STATE TRUNK HIGHWAY 29–COUNTY HIGHWAY VV MULTIMODAL INTERCHANGE PROJECT IN BROWN COUNTY, WISCONSIN

APPLICATION FOR FUNDS THROUGH THE
FY 2018 BETTER UTILIZING INVESTMENTS TO LEVERAGE DEVELOPMENT (BUILD) DISCRETIONARY GRANT PROGRAM

JULY 19, 2018

Grant Applicant: Brown County, Wisconsin

<u>Project Partners</u>

Wisconsin Department of Transportation
Village of Hobart, Wisconsin
Village of Howard, Wisconsin

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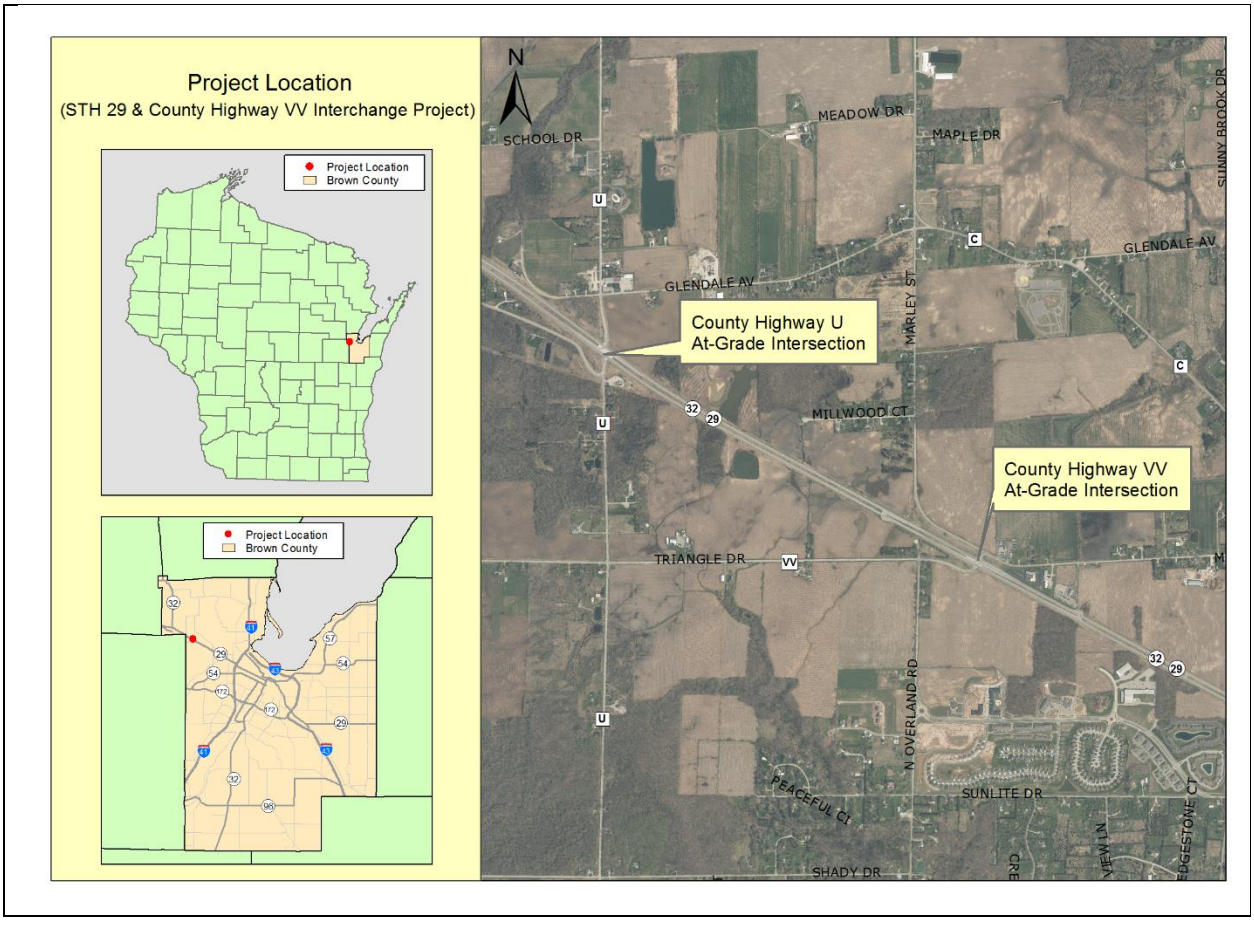
Project Narrative

I. Project Description

The proposed project will eliminate the two remaining at-grade intersections along the western portion of State Trunk Highway (STH) 29 in Brown County, which is a four-lane divided highway that has a posted speed limit of 65 mph and carries an average of more than 20,000 vehicles each day. One of the two intersections (County Highway VV) will be replaced by a full-access interchange approximately 1,600 feet west of the existing intersection that will include sidewalks, striped on-street bicycle lanes, and roundabouts at the ramp terminals and nearby intersections. The second at-grade intersection (County Highway U) will be eliminated after the County Highway VV interchange is completed. The general project location is shown below, and aerial photos showing the existing County Highway VV and U intersections in greater detail are shown in Map 1 in the Maps and Graphics appendix of this application (Appendix 1).



Project history

The conversion of the at-grade STH 29-County Highway VV intersection to a grade-separated interchange has been a high priority at the state and local levels for more than 20 years.

In the 1990s, the Wisconsin Department of Transportation (WisDOT) identified this segment of STH 29 as a high-priority state "backbone" route that needs to be upgraded to freeway standards to improve mobility and safety as development occurs and traffic volumes increase. At the same time, Brown County representatives worked with WisDOT, the county's communities, the Oneida Tribe of Indians of Wisconsin, and the public to identify a strategy for eliminating the at-grade intersections along Brown County's portion of STH 29 during the development of the *Brown County Land Use and Transportation Plan.*

After the *Brown County Land Use and Transportation Plan* was approved in 1996, Brown County partnered with WisDOT, an adjacent county, the Oneida Tribe of Indians of Wisconsin, and the communities of Hobart, Howard, and Pittsfield to develop the *STH 29 Corridor Study*. When this study was approved in 2002, it identified the County Highway VV intersection as one of the locations where a grade-separated interchange will be built. The study also identified other at-grade intersections that will either be converted to grade-separated facilities or eliminated. The improvements to the STH 29 corridor were recommended to begin at what is now Interstate 41 at the highway corridor's east end (where development existed) and to proceed west as development occurred.

Following the completion and approval of the *STH 29 Corridor Study*, WisDOT began to prepare Brown County's section of the STH 29 corridor for conversion to a grade-separated facility. The first phase of this process involved developing a corridor preservation plan that analyzed the steps needed to convert Brown County's portion of STH 29 from an expressway to a freeway. This corridor preservation plan was completed in 2008 with an Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI).

After the corridor preservation plan was finished, WisDOT began the freeway conversion process by rebuilding the outdated and crash-prone STH 29 - Interstate 41 interchange and replacing the dangerous County Highway EB and County Highway J at-grade intersections west of this interchange with a grade-separated interchange and a grade-separated underpass. The completion of these projects resulted in a dramatic reduction of crashes and serious injuries at these locations. These projects also significantly improved mobility and accessibility along and across STH 29 for drivers, bicyclists, and pedestrians because the new interchange and underpass included bicycle and pedestrian facilities as well as roundabouts at the ramp terminals and adjacent intersections.

As these projects were being completed, WisDOT proceeded with the next phase of plan implementation. This phase involved the conversion of another major at-grade intersection (County Highway FF) to a grade-separated interchange and the elimination of a minor at-grade intersection in the area. Like the previous projects, the County Highway FF interchange included bicycle and pedestrian facilities as well as roundabouts at the ramp terminals and the adjacent intersections, and this project dramatically reduced crashes and serious injuries at County Highway FF and significantly improved mobility and accessibility along and across STH 29 for drivers,

bicyclists, and pedestrians. This project also included the installation of Intelligent Transportation Systems (ITS) programmable message boards along STH 29 to provide road condition and other information to people entering the Green Bay Urbanized Area.

As the County Highway FF at-grade intersection was being converted to a grade-separated interchange, WisDOT began to design a grade-separated interchange at County Highway VV. WisDOT also installed vehicle movement restrictions at the at-grade County Highway VV and County Highway U intersections in an effort to improve safety at these locations until an interchange could be built at County Highway VV. These modified intersections (known as "J-turns") significantly reduced mobility in this area by preventing certain turning and other movements, but these extreme measures were deemed necessary for safety purposes because the VV and U intersections had experienced many high-speed right-angle crashes during the previous years that resulted in many severe injuries.

As a whole, Brown County's portion of the STH 29 corridor is much more accessible and safe now than it was when WisDOT and its partners began planning the corridor improvements more than 20 years ago. The only remaining problems are at the County Highway VV and County Highway U intersections, and nearly all of the preparation necessary to eliminate these two remaining at-grade intersections is finished. The project proposed in this application will complete the entire STH 29 freeway conversion process in Brown County, and BUILD grant funding is being requested to help complete it.

Transportation challenges addressed and how they are addressed

The STH 29-County Highway VV interchange project will address the following transportation challenges:

Mobility: The existing County Highway VV and County Highway U at-grade intersections are significant mobility barriers to drivers, bicyclists, and pedestrians because speeds and daily traffic volumes on STH 29 are very high. The J-turns that were installed at the intersections do not allow people on County Highways VV and U to make left turns directly onto STH 29 or to proceed directly across the highway, which makes traveling throughout the region and between the residential and commercial developments in the adjacent communities of Hobart and Howard very difficult. The proposed County Highway VV interchange project will address these mobility challenges by providing convenient and safe access to STH 29 in all directions for drivers and across STH 29 for drivers, bicyclists, and pedestrians.

Safety: Before the temporary J-turns were installed at the County Highway VV and U intersections, the two intersections experienced many right-angle injury crashes each year. Even after the J-turns were installed, crashes continued to occur on the STH 29 mainline at and near the locations where people now have to accelerate into high-speed traffic after completing their J-turns. The proposed County Highway VV interchange project will address these safety problems by providing safe traffic merge and diverge points along the STH 29 mainline and by creating grade-separated access across STH 29 for drivers, bicyclists, and pedestrians.

Multimodal Accessibility: It is currently very difficult and unsafe to travel across STH 29 at the at-grade County Highway VV and U intersections on foot or by bicycle because STH 29 is a divided four-lane expressway that carries a high volume of traffic at very high speeds. This poses a significant challenge to the people who want to walk and bicycle between the residential and commercial developments on each side of STH 29 in this area but cannot because the highway is a barrier. The proposed County Highway VV interchange project will address this problem by providing a grade-separated highway crossing that includes striped on-street bicycle lanes, off-street sidewalks, and roundabouts at intersections. All of these features were included in the previous STH 29 grade separation projects that occurred east of County Highways VV and U, and they have proven to be very safe and accessible to all transportation system users.

Freight Movement: There are businesses and industries on both sides of STH 29 near the County Highway VV and U intersections that rely on STH 29 to receive and distribute goods by large truck, and the temporary J-turns that were installed at the VV and U intersections make it inconvenient for the large trucks to enter STH 29. Trucks also currently have to accelerate to highway speeds and decelerate to turning speeds on the STH 29 mainline, which is very dangerous and has resulted in high-speed crashes. The proposed County Highway VV interchange project will address these freight movement problems by providing a convenient connection between STH 29 and the nearby businesses and industries. The grade-separated County Highway VV interchange's on- and off-ramps will also enable large trucks to accelerate and decelerate outside of the STH 29 mainline, which will significantly improve safety along the highway.

School Transportation: A rural school district (Pulaski) is located on both sides of STH 29 in this area, and middle and high school students who live on the south side of the highway need to travel to and from their schools on the north side of the highway on school buses or in private vehicles. In addition to being unsafe to transport students across STH 29 each school day, the highway's barrier effect adds to the expense of busing children because the bus company does not have a direct route across STH 29 in the County Highway VV/U area. The proposed County Highway VV interchange project will address these student transportation problems by providing a safe and convenient multimodal connection across STH 29.

<u>Previously completed project components</u>

The previously completed project components are (from east to west):

- An improved grade-separated interchange at STH 29 and Interstate 41.
- A new grade-separated interchange at STH 29 and County Highway EB.
- A new grade-separated underpass at STH 29 and County Highway J.
- A new grade-separated interchange at STH 29 and County Highway FF.
- Elimination of minor STH 29 intersections between Interstate 41 and County Highway VV.

The locations of the major STH 29 grade separation improvements are shown in Map 2 in the Maps and Graphics appendix of this application (Appendix 1). Before and after pictures of these improvements are also shown in the Maps and Graphics appendix of this application.

Project's relationship to the broader context of other transportation infrastructure investments

This is addressed in the previous sections of this application and is shown in Map 2 in the Maps and Graphics appendix of this application (Appendix 1).

Benefits to communities in rural areas

The County Highway VV and County Highway U intersections are both outside an urbanized area designated by the U.S. Census Bureau, so the proposed STH 29-County Highway VV interchange project will directly benefit an area that is designated as rural. In addition to the transportation benefits that were addressed earlier in this application, this project will enable fiber/broadband to be extended to this rural but developing area, which will facilitate economic development and job creation in the area. The extension of fiber/broadband will also benefit a rural school district and enhance emergency responsiveness to the area. The benefits of extending fiber/broadband to the County Highway VV/U area are addressed in greater detail in the Innovation/Technologies section of this application.

II. Project Location

Detailed geographical description of proposed project

The proposed STH 29-County Highway VV interchange project is located at and near the intersections of STH 29 and County Highways VV and U in the Villages of Hobart and Howard in Brown County, Wisconsin. The immediate area is largely comprised of farmland and a handful of commercial, industrial, and residential developments. The proposed project will occur in a rural area as defined by the U.S. Census Bureau.

Although the immediate project area is largely farmed at this point, a development that contains a dense mixture of commercial, industrial, and residential uses has been established south of the STH 29-County Highway VV intersection in the Village of Hobart. This development (known as Centennial Centre) has been gradually growing toward the STH 29-County Highway VV intersection for the last decade, and it is planned to reach the intersection once it is fully developed. However, the development's growth has been slowed by a lack of safe and convenient access to STH 29 at County Highway VV.

Geospatial data describing project location

The proposed interchange will be built at approximately 44.57652 degrees latitude and -88.171595 degrees longitude. The specific lots that will be affected by the interchange are Lots 4 and 7 of Section 3, Township 24N, Range 19E and Lots 1 and 3 of Section 2, Township 24N, Range 19E of the Public Land Survey System (PLSS) in Brown County.

Maps of project location

A map of the general project location is included in the Project Description section of this application. Additional maps of the project location are included in the Maps and Graphics appendix of this application (Appendix 1).

Connections to existing transportation infrastructure

In addition to providing a safe and convenient connection to STH 29, the proposed interchange will connect to County Highway VV south of STH 29 and to Marley Street north of STH 29. Marley Street is planned to be upgraded to a county highway after the County Highway VV interchange is constructed. The proposed STH 29-County Highway VV interchange's connections to existing transportation infrastructure are shown in the design diagram in the Project Readiness section of this application.

III. Grant Funds, Sources, and Uses of Project Funds

Project Budget

Project costs

The proposed STH 29-County Highway VV interchange project's total cost is $27,828,150. This cost includes the completion of environmental, engineering, and design activities, right-of-way acquisition, extension of fiber/broadband to the County Highway VV project area, utilities installation, construction, and contingencies.

Source and amount of project funds

The proposed STH 29-County Highway VV interchange project will utilize a combination of federal, state, county, and municipal funds. Tables 1 and 2 on the following page summarize the sources and amounts of funds for each major project activity and the percentage of funding each participant will contribute to the project. The project's non-federal funding commitments are documented in Appendix 2 of this application.

Table 1: Sources and Percentages of Project Funds

Project Component	Federal (BUILD Grant)	State (WisDOT)	Brown County	Village of Hobart	Village of Howard	Total
Completion of Environmental, Engineering, & Design	$350,000	$75,000	$25,000	$25,000	$25,000	$500,000
Right-of-Way Acquisition	$0	$0	$0	$1,642,100	$1,642,100	$3,284,200
Fiber/Broadband Extension	$629,265	$0	$89,895	$89,895	$89,895	$898,950
Utilities/Construction	$18,778,634	$0	$872,122	$872,122	$872,122	$21,395,000
Contingencies	$0	$0	$583,333	$583,333	$583,333	$1,750,000
Total	**$19,757,899**	**$75,000**	**$1,570,350**	**$3,212,450**	**$3,212,450**	**$27,828,150**
% Contribution	**71.00%**	**0.27%**	**5.64%**	**11.54%**	**11.54%**	**100.00%**

Table 2: Expenditures by Federal and Non-Federal Funding Sources

Project Component	Federal (BUILD Grant)	Other Federal	Non-Federal	Total
Funding Amount	$19,757,899	$0.00	$8,070,251	$27,828,150
% Contribution	71.00%	0.0%	29.00%	100.00%

Nature of project funding

In addition to the federal BUILD funding requested in this application, the following sources of funds will be used to complete the STH 29-County Highway VV interchange project:

State (WisDOT): The state will fund WisDOT staff's participation in the completion and review of the project's environmental, engineering, and design activities.

Brown County: Brown County will provide funding through a recently-enacted countywide sales tax to cover a portion of the costs of completing the necessary environmental, engineering, and design activities, extending fiber/broadband to the area, installing utilities, realigning County Highway VV, and constructing the new interchange.

Village of Hobart: The Village of Hobart will provide funding through revenues generated by a Tax Increment Financing (TIF) district in the County Highway VV interchange project area. The TIF funds will be used to purchase the right-of-way necessary for the project on the south side of STH 29. The TIF funds will also be used to fund the realignment of nearby village streets to safely accommodate the new interchange at CTH VV, and the TIF funds will cover a portion of the costs of completing the necessary environmental, engineering, and design activities, extending fiber/broadband to the area, installing utilities, and constructing the new interchange.

Village of Howard: The Village of Howard will provide funding through revenues generated by issuing bonds to purchase the right-of-way necessary for the project on the north side of STH 29. These funds will also cover a portion of the costs of completing the necessary environmental, engineering, and design activities, extending fiber/broadband to the area, installing utilities, and constructing the new interchange.

Funding restrictions

There are no non-federal funding restrictions associated with the STH 29-County Highway VV interchange project.

IV. Merit Criteria

Safety

Before WisDOT and its partners began to convert Brown County's portion of STH 29 from a full-access expressway to a limited-access freeway, the at-grade intersections along the STH 29 corridor experienced many high-speed crashes each year that resulted in a significant number of serious injuries and a handful of fatalities. But following the completion of each grade-separation project, the number and severity of crashes at each location decreased dramatically. The only remaining at-grade intersections along Brown County's portion of the STH 29 corridor are at County Highways VV and U, and the project proposed in this application will eliminate them.

County Highway VV and U at-grade intersections before J-turn installation

As discussed throughout this application, the high number of severe and other injury crashes at the County Highway VV and U intersections prompted WisDOT to restrict vehicle movements at the intersections through the installation of temporary J-turns. An example of how hazardous these intersections were prior to the installation of the J-turns is shown in Table 3. The summary also includes the estimated costs of the injuries that occurred at the intersections during this three-year period.

Table 3: Crash-Related Injuries at the County Highway VV and U At-Grade Intersections between 2008 and 2010 (Before J-Turn Installation)

STH 29 At-Grade Intersection	Serious ("A") Injuries	Minor ("B") Injuries	Possible ("C") Injuries	Estimated Total Cost of Injuries
County Highway VV	3	10	6	$1,707,400
County Highway U	0	4	1	$360,900
Total	**3**	**14**	**7**	**$2,068,300**

Crash Data Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory.
Injury Cost Estimate Data Source: FHWA KABCO Crash Costs by Injury Severity Level for 2009.

This three-year snapshot is indicative of how dangerous the County Highway VV and U at-grade intersections were before the J-turns were installed, and the injury statistics during and before this three-year period explain why WisDOT felt it had to restrict mobility in this area to make the two intersections safer for travelers.

County Highway VV and U at-grade intersections after J-turn installation

After the J-turns were installed at the County Highway VV and U intersections, crashes and injuries ***at*** the VV and U intersections decreased (but continued to occur). But the J-turns also created a new safety problem ***near*** the County Highway VV and U intersections, which is a conflict between vehicles on STH 29 traveling at or above 65 mph encountering slow-moving vehicles on the STH 29 mainline that are accelerating to highway speeds after completing the J-turns.

Table 4 summarizes the crash-related injuries at and near the County Highway VV and U intersections during a representative three-year period after the J-turns were installed. The summary also includes the estimated costs of these injuries.

Table 4: Crash-Related Injuries at and near the County Highway VV and U At-Grade Intersections between 2014 and 2016 (After J-Turn Installation)

STH 29 At-Grade Intersection	Serious ("A") Injuries	Minor ("B") Injuries	Possible ("C") Injuries	Estimated Total Cost of Injuries
County Highway VV	0	2	1	$310,645
County Highway U	0	1	0	$123,732
Total	**0**	**3**	**1**	**$434,377**

Crash Data Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory &Village of Hobart.
Injury Cost Estimate Data Source: FHWA KABCO Crash Costs by Injury Severity Level for 2015.

The crash statistics for the two representative three-year periods before and after the J-turns were installed suggest that the goal of preventing fatalities and serious injuries at and near the County Highway VV and U intersections has been achieved to this point. However, crashes continue to occur at and near the intersections, and it is likely only a matter of time before a serious injury or fatality happens at one of these STH 29 conflict points as the area grows and traffic volumes increase. It is also important to note that this safety improvement has been achieved at the expense of mobility in this growing area, which is not an acceptable long-term solution for the area's transportation network.

Project's ability to reduce the number, rate, and consequences of crashes, serious injuries, and fatalities

The STH 29-County Highway VV interchange project's partners are very confident that the proposed project will dramatically reduce the number, rate, and consequences of crashes and serious injuries at the County Highway VV and U intersections because this has happened at ***all*** of Brown County's other STH 29 at-grade intersections after they were replaced by grade-separated interchanges.

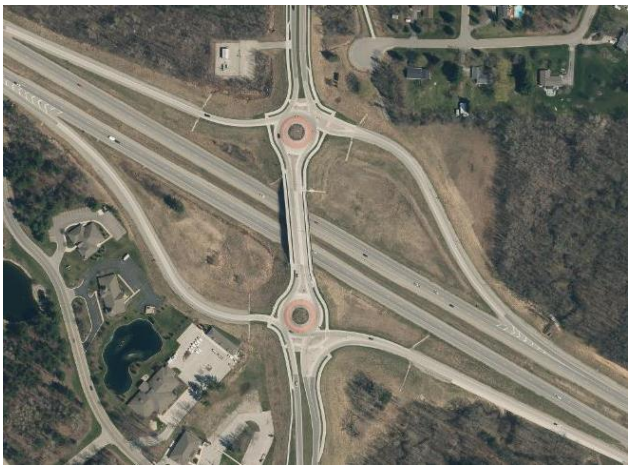
An example of where safety was dramatically improved after a STH 29 at-grade intersection was replaced by a grade-separated interchange is at STH 29 and County Highway FF, which is immediately east of the County Highway VV intersection. A summary of crash-related fatalities and injuries at the County Highway FF intersection before and after the grade separation project is shown in Table 5 on the following page. The summary also includes the estimated costs of these fatalities and injuries.

Table 5: Crash-Related Fatalities and Injuries Before and After the STH 29-County Highway FF Grade Separation Project

Three-Year Time Period/Intersection Status	Fatalities	Serious ("A") Injuries	Minor ("B") Injuries	Possible ("C") Injuries	Estimated Total Cost of Fatalities & Injuries
2010-2012 (At-Grade Intersection)	**1**	**3**	**7**	**8**	**$5,569,100**
2014-2016 (Grade-Separated Interchange with Roundabouts)	**0**	**0**	**1**	**0**	**$123,732**

Crash Data Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory.
Injury Cost Estimate Data Source: FHWA KABCO Crash Costs by Injury Severity Levels for 2009 & 2015.

STH 29-County Highway FF At-Grade Intersection Before Improvement Project



STH 29-County Highway FF Grade-Separated Interchange After Improvement Project

Because the proposed STH 29-County Highway VV interchange project is nearly identical to the project that was completed at STH 29 and County Highway FF, the same safety outcomes are expected at the County Highway VV and U intersections after the project is finished.

Elimination of unsafe highway/rail grade crossings

The STH 29-County Highway VV interchange project will eliminate the two remaining at-grade intersections along Brown County's portion of the STH 29 corridor. Because similar at-grade intersections along STH 29 experienced significant crash and injury reductions after they were

replaced by grade-separated facilities, the County Highway VV interchange project sponsors are very confident that the conversion of the County Highway VV intersection to a grade-separated interchange and the elimination of the County Highway U intersection will dramatically reduce crashes and injuries at and near these intersections as well.

How the project will contribute to preventing unintended releases of hazardous materials

Large trucks transporting fuel to a gas station next to the STH 29-County Highway VV at-grade intersection are currently at risk of being involved in high-speed right angle and rear end crashes when they enter and exit STH 29 at the existing at-grade County Highway VV intersection. If one of these types of high-speed crashes occurs, it will likely result in the release of gasoline into nearby farm fields, wetlands, and streams.

The replacement of the STH 29-County Highway VV at-grade intersection with a grade-separated interchange with roundabouts and the elimination of the County Highway U intersection will prevent high-speed right angle and rear end crashes on and near this portion of STH 29. This will minimize the risk of hazardous material-releasing crashes today and as the area develops in the future.

State of Good Repair

Consequences of not improving the condition of the facility

If left unimproved, the poor condition of the County Highway VV and U intersections with STH 29 will have a negative long-term effect on:

Future transportation network efficiency: The temporary J-turns that were installed at the County Highway VV and U intersections do not allow people on County Highways VV and U to make left turns directly onto STH 29 or to proceed directly across the highway, which makes traveling between the residential and commercial developments in the adjacent communities of Hobart and Howard very difficult. This network inefficiency problem will continue to worsen as the area develops and the number of people on the area's transportation system increases.

Mobility of goods: There are businesses and industries on both sides of STH 29 near the County Highway VV and U intersections that rely on STH 29 to receive and distribute goods by large truck, and the temporary J-turns that were installed at the VV and U intersections make it inconvenient for the large trucks to enter STH 29. Trucks also have to accelerate to highway speeds and decelerate to turning speeds on the STH 29 mainline, which is very dangerous and has resulted in high-speed crashes.

Economic growth: Because it is inconvenient and dangerous for large trucks to enter STH 29 at the County Highway VV and U at-grade intersections, it will be very difficult for the Villages of Hobart and Howard to attract and retain businesses and industries in this area. Both communities' current comprehensive plans identify the County Highway VV and U intersections as future economic growth areas, and many businesses and industries have already inquired about locating in Hobart's Centennial Centre development near the County Highway VV intersection. However,

many of these inquiring businesses and industries have indicated that they will not locate in the Centennial Centre development unless the inefficient and dangerous at-grade intersection at County Highway VV is converted to a grade-separated interchange. The Village of Howard also contains one of a handful of state-designated "Certified Development Sites" near the County Highway VV intersection, and the ability to attract development to this site will largely depend on the conversion of the at-grade County Highway VV intersection to a grade-separated interchange.

Accessibility and mobility of people: In addition to the transportation network efficiency problems described earlier in this section of the application, it will continue to be very difficult and unsafe to travel across STH 29 at the at-grade County Highway VV and U intersections on foot or by bicycle because STH 29 is a divided four-lane expressway that carries a high volume of traffic at very high speeds. The inaccessibility of the County Highway VV and U intersections will also continue to make it difficult and dangerous to transport students between the neighborhoods on the south side of STH 29 and the schools on the north side of STH 29.

Project's capitalization and use of asset management approaches that optimize its long-term cost structure

The non-federal capital necessary to complete this project will be available before the STH 29-County Highway VV interchange project begins. WisDOT and its partners will also use asset management approaches that optimize the project's long-term cost structure and ensure that the new facility will be resilient and will remain in a state of good repair. These asset management approaches are described below.

Asset Management Goals and Methods of Achieving these Goals for the Project

The STH 29-County Highway VV interchange project will achieve the three transportation asset management goals that are identified by FHWA. These are:

- Containing the costs of planning, building, operating, and maintaining transportation facilities.
- Keeping the infrastructure in as good or better condition than it is now.
- Developing and implementing a logical capital improvement plan.

The methods that will be used to achieve these goals for the STH 29-County Highway VV interchange project are summarized below.

Containing the costs of planning, building, operating, and maintaining transportation facilities:

Planning

Most of the corridor and comprehensive planning that has already occurred for the project was cooperatively completed by existing staff at the state, county, and community levels, which minimized the cost of developing these plans. The comprehensive and corridor plans that address

the STH 29-County Highway VV interchange project are listed in the State and Local Approvals/Planning Approvals section of this application.

Construction

The project is designed to minimize costs during the construction phase by constructing roundabouts instead of intersections controlled by traffic signals. Constructing roundabouts at the ramp terminals and nearby intersections instead of intersections controlled by traffic signals will save a significant amount of money because roundabouts can function efficiently without the expensive turning lanes that are necessary at signalized intersections. Streets with roundabouts also require fewer overhead travel lanes and vehicle storage space than streets controlled by traffic signals, which will enable the STH 29-County Highway VV interchange's overpass structure to be narrower than the structure that would be necessary for signalized ramp intersections to function efficiently.

Operation and Maintenance

The roundabouts will also help to minimize operation costs at the new STH 29-County Highway VV interchange because they will not require the electricity necessary to operate signalized intersections. In addition, the roundabouts will not have signal heads and posts to replace over the life of the facility, which will help to minimize maintenance costs.

Keeping the infrastructure in as good or better condition than it is now:

The key to achieving this goal is the frequent collection of facility condition data. WisDOT and Brown County already have many methods of collecting these data, and these methods will be used to ensure that the STH 29-County Highway VV interchange's overpass and other components are kept in good condition in a cost-effective manner. These data collection methods are:

The WisDOT Pavement Condition Index (PCI), which is based on the results of detailed pavement distress field surveys that identify pavement distress type, distress severity, and distress quantity. The PCI is used to determine existing pavement condition, forecast future pavement condition, and determine cost-effective maintenance and improvement strategies.

The FHWA National Bridge Inventory (NBI), which provides information about the structural sufficiency and functional obsolescence of freeway overpasses and other bridges.

The WisDOT Compass Program, which is WisDOT's quality assurance and asset management program for highway operations. WisDOT develops and publishes annual Compass reports that contain information about the relationship between existing road conditions and WisDOT's maintenance budget. These reports are used to engage the public in the development of the maintenance program and to help WisDOT operations managers establish annual highway condition targets based on current budget levels. A link to the WisDOT Compass Program website is attached below:

http://wisconsindot.gov/Pages/doing-bus/local-gov/hwy-mnt/compass/default.aspx

The Wisconsin Pavement Surface Evaluation and Rating (PASER) System, which enables the assessment of pavement conditions and prioritization of repairs through the assignment of a pavement segment rating of between 1 (failed condition - reconstruction necessary) and 10 (new - no maintenance required). The PASER ratings are maintained in the Wisconsin Information System for Local Roads (WISLR) database. Brown County, Hobart, and Howard rate their roads using the PASER system, and these ratings are used to monitor road conditions and determine the type and timing of maintenance activities that will maximize the life of existing roads and avoid the high costs of road reconstruction for as long as possible.

In addition to these existing information collection methods, WisDOT established performance measures and targets for pavement and bridge conditions on the state's National Highway System (NHS) routes in May of 2018. Because STH 29 is a component of the state's NHS, the information collected for these federally-mandated performance measures and targets will also be used to monitor the condition of the proposed STH 29-County Highway VV interchange.

Developing and implementing a logical capital improvement plan:

The State Transportation Improvement Program (STIP) is the primary capital improvement plan for STH 29 and other components of the state transportation system. The STIP meets all federal fiscal constraint requirements, and the projects in the STIP are prioritized by WisDOT using asset management principles. A link to the WisDOT STIP website is attached below:

http://wisconsindot.gov/Pages/doing-bus/local-gov/astnce-pgms/highway/stip.aspx

Sustainable source(s) of revenue available for project operations and maintenance

Because roundabouts will be built at the ramp terminals and nearby intersections instead of traffic signals, the proposed STH 29-County Highway VV interchange's operation expenses will be relatively low and will be absorbed in WisDOT's statewide highway system operations budget. The new interchange's maintenance activities will be funded through WisDOT's annual state highway maintenance budget, and the presence of the new interchange on a state "backbone" highway will ensure that WisDOT will highly prioritize the maintenance of this facility. A link to the "backbone" highway preservation element of WisDOT's performance improvement program dashboard (MAPSS) is attached below:

http://wisconsindot.gov/Pages/about-wisdot/performance/mapss/measures/preservation/backbone-hwycondition.aspx

Project's ability to reduce overall life-cycle costs

This is addressed in the previous section and in the Benefit-Cost Analysis section of this application.

Economic Competitiveness

The Villages of Hobart and Howard have made many efforts to grow their economies in the STH 29-County Highway VV/U area over the last several years. However, the lack of a safe and efficient connection across and to STH 29 in the County Highway VV area has hindered their efforts to attract and retain employers and workers for many years.

Impacts of the project on movement of goods and people

As discussed earlier in this application, a high number of severe crashes at the County Highway VV and U intersections prompted WisDOT to significantly restrict traffic movements at the intersections through the installation of J-turns. These J-turns are intended to be temporary traffic movement restrictions that will remain in place until the at-grade intersection at VV can be upgraded to a grade-separated interchange and the intersection at U can be eliminated.

Although the J-turns have reduced (but not eliminated) crashes at the VV and U intersections, they have negatively affected the movement of people and goods by making it very inconvenient for large trucks and personal vehicles to enter STH 29 and by prohibiting movements across STH 29. The J-turns have also resulted in crashes along the STH 29 mainline at the locations where vehicles have to accelerate to highway speeds after completing their J-turns.

The proposed STH 29-County Highway VV interchange project will significantly enhance the movement of goods and people by creating a safe and convenient connection to STH 29 for drivers and across STH 29 for drivers, bicyclists, and pedestrians.

How the project reduces costs of doing business

The STH 29-County Highway VV interchange project will reduce cost of doing business by improving shipping efficiency and safety in this growing area and by expanding the area's e-business capabilities through the extension of fiber/broadband. These benefits are addressed in greater detail throughout this grant application.

How the project improves local and regional freight connectivity to the national and global economy

As one of Wisconsin's "backbone" highways, STH 29 is a major route across the upper Midwest for many freight carriers. Brown County's portion of STH 29 is used by freight carriers to transport raw materials and finished goods to and from the Port of Green Bay, rail terminals in the City of Green Bay, and many large manufacturers in the Green Bay area.

The STH 29-County Highway VV interchange project will eliminate the two remaining at-grade intersections along Brown County's portion of STH 29, which will improve the safety and efficiency of transporting freight through the County Highway VV area. The STH 29-County Highway VV interchange project will also allow freight to be moved safely and efficiently across STH 29 at County Highway VV by replacing the existing at-grade intersection with a grade-

separated interchange. The freight connectivity benefits of this project are addressed in greater detail throughout this application.

How the project reduces the burden of commuting

According to the U.S. Census Bureau's American Community Survey, more than 3,000 people travel to and from work each day between Brown County and Shawano County, which is northwest of Brown County and is directly connected to Brown County by STH 29. Because STH 29 is the primary high-speed commuting route between the two counties, it is assumed that most of the daily commuting trips between the counties occur on STH 29 and pass through the County Highway VV and U intersections.

STH 29 is also a heavily-used commuting route for residents of Hobart and Howard, and many of these commuters use the County Highway VV intersection to enter and exit STH 29 (especially commuters who live in Hobart's Centennial Centre development). The benefits of the STH 29-County Highway VV interchange project to commuters are addressed in greater detail throughout this application.

How the project addresses traffic congestion

Because the existing County Highway VV and U intersections are at-grade and are controlled by stop signs, the intersections get congested by vehicles that are waiting for safe gaps to enter STH 29's high-speed traffic flow. This prompts many drivers to make high-risk movements into traffic, and this is especially the case during the morning and afternoon peak travel periods when queues at the stop-controlled intersections are long and people become impatient. Vehicles on STH 29 that are waiting to complete left turns to County Highways VV and U also queue on the highway during high-volume periods, which is a very dangerous situation for the queued vehicles and for vehicles traveling on the STH 29 mainline. The proposed STH 29-County Highway VV interchange project will solve these congestion problems.

How the project bridges service gaps in rural areas

In addition to improving access to and from STH 29 in this rural but developing area, the proposed STH 29-County Highway VV interchange will provide safe and convenient access across STH 29 for drivers, pedestrians, and bicyclists. The multimodal transportation mobility and safety benefits to this rural area are addressed in greater detail in the Project Description, Safety, State of Good Repair, and other sections of this application.

The project will also extend fiber/broadband to this rural area, which will facilitate economic development and job creation in the area and enable the expansion of ITS technologies as the area grows. These and other benefits of extending fiber/broadband to this rural area are addressed in greater detail in this application's Innovation/Technologies section and in other sections of the application.

How the project promotes the expansion of private development

The Village of Hobart and Village of Howard comprehensive plans identify the County Highway VV and U intersections as future economic growth areas, and many businesses and industries have already inquired about locating in Hobart's Centennial Centre development near the County Highway VV intersection. However, many of these inquiring businesses and industries have indicated that they will not locate in the Centennial Centre development unless the inefficient and dangerous at-grade intersection at County Highway VV is converted to a grade-separated interchange. The Village of Howard also contains one of a handful of state-designated "Certified Development Sites" near the County Highway VV intersection, and the ability to attract development to this site will largely depend on the conversion of the at-grade VV intersection to a grade-separated interchange. The importance of this project to the area's ability to attract and retain private commercial, industrial, and residential development is addressed further throughout this application.

Environmental Protection

Project's ability to improve handling of stormwater runoff

The STH 29-County Highway VV interchange project will improve how stormwater runoff is handled in this area in two ways. First, the project will remove the large paved at-grade intersections at County Highways VV and U and replace them with grassed medians that will filter pollutants from stormwater after it runs off of the highway. Second, the new interchange structure and ramps will be designed to direct stormwater to flumes that will drain into swales and other natural stormwater detention areas. The pollutants will then be filtered from the stormwater as it soaks into the ground.

Project's ability to reduce energy use and air or water pollution through congestion mitigation

The congestion that occurs at the existing at-grade County Highway VV and U intersections during peak travel periods results in a significant amount of wasted fuel and high levels of air pollution due to vehicle idling and the need for each vehicle to rapidly accelerate from a complete stop to highway speeds. But the STH 29-County Highway VV interchange's grade-separated ramps and roundabouts will allow vehicles to avoid coming to complete stops and to gradually accelerate to highway speeds before entering the STH 29 mainline. This will significantly reduce the amount of fuel used by vehicles in this area and reduce air pollution caused by vehicle emissions.

Project's ability to avoid adverse impacts to wetlands

A wetland delineation was completed by WisDOT and the Wisconsin Department of Natural Resources for the STH 29-County Highway VV interchange project. The delineation found that wetlands will be affected by all of the alignment alternatives that were considered for the new STH 29-County Highway VV interchange, and the alignment alternative that was chosen for the project is the alternative that has the least impact on wetlands. Approximately 3.2 acres of wetlands will be affected by the chosen alternative.

WisDOT has coordinated with the Wisconsin Department of Natural Resources about the proposed use of these wetlands for the STH 29-County Highway VV interchange project, and there have been no significant concerns expressed over the use of these wetlands for the project. Wetland mitigation, compensation, and a potential wetland mitigation site will be coordinated with the Wisconsin Department of Natural Resources and US Army Corps of Engineers during the project's final design phase.

Project's ability to avoid adverse impacts to endangered species

There are no known endangered species in the project area, but there is one known threatened species (Wood Turtle) in the project area. WisDOT will avoid impacting this threatened species by erecting exclusion fencing between the construction zone and nearby streams at the beginning of the turtles' active period (mid-March) to prevent the turtles from entering the work area.

Quality of Life

Expansion of access to essential services for communities (especially rural communities)

In addition to improving multimodal transportation access between the rural portions of Hobart and Howard and improving this rural area's transportation connectivity to essential services throughout the region, the proposed STH 29-County Highway VV interchange project will extend fiber/broadband to this area. The benefits of extending fiber/broadband to this rural area are addressed in greater detail in the Innovation/Technologies section of this application.

Improvement of connectivity for people to jobs, health care, and other critical destinations

The existing at-grade County Highway VV intersection's replacement with a grade-separated interchange that includes on-street striped bicycle lanes, off-street pedestrian walkways, and roundabouts at the ramp terminals and nearby intersections will significantly improve connections to jobs, health care clinics, and other critical destinations in the area for people of all ages, physical abilities, and income levels. The connectivity enhancement benefits associated with these improvements are addressed in greater detail in this application's Project Description/Transportation Challenges Addressed section, Merit Criteria/Safety section, Merit Criteria/Innovation section, and in other parts of the application.

Innovation

Technologies

The previous STH 29 at-grade intersection removal projects included the installation of ITS changeable message boards to inform travelers of delays, poor road conditions, and other aspects of the STH 29 corridor as they enter the Green Bay Urbanized Area. The proposed STH 29-County Highway VV interchange project will include the extension of fiber/broadband technologies to this rural area, which will facilitate economic development and job creation in the area and enable the expansion of ITS technologies as the area grows.

In addition to facilitating economic development and job creation, the fiber/broadband extension element of the STH 29-County Highway VV interchange project will provide the rural Pulaski School District opportunities to utilize the technology. The fiber/broadband extension will also provide wireless 5G and/or whitespace access to this rural portion of Brown County, and it will enhance safety and emergency responsiveness in this rural area by enabling the improvement of the microwave link between Brown County's Public Safety and Communications Center and the radio tower that serves this area.

Like the STH 29 grade-separated interchange projects that have already been completed at County Highways FF and EB, the proposed STH 29-County Highway VV interchange project will include roundabouts at the interchange's ramp terminals and at the nearby intersections. Because roundabouts have proven to be a very safe and efficient traffic control method at the other STH 29 interchanges and throughout the United States, the County Highway VV project sponsors are confident that the use of this innovative traffic control method will also help the new County Highway VV interchange function safely and efficiently as development occurs and traffic volumes rise.

Project delivery

Because nearly all of the environmental, design, and other work necessary to construct the proposed STH 29-County Highway VV interchange project is finished, the project's partners are confident it can be delivered with virtually no complications or delays. To expedite the project delivery process, the right-of-way necessary for the proposed STH 29-County Highway VV interchange project will be purchased by the Villages of Hobart and Howard.

Financing

The project will be financed in part through funds raised within a Tax Increment Financing (TIF) district at the STH 29-County Highway VV intersection. These funds will be used to purchase the right-of-way necessary for the County Highway VV interchange project and to fund other project elements. The project will also be funded in part through a recently-enacted countywide sales tax that was established to help fund the completion of high-priority capital projects like the interchange at STH 29 and County Highway VV.

Partnerships

Project partners

There are four partners for this project. They are:

- The State of Wisconsin (WisDOT)
- Brown County
- Village of Hobart
- Village of Howard

Efforts to collaborate among the partners/stakeholders

The four project partners have a long history of working together to achieve transportation and other objectives. In addition to working together for more than 20 years to plan, design, and construct the improvements along Brown County's portion of the STH 29 corridor, the partners have cooperatively developed and funded comprehensive plans, area development plans, county highway improvement projects, and other plans and projects that have resulted in the preservation of natural resources, cost-efficient extension of public utilities, attraction and retention of jobs, and improvement of transportation safety, mobility, and accessibility. A list of major collaborative planning efforts that address the STH 29 corridor is included in the State and Local Approvals/Planning Approvals section of this application.

The commitment of the partners to completing the STH 29-County Highway VV interchange project is demonstrated in the resolutions and letters of support that are included in Appendix 3 of this application.

Non-Federal Revenue for Transportation Infrastructure Investment

Description of secured revenue

Nearly all of the non-federal revenue for the STH 29-County Highway VV interchange project is already secured. These non-federal revenue sources are described below.

Tax Increment Finance (TIF) District Revenue: A TIF district in the Village of Hobart will fund the acquisition of right-of-way on the south side of STH 29 and Hobart's portions of the project's fiber/broadband extension, utilities installation, and construction elements. This TIF district is established and is adequately capitalized for this project.

Bond Revenue: The Village of Howard will issue bonds to fund the acquisition of right-of-way on the north side of STH 29 and Howard's portions of the project's fiber/broadband extension, utilities installation, and construction elements. The Village of Howard has adequate bonding capacity for this project, and a resolution stating that the village is committed to financially supporting this project is included in Appendix 3 of this application.

Countywide Sales Tax Revenue: The collection of the countywide sales tax for high-priority capital projects began on January 1, 2018. Because a similar countywide sales tax that was retired in 2015 generated an average of more than $20 million per year, the project sponsors are certain that the Brown County share of the County Highway VV interchange project will be available.

V. Project Readiness

Technical Feasibility

Engineering and design studies and activities information: Nearly all of the engineering and design activities are already finished for the STH 29-County Highway VV interchange project. The project is currently at the 60% design phase, and very little additional engineering and design work will be needed to proceed with the project. A diagram showing the project's 60% design is shown on the following page.

Basis for the project's cost estimate:

The basis for the STH 29-County Highway VV interchange project's cost estimate is the guidance in Chapter 19, Section 5 of WisDOT's Facilities Development Manual (FDM). A link to this section of the FDM is attached below:

http://wisconsindot.gov/rdwy/fdm/fd-19-05.pdf

Identification of financial contingency levels for the project:

A financial contingency of $1,750,000 (6.7 percent) is being used for the STH 29-County Highway VV interchange project, and this amount is shown in the Project Budget section of this application. This contingency estimate was developed by WisDOT, and it is based on WisDOT's experience with similar projects.

Any scope, schedule, and budget risk-mitigation measures:

The project's scope, schedule, and budget risk-mitigation measures will be developed using the guidance in Chapter 2, Section 15 of WisDOT's Facilities Development Manual (FDM). A link to this section of the FDM is attached below:

http://wisconsindot.gov/rdwy/fdm/fd-02-15.pdf

Detailed statement of work focusing on the technical and engineering aspects of the project:

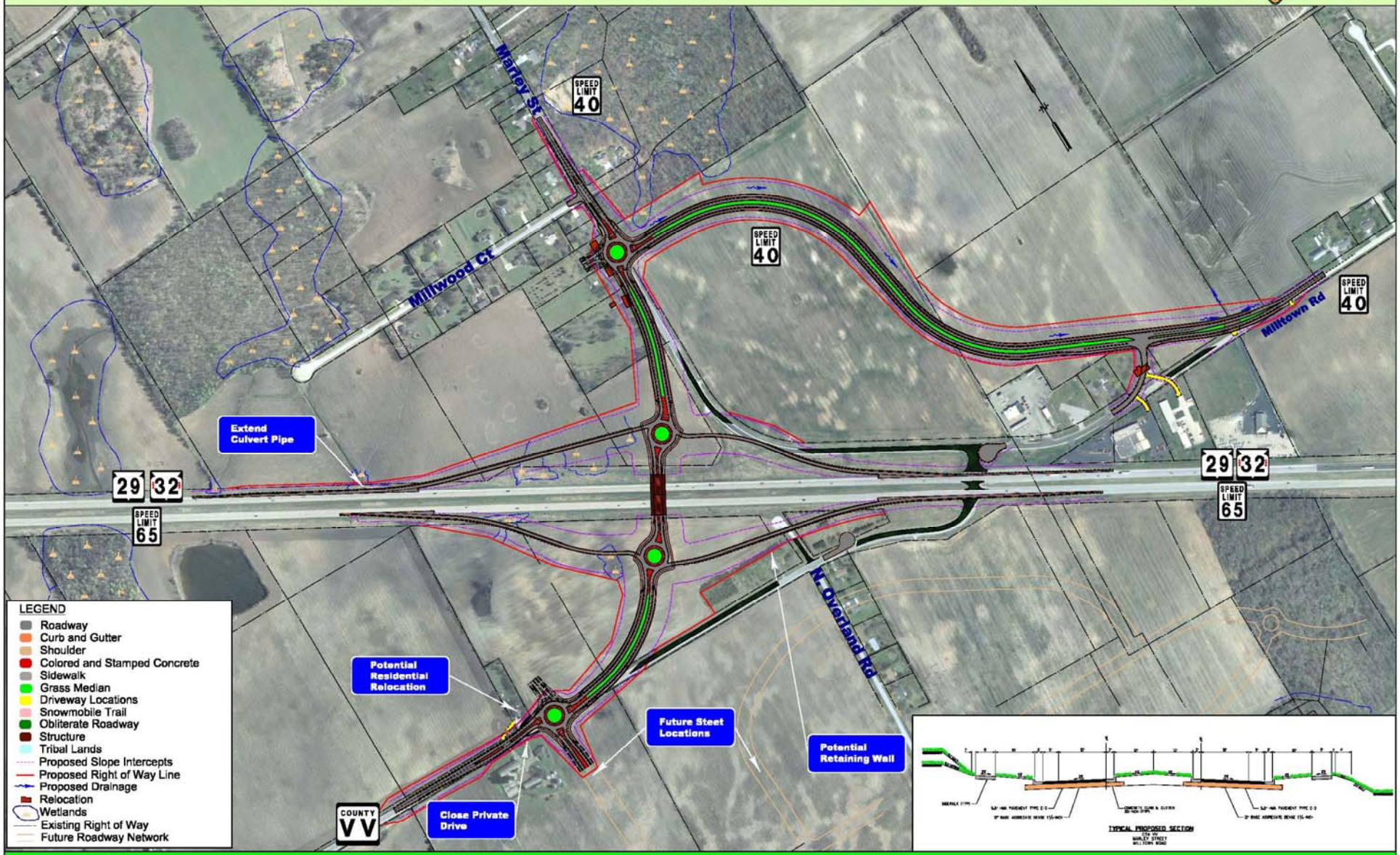
WisDOT has completed a Design Study Report (DSR) for the STH 29-County Highway VV interchange project. The DSR also addresses the possibility of adding grade-separated overpasses at the County Highway U intersection and at a location east of the existing County Highway VV intersection in the future.

The DSR includes detailed discussions of the technical and engineering aspects of the County Highway VV interchange project. It also discusses environmental impacts, safety, and other aspects of the project. A link to the DSR for the STH 29-County Highway VV interchange project is attached below:

http://www.public.applications.co.brown.wi.us/Plan/PlanningFolder/Transpotation/STH%2029%20Projects/DesignStudyReportforCTHVVInterchangeProject.pdf

County VV Interchange

NO CONSTRUCTION DATE



WIS 29 Freeway Conversion, Brown County

U.S. Department of Transportation Federal Highway Administration

Project Schedule

The STH 29-County Highway VV project's schedule is summarized below.

Project Component	Component Completion Date
Inclusion in Local and Regional Plans	Completed
Programming in MPO TIP	October 2018
Programming in STIP	January 2019
Completion and Approval of Environmental Report (ER)	August 2019
Completion of Remaining Engineering and Design Work, PS&E Approval	September 2019
Right-of-Way Acquisition	November 2019
State and Federal Permits Obtained	January 2020
Installation of Utilities	August 2020
Extension of Fiber/Broadband to Project Area	August 2020
Construction	October 2022

Please note that all of the work that needs to be completed in order to be eligible for FY 2018 BUILD funds will be completed by September 30, 2020. Also, all of the FY 2018 BUILD funds will be expended before September 30, 2025.

In addition to meeting all of the BUILD grant program schedule requirements, the project's right-of-way will be acquired in a timely manner in accordance with 49 CFR part 24, 23 CFR part 710, and other legal requirements.

Required Approvals

National Environmental Policy Act (NEPA)

An Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) were completed and signed for the entire STH 29 corridor freeway conversion project in 2007. A copy of the signed cover sheet for the EA/FONSI is included in Appendix 4 of this application.

An Environmental Report (ER) that addresses the STH 29-County Highway VV interchange project and other potential improvements to this portion of the STH 29 corridor is nearly finished, but work on the ER was suspended in 2016 because WisDOT was informed by FHWA's

Wisconsin Division that FHWA staff will no longer review environmental reports for projects that are not funded. A link to this Draft ER is attached below.

http://www.public.applications.co.brown.wi.us/Plan/PlanningFolder/Transpotation/STH%2029%20Projects/STH29-CountyHighwayVVInterchangeAreaER.pdf

The FY 2018 BUILD funding requested for the STH 29-County Highway VV interchange project and the funding provided by the state, county, and community project partners will prompt FHWA to re-engage in the NEPA process, and the project's ER will be completed and approved by August of 2019.

Reviews and approvals necessary from other agencies

A summary of reviews and approvals necessary from other agencies is included on Pages 20 and 21 of the project's Draft ER (see the link to the Draft ER above).

Permits necessary for the project

Wisconsin Department of Natural Resources (WDNR): A Section 401 Water Quality Certification (from the Clean Water Act) will be requested after the approval of the project's ER.

US Army Corps of Engineers (USACE): An application for a permit under Section 404 of the Clean Water Act will be submitted prior to construction.

US Environmental Protection Agency (EPA): An application for an EPA General Permit for Stormwater Discharges will be submitted prior to construction.

Environmental studies or other documents that describe possible environmental impacts and mitigation measures

Possible environmental impacts and mitigation measures associated with the STH 29-County Highway VV interchange project are addressed in the Environmental Protection section of this application and throughout the project's Draft ER (see the link to the Draft ER above).

Description of discussions with appropriate USDOT field office regarding project's compliance with NEPA

FHWA Wisconsin Division staff was involved in the development of the EA that was prepared for the STH 29 corridor's 2007 Right-of-Way Preservation Plan, and FHWA Wisconsin Division staff signed the EA/FONSI for the corridor plan when it was finished. A copy of the signed cover sheet for the EA/FONSI is included in Appendix 4 of this application.

FHWA Wisconsin Division staff will be involved in the completion of the STH 29-County Highway VV interchange project's ER if the BUILD funding requested in this application is obtained.

Public engagement in the project

The conversion of the STH 29-County Highway VV at-grade intersection to a grade-separated interchange has been discussed with the public at a variety of forums for more than 20 years. Examples of successful efforts to engage the public in the planning and design of the County Highway VV interchange project include:

- Public visioning sessions, citizen and technical advisory committee meetings, stakeholder interviews, project websites and newsletters, open house meetings, and plan approval meetings during the development of comprehensive and transportation plans for Brown County, the Villages of Hobart and Howard, and the Green Bay MPO. The titles of these plans are listed in the State and Local Approvals/Planning Approvals section of this application.

- Advisory committee, open house, and approval meetings during the development of the *2002 STH 29 Corridor Study*.

WisDOT also developed a project website, published project newsletters, formed and facilitated meetings with a project advisory committee, and held four public meetings during the development of the STH 29-County Highway VV interchange project's ER. Three of these meetings were for the general public, and the fourth meeting focused on the owners of private property at and near the County Highway VV interchange project area. The input received at these four meetings is summarized on Page 16 of the Draft ER (see the attached link to the Draft ER earlier in this section of the application). The public input received at these meetings and at the public meetings that occurred before the ER process began contributed to the development and selection of the project's preferred alternative.

State and Local Approvals

Planning approvals

The proposed STH 29-County Highway VV interchange project has enjoyed broad public support for more than 20 years. In addition to being identified as a high-priority project in the *1996 Brown County Land Use and Transportation Plan* and *2002 STH 29 Corridor Study*, the County Highway VV interchange project has been identified as a high-priority project in the following regional and community plans over the last 16 years:

- *2002 Village of Howard Comprehensive Plan*
- *2004 Brown County Comprehensive Plan (Current Plan)*
- *2005 Green Bay Metropolitan Planning Organization (MPO) Long-Range Transportation Plan*
- *2005 Village of Hobart Comprehensive Plan*
- *2010 Green Bay MPO Long-Range Transportation Plan*
- *2012 Village of Howard Comprehensive Plan (Current Plan)*
- *2013 Green Bay MPO Congestion Management Plan*
- *2015 Green Bay MPO Long-Range Transportation Plan (Current Plan)*
- *2016 Village of Hobart Comprehensive Plan (Current Plan)*
- *2017 Green Bay MPO Congestion Management Plan (Current Plan)*

Inclusion in the MPO Transportation Improvement Program (TIP) and State Transportation Improvement Program (STIP)

The STH 29-County Highway VV interchange project is included in the Green Bay MPO's Draft 2019-2023 Transportation Improvement Program (TIP) that will be presented for approval by the MPO's Policy Board in October of 2018. The MPO's 2019-2023 TIP will then be incorporated into the State Transportation Improvement Program (STIP) after it is approved by WisDOT.

Inclusion in the Wisconsin State Freight Plan

The STH 29 corridor is identified as a Primary Freight Corridor in Wisconsin's State Freight Plan that was completed in April of 2018. The State Freight Plan's recommended Primary Freight Corridors were supported by the State Freight Advisory Committee before the plan was completed by WisDOT and approved by FHWA. STH 29's designation as a Primary Freight Corridor is shown in Figure 9-8 on Page 359 of the document attached below.

http://wisconsindot.gov/Documents/projects/sfp/chap9.pdf

Assessment of Project Risks and Mitigation Strategies

The primary risks to the STH 29-County Highway VV interchange project are risks to the project's scope, cost, and schedule. These risks and the strategies used to mitigate these risks are discussed below.

Risks to project scope: The STH 29-County Highway VV interchange project's current scope was developed over many years through the extensive planning, environmental, design, and public outreach processes that are addressed throughout this application. The involvement of a wide variety of stakeholders and technical experts during these extensive planning, environmental, design, and public outreach processes and the careful assessment of many project alternatives will minimize the risk that the project's scope will be revised after the project begins. But to ensure that this project's scope is managed properly as the project proceeds, WisDOT will follow the scope management processes that it follows for all large-scale projects. This will include following a reasonable contracting schedule, documenting scope-related communication, and frequently meeting with the affected project partners and stakeholders regarding ongoing and out of-scope work.

Risks to project cost: To minimize the risk that the project's estimated costs will be too low, the cost of each project component identified in Table 1 of this application was estimated within the last month using the current per-unit cost of every item and activity necessary to complete the project. An inflation factor was then applied to these cost estimates to account for the number of years it will take to finish the project, and funding for contingencies was added to the budget to ensure that funds will be available to cover unanticipated cost increases attributable to materials, labor, and other factors. WisDOT will also likely utilize software (e.g. Primavera Contract Manager) that helps project managers track baseline budgets, encumbered dollars, actual expenditures, and other information.

Risks to project schedule: One of the risks to any project's schedule is the ability to secure right-of-way. Fortunately, a small portion of the right-of-way necessary for the STH 29-County Highway VV interchange project has already been acquired by WisDOT, and the remaining right-of-way will be acquired by the Villages of Hobart and Howard. Hobart's right-of-way acquisition process has already started, and Howard is in the process of appraising the land in the County Highway VV interchange project area with the intention of acquiring the right-of-way needed for the interchange. WisDOT will also likely use software (e.g. Primavera P6) to help manage the project's other components, and reports from this software will be frequently reviewed by the project's managers and other development team members to maintain the project's schedule.

Capacity to successfully implement the proposed project activities in a timely manner

WisDOT and its partners have the expertise and resources to complete the proposed STH 29-County Highway VV interchange project in a timely manner, and the ability to complete this interchange project has been demonstrated through the recent completion of other grade-separation projects along Brown County's portion of STH 29.

Benefit-Cost Analysis

The STH 29-County Highway VV interchange project is expected to produce quantifiable and qualitative benefits. The benefit-cost analysis conducted for the project includes quantifiable benefits and considers impacts and externalities of the project.

The benefit-cost analysis was conducted using the California Lifecycle Benefit/Cost Analysis Model (Cal-B/C). The Cal-B/C Model uses a standard 20-year lifecycle to enable comparisons across projects. The benefit-cost analysis completed for this project measures the following categories of user benefits:

- Travel time savings
- Vehicle operating cost reductions
- Safety improvements
- Emission reductions, including greenhouse gases

The Cal-B/C Model estimates annual user benefits over a 20-year lifecycle in constant dollars for each benefit category. Future benefits are discounted to present values using a real discount rate. Benefits are estimated separately for multiple groups defined by types of users, modes, facilities and time of day. Project costs are estimated annually from the start of construction to 20 years after projects are completed.

Many sources of input data were used for this analysis. Examples include the STH 29-County Highway VV Draft ER, WisDOT traffic counts, outputs from WisDOT's Northeast Region Travel Demand Model, Wisconsin Traffic Operations and Safety (TOPS) Laboratory crash data, WisDOT VMT estimates, and the U.S. DOT's 2018 Benefit-Cost Analysis Guidance for Discretionary Grant Programs.

Discount Rate

To be consistent with the guidance in the Federal Register, the discount rate used for this analysis was 7 percent. In addition to this primary analysis, an alternative analysis was conducted using a 3 percent discount rate. Results are presented for both analyses in this section, and the data inputs used for the entire benefit-cost analysis are shown in the Benefit-Cost Analysis appendix of this application (Appendix 5).

Travel Time Costs

To estimate travel time benefits and costs, the analysis includes the average Wisconsin median hourly wage as of July 12, 2018. The analysis also includes the Bureau of Labor Statistics' 2017 average hourly wage for truck drivers as well as hourly travel time savings estimates from the U.S. DOT's June 2018 Benefit-Cost Analysis Guidance for Discretionary Grant Programs.

Vehicle Operating Costs

The Cal-B/C model includes a combination of fuel and non-fuel vehicle operating costs. For the BUILD benefit-cost analysis, the average per-gallon gasoline and diesel fuel costs for Green Bay on July 12, 2018 were used. The analysis also incorporated current Wisconsin and federal per-gallon fuel tax rates, state and county sales taxes, and estimated non-fuel costs per mile for automobiles and trucks. The non-fuel operating costs include vehicle wear and tear as well as depreciation. For these costs, the benefit-cost analysis uses the standard Cal-B/C values updated by the GDP deflator to 2017 dollars:

- Automobiles = $0.319/mi
- Trucks = $0.434/mi

Property Damage and Injury Costs Attributable to Crashes

The property damage and injury cost estimates used for this analysis are the PDO and KABCO monetized values recommended in the June 2018 U.S. DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs.

Emission Costs

Due to a lack of adequate Wisconsin-based information regarding emissions, the benefit-cost analysis includes emissions rates estimated using factors from the California Air Resources Board (CARB) EMFAC model for on-road vehicles and other CARB sources for other modes.

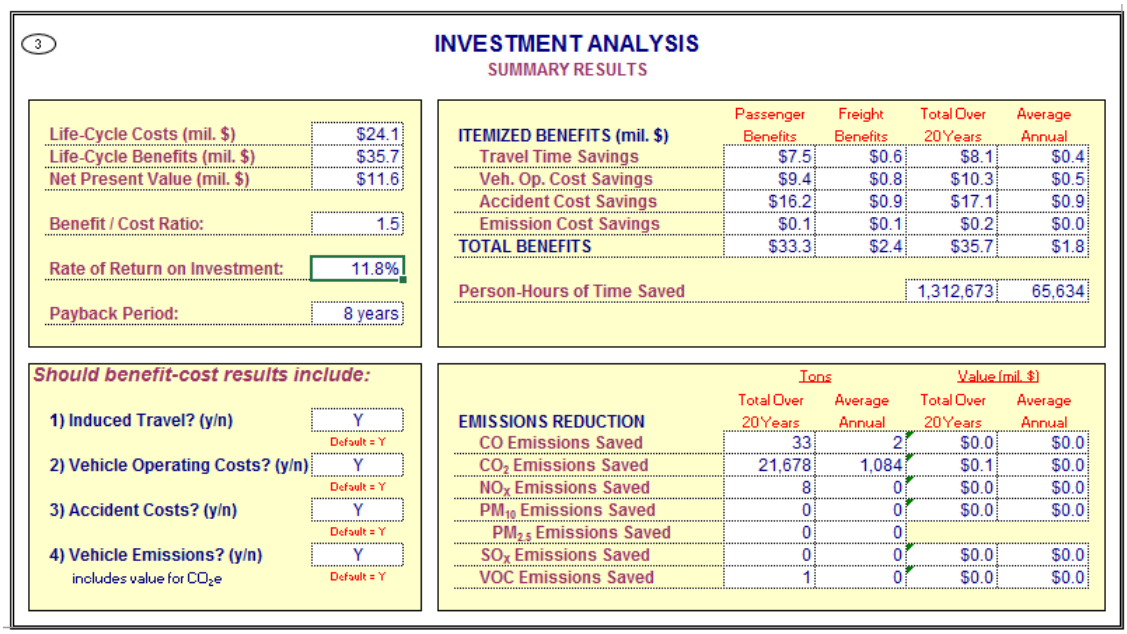
The traffic data for the benefit-cost analysis come from WisDOT's Annual Average Daily Traffic Counts and the WisDOT Northeast Region Travel Demand Model.

Summary of Results

The results of the benefit-cost analysis for the STH 29-County Highway VV interchange project using 7 percent and 3 percent discount rates are shown on the following page. The analysis results

indicate that the STH 29-County Highway interchange project will realize substantial savings associated with reductions in travel time, operating costs, crashes, and emissions. The analysis results also indicate that the interchange project's benefits will exceed its costs under both scenarios.

7 Percent Discount Rate



INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$24.1
Life-Cycle Benefits (mil. $)	$35.7
Net Present Value (mil. $)	$11.6
Benefit / Cost Ratio:	1.5
Rate of Return on Investment:	11.8%
Payback Period:	8 years

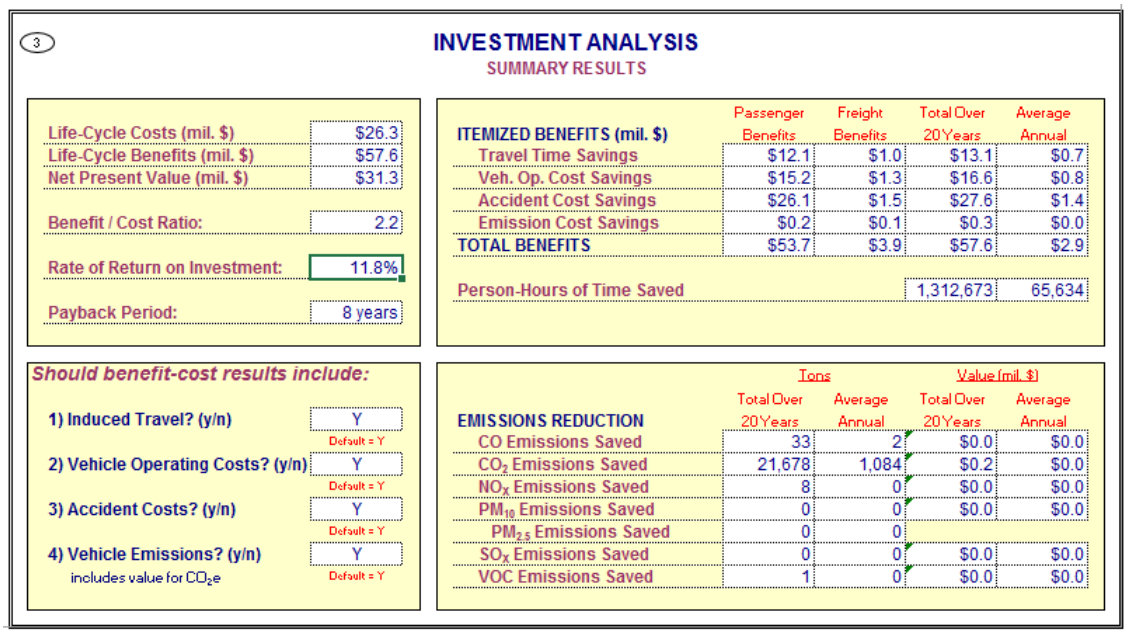
ITEMIZED BENEFITS (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$7.5	$0.6	$8.1	$0.4
Veh. Op. Cost Savings	$9.4	$0.8	$10.3	$0.5
Accident Cost Savings	$16.2	$0.9	$17.1	$0.9
Emission Cost Savings	$0.1	$0.1	$0.2	$0.0
TOTAL BENEFITS	$33.3	$2.4	$35.7	$1.8
Person-Hours of Time Saved			1,312,673	65,634

Should benefit-cost results include:

1) Induced Travel? (y/n)	Y (Default = Y)
2) Vehicle Operating Costs? (y/n)	Y (Default = Y)
3) Accident Costs? (y/n)	Y (Default = Y)
4) Vehicle Emissions? (y/n) (includes value for CO_2e)	Y (Default = Y)

	Tons		Value (mil. $)	
EMISSIONS REDUCTION	Total Over 20 Years	Average Annual	Total Over 20 Years	Average Annual
CO Emissions Saved	33	2	$0.0	$0.0
CO_2 Emissions Saved	21,678	1,084	$0.1	$0.0
NO_X Emissions Saved	8	0	$0.0	$0.0
PM_{10} Emissions Saved	0	0	$0.0	$0.0
$PM_{2.5}$ Emissions Saved	0	0		
SO_X Emissions Saved	0	0	$0.0	$0.0
VOC Emissions Saved	1	0	$0.0	$0.0

3 Percent Discount Rate



INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$26.3
Life-Cycle Benefits (mil. $)	$57.6
Net Present Value (mil. $)	$31.3
Benefit / Cost Ratio:	2.2
Rate of Return on Investment:	11.8%
Payback Period:	8 years

ITEMIZED BENEFITS (mil. $)	Passenger Benefits	Freight Benefits	Total Over 20 Years	Average Annual
Travel Time Savings	$12.1	$1.0	$13.1	$0.7
Veh. Op. Cost Savings	$15.2	$1.3	$16.6	$0.8
Accident Cost Savings	$26.1	$1.5	$27.6	$1.4
Emission Cost Savings	$0.2	$0.1	$0.3	$0.0
TOTAL BENEFITS	$53.7	$3.9	$57.6	$2.9
Person-Hours of Time Saved			1,312,673	65,634

Should benefit-cost results include:

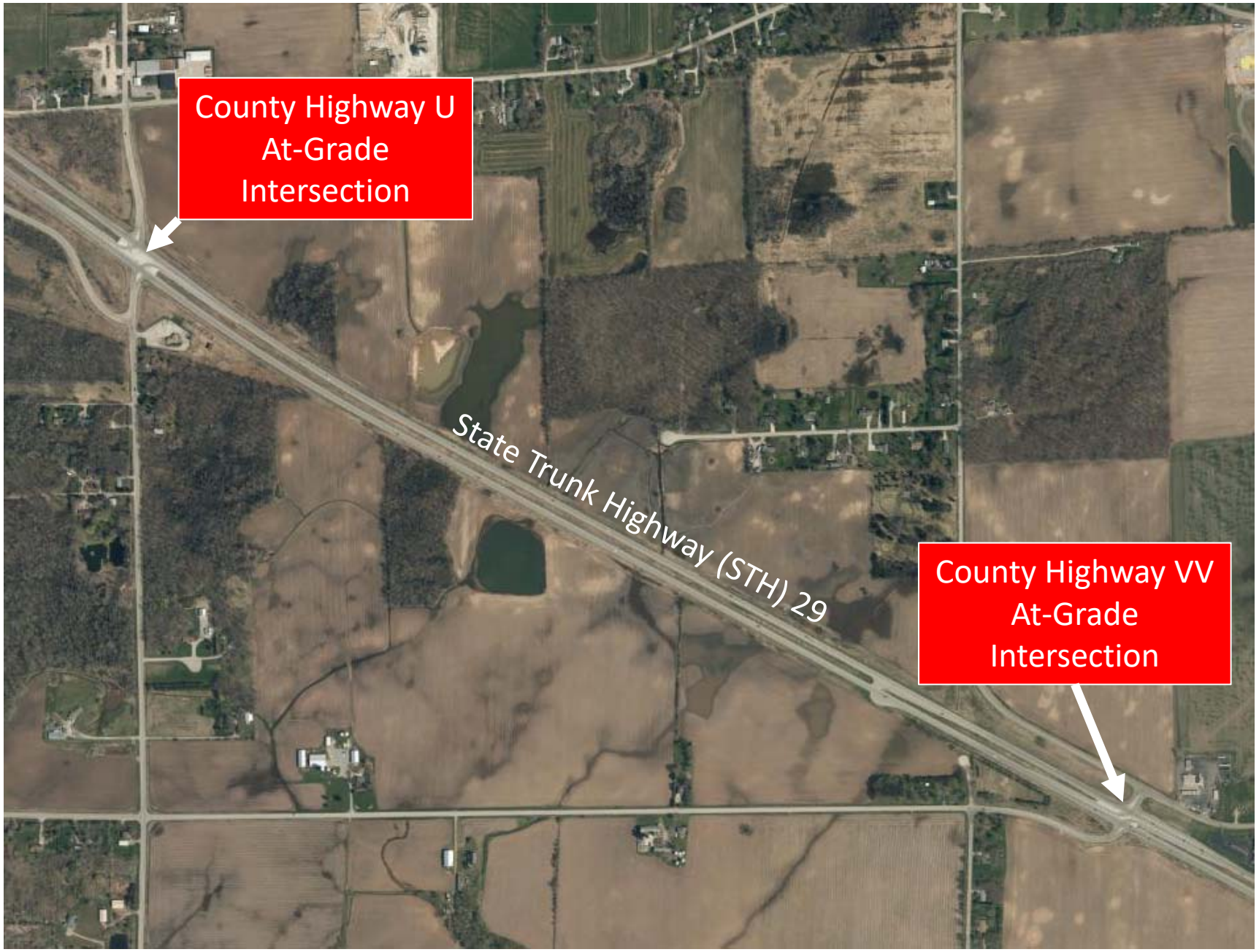
1) Induced Travel? (y/n)	Y (Default = Y)
2) Vehicle Operating Costs? (y/n)	Y (Default = Y)
3) Accident Costs? (y/n)	Y (Default = Y)
4) Vehicle Emissions? (y/n) (includes value for CO_2e)	Y (Default = Y)

	Tons		Value (mil. $)	
EMISSIONS REDUCTION	Total Over 20 Years	Average Annual	Total Over 20 Years	Average Annual
CO Emissions Saved	33	2	$0.0	$0.0
CO_2 Emissions Saved	21,678	1,084	$0.2	$0.0
NO_X Emissions Saved	8	0	$0.0	$0.0
PM_{10} Emissions Saved	0	0	$0.0	$0.0
$PM_{2.5}$ Emissions Saved	0	0		
SO_X Emissions Saved	0	0	$0.0	$0.0
VOC Emissions Saved	1	0	$0.0	$0.0

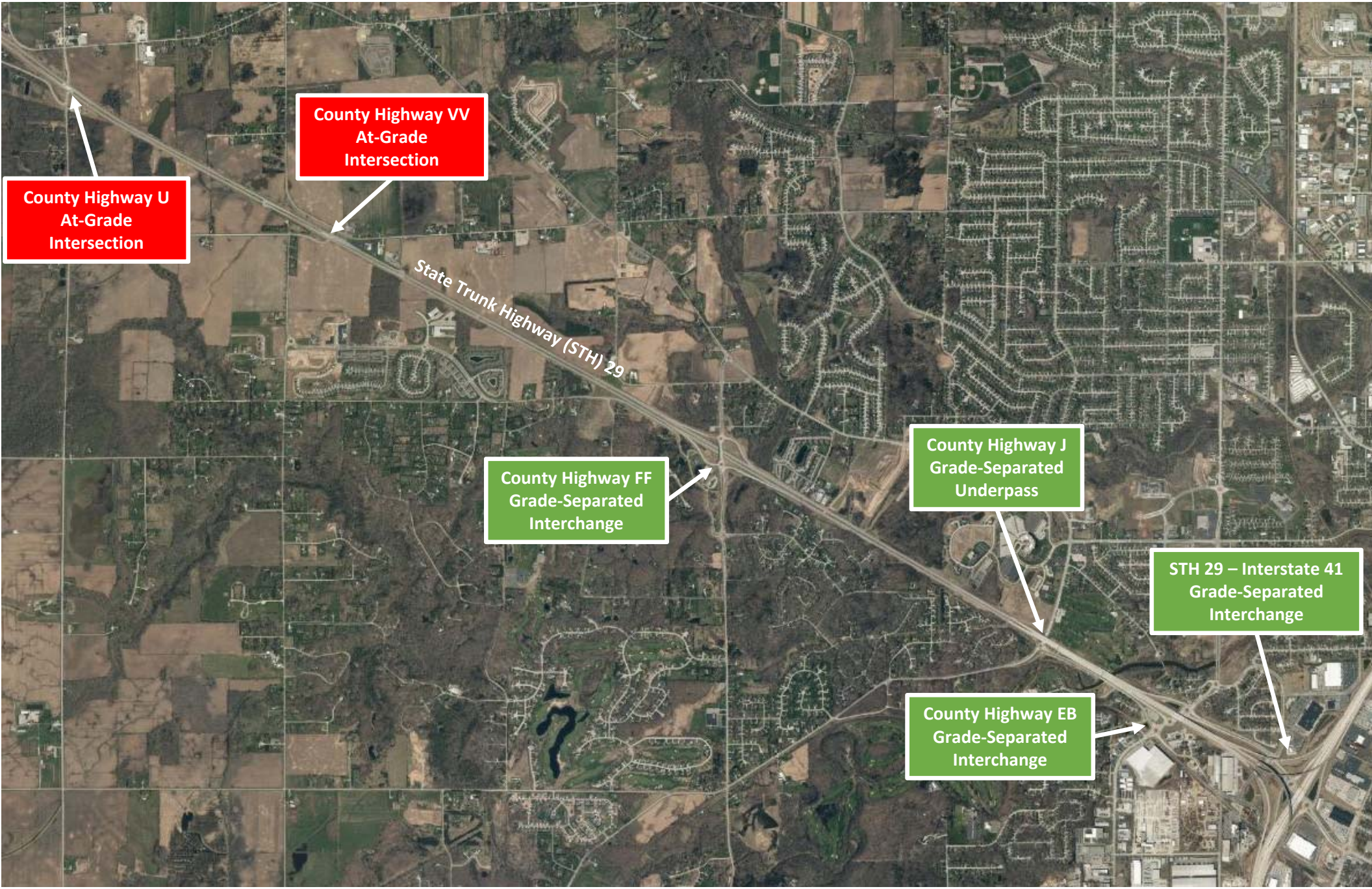
APPENDIX 1

MAPS AND GRAPHICS

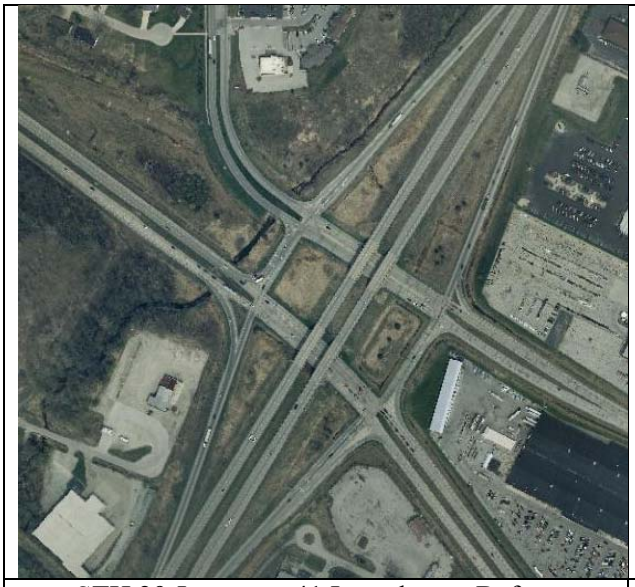
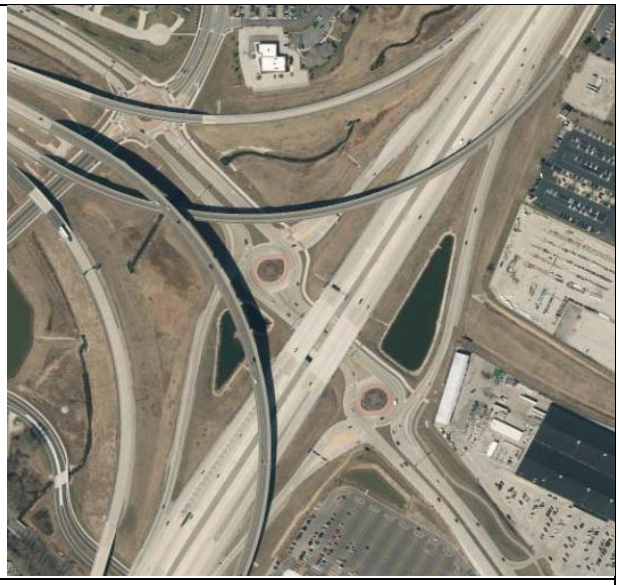
Map 1: Existing STH 29 At-Grade Intersections at County Highways VV & U



Map 2: Previously Completed STH 29 Grade Separation Improvements (In Green)



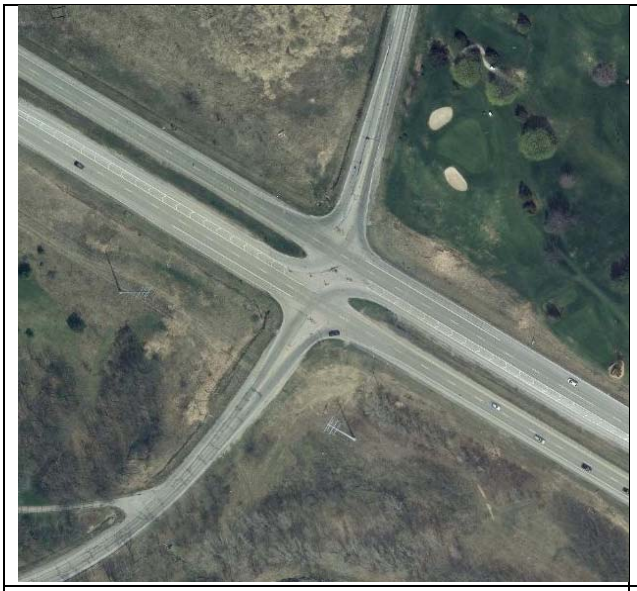
STH 29 and Interstate 41

	
STH 29-Interstate 41 Interchange Before Improvement Project	STH 29-Interstate 41 Interchange After Improvement Project

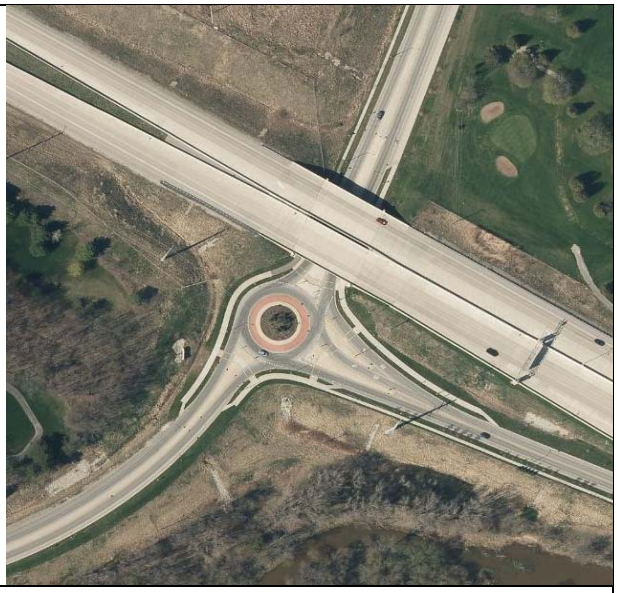
STH 29 and County Highway EB

	
STH 29-County Highway EB At-Grade Intersection Before Improvement Project	STH 29-County Highway EB Grade-Separated Interchange After Improvement Project

STH 29 and County Highway J



STH 29-County Highway J At-Grade Intersection Before Improvement Project



STH 29-County Highway J Grade-Separated Underpass After Improvement Project

STH 29 and County Highway FF

STH 29-County Highway FF At-Grade Intersection Before Improvement Project

STH 29-County Highway FF Grade-Separated Interchange After Improvement Project

APPENDIX 2

NON-FEDERAL FUNDING COMMITMENTS

VILLAGE OF
HOBART
GREATNESS IS GROWING

RESOLUTION 2018-11

A RESOLUTION BETWEEN THE VILLAGE OF HOBART AND THE VILLAGE OF HOWARD TO WORK COOPERATIVELY ON SHARING A PORTION OF THE COSTS RELATIVE TO THE COUNTY VV INTERCHANGE

BY THE VILLAGE BOARD OF THE VILLAGE OF HOBART, WISCONSIN:

WHEREAS; the proposed County VV interchange ("The Interchange) would further enhance economic development in the Village of Hobart ("Hobart") and the Village of Howard ("Howard") in Brown County; and

WHEREAS; the Interchange would lead to safer and more orderly access to and from State Highway 29 for vehicular traffic; and

WHEREAS; Hobart and Howard have worked cooperatively to create financial and political support for the construction of the Interchange for more than a decade; and

WHEREAS; Hobart and Howard are committed to exploring all reasonable and affordable options for facilitating the construction of the Interchange; and

WHEREAS; Hobart and Howard believe that working cooperatively toward the construction of the Interchange is a positive and pro-active policy that benefits the residents and businesses of both communities; and

NOW, THEREFORE, BE IT RESOLVED that we the members of the Board of Trustees of the Village of Hobart, Brown County, Wisconsin, and the Village of Howard, Brown County, Wisconsin, do hereby express our willingness to commit our financial resources, in a cooperative manner, to certain components of the construction of the County VV interchange, including, but not limited to, the purchase of right-of-way needed for the construction, design and engineering.

Adopted this 3rd day of July, 2018 by the Village of Hobart, WI

Richard Heidel, Village Board President, Hobart, WI

Attest:

Mary R. Smith
Hobart Village Clerk / Treasurer

Aaron Kramer
Hobart Village Administrator

RESOLUTION NO. 2018-22

A RESOLUTION BETWEEN THE VILLAGE OF HOBART AND THE VILLAGE OF HOWARD TO WORK COOPERATIVELY ON SHARING A PORTION OF THE COSTS RELATIVE TO THE COUNTY VV INTERCHANGE

BY THE VILLAGE BOARD OF THE VILLAGE OF HOWARD, WISCONSIN:

WHEREAS; the proposed County VV interchange ("The Interchange) would further enhance economic development in the Village of Hobart ("Hobart") and the Village of Howard ("Howard") in Brown County; and

WHEREAS; the Interchange would lead to safer and more orderly access to and from State Highway 29 for vehicular traffic; and

WHEREAS; Hobart and Howard have worked cooperatively to create financial and political support for the construction of the Interchange for more than a decade; and

WHEREAS; Hobart and Howard are committed to exploring all reasonable and affordable options for facilitating the construction of the Interchange; and

WHEREAS; Hobart and Howard believe that working cooperatively toward the construction of the Interchange is a positive and pro-active policy that benefits the residents and businesses of both communities; and

NOW, THEREFORE, be it resolved that we the members of the Board of Trustees of the Village of Hobart, Brown County, Wisconsin, and the Village of Howard, Brown County, Wisconsin, do hereby express our willingness to commit our financial resources, in a cooperative manner, to certain components of the construction of the County VV interchange, including, but not limited to, the purchase of right-of-way needed for the construction, design and engineering.

Adopted this 3rd day of July, 2018 by the Village of Hobart, WI

_____

Richard Heidel, Village Board President, Hobart, WI

Attest:

_____

Mary R. Smith
Hobart Village Clerk / Treasurer

_____

Aaron Kramer
Hobart Village Administrator

Adopted this 25th day of June, 2018 by the Village of Howard, WI

Burt R. McIntyre, Howard Village President

Christopher A. Haltom, Howard Village Clerk

EXECUTIVE

Brown County

305 E. WALNUT STREET
P.O. BOX 23600
GREEN BAY, WI 54305-3600

PHONE (920) 448-4001 FAX (920) 448-4003

Troy Streckenbach

BROWN COUNTY EXECUTIVE

July 10, 2018

The Honorable Derek Kan
Under Secretary for Policy; United States Department of Transportation
1200 New Jersey Avenue, SE
Washington D.C. 20590

Re: Support for the State Highway 29-County Highway VV Interchange Project

Dear Mr. Kan:

As the County Executive of Brown County, I wish to express my strong support for the swift completion of the State Highway 29-County Highway VV Interchange project and request that the project be identified at the federal level as a high-priority transportation project.

Brown County is applying for a Federal Better Utilizing Investments to Leverage Development (BUILD) Discretionary Grant for this project. It is my hope that you will help support this project which has the support from the Villages of Hobart and Howard, along with our state and federal legislative delegation.

Project Overview

The proposed project will eliminate the two remaining at-grade intersections along State Trunk Highway (STH) 29 in Brown County. One of the two intersections (County Highway VV) will be replaced by a grade-separated interchange that will include sidewalks, on-street bicycle lanes, and roundabouts at the ramp terminals and nearby intersections. The second at-grade intersection (County Highway U) will be eliminated after the County Highway VV interchange is completed.

Project Benefits

The STH 29-County Highway VV interchange project will address the following challenges:

- **Future transportation network efficiency:** The temporary "J-turns" that were installed at the County Highway VV and U intersections do not allow people on County Highways VV and U to make left turns directly onto STH 29 or to cross the highway, which makes traveling between the residential and commercial developments in Hobart and Howard very difficult. This problem will continue to worsen as the area develops and the number of people on the area's transportation system increases unless the interchange project is completed.

- **Mobility of goods:** There are many businesses and industries on both sides of STH 29 near the County Highway VV and U intersections that rely on STH 29 to receive and distribute goods by large truck, and the temporary J-turns that were installed at the VV and U intersections make it very inconvenient for the large trucks to enter STH 29. Trucks also currently have to accelerate to highway speeds and decelerate to turning speeds on the STH 29 mainline, which is very dangerous and has resulted in high-speed crashes. The County Highway VV interchange project will solve these problems.
- **Economic growth:** Because it is inconvenient and dangerous for large trucks to enter STH 29 at the County Highway VV and U at-grade intersections, it will be very difficult for the Villages of Hobart and Howard to attract and retain businesses and industries in this area. Both communities' current comprehensive plans identify the County Highway VV and U intersections as future economic growth areas, and many businesses and industries have already inquired about locating in Hobart's Centennial Centre development near the County Highway VV intersection. However, many of these inquiring businesses and industries have indicated that they will not locate in the Centennial Centre development unless the inefficient and dangerous at-grade intersection at County Highway VV is replaced by a grade-separated interchange. The Village of Howard also contains one of a handful of state-designated "Certified Development Sites" near the County Highway VV intersection, and the ability to attract development to this site will largely depend on the conversion of the at-grade VV intersection to a grade-separated interchange.
- **Accessibility and mobility of people:** In addition to the transportation network efficiency problems described earlier in this summary, it will continue to be very difficult and unsafe to travel across STH 29 at the at-grade County Highway VV and U intersections on foot or by bicycle because STH 29 is a divided four-lane expressway that carries a high volume of traffic at very high speeds.
- **School Transportation:** A school district (Pulaski) is located on both sides of STH 29 in this area, and middle and high school students who live on the south side of the highway need to travel to and from their schools on the north side of the highway on school buses or in private vehicles. In addition to being unsafe to transport students across STH 29 each school day, the highway's barrier effect adds to the expense of busing children because the bus company does not have a direct route across STH 29 in the County Highway VV/U area. The proposed County Highway VV interchange project will address these student transportation problems by providing a safe and convenient connection across STH 29.
- **Fiber/Broadband Access:** The STH 29-County Highway VV interchange project will include the extension of fiber/broadband technologies to this area, which will facilitate economic development and job creation in the area and enable the expansion of Intelligent Transportation Systems (ITS) technologies at the area grows.

In addition to facilitating economic development and job creation, the fiber/broadband extension element of the STH 29-County Highway VV interchange project will provide the Pulaski School District opportunities to utilize the technology. The fiber/broadband extension element will also provide wireless 5G and/or whitespace access to this portion of Brown County, and it will enhance safety and

emergency responsiveness in this area by enabling the improvement of the microwave link between Brown County's Public Safety and Communications Center and the radio tower that serves this area.

Thank you for considering this request.

Sincerely,

Troy J. Streckenbach
Brown County Executive

APPENDIX 3

RESOLUTIONS AND LETTERS OF SUPPORT

TAMMY BALDWIN
WISCONSIN

COMMITTEES:
APPROPRIATIONS
COMMERCE
HEALTH, EDUCATION,
LABOR, AND PENSIONS

United States Senate

WASHINGTON, DC 20510

July 9, 2018

The Honorable Elaine L. Chao
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Dear Secretary Chao:

I am pleased to support the application of Brown County, Wisconsin, for a 2018 US Department of Transportation BUILD grant. The State Trunk Highway 29-County Highway VV (STH 29-CH VV) Interchange Project will support commerce, economic development opportunities and accessibility for county residents, visitors and travelers. The total cost of the project is estimated to be $27,828,150; federal funding requested will be no more than $20 million.

It is my understanding that the proposed STH 29-CH VV Interchange Project will eliminate the two remaining at-grade intersections along STH 29 in Brown County. One of the two intersections (CH VV) will be replaced by a grade-separated interchange that will include sidewalks, on-street bicycle lanes, and roundabouts at the ramp terminals and nearby intersections. The second at-grade intersection (County Highway U) will be eliminated after the CH VV interchange is completed. The STH 29-CH VV Interchange Project will help improve transportation network efficiency, mobility of goods, economic growth, accessibility and mobility of people, school transportation, and fiber/broadband access.

I strongly support transportation and economic development projects that strengthen Wisconsin communities. For this reason, I respectfully request that full and fair consideration be given to Brown County's application for a US DOT BUILD grant. Please keep Jessica Sielaff in my Madison office updated on the progress of this application and contact her should you have further questions or concerns. She may be reached at 30 West Mifflin Street, Suite 700, Madison, Wisconsin 53703, by phone at 608-264-5338, or by email at projects_grants@baldwin.senate.gov. Thank you for your thoughtful consideration of this request.

Sincerely,

Tammy Baldwin
United States Senator

WISCONSIN LEGISLATURE

P.O. Box 7882 • Madison, WI 53707-7882

July 11, 2018

The Honorable Derek Kan
Under Secretary for Policy; Office of the Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Mr. Kan,

We are writing today to share our support for funding to the State Trunk Highway 29-County Trunk Highway VV Interchange Project through the Better Utilizing Investments to Leverage Development (BUILD) Discretionary Grant. We ask for your support as well.

At this time, there are two remaining at-grade intersections at County Trunk Highways (CTH) VV and U along State Trunk Highway (STH) 29 in Brown County. Both intersections have temporary "J-turns", which can make travel in the area difficult. Once completed, this project would eliminate one intersection and replace the other with a grade-separated interchange which would include sidewalks, on-street bicycle lanes, and roundabouts at the on-ramps and nearby intersections.

Current configuration of the CTH VV and U intersections along STH 29 makes travel dangerous for local commuters and businesses. There are several residential and commercial developments located on both sides of STH 29, as well as a local school district (Pulaski) which frequently sees students, parents, and school buses using the intersections. As the area continues to grow and develop, more people will be crossing STH 29 everyday, which could increase the likelihood of accidents.

The new interchange would also create the possibility of economic growth. Because of the inconvenience of the current intersections, it is difficult for the local communities of Hobart and Howard to attract and retain businesses. Both communities have identified this area as one for future economic growth with many businesses and industries already inquiring about local development should the interchange be completed.

In short, this project would create a safer crossing for local residents and businesses in the area. It would also be a catalyst for economic growth and would ensure the retention and attraction of commercial and residential developments along the STH 29 corridor.

As always, thank you for your time and attention. We look forward to hearing back from you. Please don't hesitate to contact our offices with any questions.

Sincerely,

Jim Steineke
Majority Leader
5th Assembly District

John Nygren
State Representative
89th Assembly District

Gary Tauchen
State Representative
6th Assembly District

David Steffen
State Representative
4th Assembly District

STANDING COMMITTEES:
Natural Resources & Energy, Chair
Transportation & Veterans Affairs

ROBERT L. COWLES
Wisconsin State Senator
2nd Senate District

JOINT COMMITTEES
Audit Committee, Co-Chair
Information Policy and Technology

July 3, 2018

The Honorable Derek Kan
Under Secretary for Policy; Office of the Secretary of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Mr. Kan,

I am writing to express my support for the application by Brown County, Wisconsin for a Better Utilizing Investments to Leverage Development (BUILD) Discretionary Grant to develop the critically needed State Highway 29-County Highway VV Interchange project.

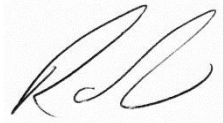
This proposed project will eliminate two at-grade intersections along State Highway 29 (STH 29) and replace them with a grade-separated interchange that will help to foster the economic growth in a growing community, be much safer for school and resident's transportation, and ease the mobility of goods and people. Currently, the intersections at County Highway VV and U have temporary "J-turns" installed that have made left turns onto STH 29, or crossing the highway, both difficult and dangerous as traffic on STH 29 is moving at 70 miles per hour. This problem is likely to worsen as area developments, both residential and commercial, in Hobart, WI and Howard, WI have been very successful and the number of people utilizing the area's transportation and these intersections in particular have risen dramatically.

Among the project's several benefits, economic growth to this area will be extensive. As mentioned, many have difficulty entering and exiting STH 29, but it has become even more burdensome for large trucks which have stunted the ability for Hobart and Howard to attract and retain businesses and industries. While, dozens of businesses have inquired about locating within these locations, none have, siting that it is too dangerous and inefficient a location unless a grade-separated interchange existed to foster the movement of traffic on and off STH 29. In addition, much of the surrounding communities' economic growth and development plans depend largely on the development of an interchange at County Highway VV and STH 29.

Additionally, every school day, students are required to travel through this intersection to attend school. Furthermore, School districts are billed with the added expense of having to use inefficient bus routes and multiple vehicles due to the highway's barrier effect on the area school district.

The County Highway VV and STH 29 Interchange project will also include an extension of fiber/broadband technologies to this area. As you are well aware, access to broadband is one of the solely most important economic development and job creation tools necessary to compete in the 21st century economy. This technology expansion will not only benefit the area businesses, but also the previously mentioned school district to take advantage of the opportunities to utilize this vital technology.

Sincerely,



Senator Robert L. Cowles
Wisconsin's 2nd Senate District

Office:
State Capitol
P.O. Box 7882
Madison, WI 53707-7882
608-266-0484

Toll-free Hotline: 1-800-334-1465
Fax: 608-267-0304
Sen.Cowles@legis.wisconsin.gov

Home:
300 W. St. Joseph Street, #23
Green Bay, WI 54301-2328
920-448-5092
Fax: 920-448-5093

WISCONSIN STATE SENATOR
DAVE HANSEN
SENATOR – 30TH DISTRICT

State Capitol P.O. Box 7882 Madison, Wisconsin 53707-7882 Phone: (608) 266-5670

July 3, 2018

The Honorable Derek Kan
Under Secretary for Policy; United States Department of Transportation
1200 New Jersey Avenue, SE
Washington D.C. 20590

Dear Secretary Kan:

I am writing to express my support for the application by Brown County, Wisconsin for a Better Utilizing Investments to Leverage Development (BUILD) Discretionary Grant to develop the critically needed State Highway 29-County Highway VV Interchange Project.

This proposed project will eliminate two at-grade intersections along State Highway 29 (STH 29) and replace them with a grade-separated interchange that will help to foster the economic growth in a growing community, be much safer for school and resident's transportation, and ease the mobility of goods and people. Currently, the intersections at County Highway VV and U have temporary "J-turns" installed that have made left turns onto STH 29, or crossing the highway, both difficult and dangerous as traffic on STH 29 is moving at 70 miles per hour. This problem is likely to worsen as area developments, both residential and commercial, in Hobart, WI and Howard, WI have been very successful and the number of people utilizing the area's transportation and these intersections in particular have risen dramatically.

Among the project's several benefits, economic growth to this area will be extensive. As mentioned, many have difficulty entering and exiting STH 29, but it has become even more burdensome for large trucks which have stunted the ability for Hobart and Howard to attract and retain businesses and industries. While, dozens of businesses have inquired about locating within these locations, none have, siting that it is too dangerous and inefficient a location unless a grade-separated interchange existed to foster the movement of traffic on and off STH 29. In addition, much of the surrounding communities' economic growth and development plans depend largely on the development of an interchange at County Highway VV and STH 29.

Additionally, every school day, students are required to travel through this intersection to attend school. Furthermore, School districts are billed with the added expense of having to use inefficient bus routes and multiple vehicles due to the highway's barrier effect on the area school district.

The County Highway VV and STH 29 Interchange project will also include an extension of fiber/broadband technologies to this area. As you are well aware, access to broadband is one of the solely most important economic development and job creation tools necessary to compete in the 21st century economy. This technology expansion will not only benefit the area businesses, but also the previously mentioned school district to take advantage of the opportunities to utilize this vital technology.

Sincerely,

Dave Hansen

Dave Hansen
Wisconsin's State Senator

Toll-Free: 1-866-221-9395 Fax: (608) 267-6791 E-mail: sen.hansen@legis.wi.gov Web: www.senatorhansen.com

WISCONSIN STATE SENATE
Caleb Frostman
SENATOR – 1ST DISTRICT

July 10, 2018

The Honorable Derek Kan
Under Secretary for Policy, United States Department of Transportation
1200 New Jersey Avenue, SE
Washington D.C. 20590

Dear Secretary Kan:

I am writing to express my support for Brown County, Wisconsin's application to receive a Better Utilizing Investments to Leverage Development (BUILD) Discretionary Grant for the vital State Highway 29 and County Highway VV Interchange Project in western Brown County.

This proposed project will eliminate two challenging at-grade intersections along State Highway 29 (STH 29) and replace them with safer and more accessible grade separated interchanges. The proposed interchange improvements will allow the nearby communities to continue to grow and create economic opportunities for the entire region. In their current configuration, the intersections have temporary "J-turns" installed which impede the ability to safely turn left onto STH 29. Traffic at these intersections has continued to rise dramatically creating safety issues for those on their way to work or school and logistics challenges for the businesses in the area.

As previously mentioned, the communities connected to these intersections want to grow and create economic opportunities for the region. However, their long term potential and ability to attract and retain businesses is being hindered due to the burdensome traffic patterns created by these dangerous at-grade intersections. Much of the future growth and development plans for the area depend on the improvement of the interchange at STH 29 and County Highway VV.

This project will also contain an extension of fiber/broadband internet service to the area. This additional aspect of the project will serve to enhance the economic development opportunities and assist in attracting additional 21st century jobs.

Thank you for your time and attention to this important project. I hope we can work together to expand transportation access and economic development opportunities to Northeast Wisconsin.

Sincerely,

Caleb Frostman
State Senator
1st Senate District

22 South, State Capitol · P.O. Box 7882 · Madison, WI 53707-7882 · Phone: (608) 266-3512
Sen.Frostman@legis.wisconsin.gov

VILLAGE OF HOBART
GREATNESS IS GROWING

RESOLUTION 2018-10

A RESOLUTION OF SUPPORT FOR APPLICATION OF A BETTER UTILIZING INVESTMENTS TO LEVERAGE DEVELOPMENT (BUILD) TRANSPORTATION DISCRETIONARY GRANT FOR THE COUNTY VV INTERCHANGE IN HOBART

BY THE VILLAGE BOARD OF THE VILLAGE OF HOBART, WISCONSIN:

WHEREAS; the Village of Hobart ("the Village") commenced with an ambitious and visionary plan of development in northern Hobart, hereafter referred to as Centennial Centre, in 2008; and

WHEREAS; the future growth and development of Centennial Centre has been and will continue to be hampered by the failure to construct the County VV interchange ("the Interchange); and

WHEREAS; the construction of the Interchange would also lead to safer and more orderly access to and from State Highway 29 for vehicular traffic; and

WHEREAS; the Village has expressed, in the past and moving forward, to commit its financial support to the construction of the Interchange; and

WHEREAS; the Village firmly believes that the construction of the Interchange would facilitate and nurture further economic benefits, as well as improvements in the quality of life, not only for the Village, but for the Village of Howard, Brown County, and other surrounding areas in Northeastern Wisconsin; and

WHEREAS; the Village will pledge its support to any initiative to encourage the construction of the Interchange; and

WHEREAS, The United States Department of Transportation (DOT) has created the Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program, which replaces the pre-existing Transportation Investment Generating Economic Recovery (TIGER) grant program, which has been created to invest in surface transportation infrastructure and are to be awarded on a competitive basis for projects that will have a significant local or regional impact and will be applied to fund roads, bridges, transit, rail, ports or intermodal transportation as an investment in the future of America's infrastructure and future.

NOW, THEREFORE, BE IT RESOLVED that we the members of the Board of Trustees of the Village of Hobart, Brown County, Wisconsin, do hereby express our unanimous support of an application for a Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant to provide funding for the County VV Interchange.

Adopted this 3rd day of July, 2018.

Richard Heidel, Village Board President

Attest:

Mary R. Smith, Village Clerk / Treasurer

Aaron Kramer, Village Administrator

RESOLUTION NO. 2018-21

A RESOLUTION OF SUPPORT FOR APPLICATION OF A Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant for the State Highway 29 and County VV Interchange

---

WHEREAS; the Village of Howard ("the Village") in 2012 received state certification of an industrial site as "shovel ready", one of the first sites to receive this distinction from the state; and

WHEREAS; site selectors have determined the site is not as desirable due to the current configuration of the State Highway 29 and County VV intersection; and

WHEREAS; future development on the westside of the Village will be greatly enhanced by the construction of full improvements at this intersection ("the Interchange); and

WHEREAS; the construction of the Interchange would also lead to safer and more orderly access to and from State Highway 29 for vehicular traffic; and

WHEREAS; the Village has expressed, in the past and moving forward, to commit its financial support to the construction of the Interchange; and

WHEREAS; the Village firmly believes that the construction of the Interchange would facilitate and nurture further economic benefits, as well as improvements in the quality of life, not only for the Village of Howard, but also for Brown County and other surrounding areas in Northeastern Wisconsin; and

WHEREAS; the Village will pledge its support to any initiative to encourage the construction of the Interchange; and

WHEREAS, The United States Department of Transportation (DOT) has created the Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program, which replaces the pre-existing Transportation Investment Generating Economic Recovery (TIGER) grant program, which has been created to invest in surface transportation infrastructure and are to be awarded on a competitive basis for projects that will have a significant local or regional impact and will be applied to fund roads, bridges, transit, rail, ports or intermodal transportation as an investment in the future of America's infrastructure and future.

NOW, THEREFORE, be it resolved that we the members of the Board of Trustees of the Village of Howard, Brown County, Wisconsin, do hereby express our support of an application for a Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant to provide funding for the County VV Interchange.

Dated this 25th day of June, 2018.

Burt R. McIntyre, Village President

Christopher A. Haltom, Village Clerk

APPENDIX 4

STH 29 CORRIDOR ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT SIGNED COVER SHEET

ENVIRONMENTAL EVALUATION OF FACILITIES DEVELOPMENT ACTIONS

Wisconsin Department of Transportation
DT2094 8/2005

Project ID	Funding Source	Federal Number
1058-14-00	☐ State Only ☒ Federal	
Project Name (Highway, Airport, Rail Line)		**Project Termini**
WIS 29 Right of Way Preservation Plan		WIS 32 to County J
Sections	**Counties**	**Estimated Project Cost (Include R/W acquisition)**
T25N R19E SEC 30,31,32,33,34 T24N R19E SEC 2,3,4,10,11,12,13 T24N R20E SEC 7,18	Brown and Outagamie	$43,400,000

It is determined, after review of the comments from the public, and coordination with other agencies, that this action would not significantly affect the quality of the human environment. This document is a

☒ Finding of No Significant Impact (FONSI).

☒ Environmental Assessment (EA) No Significant Impacts Indicated by Initial Assessment

☐ Environmental Assessment (EA) EIS Required

☐ Environmental Report (2-ER)

Mark C. M. Cathy 10/24/07
(Signature) (Date)

PROJECT MANAGER, EMCS
(Title)

Jimmy Cavanaugh 10/26/07
(Signature) (Date)

Project Manager
(Title)

Michael Berg 10/26/07
(Signature) (Date)
☐ Region, ☐ Aeronautics,
☐ Transit, Local Roads, Rails & Harbors

for [illegible] 11/6/07
(Director, Bureau of Equity & Environmental Services) (Date)

[illegible] 11/14/07
(☐ FHWA, ☐ FAA, ☐ FTA, ☐ FRA) (Date)

Johnny M Gerbitz

Mark C. M. Cathy 4/30/07
(Signature) (Date)

Project Manager, EMCS
(Title)

Colleen Hanna 4/30/07
(Signature) (Date)

Planning Supervisor
(Title)

(Signature) (Date)
☒ Region, ☐ Aeronautics,
☐ Transit, Local Roads, Rails & Harbors

[illegible] 6/5/07
(Director, Bureau of Equity & Environmental Services) (Date)

[illegible] 6/14/07
(☒ FHWA, ☐ FAA, ☐ FTA, ☐ FRA) (Date)

Johnny M. Gerbitz

1. Description of Proposed Action (Attach project location map and other appropriate graphics).

The WIS 29 Right of Way Preservation plan identifies and officially map the right of way necessary for future conversion of WIS 29 from expressway to freeway standards. The proposed action officially mapping right-of-way needed to convert WIS 29 to freeway standards is a long-term, proactive planning initiative preserving future highway right of way and discouraging development from occurring on these lands. This action is in accordance with State Statute 84.295 which authorizes the segment designations of the state trunk highway system as either freeways or expressways.

This plan addresses a segment of WIS 29 that is 7.1 miles long beginning 1.2 miles west of WIS 32 and ending 0.9 miles west of County J (see Attachment 1-project limits). Recommended interchange locations include: WIS 29 and WIS 32 (existing interchange); WIS 29 and County VV; and WIS 29 and County FF. Recommended overpasses include County U and North Pine Tree Road (extended north from Sunlite Drive to Milltown Road). The plan also calls for removing access to WIS 29 at Sunlite Drive/Forest Road and at Woodland Road/Greenfield Avenue. No private entrances to WIS 29 exist within this segment of roadway. Relocating local roads to connect into the reconstructed cross roads along WIS 29 is also recommended. These local roads include: Old Hwy 29 Road at County U; Triangle Road at County VV; Milltown Road at Marley Street; and Golden Pond Park Court at County FF. The plan recommends removing access to Sherwood Street from Catherine Drive. See Attachment 3 for plan illustrations of these future roadway alterations.

APPENDIX 5

BENEFIT-COST ANALYSIS RELEVANT FILES

Parameters

This page contains all economic values and rate tables.
To update economic values automatically, change "Economic Update Factor."

OMB GDP Deflator Table 10.1
https://www.whitehouse.gov/omb/budget/Historicals

2007	0.9684	INFRA Table 10 Inflator
2011	1.0293	1.013
2012	1.0481	
2013	1.0658	
2014	1.0852	
2015	1.0983	
2016	1.111	
2017	1.1301	
OMB GDP Inflator	1.01719172	

General Economic Parameters

Year of Current Dollars for Model	2017	
Economic Update Factor (Using GDP Deflator)	1.02	1
Real Discount Rate	7.0%	2

Travel Time Parameters

	Value	Units	
Statewide Median Hourly Wage	$ 17.81	$/hr	3
Heavy and Light Truck Drivers			
Average Hourly Wage	$ 20.42	$/hr	3
Benefits and Costs	$ 10.93	$/hr	4
Value of Time			
Automobile	$ 14.20	$/hr/per	5
Truck	$ 28.60	$/hr/veh	5
Auto & Truck Composite	$ 21.00	$/hr/veh	6
Transit	$ -	$/hr/per	5
Out-of-Vehicle Travel	2	times	5
Incident-Related Travel	3	times	7
Travel Time Uprater	0.0%	annual incr	

Vehicle Operating Cost Parameters

Average Fuel Price			
Automobile (regular unleaded)	$ 2.77	$/gal	8
Truck (diesel)	$ 3.15	$/gal	8
Sales and Fuel Taxes			
State Sales Tax (gasoline)	5.00%	%	9
State Sales Tax (diesel)	5.00%	%	9
Average Local Sales Tax	0.50%	%	9
Federal Fuel Excise Tax (gasoline)	$ 0.184	$/gal	9
Federal Fuel Excise Tax (diesel)	$ 0.244	$/gal	9
State Fuel Excise Tax (gasoline)	$ 0.330	$/gal	9
State Fuel Excise Tax (diesel)	$ 0.330	$/gal	9
Fuel Cost Per Gallon (Exclude Taxes)			
Automobile	$ 2.10	$/gal	
Truck	$ 2.45	$/gal	
Non-Fuel Cost Per Mile			
Automobile	$ 0.319	$/mi	10
Truck	$ 0.434	$/mi	11
Idling Speed for Op. Costs and Emissions	5	mph	

Accident Cost Parameters

Cost of a Fatality	$ 9,600,000	$/event	12	US DOT 2018 Guide KABCO Level Values	K	9600000
Cost of an Injury						
Level A (Severe)	$ 459,100	$/event	12		A	459100
Level B (Moderate)	$ 125,000	$/event	12		B	125000
Level C (Minor)	$ 63,900	$/event	12		C	63900
Cost of Property Damage	$ 4,327	$/event	13	US DOT 2018 Guide PDO Value		4327
Cost of Highway Accident						
Fatal Accident	$ 11,100,000	$/accident				
Injury Accident	$ 154,500	$/accident				
PDO Accident	$ 13,800	$/accident				
Average Cost	$ 280,500	$/accident				
Statewide Highway Accident Rates						
Fatal Accident	0.006	per mil veh-mi	14			
Injury Accident	0.43	per mil veh-mi	14			
PDO Accident	1.10	per mil veh-mi	14			
Non-Freeway	1.60	per mil veh-mi	15			

Highway Operations Parameters

	Value	Units	
Maximum V/C Ratio	0.9	-	16
Percent ADT in Peak Period	10.7%	%	
Percent ADT in Average Peak Hour	10.7%	%	
Annualization Factor	365	days/yr	

	Alpha	Beta	Capacity (vphpl)	Dep. Rate (vphpl)	
Freeway	0.20	10	2,000	1,800	16, 17
Expressway	0.20	10	2,000	1,800	16, 17
Conventional Highway	0.05	10	800	1,400	17
HOV Lanes	0.00	0	0		18

Non-HOV Lanes	Alpha	Beta	Capacity (vphpl)
No Build	0.05	10	800
Build	0.20	10	2,000

Sources: 16) Highway Capacity Manual, 17) NCHRP 387.

Sources: 1) Office of Management and Budget (OMB), 2) Review of OMB and State Treasurer's Office data, 3) Bureau of Labor Statistics (BLS) OES, 4) BLS Employment Cost Index, 5) USDOT Benefit-Cost Guidance for Discretionary Grant Programs - 2018, 6) Average of Auto and Truck Time Values 7) IDAS model, 8) GasBuddy.com for Green Bay, WI on July 12, 2018, 9) Wisconsin Department of Revenue, 10) AAA Your Driving Costs, 11) American Transportation Research Institute, 12) USDOT Benefit-Cost Guidance for Discretionary Grant Programs - 2018, 13) USDOT Benefit-Cost Guidance for Discretionary Grant Programs - 2018,
14) Wisconsin TOPS Lab Stats & WisDOT VMT Estimates for Brown County, WI - 2016,
15) Wisconsin TOPS Lab Stats & WisDOT VMT Estimates for Brown County, WI - 2013.

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Fuel Cost Per Gallon (Exclude Taxes)			
Automobile	$ 2.10	$/gal	
Truck	$ 2.45	$/gal	
Non-Fuel Cost Per Mile			
Automobile	$ 0.319	$/mi	10
Truck	$ 0.434	$/mi	11
Idling Speed for Op. Costs and Emissions	5	mph	

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	Value	Units	
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Percent ADT in Average Peak Hour	10.7%	%	
Annualization Factor	365	days/yr	

	Alpha	Beta	Capacity (vphpl)	Dep. Rate (vphpl)	
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Expressway	0.20	10	2,000	1,800	16, 17
Conventional Highway	0.05	10	800	1,400	17
HOV Lanes	0.00	0	0		18

Non-HOV Lanes	Alpha	Beta	Capacity (vphpl)
No Build	0.05	10	800
Build	0.20	10	2,000

Sources: 16) Highway Capacity Manual, 17) NCHRP 387.

Sources: 1) Office of Management and Budget (OMB), 2) Review of OMB and State Treasurer's Office data, 3) Bureau of Labor Statistics (BLS) OES, 4) BLS Employment Cost Index, 5) USDOT Benefit-Cost Guidance for Discretionary Grant Programs - 2018, 6) Average of Auto and Truck Time Values 7) IDAS model, 8) GasBuddy.com for Green Bay, WI on July 12, 2018, 9) Wisconsin Department of Revenue, 10) AAA Your Driving Costs, 11) American Transportation Research Institute, 12) USDOT Benefit-Cost Guidance for Discretionary Grant Programs - 2018, 13) USDOT Benefit-Cost Guidance for Discretionary Grant Programs - 2018,
14) Wisconsin TOPS Lab Stats & WisDOT VMT Estimates for Brown County, WI - 2016,
15) Wisconsin TOPS Lab Stats & WisDOT VMT Estimates for Brown County, WI - 2013.

District: WisDOT NE Region

PROJECT: State Trunk Highway 29-County Highway VV Multimodal Interchange

EA:
PPNO:

1A PROJECT DATA

Type of Project	Check percent traffic in weave in section 1B	
Select project type from list	Freeway Connector	
Project Location (enter 1 for So. Cal., 2 for No. Cal., or 3 for rural)	3	
Length of Construction Period	4	years
One- or Two-Way Data	2	enter 1 or 2
	Current	
Length of Peak Period(s) (up to 24 hrs)	1	hours

1B HIGHWAY DESIGN AND TRAFFIC DATA

Highway Design		No Build	Build
Roadway Type (Fwy, Exp, Conv Hwy)		C	F
Number of General Traffic Lanes		4	4
Number of HOV/HOT Lanes		0	0
HOV Restriction (2 or 3)			
Exclusive ROW for Buses (y/n)		N	
Highway Free-Flow Speed		65	70
Ramp Design Speed (if aux. lane/off-ramp proj.)		0	50
Length (in miles)	Highway Segment	0.0	0.0
	Impacted Length	0.2	0.0

Average Daily Traffic			
	Current	27,100	
		No Build	Build
	Base (Year 1)	34,800	35,500
	Forecast (Year 20)	50,400	52,100
Average Hourly HOV/HOT Lane Traffic		0	0
Percent of Induced Trips in HOV (if HOT or 2-to-3 conv.)			0%
Percent Traffic in Weave		0.0%	0.0%
Percent Trucks (include RVs, if applicable)		5%	5%
Truck Speed		65	70

On-Ramp Volume	Peak	Non-Peak
Hourly Ramp Volume (if aux. lane/on-ramp proj.)	0	0
Metering Strategy (1, 2, 3, or D, if on-ramp proj.)		

Queue Formation (if queuing or grade crossing project)	Year 1	Year 20
Arrival Rate (in vehicles per hour)	209	830
Departure Rate (in vehicles per hour)	209	830

Pavement Condition (if pavement project)		No Build	Build
IRI (inches/mile)	Base (Year 1)		
	Forecast (Year 20)		

Average Vehicle Occupancy (AVO)		No Build	Build
General Traffic	Non-Peak	1.39	1.39
	Peak	1.39	1.39
High Occupancy Vehicle (if HOV/HOT lanes)		0.00	0.00

1C HIGHWAY ACCIDENT DATA

Actual 3-Year Accident Data (from Table B)	Count (No.)	Rate
Total Accidents (Tot)	41	1.38
Fatal Accidents (Fat)	0	0.000
Injury Accidents (Inj)	24	0.81
Property Damage Only (PDO) Accidents	17	0.57

Statewide Basic Average Accident Rate	No Build	Build
Rate Group	1.00	1.00
Accident Rate (per million vehicle-miles)	1.38	0.10
Percent Fatal Accidents (Pct Fat)	0.0%	0.0%
Percent Injury Accidents (Pct Inj)	59.0%	5.0%

1D RAIL AND TRANSIT DATA

Annual Person-Trips		No Build	Build
	Base (Year 1)		
	Forecast (Year 20)		
Percent Trips during Peak Period		11%	
Percent New Trips from Parallel Highway			100%

Annual Vehicle-Miles		No Build	Build
	Base (Year 1)		
	Forecast (Year 20)		
Average Vehicles/Train (if rail project)			

Reduction in Transit Accidents	
Percent Reduction (if safety project)	

Average Transit Travel Time		No Build	Build
In-Vehicle	Non-Peak (in minutes)		0.0
	Peak (in minutes)		0.0
Out-of-Vehicle	Non-Peak (in minutes)	0.0	0.0
	Peak (in minutes)	0.0	0.0

Highway Grade Crossing	Current	Year 1	Year 20
Annual Number of Trains		0	
Avg. Gate Down Time (in min.)		0.0	

Transit Agency Costs (if TMS project)	No Build	Build
Annual Capital Expenditure		$0
Annual Ops. and Maintenance Expenditure		$0

Model should be run for both roads for intersection or bypass highway projects, and may be run twice for connectors. Press button below to prepare model to enter data for second road. After data are entered, results reflect total project benefits.

Prepare Model for Second Road

Enter all project costs (in today's dollars) in columns 1 to 7. Costs during construction should be entered in the first eight rows. Project costs (including maintenance and operating costs) should be net of costs without project.

1E

PROJECT COSTS (enter costs in thousands of dollars)

Col. no.	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
Year	DIRECT PROJECT COSTS					Mitigation	Transit Agency Cost Savings	TOTAL COSTS (in dollars)	
	INITIAL COSTS			SUBSEQUENT COSTS					
	Project Support	R / W	Construction	Maint./ Op.	Rehab.			Constant Dollars	Present Value
Construction Period									
1	$500							$500,000	$500,000
2		3,284						3,284,000	3,069,159
3			12,021					12,021,000	10,499,607
4			12,021					12,021,000	9,812,717
5								0	0
6								0	0
7								0	0
8								0	0
Project Open									
1				$20				$20,000	$15,258
2				$20				20,000	14,260
3				$20				20,000	13,327
4				$20				20,000	12,455
5				$20				20,000	11,640
6				$20				20,000	10,879
7				$20				20,000	10,167
8				$20				20,000	9,502
9				$20				20,000	8,880
10				$20				20,000	8,299
11				$20				20,000	7,756
12				$20				20,000	7,249
13				$20				20,000	6,775
14				$20				20,000	6,331
15				$20				20,000	5,917
16				$20				20,000	5,530
17				$20				20,000	5,168
18				$20				20,000	4,830
19				$20				20,000	4,514
20				$20				20,000	4,219
Total	$500	$3,284	$24,042	$400	$0	$0	$0	$28,226,000	$24,054,440

$$\text{Present Value} = \frac{\text{Future Value (in Constant Dollars)}}{(1 + \text{Real Discount Rate})^{\text{Year}}}$$

2A

HIGHWAY SPEED AND VOLUME INPUTS

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build				
Year 1				
Peak Period				
HOV Volume	0		0	
Non-HOV Volume	3,526		3,526	
Weaving Volume	0		0	
Truck Volume	197		197	
HOV Speed	55.0		55.0	
Non-HOV Speed	63.9		63.9	
Weaving Speed	55.0		55.0	
Truck Speed	63.9		63.9	
Non-Peak Period				
Non-HOV Volume	29,429		29,429	
Weaving Volume	0		0	
Truck Volume	1,647		1,647	
Non-HOV Speed	65.0		65.0	
Weaving Speed	55.0		55.0	
Truck Speed	65.0		65.0	
Year 20				
Peak Period				
HOV Volume	0		0	
Non-HOV Volume	5,107		5,107	
Weaving Volume	0		0	
Truck Volume	286		286	
HOV Speed	55.0		55.0	
Non-HOV Speed	63.9		63.9	
Weaving Speed	55.0		55.0	
Truck Speed	63.9		63.9	
Non-Peak Period				
Non-HOV Volume	42,622		42,622	
Weaving Volume	0		0	
Truck Volume	2,385		2,385	
Non-HOV Speed	65.0		65.0	
Weaving Speed	55.0		55.0	
Truck Speed	65.0		65.0	
Build				
Year 1				
Peak Period				
HOV Volume	0		0	
Non-HOV Volume	3,597		3,597	
Weaving Volume	0		0	
Truck Volume	201		201	
HOV Speed	55.0		55.0	
Non-HOV Speed	70.0		70.0	
Weaving Speed	55.0		55.0	
Truck Speed	65.0		65.0	
Non-Peak Period				
Non-HOV Volume	30,021		30,021	
Weaving Volume	0		0	
Truck Volume	1,680		1,680	
Non-HOV Speed	70.0		70.0	
Weaving Speed	55.0		55.0	
Truck Speed	65.0		65.0	
Year 20				
Peak Period				
HOV Volume	0		0	
Non-HOV Volume	5,279		5,279	
Weaving Volume	0		0	
Truck Volume	295		295	
HOV Speed	55.0		55.0	
Non-HOV Speed	69.6		69.6	
Weaving Speed	55.0		55.0	
Truck Speed	65.0		65.0	
Non-Peak Period				
Non-HOV Volume	44,059		44,059	
Weaving Volume	0		0	
Truck Volume	2,466		2,466	
Non-HOV Speed	70.0		70.0	
Weaving Speed	55.0		55.0	
Truck Speed	65.0		65.0	

Model speed estimates based on Highway Capacity Manual, pavement research, and research on weaving impacts

2B

HIGHWAY ACCIDENT RATES

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build				
Fatal Accidents	0.000		0.000	
Injury Accidents	0.81		0.81	
PDO Accidents	0.57		0.57	
Total Accidents	1.380			
Hwy Safety or Weaving Improvement		95%	collision reduction factor (per HSIP Guidelines)	
Adjustment Factor (Actual/Statewide Avg. Existing)				
Fatal Accidents	0.0000		0.0000	
Injury Accidents	0.0497		0.0497	
PDO Accidents	0.0504		0.0504	
Build				
Fatal Accidents	0.000		0.000	
Injury Accidents	0.00		0.00	
PDO Accidents	0.00		0.00	
Total Accidents	0.005			

2C

RAMP AND ARTERIAL INPUTS

(if detailed information is available for a TMS or an arterial signal management project)

Detailed Information Available? (y/n)	N	
Aggregate Segment Length (estimate as VMT/total volume)		
All Ramps		miles
Arterials		miles

	Entered by User	Used for Proj. Eval.	Source/Notes
No Build (Peak Period Only)			
Year 1			
Aggregate Ramp Volume		0	
Aggregate Arterial Volume		0	
Average Ramp Speed		5.0	
Average Arterial Speed		5.0	
Year 20			
Aggregate Ramp Volume		0	
Aggregate Arterial Volume		0	
Average Ramp Speed		5.0	
Average Arterial Speed		5.0	
Build (Peak Period Only)			
Year 1			
Aggregate Ramp Volume		0	
Aggregate Arterial Volume		0	
Average Ramp Speed		5.0	
Average Arterial Speed		5.0	
Year 20			
Aggregate Ramp Volume		0	
Aggregate Arterial Volume		0	
Average Ramp Speed		5.0	
Average Arterial Speed		5.0	

2D

ANNUAL PERSON-TRIPS

(for HOV and HOT lane projects that affect average vehicle occupancy)

	No Build	Build	Induced
Year 1			
Peak Period			
HOV Trips	0	0	
Non-HOV Trips	1,789,043	1,825,029	35,986
Truck Trips	72,033	73,482	1,449
Non-Peak Period			
Non-HOV Trips	14,930,981	15,231,317	300,336
Truck Trips	601,173	613,266	12,093
Total Trips	17,393,230	17,743,093	349,864
Year 20			
Peak Period			
HOV Trips	0	0	
Non-HOV Trips	2,591,027	2,678,423	87,396
Truck Trips	104,324	107,843	3,519
Non-Peak Period			
Non-HOV Trips	21,624,180	22,353,567	729,387
Truck Trips	870,664	900,032	29,368
Total Trips	25,190,195	26,039,864	849,669