

AGRICULTURAL
IMPACT
STATEMENT



**STH 15: USH 45 – STH 76
Outagamie County**

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Trade and Consumer Protection
DATCP #3224



Agricultural Impact Statement

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AGRICULTURAL IMPACT STATEMENT

STH 15: USH 45 - STH 76

Outagamie County

Wisconsin Department of Transportation

Project ID#: 6430-06-00

INTRODUCTION

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) has prepared this agricultural impact statement (AIS) in accordance with §32.035, *Wisconsin Statutes*. The AIS is an informational and advisory document that describes and analyzes the potential effects of the project on farm operations and agricultural resources, but cannot stop a project.

The DATCP is required to prepare an AIS when the actual or potential exercise of eminent domain powers involves an acquisition of interest in more than 5 acres of land from any farm operation¹. The DATCP may choose to prepare an AIS if an acquisition of 5 or fewer acres will have a significant impact on a farm operation. Significant impacts could include the acquisition of buildings, the acquisition of land used to grow high-value crops, or the severance of land. The DATCP should be notified of such projects regardless of whether the proposing agency intends to use its condemnation authority in the acquisition of project lands. The proposing agency may not negotiate with or make a jurisdictional offer to a landowner until 30 days after the AIS is published.

The DATCP is not involved in determining whether or not eminent domain powers will be used or the amount of compensation to be paid for the acquisition of any property. The AIS reflects the general objectives of the DATCP in its recognition of the importance of conserving important agricultural resources and maintaining a healthy rural economy.

Sources of information used to prepare this statement include the *Wisconsin 2007 Agricultural Statistics* and other yearly issues; the *2002 and 1997 Census of Agriculture*; the *Outagamie County Farmland Preservation Plan*; the *Soil Survey of Outagamie County*; the Wisconsin Department of Transportation (WisDOT). Some Census of Agriculture data for 1997 was revised in the 2002 Census of Agriculture. Where available, 1997 data from 2002 is used.

¹The term *farm operation* includes all owned and rented parcels of land; buildings and equipment; livestock; and personnel used by an individual, partnership, or corporation under single management to produce agricultural commodities.

Elsewhere, the 1997 data is the original *1997 Census of Agriculture* data. Additional sources of Information are included in the Reference section at the end of this report or are referred to directly in the text.

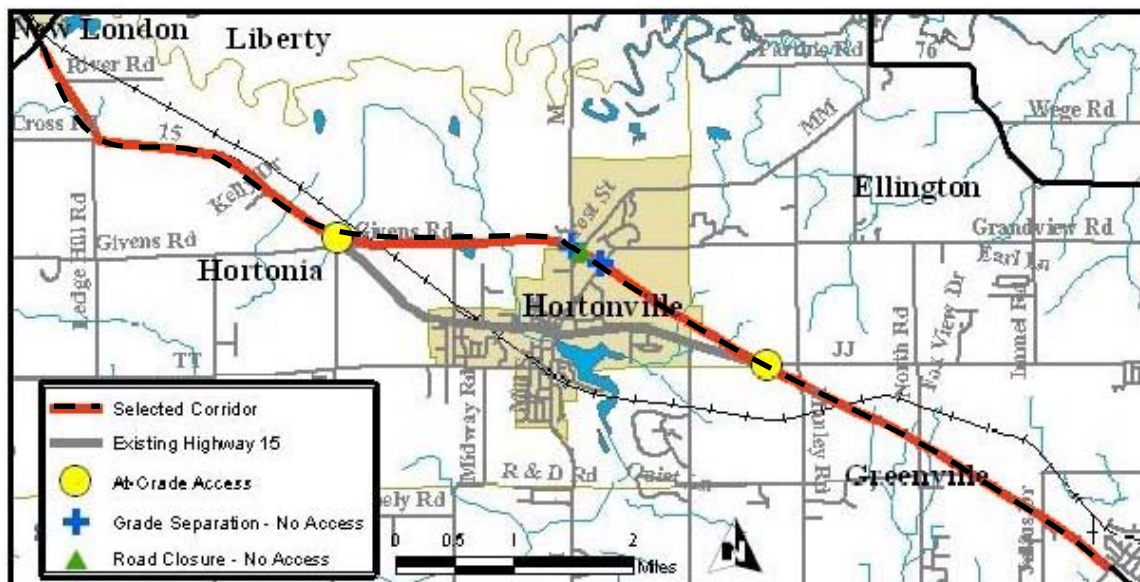
PROJECT DESCRIPTION

The Wisconsin Department of Transportation (WisDOT) is proposing to upgrade an 11-mile segment of State Trunk Highway (STH) 15 beginning at US Highway (USH) 45 in the city of New London, extending through the Village of Hortonville, and ending west of the town of Greenville and STH 76. Existing STH 15 will be expanded to 4-lane divided highways.

Roundabouts or traffic signals will be constructed at the two points where the proposed bypass meets existing WIS 15. This section of STH 15 was part of the highway that was previously designated as part of USH 45. On October 31, 2003, its name was officially changed to STH 15. It is estimated that 120 feet of right-of-way (ROW) width would be required for building the four-lane sections along the existing route, and that 200 feet of right-of-way width would be needed for construction off the existing right-of-way.

WisDOT evaluated several alternatives for constructing the proposed highway. WisDOT selected Alternative 3 for the east section of the proposed project and Option A for the west section.

Project Location Map



Existing Highway Corridor

Existing State Trunk Highway (STH) 15 is a two-lane rural arterial, except for about two miles of an urban section in the village of Hortonville. Roadway cross sections are mainly 12-foot lanes with 8-foot shoulders that include 3 feet of paved width. Turn lanes are found at most intersections. WisDOT notes there are several dangerous horizontal curves, "especially on the section between New London and Hortonville."

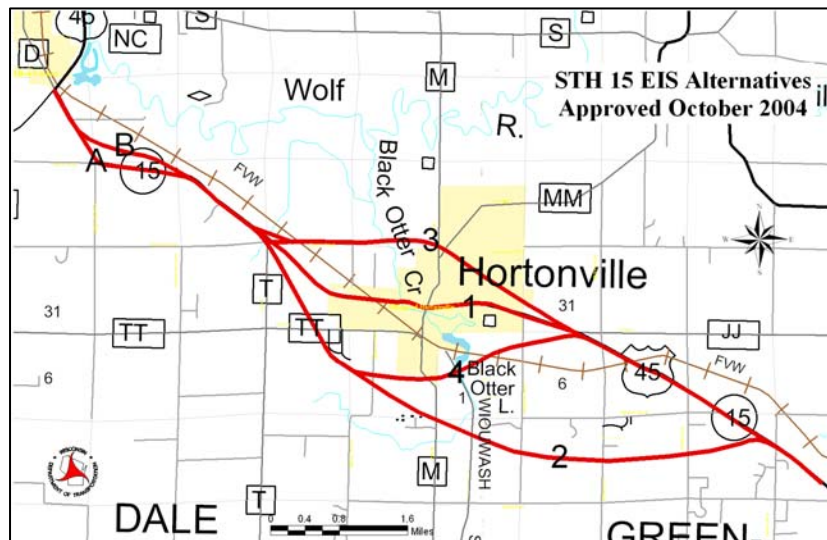
There are 299 access points along the 11-mile STH 15 project corridor, including 148 residential, 71 commercial, 13 industrial, 31 agricultural, 32 links to local roads, and four to county or state highways. The following table breaks down the type of access points geographically for three portions of the corridor that were considered by WisDOT: Segment A, rural, between New London and Hortonville; Segment B, urban, in the village of Hortonville; and Segment C between Hortonville and the east terminus of the project in the town of Greenville.

Table 1 - Distribution and Density of STH 15 Corridor Access Points by Segment				
	Segment A	Segment B	Segment C	Total Corridor Length
Length of Segment	4.66 miles	1.99 miles	4.46 miles	11.11 miles
Commercial	16	38	17	71
Industrial	3	6	4	13
Residential	44	68	36	148
Agricultural	14	3	14	31
Local Roads	6	13	13	32
County/State Highway Links	1	2	1	4
Total # of Access Points	84	130	85	299
Density of Access Points per Mile	18.0	65.3	19.1	26.9

Alternatives

WisDOT considered four route options for the main east portion of the proposed project corridor consisting of all of STH 15 east of the junction with County Trunk Highway (CTH) "T" northwest of Hortonville in the town of Hortonia. Alternative 1 runs entirely along the existing highway right-of-way. Alternative 2 diverges from the existing right-of-way after the first mile from the east starting point of the corridor, running more directly west and bypassing the village of Hortonville on the south before turning north at a 60-degree angle to connect at CTH "T". Alternative 3 follows the existing right-of-way for the first 3.6 miles or so on the east end of the route, but then follows a more northerly route through Hortonville, after which it heads straight west on Givens Road. Alternative 4 is identical to Alternative 3 for the first 3.6 miles or so from the east end of the route. From there, it follows a tight bypass around the southerly end of the village of Hortonville, where it then follows the same route as Alternative 2 for two miles.

Two options were considered for the shorter west portion of the proposed project corridor, a distance of about three miles. These west-portion options, called A and B, are identical for about half of the length of this portion of STH 15.



Option A follows the existing right-of-way for the entire length of the western portion of the project corridor. Option B runs about 1/5 of a mile north of the existing corridor in the middle section of the west portion. Both of the west-end options for the project involved building a highway interchange where it links with STH 45 southeast of New London.

The following table summarizes some of the direct agricultural impact information for the route options that WisDOT considered for the STH 15 project.

Table 2 - Direct Agricultural Impacts for STH 15 Route Options						
	East Section - Alternative 1 (Existing ROW)	East Section - Alternative 2	East Section- Alternative 3	East Section - Alternative 4	West Section - Option A (Existing ROW)	West Section - Option B
Length of Segment (miles)	7.3	7.87	7.29	7.93	3.36	3.16
Existing ROW Used (acres)	51	14	14	14	54	28
New Highway ROW Needed (acres)	64	207	170	187	61	70
Estimated Farmland Converted to ROW (acres)	20	175	110	80	25	48
Number of farms affected	3	14	8	12	1	5
Number of farms displaced	1	0	4	1	3	2
Number of farms severed	0	13	2	9	0	4

As stated earlier, WisDOT selected Alternative 3 for the east section of the proposed project and Option A for the western portion.

Project Need

WisDOT has indicated that the purpose of the proposed project is to serve existing and projected traffic volumes while improving operational efficiency and safety for local and through traffic.

According to their draft Purpose and Need statement the proposed improvements to STH 15 are needed because of:

- System Linkage and Route Importance
- Existing and Future Traffic Volumes
- Traffic Operations
- Corridor Growth/Development
- Existing Highway Characteristics

System Linkage and Route Importance

According to WisDOT, capacity expansion of STH 15 would allow the facility to complement the existing design for the US 45 bypass of New London to the north and of existing WIS 15 southeast to USH 41 in Appleton. The improvements would help to complete an area network of roadways needed in this rapidly expanding region of Wisconsin.

Existing and Future Traffic Volumes

The draft Purpose and Need statement states that "... traffic is steadily increasing along WIS 15." The actual data shown on page 1.3 in Table 1.3-1 of that document indicates a decrease in traffic or no change in traffic volume for all but two segments of the project. These segments are the CTH "CB"-WIS 76 segment, which is east of the project limits, and the CTH "JJ" – Greendale Road segment.

In late 2003, USH 45 was re-routed from the current STH 15 location to another corridor to the southwest (formerly STH 110 and CTH "D"), resulting in decreased traffic volumes on the newly designated STH 15 corridor under consideration here. WisDOT states that "Even with the rerouting of US 45 to its new location, the ADT is forecasted to increase to 17,500 on the west portion near New London and 25,000 on the east side of Hortonville by the year 2035. However, many argue that projecting traffic volumes that far into the future can be highly speculative and may not take into account possible negative impacts on travel due to long-term rising gas price levels.

Traffic Operations

According to WisDOT, current and projected traffic volumes and traffic operations on WIS 15 indicate the existing two-lane roadway will not be able to appropriately serve the urban Hortonville or surrounding rural areas. Traffic operations on WIS 15 will continue to deteriorate if improvements are not made on the highway. Roadway level of service is a measure of a highway's ability to serve the traffic demands placed on it. This measure ranges from A (very good) to F (very poor). WisDOT states in the Draft Environmental Impact Statement that (DEIS) that "Current and projected traffic volumes and traffic

operations on WIS 15 indicate the existing two-lane roadway will not be able to appropriately serve the urban Hortonville or surrounding rural areas. Traffic operations on WIS 15 will continue to deteriorate if improvements are not made on the highway.”

Corridor Growth

Growth in the project corridor has included land use changes from rural, agricultural uses to that of a suburban corridor development. This is particularly the case in three communities: the Town of Greenville, Village of Hortonville, and City of New London. According to WisDOT, “Increasing local development increases the level of conflict between local and regional traffic on WIS 15. Additional commercial and residential development increases access point usage, turning movements, and traffic control measures. These in turn hinder through traffic mobility and safety. Growing through traffic hinders local access and makes turning movements, particularly left turns, from local development increasingly difficult.”

Existing Highway Characteristics

The pavement on existing STH 15 has deteriorated to where a more major infrastructure investment would be needed, such as reconstruction. In addition, substandard curves have created operational and safety problems at the current posted speed. This is especially the case on the section between New London and Hortonville.

AGRICULTURAL IMPACTS

Direct Landowner Impacts

WisDOT estimates that the proposed project would affect about 240 acres of farmland on 48 parcels. An additional 265 acres of farmland could be landlocked by the relocated highway.

WisDOT proposes to acquire one acre or less from fourteen farm parcels, totaling four acres. From twenty-four parcels totaling of 65 acres, WisDOT would acquire between one and five acres. WisDOT is proposing to acquire more than five acres from ten parcels, totaling 171 acres.

Tables 3, 4, and 5 show the farmland acquisitions from individual farmland owners.

Table 3 - Farmland Parcels Less than 1 Acre Acquired				
Parcel Owner	Cropland/ Pasture	Woodland	Undetermined or Other	Total
Deborah J Jack	0.20		0.57	0.77
Krause Family Trust	0.42			0.42
Paula A & Tamira R Captain			0.28	0.28
John J Gerhardt			0.34	0.34
Chad A Karpf		0.02		0.02
Thomas Ort			0.12	0.12
Gerald & Rose Hoier	0.33			0.33
Claude T Bucklin	0.42			0.42
Will/Susan Revocable Trust Boylan	0.20			0.20
John S & Susan M Korth	0.55			0.55
Total	2.12	0.02	1.31	3.45

Table 4 - Farmland Parcels Greater than 1, Less than 5 Acres Acquired						
Owner	Total Farmland Acquired	Fee Simple	Easement	Cropland/ Pasture	Woodland	Other
Immel Group LLC	1.1	1.1		1.1		
Christus Lutheran Church of AP	2.7	2.7		2.7		
GLLB Properties	1.2	1.2		1.2		
Randy J & Danielle A Shaw	1.7	1.5	0.2	0.5		1.0
Wolf River Partners LLC	4.3	4.3		4.3		
David Watters	1.7	1.6	0.1	1.0		0.8
Joan M Survivors Trust Jossart	4.6	4.6		4.6		

Table 4 - Farmland Parcels Greater than 1, Less than 5 Acres Acquired						
Owner	Total Farmland Acquired	Fee Simple	Easement	Cropland/ Pasture	Woodland	Other
Arnold J & Mary S Weyers	4.7	4.7		4.7		
Alvin H Lemke	3.7	3.7		3.7		
Anne Reynolds	2.9	2.9		2.7		0.2
Rodney F Martin	1.7	1.7		1.5		0.2
Elizabeth Gaigg	4.3	4.1	0.2	4.0		0.3
Thomas Lathrop	2.2	2.2				2.2
Paul G Bernegger	2.9	2.9			2.9	
Kelly J Land	1.6	1.6			1.6	
Chad A Karpf	1.6	1.6			1.6	
Edward Sullivan	1.7	1.7		1.7		
Equity Trust Co-Custodian FBO	1.7	1.7		1.7		
Stephen & Geraldine Koepl	2.0	2.0				2.0
Daniel J Koepl	4.7	4.7		4.7		
Randall Hedtke	1.2	1.2				1.2
Jane C Schiedermayer Revocable Trust	5.5	5.5			5.5	
Robert Wolfrath	3.2	3.2				3.2
Timothy P Coenen	1.9	1.9		0.6		1.3
Totals	64.8	64.3	0.5	41.0	11.7	12.3

Table 5 - Farmland Parcels Greater than 5 Acres Acquired						
Owner	Total Farmland Acquired (acres)	Fee Simple (acres)	Easement (acres)	Cropland/Pasture (acres)	Woodland (acres)	Other (acres)
Irene E Rev Trust Becker	4.9	4.4	0.45	4.4		0.5
Eric & Patricia A Jack	15.3	15.3		14.8	0.2	0.3
Eldren Young	6.4	6.3	0.1	6.4		
Nash Hills LLC	21.0	21.0		18.9		2.1
Michael J & Mary L Murphy	6.0	6.0		4.7	1.1	0.2
Emeline A Breitrick	11.8	11.8		11.1		1.7
Don E Parker	8.0	8.0				8.0
James I Sykes	6.9	6.9				6.9
Irving J Partika	16.8	16.8		14.4		2.4
Kevin & Jane Sambs	45.0	45.0		41.8		3.2
Helen Sambs	11.0	11.0		9.0		2.0
Wesley Martin	6.1	6.1		9.2		
David Lathrop	6.1	6.1		4.9		1.2
Jane C Schiedermayer Revocable Trust	5.5	5.5			5.5	
Totals	170.8	170.2	0.6	136.5	6.7	28.5

The following farmland owners would have more than five acres acquired for the proposed STH 15 project.

Landowner: Eric and Patricia Jack
Proposed Acquisition: 15.3 acres

WisDOT proposes to acquire 15.3 acres from the parcel, which would include about 14.8 acres of cropland.

Access to the property north of STH 15 will be changed to CTH “JJ.” Access to the property south of STH 15 would change to a frontage road that would sever the parcel. This would create a remnant parcel that would be difficult to farm because of its size and shape.

Between STH 15 and CTH “JJ”, Manley Road will be obliterated and the south portion will change to right-in and right-out at STH 15. The proposed project would require the acquisition of the farmhouse. Eruc Jack rents his cropland to his son, Steve Jack. Steve Jack is dairy farmer who grows field corn and soybeans on the Eric Jack parcel.

Mr. Jack would like WisDOT to purchase the farmstead with all the buildings. He would like WisDOT to purchase the farmstead as soon as possible.

Landowner: Emeline Breitrack
Proposed Acquisition: 11.8 acres

WisDOT proposes acquiring 11.8 acres from the Breitrack parcel, including about 11.1 of cropland. CTH “MM” would be realigned near this parcel. Parcel access would be changed to CTH “MM.” About 4 acres north of the proposed highway between CTH “MM” and Grandview may be landlocked.

Ms. Breitrack rents out the approximate 40 acres of cropland on which corn, soybeans, and wheat are grown. Ms. Breitrack expressed concern that the proposed highway would be closer to the house.

Landowner: Irving Patrika
Proposed Acquisition: 16.8 acres

About 16.8 acres would be acquired from the Patrika parcel, including 14.4 acres of cropland and 2.4 acres of land in other use. An additional 38 acres north of the proposed alignment may be landlocked.

Mr. Patrika rents out about 65 acres of cropland on which corn and soybeans are normally grown. Mr. Patrika indicated that he has drainage tile that could be affected by the proposed highway. Two artesian wells flow into these field tiles.

In addition, the proposed project would cross a pond which would likely be filled to construct the highway. It is not clear where this water would be directed. Mr. Patrika is concerned that the smaller remaining cropland may be difficult to rent out.

Landowner: Kevin & Jane Sambs
Proposed Acquisition: 45 acres

WisDOT estimates that 45 acres would be acquired from the Kevin and Jane Sambs’ parcel. This total includes 41.8 acres of cropland. In addition, the farmhouse, three silos, four sheds, and a barn. The Sambs live in the house on the property. Access to the property north of STH 15 may be changed or the parcel may be landlocked.

The Sambs have about 200 tillable acres of farmland. They rent farmland to Ryan Martin, who grows corn and soybeans. The Martins also grow hay on some of their farmland.

The Sambs are concerned about access to their property. They are also concerned about compensation for their property. The uncertainty about the details and timing of the proposed project makes it difficult for them to plan.

Landowner: Helen Sambs
Proposed Acquisition: 11.0 acres

WisDOT proposes to acquire all of 11-acres of the Helen Sambs' parcel. This would include about 9 acres of cropland. In addition, a farmhouse, barn, silo, and one or more sheds would be acquired. Ryan Martin also rents the cropland on this parcel.

Landowner: Michael and Amy Murphy
Proposed Acquisition: 6.0 acres

WisDOT would acquire about 6 acres of land from the 28-acre Murphy parcel. This consists of cropland enrolled in the Conservation Reserve Program and woodland. An additional 5 acres north of the proposed roadway may be landlocked.

The Murphys had planned to develop the affected property.

Landowner: Steve Koepl
Proposed Acquisition: 2.0 acres

Mr. Koepl owns 9 acres of farmland and is part owner in about 7 additional acres. He purchases all of the feed needed for his 45 dairy animals and 27 replacements. Mr. Koepl applies manure from his livestock to a strawberry farm located in the area.

The proposed project would require the acquisition of the farmstead and other buildings on the Koepl parcel. Mr. Koepl's farm operation would need to be relocated or bought out. Mr. Koepl is concerned that his relocated farm operation is comparable to his existing facility. He would like to know WisDOT's plan for his farm so that he could plan for his new operation.

General Agricultural Impacts

Loss of Farmland

The proposed expansion of STH 15 would directly affect an estimated 239 acres of farmland. An additional 265 acres of farmland may be landlocked.

Farmers that lose farmland due to the proposed project may have difficulty finding comparable replacement farmland for the following reasons:

- Other area farmers affected by the proposed project also may be in the market for replacement farmland, thereby increasing demand, and possibly the price of replacement farmland.
- The productive potential of the available replacement farmland may be less than the farmland taken.
- Available replacement farmland may require traveling distances that are too great to farm economically.
- Alternatives that do not follow property or field lines would create smaller irregularly shaped parcels that may not be farmable.
- Improved access to this area of Wisconsin due to the project improvements could increase development pressure, which could lead to further conversion of farmland to non-farm uses.

Reduction in farm acreage may force some farm operations to reduce their crop production and livestock herd size, if comparable replacement farmland cannot be acquired. This has the effect of lowering the overall return and, consequently, the fixed return on investments such as buildings, machinery, and management.

Reduced farm acreage can reduce farm production and income that support the fixed costs associated with ownership of these assets. The ability to service debt obligations – a significant fixed cost associated with farm asset ownership – could be impaired. Although farmers could retire some debt obligations with the compensation received for the acquired farmland, the price of the farmland may be less than the price of the land when purchased and the debt obligation incurred.

Replacement acreage could minimize the potential reduction in farm income, but may entail increased costs in terms of the fuel required to travel to these more distant fields. The loss of farmland could also affect nutrient management plans on livestock farm operations.

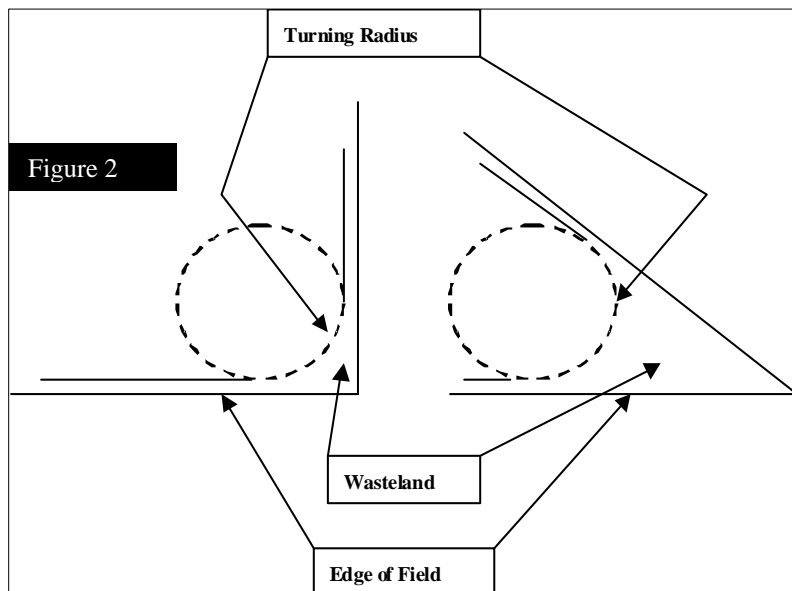
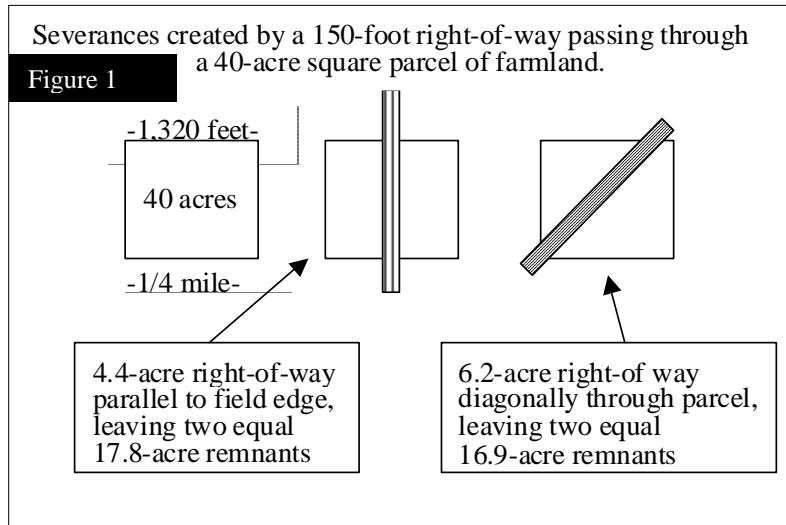
Farm Severances

Farm severances often create small irregularly shaped fields, making equipment usage awkward and production more costly. This increased cost is, in part, due to the additional time, fuel, and equipment wear associated with moving and turning equipment in small fields. If fields are severed, it may be impractical for farm machinery to maneuver in the small, narrow corners of triangular fields. Non-productive time and labor costs associated with the frequent working of these fields, may eliminate the possibility of generating profits on these remnant parcels.

In addition, when fields are made smaller, an increased proportion of wasteland is created along the edges and in narrow corners of the fields reducing their productive capacity.

Figure 2 shows the increased amount of wasteland in fields that have narrow corners. Figure 1 shows the impacts of severing a field parallel to its edge and diagonally. Compensation for the reduction in the value of parcels that are small and/or irregularly shaped will be addressed in the appraisal of each affected parcel.

Remnant parcels with a shape and/or size that severely diminish their efficient product use, may be considered “uneconomic remnant” by WisDOT. Section 32.05 (3m) of the *Wisconsin Statutes* states, “...’uneconomic remnants’ means the property remaining after



a partial taking of property, if the property remaining is of such size, shape or condition as to be of little value or of substantially impaired economic a viability. If the acquisition of only part of a property would leave its owner with an uneconomic remnant, the condemnor shall offer to acquire the remnant concurrently and may acquire it by purchase or by condemnation if the owner consents.”

Landlocked Parcels

The proposed relocated highway could landlock parcels on ten farm operations, affecting 265 acres. In these cases, WisDOT would provide access to the parcels, purchase the parcels, or pay for damages to the owners of the parcels. Table 6 lists the parcels that would be landlocked and the number of acres that could be affected.

Table 6 - Landlocked Parcels		
Name	Acres Landlocked	Comments
David Lathrop	4	
Eldren Young	10	Located north of STH 15 alignment
Nash Hills, LLC	8	Located north of STH 15 alignment
Michael & Mary Murphy	5	North property affected
Emeline Breitrick	4	North property affected
Don Parker	28	North property affected
James Sikes	38	North property affected
Arnold and Mary Weyers	62	Located north of STH 15 alignment
Joan Jossart Trust	10	North property affected
Irvng Partika	38	North property affected
Totals	265	

Access

The proposed highway would create a barrier on farms with land on both sides of the highway. Some farmland that is now contiguous and easily accessible from one area to another will be divided. If direct access to the highway is not provided in efficient locations, farmers with land on both sides of the highway, whether owned or rented, may have to drive their machinery longer distances and use side roads between parcels. This will increase the time spent and cost of farming these parcels.

Where the final alignment is relocated off of the existing right-of-way, WisDOT has authority to regulate the type, number, and spacing of access points in order to preserve

the traffic carrying capacity of the roadway and enhance safety. According to Section 85.05 of the *Wisconsin Statutes*, WisDOT must provide access to parcels separated by highway improvements. On a controlled access highway, WisDOT has the option to locate required access on town or county roads in order to provide or public safety (Chapter 84.25, *Wisconsin Statutes*). When property held by ownership is severed, WisDOT would either provide a cross-traffic access for travel between severed parcels or provide compensation for damages.

Table 7 - Changes in Access	
Landowner Name	Type of Access Change
Immel Group, LLC	Access will change to Julius Road
Christus Lutheran Church	Access will change to Julius Road
Wood River Partners, LLC	Access will change to CTH JJ
Equity Trust Co-Custodian, FBO	Access will change to North Road
Jane C. Schiedetmayer Revocable Trust	
Irene E Becker Revocable Trust	Easement from parcel needed to provide one common access to the Kenneth Spaulding and Ralph Skowron residences located south of parcel
Eric and Patricia Jack	The property north of Hwy 15 will have access changed to CTH JJ. The property south of Hwy 15 will have access changed to a frontage road that will sever the property.
Emeline Breitrick	Access will be changed from to CTH M or a side road.
Kevin & Jane Sambs	North property access will be changed or the parcel will be landlocked.
Wesley Martin	Access will be changed to a side road.
David Lathrop	Access will be changed to River Road.

Building Displacements

Buildings would be affected on the following farm parcels

Table 8 - Buildings Affected	
Name	Type of Building
Eric & Patricia Jack	Farmhouse would be acquired
Nash Hills, LLC	One barn, three silos, and one shed may be taken
Stephen & Geraldine Koeppel	Farmstead, one barn and other building to be acquired.
Robert Wolfrath	One or more buildings to be acquired.

Table 8 - Buildings Affected	
Name	Type of Building
Timothy P. Coenen	Farmstead & one building to be acquired
Elizabeth Gaigg	One non-farm building acquired.
Helen Sambs	Farmhouse, barn, silo, and sheds to be acquired.
Kevin & Jane Sambs	Farmhouse, three silos, four sheds may be acquired

The impact of building displacements on farm operations depends on the current use and the final location of the buildings after highway construction. Because of the potential displacement impacts of the proposed project, the acquiring agency (WisDOT) will be required to file a relocation service assistance plan in accordance with §32.25, *Wisconsin Statutes*.²

Drainage

The proposed project does not affect any drainage districts. However, drainage and waterways could be affected by highway construction. If the proposed highway disrupts drainage improvements, it could reduce the productivity on farmland not directly affected by the proposed highway.

Section 88.87 of the *Wisconsin Statutes* requires highways to be built with adequate ditches, culverts, and other facilities to prevent obstruction of drainage, protect property owners from damage to lands caused by unreasonable diversion or retention of surface water, and maintain, as nearly as possible, the original drainage flow patterns. Refer to the Appendix IV for the statutes pertaining to drainage rights. Landowners whose property is damaged by improper construction or maintenance of highways and highway drainage structures may file a claim with WisDOT within three years after the damage occurs.

Hazards to Livestock from Surveying and Construction Debris

If surveying or construction crews leave wire surveying flags, equipment or other debris behind after their work is completed, these items could pose a hazard to livestock. When livestock ingest such material, they can develop what is known as “hardware disease.” Ingested wire or other objects can damage the animal’s viscera, which may lead to death.

²For more information, contact the Relocation Service Unit, Division of Community Development, Department of Commerce, P.O. Box 7970, Madison WI 53707-7970, or call (608)264-7822.

Another potential hazard to livestock that can occur during right-of-way clearing is the disturbance of black walnut trees. The roots of these trees produce a toxin known as juglone that is a hazard to horses and may also affect other livestock. Contractors must take care when clearing black walnut trees to ensure that all roots, wood, bark, leaves, hulls and sawdust are removed from areas where livestock could have access. Even the ash from trees that have been burned may still contain the toxin. Relatively small amounts of juglone are found in Persian (English or Carpathian) walnut trees as well as butternut, pecan, or hickory trees.

Noise and Other Impacts

For those farmers living and farming near the project area, the level of noise, blowing dust and air pollution may increase and adversely affect living and working conditions. Some of these impacts are related to construction of the facility and would be temporary.

AGRICULTURAL RESOURCES

Agricultural Soils in the Project Area

About 78% of lands in Outagamie County are included in crop capability classes I, II or III. Among the four STH 15 corridor towns, prime soils cover most of Hortonia and Greenville, and a somewhat smaller percentage of Ellington and Dale. (Figure 6, p.25 of Outagamie County Farmland Preservation Plan, Jan. 1982)

The following four soils comprise about 45% of the selected route: Hortonville silt loams, 2-6% slopes (HrB); Hortonville silt loam, 6 to 12% slopes, eroded (HrC2); Kolberg silt loam, 1-6% slope (KoB); Menominee loamy fine sand with loamy substratum, 2-6% slope (MsB).

Table 9 lists the soils affected on the selected route option.

Table 9 - Affected Soils		
Soil Name	Farmland Class	Acres
Kolberg silt loam, 1 to 6 percent slopes	All areas are prime farmland	46.2
Menominee loamy fine sand, loamy substratum, 2 to 6 percent slopes	Farmland of statewide importance	24.5
Hortonville silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance	22.3
Hortonville silt loam, 2 to 6 percent slopes	All areas are prime farmland	20.7

Table 9 - Affected Soils		
Soil Name	Farmland Class	Acres
Winneconne silty clay loam, 0 to 2 percent slopes	All areas are prime farmland	15.5
Channahon silt loam, 2 to 6 percent slopes	Farmland of statewide importance	11.0
Rousseau loamy fine sand, 2 to 6 percent slopes	Not prime farmland	9.2
Suamico muck	Farmland of statewide importance	9.1
Grays silt loam, 2 to 6 percent slopes	All areas are prime farmland	6.9
Shawano fine sand, rolling	Not prime farmland	6.7
Casco loam, 6 to 12 percent slopes, eroded	Not prime farmland	6.3
Winneconne silty clay loam, 2 to 6 percent slopes	All areas are prime farmland	6.1
Boyer loamy sand, 2 to 6 percent slopes	All areas are prime farmland	5.8
Allendale loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance	5.5
Menominee loamy fine sand, loamy substratum, 6 to 12 percent slopes, eroded	Not prime farmland	4.6
Udorthents	Not prime farmland	4.2
Manistee loamy fine sand, 2 to 6 percent slopes	Farmland of statewide importance	3.7
Pella silt loam	Prime farmland if drained	3.6
Keowns silt loam	Prime farmland if drained	3.5
Bonduel silt loam, 0 to 3 percent slopes	Prime farmland if drained	3.3
Kolberg silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance	3.2
Hortonville fine sandy loam, 2 to 6 percent slopes	All areas are prime farmland	3.2
Manistee fine sandy loam, 2 to 6 percent slopes	Farmland of statewide importance	3.0
Kewaunee silt loam, 2 to 6 percent slopes	All areas are prime farmland	2.9
Shiocton silt loam, 0 to 3 percent slopes	Prime farmland if drained	2.7
Water	Not prime farmland	2.5
Symco silt loam, 1 to 3 percent slopes	Prime farmland if drained	2.4
Rock outcrop	Not prime farmland	1.8

Table 9 - Affected Soils		
Soil Name	Farmland Class	Acres
Zittau silty clay loam, 0 to 3 percent slopes	Prime farmland if drained	1.7
Hortonville fine sandy loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance	1.4
Hortonville silt loam, 12 to 20 percent slopes, eroded	Not prime farmland	1.4
Fluvaquents	Not prime farmland	0.9
Wainola loamy fine sand, 0 to 3 percent slopes	Farmland of statewide importance	0.8
Cathro muck	Farmland of statewide importance	0.8
Namur silt loam, 1 to 6 percent slopes	Not prime farmland	0.8
Gravel pits	Not prime farmland	0.7
Borth silt loam, 0 to 3 percent slopes	All areas are prime farmland	0.6
Hortonville silt loam, limestone substratum, 2 to 6 percent slopes	All areas are prime farmland	0.5
Manawa silty clay loam, 1 to 3 percent slopes	Prime farmland if drained	0.4
Manistee loamy fine sand, 6 to 12 percent slopes, eroded	Farmland of statewide importance	0.4
Poygan silty clay loam	Prime farmland if drained	0.2
Landfill	Not prime farmland	0.2
Poy silty clay loam	Prime farmland if drained	0.0
See Appendix A for a description of import farmland.		

Agricultural Preservation Indicators for Project Area

Table 10 provides a context for comparing recent shifts in Outagamie County agriculture to those in other Wisconsin counties. We look at the change from 1997 to 2002 in several major indicators associated with farmland preservation in Outagamie County. These indicators are derived from the 1997 and 2002 Censuses of Agriculture.

Table 10 - Comparative Outagamie County Farmland Preservation Indicators 1997 and 2002						
Indicator	Outagamie County, 2002 Value	Median Value, 2002, for Urban Wisconsin Counties	Median Value, 2002, for All Wisconsin Counties	Outagamie County, 1997 Value	Median Value, 1997, for Urban Wis. Counties	Median Value, 1997, for All Wisconsin Counties
Total # of Farms	1430	988	1022	1533	1043	1067
% of Land in Farms	64.3%	60.1%	55.2%	65.6%	64.2%	57.2%
# of Farm Operators Identifying Primarily as Farmers	882	583	631	821	542	582
% of Farm Operators Identifying Occupation Primarily as Farms	61.7%	57.2%	57.5%	53.6%	52.0%	52.1%
Average Value of Farm Machinery & Equipment per Farm	\$89,987	\$79,725	\$68,872	\$73,079	\$65,977	\$57,970
Average Net Farm Income per farm	\$26,181	\$24,004	\$16,269	\$32,108	\$19,595	\$17,059
Percent of Farms with Positive Net Income	51.3%	49.9	48.7%	56.8%	42.8%	41.4%
% Operators Working Over 200 Days Off-farm	38.3%	40.7%	40.1%	36.6%	37.3%	36.8%
Farm Density	2.23	2.12	1.83	2.39	2.26	1.85

Table 10 - Comparative Outagamie County Farmland Preservation Indicators 1997 and 2002						
Indicator	Outagamie County, 2002 Value	Median Value, 2002, for Urban Wisconsin Counties	Median Value, 2002, for All Wisconsin Counties	Outagamie County, 1997 Value	Median Value, 1997, for Urban Wis. Counties	Median Value, 1997, for All Wisconsin Counties
per Square Mile						
% Farmland Rented Out	37.5%	43.1%	24.7%	35.0%	37.6%	22.5%
Source: All data is from the Census of Agriculture						

In general, Outagamie County ranks above average in the strength of its farmland preservation indicators compared to other counties around the state. This is particularly striking since it is an urban county, having a gross population density over 100 persons per square mile.

Although Outagamie County reflects a general trend toward a declining number of farms and a decrease in percent of land in farms, it still had 44.7% more farms in 2002 than the median for urban counties, also exceeding the median for all counties. It also retained a 7% greater share of its total land in farms than was the median for urban counties. It exceeded the median for other counties in the percentage of farm operators who identify their primary occupation as farming and in the average value of farm machinery and equipment. The average net farm income of Outagamie County farms exceeded the median for urban counties and statewide in both 1997 and 2002, although the gap had shrunk by 2002. The proportion of farm operators relying primarily on off-farm income was lower than the median for other counties as well, measured by the percent of operators working over 200 days off the farm. Farm density exceeded the median as well in both years, and the percentage of farmland rented out was smaller.

Types of Farms in Project Area County

Table 11 below shows the size distribution of Outagamie County farms compared to that in other counties. Urban counties typically have a larger share of farms under 50 acres than average. Outagamie County follows this pattern, but shows a somewhat less pronounced version of this. Other than this, it follows the general trend of a downward shift in the proportion of farms of 100-180 acres and an even larger increase in the proportion of farms in the 260-500 acre range.

Table 11 - Distribution of Farms by Size Class, 2002 and 1997						
Farm Size Class	Percent, Outagamie Co, 2002	Percent, Median for Urban Counties, 2002	Percent, Median for All Counties, 2002	Percent, Outagamie County, 1997	Percent, Median for Urban Counties, 1997	Percent, Median for All Counties, 1997
0-9 Acres	8.5%	9.2%	4.4%	7.3%	9.4%	4.7%
10-49 Acres	28.2%	30.5%	20.6%	23.8%	25.1%	15.9%
50-69 Acres	6.9%	7.2%	7.0%	6.6%	7.3%	6.3%
70-99 Acres	10.8%	9.9%	12.1%	10.2%	10.7%	11.4%
100-139 Acres	9.0%	9.0%	11.1%			
140-179 Acres	7.3%	6.2%	8.8%	20.2% (includes % of farms that are between 100 and 179 acres)	17.6% (includes % of farms that are between 100 and 179 acres)	21.7% (includes % of farms that are between 100 and 179 acres)
180-259 Acres	13.5%	11.6%	14.3%	12.6%	10.6%	14.0%
260-499 Acres	21.1%	19.1%	25.2%	12.8%	11.8%	16.2%
500-999 Acres	5.9%	4.9%	5.9%	5.5%	5.1%	5.8%
1,000+ Acres	.01%	.02%	.01%	1.1%	1.6%	1.7%
Source: All data is from the Census of Agriculture						

Note: Column Percentages may not total 100% due to rounding.

Table 12 below shows that Outagamie County exceeds the median values for both urban and total Wisconsin counties in the percentage of farms involved in dairy production. It also exceeds the median for urban counties in the percentage of beef farms, while below the median for "other animals".

It appears to reflect the general trends among Wisconsin counties from 1997 to 2002 in the declining percentage of dairy and cash grain farms, and the growing percentage of farms in the categories "other crops" and "other animals."

Table 12 - Percent of Farms by Primary Commodity Produced,
2002 and 1997

Major Product Group	Outagamie County, 2002	Median for Urban Counties 2002	Median for All Counties 2002	Outagamie County, 1997	Median for Urban Counties, 1997	Median for All Counties, 1997
Cash Grains	19.6%	21.2%	14.8%	22.7%	25.2%	19.8%
Vegetables & Melons	2.2%	2.8%	1.3%	3.6%	2.8%	1.2%
Fruits	0.5%	1.3%	1.0%	0.7%	0.9%	0.8%
Horticulture	2.4%	3.1%	2.6%	2.6%	2.6%	1.9%
Other Crops	25.5%	24.6%	27.4%	6.0%	7.1%	8.6%
Beef	11.3%	7.5%	12.4%	8.4%	7.2%	12.1%
Feedlots	6.4%	4.6%	4.6%	3.6%	3.4%	2.8%
Dairy	22.9%	17.1%	17.3%	30.6%	21.6%	22.6%
Hogs	.8%	1.2%	.8%	1.8%	1.6%	1.1%
Poultry	.6%	1.4%	1.1%	.3%	.7%	.4%
Sheep	1.1%	1.6%	1.4%	.5%	1.0%	0.9%
Other Animals	6.7%	10.4%	8.2%	3.3%	4.4%	3.5%

Source: All data is from the Census of Agriculture

Agricultural Production in Project Area

A report in 2004 estimates that agriculture provides, directly or indirectly, 15,470 jobs for Outagamie County residents and contributes \$636.6 million annually to county income. (Outagamie County Agriculture: Value and Economic Impact, 2004; cited in Community Development Update, UW-Extension, First Quarter, 2005, p.5) It is estimated that 19% of all economic activity in the county is agriculturally-related. Dairy is the largest sector within county agriculture, with on-farm sale and production of milk accounting for \$246.6 million and milk processing for another \$408.1 million per year. The county is also home to twelve dairy processing plants, as well as a veal processing plant and two sauerkraut plants.

Table 13 below shows shifts in some indicators of the value of agricultural products from Outagamie county farms compared to other counties. It indicates that Outagamie County greatly exceeded the median for total agricultural production sales, as well as for dairy and grain sales compared to the median for other counties. Nevertheless there was a slight decrease from 1997 to 2002 in dairy sales, grain sales, and in average total farm sales per farm across the board.

Table 13 - Market Value of Agricultural Commodities 2002 and 1997						
Total Market Value of :	Outagamie County, 2002	Median for Urban Counties, 2002	Median, All Counties, 2002	Outagamie County, 1997	Median for Urban Counties, 1997	Median, All Counties, 1997
All Farm Products (000\$'s)	146,476	81,857	72,683	142,184	78,438	71,472
All Farm Products per Farm (\$'s) – Avg.	102,431	93,154	69,213	110,563	97,906	79,099
All Grains (000\$'s)	20,203	11,945	9,973	20,622	14,420	9,178
All Dairy Products (000\$'s)	77,199	30,443	29,862	80,393	29,676	29,662
Source: All data is from the Census of Agriculture						

Table 14 below shows the extent of the shifts and percentage change in these farm commodity indicators from 1997 to 2002. The absolute increase in the value of all farm commodities sold in Outagamie County exceeded the median for urban counties, but its percentage increase was below the median. Outagamie County experienced both absolute and percentage decreases in average farm sales per farm from 1997 to 2002 that were far above the urban county median. The absolute decrease was 71% above the urban median, and the percentage decrease was 51% above the urban median.

Further breaking down this farm commodity decrease, Table 14 shows that Outagamie County experienced a much greater loss of dairy sales than the median for urban counties, but a much smaller loss of grain sales compared to the urban median.

Table 14 - Change in Market Value of Agricultural Commodities 2002 and 1997						
Total Market Value of :	Change for Outagamie County, 1997-2002	Change for Urban Counties, 1997-2002	Change for All Counties, 1997-2002	Percent Change for Outagamie County, 1997-2002	Percent Change for Urban Counties, 1997-2002	Percent Change for All Counties, 1997-2002
All Farm Products (000\$'s)	4,292	3,419	1,211	3.0%	4.4%	1.7%
All Farm	-8,132	-4,752	-9,123	-7.4%	-4.9%	-11.5%

Table 14 - Change in Market Value of Agricultural Commodities 2002 and 1997						
Total Market Value of :	Change for Outagamie County, 1997-2002	Change for Urban Counties, 1997-2002	Change for All Counties, 1997-2002	Percent Change for Outagamie County, 1997-2002	Percent Change for Urban Counties, 1997-2002	Percent Change for All Counties, 1997-2002
Products per Farm (\$'s) – Avg.						
All Grain Products (000\$'s)	-419	-2,475	609	-2.0%	-17.2%	6.5%
All Dairy Products (000\$'s)	-3,194	-626	-2,670	-4.0%	-2.0%	-8.2%
Source: All data is from the Census of Agriculture						

Comparing Baseline Trends in and near the Project Corridor

The actual STH 15 corridor alignment options run through the towns of Hortonia, Dale, Ellington, and Greenville as well as the city of New London and the village of Hortonville. Other municipalities in Outagamie County that can be expected to be potentially affected by secondary land use impacts include the towns of Liberty, Maple Creek and Grand Chute in Outagamie County, and the towns of Lebanon, Mukwa and Caledonia in Waupaca County. However, for regional comparison purposes we here provide this information for a more broadly defined study area. This study area includes all of Outagamie County, the southeast half of Waupaca County, the north half of Winnebago County, and the northeast half of Calumet County. These boundaries were chosen to include a radius around the city of Appleton in all directions, since Appleton is the major employment center affecting the STH 15 project corridor, and itself spans three separate counties (Outagamie, Winnebago and Calumet).

Specifically, in addition to all municipalities in Outagamie County the study area would include the cities of New London, Manawa, and Weyauwega; the village of Fremont; and the towns of Bear Creek, Caledonia, Fremont, Lebanon, Little Wolf, Mukwa, Royalton, Union and Weyauwega in Waupaca County. It would include the cities of Appleton, Neenah and Menasha; the village of Winneconne; and the towns of Clayton, Menasha, Neenah, Poygan, Vinland, Winchester, Winneconne, and Wolf River in Winnebago County. It would include the cities of Appleton, Chilton, and Menasha; the villages of Sherwood and Stockbridge; and the towns of Chilton, Harrison, Stockbridge and Woodville in Calumet County. By contrast, the immediate STH 15 corridor would include only the towns of Hortonia, Dale, Ellington and Greenville, the village of

Nortonville and the city of New London in Outagamie County. We present some selected agricultural background data on the 41 towns in the wider study area.

Town Level Data on Agricultural Land Use and Production

First, we present township data on land cover and dairy operations for the 41 towns in the study area.

Table 15 - Extent of Agricultural Land in Towns				
Town/County	Total Forage Crop Area as % of Land Area, 1991-1993	Total Row Crop Area as % of Land Area, 1991-1993	Total Farmland as % of Land Area, 1991-1993	Actual Number of Dairy Farms in 1997
Black Creek/ Outagamie	41.5%	25.7%	69.1%	21
Bovina/Outagamie	46.6%	13.8%	61.1%	6
Buchanan/Outagamie	53.3%	33.7%	88.5%	21
Center/Outagamie	50.7%	35.7%	88.7%	37
Cicero/Outagamie	47.3%	27.4%	76.4%	44
Dale/Outagamie	33.4%	30.9%	66.2%	21
Deer Creek/Outagamie	48.7%	16.0%	66.3%	24
Ellington/Outagamie	45.5%	30.7%	78.6%	37
Freedom/Outagamie	56.2%	33.5%	92.3%	33
Grand Chute/ Outagamie	29.7%	24.7%	66.3%	9
Greenville/Outagamie	44.8%	32.5%	80.6%	21
Hortonia/Outagamie	34.3%	27.0%	62.9%	15
Kaukauna/Outagamie	51.1%	39.4%	93.4%	28
Liberty/Outagamie	30.5%	12.3%	43.8%	9
Maine/Outagamie	28.6%	17.3%	48.1%	12
Maple Creek/ Outagamie	51.5%	21.0%	74.0%	18
Oneida/Outagamie	53.3%	24.9%	79.9%	48
Osborn/Outagamie	52.3%	34.5%	89.6%	25
Seymour/Outagamie	58.1%	32.2%	93.2%	49
Vandenbroek/ Outagamie	57.9%	32.7%	91.9%	4
Avg. for All towns in Outagamie County	45.5%	26.5%	74.4%	24.1
Avg. for the 4 STH 15 project corridor towns	39.5%	30.3%	72.1%	23.5
Bear Creek/Waupaca	46.9%	18.9%	67.2%	29
Caledonia/Waupaca	32.3%	17.5%	58.1%	10
Fremont/Waupaca	24.2%	16.0%	47.7%	10
Lebanon/Waupaca	21.1%	22.8%	57.6%	34
Little Wolf/ Outagamie	36.6%	30.0%	70.5%	35
Mukwa/Waupaca	23.5%	12.1%	41.8%	5
Royalton/Waupaca	29.4%	14.7%	50.4%	15

Table 15 - Extent of Agricultural Land in Towns				
Town/County	Total Forage Crop Area as % of Land Area, 1991-1993	Total Row Crop Area as % of Land Area, 1991-1993	Total Farmland as % of Land Area, 1991-1993	Actual Number of Dairy Farms in 1997
Union/Waupaca	36.1%	27.1%	65.6%	51
Weyauwega/ Waupaca	24.9%	16.3%	46.1%	13
Avg. for All towns in Waupaca County	25.6%	15.3%	52.6%	19.2
Clayton/Winnebago	52.8%	30.5%	85.5%	17
Menasha/Winnebago	21.5%	18.6%	55.5%	3
Neenah/Winnebago	37.7%	35.6%	79.3%	2
Poygan/Winnebago	37.9%	29.2%	73.5%	18
Vinland/Winnebago	62.7%	27.2%	91.5%	17
Winchester/ Winnebago	30.3%	28.7%	61.7%	17
Winneconne/ Winnebago	40.8%	32.3%	75.4%	11
Wolf River/ Winnebago	29.0%	24.3%	56.9%	23
Avg. for All towns in Winnebago County	45.3%	26.2%	76.0%	16
Chilton/Calumet	58.8%	27.9%	88.8%	52
Harrison/Calumet	55.6%	30.5%	88.7%	33
Stockbridge/Calumet	61.6%	22.4%	85.7%	26
Woodville/Calumet	54.8%	32.3%	88.9%	48
Avg. for All towns in Calumet County	52.6%	27.6%	82.0%	36.8
Source: Program on Agricultural Technology Studies, Town Land Use Data Book by County				

Table 15 above gives broad indicators of the relative degree of agriculture's role on the landscape as it varies for different towns in the extended project study area. Table 16 below offers some old, but useful information as to the actual economic role of agriculture locally in townships in the study area compared to the immediate STH 15 project corridor. It indicates that in most of the corridor towns, there is a high degree of dependence of the resident population on employment and income from farming. This is less true in the towns of Dale and Greenville, and more pronounced in Hortonia and Ellington.

It is significant that although Outagamie County is classified as an urban county (based on overall population density of over 100 persons per square mile), the corridor townships displayed a significant dependence on agricultural income in 1991-1993. However, average net income from farming in the project corridor towns was only about 75% of the average for towns in the county, and the percent of adults employed in farming in these corridor towns was only two-thirds of the average. Nevertheless, STH

15 corridor towns had a 33% higher share of total town income derived from farming than the average for towns in the county. On average, they also had a 38% higher proportion of households depending on farming for some of their income than the average for Outagamie County. However, this data must be approached with caution as it is 15 years old. Unfortunately, no more recent comparable data is available, since the data is no longer collected by the Census Bureau.

Town/County	% Employed Adults Working on Farms, 1989	% Households with some Income from Farming, 1989	% Total Town Income Derived from Farming, 1989	Average net farm income per farm household, 1989 (\$s)
Black Creek/ Outagamie	20.0%	20.3%	11.4%	\$21,713
Bovina/Outagamie	7.3%	9.8%	5.2%	\$20,695
Buchanan/Outagamie	5.3%	7.0%	2.1%	\$13,452
Center/Outagamie	7.5%	11.6%	2.9%	\$11,513
Cicero/Outagamie	22.2%	24.3%	12.0%	\$17,140
Dale/Outagamie	7.7%	9.5%	3.6%	\$13,975
Deer Creek/Outagamie	23.7%	9.3%	22.4%	\$62,815
Ellington/Outagamie	14.0%	17.2%	11.2%	\$26,718
Freedom/Outagamie	7.7%	6.1%	3.9%	\$26,035
Grand Chute/ Outagamie	0.8%	1.2%	0.2%	\$9,016
Greenville/Outagamie	3.7%	5.5%	0.9%	\$7,032
Hortonia/Outagamie	12.9%	11.4%	4.7%	\$15,352
Kaukauna/Outagamie	20.5%	22.5%	18.4%	\$37,459
Liberty/Outagamie	10.3%	13.0%	4.5%	\$13,043
Maine/Outagamie	19.9%	20.45	10.9%	\$21,952
Maple Creek/ Outagamie	20.1%	23.7%	10.8%	\$17,714
Oneida/Outagamie	10.4%	7.8%	7.5%	\$34,259
Osborn/Outagamie	26.3%	25.4%	10.4%	\$14,666
Seymour/Outagamie	22.9%	25.4%	15.1%	\$25,146
Vandenbroek/ Outagamie	4.5%	6.0%	2.0%	\$15,033
All towns in Outagamie County	14.4%	7.9%	3.8%	\$21,238
Avg. for the 4 STH 15 project corridor towns	9.6%	10.9	5.1%	\$15,769
Bear Creek/Waupaca	25.2%	30.8%	14.1%	\$15,716
Caledonia/Waupaca	8.8%	11.7%	2.4%	8,146
Fremont/Waupaca	8.3%	11.0%	4.2%	\$13,596
Lebanon/Waupaca	20.1%	17.6%	9.9%	\$20,307
Little Wolf/ Waupaca	16.4%	13.3%	5.4%	\$13,830
Mukwa/Waupaca	3.9%	5.6%	0.9%	\$5,681
Royalton/Waupaca	10.3%	10.5%	3.7%	\$11,408

Table 16: Indicators of Dependence on Agriculture in Towns in the Study Area

Town/County	% Employed Adults Working on Farms, 1989	% Households with some Income from Farming, 1989	% Total Town Income Derived from Farming, 1989	Average net farm income per farm household, 1989 (\$s)
Union/Waupaca	38.8%	13.3%	20.0%	\$40,050
Weyauwega/ Waupaca	8.3%	9.75	3.5%	\$12,285
All towns in Waupaca County	19.8%	12.7%	4.5%	\$12,835
Clayton/Winnebago	7.8%	10.6%	1.6%	\$6,697
Menasha/Winnebago	1.1%	0.45	0.2%	\$28,250
Neenah/Winnebago	2.6%	4.3%	0.8%	\$12,168
Poygan/Winnebago	12.9%	21.4%	4.4%	\$6,638
Vinland/Winnebago	7.8%	9.2%	2.2%	\$11,812
Winchester/ Winnebago	7.8%	11.6%	5.6%	\$19,010
Winneconne/ Winnebago	4.7%	6.2%	3.1%	\$20,790
Wolf River/ Winnebago	11.2%	11.1%	5.2%	\$16,002
All towns in Winnebago County	10.8%	6.0%	1.8%	\$13,564
Chilton/Calumet	31.7%	31.6%	18.8%	\$23,254
Harrison/Calumet	8.7%	12.6%	2.5%	\$8,595
Stockbridge/Calumet	17.4%	18.0%	6.8%	\$14,133
Woodville/Calumet	25.0%	27.1%	17.5%	\$26,310
All towns in Calumet County	20.4%	19.3%	8.3%	\$17,440

Agricultural Land Diversion Sales and Sales Continuing in Farm Use

Wisconsin Department of Revenue maintains a file of arms length transactions involving sale of agricultural land on parcels of 38 acres or more, including land sold that continues in agricultural use as well as land sold and diverted to various nonfarm uses. Statistics based on these transaction records are compiled in Table 17 below in summary form by town. The number and acreage of sales involving farmland diversion compared to those sold for continuing agricultural use gives one indicator of development pressure.

Another important indicator of development pressure on farmland is the ratio of the average sale price of farmland diverted to nonfarm use to that for farmland continuing in farm use. As this ratio increases much above one, it indicates the increasingly dominant role of residential or development pressure in the market for farmland. By contrast, in land markets dominated by agriculture, the ratio may even be less than one. However, this ratio is only one indicator, which may be better at signaling the onset of development pressure in areas where such onset is relatively recent.

Where development pressure has been operating for a longer time period, this premium on the eventual value of farmland when it shifts to farm use may start to show up in inflation in the agricultural land sales even on transactions continuing in agricultural use for the immediate future. This inflation of the sale price of agricultural land even when the land continues in farming reflects: 1) the need of sellers of farmland to pass on the increased cost of farm operations which accrue as the area urbanizes; and 2) the capitalization into sale price of the increased probability of eventual development of the land. Therefore, the relative and absolute levels of change in the dollar value of farmland sales may generally be more useful than the development pressure ratio in some cases.

Table 17 - Sales of Farmland Parcels
in the Extended STH 15 Project Study Area, 1999-2004

Town/County	% of Farmland Acres Sold, that were Diverted to Nonfarm Use, 1999-2004 (Total # of Sales)	(A) Median Sale Price per Acre of Farmland Continuing in Ag Use, 1999-2004	Median Sale Price per Acre of Farmland, Diverted from Ag Use, 1999-2004 (B)	Ratio of (B) / (A), the farmland development pressure ratio
Black Creek/ Outagamie	21.7% (15)	\$2,088	\$1,808	0.87
Bovina/Outagamie	8.3% (6)	\$1,090	\$2,086	1.91
Buchanan/Outagamie	68.2% (7)	\$2,100	\$11,350	5.40
Center/Outagamie	58.1% (13)	\$2,059	\$4,872	2.37
Cicero/Outagamie	10.1% (26)	\$1,445	\$1,888	1.31
Dale/Outagamie	26.1% (6)	\$3,166	\$3,120	0.99
Deer Creek/Outagamie	13.3% (26)	\$1,134	\$1,210	1.07
Ellington/Outagamie	45.1% (7)	\$3,589	\$2,962	0.83
Freedom/Outagamie	32.4% (15)	\$2,915	\$6,500	2.23
Grand Chute/ Outagamie	100% (16)	-----	\$13,523	-----
Greenville/Outagamie	97% (10)	\$10,000	\$13,336	1.33
Hortonia/Outagamie	30.9% (8)	\$3,000	\$2,500	0.83
Kaukauna/Outagamie	45.5% (12)	\$3,974	\$5,980	1.50
Liberty/Outagamie	17.4% (2)	\$530	\$3,465	6.54
Maine/Outagamie	12.2% (6)	\$1,900	\$1,772	0.93
Maple Creek/ Outagamie	8.7% (12)	\$1,796	\$1,825	1.07
Oneida/Outagamie	85.9% (35)	\$2,000	\$5,227	2.61
Osborn/Outagamie	0% (2)	\$4,750	-----	-----
Seymour/Outagamie	24.5% (17)	\$1,828	\$1,360	0.74
Vandenbroek/ Outagamie	40.0% (8)	\$7,029	\$8,292	1.18
Average for towns in Outagamie County	37.4% (12.5)	\$2,577	\$4,899	1.90
Avg. for the 4 STH 15 project corridor towns	50.5% (7.8)	\$3,252	\$5,480	1.69

Table 17 - Sales of Farmland Parcels
in the Extended STH 15 Project Study Area, 1999-2004

Town/County	% of Farmland Acres Sold, that were Diverted to Nonfarm Use, 1999-2004 (Total # of Sales)	(A) Median Sale Price per Acre of Farmland Continuing in Ag Use, 1999-2004	Median Sale Price per Acre of Farmland, Diverted from Ag Use, 1999-2004 (B)	Ratio of (B) / (A), the farmland development pressure ratio
Bear Creek/Waupaca	0% (18)	\$1,082	-----	-----
Caledonia/Waupaca	7.9% (9)	\$3,135	\$5,552	1.77
Fremont/Waupaca	52.6% (6)	\$1,330	\$2,725	2.05
Lebanon/Waupaca	18.9% (10)	\$1,663	\$2,032	1.22
Little Wolf/ Waupaca	5.5% (22)	\$1,370	\$1,800	1.31
Mukwa/Waupaca	100% (2)	-----	\$2,893	-----
Royalton/Waupaca	0% (5)	\$1,197	-----	-----
Union/Waupaca	6.6% (13)	\$1,237	\$1,563	1.26
Weyauwega/ Waupaca	0% (4)	\$1,712	-----	-----
Average study area town in Waupaca County	21.2% (9.9)	\$1,591	\$2,761	1.74
Clayton/Winnebago	65.6% (27)	\$3,576	\$5,500	1.54
Menasha/Winnebago	100% (1)	-----	\$19,400	-----
Neenah/Winnebago	100% (5)	-----	\$20,000	-----
Poygan/Winnebago	47.6% (7)	\$1,811	\$1,326	0.73
Vinland/Winnebago	16.6% (10)	\$2,585	\$1,662	0.64
Winchester/ Winnebago	33.3% (5)	\$1,269	\$2,931	2.31
Winneconne/ Winnebago	0% (4)	\$2,336	-----	-----
Wolf River/ Winnebago	36.7% (7)	\$1,913	\$2,950	1.54
Average study area town in Winnebago County	50.0% (8.3)	\$2,248	\$7,681	3.42
Chilton/Calumet	0% (15)	\$1,579	-----	-----
Harrison/Calumet	44.3% (26)	\$3,499	\$14,188	4.05
Stockbridge/Calumet	13.7% (14)	\$1,700	\$2,795	1.64
Woodville/Calumet	8.9% (17)	\$1,576	\$2,500	1.59
Average study area town in Calumet County	16.7% (18)	\$2,089	\$6,494	3.11

Table 17 shows median sale prices which are more representative than average prices. However, since a data series on median sales prices is not available for the 1990-1997 period. Table 18 below provides a consistent series showing changes in average sale prices for both the 1990-1997 period and the 1999-2004 period.

Table 18 - Shift in Average Sale Price of Farmland

Town/County	(A) Average Sale Price per Acre of Farmland Continuing in Ag Use, 1990-1997 (\$'s)	(B) Average Sale Price per Acre of Farmland, Diverted from Ag Use, 1990-1997 (\$'s)	(A) Average Sale Price per Acre of Farmland Continuing in Ag Use, 1999-2004 (\$'s)	(B) Average Sale Price per Acre of Farmland, Diverted from Ag Use, 1999-2004 (\$'s)
Black Creek/Outagamie	922	948	2,314	1,785
Bovina/Outagamie	753	1,043	1,236	2,086
Buchanan/Outagamie	965	9,224	2,079	11,222
Center/Outagamie	1,403	3,679	2,394	6,130
Cicero/Outagamie	772	1,023	1,534	1,908
Dale/Outagamie	1,164	1,715	2,814	3,120
Deer Creek/Outagamie	710	763	1,299	1,248
Ellington/Outagamie	1,279	1,617	3,946	2,963
Freedom/Outagamie	1,317	2,193	2,979	6,433
Grand Chute/Outagamie	2,049		15,774	
Greenville/Outagamie	3,684	5,095	10,000	14,016
Hortonia/Outagamie	1,029	1,880	3,215	3,633
Kaukauna/Outagamie	1,267	1,995	3,915	6,711
Liberty/Outagamie	764	968	530	3,465
Maine/Outagamie	856		1,750	1,772
Maple Creek/Outagamie	784	1,194	1,686	1,825
Oneida/Outagamie	1,030	1,381	1,882	5,183
Osborn/Outagamie	987	1,824	4,750	
Seymour/Outagamie	979	1,035	1,828	1,450
Vandenbroek/Outagamie	1,042		6,974	8,226
Average for towns in Outagamie County	1,188	2,210	3,645	4,621
Avg. for the 4 STH 15 project corridor towns	1,789	2,577	4,994	5,933
Bear Creek/Waupaca	735	821	1,106	
Caledonia/Waupaca	1,166	2,000	3,238	5,552
Fremont/Waupaca		936	1,691	3,028
Lebanon/Waupaca	705	1,290	1,913	2,302
Little Wolf/ Waupaca	751	1,180	1,522	1,626
Mukwa/Waupaca	669	1,048		2,893
Royalton/Waupaca	771	959	1,356	
Union/Waupaca	707	807	1,361	1,717
Weyauwega/ Waupaca	791	1,035	1,701	
Average study area town in Waupaca County	787	1,120	1,736	2,853

Table 18 - Shift in Average Sale Price of Farmland				
Town/County	(A) Average Sale Price per Acre of Farmland Continuing in Ag Use, 1990-1997 (\$'s)	(B) Average Sale Price per Acre of Farmland, Diverted from Ag Use, 1990-1997 (\$'s)	(A) Average Sale Price per Acre of Farmland Continuing in Ag Use, 1999-2004 (\$'s)	(B) Average Sale Price per Acre of Farmland, Diverted from Ag Use, 1999-2004 (\$'s)
Clayton/Winnebago	1,091	1,943	4,235	5,965
Menasha/Winnebago	1,730	6,297		19,400
Neenah/Winnebago	1,398	3,760		18,008
Poygan/Winnebago	630	786	1,777	1,830
Vinland/Winnebago	1,187	1,330	3,138	1,662
Winchester/Winnebago	738	1,089	1,576	2,932
Winneconne/ Winnebago	747	819	2,255	
Wolf River/ Winnebago	703	849	1,773	4,471
Average study area town in Winnebago County	1,028	2,109	2,459	7,753
Chilton/Calumet	714	1,102	1,625	
Harrison/Calumet	772	3,687	3,826	12,235
Stockbridge/Calumet	820	725	1,733	3,059
Woodville/Calumet	910	668	1,798	2,247
Average study area town in Calumet County	804	1,546	2,246	5,847

Table 19 below shows that the corridor town of Greenville had the highest absolute increase in the average price of farmland sold and continuing in farm use between the early period (1990-1997) and the later period (1999-2004) among all towns in Outagamie County as well as in the extended study area. By this same indicator, the corridor town of Ellington ranked fourth in Outagamie County and sixth over the extended study area. Greenville also ranked first in Outagamie County and third over the extended study area in the increase between the two periods in the average price of land sold and diverted to nonfarm use.

Table 19 also shows that while the development pressure ratio increased on average over time in the Winnebago, Waupaca and Calumet County parts of the extended study area (Columns C and D), it actually decreased on average in Outagamie County and in the STH 15 corridor towns. It appears that for the 1999-2004 period the average price of farmland sold and continuing in agriculture was, overall, considerably higher in Outagamie County than in the portions of the other three counties in proximity. This was also true in the earlier period, but the disparity was not as great with the other counties then. On top of this, the sale price for land continuing in farming was even higher in the STH 15 corridor towns. Specifically, in Ellington, Dale and Hortonia the increase over

time in average farmland prices was greater for land continuing in agricultural use than for diverted farmland. This could reflect a premium placed on farmland for farm expansion, reflecting the greater competition for farmland due to development pressure.

Table 19 - Comparative Change in Average Sale Price of Farmland

Town/County	(A) Change in Average Sale Price per Acre of Farmland Continuing in Ag Use, from 1990-1997 period to 1999-2004 period (\$'s)	(B) Change in Average Sale Price per Acre of Farmland Diverted from Ag Use, from 1990-1997 period to 1999-2004 period (\$'s)	(C) Ratio of Avg. Sale Price per Acre of Farmland Diverted to Sale Price per Acre Continuing in Ag Use, from 1990-1997.	(D) Ratio of Avg. Sale Price per Acre of Farmland Diverted to Sale Price per Acre Continuing in Ag Use, from 1999-2004.
Black Creek/ Outagamie	1,392	837	1.03	0.77
Bovina/Outagamie	483	1,043	1.39	1.69
Buchanan/Outagamie	1,114	1,998	9.56	5.40
Center/Outagamie	991	2,451	2.62	2.56
Cicero/Outagamie	762	885	1.33	1.24
Dale/Outagamie	1,650	1,405	1.47	1.11
Deer Creek/Outagamie	589	485	1.07	0.96
Ellington/Outagamie	2,667	1,346	1.26	0.75
Freedom/Outagamie	1,662	4,240	1.67	2.16
Grand Chute/ Outagamie	-----	-----	-----	-----
Greenville/Outagamie	6,316	8,921	1.38	1.40
Hortonia/Outagamie	2,186	1,753	1.83	1.13
Kaukauna/Outagamie	2,648	4,716	1.57	1.71
Liberty/Outagamie	-234	2,497	1.27	6.54
Maine/Outagamie	894	-----	-----	1.01
Maple Creek/ Outagamie	902	631	1.52	1.08
Oneida/Outagamie	852	3,802	1.34	2.75
Osborn/Outagamie	3,763	-----	1.85	-----
Seymour/Outagamie	849	415	1.06	0.79
Vandenbroek/ Outagamie	5,932	-----	-----	1.18
Average for towns in Outagamie County	1,864	2,402	1.86	1.27
Avg. for the 4 STH 15 project corridor towns	3,205	3,356	1.44	1.19
Bear Creek/Waupaca	371	-----	1.12	-----
Caledonia/Waupaca	2,072	3,552	1.72	1.71
Fremont/Waupaca	-----	2,092	-----	1.79
Lebanon/Waupaca	1,208	1,012	1.83	1.20
Little Wolf/ Waupaca	771	446	1.57	1.07
Mukwa/Waupaca	-----	1,845	1.57	-----
Royalton/Waupaca	585	-----	1.24	-----

Table 19 - Comparative Change in Average Sale Price of Farmland

Town/County	(A) Change in Average Sale Price per Acre of Farmland Continuing in Ag Use, from 1990-1997 period to 1999-2004 period (\$'s)	(B) Change in Average Sale Price per Acre of Farmland Diverted from Ag Use, from 1990-1997 period to 1999-2004 period (\$'s)	(C) Ratio of Avg. Sale Price per Acre of Farmland Diverted to Sale Price per Acre Continuing in Ag Use, from 1990-1997.	(D) Ratio of Avg. Sale Price per Acre of Farmland Diverted to Sale Price per Acre Continuing in Ag Use, from 1999-2004.
Union/Waupaca	654	910	1.14	1.26
Weyauwega/ Waupaca	910	-----	1.31	-----
Average study area town in Waupaca County	939	1,643	1.42	1.64
Clayton/Winnebago	3,144	4,022	1.78	1.41
Menasha/Winnebago	-----	13,103	3.64	-----
Neenah/Winnebago	-----	14,248	2.69	-----
Poygan/Winnebago	1,147	1,044	1.25	1.03
Vinland/Winnebago	1,951	332	1.12	0.53
Winchester/Winnebago	838	1,843	1.48	1.86
Winneconne/ Winnebago	1,508	-----	1.10	-----
Wolf River/ Winnebago	1,070	3,622	1.21	2.52
Average study area town in Winnebago County	1,610	5,459	2.05	3.15
Chilton/Calumet	911	-----	1.54	-----
Harrison/Calumet	3,054	8,548	4.78	3.20
Stockbridge/Calumet	913	2,334	0.88	1.77
Woodville/Calumet	888	1,579	0.73	1.25
Average study area town in Calumet County	1,442	4,154	1.92	2.60

As one might expect, there is a strong, statistically significant correlation of increases in (a) residential land value, (b) residential improvements value, and (c) residential improvement value resulting from new construction during 1999-2004, for study area towns with the median price of farmland sold for **nonfarm use** in this period in these towns. The three values of the correlations corresponding to (a), (b) and (c) were .81, .90 and .88, respectively. However, it is notable that there were also statistically significant, though smaller, correlations of these three residential value variables with the median price of farmland sold for **continuing farm use**: .46, .50 and .46 respectively.

It is also noteworthy that the development pressure indicator for the 1990-1997 period was more highly correlated with these three residential value variables for the 1999-2004 period (with values of .56, .66 and .64 respectively) than was the development pressure indicator for the 1999-2004 period. (.39, .44 and .44 respectively), though all six of these

correlations were statistically significant at the .05 level. One might have expected that the correlation of residential values with the development pressure indicator for the same time period would be stronger, rather than this lagged effect. This greater strength of the lagged correlation is consistent with an interpretation that the development pressure indicator may decline somewhat over time, as continuing speculative impacts of development become capitalized into farmland sales transactions of farmland continuing in farm use.

INDICATORS OF DEVELOPMENT PRESSURE

Population and Housing Unit Change in the Study Area

The STH 15 project corridor town of Greenville has the highest percentage population growth in Outagamie County during the 1990-2000 period, and is almost tied with the town of Harrison as ranking the highest for the extended study area. Greenville also has the third largest absolute increase in population for towns in both Outagamie County and in the extended study area. Its 2000 population was the 2nd highest for towns in the county and the third highest in the extended study area. The other three STH 15 project corridor towns ranked somewhat below the average for the study area.

In Table A-1 (see Appendix B), the project corridor city of New London ranked below the average in both absolute and percentage population growth for study area cities. Table A-2 (see Appendix B) shows that the STH 15 project corridor village of Hortonville ranked about average among study area villages in both absolute and percentage population growth.

Estimates of population change for 2003 by the Wisconsin Department of Administration allow us to compare changes in population growth among area municipalities from 2000-2003. Within the extended study area, Greenville ranked 3rd among towns in the percentage increase in population from 2000-2003, and 2nd among Outagamie County towns. It ranked 3rd in absolute population increase in Outagamie County from 2000-2003 and 4th across the extended study area for towns. New London ranked fairly low among cities and Hortonville was average among villages.

Table A-4 (Appendix B) compares the actual population figures in the year 2000 in study area towns with estimates made in the late 1970's or early 1980's by the Wisconsin Department of Administration (DOA) staff and the East Central Wisconsin Regional Planning Commission. On average, the estimates for Outagamie towns were about 17% too low, whereas in Waupaca County, they were about 4% too low and in Winnebago County, they were about 4% too high. But there is great variation between towns in the accuracy of the estimates. Greenville, Grand Chute and Buchanan were especially underestimated.

Table A-5 (Appendix B) shows the absolute and percentage increase in the number of housing units in the corridor town of Greenville which ranks at the top of the study area in percentage growth and ranks third in the absolute increase. Only the town of Harrison in Calumet County showed comparable growth. The corridor towns of Dale and Ellington ranked slightly below average in percentage housing growth, although they ranked 6th and 7th respectively among towns in the county in absolute housing unit increase. The corridor town of Hortonia ranked at the low end in both absolute and percentage housing growth.

Housing unit growth in the corridor city of New London ranked just about average in percentage growth compared to other study area cities, but had only about half of the average absolute increase in housing units from 1990 to 2000. (See Table A-6, Appendix B)

According to Table A-6 (see Appendix B), the corridor village of Hortonville ranked close to the average in both absolute and percentage housing growth for study area villages.

In-Migration Trends in Study Area Communities

Counties with freeways are subject to greater in-migration. “As a group, counties with freeways experienced higher rates of migration, irrespective of the migration measure used, than counties off the System.” (Briggs, 1980, 50). Some of this migration may be tied to greater ease of commuting to adjacent counties induced by highway expansion. But much of the migration may be from nonadjacent counties. In this case also, highway expansion can contribute to increased migration, but the effect is more indirect. Part of this relies on the fact that the same travel time and perceptual factors which condition residential relocation decisions that are consumption-based- i.e. likely to be motivated primarily by desire for certain housing or neighborhood characteristics - may also come into play in interregional moves. The latter are more likely to be “production-based”, i.e. be job-related, than are moves between adjacent counties or within counties. In general, it has been found that about 31% of intercounty household moves are job-related compared to only 5.6% for intracounty moves in recent years. (Schacter, 2001, 4) **Therefore, household moves to the Outagamie County area from other metro areas, are certainly as or more likely to be sensitive to proximity to the workplace than is the case for consumption-based moves.**

Although commuting time generally enters relocation decisions mainly at the unconscious level for most households, data from the Current Population Survey on household moves from 1999 to 2000 shows there is actually a slightly higher percent of intercounty household moves for which the main stated reason for moving is to be closer to work than is the case for intracounty moves, 4.2% versus 3.0%. (Schacter, 2001, 4) The same is true for previous years.

Migration from outside a region can be a significant source of population growth that can be affected by highway corridor improvements resulting in unforeseen secondary land use impacts. In fact one study of migration patterns in metropolitan and non-metropolitan areas from 1965 to 1990 found that:

“...despite growing scholarly attention to metropolitan “spill-over” to adjacent counties, this type of metro-based migration has remained a relatively small piece of the puzzle over the past three decades. **This trend confirms that growth of adjacent nonmetro counties depends more upon inter-regional exchanges than upon the redistribution of nearby metropolitan populations.**” (Elliott, 1995, 19)

As a first-order approximation, inter-county moves are more often associated with job-related motives, while intra-county moves are more likely to be based on housing consumption needs and preferences. Nevertheless, in the case of the current project, there is also a stronger link likely than is generally the case between the frequency of housing-motivated moves and of intercounty moves. This is due to the location of the economic and population epicenter of the region - Appleton, which is in close proximity to the project corridor, - right at the boundary between four different counties. This means that housing consumption-related moves are more likely to take an inter-county form.

Even though highway access for commuting, or for shopping and other reasons, may enter site selection for interregional moves at a fairly unconscious level for most households, there are still likely to be perceptual and behavioral highway-related impacts on site selection for such household moves.

Baseline in-migration rates are one measure of this. In this regard it may be instructive to compare those rates for towns in the Outagamie, Waupaca, Winnebago and Calumet County parts of the extended project study area, the former metropolitan, and the latter and adjacent non-metropolitan county. Table A-13 (Appendix B) shows in-migration rates as a percent of 2000 population.

Tables A-10, A-11, and A-12 (Appendix B) provide information on in-migration rates for towns, villages and cities in the extended study area from 1995 to 2000. Table 21 shows that the corridor town of Greenville ranked 3rd among towns in Outagamie County and 4th across towns in the extended study area in the percent of residents over age 5 in year 2000 who moved in since 1995. It shows that Hortonia ranked 4th in Outagamie County and 6th over the whole study area. Table A-11 shows that the corridor city of New London was below average in the rate of in-migration compared to other study area cities. Table A-12 shows that the corridor village of Hortonville was also below average compared to other villages in the study area.

The STH 15 corridor towns rank about average in the percent of residents in 2000 that moved there since 1995 from elsewhere within Outagamie County. However, analysis shows that among the 41 towns in the extended study area, this variable shows little statistically significant correlation with most of the other population, housing, land values and tax rate demographic variables reviewed for this AIS. The exceptions are the .33 correlation with median household income in 2000, and a .31 correlation with the share of current housing that was built from 1980 to 1994, which were statistically significant.

By contrast, there is a statistically significant correlation of the percent of residents over age 5 in the year 2000 who migrated in from other counties within Wisconsin with most of the demographic variables reviewed. In particular, there is a statistically significant correlation, .42, among the 41 towns for this variable and the share of housing that was built between 1995 and 2000. This suggests that migration from other counties, rather than in-county migration, has been the primary driver of the overall development pressure in Outagamie County. By this measure, the corridor town of Greenville ranked 1st in the county (tied with Grand Chute at 19.3%) and 3rd in the extended study area, after Harrison in Calumet County and Caledonia in Waupaca County. This fact is consistent with the long-term labor shortage in the Fox Valley area, including Outagamie County, which tends to draw in-migration of workers as well as in-commuting from other counties. It is consistent with the key role job availability plays in cross-county migration patterns.

The corridor city of New London and the corridor village of Hortonville rank about average, compared to other cities and villages, in the percent of residents who migrated from within Outagamie County. New London ranks slightly above average in the percent of residents who migrated from other counties.

Building Permits, Subdivision Plats, Septic System Permits and Rezones

In Outagamie County, three of the four STH 15 corridor towns (Greenville, Dale and Ellington) ranked 2nd, 3rd and 5th respectively in the number of new septic system permits issued during the 2003-2004 period. In 2004, Greenville ranked first among towns in the number of new residential single-family building permits issued and second in the number of commercial building permits issued. Dale and Ellington ranked 5th and 6th respectively in terms of the number of new residential building permits for that year.

Greenville, Dale and Ellington ranked 1st, 4th and 7th respectively among the 20 Outagamie County towns in the number of new residential lots created in the period 1995-2004. Greenville alone accounted for 42% of all town lots created in that period. Together, the four STH 15 corridor towns accounted for 53.5% of all new residential subdivision lots in that time period.

"Since 1995, Greenville and Grand Chute have accounted for 50% of the plats and 62% of the new lots in the unincorporated portions of Outagamie County." (Michael Hendrick, Planning Director, 2004 Growth report: Outagamie County, April 2005, p.9)

Trends in Residential Land Values in Study Area

Table A-14 of Appendix B summarizes shifts in residential land values in towns in the extended study area for the STH 15 project. It shows that the corridor town of Greenville ranked 2nd in Outagamie County and 3rd in the extended study area in the increase in residential land value from 1998-2004. On average, increases for towns in Outagamie County were greater than for Waupaca or Calumet Counties but lower than for Winnebago County.

In terms of residential land value added due to new construction from 1998-2004, the corridor town of Greenville ranked first in both Outagamie County and in the extended study area. The corridor town of Dale also ranked 5th within Outagamie County by this measure, but was an order of magnitude less than Greenville. Greenville ranked 1st in Outagamie County and 2nd in the extended study area in residential land value added due to new construction as a share of total new residential value added. Dale ranked 4th in Outagamie County and 7th in the extended study area in terms of this.

The percentage increases in residential land values in the corridor towns of Dale and Greenville were somewhat above the average in the county.

Table A-15 of Appendix B shows changes in residential land values for cities in the extended study area of the project. The corridor city of New London shows below-average change in both total residential land values and value increase due to new residential construction from 1998-2004. Appleton shows the greatest absolute increase in residential land values, both total and resulting from new construction for the study area cities.

In Table A-16 (Appendix B) the corridor village of Hortonville shows an average change in residential land values from 1998-2004 and a below average increase in residential land values due to new construction.

Trends in Residential Improvement Values in the Study Area

Table A-17 of Appendix B summarizes information on changes in residential improvement values in study area towns. The corridor town of Greenville ranked 2nd in Outagamie County and 3rd in the extended study area in the absolute increase in residential improvement values from 1998-2004, while Dale ranked 6th in Outagamie County and 10th in the extended study area (of 41 towns).

Greenville also ranked first in Outagamie County and 2nd in the extended study area in the value of new residential construction from 1999-2004. Dale ranked 6th in the county and 9th over the entire study area. Greenville ranked first in the county and 3rd over the whole study area in new construction value as a share of total residential improvement value increase from 1998-2004.

In Table A-18 of Appendix B, trends in residential improvement values for study area cities are summarized. The increase in residential improvement value was below average in the corridor city of New London. The same was true for the value of new residential construction. Table A-19 of Appendix B shows that the corridor village of Hortonville was somewhat above average in the increase in residential improvement values from 1998-2004, as well as in the value of new residential construction.

Changes in Commercial Land and Improvement Value Trends in the Study Area

Table A-12 of Appendix B lists the change in commercial land values from 1998-2004 in the towns of the STH 15 corridor study area. It shows that the corridor town of Greenville ranked 3rd in the county and 4th in the extended study area in the increase in commercial land values from 1998-2004 among towns. The corridor town of Ellington ranked 5th in the county and 12th in the study area. Ellington also ranked 1st in the percentage increase in commercial land value, both in the county and in the study area.

Greenville ranked 1st among county towns in the increase in commercial land value due to new commercial construction from 1999-2004, and 3rd in the study area, or 2nd, not counting Chilton, where the large increase was a mistake that was adjusted for in the subsequent year. Tables A-21 and A-22 of Appendix B provide similar information for study area cities and villages.

Table A-23 of Appendix B summarizes trend information in commercial improvement values in towns of the STH 15 study area. The corridor town of Greenville ranked 2nd in Outagamie County and 3rd in the entire study area in the increase in commercial improvement value from 1998-2004. At the same time, Greenville also ranked 3rd in the percentage increase in commercial improvement value in the county and 4th over the study area. The corridor town of Dale ranked 6th in the county.

Greenville also ranked 2nd in Outagamie County and 3rd among towns in the study area in the magnitude of new commercial construction value from 1999-2004. Greenville also ranked first among towns in the county in the ratio of new commercial construction value to total change in improvement value for the period. Ellington ranked 6th in Outagamie County.

Table A-24 of Appendix B shows trend information for commercial improvement values in STH 15 study area cities. The corridor city of New London was in the mid-range in the

absolute increase in commercial improvement value from 1999-2004, but ranked 2nd in the percentage increase. New London also ranked in the mid-range in both absolute and percentage amount of new commercial construction value.

Table A-25 of Appendix B shows changes in commercial improvement values in STH 15 corridor study area villages. The corridor village of Hortonville ranked in the mid-range for these villages for both total change in improvement values, and in the amount of new construction. It ranked near the top in the ratio of new commercial construction to total change in commercial improvement value from 1999-2004.

Changes in Manufacturing Improvement Values in Study Area

Table A-26 of Appendix B shows that the corridor town of Greenville ranked 1st in the net increase in manufacturing improvement value over the period 1998-2004, both in Outagamie County, and in the larger study area. The corridor town of Hortonville ranked 4th in the county and 9th in the study area.

At the same time, Greenville ranked 3rd in the county in its percentage increase in manufacturing improvement value and 7th in the study area.

Greenville also ranked first in the county and 2nd in the study area in the absolute value of new manufacturing improvements constructed from 1999-2004. The corridor town of Hortonville ranked 3rd in new manufacturing construction value in the county and 5th in the entire study area.

Table A-27 of Appendix B shows that the corridor city of New London ranked 3rd among study area cities in terms of the absolute net increase in manufacturing improvement value from 1998-2004. At the same time, it ranked 1st in the percentage increase in manufacturing improvement value over this period. New London also ranked third in the value of new manufacturing construction improvements from 1999-2004 among study area cities.

Table A-28 of Appendix B shows that the corridor village of Hortonville ranked 4th in the absolute net increase in terms of manufacturing improvement values in the study area from 1998-2004. It ranked 3rd in terms of the percentage increase in these values. Similarly, it also ranked 4th in the amount of new manufacturing improvement value due to new construction for this period.

Property Tax Trends in Study Area Municipalities

Table A-29 of Appendix A compares property tax rates in 2003 for towns in the STH 15 study area.

The corridor towns of Greenville, Dale and Ellington ranked 2nd, 5th and 6th highest respectively in local town property tax levy in Outagamie County in 2003. Greenville ranked 4th highest over the entire study area. On average, the local levies were highest in Winnebago County and lowest in Waupaca County, with Outagamie and Calumet ranking close to each other in the midrange.

In terms of local property tax levy per capita, the corridor towns of Greenville, Hortonia, Dale and Ellington ranked 4th, 6th, 9th and 10th highest respectively in Outagamie County. They ranked 12th, 17th, 20th and 23rd highest respectively in the entire study area.

In terms of local-purpose tax rate, out of the 20 towns in Outagamie County, Ellington, Greenville, Dale and Hortonia ranked respectively 8th, 10th, 11th and 14th highest. Over the whole study area, they ranked respectively 18th, 20th, 21st, and 27th highest.

Table A-30 of Appendix B shows that the corridor city of New London ranks toward the bottom of the study area sample in terms of its property tax levy and rate, compared to other cities. Of 13 sample cities (some in multiple counties), the Waupaca County portion of New London ranked 7th highest and the Outagamie County portion ranked 10th highest in local 2003 levy. In terms of local property tax levy per capita, the two portions of New London ranked 9th and 10th highest. In terms of the local-purpose property tax rate in 2003, the two parts of New London ranked 12th and 13th out of the 13 cities. This may be connected in part to the high rate of new industrial construction there.

Table A-31 of Appendix B shows that the corridor village of Hortonville ranks 5th highest out of the 12 study area villages in its 2003 local property tax levy. It ranks 9th highest in terms of its per capita local property tax levy, and 6th in terms of its local-purpose property tax rate.

Enforcement of Consistency of Sewer Service Area Plan Approvals with Ag Preservation Plan

Communities in the study area desiring to expand their sewer service area must gain the approval of a Regional Development Committee of the East Central Wisconsin Regional Planning Commission (ECWRPC), based in part on the recommendation of ECWRPC staff, or of the full ECWRPC. According to ECWRPC,

"The regulations regarding the extension of sewer service and the development of facility plans have had what is arguably the most significant impacts on the pattern of land use that has developed over the past thirty years." (ECWRPC, 2003, 278)

After 1995, communities seeking to expand a sewer service area must have a comprehensive plan that has been approved by ECWRPC. If a community fails to submit

a comprehensive plan or its plan is deemed inadequate, they won't be permitted to expand their sewer service area. If their comprehensive plan is judged incompatible with other local, county or state plans, they will not receive the necessary approval. (Fox Cities Sewer Service Area Plan, 1997, p.122) Nevertheless, despite probable inconsistencies pointed out here between the Outagamie County agricultural preservation plan and several of the town comprehensive plans, ECWRPC does not appear to have restricted future sewer service areas on these grounds.

CONSTRAINTS ON INDUCED LAND USE IMPACTS OF STH 15 EXPANSION

Conversion of agricultural land to residential and other nonfarm uses is mediated directly through the rezoning process. This in turn is mediated in theory by the existence of town and county comprehensive plans and county agricultural preservation plans. The case for preserving farmland can be weakened at each stage depending on 1) the content of the comprehensive plans and agricultural preservation plans; 2) the provisions of the zoning ordinance for treating agricultural lands; and 3) the stringency of the town and county oversight of attempts to rezone land out of agricultural use.

Content of Town Agricultural Plans

In the first instance, if all or most agricultural lands are designated for potential development in the comprehensive plan, then zoning consistent with that plan would automatically provide little bar to conversion of agricultural land. If the zoning district applied to agricultural land attempted to be more stringent under these circumstances, it could be open to legal challenge, especially after Jan. 1, 2010. On the other hand, where the county ag preservation plan continues to designate farmland for preservation, while a town plan does the opposite, which takes precedence? We would argue that under current law, the county plan takes precedence. However starting in 2010, the town plan would take precedence. In the corridor towns of Dale and Ellington, all agricultural land is designated for potential conversion; none is targeted for preservation. The agricultural land in the village of Hortonville is all expected to be developed for residential use.

County Enforcement of Zoning Consistency with Plans in Study Area

In other corridor municipalities, where significant amounts of farmland are actually designated for preservation in the plan, the nature of the zoning map takes on greater importance. In particular, the baseline nature of the zoning of agricultural lands designated for preservation in the plan then becomes determinative as to whether rezones of agricultural land have the ability to act as a meaningful check on conversion. The issue of how rezones are treated becomes paramount, where exclusive agricultural districts, or some other type of ag districts that limit nonfarm land uses, are present.

Wisconsin has a dual veto system whereby both the town board and county board can veto any rezoning of land. The county veto of attempted town-initiated rezones of agricultural land operates even in towns that are not under county zoning. Therefore, where baseline A-1 exclusive ag zoning exists, even in the absence of a strong plan to preserve agricultural land, there is at least the semblance of a mechanism to maintain the farmland base from conversion. This applies in the case of Hortonia. In this case, the stronger the county plan provisions for ag preservation, the greater the basis for stringently preventing rezones of ag land. Even with a strong plan and exclusive ag zoning, there may be acceptable reasons for allowing some rezoning of ag land under Ch. 91. The stringency with which potential loopholes are avoided is a matter of local political will.

Farmland Preservation Program in Outagamie County

Outagamie County adopted an agricultural preservation plan that was certified by the Land and Water Conservation Board (LWCB) in March, 1982 as meeting the requirements of Chapter 91, *Wis. Stats.* This permits eligible landowners of farm parcels of 35 acres or more to collect income tax credits under the Farmland Preservation Program, if their land is include under an exclusive agricultural zoning (EAZ) ordinance certified by the state or if they have signed a farmland preservation agreement under Chapter 91. The purpose of the program is to preserve farmland through local land use planning and zoning, provide tax relief to eligible farm owners, and conserve soil and water resources. The plans identify areas intended for long-term agricultural preservation.

Eligible farmland owners in communities with exclusive agricultural zoning ordinances can receive 100 percent of the available tax credit, while those in communities without EAZ who sign agreements are eligible to receive 80 percent of the available tax credit. Farmland owners under EAZ or agreements are guaranteed a minimum 10% credit on property taxes up to \$6,000. Since Outagamie County is an urban county (having over 100 residents per square mile), farmland owners must have signed an agreement between July 1, 1988 and June 30, 1991 to participate in the program if their community lacks EAZ. Farmland owners who participate in EAZ or agreements also receive some extra "right to farm" protection over other agricultural lands, and are protected from paying special assessments for sewer, water and other services crossing their land.

Agricultural Planning Background in Outagamie County

Outagamie County's 1982 farmland preservation plan states that it was intended "to recommend methods of preserving Outagamie's prime agricultural lands," "to recommend specific lands to be preserved" and "as a general guide to future rural development in the county prior to the year 2000." It creates mapping criteria for agricultural preservation areas that include all existing farm parcels containing cropland or pastureland of at least

35 acres, having prime soils, occurring in blocs of 100 acres or more, and outside urban service areas delineated by the East Central Wisconsin Regional Planning Commission. The criteria also include farm parcels of 35 to 100 contiguous acres where extensive investment has been made in drainage, irrigation or other farm productivity improvements; other lands which are integral parts of these farm operations; and productive farms of blocs of less than 100 acres at the discretion of the landowners. The plan recommends that the county adopt an EAZ district meeting the stringent limitations with respect to residential development established in *Wis. Stats. 91.75*, to implement control of land use within the agricultural preservation areas.

Zoning Background in Outagamie County

Outagamie County amended its zoning ordinance on July 8, 1986 to add an EAZ district. The amended ordinance was subsequently certified by the LWCB on August 12, 1986. An EAZ district does not become effective within a county until it is adopted by individual towns within the county.

Currently, only seven of the towns have an EAZ district within their zoning ordinance: Hortonia, Black Creek and Kaukauna under their own zoning, and Cicero, Deer Creek, Maple Creek, and Seymour under county zoning. Within the immediate STH 15 corridor, only Hortonia has an EAZ district.

Town Policies Regarding Rezoning out of Agricultural Preservation

Hortonia

In 1996, a revised town zoning map for Hortonia was developed that was certified in March, 2001. It reflects a residual inconsistency of about 300 acres with the new town plan map: these are areas zoned for development, though designated for preservation in the new plan certified on Oct.5, 2000. The most recent zoning map still leaves about thirteen sections of town lands zoned for EAZ. STH 15 passes through sections 19, 20, 21, 28, 27, 34 and 35 of the town. Most of sections 20, 21 and 27 remain zoned for EAZ, while about half of Sections 19 and 28 are zoned for EAZ, and most of Sections 34 is zoned for development. All of Section 35 is in the village of Hortonville or else zoned for residential development in the town.

The town points out that it has consistently maintained a larger minimum lot size for residential zoning than surrounding towns. However, Hortonia's three-acre minimum lot size for residential zoning is not likely to discourage scattered development and may lead to a larger incremental loss of farmland over time compared to one-acre lot sizes as lands are developed.

The new 2000 Hortonia town plan claims that "No significant conversion to residential zoning has occurred within the last ten years." (p.8) Seventy-five percent of building permits allowed in Hortonia from 1982-1997 occurred in just four sections: 1, 5, 31, 33. However, it also notes that:

"Development pressure in the town of Hortonia for the next 10-20 years is expected to be greater than that experienced in the last 10-20 years.... The STH 15 reconfiguration will reduce commuting time between the Town and employment centers in Appleton. Further growth in the Town of Greenville, in particular, commercial and industrial development, will bring employment centers closer to the Town of Hortonia. New London is also aggressively expanding its borders and pursuing a policy of growth and development. ...Future growth areas are identified for the Town adjacent to the village of Hortonville and include parcels totaling approximately 400 acres in Sections 34, 3 and 2. The Village of Hortonville is expected to purchase 100 to 150 acres for future Village expansion within the next 2-3 years in this area." (p.14)

There is no readily available comprehensive track record by which to evaluate the quality of the enforcement of town zoning ordinances in the STH 15 corridor towns. However, Ch. 91 does specify certain minimal criteria for rezoning out of exclusive ag districts.

Greenville

The town of Greenville lacks an exclusive agricultural zoning district as part of its current town-administered zoning ordinance. Its current ordinance does have a General Agricultural District (AGD), but this district allows single-family residential uses as permitted uses in addition to agricultural uses. It has a minimum lot size of 5 acres for agricultural uses, which is far too small to accommodate commercial agricultural uses for the most part, or to prevent incompatible uses. It has a minimum lot size of about one acre for residential lots, but no maximum lot size for such use. Therefore, there is no apparent limit on the size of residential estates allowed in the agricultural district. More recently, text from the version of the Greenville comprehensive plan online suggests a one dwelling unit per ten acre maximum density, which may promote large estates that eat up farmland. No detailed conditions restricting rezones out of agricultural use are specified in the zoning ordinance. This leaves such decisions to be made in an ad hoc way on a case by case basis. The absence of stated rezone policies for ag rezoning makes the town more vulnerable to pressure to rezone from individual developers and landowners. (www.townofgreenville.com/town/townOrdinances/ZoningOrdinances)

Dale

The town of Dale comprehensive plan recommends that the town "work closely with the Outagamie County Planning Department to amend the Town Zoning Map to mirror the

land use plan map," and consider adoption of new residential and commercial districts. (p. 41) It also states that the town "will also consider implementation tools, such as land use ordinances and the official map, to assure consistency of land use decisions with the Comprehensive Plan recommendations." (p. 43) There is no evidence any conclusive action has been taken on this to date. The Dale plan map for future land use designates all agricultural land for future residential development. Therefore, it is likely that any rezoning of agricultural land to residential use would be considered compatible with the comprehensive plan.

Ellington

The town plan states that "the Town should take great care to review each rezoning request in light of the future Land Use Plan, and work closely with the Outagamie County Planning Department as rezoning petitions are filed." (p.14) However, the content of the town's map of future land use is so permissive that it is hard to imagine how any rezoning out of agriculture could be found inconsistent with the plan.

Liberty and Grand Chute

No detailed conditions restricting rezones out of agricultural use are specified in the zoning ordinance. This leaves such decisions to be made in an ad hoc way on a case by case basis. The absence of stated rezone policies for ag rezoning makes these towns more vulnerable to pressure to rezone from individual developers and landowners

In general, it does not appear from the evidence available that the current land use plans and regulations of municipalities and counties in the study area would act as an effective constraint on potential highway-induced development pressure or act as a deterrent to highway-induced conversion of agricultural land.

POTENTIAL EFFECTS OF DEVELOPMENT PRESSURE ON FARMING IN URBAN AREAS

Disinvestment and Idling of Farmland

Increased pressure to develop nearby farmland for nonfarm use may change the expectations of area farmers about the long-term viability of farming as a business and a way of life in their areas. They may reduce or stop investing in farm improvements, since these investments cannot be recaptured when farmland is valued for urban use, and may even decrease the urban value of the land at the time of sale. Conklin and Dymrza found that the frequency of large investments in farm improvements increased with distance from the city. Lockeretz presents data that shows that the mean percentage increase in the real value of farm machinery and equipment from 1969-1982 was significantly greater in nonmetropolitan counties (4.7 percent) compared to metro counties (1.4 percent). In a study

of the effect of urban development pressure on farm input and output choices in New Jersey from 1949-1982, Lopez found confirmation that capital investment is discouraged by land speculation at the urban fringe, despite more intensive use of farmland near cities. ³

As development pressure intensifies, the willingness of landowners to sell farmland increases. In a survey of four U.S. cities, 28 percent of the personal users who are also owners of fringe land under intense development pressure reported that they expected to sell their land within 5 years, compared to only 10 percent of owners of land not under such development pressure. The rate of decline of farmland increases with proximity to the

³ Bills, Nelson L. (1988) Farmland Use in an Urban Environment: Status, Trends and Policy Issues. Cornell Agricultural Economics Staff Paper No.88-16. July. pp.15-16

Lopez, Roberto A., et. al. (1988) "The Effects of Suburbanization on Agriculture." American Journal of Agricultural Economics. May. p.355-356

Lockeretz, William. (1986) "Trends in Farming Near Cities." Journal of Soil and Water Conservation. July-August. p.260

Conklin, Howard E. and Richard Dymsha. (1972) Maintaining Viable Agriculture in Areas of Urban Expansion. N.Y. State Office of Planning Services. Albany, N.Y.

metropolitan center.⁴ Development pressure is reflected in a higher selling price of agricultural land than would occur otherwise.⁵

Farmland may be idled prematurely in expectation of eventual urban development.⁶ In one study of four U.S. cities, urban fringe land up to 20 or 30 miles out had 19 percent of land unused, compared to 28 percent for areas under intense development pressure.⁷ Farmland idled as a result of a speculative land market at the urban fringe may not be converted to urban use, yet "once agricultural land has been idled for a number of years, it may be

⁴ Brown, H. James, et. al. (1981) "Land Markets at the Urban Fringe." Journal of the American Planning Association. April.

William Lockeretz. (1989) "Secondary Effects on Midwestern Agriculture of Metropolitan Development and Decreases in Farmland." Land Economics. Vol.65. No.3 August. p.214

Note: There are factors other than profit from sale of land and increasing diseconomies from remaining in farming(due to urban incursions) that motivate farmers to leave farming including: life cycle considerations such as death, illness and retirement; the general prices paid for farm goods; and the costs of farm inputs.

In general, both the "push" factors(economic factors making it hard for farmers to survive in farming, and life cycle decisions) and the "pull" factors(competing demands for their farmland and diseconomies of urban expansion) need to be considered in targeting effective means of farmland preservation. Loss of farmland at the urban fringe is a function of both expanding population and declining agricultural rent. (Brueckner, Jan. K and David A Fansler. (1983) "The Economics of Urban Sprawl: Theory and Evidence on the Spatial Size of Cities." Review of Economics and Statistics. Vol.65. No.3 p.481

In turn, the pull factor of urban demand for rural homes is not only a function of population in-migration, declining household size, birth rates, and subsidies to highways and automobiles. It is also a function of perceived deterioration of the quality of life in the existing urban area. In a random sample of Dane County residents on their quality of life, the percentage of people considering relocating was about twice as high for those who perceived the quality of life as getting worse than for those who perceived it as getting better. (Dowell Myers. (1989) The Quality of Life in Madison and Dane County, Wisconsin: A Report Summarizing the Survey Data Collected by the Madison-Dane County Quality of Life Project. March. pp.20-22

⁵ In this connection, a perusal of a recent Multiple Listing Service publication for South Central Wisconsin shows that in some cases the list prices for farms in the Town of Springfield, which is adjacent to the USH 12 corridor are 300 to 400 percent of the assessed value of the parcels. (South Central Wisconsin MLS Corporation. (1993) Multiple Listing Service. Vol.14. July 8.)

⁶ Brown, H. James, et. al. (1981) "Land Markets at the Urban Fringe." Journal of the American Planning Association. April.

⁷ H. James Brown, op.cit.p.137

prohibitively expensive to bring it back into production." ⁸ As the land reverts to forest cover or wetland, the cost of clearance rises.

Fragmentation of Farmland, Shifts in Tenure, and Lowering of Farm Productivity

The tenure of farm operators may shift more from owners to renters who have less stake in the long-term integrity of the farmland. The percentage of farms that are renter-operated is higher in metropolitan counties than in nonmetropolitan counties.⁹ Land use conflicts with relocated urban dwellers can result in complaints about farm noise, odors, pesticide use, runoff problems and farm machinery traffic on local roads.¹⁰ Changes in farm operations to accommodate these complaints, or in expectation of future urban development, may lower farm productivity and reduce farm income. Vandalism is also a problem.

At the same time that the value of farmland rises due to urban development pressure, the value of the land for farm use goes down. As urban uses impinge on farms, the productivity of the land for farm purposes declines.¹¹ In part this may reflect the shift from full commercial utilization of farmland to part-time and hobby farm uses of land. The incidence of part-time and hobby farming has been observed to increase in proximity to urban areas. (Troughton, 1977) Loss of commercial farmland thus cannot be measured simply by the actual acreage converted to non-farm uses.

⁸ Plaut, Thomas. (1976) The Effects of Urbanization on the Loss of Farmland at the Rural-Urban Fringe: A National and Regional Perspective. Regional Science Research Institute Paper Series. No.94. December. pp.1-2

Berry, David. (1978) "Effects of Urbanization on Agricultural Activities." Growth and Change. July. p.3

⁹ Heimlich, Ralph E. (1989) "Metropolitan Agriculture: Farming in the City's Shadow." Journal of the American Planning Association. Autumn. p.459

¹⁰ Rosser, J. Barkley. (1978) "The Theory and Policy Implications of Spatial Discontinuities in Land Values." Land Economics. Vol.54, No.4. pp.430-431

Nelson, Arthur C. (1986) "Using Land Markets to Evaluate Urban Containment Programs." Journal of the American Planning Association. Winter.

Schmidt, Robert H. (1980) "Freeway Impact on Agricultural Areas." Natural Resources Journal. Vol.20. July.

¹¹ Nelson, Arthur C. (1985) "A Unifying View of Greenbelt Influences on Regional Land Values and Implications for Regional Planning Policy." Growth and Change. Vol.16. No.2. April. p.46

Rosser, J. Barkley (1978) "The Theory and Policy Implications of Spatial Discontinuities in Land Values." Land Economics. Vol.54. No.4 pp.430-431

“...the higher land values created by hobby farmers may involve only a small proportion of total land area but they influence the pattern of land prices for the entire area. A substantial number of hobby farms in fringe areas may present a threat to the future of commercial agriculture, especially medium-size farms.”
(Daniels, 1986, 33)

One study found on average that a 10 percent population increase in a metropolitan area was associated with about a 2 percent decrease in agricultural output of farms in the region, after controlling for other major factors affecting farm output.¹² For example, between 1990 and 2000, Outagamie County had a 14.6 percent population increase. If this ratio were applied to 2002 farm output in the county of \$146.5 million, a loss of \$2.93 million in farm income, or about \$2,049 of lost income per farm per year on the average would result. Another study found that the higher cost of land acquisition at the urban fringe that results from development pressure - representing 30 percent of farm production costs for corn for example - would force up food and fiber prices reaching consumers.¹³

Lower farm income and productivity may in turn decrease production in other sectors, locally and statewide, through a multiplier effect.¹⁴ A sector's multiplier represents the additional dollars of output (or income) generated throughout the economy by expenditures required as inputs to produce a dollar of output (or income) for that sector. The multiplier, for instance, captures the way farm income is used to purchase inputs to the farm business or for living expenses and loan payments, which support other local businesses who also pay

¹² Andrews, Margaret S. and Joel Chetrick. (1988) "Agricultural Productivity in Densely Populated Areas." Landscape and Urban Planning. Vol.16:311-318.

¹³ Morris, Douglas. (1978) "Farmland Values and Urbanization." Journal of Agricultural Economics Research. Vol.30. No.1. January. p.47

A manual on economic impacts of highways prepared for U.S. DOT states that:

" The probability of a transportation link encouraging urbanization at the expense of agriculture is so great that, in quantitative terms, this impact on agriculture (reduced supply of produce and attendant higher prices) can sometimes overshadow the direct effects of construction." (Skidmore, Owings & Merrill. (1975) Economic Impacts: A Guidance Manual for the Assessment of Economic Impacts due to Highway Facility Improvements. Notebook No.3 in Environment Assessment Notebook Series prepared for U.S. Department of Transportation. p.68)

For 1992 farm output, the figure for cash receipts for farm marketings of all farm commodities was used from Wisconsin Agricultural Statistics - 1994. (DATCP)

¹⁴Bills, op.cit.,pp.16-17

Soil Conservation Service, U.S.D.A. (1981) National Agricultural Lands Study. Final Report. Executive Summary. p.4.

wages and generate income for local proprietors. For example, in a Door County study, every dollar of agricultural income generated over two additional dollars of income in other sectors; all other sectors in Door County generated less than two dollars per dollar of farm income. At the state level, the output multiplier of agricultural production is generally among the highest of any sector in the economy.¹⁵

The effects described in this section on the disinvestment and idling of farmland are commonly referred to as resulting in an "impermanence syndrome," because rational economic expectations may lead more local people to leave farming and keep fewer acres of prime farmland in use. This would have a negative multiplier effect on agribusiness in the area. The effects involve decreased farm capital investment, increased idling of farmland, and lower farm productivity. These effects may begin before substantial residential development occurs.¹⁶ Farmers may anticipate increasing difficulty in obtaining land for expansion to grow feed or to spread manure due to expected outward urban growth. They will find increasing costs for such land even if it is available.

As residential and other non-farm development makes incursions into agricultural areas, prices of land sought for farm expansion rise. Rental of additional farmland becomes a more attractive option for many farmers than buying land, particularly beginning farmers. However, increased rental of land creates added uncertainty for farm operators if the long-term preservation of the land in agriculture is not assured. This uncertainty of the

¹⁵ Strang, William A. (1970) Recreation and the Local Economy. U.W. Sea Grant Program. Graduate School of Business. U.W.-Madison. p.30-31 For state models, see for example:

U.S. Dept. of Commerce, Bureau of Economic Analysis. (1992) Regional Multipliers. May. p.25

Worley, Lucinda F. and Daniel D. Badger. (1987) Local Economic Impacts From Exporting Oklahoma Agricultural Commodities. Professional Paper 2577. Oklahoma Agricultural Experiment Station. p.10

McKean, John R. (1987) County Input-Output Models for the State of Wyoming: With Analysis of New Industries, and New Construction Impacts. Colorado Water Resources Research Institute. Colorado State University. October. pp.65-67

Leistriz, Larry, et. al. (1982) North Dakota Economic-Demographic Assessment Model: Technical Description. Agricultural Economics Report No.158. September. Department of Agricultural Economics. North Dakota State University. Fargo, ND. p.19

Kansas Office of Economic Analysis. (1969) The Interindustry Structure of the Kansas Economy. Dept. of Economic Development.

¹⁶ Clark, Jon. (1979) Conserving the Nation's Farmland. Background Paper from the Northeast-Midwest Institute. May. p.7

Soil Conservation Service. U.S.D.A. (1981) National Agricultural Lands Study. Final Report. Executive Summary. p.4

availability of a future reservoir of land for farm rental increases as urban and residential pressure grows. If rental land is available, it often entails greater travel to access it. Increased farm fragmentation into multiple widely scattered parcels due to competition from non-farm development can adversely affect agricultural productivity. In studies of farming on the urban fringe, this was clear:

“In general, the farmers that were interviewed preferred to rent land as close as possible to their headquarters. Yet the increase of farm size over a short period of time has tended to involve the acquisition of whatever rental parcels are available. As a result, the majority of farms are fragmented to some degree. The large cash-crop operations, in particular, reported high degrees of fragmentation, with as many as 15 different-sized parcels distributed across, and even outside, the study area. . . . Several farmers in this study did report that the time taken to move machinery between parcels, . . . together with problems of accessibility to smaller parcels, did reduce operating efficiency. . . . Clearly, fragmentation represents a cost which can be traded-off against savings from low rents and the economies of an expanded land base. . . . much depends upon the particular configuration of the fragmented layout. (Bunce, 1985, 185-186)

“...in recent years, farmers have equipped their machinery for ease of movement on public roads. Nonetheless, the cost of moving equipment over long distances is becoming a serious problem. Increased expenditures for labor, fuel, equipment maintenance, and machinery replacement are making it less profitable to use distant parcels of land. Farmers who rely upon highly scattered land bases may eventually find it necessary to secure land closer to their headquarters, or withdraw from agriculture. If suitable nearby land were available, most operators would not choose to farm distant parcels. . . . Farmers who presently rely heavily upon rental or leased land may eventually find themselves in a precarious position because the next generation of owners may decide to commit the land to other uses.” (Van Otten, 1980, 69)

Shifts in the Type of Farming Conducted

The type of farming conducted has been shown to shift over time as urban development pressure increases in a region. A longitudinal study of zonal agricultural commodity production in rings around the New York City area shows this effect. The data display an evolutionary shift over time in the composition of farm commodities. Over a period of decades, the distribution of dairy, crop, vegetable and specialty crop groups in an urbanizing region shifts along this spectrum from the former to the latter commodity types, as development pushes outward over time.

“Four more or less distinct bands of agricultural activity are identifiable from census data for the urban-rural fringe. As one moves outward from the built-up area, one

passes through a greenhouse band, a nursery band, and a vegetable band into a dairy band. At any given census a band is in a specific zone or zones. the location of the zones is fixed and does not change: the four bands shift gradually outward through them to create the peri-metropolitan bow wave.... because the county units for which data are available do not accord neatly with the zones, each county has its own distinctive patterns, and the bands are discontinuous because the built-up area has grown outward in different directions at different times....”

"Dairy farming, traditionally the dominant type of agriculture in the Northeast... constitutes the matrix into which metropolitan areas have been thrusting their bow waves. The band of dairy farming had already been pushed into zone II by the beginning of the twentieth century..., and by 1987 it had been pushed to the outermost counties of the region.... Vegetable farming, the next inner band of the bow wave, also seems to be losing its regional importance....Zone I continued to dominate vegetable production until 1900, when increasing urbanization began to push the principal concentration into zone II, where it remained for nearly half a century. However, since 1950, vegetable production has almost completely disappeared from the two inner zones. It was pushed out to zone III after 1945 and to zone IV after 1960. by 1987 the band of vegetable production was at the edge of the region and discontinuous.” (Hart, 1991, 43-45)

In the case of the New York region, the spectrum described lacks a corn/wheat band because that was never a dominant crop in the area. In Wisconsin, there would likely be five rather than four bands, with the row crop (corn/soy beans) band inserted between the dairy and vegetables bands. A similar pattern was described for California:

“Small general vegetable farms predominate on the croplands nearest the built-up core (market gardening); followed by larger specialized vegetable and fruit farms (truck farming), interspersed with dairying operations; and eventually the bordering hill land farms engaged in the more extensive dry farming and livestock raising. ...As the urban core expands, each of these agricultural zones is characterized by a succession of land uses, all the stages being of increasing land use intensity ...” (Gregor, 1957, 320)

A classic study by Berry of dairy farming in northeast Illinois from 1964-1974 documented the high sensitivity of dairying operations to adverse effects of urbanization. He notes:

“Many other agricultural activities, such as the growing of field crops, do not show such a strong aversion to nearby urban pressures.... Because dairying requires day-in and day-out attention, a smaller percentage of dairy farmers can actually work off the farm than can other farmers... the argument about riskiness concerns unrecoverable costs sunk into a farming operation and not yields per acre or value of output per acre, the focus of interest in many studies of the influence of urbanization

on agriculture....As farm investment declines in anticipation of future urbanization or in reaction to spillover effects, however, yields per acre may very well also decline. Investment in drainage, fences, equipment, and buildings are likely to taper off as farming becomes less permanent. ...

In the Midwest, the capital investment in a typical corn and soybean farm may be larger than that in a typical dairy farm; but the expensive tractors, combines, and other equipment used in cash grain farming are more mobile than the barns and related fixtures necessary for dairying. Moreover, although dairy investments are comparatively smaller, they are nevertheless quite large in absolute terms. Hence cash grain farmers may feel less reluctant to make large investments than dairy farmers in areas subject to strong or moderate urban pressures.” (Berry, 1979, 173-174)

Another study looked at agricultural impacts over time in seven large metropolitan regions in fifteen selected counties that attempted to be representative of each area’s major farming types. In two of these metro areas, Portland and Chicago, the analysis was disaggregated to compare counties at the periphery of the metro area with inner counties that included major cities. The outer counties showed increased farm sales over the 1949-1982 period in contrast with stable or declining sales in the inner counties. In the inner counties, sales fell most rapidly in the dairy and poultry sectors, while fruits, vegetables and field crops were stable or declined more slowly, and horticultural sales rose as a percentage of sales. (Lawrence, 1988, 165) The outer counties also showed greater diversity than the inner ones in terms of product mix.

“For the five counties with the greatest densities of population in relation to area in farms in 1950... the changes in area harvested and animal numbers were consistently more negative than for the other counties. ... In the inner counties, both poultry and dairy production declined drastically while other types of farming decreased in area and/or sales at a slower pace. Some viability is maintained even after 30 years of urbanization of their surroundings. While field crops still dominate in terms of area, horticultural specialties dominate the inner metropolitan farming economy in sales value. In the outer counties, however, much more diversity exists among the commodities and between individual counties.” (Lawrence, 1988, 167)

“Given the improvements in transportation over the study period, especially of refrigerated truck transport, and the greater intensification of production in non-metropolitan agriculture, the competitive advantages of close proximity to urban areas are of diminishing value for many of these commodities. In turn, negative urban influences would increasingly affect each of these types of farming, as they are compensated less and less by the traditional locational advantages of metropolitan access. Among the commodities only horticultural specialties and

field crops have maintained a consistent metropolitan advantage in their intensity of production. ...The two commodity types with the greatest viability are the most intensive (horticultural specialties) and the least intensive (field crops).... These two commodity types are the only ones to maintain the traditional metropolitan advantages in intensity of production over non-metropolitan agriculture....One would expect that if these crops served merely as a holding action for land awaiting development, there would be a drop in intensity of production to levels at or below that of non-metropolitan field crops.” (Ibid., pp.171-174)

Agricultural tourism represents another potential profit center that can cover a variety of potential on-farm activities. Some of these may conflict with conventional farming operations on the same land, but others are quite compatible. Outagamie County ranked 8th among Wisconsin counties in 2002 in the amount of traveler spending, representing an 85% increase from the 1993 amount. With the presence of many tourism destinations and a strong seasonal home market in Waupaca County, it is possible that adaptation of some area farms for agricultural tourism uses could provide viable alternative income sources, especially if conventional agricultural uses are made more problematic by scattered development. Agricultural tourism uses can include roadside markets, pick-your-own operations, agricultural festivals, farm tours of historically restored sites, farm bed and breakfasts, scenic picnic areas, camping, and horseback riding. (Country Today, 9/6/2000; Metcalf, 2000; Hafemeister, 2000) A study of agri-tourism in New Jersey described “vacationing on farms” as “one of the most popular trends in the U.S. today.” (Tavernier, et.al., 1996, 53) However, the study found that a far larger number of farms accommodated such activities than actually charged fees for them. However, 25% of those farmers providing farm-related tourist activities earned over \$20,000 a year from this. Participation in tourism was higher in, and presumably more compatible with, certain farm sectors than others. Most farms have seasonal periods in which some resources are idled, thus offering opportunities for tourism-related profit centers to evolve in some geographic areas.

Other Effects of Relocation of Urban Residents in Farm Communities

As more new residents relocate into a farming area from urban areas within metropolitan counties, there is typically a polarizing trend in the distribution of farm sizes towards a greater share of larger farms over 500 acres on the one hand, and a greater share of very small farms under 10 to 35 acres on the other. With fewer full-time, commercial farms in the area, the market for farm input suppliers may decline forcing closure or relocation of such businesses.¹⁷ As the number of farms declines, there may be a shift in other

¹⁷ Henderson, David, et. al. (1989) "Community Ties to the Farm". Rural Development Perspectives. June.

Heady, Earl and Steven Sonka. (1973) Income and Employment Generation in Rural Areas in Relation to Alternative Farm Programs. North Central Regional Center for Rural Development. Iowa State University. Ames.

community institutions as well. The local government and other institutions may become less responsive to local farm needs as farmers constitute a smaller share of voters and residents.¹⁸ Relocated urban residents may not understand the concerns and needs of farmers.

On the other hand, there is a statistically significant decrease in the total share of county land that remains in farming use, as well as in the total number of farms, associated with the proportion of farms of under 10 acres among Wisconsin urban counties (i.e., those having a population density of 100 persons or more per square mile). Such associations are not found in non-urban counties. (Based on statistical analysis of 1992 Census of Agriculture data).

New residents may require a level of services not desired by farm operators, yet farm property will disproportionately bear the property tax burden to meet the increased costs of development. This is due to the lower ratio of income to total property value for farms compared to other classes of property, with a resulting higher ratio of property tax burden to income for farmers compared to property owners generally.¹⁹

CONCLUSIONS AND RECOMMENDATIONS

The STH 15 project's initial impact on agriculture will be the loss of farmland. WisDOT estimates that the proposed project would require the acquisition of about 240 acres of farmland. An additional 265 acres of farmland may be landlocked. The loss of cropland not only reduces the farmers' crop production capacity; it also reduces the amount of land available for manure spreading, which may limit the number of livestock that can be raised.

The improvement to STH 15 would change access on several farm properties. Several landowners expressed concern about changes in access to their property. More than a few farm parcels will be severed; this can have several negative impacts on farms. These include creating a barrier to farming which impedes access, leaving irregularly shaped fields, and creating farmland that is difficult to farm. Farming small or irregularly shaped fields is frequently less efficient because it is more difficult to maneuver farm machinery in these fields.

¹⁸ Berry, David. (1978) "Effects of Urbanization on Agricultural Activities." Growth and Change. July. p.3

Green, Gary P. (1985) "Large-Scale Farming and the Quality of Life in Rural Communities: Further Specification of the Goldschmidt Hypothesis." Rural Sociology. Vol.50. No.2. p.271

¹⁹ Barrows, Richard. (1986) The Property Tax and Agriculture. Department of Agricultural Economics. U.W.-Madison. p.11

Berry, op. cit. p.3

WisDOT currently anticipates acquiring buildings on six farm parcels. In addition, the highway may have an impact on other buildings that are close to the road and may be left closer to the road after construction is completed. Twenty-two farmland owners also

The proposed project would displace building on eight farm parcels. In addition, the highway may have an impact on other buildings that may be closer to the road after construction is completed. Some farmland owners expressed concern about the project's impact on drainage improvement on their farmland.

In addition to these direct impacts to farm operations, improved highways can have secondary land use impacts that can also affect farm operations. Reduced travel times, in conjunction with several other factors, permit/attract people to live in rural areas. People relocating to rural areas can have negative consequences to agriculture.

The DATCP recommends the following as ways to mitigate the potential adverse impacts associated with the proposed project:

1. In order to adequately address possible drainage problems that may occur as a result of the project, DATCP recommends that representatives of WisDOT discuss construction plans with representatives of Outagamie County Conservation Department during the design process
2. WisDOT should consult with landowners whose access must be altered to ensure that safe and efficient access to their property is provided.
3. WisDOT should consider compensating farmers who will have to travel longer distances between parcels of their land due to severances and changes in access.
4. The county conservationists should be consulted to ensure that construction proceeds in a manner that minimizes crop damage, soil compaction, and soil erosion on adjacent farmland.
5. The farmland owners and operators should be given advance notice of acquisition and construction schedules so that farm activities can be adjusted accordingly. To the extent feasible, the timing of the acquisitions and construction should be coordinated with them to minimize crop damage and disruption of farm operations.

APPENDIX A Statutes & Definitions

Appendix A-I: Agricultural Impact Statements

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) is required to prepare an Agricultural Impact Statement (AIS) whenever more than five acres of land from at least one farm operation will be acquired for a public project if the agency acquiring the land has the authority to use eminent domain for the acquisition(s). The DATCP has the option to prepare an AIS for projects affecting five or fewer acres from each farm. An AIS would be prepared in such a case if the proposed project would have significant effects on a farm operation. The agency proposing the acquisition(s) is required to provide the DATCP with the details of the project and acquisition(s). After receiving the needed information, DATCP has 60 days to analyze the project's effects on farm operations, make recommendations about it and publish the AIS. DATCP will provide copies of the AIS to affected farmland owners, various state and local officials, local media and libraries, and any other individual or group who requests a copy. Thirty days after the date of publication, the proposing agency may begin negotiating with the landowner(s) for the property.

Section 32.035 of the Wisconsin Statutes: Agricultural impact statement.

(1) Definitions. In this section:

(a) "Department" means department of agriculture, trade and consumer protection.

(b) "Farm operation" means any activity conducted solely or primarily for the production of one or more agricultural commodities resulting from an agricultural use, as defined in s. 91.01 (1), for sale and home use, and customarily producing the commodities in sufficient quantity to be capable of contributing materially to the operator's support.

(2) EXCEPTION. This section shall not apply if an environmental impact statement under s. 1.11 is prepared for the proposed project and if the department submits the information required under this section as part of such statement or if the condemnation is for an easement for the purpose of constructing or operating an electric transmission line, except a high voltage transmission line as defined in s. 196.491(1)(f).

(3) PROCEDURE. The condemnor shall notify the department of any project involving the actual or potential exercise of the powers of eminent domain affecting a farm operation. If the condemnor is the department of natural resources, the notice required by this subsection shall be given at the time that permission of the senate and assembly committees on natural resources is sought under s. 23.09(2)(d) or 27.01(2)(a). To prepare an agricultural impact statement under this section, the department may require the condemnor to compile and submit information about an affected farm operation. The department shall charge the

condemnor a fee approximating the actual costs of preparing the statement. The department may not publish the statement if the fee is not paid.

(4) IMPACT STATEMENT. (a) When an impact statement is required; permitted. The department shall prepare an agricultural impact statement for each project, except a project under ch. 81 or a project located entirely within the boundaries of a city or village, if the project involves the actual or potential exercise of the powers of eminent domain and if any interest in more than 5 acres from any farm operation may be taken. The department may prepare an agricultural impact statement on a project located entirely within the boundaries of a city or village or involving any interest in 5 or fewer acres of any farm operation if the condemnation would have a significant effect on any farm operation as a whole.

(b) *Contents.* The agricultural impact statement shall include:

1. A list of the acreage and description of all land lost to agricultural production and all other land with reduced productive capacity, whether or not the land is taken.
2. The department's analyses, conclusions and recommendations concerning the agricultural impact of the project.

(c) *Preparation time; publication.* The department shall prepare the impact statement within 60 days of receiving the information requested from the condemnor under sub. (3). The department shall publish the statement upon receipt of the fee required under sub. (3).

(d) *Waiting period.* The condemnor may not negotiate with an owner or make a jurisdictional offer under this subchapter until 30 days after the impact statement is published.

(5) PUBLICATION. Upon completing the impact statement, the department shall distribute the impact statement to the following:

- (a) The governor's office.
- (b) The senate and assembly committees on agriculture and transportation.
- (c) All local and regional units of government which have jurisdiction over the area affected by the project. The department shall request that each unit post the statement at the place normally used for public notice.
- (d) Local and regional news media in the area affected.
- (e) Public libraries in the area affected.
- (f) Any individual, group, club or committee which has demonstrated an interest and has requested receipt of such information.
- (g) The condemnor.

Appendix A-II: Eminent Domain

Fair compensation for a partial taking of property under eminent domain is the larger of two figures: (1) the fair market value of the acquired property or (2) the fair market value of the entire parcel before the acquisition minus the fair market value of the remaining parcel.

Compensation will be paid for the land acquired, any improvements acquired (structures, fencing, etc.), loss of access, loss of a use of this property, and damages resulting from severance of the property (including land and improvements). The condemnor may provide compensation for increased travel distances.

In addition to other compensation, a condemnor is required to make a payment of \$50,000 or less to any displaced farm or business owner who has owned the property for at least one year and who purchases a comparable replacement farm or business within two years of the acquisition. The amount of this payment would include any additional amount of money needed to equal the reasonable cost of a replacement farm or business, any increased interest or debt service charges, and closing costs. Displaced renters may also receive compensation if they rent or lease a comparable replacement farm or business within two years of the acquisition. If the displaced tenant rents or leases a comparable farm or business, the payment would include the amount needed to rent the replacement property for four years. This payment would not exceed \$30,000. If the renter decides to purchase a comparable farm or business, the payment would be equal to the rental or lease of that property for four years plus closing fees.

If a project would displace any person, business, or farm operation, the condemnor must file and have approved a written relocation payment plan and a relocation assistance service plan with the Department of Commerce. The condemnor must determine the relocation payment, assist displaced persons, businesses and farm operations to find comparable replacement properties, provide information about any government assistance to displaced persons, and coordinate the displacement with other project activities in a timely manner to avoid causing hardship

Section 32.09 of the Wisconsin Statutes describes the compensation provided for property acquisition and certain damages:

(6) In the case of a partial taking of property other than an easement, the compensation to be paid by the condemnor shall be the greater of either the fair market value of the property taken as of the date of evaluation or the sum determined by deducting from the fair market value of the whole property immediately before the date of evaluation, the fair market value of the remainder immediately after the date of evaluation, assuming the completion of the public improvement and giving effect, without allowance of offset for general benefits, and without restriction because of enumeration but without duplication, to the following items of loss or damage to the property where shown to exist:

- (a) Loss of land including improvements and fixtures actually taken.
- (b) Deprivation or restriction of existing right of access to highway from abutting land, provided that nothing herein shall operate to restrict the power of the state or any of its subdivisions or any municipality to deprive or restrict such access without compensation under any duly authorized exercise of the police power.
- (c) Loss of air rights.
- (d) Loss of a legal nonconforming use.

(e) Damages resulting from actual severance of land including damages resulting from severance of improvements or fixtures and proximity damage to improvements remaining on condemnee's land. In determining severance damages under this paragraph, the condemnor may consider damages which may arise during construction of the public improvement, including damages from noise, dirt, temporary interference with vehicular or pedestrian access to the property and limitations on use of the property. The condemnor may also consider costs of extra travel made necessary by the public improvement based on the increased distance after construction of the public improvement necessary to reach any point on the property from any other point on the property.

(f) Damages to property abutting on a highway right-of-way due to change of grade where accompanied by a taking of land.

(g) Cost of fencing reasonably necessary to separate land taken from remainder of condemnee's land, less the amount allowed for fencing taken under par. (a), but no such damage shall be allowed where the public improvement includes fencing of right of way without cost to abutting lands.

Section 32.19 of the Wisconsin Statutes outlines payments to be made to displaced tenant-occupied businesses and farm operations.

(4m) BUSINESS OR FARM REPLACEMENT PAYMENT. (a) *Owner-occupied business or farm operation.* In addition to amounts otherwise authorized by this subchapter, the condemnor shall make a payment, not to exceed \$50,000, to any owner displaced person who has owned and occupied the business operation, or owned the farm operation, for not less than one year prior to the initiation of negotiations for the acquisition of the real property on which the business or farm operation lies, and who actually purchases a comparable replacement business or farm operation for the acquired property within two years after the date the person vacates the acquired property or receives payment from the condemnor, whichever is later. An owner displaced person who has owned and occupied the business operation, or owned the farm operation, for not less than one year prior to the initiation of negotiations for the acquisition of the real property on which the business or farm operation lies may elect to receive the payment under par. (b) 1. in lieu of the payment under this paragraph, but the amount of payment under par. (b) 1. to such an owner displaced person may not exceed the amount the owner displaced person is eligible to receive under this paragraph. The additional payment under this paragraph shall include the following amounts:

1. The amount, if any, which when added to the acquisition cost of the property, other than any dwelling on the property, equals the reasonable cost of a comparable replacement business or farm operation for the acquired property, as determined by the condemnor.

2. The amount, if any, which will compensate such owner displaced person for any increased interest and other debt service costs which such person is required to pay for financing the acquisitions of any replacement property, if the property acquired was encumbered by a bona fide mortgage or land contract which was a valid lien on the property for at least one year prior to the initiation of negotiations for its acquisition. The amount under this subdivision shall be determined according to rules promulgated by the department of commerce.

3. Reasonable expenses incurred by the displaced person for evidence of title, recording fees and other closing costs incident to the purchase of the replacement property, but not including prepaid expenses.

(b) *Tenant-occupied business or farm operation.* In addition to amounts otherwise authorized by this subchapter, the condemnor shall make a payment to any tenant displaced person who has owned and occupied the business operation, or owned the farm operation, for not less than one year prior to initiation of negotiations for the acquisition of the real property on which the business or operation lies or, if displacement is not a direct result of acquisition, such other event as determined by the department of commerce, and who actually rents or purchases a comparable replacement business or farm operation within 2 years after the date the person vacates the property. At the option of the tenant displaced person, such payment shall be either:

1. The amount, not to exceed \$30,000, which is necessary to lease or rent a comparable replacement business or farm operation for a period of 4 years. The payment shall be computed by determining the average monthly rent paid for the property from which the person was displaced for the 12 months prior to the initiation of negotiations or, if displacement is not a direct result of acquisition, such other event as determined by the department of commerce and the monthly rent of a comparable replacement business or farm operation and multiply the difference by 48; or

2. If the tenant displaced person elects to purchase a comparable replacement business or farm operation, the amount determined under subd. 1 plus expenses under par. (a) 3.

(5) **EMINENT DOMAIN.** Nothing in this section or ss. 32.25 to 32.27 shall be construed as creating in any condemnation proceedings brought under the power of eminent domain, any element of damages.

Section 32.25 of the Wisconsin Statutes delineates steps to be followed when displacing persons, businesses, and farm operations.

(1) Except as provided under sub.(3) and s. 85.09 (4m), no condemnor may proceed with any activity that may involve the displacement of persons, business concerns or farm operations until the condemnor has filed in writing a relocation payment plan and relocation assistance service plan and has had both plans approved in writing by the department of commerce.

(2) The relocation assistance service plan shall contain evidence that the condemnor has taken reasonable and appropriate steps to:

(a) Determine the cost of any relocation payments and services or the methods that are going to be used to determine such costs.

(b) Assist owners of displaced business concerns and farm operations in obtaining and becoming established in suitable business locations or replacement farms.

(c) Assist displaced owners or renters in the location of comparable dwellings.

(d) Supply information concerning programs of federal, state and local governments which offer assistance to displaced persons and business concerns.

(e) Assist in minimizing hardships to displaced persons in adjusting to relocation.

(f) Secure, to the greatest extent practicable, the coordination of relocation activities with other project activities and other planned or proposed governmental actions in the community or nearby areas which may affect the implementation of the relocation program.

(g) Determine the approximate number of persons, farms or businesses that will be displaced and the availability of decent, safe and sanitary replacement housing.

(h) Assure that, within a reasonable time prior to displacement, there will be available, to the extent that may reasonably be accomplished, housing meeting the standards established by the department of commerce for decent, safe and sanitary dwellings. The housing, so far as practicable, shall be in areas not generally less desirable in regard to public utilities, public and

commercial facilities and at rents or prices within the financial means of the families and individuals displaced and equal in number to the number of such displaced families or individuals and reasonably accessible to their places of employment.

(i) Assure that a person shall not be required to move from a dwelling unless the person has had a reasonable opportunity to relocate to a comparable dwelling.

(3)(a) Subsection (1) does not apply to any of the following activities engaged in by a condemnor:

1. Obtaining an appraisal of property.
2. Obtaining an option to purchase property, regardless of whether the option specifies the purchase price, if the property is not part of a program or project receiving federal financial assistance.

Appendix A-III: Access

WisDOT must reconstruct any entrance to property abutting a highway if there is a change in the highway alignment affecting that entrance. If a new highway severs property, WisDOT must provide an entrance to both parcels of land. The landowner is responsible for the maintenance of these access points after construction is completed.

WisDOT has the authority to limit the number of access points to and from rural segments of the state trunk system serving more than 2,000 vehicles per day. Access to a road or private property may be taken away if WisDOT determines a need for access control. A controlled-access highway is one where the entrance to and departure from the highway is limited. Access controls can be placed on a new or existing highway and WisDOT can limit access by providing a grade separation, service roads or closing access to an intersecting road. Additional access to a controlled-access highway will not be provided without WisDOT's written permission. When a controlled-access highway severs a parcel, WisDOT may provide a crossover point for the owner to travel between the severed parcels. The access in these cases is removed when the parcels are no longer owned by the same party.

Section 86.05 of the Wisconsin Statutes states that access shall be provided to land which abuts a highway:

Entrances to highway restored. Whenever it is necessary, in making any highway improvement to cut or fill or otherwise grade the highway in front of any entrance to abutting premises, a suitable entrance to the premises shall be constructed as a part of the improvements, and if the premises are divided by the highway, then one such entrance shall be constructed on each side of the highway. Thereafter, each entrance shall be maintained by the owner of the premises. During the time the highway is under construction, the state, county, city, village or town shall not be responsible for any damage that may be sustained through the absence of an entrance to any such premises.

Section 84.25 of the Wisconsin Statutes describes access restrictions concerning a controlled-access highway:

(3) CONSTRUCTION; OTHER POWERS OF DEPARTMENT. In order to provide for the public safety, convenience and the general welfare, the department may use an existing highway or provide new and additional facilities for a controlled-access highway and so design the same and its appurtenances, and so regulate, restrict or prohibit access to or departure from it

as the department deems necessary or desirable. The department may eliminate intersections at grade of controlled-access highways with existing highways or streets, by grade separation or service road, or by closing off such roads and streets at the right-of-way boundary line of such controlled-access highway and may divide and separate any controlled-access highway into separate roadways or lanes by raised curbsings, dividing sections or other physical separations or by signs, markers, stripes or other suitable devices, and may execute any construction necessary in the development of a controlled-access highway including service roads or separation of grade structures.

(4) **CONNECTIONS BY OTHER HIGHWAYS.** After the establishment of any controlled-access highway, no street or highway or private driveway, shall be opened into or connected with any controlled-access highway without the previous consent and approval of the department in writing, which shall be given only if the public interest shall be served thereby and shall specify the terms and conditions on which such consent and approval is given.

(5) **USE OF HIGHWAY.** No person shall have any right of entrance upon or departure from or travel across any controlled-access highway, or to or from abutting lands except at places designated and provided for such purposes, and on such terms and conditions as may be specified from time to time by the department.

(6) **ABUTTING OWNERS.** After the designation of a controlled-access highway, the owners or occupants of abutting lands shall have no right or easement of access, by reason of the fact that their property abuts on the controlled-access highway or for other reason, except only the controlled right of access and of light, air or view.

(7) **SPECIAL CROSSING PERMITS.** Whenever property held under one ownership is severed by a controlled-access highway, the department may permit a crossing at a designated location, to be used solely for travel between the severed parcels, and such use shall cease if such parcels pass into separate ownership.

Appendix A-IV: Drainage

Roads and railroad grades must be constructed and maintained so they do not impede the general flow of surface water in an unreasonable manner. Roads and railroad grades must be constructed with adequate ditches, culverts and other facilities to maintain a practical drainage pattern.

The following specifications and statutes cited address some of the impacts which could potentially occur during and after the proposed highway project. The statutes cited can be found in full in the following: Orlan L. Prestegard (ed.), Wisconsin Statutes, State of Wisconsin, 2000-01. WisDOT's specifications can be found in Standard Specifications for Highway and Structure Construction, State of Wisconsin, Department of Transportation, 2003. DATCP recommends that farmland owners concerned about drainage should consult these texts for further information.

Section 88.87(2) of the Wisconsin Statutes describes regulations concerning rights of drainage:

(a) Whenever any county, town, city, village, railroad company or the department of transportation has heretofore constructed and now maintains or hereafter constructs and maintains any highway or railroad grade in or across any marsh, lowland, natural depression, natural watercourse, natural or man-made channel or drainage course, it shall not impede the general

flow of surface water or stream water in any unreasonable manner so as to cause either an unnecessary accumulation of waters flooding or water-soaking uplands or an unreasonable accumulation and discharge of surface water flooding or water-soaking lowlands. All such highways and railroad grades shall be constructed with adequate ditches, culverts, and other facilities as may be feasible, consonant with sound engineering practices, to the end of maintaining as far as practicable the original flow lines of drainage. This paragraph does not apply to highways or railroad grades used to hold and retain water for cranberry or conservation management purposes.

(b) Drainage rights and easements may be purchased or condemned by the public authority or railroad company having control of the highway or railroad grade to aid in the prevention of damage to property owners which might otherwise occur as a result of failure to comply with par. (a).

(c) If a city, village, town, county, or railroad company or the department of transportation constructs and maintains a highway or railroad grade not in accordance with par. (a), any property owner damaged by the highway or railroad grade may, within 3 years after the alleged damage occurred, file a claim with the appropriate governmental agency or railroad company. The claim shall consist of a sworn statement of the alleged faulty construction and a description, sufficient to determine the location of the lands, of the lands alleged to have been damaged by flooding or water-soaking. Within 90 days after the filing of that claim, the governmental agency or railroad company shall either correct the cause of the water damage, acquire rights to use the land for drainage or overflow purposes, or deny the claim. If the agency or company denies the claim or fails to take any action within 90 days after the filing of the claim, the property owner may bring an action in inverse condemnation under ch. 32 or sue for such other relief, other than damages, as may be just and equitable.

WisDOT specification 205.3.3 further describes its policies concerning drainage:

During construction, maintain roadway, ditches, and channels in a well-drained condition at all times by keeping the excavation areas and embankments sloped to the approximate section of the ultimate earth grade. Perform blading or leveling operations when placing embankments and during the process of excavation except if the excavation is in ledge rock or areas where leveling is not practical or necessary. If it is necessary in the prosecution of the work to interrupt existing surface drainage, or under drainage, provide temporary drainage until completing permanent drainage work.

If storing salvaged topsoil on the right-of-way during construction operation, stockpile it to preclude interference with or obstruction of surface drainage.

Seal subgrade surfaces as specified for subgrade intermediate consolidation and trimming in 207.3.9.

Preserve, protect and maintain all existing tile drains, sewers, and other subsurface drains, or parts thereof, that the engineer judges should continue in service without change. Repair, with no expense to the department, all damage to these facilities resulting from negligence or carelessness of the contractor's operations.

Appendix A-V

General Criteria for the Classification of Important Farmlands

The following discussion summarizes the USDA Natural Resources Conservation Service's written criteria for classifying farmlands, greater detail can be obtained from the Natural Resources Conservation Service office located at 6515 Watts Road, Suite 200, Madison, WI 53719-2726.

Prime Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water). It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, fruit, and vegetables.

Additional Farmland of Statewide Importance

This is land, in addition to prime and unique farmland, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable. In some states, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by state law.

Additional Farmland of Local Importance

In some local areas there is concern for certain additional farmland for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Where appropriate, these lands are to be identified by the local

agency or agencies concerned. In places, additional farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance.

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Table A-1. Population Change in Towns in Extended Study Area for STH 15 Project.

Town/County	Population in 1990	Population in 2000	Population Change from 1990-2000	% Population Change from 1990-2000
Black Creek/ Outagamie	1,169	1,268	99	8.5%
Bovina/Outagamie	957	1130	173	18.1%
Buchanan/Outagamie	2,484	5,827	3,343	34.6%
Center/Outagamie	2,716	3,163	447	16.5%
Cicero/Outagamie	1,126	1,092	-34	-3.0%
Dale/Outagamie	1,818	2,288	470	25.9%
Deer Creek/Outagamie	724	682	-42	-5.8%
Ellington/Outagamie	2,099	2,535	436	20.8%
Freedom/Outagamie	4,114	5,241	1,127	27.4%
Grand Chute/ Outagamie	14,490	18,392	3,902	26.9%
Greenville/Outagamie	3,806	6,844	3,038	79.8%
Hortonia/Outagamie	883	1,063	180	20.4%
Kaukauna/Outagamie	939	1,142	203	21.6%
Liberty/Outagamie	702	834	132	18.8%
Maine/Outagamie	791	831	40	5.1%
Maple Creek/ Outagamie	695	687	-8	-1.2%
Oneida/Outagamie	3,858	4,001	143	3.7%
Osborn/Outagamie	784	1,029	245	31.3%
Seymour/Outagamie	1,217	1,216	-1	-0.1%
Vandenbroek/ Outagamie	1,291	1,351	60	4.7%
Average for all towns in Outagamie County	2,333	3,031	698	29.9%
Avg. for the 4 STH 15 project corridor towns	2,151	3,182	1,031	48.0%
Outagamie Co. Total	140,510	160,971	20,461	14.6%
Bear Creek/Waupaca	787	838	51	6.5%
Caledonia/Waupaca	1,177	1,466	289	24.6%
Fremont/Waupaca	561	632	71	12.7%
Lebanon/Waupaca	1,290	1,648	358	27.8%
Little Wolf/ Waupaca	1,326	1,445	119	9.0%
Mukwa/Waupaca	2,304	2,773	469	20.4%
Royalton/Waupaca	1,458	1,523	65	4.5%
Union/Waupaca	733	804	71	9.7%
Weyauwega/ Waupaca	653	627	-26	-4.0%
Average for all study area towns in Waupaca County	1,143.2	1,306.2	163	14.3%
Waupaca County Total	46,104	51,731	5,627	12.2%
Clayton/Winnebago	2,264	2,974	710	31.4%
Menasha/Winnebago	13,975	15,858	1,883	13.5%
Neenah/Winnebago	2,691	2,657	-34	-1.3%
Poygan/Winnebago	824	1,037	213	25.9%
Vinland/Winnebago	1,688	1,849	161	9.5%
Winchester/ Winnebago	1,433	1,676	243	17.0%

Town/County	Population in 1990	Population in 2000	Population Change from 1990-2000	% Population Change from 1990-2000
Winneconne/ Winnebago	1,761	2,145	384	21.8%
Wolf River/ Winnebago	1,037	1,223	186	17.9%
Average for study area towns in Winnebago County	3,209	3,677	468	14.6%
Chilton/Calumet	998	1,130	132	13.2%
Harrison/Calumet	3,195	5,756	2,561	80.2%
Stockbridge/Calumet	1,317	1,383	66	5.0%
Woodville/Calumet	1,071	993	-78	-7.3%
Average for study area towns in Calumet County	1,645	2,315	670	40.7%

Table A-2. Population Change in Cities in Extended Study Area for STH 15 Project.

City	Population in 1990	Population in 2000	Population Change from 1990-2000	% Population Change from 1990-2000
Chilton, Calumet Co.	3,240	3,708	468	14.4%
New London, multiple counties	6,658	7,085	427	6.4%
Manawa, Waupaca Co.	1,169	1,330	161	13.8%
Weyauwega, Waupaca Co.	1,665	1,806	141	8.5%
Appleton, multiple counties	65,695	70,087	4,392	6.7%
Menasha, multiple counties	14,711	16,331	1,620	11.0%
Neenah, Winnebago Co.	23,219	24,507	1,288	5.6%
Kaukauna, Outagamie Co.	11,982	12,983	1,001	8.4%
Seymour, Outagamie Co.	2,782	3,335	553	19.9%
Average Study Area City	14,569	15,686	1,117	7.7%

Table A-3. Population Change in Villages in Extended Study Area for STH 15 Project

Village	Population in 1990	Population in 2000	Population Change from 1990-2000	% Population Change from 1990-2000
Bear Creek, Outagamie Co.	418	415	-3	-0.7
Black Creek, Outagamie Co.	1,152	1,192	40	3.5%
Combined Locks, Outagamie Co.	2,190	2,422	232	10.6%
Hortonville, Outagamie Co.	2,029	2,357	328	16.2%

Village	Population in 1990	Population in 2000	Population Change from 1990-2000	% Population Change from 1990-2000
Kimberly, Outagamie Co.	5,406	6,146	740	13.7%
Little Chute, Outagamie Co.	9,207	10,476	1,269	13.8%
Nichols, Outagamie Co.	254	307	53	20.9%
Sherwood, Calumet Co.	837	1,550	713	85.2%
Shiocton, Outagamie Co.	913	954	41	4.5%
Fremont, Waupaca Co.	632	666	34	5.4%
Stockbridge, Calumet Co.	579	649	70	12.1%
Winneconne, Winnebago Co.	2,059	2,401	342	16.6%
Average Study Area Village	2,139	2,461	322	15.0%

Table A-4. Accuracy of Earlier Town Population Estimates in STH 15 the Study Area

Town/County	Estimated Population in 2000 *	Actual Population in 2000	Difference of Estimate over Actual Value for year 2000	% Error of Estimate of Year 2000 Population
Black Creek/ Outagamie	1,415	1,268	147	11.6%
Bovina/Outagamie	878	1130	-252	-22.3%
Buchanan/Outagamie	1,453	5,827	-4,374	-75.1%
Center/Outagamie	3,709	3,163	546	17.3%
Cicero/Outagamie	957	1,092	-135	-12.4%
Dale/Outagamie	1,972	2,288	-316	-13.8%
Deer Creek/Outagamie	771	682	89	13.1%
Ellington/Outagamie	2,242	2,535	-293	-11.6%
Freedom/Outagamie	5,193	5,241	-48	-0.9%
Grand Chute/ Outagamie	13,672	18,392	-4,720	-25.7%
Greenville/Outagamie	6,844	6,844	-2,186	-31.9%
Hortonia/Outagamie	998	1,063	-65	-6.1%
Kaukauna/Outagamie	1,112	1,142	-30	-2.6%
Liberty/Outagamie	712	834	-122	-14.6%
Maine/Outagamie	946	831	115	13.8%
Maple Creek/ Outagamie	719	687	32	4.7%
Oneida/Outagamie	4,659	4,001	658	16.5%
Osborn/Outagamie	930	1,029	-99	-9.6%
Seymour/Outagamie	1,271	1,216	55	4.5%
Vandenbroek/ Outagamie	1,675	1,351	324	24.0%
Average for all towns in Outagamie County	2,497	3,031	-534	-17.6%
Avg. for the 4 STH 15 project	3,014	3,182	-168	-5.3%

Town/County	Estimated Population in 2000 *	Actual Population in 2000	Difference of Estimate over Actual Value for year 2000	% Error of Estimate of Year 2000 Population
corridor towns				
Bear Creek/Waupaca	910	838	72	8.6%
Caledonia/Waupaca	1,412	1,466	-54	-3.75
Fremont/Waupaca	812	632	180	28.5%
Lebanon/Waupaca	1,676	1,648	28	1.7%
Little Wolf/ Waupaca	1,299	1,445	-146	-10.1%
Mukwa/Waupaca	2,503	2,773	-270	-9.7%
Royalton/Waupaca	1,464	1,523	-59	-3.9%
Union/Waupaca	564	804	-240	-29.9%
Weyauwega/ Waupaca	595	627	-32	-5.15
Average for all study area towns in Waupaca County	1,248	1,306	-58	-4.4%
Clayton/Winnebago	3,079	2,974	105	3.5%
Menasha/Winnebago	16,952	15,858	1,094	6.9%
Neenah/Winnebago	3,108	2,657	451	17.0%
Poygan/Winnebago	1,093	1,037	56	5.4%
Vinland/Winnebago	1,839	1,849	-10	-0.5%
Winchester/ Winnebago	1,338	1,676	-338	-20.2%
Winneconne/ Winnebago	1,929	2,145	-216	-10.1%
Wolf River/ Winnebago	1,248	1,223	25	2.0%
Average for study area towns in Winnebago County	3,823	3,677	146	4.0%

The estimates for Outagamie County towns were made in 1983 by the Wisconsin Dept. of Administration (WDOA). The Waupaca County estimates for towns were made by WDOA in 1978. The Winnebago County estimates for towns were made in 1981 by the East Central Wisconsin Regional Planning Commission.

Table A-5. Housing Unit Change in Towns of Extended Study Area for STH 15 Project.

Town/County	# Housing Units, 1990	# Housing Units, 2000	Change in # Hsg. Units, 1990-2000	% Change in # Hsg. Units, 1990-2000
Black Creek/ Outagamie	369	461	92	24.9%
Bovina/Outagamie	345	414	69	20.0%
Buchanan/Outagamie	749	1,868	1,119	149.4%
Center/Outagamie	850	1,105	255	30.0%
Cicero/Outagamie	352	384	32	9.1%
Dale/Outagamie	606	812	206	34.0%
Deer Creek/Outagamie	253	269	16	6.3%
Ellington/Outagamie	671	870	199	29.7%
Freedom/Outagamie	1,342	1,859	517	38.5%
Grand Chute/ Outagamie	5,619	7,965	2,346	41.8%
Greenville/Outagamie	1,274	2,353	1,079	84.7%
Hortonia/Outagamie	331	375	44	13.3%
Kaukauna/Outagamie	280	378	98	35.0%

Town/County	# Housing Units, 1990	# Housing Units, 2000	Change in # Hsg. Units, 1990-2000	% Change in # Hsg. Units, 1990-2000
Liberty/Outagamie	242	283	41	16.9%
Maine/Outagamie	288	326	38	13.2%
Maple Creek/ Outagamie	215	241	26	12.1%
Oneida/Outagamie	1,151	1,316	165	14.3%
Osborn/Outagamie	249	340	91	36.6%
Seymour/Outagamie	360	421	61	16.9%
Vandenbroek/ Outagamie	403	465	62	15.4%
Average for towns in Outagamie County	797	1,125	328	41.1%
Avg. for the 4 STH 15 project corridor towns	721	1,103	382	53.0%
Bear Creek/Waupaca	271	291	20	7.4%
Caledonia/Waupaca	438	518	80	18.3%
Fremont/Waupaca	251	278	27	10.8%
Lebanon/Waupaca	425	587	162	38.1%
Little Wolf/ Waupaca	507	544	37	7.3%
Mukwa/Waupaca	869	1,088	219	25.2%
Royalton/Waupaca	604	608	4	0.7%
Union/Waupaca	323	335	12	3.7%
Weyauwega/ Waupaca	293	262	-31	-10.6%
Average study area town in Waupaca County	442	501	59	13.3%
Clayton/Winnebago	832	1,096	264	31.7%
Menasha/Winnebago	5,514	6,521	1,007	18.3%
Neenah/Winnebago	1,001	1,010	9	0.9%
Poygan/Winnebago	478	532	54	11.3%
Vinland/Winnebago	627	721	94	15.0%
Winchester/Winnebago	535	636	101	18.9%
Winneconne/ Winnebago	880	1,020	140	15.9%
Wolf River/ Winnebago	713	807	94	13.2%
Average study area town in Winnebago County	1,323	1,543	220	16.7%
Chilton/Calumet	312	371	59	18.9%
Harrison/Calumet	1,155	2,139	984	85.2%
Stockbridge/Calumet	575	614	39	6.8%
Woodville/Calumet	324	337	13	4.0%
Average study area town in Calumet County	592	865	274	46.3%

Table A-6. Housing Unit Change in Cities in Extended Study Area for STH 15 Project.

City	# Housing Units in 1990	# Housing Units in 2000	Housing Unit Change from 1990- 2000	% Hsg. Unit Change from 1990-2000
Chilton, Calumet Co.	1,287	1,606	319	24.8%
New London, multiple counties	2,694	3,045	351	13.0%

City	# Housing Units in 1990	# Housing Units in 2000	Housing Unit Change from 1990-2000	% Hsg. Unit Change from 1990-2000
Manawa, Waupaca Co.	493	570	77	15.6%
Weyauwega, Waupaca Co.	674	763	89	13.2%
Appleton, multiple counties	25,528	27,736	2,208	8.7%
Menasha, multiple counties	6,168	7,271	1,103	17.9%
Neenah, Winnebago Co.	9,261	10,198	937	10.1%
Kaukauna, Outagamie Co.	4,454	5,142	688	15.5%
Seymour, Outagamie Co.	1,059	1,377	318	30.0%
Average Study Area City	5,735	6,412	677	11.8%

Table A-7. Housing Unit Change in Villages in Extended Study Area for STH 15 Project

Village	# Housing Units in 1990	# Housing Units in 2000	Housing Unit Change from 1990-2000	% Hsg. Unit Change from 1990-2000
Bear Creek, Outagamie Co.	154	172	18	11.7%
Black Creek, Outagamie Co.	433	513	80	18.5%
Combined Locks, Outagamie Co.	738	903	165	22.4%
Hortonville, Outagamie Co.	710	904	194	27.3%
Kimberly, Outagamie Co.	2,069	2,593	524	25.3%
Little Chute, Outagamie Co.	3,232	3,956	724	22.4%
Nichols, Outagamie Co.	92	130	38	41.3%
Sherwood, Calumet Co.	325	593	268	82.5%
Shiocton, Outagamie Co.	363	394	31	8.5%
Fremont, Waupaca Co.	341	406	65	19.1%
Stockbridge, Calumet Co.	257	299	42	16.3%
Winneconne, Winnebago Co.	880	1,060	180	20.5%
Average Study Area Village	800	994	194	24.3%

Table A-8. Housing Age Distribution in 2000 for STH 15 Project Study Area Towns.

Town/County	% of Hsg. Units Built from 1995 to 2000	% of Hsg. Units Built from 1999-2000	% of Hsg. Units Built from 1980-1990	% of Hsg. Units Built from 1990 to 2000
Black Creek/ Outagamie	10.9%	5.0	12.0%	23.8%

Town/County	% of Hsg. Units Built from 1995 to 2000	% of Hsg. Units Built from 1999-2000	% of Hsg. Units Built from 1980-1990	% of Hsg. Units Built from 1990 to 2000
Bovina/Outagamie	15.6%	3.6	12.0%	28.6%
Buchanan/Outagamie	41.4%	6.3	14.1%	71.3%
Center/Outagamie	13.9%	4.1	15.4%	23.8%
Cicero/Outagamie	10.2%	4.7	11.5%	18.1%
Dale/Outagamie	21.5%	4.6	12.4%	33.7%
Deer Creek/Outagamie	7.4%	0.0	10.5%	11.3%
Ellington/Outagamie	14.1%	4.3	19.7%	26.8%
Freedom/Outagamie	16.4%	2.7	18.1%	29.0%
Grand Chute/ Outagamie	18.1%	4.4	27.1%	34.6%
Greenville/Outagamie	26.3%	7.4	14.1%	51.2%
Hortonia/Outagamie	18.8%	3.9	9.8	32.7%
Kaukauna/Outagamie	14.0%	2.1	7.3%	29.3%
Liberty/Outagamie	14.4%	2.1	17.9%	22.8%
Maine/Outagamie	13.0%	4.1	13.0%	19.2%
Maple Creek/ Outagamie	9.7%	1.7	10.5%	17.7%
Oneida/Outagamie	15.5%	1.4	16.0%	24.5%
Osborn/Outagamie	23.4%	4.2	12.6%	37.5%
Seymour/Outagamie	18.2%	4.7	6.4%	22.4%
Vandenbroek/ Outagamie	10.1%	2.2	19.4%	20.1%
Average for towns in Outagamie County	15.9%	3.7	14.0%	28.9%
Avg. for the 4 STH 15 project corridor towns	20.2%	5.1	14.0%	36.1%
Bear Creek/Waupaca	9.5%	3.4	8.5%	12.6%
Caledonia/Waupaca	17.2%	2.1	13.2%	27.3%
Fremont/Waupaca	6.4%	1.1	12.5%	9.6%
Lebanon/Waupaca	12.9%	2.8	18.3%	24.8%
Little Wolf/ Waupaca	10.1%	2.0	14.2%	16.6%
Mukwa/Waupaca	12.5%	3.1	19.6%	27.0%
Royalton/Waupaca	11.9%	2.0	10.4%	18.3%
Union/Waupaca	13.9%	4.3	7.2%	16.8%
Weyauwega/ Waupaca	12.6%	3.3	8.2%	20.8%
Average study area town in Waupaca County	11.9%	2.7	12.5%	19.3%
Clayton/Winnebago	16.7%	4.2	10.6%	31.5%
Menasha/Winnebago	10.8%	3.0	17.6%	23.2%
Neenah/Winnebago	4.5%	2.0	9.8%	14.2%
Poygan/Winnebago	13.3%	3.2	12.0%	21.5%
Vinland/Winnebago	9.5%	3.2	12.5%	16.4%
Winchester/Winnebago	12.5%	2.4	15.5%	22.9%
Winneconne/ Winnebago	11.0%	2.9	11.8%	18.5%
Wolf River/ Winnebago	6.9%	1.2	8.2%	13.0%
Average study area town in Winnebago County	10.7%	2.8	12.3%	20.2%
Chilton/Calumet	11.7%	2.9	8.8%	13.8%
Harrison/Calumet	39.2%	13.6	9.9%	54.1%
Stockbridge/Calumet	9.0%	2.3	9.2%	17.5%
Woodville/Calumet	5.3%	0.9	11.2%	8.3%

Town/County	% of Hsg. Units Built from 1995 to 2000	% of Hsg. Units Built from 1999-2000	% of Hsg. Units Built from 1980-1990	% of Hsg. Units Built from 1990 to 2000
Average study area town in Calumet County	16.3%	4.9	9.8%	23.4%

Table A-9. Housing Age Distribution in 2000 for STH 15 Project Study Area Cities.

City	% of Hsg Units Built from 1995 to 2000	% of Hsg. Units Built from 1999-2000	% of Hsg. Units Built from 1980-1990	% of Hsg. Units Built from 1990-2000
Chilton, Calumet Co.	16.1%	5.4%	10.6%	20.6%
New London, multiple counties	10.7%	1.9%	8.0%	17.4%
Manawa, Waupaca Co.	5.4%	0.3%	11.3%	10.8%
Weyauwega, Waupaca Co.	3.0%	1.0%	9.5%	6.6%
Appleton, multiple counties	5.9%	1.2%	13.4%	11.1%
Menasha, multiple counties	9.1%	2.9%	10.4%	18.0%
Neenah, Winnebago Co.	6.6%	1.2%	9.2%	11.5%
Kaukauna, Outagamie Co.	8.2%	2.6%	14.5%	18.5%
Seymour, Outagamie Co.	15.9%	4.2%	7.9%	23.5%
Average Study Area City	9.0%	2.3%	10.5%	15.3%

Table A-10. Housing Age Distribution in 2000 for STH 15 Project Study Area Villages.

Village	% of Hsg. Units Built from 1995 to 2000	% of Hsg. Units Built from 1999-2000	% of Hsg. Units Built from 1980-1990	% of Hsg. Units Built from 1990 to 2000
Bear Creek, Outagamie Co.	1.1%	1.1%	5.1%	2.2%
Black Creek, Outagamie Co.	12.1%	7.3%	14.5%	15.8%
Combined Locks, Outagamie Co.	12.4%	4.2%	4.4%	24.15
Hortonville, Outagamie Co.	14.1%	3.0%	9.4%	20.8%
Kimberly, Outagamie Co.	12.2%	4.1%	12.0%	19.8%
Little Chute, Outagamie Co.	12.8%	2.4%	17.1%	24.6%
Nichols, Outagamie	16.9%	4.6%	8.5%	27.7%

Village	% of Hsg. Units Built from 1995 to 2000	% of Hsg. Units Built from 1999-2000	% of Hsg. Units Built from 1980-1990	% of Hsg. Units Built from 1990 to 2000
Co.				
Sherwood, Calumet Co.	31.1%	9.1%	16.8%	47.7%
Shiocton, Outagamie Co.	7.1%	2.9%	17.9%	15.2%
Fremont, Waupaca Co.	11.7%	4.6%	15.2%	20.3%
Stockbridge, Calumet Co.	16.1%	3.0%	9.8%	20.7%
Winneconne, Winnebago Co.	11.4%	1.1%	10.4%	19.2%
Average Study Area Village	13.3%	4.0%	11.8%	21.5%

Table A-11. Home Values and In-Migration for STH 15 Project Study Area.

Town/County	Median Value of Owner-Occupied Housing, 2000 (\$'s)	% Residents over age 5 in 2000 who moved since 1995	% Residents over age 5 in 2000, who moved since 1995 from within the same county	% Residents over age 5 in 2000, who moved since 1995 from a different county, same state
Black Creek/ Outagamie	\$120,500	25.5%	19.2%	4.3%
Bovina/Outagamie	\$125,900	34.4%	22.9%	9.2%
Buchanan/Outagamie	\$149,400	52.4%	25.4%	18.3%
Center/Outagamie	\$142,900	26.6%	18.9%	5.7%
Cicero/Outagamie	\$95,400	30.4%	16.7%	10.6%
Dale/Outagamie	\$123,400	33.2%	20.8%	8.9%
Deer Creek/Outagamie	\$73,900	27.6%	10.4%	14.2%
Ellington/Outagamie	\$132,100	27.7%	19.1%	8.0%
Freedom/Outagamie	\$130,300	36.6%	25.7%	9.1%
Grand Chute/ Outagamie	\$131,900	50.8%	21.4%	19.3%
Greenville/Outagamie	\$143,900	42.9%	17.6%	19.3%
Hortonia/Outagamie	\$143,800	37.9%	16.1%	15.3%
Kaukauna/Outagamie	\$139,800	30.6%	12.6%	15.1%
Liberty/Outagamie	\$123,300	31.2%	17.1%	12.2%
Maine/Outagamie	\$92,500	31.6%	22.5%	8.2%
Maple Creek/ Outagamie	\$105,700	29.9%	11.3%	17.2%
Oneida/Outagamie	\$121,100	29.5%	12.2%	13.6%
Osborn/Outagamie	\$150,300	31.2%	23.6%	6.3%
Seymour/Outagamie	\$104,500	29.2%	16.7%	11.6%
Vandenbroek/ Outagamie	\$137,700	29.9%	24.3%	4.7%
Average for towns in Outagamie County	\$124,415	33.5%	18.7%	11.6%
Avg. for the 4 STH 15 project corridor towns	\$135,800	35.4%	18.4%	12.9%
Bear Creek/Waupaca	\$88,700	34.8%	16.3%	18.8%
Caledonia/Waupaca	\$119,800	36.0%	7.3%	36.0%

Town/County	Median Value of Owner-Occupied Housing., 2000 (\$'s)	% Residents over age 5 in 2000 who moved since 1995	% Residents over age 5 in 2000, who moved since 1995 from within the same county	% Residents over age 5 in 2000, who moved since 1995 from a different county, same state
Fremont/Waupaca	\$112,000	23.7%	13.5%	9.0%
Lebanon/Waupaca	\$104,300	32.4%	15.4%	14.1%
Little Wolf/ Waupaca	\$110,500	29.5%	21.1%	6.2%
Mukwa/Waupaca	\$119,300	31.2%	17.4%	10.5%
Royalton/Waupaca	\$107,100	25.4%	15.9%	9.0%
Union/Waupaca	\$77,500	30.1%	18.9%	7.9%
Weyauwega/ Waupaca	\$106,500	29.9%	21.1%	6.2%
Average study area town in Waupaca County	\$105,078	30.3%	16.3%	12.0%
Clayton/Winnebago	\$140,600	34.5%	25.0%	8.7%
Menasha/Winnebago	\$112,100	42.0%	16.7%	17.7%
Neenah/Winnebago	\$145,800	23.1%	15.0%	5.2%
Poygan/Winnebago	\$139,600	36.1%	21.7%	10.1%
Vinland/Winnebago	\$138,800	26.6%	18.1%	7.3%
Winchester/Winnebago	\$121,000	28.6%	19.2%	5.8%
Winneconne/ Winnebago	\$150,900	33.6%	23.2%	7.1%
Wolf River/ Winnebago	\$125,900	27.5%	7.8%	18.1%
Average study area town in Winnebago County	\$134,338	31.5%	18.3%	10.0%
Chilton/Calumet	\$119,600	29.6%	20.4%	8.1%
Harrison/Calumet	\$144,000	45.6%	10.7%	29.2%
Stockbridge/Calumet	\$122,100	19.5%	10.2%	8.2%
Woodville/Calumet	\$102,200	24.8%	10.3%	13.8%
Average study area town in Calumet County	\$121,975	29.9%	12.9%	14.8%

Table A-12. Home Values and In-Migration for STH 15 Project Study Area

City	Median Value of Owner-Occupied Housing., 2000	% Residents over age 5 in 2000 who moved since 1995	% Residents over age 5 in 2000, who moved since 1995 from within the same county	% Residents over age 5 in 2000, who moved since 1995 from a different county, same state
Chilton, Calumet Co.	\$84,900	41.1%	24.7%	13.6%
New London, multiple counties	\$83,600	42.0%	21.2%	16.2%
Manawa, Waupaca Co.	\$74,000	47.6%	27.1%	19.0%
Weyauwega, Waupaca Co.	\$77,600	38.4%	24.2%	9.6%
Appleton, multiple counties	\$97,900	46.4%	21.0%	15.1%
Menasha, multiple counties	\$87,700	49.4%	22.4%	18.5%
Neenah, Winnebago Co.	\$92,900	44.8%	25.5%	12.8%

City	Median Value of Owner-Occupied Housing., 2000	% Residents over age 5 in 2000 who moved since 1995	% Residents over age 5 in 2000, who moved since 1995 from within the same county	% Residents over age 5 in 2000, who moved since 1995 from a different county, same state
Kaukauna, Outagamie Co.	\$91,200	40.3%	27.9%	9.6%
Seymour, Outagamie Co.	\$92,100	46.1%	23.6%	18.1%
Average Study Area City	\$86,878	44.0%	24.2%	14.7%

Table A-13. Home Values and In-Migration for STH 15 Project Study Area

Village	Median Value of Owner-Occupied Housing., 2000	% Residents over age 5 in 2000 who moved since 1995	% Residents over age 5 in 2000, who moved since 1995 from within the same county	% Residents over age 5 in 2000, who moved since 1995 from a different county, same state
Bear Creek, Outagamie Co.	\$65,500	44.6%	26.7%	12.7%
Black Creek, Outagamie Co.	\$88,600	35.0%	24.2%	9.2%
Combined Locks, Outagamie Co.	\$99,500	30.4%	21.7%	6.2%
Hortonville, Outagamie Co.	\$98,200	38.3%	21.9%	12.0%
Kimberly, Outagamie Co.	\$90,500	37.7%	21.6%	11.2%
Little Chute, Outagamie Co.	\$105,600	40.8%	28.0%	9.5%
Nichols, Outagamie Co.	\$71,700	45.4%	20.9%	14.5%
Sherwood, Calumet Co.	\$160,000	47.1%	10.2%	29.4%
Shiocton, Outagamie Co.	\$76,100	48.5%	31.7%	10.2%
Fremont, Waupaca Co.	\$107,100	42.7%	22.6%	17.5%
Stockbridge, Calumet Co.	\$93,900	36.8%	16.8%	16.5%
Winneconne, Winnebago Co.	\$89,000	38.0%	21.5%	10.4%
Average Study Area Village	\$95,475	40.4%	22.3%	13.3%

Table A-14. Trends in Residential Land Value Changes in STH 15 Study Area Towns.

Town/County	Change in Residential Land Values, 1998-2004 (000 \$'s)	% Change in Total Residential Land Value, 1998-2004	Land Value Change from New Resid. Construction, 1998-2004 (000 \$'s)	Change in Resid. Land Value from New Resid. Construction Value as a % of Change in Total Resid. Value, 1998-2004
Black Creek/ Outagamie	6,636.5	170.9%	315.9	4.8%
Bovina/Outagamie	4,711.1	142.3%	508.8	10.8%
Buchanan/Outagamie	27,384.0	67.6%	3,770.0	13.8%
Center/Outagamie	10,566.1	51.9%	0.0	0%
Cicero/Outagamie	1,503.3	74.4%	398.6	26.5%
Dale/Outagamie	11,530.4	86.2%	3,070.8	26.6%
Deer Creek/Outagamie	816.9	116.9%	1,477.3 *	----- *
Ellington/Outagamie	8,739.5	73.3%	0.0	0%
Freedom/Outagamie	14,571.3	48.0%	5,007.8	34.4%
Grand Chute/ Outagamie	62,471.2	52.4%	4,515.7	7.2%
Greenville/Outagamie	48,321.5	98.4%	21,647.1	44.8%
Hortonia/Outagamie	5,497.8	68.0%	21.0	0.4%
Kaukauna/Outagamie	757.4	12.6%	45.8	6.0%
Liberty/Outagamie	3,110.3	113.0%	291.4	9.4%
Maine/Outagamie	1,922.8	152.7%	313.3	16.3%
Maple Creek/ Outagamie	389.6	25.6%	65.8	16.9%
Oneida/Outagamie	20,144.9	229.0%	0.0	0%
Osborn/Outagamie	3,564.1	92.6%	816.1	22.9%
Seymour/Outagamie	4,352.3	165.8%	368.9	8.5%
Vandenbroek/ Outagamie	7,239.9	70.9%	2,670.6	36.9%
Average for towns in Outagamie County	12,211.5	71.8%	2,265.2	18.5%
Avg. for the 4 STH 15 project corridor towns	18,522.3	81.5%	6,184.7	33.4%
Bear Creek/Waupaca	1,610.8	284.4%	324.6	20.2%
Caledonia/Waupaca	7,903.4	74.9%	1044.4	13.2%
Fremont/Waupaca	7,325.8	182.1%	3421.3	46.7%
Lebanon/Waupaca	8,142.4	203.6%	475.2	5.8%
Little Wolf/ Waupaca	2,589.5	49.8%	176.8	6.8%
Mukwa/Waupaca	11,673.7	63.5%	2,380.6	20.4%
Royalton/Waupaca	6,672.1	79.0%	33.9	0.5%
Union/Waupaca	1,359.4	86.3%	34.3	2.5%
Weyauwega/ Waupaca	1,613.7	68.7%	11.3	0.7%
Average study area town in Waupaca County	5,432.3	121.4%	878.0	16.2%
Average for all towns in Waupaca County	6,909.0	67.8%	434.9	6.3%
Clayton/Winnebago	31,640.6	170.6%	8,392.0	26.5%
Menasha/Winnebago	34,703.6	28.1%	11,625.6	33.5%
Neenah/Winnebago	22,323.4	57.5%	3,295.2	14.8%
Poygan/Winnebago	10,955.7	63.5%	1,445.9	13.2%
Vinland/Winnebago	17,053.3	75.5%	1,385.4	8.1%
Winchester/Winnebago	8,140.8	82.8%	1,276.8	15.7%

Town/County	Change in Residential Land Values, 1998-2004 (000 \$'s)	% Change in Total Residential Land Value, 1998-2004	Land Value Change from New Resid. Construction, 1998-2004 (000 \$'s)	Change in Resid. Land Value from New Resid. Construction Value as a % of Change in Total Resid. Value, 1998-2004
Winneconne/ Winnebago	23,346.9	59.6%	3,857.8	16.5%
Wolf River/ Winnebago	17,156.5	85.4%	402.3	2.3%
Average study area town in Winnebago County	20,665.1	77.9%	3,960.1	19.2%
Average for all towns in Winnebago County	18,169.5	60.4%	3,075.7	16.9%
Chilton/Calumet	2,021.8	48.3%	552.7	27.3%
Harrison/Calumet	55,525.2	90.2%	11,412.8	20.6%
Stockbridge/Calumet	9,882.9	61.0%	921.7	9.3%
Woodville/Calumet	1,073.9	42.5%	118.9	11.1%
Average study area town in Calumet County	17,126.0	60.5%	3,251.5	19.0%
Average for all towns in Calumet County	10,020.0	84.2%	1,809.9	18.1%

* Note: The anomalous data for the town of Deer Creek which shows a larger new residential construction value added from 1998-2004 than the total increase in residential construction value is due to an outlier \$1,446.9 new construction value recorded in 2003 that appears to be a mistake that was then corrected downward in 2004 as an adjustment of (-\$1,437.1) allotted in the "Other Changes" category.

Table A-15. Residential Land Value Changes for Cities, STH 15 Extended Study Area.

City/County	Change in Residential Land Values, 1998-2004 (000 \$'s)	% Change in Total Residential Land Value, 1998-2004	Land Value Change from New Resid. Construction, 1998-2004 (000 \$'s)	Change in Resid. Land Value from New Resid. Construction Value as a % of Change in Total Resid. Land Value, 1998-2004
Appleton/Outagamie	97,433.3	33.9%	13,314.7	13.7%
Kaukauna/ Outagamie	32,168.9	49.9%	10,805.9	33.6%
New London/ Outagamie	1,947.1	25.0%	245.5	12.6%
Seymour/Outagamie	8,160.4	41.8%	1,063.0	13.0%
Avg. for all cities/ Outagamie	34,927.4	36.9%	6,357.3	18.2%
Appleton/Winnebago	-145.8	-7.6%	6.2	-----
Neenah/Winnebago	79,464.7	45.0%	14,786.9	18.6%
Menasha/Winnebago.	24,096.5	27.0%	1,602.3	6.6%
Avg. for all cities/ Winnebago	45,374.2	41.7%	7,669.9	16.9%
Appleton/Calumet	17,342.2	30.4%	1,652.9	9.5%
Chilton/Calumet	2,685.1	19.9%	451.3	16.8%
Menasha/Calumet	8,747.4	121.6%	6,470.0	74.0%
Avg. for all Cities/ Calumet	5,825.9	34.5%	1,566.7	26.9%
New London/	7,389.8	30.3%	570.7	7.7%

City/County	Change in Residential Land Values, 1998-2004 (000 \$'s)	% Change in Total Residential Land Value, 1998-2004	Land Value Change from New Resid. Construction, 1998-2004 (000 \$'s)	Change in Resid. Land Value from New Resid. Construction Value as a % of Change in Total Resid. Land Value, 1998-2004
Waupaca				
Manawa/ Waupaca	1,508.2	35.05	53.8	3.6%
Weyauwega/ Waupaca	2,086.3	30.5%	48.5	2.3%
Avg. for all Cities/ Waupaca	4,917.1	38.4%	1,068.9	21.7%

Table A-16. Change in Residential Land Values in Villages in Extended Study Area for STH 15 Project

Village/County	Change in Residential Land Values, 1998-2004 (000 \$'s)	% Change in Total Residential Land Value, 1998-2004	Land Value Change from New Resid. Construction, 1998-2004 (000 \$'s)	Change in Resid. Land Value from New Resid. Construction Value as a % of Change in Total Resid. Value, 1998-2004
Bear Creek, Outagamie Co.	188	26.7%	0.0	0.0%
Black Creek, Outagamie Co.	1,645.4	24.9%	141.8	8.6%
Combined Locks, Outagamie Co.	20,615.3	105.0%	9,526.2	46.2%
Hortonville, Outagamie Co.	6,924.2	57.7%	485	7.0%
Kimberly, Outagamie Co.	14,652.7	41.1%	2,940	20.1%
Little Chute, Outagamie Co.	30,480.7	42.8%	3,375.8	11.1%
Nichols, Outagamie Co.	791.8	97.5%	14.2	1.8%
Shiocton, Outagamie Co.	504.4	17.1%	28.9	5.7%
Avg. - all villages, Outagamie Co.	10,267.2	54.9%	2,787.0	27.1%
Winneconne, Winnebago Co.	10,637.8	46.1%	678.5	6.4%
Sherwood, Calumet Co.	19,491.0	114.8%	11,985.0	61.5%
Stockbridge, Calumet Co.	2,892.0	27.7%	190.7	6.6%
Avg. - all villages, Calumet Co.	5,894.7	73.4%	3,092.7	52.5%
Fremont, Waupaca Co.	4,895.8	64.7%	14.7	0.3%
Avg. - all villages, Waupaca Co.	1,364.8	56.1%	4.9	0.4%

Table A-17. Changes in Residential Improvement Values in STH 15 Study Area Towns.

Town/County	Change in Residential Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Residential Improvement Value, 1998-2004	Change in Residential Improvement Value due to New Resid. Construction, 1999-2004 (000 \$'s)	Change in Resid. Imprv. Value from New Resid. Construction as a % of Change in Total Resid. Improvement Value, 1998-2004
Black Creek/ Outagamie	20,804.6	74.9%	9,391.2	45.1%
Bovina/Outagamie	16,471.7	63.2%	9,297.8	56.4%
Buchanan/Outagamie	129,935.3	75.4%	67,964.2	52.3%
Center/Outagamie	66,541.7	65.4%	31,613.1	47.5%
Cicero/Outagamie	17,333.1	103.5%	6,236.9	36.0%
Dale/Outagamie	59,786.7	91.4%	31,200.9	52.2%
Deer Creek/Outagamie	8,843.8	117.4%	1,900.0	21.5%
Ellington/Outagamie	48,544.6	71.4%	25,083.1	51.7%
Freedom/Outagamie	92,386.9	67.5%	48,979.0	53.0%
Grand Chute/ Outagamie	199,486.7	44.9%	98,326.5	49.3%
Greenville/Outagamie	157,889.7	81.5%	98,908.3	62.6%
Hortonia/Outagamie	22,200.2	64.5%	9,560.9	43.1%
Kaukauna/Outagamie	27,819.9	97.8%	13,816.1	49.7%
Liberty/Outagamie	11,726.7	61.1%	6,518.3	55.6%
Maine/Outagamie	16,750.6	134.5%	5,289.4	31.6%
Maple Creek/ Outagamie	8,857.8	77.9%	3,379.5	38.2%
Oneida/Outagamie	33,443.3	49.2%	20,763.0	62.1%
Osborn/Outagamie	15,041.7	51.1%	9,119.3	60.6%
Seymour/Outagamie	25,999.5	129.8%	8,317.5	32.0%
Vandenbroek/ Outagamie	24,684.4	52.2%	10,821.1	43.8%
Average for towns in Outagamie County	50,227.4	65.6%	25,824.3	51.4%
Avg. for the 4 STH 15 project corridor towns	72,105.3	77.2%	41,188.3	57.1%
Bear Creek/Waupaca	11,261.2	139.4%	6,351.0	56.4%
Caledonia/Waupaca	27,127.3	62.8%	9,235.5	34.0%
Fremont/Waupaca	13,662.5	82.4%	7,218.7	52.8%
Lebanon/Waupaca	21,891.4	73.9%	11,296.4	51.6%
Little Wolf/ Waupaca	24,447.8	81.0%	10,492.8	42.9%
Mukwa/Waupaca	55,025.9	73.1%	20,932.2	38.0%
Royalton/Waupaca	22,386.0	56.4%	11,341.8	50.7%
Union/Waupaca	11,816.7	130.5%	5,996.8	50.7%
Weyauwega/ Waupaca	8,418.6	64.7%	2,984.8	35.5%
Average study area town in Waupaca County	21,781.9	84.9%	11,250.0	51.6%
Average town in Waupaca County	24,798.7	80.1%	9,708.9	39.2%
Clayton/Winnebago	95,367.8	93.0%	51,075.3	53.6%
Menasha/Winnebago	151,400.0	37.2%	63,531.7	42.0%
Neenah/Winnebago	52,840.0	46.9%	18,522.8	35.1%
Poygan/Winnebago	26,559.5	94.8%	16,963.0	63.9%

Town/County	Change in Residential Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Residential Improvement Value, 1998-2004	Change in Residential Improvement Value due to New Resid. Construction, 1999-2004 (000 \$'s)	Change in Resid. Imprv. Value from New Resid. Construction as a % of Change in Total Resid. Improvement Value, 1998-2004
Vinland/Winnebago	32,896.2	52.8%	15,727.8	47.8%
Winchester/Winnebago	23,036.8	51.3%	12,444.5	54.0%
Winneconne/ Winnebago	59,965.3	72.9%	28,876.9	48.2%
Wolf River/ Winnebago	24,152.0	62.5%	8,053.3	33.3%
Average study area town in Winnebago County	58,277.2	58.1%	26,899.4	46.2%
Average town in Winnebago County	50,578.5	57.4%	23,645.3	46.7%
Chilton/Calumet	16,074.9	84.8%	8,141.7	50.6%
Harrison/Calumet	264,989.2	170.4%	149,770.8	56.5%
Stockbridge/Calumet	22,097.6	59.3%	10,710.4	48.5%
Woodville/Calumet	6,917.5	38.3%	4,368.9	63.2%
Average town in Calumet County	44,348.9	115.4%	25,090.6	56.6%
Average study area town in Calumet County	77,519.8	88.2%	43,248.0	55.8%

Table A-18. Change in Residential Improvement Values in STH 15 Study Area Cities.

City/County	Change in Residential Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Residential Improvement Values, 1998-2004	Change in Improvement Value from New Residential Construction, 1998-2004 (000 \$'s)	Change in Resid.Imprv. Value from New Resid. Construction as a % of Change in Total Resid. Imprv.Value, 1998-2004
Appleton/Outagamie	634,956.2	46.4%	229,404.5	36.1%
Kaukauna/ Outagamie	151,985.6	54.0%	78,549.6	51.7%
New London/ Outagamie	11,850.3	48.8%	5,345.1	45.1%
Seymour/Outagamie	26,162.0	39.3%	11,820.0	45.2%
Avg. for all cities/ Outagamie	206,238.5	47.4%	81,279.8	39.4%
Appleton/Winnebago	1,809.0	33.2%	1464.3	80.9%
Neenah/Winnebago	228,028.5	38.4%	88,121.2	38.6%
Menasha/Winnebago.	98,226.1	32.7%	22,668.6	23.1%
Avg. for all cities/ Winnebago	165,841.3	40.8%	60,588.2	36.5%
Appleton/Calumet	111,005.8	41.5%	35,183.0	31.7%
Chilton/Calumet	26,699.2	36.1%	11,664.3	43.7%
Menasha/Calumet	55,269.7	341.9%	48,831.7	88.4%
Avg. for all Cities/ Calumet	40,479.1	49.1%	18,734.4	46.3%
New London/	38,976.6	41.7%	13,200.4	33.9%

City/County	Change in Residential Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Residential Improvement Values, 1998-2004	Change in Improvement Value from New Residential Construction, 1998-2004 (000 \$'s)	Change in Resid.Improv. Value from New Resid. Construction as a % of Change in Total Resid. Improv.Value, 1998-2004
Waupaca				
Manawa/ Waupaca	9,516.2	41.0%	2,936.5	30.9%
Weyauwega/ Waupaca	10,335.5	33.8%	2,391.9	23.1%
Avg. for all Cities/ Waupaca	24,038.2	43.8%	7,573.1	31.5%

Table A-19. Change in Residential Improvement Values in STH 15 Study Area Villages.

Village/County	Change in Residential Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Residential Improvement Values, 1998-2004	Improvement Value Change from New Residential Construction, 1998-2004 (000 \$'s)	Change in Resid.Improv. Value from New Resid. Construction as a % of Change in Total Resid. Improv.Value, 1998-2004
Bear Creek, Outagamie Co.	1,989.2	42.5%	273.5	13.7%
Black Creek, Outagamie Co.	9,476.1	39.75	5,397.0	57.0%
Combined Locks, Outagamie Co.	57,600.4	91.7%	33,314.7	57.8%
Hortonville, Outagamie Co.	38,028.5	73.4%	23,994.0	63.1%
Kimberly, Outagamie Co.	74,825.7	56.0%	29,421.2	39.3%
Little Chute, Outagamie Co.	89,310.8	39.1%	36,346.1	40.7%
Nichols, Outagamie Co.	1,495.7	45.8%	488.6	32.7%
Shiocton, Outagamie Co.	8,800.0	56.8%	1,850.9	21.0%
Avg.- all villages, Outagamie Co.	35,665.4	54.5%	16,816.2	47.1%
Winneconne, Winnebago Co.	37,187.6	55.1%	18,633.0	50.1%
Sherwood, Calumet Co.	75,996.4	142.6%	57,114.0	75.2%
Stockbridge, Calumet Co.	17,759.2	105.9%	7,325.9	41.3%
Avg. - all villages, Calumet Co.	24,991.9	101.5%	17,027.6	68.1%
Fremont, Waupaca Co.	12,162.4	56.4%	6,507.9	53.5%
Avg. - all villages,	6,197.4	58.7%	2,226.7	35.9%

Village/County	Change in Residential Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Residential Improvement Values, 1998-2004	Improvement Value Change from New Residential Construction, 1998-2004 (000 \$'s)	Change in Resid.Improv. Value from New Resid. Construction as a % of Change in Total Resid. Improv.Value, 1998-2004
Waupaca Co.				

Table A-20. Change in Commercial Land Values in STH 15 Study Area from 1998-2004.

Town/County	Change in Commercial Land Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Land Value, 1998-2004	Land Value Increase from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Land Value from New Commercial Construction Value as a % of Change in Total Commercial Land. Value, 1998-2004
Black Creek/ Outagamie	211.7	149.1%	0.0	0.0%
Bovina/Outagamie	-23.5	-21.3%	15.2	-----
Buchanan/Outagamie	17,247.4	313.7%	2731.5	15.8%
Center/Outagamie	810.4	100.8%	0.0	0.0%
Cicero/Outagamie	81.3	62.8%	11.4	14.0%
Dale/Outagamie	282.9	62.1%	55.1	19.5%
Deer Creek/Outagamie	11.6	62.4%	0.0	0.0%
Ellington/Outagamie	1,533.7	1250.0%	224.7	14.7%
Freedom/Outagamie	2,065.6	91.0%	69.2	3.4%
Grand Chute/ Outagamie	90,118.1	68.6%	716.2	0.8%
Greenville/Outagamie	21,099.8	343.2%	4,841.5	22.9%
Hortonia/Outagamie	624.3	216.9%	0.0	0.0%
Kaukauna/Outagamie	239.0	47.0%	21.1	8.8%
Liberty/Outagamie	39.6	58.6%	3.4	8.6%
Maine/Outagamie	293.5	1059.6%	129.1	44.0%
Maple Creek/ Outagamie	8.4	35.2%	0.0	0.0%
Oneida/Outagamie	694.5	253.9%	0.0	0.0%
Osborn/Outagamie	102.6	131.2%	9.2	9.0%
Seymour/Outagamie	196.5	89.05	0.0	0.0%
Vandenbroek/ Outagamie	412.2	48.6%	62.8	15.2%
Average for towns in Outagamie County	6,802.5	91.1%	444.5	6.5%
Avg. for the 4 STH 15 project corridor towns	5,885.2	465.6%	1,280.3	21.8%
Bear Creek/Waupaca	190.5	280.6%	31.1	16.3%
Caledonia/Waupaca	465.0	405.8%	7.8	1.7%
Fremon/Waupaca	2,112.0	279.6%	1,504.8	71.3%
Lebanon/Waupaca	123.9	19.1%	20.1	16.2%
Little Wolf/ Waupaca	186.0	80.6%	0.0	0.0%
Mukwa/Waupaca	498.8	70.5%	6.7	1.3%
Royalton/Waupaca	214.5	63.2%	0.0	0.0%
Union/Waupaca	-19.5	-51.2%	0.0	0.0%

Town/County	Change in Commercial Land Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Land Value, 1998-2004	Land Value Increase from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Land Value from New Commercial Construction Value as a % of Change in Total Commercial Land Value, 1998-2004
Weyauwega/ Waupaca	243.9	48.95	100.3	41.1%
Average for towns in Waupaca County	401.3	105.2%	85.3	21.3%
Clayton/Winnebago	4,909.7	316.8%	0.0	0.0%
Menasha/Winnebago	23,847.4	71.8%	17,591.7	73.8%
Neenah/Winnebago	2,618.1	115.3%	392.4	15.0%
Poygan/Winnebago	549.8	110.7%	11.9	2.2%
Vinland/Winnebago	2,236.2	162.7%	476.4	21.3%
Winchester/Winnebago	612.7	103.9%	140.1	22.9%
Winneconne/ Winnebago	582.7	63.4%	100.7	17.3%
Wolf River/ Winnebago	443.6	26.8%	6.0	1.4%
Average for towns in Winnebago County	2,722.5	85.1%	1,230.2	45.2%
Chilton/Calumet	1,293.9	163.6%	24,721.9	*
Harrison/Calumet	4,413.6	94.2%	162.1	3.7%
Stockbridge/Calumet	123.1	26.2%	68.7	55.8%
Woodville/Calumet	129.4	71.2%	0.0	0.0%
Average for towns in Calumet County	902.9	108.7%	2,786.6	*

* - Note: There was a 24,575,600 increase in new commercial land value in 2000, which was negated by a 22,937,600 adjustment in the "Other Change" category resulting in the anomalous ratio.

Table A-21. Change in Commercial Land Values in STH 15 Study Area Cities.

City/County	Change in Commercial Land Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Land Value, 1998-2004	Land Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Land Value from New Commercial Construction Value as a % of Change in Total Commercial Land Value, 1998-2004
Appleton/Outagamie	41,771.7	46.5%	5,278.3	12.6%
Kaukauna/ Outagamie	10,139.4	71.1%	2,496.5	24.6%
New London/ Outagamie	793.8	63.0%	176.8	22.3%
Seymour/Outagamie	3,162.4	66.8%	99.3	3.1%
Avg. for all cities/ Outagamie	13,966.8	50.8%	2,012.7	14.4%
Appleton/Winnebago	3,474.1	48.9%	0.0	0.0%
Neenah/Winnebago	27,220.0	77.0%	14,237.0	52.3%
Menasha/Winnebago.	13,319.7	66.9%	473.6	3.6%
Avg. for all cities/ Winnebago	25,747.3	74.4%	6,277.1	24.4%
Appleton/Calumet	17,530.5	268.0%	11,459.9	65.4%
Chilton/Calumet	1,505.3	35.8%	249.4	16.6%
Menasha/Calumet	1,176.5	74.9%	58.8	5.0%

City/County	Change in Commercial Land Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Land Value, 1998-2004	Land Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Land Value from New Commercial Construction Value as a % of Change in Total Commercial Land Value, 1998-2004
Avg. for all Cities/Calumet	3,662.9	124.7%	1,990.6	54.3%
New London/Waupaca	3,247.8	54.9%	232.3	7.2%
Manawa/Waupaca	132.0	12.2%	32.7	24.8%
Weyauwega/Waupaca	376.7	42.4%	0.0	0.0%
Avg. for all Cities/Waupaca	1,974.4	36.3%	635.0	32.3%

Table A-22. Change in Commercial Land Values in STH 15 Study Area Villages.

Village/County	Change in Commercial Land Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Land Value, 1998-2004	Land Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Land Value from New Commercial Construction Value as a % of Change in Total Commercial Land Value, 1998-2004
Bear Creek, Outagamie Co.	42.3	35.3%	0.0	0.0%
Black Creek, Outagamie Co.	876.4	106.5%	68.0	7.8%
Combined Locks, Outagamie Co.	181.2	51.1%	0.0	0.0%
Hortonville, Outagamie Co.	1,095.3	84.3%	52.3	4.8%
Kimberly, Outagamie Co.	8,727.8	132.4%	938.4	10.8%
Little Chute, Outagamie Co.	7,008.6	50.7%	1022.5	14.6%
Nichols, Outagamie Co.	669.8	733.6%	12.9	1.9%
Shiocton, Outagamie Co.	99.3	27.3%	18.7	18.8%
Avg.- all villages, Outagamie Co.	2,743.7	93.6%	312.2	11.4%
Winneconne, Winnebago Co.	1,160.5	64.5%	102.9	8.9%
Sherwood, Calumet Co.	1,424.9	117.2%	204.7	14.4%
Stockbridge, Calumet Co.	468.1	183.9%	0.0	0.0%
Avg. - all villages, Calumet Co.	378.1	63.4%	63.5	16.8%
Fremont, Waupaca Co.	320.0	24.5%	0.0	0.0%
Avg. - all villages,	49.9	10.7%	15.3	30.7%

Village/County	Change in Commercial Land Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Land Value, 1998-2004	Land Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Land Value from New Commercial Construction Value as a % of Change in Total Commercial Land Value, 1998-2004
Waupaca Co.				

Table A-23. Commercial Improvement Value Trends in Towns of STH 15 Study Area.

Town/County	Change in Commercial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Improvement Values, 1998-2004	Improvement Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Improvement Value from New Commercial Construction Value as a % of Change in Total Commercial Improvement Value, 1998-2004
Black Creek/ Outagamie	359.4	44.1%	54.8	15.2%
Bovina/Outagamie	17.7	60.6%	166.6	*
Buchanan/Outagamie	32,533.8	241.7%	22,079.6	67.9%
Center/Outagamie	1,052.0	40.5%	1,736.0	*
Cicero/Outagamie	190.0	48.1%	37.2	19.6%
Dale/Outagamie	1,413.0	50.9%	318.8	22.6%
Deer Creek/Outagamie	77.3	62.3%	0.0	0.0%
Ellington/Outagamie	315.4	71.2%	2,841.9	*
Freedom/Outagamie	5,838.4	46.3%	3,234.3	55.4%
Grand Chute/ Outagamie	287,654.8	68.2%	188,250.9	65.4%
Greenville/Outagamie	55,344.6	156.5%	41,733.1	75.4%
Hortonia/Outagamie	1,269.1	102.8%	237.7	18.7%
Kaukauna/Outagamie	1,782.7	88.1%	1,245.1	69.8%
Liberty/Outagamie	127.8	29.8%	29.5	23.1%
Maine/Outagamie	588.5	272.5%	342.7	58.2%
Maple Creek/ Outagamie	48.3	36.0%	0.0	0.0%
Oneida/Outagamie	554.3	25.6%	989.0	*
Osborn/Outagamie	521.1	92.4%	81.8	15.7%
Seymour/Outagamie	760.9	53.1%	92.3	12.1%
Vandenbroek/ Outagamie	1,107.2	35.1%	4,132.1	*
Average for towns in Outagamie County	19,577.8	78.0%	13,380.2	68.3%
Avg. for the 4 STH 15 project corridor towns	14,585.5	95.4%	11,282.9	77.4%
Bear Creek/Waupaca	525.3	146.5%	665.4	*
Caledonia/Waupaca	579.2	63.1%	66.8	11.5%
Fremont/Waupaca	1,430.0	81.0%	972.2	68.0%
Lebanon/Waupaca	442.8	54.3%	374.5	84.6%
Little Wolf/ Waupaca	232.3	28.5%	83.2	35.8%
Mukwa/Waupaca	865.2	79.6%	63.7	7.4%
Royalton/Waupaca	544.5	66.7%	178.5	32.8%
Union/Waupaca	157.3	38.6%	130.4	82.9%

Town/County	Change in Commercial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Improvement Values, 1998-2004	Improvement Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Improvement Value from New Commercial Construction Value as a % of Change in Total Commercial Improvement Value, 1998-2004
Weyauwega/ Waupaca	561.1	27.0%	838.0	149.3%
Average for all towns in Waupaca County	595.2	54.6%	298.1	50.1%
Clayton/Winnebago	10,508.6	62.7%	1,740.5	16.6%
Menasha/Winnebago	113,737.3	108.2%	76,719.6	67.5%
Neenah/Winnebago	5,997.3	29.6%	3,700.5	61.7%
Poygan/Winnebago	112.1	16.9%	346.3	*
Vinland/Winnebago	5,383.9	103.5%	3,804.0	70.7%
Winchester/Winnebago	491.4	37.5%	364.4	74.2%
Winneconne/ Winnebago	3,094.6	137.8%	1,413.8	45.7%
Wolf River/ Winnebago	230.2	13.2%	199.0	86.4%
Average for towns in Winnebago County	9,597.4	86.7%	6,084.2	63.4%
Chilton/Calumet	1,405.7	51.65	782.1	55.6%
Harrison/Calumet	5,588.4	58.4%	2,997.7	53.6%
Stockbridge/Calumet	503.1	54.6%	232.1	46.1%
Woodville/Calumet	114.5	8.4%	2.0	1.7%
Average for towns in Calumet County	1,155.9	46.8%	731.2	63.3%

- Note: In Bovina, \$154,800 in new commercial construction value is recorded for 1999, but an adjustment of - \$154,800 in the "Other Change" category is added in 2001 causing anomalous results.
- In Center, the \$1,736,000 in new commercial construction is overbalanced by negative adjustments in the "Other Change" category of \$202,800 in 1999, \$693,900 in 2002 and \$322,100 in 2003.
- In Ellington, new commercial construction added of \$1,807,200 in 2002 and \$1,012,700 in 2003 are mitigated by negative adjustments in the "Other Change" category of \$1,880,000 in 2003 and \$863,500 in 2004.
- In Oneida, new commercial construction of \$512,800 added in 1999, \$197,400 in 2000, and \$138,900 in 2001 were modified by a negative adjustment of \$1,300,200 in 2002.
- In Vandenbroek, new commercial construction of \$873,100 in 1999, \$1,976,900 in 2000, \$421,200 in 2001 and \$800,000 in 2002 were modified by negative adjustments in the "Other Change" category of \$110,700 in 1999, \$341,800 in 2002, \$433,300 in 2003 and \$2,319,100 in 2004.
- In Poygan, new commercial construction of \$50,000 in 1999 and \$250,000 in 2000 is overbalanced by a negative adjustment of \$568,800 in 2001.
- In Bear Creek, the new construction value is partly offset by negative adjustments in the "Other Change" category of \$49,400 in 2000 and \$113,400 in 2004.

Table A-24. Commercial Improvement Value Trends in STH 15 Study Area Cities.

City/County	Change in Commercial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Improvement Values, 1998-2004	Improvement Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Improvement Value from New Commercial Construction Value as a % of Change in Total Commercial Improvement Value, 1998-2004
Appleton/ Outagamie	109,636.4	28.4%	95,352.9	87.0%
Kaukauna/ Outagamie	51,167.4	102.8%	37,233.9	72.8%
New London/ Outagamie	7,059.1	102.4%	5,691.0	80.6%
Seymour/ Outagamie	5,512.7	29.7%	4,644.4	84.2%
Avg. for all cities/ Outagamie	43,343.9	37.6%	35,730.6	82.4%
Appleton/ Winnebago	7,916.9	26.8%	6,970.7	88.0%
Neenah/ Winnebago	103,276.6	61.3%	80,052.4	77.5%
Menasha/ Winnebago.	31,524.0	34.1%	28,656.7	90.9%
Avg. for all cities/ Winnebago	81,456.0	54.7%	65,430.1	80.3%
Appleton/ Calumet	40,363.2	131.2%	30,828.2	76.4%
Chilton/Calumet	13,261.6	58.7%	12,932.0	97.5%
Menasha/ Calumet	9,642.5	534.1%	9,176.4	95.2%
Avg. for all Cities/ Calumet	12,640.9	78.6%	10,393.2	82.2%
New London/ Waupaca	16,518.5	63.1%	11,958.5	72.4%
Manawa/ Waupaca	2,992.1	47.2%	2,297.4	76.8%
Weyauwega/ Waupaca	2,444.0	31.7%	2,096.4	85.8%
Avg. for all Cities/ Waupaca	13,355.4	60.1%	10,120.7	75.8%

Table A-25. Commercial Improvement Value Trends in STH 15 Study Area Villages.

Village/ County	Change in Commercial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Commercial Improvement Values, 1998-2004	Improvement Value Change from New Commercial Construction, 1998-2004 (000 \$'s)	Change in Commercial Improvement Value from New Commercial Construction Value as a % of Change in Total Commercial Improvement Value, 1998-2004
Bear Creek, Outagamie Co.	176.0	17.8%	137.2	78.0%
Black Creek,	-3,995.7	-77.4%	1,539.8	*

Village/ County	Change in Commercial Improvement Values, 1998- 2004 (000 \$'s)	% Change in Total Commercial Improvement Values, 1998- 2004	Improvement Value Change from New Commercial Construction, 1998- 2004 (000 \$'s)	Change in Commercial Improvement Value from New Commercial Construction Value as a % of Change in Total Commercial Improvement Value, 1998-2004
Outagamie Co.				
Combined Locks, Outagamie Co.	675.7	20.5%	247.4	36.6%
Hortonville, Outagamie Co.	3,013.7	37.8%	2,703.1	90.0%
Kimberly, Outagamie Co.	24,822.2	56.0%	19,377.1	78.1%
Little Chute, Outagamie Co.	27,232.7	54.0%	12,814.2	47.1%
Nichols, Outagamie Co.	75.7	9.5%	52.5	69.6%
Shiocton, Outagamie Co.	602.9	27.3%	1,025.0	*
Avg.- all villages, Outagamie Co.	7,892.8	55.2%	5,302.4	67.2%
Winneconne, Winnebago Co.	3,991.9	48.0%	2,201.1	55.1%
Sherwood, Calumet Co.	2,757.6	64.3%	462.8	16.8%
Stockbridge, Calumet Co.	281.6	13.0%	279.5	99.3%
Avg. - all villages, Calumet Co.	-2,259.2	-19.7%	655.3	*
Fremont, Waupaca Co.	321.5	9.9%	277.7	86.4%
Avg. - all villages, Waupaca Co.	283.9	12.7%	326.5	*

- Increases in new construction were overshadowed or balanced by large negative adjustments in subsequent years in the "Other Changes" category.

Table A-26. Changes in Manufacturing Improvement Values for STH 15 Study Area Towns.

Town/County	Change in Industrial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Industrial Improvement Values, 1998-2004	Improvement Value Change from New Industrial Construction, 1998-2004 (000 \$'s)	Change in Industrial Improvement Value from New Industrial Construction Value as a % of Change in Total Industrial Improvement Value, 1998-2004
Black Creek/ Outagamie	0.0	n/a	0.0	n/a
Bovina/Outagamie	0.0	n/a	0.0	n/a
Buchanan/Outagamie	590.9	19.8%	410.9	69.5%
Center/Outagamie	1,242.9	113.2%	0.0	0.0%
Cicero/Outagamie	-5.1	-1.5%	0.0	n.a
Dale/Outagamie	0.0	n/a	0.0	n/a

Town/County	Change in Industrial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Industrial Improvement Values, 1998-2004	Improvement Value Change from New Industrial Construction, 1998-2004 (000 \$'s)	Change in Industrial Improvement Value from New Industrial Construction Value as a % of Change in Total Industrial Improvement Value, 1998-2004
Deer Creek/Outagamie	0.0	n/a	0.0	n/a
Ellington/Outagamie	0.0	n/a	0.0	n/a
Freedom/Outagamie	15.0	10.6%	0.0	0.0%
Grand Chute/ Outagamie	9,424.6	20.4%	8,445.4	89.6%
Greenville/Outagamie	16,430.2	49.7%	9,019.5	54.9%
Hortonia/Outagamie	714.1	6.8%	2,196.6	*
Kaukauna/Outagamie	111.1	43.2%	56.4	50.8%
Liberty/Outagamie	192.3	18.6%	0.0	0.0%
Maine/Outagamie	0.0	n/a	0.0	n/a
Maple Creek/ Outagamie	0.0	n/a	0.0	n/a
Oneida/Outagamie	27.3	6.8%	0.0	0.0%
Osborn/Outagamie	81.5	59.1%	142.2	*
Seymour/Outagamie	-92.9	-3.7%	39.9	*
Vandenbroek/ Outagamie	0.0	n/a	0.0	n/a
Average for towns in Outagamie County	1,459.1	29.7%	1,015.5	69.6%
Avg. for the 4 STH 15 project corridor towns	4,286.2	28.3%	2,804.0	65.4%
Bear Creek/Waupaca	0.0	n/a	0.0	n/a
Caledonia/Waupaca	-316.7	-81.1%	2.0	n/a
Fremont/Waupaca	-2.5	-1.7%	0.0	n/a
Lebanon/Waupaca	0.0	n/a	0.0	n/a
Little Wolf/ Waupaca	105.8	43.3%	0.0	n/a
Mukwa/Waupaca	0.0	n/a	0.0	n/a
Royalton/Waupaca	84.1	41.2%	67.5	80.3%
Union/Waupaca	0.0	n/a	0.0	n/a
Weyauwega/ Waupaca	454.2	133.5%	618.0	*
Average study area town in Waupaca County	44.4	19.2%	54.1	*
Clayton/Winnebago	173.5	91.1%	73.2	42.2%
Menasha/Winnebago	10,121.7	7.3%	16,273.4	*
Neenah/Winnebago	4,491.6	105.7%	1,878.4	41.8%
Poygan/Winnebago	0.0	n/a	0.0	n/a
Vinland/Winnebago	1,561.0	14.0%	1,786.6	*
Winchester/ Winnebago	84.8	n/a	84.8	100.0%
Winneconne/ Winnebago	0.0	n/a	0.0	n/a
Wolf River/ Winnebago	9.6	13.5%	1.4	14.6%
Average study area town in Winnebago County	1,396.2	14.2%	1,336.6	95.7%
Chilton/Calumet	182.5	28.3%	245.8	*
Harrison/Calumet	4,962.3	146.5%	4777.2	96.3%
Stockbridge/Calumet	-51.1	-100.0%	5.1	n/a
Woodville/Calumet	309.5	38.8%	8.0	2.6%

Town/County	Change in Industrial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Industrial Improvement Values, 1998-2004	Improvement Value Change from New Industrial Construction, 1998-2004 (000 \$'s)	Change in Industrial Improvement Value from New Industrial Construction Value as a % of Change in Total Industrial Improvement Value, 1998-2004
Average study area town in Calumet County	749.5	100.4%	740.6	98.8%

- New construction value was overshadowed or balanced by large negative adjustments recorded in the "Other Changes" category.

Table A-27. Change in Industrial Improvement Values in STH 15 Study Area Cities.

City/County	Change in Industrial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Industrial Improvement Values, 1998-2004	Improvement Value Change from New Industrial Construction, 1998-2004 (000 \$'s)	Change in Industrial Improvement Value from New Industrial Construction Value as a % of Change in Total Industrial Improvement Value, 1998-2004
Appleton/ Outagamie	33,084.5	29.5%	30,688.7	92.8%
Kaukauna/ Outagamie	9,351.2	31.6%	6,705.5	71.7%
New London/ Outagamie	18,009.0	150.6%	15,549.4	86.3%
Seymour/ Outagamie	-252.4	-5.9%	1,436.4	*
Avg. for all cities/ Outagamie	15,048.1	38.1%	13,595.0	90.3%
Appleton/ Winnebago	0.0	n/a	0.0	*
Neenah/ Winnebago	26,652.4	22.7%	25,475.6	95.6%
Menasha/ Winnebago.	7,220.7	11.9%	3,154.3	43.7%
Avg. for all cities/ Winnebago	13,754.6	22.2%	12,488.0	90.8%
Appleton/ Calumet	0.0	n/a	40.5	*
Chilton/Calumet	7,161.9	47.8%	10.1	0.1%
Menasha/ Calumet	10.9	25.9%	8.1	74.3%
Avg. for all Cities/ Calumet	1,967.5	26.7%	1,732.8	88.1%
New London/ Waupaca	633.8	24.8%	303.8	47.9%
Manawa/ Waupaca	6,442.2	110.9%	5,566.9	86.4%
Weyauwega/ Waupaca	4,804.0	45.2%	4,982.7	*
Avg. for all Cities/ Waupaca	5,812.4	69.1%	5,582.1	96.0%

- New construction value was overshadowed or balanced by large negative adjustments recorded in the "Other Changes" category.

Table A-28. Change in Industrial Improvement Values in STH 15 Study Area Villages.

Village/County	Change in Industrial Improvement Values, 1998-2004 (000 \$'s)	% Change in Total Industrial Improvement Values, 1998-2004	Improvement Value Change from New Industrial Construction, 1998-2004 (000 \$'s)	Change in Industrial Improvement Value from New Industrial Construction Value as a % of Change in Total Industrial Improvement Value, 1998-2004
Bear Creek, Outagamie Co.	339.2	38.5%	340.2	*
Black Creek, Outagamie Co.	209.9	7.7%	60.0	28.6%
Combined Locks, Outagamie Co.	-4,067.2	-16.2%	202.4	*
Hortonville, Outagamie Co.	2,372.2	80.7%	2,632.8	*
Kimberly, Outagamie Co.	2,867.9	9.4%	2,718.1	94.8%
Little Chute, Outagamie Co.	11,856.4	48.75	9,717.7	82.0%
Nichols, Outagamie Co.	0.7	0.1%	0.0	*
Shiocton, Outagamie Co.	86.6	14.2%	68.2	78.8%
Avg. - all villages, Outagamie Co.	1,685.7	15.2%	1,967.4	*
Winneconne, Winnebago Co.	3,055.1	119.9%	3,102.5	*
Sherwood, Calumet Co.	0.0	0.0%	0.0	*
Stockbridge, Calumet Co.	417.0	135.2%	374.2	89.7%
Avg. - all villages, Calumet Co.	202.5	7.3%	162.0	80.0%
Fremont, Waupaca Co.	-99.3	-100.0%	0.0	*
Avg. - all villages, Waupaca Co.	208.3	46.0%	189.4	90.9%

- New construction value was overshadowed or balanced by large negative adjustments recorded in the "Other Changes" category.

Table A-29. Property Taxes Rates Levied in 2003, Collected in 2004 for STH 15 Study Area Towns.

Town/County	Local-purpose Property Tax Levied 2003, Collected in 2004 (000\$'s)	Local Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Total Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Full-value Gross Local-Purpose Prop. Tax Rate for 2003 (per \$1000 of Full Value)
Black Creek/ Outagamie	167.7	130.10	1,054.93	2.21

Town/County	Local-purpose Property Tax Levied 2003, Collected in 2004 (000\$'s)	Local Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Total Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Full-value Gross Local-Purpose Prop. Tax Rate for 2003 (per \$1000 of Full Value)
Bovina/Outagamie	86.0	71.61	916.24	1.43
Buchanan/Outagamie	1,142.2	169.84	1,280.52	2.58
Center/Outagamie	303.0	91.76	1,190.37	1.37
Cicero/Outagamie	149.1	135.67	938.49	2.61
Dale/Outagamie	308.5	125.15	1,191.36	1.92
Deer Creek/Outagamie	66.0	97.06	948.09	2.04
Ellington/Outagamie	306.0	116.04	1,097.76	1.99
Freedom/Outagamie	603.3	111.74	1,024.13	1.99
Grand Chute/ Outagamie	6,079.8	312.10	1,795.28	3.33
Greenville/Outagamie	1,177.7	156.46	1,507.09	1.94
Hortonia/Outagamie	142.8	133.58	1,598.78	1.50
Kaukauna/Outagamie	121.2	101.85	1,271.18	1.44
Liberty/Outagamie	33.0	38.11	995.27	0.66
Maine/Outagamie	88.0	100.46	1,046.58	1.80
Maple Creek/ Outagamie	54.0	78.37	828.16	1.64
Oneida/Outagamie	99.9	23.59	604.68	0.66
Osborn/Outagamie	180.5	168.06	1,037.62	2.99
Seymour/Outagamie	161.1	129.29	1,040.45	2.19
Vandenbroek/ Outagamie	120.1	91.82	1,325.31	1.24
Average for towns in Outagamie County	569.5	176.98	1,346.11	2.46
Avg. for the 4 STH 15 project corridor towns	483.8	132.81	1,348.75	1.84
Bear Creek/Waupaca	77.6	89.40	1,022.35	1.82
Caledonia/Waupaca	110.0	73.48	1,212.83	1.07
Fremon/ Waupaca	80.6	280.43	1,492.39	3.71
Lebanon/Waupaca	212.4	124.79	933.08	2.60
Little Wolf/ Waupaca	202.0	135.30	1,078.43	2.69
Mukwa/Waupaca	165.7	58.14	941.19	1.09
Royalton/Waupaca	107.4	68.85	1,087.56	1.15
Union/Waupaca	120.0	146.16	1,118.76	2.78
Weyauwega/ Waupaca	100.0	156.01	1,120.90	2.59
Average study area town in Waupaca County	141.7	125.80	1,111.90	2.17
Clayton/Winnebago	728.9	227.14	1,602.80	2.85
Menasha/Winnebago	5,982.1	362.88	1,606.59	5.05
Neenah/Winnebago	277.6	103.35	1,767.57	1.07
Poygan/Winnebago	205.2	187.74	1,663.95	2.23
Vinland/Winnebago	235.5	124.54	1,731.57	1.32
Winchester/Winnebago	143.6	83.49	1,183.55	1.34
Winneconne/ Winnebago	338.5	150.31	1,762.97	1.63
Wolf River/ Winnebago	201.0	160.54	1,641.93	1.80
Average study area town in Winnebago County	1,014.1	175.00	1,620.10	2.16
Chilton/Calumet	0.00	0.00	1,060.84	0.00
Harrison/Calumet	1,552.5	210.11	1,394.78	3.00

Town/County	Local-purpose Property Tax Levied 2003, Collected in 2004 (000\$'s)	Local Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Total Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Full-value Gross Local-Purpose Prop. Tax Rate for 2003 (per \$1000 of Full Value)
Stockbridge/Calumet	231.0	163.25	1,442.47	2.41
Woodville/Calumet	80.0	81.63	908.78	1.68
Average study area town in Calumet County	465.9	113.70	1,201.70	1.77

Table A-30. Property Taxes Rates Levied in 2003, Collected in 2004 for STH 15 Study Area Cities.

City/County	Local-purpose Property Tax Levied 2003, Collected in 2004 (000\$'s)	Local Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Total Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Full-value Gross Local-Purpose Prop. Tax Rate for 2003 (per \$1000 of Full Value)
Appleton/Outagamie	23,713.3	331.00	1,005.20	7.74
Kaukauna/ Outagamie	4,956.7	362.10	1,178.6	7.50
New London/ Outagamie	529.2	73.60	289.60	5.59
Seymour/Outagamie	1,316.3	390.10	1,075.90	8.66
Appleton/Winnebago	488.2	6.80	20.70	8.18
Neenah/Winnebago	12,158.5	485.20	1,520.90	7.84
Menasha/Winnebago.	6,678.6	401.20	1,170.10	9.01
Appleton/Calumet	3,893.3	54.30	169.30	7.54
Chilton/Calumet	1,042.0	277.40	1,293.30	5.66
Menasha/Calumet	729.5	43.80	119.20	9.45
New London/ Waupaca	1,181.7	164.20	672.30	5.54
Manawa/ Waupaca	471.5	351.90	1312.50	7.49
Weyauwega/ Waupaca	506.1	277.50	985.00	6.26
Avg. for all Cities in Sample	4,435.8	247.60	831.80	7.40

Table A-31. Property Taxes Rates Levied in 2003, Collected in 1004 for STH 15 Study Area Villages.

Village/County	Local-purpose Property Tax Levied 2003, Collected in 2004 (000\$'s)	Local Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Total Prop. Tax Levied in 2003, Collected in 2004 per capita (\$'s)	Full-value Gross Local-Purpose Prop. Tax Rate for 2003 (per \$1000 of Full Value)
Bear Creek, Outagamie Co.	47.4	112.59	563.66	4.51
Black Creek, Outagamie Co.	416.5	344.50	1,060.13	7.90
Combined Locks, Outagamie Co.	931.2	355.69	1,526.85	5.04
Hortonville, Outagamie Co.	594.4	240.75	1,040.42	5.07
Kimberly, Outagamie Co.	2,596.3	412.64	1,411.86	6.78
Little Chute, Outagamie Co.	3,344.6	311.39	1,184.39	6.18
Nichols, Outagamie Co.	34.8	115.23	591.72	3.73

Winneconne, Winnebago Co.	1,071.3	436.55	1,467.03	7.18
Sherwood, Calumet Co.	531.9	261.25	1,689.59	3.46
Stockbridge, Calumet Co.	199.1	296.72	1,661.40	4.05
Fremont, Waupaca Co.	228.0	331.88	1,466.96	4.58
Avg. - all villages in study area	849.4	285.40	1,201.70	5.39