ENVIRONMENTAL EVALUATION OF FACILITIES DEVELOPMENT ACTIONS
Wisconsin Department of Transportation (WisDOT)
DT 2094 6/2015

BASIC SHEET 1–PROJECT SUMMARY

Project ID 5845-06-03 Construction ID Not Identified	Project Termini I-39/90 to US 12/18 (Madison South Beltline)	Funding Sources *(Check all that apply)* ☒ Federal ☒ State ☐ Local Estimated Project Cost and Funding Source (state and/or federal). Year of Expenditure (YOE) dollars include delivery cost. ** $203.4 million Real Estate Acquisition Portion of Estimated Cost (YOE) $8.1 million Utility Relocation Portion of Estimated Cost (YOE) $3.7 million ** See Estimated Project Cost explanation on next sheet.
Route Designation *(if applicable)* US 51 National Highway System (NHS) Route ☐ Yes ☒ No	Nearest Community City of Stoughton and Village of McFarland	
Project Title US 51 Corridor Study	Section / Township / Range 1 & 12 / T5 / R10E; 1-12 / T5 / R11E 4-9 / T5 / R12E; 31 / T6 / R11E 3-4, 9-10, 15-16, 22-23, 25-26, 36 / T6 / R10E	
County Dane		
Bridge Number(s) *(if applicable)* B-13-0385, B-13-0386, B-13-060, B-13-0376, B-13-0512, B-13-0387, B-13-0388, B-13-0812, C-13-094	For an ER, indicate the date funding was authorized to begin preliminary engineering. For an EA, indicate the date the Process Initiation Letter (PIL) was accepted by FHWA. January 15, 2020.	

Right of Way Acquisition	Acres
Fee	66
TLE	8
PLE	<1

Functional Classification of Existing Route (FDM 3-5-2)	Urban	Rural
Freeway/Expressway	☐	☐
Principal Arterial	☒	☒
Minor Arterial	☐	☒
Major Collector		☐
Minor Collector		☐
Collector	☐	
Local	☐	☐
No Functional Class	☐	☐

WisDOT Project Classification (FDM 3-5-2)	
Resurfacing	☐
Pavement Replacement	☒
Reconditioning	☐
Expansion	☒
Bridge Rehabilitation	☒
Bridge Replacement	☒
"Majors" Project (there are both state and federal majors)	☒
SHRM	☐
Reconstruction	☒
Preventive Maintenance	☐
Safety	☐
Other – Describe:	☐

☐ FHWA Draft Type 2c Categorical Exclusion (CE)/WisDOT Draft Environmental Report (ER). **No significant impacts indicated by initial assessment.**
☒ FHWA/WisDOT Draft Environmental Assessment (EA). **No significant impacts indicated by initial assessment.**

DocuSigned by: Jennifer Kobryn 12AE34D54FD8415... — Strand Associates, Inc — 24 November 2020
(Print – Preparer Name, Title, Company/Organization) (Date – m/d/yy)

DocuSigned by: Scott J. Lang 5F484D7186924F8... — 24 November 2020
(Signature – Director, Bureau of Technical Services) (Date – m/d/yy)

DocuSigned by: Jeff Berens 3EBF164D2910496... — WisDOT SW Region — 24 November 2020
(Signature, Title) (Date – m/d/yy)

DocuSigned by: Bethaney Bacher-Gresock 38411F145A8B4F3... — FHWA — 24 November 2020
(Signature, Title) (Date – m/d/yy)

☒ Region ☐ Aeronautics ☐ Rails & Harbors ☐ FHWA ☐ FAA ☐ FTA ☐ FRA

☐ FHWA Final Type 2 Categorical Exclusion (CE)/WisDOT Final Environmental Report (ER). It has been determined **no significant impacts will occur** and a Public Hearing is not required.

After reviewing and addressing substantive public comments, updating the Draft CE/ER or Draft EA and coordinating with other agencies, it is determined this action:

☐ **Will NOT significantly affect** the quality of the human environment. This document is a Final CE/Final ER.

☒ **Will NOT significantly affect** the quality of the human environment. This document is a Final EA/Finding of No Significant Impact.

☐ **Has potential to significantly affect** the quality of the human environment. I…mpact Statement (EIS) required.

DocuSigned by:
Luke Hellermann — CC9720A3B7024E3...
Strand Associates, Inc. — 16 August 2021
(Name, Company/Organization) (Date – m/d/yy)

DocuSigned by:
Scott J. Lawry — 5F484D7166924F8...
16 August 2021
(S…ou of Technical Services) (Date–m/d/yy)

DocuSigned by:
Jeff Berens — 3EBF164D2910496...
WisDOT SW Region — 16 August 2021
(Date – m/d/yy)

DocuSigned by:
Bethaney Bacher-Gruszk — 38411F145A8B4F3...
17 August 2021
(Signature, Title) (Date–m/d/yy)

☐ Region ☐ Aeronautics ☐ Rails & Harbors ☐ FHWA ☐ FAA ☐ FTA ☐ FRA

Alternative Alternative H	Total Length of Center Line of Existing Roadway 18.6 miles Length of This Alternative 17.7 miles

1. Date(s) of Public Notice: March 21, 2021 and April 11, 2021

2. In: (Name of Newspaper): Wisconsin State Journal

3. Dates Environmental Assessment (EA) made available to public:

From January 5, 2021

To April 28, 2021

4. Public Hearing:

☐ Was not required, explain: _____
☐ Opportunity was given but no hearing was held.
  ☐ No requests for a public hearing were received.
  ☐ Requests for a public hearing were not substantial.
☒ Was held on April 20, 2021 and April 21, 2021.

5. Summarize comments from the Public Hearing and Public Notice of Availability. Characterize public support or opposition to the project. Include a summary of the changes to the environmental document and the project resulting from comments: (Note: Alternatives proposed by the public and subsequently rejected should be identified and the reasons for rejecting them included.)

The following is a summary of public hearing participation and the verbal and written testimony received during the public hearing and public availability period ending April 28, 2021 for the environmental document.

For the virtual component of the public hearing on April 20, 2021:

- 52 streamed live on YouTube.
- 1,218 people viewed the recorded portions of the public hearing through the end of the availability period.
- Three people gave public testimony.
- One person gave private testimony.

For the in-person component of the public hearing, held in Stoughton on April 21, 2021:

- 19 people attended.
- Four people gave private testimony.

A total of 71 people provided comments. The Yahara Lakes Association and the Lake Waubesa Conservation Association each provided a comment. Groupings of similar comments include the following:

- Nine comments requested a pedestrian underpass or portage at the Yahara River bridge in McFarland.
- Six comments were related to reducing the speed limit.
- Five comments were related to the Farwell Street intersection and a median opening near Culver's in McFarland.
- Four comments requested temporary safety improvements.
- Four comments were related to providing a long bridge span over the Yahara River in McFarland.
- Three comments requested roundabouts at the Siggelkow Road ramp terminals.
- Three comments were in opposition to removal of on-street parking east of the railroad crossing in Stoughton.

No changes were made to the preferred alternative (Alternative H) based on the testimony received. No changes to the environmental document or changes to project impacts resulted from the testimony received. While some objected to aspects of the project, WisDOT and FHWA determined the project is still needed to address existing safety conditions, accommodate travel demand, address existing pavement condition, improve bicycle and

pedestrian accommodations, and long-term planning and corridor preservation. A table summarizing comments and responses to comments is provided with this Addendum. The summary table provides additional details and reasons why no changes to the project are planned. Follow-up coordination has been and will continue to occur with project stakeholders to resolve questions presented and WisDOT will attempt to further minimize impacts, where feasible, during final design.

6. Describe selected alternative:

☒ Selected alternative is the same as that described on form DT2094, Environmental Evaluation of Facilities Development Actions.
☐ Selected alternative is different from that described on form DT2094, Environmental Evaluation of Facilities Development Actions. Explain changes and why another alternative was selected.

The selected alternative is the same as that described in the EA (form DT2094).

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
Proposed development on the west side of Stoughton is working with Stoughton. Has the project communicated with Stoughton?	1		The study team has been coordinating with the City regarding the proposed development on the west side of Stoughton and the potential impacts to the US 51 design in that area. Coordination will continue as the project moves forward.
Concerned with safety and mobility of US 51/County B (east) and US 51/County B/AB. Requested a signal or roundabout be included at these intersections.		1	A part of the US 51 Corridor Study includes a roundabout being proposed at US 51 and County B (east). The US 51 and County B/AB intersection is no longer part of the study and a separate roundabout project is being designed with construction anticipated for 2024.
Concerned with safety accessing US 51 from existing Tower Drive.	1		As part of the US 51 Corridor Study the west leg of the US 51 and Tower Drive intersection will be relocated to connect in with a proposed roundabout at Exchange Street.
Concerned that their property was one of the proposed residential relocations.		2	The properties in question are not considered a potential relocation with the preferred alternative.
Supports four lanes between Stoughton and McFarland.		1	Alternative B would provide four lanes between Stoughton and McFarland. Although Alternative B fully meets the project's purpose and need factors, it has greater impacts, did not meet fiscal constraint requirements, and had more public opposition than the other alternatives.
A. Concerned with the median closure in McFarland. Stated that removing the curb cut access for southbound US 51 vehicles to turn left into Culver's would create an unsafe situation for vehicles and pedestrians at the Farwell Street intersection. Stated that the existing curb cut has not resulted in auto or pedestrian traffic accidents or injuries. Requested that a curb cut in the median be provided to allow left-turning vehicles from southbound US 51 to enter Culver's from US 51. B. After observing traffic, 50 or 70** percent of the southbound US 51 traffic uses the median opening to access Culver's and closure would destroy the business. There would be severe congestion at Farwell Street. With restricted access, Culver's would be non-viable. Would WisDOT purchase the property? ** 50 percent was noted during virtual testimony at the public hearing. 70 percent was noted in a phone call. C. Has an extended driveway option north of Culver's been investigated further?	1 *	1 *	A. Future development to the east is expected to increase left-turning traffic from US 51 to Farwell Street. WisDOT is proposing a dual southbound left-turn lane to reduce the queuing. If the existing median opening was maintained, as proposed by the commenter, it would fall within the left-turn storage lane which does not comply with WisDOT standards. Regarding crashes at the driveway location, in the period 2014-2018, there was one crossing maneuver crash with a southbound left-turning vehicle at the Culver's driveway that resulted in property damage. B. During final design WisDOT will be looking at traffic flow in and around the Farwell Street intersection to determine what other options may be available. C. An extension was reviewed during the study but there were concerns by the WisDOT Access group about the proximity of an extension to the US 51/Dale Curtain intersection. An extension will be investigated further during final design to determine if it is a viable option.
Concerned with the safety of the US 51 and County B (east) intersection.	1		As part of the US 51 Corridor Study there is a roundabout being proposed at US 51 and County B (east).

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written**	**Verbal**	**Response**
	* Comment provided in both written and verbal forms.		
Concerned with the safety and intersection sight distance from Rutland-Dunn Townline Road onto US 51.		1	The preferred alternative will expand US 51 to four lanes in this area and a northbound left-turn lane would be added at the intersection. The surrounding area will be graded to provide acceptable intersection sight distance.
Another fatality has occurred at Roby Road. Does Stoughton need to add a stop light at that intersection? Can temporary stop/go lights be included at US 51 and Roby Road?	1		The US 51 and Roby Road intersection is no longer part of the study and a separate roundabout project is being designed with construction anticipated for 2022. Prior to construction, interim improvements at County B/AB, County B (east), Rutland Dunn Townline Road, and Roby Road will include pavement marking and signs.
Another fatality has occurred on US 51. What is the status of the plan to improve this roadway?	1		Alternative H was selected as the preferred alternative for the corridor because it best addressed the corridor needs after considering the projected impacts and available funding. Construction is anticipated to occur in the mid to late 2020s. Prior to construction, interim improvements at County B/AB, County B (east), Rutland Dunn Townline Road, and Roby Road will include pavement marking and signs. There will also be increased speed limit enforcement in the area. Four additional roundabouts are also being designed and constructed as separate projects prior to the US 51 corridor improvements (Hoel Avenue/Silverado Drive, WIS 138 (west), Roby Road, and County B/AB). Roundabouts provide increased safety for severe crashes and increase mobility
What is the proposed construction sequencing, specifically between Larson Beach Road and Voges Road?	1		US 51 corridor will be constructed in stages from the mid- to late-2020s. WisDOT is still working on finalizing construction timeframes for the various segments; however, at this point it is anticipated that the section of the corridor from Larson Beach Road to Voges Road would likely start in 2025 with just the building of crossovers for traffic staging, and the rest or bulk of the work would be completed in 2026.
Against the number of proposed roundabouts and the money should be used to improve other roadways. Issues also included education on how to use a roundabout, lack of transparency in government agencies, and public image.		1	Intersection control evaluations (ICE) were performed for each of the proposed roundabout locations. WisDOT selected the appropriate control type based on traffic operations, safety, and impacts. During design WisDOT will continue to provide public involvement, including how to drive through a roundabout.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
Interested in an overview of the project.		1	The purpose of this project is to provide a safe and efficient transportation system for the US 51 corridor that serves present and long-term travel demand while minimizing disturbance to the environment. The proposed improvement includes: • Reconstruction of 2-lane US 51 east of Stoughton. • Reconstruction of existing US 51 through Stoughton. • Urban 4-lane reconstruction and capacity expansion along the west side of Stoughton. • Reconstruction of rural 2-lane US 51 (Stoughton to McFarland) with intersection improvements. • Urban 4-lane reconstruction in McFarland. • Pavement replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road interchange ramp improvements, and addition of an auxiliary lane in each direction north of Siggelkow Road.
Concerned with safety accessing US 51 from Tower Drive and requests a temporary lower speed limit on US 51 until construction is completed.	1		As part of the US 51 Corridor Study the west leg of the US 51 and Tower Drive intersection will be relocated to connect in with a proposed roundabout at Exchange Street. Request for a temporary lower speed limit until construction is completed was forwarded to WisDOT Traffic.
Support roundabouts at the Siggelkow Road ramp terminals.	3		Comment acknowledged.
Requests a longer US 51 southbound right-turn lane and US 51 northbound left-turn lane to Bible Camp Road for safety. McFarland is not pedestrian friendly.	1		A right-turn lane has not been proposed on southbound US 51 at Bible Camp Road because it is not warranted based on WisDOT standards and would cause impacts to Babcock Park. Sidewalks are proposed along one or both sides of US 51 from Exchange Street to Larson Beach Road in McFarland.
Requests a stop light at Mahoney Road for safety. Concerned with safety of drivers turning from the proposed Mahoney backage road to Mahoney Road. Concerned with people using private driveways to turn around on Mahoney Road. Requests that the speed limit of US 51 at Mahoney Road be permanently reduced.		1	The recommended improvements at Mahoney Road were selected based on a variety of factors such as traffic operations, safety, impacts, and costs. Alternative H includes a proposed median with designated left-turn lane at Mahoney Road. The removal of driveway access points along US 51 near Mahoney Road will reduce the conflict points along the higher volume roadway (US 51) and shift them to the lower volume backage road that connects to Mahoney Road. The backage road connection is located approximately 550 feet from the US 51 intersection. A permanent speed limit change on US 51 within the town of Dunn is not included with this project. The town of Dunn could request that WisDOT conduct a speed study in the area after construction is completed. The results of the speed study would indicate if the speed limit should be changed.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
A. Concerned with the safety of left turning vehicles at Yahara Drive. B. Questioned if additional right of way was required at a specific parcel. C. Requested lowering the speed limit through McFarland. D. Concerned with the US 51 and Farwell Street intersection.		1	A. A two-way left-turn lane will be provided at Yahara Drive, which would allow vehicles traveling southbound on US 51 to move out of the through travel lane of traffic to make a left turn. B. Based on the planning-level design, WisDOT does not anticipate needing any right of way from that parcel. C. A speed limit change within McFarland is not included with this project. McFarland could request that WisDOT conduct a speed study in the area after construction is completed. The results of the speed study would indicate if the speed limit should be changed. D. Improvements to US 51 and Farwell Street including two left-turn lanes and removing median access on US 51 were based on traffic volumes, left-turn movements, and signal phasing to avoid backups onto US 51 through lanes. Additional coordination with McFarland will continue during final design to examine potential options to further improve safety and mobility at this intersection.
Requests roundabouts on the west side of Stoughton as soon as possible. Specifically, at Roby Road and County B (east).	1		As part of the US 51 Corridor Study there is a roundabout being proposed at US 51 and County B (east). At this time, construction is anticipated for the mid- to late-2020s. The US 51 and Roby Road intersection is no longer part of the study and a separate roundabout project is being designed with construction anticipated for 2022.
A. Questioned the dates of construction, how people will be notified of construction, and routes during construction. Also requested reconsideration of bicycle lanes alongside the highway in rural areas. B. Concerned with impacts at County B/AB roundabout to property owners and Indian mound site. Project should not move forward. Against the County B/AB roundabout.	1		A. Construction is anticipated to occur in the mid- to late-2020s. As the study transitions over to the project design team construction staging will be finalized and additional public involvement will occur to provide stakeholders with the latest updates. B. The US 51 and County B/AB intersection is no longer part of the study and a separate roundabout project is being designed with construction anticipated for 2024. The comment will be forwarded to that design team.
Against McFarland design.	1		Comment acknowledged.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
What is the improvement at US 51 and County B (east)? Can something be done before construction like traffic calming or temporary lights?	1		As part of the US 51 Corridor Study there is a roundabout being proposed at US 51 and County B (east). At this time, construction is anticipated for the mid- to late-2020s. New signs and pavement markings will be added to the US 51 intersection with County B, Rutland-Dunn Townline Road, Roby Road, and County B/AB to improve the existing conditions until the proposed projects can occur.
Concerned with the impact to downtown Stoughton businesses during construction.		1	At this time, construction is anticipated for the mid- to late-2020s. WisDOT will set up a meeting with the potential for reoccurring meetings with the Stoughton area businesses to review questions and provide construction information.
Interested to know what improvements are proposed near their business and if there are any impacts to their property.	1		The business is located at the intersection of McComb Road and Hoel Avenue. The nearest construction to the property is the roundabout at US 51 and Hoel Avenue. The project website has exhibits of the preferred alternative, including the roundabout at US 51 and Hoel Avenue. The roundabout at US 51 and Hoel Avenue is no longer part of the study and is a separate project that is currently being designed and construction is anticipated for 2022.
Interested in the next steps as a relocated property and the location of other relocations.	1		This relocation is part of the US 51 and County B/AB roundabout project. This project has been removed from the study and is being constructed as a separate project. The plat for that project is anticipated in late spring 2021 which is when the real estate process can begin. The potential relocations for the US 51 Corridor Study include a home location in the northwest quadrant of the US 51 and Rutland-Dunn Townline Road intersection, and a home located on top of the large rock-cut area near Charles Lane.
Request for information in the area of a high-pressure petroleum pipeline.	1		The project website has exhibits of the preferred alternative throughout the corridor. The comment was specifically looking into US 51 and Terminal Drive improvements. The US 51 Corridor Study is expected to end construction approximately 1,800 feet south of this intersection.
What is the proposed improvement at US 51 and Exchange Street? Will there be a left-turn from US 51 southbound to Exchange Street? Is the clearing of trees that occurred in January 2021 part of the project? What is the plan to improve visibility and safety at US 51 and Tower Road?	1		A roundabout is proposed for US 51 and Exchange Street as part of the preferred alternative. Tower Road on the west side of US 51 will be realigned to connect into the proposed US 51 and Exchange Street roundabout. The January 2021 woodland clearing was not completed as part or in conjunction with the US 51 Corridor Study.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
US 51 is an alternative route for interstate traffic and improvements should address future traffic needs. A two-lane roadway between Stoughton and McFarland will not be sufficient. There have already been too many traffic deaths. Avoid a short-term solution that has to be addressed again in the future.	1		WisDOT investigated a capacity expansion alternative (Alternative B) that included expanding US 51 to four lanes between Stoughton and McFarland. Alternative B was dismissed from the study in 2015 for the following reasons: ▪ Alternative B had significantly more environmental and property impacts than the other build alternatives. ▪ Alternative B received more public opposition that the other alternatives. ▪ Alternative B did not meet the federal fiscal constraint requirement–Construction funding for an expansion alternative would not be available until after the planning horizon for the study (approximately 30 years). Alternative H was selected as the preferred alternative for the corridor because it best addressed the corridor needs after considering the projected impacts and available funding. The addition of roundabouts at larger volume intersections and right- and left-turn lanes at lower volume intersections between Stoughton and McFarland will improve safety and intersection mobility. Based on traffic forecasts and traffic operations modeling, Alternative H accommodates future traffic within the planning horizon.
Is the Tower Road realignment to the Exchange Street roundabout the final plan for the US 51 project or could it be changed? Could the impacts be reduced? What happens with the property that is severed by the new roadway? The property remaining would not allow resident to have two homes on the parcel with Dunn ordinances. Should residents attend a public hearing?		1	The realignment of Tower Road is a part of the preferred alternative that WisDOT is moving forward with. The realignment of Tower Road could be changed during the final design process, but significant changes are unlikely. WisDOT modified the Tower Road realignment to reduce impacts to private property owners. WisDOT must follow roadway design standards (roadway curvature, throat distance at an intersection); however, during the final design the design team would continue to investigate ways to minimize the amount of right-of-way impacts shown in the environmental document. The property between Tower Road and US 51 would be considered a severed parcel, and WisDOT would offer to purchase the severed land as part of the roadway project. Residents should contact Dunn to discuss local ordinances. WisDOT Real Estate will consider this situation to determine whether it should be factored into the appraisal for the property. If a public hearing was requested, it would depend on the person to determine for themselves if they wanted to attend.

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Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
Construction occurred in 2020 in Stoughton. Is WisDOT going to reconstruct that area again? How many roundabouts were proposed on the corridor? Opposes roundabouts. Has experienced more close calls at roundabouts than at signalized intersections.		1	The 2020 project was a rehabilitation project meant to improve the driving surface of US 51 until the reconstruction project could be completed. Stoughton supported the 2020 project moving forward. The preferred alternative includes two roundabouts at County B (east) and Exchange Street. Roundabouts could also be included at the Siggelkow Road ramp terminals. Four additional roundabouts are being designed and constructed as separate projects (Hoel Avenue/Silverado Drive, WIS 138 (west), Roby Road, and County B/AB). Roundabouts provide increased safety for severe crashes and increase mobility. Stoughton has also been supportive of the roundabouts.
Wants the speed limit in McFarland lowered.		1	A speed limit change within McFarland is not proposed with this project. McFarland could request that WisDOT conduct a speed study in the area after construction is completed. The results of the speed study would indicate if the speed limit should be changed.
Requests two lanes at the southbound exit ramp to Siggelkow Road to separate eastbound and westbound traffic. Also requests a hill climbing lane for the northbound entrance ramp.	1		The proposed action does not include the addition of lanes to the exit or entrance ramps at the Siggelkow Road interchange. WisDOT will continue to assess the operational needs during final design.
Against the removal of parking east of the railroad tracks in Stoughton.		3	In 2015, WisDOT showed three cross-section options for the section on US 51 in this area; one that did not allow parking on either side of US 51, one that allowed parking on one side, and one that allowed parking on both sides. WisDOT asked the public to comment on which option they preferred for the area. Ten comments supported no parking on both sides of US 51, two comments supported parking on both sides of US 51, and one comment supported parking on one side of US 51. In addition, in September 2015, Stoughton passed a resolution stating that it supported no parking on both sides of US 51 from Spring Road to the railroad tracks in Stoughton. WisDOT then met with Stoughton representatives in June 2021 and they confirmed they are still in agreement with the 2015 resolution. For these reasons, the preferred alternative did not include parking on both sides of US 51.
Against the pedestrian islands in Stoughton.		1	WisDOT will work with Stoughton on potential pedestrian safety enhancements at various locations on the corridor as the design progresses.
Traffic drives too fast in Stoughton and does not stop for pedestrians. Suggests a 4-way stop on US 51.		2	WisDOT will work with Stoughton on potential pedestrian safety enhancements at various locations on the corridor as the design progresses.
Requests longer turn bay lengths at Charles Lane.		1	WisDOT is proposing to add a left- and right-turn lane at the US 51 and Charles Lane intersection and the length of the turn lanes will be designed for the 55-mile-per-hour roadway.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
Unless substantial grading is done to improve the sight lines at Brooklyn Drive the intersection should be made right in/right out.	1		The preferred alternative proposes to change the existing alignment to meet sight distance requirements. The horizontal curve deficiencies in the area will be brought up to standard and the hill between County B (east) and Brooklyn Drive will be lowered to meet sight distance requirements.
Four residential property owners asked if their properties would be impacted by the proposed action.	2	2	WisDOT responded to each property owner individually with details of what impact, if any, was anticipated based on planning-level design. As appropriate for each property, WisDOT provided site-specific maps, links to aerial maps on the study website, an indication of the construction schedule and that WisDOT does not typically begin acquiring real estate for a project until approximately two to three years prior to construction. Specific real estate questions were referred to WisDOT Real Estate.
What are the improvements at Voges Road and US 51?		1	The study is proposing auxiliary lanes in both the northbound and southbound direction between the Siggelkow Road interchange and Voges Road.
Request for more information on the typical section east of the railroad tracks in Stoughton. Requested the timing for proposed changes.		1	In 2015, WisDOT showed three cross-section options for the section on US 51 in this area; one that did not allow parking on either side of US 51, one that allowed parking on one side, and one that allowed parking on both sides. WisDOT asked the public to comment on which option they preferred for the area. Ten comments supported no parking on both sides of US 51, two comments supported parking on both sides of US 51, and one comment supported parking on one side of US 51. In addition, in September 2015, Stoughton passed a resolution stating that they supported no parking on both sides of US 51 from Spring Road to the railroad tracks in Stoughton. WisDOT then met with Stoughton representatives in June 2021 and they confirmed they are still in agreement with the 2015 resolution. For these reasons, the preferred alternative did not include parking on both sides of US 51. There is still time to provide input regarding the roadway cross-section between Spring Road and the railroad tracks.
Supports a pedestrian and/or boat connection under the Yahara River Bridge at Babcock Park. ▪ Five of the comments requested a pedestrian underpass or walkway. ▪ Two of the comments requested a portage or pedestrian walkway. ▪ Two comments requested a canoe and kayak portage.	9*	1*	The preferred alternative (Alternative H) would extend the bridge length to match the width of the existing dam opening on the Yahara River. As the design continues to progress, WisDOT will continue to coordinate with Dane County Parks and McFarland on a potential underpass at the bridge as well as pedestrian safety on US 51.
Request to have the Yahara River Bridge opening exceed the width of the lock and dam.	4		A new bridge crossing of the Yahara River would provide an increased span that matches the existing dam opening. Further review to increase the span will be completed during final design.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
Requests a traffic light at County B/AB. Roundabout will be difficult for semitrucks. Sewer bills will increase by $600 per year to relocate sewer lines. If a roundabout is the only option, then visibility is a must. Roundabouts waste money, create more runoff from rain, and cause more accidents.	1		The US 51 and County B/AB intersection is no longer part of the study and a separate roundabout project is being designed with construction anticipated for 2024.
A. Re-examine the speed limits through the corridor. The 55 miles per hour (mph) should be reduced to 45 mph. B. There needs to be clearer definition of pedestrian and bicycle safety through the proposed intersections in conjunction with existing walkways and bicycle paths. C. Better interim safety measures must be in place. Especially at Roby Road, Rutland-Dunn Townline Road, County B (east), County B/AB, and Tower Road.	1		A. A speed limit change within the corridor is not included with this project. Local municipalities could request that WisDOT conduct speed studies along the corridor after construction is completed. The results of the speed studies would indicate if the speed limit should be changed. B. WisDOT will work with local municipalities on potential pedestrian safety enhancements at various locations on the corridor as the design progresses. C. Prior to construction, interim improvements at County B/AB, County B (east), Rutland-Dunn Townline Road, and Roby Road will include pavement marking and signs. There will also be increased speed limit enforcement in the area.
Concerned with the median closures in McFarland. Restricting access would have huge impacts to business.		2	WisDOT will investigate traffic patterns in the area during final design to further investigate potential options to address WisDOT and stakeholder concerns regarding Farwell Street.
Requests wildlife corridors. Did the study examine the effects on wildlife and the possibility of wildlife corridors?	1		The Environmental Assessment (EA) documents the social, environmental, and other effects of the location and design of the proposed project, as well as the various alternatives that were presented and considered at the public hearing. Impacts to wildlife and the environment were reviewed and documented. In addition to the review and documentation of impacts, extensive coordination with resource agencies occurred to aid the WisDOT project team to understand the resources within the project area. One of the results of this coordination was the identification of the need for a bridge over Keenans Creek rather than a culvert, which will increase hydraulic connectivity in the Lower Mud Lake Fishery wetlands and function as a wildlife crossing.
What has been done to mitigate additional water flowing onto the property? Drainage area is limited and additional water will likely cause more loss of farmable land.	1		WisDOT recognizes drainage as a primary consideration for highway construction. Every WisDOT project strives to deliver a drainage system that provides safety to the traveling public by using sound engineering practices outlined in the WisDOT Facilities Development Manual (FDM) to protect and drain the highway while protecting private property from flooding, water-soaking or other damage in accordance with applicable statutes and administrative rules. Specific design elements will be incorporated after hydrologic and hydraulic analyses are completed during final design.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
Make the roundabout at Exchange Street large enough to accommodate the many boats on trailers and trucks/cars that will use the roundabout.	1		The roundabout will be designed to accommodate large semitrucks and recreational vehicles.
Supports roundabouts. WisDOT has refused to look into a rail alternative for travel along US 51. The State of Wisconsin already owns the tracks from the Isthmus to downtown Stoughton, so there would be negligible maintenance cost increases. On top of all of this is that WisDOT seemingly refuses to see the environmental impacts of continuing to expand roadways. Building wider roads will just encourage more cars to take that road. Instead we could fund a transit option that would alleviate traffic on US 51, I-90, and the Madison Beltline. The time is now to fund affordable transportation for everyone in the state, not just car owners.	1		Early in the alternatives development process during the study's Environmental Impact Phase (2006 to 2013), Transportation Demand Management (TDM) strategies, such as Park and Ride lots and transit (including vanpool, express bus, and rail), that might reduce the number of single-occupancy vehicles on US 51, were initially considered. If transit service were initiated between Stoughton and Madison it could capture up to 6 percent of the traffic from US 51. Even with this mode shift, 2035 traffic volumes on US 51 will still be greater than what exists currently. Congestion and safety concerns would remain. While TDM measures have merit, they are not able to fully address the project purpose and need as standalone strategies.
A. Put a roundabout at Tower Road instead of rerouting to Exchange Street. B. Put a bicycle lane from Tower Road to Babcock Park. Bicycle traffic has increased significantly.	1		A. Potential intersection control (roundabouts and signals) at Tower Road was investigated as part of the US 51 Corridor Study. Based on the analysis completed, it was determined that intersection control would not be warranted because of the low traffic volumes. WisDOT also looked at potentially restricting access at the intersection, but that was considered undesirable because of the indirection it would cause. Because restricting access and intersection control were not reasonable, options that relocate Tower Road to the proposed roundabout at Exchange Street were investigated further and eventually incorporated into the preferred alternative. B. WisDOT has not had any discussions regarding a bicycle lane or multiuse path from Tower Road to Babcock Park. With the passage of Wisconsin Statute 32.015 in 2017, WisDOT cannot condemn property to acquire right of way for bicycle accommodations such as bicycle lanes or multiuse paths. These accommodations would require additional right of way from private property owners if they were to be constructed. The preferred alternative (Alternative H) includes 10-foot shoulders (6-foot paved) on US 51, which would accommodate bicycles.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written**	**Verbal**	**Response**
	* Comment provided in both written and verbal forms.		
Dunn might have weighed in with a preference to a proposed bicycle path by Babcock Park. The next phase of the Lower Yahara River Trail will be to the east of McFarland and then south toward the state park and on toward Stoughton. Dane County is also looking to connect Lake Farm Park through Capital Springs State Park south to Waucheeta Trail. Dunn might have been in contact with Lake Waubesa Bible Camp regarding the people using that "trail" off the end of Bible Camp Road, along the lake to the camp's property. Dunn may want to explore acquiring an easement or some other way of formalizing the use of a connecting trail through this area, if it's agreeable to the neighborhood.	1		WisDOT has not had any discussions regarding a bicycle lane or multiuse path from Tower Road to Babcock Park. With the passage of Wisconsin Statute 32.015 in 2017, WisDOT cannot condemn property to acquire right of way for bicycle accommodations such as bicycle lanes or multiuse paths. These accommodations would require additional right of way from private property owners if they were to be constructed. The preferred alternative (Alternative H) includes 10-foot shoulders (6-foot paved) on US 51, which would accommodate bicycles.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
A. Concerned with the speed limits on the approaches to Stoughton. B. Requests bicycle access across US 51 at Dyreson Road. C. Requests left-turn signals at US 51 and County N. D. Requests a bicycle and pedestrian trail adjacent to US 51 from Stoughton to McFarland.	1		A. Stoughton will extend the connecting highway limits on US 51 to include the section from Hoel Avenue through Roby Road. With that connecting highway extension, Stoughton plans to reduce the speed limit to 35 mph between Hoel Avenue and Roby Road. (Connecting highways are local streets that carry state highway traffic through cities and villages.) Stoughton has also requested that the reduced speed limit extend north of Roby Road through the Rutland-Dunn Townline Road intersection. This is something that will be evaluated further as the US 51 projects move forward. B. Proposed changes to the existing Dyreson Road/US 51 intersection include realigning the north approach of Dyreson Road approximately 200 feet north of its existing location to create a T-intersection with US 51 for improved sight distance and removing direct access to US 51 from the south approach of Dyreson Road. A cul-de-sac is proposed at the south leg of Dyreson road adjacent to US 51. A potential path connecting the cul-de-sac to US 51 at the new T-intersection location is being evaluated so that bicyclists crossing US 51 at this location would have improved sight distance and an opportunity to more safely cross US 51. C. Specific design details will be completed during final design. D. With the passage of Wisconsin Statute 32.015 in 2017, WisDOT cannot condemn property to acquire right of way for bicycle accommodations such as bicycle lanes or multiuse paths. These accommodations would require additional right of way from private property owners if they were to be constructed. The preferred alternative (Alternative H) includes 10-foot shoulders (6-foot paved) on US 51, which would accommodate bicycles.
Requests that the project complete an Environmental Impact Statement.	1		Based on the work that has been done to date, WisDOT anticipates that the final result of the study will be a Finding of No Significant Impact, meaning that the study would be concluded, and design of the preferred alternative could move forward. The Federal Highway Administration will make the final decision after the public hearing is completed and all documentation is reviewed.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written** * Comment provided in both written and verbal forms.	**Verbal**	**Response**
Stoughton roundabouts will not and cannot work as presently configured. Roundabouts are not a useful option for pedestrian and bicycle crossing points in complex urban areas. Stoughton is working to have a high livability index with pedestrian and bicycle trails all around Stoughton with future connections to Oregon and McFarland. Roundabouts ignore the historic work and complicates crossing US 51 safety at important crossing points. WisDOT needs open and engaging discussions with city leaders, Rivers and Trails Task Force, and others. People and bicyclists must be considered in all transportation planning. WisDOT has not adjusted its roundabout planning and design to the inherent differences between exurban locations and inner-city locations. Requests at least one pedestrian overpass or underpass. Requests several fully secured, self-light activated, crossing points at every crossing. Also requests colored cross walks at these locations. If lights are not provided at every crossing, they could be provided at a mid-block crossing between intersections with warning lights, slower speeds, and colored pavement.	1*	1*	The proposed roundabouts at the US 51 and Roby Road, US 51 and WIS 138, and US 51 and Hoel Avenue intersections are no longer a part of the US 51 Corridor Study. They were removed from the study and are being designed and constructed as separate projects. To date, Stoughton has not requested that additional safety measures such as pedestrian crossing lights be installed as part of these roundabout projects. If Stoughton were to request pedestrian crossing lights, Stoughton would be responsible for funding and maintenance. For the US 51 Corridor Study, WisDOT has communicated with Stoughton throughout the study and has presented a preferred alternative that provides improved safety accommodations for bicycles and pedestrians on US 51. WisDOT will continue to coordinate and communicate with Stoughton on potential bicycle and pedestrian enhancements that could be incorporated as future US 51 projects move into final design. In addition, WisDOT has had preliminary discussions with Stoughton and a developer regarding a proposed bicycle and pedestrian underpass of US 51 just north of Rutland-Dunn Townline Road. WisDOT will continue to work with Stoughton to discuss the feasibility of an underpass in the final design and construction of the roadway project. WisDOT looks forward to continuing to work with Stoughton and project stakeholders throughout the final design process to develop a safe and efficient transportation facility for all users.
Concerned with crossing the highway to get the mail. The Post Office will not move the mailbox.		1	The concerned resident can request documentation to provide to the Post Office to support the need to move the existing mailbox. Coordination with the Post Office would be completed by the resident.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written**	**Verbal**	**Response**
	* Comment provided in both written and verbal forms.		
Concerned with noise pollution in McFarland. Requests that WisDOT use modern pavement types to reduce noise pollution.		1	WisDOT will investigate pavement types during the final design phase.
Objects to the adverse effects on resident's property near Tower Drive and Exchange Street. The plan unnecessarily takes valuable land which Dunn has worked to keep unimproved. The plan unnecessarily impacts wetlands that Dunn is striving to protect. Traffic lights could work at Exchange Street and save wetlands, prevent land being taken for roadway, and prevent creation of nearly useless orphan parcels of land.	1		The proposed realignment of Tower Road is based on safety and operational concerns in the area. An Intersection Control Evaluation analysis was performed and reviewed several alternatives with and without a realignment of Tower Road. The recommended intersection control type was selected based on a variety of factors such as traffic operations, safety, impacts, costs, and feedback from the public and stakeholders. The preliminary design was refined to reduce impacts while meeting design standards. During preliminary design and alignment refinement, considerable effort was devoted to avoiding and minimizing wetland impacts and all practicable measures to minimize harm to wetlands were taken. The proposed action includes all practicable measures to minimize harm to wetlands.
Supports Alternative H. Supports roundabouts and requests that they be installed as soon as possible. This would decrease the bad accidents at some of the intersections and increase the flow of traffic at some of the traffic lights and four-way stops.	1		Alternative H was selected as the preferred alternative for the corridor because it best addressed the corridor needs after considering the projected impacts and available funding. Construction is anticipated to occur in the mid- to late-2020s. Prior to construction, interim improvements at County B/AB, County B (east), Rutland Dunn Townline Road, and Roby Road will include pavement marking and signs. There will also be increased speed limit enforcement in the area. Four additional roundabouts are also being designed and constructed as separate projects prior to the US 51 corridor improvements (Hoel Avenue/Silverado Drive, WIS 138 (west), Roby Road, and County B/AB). Roundabouts provide increased safety for severe crashes and increase mobility.

Project ID 5845-06-03 US 51 Corridor Study Comments Received During Environmental Assessment Availability and Public Hearing, and Responses			
Comment	**Written**	**Verbal**	**Response**
	* Comment provided in both written and verbal forms.		
A. Supports County B (east) and US 51 roundabout. B. Against the WIS 138 and US 51 roundabout. The stop and go lights need to remain as is. C. Reconstruction of the two lanes from County B (east) and McFarland should have another option instead of grass. D. Supports the sidewalks on US 51 east. E. Appreciated staff available at the public hearing. Appreciated the updates for review and questions.	1		A. As part of the US 51 Corridor Study there is a roundabout being proposed at US 51 and County B (east). At this time, construction is anticipated for the mid- to late-2020s. B. The roundabout at US 51 and WIS 138 is no longer part of the study and separate roundabout projects are being designed with construction anticipated for 2022. C. Final design of medians will consider materials, maintenance, and safety needs so that vegetation does not block sight lines. D. Comment acknowledged. E. Comment acknowledged.
Questions from the Media			
Will the virtual public hearing be posted to YouTube after the live viewing?	1		The virtual public hearing can be viewed at the YouTube link during and after the live viewing. The link will be accessible to everyone for the foreseeable future.
A. Interested in the future public involvement efforts for the project. B. Asked what is the meaning of “No significant impacts are anticipated to occur as a result of the improvement” from the public hearing notice.		1	A. A public hearing can be requested and is a more formal event than a public involvement meeting. The purpose of the process is to obtain public comments or testimonies on the environmental document and the proposed action. Comments received during a public hearing and during the document availability period will be considered prior to issuing a Finding of No Significant Impact (FONSI). During the design process there will be additional public outreach. B. Based on the work that has been done to date, WisDOT anticipates the final result of the study will be a FONSI, meaning that the study would be concluded, and design of the preferred alternative could move forward. Federal Highway Administration will make the final decision after the public hearing is completed and all documentation is reviewed.

Estimated Project Cost

A cost risk analysis was completed to arrive at an estimated project cost. The estimated project cost is comprised of two components: a base cost and increases or decreases to the cost based on various risk factors associated with the project. The base cost is defined as the likely cost of the planned project if no substantial problems occur. Once the base cost and schedule was established, a list of risks was developed. A risk assessment was performed to replace general types of contingencies with explicitly defined risk events specific to the project, the probability of occurrence, and the consequences to cost of each potential risk event.

In performing the cost risk analysis, a risk-based modeling tool was incorporated to simulate the impacts of the identified risks. This process uses a Monte Carlo simulation methodology to quantitatively determine the overall risk in the project. The following table summarizes the Risk-Adjusted Cost Results for the project. The information includes the 70th percentile results, in both 2020 fiscal year (FY) dollars and year-of-expenditure dollars (YOE), as well as the projected range of costs that reflects the project's current stage of development.

US 51 Cost Risk Assessment Results		
Risk-Adjusted Cost Results (millions)		
70th Percentile (2020 FY $)	**70th Percentile (YOE $)**	**0 to 100th Percentile Range (YOE $)**
$174.1	$203.4	$176.0 to $224.2

The YOE cost is a total cost for the entire project timeline from the completion of the environmental document to the anticipated completion of construction by the end of 2029. This risk-adjusted cost results show that 70 percent of the time, total project costs will be $203.4 million or below at YOE. In 2020 FY dollars, this equates to a 70th percentile total project cost of $174.1 million. The project cost could range from $176.0 to $224.2 million.

STATEMENT OF PURPOSE

The Wisconsin Department of Transportation (WisDOT), in cooperation with the Federal Highway Administration (FHWA), is responsible for conducting an environmental review for proposed transportation projects. Transportation projects vary in type, size and complexity, and their potential to affect the environment. Transportation project effects can vary from very minor to significant impacts to the natural and built environment. To account for the variability of project impacts, three basic "classes of action" are allowed for compliance as a part of the National Environmental Policy Act (NEPA) and Wisconsin Environmental Policy Act (WEPA) processes to fulfill requirements of 42 USC 4332, Wis. Stat. 1.12 and Trans 400.

1. An *Environmental Impact Statement (EIS)* is prepared for projects where it is known that the action will have a significant effect on the environment.
2. An *Environmental Assessment (EA)* is prepared for actions in which the significance of the environmental impact is not clearly established.
3. *Categorical Exclusions (CEs)* are issued for actions that do not individually or cumulatively have a significant effect on the environment.

Following an appropriate level of agency review and public involvement to solicit input from all affected public, WisDOT and FHWA have prepared an Environmental Assessment to document the NEPA process.

For Environmental Assessment Documents, a Finding of No Significant Impact (FONSI) is issued by FHWA if environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment. Significance is determined by context (area and setting of the project) and intensity (degree of impact or effect on a resource). If it is determined that there will be no significant impacts, FHWA will approve the Final EA and issue a FONSI statement to conclude the process and document the decision. If it is determined that there are significant impacts, an EIS will be initiated.

Organization and Content of this Document
WisDOT uses a series of worksheets to investigate, evaluate, and report the environmental effects of proposed transportation actions. The worksheets are comprised of Basic Sheets and Factor Sheets as a framework for preparing the EA. All Basic Sheets must be completed, while Factor Sheets are completed only if the specific resource they address is affected by the project in a way that warrants further discussion, whether negatively or positively.

The environmental document needs to be considered in its entirety. In other words, to completely understand the reasons that one alternative is chosen over another, the entire document must be considered.

The environmental document represents a process of consideration of potential impacts related to potential final design and construction. It is used to help decide the best option for final design and construction that has the least impacts on the environment while considering cost and engineering issues. Only preliminary engineering, or a level of engineering necessary to complete the environmental document, is allowed to occur during the NEPA phase of project development. Final engineering and construction can only occur after an environmental document has been completed.

BASIC SHEET 2–TABLE OF CONTENTS, ABBREVIATIONS/ACRONYMS, DOCUMENT DESCRIPTION

1. Table of Contents

2. Abbreviations and Acronyms

AADT, Annual Average Daily Traffic

ACHP, Advisory Council on Historic Preservation

ACS, American Community Survey

ADA, Americans with Disabilities Act

ADID, Advanced Identification Program

ADT, Average Daily Traffic

AEA, Agricultural Enterprise Areas

AHI, Wisconsin Architecture and History Inventory

AIN, Agricultural Impact Notice

AIS, Agricultural Impact Statement

AMMs, Avoidance and minimization measures

APE, Area of Potential Effect

AWDT, Average Weekday Daily Traffic

BTO, Bureau of Traffic Operations

CAAA, Clean Air Act Amendments

CBD, Central Business District

CE, Categorical Exclusion

CEQ, Council on Environmental Quality

CFR, Code of Federal Regulations

CO, Carbon Monoxide

County (e.g. County N), County Trunk Highway

CP, Coordination Plan

CSRP, Conceptual Stage Relocation Plan

CWA, Clean Water Act

D for C, Documentation for Consultation

DATCP, Department of Agriculture, Trade, and Consumer Protection

dBA, A weighted decibel

DEIS, Draft Environmental Impact Statement

DHV, Design Hourly Volume

DNAE, Determination of No Adverse Effect

DOE, Determination of Eligibility

DOI, U.S. Department of Interior

EA, Environmental Assessment

EAB, emerald ash borer

EB, eastbound

ECP, Erosion Control Plan

ECIP, Erosion Control Implementation Plan

EIS, Environmental Impact Statement

EO, Executive Order

ER, Environmental Report

ERW, Exceptional Resource Waters

FAA, Federal Aviation Administration

FDM, Wisconsin Department of Transportation, Facilities Development Manual

FEIS, Final Environmental Impact Statement

FEMA, Federal Emergency Management Agency

FHWA, Federal Highway Administration

FONSI, Finding of No Significant Impact

FRA, Federal Railroad Administration

FTA, Federal Transit Administration

FW, farmed wetlands

FY, Fiscal Year

GHG, greenhouse gas

GIS, Geographic Information System

GP, General Permit

HCM, Highway Capacity Manual

HCS, Highway Capacity Software

HMA, Hazardous Materials Assessment

HMVM, hundred million vehicle miles

HPZ, high potential zone

HUC, Hydrologic Unit Code

I (e.g. I-39/90), Interstate Highway

IAM, Impact Analysis Methodology Report

ICE, Intersection Control Evaluation

IPaC, Information for Planning and Conservation

ISD, intersection sight distance

KPW, Kettle Park West

LOP, Letter of Permission

LOS, Level of Service

LUST, Leaking Underground Storage Tank

LWCF, Land and Water Conservation Act Fund

M, wet meadow

MEV, million entering vehicles

MLS, Multiple Listing Service

MOA, Memorandum of Agreement

mph, miles per hour

MPO, Madison Area Transportation Planning Board (name was changed to Greater Madison MPO in fall 2020)

MS4, Municipal Separate Storm Sewer System

MSAT, Mobile Source Air Toxics

MVM, million vehicle miles

NAAQS, National Ambient Air Quality Standards

NAC, Noise Abatement Criteria

NB, northbound

NEPA, National Environmental Policy Act

NHI, Wisconsin Department of Natural Resources, Natural Heritage Inventory

NHS, National Highway System

NLC, Noise Level Criteria

NLEB, Northern Long-eared Bat

NPS, National Park Service

NRCS, Natural Resource Conservation Service

NRHP, National Register of Historic Places

OCR, Office of the Commissioner of Railroads

OD, Origin Destination

ORP, Outstanding Resource Waters

PAC, Policy Advisory Committee

PCBs, Polychlorinated Biphenyls

PCI, Pavement Condition Index

PDR, Purchase of Development Rights

PEL, Planning and Environment Linkages

PIM, Public Involvement Meeting

PLE, Permanent Limited Easement

$PM_{2.5}$, Particulate Matter

PTSF, Percent Time Spent Following

RPBB, Rusty Patched Bumble Bee

RPE, Riparian palustrine emergent

RPF, Riparian palustrine forested

RPC, Regional Planning Commission

RTP, Regional Transportation Plan

R/W, right of way

SB, southbound

SHPO, State Historical Preservation Office

SHRM, State Highway Rehabilitation-Maintenance

SIP, State Implementation Plan

SM, Shallow marsh

SS, Shrub swamp

SSD, Stopping Sight Distance

Sta., Station

STH, state trunk highway

STIP, Statewide Transportation Improvement Plan

STSP, Standardized Special Provision

TAC, Technical Advisory Committee

TAFIS, Traffic Analysis Forecasting Information System

TAZ, Traffic Analysis Zones

TDM, Transportation Demand Management

THPO, Tribal Historic Preservation Officer

TIP, Transportation Improvement Program

TLE, Temporary Limited Easement

TMDL, Total Maximum Daily Load

TNM, Traffic Noise Model

TP, total phosphorus

TPB, Transportation Planning Board

TPC, Transportation Projects Commission

TPM, Transportation Planning Manual

TSM Transportation System Management

TSS, total suspended solids

TS4, Transportation Separate Storm Sewer System

TWLTL, two-way left-turn lane

US (e.g. US 51), United States Highway

USACE, United States Army Corps of Engineers

USC, United States Code

USCG, United States Coast Guard

USDA, United States Department of Agriculture

USEPA, United States Environmental Protection Agency

USFWS, United States Fish and Wildlife Service

USGS, United States Geological Survey

UST, underground storage tank

VE, Value Engineering

VHS, Viral Hemorrhagic Septicemia

VMT, Vehicle miles of travel

vpd, vehicles per day

WB, westbound

WDNR, Wisconsin Department of Natural Resources

WDOA, Wisconsin Department of Administration

WEPA, Wisconsin Environmental Policy Act

WHS, Wisconsin Historical Society

WIS (e.g. WIS 138), Wisconsin State Highway

WisDOT, Wisconsin Department of Transportation

WOUS, Waters of the United States

WSOR, Wisconsin & Southern Railroad

YOE, Year of Expenditure

3. Environmental Document Statement

This environmental document is an essential component of the National Environmental Policy Act (NEPA) and Wisconsin Environmental Policy act (WEPA) project development process, which supports and complements public involvement and interagency coordination.

The environmental document is a full-disclosure document which provides a description of the purpose and need for the proposed project, the existing environment, analysis of the anticipated beneficial or adverse environmental effects resulting from the proposed action and potential mitigation measures to address identified effects. This document also allows others the opportunity to provide input and comment on the proposed action, alternatives and environmental impacts. Finally, it provides the decision makers with appropriate information to make a reasoned choice when identifying a preferred alternative.

This environmental document must be read entirely so the reader understands the reasons that one alternative is selected as the preferred alternative over other alternatives considered.

The Council on Environmental Quality updated their NEPA regulations at 40 CFR 1500–1508 during the preparation of this Environmental Assessment (EA). These NEPA regulations apply to all Federal Agencies. Per updated 40 CFR 1506.13, the updated regulations, “apply to any NEPA process begun after September 14, 2020”. Since the NEPA process for this project was started prior to that date, FHWA and WisDOT have decided to prepare this EA consistent with the older version of the regulations, and all references to 40 CFR 1500–1508 throughout this document reference the older version of the regulations.

BASIC SHEETS DEFINED

This section of the EA is called the “Basic Sheets.” It contains background information for the study, defines the purpose and need, and describes all of the alternatives that were studied to address the purpose and need. This section also provides information on public involvement, environmental factors, a summary of impacts, and other information pertinent to the EA.

1.0 Purpose and Need Introduction

A. US 51 Study Corridor Location

The study area for the United States Highway (US) 51 Corridor Study is located in south central Wisconsin in the southeast corner of Dane County. The area lies directly southeast of the city of Madison (Madison). The US 51 study corridor extends between the logical termini of Interstate 39/90 (I-39/90), located east of the city of Stoughton (Stoughton), and US 12/18 (Madison South Beltline) in Madison, a distance of 18.6 miles. US 51 passes through or forms the border with five towns: Albion, Dunkirk, Rutland, Pleasant Springs, and Dunn. It is Main Street through Stoughton and is the main thoroughfare through the village of McFarland (McFarland). Figure 1 is a map of the US 51 study area and corridor.

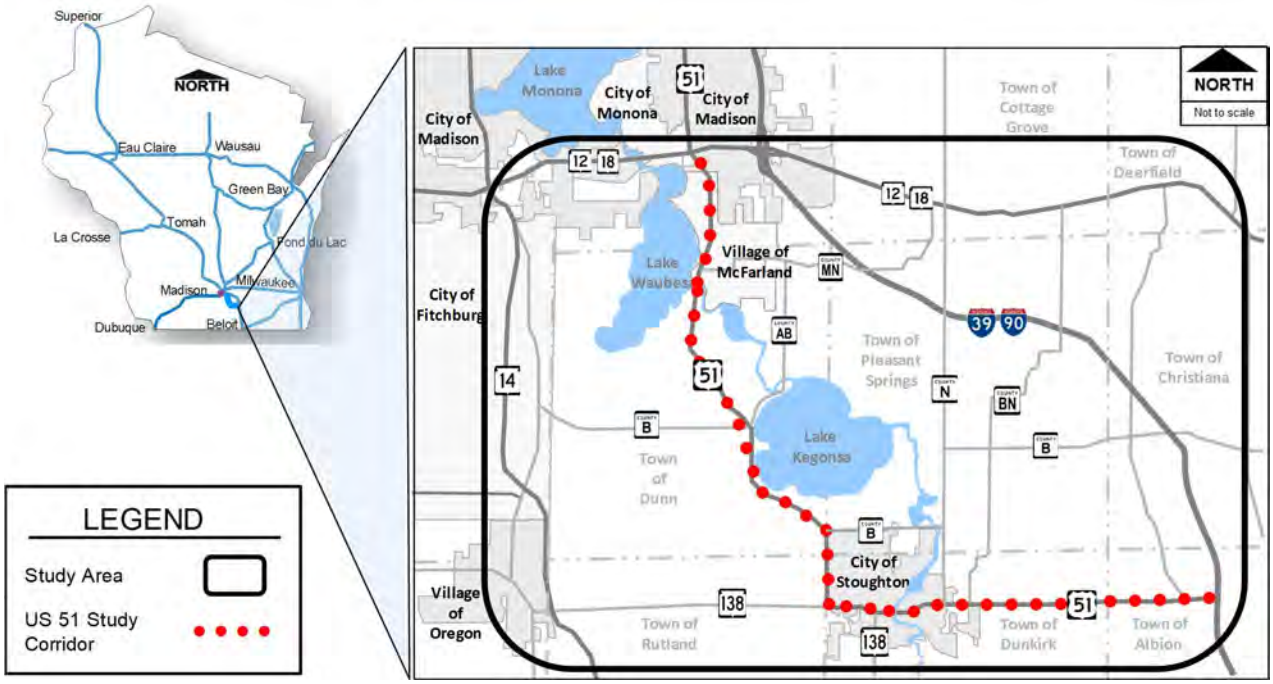

Figure 1 US 51 Study Area and Corridor

B. Progression of Corridor Study and Development of Alternatives

The US 51 Corridor Study has a long history that is important for understanding its current focus, range of alternatives, and stakeholder interaction. The study progressed from an initial Needs Assessment study to the evaluation of multiple improvement alternatives as part of an EIS before being downscoped to the current evaluation in this EA. The following timeline summarizes the progression of the study. A more detailed description of the study progression and the alternatives developed is provided in Appendix A.

B.1 2002 to 2004: Needs Assessment

WisDOT initiated a transportation needs study of the US 51 corridor from I-39/90 to McFarland. The US 51 Needs Assessment results were presented at a Public Involvement Meeting (PIM) in 2004 and identified the following needs:

- Safety
- Travel Demand and Capacity
- Bicycle and Pedestrian Accommodations
- Roadway Deficiencies
- Long-Term Planning and Corridor Preservation

B.2 2006 to 2013: EIS Phase

Work on the EIS began in 2006. A PIM held in 2006 presented the No Build and five build concepts. In 2008, a Value Engineering (VE) Study was completed and generated additional alternatives. Subsequent PIMs were held in 2009, 2011, and 2012 as the alternatives were refined. The PIM held in October 2012 provided information about the three remaining corridor alternatives: No Build, Alternative A (Low Build), and Alternative B (4-lane expansion with Stoughton Bypass). Public comments were summarized for inclusion in the Draft Environmental Impact Statement (DEIS), which was anticipated to be published in 2013.

B.3 2014 to Present: Transition to EA

Based on a combination of changes in statewide priorities and federal fiscal constraint policy, the DEIS was not published and other strategies were reviewed to complete the environmental process. In February 2016, WisDOT and FHWA agreed that it was appropriate to downscope the project and continue the US 51 Corridor Study as an EA.

C. Description of Existing Facility

US 51 connects I-39/90 and US 12/18, which are both NHS routes and Connections 2030 Backbone routes. NHS routes are important to the nation's economy, mobility, and defense. Connections 2030 Backbone (and Connector) routes are identified in Wisconsin's Connections 2030 Long-Range Multimodal Transportation Plan adopted October 2009 and signify Wisconsin's most important highways. While US 51 is not a NHS route, Backbone or Connector route, the US 51 study corridor is an important commuter route in southeastern Dane County that connects I-39/90 and US 12/18. US 51 functions as a principal arterial for most of the corridor except for the 5.7-mile section east of Stoughton from I-39/90 to County N, which is classified as a minor arterial.

US 51 has a variety of roadway cross sections but is a 2-lane roadway for over 75 percent of the 18.6-mile study corridor. Figure 2 shows the functional classification, number of lanes, and posted speeds along the study corridor. A brief description of the roadway cross sections, beginning at I-39/90, includes:

- From I-39/90 to Spring Road, approximately 5.1 miles in length, the rural cross section consists of two 12-foot travel lanes with 10-foot shoulders (5-foot paved).
- From Spring Road to Page Street, just west of the Yahara River in downtown Stoughton, approximately 1.7 miles in length, the urban roadway section consists of two travel lanes (generally 14 feet wide) and 6- or 8-foot parking lanes.
    - Within the Spring Road to Page Street section the only at-grade railroad crossing of the US 51 study corridor is located just east of 7th Street. The crossing has two sets of Wisconsin & Southern Railroad (WSOR) tracks and is signalized and gated.
- From Page Street to Hoel Avenue, approximately 1.0 miles in length, there is a 4-lane undivided urban section that has 10- to 12-foot lanes, no parking lanes, and no shoulders.
- From Hoel Avenue to Jackson Street, approximately 0.4 miles in length, US 51 has a divided section with four 12-foot lanes with 10-foot rural outside shoulders (3-foot paved).
- From Jackson Street to Tower Road, approximately 6.6 miles in length, the rural cross section consists of two 12-foot lanes and 8-foot shoulders (3- to 6-foot paved).
- Between Tower Road and Exchange Street, approximately 0.3 miles in length, US 51 has a rural cross section with two 12-foot southbound lanes and one 12-foot northbound lane with 10-foot shoulders on both sides of US 51 (3-foot paved).
- From Exchange Street to Burma Road, approximately 0.7 miles in length, the roadway has a 4-lane undivided urban cross section with four 12-foot lanes and no shoulders.
- From Burma Road to Larson Beach Road, approximately 0.4 miles in length, the roadway has a 4-lane divided urban cross section with four 12-foot lanes and no shoulders.
- From Larson Beach Road to US 12/18, approximately 2.0 miles in length, US 51 has a 4-lane rural divided section with 10-foot shoulders (8-foot paved).

- Approximately 0.25 miles north of Larson Beach Road, US 51 passes over the WSOR and Taylor Road.
- Approximately 0.6 miles north of Larson Beach Road, US 51 passes over and forms a diamond interchange with Siggelkow Road.

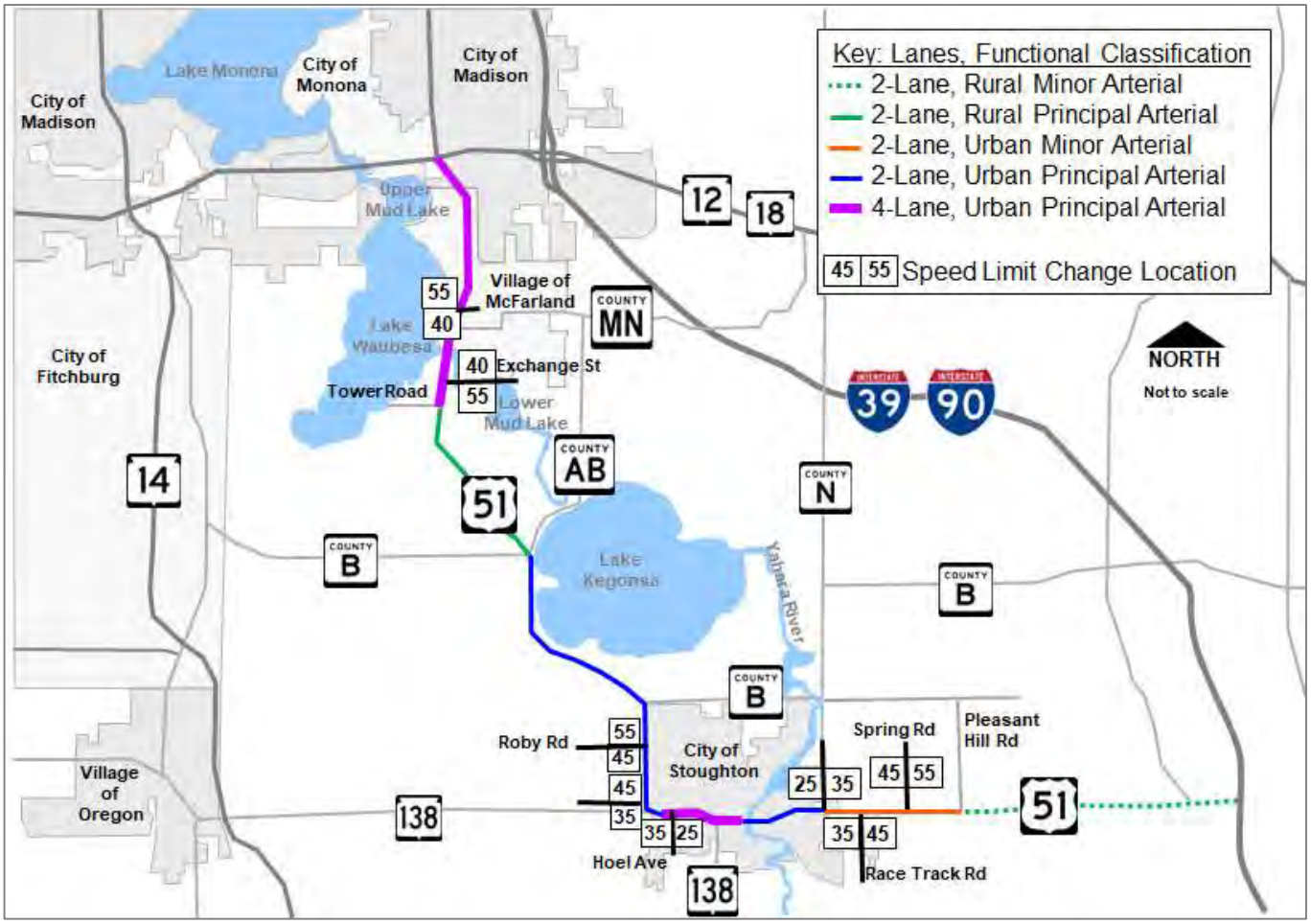

Figure 2 US 51 Functional Classification, Number of Lanes, and Posted Speed Limits

D. Other Studies in the Area

In addition to the US 51 Corridor Study, there are three other studies underway in the area, as well as a reconstruction project at the I-39/90 and US 12/18 Interchange (Beltline Interchange or BIC) that began in 2020, and a reconstruction project of the I-39/90 corridor underway that abuts the south US 51 study corridor terminus. Figure 3 shows the locations of the area studies and the reconstruction projects that are described in the following paragraphs.

The Stoughton Road EIS studies the portion of US 51 beginning at Terminal Drive and Voges Road (McFarland), just south of US 12/18 to WIS 19 in Dane County. The purpose of the proposed improvements is to accommodate current and future traffic demand; address safety concerns; improve traffic operations on the roadway mainline and at the interchanges and intersections; and enhance bicycle, pedestrian, and transit travel. While the Terminal Drive and Voges Road intersection is geographically within the defined limits of this US 51 study because it is south of US 12/18, the intersection would be addressed as part of the Stoughton Road EIS. This is because the intersection is less than 0.5 mile from the US 51 interchange with US 12/18 and within the influence area of changes proposed with that interchange.

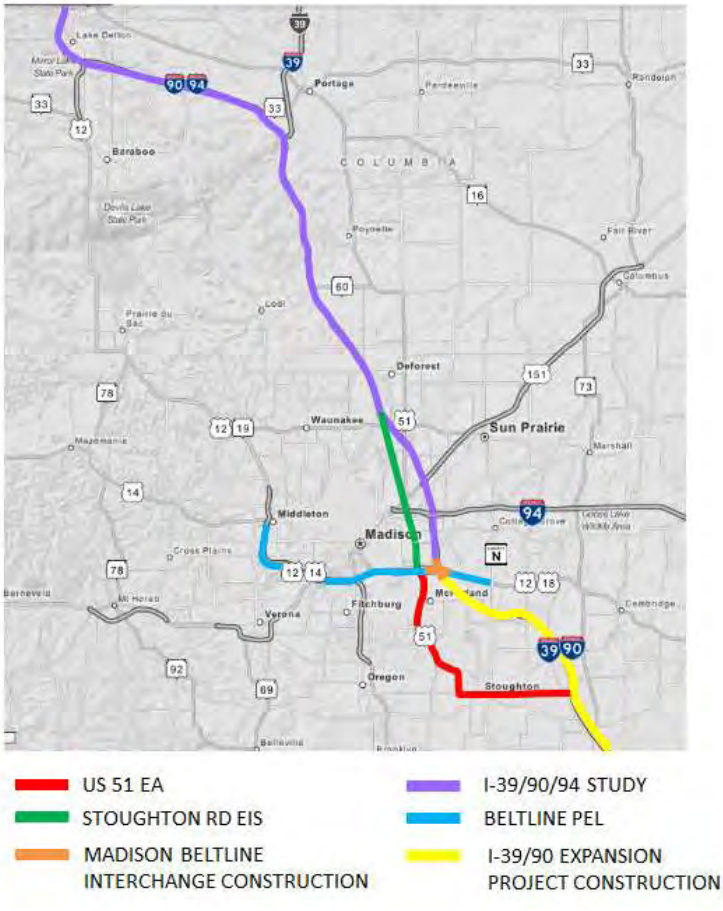

Figure 3 Other Studies and Projects in the Area

WisDOT is also conducting a safety and operational analysis of the interstate corridor from US 12/18 (Madison) to the I-94 system interchange in Tomah. The purpose of the study is to analyze the existing conditions of the I-39/90/94 and I-90/94 corridors to identify and summarize needs.

WisDOT is completing a Planning and Environment Linkages (PEL) study of the Madison South Beltline from US 14 (Middleton) to County N (town of Cottage Grove) to identify and evaluate a range of potential strategies that address local and regional safety and mobility along the corridor.

The BIC project extends approximately 4 miles north and south along I-39/90 and approximately 4 miles east and west along US 12/18, in Dane County. The existing interchange is classified as a service interchange that includes two loop ramps, two left-side exit ramps, and four typical free-flow ramps. The purpose of the project is to accommodate I-39/90 traffic levels with a focus on safety issues that affect interstate travel through the US 12/18 interchange and ensure compatibility with the I-39/90 reconstruction project south of the US 12/18 to the Illinois State Line. A public hearing for the project was held on December 13, 2018, with an EA and FONSI signed on May 2, 2019, and construction started in 2020.

The I-39/90 expansion project extends approximately 45 miles from the Illinois state line to the US 12/18 interchange. The project will expand the existing 4-lane rural interstate to 6 lanes for the majority of the corridor and to 8 lanes in the Janesville area. The corridor is a heavily used recreational route with peak traffic occurring on summer weekends as tourists from Illinois and southern Wisconsin travel north to leisure destinations. This project is currently under construction and mainline pavement construction is anticipated to be completed in 2021.

All the studies and the reconstruction projects have independent utility, logical termini, and their own environmental documents. The Stoughton Road EIS corridor and the US 51 corridor studied in this EA have independent utility because improvements proposed within each corridor length are based on addressing existing and future traffic and

safety limitations affecting each separate portion of US 51. The US 12/18 corridor (Madison Beltline) is a principal arterial separating the two US 51 corridors. The Beltline is a primary origin/destination for the two US 51 sections and makes them functionally distinct. The Stoughton Road EIS corridor and this US 51 EA study corridor can operate independently, and neither of the projects, if improvements were constructed, would preclude or require construction of the other. The same is true for the I-39/90/94 and Beltline corridors. The corridors under study in this area are existing routes that serve different regional functions. Improvements on any of the four corridors have utility and value for meeting that corridor's need regardless if improvements are made or not made in other corridors.

Within the US 51 study corridor, there are also several projects that have been programmed and are under development. These projects include roundabouts at Hoel Avenue, WIS 138 (west), and Roby Road that are scheduled for construction in 2022, and a roundabout at County B/AB that is scheduled for construction in 2024.

The programmed projects have independent utility and distinct needs so that WisDOT has prioritized construction earlier than full corridor improvements would be realized. The programmed improvements of the noted projects would be available for use and be a reasonable expenditure even if no additional transportation improvements in the area are made. Each programmed project will have its own environmental document.

1.1 Project Purpose

The purpose of this project is to provide a safe and efficient transportation system in the US 51 corridor to serve present and long-term travel demand while minimizing disturbance to the environment. This will be obtained by working to address existing safety conditions, accommodating travel demand, addressing existing pavement conditions, improving bicycle and pedestrian accommodations, and considering corridor preservation and long-term planning measures.

1.2 Project Need

The following five contributing factors of need support the purpose of improvements to the US 51 corridor:

1. Address Existing Safety Conditions
2. Accommodate Travel Demand
3. Address Existing Pavement Condition
4. Improve Bicycle and Pedestrian Accommodations
5. Long-Term Planning and Corridor Preservation

The need factors in the following sections may reference some locations that have currently programmed projects on the US 51 corridor as noted in Section 1.D, for example, the roundabouts at Hoel Avenue, WIS 138 (west), Roby Road, and County B/AB. The needs at these locations will be addressed separately by the programmed projects, and therefore, they are not primary contributors to the overall US 51 Corridor need factors. The locations are included for informational purposes.

1.2.1 Address Existing Safety Conditions

Safety-related comments and concerns for the US 51 corridor were expressed frequently by the public during focus group meetings, on survey forms, at public meetings, and through individual contacts with the study team. Safety-related comments were typically about unsafe conditions at intersections, the lack of passing opportunities, travel speeds over the posted limit, the difficulty experienced by motorists getting on and off US 51 safely, and the number of crashes and "near misses." The study team analyzed crash rates, roadway deficiencies, and access point frequency, as these are measures of actual or potential safety concerns.

1.2.1.1 Crash Rates

WisDOT maintains crash statistics for 12 types of state trunk highways (STHs) based on various roadway characteristics such as cross section (rural or urban, divided or undivided), posted speed limit, and the amount of average daily traffic.[1] A comparison of a highway's crash statistics with the statewide average for a similar type of roadway over the same period can help show the need to improve safety on the highway in question. A crash

[1] The STHs are categorized into WisDOT Meta-Manager Peer Groups. The peer groups used for this study reference the 2018 Statewide Average Crash Rates memorandum prepared by WisDOT on November 15, 2019.

analysis was prepared for the five-year period 2014 to 2018, which was the most recent available data at the time of document preparation in fall 2019.

1.2.1.1.a Crash Rates on Roadway Segments

To analyze crashes along US 51, the corridor was divided into ten roadway segments based on the changing character of the highway. Beginning at I-39/90 east of Stoughton, the ten segments are:

- Crash Segment 1 is from I-39/90 to west of County A (0.3 miles).
- Crash Segment 2 is from west of County A to Spring Road (4.8 miles).
- Crash Segment 3 is from Spring Road to Page Street (1.7 miles).
- Crash Segment 4 is from Page Street to WIS 138 (south) (1.1 miles).
- Crash Segment 5 is from WIS 138 (south) to north of Jackson Street (0.6 miles).
- Crash Segment 6 is from north of Jackson Street to County B (east) (1.1 miles).
- Crash Segment 7 is from County B (east) to County B/AB (3.0 miles).
- Crash Segment 8 is from County B/AB to Exchange Street (2.7 miles).
- Crash Segment 9 is from Exchange Street to south of Burma Road (0.7 miles).
- Crash Segment 10 is from south of Burma Road to south of Terminal Drive and Voges Road (1.7 miles).

Figure 4 shows the ten crash segments, which covers 17.7 miles of the US 51 corridor. Crashes on the portion of US 51 from Terminal Drive and Voges Road to US 12/18 and at the I-39/90/US 51 interchange (totaling approximately 0.9 miles) were not included in the crash analysis because they are part of other studies. Crash rates for divided roadways are analyzed by direction, meaning Crash Segments 1, 5, and 10 are analyzed independently for US 51 northbound and southbound.

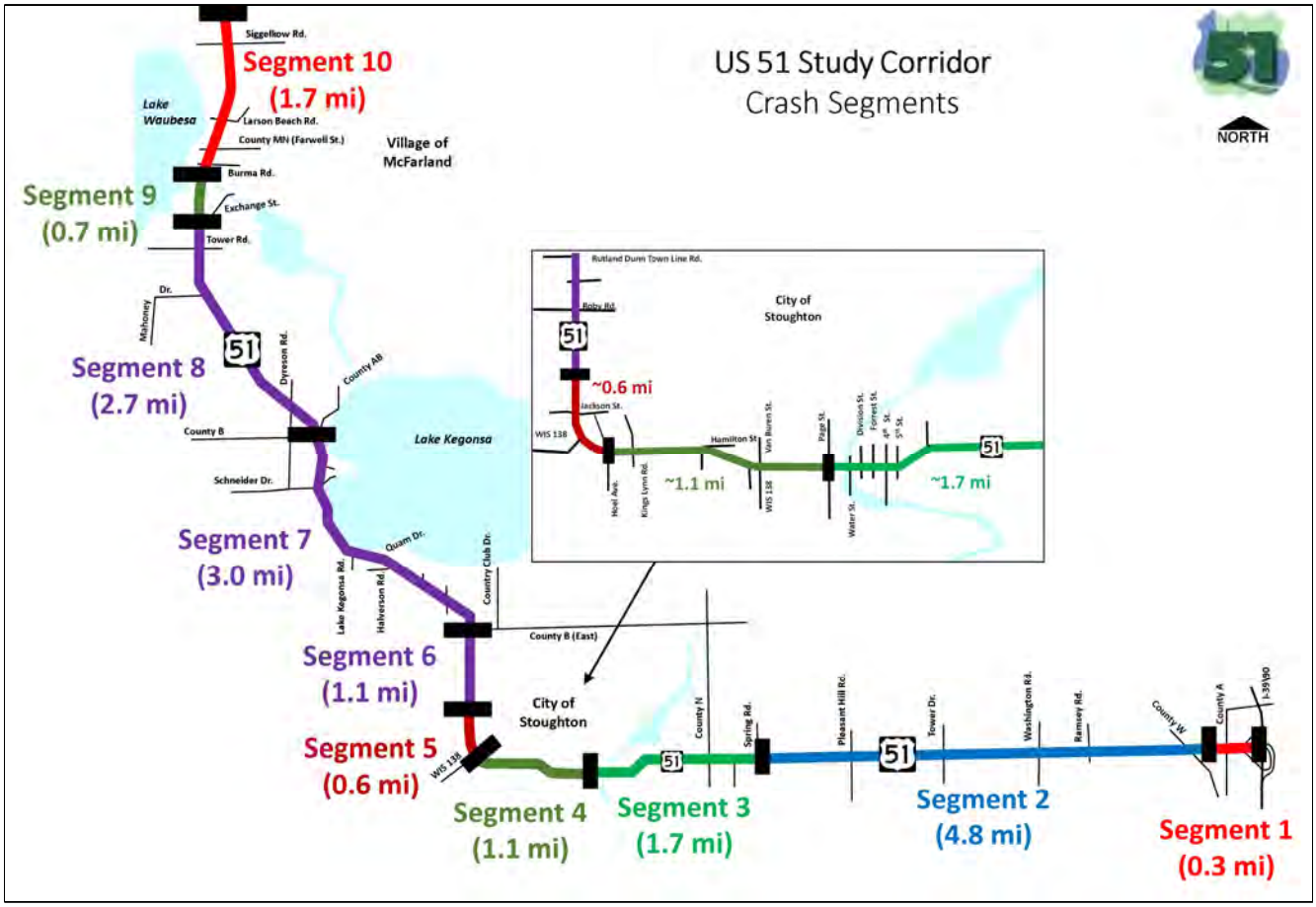

Figure 4 Crash Segments

There were 679 (non-deer-related) crashes from 2014 to 2018 between I-39/90 and south of Terminal Drive and Voges Road. In five of the ten crash segments, the total crash rate exceeded the statewide average for similar roadways for at least one direction of travel. There were two fatal crashes and 14 suspected serious injury crashes during the study period. Injury crash rates for Segments 1, 6, 7, and 8 each exceeded the statewide average for at least one direction of travel.[2] In the five years before the analysis period, from 2009 to 2013, nine fatal crashes occurred. Over the course of the US 51 corridor study beginning with the Needs Assessment, several crash analyses have been prepared for various time frames. From 2003 to 2018, Segments 7 and 8 (the rural section between Stoughton and McFarland) consistently exceeded the statewide total crash rate and the injury crash rate for similar roadways. Additional detail on segment crash rates is included in the study's crash analysis memorandum located in Appendix B.

1.2.1.1.b. Crash Rates at Intersections

Of the 679 non-deer crashes, 418 (or 62 percent) were associated with intersections. The study team evaluated intersection crash rates at 55 intersections along the rural sections of US 51, in Stoughton, and in McFarland. Intersection crash rates are expressed as crashes per million entering vehicles (MEV). While WisDOT does not currently have published statewide average intersection crash rate data, the intersection crash rates along the corridor were compared against one another. The five locations with the highest intersection crashes from 2014 to 2018 were:

- US 51 and County B/AB (1.73 crashes per MEV, 36 total crashes)*
- US 51 and Siggelkow Road Southbound Ramp Terminal (0.98 crashes per MEV, 14 total crashes)
- US 51 and Roby Road and Deer Point Drive (0.92 crashes per MEV, 23 total crashes)*
- US 51 and Larson Beach Road (0.84 crashes per MEV, 33 total crashes)
- US 51 and WIS 138 (south) and Van Buren Street (0.78 crashes per MEV, 23 total crashes)

* These intersections have programmed improvements independent of the US 51 Corridor Study.

Additional detail on intersection crash rates is included in the study's crash analysis memorandum located in Appendix B.

1.2.1.2 Roadway Deficiencies

The US 51 corridor has many locations where there are substandard roadway elements that may affect safety. These elements include substandard horizontal and vertical curves, substandard grades (uphill and downhill), poor intersection geometry, and substandard clear zone. Roadway deficiencies were catalogued within four roadway segments that were based on previous construction projects and rural/urban characteristics. Figure 5 shows the location and type of roadway deficiencies in each of four roadway sections. Roadway deficiencies that impact the amount of passing opportunities on 2-lane rural roadways also potentially affect safety.

[2] Injury crash rates are expressed with a KAB severity measure. KAB is the sum of all K-Level (fatal), A-Level (suspected serious injury), and B-Level (suspected minor injury) crashes as defined by WisDOT guidance.

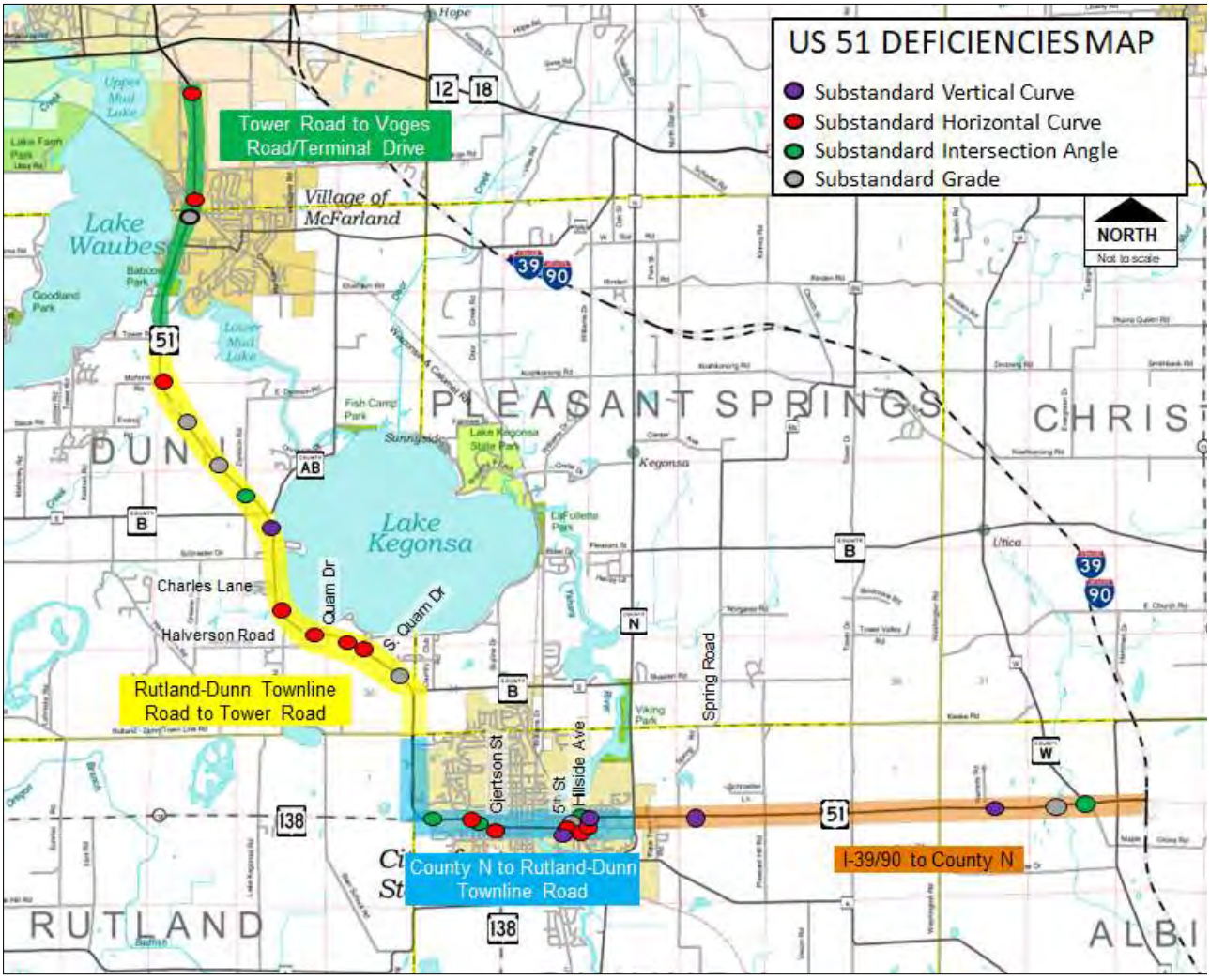

Figure 5 Roadway Deficiencies Map

1.2.1.2-a Roadway Geometry

The horizontal layout (straight or curved) and vertical profile (flat, steep, or rolling) of a road describes its geometry. When the geometry of a roadway does not meet the design standards associated with that roadway's class and function, safety and operational efficiency can suffer. Substandard vertical curves are based on sight distance considerations.[3] Substandard horizontal curves occur when the roadway curves and does not meet the required superelevation (the amount by which the outer edge of a curve on a road is banked above the inner edge) to overcome the centrifugal force that acts on a vehicle.[4] Maximum grades vary with terrain, design speed, and functional classification.[5] Table 1 describes the substandard roadway geometries along the corridor.

[3] Facilities Development Manual (FDM) 11-10, Attachment 5.4, *Sight Distance for Crest Vertical Curves* and FDM 11-10, Attachment 5.6, *Sight Distance for Sag Vertical Curves*, accessed May 10, 2019.
[4] FDM 11-10, Exhibit 5.1, *Superelevation Tables*, accessed May 10, 2019.
[5] FDM 11-10, Attachment 5.3, *Maximum Grades by Functional Classification*, accessed May 10, 2019.

Table 1 Roadway Geometric Deficiencies

I-39/90 to County N	▪ There are two substandard vertical curves and no substandard horizontal curves. The two vertical curves meet desirable standards for a 50-mile-per-hour (mph) design speed, but should meet the design speed of 60 mph for this rural section. ▪ There is a substandard grade just west of the County W intersection.
County N to Rutland-Dunn Townline Road	▪ There are two substandard vertical curves that do not meet the minimum length requirements for the 30-mph design speed. ▪ There are three substandard horizontal curves located near 5th Street, the railroad crossing, and Hillside Avenue. Residents have commented that the horizontal curves at both Hillside Avenue and 5th Street are a concern. ▪ There is one substandard grade located near the railroad crossing and Hillside Avenue.
Rutland-Dunn Townline Road to Tower Road	▪ Curves in this section should meet the design speed of 60 mph for this rural section. ▪ There is one substandard vertical curve. The vertical curve is adequate for a design speed of 50 mph. ▪ There are five substandard horizontal curves. Two of the curves are located just west of South Quam Drive and are adequate for a 40-mph design speed. Neither curve has superelevation. The other three curves, two between Halverson Road and Quam Drive and Charles Lane and one near Mahoney Road, are adequate for a 55-mph design speed. ▪ There are three substandard grades in this rural area.
Tower Road to Terminal Drive/Voges Road	▪ Curves in the rural section north of Larson Beach Road should meet a design speed of 60 mph. ▪ There are two substandard horizontal curves located north of Larson Beach Road in McFarland. The curve south of Siggelkow Road is adequate for a 50-mph design speed. The curve south of Terminal Drive and Voges Road is adequate for a 45-mph design speed. ▪ There is one substandard grade north of Larson Beach Road.

1.2.1.2-b Intersection Geometries

It is preferable for intersecting side roads to meet the main highway at an angle as close to 90 degrees as possible so the side road is generally perpendicular to the highway. Intersections should be improved to a 70-degree minimum intersection angle if the existing intersection angle is less than 65 degrees. There are two rural intersections with substandard intersection angles: County W (50 degrees) and Dyreson Road (60 degrees). In Stoughton, there are three intersections with substandard intersection angles: Hillside Avenue (53 degrees), Rowe Street (63 degrees), and Hoel Avenue (61 degrees).

Intersection sight distance (ISD) is the distance for which there must be unobstructed sight along both roads of an intersection to allow a vehicle to safely carry out whatever maneuver may be required to negotiate the intersection.[6] There are numerous intersections within Stoughton that have below minimum ISD because of signs, posts, or buildings. In the rural section and McFarland there are six intersections with below minimum ISD for the design vehicle stopped at the intersection to make a left turn. These intersections include Halverson Road (west leg), Lake Kegonsa Road (east leg), Colladay Point Drive (east leg), County B/AB (west leg), Dyreson Road (north leg), and Yahara Drive.

Many rural intersections (18) along US 51 have tapers for right-turning vehicles but no designated left-turn lanes. An example of this geometry is at the Lake Kegonsa Road intersection where vehicles traveling on US 51 share a single lane with left- and right-turning vehicles. US 51 has an exclusive left-turn lane at only one rural intersection, County A just west of I-39/90. At Roby Road and County B/AB there are right-turn lanes in each direction. At County B (east) and Mahoney Road there is a bypass lane around left-turning vehicles. At Exchange Street there is no designated left-turn lane, but there are two through southbound lanes and a northbound right-turn lane. Without designated left-turn lanes, vehicles must stop in the travel lane as they wait for a gap in traffic to make the turn. This blocks the through travel lane on a 55 mph posted highway, posing safety concerns for causing rear-end collisions or traffic passing illegally on the shoulder.

[6] FDM 11-10-5.1.4, Intersection Sight Distances (ISDs), Vision Triangles, and Vision Corners.

1.2.1.2-c Clear Zone Deficiencies

Clear zone is the roadside border area made available for recovery by errant vehicles in rural areas (without curb and gutter at the road edge) through the removal of hazards. Required clear zone width is measured from the edge of the outside travel lane for rural highways and depends on the design speed and traffic volumes. Clear zone width is deficient in four locations along US 51 because of existing retaining walls. According to WisDOT FDM 11-15, Attachment 1.9, *Clear Zone Distance Tables & Recovery Area Width Determination*, a 30-foot minimum clear zone is required where the design speed is 60 mph and the design average daily traffic (ADT) is over 6,000 vehicles per day (vpd). There are two locations that do not meet this criteria. One is at the Rutland-Dunn Townline Road intersection where a retaining wall is located 18.5 feet from the edge of the southbound US 51 travel lane, and the other is east of Spring Road where a retaining wall is 27 feet from the edge of driving lane. An 18- to 28-foot clear zone is required for the 45-mph posted speed west of Spring Road. There are two retaining walls 16 feet from the edge of driving lane in this area.

1.2.1.2-d 2-Lane Passing Conditions

Because passing requires the use of the opposing traffic lane, the availability of passing opportunity is based on roadway geometrics and traffic volumes. Even if the roadway geometry allows the driver to see far enough ahead to judge when it might be safe to pass a slow-moving vehicle, if traffic volumes are so high that they limit the number of gaps of sufficient size to allow opportunity to pass, driver frustration increases. When there is insufficient passing opportunity, “platoons” (long lines of vehicles) can form and traffic is not able to travel the free-flow speed.

WisDOT standards recommend achieving passing opportunity of 60 percent or greater on modernization, or reconstruction, projects.[7] Only a small percentage of the existing 2-lane US 51 roadway is marked for passing because of the numerous horizontal and vertical curves. The curves combined with the high volume of opposing traffic makes passing very difficult. The existing rate of available passing on US 51 between Stoughton and McFarland is approximately 40 percent of the roadway. East of Stoughton, the rate of available passing on US 51 is approximately 65 percent of the roadway.

1.2.1.3 Access Point Frequency

Access to US 51 includes side-road intersections, driveways for residential and commercial properties, and agricultural field entrances. An access count completed in 2019 indicated there were 286 access points between I-39/90 and US 12/18. WisDOT provides recommended access densities for various functional classifications of intersecting roads with rural principal arterials and rural minor arterials in the FDM 11-5, Attachment 5.1 *Access Spacing Guidelines*. For non-expressway, rural principal arterials, and minor arterials such as US 51, the recommended maximum density is 5.3 private access points per mile and 2.6 local road access points per mile.[8]

An assessment of how the existing access along US 51 rural sections of the corridor compares to recommended maximum density guidance is as follows:

- East of Stoughton:
  - Private access density = 8.7 driveways per mile, or 1.6 times the recommended maximum density.
  - Intersection access density = 1.3 access points per mile, or approximately one-half of the recommended maximum density.

- Between Stoughton and McFarland:
  - Private access density = 4.3 driveways per mile, or 19 percent below the recommended maximum density.
  - Intersection access density = 2.2 access points per mile, or 15 percent below the recommended maximum density.

[7] FDM 11-10-5.1.3, Passing Sight Distance, accessed August 29, 2019.
[8] FDM 11-5-5, Attachment 5.1 Access Spacing Guidelines. Accessed August 29, 2019. Minimum spacing between local road access points = 5,280 feet per mile / 2,000 feet per access point = 2.6 access points per mile. Minimum spacing between private access points = 5,280 feet per mile / 1,000 feet per access point = 5.3 access points per mile.

- North of McFarland
    - Private access density = 0 driveways per mile, below the recommended maximum density.
    - Intersection access density = 2.4 access points per mile, or 8 percent below the recommended maximum density.

While there are no recommendations for urban areas, Stoughton has 128 driveways, or 32 driveways per mile, between Spring Road and Rutland-Dunn Townline Road. McFarland has 11 driveways, or 10.6 driveways per mile, between Exchange Street and Larson Beach Road.

1.2.2 Accommodate Travel Demand

To establish whether US 51 will meet future travel demands placed on the route, it is important to understand the mix of traffic using US 51, evaluate the existing and future projected traffic volumes, and perform traffic modeling to show, at various locations in the study area, the existing and projected traffic operations if no improvements are made. The results in this section establish the need for improvements on portions of US 51 based on expected traffic volumes and the existing roadway capacity, together producing unacceptable levels of congestion.

1.2.2.1 Traffic Mix

In Wisconsin, the percentage of daily trucks within the total traffic volume on rural arterials (non-freeway) typically ranges from 10 to 14 percent; on urban arterials (non-freeway), daily truck percentages range from 4 to 7 percent.[9]

WisDOT collected daily truck data at five locations throughout the corridor from 2012 through 2017. Intersection traffic counts performed by the project team in October 2014 indicated that the percentage of trucks on US 51 varies by location and is generally higher in the AM peak hour than the PM peak hour. The AM peak period is generally from 6 to 9 A.M. with the peak hour from 7 to 8 A.M. The PM peak period is generally from 3 to 7 P.M. with the peak hour from 5 to 6 P.M. A review of the daily and the peak hour truck data, by corridor location, shows the following:

- North of Stoughton, the AM range of 2 to 12 percent is near the typical range for a rural arterial. Daily truck percentages range from 6 to 8 percent at one site north of County B (east).
- East of Stoughton, the range is 4 to 8 percent during the AM peak hour. The daily truck percentage reported at one site between County A and County W was 11 percent.
- In downtown Stoughton, trucks range from 1 to 11 percent during the AM peak hour, which is higher than typical for an urban principal arterial. Daily truck percentages ranged from 9 to 10 percent at two sites in the downtown area.

The proximity of I-39/90, deliveries to and from Stoughton, and trucking associated with manufacturing businesses in Stoughton may all be contributing to the higher truck percentages within Stoughton. Based on the location of the existing truck weigh scale located north of Stoughton, trucks are not diverting through Stoughton simply to avoid weigh scales in other locations.

Because of the agricultural lands adjacent to the rural portions of the corridor, farm vehicles are also part of the traffic mix. The public voiced concerns early on in the study about the difficulty in passing slower-moving, farm machinery vehicles. Existing bicyclist and pedestrian usage of the corridor has not been measured because bicycle and pedestrian facilities between Stoughton and McFarland are deficient.

1.2.2.2 Traffic Volume Forecasting

Travel demand is a measure of the trips people want to make and when they want to make them. It is directly related to the volume of traffic on a roadway for a specific period, such as morning and afternoon commuting hours (AM and PM peak hours). Existing traffic volumes are obtained through traffic counts. Future travel demand is estimated based on traffic count data, U.S. Census data, existing and projected land use, and other information in land use and transportation plans.

[9] WisDOT vehicle classification data spreadsheet https://wisconsindot.gov/Pages/projects/data-plan/traf-fore/default.aspx (Accessed August 30, 2019). The ranges provided are based on the latest four years of data available (2014 to 2017). The functional class names and numbers, in parenthesis, used in this analysis were rural principle arterials (2), rural minor arterials (6), urban principle arterial (14), and urban minor arterial (16). The truck percentages reflect the total of single-unit trucks and combination-unit (i.e. tractor-trailor) trucks.

Traffic forecasting is a dynamic process that considers numerous factors. The WisDOT Traffic Forecasting Section provided the roadway and intersection traffic forecasts for the US 51 Corridor Study. The Dane County Travel Demand Model (Demand Model) and Traffic Analysis Forecasting and Information System (TAFIS) were the tools used to estimate traffic volumes that reasonably represent how US 51 can be expected to be used in the future. The following paragraphs describe a summary of these tools. More detail on how travel demand models and TAFIS may be used to conduct a traffic forecast can be found in Chapter 9 of the WisDOT Transportation Planning Manual (TPM).[10]

The WisDOT Traffic Forecasting Section used the Demand Model to forecast future travel patterns. Travel demand models are complex and integrated tools. Key inputs include current and future households, employment, and special traffic generators. Roadway network inputs include speed, roadway classification, and number of lanes. Local municipalities throughout the county develop land use plans that describe their long-term expectations regarding how agricultural, urban, and rural areas will change in the future. These land use plans are incorporated into the Demand Model, which models how new development and changes in redeveloped areas impact the transportation system. The Demand Model considers data including: trip generation (the number of vehicular trips to be made); trip distribution (where those trips go); mode choice (how the trips will be divided among the available modes of travel); and trip assignment (forecasting the route trips will take). The Demand Model is validated and calibrated to existing travel patterns and volumes and then used to project future travel patterns and volumes.

The WisDOT Traffic Forecasting Section used the TAFIS as a comparison tool. TAFIS is a computer program operating on the principle of forecasting future STH traffic volumes using historic traffic counts to create a best-fit, statistically significant forecast. WisDOT uses a combination of TAFIS and the Demand Model output to conduct roadway traffic forecasts in areas where travel demand models exist, such as the US 51 corridor. Travel demand model growth rates and TAFIS growth rates are generated with different information. The travel demand model growth rate can account for anticipated changes in population and employment in specific locations. Regression-based TAFIS growth rates are based on formulas that are applied to the past and current counts for specific locations and do not normally include or consider assumptions as to why those volume changes occur. The WisDOT Traffic Forecasting Section documents the difference in growth rates before choosing them in traffic forecasts and uses engineering judgement to choose growth rates based on the level of confidence in forecasting tools, including travel demand models and TAFIS.

The WisDOT Forecasting Section finalized the traffic forecasts for US 51 in July 2015. A projected design year of 2045 was based on an assumed construction year of 2025 plus the standard 20 years after construction to reach the study horizon.[11] The roadway traffic forecast existing (or base) year volumes were determined by the most recent traffic count data available through WisDOT's traffic count program at the time of the forecasting effort. All roadway traffic counts along US 51 and most of the side-road traffic counts used in the forecasting effort were completed in 2012. For the intersection traffic forecasts, the existing (or base) year volumes used in the forecasting effort were based on traffic counts performed by the project team in summer and fall 2014. Existing traffic volume maps and traffic forecast results are included in Appendix C.

Since the completion of the traffic forecasts in 2015, more recent roadway traffic count data (collected through WisDOT's traffic count program in 2018) has become available along US 51, updates have been made to the WisDOT TPM regarding traffic forecasting procedures, and updates have been made to the version of the Demand Model used in the forecasting effort. In light of the newer traffic data available along the corridor, the project team coordinated with WisDOT Traffic Forecasting Section and FHWA to assess the need to update traffic forecasts for the study. The assessment included a review of Base Year traffic volumes, a comparison between versions of the Demand Model, a review of planned development, and the potential effect of traffic data related to alternatives analysis. Based on this assessment, WisDOT and FHWA staff determined that updated traffic forecasts were not needed for this US 51 EA. The July 16, 2019, technical memorandum, Base Year Traffic Data Review, describes the traffic data assessment and is included in Appendix C.

[10] WisDOT Transportation Planning Manual (May 2018), Chapter 9, Section 10.5, page 35. Accessed August 29, 2019.
[11] FDM 11-10-1.1 (Accessed May 23, 2019): *The design years for projects are normally 20 years from the date projects are proposed to be opened to traffic. Shorter design periods may be used when highways are to be constructed in stages or designed for shorter pavement improvement life-spans*. The traffic forecasts for US 51 were developed assuming an estimated construction year of 2025.

1.2.2.3 Traffic Volumes

Roadway traffic count volumes were collected by WisDOT in 2012 at most locations along US 51 within the study area. The roadway traffic counts are collected over a three-year cycle at rural and urban locations throughout the state and are not available for every calendar year. Intersection traffic counts were collected along US 51 in 2014 at 27 locations, which are further described in Section 1.2.2.6. The Base Year of the traffic analysis performed for the US 51 Corridor Study is 2014 to be consistent with the intersection traffic counts. Because of this, the 2012 roadway traffic count volumes were inflated by two years to be consistent with the study's 2014 Base Year.

Table 2 identifies the Base Year (2014) roadway volumes and projected roadway volumes for 2045 at various representative locations along US 51, and on other roadways including WIS 138, County B (east), and County N. The projected 2045 traffic volumes are based on no improvements being made along the study corridor (Future No Build) and were obtained from WisDOT traffic forecast volume reports.[12] The traffic volumes are expressed as annual average daily traffic (AADT) volumes in vpd to reflect average travel conditions on a particular highway, rather than daily or seasonal fluctuations.

Table 2 Base (2014) and Future No Build (2045) Traffic Comparison

Highway	Limits (2-lane unless otherwise noted)	Approximate Location	Base (2014) Traffic AADT	Future No Build (2045) Traffic AADT
US 51	I-39/90 to County N	East of Stoughton	4,200	6,000
US 51	Page Street to WIS 138 (south) (4-lane)	Stoughton	15,100	18,600
US 51	WIS 138 (south) to WIS 138 (west) (4-lane)	Stoughton	14,500	17,700
US 51	Jackson Street to Roby Road	Stoughton	8,700	11,600
US 51	County B (east) to County B/AB	Stoughton to McFarland	11,100	14,400
US 51	County B/AB to Dyreson Road	Stoughton to McFarland	10,500	12,600
US 51	Mahoney Road to Exchange Street	Stoughton to McFarland	10,800	13,600
US 51	North of County MN (4-lane)	McFarland	19,000	23,400
WIS 138	US 14 to US 51	West of Stoughton	7,100	9,900
County B (east)	US 51 to County N	Stoughton	4,400	5,900
County N	County B (east) to I-39/90	North of Stoughton	6,600	8,700

Traffic volumes are highest on US 51 in Stoughton and McFarland, and lowest east of Stoughton. Table 2 shows traffic volumes are projected to grow when comparing Base and Future No Build volumes.

According to FDM 11-15, Attachment 1.1, *Modernization Design Criteria for Rural State Trunk Highways Functionally Classified as Arterials*, a rural 2-lane arterial highway such as US 51 generally has a maximum capacity of 15,000 AADT.[13] This maximum volume assumes the roadway has 80 percent of the corridor available for passing. US 51 has a much lower rate of available passing between Stoughton and McFarland, approximately 40 percent of the roadway, and so this would reduce the maximum capacity to less than the optimum 15,000 AADT. With traffic projections at approximately 14,400 AADT between County B (east) and County B/AB,

[12] The Future No Build traffic forecasts for the US 51 Corridor Study were completed in February 2015. Since that time, several independent roundabout projects have been committed to by WisDOT (funded and not yet constructed) and a permanent traffic signal has been installed at Jackson Street. These changes in traffic control were not included in the US 51 Corridor Study's traffic forecasts for this EA. Intersection control such as traffic signals or roundabouts are typically not accounted for within the Demand Model and therefore it does not impact the forecast results. Further review of historic traffic volumes and other factors as to why the study's traffic forecasts are still appropriate is discussed further in Appendix C. See Section 1.2.2.2 for additional discussion on traffic volume forecasting.

[13] FDM 11-15 Attachment 1.1 (accessed August 29, 2019). To support the 15,000 AADT value as a planning-level upper threshold of a 2-lane roadway, FDM 11-5-3.5 *Level of Service Analysis* (accessed August 29, 2019) states that "*The design criteria tables in FDM 11-15-1 and 11-20-1 contain planning level AADT thresholds that could be used for first glance planning applications."*

the highway will be near or at capacity. Given the base and projected traffic volumes from WisDOT traffic volume forecast reports, operations along the corridor were studied and are presented in the next sections.

1.2.2.4 Operations Modeling and Level of Service (LOS)

The capacity of a roadway is the highway's ability to handle traffic. When traffic volumes increase beyond a roadway's capacity, congestion and delays increase and mobility and safety typically decline. Operations modeling provides a measure of how well the roadway handles existing traffic and forecasted traffic during peak commuting hours. The operations modeling for the US 51 study used forecasted traffic volumes based on WisDOT traffic forecast volume reports for the study area and was completed in July 2015.

Operations modeling was used to understand traffic operations during peak commuting times (AM and PM peak hours) at various locations in the study area for the base and future conditions. Operations modeling was performed in 2015 for both the 2-lane roadway and intersections in the study area because both are integral to understanding how US 51 operates. Roadway operations modeling takes into account traffic and roadway design factors such as peak-hour volumes, peak-hour truck percentages, number of driving lanes, lane widths, vertical grades, passing opportunities, and number of access points to determine the LOS.

Three types of traffic modeling software were used based on 2015 guidance from FDM 11-5-3.7, *Traffic Analysis Tool Selection*, each of which follow Highway Capacity Manual (HCM) 2010 methodologies:

- Highway Capacity Software 2010 (HCS) was used to model operations for the 12 miles of 2-lane rural roadway in the study corridor, taking into account factors such as the number of access points and the location and length of no passing zones.
- Synchro 8 Software, Build 806, (Synchro) was used to model operations of signalized and unsignalized intersections in the study corridor.
- Sidra 6 Software (Sidra) was used to model operations of potential future roundabout-controlled intersections in the study corridor for the traffic modeling of the build alternatives.

Since the completion of the traffic operations modeling in 2015, updates have been made to FDM guidance on traffic analysis tool selection and software updates have been made to HCS, Synchro, and Sidra to reflect HCM 6th Edition (HCM6) methodologies. As of August 2019, FDM 11-5-3.7.2 states the following:[14]

> *WisDOT accepts the use of HCM6 methods in order to meet the planning, operational, and design analysis needs of most traffic studies. For project analysis initiated prior to November 2017, it may be acceptable to continue to follow the HCM 2010 methodologies for the duration of the project. Coordinate with the regional traffic engineer or BTO-TASU to verify whether to continue to using the HCM 2010 methodologies or whether to update to the HCM6 methodologies.*

The project team coordinated with the WisDOT Bureau of Traffic Operations (BTO) in April 2019 and determined the HCM 2010 methodologies were still appropriate for the US 51 operations analysis. Therefore, the operations modeling effort for this US 51 EA has not been revised to reflect the HCM6 methodologies.

LOS is used to describe the quality of how a transportation facility operates. LOS is a quantitative measure that can be described both numerically, and using the letter grades, "A" through "F" with LOS A (1.01 to 2.00) the best and LOS F (greater than 6.00) the worst.

The WisDOT desirable LOS standards for a facility take into account the function and type of roadway along with the area type and population. For a non-NHS route such as US 51, the desirable LOS is shown in Figure 6 and described as follows:

- From east of Spring Road to County B/AB (8.0 miles) and from Tower Road to Terminal Drive (3.0 miles), US 51 is classified by the MPO as an urbanized area of Madison.[15] The desirable minimum LOS for these portions of US 51 as a non-NHS route within an urbanized area is mid-LOS E (greater than 5.50) as outlined in the FDM.[16]

[14] FDM 11-5-3.7.2 Capacity Analysis. Accessed August 29, 2019.
[15] https://wisconsindot.gov/Pages/projects/data-plan/plan-res/boundaries.aspx. Accessed April 4, 2019.
[16] FDM 11-5-3.2.1 Congestion and Facility LOS. Accessed April 4, 2019.

- From I-39/90 to east of Spring Road (4.5 miles) and from County B/AB to Tower Road (2.4 miles), US 51 is classified by the MPO as a rural area of Madison. The desirable minimum LOS for these portions of US 51 as a non-NHS route in a rural area is LOS D (greater than 5.01) as outlined in the FDM.
- The portion of US 51 from Terminal Drive/Voges Road to US 12/18 (approximately 0.7 miles) and the I-39/90/US 51 interchange were not included in the desirable LOS review because they are part of other studies.

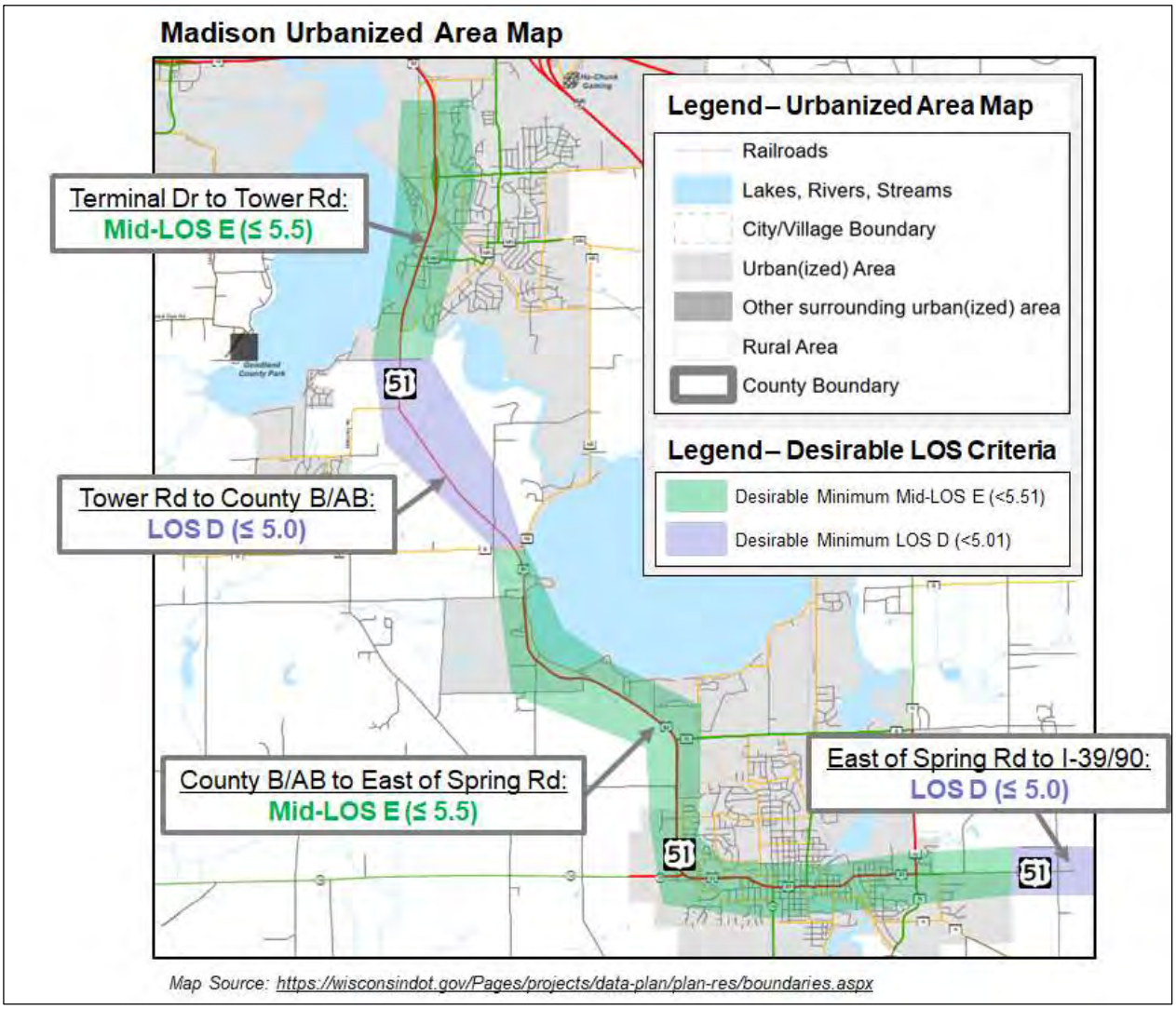

Figure 6 US 51 Desirable LOS Criteria

1.2.2.5 Rural 2-Lane Operations

The level of congestion, or the overall quality of traffic flow along a section of roadway, is quantitatively measured and described by the highway's LOS. As noted earlier, the levels range from very good, represented by LOS A, to very poor, represented by LOS F. The *Transportation Research Board's Highway Capacity Manual, 2010 edition*, classifies a high speed 2-lane arterial like US 51 as a Class I highway where speed and delay because of passing restrictions are both important to motorists. LOS is defined in terms of both average travel speed and percent time spent following. Average travel speed is defined as the highway section's length divided by the average travel time taken by vehicles to traverse it during a given time interval. Percent time spent following is the average percentage of time that vehicles must travel in platoons behind slower vehicles because of limited ability to pass. Percent time spent following also represents the approximate percentage of vehicles traveling in platoons. Table 3 defines the LOS thresholds for a Class I, 2-lane section of highway.

Table 3 2-Lane Highway Section LOS Thresholds, Class I Highways

LOS (Numeric)	Average Travel Speed (miles/hour)	Percent Time Spent Following (%)	Conditions
A (1.01 to 2.00)	>55	≤35	▪ Unrestricted free flow ▪ Drivers virtually unaffected by others ▪ High level of freedom to select speed and maneuver ▪ Excellent level of driver comfort and convenience
B (2.01 to 3.00)	>50-55	>35-50	▪ Slightly restricted stable flow ▪ Driver aware of use by others ▪ Slight restriction in speed and maneuvering ▪ Good level of driver comfort and convenience
C (3.01 to 4.00)	>45-50	>50-65	▪ Moderately restricted stable flow ▪ Driver operation significantly affected by others ▪ Moderate restriction in speed and maneuvering ▪ Fair level of driver comfort and convenience
D (4.01 to 5.00)	>40-45	>65-80	▪ Heavily restricted flow ▪ Driver operation completely affected by others ▪ Severe restriction in speed and maneuvering ▪ Poor level of driver comfort and convenience
E (5.01 to 6.00)	≤40	>80	▪ Unstable flow ▪ Slow speeds and traffic backups; some stoppage ▪ Total restriction in vehicle maneuvering ▪ High driver frustration
F (Over 6.00)	-	Volume exceeds Capacity	▪ Traffic flow in one or both directions exceeds capacity of the highway ▪ Heavy congestion exists ▪ Maximum driver frustration

Sources: FDM 11-5-3, Table 3.2, *LOS Alpha/Numeric Value Comparison* and Highway Capacity Manual (HCM) 2010 Chapter 15, as of October 27, 2015. The alpha and numeric LOS relationships shown in this table are unchanged in the FDM as of August 29, 2019.

The 2-lane operations modeling was performed at three locations on US 51: east of Stoughton between Washington Road and Tower Drive, between County B (east) and Lake Kegonsa Road, and between Dyreson Road and Mahoney Road (see Figure 7). As noted earlier, the desirable LOS for US 51 from east of Spring Road to County B/AB (8.0 miles) and from Tower Road to Terminal Drive (3.0 miles) is mid-LOS E or better (<5.50). From I-39/90 to east of Spring Road (4.5 miles) and from County B/AB to Tower Road (2.4 miles), the desirable LOS is LOS D or better (<5.01).

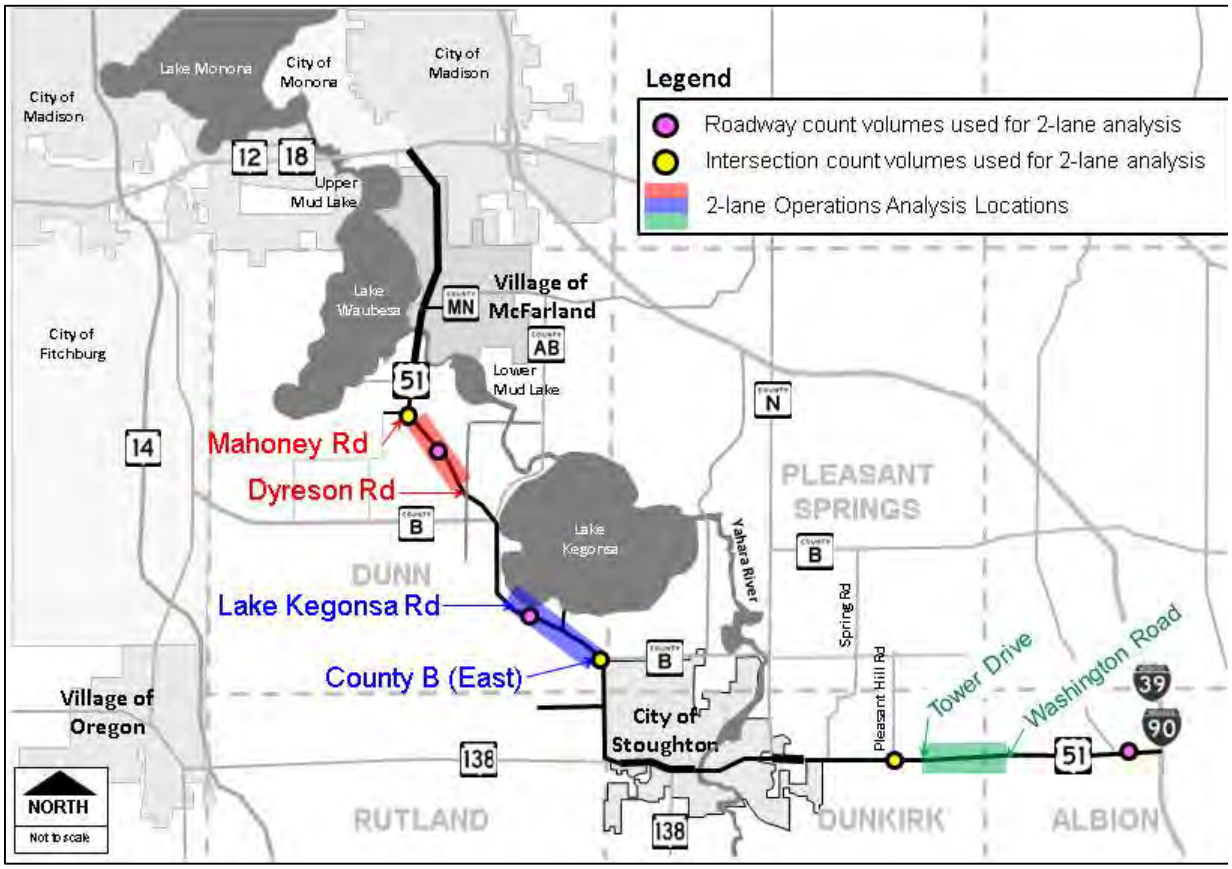

Figure 7 2-lane Operations Modeling Locations

The 2-lane analysis for the Base Year (2014) and Future (2045) No Build scenarios was performed at the three locations described previously. The 2014 traffic volumes used in the analysis were determined by interpolating between the 2012 WisDOT roadway traffic count AADT and the 2045 No Build AADT at each location. According to the FDM, WisDOT policy is to use the 30th highest hour volume (K30) as the Design Hour Volume for rural 2-lane facilities.[17] The K30 analysis is used so operations along the US 51 mainline can be compared evenly across the Base Year, Future No Build and various build alternatives. K values are the standard means to evaluate mainline conditions. The K factor proportions and directional split factors used in the analysis are provided in WisDOT traffic forecast volume reports. For US 51, the K factor analysis resulted in a directional split of 59 percent of US 51 traffic traveling in the peak direction.

Evaluation of the operations of the Base Year conditions show some of the rural portions of the study corridor are operating near undesirable levels. US 51 between Dyreson Road and Mahoney Road has a current traffic volume of approximately 11,000 vpd and operates just under LOS E (numeric LOS equal to 4.99, or just 0.02 away from LOS E) in northbound and southbound peak times. The 2-lane operations between County B (east) and Lake Kegonsa Road are LOS E (numeric LOS equal to 5.11) and meet the desirable LOS criteria of mid-LOS E or better (<5.50). The 2-lane operations east of Stoughton meet desirable LOS criteria at LOS C.

In the Future No Build condition, 2-lane US 51 will be near or over capacity between Stoughton and McFarland because of growth in traffic volumes and limited passing opportunities. Traffic volumes reach approximately 14,400 vpd. In 2045, US 51 between Dyreson Road and Mahoney Road operates at LOS E (numeric LOS equal to 5.35) in northbound and southbound peak times and does not meet desirable LOS criteria (LOS D or better) based on the K30 analysis. Along US 51 between County B (east) and Lake Kegonsa Road, 2045 operations just meet the desirable mid-LOS E criteria (numeric LOS equal to 5.47 to 5.48, or just 0.02 to 0.03 away from mid-LOS E) for northbound and southbound travel during peak times. East of Stoughton, modeling indicates that 2-lane operations would continue meeting desirable LOS criteria (LOS D or better).

[17] FDM 11-5.3.5.1.1 Design Hour Volume for Freeways, Multilane Highways, and Two-Lane Highways. Accessed August 29, 2019.

Table 4 shows the Base Year and Future No Build LOS for the 2-lane corridor sections in the peak directions of travel based on the K30 analysis performed.

Table 4 2014 Base Year and 2045 Future No Build LOS for 2-Lane Segments of Corridor

2-Lane Operations Modeling Location	K30 Analysis: Alpha LOS (Numeric LOS)			
	2014 Base Year K30 NB	2014 Base Year K30 SB	2045 Future No Build K30 NB	2045 Future No Build K30 SB
US 51 East of Stoughton, between Washington Road and Tower Drive	C (3.69)	C (3.63)	C (4.00)	C (3.96)
US 51 between County B (east) and Lake Kegonsa Road	E (5.11)	E (5.11)	**E (5.47)[2]**	**E (5.48)[2]**
US 51 between Dyreson Road and Mahoney Road	**D (4.99)[1]**	**D (4.99)[1]**	**E (5.35)**	**E (5.35)**

Note: Alpha and numeric LOS values that are gray and bolded are exceeding or are near the desirable LOS threshold for the facility.

[1] The numeric LOS range for LOS D is 4.01 to 5.00, and for LOS E the range is 5.01 to 6.00. For US 51 northbound and southbound between Dyreson Road and Mahoney Road the 2014 LOS of 4.99 is just 0.02 away from LOS E, which just meets the desirable LOS criteria (<5.01) for this section of US 51.

[2] For US 51 between Dyreson Road and Mahoney Road, the 2045 numeric LOS values of 5.47 for northbound and 5.48 for southbound are just 0.02 and 0.03 away, respectively, from the desirable mid-LOS E criteria (<5.50) for this section of US 51.

Because of the commuter characteristics of the corridor, the study team decided to also perform a 2-lane analysis using the AM and PM peak-hour volume data. This data allowed the analysis to capture a higher directionality of the US 51 corridor during peak commuting times, to better reflect existing conditions (60 to 72 percent of traffic traveling in the peak direction during the peak hours). The AM and PM intersection count locations used for each 2-lane analysis segment are shown in Figure 7. The peak-hour analysis showed slightly poorer operations along US 51 southbound during the PM peak hour than the K30 analysis. The AM and PM peak-hour analysis was similar to the K30 analysis in that the same roadway sections are anticipated to operate near or over the desirable LOS thresholds between Stoughton and McFarland in 2045. East of Stoughton, operations continue to meet desirable LOS criteria (LOS D or better) with the AM and PM peak-hour analysis in 2045, which is similar to the K30 analysis.

In addition to the K30 and peak-hour analyses, a peak-period analysis was performed to estimate how long LOS E operations would occur *before* and *after* the actual peak hour for the two roadway sections between Stoughton and McFarland, County B (east) to Lake Kegonsa Road, and Dyreson Road to Mahoney Road. This peak-period analysis used the percentage of peak-hour traffic occurring in the hour(s) before and after the peak hour based on roadway traffic counts, in combination with WisDOT traffic forecast volumes.

Seven total hours were analyzed, three hours for the AM peak period and four hours for the PM peak period:

- The AM peak period is generally from 6 to 9 A.M. with the peak hour from 7 to 8 A.M.
- The PM peak period is generally from 3 to 7 P.M. with the peak hour from 5 to 6 P.M.

The peak-period analysis shows that during the Base Year, only the actual PM peak hour operates at LOS E in each of the two sections. In the Future No Build condition, the analysis results differ slightly by roadway section.

- Between County B (east) and Lake Kegonsa Road, four of the seven hours would be at LOS E in 2045 (7 to 8 A.M. [the AM peak hour] and 3 to 6 P.M.).
- Between Dyreson Road and Mahoney Road, three of the seven hours would be at LOS E in 2045 (7 to 8 A.M. [the AM peak hour] and 4 to 6 P.M.).

1.2.2.6 Intersection Operations

Intersection LOS is the primary evaluation measure for operation levels in urbanized areas. For intersections, the LOS is determined by the average delay (in seconds) of all vehicles entering the intersection. Intersections with short average delays have desirable or high LOS (LOS A); conversely, intersections with long average delays have undesirable or low LOS (LOS F). The *Transportation Research Board's Highway Capacity Manual* (2010) established a delay of up to 55 seconds for signalized intersections and 35 seconds for unsignalized intersections, both corresponding to LOS D, as their minimum standard. In addition, evaluating intersection operations in the rural area between Stoughton and McFarland can provide an understanding of the degree of difficulty for drivers to enter or cross the highway. Table 5 shows intersection LOS thresholds.

Table 5 Intersection LOS Thresholds

LOS	Average Delay at Intersection (seconds per vehicle)		Conditions
	Signalized Intersection	Stop-Controlled Intersection	
A	≤ 10	≤ 10	Intersection approaches appear open and turning movements are easily made.
B	>10 to 20	>10 to 15	Stable operation; slight delays.
C	>20 to 35	>15 to 25	Stable operation; acceptable delays.
D	>35 to 55	>25 to 35	Approaching capacity with tolerable delays, may need to wait through more than one signal cycle before proceeding.
E	>55 to 80	>35 to 50	At capacity of the intersection.
F	> 80	> 50	Intersection is over capacity with minimal gaps in mainline flow for intersections with stop signs and most signal cycles fail to clear the queue.

Source: HCM 2010 Chapters 18 and 19, as of October 27, 2015.

For non-NHS routes such as US 51, the FDM indicates that, where practical, WisDOT should strive to provide mid-LOS E or better operations for all movements at the intersection (left, through, and right-turning movements for each approach) during the peak hours of travel.[18] The mid-LOS E threshold for signalized intersections is 67.5 seconds of average delay and the mid-LOS E threshold for stop-controlled intersections is 42.5 seconds of average delay. The FDM also indicates that where it is not practical to achieve these levels of operation, a reduced LOS may be acceptable for minor street movements or major street non-through movements.[19]

The Base operations analysis was completed for the higher-volume unsignalized intersections and all signalized intersections in the study area. The following intersections are included in the Base operations analysis:

- Unsignalized: Along US 51, the intersections of Pleasant Hill Road, Hoel Avenue/Silverado Drive, WIS 138 (west), Jackson Street, Roby Road, Rutland-Dunn Townline Road, County B (east), Brooklyn Drive, Quam Drive, Halverson Road/Quam Drive, Lake Kegonsa Road, Charles Lane, Schneider Drive, Colladay Point Drive (south), County B/AB, Dyreson Road, Mahoney Road, Tower Road, Exchange Street, and Bible Camp Road.
- Signalized: In Stoughton along US 51, County N, 4th Street, Division Street, Page Street, and WIS 138 (south)/Van Buren Street. In McFarland along US 51, County MN and Larson Beach Road.

The locations and types of intersections for the Base operations analysis are shown in Figure 8.

[18] FDM 11-5-3.2.2 Congestion and Intersection LOS. Accessed August 29, 2019.
[19] FDM 11-5-3.2.2 indicates that common scenarios may include, but are not limited to, where the minor street is not part of the State Trunk Network, where the 95th percentile queue for the movement is less than four vehicles, or approximately 100 feet, and will not block another major intersection or access point, where nearby alternate routes are available for drivers to self-diver to a location with lower delay, where the intersection is minor-street stop-controlled and centered between two signalized intersections on the major street, or where there are fewer impacts to other modes of travel (motorized or non-motorized).

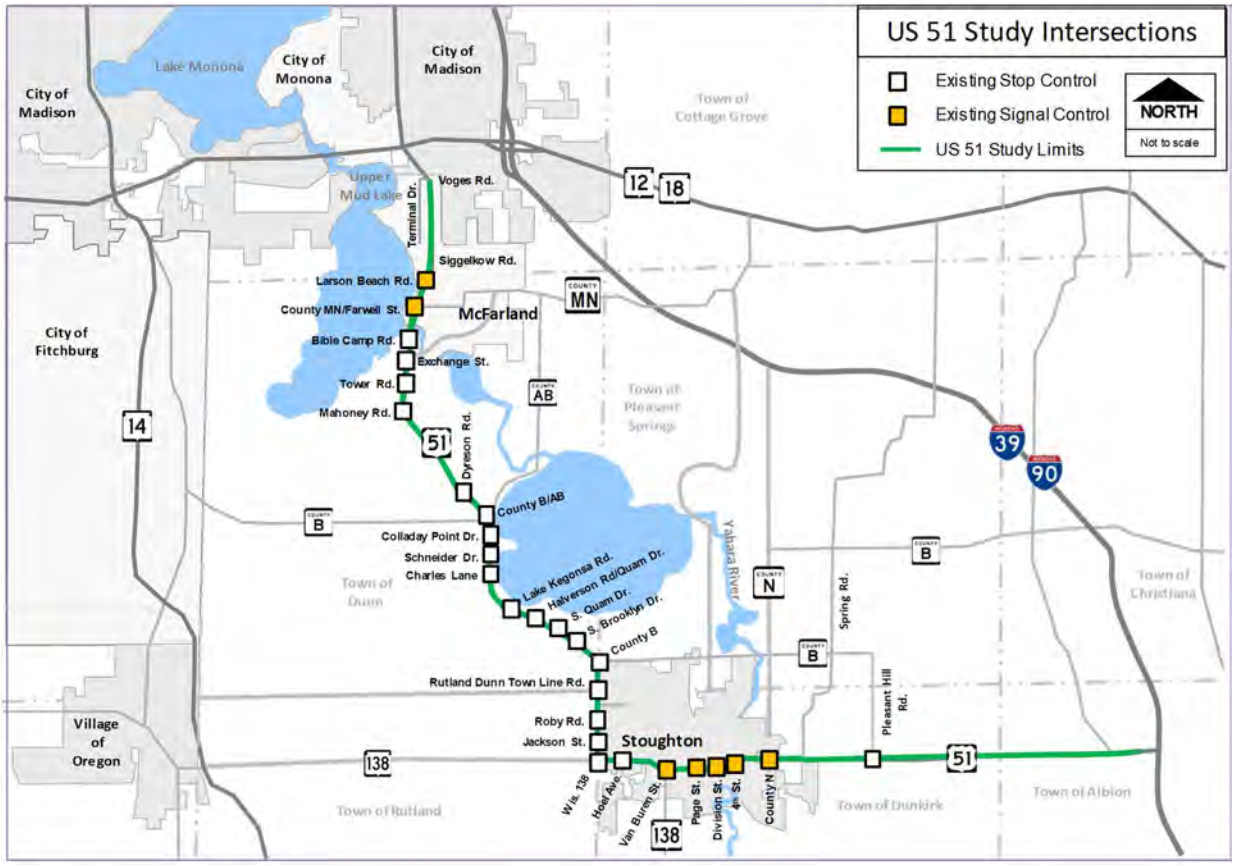

Figure 8 Intersections (Location and Control Type) Studied in Base (2014) Operations Analysis

Table 6 shows the intersection operations for the Base conditions for the signalized and unsignalized intersections analyzed. Side-road LOS and overall LOS for unsignalized intersections was evaluated based on the poorest performing movement at the side-road approach. Many of the stop-controlled intersections between Stoughton and McFarland have side-road movements that operate at less than desirable operations (worse than mid-LOS E). The mainline-to-side road left-turn movements between Stoughton and McFarland operate acceptably. Most of the signalized intersections, which are located in the urban areas, have acceptable operations, with individual movements and overall intersection operations of LOS D or better. The only signalized intersection with undesirable operations is at 4th Street in Stoughton. The northbound side-road movement operates at LOS F in both the AM and PM peak hours and the southbound movement operates at LOS F during the AM peak hour.

Table 6 2014 Base Conditions

Intersection	Traffic Control	Peak Hour	2014 Base Conditions Peak Hour LOS [1]				
			Overall	US 51		Side Road	
				NB	SB	EB	WB
US 51 and Pleasant Hill Road	Stop	AM	B	A	A	B	B
		PM	C	A	A	C	B
US 51 and County N (Stoughton)	Signal	AM	B	B	B	B	B
		PM	B	B	B	B	B
US 51 and 4th Street (Stoughton)	Signal	AM	**E**	B	C	**F**	**F**
		PM	D	B	C	**F**	D
US 51 and Division Street (Stoughton)	Signal	AM	A	A	A	B	B
		PM	A	A	A	B	B
US 51 and Page Street (Stoughton)	Signal	AM	A	A	A	B	B
		PM	A	A	A	B	B
US 51 and WIS 138 (south) (Stoughton)	Signal	AM	B	B	B	C	C
		PM	A	A	A	C	C
US 51 and Hoel Avenue/Silverado Drive (Stoughton)	Stop	AM	E	A	A	D	E
		PM	**F**	A	A	**F**	**F**
US 51 and WIS 138 (west) (Stoughton)	Stop[2]	AM	**F**	A	A	**F**	-
		PM	**F**	A	A	**F**	-
US 51 and Jackson Street (Stoughton)	Stop[2]	AM	C	A	A	B	C
		PM	D	A	A	C	D
US 51 and Roby Road (Stoughton)	Stop	AM	C	A	A	C	C
		PM	**F**	A	A	**F**	**F**
US 51 and Rutland-Dunn Townline Road (Stoughton)	Stop	AM	B	A	A	B	-
		PM	C	A	A	C	-
US 51 and County B (east)	Stop	AM	C	A	A	-	C
		PM	**F**	A	A	-	**F**
US 51 and Brooklyn Drive	Stop	AM	C	A	A	-	C
		PM	C	A	A	-	C
US 51 and Quam Drive	Stop	AM	C	A	A	-	C
		PM	C	A	A	-	C
US 51 and Halverson Road	Stop	AM	D	A	A	C	D
		PM	E	A	A	C	E
US 51 and Lake Kegonsa Road	Stop	AM	**F**	A	A	**F**	D
		PM	**F**	A	A	**F**	D
US 51 and Charles Lane	Stop	AM	C	A	A	C	-
		PM	C	A	A	C	-
US 51 and Schneider Drive	Stop	AM	E	A	A	D	E
		PM	E	A	A	E	D
US 51 and Colladay Point Drive (south)	Stop	AM	C	A	A	-	C
		PM	B	A	A	-	B

[1] Overall intersection delay and side-road delay for stop-controlled intersections is based on the poorest performing side-road movement. The side-road delay for signal-controlled intersection is based on the delay of the intersection approach. Shaded LOS E values are over the desirable mid-LOS E delay threshold of 42.5 and 67.5 seconds for stop-controlled intersections and signalized intersections, respectively.

[2] Permanent traffic signals were installed at the US 51/Jackson Street intersection and temporary traffic signals were installed at the US 51/WIS 138 intersection in 2016. The traffic operations results shown in this table are based on 2014 base year conditions, which included stop-controlled conditions on Jackson Street and WIS 138. The future No Build conditions traffic operations results shown in Table 7 take into account the signalization of the US 51/Jackson Street intersection, as well as other committed (funded) projects, including roundabouts at Hoel Avenue, WIS 138 (west), Roby Road, and County B/AB.

Table 6 2014 Base Conditions

Intersection	Traffic Control	Peak Hour	2014 Base Conditions Peak Hour LOS [1]				
			Overall	US 51		Side Road	
				EB	WB	NB	SB
US 51 and County B/AB	Stop	AM	**F**	A	A	**F**	**F**
		PM	**F**	A	A	**E**	**F**
US 51 and Dyreson Road	Stop	AM	D	A	A	D	C
		PM	D	A	A	D	C
US 51 and Mahoney Road	Stop	AM	D	A	A	D	-
		PM	**E**	A	A	**E**	-
US 51 and Tower Road	Stop	AM	**F**	A	A	**F**	C
		PM	**F**	A	A	**F**	B
US 51 and Exchange Street (McFarland)	Stop	AM	E	A	A	-	E
		PM	D	A	A	-	D
US 51 and Bible Camp Road (McFarland)	Stop	AM	D	A	A	D	-
		PM	D	A	A	D	-
US 51 and County MN (McFarland)	Signal	AM	B	B	B	C	C
		PM	B	B	B	C	C
US 51 and Larson Beach Road (McFarland)	Signal	AM	B	B	B	C	C
		PM	C	B	B	C	C

[1] Overall intersection delay and side-road delay for stop-controlled intersections is based on the poorest performing side-road movement. The side-road delay for signal-controlled intersection is based on the delay of the intersection approach. Shaded LOS E values are over the desirable mid-LOS E delay threshold of 42.5 and 67.5 seconds for stop-controlled intersections and signalized intersections, respectively.

Table 7 shows the intersection operations for the 2045 Future No Build conditions for the signalized and unsignalized intersections analyzed. For the 2045 Future No Build analysis, the projected traffic volumes were placed into the existing corridor operations model. Signalized intersection timings were optimized to adjust for the increase in traffic volumes. No other geometric changes were made to US 51 in the Future No Build models other than at five intersections with recently constructed or committed (funded) projects. In 2016, a traffic signal was installed at Jackson Street as part of the Kettle Park West development. In 2022, roundabouts will be constructed at Hoel Avenue, WIS 138 (west), and Roby Road. In 2024, a roundabout will be constructed at County B/AB.

The 2045 Future No Build operations modeling showed substantial increases in congestion, queuing (traffic backups), and decreases in LOS at locations without committed intersection improvement projects.

Table 7 2045 Future No Build Conditions

Intersection	Traffic Control	Peak Hour	2045 Future No Build Peak Hour LOS [1,2]				
			Overall	US 51		Side Road	
				NB	SB	EB	WB
US 51 and Pleasant Hill Road	Stop	AM	C	A	A	C	C
		PM	C	A	A	C	B
US 51 and County N (Stoughton)	Signal	AM	B	B	B	C	C
		PM	B	B	B	B	B
US 51 and 4th Street (Stoughton)	Signal	AM	**E**	A	B	**F**	**F**
		PM	D	A	B	**F**	D
US 51 and Division Street (Stoughton)	Signal	AM	A	A	A	D	C
		PM	A	A	A	C	C
US 51 and Page Street (Stoughton)	Signal	AM	B	A	A	C	C
		PM	B	A	A	C	C
US 51 and WIS 138 (south) (Stoughton)	Signal	AM	B	B	A	C	C
		PM	A	A	A	C	C
US 51 and Hoel Avenue/Silverado Drive (Stoughton)	Committed Roundabout	AM	A	A	A	A	A
		PM	A	A	A	A	A
US 51 and WIS 138 (west) (Stoughton)	Committed Roundabout	AM	A	A	A	A	-
		PM	B	A	A	C	-
US 51 and Jackson Street (Stoughton)	Signal added in 2016	AM	A	A	A	B	B
		PM	A	A	A	B	B
US 51 and Roby Road (Stoughton)	Committed Roundabout	AM	A	A	A	A	A
		PM	A	A	A	A	A
US 51 and Rutland-Dunn Townline Road (Stoughton)	Stop	AM	C	A	A	C	-
		PM	C	A	A	C	-
US 51 and County B (east)	Stop	AM	**E**	A	A	-	**E**
		PM	**F**	A	A	-	**F**
US 51 and Brooklyn Drive	Stop	AM	D	A	A	D	-
		PM	C	A	A	C	-
US 51 and Quam Drive	Stop	AM	D	A	A	-	D
		PM	C	A	A	-	C
US 51 and Halverson Road	Stop	AM	**F**	A	A	C	**F**
		PM	**F**	A	A	C	**F**
US 51 and Lake Kegonsa Road	Stop	AM	**F**	A	A	**F**	**F**
		PM	**F**	A	A	**F**	**F**
US 51 and Charles Lane	Stop	AM	C	A	A	C	-
		PM	D	A	A	D	-
US 51 and Schneider Drive	Stop	AM	**F**	A	A	**F**	**F**
		PM	**F**	A	A	**F**	**F**
US 51 and Colladay Point Drive (south)	Stop	AM	E	A	A	-	E
		PM	D	A	A	-	D

Intersections and operations shaded gray represent recently constructed or committed (funded) projects.

[1] Overall intersection delay and side-road delay for stop-controlled intersections is based on the poorest performing side-road movement. The side-road delay for signal-controlled intersection is based on the delay of the intersection approach. Shaded LOS E values are over the desirable mid-LOS E delay threshold of 42.5 and 67.5 seconds for stop-controlled intersections and signalized intersections, respectively.

[2] Signalized intersection timings were optimized for the Future No Build scenario.

Table 7 2045 Future No Build Conditions

Intersection	Traffic Control	Peak Hour	2045 Future No Build Peak Hour LOS [1,2]				
			Overall	US 51		Side Road	
				EB	WB	NB	SB
US 51 and County B/AB	Committed Roundabout	AM	A	A	A	A	B
		PM	B	A	A	C	A
US 51 and Dyreson Road	Stop	AM	E	A	A	E	C
		PM	**F**	A	A	**F**	D
US 51 and Mahoney Road	Stop	AM	**F**	A	A	**F**	-
		PM	**F**	A	A	**F**	-
US 51 and Tower Road	Stop	AM	**F**	A	A	**F**	C
		PM	**F**	A	A	**F**	B
US 51 and Exchange Street (McFarland)	Stop	AM	**F**	A	A	-	**F**
		PM	**E**	A	A	-	**E**
US 51 and Bible Camp Road (McFarland)	Stop	AM	E	A	A	E	-
		PM	**F**	A	A	**F**	-
US 51 and County MN (McFarland)	Signal	AM	C	C	C	C	D
		PM	C	C	C	C	C
US 51 and Larson Beach Road (McFarland)	Signal	AM	C	C	C	C	C
		PM	C	C	C	D	C
		PM	C	A	A	C	-

Intersections and operations shaded gray represent recently constructed or committed (funded) projects.

[1] Overall intersection delay and side-road delay for stop-controlled intersections is based on the poorest performing side-road movement. The side-road delay for signal-controlled intersection is based on the delay of the intersection approach. Shaded LOS E values are over the desirable mid-LOS E delay threshold of 42.5 and 67.5 seconds for stop-controlled intersections and signalized intersections, respectively.

[2] Signalized intersection timings were optimized for the Future No Build scenario.

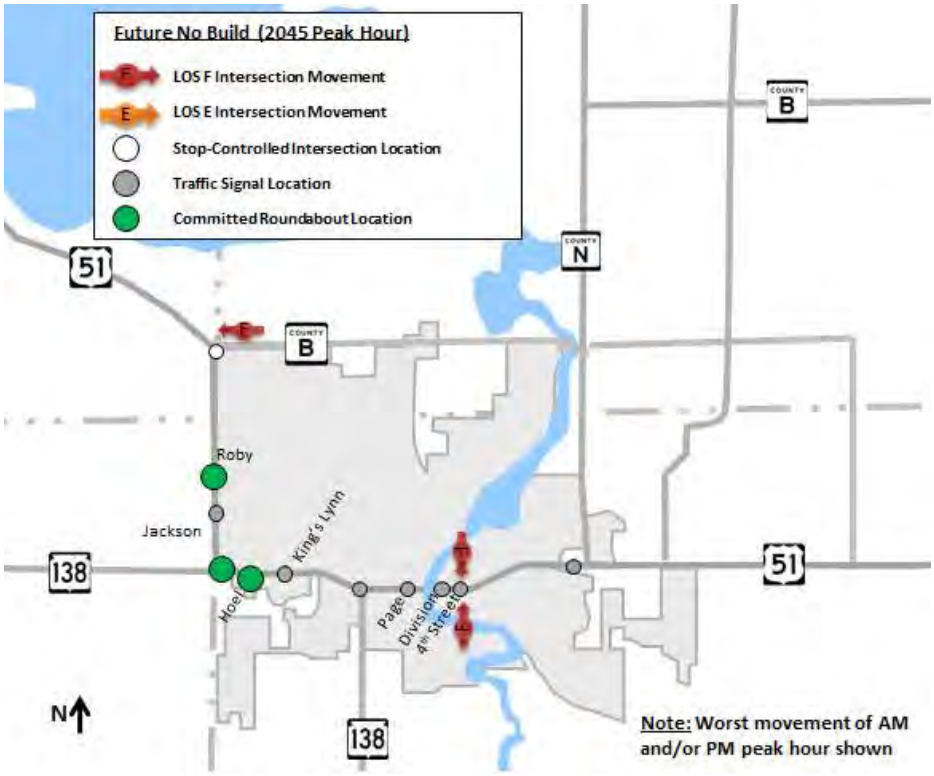

Figure 9 Undesirable LOS in and around Stoughton–Future No Build

Figure 9 illustrates the 2045 Future No Build conditions that are substandard in and around Stoughton. Along US 51, the intersections of County B (east) and 4th Street are projected to have one or more movements operate over the desirable mid-LOS E threshold. Queues (backups) on the side-road approach at the US 51/County B (east) intersection are shown to reach more than 500 feet in length during the 2045 PM peak hour.

The 2045 Future No Build LOS along US 51 through Stoughton will continue to be acceptable; however, queues on US 51 are anticipated to range from 300 to 500 feet in the downtown area during the peak hours. These queues may block turning bays and access to adjacent intersections and driveways.

Between Stoughton and McFarland, 9 of the 13 stop-controlled intersections from County B (east) to County MN that were analyzed in the 2045 Future No Build model had minor side-road approaches that experienced LOS F movements in the AM and/or PM peak hours. The 2045 modeling also indicated that side-road queuing at these intersections would become a problem because vehicles would have difficulty entering US 51, leading to queues of up to 250 feet at some locations. During the 2045 AM and PM peak hours in the Future No Build conditions, southbound left-turning vehicle queues at County MN in McFarland spilled out of the dedicated left-turn bay's storage area. As a result, vehicles may block the US 51 southbound through lanes, decreasing capacity and potentially increasing the risk of crashes.

1.2.2.7 Travel Demand Summary

Operations along US 51 just meet desirable LOS levels in the 2014 Base condition between Dyreson Road and Mahoney Road. In the 2045 Future No Build condition, operations fall to undesirable levels between Dyreson Road and Mahoney Road and just meet desirable levels between County B (east) and Lake Kegonsa Road. East of Stoughton, US 51 meets desirable LOS criteria in the 2045 No Build condition. For other sections of the corridor, the model indicated US 51 has the following travel demand needs:

- By the design year 2045, traffic volumes on US 51 are projected to grow in all locations. Volumes will approach the capacity of the roadway in key locations, particularly between County B (east) and Lake Kegonsa Road. The Base conditions modeling shows US 51 operating at LOS E in this location. By 2045, the 2-lane sections of US 51 between Dyreson Road and Mahoney Road and between County B (east) and Lake Kegonsa Road are anticipated to operate at LOS E for several hours of the day.
- By 2045, most two-way, stop-controlled rural intersections along US 51 are expected to operate at LOS E or LOS F on the side roads. Under these conditions, delays at side-road approaches and resulting driver frustration can lead to an increase in unsafe driving behavior and potential crash concerns.
- In McFarland in 2045, desirable LOS conditions are expected for the signalized intersections, however, the southbound left-turn movement from US 51 to Farwell Street (County MN) has projected queues extending past the existing turn bay length and into through traffic.
- On the west side of Stoughton between Hoel Avenue and County B (east), several committed roundabout projects are anticipated to improve traffic operations. The County B (east) intersection currently operates with LOS F side-road movements and is anticipated to have side-road queues of over 500 feet in 2045.
- In Stoughton between County N and WIS 138 (west), traffic operations along US 51 are expected to operate at LOS B or better in 2045. At 4th Street, which has an existing traffic signal, traffic approaching US 51 is anticipated to have failing operations (LOS F) in 2045.
- In 2045 in downtown Stoughton, US 51 queues during peak hours may block access to US 51/Main Street from adjacent side streets and driveways.

In summary, in 2045 under a No Build condition the anticipated congestion along the 5.6-mile rural section between Stoughton and McFarland on US 51 and intersecting side roads, and at key intersections in the urban areas, will be either at or near a level considered undesirable by WisDOT standards for this class of highway.

1.2.3 Address Existing Pavement Condition

For the majority of the US 51 corridor, the underlying pavement structure is near or has surpassed its useful life. Underlying pavement age along US 51 varies from 0 to 59 years old as shown in Table 8. The pavement type along the corridor includes both asphalt and concrete. Distressed pavement is visible as extensive longitudinal and transverse pavement cracking. Cracks in the pavement have propagated to the surface from underlying, failing pavement structure.

Table 8 US 51 Pavement Condition

Roadway Sections	Distance (Miles)	Underlying Pavement Structure Age as of 2020 (years)	Year 2024 Surface Pavement Rating (PCI and Condition)
I-39/90 to 0.2 miles west of County A	0.4	59	32 Poor
0.2 miles west of County A to Chalet Road	5.4	28	30-72 Poor to Good
Chalet Road to Forest Street	0.8	9 to 17	58 Fair
Forest Street to Page Street	0.2	18 to 19	32 Poor
Page Street to Hoel Avenue*	1.0	0 to 33	Good/Excellent
Hoel Avenue to Roby Road*	0.8	49	73-81 Good
Roby Road to South Quam Drive*	1.5	29	63-81 Good
South Quam Drive to County B/AB*	2.3	36	79-80 Good
County B/AB to Tower Road*	2.4	29	75-81 Good
Tower Road to Voges Road	2.8	27	72-81 Good

PCI=Pavement Condition Index
*Projects located within these limits (Roundabouts at Hoel Avenue, WIS 138 (west), Roby Road and County B/AB) are currently programmed for construction between 2022 and 2024. After construction of these individual projects and the recently completed project between Page Street and Hoel Avenue, the estimated surface pavement rating PCI is estimated to be between 88 and 100 depending on the improvement.

Typically, pavement has a life span of 20 to 30 years before replacement should be considered. As concrete pavement ages, the layer of concrete begins to wear and crack. The cracks allow water to enter the pavement. Water deteriorates the concrete, creating voids in the pavement, and decreasing the pavement's stability. Water is trapped in the cracks and expands as it freezes, causing the cracks to get wider. Temperature variations and freeze-thaw cycles increase the pavement stress. As flexible (asphalt) pavement ages, the layers of asphalt exhibit three common kinds of pavement stresses: deformation, cracking, and deterioration. Deformation is caused by repeated traffic loadings and is often seen as rutting in the vehicle wheel paths or as corrugation where vehicles are braking. Cracking (such as longitudinal, fatigue, and transverse cracks) and deterioration (such as delamination, where the surface layer separates from the layer below, and the formation of potholes) are caused by traffic loadings, temperature variations, and freeze-thaw cycles.

Once the original pavement has deteriorated, rehabilitation work can be performed to extend the life of the pavement. There are many levels of deterioration and rehabilitation, both of which impact how long the repairs will last. The chosen level of rehabilitation and its effectiveness can depend on the condition of the pavement, gravel base, and soil subgrade and is typically selected to maximize the cost to benefit ratio.

Resurfacing provides a new layer of asphalt pavement, which returns the roadway to a smooth riding surface but does not address the cracks and other issues of the original pavement, whether it is concrete or asphalt. The underlying pavement will continue to deteriorate after the resurfacing or other repairs. More than one rehabilitation project can occur, but the pavement will eventually need to be repaired or replaced to increase the stability. At some point in time, the pavement will have deteriorated enough that it is more cost-effective to fully reconstruct or replace the entire roadway instead of continuing to pay for additional rehabilitation projects that offer shorter effective lifespans.

To rate the condition of existing pavement and project its condition six years in the future, WisDOT uses a PCI that is based on the results of a detailed pavement distress survey. PCI ratings can range from 0 (failed) to 100 (excellent). Table 8 shows WisDOT projected (2024) PCI ratings in various sections of the study corridor as well as the age of the underlying pavement structure in those sections.

In 2013, pavement reconditioning projects were completed from South Quam Drive to County B/AB and east of Stoughton, from I-39/90 to Spring Road. In 2015, a pavement reconditioning project beginning east of WIS 138 (west) at Silverado Drive and extending to Roby Road (0.69 miles) was completed. In 2020, a pavement joint replacement and mill and overlay project from WIS 138 (south)/Van Buren Street to Hoel Avenue was completed. These projects improved the pavement surface and the smoothness of the driving surface temporarily but do not address the age and condition of the underlying pavement structure.

In 2022, roundabouts are programmed for construction at Hoel Avenue, WIS 138 (west), and Roby Road. In 2024, a roundabout is programmed for construction at County B/AB. These projects will improve the pavement surface and the underlying pavement structure.

1.2.4 Improve Bicycle and Pedestrian Accommodations

The lack of bicycle facilities in the rural areas and the lack of, or discontinuous, network of the existing bicycle and pedestrian facilities in urban areas limit the use of nonmotorized travel modes in the US 51 study corridor. Public feedback indicates support for improvements to bicycle and pedestrian facilities. The United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations signed on March 11, 2010 reflects FHWA's support for the development of fully integrated active transportation networks in communities.

1.2.4.1 Bicycle Accommodations

There are no continuous bicycle routes on the existing US 51 corridor, and there are no acceptable alternate routes available. On urban roadway sections in McFarland and Stoughton, curbside travel lanes and parking lanes provide no additional width for cyclists except on Siggelkow Road, which has bike lanes on both sides of the roadway through the interchange, and Farwell Street, which has bike lanes on both sides of the roadway. The Wisconsin State Bicycle Map[20] identifies rural US 51 between I-39/90 and McFarland, County N, County B (east), and WIS 138 as "High Volume, Undesirable" for bicycle travel. The Dane County Bicycle Map,[21] prepared by the Madison Area Transportation Planning Board (MPO) and Dane County, identifies rural US 51 between I-39/90 and McFarland, County N, County B (east), and WIS 138 as "Least Suitable for Shared Bicycle/Motor Vehicle Use" and "Least Suitable Roadways with Paved Shoulders." This map classifies US 51 in McFarland, from Farwell Street to the Madison South Beltline, as "Bicycles Prohibited or Not Recommended." On the rural sections of US 51, the existing paved shoulder is typically 3 to 6 feet wide (see Figure 10). FDM 11-46, Table 15.2, *Minimum Paved Shoulder Width for On-Road Bike Accommodation on Rural Roads*, indicates a 5-foot paved shoulder is the minimum bicycle accommodation for rural US 51 with a 6-foot paved shoulder advisable because of the higher AADT on US 51.

FHWA's *Bicycle Compatibility Index*[22] provides another measure of the existing bicycle facilities within the urban and suburban portions of the corridor. The bicycle compatibility index model uses roadway characteristics including lane width, traffic volume, and vehicle speeds to predict the comfort level of an average adult bicyclist. The model was not developed for rural conditions. According to the model, a bicyclist would feel very uncomfortable on US 51 in McFarland, moderately uncomfortable on the 4-lane portion of US 51 within Stoughton, and extremely uncomfortable on the 2-lane portions of US 51 within Stoughton.

Figure 10 Example of Lack of Bicycle Accommodations on US 51

[20] Wisconsin Department of Transportation, Wisconsin State Bicycle Map, 2015 Edition, http://wisconsindot.gov/Pages/travel/bike/bike-maps/state.aspx, accessed August 1, 2019.
[21] Madison Area Transportation Planning Board, Dane County Bicycle Map (2015), http://www.madisonareampo.org/maps/documents/DaneCo_Bicycle_Map_East.pdf, accessed August 1, 2019.
[22] Federal Highway Administration, The Bicycle Compatibility Index, 1998, http://safety.fhwa.dot.gov/tools/docs/bci.pdf, accessed August 1, 2019.

A plan prepared by the MPO, *2015 Bicycle Transportation Plan for Madison and Urban Dane County,*[23] anticipates the addition of wide bicycle lanes/paved shoulders on US 51 between I-39/90 and McFarland. In addition to public feedback regarding the need for improvements to the bicycle facilities within the study corridor, the Wisconsin Department of Natural Resources (WDNR), Stoughton, and Dane County Parks (a Division of Dane County's Land & Water Resources Department) have expressed a desire for improved facilities. Consistent with Connections 2030 and the *Bicycle Transportation Plan for the Madison Urban Area and Dane County,*[24] the construction of a connection between McFarland and Madison's Capital City Trail system is identified and was recently constructed. The plan also identifies a rail line from Stoughton to McFarland as a "special transportation corridor" with potential for mixed transportation use. This could mean the possibility of a parallel bike path adjacent to the existing rail line or the possibility of conversion of the rail line to a trail. This corridor is located east of Lake Kegonsa and intersects County B; it would not intersect US 51. This facility has not been constructed.

1.2.4.2 Pedestrian Accommodations

Pedestrian accommodations and unmarked crossings in the urban areas of Stoughton and McFarland have been frequently mentioned as particular safety concerns during public involvement activities.

In McFarland, there are no pedestrian accommodations along US 51 except within Dane County's Babcock Park and between Burma Road and Farwell Street (County MN) along the east side of US 51. In the park, there is a path for pedestrians that extends approximately 850 feet between parking lots located north and south of the Yahara River, along the west side of US 51. The path crosses the Yahara River at the US 51 bridge. Crosswalks for pedestrians are present at the south side of Burma Road, at Farwell Street (County MN), and at the south side of Larson Beach Road. Yahara Drive and Dale-Curtin Drive do not have marked crosswalks. There is no marked crossing of the four travel lanes at the Babcock Park overflow parking lot on the east side of US 51 but there are pedestrian crossing warning signs with flashing beacons located approximately 400 feet north and south of the crossing.

In Stoughton, there is sidewalk on both sides of US 51 from Chalet Drive (between Veterans Parkway and Amundson Parkway) to near Hoel Avenue. From Hoel Avenue to County B (east) there is no sidewalk and a small section of multiuse path on the west side of US 51 from WIS 138 (west) to Jackson Street. In the Stoughton area, there are rectangular rapid flashing beacons at the pedestrian cross walks at Amundson Parkway, Morris Street, 5th Street, Forrest Street, Monroe Street, Main Street, just west of King Street, and just west of Kings Lynn Road.

The Stoughton Area School District (District) (which serves most of the corridor south of the County B/AB intersection) identified much of US 51, County B (east), and County N as "unusual hazards:"

- US 51/WSOR crossing in downtown Stoughton (for school grades K-5).
- US 51/County N intersection on the east side of Stoughton (for all grades).
- US 51 from Page Street to Hoel Avenue and Silverado Drive (for school grades K-5).
- US 51 from Hoel Avenue and Silverado Drive west and north to County B (east) (for school grades K-12).
- County B (east) from US 51 to County N (for school grades K-12).
- County N from US 51 to County B (east) (for school grades K-12).

WisDOT identified that it buses students who would have to cross US 51 in these areas to get to school, even if the students would otherwise be ineligible for busing.

Within Stoughton (generally outside the downtown area) and within McFarland, several characteristics of US 51 present mobility and safety concerns to pedestrians:

- High traffic volumes
- Travel speeds (40 to 45 mph or greater)
- Wide cross section (44 feet or greater)
- Few signalized intersections
- Inadequate or incomplete sidewalks
- Unmarked pedestrian crossings

[23] Madison Area Transportation Planning Board, Bicycle Transportation Plan, 2015, http://madisonareampo.org/planning/documents/Final_BTP_2015_web.pdf, accessed August 1, 2019.
[24] Madison Area Metropolitan Planning Organization, Bicycle Transportation Plan for the Madison Urban Area and Dane County, Wisconsin, September 2000, https://www.cityofmadison.com/trafficEngineering/documents/BikeTranspPlan/bikeplan00.pdf, accessed August 1, 2019.

Pedestrian crossing accommodations are provided at one location in the rural portion of the US 51 corridor. Bay View Heights, a manufactured home community on the west side of US 51 at Charles Lane, has approximately 220 homes. An existing pedestrian culvert is used to allow residents access to Lake Kegonsa on the east side of US 51 without having to cross US 51 at grade and interact with high speed traffic. Figure 11 shows a photo of the existing pedestrian underpass.

Figure 11 Pedestrian Underpass of US 51 Near Charles Lane

1.2.5 Long-Term Planning and Corridor Preservation

US 51 serves as one of the major connections between Stoughton, McFarland, and Madison. Growth in these communities and the greater Madison area makes US 51 an important corridor to preserve mobility and safety. The highway serves a diverse range of users because of the rural nature of the lands surrounding the Madison metropolitan area. Mobility in this area of Dane County is critical to local and commuter traffic.

1.2.5.1 Long-Term Planning

Stoughton, McFarland, and the surrounding towns have experienced rapid growth over the past two decades; however, over the last few years growth has slowed. Tables 9 and 10 show community population trends and projections within the study area. Population trend information was obtained from the latest US Census (2010). Population projections were obtained from the Wisconsin Department of Administration which last updated projections in 2013, independent of this study.[25] In Madison, Stoughton, McFarland, and the village of Oregon (Oregon), growth is expected to continue at an accelerated pace over the 20- to 30-year period between 2010 and 2040. Rutland and Pleasant Springs are also anticipated to see substantial growth during that 20- to 30-year period. The population is expected to decline in the towns of Albion, Dunkirk, and Dunn over the same period.

Table 9 Population Trends

	1970	1980	1990	2000	2010	% Change 1980-2000	% Change 2000-2010
Albion	1,926	1,918	1,964	1,858	1,951	-3.1	5.0
Dunkirk	2,139	2,098	2,121	2,053	1,945	-2.1	-5.3
Dunn	3,391	4,966	5,274	5,270	4,931	6.1	-6.4
Pleasant Springs	2,057	2,529	2,660	3,053	3,154	20.7	3.3
Rutland	1,197	1,393	1,584	1,887	1,966	35.5	4.2
McFarland	2,386	3,783	5,232	6,416	7,808	69.6	21.7
Oregon	2,553	3,876	4,519	7,514	9,231	93.9	22.8
Madison	171,809	170,616	191,262	208,054	233,209	21.9	12.0
Stoughton	6,096	7,589	8,786	12,354	12,611	62.8	2.0
Dane County	290,272	323,545	367,085	426,526	488,073	31.8	14.4

U.S. Census Bureau, 2010 Census Data

[25] Wisconsin Department of Administration, Wisconsin Population & Household Projections, produced in 2013, based on the 2010 Census, http://doa.wi.gov/divisions/intergovernmental-relations/demographic-services-center/projections, assessed on May 10, 2019.

Table 10 Population Projections

	2010	2020	2030	2040	% Change 2010 to 2030	% Change 2010 to 2040
Albion	1,951	1,965	1,980	1,935	1.5	-0.8
Dunkirk	1,945	1,910	1,870	1,780	-3.9	-8.5
Dunn	4,931	4,870	4,765	4,525	-3.4	-8.2
Pleasant Springs	3,154	3,270	3,400	3,435	7.8	8.9
Rutland	1,966	2,065	2,175	2,220	10.6	12.9
McFarland	7,808	8,490	9,335	9,895	19.6	26.7
Oregon	9,231	10,300	11,620	12,580	25.9	36.3
Madison	233,209	251,550	270,350	281,150	15.9	20.6
Stoughton	12,611	13,130	13,800	14,080	9.4	11.6
Dane County	488,073	530,620	577,300	606,620	18.3	24.3

Wisconsin Department of Administration, Demographic Services Center: Population Projections, Final Release, December 10, 2013.

Growth has and will continue to put pressure on US 51 to accommodate increased traffic that accompanies increased population. To maintain mobility through and around the communities along the corridor, transportation strategies for long-term corridor management must work in concert with land use planning efforts.

1.2.5.2 Corridor Preservation

Although Wisconsin State and US highways account for only 10 percent of the state's total roadway mileage, they carry 60 percent of all traffic. Because of this, the *Connections 2030 Statewide Long-Range Transportation Plan* places a high priority on the preservation of state trunk and US highways. Connections 2030 notes WisDOT has primary responsibility for maintaining and preserving the STH system, which includes highway corridors like US 51.

Preserving a corridor's function can require addressing some of the top challenges facing state and US highways: safety, mobility, and increased congestion. These challenges relate to US 51 because there are congestion and safety concerns on the highway, particularly through Dunn, and access point density concerns. When mobility and safety along a corridor are compromised, WisDOT must address the issues and evaluate solutions that allow the corridor to be reliable and seamlessly connected to the transportation system.

1.3 Summary of Purpose and Need

The purpose of this project is to provide a safe and efficient transportation system in the US 51 corridor to serve present and long-term travel demand while minimizing disturbance to the environment. There are five main factors that contribute to the need for improvements within the US 51 study corridor and are used to screen potential alternatives. The five needs are summarized as follows:

Address Existing Safety Conditions
There are multiple existing conditions that need to be addressed to improve safety along the US 51 corridor. These conditions include:

- In the analysis period of 2014 to 2018, the total crash rate exceeded the statewide average for similar roadways for at least one direction of travel in five of the ten corridor crash segments studied. There were 2 fatal crashes and 14 suspected serious injury crashes. In the five years before the analysis period, from 2009 to 2013, nine fatal crashes occurred.
- The US 51 corridor has over two dozen locations where there are substandard roadway elements that may affect safety. These elements include substandard horizontal and vertical curves, substandard grades (uphill/downhill), poor intersection geometry, and substandard clear zone.
- There are two rural intersections with substandard intersection angles: County W and Dyreson Road. Stoughton has three intersections with substandard intersection angles: Hillside Avenue, Rowe Street, and Hoel Avenue.

- Four locations have existing retaining walls that do not meet the clear zone requirements; the proximity of the walls make the roadside border area less available for use by errant vehicles.
- Only a small percentage of the existing 2-lane US 51 roadway is marked for passing. The numerous horizontal and vertical curves combined with the high volume of opposing traffic makes passing very difficult. The existing rate of available passing on US 51 between Stoughton and McFarland is approximately 40 percent of the roadway. A desirable rate of available passing would be 60 percent or greater.
- In the rural portions of the corridor, the number of private access points either exceeds or is near the recommended maximum density of 5.3 private access points per mile. East of Stoughton, access density on US 51 is 8.7 driveways per mile, which is approximately 1.6 times the recommended maximum density. Between Stoughton and McFarland, the access density is 4.3 driveways per mile, which is approximately 19 percent below the recommended maximum density.

Accommodate Travel Demand
The desirable LOS along US 51 varies depending on the area of the corridor, with a desirable LOS D or better in rural sections and a desirable mid-LOS E or better in urbanized sections. In the 2045 Future No Build condition, desirable operations levels occur on the 2-lane section of US 51 east of Stoughton, but for other sections of the corridor, US 51 has varied projected travel demand needs. These needs include:

- By the design year 2045, traffic volumes on US 51 are projected to grow in all locations. Volumes will approach the capacity of the roadway in key locations. By 2045, the 2-lane sections of US 51 between Dyreson Road and Mahoney Road and between County B (east) and Lake Kegonsa Road are anticipated to operate at LOS E for several hours of the day.
- By 2045, most two-way, stop-controlled rural intersections along US 51 are expected to operate at LOS E or LOS F on the side roads. Under these conditions, delays at side-road approaches and resulting driver frustration can lead to an increase in unsafe driving behavior, and potential crash concerns.
- In McFarland in 2045, LOS D conditions are expected; however, the southbound left-turn movement from US 51 to County MN has projected queues extending past the existing turn-bay length and into through traffic.
- On the west side of Stoughton between WIS 138 (west) and County B (east), several committed projects are anticipated to improve traffic operations. The County B (east) intersection currently operates with failing side-road movements. Driver delay and queues along the side road will continue to worsen by 2045 if no improvements are made.
- In Stoughton between County N and WIS 138 (west), traffic operations along US 51 are expected to meet desirable LOS criteria in 2045. At 4th Street, which has an existing traffic signal, traffic approaching US 51 is anticipated to have failing operations in 2045.
- In 2045 in downtown Stoughton, US 51 queues during peak hours may block access to US 51/Main Street from adjacent side streets and driveways.

Address Existing Pavement Conditions
For the majority of the US 51 corridor, the underlying pavement structure is near or has surpassed its useful life. Distressed pavement is visible as extensive longitudinal and transverse pavement cracking. Surface repairs do not address the underlying, failing pavement structure.

Improve Bicycle and Pedestrian Accommodations
The lack of bicycle facilities in the rural areas and the lack of, or discontinuous, network of the existing bicycle and pedestrian facilities in urban areas limit the use of nonmotorized travel modes in the US 51 study corridor. Public feedback indicates support for improvements to bicycle and pedestrian facilities.

Long-Term Planning and Corridor Preservation
To maintain mobility through and around the communities along the corridor, transportation strategies for long-term corridor management must work in concert with land use planning efforts. WisDOT is responsible for maintaining the mobility, functionality, and level of safety of state and US highway corridors to acceptable levels. When mobility and safety along a corridor are compromised, WisDOT must address the issues and implement solutions so the corridor continues to be reliable and seamlessly connected to the transportation system.

2.0 Introduction to Alternatives

The extensive alternative development process that took place during the prior environmental study phase was outlined in Section 1.0, Part B. and a more detailed description is provided in Appendix A. When the prior environmental study phase ended in late 2013 it was determined, based on statewide priorities, that the US 51 corridor alternatives proposed at that time would not receive funding for the next major action to advance the project. The alternatives developed during the prior environmental study phase, the No Build (No Action), Alternative A (Low Build) and Alternative B (4-lane Expansion) are included in this EA. In addition, a new alternative, Alternative H (Hybrid) has been developed. Each of the US 51 Corridor Study build alternatives have a total length of 17.7 miles compared to 18.6-mile length of corridor study limits. This is based on the reconstruction limits on US 51 east of Stoughton at the US 51/I-39 interchange as a result of the I-39 expansion project, and the proposed construction limits of the Stoughton Road EIS that extend south of US 12/18 (Madison South Beltline).

Independent of any alternative, the following programmed projects and projects under development that are discussed in Section 1.D are planned for construction in the years noted:

- Roundabout construction at the Hoel Avenue intersection (2022)
- Roundabout construction at the WIS 138 (west) intersection (2022)
- Roundabout construction at the Roby Road intersection (2022)
- Roundabout construction at the County B/AB intersection (2024)

Table 11 presents a broad overview of the improvements proposed for each alternative by location along the corridor. Following Table 11, Sections 2.1 through 2.4 provide detailed descriptions of the alternatives and define how the alternative does or does not meet the purpose and need factors, and summarizes anticipated impacts. It is important to understand the difference between the three types of roadway improvements proposed in one or more of the build alternatives:

Pavement Replacement–Pavement replacement is structural improvement to the pavement structure or removal of the total thickness of all existing asphalt or concrete paving layers from an existing roadway and providing a new paved surface without changing the underlying roadbed (subgrade). It may include restoration of the base aggregate by adding more material before repaving. It generally involves no improvement in capacity or geometrics. Pavement replacement may require additional right of way (R/W).

Reconstruction–Reconstruction is a total rebuilding of an existing highway to improve maintainability, safety, geometrics, and traffic service. It is typically accomplished on existing alignment and major elements may include flattening of hills and grades, improvement of curves, widening of the roadbed, and elimination or shielding of roadside obstacles. Normally, reconstruction will require additional R/W. It includes rebuilding both the pavement structure and subgrade.

Expansion–Expansion is reconstruction of a roadway that includes adding additional travel lanes, for example expanding from two lanes to four lanes. It can be accomplished on existing alignment or on new alignment and will typically require additional R/W.

Table 11 Overview of Improvements for US 51 Corridor Study Alternatives

Section (limits)	*No Build Alternative*	*Alternative A*	*Alternative B*	*Alternative H*
East of Stoughton (I-39/90 to Spring Road)	No improvement	2-lane rural reconstruction with a 1-mile EB passing lane	2-lane rural reconstruction with a 1-mile EB passing lane	2-lane rural reconstruction with a 1-mile EB passing lane
Stoughton (Spring Road to WIS 138 (west))		Minor safety improvements	Minor safety improvements on existing US 51 in Stoughton and construction of a 4-lane Stoughton Bypass	2- and 4-lane urban reconstruction
West side of Stoughton (WIS 138 (west) to County B (east))		2-lane rural pavement replacement	4-lane urban expansion	4-lane urban expansion
Rural (County B (east) to Dyreson Road)		2-lane rural reconstruction	4-lane rural expansion with interchange at County B/AB	2-lane rural reconstruction
Rural (Dyreson Road to Exchange Street)		2-lane rural pavement replacement		
McFarland (Exchange Street to Larson Beach Road)		Minor safety improvements	4-lane urban reconstruction	4-lane urban reconstruction
North McFarland (Larson Beach Road to Terminal Drive/ Voges Road)		4-lane rural pavement replacement with an auxiliary lane on each side from Siggelkow Road north ramps to Terminal Drive/Voges Road	4-lane rural pavement replacement with an auxiliary lane on each side from Siggelkow Road north ramps to Terminal Drive/Voges Road	4-lane rural pavement replacement with an auxiliary lane on each side from Siggelkow Road north ramps to Terminal Drive/Voges Road

2.1 No Build Alternative (No Action)

Under the No Build Alternative, no intersection improvements, reconstruction, or capacity improvements would be made to the existing US 51 corridor. Independent of the No Build Alternative or any build alternative, there are currently programmed projects (four roundabouts) planned for construction within the corridor, as noted in Section 2.0. Under the No Build Alternative, the existing road would bear future traffic increases, congestion, roadway deficiencies and worsening pavement conditions with effects on safety, congestion, mobility, and operational characteristics. The No Build Alternative includes the cost of routine maintenance through the design year and would have no associated R/W impacts.

The No Build Alternative does not address the purpose and need factors. It serves as a baseline from which to compare the build alternatives under consideration.

2.2 Alternative A (Low Build)

Alternative A (Low Build) is considered the lower cost and lower impact build alternative. Alternative A has seven main components that would include the following:

1. Reconstruction of 2-lane US 51 east of Stoughton.
2. Safety improvements in Stoughton.
3. Safety improvements in McFarland.
4. Two roundabouts and other intersection improvements between Stoughton and McFarland.
5. Reconstruction of 2-lane US 51 from County B (east) to Dyreson Road.
6. Pavement replacement in multiple sections between Stoughton and McFarland.

7. Pavement replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road interchange ramp improvements and the addition of an auxiliary lane in each direction north of Siggelkow Road.

Alternative A would be compatible with the programmed projects and projects under development that are discussed in Section 1.D. Those projects include roundabouts at Hoel Avenue, WIS 138 (west), and Roby Road that are scheduled for construction in 2022, and the roundabout at County B/AB that is scheduled for construction in 2024.

Figure 12 provides an overview of Alternative A.

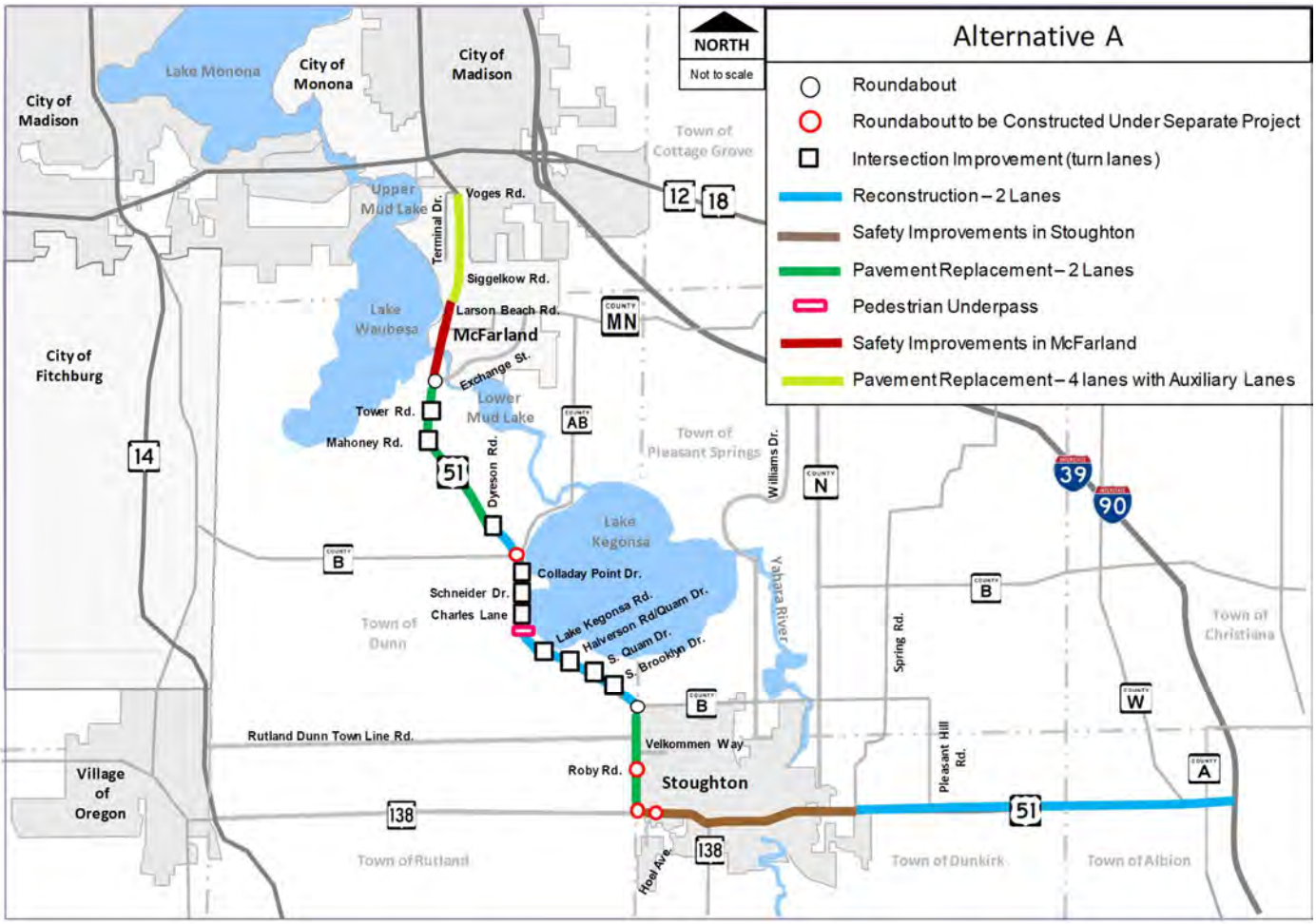

Figure 12 Alternative A (Low Build)

2.2.1 Reconstruction of 2-lane US 51 East of Stoughton

Alternative A would reconstruct the approximately 5.1-mile, 2-lane rural section of US 51 east of Stoughton from I-39/90 to Spring Road. Reconstruction would replace the pavement structure constructed in 1991 and improve vertical curves and intersections to meet design standards. One exception is that the substandard intersection angle at County W would not be improved to avoid impacts to a historic property. There were no major safety issues identified at the intersection; there were three crashes at this location during the five-year period from 2014 to 2018 but no substantial trends were found. Alternative A would include an eastbound, one-mile long passing lane between Washington Road and Tower Drive to improve safety by providing additional passing opportunity. Although the passing lane does not add capacity, the addition of a passing lane is anticipated to improve 2-lane roadway operations to LOS B compared with the acceptable LOS D in the Future No Build conditions based on K30 design-hour volumes. Bicycle accommodations would be provided with the 6-foot paved portion of the 10-foot-wide shoulders.

2.2.2 Safety Improvements in Stoughton

In Stoughton, from Spring Road to WIS 138 (west), Alternative A would provide minor safety improvements where possible without reconstructing pavement. The potential safety improvements listed may help address safety needs identified by the 2014 to 2018 crash analysis in Stoughton. The total crash rate for the 1.7-mile section between Spring Road and Page Street exceeded the statewide average during this period and the total crash rate for the 1.0-mile section between Page Street and Hoel Avenue was approximately 17 percent below the statewide average. The two most common types of crashes were rear-end and angle crashes, the types typically associated with intersections and driveways. Listed by location from east to west, potential safety improvements on US 51 include:

- Hillside Avenue–Consider additional curve delineators or signage to supplement existing curve warning sign.
- South 5th Street–Consider removing some of the on-street parking east of the existing horizontal curve.
- South Division Street–Consider removing some on-street parking near the intersection to lengthen turn bays and to reduce potential conflicts. Also, consider evaluating signal timing improvements.
- East of Yahara River (Between South Water Street and Hillside Avenue)–Consider removing some on-street parking near intersections to increase the turn-bay lengths. Signal timings would be reviewed to coordinate the traffic signals to provide corridor progression in the peak direction.
- South Page Street–Consider pavement markings and signage to alert drivers to the presence of bicyclists.
- WIS 138 (south)/Van Buren Street–Consider improvements to increase signal visibility for southbound vehicles.

In downtown Stoughton, traffic operations under Alternative A would be similar to the Future No Build with acceptable LOS along US 51/Main Street. Queues during peak hours could range from 300 to 500 feet which may block access to adjacent intersections and driveways. Additionally, the 4th Street approaches to US 51 are anticipated to operate at LOS F.

Providing additional improved bicycle accommodations and pedestrian improvements in Stoughton are not part of Alternative A because they would require pavement reconstruction.

2.2.3 Safety Improvements in McFarland

In McFarland between Exchange Street and Larson Beach Road, Alternative A would provide minor safety improvements, where possible without reconstructing pavement. R/W impacts at Babcock Park and commercial properties would be avoided with the following minor safety improvements:

- Consider closing or reducing mid-block median openings.
- Burma Road–Revise the crosswalk pavement marking to provide pedestrian refuge on the existing median.
- Lengthen medians to replace two-way, left-turn lanes (TWLTL) and eliminate turn conflicts.

Providing additional improved bicycle accommodations and pedestrian improvements in McFarland are not part of Alternative A because they would require pavement reconstruction.

2.2.4 Two Roundabouts and Other Intersections Improvements Between Stoughton and McFarland

Two intersections with US 51 would be converted to roundabouts: County B (east) and Exchange Street. These two intersections are anticipated to operate at LOS B or better under 2045 traffic conditions with roundabout control, compared to their failing LOS E or LOS F operations in the Future No Build condition. A roundabout will be constructed at County B/AB under a separate project.

Other rural intersections between Stoughton and McFarland would be reconstructed with the addition of left- and right-turn lanes. These intersections include Brooklyn Drive, South Quam Drive, Halverson Road/Quam Drive, Lake Kegonsa Road, Charles Lane, Schneider Drive, Colladay Point Drive (south), Dyreson Road (north leg), Mahoney Road, and Tower Road. Dyreson Road access on the south side of US 51 would be removed and a cul-de-sac provided. Residents on Dyreson Road south of US 51 would gain access to US 51 via County B. Tower Road access on the west side of US 51 would be removed and the roadway realigned to connect to the proposed roundabout at Exchange Street. Tower Road on the east side of US 51 would have a right-turn lane provided.

2.2.5 2-lane US 51 Between County B (east) and Exchange Street

Between County B (east) and Dyreson Road, rural design standards require a raised median between the northbound lane and southbound lane. This is because of the closely spaced intersections. Providing each intersection with a designated left-turn lane requires a median to protect the left-turning vehicles from oncoming traffic. Where there is not enough distance between intersections to taper the median down to zero width before it approaches another intersection and has to taper to a wider section again, the median must be continuous. The median width would typically be 30 feet wide between the northbound and southbound lanes, although at four-legged intersections the median width would increase to 45 feet wide in accordance with design standards. Figure 13 illustrates the median.

Figure 13 Example of Raised Median Between Closely Spaced Intersections in 2-lane Section

Traffic modeling indicates that the median would improve the operations of the unsignalized intersections throughout this section. The median allows for vehicles on side-road approaches that want to turn left or travel through to cross one stream of traffic at a time, decreasing the amount of delay for the driver to enter or cross US 51. One vehicle can be stored in the median at a time.

Between Stoughton and McFarland, Alternative A improves safety for left-turning vehicles by moving them out of the live through lane of traffic into protected left-turn lanes. Operations at the six intersections that have LOS F for over an hour in the 2045 Future No Build condition (four in the reconstruction section: Halverson Road, Lake Kegonsa Road, Schneider Drive, Dyreson Road, and two in a pavement replacement section: Mahoney Road and Tower Road) are improved in Alternative A. Three of the six intersections have LOS D or above with Alternative A, but there are still three intersections anticipated to have a LOS E or LOS F movements on the side-road approach during the 2045 PM peak hour. In the reconstruction section, Lake Kegonsa Road operates at LOS E. Schneider Drive operates at LOS F, but the LOS F movements are anticipated to last less than a 15-minute portion of the 2045 PM peak hour. For the LOS F movements during the PM peak hour, according to the traffic modeling there would be a maximum of three vehicles in a queue at Schneider Drive with delays of 53.1 seconds. In the pavement replacement section, Mahoney Road operates at LOS F, but the LOS F movements are anticipated to last less than a 15-minute portion of the 2045 PM peak hour. For the LOS F movements during the PM peak hour, traffic modeling indicates there would be a maximum of six vehicles in a queue at Mahoney Road, with 50.9 seconds of delay per vehicle.

With Alternative A, the 2-lane US 51 with a median would be over capacity between Stoughton and McFarland, with volumes of up to approximately 14,400 AADT. Along US 51 between County B (east) and Lake Kegonsa Road, 2045 operations do not meet desirable LOS and is just over the mid-LOS E criteria (numeric LOS equal to 5.51, or just 0.01 over the mid-LOS E threshold) for northbound and southbound travel during peak times. In 2045, US 51 between Dyreson Road and Mahoney Road operates at LOS E (numeric LOS equal to 5.37 to 5.39) in northbound and southbound peak times and does not meet desirable LOS criteria (LOS D or better) based on the K30 analysis.

A peak-period analysis was performed to estimate how long LOS E operations would occur *before* and *after* the actual peak hour for the two 2-lane analysis roadway sections between Stoughton and McFarland (shown in Figure 7). The peak-period analysis was performed for the Base conditions, Future No Build, and Alternative H (described in Section 2.4). A separate analysis was not performed for Alternative A between Stoughton and McFarland because Alternative A and Alternative H have the same geometry in this section (i.e., a median is introduced) and the roadway traffic forecast volumes are similar. This peak-period analysis used the percentage of peak-hour traffic occurring in the hour(s) before and after the peak hour based on roadway traffic counts, in combination with WisDOT traffic forecast volumes.

Seven total hours were analyzed, three hours for the AM peak period and four hours for the PM peak period:

- The AM peak period is generally from 6 to 9 A.M., with the peak hour from 7 to 8 A.M.
- The PM peak period is generally from 3 to 7 P.M., with the peak hour from 5 to 6 P.M.

The peak-period analysis for Alternative H, and because of the similarities, for Alternative A, shows the following:

- Between County B (east) and Lake Kegonsa Road, four of the seven peak-period hours are anticipated to operate at LOS E in 2045 (7 to 8 A.M. and 3 to 6 P.M.).
- Between Dyreson Road and Mahoney Road, three of the seven peak-period hours would be at LOS E in 2045 (7 to 8 A.M. and 4 to 6 P.M.).

The peak-period analysis results for Alternative A with a median between Stoughton and McFarland are the same as for the Future No Build condition. Introducing the median with Alternative A is anticipated to provide a slight decrease in average travel speeds (less than 0.2 mph) and a slight increase in percent time spent following (1 to 2 percent increase) compared to the Future No Build condition.

2.2.6 Pavement Replacement in Multiple Sections Between Stoughton and McFarland

Between WIS 138 (west) in Stoughton and Exchange Street south of McFarland, pavement replacement of the 2-lane roadway would be provided in the sections not completely reconstructed because of intersection improvements or sections where closely spaced intersection improvements would require the associated raised median. There are four pavement replacement sections: between WIS 138 (west) and Roby Road, between Roby Road and County B (east), between Dyreson Road and Mahoney Road, and between Mahoney Road and Exchange Street. Bicycle accommodations would be provided on paved shoulders.

2.2.7 Pavement Replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road Interchange Ramp Improvements and Addition of Auxiliary Lanes North of Siggelkow Road.

The existing 4-lane expressway section from Larson Beach Road to a point south of the Terminal Drive/Voges Road intersection would consist of a pavement replacement. An auxiliary lane (outside lane) would be added between the north ramps of the Siggelkow Road interchange and the match point. The pavement replacement connects to the proposed improvements associated with the US 51 Stoughton Road EIS study.

Figure 14 shows the match point for the two corridor studies, near Meinders Road in McFarland. Neither project is dependent on the other project's construction.

In addition, this section will also include replacement of the southbound bridge over Taylor Road and the WSOR, and the replacement of pavement for all four Siggelkow Road interchange ramps. At the Siggelkow Road ramp terminals, roundabouts and signals were considered to replace the existing stop signs. Based on a Phase 1 ICE analysis and public comments, roundabouts are the selected ramp terminal intersection improvement. During final design, a Phase 2 ICE analysis will be completed to confirm the selection of roundabouts. ~~two options are being considered for the replacement of the existing stop signs. Either roundabouts would be constructed, or signals would be installed.~~ The public was provided opportunity to comment on these options at the October 2020 PIM for the project. Eight comments received from the PIM indicated roundabouts were preferred. No comments were received supporting traffic signals. Comments from the April 2021 public hearing are summarized in Addendum A.

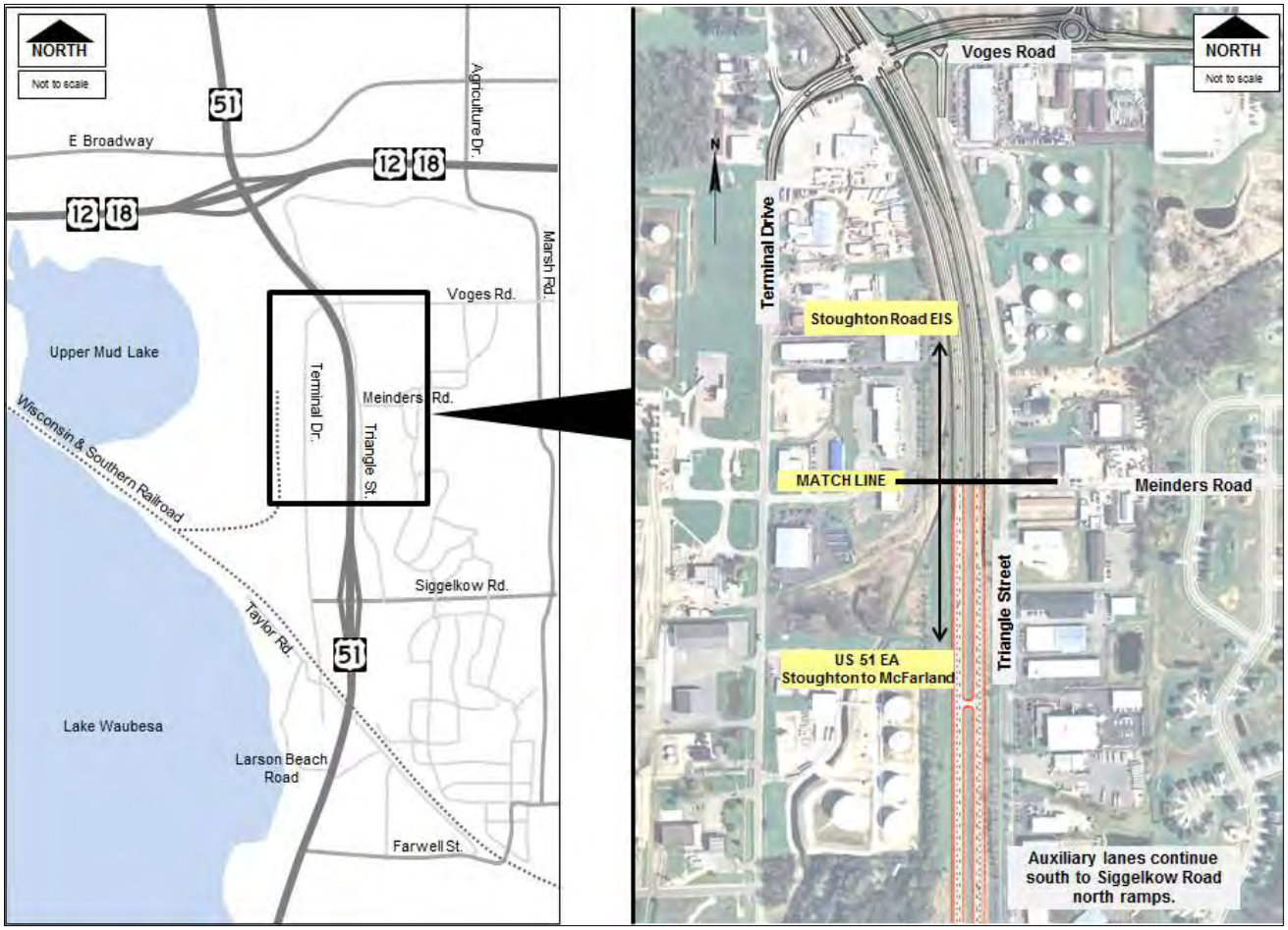

Figure 14 US 51 Corridor Study Connection to Stoughton Road EIS

2.2.8 Bicycle and Pedestrian Accommodations

Alternative A provides bicycle accommodations on paved shoulders along the rural sections of the corridor. Improvement of pedestrian accommodations would also be provided by the replacement of the pedestrian culvert near Charles Lane to serve residents of Bay View Heights, a manufactured home community, as a pedestrian access to businesses east of US 51 and to Lake Kegonsa. Minor pedestrian improvement would be provided by revising the crosswalk pavement marking at Burma Road in McFarland to provide pedestrian refuge on the existing median near Babcock Park.

Alternative A Conclusion

Alternative A partially meets the project's purpose and need factors. It offers the following measures:

- It improves safety for turning vehicles by improving rural intersections between Stoughton and McFarland and also improves safety by providing a passing lane in the rural section of the corridor east of Stoughton.
- It improves pavement conditions in the rural sections of the corridor east of Stoughton and between Stoughton and McFarland by either reconstructing or replacing pavement.
- Alternative A reduces roadway deficiencies in the rural sections east of Stoughton and between Stoughton and McFarland.
- It provides for long-term travel demand and capacity along 13 miles of the 18.6-mile corridor by meeting desirable mainline LOS thresholds. The exception is within the 5.6-mile section between Stoughton and McFarland.
- It provides bicycle accommodations along the rural shoulders of the US 51 corridor and improves pedestrian accommodations at specific locations.

- If corridor preservation needs arise on the US 51 corridor, WisDOT will work with local jurisdictions to manage these needs. Control of access along the corridor would continue.

Alternative A does not address the following need factors:

- Pavement conditions in Stoughton and McFarland are not addressed because development of Alternative A as a Low Build Alternative did not include reconstruction in these areas.
- The lack of passing opportunities in the 5.6-mile section between Stoughton and McFarland is not improved under Alternative A because the improvements at closely spaced intersections, and maintaining a 2-lane highway requires a median between intersections for much of the section. The median will prevent passing. It is expected the safety benefits will outweigh any minor inconvenience in this stretch, and the fact that turning vehicles will have their own designated turn lanes and move out of through travel lanes will allow traffic flow to maintain normal travel speeds.
- Bicycle and pedestrian accommodations are not addressed in Stoughton and McFarland because the pavement, curb and gutter, and sidewalks are not proposed for reconstruction.
- Long-term travel demand and capacity is not fully addressed in the 5.6-mile rural section between Stoughton and McFarland.

Alternative A has the following impacts:

- The amount of land converted to highway R/W for Alternative A is 59 acres, compared to 66 or a range of 272 to 299 acres for the other build alternatives.
- One relocation is required for Alternative A, compared to 2 or a range of 18 to 26, for the other build alternatives.
- The number of acres of farmland required for Alternative A is 34, compared to 46 acres or a range of 183 to 223 acres, for the other build alternatives.
- Alternative A would impact a property that qualifies for protection under Section 4(f), the Brost Addition to Mud Lake (Brost Addition), to a lesser extent than Alternatives B and H.
- The preliminary cost estimate for Alternative A (FY 2016 dollars) is $99 million, which is the lowest cost compared to the other build alternatives.

Although Alternative A is anticipated to address statewide priorities and satisfy the federal fiscal constraint requirement, it does not fully meet the purpose and need factors discussed above. WisDOT dismissed Alternative A from further consideration as an improvement solution.

2.3 Alternative B (4-Lane Expansion)

Alternative B (4-Lane Expansion) was developed to preserve the US 51 corridor functionality, address future projected travel demand by increasing capacity, improve safety, correct roadway deficiencies, provide bicycle accommodations throughout and pedestrian accommodations in urban areas, and address pavement conditions.

Alternative B has six main components that would include the following:

1. Reconstruction of 2-lane US 51 east of Stoughton.
2. Safety improvements in Stoughton.
3. Construct 4-lane expansion around Stoughton (Stoughton Bypass).
4. Rural 4-lane expansion (Stoughton to McFarland).
5. Urban 4-lane reconstruction in McFarland.
6. Pavement replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road interchange ramp improvements, and addition of an auxiliary lane in each direction north of Siggelkow Road.

Alternative B would be compatible with the programmed projects and projects under development that are discussed in Section 1.D. Those projects include roundabouts at Hoel Avenue, WIS 138 (west), and Roby Road that are scheduled for construction in 2022, and the roundabout at County B/AB that is scheduled for construction in 2024.

Figure 15 provides an overview of Alternative B.

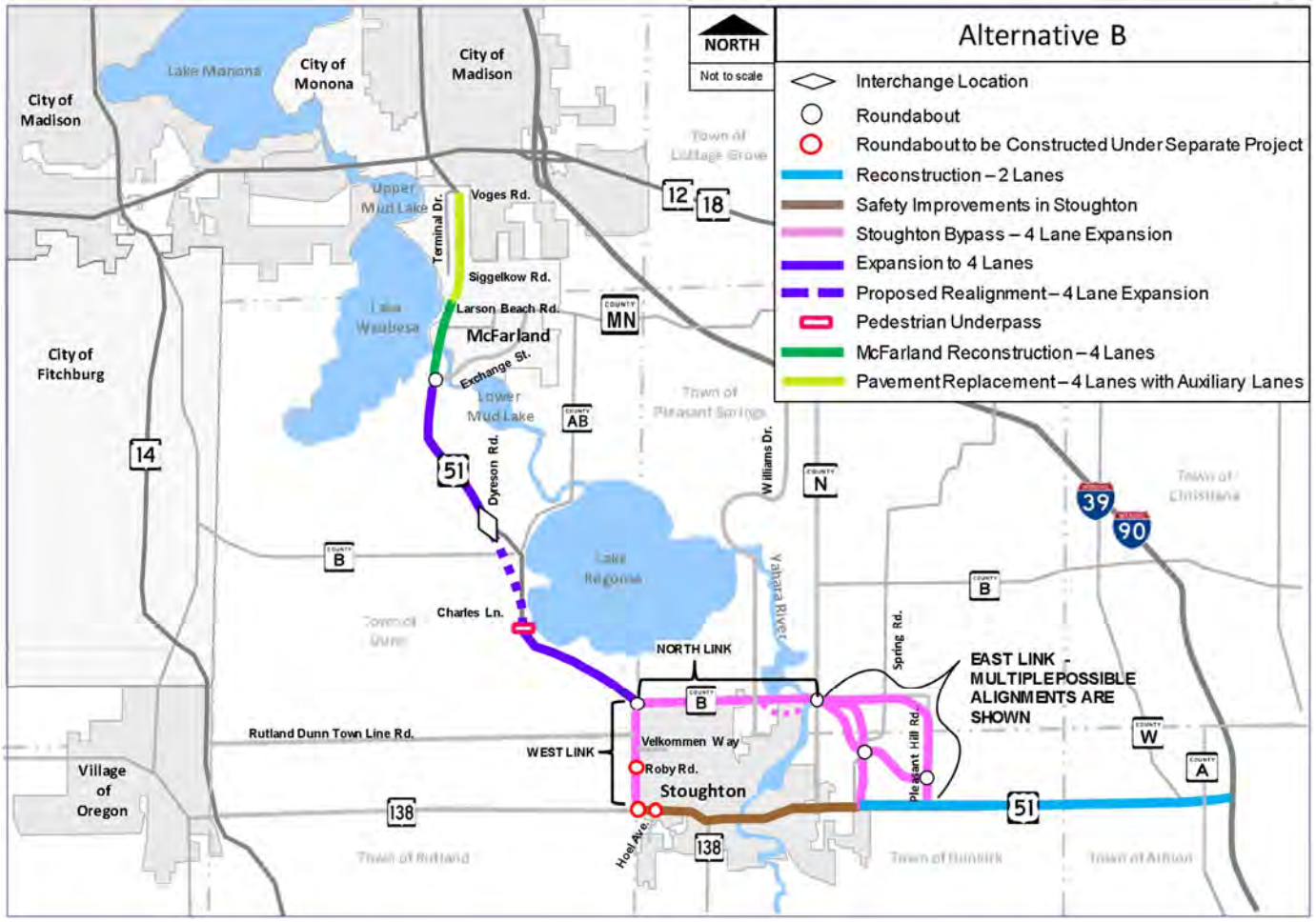

Figure 15 Alternative B (4-lane Expansion)

2.3.1 Reconstruction of 2-Lane US 51 East of Stoughton

East of Stoughton, the same improvements listed for Alternative A (Low Build), as described previously in Section 2.2.1, would also be included in Alternative B. In addition, the deficient County W intersection angle would be improved to meet current design standards. Alternative B includes this improvement because, as a higher build alternative, it addresses deficiencies regardless of the resulting impacts.

2.3.2 Safety Improvements in Stoughton

Through Stoughton, the same minor safety improvements listed for Alternative A (Low Build) as described previously in Section 2.2.2 would also be included in Alternative B.

2.3.3 Construct 4-Lane Expansion around Stoughton (Stoughton Bypass)

Alternative B includes a 4-lane bypass of Stoughton. The route was developed during the previous environmental study phase based on the previous traffic forecasts and modeling. The previous 2035 projected operations for US 51 traffic on Main Street through Stoughton, based on the data available at that time, did not meet the required mid-LOS D.[26] Adding capacity through downtown Stoughton would have resulted in impacts to the multiple historic districts adjacent to US 51, loss of parking and substantial real estate impacts. Because this was not reasonable, a rerouting of US 51 around Stoughton was evaluated. The proposed Stoughton Bypass and was comprised of west, north, and east links around Stoughton. The north and east links had multiple alignment

[26] The traffic operations criteria during the prior environmental study phase referenced FDM 11-5-3, Table 3.1, *Acceptable Levels of Service*, dated December 21, 2012 and accessed May 16, 2013. At that time, US 51 was classified as an NHS route and was classified by the MPO as an urbanized area between County N and US 12/18. This previous FDM criteria required US 51 to operate at or below mid-LOS D ($\leq$ 4.51).

options. When the traffic forecasts and modeling were updated in 2014 and 2015, the 2045 projected operations for US 51 traffic in Stoughton met the required LOS.

Figure 16 depicts the Stoughton Bypass, including potential alignment options. With the bypass, the north and east links would be designated as US 51, and the existing highway through Stoughton would have pavement replaced and ownership and maintenance transferred to the local jurisdiction. The west, north, and east links of the bypass would provide capacity expansion with each link being expanded from 2-lane to 4-lane facilities. The bypass would include a 4-lane, high-speed urban section with a curbed median, curb and gutter along the outside paved shoulders, sidewalk on both sides, and on-street bicycle accommodations on paved shoulders along the west link, and a 4-lane hybrid section with a 30-foot-wide curbed median and rural 10-foot outside shoulders paved to accommodate bicycles along the north and east links. Along the west link, bicyclists could take a lane as allowed by state statute, ride on the 10-foot-wide sidewalk as allowed by Stoughton ordinance, or ride on the paved shoulder.

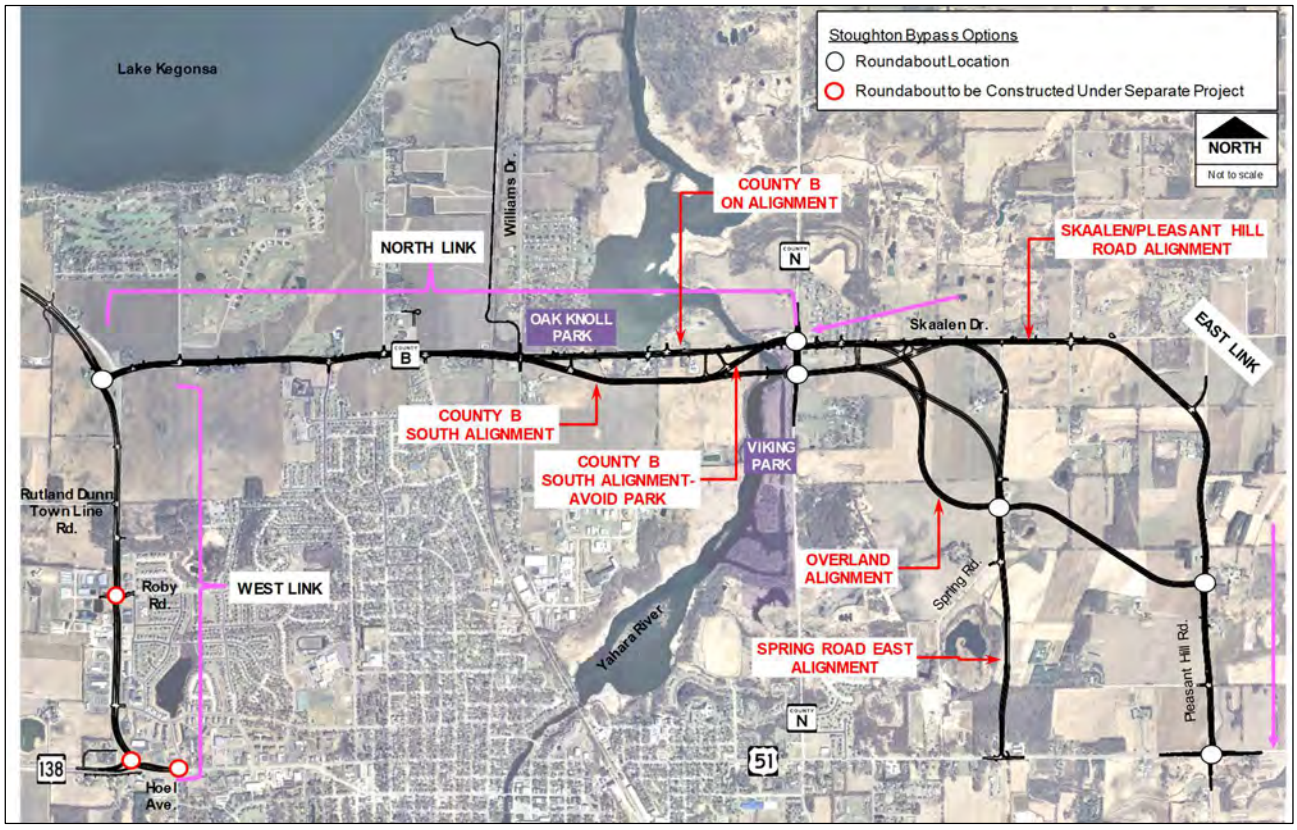

Figure 16 Three Links of Stoughton Bypass

An overview of the three links of the Stoughton Bypass follows:

- The west link along existing US 51 from WIS 138 (west) to County B (east) and is approximately 1.4 miles long. This link would reconstruct and expand the existing 2-lane facility to a 4-lane, high-speed urban section with a roundabout at the County B (east) intersection.
- The north link is along existing County B (east) between US 51 and County N and is 2.5 miles long. This link would reconstruct the existing 2-lane facility to a 4-lane hybrid section. Three alignment options were considered for the east 1-mile section between Williams Drive and County N:
    - County B On Alignment.
    - County B South Alignment–This alignment impacts Viking Park.
    - County B South Alignment–Avoids Viking Park.
- The east link would also be a 4-lane hybrid section and has a number of potential routes and multiple combinations of routes, any of which would serve as the connection between the north link and US 51 east of Stoughton. Five alignments east of County N were originally developed. After evaluation of

environmental impacts and agency coordination, three alignments were retained for further consideration on the east link.

- Skaalen Road–Pleasant Hill Road Alignment.
- Spring Road East Alignment.
- Overland Alignment.

Each of these three east link alignments could connect to any of the three north link alignments.

2.3.4 Rural 4-Lane Expansion (Stoughton to McFarland)

For the 5.6-mile section between County B (east) and Exchange Street south of McFarland, the existing 2-lane rural roadway would be converted to a 4-lane rural expressway. Location and design aspects of the 4-lane expansion are as follows:

- The 4-lane roadway would be located generally along the existing alignment except north of Charles Lane where avoidance of environmental resources requires a new alignment west of the existing US 51 corridor.
- An interchange would connect US 51 to County B/AB and Dyreson Road.
- The intersections of County B (east) and Exchange Street would be converted to roundabouts, with Tower Drive access on the west side of US 51 removed and realigned to the Exchange Street roundabout with US 51.
- Schneider Drive and Colladay Point Drive would no longer have direct access to US 51.
- The 4-lane section would use a 60-foot grass median for most of the route. The design would meet expressway design standards with a 70-mph design speed and a posted speed of 55 mph.
- Two locations would have a narrower median width. One is through the Lower Mud Lake Fishery wetland complex south of Mahoney Road. In this area a 22-foot median section with 10-foot paved inside shoulders and a concrete barrier in the center of the median would be used to minimize impacts to the adjacent wetlands. The other location is through the rock cut near Charles Lane and adjacent to the Bay View Heights community. A 50-foot median would provide the minimum width that would allow for a full access median opening at Charles Lane and avoid additional relocations.
- Median openings with left-turn lanes at intersections and two other locations would provide refuge for vehicles crossing or making a left turn onto or from US 51.
- Bicycle accommodations would be provided on paved shoulders.
- Mitigation measures for impacts at the Brost Addition, a Section 4(f) property, would be implemented. Refer to Factor Sheet B-8, Section 4(f) and 6(f) or Other Unique Areas and the ~~Draft~~ Final Section 4(f) Evaluation in Appendix D.

Traffic operations modeling results indicate that the 4-lane section of US 51 between Stoughton and McFarland would operate at LOS A in 2045 based on K30 design hour volumes. See Appendix C for the 2045 Build Alternatives operations modeling results.

A travel time analysis was performed to determine what level of travel time improvement might occur between a 2-lane US 51 (No Build, Alternative A, and Alternative H) and 4-lane US 51 (Alternative B) in the 5.6-mile section between Stoughton and McFarland. Data used included output from the HCS roadway operations analysis, projected travel speeds, and existing travel speed data that was collected along US 51 in October 2015. The travel time improvement between a 2-lane US 51 and 4-lane US 51 between Stoughton and McFarland is projected to be less than a minute during 2045 in the AM and PM peak hours for the 5.6-mile section analyzed. The detailed results are shown in Appendix C on page C-39 and Section 2.4.4.1.E further describes the methodology and data used to support the analysis.

2.3.5 Urban 4-Lane Reconstruction in McFarland

In the McFarland area, between Exchange Street and Larson Beach Road, Alternative B would include reconstruction of the existing roadway to provide an urban 4-lane facility with a median or TWLTL and pedestrian accommodations. The proposed reconstruction in the McFarland area includes the following:

- Pedestrian accommodations would be provided on both sides of the roadway, except for a small section along the east side of US 51. From the Exchange Street roundabout to the proposed new Babcock Park driveway to the overflow parking area, grading for future sidewalk would be provided.

- Dual southbound left-turn lanes would be provided at Farwell Street (County MN) to address 2045 peak-hour volumes and queuing that spills out into travel lanes with the existing single turn lane.
- Pedestrian crossings would be improved at reconstructed intersections of Burma Road, Farwell Street (County MN), Dale-Curtin Drive, and Larson Beach Road.
- A new bridge crossing of the Yahara River would provide an increased span that matches the existing dam opening.
- Agreed-upon mitigation measures for impacts at Babcock Park, a Section 4(f) property, would be implemented. Refer to Factor Sheet B-8, Section 4(f) and 6(f) or Other Unique Areas and the ~~Draft~~ Final Section 4(f) Evaluation in Appendix D.
- Access at the Babcock Park boat launch parking lot would be modified. A designated southbound right-turn lane would be provided. All vehicles exiting the parking lot would be required to turn right (southbound) to eliminate left-turn conflicts. To travel north from the parking lot, drivers would first travel south 1,650 feet to the Exchange Street roundabout, then travel around the roundabout and head north on US 51.
- The median openings between Burma Road and Farwell Street and between Farwell Street and Dale-Curtain Drive will be closed. Driveway access at these locations would be right-in/right-out only.

The proposed urban roadway typical sections in McFarland vary because existing retaining wall and dam structures and adjacent land uses require avoidance or minimization to reduce substantial impacts.

The proposed roadway typical section at Babcock Park avoids impacting the existing retaining wall along the east side of US 51 and the existing dam on the west side of the Yahara River bridge. Minimizing impacts to Babcock Park, including its campground facilities north of the Yahara River and boat launch facilities, parkland, and parking lots south of the river, are a requirement for this Section 4(f) resource. Sidewalk would be constructed as part of the project from the Babcock Park overflow parking lot on the east side of US 51 to the Yahara River. Between Yahara River Drive and Burma Road, which includes Babcock Park, this approximately 1,000-foot section has Babcock Park campground facilities abutting the west side of US 51 and a large retaining wall on the east side.

2.3.6 Pavement Replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road Interchange Ramp Improvements, and Addition of Auxiliary Lanes North of Siggelkow Road.

The Alternative B improvement from Larson Beach Road to a point south of the Terminal Drive/Voges Road intersection would be the same as previously described for Alternative A (see Section 2.2.7).

2.3.7 Bicycle and Pedestrian Accommodations

Bicycle and pedestrian accommodations were identified as a need throughout the corridor. Alternative B addresses these needs in the following ways:

- Bicycle accommodations are provided on US 51 and the Stoughton Bypass on paved shoulders in rural areas. For the west link of the Stoughton bypass (a 4-lane urban section with a curbed median), bicyclists could take a lane as allowed by statute, ride on the sidewalk as allowed by Stoughton ordinance, or ride on the paved shoulder. In McFarland, from the Exchange Street roundabout to Larson Beach Road, bicyclists can take a traffic lane as allowed by statute. Bicyclists can also use the existing path in Babcock Park and the path on the west side of the Yahara River bridge.
- Accommodations for sidewalk would be provided wherever the reconstructed roadway has an urban section with curb and gutter. Pedestrian crossings would be improved in McFarland where there is a lack of pedestrian refuge at signalized intersections and at the unsignalized Burma Road crossing adjacent to Babcock Park.
- Public comments identified the need for one pedestrian crossing in the rural section between Stoughton and McFarland at the existing pedestrian culvert beneath US 51 immediately south of the rock cut near Charles Lane. The structure would be reconstructed as part of Alternative B to serve residents of the Bay View Heights community as a pedestrian access to businesses east of US 51 and to Lake Kegonsa without having to cross US 51 at grade. The pedestrian culvert would be reconstructed to an appropriate size with lighting and other safety features.

Alternative B Conclusion

Alternative B best meets the project's purpose and need factors by offering the following measures:

- It improves pavement conditions along the entire route from I-39/90 to Terminal Drive/Voges Road. With the Stoughton Bypass, a new route around the city would be constructed. The pavement through Stoughton would be replaced with ownership and maintenance transferred to the local jurisdiction.
- Although the latest forecasts and traffic modeling indicate that the Stoughton Bypass is not required to satisfy the LOS requirements for future US 51 traffic through Stoughton, the bypass route does provide an alternative to avoid queues during peak hours.
- It addresses future projected travel demand and LOS goals by increasing capacity to a 4-lane roadway between Stoughton and McFarland. However, the travel time improvement between a 2-lane US 51 and 4-lane US 51 between Stoughton and McFarland is projected to be less than a minute during 2045 peaks.
- The expanded 4-lane roadway between Stoughton and McFarland would be anticipated to improve safety for turning vehicles by improving rural intersections and reducing the number of access points in this stretch.
- Safety is also improved by providing a passing lane in the rural section of the corridor east of Stoughton.
- Alternative B corrects roadway deficiencies on existing US 51, except within Stoughton where the designation of US 51 would be shifted to the Stoughton Bypass.
- It provides bicycle accommodations along the rural portions of the route and pedestrian accommodations in urban areas and at specific locations.
- If corridor preservation needs arise on the US 51 corridor, WisDOT will work with local jurisdictions to manage these needs. Control of access along the corridor would continue.

Alternative B has the following impacts:

- The amount of land needed for Alternative B is over 200 acres more than the other build alternatives.
- The number of relocations required for Alternative B is substantial, ranging from 18 to 26, compared to 1 or 2 for the other build alternatives.
- The number of acres of farmland required for Alternative B is substantial, ranging from 183 to 223 acres, compared to 34 or 46 acres for the other build alternatives.
- Alternative B would impact one historic farmstead and, depending on the alignment, potentially five other Section 4(f) properties. None of these properties would be impacted by the other build alternatives.
- Alternative B would impact the Section 4(f) property Babcock Park in McFarland, to the same extent as one of the other build alternatives.
- Alternative B would impact the Section 4(f) property Brost Addition, more than the other build alternatives.
- The preliminary cost estimate for Alternative B (FY 2016 dollars) is between $304 to $321 million, which is the highest cost build alternative.

WisDOT dismissed Alternative B from further consideration as an improvement solution because, based on statewide priorities, it would not receive funding for the next major action to advance the project. Without the funding, it would not meet the federal fiscal constraint requirement. Alternative B has higher real estate and relocation impacts, and environmental impacts with or without the Stoughton Bypass. The public opposed the Stoughton Bypass aspect of Alternative B. Dunn opposed a 4-lane expansion of US 51 between Stoughton and McFarland.

2.4 Alternative H (Hybrid)

Alternative H (Hybrid) is an alternative that combines features of Alternatives A and B. Alternative H has six main components that would include the following:

1. Reconstruction of 2-lane US 51 east of Stoughton (same as Alternatives A and B).
2. Reconstruction of existing US 51 through Stoughton (different from Alternatives A and B).
3. Urban 4-lane reconstruction and capacity expansion along the west side of Stoughton (same as Alternative B).
4. Reconstruction of rural 2-lane US 51 (Stoughton to McFarland) with intersection improvements (similar to Alternative A).
5. Urban 4-lane reconstruction in McFarland (same as Alternative B).
6. Pavement replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road interchange ramp improvements and addition of an auxiliary lane in each direction north of Siggelkow Road (same as Alternatives A and B).

Alternative H would be compatible with the programmed projects and projects under development that are discussed in Section 1.D. Those projects include roundabouts at Hoel Avenue, WIS 138 (west), and Roby Road that are scheduled for construction in 2022, and the roundabout at County B/AB that is scheduled for construction in 2024.

Figure 17 provides an overview of Alternative H, aerial maps showing Alternative H are in Appendix E.

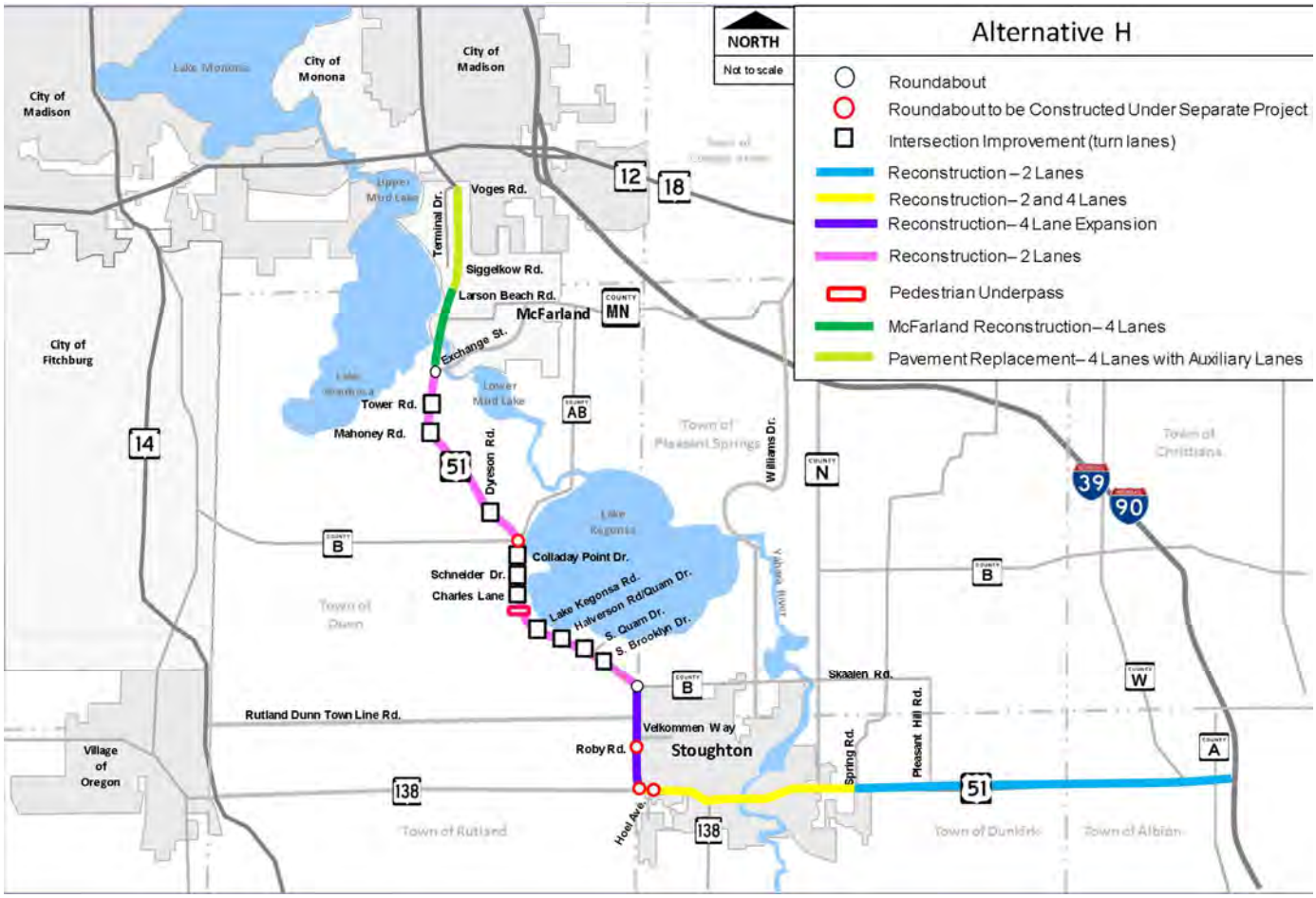

Figure 17 Alternative H (Hybrid)

The following sections describe components of Alternative H in different sections of the corridor. In general, these sections are more detailed than similar sections in the descriptions for Alternatives A and B because Alternative H was taken to a more detailed level of design than the other alternatives.

2.4.1 Reconstruction of 2-Lane US 51 East of Stoughton

East of Stoughton, the same improvements listed for Alternative A (Low Build) in Section 2.2.1 would also be included in Alternative H. As in Alternative A, there would be no improvement of the substandard intersection angle at County W. As in Alternative A, modeling indicates that 2-lane operations would remain at acceptable levels based on K30 design hour volumes.

2.4.2 Reconstruction of Existing 2- and 4-Lane US 51 through Stoughton

Alternative H includes reconstruction of the approximately three-mile, 2- and 4-lane urban section of US 51 through Stoughton, between Spring Road and WIS 138 (west). The majority of this section's pavement structure is nearly 30 years old. Bicycle accommodations would be provided with bike lanes on US 51 where possible. When bike lanes are not reasonable because road widening would require R/W or extensive impacts, signed parallel routes on residential streets are proposed.

This three-mile section of US 51 was divided into 10 parts for more detailed review and development of roadway typical sections. In the more constrained existing downtown environment, between the WSOR and Gjertson Street, some of the features include limited available R/W, narrow sidewalks and terraces, and areas where buildings or retaining walls abut the sidewalk. There are also five Historic Districts. Reconstruction options were limited because of the space and Historic District constraints, and the need to retain pedestrian accommodations and on-street parking adjacent to businesses. Figure 18 shows the street layout in a Stoughton detail map.

Figure 18 City of Stoughton Street Detail Map

For the eastern 1.2-mile portion of this urban section in Stoughton, between Spring Road and WSOR, options for modifying the roadway typical section were investigated. Adjacent land use in this area is residential. The existing typical section includes two 14-foot travel lanes, 8-foot-wide parking (unmarked) on both sides of the road, 5.5-foot grass terraces, and 5-foot sidewalks. A historic district is present along both sides of the road between Amundson Parkway and Church Street. Three options were developed for the Spring Road to railroad section that would remain within the existing R/W to avoid impacts to the historic district, provide standard travel lane widths, and accommodate bicyclists and pedestrians. The options were: Option 1–No Parking, Option 2–Parking on One Side of the Road, and Option 3–Parking on Both Sides of the Road. Public input and a resolution by Stoughton's Common Council (R-142-2015) supported Option 1–No Parking. Option 1 was favored because the numerous side streets provide opportunity for on-street parking when needed and provide the widest terrace width (8.5 feet) to support trees, enhance the entrance to Stoughton, and allow for bicycle accommodations.

No changes to the existing roadway geometrics at the railroad crossing are proposed; the existing railroad gates, signals and appurtenances could be improved based on coordination with WSOR during final design.

Table 12 summarizes the features of the existing and proposed roadway sections through Stoughton between Spring Road and Hoel Avenue.

Table 12 Comparison of Existing and Proposed Typical Sections for Alternative H between Spring Road and Hoel Avenue

Location	*Historic District*	*Feature*	*Existing*	*Proposed Under Alternative H*
Spring Road to Amundson Parkway	*Not in Historic District*	*Sidewalk*	*Most of this section has existing 5-foot sidewalks except in the easternmost 1,500-foot portion between Spring Road and 1,000 feet east of County N.*	*Provides 5-foot sidewalk on both sides of the road in the majority of this section. In the 1,500-foot less developed portion between Spring Road and 1,000 feet east of County N, Alternative H could provide grading only for future sidewalk construction. The decision would be made during final design following consultation with the local municipality.*
		Terrace	*Existing 5-foot terrace.*	*Provides a 5- to 8.5-foot terrace.*
		Bikes	*No bike accommodations.*	*Provides a 5-foot bike lane.*
		No. of lanes/	*Existing 15-foot lane*	*Provides two 12-foot lanes.*

		width	*widths.*	
		Parking	*Majority has parking on both sides of road,*	*Removes all parking (Option 1).*
		R/W	*N/A*	*Temporary limited easement (TLE) required.*
Amundson Parkway to Railroad Crossing	***Historic District (both sides of US 51)***	*Sidewalk*	*Existing 5-foot sidewalks.*	*Provides 5-foot sidewalks on both sides of the road.*
		Terrace	*Existing 5-foot terrace.*	*Provides a 4.5- to 8.5-foot terrace. Reduce to 4-foot terrace at the pedestrian island crossings and left-turn lane.*
		Bikes	*No existing bike accommodations.*	*Provides a 5-foot bike lane (4-foot at left-turn lane) and pedestrian island crossings.*
		No. of lanes/ width	*Two 14-foot lanes.*	*Provides two 12-foot lanes.*
		Parking	*Parking on both sides of road.*	*Removes all parking (Option 1).*
		R/W	*N/A*	*TLE required.*
Railroad Crossing to 5th Street	***Historic District (both sides of US 51)***	*Sidewalk*	*Existing 8-foot sidewalks.*	*Provides 8-foot sidewalks on both sides of the road.*
		Terrace	*No terraces.*	*No terraces.*
		Bikes	*No bike accommodations.*	*Provides minimum bike accommodation (bike/parking shared lane).*
		No. of lanes/ width	*Two 14-foot lanes.*	*Provides two 12-foot lanes.*
		Parking	*Parking both sides of road.*	*Parking on both sides provided, approximately three parking spaces removed.*
		R/W	*N/A*	*TLE required.*
5th Street to Water Street	***Historic District (both sides of US 51)***	*Sidewalk*	*Existing 8-foot sidewalks.*	*Provides 8-foot sidewalks on both sides of the road.*
		Terrace	*No terraces.*	*No terraces.*
		Bikes	*No bike accommodations.*	*No bike accommodations on US 51. Bike accommodation is provided on a parallel route.*
		No. of lanes/ width	*Two 14-foot lanes.*	*Retains two 14-foot lanes.*
		Parking	*Parking both sides of road.*	*Retains all existing parking.*
		R/W	*N/A*	*No R/W required.*
Water Street to Page Street	***Historic District (both sides of US 51)***	*Sidewalk*	*Existing 8-foot sidewalks.*	*Provides 8-foot sidewalks on both sides of the road.*
		Terrace	*No terraces.*	*No terraces.*
		Bikes	*No bike accommodations.*	*Provides minimum bike accommodation (bike/parking shared lane). Bikes on US 51 to cross Yahara River.*
		No. of lanes/ width	*Two 14-foot lanes.*	*Provides two 12-foot lanes.*
		Parking	*Parking both sides of road.*	*Parking on both sides provided; approximately three parking spaces removed.*
		R/W	*N/A*	*TLE required.*
Page Street Harrison Street	***Historic District (both sides of US 51)***	*Sidewalk*	*Existing 5-foot sidewalks.*	*Provides 5-foot sidewalks on both sides of the road.*
		Terrace	*Existing 5-foot terrace.*	*Provides a 4-foot terrace.*
		Bikes	*No bike accommodations.*	*No bike accommodations on US 51. Bike accommodation is provided on a parallel route.*
		No. of lanes/ width	*Four 10-foot lanes.*	*Provides 4 lanes, 12-foot outside lanes and 11-foot inside lanes with integral curb and gutter.*
		Parking	*None existing.*	*None provided.*
		R/W	*N/A*	*TLE required.*

Location	Historic District	Feature	Existing	Proposed Under Alternative H
Harrison Street to WIS 138 (South)/Van Buren Street	***Historic District (north side of US 51)***	*Sidewalk*	*Existing 5-foot sidewalks.*	*In this one-block section, there is a mix of 5-foot sidewalk (where there is no existing retaining wall and a terrace can be provided), 6-foot sidewalk (where sidewalk would extend to back of curb), and 7-foot sidewalk (where the sidewalk would be between an existing retaining wall and back of curb).*
		Terrace	*Mix of terrace and no terrace.*	*Mix of terrace and no terrace.*
		Bikes	*No bike accommodations.*	*No bike accommodations on US 51. Bike accommodation is provided on a parallel route.*
		No. of lanes/ width	*Four existing 10- to 12-foot lane widths.*	*Provides 4 lanes, 12-foot outside lanes and 11-foot inside lanes with integral curb and gutter.*
		Parking	*None existing.*	*None provided.*
		R/W	*N/A*	*TLE required.*
WIS 138 (south)/Van Buren Street to Gjertson Street	***Historic District (north side of US 51)***	*Sidewalk*	*Existing 5-foot sidewalks.*	*Provides 6- to 7-foot sidewalk on both sides of the road.*
		Terrace	*No terraces.*	*No terraces.*
		Bikes	*No bike accommodations.*	*No bike accommodations on US 51. Bike accommodation is provided on a parallel route.*
		No. of lanes/ width	*Four 12-foot lanes.*	*Four 12-foot lanes.*
		Parking	*None existing.*	*None provided.*
		R/W	*N/A*	*Requires R/W.*
Gjertson Street to Hoel Avenue	*Not in Historic District*	*Sidewalk*	*A 4- to 5-foot sidewalk is located in majority of this section; no sidewalk near Hoel Avenue.*	*Provides 5-foot sidewalks on both sides of the road.*
		Terrace	*Terrace varies.*	*Generally provides 5-foot terrace (terrace width varies).*
		Bikes	*No bike accommodations.*	*No bike accommodations on US 51. Bike accommodation is provided on a parallel route.*
		No. of lanes/ width	*Four 12-foot lanes.*	*Four 12-foot lanes.*
		Parking	*None existing.*	*None provided.*
		R/W	*N/A*	*Requires R/W.*

In downtown Stoughton, traffic modeling for Alternative H is similar to the Future No Build, where desirable LOS is met along US 51/Main Street through downtown Stoughton. However, queues typically ranging from 300 to nearly 500 feet in the peak hours are anticipated. These queues along US 51 may block turning bays and access to adjacent intersections and driveways, decreasing capacity. An option to provide a northbound left-turn lane at 4th Street, while removing three parking spots on the northbound approach, to address LOS issues is proposed as part of Alternative H. With the proposed turn-lane reconfiguration at 4th Street, the side road is anticipated to operate with LOS C movements. Roundabouts will be constructed at Hoel Avenue and WIS 138 (west) as part of a separate project. The 2045 traffic modeling results indicate the proposed improvements at Hoel Avenue and WIS 138 (west) will operate at LOS B or better.

2.4.3 Urban 4-Lane Expansion along the West Side of Stoughton

The proposed reconstruction of the approximate 1.4-mile section of US 51 from WIS 138 (west) to County B (east) is the same as previously described in Section 2.3.3 for the west link of the Stoughton Bypass that is part of Alternative B. From WIS 138 (west) to County B (east), the proposed typical section would be expanded from 2 lanes to a 4-lane, high-speed urban section with a curbed median, curb and gutter along the outside paved shoulders, 10-foot-wide sidewalk on both sides, and on-street bicycle accommodations on paved shoulders. A roundabout would be included at the County B (east) intersection. The 2045 traffic modeling results indicate the County B (east) roundabout will operate at LOS A. The unsignalized intersection of Rutland-Dunn Townline Road will operate at LOS B in the 2045 design year. Roundabouts are scheduled to be constructed at WIS 138 (west), as noted above, and at Roby Road, as separate projects. The 2045 traffic modeling results indicate the proposed improvements at WIS 138 (west) and Roby Road will operate at LOS A.

2.4.4 Reconstruction of Rural 2-Lane US 51 (Stoughton to McFarland) with Intersection Improvements

For the 5.6-mile section of US 51 between County B (east) and Exchange Street south of McFarland, the existing 2-lane rural roadway would be reconstructed with improvements at most intersections. Reconstruction would replace the pavement that was last reconstructed between 1984 and 1991 and would also improve vertical curves and intersection angles to meet desirable roadway design standards. Bicycle accommodations would be provided with paved shoulders. Additional details on the location and design aspects are described as follows:

- Alternative H is the same as Alternative A as described in Section 2.2.5, where in the section from County B (east) to Dyreson Road the rural design standards require a raised median between the northbound lane and southbound lane in this section due to proximity to intersections. Figure 13 in Section 2.2.5 illustrates the median between closely spaced intersections.
- Alternative H would reconstruct the entire pavement structure (pavement, aggregate and subbase layers) and the entire roadbed would be rebuilt in this section. This differs from the pavement replacement discussed as part of Alternative A in Section 2.2.6 Pavement Replacement in Multiple Sections Between Stoughton and McFarland.
- Alternative H is the same as Alternative A as described in Section 2.2.5, with intersections improved with the addition of left- and right-turn lanes for the intersections of Brooklyn Drive, South Quam Drive, Halverson Road/Quam Drive, Lake Kegonsa Road, Charles Lane, Schneider Drive, Colladay Point Drive (south), Dyreson Road (north leg), and Mahoney Road. Dyreson Road access on the south side of US 51 would be removed and a cul-de-sac provided. Residents on Dyreson Road south of US 51 would gain access to US 51 via County B.
- Alternative H is the same as Alternative A with roundabouts constructed at County B (east) and Exchange Street. Like Alternative A, the Tower Road intersection on the west side of US 51 would be removed and the roadway realigned to connect to the proposed roundabout at Exchange Street. Tower Road on the east side of US 51 would have a right-turn lane provided.
- For Alternative H, access options for Good Shepherd by the Lake Church were investigated to determine if the existing direct access to US 51 could be removed and relocated. WisDOT originally proposed that the US 51 driveway would allow right-in/right-out access for northbound vehicles and an extension of Barber Drive would be constructed parallel to US 51 and connect to the church parking lot for use by southbound vehicles. This proposal was met with approval by the church council. The Barber Drive extension would require new R/W and archaeological investigations. Permission for access to perform the required archaeological investigations was not granted by the property owner. As a result, WisDOT revised the proposed access to eliminate the Barber Drive extension and use a left-turn lane and median opening on US 51 to provide for full access at the existing driveway on US 51. The church council had no objection to the revised access proposal.
- Similar to Alternative B, at the large rock cut near Charles Lane, which is the only existing access point for the Bay View Heights community, a reduced-width median (20 feet wide) would reduce impacts to the area and allow for dedicated right- and left-turning lanes. The rock cut area would also have concrete barrier on both sides of the roadway. North of Charles Lane, a retaining wall would be used along the east side of the roadway to avoid impacts to Barber Drive.
- Mitigation measures for impacts at the Brost Addition, a Section 4(f) property, would be implemented. Refer to Factor Sheet B-8, Section 4(f) and 6(f) or Other Unique Areas and the ~~Draft~~ Final Section 4(f) Evaluation in Appendix D.

Traffic modeling for Alternative H indicated that the 2-lane US 51 with a median would be over capacity between Stoughton and McFarland, with volumes of up to approximately 14,400 AADT, similar to the Future No Build and Alternative A conditions. As with Alternative A, introducing the median with Alternative H is anticipated to provide a slight decrease in average travel speeds (less than 0.2 mph) and a slight increase in percent time spent following (a 1 to 2 percent increase) compared to the Future No Build condition. In 2045, US 51 between Dyreson Road and Mahoney Road operates at LOS E (numeric LOS equal to 5.37 to 5.39) in northbound and southbound peak times and does not meet desirable LOS criteria (LOS D or better) based on the K30 analysis. Along US 51 between County B (east) and Lake Kegonsa Road, 2045 operations does not meet desirable LOS and is just over the mid-LOS E criteria (numeric LOS equal to 5.51, or just 0.01 over the mid-LOS E threshold) for northbound and southbound travel during peak times.

Because Alternative H does not meet WisDOT's desirable operational goals in the design year (2045) in this 5.6-mile section, the study team further analyzed various aspects of traffic operations to provide a deeper understanding of the impacts of LOS E operations along this section with Alternative H. The results are discussed in Sections 2.4.4.1 and 2.4.4.2.

2.4.4.1 Traffic Analysis for Broader Understanding of Alternative H Operations

As noted above, in 2045, two representative roadway sections within the 5.6-mile, 2-lane rural section between Stoughton and McFarland are projected to operate at LOS E for both the No Build Alternative and the 2-lane Alternative H. These sections are County B (east) to Lake Kegonsa Road and Dyreson Road to Mahoney Road. Because the projected operations for Alterative A are similar to Alternative H, Alternative A is only discussed when there is a useful comparison.

The analyses presented below include reviewing the operations of rural intersections, because that has been a key concern of the public for many years; testing the sensitivity of the design hour volume on LOS E operations (through a K factor analysis); estimating the duration of LOS E conditions during the peak period; determining the increase in traffic volumes needed to reach LOS F levels; and comparing the projected travel times for the 2-lane roadway versus a 4-lane.

A. Intersection Operations with Alternative H

Operations between Stoughton and McFarland were analyzed for 10 intersections during the 2045 AM and PM peak hours, including a length of delay analysis for LOS F movements. Typically, the screening criteria is LOS D or better on mainline and no LOS F movements at intersection approaches. As noted, peak-hour mainline operations in the peak travel direction are LOS E. The results of the intersection operations analysis for the 2045 PM peak hour are listed below and illustrated in Appendix C, pages C-37 and C-38. The No Build is also provided for comparison purposes:

i. No Build (2-lane, no median): There are six intersections with LOS F movements (eight LOS F movements total). Of the 8 LOS F movements, six are anticipated to last more than an hour.

ii. Alternative H (2-lane, with median): There is one intersection (Mahoney Road) with one LOS F movement (the eastbound left turn). The LOS F movement is anticipated to last less than 15 minutes. The analysis indicates there would be a maximum of six vehicles in a queue (at any time during this 15-minute period) with a delay of 55.9 seconds.

An analysis was also performed for the interim year 2025 (as an assumed year for construction) with the No Build and Alternative H traffic conditions at the higher volume intersections of Mahoney Road, Schneider Drive, Lake Kegonsa Road, and Halverson Road. With the 2025 No Build conditions, each intersection analyzed is anticipated to have LOS F movements during the PM peak hour and LOS E or LOS F movements during the AM peak hour. In the 2025 Alternative H conditions, each intersection analyzed is anticipated to have LOS D or better movements during the PM peak hour. During the 2025 AM peak hour with Alternative H conditions there are no LOS F movements. LOS E movements are anticipated at Lake Kegonsa Road and Mahoney Road, while Schneider Drive and Halverson Road are at LOS D or better.

B. K factor 2-lane Roadway Analysis:

To analyze the through movements of a rural 2-lane roadway, WisDOT policy is to use the 30th highest hour volume (K30) as the design hour volume. Design-hour volumes of K100 for rural areas or K250 for urbanized areas may be considered when the desired LOS using K30 cannot be achieved because of social, environmental, or financial constraints. This K factor analysis was performed to determine if, with potentially lower design hour volumes, the 2-lane traffic operations would move from LOS E to possibly LOS D levels.

LOS for 2-lane roadways is based on percent time spent following (PTSF). For 2-lane roadways the threshold for LOS D is 65 to 80 PTSF, as indicated by the HCM 2010. A PTSF value over 80 results in LOS E until the volume to capacity ratio of the roadway segment exceeds 1.0, which would then result in LOS F. In 2045, for both the No Build Alternative and the 2-lane Alternative H, the two sections between Stoughton and McFarland are projected to operate at LOS E for the three types of K factors analyzed: K30 (11.3 percent of daily traffic), K100 (10.7 percent of daily traffic), and K250 (10.0 percent of daily traffic). The results of the K factor analysis are summarized below:

Dyreson Road to Mahoney Road

i. K30 No Build = LOS E (85.2 PTSF). K30 Alternative H = LOS E, (85.6 PTSF)
ii. K100 No Build = LOS E (82.9 PTSF). K100 Alternative H = LOS E, (83.3 PTSF)
iii. K250 No Build = LOS E, (81.9 PTSF). K250 Alternative H = LOS E, (82.2 PTSF)

County B (east) to Lake Kegonsa Road

i. K30 No Build = LOS E (87.1 PTSF). K30 Alternative H = LOS E, (87.7 PTSF)
ii. K100 No Build = LOS E (86.0 PTSF). K100 Alternative H = LOS E, (86.7 PTSF)
iii. K250 No Build = LOS E, (83.8 PTSF). K250 Alternative H = LOS E, (84.7 PTSF)

The K factor analysis shows that 2045 operations for the No Build and Alternative H in the 5.6-mile section are LOS E (with PTSF value over 80) for all K factors noted. See Appendix C, pages C-24 to C-32. The results of the analysis demonstrate that even with potentially lower design-hour volumes, the 2-lane traffic operations would remain at LOS E levels.

C. Peak-Period Roadway Operations (or Peak-Spreading) Analysis:
A peak-period analysis was performed to estimate how long operations that would not meet the desirable LOS criteria would occur *before* and *after* the actual peak hour for the two roadway sections between Stoughton and McFarland, County B (east) to Lake Kegonsa Road and Dyreson Road to Mahoney Road. The desirable LOS criteria for County B (east) to Lake Kegonsa Road is mid-LOS E or better and for Dyreson Road to Mahoney Road is LOS D or better. This peak spreading analysis was performed for the Base Year (2014), 2045 No Build, and 2045 Alternative H traffic conditions for each direction of travel along US 51.

Seven total peak hours were analyzed, three hours for the AM peak period and four hours for the PM peak period:

- The AM peak period is generally from 6 to 9 A.M. with the peak hour from 7 to 8 A.M.
- The PM peak period is generally from 3 to 7 P.M. with the peak hour from 5 to 6 P.M.

The analysis showed that during the Base Year only the actual PM peak hour operated below desirable LOS criteria between Dyreson Road and Mahoney Road. In 2045, the results were similar for the No Build and Alternative H:

- In the No Build and Alternative H, three of the seven peak-period hours operated below desirable LOS criteria (LOS D) between Dyreson Road and Mahoney Road.
- In Alternative H, only one of the seven peak-period hours operated below desirable LOS criteria (mid-LOS E) between County B (east) and Lake Kegonsa Road. This peak-period hour represents the PM peak and had a numeric LOS equal to 5.53 for US 51 southbound, or just 0.03 over the mid-LOS E threshold.

During the 2045 AM peak hour for the No Build and Alternative H, the off-peak direction of travel (US 51 southbound) is projected to operate at LOS C between Stoughton and McFarland.

During the 2045 PM peak hour for the No Build and Alternative H, the off-peak direction of travel (US 51 northbound) is projected to operate at LOS D between County B (east) and Lake Kegonsa Road and at LOS C between Dyreson Road and Mahoney Road.

The AM and PM peak-period analysis was also performed for 2025 Alternative H traffic conditions as an assumed year of construction. In 2025 between County B (east) and Lake Kegonsa Road, each hour reviewed meets the desirable LOS criteria (mid-LOS E). In 2025, between Dyreson Road and Mahoney Road, although three hours operate at LOS E (below the desirable LOS D criteria for this section), two of the three hours are on the LOS D/LOS E threshold.

See Appendix C pages C-33 to C-35 for graphics and operations tables that show the peak-period analysis results.

D. Residual 2-lane Roadway Capacity (Hourly):
The County B (east) to Lake Kegonsa Road section is projected to operate at LOS E in the 2045 design year using the K30, K100, and K250 forecast volumes as indicated in Section B. For 2-lane roadway segments, LOS F is met when the volume to capacity ratio exceeds 1.0. An analysis was performed to determine when LOS F is met using the K30, K100, and K250 forecast volumes. The results are discussed below.

- Using the K30 No Build section from County B (east) to Lake Kegonsa Road, it takes 75 percent more volume than the 2045 forecast year to reach LOS F (with speeds of approximately 35 mph and percent time spent following at approximately 97 percent). This is an increase in 2045 from approximately 1,630 vehicles to 2,850 vehicles on the road (two-way) during the peak hour.
- Using the K100 forecast volumes for the same section, it would take an increase from approximately 1,540 vehicles to 2,850 vehicles, or 85 percent more volume, than the 2045 forecast year to reach LOS F.
- Using the K250 forecast volumes it would take an increase from approximately 1,440 vehicles to 2,850 vehicles, or nearly double the 2045 forecast year traffic, to reach LOS F.

The No Build hourly capacity comparisons show that in the critical roadway section analyzed, while it operates at LOS E in 2045, it would take a 75 to 100 percent increase in projected traffic volumes to reach LOS F levels. While this analysis was not performed for Alternative H, it is anticipated a similar conclusion would be reached because of the similar projected 2-lane operations between the Future No Build and Alternative H in 2045.

E. Travel Time Analysis:
The travel time analysis was performed to determine what level of travel time improvement might occur between Alternative H (2-lane US 51) and Alternative B (4-lane US 51) in the 5.6-mile section between Stoughton and McFarland. Data used included output from the HCS roadway operations analysis, projected travel speeds, and existing travel speed data that was collected along US 51 in October 2015.

The travel time improvement between Alternative H and Alternative B between Stoughton and McFarland is projected to be less than a minute during 2045 in the AM and PM peak hours for the 5.6-mile section analyzed. The detailed results are shown in Appendix C on page C-39 and the following paragraphs describe the methodology and data used to support the analysis.

Actual travel speed data was collected October 26-27, 2015 (18 hours) between Halverson Road and Quam Drive for northbound and southbound traffic. Speed data in the Dyreson Road to Mahoney Road section was collected October 29-30, 2015 (18 hours) for northbound traffic and southbound traffic. Average travel speeds were typically 55-57 mph during the peak hours in the peak directions of travel (AM northbound and PM southbound) at each location. During the 18-hour data collection period 85 percent of vehicles do not exceed 62 to 64 mph at each location. This is the 85th percentile speed.

The 2-lane Alternative H travel time analysis uses the relationship between the travel speeds predicted by the HCS analysis applied to the travel speed data collected in October 2015. For example, the base conditions HCS analysis predicts a travel speed of 48 mph for northbound US 51 between County B/AB and Mahoney Road during the AM peak hour and a travel speed of 46.6 mph for the same segment under the 2045 Alternative H conditions. This is a difference of 1.4 mph. The 1.4 mph difference was then applied to the October 2015 field data (57.5 mph average speed) for the same segment to come up with a predicted travel speed of 56.1 mph for the 2045 Alternative H traffic conditions. The travel time analysis was performed in this manner because it appears HCS is underpredicting the travel speeds along US 51 based on comparisons to the field data. The travel time analysis assumes travel speeds are 5 mph above the anticipated posted speed of 55 mph for the 4-lane alternative between Stoughton and McFarland. The travel time analysis does not consider acceleration/deceleration times at the committed County B/AB roundabout.

Because LOS E operations are occurring in the Halverson Road to Quam Drive section today in the peak direction of travel, the field speed data indicates that travel speeds would not be expected to change drastically in future years with continuing LOS E conditions. The travel time analysis supports this, with the difference in travel time projected to be less than a minute between the 2- and 4-lane alternatives.

2.4.4.2. Safety Considerations with Alternative H Improvements Between Stoughton and McFarland

A. Intersection Safety
During the analysis period (2014 to 2018) between County B (east) and Exchange Street, 43 percent of the crashes (74 of the 174 crashes) involved vehicles either performing a turning movement to or from US 51 or slowing down to turn, resulting in rear-end crashes. Additionally, 31 percent (54 of the 174 crashes) involved vehicles crossing the 2-lane roadway centerline, five of which were head-on collisions. These percentages are anticipated to be reduced based on the following Alternative H improvements: adding a median and protected left-turn lane at intersections so left-turning vehicles can move out of the live lane of traffic; allowing for a two-stage crossing for side road vehicles at improved intersections because of the median area associated with left-turn lanes; and providing right-turn lanes. Additionally, the committed roundabout at County B/AB and the roundabouts proposed at the US 51 intersections of County B (east) and Exchange Street in Alternative H are anticipated to reduce the severity of crashes along the US 51 corridor. Of the 61 crashes that occurred at these three intersections between 2014 and 2018, 28 involved injuries (46 percent), including one suspected serious injury and one fatality.

B. Roadway Safety
The total crash rate between Stoughton and McFarland is approximately 1.1 to 1.9 times the statewide average crash rate for similar roadways. The injury crash rate is approximately 1.2 to 2.3 times the statewide average crash rate for similar roadways, with two fatal crashes occurring between 2014 and 2018. In the five years before the analysis period, from 2009 to 2013, four fatal crashes occurred between County B (east) and Exchange Street. The following is a basic description of the six fatal crashes:

i. US 51/Halverson Road intersection: A US 51 northbound through vehicle colliding with a US 51 southbound left-turning vehicle. A median may have provided refuge for the turning vehicle and avoided the collision.
ii. Near Lake Kegonsa Road intersection: A US 51 SB vehicle crossed centerline and hit a US 51 northbound vehicle. A median may have provided additional room for the SB vehicle to regain control before crossing into opposing traffic.
iii. Near Schneider Drive intersection: US 51 southbound single vehicle run-off-road crash. The vehicle drifted right, overcorrected, then crossed over US 51 and struck a tree. A median may have provided additional room for the SB vehicle to regain control.
iv. County B/AB intersection: A head-on collision between northbound and southbound vehicles occurred at the intersection. The committed roundabout at this intersection should help prevent this type of crash.
v. Two between Exchange Street and Tower Road: Both involved a US 51 SB vehicle changing lanes approaching Tower Road. The lower speeds of traffic exiting the proposed roundabout at Exchange Street may help prevent this type of crash.

2.4.5 Urban 4-Lane Reconstruction in McFarland

In McFarland, the proposed improvements between Exchange Street and Larson Beach Road would be the same as described in Section 2.3.5 for Alternative B.

2.4.6 Pavement Replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road Interchange Ramp Improvements, and Addition of Auxiliary Lanes North of Siggelkow Road

The proposed improvements in this section would be the same for all Alternatives. Refer to the previous description in Section 2.2.7.

2.4.7 Bicycle and Pedestrian Accommodations

Bicycle and pedestrian accommodations were identified as a need throughout the corridor. Alternative H addresses these needs as follows:

- In rural areas where pavement reconstruction or pavement replacement would be provided, bicycle accommodations would be provided on the paved shoulders.
- On-street bicycle accommodations are also provided in the urban areas of Stoughton, where possible without taking additional R/W. Because of the constrained and highly developed downtown environment, historic districts that border US 51, and Stoughton's desire to retain US 51 on-street parking through the

Central Business District (CBD), bike accommodations do not fit everywhere along US 51. In those sections, accommodations would be provided by signed routes on streets one to two blocks north or south of and parallel to US 51.

a. From Spring Road to Amundson Parkway, 5-foot bike lanes are provided.
b. From Amundson Parkway to the railroad crossing, 4- to 5-foot bike lanes are provided.
c. From the railroad crossing to 5th Street, minimum bike accommodations are provided with a shared bike and parking lane.
d. From 5th Street to the Yahara River, bicycles would use signed parallel routes on residential streets.
e. Bikes would use US 51 to cross the Yahara River.
f. From Page Street to WIS 138(south)/Van Buren Street, bicycles would use signed parallel route on residential streets.
g. From WIS 138 (south)/Van Buren Street to WIS 138 (west), bicycles would use signed parallel route on residential streets.

- On the west side of Stoughton, from WIS 138 (west) to County B (east), the proposed typical section would be expanded from 2 to 4 lanes, high-speed urban section with a curbed median, curb and gutter along the outside paved shoulders, 10-foot-wide sidewalk on both sides, and on-street bicycle accommodations on 8-foot outside paved shoulders.
- Sidewalk for pedestrians would be constructed to be continuous wherever the proposed roadway has an urban section with curb and gutter. In the less developed areas with a proposed urban roadway cross section, Alternative H could provide grading only for future sidewalk construction. An example area where this might be considered is in the 1,500-foot section between Spring Road and 1,000 feet east of County N in Stoughton. The decision to forgo sidewalk and just provide the grading would be made during final design following consultation with the local municipality.
- Pedestrian crossings would be improved in McFarland where there is a lack of pedestrian refuge at signalized intersections and at the unsignalized Burma Road crossing adjacent to Babcock Park.
- In Stoughton, the sidewalk width will be increased where deficient.
- Pedestrian crossings in Stoughton and McFarland will have pavement marking and WisDOT will work with the municipalities during final design to provide acceptable signage and lighting at each pedestrian crossing.
- As described in Sections 2.2.8 and 2.3.7 for Alternatives A and B, respectively, the existing pedestrian culvert beneath US 51 immediately south of the rock cut near Charles Lane would be reconstructed.

Alternative H Conclusion

Alternative H meets the following purpose and need factors. It offers the following measures:

- It improves pavement conditions along the entire route from I-39/90 to Terminal Drive/Voges Road.
- It improves safety for turning vehicles by improving rural intersections between Stoughton and McFarland and also improves safety by providing a passing lane in the rural section of the corridor east of Stoughton.
- Alternative H addresses the majority of the roadway deficiencies along the entire route. By not correcting deficiencies in some cases where safety has not been an issue, and maintaining the existing conditions, impacts to Section 106 historic properties and substantial relocations would be avoided.
- It provides for long-term travel demand and capacity along 13 miles of the 18.6-mile corridor by meeting desirable mainline LOS thresholds. The exception is within the 5.6-mile section between Stoughton and McFarland, discussed further in the next paragraph.
- It provides bicycle accommodations along the rural sections and where possible in urban sections and provides pedestrian accommodations in urban areas and at specific locations in rural sections.
- If corridor preservation needs arise on the US 51 corridor, WisDOT will work with local jurisdictions to manage these needs. Control of access along the corridor would continue.

Alternative H does not fully address the travel demand needs in the 5.6-mile rural section between Stoughton and McFarland. Based on the analysis results summarized below, WisDOT accepts the lower US 51 mainline operations provided by EA improvements along this specific section because they are limited in duration and should not substantially impact travel speeds:

- The 5.6-mile rural section of roadway between Stoughton and McFarland does not meet the desirable LOS requirements. Traffic forecasts and detailed analysis show operations do not meet desirable LOS requirements for one or four of the total seven peak hours, depending on the location.

- Alternative H provides desirable mid-LOS E or better operations for nine of the 10 rural side road intersections. In the 2045 PM peak hour, Mahoney Road has one LOS F movement (the eastbound left turn) anticipated to last less than 15 minutes.
- Average travel speeds in 2015 under current LOS E conditions in this section were typically 55 to 57 mph during the peak hours in the peak directions of travel (AM northbound and PM southbound) and analysis indicates that under Alternative H they would not be expected to change drastically in future years with continuing LOS E conditions.
- The lack of passing opportunities in the 5.6-mile section between Stoughton and McFarland is not improved under Alternative H because the improvements at closely-spaced intersections and maintaining a 2-lane highway requires a median between intersections for much of the section. The median will prevent passing. It is expected the safety benefits will outweigh any minor inconvenience in this stretch, and the fact that turning vehicles will have their own designated turn lanes and move out of through travel lanes will allow traffic flow to maintain normal travel speeds.

Alternative H has the following impacts:

- The amount of land converted to highway R/W for Alternative H is 66 acres, which is slightly higher than that needed for Alternative A (59 acres), but approximately one quarter of the 272 to 299 acres needed for Alternative B.
- Alternative H requires two residential relocations, compared to one residence for Alternative A, and 14 to 20 residences, two businesses, and two to four barns for Alternative B.
- The number of acres of farmland required for Alternative H is 46, compared to 34 acres for Alternative A and a range of 183 to 223 acres for Alternative B.
- Alternative H would impact a property that qualifies for protection under Section 4(f), Babcock Park in McFarland, to the same extent as Alternative B. Mitigation for the impacted property has been coordinated.
- Alternative H would impact a property that qualifies for protection under Section 4(f), the Brost Addition, to a lesser extent than Alternative B but more than Alternative A. Mitigation for the impacted property is being coordinated.
- The preliminary cost estimate for Alternative H, based on the YOE, is $220.0 million. The preliminary cost estimates prepared for Alternatives A and B use FY 2016 costs. The cost of Alternative H is lower than that of Alternative B but more than Alternative A.

Alternative H best satisfies the purpose and need factors compared to the No Build Alternative and Alternative A. Although Alternative B fully meets the project's purpose and need factors, Alternative B would result in greater impacts when compared to Alternative H and based on statewide priorities, it would not receive funding for the next major action to advance the project. The majority of public comments received support Alternative H over other alternatives. Local officials in Stoughton support Alternative H. Dunn opposed a 4-lane expansion of US 51 between Stoughton and McFarland, and Alternative H retains a 2-lane roadway section in this area. Alternative H satisfies statewide priorities and is anticipated to meet the federal fiscal constraint requirement. WisDOT has identified Alternative H as the preferred alternative. Refer to Basic Sheet 6–Alternatives Comparison Matrix for a summary and comparison of impacts to each alternative considered.

3.0 Description of Proposed Action

Alternative H best satisfies the purpose and need factors when compared to the No Build Alternative and Alternative A. The preliminary cost estimate for Alternative H is approximately one-half of Alternative B and the environmental impacts of Alternative H are substantially less than Alternative B. Alternative H received favorable input from local officials and the public and is also anticipated to meet the federal fiscal constraint requirement. For these reasons WisDOT identified Alternative H as the preferred alternative. The proposed action would reconstruct the US 51 corridor on existing alignment between I-39/90 and Larson Beach Road in McFarland and would replace the pavement from Larson Beach Road to a point south of the Terminal Drive/Voges Road intersection. An auxiliary lane (outside lane) would be added between the north ramps of the Siggelkow Road interchange and the match point. The pavement replacement connects to the proposed improvements associated with the US 51 Stoughton Road EIS study. The proposed action would improve geometric roadway deficiencies through the corridor. A passing lane would be provided east of Stoughton. A 1.4-mile section of US 51 on the west side of Stoughton would be expanded from 2 lanes to 4 lanes. Intersections would be improved. Bicycle accommodations would be improved and pedestrian facilities provided in urban areas and in spot locations in rural areas. See Appendix E for aerial maps of Alternative H.

During construction, traffic would need to be detoured. It is anticipated signed detours would be on the existing interstate routes and Wisconsin State and United States Highways.

The main components of the proposed action include:

Reconstruction of 2-Lane US 51 East of Stoughton
Reconstruction of the approximate 5.1-mile, 2-lane rural section of US 51 east of Stoughton from I-39/90 to Spring Road would include 12-foot travel lanes, a paved shoulder for bicycle accommodations, and an eastbound passing lane between Washington Road and Tower Drive. In order to avoid impacts to a historic site, the one substandard intersection angle in this section (at County W) would not be improved. There were no major safety issues identified at the intersection; there were three crashes at this location during the five-year period from 2014 to 2018 but no substantial trends were found.

Reconstruction of Existing 2- and 4-Lane US 51 through Stoughton
Reconstruction of the approximately three-mile, 2- and 4-lane urban section of US 51 through Stoughton extends from Spring Road to WIS 138 (west). The reconstruction would include new pavement and subgrade and most of the on-street parking would be retained. Bicycle accommodations would be provided with bike lanes on US 51 where possible or a new designated bike route on parallel streets. Sidewalks would be constructed to be continuous wherever the proposed roadway has an urban section with curb and gutter. The sidewalk width would also be increased where deficient, for example where it is adjacent to existing retaining walls. At the easternmost, less developed end of the Stoughton section, some areas may be graded for potential future sidewalk. WisDOT will work with Stoughton to evaluate and determine appropriate pedestrian access accommodations during final design.

Urban 4-Lane Expansion along the West Side of Stoughton
The proposed reconstruction of the approximate 1.4-mile section of US 51 from WIS 138 (west) to County B (east) is a capacity expansion from a 2-lane rural section to a 4-lane high speed urban section with a curbed median, curb and gutter along the outside paved shoulders, and sidewalk on both sides of US 51. A roundabout would be included at the County B (east) intersection as part of the proposed action.

Reconstruction of Rural 2-Lane US 51 (Stoughton to McFarland) with Intersection Improvements.
Reconstruction of the approximately 5.6-mile, 2-lane rural section of US 51 between County B (east) and Exchange Street would include 12-foot travel lanes, 6 feet of the 10-foot shoulder paved for bicycle accommodations, and improved vertical curves. Most intersections would be improved with the addition of left- and right-turn lanes. Between County B (east) and Dyreson Road a raised median between the northbound and southbound lanes would be used; providing intersections with a designated left-turn lane requires a median to protect the left-turning vehicles and the median in continuous in this section because of the closely spaced intersections.

Urban 4-Lane Reconstruction in McFarland
In McFarland, the proposed improvements between Exchange Street and Larson Beach Road would include reconstruction of the existing undivided 4-lane roadway to provide a consistent urban 4-lane facility with a median or TWLTL and sidewalk on both sides of US 51. Intersections would also be reconstructed. A dual southbound left-turn lane would be constructed at Farwell Street (County MN). For pedestrian accommodations, existing crosswalks will be replaced and WisDOT will work with McFarland on additions and modifications elsewhere during final design.

Pavement Replacement between Larson Beach Road and Terminal Drive/Voges Road in McFarland, Siggelkow Road Interchange Ramp Improvements, and Addition of Auxiliary Lanes North of Siggelkow Road
Pavement replacement would be included for the existing 4-lane expressway section from Larson Beach Road to a point south of the Terminal Drive/Voges Road intersection. The US 51 southbound bridge over Taylor Road and the WSOR would also be replaced. An auxiliary lane (outside lane) would be added between the north ramps of the Siggelkow Road interchange and Terminal Drive/Voges Road intersection near Meinders Road. At the Siggelkow Road ramp terminals, roundabouts and signals were considered to replace the existing stop signs. Based on a Phase 1 ICE analysis and public comments, roundabouts are the selected ramp terminal intersection improvement. The public was provided the opportunity to comment during multiple PIMs and during the public hearing in April 2021. During final design, a Phase 2 ICE analysis will be completed to confirm the selection of roundabouts. ~~two options are being considered for the replacement of the existing stop sign control. Either roundabouts would be constructed or signals would be installed. The public was provided opportunity to comment during multiple public involvement meetings for the project. Additional opportunities to provide comments or testimony will occur during the availability period for this EA and during a public hearing if one is held.~~

4.0 Construction and Operational Energy Requirements

Energy consumption generally includes the raw materials and fuels used to construct, operate, and maintain the highway facility. Construction energy is comprised of the raw materials and equipment used to build and maintain the highway while operational energy is the fuel consumed by the vehicles traveling on the roadways. The fuel consumption levels are a function of several variables. Consumption levels for vehicles using a roadway are a function of the types of vehicles (i.e., trucks versus cars), travel speeds, congestion levels, induced travel, and increased trips generated by induced land development. The most important factor affecting operational energy consumption is speed.

No Build, Alternative A (Low Build), and Alternative H (Hybrid) Compared to Alternative B (4-Lane Expansion)
The No Build Alternative (routine safety and maintenance projects) and Alternatives A and H may over time require increased consumption of operational energy over Alternative B because of increased congestion. At the same time, Alternative B may have higher operational energy requirements resulting from potentially longer travel distances, an increase in the number of trips due to induced demand, and higher speeds facilitated by the improved facility.

Construction energy for maintenance would be higher, in the near term, for the No Build Alternative than for a new road. Eventually, the existing roadway would need to be reconstructed, at which time the energy consumption for construction would be comparable to the build alternatives. At the same time, Alternative B would have much higher initial construction energy requirements compared to the No Build, Alternative A, and Alternative H.

5.0 Land Use Adjoining the Project and Surrounding Area

Existing Land Use
Existing land use in the towns is primarily agricultural with woodlands and other natural resource areas scattered throughout the study area, including the major water resources of Lake Kegonsa, Lake Waubesa, Lower Mud Lake, and the Yahara River. Urban land uses served by sewer and water are dominant in cities and villages in the study area. Figure 19 depicts the existing land use for the municipalities (towns, villages, and cities) located in the study area. Characteristics of the rural and urban communities are described in the Community or Residential Impact Evaluation Factor Sheet B-1.

Future land use maps are the planning tool authorized by state statutes to officially recommend the pattern of land uses during the time period of the Comprehensive Plan (often 20 years or more). Future land use maps are typically based on the existing pattern of land uses at time of Comprehensive Plan adoption, with recommendations for the future use and character of lands recommended for development and redevelopment during the planning period. Under Wisconsin law, town plans make recommendations for the area within the municipal limits of the town, while city and village plans include their municipal limits and may also include their extraterritorial planning areas in parts of the surrounding towns. For the study area, Figure 20 depicts a composite map of city/village and town future land use.

Land Use of Adjoining Properties
Within the US 51 study corridor, each build alternative includes improvements that are primarily outside the urban areas of Stoughton and McFarland. In these areas the primary land uses are agricultural and rural residential. In addition, there are significant areas of open space that include lakes, streams, parks, wetlands, uplands, and isolated woodlands. Each build alternative also includes improvements within the urban areas of Stoughton and McFarland where the primary land uses are retail, commercial, and urban residential.

Section 6, Planning and Zoning and Factor Sheet B-1 discuss how the towns in the project area are focused on preserving agricultural land uses while the communities of Stoughton and McFarland are interested in commercial and residential development.

Land Use of Surrounding Area
The land uses north of the US 51 study corridor in the Madison metropolitan area are primarily urbanized residential, transportation, commercial, and industrial. The land uses to the east, west, and south of the US 51 study corridor are primarily agricultural and rural residential with significant areas of open space that include lakes, streams, parks, wetlands, uplands, and isolated woodlands.

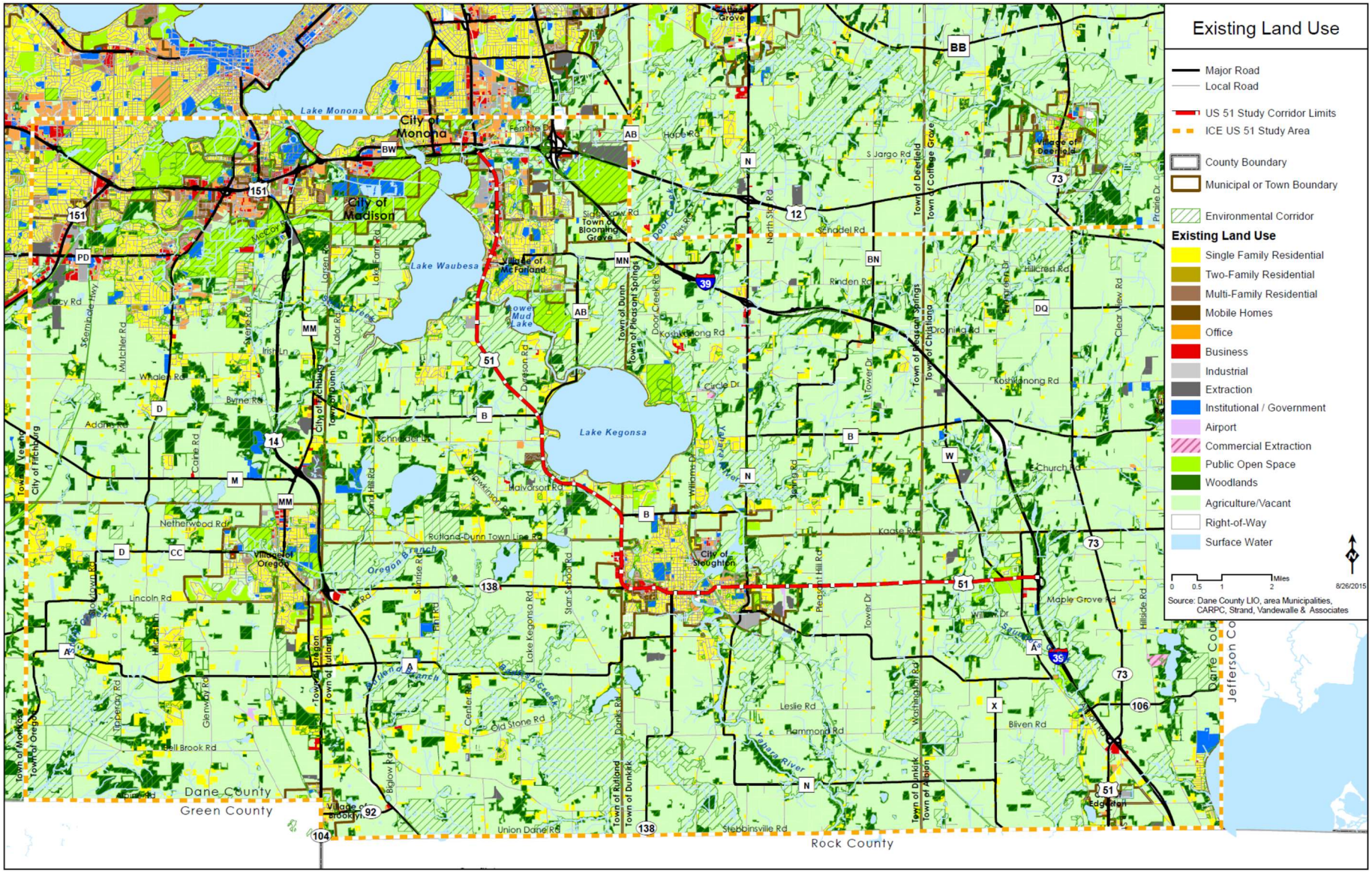

Figure 19 Existing Land Use

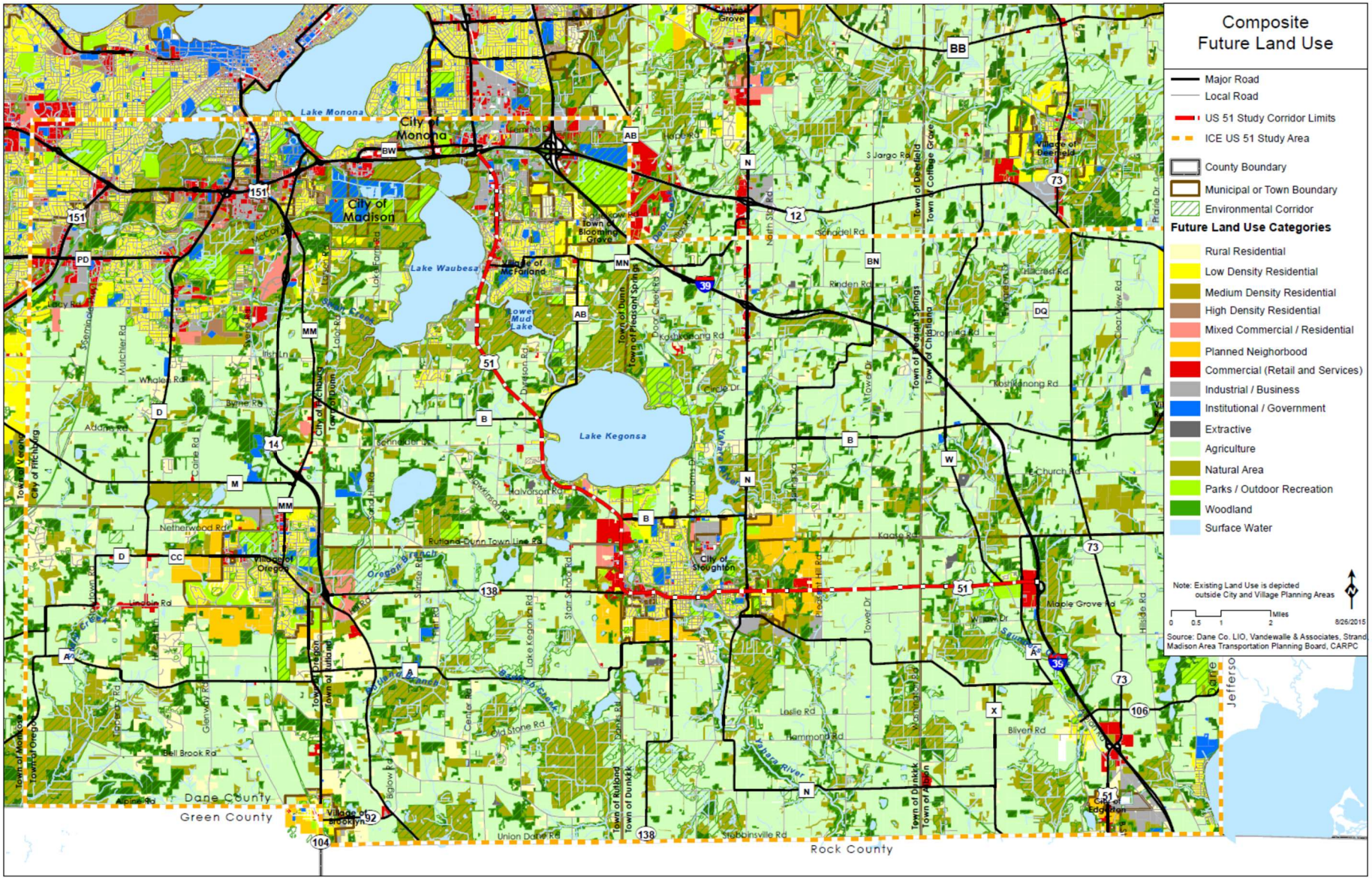

Figure 20 Future Land Use

6.0 Planning and Zoning

All the identified local or regional plans for the project area are compatible with the proposed action. Table 13 provides a summary of the local and regional plans and notes any specific references to US 51 made in the plans.

Table 13 Summary of Compatibility with Adopted Plans

Plan Name/Date	Discussion
City of Stoughton Comprehensive Plan (adopted in 2017)	Chapter 4 of the plan provides the following transportation recommendations: 1. Work with state, county, and neighboring jurisdictions on US 51 improvements. 2. Plan for new, expanded, and enhanced collector roads. 3. Update the functional classification map. 4. Update and enforce the city's official map. 5. Plan for an interconnected local street pattern. 6. Expand and implement pedestrian and bicycle facilities plan. 7. Promote future transit services. The plan identified three areas of projected growth along US 51. The areas are east of Spring Road on the south side of US 51, at the northwest quadrant of the US 51/WIS 138 west intersection (Kettle Park West development), and at the southeast quadrant of the US 51 and County B (east) intersection. Mapping shows planned expanded R/W on US 51 east of County N and north of Rutland-Dunn Townline Road. Planned expanded R/W is also shown on County B (east), County N north of US 51, and Rutland-Dunn Townline Road east of US 51, among other roads and highways. The mapping does not show planned bike and pedestrian paths along US 51 or on-street bike lanes planned on US 51.
Village of McFarland Comprehensive Plan (adopted in 2017)	The plan identifies the "Future US 51 Reconstruction" through McFarland and has an objective of enhancing the connection between US 51, downtown McFarland, and the growing east side via Farwell, Exchange, and Broadhead Streets. The plan also identifies a future East End Business Park at I-39/90 and shows a 4-lane divided Siggelkow Road connecting the Business Park to US 51. Another initiative of the plan is improved access to McFarland's lakes and river. The plan identifies intersection improvements along US 51 at Exchange Street, Burma Road, Farwell Street, Dale-Curtain Drive, Larson Beach Road, and Siggelkow Road. The plan identifies the following future bicycle and pedestrian accommodations along US 51: ▪ Off-street bike and pedestrian path from East Tower Road to Babcock Park. ▪ On-street bike lanes on Exchange Street. ▪ Priority sidewalks from Babcock Park to Larson Beach Road. The plan's transportation initiatives are to maintain and enhance McFarland's road network, expand the bicycle and pedestrian network, explore the introduction of transit service, and continue to engage with WisDOT on highway improvements.
Village of Oregon Comprehensive Plan (adopted in 2004 and amended in 2018)	The plan does not specifically mention US 51, but the WIS 138/US 14 intersection and the connection to Stoughton via WIS 138 is discussed. The WIS 138/US 14 interchange is identified as a community economic development area and important community gateway. Recommended land uses around the WIS 138 interchange consist primarily of Planned Mixed Use and Planned Office. The plan also indicates that Oregon has a policy that would officially map R/W along WIS 138 to allow for a 4-lane roadway with turn lanes and adequate landscape buffering.

Plan Name/Date	Discussion
Town of Dunn Comprehensive Plan (adopted in 2006 and amended in 2019)	Chapter 5 of Dunn's plan includes two transportation-related goals. 1. "The Town of Dunn will work with Dane County and neighboring jurisdictions to maintain the Town's existing roads, explore alternative transportation options and provide a safe, efficient and economically sound transportation system that meets the needs of its residents, farmers, businesses and visitors, while respecting the Town's unique environmental, agricultural and historical resources." This goal has Action Items related to the US 51 corridor including: ▪ "Coordinate with the County and the State to improve safety problems at dangerous intersections and existing or potentially hazardous areas." ▪ "Accommodate and encourage safe, convenient, non-motorized transportation choices (pedestrian, bicycle, etc.)." 2. "The Town's transportation system will be designed to protect the rural character of the Town and minimize impacts on the natural environment to the greatest extent possible." This goal has Action Items related to the US 51 corridor, including: ▪ "Maintain Lalor Road and Dyreson Road as Rustic Roads." ▪ "Support access control and rural character objectives by discouraging "side of the road" commercial development on state and county highways, and especially along USH 51." ▪ "Discourage development that would require new Town roads and oppose any new highways in the Town or highway expansion that negatively affects farmland or natural areas in the Town."
Town of Pleasant Springs Comprehensive Plan (adopted in 2017)	The plan identifies the following Land Use, Intergovernmental Cooperation, and Transportation policies related to US 51: ▪ "Direct more intensive commercial development to mapped commercial or mixed use areas, around the I-39/90 / County Highway N, I-39/90 / County Highway MN, and US 51 and County Highway B intersections." ▪ "Work cooperatively with the city of Stoughton to explore a cooperative planning effort and/or boundary agreement that address areas of conflict between the town and city plans, with particular attention given to the area north of County Highway B lying between US 51 and Williams Drive, which was identified as a future growth area in the city's 2017 comprehensive plan update." ▪ "Work with Dane County and the State of Wisconsin to develop a diversified, safe, efficient, and environmentally sound transportation network to move people and goods within the community and to connect the town with population centers in the region." ▪ "Work with other communities to develop a network of pedestrian and bikeways and connect them with other recreational facilities in the region."
Town of Rutland Comprehensive Plan (adopted in 2007)	Rutland has a goal to develop a diversified, safe, efficient, and environmentally sound transportation network to move people and goods within the community and to connect Rutland with population centers in the region. Rutland also wants to develop a network of pedestrian and bikeways in the community and to connect with other facilities in the region. The Future Bicycle Plan map identifies County A, Old Stone Road, Center Road, and portions of Oak Hill and Sunrise Roads as potential bike routes. According to the plan the west shift of US 51 into Rutland in Alternatives BW, CW, DW, and EW (dismissed alternatives) was considered a threat to Rutland.

Plan Name/Date	Discussion
Town of Dunkirk Comprehensive Plan (adopted in 2006)	The plan does not specifically mention US 51; however, it identifies three goals in the section titled Transportation. 1. "Support a diversified, safe, efficient, and environmentally-sound transportation network for moving people and goods." 2. "Support a rail transportation network that safely and efficiently serves the region." 3. "Support a complete network of pedestrian and bikeways throughout the community and with other areas in the region."
Town of Albion Comprehensive Plan (adopted in 2006 and amended in 2016)	The plan does not specifically mention US 51; however, it does mention that the majority of roads in Albion are in good condition and those in poorer condition are slated for improvement. The need for additional pedestrian and bicycle facilities was identified in the planning process as a growing need. Albion has proposed several bicycle routes, one crosses US 51 at County W. The 2016 amendment updated Albion's commercial development, zoning, and design review ordinances. The 2016 amendment included a Planned Land Use Map.
MPO, Regional Transportation Plan (RTP) 2050 (adopted in 2017)	The RTP 2050 goals outlined in Chapter 4 of the plan include: 1. Create Connected Livable Neighborhoods and Communities. 2. Improve Public Health, Safety, and Security. 3. Support Personal Prosperity and Enhance the Regional Economy. 4. Improve Equity for Users of the Transportation System. 5. Reduce the Environmental Impact of the Transportation System. 6. Advance System-wide Efficiency, Reliability, and Integration Across Modes. 7. Establish Financial Viability of the Transportation System. The plan identifies the US 51 Corridor Study (Stoughton to McFarland) as ongoing. The plan indicates improvements are being addressed in an EA to identify near-term improvements and that a Tier 1 EIS to analyze long-term improvements was suspended because of the unlikelihood of funding being available in the near future for a major capacity expansion project. The updated 2020-2024 TIP, dated October 2019, identifies the US 51 Stoughton to McFarland EA Corridor Study (ID 5845-06-02, -03) with funding obligated in 2004 and the anticipated EA completion in 2020. The 2020-2024 TIP also identifies other US 51 projects, including roundabouts at Roby Road, WIS 138 (west), Hoel Avenue/Silverado Drive, and County B/AB and the US 51 pavement rehabilitation project from Page Street to Hoel Avenue. Sections of US 51 are shown as having a need for new or improved on-street bicycle facilities, including most of US 51 from Babcock Park north to US 12/18 (Madison South Beltline) and all of US 51 from the west side of Stoughton at WIS 138, through downtown, to the east side of Stoughton. Areas of planned shared-use path are shown along US 51 from Rutland-Dunn Townline Road north to near Quam Drive. The plan's map of the Future Planned Regional Transit Service Network shows US 51 as a Future Regional Express Service bus route from US 12/18, extending south through McFarland and to Stoughton.

Plan Name/Date	Discussion
Capital Area Regional Planning Commission (Capital Area RPC) Dane County Land Use and Transportation Plan (adopted in 2008 and amended in 2017)	The Commission amended the Dane County Land Use and Transportation Plan in 2017 by adopting the Goals and Policies of the Regional Transportation Plan 2050 (RTP 2050) for the Madison area. Sections of the Dane County Land Use and Transportation Plan that are superseded by RTP 2050 include: 1. The "Transportation Plan" (pages 38 to 66) is replaced by RTP 2050 Chapter 4: Goals and Policies. 2. The "Transportation Goal" (page 1) is replaced with "Support the goals of the Regional Transportation Plan for the Greater Madison Area." 3. The following sections of the Dane County Land Use & Transportation Plan are superseded by RTP 2050: a. "Transportation Plan Element" (pages 3 to 4). b. Last bullet of "Implementation Strategies" (page 4) c. "Existing Conditions"/ "Transportation" (pages 7 to 10) d. "Transportation System Impacts" (pages 85 to 96) Refer to the previous discussion of the MPO RTP 2050.
Dane County Comprehensive Plan (adopted 2007 and amended in 2012)	The plan does not specifically mention US 51; however, chapter 3 of the plan includes five transportation-related goals. 1. "Provide an integrated, efficient and economical transportation system that affords mobility, convenience and safety and that meets the needs of all citizens, including transit-dependent and disabled citizens." 2. "Provide an accessible, integrated and well-maintained multi-modal transportation network that provides for the movement of people and goods in a safe and efficient manner." 3. "Coordinate land use and transportation plans and decisions to ensure that transportation facilities are compatible with planned development." 4. "Ensure that future transportation planning examines the full range of costs associated with infrastructure improvements and programs, including indirect, external, and opportunity costs." 5. "Reduce transportation's contribution of greenhouse gases that contribute to climate change."
WisDOT's Connections 2030 Long-Range Multimodal Transportation Plan (adopted in 2009)	The majority of the US 51 study corridor [from County N to US 12/18 (Madison South Beltline)] is within the Madison Metropolitan Planning Area defined in the plan. Connections 2030 indicates current and proposed future activities for US 51, from the east side of Stoughton to US 12/18, include "prepare corridor plan" and "provide urban connection for bicycle and pedestrian facilities." Current and proposed future activities for the portion of US 51 from WIS 138 to the Madison South Beltline include "construct capacity project." Connections 2030 also proposes a Rail to Trail route extending north on the WSOR line from County B (east) to McFarland, past the east side of Lake Waubesa.

7.0 Indirect Effects and Cumulative Effects

If any of the following boxes are checked, the Pre-Screening Worksheet for EA and ER Projects For Determining the Need to Conduct Indirect Effects Analysis found in Appendix A of the WisDOT report titled *Guidance for Conducting an Indirect Effects Analysis* must be completed and attached to this environmental document in Appendix F.

An alternative being carried forward for detailed consideration includes;

- ☐ Economic development as a purpose and need element of the proposed project.
- ☒ Construction of one or more new or additional through lanes.
- ☐ Construction of a new interchange or elimination of an existing interchange.
- ☐ Construction of one or more additional ramps or relocation of a ramp lane to a new quadrant to an at-grade intersection.
- ☐ Changing an at-grade intersection to a grade-separation with no access or a grade-separation to an at-grade intersection.
- ☐ Construction of one or more additional intersections along the mainline created by a new side-road access.
- ☐ One or more new access points along a side road within 500 feet of the mainline.

☐ None of the above boxes have been checked, it has therefore been concluded that the proposed action will not result in indirect effects or cumulative effects.

☒ The proposed action may result in indirect effects or cumulative effects. The Pre-Screening Worksheet for EA and ER Projects For Determining the Need to Conduct a Detailed Indirect Effects Analysis attached as Appendix F indicates a detailed indirect effects and cumulative effects analysis is not required.

☐ The proposed action may result in indirect effects or cumulative effects. It has been determined that a detailed indirect effects and cumulative effects analysis is required. See _____ for the detailed analysis.

8.0 Environmental Justice

How was information obtained about the presence of populations covered by EO 12898? *(check all that apply)*	
☒ US Census Data (2013-2017 ACS)+	☐ Survey Questionnaire
☐ Real Estate Company	☐ WisDOT Real Estate
☒ Public Involvement Meeting (PIM)	☒ Local Government
☐ Official Plan	☒ Windshield Survey*
☐ Human Resources Agency Identify agency: Identify plan, approval authority and date of approval:	
☒ Other–Identify: Data on low income and minority populations was collected from the Stoughton School District and the U.S. Census Bureau Poverty Thresholds data (2013 to 2017 ACS).	

*Conducting only a windshield survey is not sufficient to make a determination regarding whether or not populations are present.
+ACS is U.S. Census Bureau American Community Survey data.

Based on data obtained from the methods above, are populations covered by EO 12898 present in the project area?
a. ☐ No
b. ☒ Yes–Factor Sheet B-4 must be completed.

WisDOT contacted local governments and the Stoughton School District and evaluated low income, poverty threshold, and minority population data to identify populations covered by EO 12898. A windshield survey was also conducted.

Although there were several low income and minority populations identified along the project corridor, the

proposed action will result in no disproportionately high and adverse human health and environmental effects on minority populations or low-income populations. Full and fair participation has been offered to potentially affected communities in the transportation decision-making process, and the proposed action will not cause denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations. See Environmental Justice Evaluation Factor Sheet B-4 for additional information.

9.0 Title VI of the 1964 Civil Rights Act, the Americans with Disabilities Act or the Age Discrimination Act (ADA)

Indicate whether or not issues have been identified or concerns have been expressed related to Title VI of the 1964 Civil Rights Act, the ADA, or the Age Discrimination Act.

a. ☒ No–Issues related to the above laws were not identified and concerns were not expressed.
b. ☐ Yes–Issues related to the above laws were identified and/or concerns were expressed. Explain:

Notices were placed on advertisements for the August 2015 and September 2019 in-person PIMs, giving the telecommunications device for the deaf telephone number and stating that accommodations can be made for anyone requesting it. Interpreters were not requested for the August 2015 or September 2019 PIMs. The October 2020 PIM was virtual because of the COVID-19 pandemic. The notice for the virtual PIM indicated that WisDOT would provide additional accommodations, if requested.

News releases for the in-person PIMs in August 2015 and September 2019 included the following statement: "The meeting locations are wheelchair accessible. Hearing impaired persons needing an interpreter at the meetings may request one by contacting the WisDOT Project Manager at least three working days prior to the meeting via The Wisconsin Telecommunications Relay System (dial 711)." The October 2020 PIM was virtual because of the COVID-19 pandemic. The news release for this virtual PIM indicated that WisDOT would provide additional accommodations, if requested. WisDOT will continue to include similar statements in future project mailings.

10.0 Public Involvement

Public involvement for the US 51 Corridor Study has been ongoing since 2005 when the initial Alternatives Solutions Workshop was held following the Needs Assessment. Following that workshop, public involvement through 2013 was related to the development of alternatives during the prior environmental study phase. After 2014, the public involvement focused on obtaining input on the improvements documented by this EA. An overview of the initially-planned Tiered EIS process for long-term corridor improvements was provided at the August 2015 PIM.

A. Public Meetings

The public meetings held during the prior environmental study phase and the August 2015, September 2019, and October 2020 PIMs related to this EA are summarized in the following table.

Public meetings were held in handicapped accessible buildings and opportunities to request an interpreter or signer were provided.[27] Signers were requested and provided for the 2012 PIM. The public meetings were held in an open house format allowing one-to-one interaction with interested parties. A formal slideshow presentation and question and answer period were a part of each meeting. Comment sheets were available for written comments. The public involvement process complied with Executive Order (EO) 12898 as described in the Environmental Justice Factor Sheet B-4.

[27] The October 2020 PIM was virtual because of the COVID-19 pandemic. Those unable to access the meeting materials could request additional accommodations through WisDOT. The virtual meeting included a slideshow presentation with links to exhibits and a comment form.

Date (m/d/yyyy)	Meeting Sponsor (WisDOT, RPC, MPO, etc.)	Type of Meeting (PIM, Public Hearings, etc.)	Location	Approximate Number of Mailed Notices	Approximate Number of Attendees
Meetings Related to Prior Environmental Study Phase Alternatives Development					
4/28/2005	WisDOT	Public Community Workshop– Alternative Solutions	Stoughton	19,490	100
5/16-17/2006	WisDOT	PIMs	Stoughton and McFarland	19,495	160
5/20-21/2009	WisDOT	PIMs	Stoughton and McFarland	15,494	400
4/14/2011	WisDOT	PIM	Stoughton	12,366	360
10/15/2012	WisDOT	PIM	Stoughton	13,000	346
Meetings Related to this EA					
8/26/2015	WisDOT	PIM	Stoughton	14,656	258
9/26/2019	WisDOT	PIM	Stoughton	14,765	118
10/6/2020	WisDOT	PIM	Virtual	15,623	208 [28]

A notice of opportunity to request a public hearing was published and a public hearing was requested and held in April 2021. Refer to Addendum A for public hearing details. Addendum A is provided after the signature page of this EA.

B Other methods such as those identified in the Public Involvement Plan and Environmental Justice Plan (if applicable):

News releases were published in local newspapers and posted on local municipality websites. Newsletters were sent to all abutting property owners and to other interested stakeholders. Newsletters were also sent to federal, state, and local officials. The 2009, 2011, 2012, 2015, and 2019 newsletters were also sent to American Indian Tribes. WisDOT used Twitter to advertise for the 2020 PIM, which received one response.

News Releases and Newsletters Related to the Prior Environmental Study Phase (pre-2014):
A news release and postcard notified the public of the Alternative Solutions Workshop held in Stoughton on April 28, 2005. News releases were also published in the local newspapers before the PIMs in May 2006, May 2009, April 2011, and October 2012. A news release was published in November 2008 to notify the public of the availability of the Coordination Plan (CP) and Impact Analysis Methodology (IAM).

May 2006 Newsletter:
The newsletter announced the PIMs in Stoughton and McFarland on May 16 and May 17, 2006. The newsletter provided project background information and a schedule and summarized alternative Concepts A through E resulting from the Alternatives Workshop.

May 2009 Newsletter:
The newsletter announced the PIMs in Stoughton and McFarland on May 20 and May 21, 2009. The newsletter provided project background information and a schedule. The newsletter summarized the alternatives being evaluated and refined (Alternatives A through D and Alternative B1).

March 2011 Newsletter:
The newsletter announced the PIM in Stoughton on April 14, 2011. The newsletter provided project background information and a schedule. The newsletter summarized the alternatives being evaluated and refined (Alternatives A and B, Stoughton Bypass Alternatives, and dismissal of Alternatives C and D).

October 2012 Newsletter:
The newsletter announced the PIM in Stoughton on October 15, 2012. The newsletter provided project background information and a schedule. The newsletter summarized the alternatives being

[28] The YouTube video had 208 views by October 24, 2020.

evaluated and refined (No Build, Alternatives A [Low Build], and Alternative B [4-lane expansion with Stoughton Bypass]).

News Releases and Newsletters Related to this EA and the initially-planned Tiered EIS (2014 and later):
A news release notified the public of the August 26, 2015 and September 26, 2019 in-person PIMs and the October 6, 2020 virtual PIM.

July 2015 Newsletter:
The newsletter announced the PIM was to be held in Stoughton on August 26, 2015. The newsletter provided project background information and a schedule. The newsletter summarized the transition from the previous environmental study phase to the current EA and indicated the EA would be followed by a Tiered EIS.

June 2016 Newsletter:
The newsletter identified Alternative H as the preferred alternative. The newsletter also announced that, because of statewide priorities and funding limitations, the US 51 project would not be able to obtain funding for final design and construction in 2016. As a result of the project funding delay, the publication of the EA and the public hearing were postponed.

September 2019 Newsletter:
The newsletter announced the PIM was to be held in Stoughton on September 26, 2019. The newsletter provided project background information and a schedule. The newsletter provided an update of what happened since the 2015 PIM and WisDOT's subsequent identification of Alternative H as the preferred alternative in 2016.

WisDOT created a project website for the US 51 Corridor Study to provide an additional source of information to the public. In April 2005, the website was changed from the US 51 Needs Assessment Study to the US 51 Corridor Study. The website contains the US 51 study schedule, maps, project newsletters, and public meeting materials, Needs Assessment study from 2004, impact summaries, and project information. The website is: http://wisconsindot.gov/Pages/projects/by-region/sw/5139901218/default.aspx.

C. Identify groups that participated in the public involvement process. Include any organizations and special interest groups including but not limited to:

Related to the prior environmental study phase (pre-2014):
An area resident set up a table near the entrance to the May 20, 2009 PIM. The table displayed posters opposing the project and provided a petition against the Skaalen Road expansion alternative. A copy of the petition has not been submitted to WisDOT.

An area resident set up a website called "No Stoughton Bypass" located at www.nostoughtonbypass.org. It has information on the project including cost and impacts and a mission statement. The "No Stoughton Bypass" website was created in fall 2012.

A petition from a group called The Concerned Citizens was signed by 167 citizens and sent to WisDOT on September 3, 2013. The petition expressed concern over the potential construction of a bypass around Stoughton and asked WisDOT to abandon the "County B bypass" part of the plan. The petition states that development has been to the north and west of Stoughton toward Madison and that the bypass would have a seriously negative effect on downtown Stoughton businesses**.**

Related to this EA (2014 and later):
No organizations or public interest groups have self-identified during the public involvement process.

D. Indicate plans for additional public involvement, if applicable:

~~A notice of opportunity to request a public hearing and notice of availability of the EA for this project will be published following approval of this EA. A public hearing will be held if requested in writing.~~ During ~~the~~ final design and construction of the preferred alternative ~~for this EA~~, website updates and~~,~~ newsletters will be provided, and public and individual property owner meetings will ~~would~~ be conducted.

11.0 Briefly summarize the results of public involvement.

The following paragraphs summarize the public involvement related to this EA and the US 51 improvements. The results of public involvement related to the previous environmental study phase (pre-2014), are provided in Appendix G.

A total of 57 written comment sheets, letters, or emails were received as a result of the June 2015 newsletter and August 26, 2015 PIM that presented alternatives for possible improvements. Support for Alternative H (Hybrid) received the highest number of comments (15) with Alternative A (Low Build) receiving 9 support comments. Alternative B (4-lane Expansion) had 7 support comments but also received 6 comments opposing it, as well as 10 comments that specifically opposed the Stoughton Bypass portion of Alternative B.

As a result of the September 2019 newsletter and September 26, 2019 PIM that presented the preferred alternative, Alternative H, 37 comment sheets, letters, or emails were received.

As a result of the October 6, 2020 PIM that presented the preferred alternative, Alternative H, a total of 53 comment sheets, emails, or phone messages were received.

A public hearing was held and included a virtual component on April 20, 2021 and an in-person component on April 21, 2021 in Stoughton. See Addendum A for public hearing details and a summary of comments and responses. Addendum A is located after the signature page of this EA.

A. Describe the issues, if any, identified by individuals or groups during the public involvement process:

The following is a list of issues identified by individuals or groups during the August 26, 2015 PIM and in the 30-day post-PIM comment period.

Comments from August 26, 2015 PIM
(a) Participants at the PIM were asked to note support for one of three typical section options for the roadway section in Stoughton from the Railroad to Spring Road. Option 1 (No Parking) received the most (10) support comments. One comment supported Option 2 (Parking on One Side). Two comments supported Option 3 (Parking on Both Sides).
(b) Eleven people commented on their desire to have WisDOT improve the intersection of Hoel Avenue by installing some type of intersection control.
(c) There were five comments in support of removing truck traffic from downtown Stoughton and placing truck route signs on County N and County B to reroute trucks around Stoughton.
(d) There were six comments voicing concern about the impacts of the alternatives to properties.
(e) Numerous people noted their preferences for the use of either roundabouts or traffic signals at specific intersections including WIS 138 (west), County B (east), County B/AB, and Exchange Street. Several commented in opposition to the use of roundabouts.
(f) Two people voiced concern about current conditions and requested a roundabout be constructed at Exchange Street soon or the speed limit should be lowered.
(g) Two people requested that the roadway grade north of County B/AB be lowered.
(h) One resident requested a passing lane on the north side (westbound) of US 51 between Tower Drive and Washington Road since the south (eastbound) is getting a passing lane.
(i) The Stoughton High School administrator voiced concern that US 51 currently has no safe way for kids to cross anywhere between Hoel Avenue and Hamilton Street due to the speeds and high traffic volumes.
(j) Concerns were raised that the US 51/County B (east) roundabout would not be constructed until the early 2020s. Residents suggested that a temporary signal (similar to the one proposed for WIS 138) could be put in place until then.
(k) A resident commented on the overflow lot at the Babcock Park boat launch. He indicated the overflow lot gets used on busy weekends by vehicles with trailers. He pointed out that it is not possible to park in the overflow lot and then cross US 51 back to the boat launch parking lot to get a boat. The current design requires a right turn out of the overflow lot, travel to the north to find a place to turn around, and then travel south back to the main lot/boat launch.

The following is a list of issues identified by individuals or groups during the September 26, 2019 PIM and in the 30-day post-PIM comment period.

Comments from September 26, 2019 PIM
(a) Five people requested that a yellow left-turn arrow be added to the temporary signal at WIS 138 and US 51.
(b) There were 18 people supporting roundabouts or requesting roundabouts on the corridor. Specific intersections with US 51 mentioned were County N, County B (east), Exchange Street, Mahoney Road, Hoel Avenue, Roby Road, Quam Road, Farwell Street, and the Siggelkow Road ramp terminals. One comment suggested Dane County maintain the roundabouts. There were six people opposing roundabouts at specific locations including Hoel Avenue, WIS 138, County B (east), and County B/AB.
(c) Four people requested signals instead of roundabouts throughout the US 51 corridor including one person requesting signals at Lake Kegonsa Road and two people requesting signals at Mahoney Road.
(d) There were three people in support of Alternative H, one in support of four lanes on US 51, and one against Alternative H. Six people supported general improvements or specific improvements such as the four lanes on the west side of Stoughton and turn lanes.
(e) Three people submitted comments related to bypassing Stoughton. One supported a bypass south of Stoughton to US 14, one supported a bypass on County B (east), and one was against a bypass around Stoughton.
(f) Eleven people submitted comments related to unsafe conditions, too much traffic, and too many access points along the corridor. Four people suggested eliminating intersections and one person suggested providing frontage roads.
(g) Related to the roadway section between the railroad and Spring Road in Stoughton, one person supported no parking along US 51 and one person supported keeping parking along US 51.
(h) Numerous comments were received related to bicycle accommodations. Comments supporting bicycle improvements included supporting a path from Colladay Point Drive (north) to the roundabout at County B/AB, supporting bike accommodations in urban areas, supporting safe bicycle crossings, supporting bike improvements on paved shoulders, supporting the removal of the path between County B and Skyline Drive, and supporting sidewalk and bicycle paths from Exchange Street to Larson Beach Road. One comment was received against bicycle lanes between Stoughton and McFarland and one comment was against the current state law that does not allow for condemnation for multiuse paths.
(i) There were five people that commented on the Stoughton design. One person requested improvements to pedestrian crossings at WIS 138 and Roby Road. One person requested 10-foot-wide sidewalks from Jackson Street to County B (east), improved pedestrian crossing at Hamilton Street, and overhead pedestrian flashers through Stoughton. One person requested a divided roadway between Lynn Street and County N with reduced lane widths and bump outs for proposed street parking. One person was against the removal of trees on Main Street and for paying for curb and gutter. One person supported the Stoughton design.
(j) Four people provided comments related to the Tower Drive realignment. One supported the frontage road realignment and three people suggested extending the frontage road to Mahoney Road.
(k) Five people supported reduced speeds and one person noted vehicles speeding and requested more speed enforcement.
(l) One person suggested designating County N and County B as a truck bypass route and requested that something be done to remove large trucks from US 51 through Stoughton.
(m) A comment requested that the pedestrian underpass near Charles Lane be constructed to only allow bicycle and pedestrian access so vehicles do not try to use it as a short cut.
(n) A comment was received about the concern over relocating the Kegonsa Sanitary District force main.
(o) A concern was noted about the geese crossing the road at Babcock Park.
(p) A comment received asked that all medians use materials that will not block sight lines.
(q) A comment requested occasional snowmobile crossings.
(r) A comment requested wide turn options at Quam Drive.
(s) A comment requested a drain pipe be installed to pump out floodwater from the lakes.
(t) A comment requested removal of the asphalt shoulders on US 51 near Pleasant Hill Road because vehicles try to pass on the shoulder.

Comments from September 26, 2019 PIM
(u) A comment requested access at Velkommen Way and Rutland-Dunn Townline Road intersections be restricted to right-in/right-out access only.

The following is a list of issues identified by individuals or groups during the October 6, 2020 PIM and in the 18-day post-PIM comment period.

Comments from October 6, 2020 PIM
(a) Comments supporting proposed roundabouts on the project: (1) Eight comments support roundabouts at the Siggelkow Road ramp terminals. (2) Three comments support the County B/AB roundabout. (3) Three comments support the County B (east) roundabout (two people requested it as soon as possible). (4) Two comments support the Hoel Avenue/Silverado Drive roundabout. (5) Two comments support the Roby Road roundabout (one person requested it as soon as possible). (6) One comment supports the WIS 138 (west) roundabout. (7) One comment supports the Exchange Street roundabout. (8) Two comments support all the proposed roundabouts on the corridor.
(b) Twelve comments requested safer pedestrian and bicycle options and improvements on the corridor (four specifically noted around County B/AB). Improvements suggested by commenters included paths and sidewalk, better crossings at roundabouts and at Dyreson Road, barriers separating cars from bicycles, and a pedestrian overpass at Farwell Street.
(c) Six comments had questions: (1) Are there any plans for County B (east)? (2) Two comments asked when is construction and how long would it take? (3) Should Siggelkow Road roundabouts be 2 lanes? (4) Are there any improvements proposed for Terminal Drive/Voges Road? (5) How about using this money to enhance mass-transit? (6) What actions will be taken to address drainage and water issues as a result of the conversion of farmland to road R/W? (7) What end of the project will occur first? (8) What does the Exchange Street roundabout look like? Could it be a signal with left-turn lane? Will it have an art structure? Will it be designed for trucks and semis? (9) Will the project accommodate boat and recreational traffic? (10) What will the speed limit be (remain or slow down)? (11) Will the detours and alternative routes be shared with the public and will you be able to get to Stoughton on US 51 during construction? (12) What improvements will be made to County B (east) and County B/AB? (13) Will taxes be raised in the affected cities and towns to accommodate this project? (14) Why is a 4-lane roadway planned between the roundabouts at Roby Road and County B (east)?
(d) Five comments support a 4-lane expansion and/or a bypass around Stoughton.
(e) Four comments support Alternative H overall and numerous people support specific improvements on the corridor: (1) Two comments support turn lanes at intersections. (2) Two comments support the Tower Drive connection to Exchange Street. (3) One comment support the 2-lane reconstruction east of Stoughton. (4) One comment support improvements at Mahoney Road. (5) One comment support the sidewalk extension along Siggelkow Road. (6) One comment support the turn lanes at Brooklyn Road.
(f) Numerous comments pertained to various intersection improvements: (1) Three comments were against having so many roundabouts (having roundabouts). (2) One comment requested a signal at Racetrack Road. (3) One comment requested a roundabout at County N. (4) One comment requested the signals to remain at WIS 138 (west). (5) One comment requested signals at Roby Road and County B (east) as an interim fix. (6) Two comments requested a signal at County B (east) (one person also requested a camera). (7) One comment requested an interchange at County B/AB, not a roundabout. (8) One comment requested a southbound left-turn lane at Yahara Drive.

Comments from October 6, 2020 PIM
(9) One comment requested a roundabout at Burma Road. (10) One comment requested a roundabout or other intersection improvement to improve Farwell Street. (11) One comment requested a roundabout at Mahoney Road. (12) One comment requested a signal at Exchange Street or Mahoney Road. (13) One comment requested a cul-de-sac at Maple Grove Road. (14) One comment requested a signal at Exchange Street to accommodate school traffic and lower speeds.
(g) One comment suggested removing Culver's driveway on Farwell Street.
(h) One comment noted concern that Barber Drive will become a bypass route during construction and wants trees planted as a noise barrier near Schneider Drive.
(i) One comment was against the traffic that will detour to Tower Road to use the roundabout.
(j) An email was received from RHD Properties (RHD) related to a proposed development in Stoughton. The email included the following comments and questions: (1) Notes RHD is working with Stoughton on RHD's development concept plan in the area along US 51 on the west side of Stoughton. (2) Notes the development concept could remove Velkommen Way access on the east side of US 51 and farm driveway access on west side of US 51. (3) Requests access for a future Dvorak Drive on the west side of US 51. (4) Requests a roundabout or signal at Rutland-Dunn Townline Road and US 51. (5) Requests a pedestrian underpass north of Rutland-Dunn Townline Road (6) Requests a street stub on the west side of the US 51/County B (east) roundabout. This property is now annexed to Stoughton. (7) Asks whether sidewalk will be installed between Roby Road and County B (east).
(k) One comment said that the traffic counts were faulty at US 51 and County N and should have been taken during the school year and do not include future development.
(l) Two comments were related to the Brost Addition: (1) One comment agreed with minimizing and mitigating the impacts to the Brost Addition. (2) One comment requested that WisDOT be respectful of the conservation land (Brost Addition Conservation Land) and minimize impacts to Dunn. The comment was against improvements to the roadway.
(m) One comment requested modification or relocated intersections along US 51 between Stoughton and McFarland. The comment said that current plans will not reduce crash rates.
(n) One comment requested no engine braking signs near Siggelkow Road.
(o) One comment requested that the environmental impacts be studied and as little damage as possible be done.
(p) One comment requested repaving County B (west) from County MM to US 51.
(q) Three comments were against the realignment of Tower Drive to Exchange Street because of agricultural impacts.
(r) One comment mentioned an agreement for access to US 51 that would be removed with the proposed plan. The comment requested that access be retained to US 51 between Tower Drive and Exchange Street.
(s) One comment questioned the graphic showing the loss of a driveway.
(t) Two comments were concerned with the stormwater runoff/salt pollution (one comment specifically noted the County B/AB roundabout) and how it enters Lake Kegonsa.
(u) One comment requested accommodation for snowmobiles at County B (east).
(v) One comment was against the conversion of farmland to road R/W east of Stoughton.
(w) One comment was against Alternative B and the Stoughton Bypass.
(x) One comment wanted a lower speed limit through McFarland.
(y) One comment was against bicycle accommodations on US 51 between Stoughton and McFarland and noted bicycle accommodations would cause unsafe conditions and require more R/W.

Comments from October 6, 2020 PIM
(z) One comment stated that the proposed improvement on Mahoney Road would not address the backups at US 51. These backups and the high speed of traffic turning onto Mahoney Road from US 51 would prevent the users of the proposed backage road access to Mahoney Road.

B. Briefly describe how the issues identified above were addressed:

How comments from August 26, 2015 PIM were addressed
(a) Based on public input and Stoughton's resolution, Option 1 (No Parking) will be used for the typical section between the Railroad and Spring Road.
(b) Comment acknowledged. An intersection control evaluation was completed for the intersection of US 51 and Hoel Avenue and it does not meet warrants for intersection improvements. WisDOT will continue to monitor the intersection for potential improvements.
(c) US 51 is a NHS route and state truck route. WisDOT policy does not permit rerouting truck traffic onto a county road system when a NHS route is available.
(d) Comment acknowledged. The purpose of this project is to provide a safe and efficient transportation system for the US 51 corridor that serves present and long-term travel demand while minimizing disturbance to the environment. Future design will work with affected property owners to continue to provide a safe and efficient transportation system while minimizing impacts.
(e) Intersection control evaluations (ICE) were performed for each of the locations noted. WisDOT will select the appropriate control type based on traffic operations, safety, and impacts once the ICE reports are approved.
(f) Comment acknowledged. It is anticipated a roundabout would be constructed at Exchange Street. WisDOT will prioritize construction sections and place priority on areas with safety concerns.
(g) Comment acknowledged. The grade north of County B/AB is proposed to remain similar to current conditions. Any changes to this grade would create increased land impacts in the area of Dyreson Road because of the rolling topography.
(h) Comment acknowledged. A passing lane for westbound traffic east of Stoughton was not possible because of multiple access point conflicts. The passing lane for eastbound traffic did not have these concerns.
(i) Comment acknowledged. WisDOT will provide crosswalks that meet standards and safety guidelines.
(j) Comment acknowledged. The NEPA process, design, and funding does not allow this intersection to be constructed any earlier than anticipated.
(k) The access from the overflow lot on the east side of US 51 at Babcock Park was revised to allow entry into the northbound left-turn lane to the boat launch parking lot on the west side of the roadway.

How comments from September 26, 2019 PIM were addressed
(a) The temporary signal currently in place at WIS 138 and US 51 does not have a yellow left-turn arrow because of sight distance and safety concerns. This intersection is scheduled to be reconstructed as a roundabout in 2021.
(b) ICEs were performed for intersections along the corridor. The recommended control type was selected based on traffic operations, safety, and impacts. Depending on the location of a roundabout, Dane County, McFarland, or Stoughton would provide maintenance, snow removal, and mowing.
(c) ICEs were performed for intersections along the corridor. The recommended control type was selected based on traffic operations, safety, and impacts.
(d) Comments acknowledged. Alternative H best satisfies the purpose and need factors compared to the No Build Alternative and Alternative A. Although Alternative B fully meets the project's purpose and need factors, it has much greater impacts, with or without the Stoughton Bypass, when compared to Alternative H. Because WisDOT determined Alternative B does not meet statewide priorities, it would not receive funding for the next major action to advance the project. The majority of public comments received support Alternative H over other alternatives. Local officials in Stoughton support Alternative H. Dunn opposed a 4-lane expansion of US 51 between Stoughton and McFarland, and Alternative H retains a 2-lane roadway section in this area. Alternative H will meet the federal fiscal constraint requirement. WisDOT has identified Alternative H as the preferred alternative.
(e) Comments acknowledged. A bypass of Stoughton is no longer being considered because the latest forecasts and traffic modeling indicate a bypass is not required.

How comments from September 26, 2019 PIM were addressed
(f) Comments acknowledged. Alternative H includes left-turn and right-turn lane improvements and the opportunity for two-stage crossings at rural intersections; this will allow area residents and travelers safer access onto and off US 51.
(g) Based on public input during the August 26, 2015 PIM and Stoughton's resolution, Option 1 (No Parking) will be used for the typical section between Spring Road and the railroad.
(h) Bicycle accommodations will be provided where feasible along the corridor. This includes on paved shoulders or along parallel bike routes. The multiuse path from County B to Skyline Drive is no longer part of the project.
(i) Comments acknowledged. Detailed design regarding pedestrian crossings and potential tree removal or replacement would be completed during final design. Construction of curb and gutter replacement needed for this project will be funded by FHWA and WisDOT.
(j) The preferred alternative includes the realignment of Tower Drive to Exchange Street. The Mahoney Road intersection would be improved to include turn lanes on US 51. The addition of turn lanes would allow drivers to make a two-stage left turn when entering US 51.
(k) Comments acknowledged.
(l) Comments acknowledged. US 51 is a state highway and a designated long truck route for the entire limits of the US 51 corridor study. County N is a long truck route between US 51 and I-39/90. The designated long truck route map in this area can be viewed at https://wisconsindot.gov/Documents/dmv/shared/ltr-sw.pdf [29]
(m) The design of the proposed pedestrian underpass will follow WisDOT design guidelines for bicycle and pedestrian accommodations. The design will also take into account maintenance vehicles.
(n) Detailed impacts and relocation needs for the Kegonsa Sanitary District force main will be determined during final design.
(o) Comment acknowledged.
(p) Final design of medians will consider materials, maintenance, and safety needs so that vegetation does not block sight lines.
(q) Comment acknowledged. Coordination about potential snowmobile crossings can be discussed with local snowmobile club representatives during final design.
(r) Quam Drive will be designed to accommodate truck-turning movements.
(s) A drain pipe to pump flood water from the lakes is not feasible as part of the US 51 project. Other solutions for flood mitigation are being reviewed by Dane County.
(t) Comment acknowledged. The proposed design of US 51 in the rural sections requires shoulders to meet design standards.
(u) Comment acknowledged. Full access at the Velkommen Way and Rutland-Dunn Townline Road intersections will be provided as part of Alternative H. The proposed 4-lane divided roadway section will allow two-stage crossings for vehicles turning left from the side roads.

How comments from October 6, 2020 PIM were addressed
(a) Comment acknowledged. Intersection Control Evaluation (ICE) reports were prepared for intersections along the corridor where new intersection traffic control (e.g., roundabouts or signals) were considered. The recommended control type was selected based on a variety of factors such as traffic operations, safety, impacts, costs, and feedback from the public and stakeholders.
(b) Pedestrian and bicycle accommodations will be provided where feasible along the corridor. This includes on paved shoulders or along parallel bike routes. WisDOT will investigate the potential for bicycle crossings of US 51 including at the Dyreson Road intersection and Farwell Street during the final design phase. WisDOT will also work with the local communities to improve pedestrian crossings during the final design phase.
(c) (1) There are no improvements proposed for County B (east) as part of this project. Any future improvements would be completed by Dane County. (2) Construction is anticipated to begin in 2025 if funding is obtained. The sequencing of construction projects is under review and will be communicated with the public during final design. The corridor is anticipated to be divided into different construction segments, and it is anticipated that it would take multiple years to complete construction.

[29] Wisconsin Long Truck Operators Map; WisDOT SW Region; August 2017; https://wisconsindot.gov/Documents/dmv/shared/ltr-sw.pdf; accessed November 13, 2019

How comments from October 6, 2020 PIM were addressed
(3) A single-lane roundabout at the Siggelkow Road ramp terminals is anticipated to accommodate future traffic needs and will have a smaller impact than a dual-lane roundabout. (4) The Stoughton Road EIS studies the portion of US 51 beginning at Terminal Drive and Voges Road (McFarland), just south of US 12/18 to WIS 19 in Dane County. While the Terminal Drive and Voges Road intersection is geographically within the defined limits of this US 51 study because it is south of US 12/18, the intersection will be addressed as part of the Stoughton Road EIS. (5) While transit measures have merit, they are not able to fully address the project purpose and need as standalone strategies. (6) WisDOT recognizes drainage as a primary consideration for highway construction. Every WisDOT project strives to deliver a drainage system that provides safety to the traveling public by using sound engineering practices outlined in the WisDOT Facilities Development Manual (FDM) to protect and drain the highway while protecting private property from flooding, water-soaking or other damage in accordance with applicable statutes and administrative rules. Specific design elements will be incorporated after hydrologic and hydraulic analyses are completed during final design. (7) The sequencing of construction projects is under review and will be communicated with the public during final design. (8) A roundabout is the recommended control type based on a variety of factors such as traffic operations, safety, impacts, costs, and feedback from the public and stakeholders. WisDOT takes a proactive approach toward minimizing driver distraction. WisDOT avoids items in the central island that may be considered an attractive nuisance and may encourage passerby to go to the central island for pictures or might distract drivers from driving. The roundabout will be designed to accommodate large semis and recreational vehicles. (9) Proposed access into Babcock Park will accommodate boat and recreational vehicle traffic. (10) The speed limit would not be changed as part of the construction process. McFarland can request that WisDOT conduct a speed study in the area after construction is completed. The results of the speed study would indicate whether or not the speed limit should be changed. (11) During final design, WisDOT will share proposed alternative routes and/or detours based on the anticipated work being completed. Access will be provided to businesses and destinations on US 51. (12) Intersection Control Evaluation (ICE) reports were prepared for intersections along the corridor where new intersection traffic control (e.g. roundabouts or signals) were considered. The recommended control type for County B (east) and County B/AB is a roundabout. The County B/AB roundabout is proposed for construction in 2024. (13) The majority of the construction costs would be funded by federal and state funds; however, local municipalities may incur costs as part of the project. For example, typically, local governments have a cost share when new sidewalk or street lighting is installed with a project. In addition, the local municipality would also pay to update any municipality-owned utilities as part of a roadway project if the utilities are located within the existing highway R/W. The local municipality would also typically pay if they requested additional items that were not deemed necessary in the design plan. It would be up to the local municipality to determine how to pay for any incurred costs. (14) Based on traffic analysis, the Roby Road and proposed County B (east) roundabouts were designed to provide dual lanes within the roundabouts. As a result, 4-lane approaches to the roundabouts are required. The transition from the 4-lane approaches for each roundabout to a 2-lane section would take up approximately half of the 4,300-foot distance between the roundabouts. A roadway section that changes from 4-lane to 2-lane and back to 4-lane in this short of a distance is not desirable. Alternative H includes a 4-lane roadway between Roby Road and County B (east) to provide a consistent roadway cross section for the length of US 51 along the west side of Stoughton. In addition, the proposed 4-lane divided roadway section will allow two-stage crossings for vehicles turning left from the side roads at Velkommen Way and Rutland-Dunn Townline Road.
(d) Comments acknowledged. Although Alternative B (4-lane roadway) fully meets the project's purpose and need factors, it has much greater impacts, with or without the Stoughton Bypass, when compared to Alternative H. Because WisDOT determined Alternative B does not meet statewide priorities, it would not receive funding for the next major action to advance the project. The majority of public comments received support Alternative H over other alternatives. Local officials in Stoughton support Alternative H. Dunn opposed a 4-lane expansion of US 51 between Stoughton and McFarland, and

How comments from October 6, 2020 PIM were addressed
Alternative H retains a 2-lane roadway section in this area. Alternative H will meet the federal fiscal constraint requirement. WisDOT has identified Alternative H as the preferred alternative.
(e) Comments acknowledged.
(f) Comment acknowledged. ICE reports were prepared for intersections along the corridor where new intersection traffic control (e.g., roundabouts or signals) were considered. The recommended control type was selected based on a variety of factors such as traffic operations, safety, impacts, costs, and feedback from the public and stakeholders.
(g) Comment acknowledged.
(h) It is anticipated signed detours would be on the existing interstate routes and Wisconsin State and United States Highways. Regarding the potential for tree planting on the east side of US 51 in the "rock cut" area, existing and future traffic noise was modeled along the corridor and a noise impact was not identified along Barber Drive. In addition, WisDOT's noise policy does not identify vegetation as an acceptable form of noise abatement, so planting trees for that purpose would not be included in the project.
(i) Comment acknowledged. The study's traffic forecasts indicate that the same amount of traffic is anticipated to use Tower Road with or without the roundabout improvement.
(j) (1) WisDOT is aware of the proposed concept plan and the development coordination with Stoughton. (2), (3), and (4) Once the proposed development plan is adopted by Stoughton, WisDOT will confirm the proposed access changes and proposed intersection control on US 51 are compatible with the WisDOT Alternative H design on the west side of Stoughton. A Traffic Impact Analysis (TIA) should be performed to evaluate this specific development and potential improvements to the intersection. (5) Based on planning-level design, a pedestrian underpass is potentially feasible. Following project approval for final design and construction funding, WisDOT would further develop and refine the design in this area. WisDOT would expect either the developer or Stoughton to complete design plans and incur the cost for the design and construction of the underpass. (6) Sidewalk is proposed as part of the Roby Road roundabout currently scheduled for construction in 2022. As part of Alternative H, WisDOT is proposing sidewalk on both sides of US 51 from WIS 138 (west) to County B (east), including the proposed roundabout at County B (east). (7) The proposed roundabout design at County B (east) would have the potential to add a stub for a local street connection on the west side; however, there are no current local road plans WisDOT is aware of that would require a connection at this time. (8) WisDOT is aware of the proposed concept plan and the development coordination with Stoughton.
(k) The intersection traffic counts were performed at County N and US 51 in October 2014 when school was in session. The roadway traffic counts used in the traffic forecasting process are seasonally factored by WisDOT to represent annual average daily traffic (AADT) volumes. The traffic forecasts prepared for the study consider future development that is based on approved local plans.
(l) Comments acknowledged. Comments have been shared with the officials with jurisdiction over the property.
(m) Comments acknowledged. Alternative H includes left-turn and right-turn lane improvements and the opportunity for two-stage crossings (first stage is crossing to the median; second stage is merging from the median into the travel lane) at rural intersections between Stoughton and McFarland; this will allow area residents and travelers safer access onto and off US 51.
(n) Engine braking signs are not installed by WisDOT. Local governments must request that signs be added to State Highways and are responsible for supplying, installing, and maintaining the signs.
(o) Comment acknowledged. The purpose of this project is to provide a safe and efficient transportation system for the US 51 corridor that serves present and long-term travel demand while minimizing disturbance to the environment.
(p) There are no improvements proposed for County B (west) as part of this project. Any future improvements would be completed by Dane County.
(q) The proposed realignment of Tower Road is based on safety and operational concerns in the area. An ICE analysis was performed and reviewed several alternatives with and without a realignment of Tower Road. The recommended intersection control type was selected based on a variety of factors such as traffic operations, safety, impacts, costs, and feedback from the public and stakeholders. The design was changed to reduce impacts while meeting design standards.
(r) Comment acknowledged. If Alternative H is constructed as currently designed, the access would be relocated to the new Tower Road connection, and the existing access would be removed from

How comments from October 6, 2020 PIM were addressed
US 51. When alternative access to a parcel becomes available on a local road, the existing access on a State or US highway is typically relocated to improve safety and mobility on the highway. The intent of access management is to allow adequate, safe, and reasonably convenient access to land and land uses, consistent with the interest of public safety and the preservation of the public investment in the highway facility.
(s) The exhibit has been corrected and the property will retain both access points on Exchange Street.
(t) Comment acknowledged. During final design of the County B/AB project and final design of Alternative H for the US 51 corridor study, the need and feasibility for stormwater management measures will be evaluated further. Stormwater management measures may include detention and bioretention basins that will effectively reduce the rate and volume of runoff, while also treating runoff from this watershed by removing sediment and stormwater pollutants before discharging to Lake Kegonsa.
(u) Comment acknowledged. Coordination about potential snowmobile crossings can be discussed with local snowmobile club representatives during final design.
(v) Comment acknowledged. The purpose of this project is to provide a safe and efficient transportation system for the US 51 corridor that serves present and long-term travel demand while minimizing disturbance to the environment.
(w) Comments acknowledged. Although Alternative B fully meets the project's purpose and need factors, it has much greater impacts, with or without the Stoughton Bypass, when compared to Alternative H. Because WisDOT determined Alternative B does not meet statewide priorities, it would not receive funding for the next major action to advance the project. A bypass of Stoughton is no longer being considered because the latest forecasts and traffic modeling indicate a bypass is not required.
(x) The speed limit would not be changed as part of the construction process. McFarland can request that WisDOT conduct a speed study in the area after construction is completed. The results of the speed study would indicate whether or not the speed limit should be changed.
(y) Comment acknowledged. The proposed design of US 51 in the rural sections requires shoulders to meet design standards and will accommodate bicycles. No additional R/W will be acquired for the bicycle accommodations.
(z) Comments acknowledged. Alternative H includes a proposed median at Mahoney Road which will improve the capacity along Mahoney Road at the US 51 intersection. The removal of driveway access points along US 51 near Mahoney Road will reduce the conflict points along the higher volume roadway (US 51) and shift them to the lower volume backage road that connects to Mahoney Road. Vehicles on the backage road should not typically be delayed by backups on Mahoney Road. The backage road connection is located approximately 550 feet from the US 51 intersection. The Alternative H queue on Mahoney Road is estimated to be 6 vehicles (or approximately 150 feet).

12.0 Local/regional/tribal/federal government coordination

The following paragraphs summarize government coordination related to the US 51 Corridor Study.

A. Identify units of government contacted and provide the date coordination was initiated.

Coordination during the Needs Assessment phase, previous environmental study phase, and EA is summarized for each unit of government in the table below. Correspondence with local, regional, tribal, and federal government entities related to the EA is provided in Appendix H.

A Technical Advisory Committee (TAC) of technical staff from agencies and local units of government and a Policy Advisory Committee (PAC) of elected officials provided guidance and local input throughout the corridor study. TAC and PAC meetings were generally held before PIMs to obtain input from local units of government for the public involvement efforts. Officials have participated on advisory committees, attended PIMs, and participated in various project team meetings with WisDOT to address their concerns and provide recommendations specific to their communities.

				Comments
City of Stoughton	☒ Yes ☐ No	2003	Ongoing	Stoughton officials were invited to 24 TAC and 21 PAC meetings.
		7/25/2009	7/25/2009	Letter recommending Alternative B with the bypass on County N.
		1/9/2014	1/9/2014	Meeting to discuss bike and pedestrian accommodations and development at the northwest quadrant of the US 51/WIS 138 (west) intersection.
		1/29/2015	1/29/2015	Meeting to discuss bike and pedestrian requirements through downtown Stoughton.
		8/11/2015	8/11/2015	Meeting with the city council to provide a preview of the August 26, 2015 PIM materials and also request specific input on the typical section options between Spring Road and the Railroad.
		9/9/2015	9/9/2015	Resolution R-142-2015 issued with six specific recommendations related to intersection and pedestrian improvements and parking accommodations. See the detailed description of Resolution R-142-2015 in Section B following this table.
		12/10/2015	12/10/2015	WisDOT sent a memorandum to Stoughton regarding proposed pedestrian crossings in the city.
		8/16/2019	8/16/2019	Meeting with Stoughton to discuss changes to design since 2015 and upcoming schedule.
		10/28/2019	10/28/2019	Resolution R-169-2019 issued with four specific recommendations related to pedestrian accommodations and parking accommodations.
		11/20/2019	11/20/2019	Email with specific pedestrian enhancements and locations.
		1/29/2021	1/29/2021	Email notification that a resident was planning to request a public hearing. Stoughton requested clarification on the opportunity for public interaction with WisDOT at a public hearing.
Village of McFarland	☒ Yes ☐ No	2003	Ongoing	McFarland officials were invited to 24 TAC and 21 PAC meetings.
		9/7/2010	9/7/2010	Meeting to discuss potential project impacts in McFarland, including typical roadway section, bike and pedestrian accommodations, impacts to Babcock Park, and intersection improvements. This meeting presented aspects of the prior environmental study phase Alternative B, which was refined after 2014 as part of the Alternative H design.
		5/15/2015	5/25/2015	Meeting with McFarland officials to discuss pedestrian accommodations within the village.
		1/7/2016	1/7/2016	Meeting with McFarland officials to discuss the revised design of US 51 that would not remove substantial parking from Culver's restaurant.
		9/9/2019	9/9/2019	Email with 19 specific recommendations related to the McFarland design.
		10/15/2019	10/15/2019	Letter with nine specific recommendations related to the McFarland design.
		12/12/2019	12/12/2019	Meeting with McFarland to discuss concerns and comments.
		10/23/2020	10/23/2020	McFarland updated its October 15, 2019 letter.
Village of Oregon	☐ Yes ☒ No	2/24/2005	10/10/2008	Oregon officials were invited to PAC meetings during the previous environmental study phase.
Town of Albion	☐ Yes ☒ No	2003	Ongoing	Albion officials were invited to 21 PAC meetings.

				Comments
		9/27/2012	9/27/2012	Meeting with Albion officials to discuss design options at County W.
		2/19/2014	2/19/2014	Discussed the study with new Albion chair and maintenance staff.
Town of Dunkirk	☒ Yes ☐ No	2003	Ongoing	Dunkirk officials were invited to 21 PAC meetings.
		7/28/2009	7/28/2009	Dunkirk opposes any bypass construction on Pleasant Hill Road.
Town of Dunn	☒ Yes ☐ No	2003	Ongoing	Dunn officials were invited to 24 TAC and 21 PAC meetings.
		3/21/2011	3/21/2011	Resolution 2011-06 issued endorsing Alternative A.
		8/15/2011	8/15/2011	Resolution 2011-12 issued. In the event of a 4-lane expansion of US 51, Dunn endorses an interchange connection to Dyreson Road on the north side of US 51.
		9/21/2015	9/21/2015	Resolution 2015-11 issued endorsing Alternative A and near-term safety improvements.
		9/30/2015	9/30/2015	Email to WisDOT indicating Dunn supports a cul-de-sac at the Dyreson Road south approach to US 51, a retaining wall adjacent to Colladay Point Park (if no other options are available to avoid the park), and full access to US 51 at Good Shepherd by the Lake Church (all design elements that are included in Alternative H).
		10/5/2015	10/5/2015	Email to WisDOT stating that Alternative H's proposed cul-de-sac of the south approach of Dyreson Road would not impact the Rustic Roads designation of Dyreson Road.
		8/22/2017	8/22/2017	Resolution 2017-09 issued supporting the paved shoulder and opposed an extension of Colladay Point Drive (north).
		11/12/2019	11/12/2019	Letter supporting the revised alignment of the proposed frontage road between Tower Drive and Exchange Street.
		10/23/2020	10/23/2020	Email to WisDOT opposing a relocation.
		3/30/2021	3/30/2021	Meeting to discuss potential conservation easements and avoidance of conflicts with the preferred alternative.
		4/12/2021	4/12/2021	An email from Dunn asked about discussions between Dane County and WisDOT related to a possible walkway under the Yahara River bridge in McFarland.
Town of Pleasant Springs	☒ Yes ☐ No	2003	Ongoing	Pleasant Springs officials were invited to 21 PAC meetings.
		7/13/2009	7/13/2009	Email to WisDOT indicating Pleasant Springs opposes any bypass construction activities on Skaalen and Pleasant Hill Roads or expansion of County B east of County N. Pleasant Springs endorses creation of a new entrance to Stoughton Business Park North from the bypass.
		7/1/2015	7/1/2015	WisDOT provided a study update at a Plan Commission meeting.
Town of Rutland	☐ Yes ☒ No	2003	Ongoing	Rutland officials were invited to 21 PAC meetings.
Kegonsa Sanitary District	☐ Yes ☒ No	8/3/2009	8/3/2009	Meeting during previous environmental study phase to discuss potential conflicts with the sanitary force main along US 51 and relocation and mitigation options and costs.

				Comments
		10/17/2019	10/17/2019	Meeting to discuss potential conflicts with the sanitary force main along US 51.
		1/8/2021	1/8/2021	Email to WisDOT requested additional information on potential impacts to the sanitary force main from the preferred alternative.
MPO	☐ Yes ☒ No	2003	Ongoing	MPO officials were invited to 24 TAC meetings.
		1/15/2014	1/15/2014	Meeting with MPO to present a study overview.
		1/22/2014	1/22/2014	Meeting with the MPO Technical Committee to present a study overview.
Capital Area Regional Planning Commission (CARPC)	☐ Yes ☒ No	2003	Ongoing	CARPC officials were invited to 24 TAC meetings.
Groundswell Conservancy	☒ Yes ☐ No	5/19/2021	5/19/2021	Letter from Groundswell Conservancy provided concurrence with the finding of *de minimis* impact for the Brost Addition.
		2020	Ongoing	Meetings with Groundswell Conservancy and WDNR to discuss the project impacts at the Brost Addition and mitigation measures.
Dane County	☒ Yes ☐ No	2003	Ongoing	Dane County officials were invited to 24 TAC and 21 PAC meetings.
		9/5/2008	9/5/2008	Meeting with Dane County Parks staff to review alignments and typical sections and discuss options for sidewalks and paths at Babcock Park.
		9/7/2010	9/7/2010	Meeting with Dane County Parks staff to discuss potential project impacts to Babcock Park and intersection improvements.
		5/13/2011	5/13/2011	Meeting with Dane County Parks staff to discuss potential project impacts at Babcock Park, potential mitigation measures, and design refinements.
		7/13/2011	7/13/2011	At a Dane County Park Commission meeting, the study team presented an overview of the US 51 study and summary of preliminary impacts to Babcock Park and potential mitigation measures.
		8/24/2011	8/24/2011	Letter from the Dane County Park Commission listed requested mitigation measures at Babcock Park.
		10/31/2011	10/31/2011	Meeting with Dane County Parks staff to discuss potential project impacts at Babcock Park and WisDOT proposed mitigation measures.
		11/28/2011	11/28/2011	Letter from Dane County Parks indicating the Park Commission was generally in agreement with proposed mitigation measures at Babcock Park.
		1/17/2013	1/17/2013	Meeting with Dane County Parks to discuss Babcock mitigation measures and whether WisDOT should pursue a *de minimis* impact determination at Babcock Park or a full Section 4(f) Evaluation.
		2/27/2013	2/27/2013	WisDOT attended the Park Commission meeting to discuss Babcock mitigation measures and whether WisDOT should pursue a *de minimis* impact determination at Babcock Park or a full Section 4(f) Evaluation. Park Commission passed a motion reconfirming their position on the *de minimis* impact determination.
		10/13/2015	10/28/2015	Email correspondence indicating Dane County Parks is in agreement with moving the Babcock Park overflow parking lot entrance approximately 275 feet south and grading the lot with a 20:1 slope.

Unit of Government (MPO, RPC, City, County, Village, Town, Tribal, Federal, etc.)	**Coordination** Correspondence Attached	**Coordination Initiation Date** (m/d/yyyy)	**Coordination Completion Date** (m/d/yyyy)	**Comments**
		8/12/2019	8/12/2019	Meeting with Dane County Parks staff to discuss changes to the design since 2015, the project schedule, and potential impacts at Babcock Park and WisDOT proposed mitigation measures.
		11/11/2019	11/11/2019	Email correspondence indicating Dane County Parks agrees with the proposed temporary detour of the Lower Yahara River Trail during construction of the US 51 bridges over Taylor Road.
		11/25/2020	11/25/2020	Meeting with Dane County Parks staff to discuss the project schedule and impacts at Babcock Park and the proposed mitigation measures.
		4/9/2021	4/9/2021	Email from Dane County asking about the proposed clear span of the bridge over the Yahara River in McFarland, the potential to include a portage under the bridge during final design, and notifying WisDOT that dredged material from the Yahara River will be stored at Babcock Park and would be available for use on the US 51 project.

B Describe the issues, if any, identified by units of government during the public involvement process:

Based on public comments and through agency and local government coordination, the following primary issues were identified:

1. Dunn was opposed to any capacity expansion of US 51 within the town limits and issued three resolutions. The first resolution in 2011 endorsed Alternative A, the Low Build Option. A second resolution in 2011 endorsed the connection of the north leg of Dyreson Road to the County B interchange in the event of a 4-lane expansion of US 51. The 2015 resolution endorsed Alternative A, the Low Build Option, and requested evaluation of near-term safety improvements ahead of the US 51 construction project as determined by the corridor study.

   Dunn was opposed to the extension of Colladay Point Drive (north) to remove access to US 51 at four driveway locations. Resolution 2017-9 on August 27, 2017 endorsed a paved shoulder to reduce impacts to the properties at this location.

   Dunn was opposed to the potential residential relocation and plans to contact the homeowner about potentially being relocated. Dunn indicated that if the landowner is in favor of the relocation, Dunn would not be opposed to the relocation.

2. Stoughton issued Resolution R-142-2015 on September 8, 2015, which stated the following:

   a. “Strongly recommend Hoel Avenue/Silverado Drive should be improved with a traffic signal or roundabout to improve unacceptable operations for side street drivers and to improve pedestrian and bicycle safety at this intersection;” and
   b. “Support the construction of a roundabout at Roby Road;” and
   c. “Support no parking on either side of Main Street in Stoughton from the railroad tracks to Spring Road to provide better terrace widths and include trees to enhance the entrance into the City;” and
   d. “Recommend extension of the proposed shared-use path from Velkommen Way north to County B (east) at least on the east side of US 51;” and
   e. “Recommend pedestrian crossings be enhanced for designated locations crossing four lanes of traffic by considering the use of overhead signs and flashers, alternative pavement types for the crosswalks, mid-crossing medians, enhanced signalization;” and
   f. “Study/consider the feasibility of a park and ride locations such as (a) the US 51/WIS 138 (south) intersection recommended in the recent WisDOT SW Region Park and Ride Study, (b) County B near Williams Drive identified in the last Transit Development Plan by the MPO, (c) US 51/County B (east) intersection to encourage carpooling and its use with future bus

transportation;' and
g. "The City requests to be consulted during the evolving design process continuing through to construction."

3. Stoughton issued Resolution R-169-2019 on October 22, 2019, which stated the following:

   a. "A ten-foot wide sidewalk be installed on one or both sides of US 51 from Jackson Street to County B (east);" and
   b. "Recommend pedestrian crossing be enhanced for designated locations crossing four lanes of traffic by considering the use of overhead signs and flashers, alternative pavement types for the crosswalks, mid-crossing medians, enhanced signalization;" and
   c. "Study/consider the feasibility of a park and ride locations such as (a) the US 51/WIS 138 (south) intersection recommended in the recent WisDOT SW Region Park and Ride Study, (b) County B near Williams Drive identified in the last Transit Development Plan by the MPO, (c) US 51/County B (east) intersection to encourage carpooling and its use with future bus transportation;" and
   d. "The city be consulted during the evolving design process continues through to construction."

4. McFarland provided a letter on October 15, 2019, which stated the following:

   a. "WisDOT has not discussed with local officials about the inclusion of roundabouts as well as other alternatives on Siggelkow Road, a local road."
   b. "More emphasis should be provided in the project planning as it relates to safe and accessible pedestrian interactions with the highway as well as what pedestrian enhancements or improvements should be recommended."
   c. "WisDOT will cost share in the installation of sidewalk of this project if not pickup the full cost of this improvement. Local share of sidewalk construction at 100% is not agreeable especially in the face of a likely Federal mandate for their inclusion."
   d. "Other forms of transportation through the Village need to be further evaluated and included (i.e. bike lanes)."
   e. "More discussion and planning needs to happen now regarding stormwater management as a result of this project and not wait until design phase."
   f. "The Village remains opposed to the current speed especially when WisDOT proposes no alternatives for pedestrians in a dense urban environment."
   g. "Loss of access at Yahara Drive and near Farwell Street is too restricting. The Village is not agreeable to the access lost to local businesses such as Kwik Trip and Culver's. Access in all of these locations should be maintained."
   h. "Farwell Street is a local road under local control, yet WisDOT continues to make plans to improve it without consultation with local officials. The present plan for Farwell Street and its interaction with US Highway 51 is not agreeable nor functionally realistic."
   i. "The planned bridge span over Yahara River is a concern related to flooding and that it be demonstrated the plan to replace this bridge will be done so it concert with best practices for stormwater management. Furthermore, the Village wishes to evaluate a path crossing under the bridge to provide for a safe crossing under the highway into Babcock Park from Yahara Drive."

5. McFarland provided a letter dated October 23, 2020, updating the October 15, 2019 letter and stating the following:

   a. "The Village understands based on comments from WisDOT that all options remain available for ingress and egress of off ramps at the Siggelkow Road interchange. The Village desires to have input on the final controls for this intersection and does not outright accept roundabouts without further consideration of other options."
   b. "Emphasis should continue to be provided in the project planning regarding safe pedestrian crossings at all intersections. The Village desires to have input on the final pedestrian accommodations and controls for these locations as part of ongoing planning and design for the project. WisDOT will at the very least cost share in these improvements as is appropriate."
   c. "The Village understands that WisDOT will cost share at a ratio of 80 (State-Fed)/20 (Local) for the installation of sidewalk as part of this improvement. We will consider this as part of our discussion to enter into a State Municipal Agreement where appropriate."

d. “The Village continues to insist that bike lanes need to be included with the project as another form of transportation. It remains the Village’s position that the availability of existing R/W is sufficient to support this without the need to acquire more R/W for this purpose.”
e. “More discussion and planning is needed regarding stormwater management as a result of this project.”
f. “The Village remains opposed to the current speed especially without further discussion and commitment from WisDOT on pedestrian safety.”
g. “Upon review of the current plans, Yahara Drive has been reopened to full access with the addition of a dedicated turn lane. The Village is supportive of this change.”
h. “The present design for the Farwell Street intersection and the proposed access closures remain far too restrictive and problematic. The Village is not agreeable to the access lost to local businesses such as Kwik Trip and Culver’s. We are in receipt of the traffic study information shared on March 18, 2020 but more options need to be considered to assist in alleviating the issues at this location. The solution pushes all of the traffic problems from the highway onto the local road very close to the intersection for those two very active businesses. This is remains the largest disagreement we have with the current plans and needs to be further rectified. Access in all of these locations should be maintained. The present plan for Farwell Street and its interaction with US Highway 51 is not agreeable nor functionally realistic.”
i. “The Village understands WisDOT is working with Dane County on the planned bridge span and is making accommodations to ensure its width is appropriate to alleviate flooding concerns.”
j. “The Village still wishes to pursue, at least study, an underpass within the bridge spanning the Yahara River to provide for safe pedestrian access under the highway.”

C. Briefly describe how the issues identified above were addressed:

1. The preferred alternative, Alternative H, would keep two lanes on US 51 within Dunn and would improve intersections. Impacts associated with Alternative H are very similar to Alternative A impacts within the town except that Alternative H includes a bridge over Keenans Creek and slightly wider slope intercepts for reconstructed sections compared to pavement replacement sections.

   The preferred alternative, Alternative H, would not extend Colladay Point Drive (north) and would retain the existing driveway access onto US 51 for the four residential properties south of County B/AB.

   The relocated home is located on the east side of US 51, on top of the rock cut just north of Charles Lane. In order to provide turn lanes at the Charles Lane intersection, a median is needed, increasing the US 51 footprint and impacting the rock cut on the east side of US 51. Based on the planning-level design, the impact to the rock cut would approach the back of the home. It may be possible to reduce impacts during final design or investigate other options to safely avoid the relocation.

2. The items noted in Stoughton Resolution R-142-2015 were addressed as follows:

   a. Construction of a roundabout at the Hoel Avenue and Silverado Drive intersection is planned for 2021 as part of a separate project.
   b. Construction of a roundabout at the Roby Road intersection is planned for 2021 as part of a separate project.
   c. Option 1 (no parking between Spring Road and Railroad) is part of the preferred alternative.
   d. The current design of Alternative H includes a 10-foot-wide sidewalk on both sides of US 51 from WIS 138 (west) to County B (east). Bicycle accommodations are provided on paved shoulders.
   e. Pedestrian crossings will be improved in accordance with FHWA guidance. WisDOT will work with Stoughton to evaluate and determine appropriate pedestrian control during final design.
   f. A park and ride is not included as part of Alternative H. In the future, WisDOT may consider a park and ride near the US 51 corridor as a separate project.
   g. Stoughton will continue to be part of the study and will be involved during future design stages.

3. The items noted in Stoughton Resolution R-169-2019 were addressed as follows:

a. The 10-foot sidewalk requested in the resolution is proposed as part of Alternative H in the section between WIS 138 (west) and County B (east).
b. Pedestrian crossings will be improved in accordance with FHWA guidance. WisDOT will work with Stoughton to evaluate and determine appropriate pedestrian control during final design.
c. A park and ride is not included as part of Alternative H. In the future, WisDOT may consider a park and ride near the US 51 corridor as a separate project.
d. WisDOT will continue to coordinate with Stoughton during the remainder of the study and future design and construction phases.

4. The items noted in the October 15, 2019 McFarland letter were addressed as follows:

    a. At the Siggelkow Road ramp terminals, two options are being considered for the replacement of the existing stop signs. A planning-level ICE was performed and determined either roundabouts would be constructed, or signals would be installed. The public has been provided the opportunity to comment on these options following the PIMs held for the project.
    b. Potential pedestrian enhancement requests will be reviewed and included, if possible, during final design.
    c. WisDOT's current policy is that in areas where sidewalk does not currently exist the municipality would pay 20 percent of the cost for installation of new sidewalk.
    d. WisDOT is not allowed to condemn R/W for the purpose of including on-street bike lanes.
    e. The project will have a preliminary design completed as part of the environmental document phase. Stormwater management design is not included in preliminary design. In developing stormwater and drainage design during final design, the project would meet applicable state regulations and post-construction stormwater management requirements. Stormwater drainage standards that are outlined in the FDM will be followed. WisDOT will review existing flooding or drainage concerns within the roadway corridor.
    f. The speed limit would not be changed as part of the construction process. McFarland can request that WisDOT conduct a speed study in the area after construction is completed. The results of the speed study would indicate whether or not the speed limit should be changed.
    g. Yahara Drive would be a full access intersection in Alternative H. The right-in/right-out access for the two businesses noted follow WisDOT's access management practices used to improve safety. There are alternative driveway locations to access US 51 at Burma Road and Farwell Drive for the two businesses noted.
    h. The two proposed left-turn lanes from southbound US 51 onto Farwell Street are needed based on traffic volumes and left-turn movements. There is a tangent length and a taper length required along Farwell Street before the two eastbound lanes can be merged together. The current limits shown meet desirable design criteria.
    i. The design for the replacement of the Yahara River bridge in McFarland would meet all state and federal requirements. McFarland will consider providing the funding for a path crossing under the bridge.

5. The items noted in the October 23, 2020 McFarland letter are addressed as follows:

    a. At the Siggelkow Road ramp terminals, two options are being considered for the replacement of the existing stop signs. A planning-level ICE was performed and determined either roundabouts would be constructed or signals would be installed. The public has been provided the opportunity to comment on these options following the PIMs held for the project. WisDOT will consider public comments and accept input from McFarland.
    b. Potential pedestrian enhancement requests will be reviewed and included, if possible, during final design. WisDOT will consider public comments and accept input from McFarland in the final decision-making process.
    c. Comment acknowledged. According to current WisDOT policy, an 80 percent (State-Federal)/ 20 percent (Local) cost share is used for proposed new sidewalk within the project limits where none currently exists, and a 100 percent (State-Federal) cost is used for replacement of existing sidewalk impacted by the project.
    d. WisDOT is not allowed to condemn R/W for the purpose of including on-street bike lanes. The proposed roadway cross-section in McFarland requires acquiring R/W from some adjacent property owners. The addition of bike lanes on US 51 would widen the roadway cross-section, which would require additional R/W in those areas.

e. The project will have a preliminary design completed as part of the environmental document phase. Stormwater management design is not included in preliminary design. In developing stormwater and drainage design during final design, the project would meet applicable state regulations and post-construction stormwater management requirements. Stormwater drainage standards that are outlined in the FDM will be followed. WisDOT will review existing flooding or drainage concerns within the roadway corridor.
f. The speed limit would not be changed as part of the construction process. McFarland can request that WisDOT conduct a speed study in the area after construction is completed. The results of the speed study would indicate whether or not the speed limit should be changed.
g. Comment acknowledged.
h. The two proposed left-turn lanes from southbound US 51 onto Farwell Street are based on traffic volumes, left-turn movements, and signal phasing to avoid back-ups onto US 51 through lanes. Additional coordination will continue during final design.
i. Comment acknowledged.
j. WisDOT will provide information to assist McFarland with their study of a pedestrian underpass.

D. Indicate any unresolved issues or ongoing discussion:

Coordination with McFarland, ~~and~~ Stoughton, Dunn and Dane County is ongoing. The following unresolved issues or ongoing discussions will occur during final design:

- Specific pedestrian and bicycle accommodation considerations in both Stoughton and McFarland.
- ~~The intersection control type at the Siggelkow Road ramp terminals in McFarland.~~ At the Siggelkow Road ramp terminals, roundabouts and signals were considered to replace the existing stop signs. Based on a Phase 1 ICE analysis and public comments, roundabouts are the selected ramp terminal intersection improvement. The public was provided the opportunity to comment during multiple PIMs and during the public hearing in April 2021. During final design, a Phase 2 ICE analysis will be completed to confirm the selection of roundabouts.
- Stormwater management and design through McFarland.
- Improvements or reconstruction limits on Farwell Street in McFarland.
- Feasibility of a pedestrian underpass or portage at the Yahara River bridge in McFarland.
- WisDOT and Dunn will coordinate regarding any potential new conservation easements in the town of Dunn.

13.0 Public Hearing Requirement

☒ This document is an Environmental Assessment.
- ☒ A Notice of Opportunity to Request a Public hearing **will be** published, or,
- ☐ A Public Hearing **will be** held.

☐ This document is Type 2c Categorical Exclusion / Environmental Report.
- ☐ A substantial amount of right-of-way **will** be acquired.
- ☐ The proposed action **will** substantially change the layout or functions of connecting roadways or of the facility being improved.
- ☐ The proposed action **will** have a substantial adverse impact on abutting property.
- ☐ The proposed action **will** have other substantial social, economic, environmental effects.
- ☐ The department has made a determination that a public hearing is in the public interest.

☐ None of the above boxes have been checked, it has therefore been concluded that a Notice of Opportunity to Request a Public Hearing **will not** be published and a Public Hearing **is not** required, or,

☒ A Notice of Opportunity to Request a Public hearing **will be** published.

☐ A Public Hearing **will be** held.

Note: For federally-funded projects, FHWA signature of this environmental document indicates concurrence with the department's Public Hearing requirement determination.

A public hearing was requested and held. The hearing included a virtual component on April 20, 2021 and an in-person component held on April 21, 2021 in Stoughton. The public hearing details and a summary of comments and responses are in Addendum A, provided after the signature page of this EA.

BASIC SHEET 4–TRAFFIC SUMMARY MATRIX

Table 1–US 51 East of Stoughton	US 51–I-39/90 to Stoughton ALTERNATIVES			
	No Build	**A**	**B**	**H**
TRAFFIC VOLUMES				
Base Yr. AADT Yr. 2014	4,200	4,200	4,200	4,200
Const. Yr. AADT Yr. 2025	4,860	4,860	5,100	4,860
Const. Plus 10 Yr. AADT Yr. 2035	5,440	5,450	5,900	5,450
Design Yr. AADT Yr. 2045	6,030	6,040	6,700	6,040
DHV Yr. 2045	402	402	577	402
TRAFFIC FACTORS				
K [☒ 30/☐ 100/☐ 200] (%)	11.3	11.3	14.6	11.3
D (%)	59	59	59	59
Design Year T (% of AADT)	5.4	5.4	3.9	5.4
T (% of DHV)	4.6	4.6	3.3	4.6
Level of Service (worst of AM/PM roadway operations between Washington Road and Tower Drive, northbound and southbound)	D / D	C / B	D / B	D / B
SPEEDS				
Existing Posted	55	55	55	55
Future Posted	55	55	55	55
Design Year Project Design Speed	55	60	60	60
OTHER *(specify)*				
P (% of ADT)	12.8	12.8	19.0	12.8
K_8 (% OF ADT)				
Other				

AADT = Annual Average Daily Traffic
K [$_{30/100/200}$] : K_{30} = Interstate, K_{100} = Rural, K_{250} = Urban, % = AADT in DHV
T = Trucks
DHV = Design Hourly Volume
D = % DHV in predominate direction of travel
P = % AADT in peak hour
K_8 = % AADT occurring in the average of the 8 highest consecutive hours of traffic on an average day (required only if CO analysis required).

The traffic data in this table is based on 2012 roadway traffic counts and forecasts prepared in 2015 for US 51 between County A and County W west of I-39/90 (Site ID 130982). Two count sites were available east of Stoughton. The most representative count (Site ID 130982) was used to report traffic data. Intersection traffic counts for the study were collected in 2014. The Base Year of the traffic analysis performed for the study is 2014 to be consistent with the intersection counts.

Table 2–US 51 in Stoughton	US 51–Stoughton ALTERNATIVES			
	No Build	**A**	**B ***	**H**
TRAFFIC VOLUMES				
Base Yr. AADT Yr. 2014	15,100	15,100	15,100	15,100
Const. Yr. AADT Yr. 2025	16,380	16,380	16,500	16,380
Const. Plus 10 Yr. AADT Yr. 2035	17,500	17,510	17,700	17,510
Design Yr. AADT Yr. 2045	18,630	18,630	18,900	18,630
DHV Yr. 2045	1,242	1,242	1,249	1,242
TRAFFIC FACTORS				
K [☒ 30/☐ 100/☐ 200] (%)	11.3	11.3	11.2	11.3
D (%)	59	59	59	59
Design Year T (% of AADT)	5.4	5.4	5.4	5.4
T (% of DHV)	4.6	4.6	4.6	4.6
Level of Service (worst of AM/PM operations at Main Street and South 4th Street intersection)	E	E	--	B
SPEEDS				
Existing Posted	25	25	25	25
Future Posted	25	25	25	25
Design Year Project Design Speed	25	30	30	30
OTHER *(specify)*				
P (% of ADT)	12.8	12.8	12.6	12.8
K_8 (% OF ADT)				
Other				

AADT = Annual Average Daily Traffic
DHV = Design Hourly Volume
K [$_{30/100/200}$] : K_{30} = Interstate, K_{100} = Rural, K_{250} = Urban, % = AADT in DHV
D = % DHV in predominate direction of travel
T = Trucks
P = % AADT in peak hour
K_8 = % AADT occurring in the average of the 8 highest consecutive hours of traffic on an average day (required only if CO analysis required).

The traffic data in this table is based on 2012 traffic counts and forecasts prepared in 2015 for US 51 between Page Street and WIS 138 (south) in Stoughton (Site ID 130895). Intersection traffic forecasts were not prepared for Alternative B in this US 51 EA; therefore, intersection LOS is not reported in this table. Intersection traffic counts for the study were collected in 2014. The Base Year of the traffic analysis performed for the study is 2014 to be consistent with the intersection counts.

* The data in the traffic matrix for Alternative B in Stoughton characterizes conditions on existing US 51 through Stoughton.

Table 3–US 51 between Stoughton and McFarland	US 51–Stoughton to McFarland ALTERNATIVES			
	No Build	**A**	**B**	**H**
TRAFFIC VOLUMES				
Base Yr. AADT Yr. 2014	11,100	11,100	11,100	11,100
Const. Yr. AADT Yr. 2025	12,300	12,290	12,600	12,290
Const. Plus 10 Yr. AADT Yr. 2035	13,350	13,330	13,800	13,330
Design Yr. AADT Yr. 2045	14,400	14,370	15,100	14,370
DHV Yr. 2045	960	958	1,078	958
TRAFFIC FACTORS				
K [☒ 30/☐ 100/☐ 200] (%)	11.3	11.3	11.9	11.3
D (%)	59	59	60	59
Design Year T (% of AADT)	5.4	5.4	8.5	5.4
T (% of DHV)	4.6	4.6	7.1	4.6
Level of Service (worst of AM/PM roadway operations between County B (east) and Lake Kegonsa Road, northbound and southbound)	E / E	E / E	A / A	E / E
SPEEDS				
Existing Posted	55	55	55	55
Future Posted	55	55	55	55
Design Year Project Design Speed	55	60	70	60
OTHER *(specify)*				
P (% of ADT)	12.8	12.8	14.5	12.8
K_8 (% OF ADT)				
Other				

AADT = Annual Average Daily Traffic
DHV = Design Hourly Volume
K [$_{30/100/200}$] : K_{30} = Interstate, K_{100} = Rural, K_{250} = Urban, % = AADT in DHV
D = % DHV in predominate direction of travel
T = Trucks
P = % AADT in peak hour
K_8 = % AADT occurring in the average of the 8 highest consecutive hours of traffic on an average day (required only if CO analysis required).

The traffic data in this table is based on 2012 traffic counts and forecasts prepared in 2015 for US 51 between County B (east) and Lake Kegonsa Road between Stoughton and McFarland (Site ID 130427). Intersection traffic counts for the study were collected in 2014. The Base Year of the traffic analysis performed for the study is 2014 to be consistent with the intersection counts.

Table 4–US 51 in McFarland	US 51–McFarland ALTERNATIVES			
	No Build	**A**	**B**	**H**
TRAFFIC VOLUMES				
Base Yr. AADT Yr. 2014	19,000	19,000	19,000	19,000
Const. Yr. AADT Yr. 2025	20,550	20,540	21,000	20,530
Const. Plus 10 Yr. AADT Yr. 2035	21,950	21,930	22,700	21,930
Design Yr. AADT Yr. 2045	23,360	23,330	24,500	23,320
DHV Yr. 2045	1,577	1,555	1,619	1,555
TRAFFIC FACTORS				
K [☒ 30/☐ 100/☐ 200] (%)	11.3	11.3	11.2	11.3
D (%)	59	59	59	59
Design Year T (% of AADT)	5.4	5.4	5.4	5.4
T (% of DHV)	4.6	4.6	4.6	4.6
Level of Service (worst of AM/PM operations at Farwell Street (County MN) Intersection)	C	C	--	C
SPEEDS				
Existing Posted	40	40	40	40
Future Posted	40	40	40	40
Design Year Project Design Speed	40	45	45	45
OTHER *(specify)*				
P (% of ADT)	12.8	12.8	12.6	12.8
K_8 (% OF ADT)				
Other				

AADT = Annual Average Daily Traffic
DHV = Design Hourly Volume
K [$_{30/100/200}$] : K_{30} = Interstate, K_{100} = Rural, K_{250} = Urban, % = AADT in DHV
D = % DHV in predominate direction of travel
T = Trucks
P = % AADT in peak hour
K_8 = % AADT occurring in the average of the 8 highest consecutive hours of traffic on an average day (required only if CO analysis required).

The traffic data in this table is based on 2012 traffic counts and forecasts prepared in 2015 for US 51 just north of Farwell Street (County MN) in McFarland (Site ID 130577). Intersection traffic forecasts were not prepared for Alternative B in this US 51 EA; therefore, intersection level of service is not reported in this table. Intersection traffic counts for the study were collected in 2014. The Base Year of the traffic analysis performed for the study is 2014 to be consistent with the intersection counts.

1. Identify the agency that generated the data included in the Traffic Summary Matrix.

   The WisDOT Traffic Forecasting Section generated the traffic volume data referenced in the Traffic Summary Matrices. The project team completed the LOS analysis.

2. Identify the date (month/year) that the traffic forecast data included in the Traffic Summary Matrix was developed.

   The No Build, Alternative A, and Alternative H roadway traffic forecasts reports were each completed in February 2015. The Alternative B roadway traffic forecast report was completed in June 2015. The roadway traffic forecast reports for Alternatives C and D were completed in June 2015 and July 2015, respectively; however, these are not summarized in the Traffic Summary Matrices. Intersection traffic forecast reports were completed in May 2015 for the No Build and Alternative H. The roadway forecasts completed for this US 51 EA are included in Appendix C.

   The truck data cited in the Traffic Summary Matrices is based on the information provided in the roadway traffic forecast reports.

   Since the completion of the traffic forecasts in 2015, more recent roadway traffic count data (collected through WisDOT's traffic count program in 2018) has become available along US 51, updates have been made to the WisDOT TPM regarding traffic forecasting procedures, and updates have been made to the version of the Demand Model used in the forecasting effort. In light of the newer traffic data available along the corridor, the project team coordinated with WisDOT Traffic Forecasting Section and FHWA to assess the need to update traffic forecasts for the study. The assessment included a review of Base Year traffic volumes, a comparison between versions of the Demand Model, a review of planned development, and the potential effect of traffic data related to alternatives analysis. Based on this assessment, WisDOT and FHWA staff determined that updated traffic forecasts were not needed for this US 51 EA. The July 16, 2019 technical memorandum, Base Year Traffic Data Review, describes the traffic data assessment and is included in Appendix C.

3. Identify the methodology and/or computer program(s) used to develop the data included in the Traffic Summary Matrix.

   LOS is reported at intersections using HCM 2010 reports from Synchro 8 modeling software. The US 51 and Farwell Street (County MN) intersection operations are reported for the McFarland area and the US 51/Main Street and South 4th Street intersection operations are reported for the Stoughton area.

   LOS is reported for the US 51 mainline between Stoughton and McFarland and the US 51 mainline between I-39/90 and Stoughton using HCS 2010. Between Stoughton and McFarland, a 2-lane highway segment analysis was performed for the No Build, Alternative A, and Alternative H, and a 4-lane basic freeway segment analysis was performed for Alternative B. Between I-39/90 and Stoughton, a 2-lane highway segment analysis was performed for each alternative, which includes passing lanes for US 51 southbound in Alternatives A, B, and H. For the base conditions roadway operations analysis at each location, 2014 traffic volumes were used for the operations analysis to be consistent with the intersection operations analysis. The 2014 traffic volumes used in the analysis were determined by interpolating between the 2012 WisDOT roadway traffic count AADT and the 2045 No Build AADT at each location.

4. If a metric other than AADT is used for describing traffic volumes such as Average Annual Weekday Traffic (AWDT), explain why a different metric was used and how it compares to AADT.

   AADT volumes from the traffic forecast reports were used to complete the Traffic Summary Matrix.

BASIC SHEET 5–AGENCY AND TRIBAL COORDINATION

During the prior environmental study phase of this project a CP and an IAM were developed and distributed to federal, state, and local agencies, local units of government, and American Indian Tribes that had expressed an interest in the project for review and comment. The CP and IAM were prepared in compliance with Section 139 of Title 23 of the United States Code (USC) to describe the steps in the project's environmental review process. Portions in the table below reference correspondence and comments related to the CP and IAM from the previous environmental study phase. This correspondence is still relevant to this EA because it demonstrates early coordination related to alternatives considered in this EA.

Agency	Coordination Required?	Correspondence Attached?	Comments
WisDOT			
SW Region Real Estate Section	☐ No	N/A	Coordination is not required because there will be no fee, PLE or TLE acquisitions.
	☒ Yes	☒ Yes ☐ No	Coordination has been completed. Project effects and relocation assistance have been addressed. The executive summary of the Conceptual Stage Relocation Plan is attached as Appendix I.
Bureau of Aeronautics	☒ No	N/A	Coordination is not required. The project is not located within 5 miles of a public or military use airport.
	☐ Yes	☐ Yes ☐ No	Coordination has been completed and project effects have been addressed. Explain:
Railroads and Harbors Section	☐ No	N/A	Coordination is not required because no railways or harbors are in or planned for the project area.
	☒ Yes	☐ Yes ☒ No	Coordination with the Office of the Commissioner of Railroads (OCR) may be necessary for this project. If necessary, OCR coordination would occur during final design, prior to construction, when the OCR has an action to act on. Coordination will be required at two locations: for roadway improvements at the existing US 51/WSOR crossing on East Main Street in Stoughton and for the US 51 bridge replacement over Taylor Road and the WSOR corridor in McFarland.
STATE AGENCY			
Natural Resources (WDNR)	☒ Yes	☒ Yes ☐ No	**Coordination with WDNR from 2004 to 2012 occurring during the prior environmental study phase is summarized below.** **1/7/04** WDNR responded to the Draft Needs Assessment and identified areas of natural resources, rare species and natural communities, wetlands, and WDNR lands. WDNR indicated support for consideration of alternative modes of transportation. **12/18/08** WDNR accepted invitation to be a cooperating and participating agency and provided concurrence with IAM document. **1/6/09** WDNR sent comments on the methodology for air quality analysis. **1/15/10** WDNR sent Impact Comparison Letter for Stoughton Bypass Alternatives. Letter indicated the County B On Alignment, County B South Alignment, and Spring Road East are "viable alternatives" while the County N and Spring Road West alternatives would be difficult to support. **1/20/10** WDNR sent property acquisition information and Section 4(f) Applicability Determination letter summarized Section 4(f) and Section 6(f) site applicability. Concurred with

Agency	Coordination Required?	Correspondence Attached?	Comments
			FHWA Section 4(f) determination and specified that NR 103 Wetland Water Quality Standards apply to all sites. **9/16/10 and 9/20/10** WDNR sent emails with updated Threatened and Endangered Species information (emails and maps are not included in the appendices because they contain specific Threatened and Endangered Species information). **1/18/11** WDNR sent comments for the previous environmental study phase build alternatives being considered at that time, including Alternatives A through D and Stoughton Bypass Alternatives. Included comments on wetlands and waterways, protection of Land Legacy areas, wildlife crossings, endangered and threatened resources, and Section 4(f) and Section 6(f) determinations. **4/20/11** WDNR sent concurrence with dismissal of Alternatives C and D. **10/26/11** WDNR sent a letter indicating no major concerns that would prohibit WisDOT from development of the Terminal Drive/Voges Road intersection reconfiguration. **3/1/12** WDNR sent concurrence with dismissal of the Spring Road West and County N alignments of the Stoughton Bypass. **Coordination with WDNR related to the improvements documented in this EA is summarized below.** **11/13/14** WDNR participated in an agency meeting where the project update highlighted the introduction of Alternative H. **6/11/15** WDNR sent an email indicating coordination with the USFWS is not needed related to potential project impacts at Babcock Park. Babcock Park received Federal Dingell-Johnson Sport Fish Restoration Act funds for park improvements. The project temporarily impacts the use of the trail that was constructed with SRF funds. Because the impact is temporary, additional coordination with USFWS is not required. **7/7/15** WDNR sent the Initial Project Review Letter for the US 51 EA. The letter addressed project-specific resource concerns and construction site considerations. **9/29/15** WDNR sent an email clarifying its request for threatened and endangered species surveys and invasive plant species issues. **12/9/15** WDNR sent an email summarizing the result of its December 9, 2015 review of the National Heritage Inventory (NHI). **1/22/16** WDNR sent an email clarifying that endangered species surveys should be completed before or during the final design process, and early enough in the process to fully consider and not preclude avoidance and mitigation measures for any identified listed species. **2/17/16** WDNR participated in a Section 106 Consultation Meeting. **3/16/16** Letter to WDNR stated WisDOT determined that the US 51 Corridor Study should conclude with the improvements documented in this EA. The letter also stated that WisDOT and FHWA determined preparation of a Tier 1 EIS for long-term improvements should not be started at

Agency	Coordination Required?	Correspondence Attached?	Comments
			this time because funding for improvements associated with a Tier 1 EIS are outside the planning horizon. **8/22/19** WDNR participated in the TAC meeting. **9/4/19** WDNR sent an Initial Project Review Letter to update and supplement previously provided comments. The letter addressed project-specific resource concerns and construction site considerations. **4/30/20** WDNR participated in a meeting with WisDOT and the Groundswell Conservancy to discuss impacts to the Brost Addition Section 4(f) property and potential mitigation measures. **2/10/21** WDNR email acknowledged the receipt of the Notice of Opportunity to Request a Public Hearing and Notice of Availability of the EA. **5/14/21** WDNR letter providing concurrence with the finding of *de minimis* impact for the Brost Addition. **2020–Ongoing** Meetings with WDNR and Groundswell Conservancy to discuss the project impacts at the Brost Addition and mitigation measures. No wetland delineation concurrence has been received. The Wetland Delineation Report was mailed to WDNR and the United States Army Corps of Engineers (USACE) on December 2, 2015. and will be updated during permitting. This approach is not an ongoing discussion item and is acceptable to the USACE as indicated in the correspondence in Appendix H (starting on page H-6).
State Historic Preservation Office (SHPO)	☒ Yes	☒ Yes ☐ No	**Section 106 submittal in October 2013** (applicable information is included in Appendix K). This Section 106 submittal was for the prior environmental study phase (ID 5845-06-02) and included the Section 106 form, Architecture History Survey Form Reports, archaeological field survey, nine Determinations of Eligibility (DOE), and archaeological Phase I and Phase II reports for the study area. **11/13/14** SHPO participated in an agency meeting where the project update highlighted the introduction of Alternative H. **Section 106 submittal in October 2015** (applicable information is included in Appendix K). This Section 106 submittal was for the US 51 EA (ID 5845-06-03) and referred to documentation in the October 2013 submittal that SHPO had previously reviewed and included the Section 106 form, an archaeological investigation report, and one DOE. **2/17/16** SHPO participated in a Section 106 Consultation Meeting. **5/14/19** The Wisconsin Historical Society (WHS) participated in an interagency meeting where WisDOT provided a project update and announced the re-initiation of the US 51 Corridor Study. **Section 106 submittal in January 2020** (applicable information is included in Appendix K).

Agency	Coordination Required?	Correspondence Attached?	Comments
			This Section 106 submittal was for the US 51 EA (ID 5845-06-03) and referred to documentation in the previous submittals and included an amended Section 106 form, an Architecture/History Survey Update, and archaeological survey and records review.
Agriculture (DATCP)	☒ Yes ☐ No	☒ Yes ☐ No	**11/13/14** DATCP participated in an agency meeting where the project update highlighted the introduction of Alternative H. **9/4/15** The Agriculture Impact Notice was submitted to DATCP on September 4, 2015. DATCP prepared an AIS dated February 11, 2016. The AIS provided recommendations for mitigating potential adverse impacts to agriculture associated with the project. See Appendix J. **5/14/19** DATCP participated in an interagency meeting where WisDOT provided a project update and announced the re-initiation of the US 51 Corridor Study. **10/16/19** DATCP provided a letter indicating it reviewed the updated Alternative H farmland impact data and determined an addendum to the AIS would not be prepared. **1/5/21** DATCP email indicated no comment on the EA.
FEDERAL AGENCY			
USACE	☒ Yes ☐ No	☒ Yes ☐ No	**Coordination with the USACE from 2008 to 2012 occurring during the prior environmental study phase is summarized below.** **11/13/08** In a letter, the USACE agreed to serve as a participating and cooperating agency and provided concurrence with the purpose and need statement. USACE requested that FHWA serve as the federal lead agency for Endangered Species Act Section 7 and Section 106 requirements. **1/12/10** Email provided comments on the "Stoughton Bypass" alternatives. **3/16/11** The USACE provided concurrence with dismissal of Alternatives C and D. **2/14/12** Provided concurrence with dismissal of the Spring Road West and County N alignments of the Stoughton Bypass. **Coordination with the USACE related to the improvements documented in this EA is summarized below.** **11/13/14** USACE participated in an agency meeting where the project update highlighted the introduction of Alternative H. **9/3/15** Email indicated no objection to evaluation of near-term improvements and the use of an EA environmental document. No wetland delineation concurrence has been received. The Wetland Delineation Report was mailed to WDNR and USACE on December 2, 2015. and will be updated during permitting. This approach is not an ongoing discussion item and is acceptable to the USACE as indicated in the correspondence in Appendix H (starting on page H-6). **2/17/2016** USACE participated in a Section 106 Consultation Meeting. **3/16/16** Letter to USACE stated WisDOT determined that the US 51 Corridor Study should

Agency	Coordination Required?	Correspondence Attached?	Comments
			conclude with the improvements documented in this EA. The letter also stated that WisDOT and FHWA determined preparation of a Tier 1 EIS for long-term improvements should not be started at this time because funding for improvements associated with a Tier 1 EIS are outside the planning horizon. **5/14/19** USACE participated in an agency meeting where WisDOT provided a project update and announced the re-initiation of the US 51 Corridor Study. **9/2/20** USACE participated in an agency meeting where WisDOT provided a project update. **2/10/21** Email from USACE provided concurrence with the purpose and need, the identification of Alternative H as the Preferred Alternative, and the FONSI determination. The email indicated that unavoidable wetland impacts would be evaluated by the USACE under a Section 404 individual permit. USACE also concurred with the conceptual compensatory mitigation proposal of debiting wetland credits from the WisDOT World Dairy Center Wetland Mitigation Bank to offset the loss of wetland functions from the project.
U.S. Fish and Wildlife Service (USFWS)	☒ Yes ☐ No	☒ Yes ☐ No	**Coordination with the USFWS from 2006 to 2012 occurring during the previous environmental study phase is summary zed below.** **2/16/06** USFWS letter to WisDOT provided concurrence with the draft purpose and portions of the draft need statement. USFWS supported further evaluation and refinement of the preliminary alternatives presented. **11/20/08** USFWS declined the invitation to be a participating agency. **Coordination with the USFWS related to the improvements documented in this EA is summarized below.** **5/13/19** USFWS participated in an interagency meeting where WisDOT provided a project update and announced the re-initiation of the US 51 Corridor Study. **6/26/19** Programmatic informal consultation for the northern long-eared bat (NLEB) was completed. A programmatic biological opinion concurrence verification letter was obtained and a May Affect, Not Likely to Adversely Affect determination was reached through application of avoidance and minimization measures (AMMs). **10/10/19** Official Species List was obtained. **1/30/20** Consultation for the rusty patched bumble bee (RPBB) was completed. USFWS provided concurrence with a May Affect, Not Likely to Adversely Affect determination. **9/2/20** USFWS participated in an agency meeting where WisDOT provided a project update. **10/19/20** An updated Official Species List was obtained. See Appendix L for Section 7 documentation.
Natural Resources Conservation Service (NRCS)	☒ Yes ☐ No	☒ Yes ☐ No	**11/13/14** NRCS participated in an agency meeting where the project update highlighted the introduction of Alternative H. **10/8/15** Received the completed Farmland Conversion Rating Form.

Agency	Coordination Required?	Correspondence Attached?	Comments
U.S. National Park Service (NPS)	☒ Yes ☐ No	☐ Yes ☒ No	**11/13/14** NPS participated in an agency meeting where the project update highlighted the introduction of Alternative H.
U.S. Coast Guard (USCG)	☐ Yes ☒ No	☐ Yes ☒ No	No coordination is required.
U.S. Environmental Protection Agency (USEPA)	☒ Yes ☐ No	☒ Yes ☐ No	**Coordination with the USEPA from 2006 to 2012 occurring during the former EIS phase is summarized below.** **7/18/06** USEPA letter to WisDOT commented on the draft purpose and need; concurrence was not provided. **2/23/09** USEPA letter to WisDOT accepted the invitation to be a participating agency, provided concurrence with the updated purpose and need, and indicated no comment on the IAM. The letter indicated the CP should include explicit NEPA/404 concurrence points to follow the NEPA/404 merger process. **3/10/11** USEPA provided concurrence with dismissal of Alternatives C and D. **1/27/12** USEPA provided concurrence with dismissal of the Spring Road West and County N alignments of the Stoughton Bypass. **10/15/12** USEPA email indicated no comment on the IAM and CP. **Coordination with the USEPA related to the improvements documented in this EA is summarized below.** **11/13/14** USEPA participated in an agency meeting where the project update highlighted the introduction of Alternative H. **8/26/15** USEPA letter provided comments relating to water quality, wetlands, stormwater management, climate change, consultation records, reuse of construction materials, and reseeding as follows: ▪ USEPA noted the EA should describe how the proposed action may affect Clean Water Act (CWA) Section 303(d) listed water bodies and their listing status as impaired. They recommend that this section of the document discuss current impairments, and how the proposed action may affect, either positively or detrimentally, the impairment. Discuss avoidance first, then demonstration of impact minimization, then mitigation for unavoidable, minimized impacts. A discussion on proposed mitigation for unavoidable, minimized stream impacts should be included in the EA, if applicable. ▪ USEPA recommended the project account for increased storm frequency and intensity in the design of this project. USEPA also recommends the project be constructed to have "no net gain" for stormwater surface discharge off-site. ▪ USEPA requested including a summary discussion of climate change and reasonably foreseeable climate change impacts relevant to the project, estimate greenhouse gas (GHG) emissions, describe measure to reduce GHG emissions, and other related requests. ▪ USEPA recommended attaching consultation documents regarding historic and cultural resources, wetlands, and

Agency	Coordination Required?	Correspondence Attached?	Comments
			federal and state threatened and endangered species with the EA. Requested a list of agency contacts in the EA. ▪ USEPA recommended pavement and structural materials be reclaimed for future use for this project, or elsewhere. USEPA also recommended reuse or recycling of other used construction material, such as metals. ▪ USEPA recommended re-seeding exposed soil using native grasses that do not need to be maintained. **3/16/16** Letter to USEPA stated WisDOT determined that the US 51 Corridor Study should conclude with the improvements documented in this EA. The letter also stated that WisDOT and FHWA determined preparation of a Tier 1 EIS for long-term improvements should not be started at this time because funding for improvements associated with a Tier 1 EIS are outside the planning horizon. **5/14/19** USEPA participated in an agency meeting where WisDOT provided a project update and announced the re-initiation of the US 51 Corridor Study. **1/21/21** Letter from USEPA provided concurrence on the purpose and need and the range of alternatives carried forward and stated the agency had no additional comments.
Advisory Council on Historic Preservation (ACHP)	☒ Yes ☐ No	☒ Yes ☐ No	The ACHP was notified that this undertaking will adversely affect a historic property (Barber Campsite). The ACHP responded with a letter dated March 19, 2020 indicating ACHP participation in the consultation is not needed.
Other (identify)	☐ Yes ☐ No	☐ Yes ☐ No	
SOVEREIGN NATIONS			

Agency	Coordination Required?	Correspondence Attached?	Comments
American Indian Tribes[1]	☒ Yes	☒ Yes	**Coordination with American Indian Tribes from 2008 to 2013 occurring during the prior environmental study phase is summarized below.** **10/10/08** Invitations to be Participating Agency were submitted to American Indian Tribes and no responses have been received. **4/22/09** WisDOT sent newsletter announcing the PIM on May 19 and 20, 2009. **3/23/11** WisDOT sent a newsletter announcing the PIM on April 14, 2011. **5/12/11** Email from Ho-Chunk Nation stating Ho-Chunk representatives do not need to be on-site during Phase II investigation. **8/15/11** Tribes were invited to an Agency Coordination meeting and provided with a project update with the invitation letter. No tribes responded to the invitation or attended the Agency Coordination meeting held on August 25, 2011. **10/3/12** WisDOT sent a newsletter announcing the PIM on October 15, 2012. **9/16/13** Letters were sent to American Indian Tribes for updates to the project scope. **Coordination with American Indian Tribes related to the improvements documented in this EA is summarized below.** **7/10/15** A newsletter was sent announcing the August 26, 2015 PIM. **7/22/15** Letters were sent to American Indian Tribes for updates to the project scope. **2/17/16** Ho-Chunk Nation participated in a Section 106 Consultation Meeting. **8/13/19** Letters were sent to American Indian Tribes providing a project update. **9/9/19** A newsletter was sent announcing the September 26, 2019 PIM. **4/21/20** Ho-Chunk Nation signed the MOA. **10/22/20** A notice was sent to American Indian Tribes announcing the October 6, 2020 virtual PIM. The comment period for the American Indian Tribes was extended to November 6, 2020. **1/8/21** Email from Ho-Chunk Nation asked to receive the archaeological reports and reviews, copies of SHPO/Office of State Archaeologist (OSA) permits and review documents, and to remain as a consulting party throughout the duration of the proposed undertaking.

[1] Tribes invited to be participating agencies during the previous environmental study phase include Great Lakes Inter-Tribal Council, Bad River Band of Lake Superior Chippewa Indians, Forest County Potawatomi Community of Wisconsin, Ho-Chunk Nation, Lac Vieux Desert Band of Lake Superior Chippewa Indians, Menominee Indian Tribe of Wisconsin, Prairie Band Potawatomi Nation, Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin, Sac & Fox Nation of Missouri in Kansas and Nebraska, and Sac & Fox Nation of Oklahoma. During EA coordination through 2019, the Sac and Fox Nation of Mississippi in Iowa tribe was included with the list of tribes. For the October 2020 PIM coordination, all tribes were contacted.

BASIC SHEET 6–ALTERNATIVES COMPARISON MATRIX

Cost estimates are based on either FY 2016 or FY 2020 costs, depending on the alternative and when the estimate was prepared. Additional agency or public involvement may change these estimates in the future.

PROJECT PARAMETERS	Unit of Measure	ALTERNATIVES			
		No Build [1]	A	B	H
Project Length	Miles	--	17.7	17.7	17.7
PRELIMINARY COST ESTIMATE [2]		**2016 (FY)**	**2016 (FY)**	**2016 (FY)**	**2020 (FY)**
Construction	Million $	28	97	294 to 306	166.6
Real Estate	Million $	0	2	10 to 15	7.5
TOTAL	Million $	28	99	304 to 321	174.1
TOTAL (YOE)	Million $	--	--	--	203.4
LAND CONVERSIONS					
Total Area Converted to ROW	Acres	0	59	272 to 299	66
REAL ESTATE					
Number of Farms Affected	Number	0	37	159	37
Total Area Required from Farm Operations	Acres	0	34.1	183 to 223	45.7
AIS Required		☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Farmland Rating	Score	--	172	197	169
Total Buildings Required	Number	0	1	18 to 26	2
Housing Units Required	Number	0	1	14 to 20	2
Commercial Units Required	Number	0	0	2	0
Other Buildings or Structures Required	Number & Type	0	0	2 to 4 Barns and Community Facilities	0
ENVIRONMENTAL FACTORS					
Indirect Effects		☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	☐ Yes ☒ No
Cumulative Effects		☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	☐ Yes ☒ No
Environmental Justice Populations		☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
National Register Eligible Historic Structures in the Area of Potential Effect	Number	0	2 Sites 5 Historic Districts	4 Sites 5 Historic Districts	2 Sites 5 Historic Districts
National Register Eligible Archeological Sites in the Area of Potential Effect	Number	0	5	6	5
Burial Site Protection *(authorization required)*		☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
106 MOA Required		☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Section 4(f) Evaluation Required		☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Section 6(f) Land Conversion Required		☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	☐ Yes ☒ No
Floodplain		☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Unique Upland Habitat Identified		☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No	☐ Yes ☒ No
Total Wetlands Filled	Acres	0	8.2	8.4 to 9.4	8.4
Stream Crossings	Number	0	6	7	6
Threatened/Endangered Species		☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Noise Analysis Required Receptors Impacted	Number	☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No 69 to 78 [3]	☒ Yes ☐ No 38
Contaminated Sites	Number	0	25	36 to 40	76

[1] The estimated cost of routine maintenance through the design year should be included in the "Construction" box for the No Build Alternative.

[2] Only fiscal year 2016 costs were estimated for the No Build Alternative, Alternative A, and Alternative B. A cost risk analysis was completed to arrive at an estimated year of expenditure (YOE) project cost for the preferred alternative (Alternative H).

[3] The noise analysis for Alternative B was completed prior to dismissal of the alternative. The traffic forecast used at that time had higher traffic volumes than the current traffic forecast and the analysis represents a worst case scenario for Alternative B.

BASIC SHEET 7–EIS SIGNIFICANCE CRITERIA

In determining whether a proposed action is a "major action significantly affecting the quality of the human environment," the proposed action must be assessed in light of the following criteria (1) if significant impact(s) will result, the preparation of an environmental impact statement (EIS) should commence immediately. Indicate whether the issue listed below is a concern for the proposed action or alternative and (2) if the issue is a concern, explain how it is to be addressed or where it is addressed in the environmental document.

1. Will the proposed action stimulate substantial indirect environmental effects?

   ☒ No
   ☐ Yes–Explain or indicate where addressed.

2. Will the proposed action contribute to cumulative effects of repeated actions?

   ☒ No
   ☐ Yes–Explain or indicate where addressed.

3. Will the creation of a new environmental effect result from this proposed action?

   ☒ No
   ☐ Yes–Explain or indicate where addressed.

4. Will the proposed action impact geographically scarce resources?

   ☒ No
   ☐ Yes–Explain or indicate where addressed.

5. Will the proposed action have a precedent-setting nature?

   ☒ No
   ☐ Yes–Explain or indicate where addressed.

6. Is the degree of controversy associated with the proposed action high?

   ☒ No
   ☐ Yes–Explain or indicate where addressed.

7. Will the proposed action be in conflict with official agency plans or local, state, tribal, or national policies, including conflicts resulting from potential effects of transportation on land use and transportation demand?

   ☒ No
   ☐ Yes–Explain or indicate where addressed.

BASIC SHEET 8–ENVIRONMENTAL COMMITMENTS

Attach a copy of this page to the design study report and the PS&E submittal package.

Factor Sheet	**Commitment** (if none, include "No special or supplemental commitments required.")
A-1 General Economics	No special or supplemental commitments required.
A-2 Business	**Commitments made**: Access to businesses will be maintained during construction. Local and emergency access will be provided during construction. Driveways and access points will be provided for reasonable access to affected properties. The WisDOT design engineer will incorporate this commitment into the project plans. The WisDOT design engineer will be responsible for developing the Transportation Management Plan and coordinating with local governments. The contractor will work with landowners to ensure that access, where needed, is available. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction.
A-3 Agriculture	**Commitments made**: Access will be maintained to field entrances during construction. WisDOT will consult with landowners on the locations of any new or relocated access points. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of the commitments during construction.
B-1 Community or Residential	**Commitments made**: Local, school bus, and emergency access will be provided during construction. Driveways and access points will be provided for reasonable access to affected properties. The WisDOT design engineer will incorporate this commitment into the project plans. The WisDOT design engineer will be responsible for developing the Transportation Management Plan and coordinating with local governments. The contractor will work with landowners to ensure that access, where needed, is available. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction. Relocation assistance will be provided by WisDOT as specified in the project's Conceptual Stage Relocation Plan (CSRP). WisDOT Real Estate staff will ensure fulfillment of this commitment.
B-2 Indirect Effects	No special or supplemental commitments required.
B-3 Cumulative Effects	No special or supplemental commitments required.
B-4 Environmental Justice	No special or supplemental commitments required.
B-5 Historic Resources	**Commitments made:** With the current design, sites with historic structures and historic districts will be avoided. The WisDOT design engineer will be responsible for communicating the boundaries of historic resources and the design aspects (including typical section, and vertical and horizontal alignments) used during preliminary design/environmental documentation phase to avoid impacting the historic resources. The historic resources include the following: Maple Grove School, Olson-Hemsing Farmstead, and five historic districts in downtown Stoughton. The proposed action would require no fee R/W acquisition from the Olson-Hemsing farmstead but would require a small amount of TLE. FHWA and WisDOT concurred with a preliminary design justification between Mahoney Road and Dyreson Road that would allow a 4 percent roadway profile grade to avoid the historic resource and the WDNR's Lower Mud Lake Fishery property. The planned 4 percent grade matches the existing grade. A 3 percent grade would meet the design standard but would impact the historic property and the WDNR property. The design justification will be formally requested and reviewed for approval during final design. The WisDOT construction engineer will monitor and ensure that any design changes proposed in the field within the limits of these historic resources are first fully coordinated with the WisDOT environmental coordinator and design engineer, the WisDOT Cultural Resources Team, and the WHS.

Factor Sheet	**Commitment** (if none, include "No special or supplemental commitments required.")
B-6 Archaeological/Burial Sites	**Commitments made**: The following uncatalogued burial sites (burial mounds) are protected by Wisconsin Burial Site preservation law, Wisconsin Statute 157.70. The law requires that a minimum buffer of 5 feet be maintained around known grave locations. ▪ **47DA0069 (BDA0499) Railroad Burial** ▪ **47DA0070 (BDA-0500) Stoughton Mounds** ▪ **47DA0080 (BDA0368) Bryngelson Group** ▪ **47DA0087 (BDA0547) Holver Johnson Group** ▪ **47DA0105 (BDA0359) C.M. Colladay I** ▪ **47DA0106 (BDA360) Thelma Barber** ▪ **47DA0480 (BDA0339) Bird Effigy** ▪ **47DA0567 (BDA0341) W.E. Colladay** ▪ **47DA0727 (BDA0528) Ole Quam Mound** If work will occur within proximity to a burial site, permission to construct within an uncatalogued burial site will be obtained from the WHS before construction and is applicable for one calendar year. The WisDOT environmental coordinator will ensure fulfillment of this commitment, if needed. Archaeological monitoring during construction activities in close proximity of the boundaries of the burial sites is required. Two of the burial sites, 47DA0105 and 47DA0480, will also be fenced during construction. The WisDOT design engineer will incorporate site boundaries and other commitments outlined above into the project plans. The special provisions shall include contact information for the contractor to request an archaeologist to be on-site. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction. The WisDOT construction engineer will notify SHPO, WisDOT Environmental Process and Documents Section, and interested Tribe(s) ten days before the start of construction for monitoring purposes. Site 47DA0727 is unevaluated. A Phase II was recommended. An earlier proposal for an extension of Barber Drive to serve as access for Good Shepherd by the Lake Church required the investigation, but the property owner refused to allow access to the site and the proposal to extend Barber Drive was removed from the project. If the design changes and the access proposal is reevaluated during final design, the WisDOT environmental coordinator and design engineer will ensure that the Phase II is performed and necessary coordination with the WHS is completed. Archaeological Site Protection: ▪ **47DA0107 Barber Campsite between Charles Lane and Schneider Drive** ▪ **47DA1429 Babcock Park Site at Babcock Park in McFarland** Site 47DA0107 will not be avoided by the current design, resulting in an Adverse Effect. Archaeological data recovery will be completed at this site. WisDOT will conduct consultation with the WHS and other consulting parties regarding measures to avoid, minimize, or mitigate adverse effects to the site and will document those conditions within a Memorandum of Agreement (MOA). The WisDOT environmental coordinator and design engineer, along with the WisDOT Cultural Resources Team, will coordinate the consultation efforts, preparation of the MOA and incorporate agreed upon measures into the project plans. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction. Archaeological monitoring during construction activities in close proximity of the boundary of the site 47DA1429 is required. Site 47DA1429 should be fenced during construction. The WisDOT design engineer will incorporate these commitments into the project plans. The special provisions shall include contact information for the contractor to request an archaeologist to be on-site. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction.
B-7 Tribal Coordination/ Consultation	The WisDOT construction engineer will notify interested Tribe(s) ten days before the start of construction for monitoring purposes. Before the start of data recovery field investigations, the WisDOT design engineer will offer interested Tribes an opportunity to meet with archaeologists and FHWA to discuss culturally sensitive issues. WisDOT will provide property owner information for 47DA0105 (BDA-0359) C.M. Colladay I, 47DA0480 (BDA-0339) Bird Effigy, and 47DA0107 Barber Campsite to The Ho-Chunk Nation.

Factor Sheet	Commitment (if none, include "No special or supplemental commitments required.")
B-8 Section 4(f) and Section 6(f) or Other Unique Areas	**Commitments made**: A Section 4(f) Evaluation was prepared for Babcock Park, a Dane County park located in McFarland. Dane County Parks initially proposed 18 mitigation measures (August 24, 2011) and WisDOT agreed to satisfy 15 of the requested mitigation measures (October 14, 2011). WisDOT will compensate Dane County Parks for the acquisition from Babcock Park before the reconstruction of US 51 in McFarland. WisDOT will continue to work with Dane County during the final design phase to incorporate the mitigation measures into the project plans. The WisDOT environmental coordinator and design engineer will ensure fulfillment of this commitment. A list of mitigation measures requested by the Dane County Parks and agreed to by WisDOT are listed here. 1. WisDOT will include provisions for wayfinding signage to park, campground, and boat launch for north- and southbound traffic. 2. WisDOT will replace trees lost within Babcock Park because of construction; location, size, and type of trees will be determined. 3. WisDOT will include relocation/recalibration of the United States Geological Survey (USGS) station at Babcock Park. 4. WisDOT will provide an access path from proposed US 51 path south of the Yahara River bridge to the existing fishing pier and dam. 5. WisDOT will provide a crosswalk on US 51 with pedestrian refuge islands near the overflow parking lot on the east side of US 51. 6. WisDOT will provide a shared-use path from the overflow parking area on the east side of US 51 to the Yahara River. 7. WisDOT will provide sidewalk on the east side of the Yahara River Bridge and a bicycle/pedestrian path on west side of the bridge. 8. WisDOT will provide a connector path from the proposed US 51 path north of the Yahara River bridge to the parking lot and existing park path on the west side of US 51. 9. WisDOT will reconstruct the lock parking lot as single loaded on the west side and expand the lot north to the existing storage sheds. 10. WisDOT will discuss with Dane County Parks the options for decreasing the entrance drive slope to the shower building parking lot. If needed, the parking lot will be raised and reconstructed with required stormwater facilities. 11. WisDOT will lengthen the span of the Yahara River Bridge to be at least the same as the existing dam structure opening. 12. WisDOT will construct a retaining wall from Station (Sta.) 489+00 to Sta. 494+00 that includes a transition ramp to provide access to the parking lot. 13. If needed to maintain existing boat landing parking lot roadway geometry, WisDOT will provide a retaining wall from about Sta. 478+50 to about Sta. 481+00. 14. WisDOT will provide a screening and/or barrier wall adjacent to the campground. Between the wall and US 51 west curb line, sidewalk will be provided. 15. WisDOT is willing to provide some aesthetic and informational provisions on the screening and/or barrier wall and will coordinate these items with Dane County Parks. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction. For the Brost Addition to Mud Lake (Brost Addition), ~~Section 4(f)~~ coordination with the WDNR and the Groundswell Conservancy is ongoing and mitigation measures discussed to date that are under consideration consist of construction of an improved access and parking area, signage, potential water access enhancements and/or other property enhancements. Mitigation measures will be finalized following real estate appraisals to determine total value of required mitigation. ~~Mitigation measures are currently being discussed. Coordination will be completed before completion of the NEPA process.~~ The WisDOT environmental coordinator and design engineer will ensure fulfillment of this commitment.
B-9 Aesthetics	**Commitments made:** Existing aesthetic features in Stoughton and McFarland impacted by the proposed action such as but not limited to decorative crosswalks, colored sidewalk panels, and lighting would be replaced in kind. The project's Documentation for Consultation (D for C) specifies that these types of features located in historic districts would be replaced in kind. The WisDOT design engineer and construction engineer will ensure fulfillment of this commitment.

Factor Sheet	**Commitment** (if none, include "No special or supplemental commitments required.")
C-1 Wetlands	**Commitments made**: Unavoidable wetland impacts shall be mitigated in accordance with the WisDOT/WDNR Cooperative Agreement and the WisDOT Wetland Mitigation Banking Technical Guideline. WDNR and USACE shall be notified regarding the amount and type of unavoidable wetland impacts at final design. A Section 401 Water Quality Certification from WDNR and a Section 404 Permit from the USACE will be obtained before construction. The WisDOT environmental coordinator and design engineer will ensure fulfillment of this commitment.
C-2 Rivers, Streams and Floodplains	**Commitments made**: **Migratory Bird Protection**–WisDOT will complete a review of structures to determine if there is use by nesting birds and the following mitigation measures will be followed if there is evidence of migratory bird nesting: If present, measures to prevent nesting (removal of unoccupied nests during the non-nesting season or installation of barrier netting before May 1), construction of the project between August 30 and May 1, or application for a depredation permit through USFWS shall be used. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction. **Waterway Structures**–Ongoing coordination with WDNR will continue. A single-span bridge over Keenans Creek will replace the existing culvert to provide aquatic connectivity. The span of the structure over the Yahara River at Babcock Park will be lengthened to be at least as wide as ~~match~~ the existing dam opening. **In-Stream Work Timing Restrictions**–US 51 crosses several waterways within the corridor including the Yahara River, Keenans Creek, Saunders Creek and several unnamed perennial and intermittent tributaries. All waterways with fisheries are considered warm-water systems. In order to protect developing fish eggs and substrate for aquatic organisms, all instream work that could adversely impact water quality will not be undertaken between March 1 and June 15. The WisDOT design engineer will incorporate these commitments into the project plans. The special provisions shall include the date restrictions for in-stream work. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction. **Navigation Aids in Yahara River**–This reach of the Yahara River is regularly used by recreational watercraft. Navigation aids will be required for placement around the construction area during construction. Special requirements for placement may be required. A Waterway Marker Application and Permit is required to place Danger, Information, or Navigation (red, green, black/white or red/white striped) type buoys. To place any type of Control buoy (such as Slow-no-wake) or a Boats Prohibited buoy requires a Waterway Marker Application and Permit, along with local ordinance authorizing placement of these types of buoys. Adequate time should be allowed for the passage of an ordinance with the local municipality. The special provisions shall address the general steps for submission of a Waterway Marker Application and Permit. The contractor shall obtain the appropriate approval permit prior to any work in the waterway. The WisDOT construction engineer will monitor and ensure fulfillment of this commitment during construction. WisDOT Standard Specification 107.19 regarding construction over navigable waterways will apply. The WisDOT design engineer will incorporate this commitment into the project plans. The project is not at a design stage advanced enough to determine the effects to backwater. This determination will be completed for the proposed action during final design and will be consistent with NR116. However, it is anticipated that no additional backwater will be created as crossing structures will be designed to pass the flows within the 100-year floodplain. Further coordination and determination will be completed for the proposed action during final design, as necessary. Coordination with the floodplain zoning authorities will occur during final design. Within McFarland , the village is the floodplain zoning authority. Within Stoughton, the city is the floodplain zoning authority within Stoughton. Within other jurisdictions along the corridor, Dane County is the floodplain zoning authority. The WisDOT design engineer will complete coordination and ensure fulfillment of this commitment.
C-3 Lakes or other Open Water	No special or supplemental commitments required.
C-4 Groundwater, Wells and Springs	No special or supplemental commitments required.

Factor Sheet	**Commitment** (if none, include "No special or supplemental commitments required.")
C-5 Upland Wildlife and Habitat	**Commitments made**: Wildlife barrier fencing was requested by WDNR. Wildlife barrier fencing near areas of open water or wetlands of the Lower Mud Lake Fishery area will be evaluated with WDNR and may be included in the final design. The WisDOT design engineer will incorporate any fencing commitments in the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of commitments during construction.
C-6 Coastal Zones	No special or supplemental commitments required.
C-7 Threatened and Endangered Species	**Commitments made:** Measures will be considered to avoid, minimize, and mitigate impacts to threatened and endangered species. The following AMMs will be completed to avoid affects to the NLEB. 1. General AMM 1–Personnel working in areas of known or presumed bat habitat will be made aware of environmental commitments, including applicable Avoidance and Minimization Measures. 2. Lighting AMM 1–Lighting will be directed away from suitable habitat between April 1 and September 30, the active season. 3. Tree Removal AMM 1–Tree removal will be limited to what is required to implement the project safely. 4. Tree Removal AMM 2–Tree clearing will be completed between October 1 and March 31, the inactive season. 5. Tree Removal AMM 3–Tree removal will be limited to that specified in project plans. Bright orange flagging and fencing will be installed before any tree clearing to ensure contractors stay within clearing limits. 6. Tree Removal AMM 4–Known roost sites, trees within 0.25 miles of roosts, and documented foraging habitat will be avoided by the project. Federal Section 7 consultation will be updated annually or at the time of final plan review and permitting. The WisDOT environmental coordinator will be responsible for fulfillment of this commitment. Resource surveys were completed by WisDOT in 2016 for the three NHI plant species. Wild hyacinth was identified during that review, but at a location outside the footprint of the proposed project. WisDOT will take measures to avoid wild hyacinth habitat near the project (remnant prairie) and no staging of equipment or materials or other disturbance of the habitat during construction will be allowed. WisDOT will notify WDNR if population areas could be disturbed. The WisDOT environmental coordinator and design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction.
D-1 Air Quality	No special or supplemental commitments required.
D-2 Construction Stage Sound Quality	**Commitments made**: WisDOT Standard Specification 107.8(6) and 108.7.1 will apply. The WisDOT design engineer will incorporate this commitment into the project plans.
D-3 Traffic Noise	No special or supplemental commitments required.

Factor Sheet	**Commitment** (if none, include "No special or supplemental commitments required.")
D-4 Hazardous Substances or Contamination	**Commitments made**: **Contaminated Site Investigations**–Where avoidance of contaminated sites and materials is not possible, the design team shall work with all concerned parties to ensure that the disposition of any petroleum contamination is resolved to the satisfaction of WDNR, WisDOT Bureau of Technical Services, and FHWA before acquisition of any questionable site, and before advertising the project letting. Nonpetroleum sites will be handled on a case-by-case basis with detailed documentation and coordination with the FHWA, as needed. The WisDOT environmental coordinator and design engineer will ensure fulfillment of this commitment. Phase 1 Hazardous Materials Assessments (HMAs) were completed for various sections of the US 51 corridor in March 2013, December 2013, and June 2015. Twenty-five sites were identified where additional investigation or preparation of contract special provisions were recommended. Investigations will be completed prior to construction at the sites where investigation is warranted. Contract special provisions will be prepared as needed for other sites where the management of contaminated or potentially contaminated material is required during construction. **Asbestos Notifications**–No asbestos-containing material has been found on structure B-13-385 (US 51 bridge over the Yahara River in McFarland) or structure B-13-060 (US 51 bridge over Taylor Road). Standard specification 107-125 will be included in the plans. The contractor will be responsible for completion of the Notification of Demolition (WDNR form 4500-133). Copies of the inspection reports are available from the Region office. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction.
D-5 Stormwater	**Commitments made**: Best management practices, including use of vegetated swales and distancing outfalls from waterway edges, will be considered to prevent or minimize potential adverse effects. Other features and requirements of the WisDOT/WDNR Cooperative Agreement and TRANS 401 will be evaluated with WDNR staff during final design. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction.
D-6 Erosion Control	**Commitments made:** An Erosion Control Plan (ECP) will be prepared that describes best management practices to be implemented before, during, and after construction to minimize pollution from stormwater discharges. As needed, the water quality in ditches approaching streams and sensitive or unique areas will be protected using erosion control measures such as trenched-in erosion bales (for moderate velocity runoff) and clean aggregate ditch checks (for moderate to high velocity runoff). Other devices such as riprap, matting, silt fence, detention basins, seeding, and sediment traps and barriers may also be used where applicable. The determination of need for, and which measure to use will be made during final design. Once the project contract has been awarded, the contractor will be required to outline its construction methods in an Erosion Control Implementation Plan (ECIP). An adequate ECIP for the project must be developed by the contractor and submitted to WisDOT and WDNR for review at least 14 days before the preconstruction conference. For projects regulated under the Wisconsin Pollutant Discharge Elimination System Transportation Construction General Permit, submit the ECIP as an amendment to the ECP. The contractor will be required to include a plan for the re-vegetation of the project area, including borrow sites and waste areas, as a component of the ECIP. It will be required that revegetation and stabilization of cleared and graded areas occur as soon as practicable following grading operations. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction.

Factor Sheet	**Commitment** (if none, include "No special or supplemental commitments required.")
E Invasive Species	**Commitments made**: **Invasive Species and Viral Hemorrhagic Septicemia (VHS)**–Precautions will be taken to prevent transporting or introducing invasive species via construction equipment, as provided under Wisconsin Administrative Code (WAC) Chapter NR 40. All equipment coming into contact with surface waters will be properly cleaned and disinfected to prevent the spread of invasive species and viruses. To prevent the spread of VHS, zebra mussels, and other invasive species, special provisions will require contractors to implement the measures in Standard Specification 107.055 *Environmental Protection, Aquatic Exotic Species Control*. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction. **Oak Wilt Regulations**–WisDOT standard specification 201.3(4) to address oak wilt shall be followed for this project. The specification states to prevent the spread of oak wilt by treating all cut surfaces and abrasions sustained between April 1 and September 30 by healthy oak trees and saplings with a thorough application of tree paint immediately upon discovering a wound. Between these dates, the contractor shall also paint the cut surfaces of stumps of all healthy oak trees and saplings immediately after cutting, whether remaining in place or grubbed. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction. **Emerald Ash Borer Regulations**–It is illegal to move or transport ash material, the emerald ash borer, and hardwood debris (such as firewood) from emerald ash borer (EAB) beetle quarantined areas to a nonquarantined area without a compliance agreement issued by the Wisconsin DATCP. Regulated items include cut hardwood (nonconiferous) firewood, ash logs, ash mulch or bark fragments larger than one-inch in diameter, or ash nursery stock. The special provisions shall include the contractor having an arborist identify ash trees along the project. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction.
F Selected Site and Commercial Non-Metallic Mines	**Commitments made:** The WisDOT Select Site process will be followed for clean fill and material that leaves the project. The WisDOT environmental coordinator project manager will coordination with the WisDOT-WDNR liaison. The WisDOT design engineer will incorporate these commitments into the project plans and the WisDOT construction engineer will monitor and ensure fulfillment of these commitments during construction.

BASIC SHEET 9–ENVIRONMENTAL FACTORS MATRIX *(check all that apply)*

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
A. ECONOMIC FACTORS *Factor Sheet A-1, General Economics, must be included if Factor Sheet A-2 or A-3 is completed.*					
A-1 General Economics	☒	☒	☐	☒	Alternative H would provide safety improvements at intersections and new pavement along US 51. Traffic operations along most of the route meets operational goals. The proposed action does not provide capacity expansion in the rural section between Stoughton and McFarland. The projected increasing traffic volumes on the 2-lane highway in this section would result in congestion during peak travel times, although 2045 peak commute times would remain similar to 2015 conditions. Alternative H minimizes impacts to adjacent properties. Access would remain for all properties, but might be modified to improve safety. There is also a loss of space for parking in some sections within Stoughton and McFarland. (see Factor Sheet A-1 General Economics Evaluation)
A-2 Business	☒	☒	☐	☒	Providing improvements to intersections (e.g., traffic signals, roundabouts, or turning lanes) would improve safety and reduce congestion at side roads. Some parking loss impacts and access changes would occur in the urban areas. The proposed action does not provide capacity expansion in the rural section between Stoughton and McFarland. The projected increasing traffic volumes on the 2-lane highway in this section would result in congestion during peak travel times, although 2045 peak commute times would remain similar to 2015 conditions. This could impact locational choices of commercial and residential development. Alternative H does not require any business relocations. Alternative H improves bicycle and pedestrian accommodations for nonmotorized travel within the corridor. (see Factor Sheet A-2 Business Evaluation)
A-3 Agriculture	☒	☒	☐	☒	No adjustment to urban service areas or zoning is expected as a result of this project. Regional and local land use and farmland preservation planning and agricultural zoning will likely maintain agriculture as the primary land use in nonurbanized areas. In addition, initiatives such as Dunn's "Purchase of Development Rights" program would continue to protect and maintain agricultural land use within the area. An Agriculture Operations Survey was submitted to landowners along the project corridor and 36 responses to the survey were received. A summary of the Agriculture Operations Survey is provided as Appendix P. Responses indicated that US 51 and other roadways are used by farm machinery to access fields and to transport goods. Frequently used intersections, crossings of US 51, and field access locations were identified by the survey respondents. The proposed action may result in some changes to existing field access, crossings, and transportation provisions for farm-related machinery. Coordination with farm operators would continue and adequate provisions will be retained or replacement provisions would be provided. The AIS prepared by DATCP, dated February 11, 2016, provides recommendations for mitigating potential adverse impacts to agriculture associated with the project. In October 2019, DATCP evaluated updated Alternative H farmland impacts and determined an addendum to the 2016 AIS was not required. The AIS is included in Appendix J.

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
					The improved transportation facilities may also benefit the area's agricultural industry by providing improved access to fields and farm buildings and allowing more efficient transport of goods. (see Factor Sheet A-3 Agriculture Evaluation)
B. SOCIAL/CULTURAL FACTORS					
B-1 Community or Residential	☒	☒	☐	☒	In general, the improved safety and mobility of Alternative H would benefit residents and communities. Two residential relocations would occur as part of Alternative H. Temporary disruptions from construction may adversely affect some residents and communities. Land use and community character changes may also have adverse effects. (see Factor Sheet B-1 Community or Residential Evaluation)
B-2 Indirect Effects	☐	☐	☒	☐	Indirect effects are caused by the project and occur later in time or are farther removed in distance yet are reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. An Indirect Effects Pre-Screening Worksheet for Determining the Need to Conduct a Detailed Indirect Effects Analysis was prepared and is included in Appendix F. Based on the screening analysis and FDM guidance on indirect effects, the factors of the project, its location, and other conditions do not warrant further detailed analysis of the potential for indirect effects. The project will not have the likelihood to result in significant indirect effects as defined by NEPA. Evaluation of the 10 pre-screening factors supports this conclusion: 1. The **project design concepts and scope** of the proposed action will be limited to reconstruction along the existing US 51 alignment. There are no bypasses, interchanges, or new access points included. 2. The **project purpose and need** does not include economic development. 3. The **project document type** is an EA. 4. The **facility function** will not change from its current use, US 51 will continue to serve local and commuter traffic along the rural and urban arterial. 5. The **project location** is within a Metropolitan Planning area and there are no communities with populations less than 5,000 affected and no changes to rural agricultural land uses are anticipated. 6. The proposed action will not substantially i**mprove travel times to the area or region** (less than five minutes). 7. The proposed action will not conflict with local **land use and planning** and zoning considerations. For example, between Stoughton and McFarland, the proposed median through most of this section will limit full access to existing intersections. Indirect effects in rural townships will be discouraged by zoning for agricultural preservation, farmland preservation plans, and conservation easements. Dunn has issued resolutions that confirm their commitment to farmland preservation. There are very limited urban services available in this area and east of Stoughton. 8. Regarding **population and demographic considerations,** the area's projected annual rate of population growth is less than the

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
					Dane County average and the proposed action's reconstruction of the US 51 facility will not affect this. 9. The **rate of urbanization** is increasing but is in alignment with planned growth in the urban area of Stoughton. As noted previously, the rural towns have plans and zoning in place that discourage development and urbanization. 10. Based on public/agency concerns identified by an **Expert Panel** made up of local officials, land use, and resource agencies, the proposed action will produce only minor increases in roadway capacity, but it may encourage indirect effects. The only location along the 18.6-mile corridor where additional through lanes were added is in a 1.4-mile stretch on the west side of Stoughton. The Expert Panel found that the possible indirect effects that could be encouraged by the proposed action had influencing factors already in place or planned as part of the proposed action that would discourage the effects.
B-3 Cumulative Effects	☐	☐	☒	☐	Cumulative effects are the impacts on the environment that result from the incremental impact of the project when added to past, present, and reasonably foreseeable future actions regardless of which agency (federal or nonfederal) undertakes these other actions. Cumulative effects can result from individually minor but collectively substantial actions taking place over a period of time. Incremental farmland conversion, loss of natural resource lands, and increases in impervious surfaces that would impact water quality may occur as planned development occurs. Planned development as identified in existing plans could potentially occur at a slightly accelerated rate compared to the No Build Alternative.
B-4 Environmental Justice	☐	☐	☒	☒	Low-income and minority populations have been identified along the project corridor. The proposed action would result in no disproportionately high and adverse human health and environmental effects on minority populations or low-income populations. There has been full and fair participation by all potentially affected communities in the transportation decision-making process. There would be no denial of, reduction in, or significant delay in the receipt of benefits of the proposed action by minority and low-income populations. (see Factor Sheet B-4 Environmental Justice Evaluation)
B-5 Historic Resources	☐	☐	☒	☒	Architecture/History Surveys were completed in 2010, 2012/2013, and 2019. One structure (Maple Grove School) was previously determined to be eligible for listing on the National Register of Historic Places (NRHP). A Determination of Eligibility was prepared as part of this project for one farmstead (Olson-Hemsing Farmstead) and determined eligible. Five historic districts in downtown Stoughton are NRHP-listed or previously determined to be eligible for listing. Alternative H does not have an adverse effect to the above-mentioned historic properties or districts. (see Factor Sheet B-5 Historic Resources Evaluation)

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
B-6 Archaeological/ Burial Sites	☒	☐	☐	☒	The study completed Phase I and Phase II investigations for the project corridor. Investigations identified 23 archaeological sites within or adjacent to the footprint of the proposed action. Four sites were determined NRHP-eligible or potentially eligible but would be avoided. One site (47DA0107 Barber Campsite) was determined eligible for the NRHP and cannot be avoided. Data recovery, monitoring during construction, and consultation would be completed at this site. There are also nine burial sites that require archaeological monitoring during construction (see Factor Sheet B-6 Archaeological Sites Evaluation)
B-7 Tribal Coordination /Consultation	☐	☐	☒	☐	Coordination with American Indian Tribes is ongoing. Burial sites have been identified along the US 51 corridor. The Ho-Chunk Nation participated in the Section 106 consultation meeting on February 17, 2016. In September 2019, The Ho-Chunk Nation indicated that if the project has not changed substantially since the 2016 consultation meeting, they would not be interested in participating in another Section 106 consultation meeting. In the January 8, 2021 email to WisDOT, the Ho-Chunk Nation asked to remain as a consulting party throughout the duration of this undertaking. No other tribes have responded to study notification letters or newsletters.
B-8 Section 4(f) and 6(f) or Other Unique Areas	☒	☒	☐	☒	There are no Section 6(f) resources affected by the proposed action. There will be a Section 4(f) use of one Section 4(f) resource (Babcock Park) and a finding of *de minimis* impact is anticipated at one Section 4(f) resource (Brost Addition). **Section 4(f) Property: Babcock Park** is located in McFarland, Dane County. The park is owned and operated by Dane County and qualifies for protection under Section 4(f). Alternative H requires an estimated 0.5 acres of fee R/W and 2.9 acres of TLE and the project will result in a Section 4(f) use of this property. Mitigation measures include retaining walls, a visual screening wall, paths, parking lot reconstruction, a park entrance turn lane, pedestrian crossing improvements, and park signage. Coordination with Dane County Parks is ongoing as described in Factor Sheet B-8 Section 4(f) and 6(f) or Other Unique Areas Evaluation. The Final Section 4(f) Evaluation is provided as Appendix D.~~A Draft Section 4(f) Evaluation has been prepared and is under review.~~ **Section 4(f) Property: Colladay Point Park** is a Dunn park in the rural area between Stoughton and McFarland. This property qualifies for protection under Section 4(f). The proposed action would require beam guard and a retaining wall to avoid impacts to the park. No R/W acquisition from this property is anticipated and the project will not result in a Section 4(f) use of this property. **Section 4(f) Property: Lincoln Park** is a Dunn park in the rural area between Stoughton and McFarland. This property qualifies for protection under Section 4(f). The proposed action would not impact the park. No R/W acquisition from this property is anticipated and the project will not result in a Section 4(f) use of this property. **Section 4(f) Property:** The **Lower Yahara River Trail** is a 2.5-mile Dane County trail that provides an off-road trail connection between Madison and McFarland. The trail is open to hiking and biking, and other forms of non-motorized transit. This property qualifies for protection under Section 4(f), but the temporary occupancy exception in 23 Code of Federal Regulations (CFR) 774.13(d) applies to the trail. The

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
					proposed action would acquire no R/W and the trail would be temporarily rerouted during construction. The project will not result in a Section 4(f) use of this property. **Section 4(f) Property:** The **Brost Addition** is approximately 68 acres of public access lands designated for outdoor recreation and habitat preservation and restoration. The land was acquired by Groundswell Conservancy with Knowles-Nelson Stewardship Grant funds administered by WDNR. This property qualifies for protection under Section 4(f). ~~Coordination with the WDNR and Groundswell Conservancy is ongoing and the draft finding of *de minimis* impact is included with the Draft 4(f) Evaluation Appendix D.~~ A finding of *de minimis* impact for the Brost Addition is included with the Final Section 4(f) Evaluation in Appendix D. **Archaeology (Section 4(f) Properties):** Phase I and Phase II investigations identified one potentially eligible archaeological site that would not be avoided (47DA0107, Barber Campsite). FHWA requirements for Section 4(f) do not apply to the Barber Campsite because the exception in CFR 774.13(b) applies. See Factor Sheet B-6 for more information. **Historic Sites (Section 4(f) Properties):** ▪ **Historic Maple Grove School** is located east of Stoughton near I-39/90. The historic property is owned by Coachman's Golf Course. This property qualifies for protection under Section 4(f). No fee R/W acquisition is anticipated and the project will not result in a Section 4(f) use of this property. ▪ **Historic Olson-Hemsing Farmstead** is located in the rural area between Stoughton and McFarland. This property qualifies for protection under Section 4(f). No fee R/W acquisition is anticipated and the project will not result in a Section 4(f) use of this property. ▪ **Historic districts in Stoughton** The Northwest Side, Southwest Side, Main Street Commercial, and East Side Historic Districts are all listed on the NRHP. The Depot Hill Historic District was determined eligible for listing on the NRHP. No fee R/W acquisition is anticipated, and the project will not result in a Section 4(f) use within any of the historic districts. **Unique Area:** The **Town of Dunn Conservation Easement (Kramper)** is privately owned and does not meet public access criteria to qualify for protection under Section 4(f). There would be an estimated 2.5 acres of fee R/W acquired from this easement. **Unique Area:** The **WDNR Lower Mud Lake Fishery** is owned and operated by WDNR. This WDNR parcel is designated as a fishery area on the east side of US 51 and a wildlife habitat west of US 51. FHWA and WDNR provided concurrence in correspondence dated January 18, 2010 (FHWA) and January 20, 2010 (WDNR) that this property does not qualify for protection under Section 4(f). See the correspondence in Appendix H. No R/W acquisition from this property is anticipated. **Unique Area:** The **Town of Dunn Conservation Easement (Franklin)** was previously owned by a nonprofit membership organization and is now privately owned. The property does not meet public access criteria to qualify for protection under Section 4(f). There would be approximately 0.8 acres of R/W acquisition from this property and minimal temporary limited easement for driveway reconstruction. (see Factor Sheet B-8 Section 4(f) and 6(f) or Other Unique Areas

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
					Evaluation)
B-9 Aesthetics	☒	☒	☐	☒	Throughout the majority of the study corridor, improvements would have minimal impact on the view of the roadway or the view from the roadway. Views from the improved roadways could change over time as a result of potential new development at improved intersections and roundabouts. No change in aesthetics within Stoughton or McFarland is anticipated as existing decorative crosswalks, colored sidewalk panels, and lighting impacted would be replaced in kind. For these types of features located in Stoughton's historic districts, this commitment is also specified in the project's D for C. In the residential area east of the downtown business district in Stoughton, between County N and the railroad crossing, grass terraces will be widened from 5 to 8 feet on each side of the road. The wider terrace provides space for Stoughton to plant trees and for additional snow storage. Some change in aesthetics within McFarland is anticipated in the vicinity of Babcock Park. New wayfinding signage to the park, campground, and boat launch for north- and southbound traffic will be provided. Between the Babcock Park shower building and Burma Road (a distance of approximately 550 feet), a new 7-foot sidewalk will be located directly adjacent to the southbound US 51 curb line. At the west edge of that sidewalk, a concrete barrier wall will be provided. In addition, a screening wall will be installed to provide a visual screen to block the view of US 51 from the campground, a benefit for Babcock Park users in the area of the campground. The height of the screening wall will be determined in consultation with Dane County Parks. WisDOT may provide some aesthetic and informational provisions on the screening wall and will coordinate these items with Dane County Parks. The screening wall and barrier wall will benefit park users. The screening wall and barrier wall will change the view from the roadway, blocking the view of the park. This will be an adverse effect for drivers. (see Factor Sheet B-9 Aesthetics Evaluation)
C. NATURAL RESOURCE FACTORS					
C-1 Wetlands	☒	☐	☐	☒	Alternatives evaluation included Geographic Information System (GIS)-based wetland mapping and a field delineation completed for Alternative H. Alternative H would impact 8.4 acres of wetland along the corridor. (see Factor Sheet C-1 Wetlands Evaluation)
C-2 Rivers, Streams and Floodplains	☒	☒	☐	☒	Under Alternative H, the portions of US 51 that would be improved cross five streams and their associated floodplains. Between Stoughton and McFarland there are two unnamed streams and Keenans Creek. In both downtown Stoughton and in McFarland there is one crossing of the Yahara River. East of Stoughton, US 51 crosses Saunders Creek. Under Alternative H, the impervious area would be increased. All stream crossings, with the exception of the Main Street bridge crossing the Yahara River in Stoughton, which would not be replaced as part of Alternative H, would have appropriately sized structures to minimize stream and floodplain encroachment and backwater effects and to facilitate wildlife movement. (see Factor Sheet C-2 Rivers, Streams and Floodplains Evaluation)

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
C-3 Lakes or Other Open Water	☐	☐	☒	☐	The project corridor is adjacent to Upper Mud Lake, Lake Waubesa, Lower Mud Lake, and Lake Kegonsa. These lakes are part of the Yahara River chain of lakes. The project corridor is within the Yahara River valley, crosses the Yahara River at three locations, and crosses tributaries to the Yahara River and the chain of lakes at several other locations. (see Factor Sheet C-2 Rivers, Streams, and Floodplains Evaluation)
C-4 Groundwater, Wells, and Springs	☐	☐	☒	☐	No municipal wells would be impacted by the build alternatives. Impacts to private wells such as monitoring wells, drinking water wells, or irrigation wells would be evaluated during final design.
C-5 Upland Wildlife and Habitat	☒	☐	☐	☒	Upland wildlife habitat in the project area is generally isolated wooded areas that border agricultural fields or that contain impediments to cropping or harvesting such as steep slopes or rocky ground. Minimal impacts are anticipated to upland wildlife and habitat. (see Factor Sheet C-5 Upland Wildlife and Habitat Evaluation)
C-6 Coastal Zones	☐	☐	☒	☐	The project is not located in a coastal zone of Wisconsin.
C-7 Threatened and Endangered Species	☐	☐	☒	☒	An updated USFWS Official Species list was generated October 19, 2020 using the Information for Planning and Conservation (IPaC) website. The list identified species that have been known to occur in Dane County. Based on discussions with WDNR and knowledge of habitat along the project corridor that would be affected by the proposed action, a No Effect determination was made for all species except the NLEB and the RPBB. For the NLEB, concurrence with the February 5, 2018 Programmatic Biological Opinion for Transportation Projects was obtained. A May Affect, Not Likely to Adversely Affect determination was reached through the application of AMMs. The concurrence letters are dated June 26, 2019, and January 30, 2020, satisfying requirements under Section 7 of the Endangered Species Act for NLEB. For the RPBB a May Affect, Not Likely to Adversely Affect determination was provided by USFWS. USFWS concluded the project's impacts to the RPBB would be insignificant or discountable. The concurrence letter is dated January 30, 2020, satisfying requirements under Section 7 of the Endangered Species Act for RPBB. WDNR completed a review of the NHI and other WDNR records for the project area and indicated the following state-listed endangered resources have been known to occur in the project area or its vicinity and could be impacted by the proposed action: wild hyacinth, pale purple coneflower, yellow giant hyssop, and Blanding's turtle. Resource surveys were completed by WisDOT in 2016 for the NHI plant species. Only wild hyacinth was identified during the review, but at a location outside the footprint of the proposed project. The yellow giant hyssop and pale purple coneflower were not identified and WDNR indicated there are no further requirements for these plant species. For the Blanding's turtle, wildlife barrier fencing will be considered during final design. Considerations will be discussed with WDNR for fencing near areas of open water or wetlands and at the Lower Mud Lake Fishery Area to prevent turtles from crossing US 51 travel lanes. (see Factor Sheet C-7 Threatened and Endangered Species Evaluation)

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
D. PHYSICAL FACTORS					
D-1 Air Quality	☐	☐	☒	☒	The project is not located in an area which is designated nonattainment or maintenance for ozone or fine particulate matter ($PM_{2.5}$). A qualitative analysis for Mobile Source Air Toxics (MSATs) was completed since the project has a low potential for MSAT effects. When US 51 is improved, the localized level of MSAT emissions for Alternative H could be higher relative to the No Build Alternative, but this could be offset because of reductions in congestion (which are associated with lower MSAT emissions). On a regional basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today. (see Factor Sheet D-1 Air Quality Evaluation)
D-2 Construction Stage Sound Quality	☒	☐	☐	☒	WisDOT Standard Specifications 107.8(6) and 108.7.1 will apply for construction stage noise abatement. (see Factor Sheet D-2 Construction Stage Sound Quality Evaluation)
D-3 Traffic Noise	☒	☐	☐	☒	Traffic noise impacts occur when the predicted equivalent sound level (Leq) approaches or exceeds the noise level criteria (NLC) established for a type of land use or when predicted sound levels substantially exceed existing levels. Noise walls were reviewed to see if they were feasible and reasonable. To determine whether a noise wall is feasible, factors including safety, noise reduction, wall height, topography, drainage, utilities, and maintenance are considered. To determine whether a noise wall is reasonable, a cost-benefit analysis is completed. Noise mitigation is not reasonable and feasible for any locations. (see Factor Sheet D-3 Traffic Noise Evaluation)
D-4 Hazardous Substances or Contamination	☒	☐	☐	☒	The study corridor was evaluated in Phase 1 Hazardous Materials Assessments (HMAs) dated March 2013 (I-39/90 to Terminal Drive/Voges Road, excluding downtown Stoughton), December 2013 (Larson Beach Road to Terminal Drive/Voges Road, accounting for recent design revisions in that section) and June 2015 (downtown Stoughton). During the March 2013 Phase 1 HMA there were 30 sites identified, with additional investigation recommended at six sites. During the December 2013 Phase 1 HMA there were 10 sites with no future investigation recommended. During the June 2015 Phase 1 HMA there were 51 sites with additional investigation recommended at 19 sites. Phase 2 or 2.5 assessments will be required for two sites which will be completed by WisDOT closer to final design. (see Factor Sheet D-4 Hazardous Substances of Contamination Evaluation)

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
D-5 Stormwater	☒	☒	☐	☒	Best management practices including use of vegetated swales, detention basins, and distancing outfalls from waterway edges will be considered to prevent potential adverse effects. Other features and requirements of the WisDOT/WDNR Cooperative Agreement and TRANS 401 will be evaluated with WDNR staff for the preferred alternative. The Rock River total maximum daily load (TMDL) was officially approved by the USEPA in September 2011 for total phosphorus (TP) and total suspended solids (TSS) in the Rock River Basin, including Columbia, Dane, Dodge, Fond du Lac, Green Lake, Jefferson, Rock, Walworth, Washington, and Waukesha Counties, Wisconsin. While the Rock River TMDL was developed to address impairments to designated uses of streams, rivers and lakes in the Rock River Basin, the TMDL analysis that was conducted included all waters within the Rock River Basin. The TMDL serves to protect unimpaired waters, as well as downstream receiving waters. In order to comply with the Rock River TMDL requirements, applicable TSS and TP wasteload allocations will be determined for portions of the project corridor that are governed by a Transportation Separate Storm Sewer System (TS4) Permit (such as portions of the project within Municipal Separate Storm Sewer System (MS4) municipal boundaries). In order to meet the calculated TMDL, TSS, and TP load allocations, stormwater runoff treatment measures (such as filter strips, grass swales, and bioretention basins) will be implemented where appropriate. If TSS and TP reduction goals cannot be met within the portions of the project corridor that are governed by a TS4 permit, credit can be achieved by implementing stormwater treatment measures within the non-TS4 permit regulated areas of the project corridor. (see Factor Sheet D-5 Stormwater Evaluation)
D-6 Erosion Control and Sediment Control	☐	☐	☐	☒	Best management practices including use of silt fence, vegetated swales, detention basins, and distancing outfalls from waterway edges will be considered to prevent potential adverse effects. Other features and requirements will be evaluated with WDNR staff during final design. (see Factor Sheet D-6 Erosion Control and Sediment Control Evaluation)
E. OTHER FACTORS					
E-1 Utilities–Kegonsa Sanitary District, Sanitary Sewer Force Main	☒	☐	☐	☐	The Kegonsa Sanitary District has a sanitary sewer force main that runs along US 51 on the east side of the roadway. This force main would need to be relocated in some areas. The Kegonsa Sanitary District would determine the location of the relocated force main. Easements are anticipated because of the wider “footprint” of the roadway. This easement is anticipated to require additional land from Babcock Park and the Brost Addition, both of which are protected by Section 4(f).
E-2 Borrow Sites	☐	☐	☒	☐	If borrow material is needed, the selection of borrow material sites is the responsibility of the construction contractor and subject to approval by WisDOT. Borrow material sites (private and commercial) are located close to the study area. Similarly, waste sites could be required for material excavated and not used on the project. The selection of waste sites is the responsibility of the contractor and subject to approval by WisDOT.

Factors	Adverse	Benefit	None Identified	Factor Sheet Attached	Note: If the effects on the environmental factor cannot be adequately summarized in several sentences, the Factor Sheet for the environmental factor must be included. Effects
E-3 Traffic Mitigation	☐	☐	☒	☐	Alternative H would have specific traffic mitigation determined during final design. Local access to properties would be maintained but major detours could be required for through traffic. There would likely be alternate routes to reduce traffic within the work zone. Traffic could be routed to US 14, WIS 138, or I-39/90 to alleviate some congestion. Upgrades to the other named routes to accommodate increased traffic are not anticipated.
E-4 Invasive Species	☐	☐	☒	☐	WisDOT completed an invasive species survey in 2016. No WAC NR 40 prohibited species were identified, and the invasive species encountered are common to the project area. WDNR plans to work with WisDOT to help identify any problem areas on the project and will recommend preventative measures.