

## **Corridor Planning in Wisconsin: A Work in Progress**

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**Abstract**

In Wisconsin, the state Department of Transportation (WisDOT) has begun experimenting with new combinations of tools aimed at addressing transportation problems within their community context. The most extensive and deliberate use of these tools is corridor planning. Corridor planning is an approach that is rooted in collaboration with local communities to address all the issues of context that are beyond the purview of the state transportation agency. This paper describes the corridor planning process, the various ways the corridor planning processes can be used, and presents the results of an extensive corridor planning project recently completed.

The case study presented is a corridor plan prepared for a 60-mile corridor, 45 miles of which is slated for expansion. The plan was developed in collaboration with local communities, using several educational tools and a structured process that involved local community leaders and elected officials. The plan recommendations include revising land use plans to address new issues and opportunities associated with a highway expansion project, employing tools to balance transportation and land use in local areas, planning for interchange areas, preserving agriculture, and addressing multi-modal needs.

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## INTRODUCTION

The quality and functionality of four-lane highways in the U.S. ranges from the highly efficient rural Interstate to the many examples of choked arterials that exist in most, if not all urban areas. In between the two extremes lie a variety of facilities that perform their designated functions with varying degrees of success.

The practice of placing new facilities across undeveloped lands and limiting access to new interchanges is becoming increasingly difficult, for reasons related to the cost and environmental impacts of doing so. Thus, increasing highway capacity is most often accomplished by adding travel lanes to existing facilities. The challenge with this approach is that access control techniques have limitations as to what they can achieve because of the need to accommodate existing development. Additionally there exist too many examples of how even strictly limiting access to interchanges can't preserve the functions of the roadway in urban areas, if the road is burdened with handling large volumes of local traffic.

In Wisconsin, the state Department of Transportation (WisDOT) has begun experimenting with new combinations of tools aimed at addressing transportation problems within their community context. The most extensive and deliberate use of these tools is corridor planning. Corridor planning is an approach that is rooted in collaboration with local communities to address all the issues of context that are beyond the purview of the state transportation agency. This paper describes the corridor planning process, the various ways the corridor planning processes can be used, and presents the results of an extensive corridor planning project recently completed.

## OVERVIEW OF CORRIDOR PLANNING

### Definition

A *corridor plan* should be distinguished from a *corridor study*, which is a term used loosely by WisDOT (and others) to refer to a study conducted to identify the purpose and need for a transportation project and to offer broad alternative concepts, often resulting in an Environmental Impact Statement.

A working definition of a *corridor plan* was developed for internal use in 2003 by WisDOT. It states, "A corridor plan...is a detailed specific plan that considers land use and transportation issues within a carefully organized, collaborative planning process between local governments, regional entities, and WisDOT." This definition is likely to be further refined and perhaps expanded but in this initial draft form it correctly emphasizes the collaborative nature of a corridor planning process, and places the transportation-land use relationship front and center. The corridor plans that WisDOT has developed address land use but also give prominence to issues related to access management and local road infrastructure. In these early stages of practice, no definitive outline exists of what is, or is not in a corridor plan. It should be noted that the success of corridor planning is measured in long-term outcomes, and not enough time has elapsed to say whether the efforts will yield satisfactory results

### Background.

In the 1990's, WisDOT became increasingly involved with issues of land use for a number of reasons. The increased focus on the secondary impacts of highway expansion led to an internal search for a useful and appropriate approach to this issue. There was an extensive effort to develop an official policy that would help the agency play a productive, rather than reactive role

in discussions about land use. The need for addressing land use issues was also driven by the desire for better stewardship of the existing highway system because of the high cost of improvements that become necessary after a highway's function has been eroded as a result of poorly planned development, or inadequate access management.

After extensive internal conversations and data-gathering the department issued its land use vision: "Coordinating transportation and land use decisions to effectively manage our transportation system." A detailed policy statement was developed, which acknowledges the symbiotic relationship between transportation and land use and commits WisDOT to working with local communities to address issues associated with that relationship.

WisDOT has applied a variety of access management tools to greater or lesser degrees but in recent years has begun a more concerted effort to develop policy guidance that would improve consistency in how various access management techniques are applied. The overall goal of the policy approach that is emerging is to protect the safety, capacity and public investment in the state highway system, while working with the public and local governments to provide access where possible.

Consideration of local road infrastructure needs is critical if the vision of a functional state highway system is to be achieved. The new development that is drawn to an improved highway facility can degrade its function over time if the highway is used to carry local traffic because the community has neglected to build local roads to serve the new development, relying instead on the state highway system.

### **Evolution of a Corridor Planning Process**

As WisDOT's development of the land use-transportation policy was evolving, and access management and local road issues began to receive more attention, the department's district office based in Green Bay began experimenting with a corridor planning process. The District 3 office formed a workgroup to develop policy that could be used to decide how and when development of a corridor plan should be considered. The workgroup defined corridor planning as "a comprehensive approach to planning and designing and preserving a highway corridor." Criteria were developed that included congestion, safety problems, existing improvement plans, role in the state system, growth in the area, and local interest in an improvement. A GIS application was developed that creates a color-coded display of the number of criteria that the highways meet. This assists with prioritizing corridor planning efforts.

The workgroup created a list of information that could be included in a corridor plan. It includes land use and zoning data, physical and natural features, characteristics of the existing facility, traffic and crash data, existing local facilities and other-mode facilities. The plan recommendations should include transportation facility needs, recommended access management techniques, land use, and future streets.

The corridor planning process followed in District 3 has been used in most cases for highways where problems exist but no solutions have been identified. In these situations, the corridor plan was a prelude to undertaking the environmental process for selecting a highway improvement alternative.

In the case study presented here, the corridor plan was prepared was the WisDOT District 1 office, located in Madison. This planning process was unique in that it is something of a hybrid – involving 45 miles of roadway for which expansion is planned, and an additional 15 miles where no expansion is planned in the near future.

Thus, the corridor planning process is a flexible approach that has been used to help to identify the needs for improvements for a troubled road, to assist the design process when improvements are planned, and to identify recommended approaches for local communities to deal with the context issues of land use, development of a supporting local road network, and access management, after an improvement alternative has been selected, or simply to preserve a well-functioning road.

### **Comparison to Corridor Preservation Plans and Corridor Access Management Plans**

Because there is a certain amount of overlap between corridor preservation, corridor access management planning, and corridor planning approaches, it is useful to briefly discuss their commonalities, and their differences. The FHWA publication *Corridor Preservation* (1) defines transportation corridor preservation as "...a concept utilizing the coordinated application of various measures to obtain control or otherwise protect right-of-way for a planned transportation facility." This is the identical definition developed by the American association of State highway and Transportation Officials. in their *Report of the AASHTO Task Force on Corridor Preservation* (2).

In general, corridor preservation refers to actions taken to protect the physical right-of-way for a proposed transportation facility. Those actions could include the actual purchase of right-of-way, application of regulations (such as setback requirements), or cooperative arrangements made with property owners. Corridor preservation can be viewed as a sub-activity of corridor planning processes in that it refers to preserving the land for building a facility. Although costly, acquisition of property to protect a corridor that is slated for expansion is relatively easy, with assured results in most cases. In contrast, many corridor planning activities are aimed at protecting the functionality of the highway after it is built – a trickier proposition with results that are harder to predict. For the case study discussed below, corridor preservation is one aspect of the corridor plan that was developed.

The 2003 TRB publication *Access Management Manual* (3) states: "A corridor access management plan is a long-range planning guide that provides solutions to existing access problems and identifies future access points along an existing or planned roadway." The process recommended for developing a corridor access management plan is similar to corridor preservation planning and corridor planning as discussed in this paper. It is based upon collaboration with local government, regional bodies, and resource agencies, and includes a public participation element.

The strategies recommended in a corridor access management plan may be similar to some of those that are found in a corridor plan, such as improvements to the local street system, and changes to land use plans and regulations. But in general, the corridor access management plan is more suited to retrofit situations, and, as its name implies, focuses on access management techniques. Thus a corridor access management strategy or plan is one aspect, or a sub-type of corridor plan.

## **CASE STUDY: WIS 26**

### **Description of Project Location**

The most extensive use of corridor planning is being carried out for a 60-mile stretch of WIS 26, that connects the south central area of the state with the northeast area between the cities of

Janesville and Waupun. An environmental impact statement has been prepared for the four-lane expansion project that is proposed for 45 miles of the route. The selection of WIS 26 as a candidate for expansion was not merely based upon traffic volumes on the route; it was also based upon the route's role in the state highway system.

In 1988, then-Governor Tommy Thompson unveiled **Corridors 2020**, a long-range transportation and economic development plan that established a backbone system of multi-lane divided highways interconnecting all regions of the state and tying them into the national highway network. Corridors 2020 also includes a system of two and four-lane connectors linking economic centers to the backbone network, envisioning that all communities over 5,000 would be within five miles of a connector or backbone route (see Figure 1). WIS 26 is a Corridor 2020 connector route, linking the backbone routes of Interstate 39/90 to US 151. The importance of WIS 26 is growing as traffic volumes on the state's Interstate highways increases and travelers seek alternative routes.

**Figure 1**  
**Corridors 2020 System**



Expansion is currently not planned for the entire corridor between Janesville and Waupun because projected traffic volumes on the northern 15 miles of the route do not justify expansion. To the greatest extent possible the road expansion project will use existing alignment, but it includes bypasses of three communities that will be built on new alignment to freeway standards. Some local officials have shown an interest in moving the state highway function to a parallel local route that is somewhat more direct and is believed to carry a fair amount of regional traffic. WisDOT officials determined that the entire 60-mile stretch of highway should be included in

the corridor planning process, with enough flexibility in the process to include consideration of the parallel routes, if there was local interest in doing so.

The initial goal for the corridor planning project was simply to preserve the long-term functionality of the highway corridor so it could fulfill its role as a Corridors 2020 connector route. As the project evolved, it became apparent that an additional important goal was to help the impacted communities prepare for the highway expansion project.

### **Planning Process**

The engineering firm of Short, Elliot and Hendrickson Inc was selected to assist WisDOT with the planning process because of the firm's previous experience with the Green Bay-based efforts. The project was initially planned to focus on access management, land use, and local road infrastructure as the areas of focus, but during the preparation period, two additional areas were identified for inclusion – bicycle and pedestrian needs, and planning for interchange areas.

For planning purposes, WisDOT divided the corridor into two sections, and formed two advisory groups to participate in the planning process for each section. One group consisted of local elected officials from the corridor communities, both rural and incorporated. To provide a broader base of input, advisory groups of local citizens were also appointed. These groups met monthly for six months. At each session, the consultant team presented background educational materials on one for the areas of focus; the groups then identified needs along the corridor. In the second phase of the project, the group discussed potential solutions for the needs identified.

The Project Team used a variety of teaching tools to give the advisory group participants background information that would help them consider the needs and issues. One of the most successful was a Corridor Field Guide. Participants took a self-guided tour of the corridor, using the field guide to help them apply their new knowledge. The field guide directed them to identify potential access issues, locations where new development pressures would emerge, potential bicycle and pedestrian issues, etc..

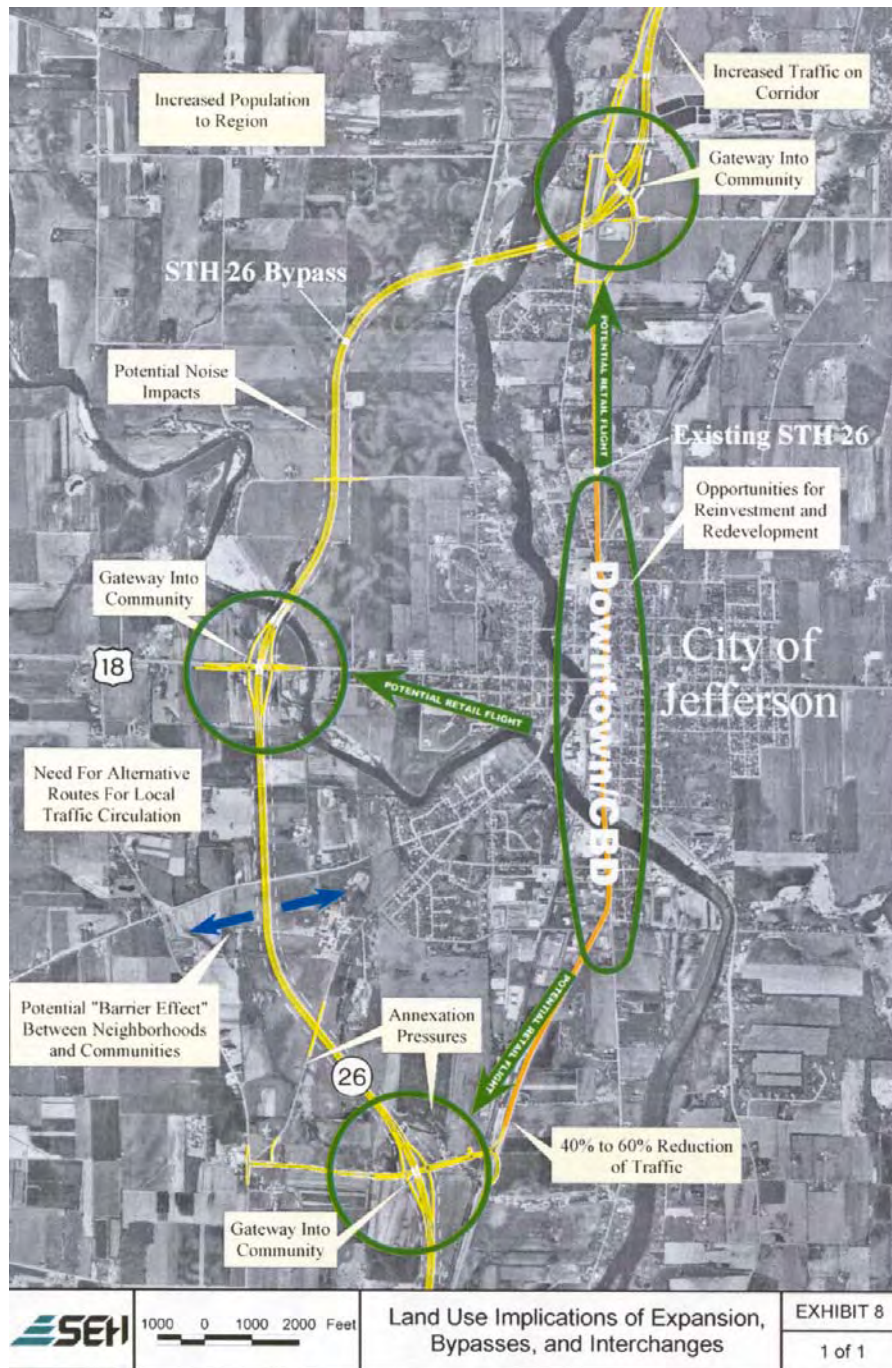
Another successful tool was the 1997 FHWA video *Access Management Overview* (4), which uses animated techniques to demonstrate how poorly planned access points are a source of crashes, and how potential remedies can improve safety and traffic flow. Participants were very enthusiastic about the value of the video in helping lay people understand access issues, and one of the communities requested permission to play the video on the local government cable channel.

To wrap up the project, the project held a one-day conference featuring speakers on a variety of topics related to issues identified in the planning process. At the close of the conference, several group participants proposed that a group be formed to continue cooperative efforts in implementing the solutions identified in the planning process.

The actual corridor plan document itself includes a description of the planning process, plan recommendations that apply to all sections of the corridor, and maps that show recommendations specific to an area. Figure 2 is an example of the maps prepared to illustrate the various concepts discussed, in this case, Land Use Implications of Expansion, Bypasses, and Interchanges. Maps specific to each area were prepared that show recommendations in the vicinity where they apply.



**Figure 2**  
**Example of Concept Map**



Each community involved was given a copy of the written plan, and the maps showing recommendations specific to it. The entire document and all maps are also available in electronic form.

### **Plan Recommendations**

The actual corridor plan document itself includes a description of the planning process, plan recommendations that apply to all sections of the corridor, and maps that show recommendations specific to an area. Each community involved was given a copy of the written plan, and the maps showing recommendations specific to it. The entire document and all maps are also available in electronic form. Ten categories of recommendations were developed. Each category is discussed below.

*Understand and plan for land use impacts of WIS 26 expansion, bypasses and interchanges*  
Perhaps the most overall important recommendation for this category was to update land use plans to include the proposed highway expansion, modifying the proposed land uses in the vicinity, if appropriate, and reviewing/modifying local ordinances. Other recommendations include minimizing exposure of noise sensitive land uses near planned bypasses, and develop development review criteria that will assist in reviewing development proposals.

*Coordinate local comprehensive planning with WIS 26 Corridor Plan*

Similar to the previous category, this category specifically refers to coordinating local plans with the corridor plan. By 2010, all communities in Wisconsin are required to have a comprehensive plans to guide local decisions. The hope is that these local plans will be consistent with the WIS 26 Corridor Plan, to the extent possible.

*Employ tools to balance land use and transportation systems*

This section suggests tools that can be used by local communities to balance land use and transportation needs. Recommendations include use of traffic impact analyses for large development, boundary agreements between rural and incorporated areas near bypasses, and updating local ordinances appropriately. The final plan document includes a stand-alone document that provides sample language for ordinance provisions that help balance land use and transportation.

*Develop functional roadway classification systems and local traffic circulations plans*

Increasingly, WisDOT has come to appreciate the importance of the local road system. This understanding has been hard won, learned from the breakdown of state highways that have become over-burdened with local traffic. The planning process identified potential local route connections that could be made, and identified local routes that communities would want to protect with access management and setback requirements, because they will be important to maintaining good circulation patterns off the state highway as adjacent areas develop.

*Minimize impacts on agriculture*

WIS 26 lies in a highly productive agricultural region. Many of the plan participants were concerned about the direct impacts of the facility on agricultural land due to the purchase of right away,. There were also concerns related to the indirect impacts associated with new development that would be attracted to the area because of the improved access provided by the expanded highway.

The plan addressed direct impacts with recommendations related to drainage control, providing farm access, etc.. It also recommended that the local communities consider use of

farmland preservation techniques, and work on developing a agriculture development strategy to help maintain the viability of agricultural operations in the area.

#### *Manage expressway sections over time*

Approximately half of the existing at-grade intersections on Wis 26 will be converted to grade-separated roads. These are local roads that have high enough volumes to justify the expense of building grade separations. The remaining intersections are expected to remain at-grade at the time that the project is built. While in the midst of the planning process, the department was confronted with the long-term safety problems that these intersections may pose in the future. One of the rural towns along the corridor prepared a draft comprehensive plan that proposed a commercial land use designation for a strip of land alongside WIS 26, with access via one of the intersections that was expected to remain at-grade. This brought home the reality that the future functionality and safety of the highway could be degraded if highway dependent developments were located near the at-grade intersections.

After much internal discussion, WisDOT decided that communities should be informed as part of the environmental process that at grade intersections could be converted to cul-de-sacs or overpasses in the future, or the median could closed to prevent cross-traffic. The hope is that communities will take land use planning actions that would prevent the need for future access restrictions. Fortunately, the community involved in the local planning activity was willing to specify that the land uses appropriate next to the highway accessed via at-grade local roads would be low-volume business types appropriate for a rural highway location.

The corridor plan recommends that communities plan for land uses that will not create safety problems at intersections. Ideally, high volume traffic generators will be located near grade separated facilities.

#### *Protect scenic and natural resources*

WIS 26 lies in the Rock River basin, and the river is an important natural feature in the area. Recommendations include maximizing scenic views of the river in highway design and local land use planning. The archeological studies completed for the EIS identified several sites near the river. With some planning, communities may be able to protect these sites from destruction by development activities. The plan recommends that a viewshed analysis be down in the areas near the river.

#### *Integrate Multi-Modal Needs into Corridor*

Expressways and freeways often become a barrier for non-automobile forms of travel. WisDOT included plans for grade separated crossing into the project not only to handle motorized traffic but to reduce the barrier effect for pedestrians and bicycles. Two important bicycle trails are in the corridor will be accommodated via bridges or box culverts. The plan recommends that local roads that are built or upgraded as a result of new development include accommodations for bicycles and pedestrians. The plan further recommends that communities adopt design standards for new development that support the pedestrian mode.

#### *Address long-term needs north of STH 60*

This category of recommendations refers to the 15-mile portion of WIS 26 that is not scheduled for expansions but was included in the corridor panning process. WIS 60 in the northern terminal point for the highway expansion. Some believe that the expansion of WIS 26 south of

WIS 60 will bring much more traffic onto the highway. If this is true, eventually WisDOT will have to consider alternatives for improving the section north of WIS 60. The purpose of including this section of the highway in the corridor plan was to preserve the functionality of the roadway as long as possible.

WisDOT cannot study improvement alternatives for the northern segment without receiving approval from a state oversight committee to starting a formal environmental process, but has encouraged communities to work together to consider the long-term future of the highway, especially in view of the fact that some think the state highway functions should be moved on to a more direct local road. Whether or not the state highway is moved onto this local route, preserving the local route is clearly important since it is already used as an alternate to WIS 26. The corridor recommends that a local entity take the lead on bringing the affected communities together to explore the options for the future of this portion of WIS 26, and the parallel local route.

#### *Protect functionality of interchanges*

Of special concern are the expected eight new interchanges that will be created when three communities are bypassed. Interchange areas are early targets for development and both the worst and the best examples of development can be found there. WisDOT's interest in improving the planning for interchange areas is documented in a report it produced nearly 20 years ago in cooperation with FHWA. *A Guide for Interchange Area Planning in Wisconsin* (5) identifies many concerns with past patterns of development in these areas, including visual blight, inadequate access control and strip development. It suggests a variety of techniques that are as valid today as they were 20 years ago – access management, development of an internal local road system, and appropriate land use regulations.

The planned new interchanges for the expansion project are located in areas that are currently under the jurisdiction of rural towns, but within areas that are expected to urbanize within twenty years. Thus, both the towns and the nearby incorporated areas have an interest in these areas. Generally speaking, rural towns are not well equipped to evaluate development proposals, since they often lack professional staff. Some land developers will be likely to seek annexation to the incorporated communities because in order to receive sewer and water services, but certainly there are many types of development that can operate without these services. Gasoline stations with convenience stores are probably the best example of this. For all these reasons, it is desirable for towns and incorporated areas to work together to decide the best futures for these areas.

The plan recommendations include undertaking intergovernmental planning efforts, consideration of special interchange districts for local plans, consideration for sign regulations to avoid visual blight, and development of traffic and access management plans for these areas.

#### **Plan Follow-up Needs**

Developing solutions for protecting the highway and maximizing its value to the community is relatively easy as a desk exercise; all of the recommendations discussed above could have been developed by WisDOT alone. It is obvious that the collaborative and educational process was essential for developing a plan that would be meaningful to the local communities. Moving to implementation is the challenge ahead.

In some communities a fairly strong planning functions exists; in these situations, the community is likely to take the initiative to address the challenges and opportunities that accompany a major highway project. In other locations, the community may operate largely in a reactive mode, responding to development proposals rather than developing a vision to which development proposals are expected to be consistent.

One of the incorporated communities along the corridor has established a cooperative relationship with its rural neighbors, while in another location, the rural and urban neighbors are in conflict. The issues that lead to contentious relationships are related to land use and annexation. Where relationships are difficult, WisDOT's efforts to provide resources to support intergovernmental planning efforts may, in the long term, lead to a healthier relationship. A corridor planning process can encourage communities to develop the local vision by providing the framework for community discussion, and some of the resources needed to carry out the necessary planning activities.

At the close of the planning project, several participants suggested that the communities continue to work together to begin implementation of the plan recommendations. While WisDOT had intentions of continuing to work with the communities on implementation, the initiative of community leaders in asking for continued collaboration was extremely valuable, and a measure of the success of the project. WisDOT has committed further resources to carry out an analysis of the economic opportunities created by the highway expansion project, and develop site and area design standards for interchange areas that could be adapted, and adopted by each local community.

WisDOT is also developing an electronic newsletter that will help keep communities informed about efforts to implement recommendations of the plan, and progress on the highway project itself.

## **CONCLUSIONS**

One of the unexpected outcomes of the planning projects was the participants' appreciation for the chance to work with leaders of other communities on issues of mutual interest. The gulf between local communities is wider than one would expect, given their actual geographic proximity.

The importance of opening the door wide to engage a variety of participants was demonstrated. One of the most enthusiastic proponents of follow-up work for implementation was an environmental advocate who was initially strongly opposed to the highway expansion project. He became an elected official while the project was underway and has proved to be a key player in taking the next steps towards implementation. Engaging local leaders beyond the elected officials was important. As noted above, some of these leaders may become elected officials someday. More importantly, they can form a base of support for local elected leaders who may otherwise feel they are going out on a limb alone if they support the planning process.

The next chapters will be written in the years ahead as WisDOT continues its work with the local communities. It remains to be seen if the collaborative spirit developed in the process will help preserve the highway, and assist the communities in creating better outcomes as they meet the challenges posed by a major transportation facility project.

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