

# Rural Access Management:

## *“Innovative Approaches to Expressway to Freeway Conversions”*

7<sup>th</sup> Conference on Access Management  
Park City, Utah

Darren Fortney, AICP  
Jim Hanson, PE, PTOE



# What we typically associate access management with...

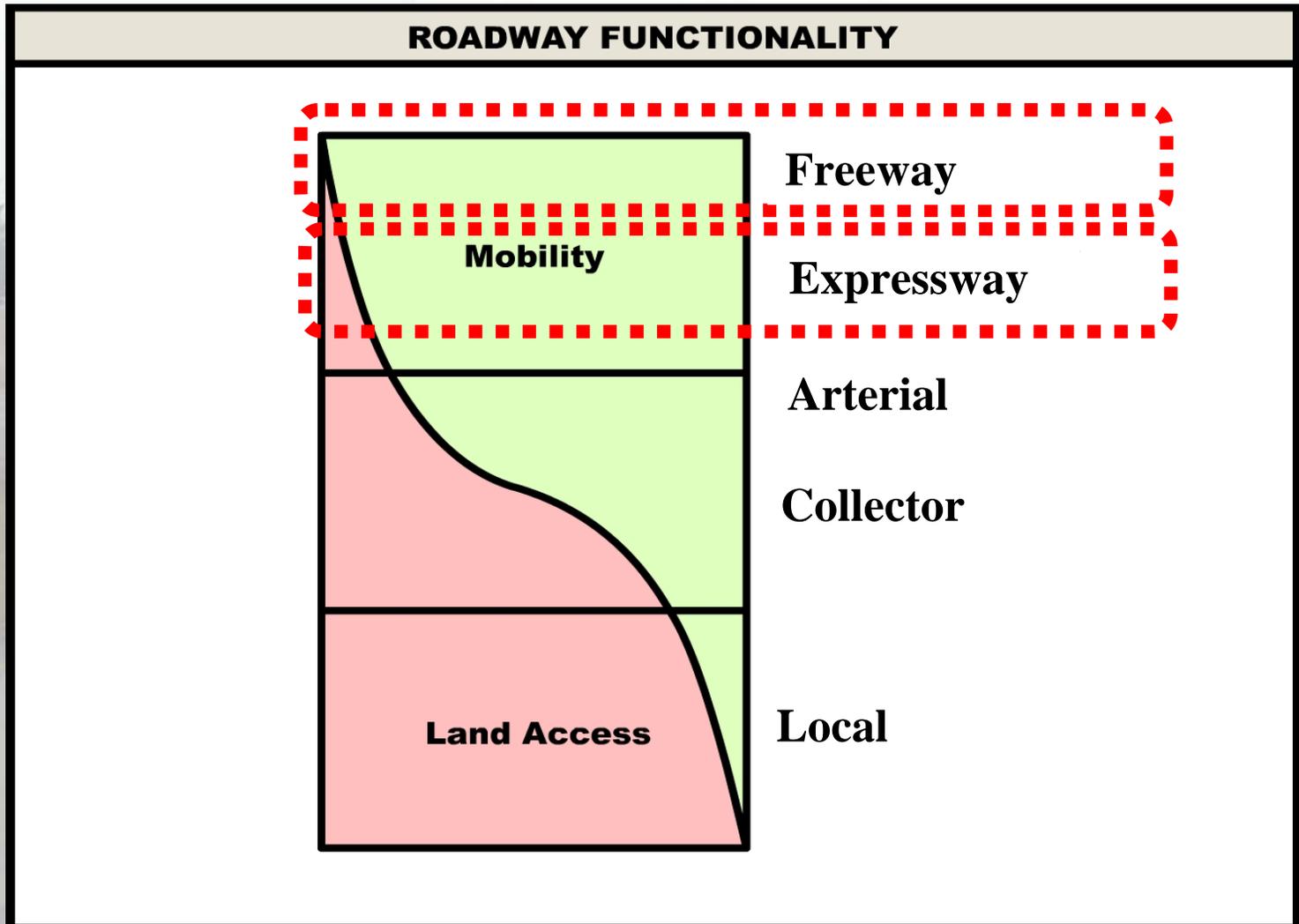


# What about higher order access management in rural areas?

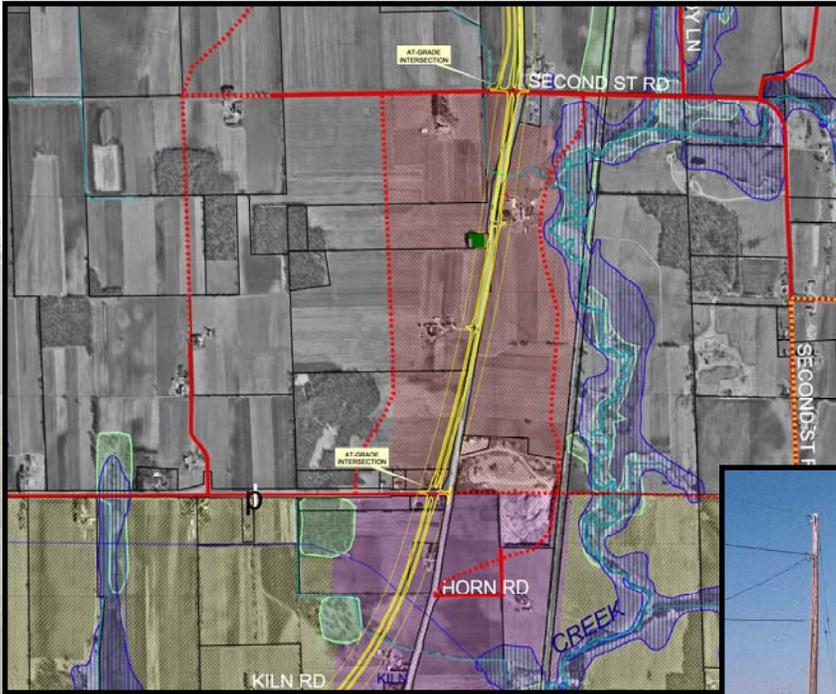


CROSS TRAFFIC  
NEXT 14 MILES

# Access management applied to a expressway to freeway conversion



# Why protect and preserve?



**To avoid this...**



# And avoid this...

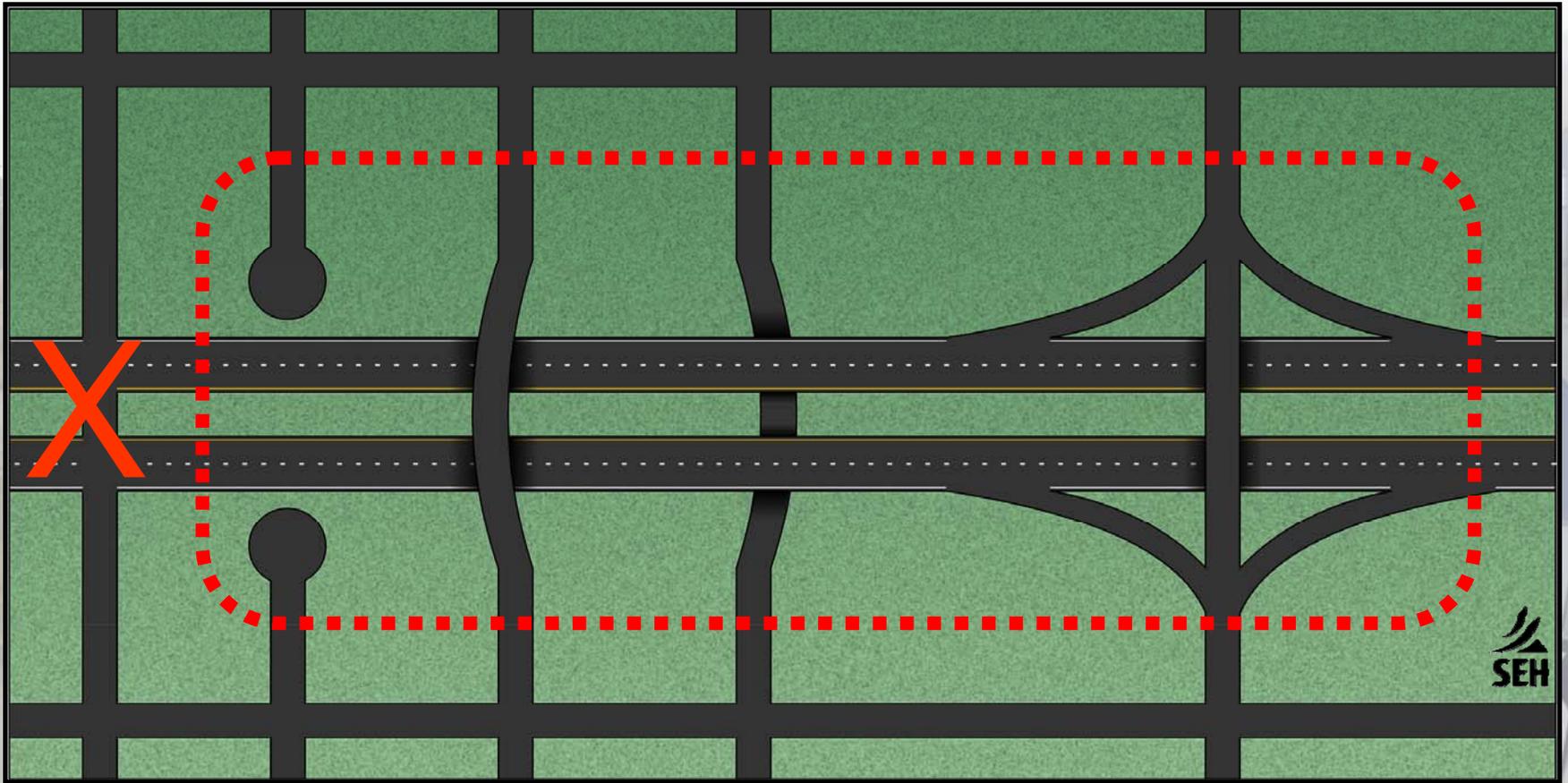


WSJ LOCAL 2-26-06

Wisconsin State Journal

## Seeking answers to bypass crashes

# What does a freeway conversion consist of?



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NEXT 14 MILES

# Need for freeway conversion

- **Long-term plan and importance of state trunk highway system**
- **Increasing traffic volumes**
- **Increasing growth and development pressures**
- **Long-term safety and operations**
- **Corridor preservation**
  - **Establish long-term vision**
  - **Land use planning integration**
  - **Continuous management strategies**
  - **Investment protection**
  - **R/W footprint mapping and protection**



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# Wisconsin Department of Transportation's (WisDOT) focus on planning and preservation



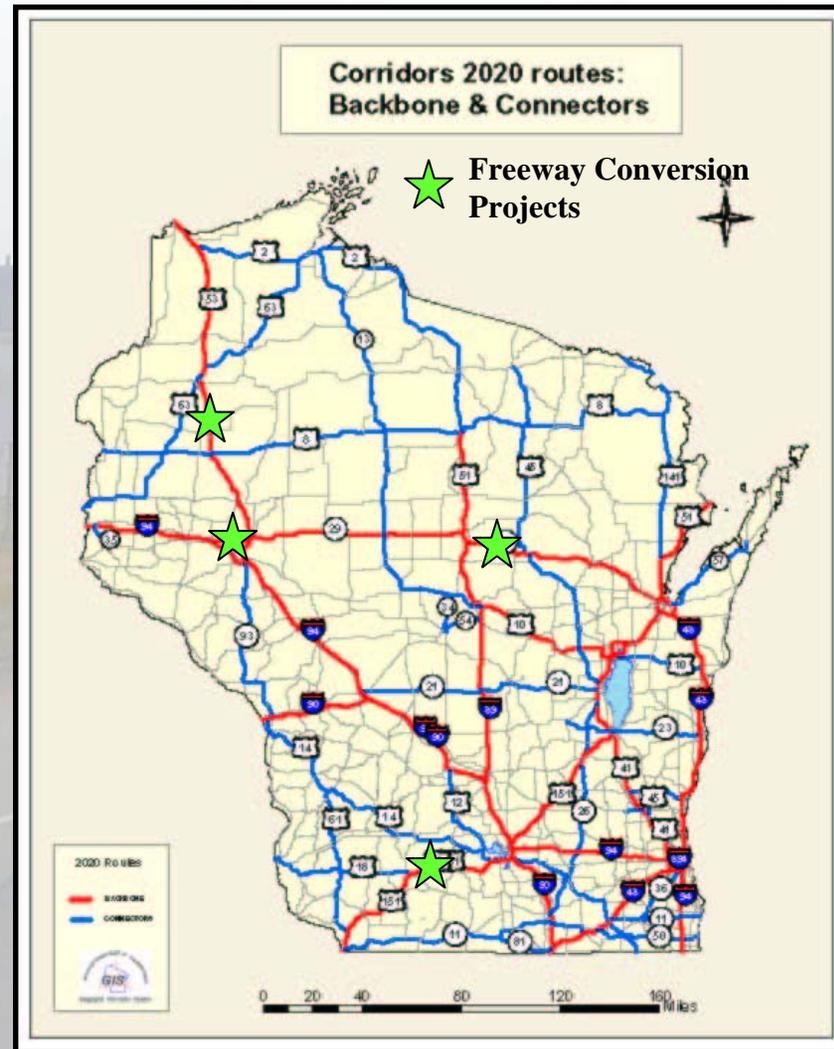
# **WisDOT's utilizes unique planning and preservation tool (Wis. Stats. 84.295)**

- **Allows for special freeway designation of certain highways**
- **Protects and preserves necessary R/W through official mapping/recording on property deeds**
- **Does not commit WisDOT to constructing freeway improvements and/or purchasing R/W**

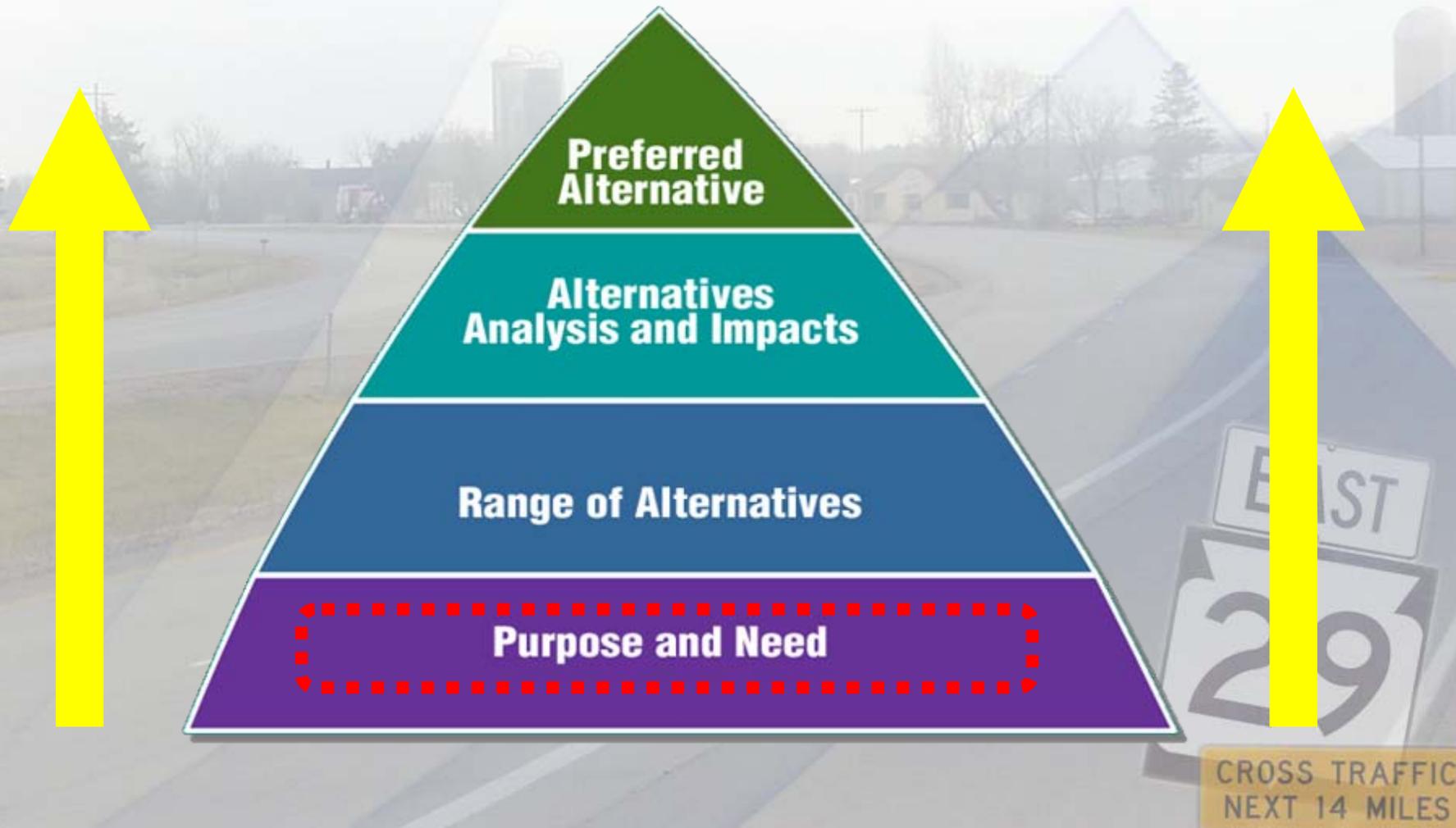
**CROSS TRAFFIC  
NEXT 14 MILES**



# Freeway conversion occurring statewide

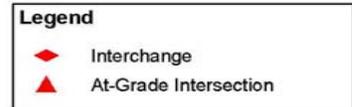
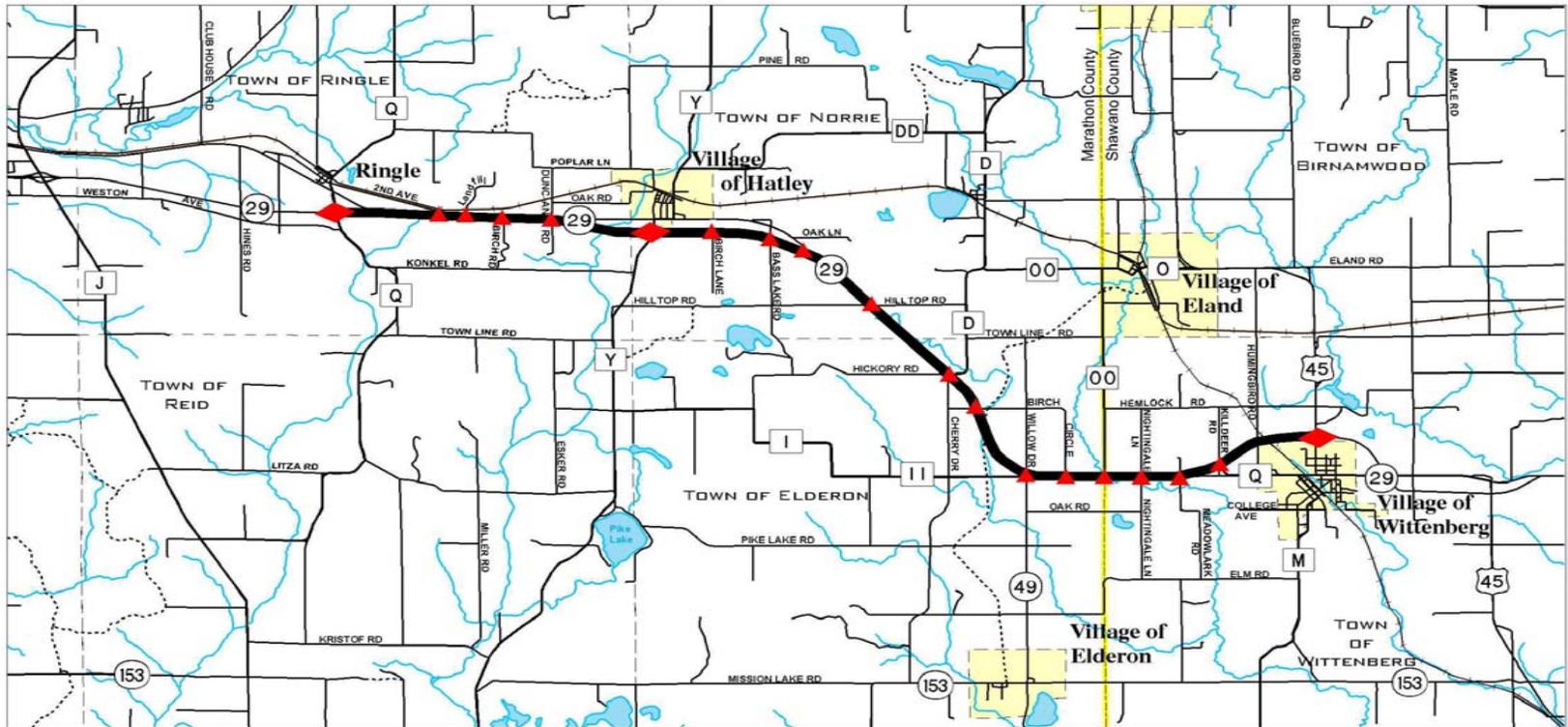


# Freeway conversion and public involvement must follow process to be effective



# Comprehensive base map and access inventory necessary to set foundation

WIS 29 East - Location Map



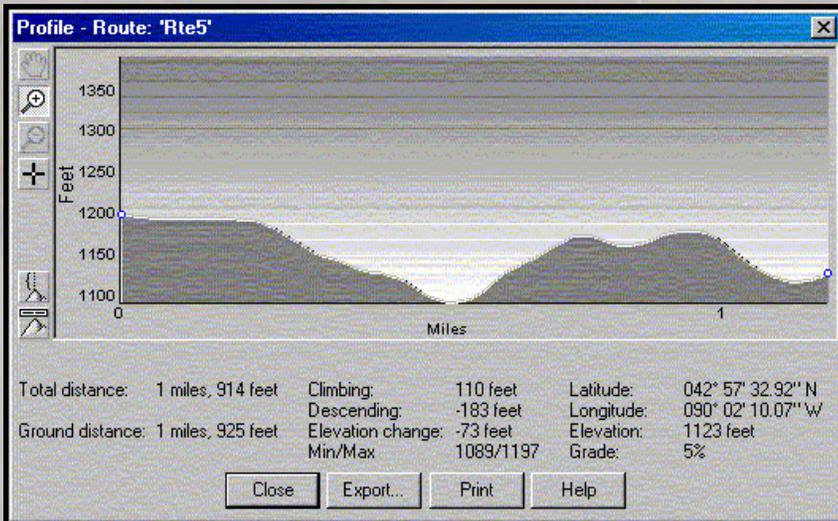
TRAFFIC MILES

# Assess existing roadway network



## Inventory of Existing Roads

- Collect traffic volumes
- Analyze existing functional classifications
- Terrain and profiles
- Review existing access locations & uses



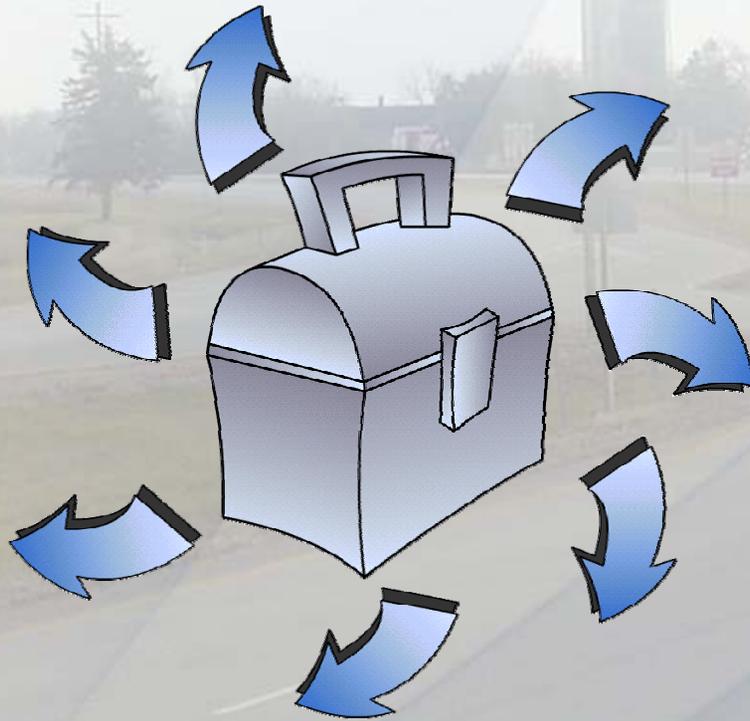
# Evaluate existing travel patterns

- Emergency services (police, fire, EMS)
- School bus routes
- Farm operation
- Postal delivery
- Residents/business
- Multi-modal
  - Snowmobiles
  - Bike routes
  - State recreation trails



TRAFFIC  
MILES

# Public involvement tools important from start



## WIS 29 Preservation Plan (Ringle to Wittenberg)

### Frequently Asked Questions



**1. Who is conducting the WIS 29 Preservation Plan?**

The Wisconsin Department of Transportation (WisDOT), North Central Region is conducting the study. WisDOT will coordinate with local agencies for input and assistance.

**2. What is the WIS 29 Preservation Plan all about?**

Even though the WIS 29 corridor is operating within the capacity limits it was initially designed to handle, experience around the state has demonstrated that unmanaged and unprotected highways can deteriorate quickly in terms of reduced operations and safety. Increases in traffic and land development perpetuate this deterioration. Of greatest concern to WisDOT are the at-grade intersections along WIS 29. As traffic increases over time, it will become increasingly difficult to turn on, off, and/or cross the highway in a safe manner, and the potential for crashes will increase.

The purpose of the WIS 29 Corridor Preservation plan is to develop a long-term vision for the corridor with the goal of officially designating, mapping, and preserving the corridor as a freeway. In a freeway condition the at-grade intersections would be replaced by well-spaced interchange(s), overpasses, cul-de-sacs, and a local transportation network to safely balance the access and mobility needs of the area.

The WIS 29 Preservation Plan will ultimately map and preserve future footprints and right-of-way necessary to construct the improvements necessary for the conversion. Although there are no immediate project or construction dollars programmed, the land will be protected prior to actual construction through deed restrictions on some private properties. A formal "official map" will be prepared as part of the plan and recorded at the local Register of Deeds offices.

The limits of the plan extend from County Q in the village of Ringle to the western intersection of US 45 in the village of Wittenberg; a distance of approximately 14 miles. The project is located in both Marathon and Shawano Counties.

**3. Are you planning to convert WIS 29 to a freeway?**

This segment of WIS 29 is currently designed as an "expressway." An expressway typically consists of 55 to 65 mph posted speed limit, a median to separate traffic, and at-grade intersections (meaning you can get directly on/off/across at the intersecting roads). An expressway often has some interchanges and a limited number of private driveways located directly on the highway.

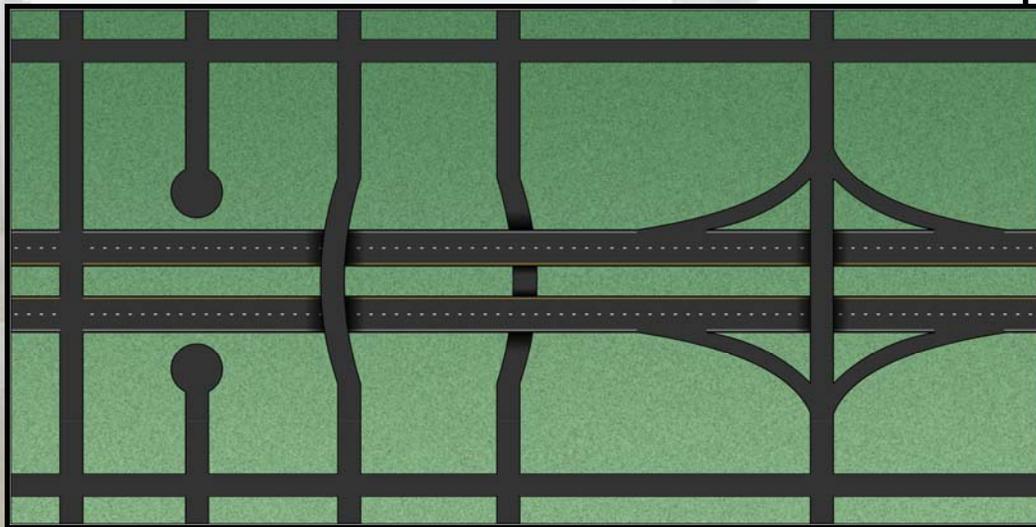
A "freeway" facility is usually a four-lane facility with a median and a 65 mph posted speed limit. Unlike expressways, freeways accommodate access on/off the highway only at interchanges. With a freeway facility, there are no at-grade intersections or private driveways on the corridor. The goal of the plan is the ultimate designation and conversion of WIS 29 from an expressway to a freeway.

**4. Why is the plan being done now? Why wasn't access addressed when it was constructed as an expressway?**

WIS 29 is one of the most important east/west roadways of the state highway system and is identified as a Backbone route in WisDOT's Corridors 2020 Plan. The plan places a high priority in protecting highway investments that connect major economic/population centers and carry long-distance, statewide traffic. Between 1992 and 2005 WIS 29 has undergone several capacity expansion and safety enhancements between Green Bay and I-94 representing significant investments by WisDOT.



# Education is essential for public understanding and acceptance



## US 18/151 Highway Access Study Preliminary Concepts WisDOT ID: 1200-08-00



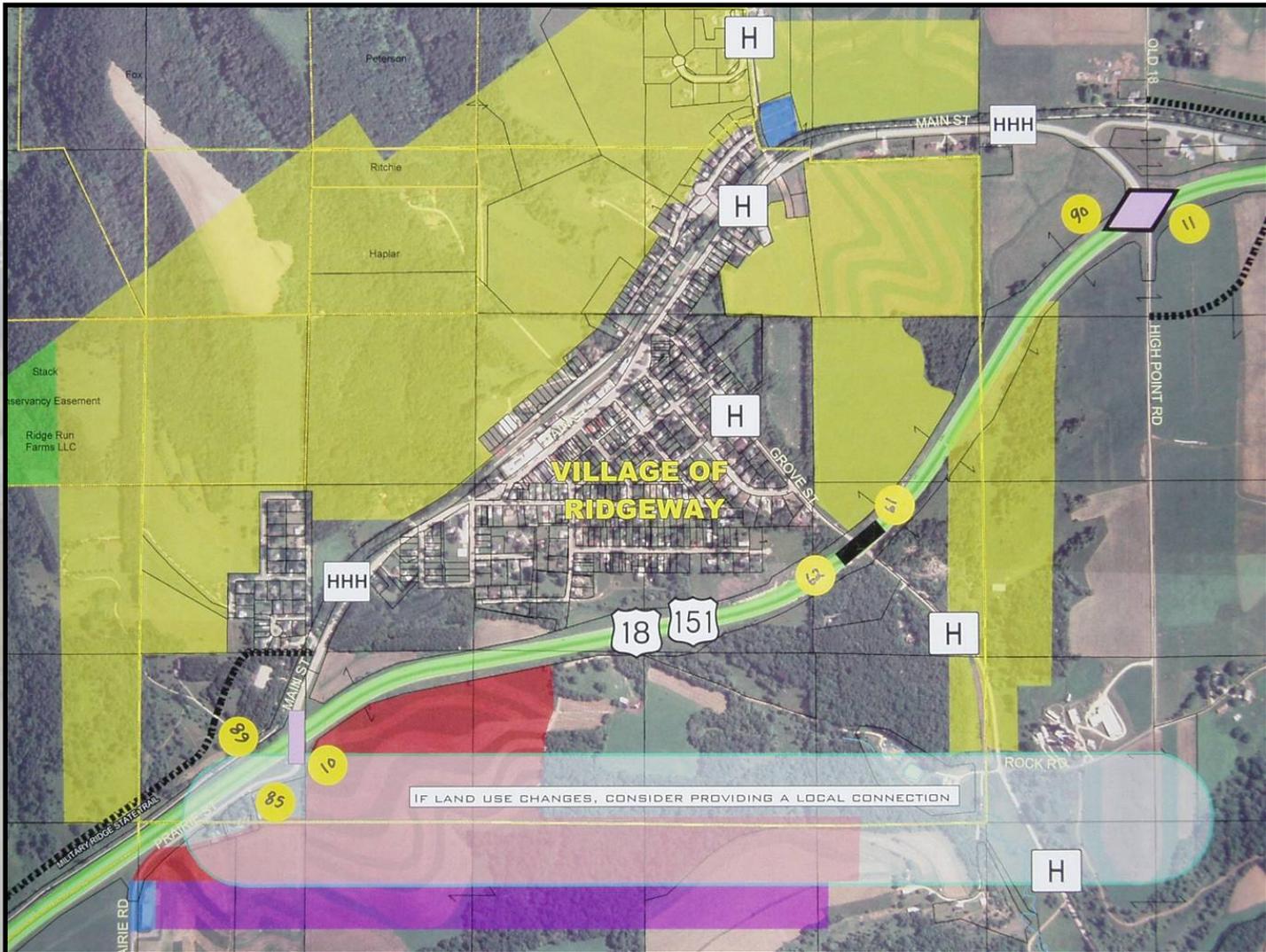
There are several types of access that can exist along a US or state highway facility including at-grade, grade separated, and interchange access. At-grade access consist of intersections with public streets and private driveways. Private driveways can be commercial, residential, agricultural such as a field access, or a combination such as a farm that provides access for residential and agricultural uses. Grade separations usually allow roadways to cross via a structure and include overpasses and underpasses. Interchanges are also grade separations providing access between roadways via on-ramps and off-ramps. Many of these access types are depicted on the *Maps of Preliminary Concepts*

### How to Use the Maps of Preliminary Concepts

The maps depict existing access locations as well as recommendations for future access and local roadway circulation. It is important to understand what the symbols represent when looking at the maps. The following information lists both the access map symbols and a graphic representation of the type of access that is depicted by the symbol. This allows you to correctly interpret the information that is portrayed on the attached maps. An inventory of the existing access and the recommendation for future access is also depicted in a table format.

MAP SYMBOL	DESCRIPTION	EXAMPLE
	<b>Existing At-Grade Access</b> Existing at-grade access points along US 18/151 include intersections with public streets and private driveways. Private access points commonly found along the highway include residential driveways, farm access, and field access. A few existing commercial driveways also exist along US 18/151. There are several intersections with public streets along the highway. These include full access intersections where the median is also open allowing left turns onto and off of US 18/151 and "T" intersections.	
	<b>Grade Separation</b> These locations allow the local street or highway to cross over/under US 18/151, but do not provide direct access to the highway. This allows local circulation to be preserved and reduces the "barrier-effect" of the state highway. Grade separations do not provide access to the highway, but are important for local circulation allowing a vehicle to travel to a location where access to the highway is provided.	
	<b>Interchange</b> Existing interchanges are typically located where US 18/151 intersects major state and county highways and where a higher degree of need for access exists (village of Barneveld and Mount Horeb). Future interchanges are recommended only at locations that allow adequate spacing between them (2 - 5 miles). In addition, future interchanges are recommended only at locations where future needs are anticipated to be the greatest.	
	<b>Cul-de-Sac, and Closures/Relocations</b> Where the existing at-grade access accommodates a very limited amount of traffic and/or has the potential for safety risks, it may be recommended for conversion to a cul-de-sac, relocated to another roadway, consolidated with other access points, or removed from the highway. In these cases, alternate access is provided via another location through enhanced local roadway circulation.	

# Corridor-wide public input must be obtained



# Input exercise



## WIS 29 Preservation Plan

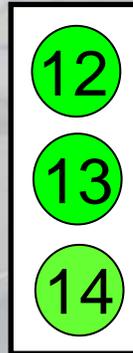
Ringle to Wittenberg

Public Input Form

June 13, 2006

Place a numbered sticker on the map near the location for which you would like to comment. Write the sticker number in the box below and comment in the adjacent spaces:

<input type="checkbox"/>	_____
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	_____



# Input exercise

STEP 1 - Place number on the map.



12

13

14

Place a numbered sticker on the map near the location for which you would like to comment. Write the sticker number in the box below and comment in the adjacent spaces:

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WIS 29 Preservation Plan  
Road to Recovery  
Local Official Input Form  
Mar 13, 2009

Place a numbered sticker on the map near the location for which you would like to comment. Write the sticker number in the box below and comment in the adjacent spaces.

<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/>
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<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/>
<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/>
<input type="checkbox"/>	<hr/> <hr/> <hr/> <hr/>



TRAFFIC MILES

# Input exercise

STEP 1 - Place number on the map.

STEP 2 - Write number and comment on form.



Place a numbered sticker on the map near the location for which you would like to comment. Write the sticker number in the box below and comment in the adjacent spaces:

13

14

12

*It is difficult to turn onto WIS 29 from this intersection during busy times of the day.*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

WIS 29 Preservation Plan  
Phase 2 - Inventory  
Last Modified: 10/15/2010  
May 15, 2010

Place a numbered sticker on the map near the location for which you would like to comment. Write the sticker number in the box below and comment in the adjacent spaces.

TRAFFIC MILES

# Early outreach to localized, rural stakeholders critical to corridor understanding

- **Focus groups & surveys**
  - **Emergency services**
  - **School bus**
  - **Agriculture/farm**



## US 18/151 Agricultural Operations Survey

### Survey Overview:

The purpose of this survey is help the Wisconsin Department of Transportation (WisDOT) and its consultant Short Elliott Hendrickson Inc. (SEH®) understand and prepare for the needs of agriculture enterprises with particular emphasis on their operations, livestock, and equipment. Transportation projects can affect travel time, field access, shipment of goods, and animal movement. Early input in the transportation planning process can help minimize negative consequences and ensure that operations are not unduly disturbed.

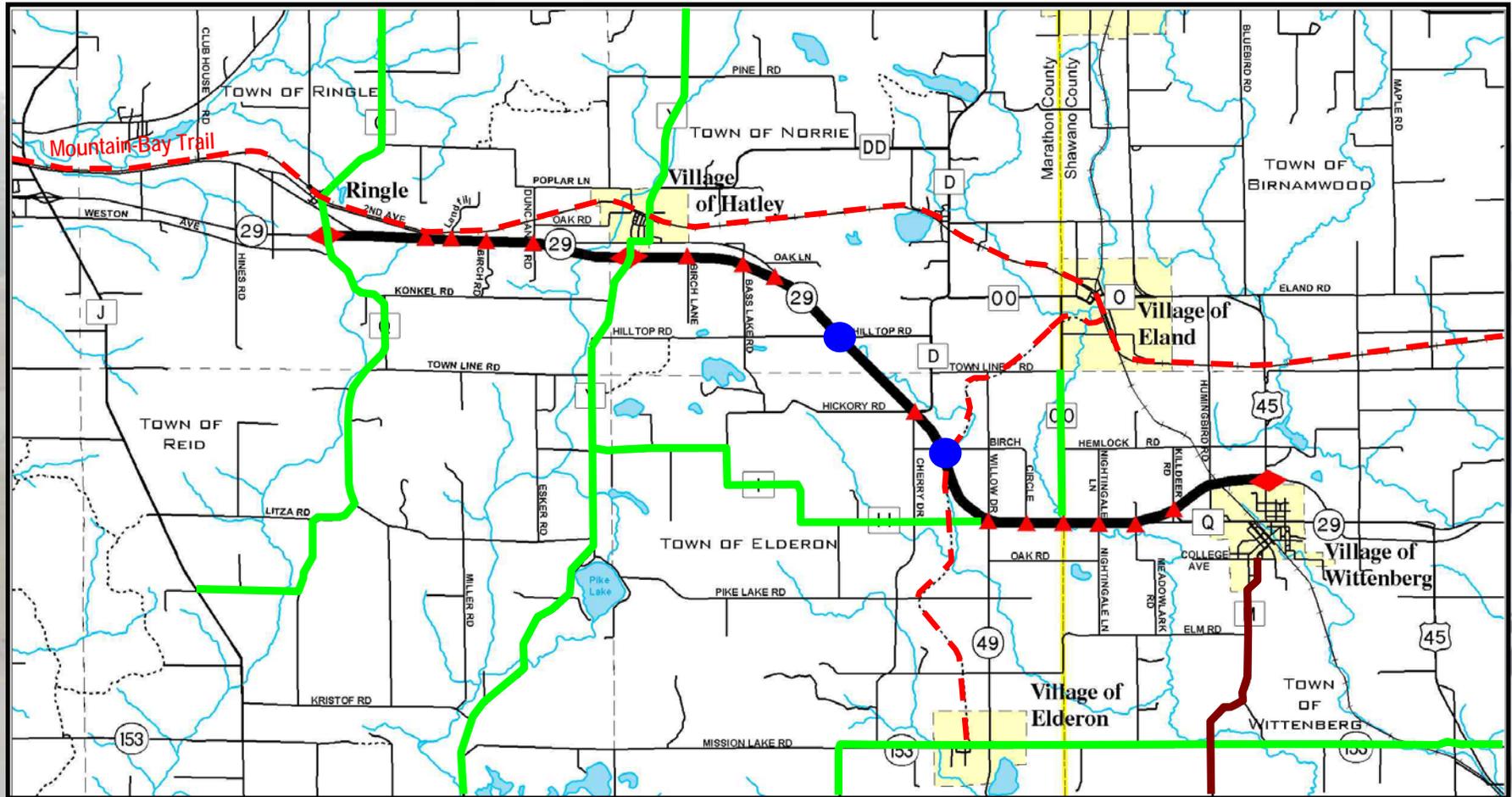
1. Is your farmland (check all that apply):
  - owned
  - rented/leased
  - custom farmed
2. How many acres are:
  - acres owned
  - acres rented/leased
  - acres custom farmed
3. Does your operation include livestock?
  - Yes
  - No
4. Does your property have any cattle passes under US 18/151?
  - Yes
  - No (If no, go to Question 5)

Cattle Pass Locations	Frequency of Use			
	Never	Daily	Weekly	Monthly
500' west of County P		x		

# Multi-modal integration ensures sustainable transportation system



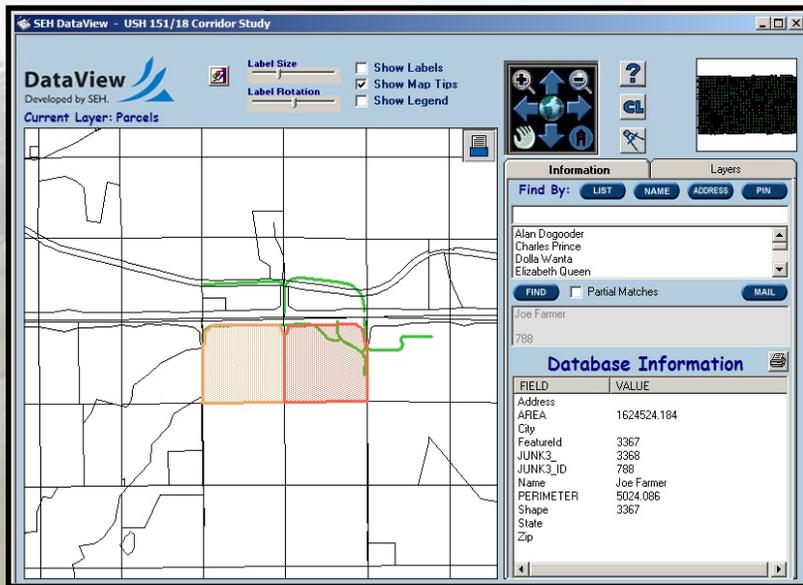
# Early multi-modal planning provides transportation facilities for all users



— Best Bike Conditions    - - Trails    — Rustic Road    ● Snowmobile Crossing

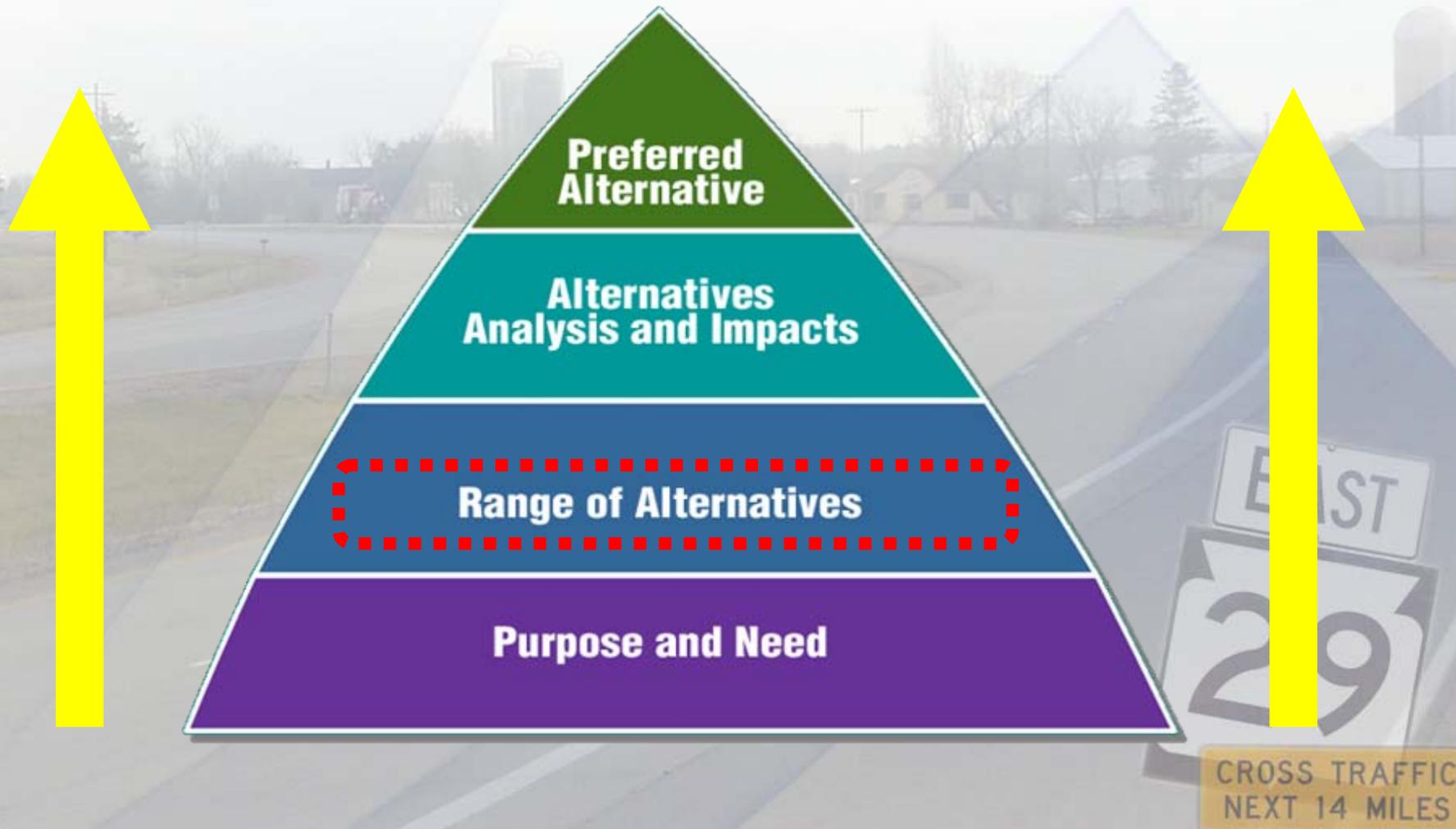
CROSS TRAFFIC  
NEXT 14 MILES

# Development of GIS system insures pubic input is integrated into alternatives



CROSS TRAFFIC  
NEXT 14 MILES

# Freeway conversion and public involvement must follow process to be effective



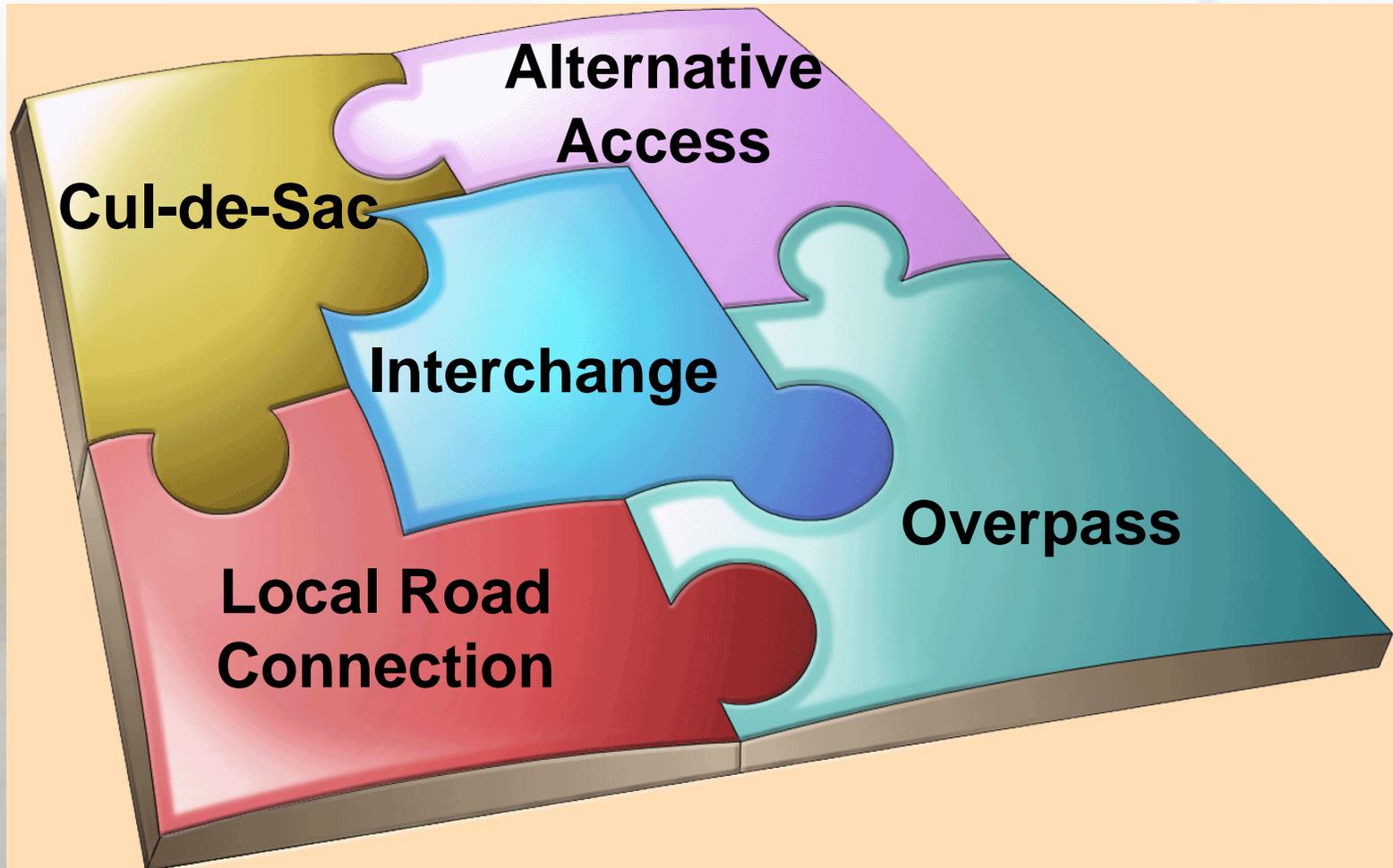
# Experience leads the process in the right direction



**Spot Improvements v. System Approach**

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# System approach provides for comprehensive solutions

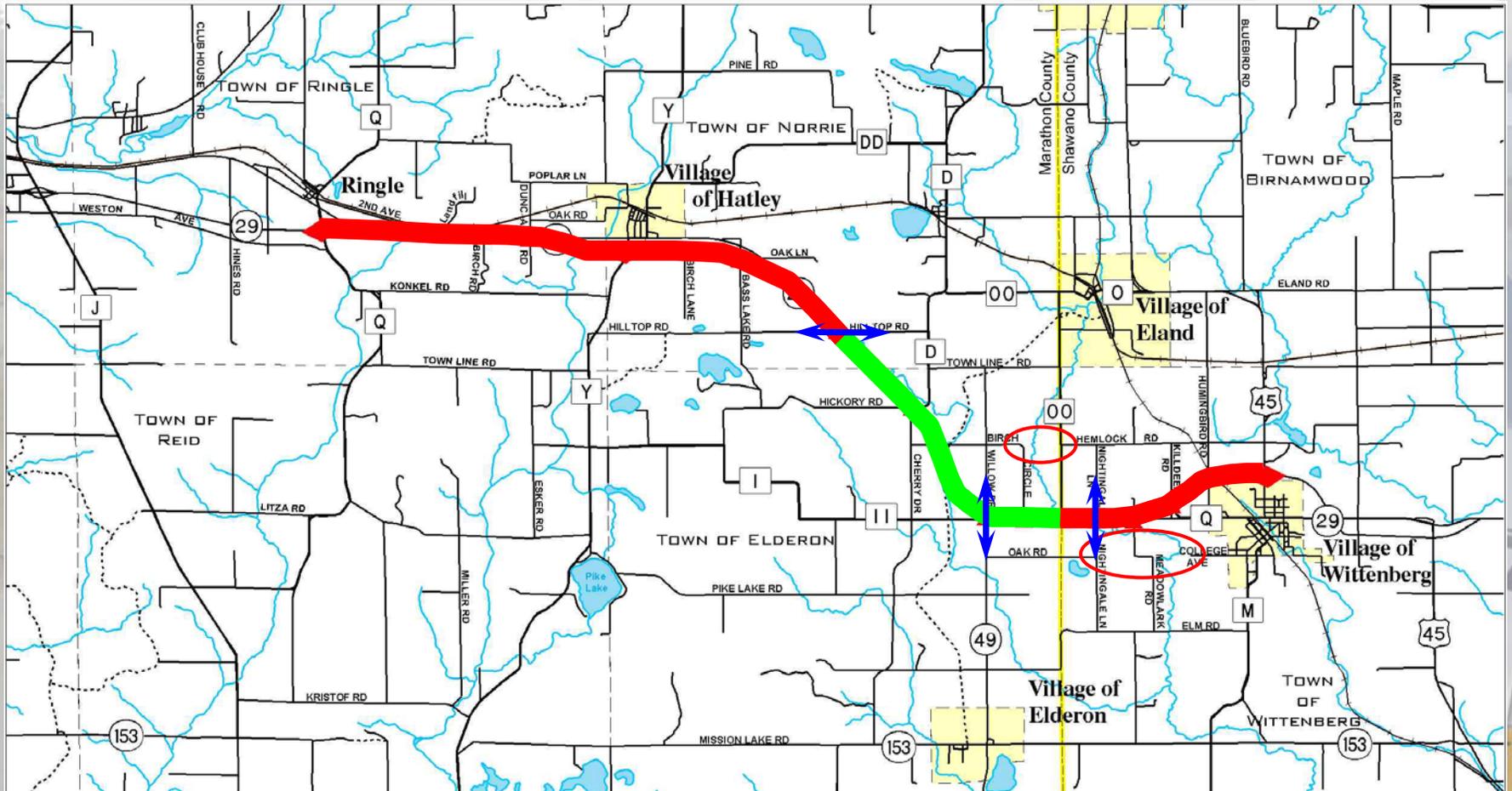


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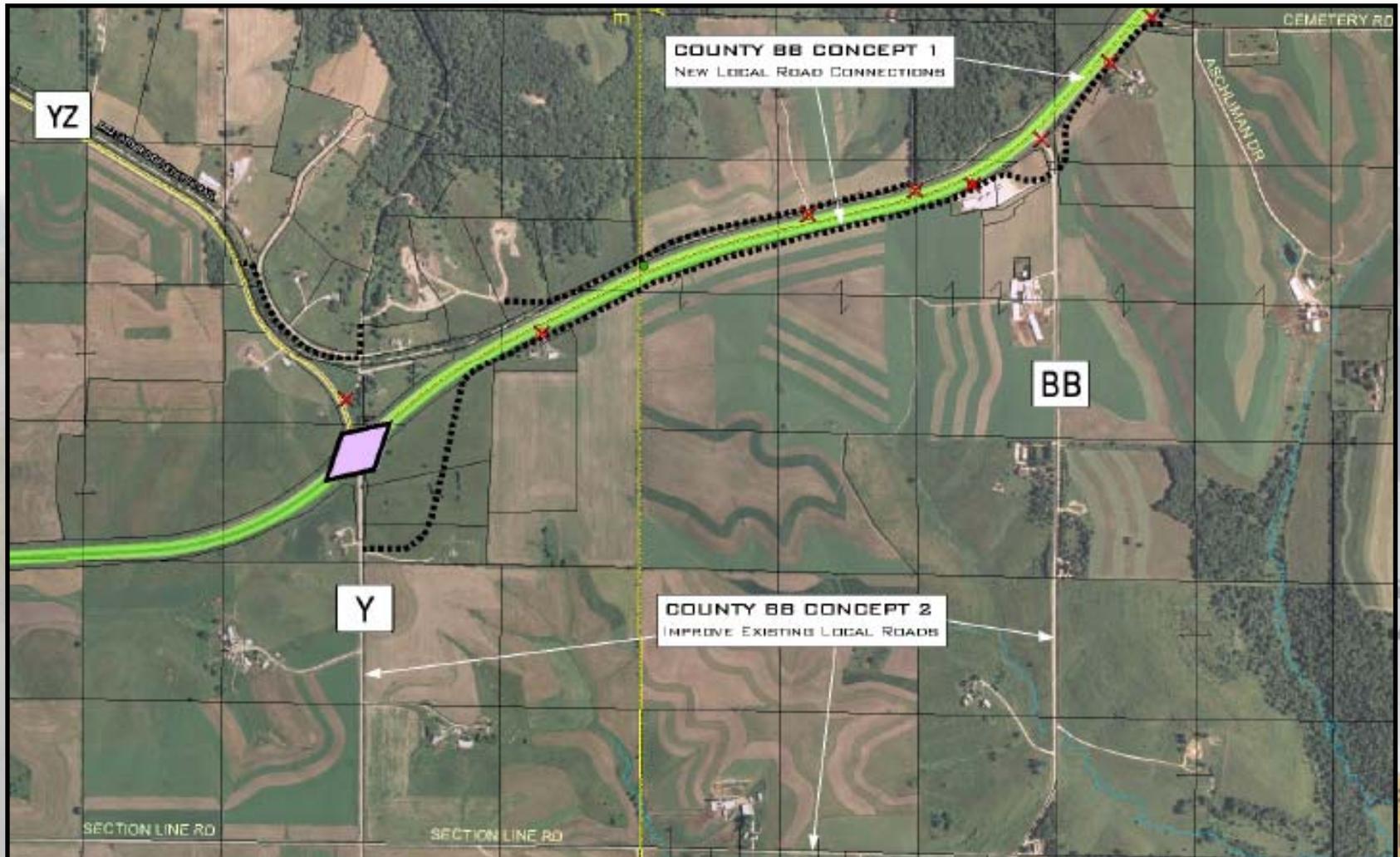
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NEXT 14 MILES

# Shorten up corridor length by starting with freeway access (interchanges) first, then grade separations, then local roads



# Local road options must be evaluated: new versus improved



# System approach is critical

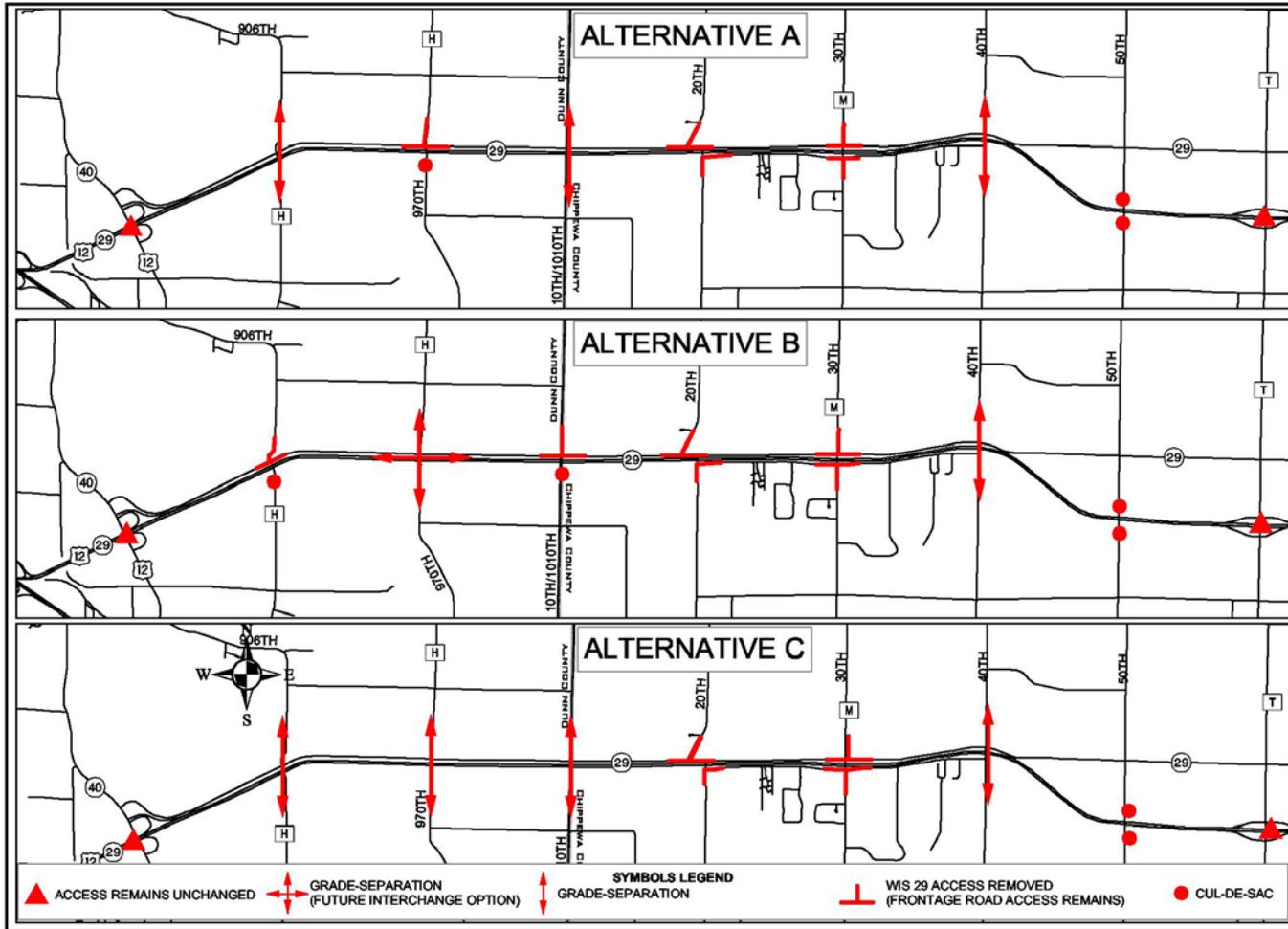


EXHIBIT 2

1 OF 1

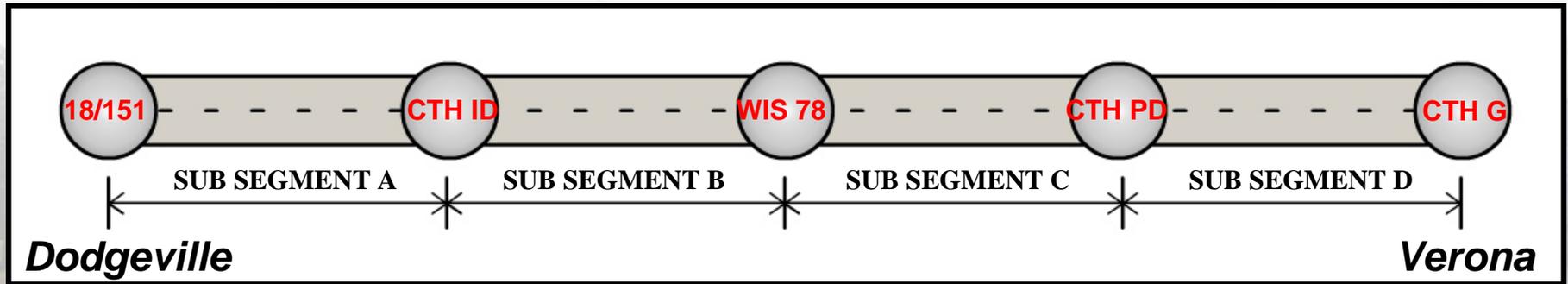
PROJECT ALTERNATIVES

WIS 29 FREEWAY CONVERSION  
DUNN & CHIPPEWA COUNTY  
PROJECT I.D. # 1051 - 01 - 02

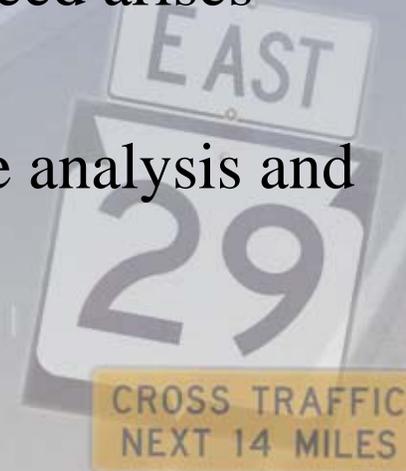
1/2 MILE



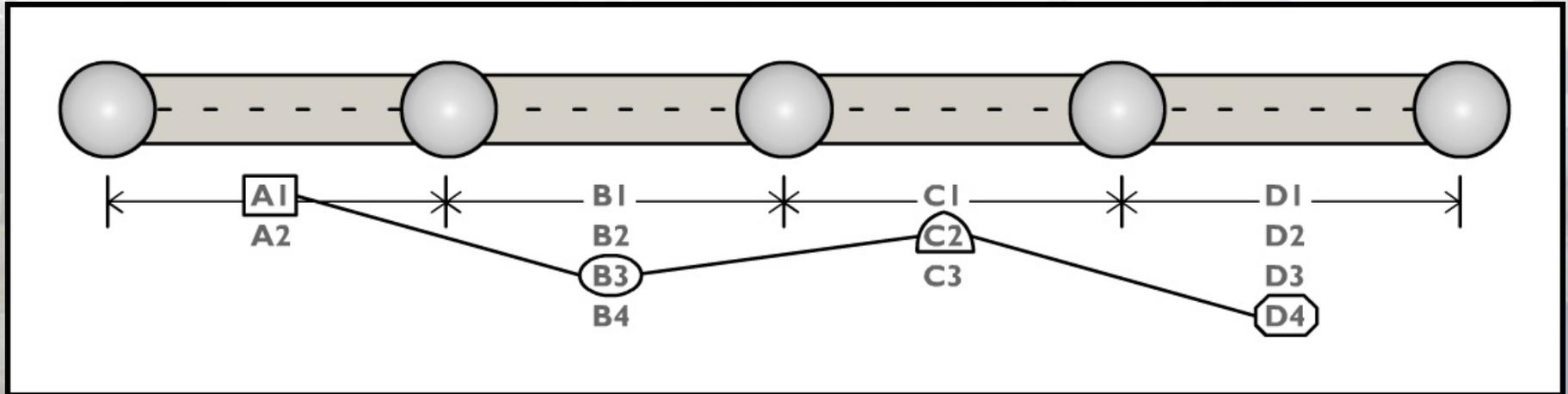
# Longer corridor conversions requires system approach with logical segmentation to satisfy NEPA requirements



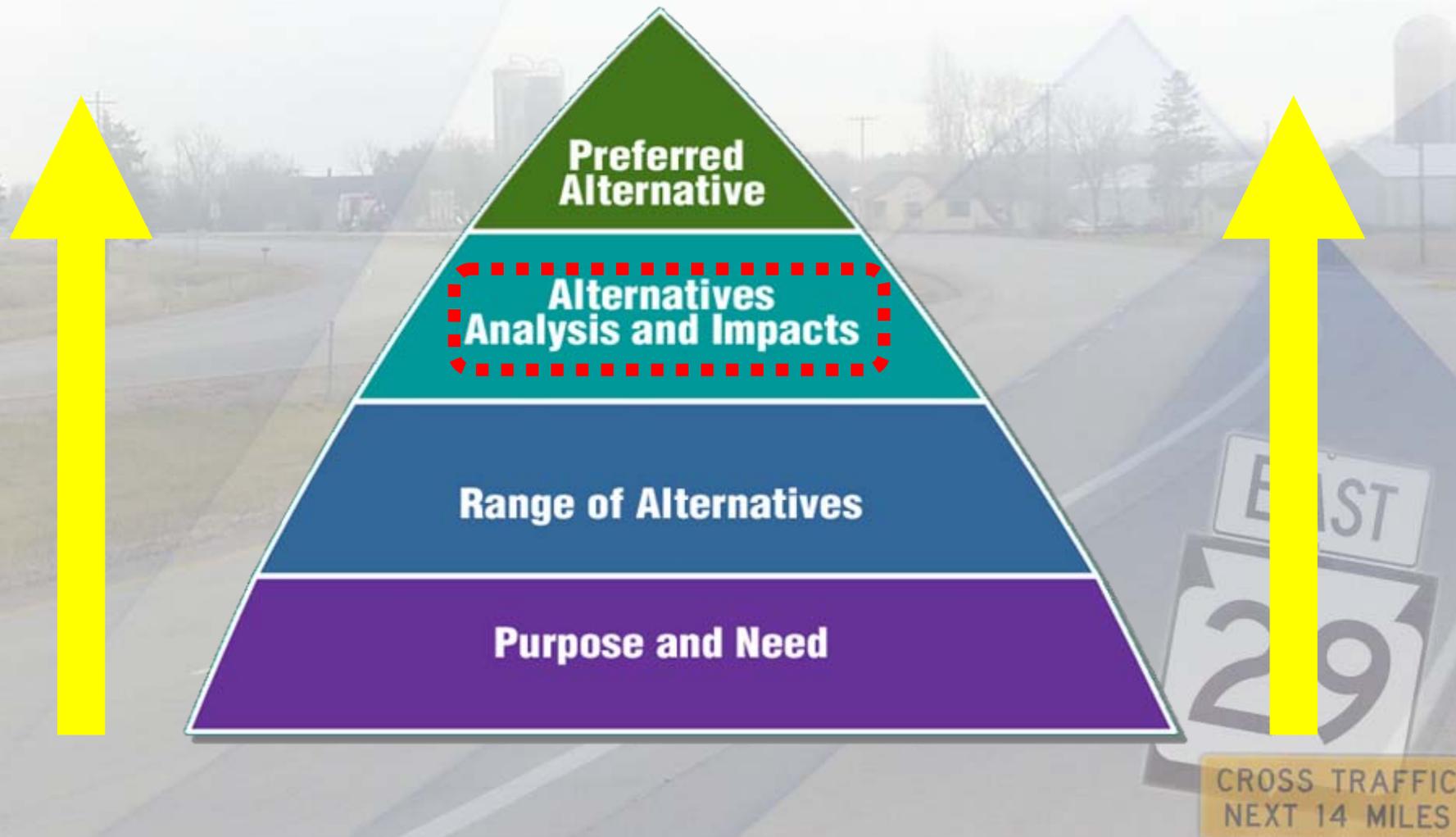
- Supports a long-term system approach
- Accommodates incremental implementation as need arises and/or funding becomes available
- Satisfies public and NEPA's needs for alternative analysis and options



# Logical segmentation leads to NEPA-compatible alternative analysis and preferred alternative



# Freeway conversion and public involvement must follow process to be effective



# Analyze system alternatives

- Interchange locations
  - Spacing
  - Land use
  - Traffic volumes
  - Crash history
- Overpass locations
  - Spacing
  - Land use
  - Traffic volumes
  - Continuity/circulation
- Cul-de-Sac
- Local system connectivity



# Analyze future travel patterns

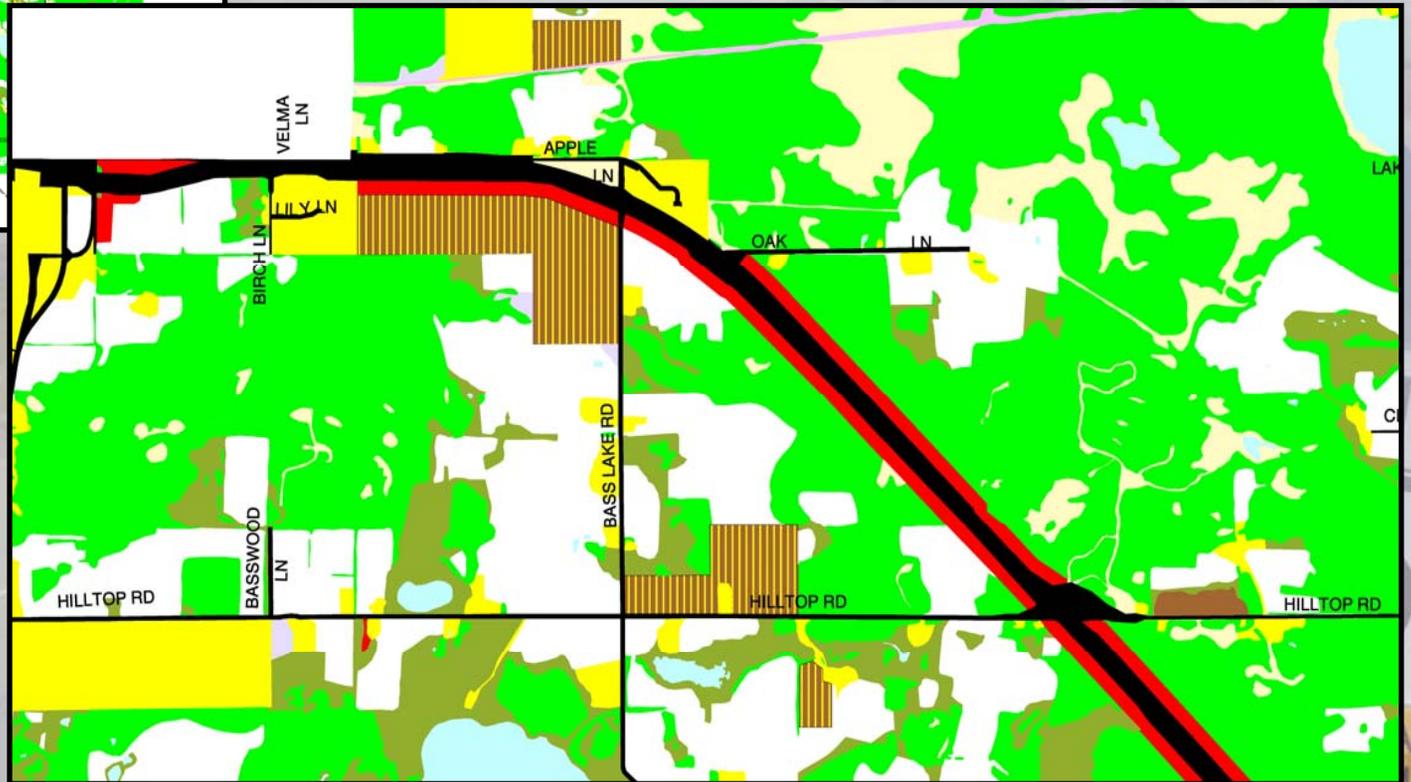
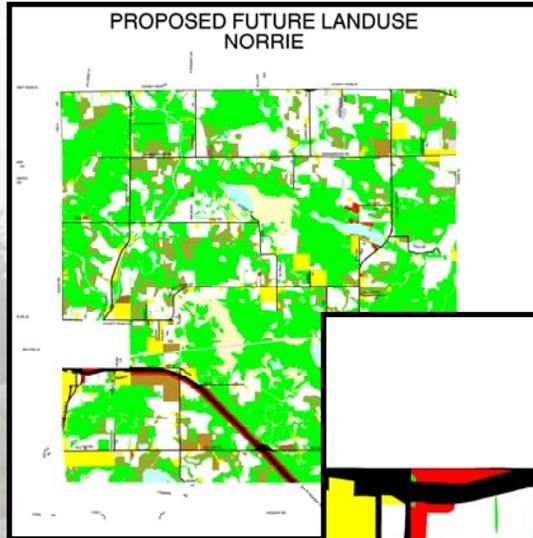
- Emergency services (police, fire, EMS) & response time
- School bus routes
- Farm operations
- Travel time & indirection
- Bike & recreational trail connectivity



# Implications must be thought through

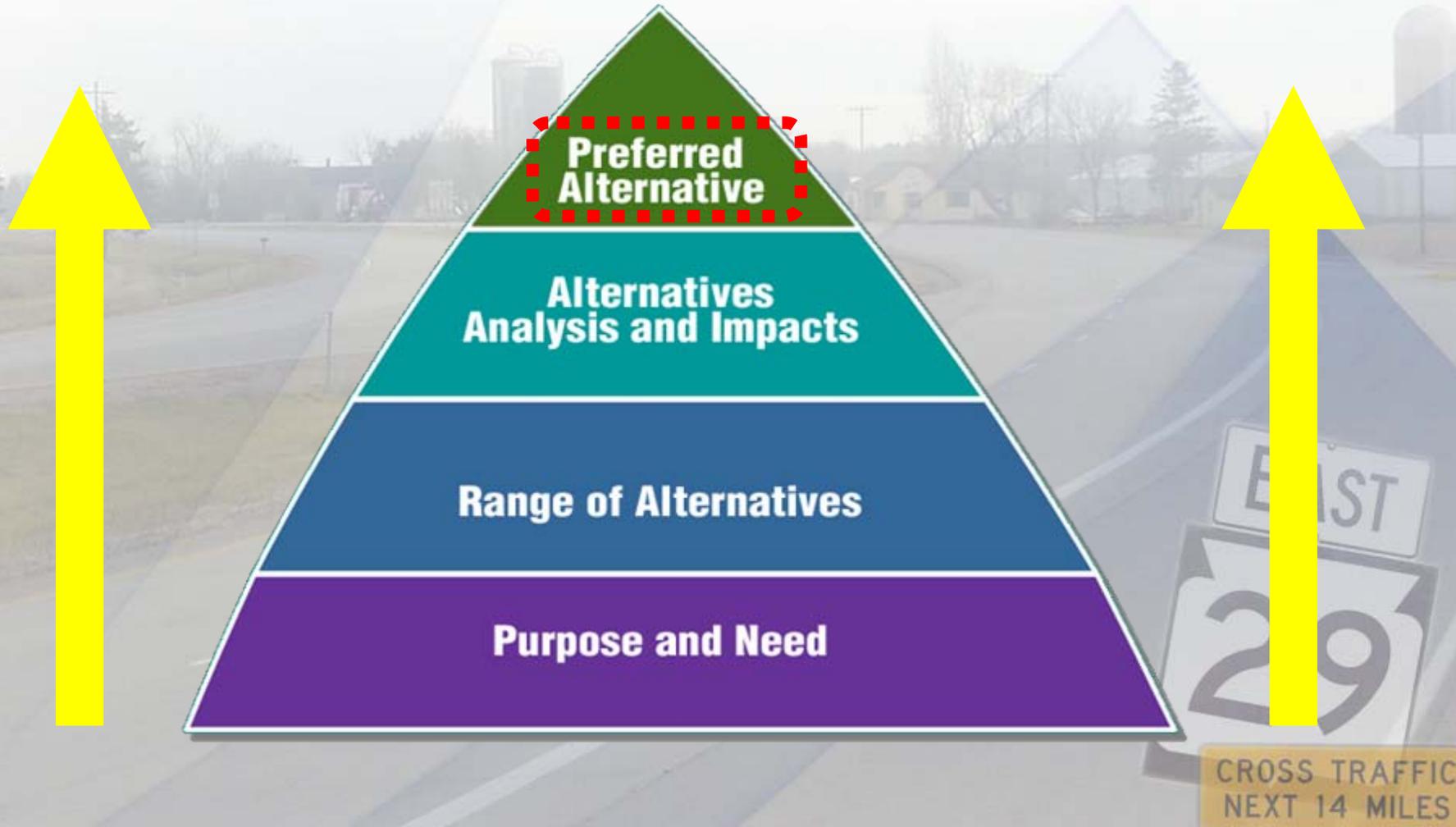


# Implications must be thought through



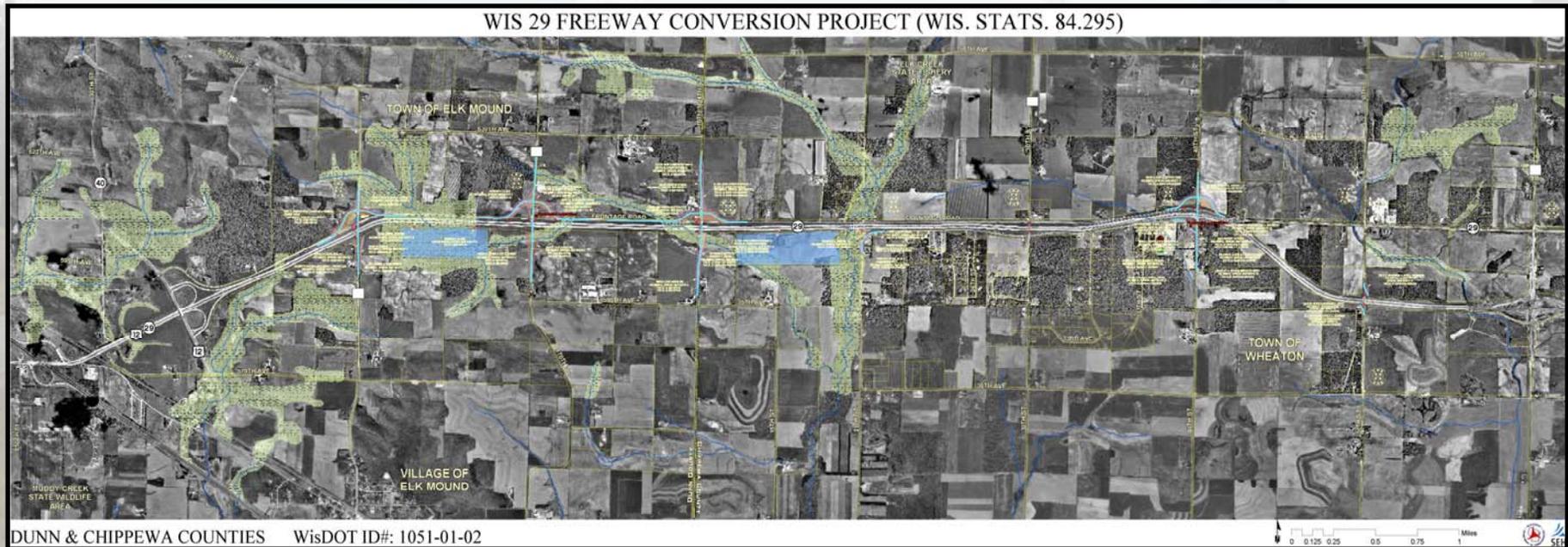
TRAFFIC  
MILES

# Freeway conversion and public involvement must follow process to be effective





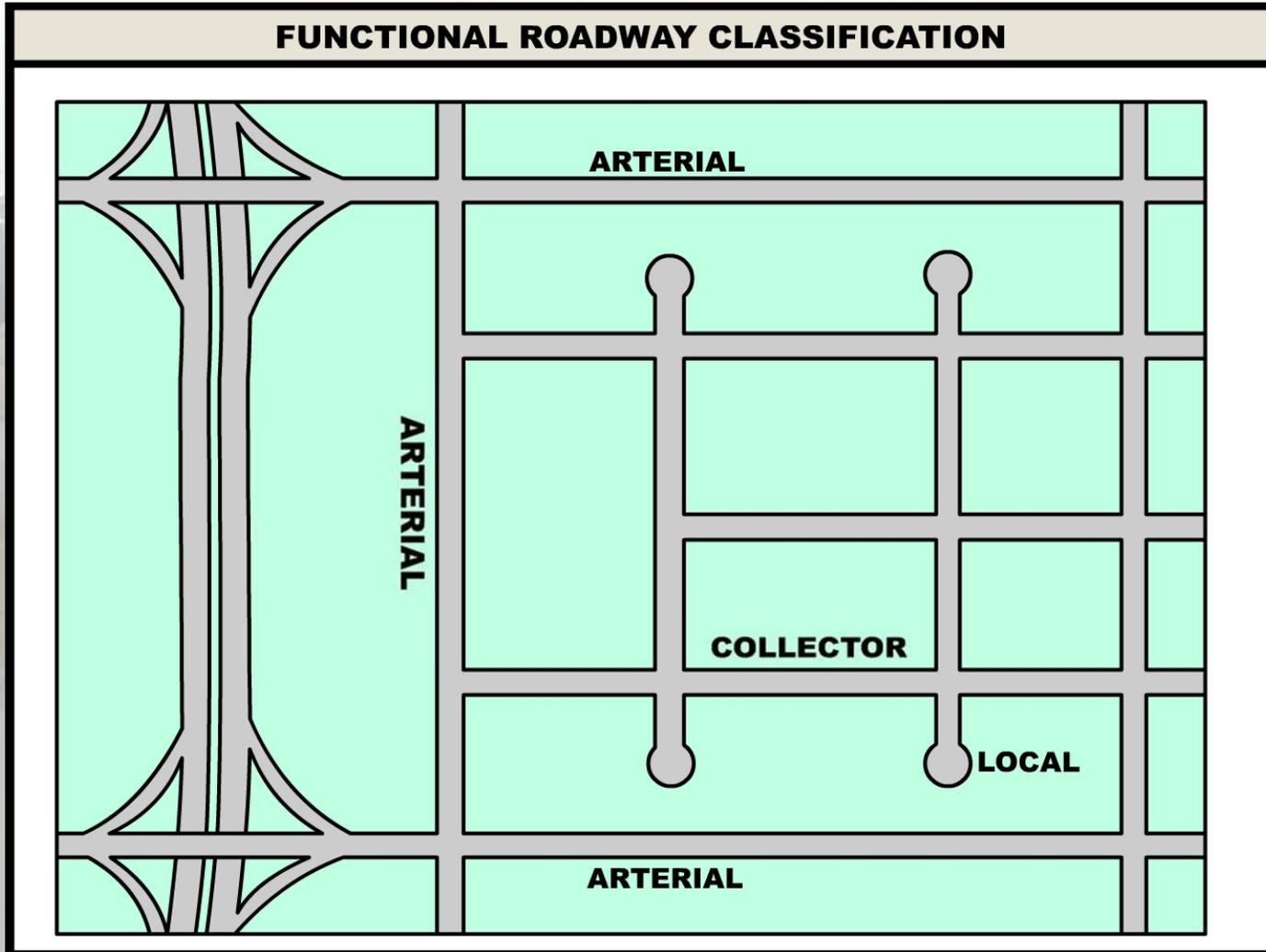
# Wis. Stats. 84.295 mapping final deliverables



29

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# Reestablishment of roadway network must be completed to preserve roadway system

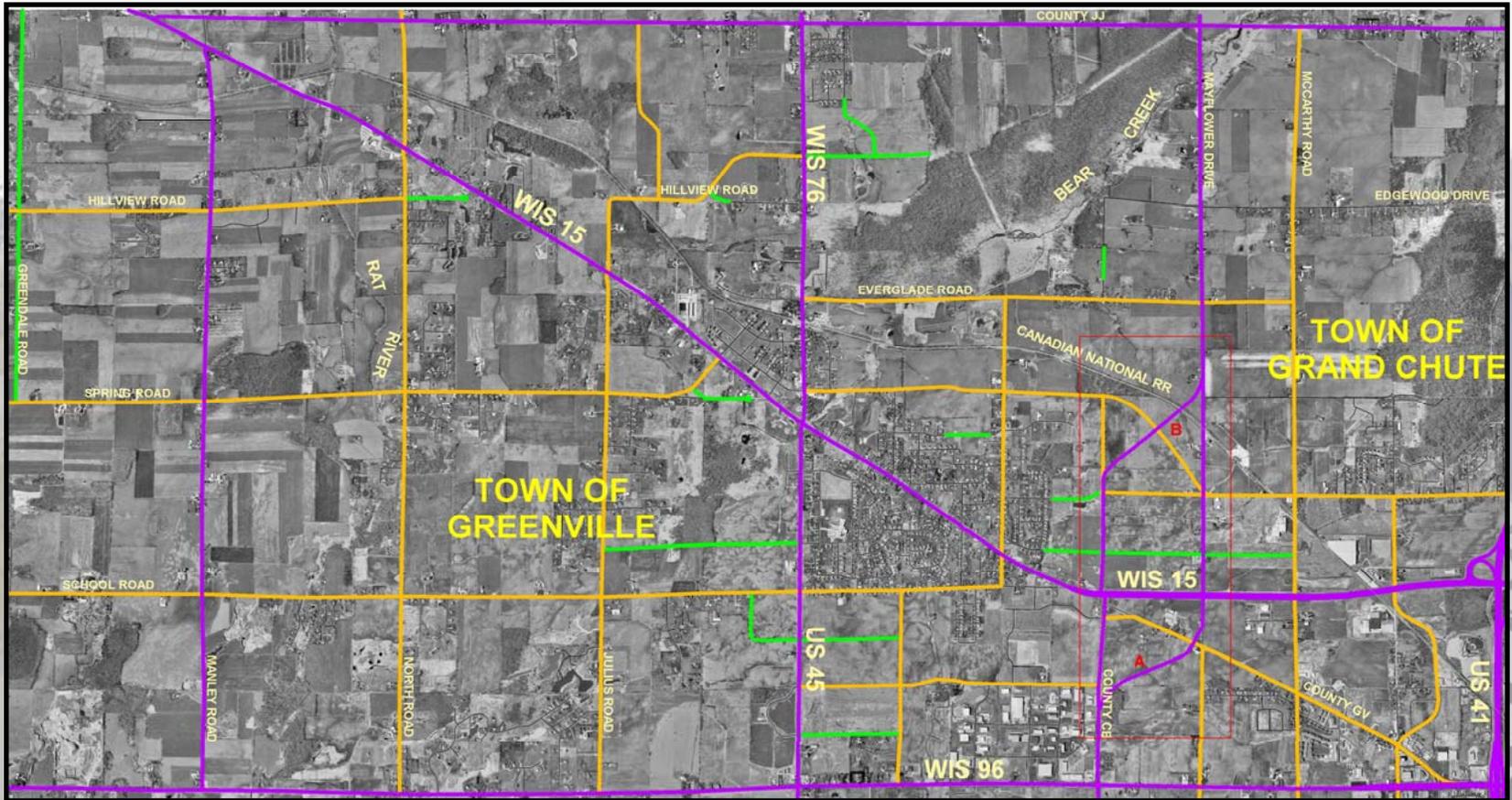


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NEXT 14 MILES

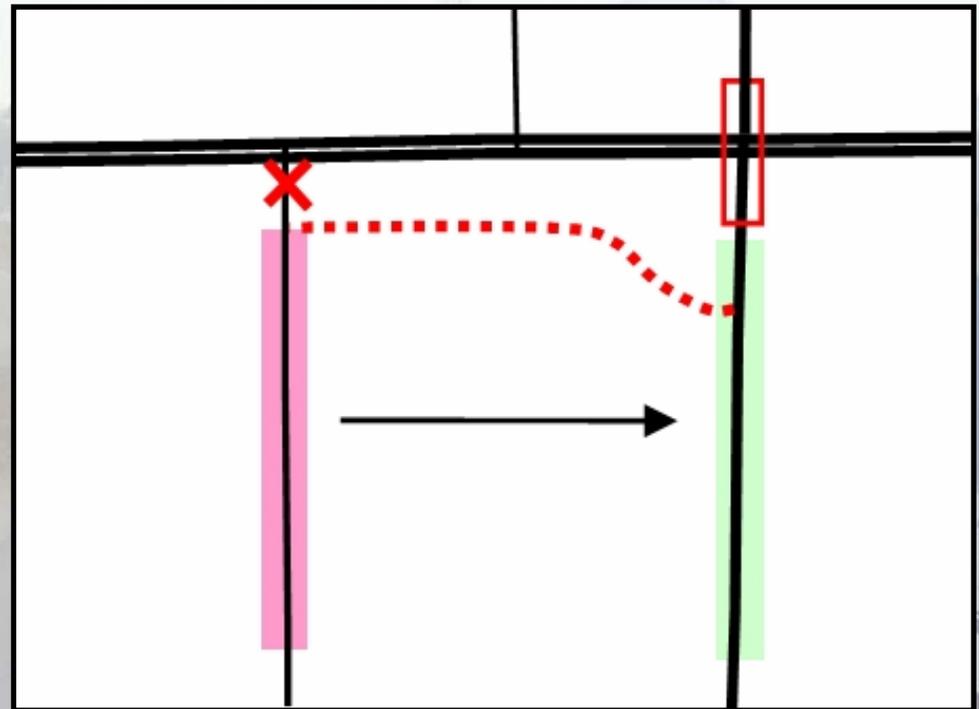
# Reestablishment of roadway network must be completed to preserve roadway system



CROSS TRAFFIC  
NEXT 14 MILES

# Roadway Improvement Prioritization Plan (RIPP) facilitates long-term planning

- Long-term planning tool
- Resource allocation
- Budgeting
- Land use/zoning



CROSS TRAFFIC  
NEXT 14 MILES

# Thank you

## Rural Access Management:

*“Innovative Approaches  
to Expressway to Freeway  
Conversions”*

7<sup>th</sup> Conference on Access Management  
Park City, Utah



Darren Fortney, AICP – [dfortney@sehinc.com](mailto:dfortney@sehinc.com)  
Jim Hanson, PE, PTOE – [jhanson@sehinc.com](mailto:jhanson@sehinc.com)

CROSS TRAFFIC  
NEXT 14 MILES

**“Back in the olden days”  
it looked like this...**



**WIS 13, Ashland County, at Marengo, 5/4/56**

**CROSS TRAFFIC  
NEXT 14 MILES**

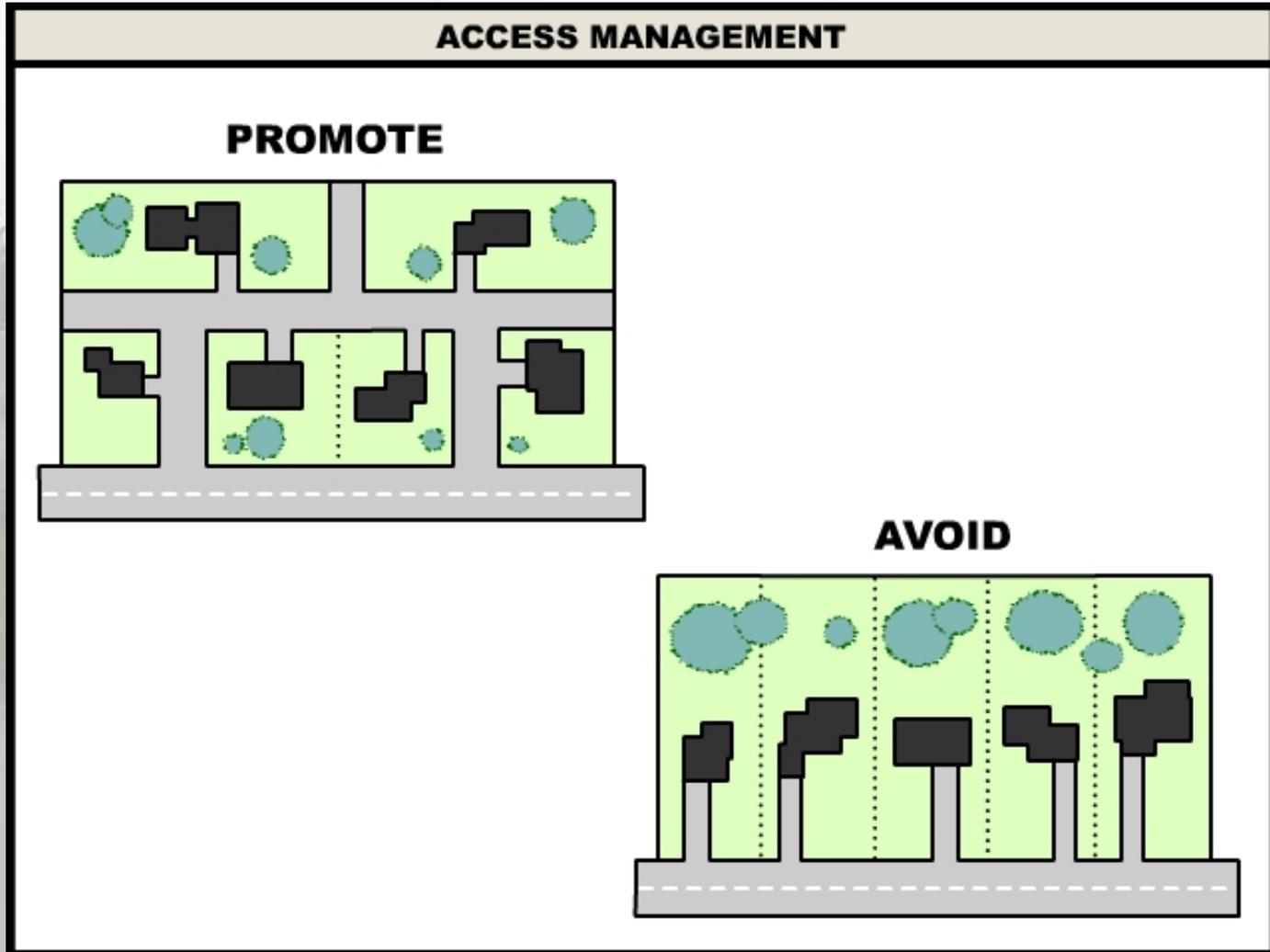
**“Back in the olden days”  
it looked like this...**



**WIS 13, Ashland County, at Marengo, 5/4/56**

TRAFFIC  
NEXT 14 MILES

# Or “plan” on doing this...

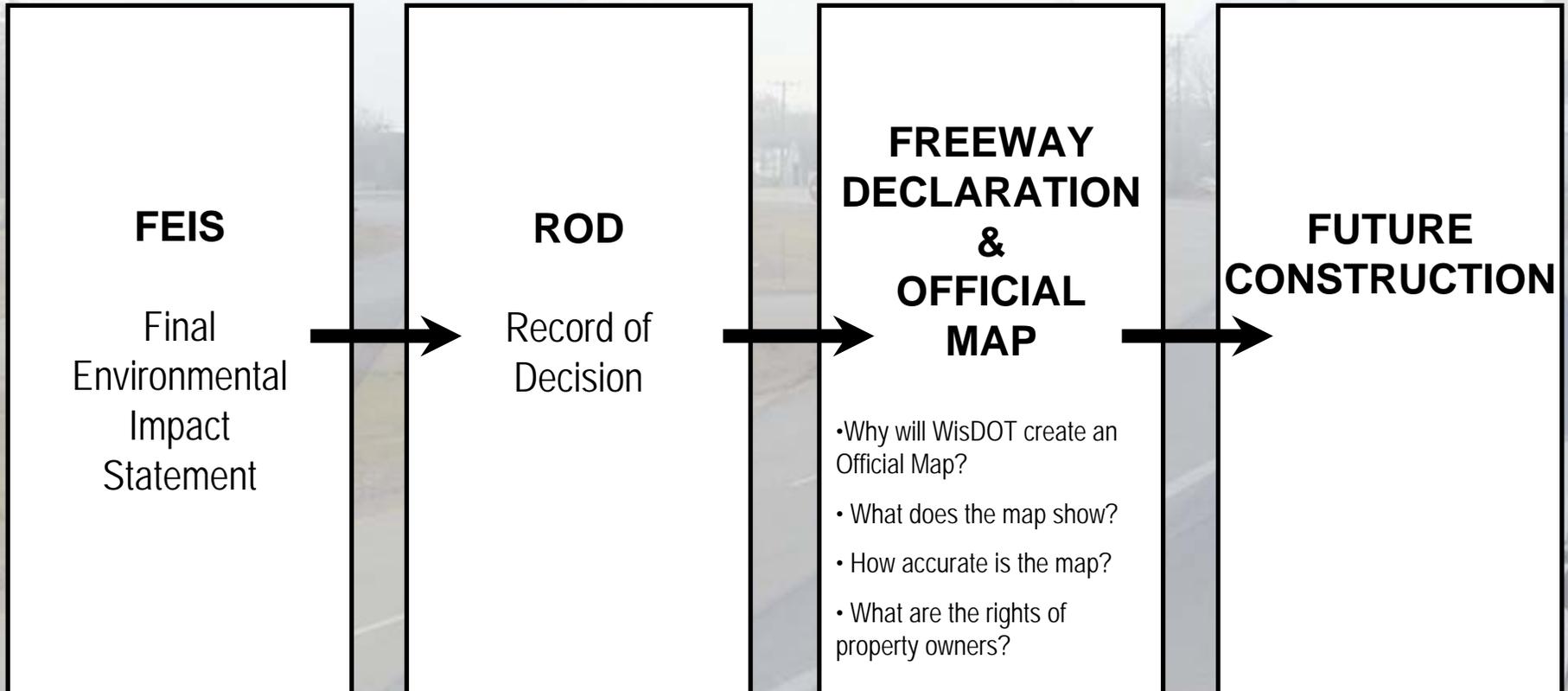


SS TRAFFIC  
NEXT 14 MILES

**To avoid this...**

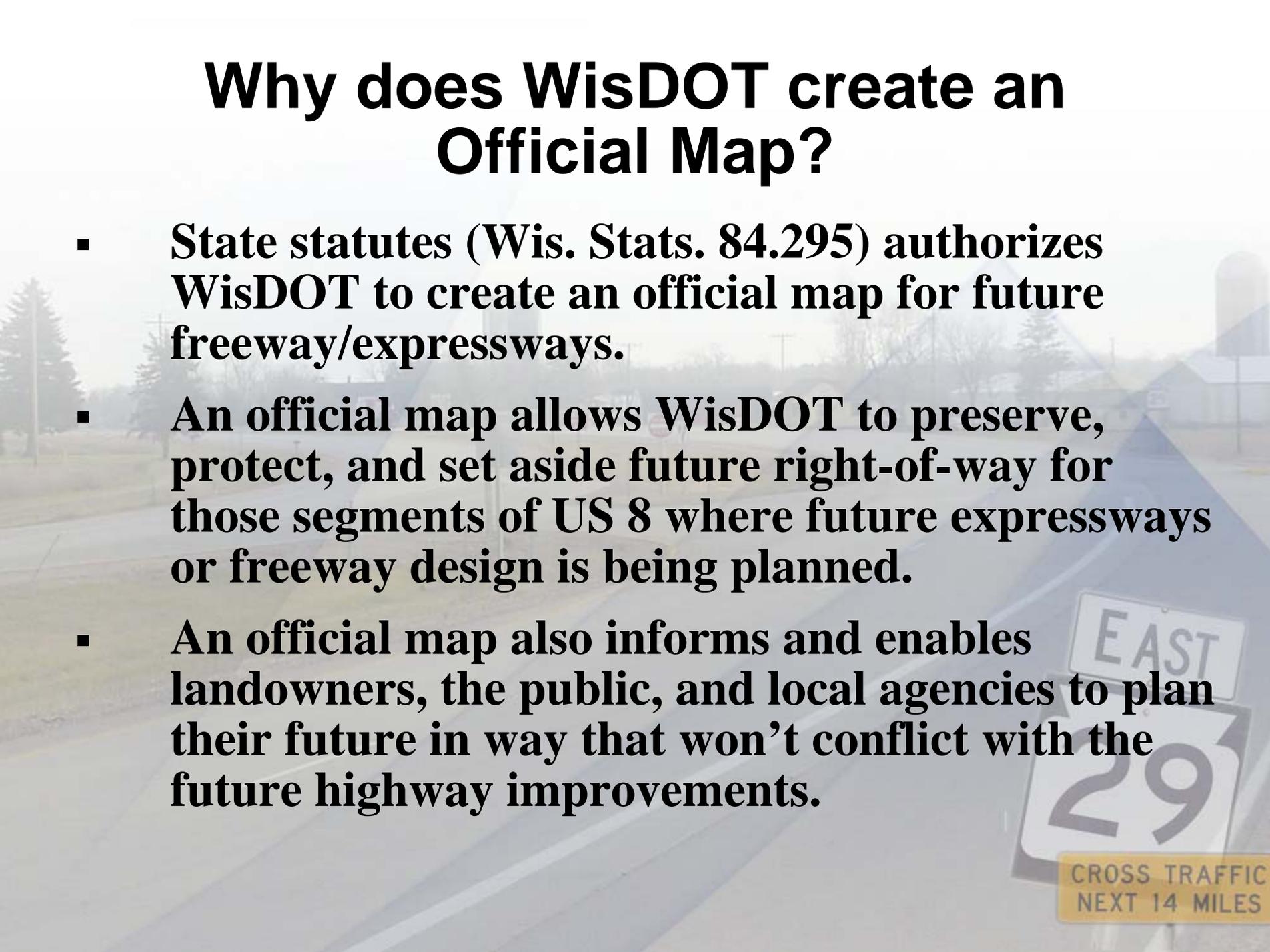


# Steps of freeway conversion



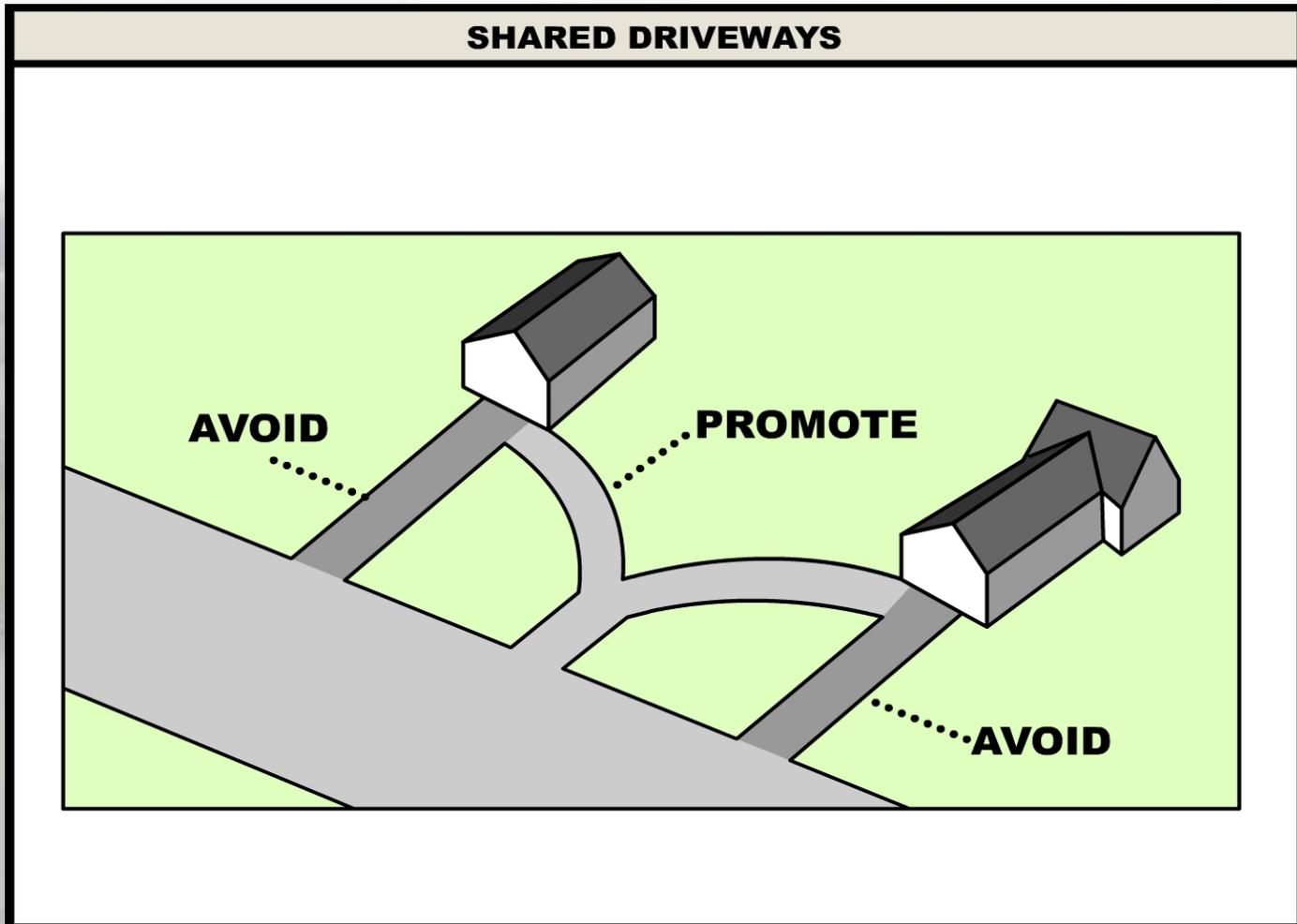
# Why does WisDOT create an Official Map?

- **State statutes (Wis. Stats. 84.295) authorizes WisDOT to create an official map for future freeway/expressways.**
- **An official map allows WisDOT to preserve, protect, and set aside future right-of-way for those segments of US 8 where future expressways or freeway design is being planned.**
- **An official map also informs and enables landowners, the public, and local agencies to plan their future in way that won't conflict with the future highway improvements.**



**EAST**  
**29**  
**CROSS TRAFFIC**  
**NEXT 14 MILES**

# So, we retrofit like this...



AST

9

S TRAFFIC  
NEXT 14 MILES

# What will WisDOT Officially Map?

- **WisDOT will map and preserve land required to convert US 8 to a freeway/expressway under Wis. Stats. 84.295 including:**
  - **New and/or expanded corridors and bypasses**
  - **Interchanges**
  - **Grade separations (over/underpass)**
  - **Removal or alterations to existing public and private access points, including driveways.**
  - **Alterations, removals, or additions to the Local road system.**

**CROSS TRAFFIC  
NEXT 14 MILES**

# How accurate is the Official Map?

- **An Official Map is done to the same level of accuracy required for final highway plans and includes the accurate location of all property boundaries and current landowners.**



# What are the rights of property owners?

- **If your property falls within the area shown on the WisDOT official map, you will:**
  - **Receive a formal letter from WisDOT informing you of this.**
  - **Have the official map notification recorded on your property.**
- **The only requirement from that point on is that you must notify WisDOT 60-days in advance of any alteration to your property or any structure on your property.**
- **Upon receipt of that notification from the landowner, WisDOT will make a determination to either purchase the property at fair market value or allow the alteration to occur. If the property is acquired a later date, the owner will receive full compensation for the alteration.**
- **However, if a landowner makes any alteration to the property without notifying WisDOT, they will not receive any compensation for that improvement if/when WisDOT decides to purchase the property.**

CROSS TRAFFIC  
NEXT 14 MILES