanges/Grade Separation/Local Road**

- Preservation of RW for Option 23-1
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**Figure 2.7-22**

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**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative
- 4-Lane Expansion
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**PROJECT ID 1440-13/15-00**  
**WISCONSIN STATE**  
**HIGHWAY 23**

**FOND DU LAC TO**  
**PLYMOUTH**

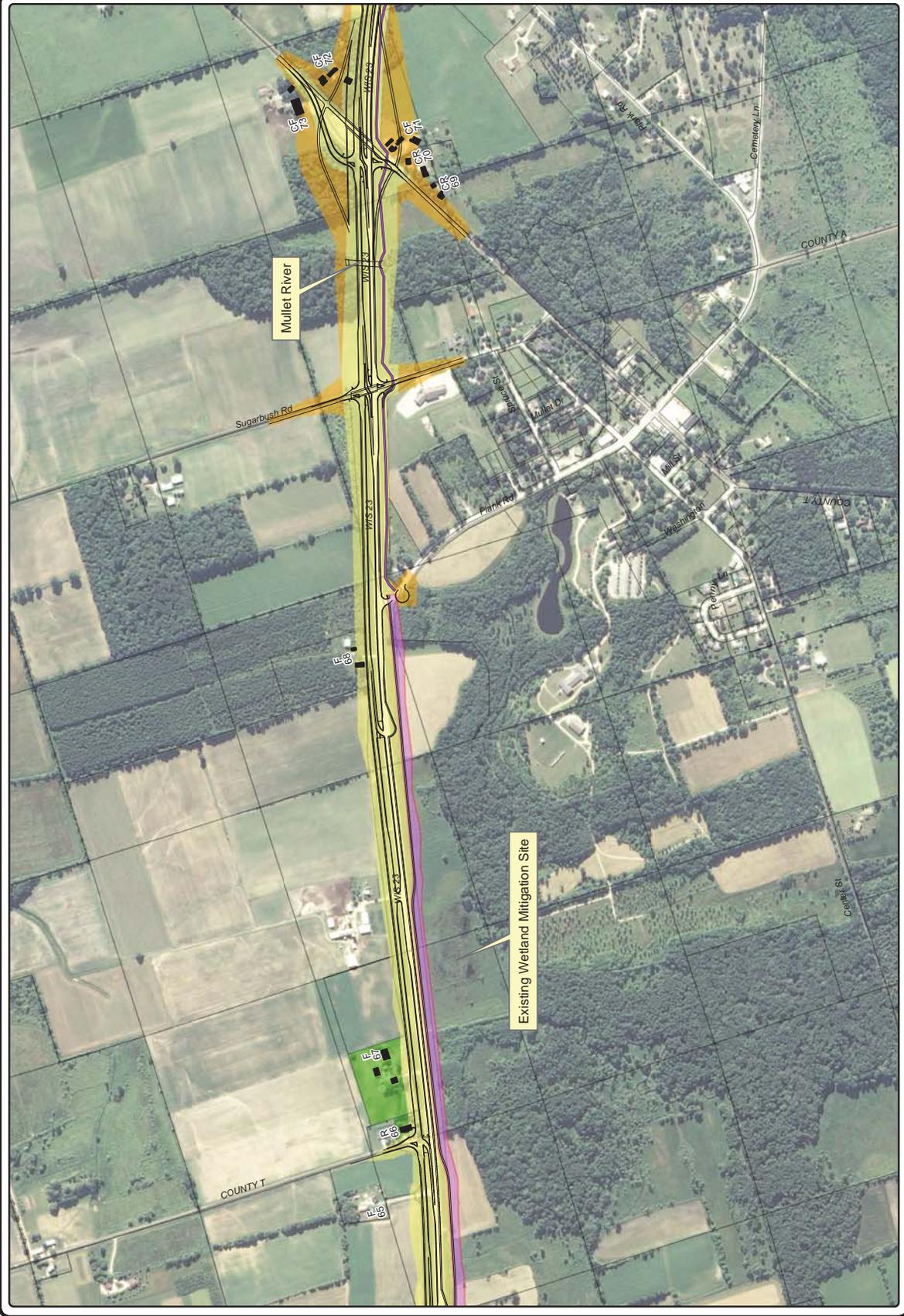
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**OF TRANSPORTATION**

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**SHEBOYGAN COUNTIES,**  
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**Figure 2.7-23**

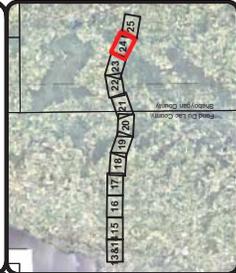
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- Legend**
- BUILD ALTERNATIVE**
- RW Needed for Build Alternative
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  - RW Needed for Build Alternative Interchanges/Local Road
  - RW Needed for Build Alternative Old Plank Trail
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**Figure 2.7-24**

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**Legend**

**BUILD ALTERNATIVE**

- RW Needed for Build Alternative
- 4-Lane Expansion
- RW Needed for Build Alternative Interchanges/Local Road
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- Excess RW Purchased
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**R** = Residential Relocation  
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**F** = Farm Relocation  
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**CORRIDOR PRESERVATION ALTERNATIVE**

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**COB** = Outbuilding

**PROJECT ID 1440-13/15-00**

**WISCONSIN STATE**

**HIGHWAY 23**

**FOND DU LAC TO**

**PLYMOUTH**

**WISCONSIN DEPARTMENT**

**OF TRANSPORTATION**

**FOND DU LAC AND**

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**Figure 2.7-25**

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