
Town of Windsor Annex

Community Profile

The Town of Windsor is located in the Northeast quadrant of the County, north of the city Madison, east of the Town of Vienna, and south of Columbia County. The Town of Windsor currently shares borders with the City of Sun Prairie, Village of DeForest and the Towns of Burke, Bristol, Vienna, Westport and Leeds. The land east of U.S. Highway 51 and north of Windsor Rd. is primarily productive agricultural land. The area south of Windsor Rd. is a mix of country estate residential subdivisions and Conservancy Lands along Token Creek. Much of the area south of the village of DeForest and west of U.S. Highway 51 is suburban and contains a mix of residential subdivisions and neighborhood commercial development. The area the town north of DeForest and west of U.S. Highway 51 is primarily productive agricultural land except for the Hamlet of Morrisonville in the far northwest corner of the town. According to the United States Census Bureau, the Town of Windsor has a total area of 30.84 square miles, 30.73 square miles of it is land and 0.10 square miles is water. The total area is 0.32% water.

As of the 2000 Census, there are 5,286 people, 1,880 households, and 1,550 families residing in the Town of Windsor. The population density is 172 per square mile. There are 1,923 housing units at an average density of 62.6 per square mile. The municipality population distributed by Dane County indicates that the 2008 population for Town of Windsor was 5,861 people.

There are 1,880 households out of which 28.6% have children under the age of 18 living with them, 17.6% of all households are made up of individuals and 3.1% have someone living alone who is 65 years of age or older. The average household size is 2.80% and the average family size is 3.05%. In the Town of Windsor, the population is spread out with 28.6% under the age of 18, 6.3% from ages 18 to 24, 31.4% ages 25 to 44, 27.1% ages 45 to 64, and 6.6% who are 65 years of age or older. The median age is 36.7 years. 4.2% of the population speaks a language other than English at home and 10.1% of the population (above the age of 5) is disabled.

The median income for a household in Town of Windsor is \$61,958 and the median income for a family is \$69,150. The per capita income for the Town of Windsor is \$29,266. 0.5% of the population and 0.0% of families are below the poverty line. Out of the total people living in poverty, 0.0% are under the age of 18 and 0.0% are 65 or older. 94.7% of the population has at least a high school degree, while 31.7% of the population holds at least a bachelor's level degree.

Hazard Identification and Risk Assessment

A hazard identification and vulnerability analysis was completed for the Town of Windsor using the same methodology in the base plan. The information to support the hazard identification and risk assessment for this Annex was collected through a Data Collection Guide, which was distributed to each participating municipality to complete.

The first step in a hazard analysis is to identify which hazards the community is vulnerable to. Table 1 outlines the hazard identification for the Town of Windsor based on the Data Collection Guide issued in 2008. The Data Collection Guide listed all of the hazards that could impact anywhere in Dane County. The purpose of this worksheet was to identify and rank the hazards and vulnerabilities specific to the jurisdiction. The Town of Windsor's planning team members were asked to complete the matrix by ranking each category on a scale of 0 to 3 based on the experience and perspective of each planning team member. A ranking of 0 indicated "no concern" while a ranking of 3 indicated "highest concern". This matrix appears as Table 1. This matrix reflects the significance of the hazards relative to one another.

This matrix reflects that the Town of Windsor is most vulnerable to floods, and tornados. The Town of Windsor has a medium vulnerability to extreme cold and heat, and drought, and a lower vulnerability to dam/levee failures, erosion, windstorm, fog, hail storm, landslide, lightning, wildfires, windstorm, and subsidence. The vulnerability established here is a qualitative assumption based on the impacts, geographic extent, probability of future occurrence, and magnitude/severity.

Table 1 Vulnerability Assessment Matrix for the Town of Windsor

Hazard	Hazard Attributes (1-2-3)			Impact Attributes (0-1-2-3)						Total
				Primary Impact (Short Term – Life and Property)			Secondary Impact (Long Term- Community Impacts)			
	Area of Impact	Past History, Probability of Future Occurrence	Short Term Time Factors	Impact on General Structures	Impact on Critical Facilities	Impact on At-Risk Populations	Social Impact	Economic Impact	Severity of other associated secondary hazards	
Dam failure	1	1	1	3	3	0	2	2	1	14
Extreme Cold	2	3	2	1	1	1	1	1	1	13
Extreme Heat	2	3	2	0	0	1	1	1	1	11
Drought	3	3	2	0	0	0	1	3	2	14
Erosion	1	3	2	1	1	0	0	2	1	11
Flood	3	3	3	3	2	1	2	2	2	21
Fog	1	3	1	0	0	0	0	0	0	5
Hail Storm	1	3	1	1	1	0	1	1	0	9
Landslide	1	1	1	0	0	0	0	0	0	3
Lightning	1	3	1	1	1	0	1	1	0	9
Tornado	3	3	3	3	3	3	3	3	3	27
Wildfire	1	3	1	1	1	0	1	1	0	9
Windstorm	1	3	1	1	1	0	1	1	0	9
Winter Storm	1	3	1	1	1	0	1	1	0	9
Subsidence	1	1	1	0	0	0	0	0	0	3
<i>Other:</i>										

Source: Town of Windsor

Previous Hazard Events

Through the Data Collection Guide, the Town of Windsor noted specific historic hazard events to include in the community profile. These events have been incorporated into the appropriate hazard chapters in the base plan. These events had a particular impact on the community beyond the impacts and events recorded in the Dane County Hazard Mitigation Plan. This is not a comprehensive summary of past incidents, as the hazard profiles collected in the main Mitigation Plan include other events that may have historically impacted the jurisdiction. The events noted by this jurisdiction in the Data Collection Guide include:

Flooding: July 2008

Impacted by the same flooding events that impacted most of Dane County in July, 2008, the Town of Windsor experienced one flooded street and received minimal federal assistance to help with the cost and recovery of the event. No injuries, deaths, or other property damages were reported.

Asset Inventory

Assets include the people, property, and critical facilities within the Town of Windsor that are exposed to hazards in general. Inventories of property, essential infrastructure, and natural, cultural or historic resources help provide a comprehensive picture of the community and provide a method of assessing exposure to hazards by establishing the improved and total values, capacities and populations for these assets. It also forms the basis for estimating potential losses, where possible.

Population

Table 2 Vulnerable Population Summary

Disability Status from the 2000 Census	Number	Percent
Total Population ages 5 or less	344	6.5%
Total population ages 5 to 19	1,280	24.2%
Total population over 65 years old	348	6.6%
Total Population with any Disability	503	10.1%
Families Below Poverty Level	0	0.0%
Individuals Below Poverty Level	27	0.5%
Total Population who Speak English less than "very well"	67	1.3%
Total Population	5,286	100%

Data Source: 2000 US Census

General Property

Table 3 Property Exposure Summary

Property Type	Total Parcel Count	Improved Parcel Count	Improved Values (\$)	Content (\$)	Total Value (\$)
Residential	1,972	1,782	277,454,500	138,727,250	416,181,750
Agriculture	1,226	210	34,420,300	34,420,300	68,840,600
Other	339	108	24,934,800	12,467,400	37,402,200
Commercial Services	24	19	4,416,500	4,416,500	8,833,000
Transportation	13	2	539,300	269,650	808,950
Industrial	28	19	10,625,900	15,938,850	26,564,750
Institutional/Government	14	2	274,700	274,700	549,400
Utilities	4				
Total	3,637	2,155	356,569,300	210,417,950	566,987,250

Data Source: Dane County Land Information Office, December 2008

Critical Facilities

The Town of Windsor has identified the following critical facilities important to protect from disaster impacts. These are collected in Table 4, which is based on GIS data inventories from Dane County.

Table 4 Critical Facility Summary/Essential Infrastructures

Facility	Type*	No. of Facilities	Replacement Value (\$)
Airport	EI	1	16,200,000
Bridge	EI	1	1,000,000
Child Care	VF	6	954,500
Communications Tower	EI	2	400,000
Community Based Residential	VF	1	208,300
FCC Tower	EI	1	200,000
Hazardous Chemicals	HM	3	534,700
Historic Site	VF	1	500,000
Municipal Hall	EI	1	750,000
Public School	VF	2	4,000,000
Residential Care Apart. Complex	VF	1	10,000,000
Sheriff Precinct	EI	1	500,000
Water Utility	EI	1	1,500,000
Well	EI	5	2,000,000
TOTAL		27	43,247,500

*EI: Essential Infrastructure; VF: Vulnerable Facilities; HM: Hazardous Materials Facilities

Data Source: Dane County GIS

Other Assets

Other assets help define a community beyond the current composition of the Town of Windsor. These assets may provide economic benefit to the community, in addition to preserving the heritage and diversity of the community and may include natural, cultural and historic assets or economic assets such as major employers. It may also include more specific detail on critical facilities. The Town of Windsor has identified these other assets in Table 5. Hazard specific vulnerabilities are noted, where known.

Table 5 Other Specific Assets for the Town of Windsor

Name of Asset	Type*	Replacement Value (\$)	Occupancy/ Capacity (#)	Hazard Specific Issues
Town Hall	EI	\$750,000		
Town Garage	EI	\$400,000		
Windsor Sanitary District Elevated water storage	EI	\$700,000	300,000 gallons	
Windsor Sanitary District Well No. 1	EI	\$500,000	500 GPM	
Windsor Sanitary District Well No.2	EI	\$500,000	490 GPM	
Morrisonville Sanitary District Well No.2	EI	\$500,000	500 GPM	

*EI: Essential Infrastructure; VF: Vulnerable Facilities; HM: Hazardous Materials Facilities; NA: natural assets

Data Source: Dane County GIS

Vulnerability to Specific Hazards

This section details vulnerability to specific hazards, where quantifiable, and where it differs from that of the overall County. The previous inventory tables quantify what is exposed to the various hazards within Town of Windsor. Table 6 cross-references the hazards with the various tables where exposure or vulnerability specifics are found. The intent of Table 6 is to quantify, where possible, future impacts of each hazard on the jurisdiction. In many cases it is difficult to estimate potential losses, so the overall exposure of populations, structures, and critical facilities is referenced.

Table 6 Hazard Vulnerability Specifics

Hazard	Populations	Structures	Critical Facilities	Future Damage Potential
Dam Failure	None	None	None	Specifics unknown; See hazard profile in County Plan
Drought	Minimal	None	Minimal	Specifics unknown; See hazard profile in County Plan
Flooding	See section below	See section below	See section below	See section below
Fog	Minimal	None	None	Specifics unknown; See hazard profile in County Plan

Hazard	Populations	Structures	Critical Facilities	Future Damage Potential
Hailstorm	Minimal	See Property Exposure table 3	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan
Landslide/ Sinkholes/ Erosion	Minimal	Minimal	Minimal	Specifics unknown; See hazard profile in County Plan
Lightning	See Table 2 Population	See Table 3 Property Exposure	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan
Severe Cold	See Table 2 Population	See Table 3 Property Exposure	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan
Severe Heat	See Table 2 Population	None	Minimal	Specifics unknown; See hazard profile in County Plan
Severe Winter Storm	See Table 2 Population	See Table 3 Property Exposure	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan
Tornado	See Table 2 Population	See section below	See Critical Facility Inventory Table(s)	See section below
Wildfire	Minimal	Minimal	Minimal	Specifics unknown; See hazard profile in County Plan
Windstorm	See Table 2 Population	See Table 3 Property Exposure	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan

Flood

Structures in the Floodplain

Some assets are specifically vulnerable to floods, due to their location. These assets are collected in Table 7. Refer to the flood profile in the mitigation plan for a description of the methodology used to identify potentially flood-prone properties. Table 8 summarizes properties located in the floodway, typically the area of the floodplain where velocities are highest and flood depths the greatest, and thus could be considered a priority for mitigation. The locations of properties within the floodplain are shown in Figure 1, in addition to flood hazard areas and planned land use.

Table 7 Potentially Flooded Property Summary and Loss Estimate (DFIRM 100 – year)

Property Type	Improved Parcel Count	Improved Values	Content	Total Values (Content & Imp.)	Estimated Loss
Agriculture	10	\$2,234,600	\$1,117,300	\$3,351,900	\$670,380
Residential	20	\$3,067,000	\$1,533,500	\$4,600,500	\$920,100
Other	10	\$1,854,500	\$927,250	\$2,781,750	\$556,350
Total	40	\$7,156,100	\$3,578,050	\$10,734,150	\$2,146,830

Data Source: Dane County GIS, 2008 DFIRM

Based on the average household size in Dane County and the count residential parcels in the floodplain, approximately 49 people are potentially at risk to the 100 year flood and 2 to the 500 year flood (51 total) within the jurisdiction.

Table 8 Floodway Property Summary and Loss Estimate (DFIRM 100 –year)

Property Type	Improved Parcel Count	Improved Values	Content	Total Values (Content & Imp.)	Estimated Loss
Residential	4	\$489,300	\$244,650	\$733,950	\$146,790
Total	4	\$489,300	\$244,650	\$733,950	\$146,790

Data Source: Dane County GIS, 2008 DFIRM

Repetitive Loss Properties and Flood Insurance Policies

Specific NFIP policy information is available only for Cities and Villages in Dane County and is not available by Town. There are no repetitive loss properties in the town.

Critical Facilities

Table 9 displays a result of an analysis of critical facilities located within either the FEMA DFIRM 100-year, 500-year, or HAZUS 100-year floodplains. The location of these facilities is shown in Figure 2.

Table 9 Potentially Flooded Critical Facility Summary

Facility Type	No. of Facilities	DFIRM 100-yr	DFIRM 500-yr	HAZUS Only
Bridge	1	1		
Historic Site (Token Creek)	1	1		
Total	2	2	0	0

Data Source: Dane County GIS, 2008 DFIRM

Figure 1 Flood Hazards and Future Land Use Map

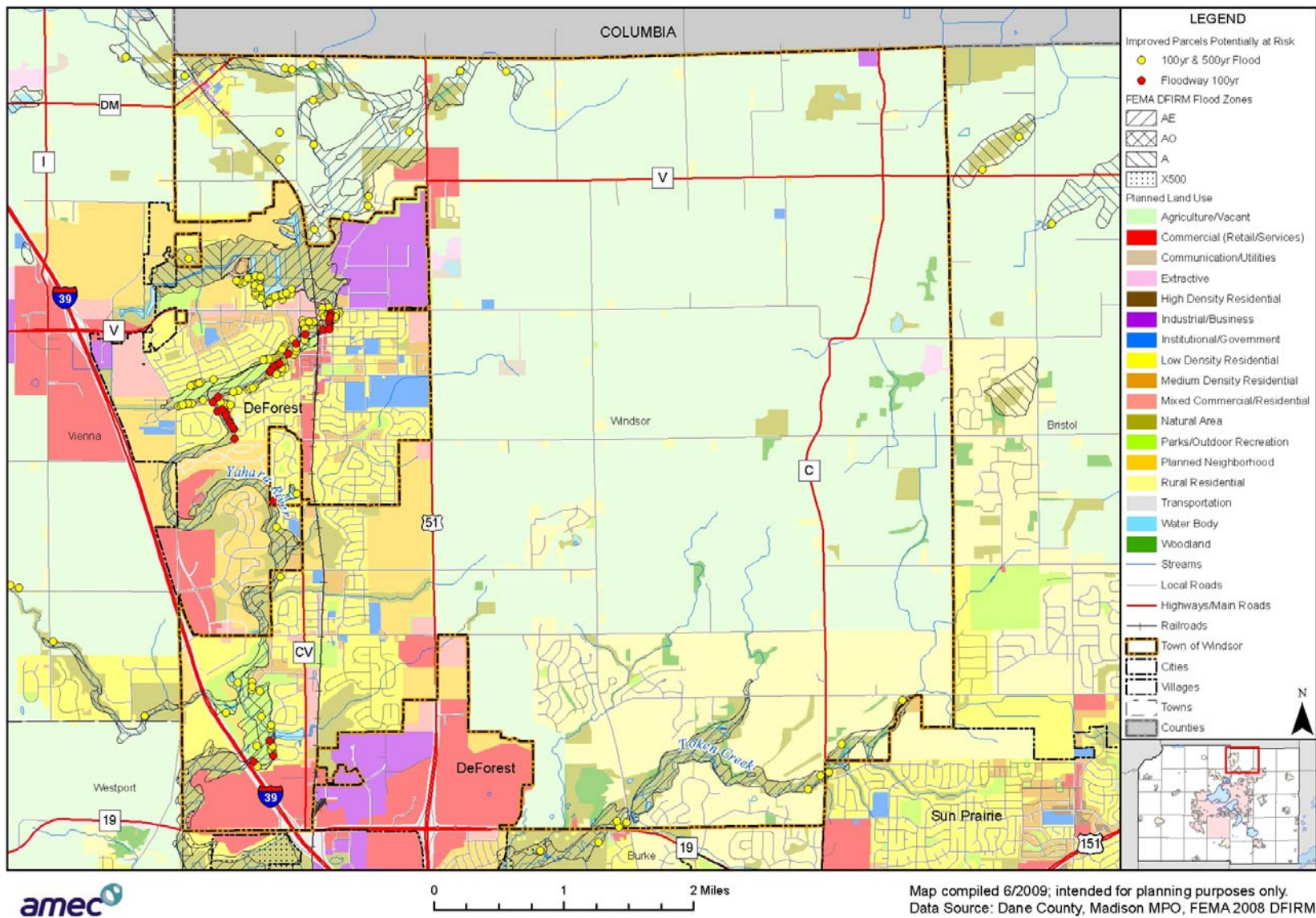
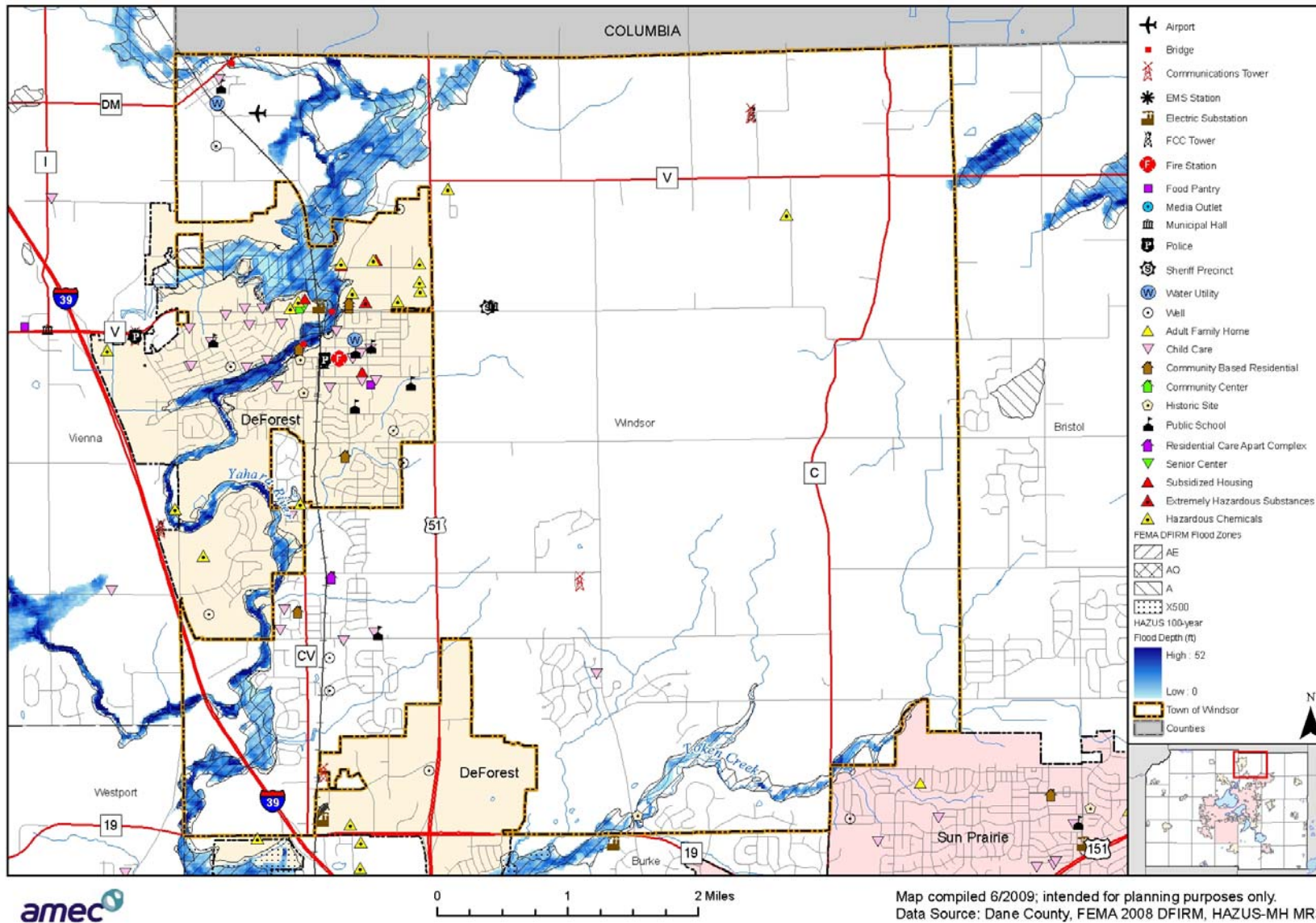


Figure 2 Flood Hazards and Critical Facilities Map



Tornado

While it is difficult to estimate specific losses to a tornado due to the random nature of the event, a methodology was developed that was applied to each jurisdiction during the 2009 update. The table below estimates the percent area of the jurisdiction that could be impacted based on the average sized tornado (F2) in Dane County. High value exposure is based on 100% loss, medium 50% loss, and low is 25% loss to the property potentially impacted. The loss ratio, which is the ratio of the damaged building value to total exposed building value, is a measure of the impact to the jurisdiction as a whole. Communities with loss ratios 10% or more may have difficulty recovering from a disaster. Refer to the tornado hazard profile in the main mitigation plan for more details on this methodology.

Table 10 Tornado Loss Estimate

% area impact	Improved Parcel Count	Affected Structure Estimate	Total Exposed Value	Estimated Loss \$ (High Damage Range)	Estimated Loss \$ (Moderate Damage Range)	Estimated Loss \$ (Low Damage Range)	Loss Ratio for Moderate Damage Range
2.95%	2,155	63	566,987,250	16,704,774	8,352,387	2,088,097	2.95%

Data Source: Analysis Based on Dane County Land Information Office's data

Growth and Development Trends

Planned land use is shown in Figure 1, in relation to the flood hazard. Table 11 illustrates how the Town of Windsor has grown in terms of population and number of housing units between 2000 and 2008. Table 12, drawn from the Comprehensive Plan for the Town of Windsor, shows population projections through 2025.

Table 11 Town of Windsor Change in Population and Housing Units, 2000-2008

2000 Population	2008 Population	Percent Change (%) 2000-2008	2000 # of Housing Units	2008 # of Housing Units	Percent Change (%) 2000-2008
5,286	5,861	10.9	1,923		

Data Source: Dane County

Table 12 Town of Windsor Population Projections, 2005-2025

Population Projection	2005	2010	2015	2020	2025
Increase by same number per year	5,607	6,038	6364	6,715	7,101

Data Source: Town of Windsor Comprehensive Plan.

The Data Collection Guide issued in 2009 provided additional insight into growth and development for the Town of Windsor:

- The town is actively monitoring development in areas that may be susceptible to natural hazards.

Problems or Additional Vulnerability issues

The Data Collection Guide identified the following problems or additional vulnerability issues in the Town of Windsor:

- Recently the Town has experienced flooding every year
- Floods are approximately 2 feet deep
- The Morrisonville flooding affects a low income population

Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment summarizes regulatory mitigation capabilities, administrative and technical mitigation capabilities, and fiscal mitigation capabilities for the Town of Windsor.

Mitigation Capabilities Summary

Table 13 lists planning and land management tools typically used by local jurisdictions to implement hazard mitigation activities, or by themselves contribute to reducing hazard losses. The table also indicates which of these tools are currently utilized in the Town of Windsor.

Table 13 Town of Windsor Regulatory Mitigation Capabilities

Regulatory Tool (ordinances, codes, plans)	Yes/No	Comments
General or Comprehensive plan	Yes	Updated 2006
Zoning ordinance	Yes	Dane County/Sun Prairie extraterritorial
Subdivision ordinance	Yes	
Growth management ordinance	No	
Floodplain ordinance	Yes	
Other special purpose ordinance (stormwater, steep slope, wildfire)	Yes	Storm water/Steep Slope
Building code	Yes	State building code
Fire department ISO rating	Yes	
Erosion or sediment control program	Yes	Dane County
Storm water management program	Yes	Dane County
Site plan review requirements	Yes	
Capital improvements plan	No	
Economic development plan	No	
Local emergency operations plan	No	
Other special plans	No	
Flood insurance study or other engineering study for streams	Yes	
Elevation certificates (for floodplain development)	No	

Data Source: Town of Windsor Data Collection Guide

Table 15 identifies the personnel responsible for mitigation and loss prevention activities as well as related data and systems in the Town of Windsor.

Table 15 Responsible Personnel and Departments for the Town of Windsor

Personnel Resources	Yes/No	Department/Position	Comments
Planner/engineer with knowledge of land development/land management practices	Yes	Planner/Engineer	The planners a consultant, the engineer as a part time employee of the town
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Town Engineer	
Planner/engineer/scientist with an understanding of natural hazards	Yes	Town Engineer	
Personnel skilled in GIS	Yes	Planner	Planning consultant to the town
Full-time Building Official	No	Part time building inspector	
Floodplain Manager	No		
Emergency Manager	Yes	Fire chief	
Grant Writer	Yes	Town Operations Manager	
Other Personnel			
GIS Data Resources – (land use, building footprints, etc.)	Yes	Dane County land information office	
GIS Data – Links to assessor's data			
Warning systems/services (Reverse 9-11, cable override, outdoor warning signals)	No	Siren	

Data Source: Town of Windsor Data Collection Guide

Table 16 identifies financial tools or resources that the Town of Windsor could potentially use to help fund mitigation activities.

Table 16 Financial Resources for the Town of Windsor

Financial Resources	Accessible/Eligible to Use (Yes/No)	Comments
Community Development Block Grants	Yes	Dane County administers the CDBG program
Capital improvements project funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	Town sanitary districts responsible for water and sanitary sewer
Impact fees for new development	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Incur debt through private activities	Yes	

Data Source: Town of Windsor Data Collection Guide

Additional Capabilities

The Data Collection Guide identified the following additional capabilities for the Town of Windsor:

- At this time the Town is not aware of any certifications.
- DeForest Area Fire and EMS maintains a website <http://www.deforestfire.com> with information regarding fire safety.
- The fire department also has outreach programs to inform the public about fire safety.
- Comparison floodplain mapping and structures at risk in the town.
- Dredging the Morrisonville drainage ditch, construction is expected to start in February 2009.

National Flood Insurance Program Participation

The Town of Windsor does not participate in the National Flood Insurance Program as a stand-alone entity, but is covered by the County's ordinance.

Public Involvement Activities

During the 2009 update, the community assisted with the public involvement activities referenced in the base plan. The Dane County Natural Hazard Mitigation Plan has been discussed at several of the Town Board Meetings. On April 15, 2009 the town hosted a public meeting to discuss the goals and objectives of the Natural Hazard Mitigation Plan at Town Hall.

Mitigation Objectives (Actions)

Objective #1: Mitigate Morrisonville flooding by improving drainage along the Yahara River

Steps:

- 1) Prepare project construction drawings
- 2) Obtain necessary permits for projects.
- 3) Obtain easements for project construction.
- 4) Competitively bid the project.
- 5) Select contractor.
- 6) Provide Project oversight and project documentation to the WDNR

Lead Implementing Agency: Town of Windsor

Supporting Agencies: Morrisonville Sanitary District

Possible Funding and Technical Assistance: Morrisonville Utility District

Timeline: Project to be completed by summer of 2009.

Priority: High

Estimated Costs: \$210,000

Objective #2: Mitigate sanitary sewer backups in Morrisonville.

Steps:

- 1) Apply for CDBG disaster mitigation grant
- 2) Conduct targeted salary survey to determine Morrisonville Sanitary District grant eligibility
- 3) Prepare engineering studies
- 4) Apply for WDNR and Rural Development grants and loans
- 5) Prepare plans and specifications
- 6) Obtain bids for project construction
- 7) Provide Project oversight and documentation for WDNR and Rural Development

Lead Implementing Agency: Morrisonville Sanitary District

Supporting Agencies:

- Town of Windsor
- Dane County
- WDNR
- Rural Development

Possible Funding and Technical Assistance:

- CDBG Disaster Mitigation Grant
- WDNR Hardship Funding
- Rural Development Grant and Loan Program

Timeline: Plans and specifications completed by winter 2010, construction completed by fall 2010.

Priority: Moderate

Estimated Costs: \$3.5 million.

Objective #3: Mitigate resident injuries and property damage from natural disasters.

Steps:

- 1) Make weather radios available for purchase at Town Hall.

Lead Implementing Agency: Town of Windsor

Timeline: Ongoing

Priority: Low

Estimated Costs: \$25 per radio