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## Village of Waunakee Annex

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### Community Profile

The Village of Waunakee is located in the north central part of the County, north of the Town of Westport, east of the Town of Springfield, and south of the Town of Vienna. Land use includes agriculture and woodlands, and dispersed one, two and multi-family homes. According to the United States Census Bureau, the Village of Waunakee has a total area of 5.96 square miles, all of it land.

As of the 2010 Census, there are 12,097 people, 4,344 households, and 3,316 families residing in the Village of Waunakee. The population density is 1895.7 per square mile. There are 4,483 housing units at an average density of 702.5 per square mile. The municipality population distributed by the Wisconsin Department of Administration indicates that the 2015 population for Village of Waunakee was 12,901 people. Table 1 shows the population profile by age for the Village of Waunakee according to the 2010 Census.

**Table 1 Population Profile of Village of Waunakee**

Category	Number	Percent
Total population	12,097	100.0
Under 5 years	809	6.7
5 to 9 years	1,208	10.0
10 to 14 years	1,148	9.5
15 to 19 years	907	7.5
20 to 24 years	389	3.2
25 to 29 years	484	4.0
30 to 34 years	603	5.0
35 to 39 years	938	7.8
40 to 44 years	1,086	9.0
45 to 49 years	1,186	9.8
50 to 54 years	974	8.1
55 to 59 years	629	5.2
60 to 64 years	536	4.4
65 to 69 years	331	2.7
70 to 74 years	229	1.9
75 to 79 years	206	1.7
80 to 84 years	172	1.4
85 years and over	262	2.2

Data Source: 2010 U.S. Census

American Community Survey estimates for 2014 indicate that the median income for a household in the Village of Waunakee is \$90,365 and the median income for a family is \$103,665. The per capita income for the Village of Waunakee is \$37,951. 97.6% of the population has at least a high school degree, while 50.5% of the population holds at least a bachelor's level degree.

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## **Hazard Identification and Risk Assessment**

The first step in a hazard analysis is to identify which hazards the community is vulnerable to. Table 2 outlines the hazard identification for the Village of Waunakee based on the Data Collection Guide. 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 Village of Waunakee’s planning team members were asked to complete the matrix by ranking each category on a scale of 0 to 5 based on the experience and perspective of each planning team member. A ranking of 0 indicated “no concern” while a ranking of 5 indicated “highest concern”. This matrix appears as Table 2. This matrix reflects the significance of the hazards relative to one another.

This matrix reflects that the Village of Waunakee is most vulnerable to wildfire, windstorm, and landslide. The vulnerability established here is a qualitative assumption based on the impacts, geographic extent, probability of future occurrence, and magnitude/severity. On the county level, these vulnerabilities were calculated with quantitative data as well.

**Table 2 Vulnerability Assessment Matrix for the Village of Waunakee**

Hazard	Hazard Attributes (1-5)			Impact Attributes (0-5)						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/Levee	0	0	0	0	0	0	0	0	0	<b>0</b>
Extreme Cold	5	2	2	1	1	3	1	1	1	<b>17</b>
Extreme Heat	5	2	2	1	1	3	1	1	1	<b>17</b>
Drought	5	2	2	1	1	2	1	1	3	<b>18</b>
Flood	5	3	4	1	1	2	1	1	3	<b>21</b>
Fog	3	3	2	1	1	1	1	1	1	<b>14</b>
Hail Storm	3	3	2	2	1	1	2	1	3	<b>18</b>
Landslide	3	3	3	3	3	3	3	3	3	<b>27</b>
Lightning	1	1	5	1	1	2	1	1	2	<b>15</b>
Tornado	3	2	2	3	3	3	3	3	2	<b>24</b>
Wildfire	3	3	3	3	3	3	3	3	3	<b>27</b>
Windstorm	3	3	3	3	3	3	3	3	3	<b>27</b>
Winter Storm	5	4	2	1	1	3	2	2	3	<b>23</b>

Data Source: Data Collection Guide, 2015

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## Previous Hazard Events

Through the Data Collection Guide, the Village of Waunakee 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 Village of Waunakee did not note any previous hazard events in their jurisdiction in the Data Collection Guide.

## Asset Inventory

Assets include the people, property, and critical facilities within the Village of Waunakee 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 3 Vulnerable Population Summary**

Disability Status from the 2014 American Community Survey	Number	Percent of Group with Disability
Population Under 5 years old with a Disability	0	0%
Population 5-17 years old with a Disability	28	0.9
Population 18-64 with a Disability	216	2.8
Population Over 65 years old with a Disability	348	28.0
Total Population with Disability	592	4.7

Other Vulnerable Populations	Estimate	Percentage
Families Below Poverty Level	73	2.1
Individuals Below Poverty Level	379	3.0
Of those poverty: Individuals Under 18	106	2.7
Of those poverty: Individuals Over 65	95	7.6
Total Population Over 5 who Speak English less than "very well"	118	1.0
2014 ACS Total Population Estimate	12613	100%

Data Source: 2014 American Community Survey

## General Property

**Table 4 Property Exposure Summary**

Property Type	Total Parcel Count	Improved Parcel Count	Improved Values (\$)	Content (\$)	Total Value (\$)
<b>Totals</b>	<b>4,068</b>	<b>3,582</b>	<b>878,899,100</b>	<b>439,449,550</b>	<b>1,318,348,650</b>
Agriculture	31	5	241,000	120,500	361,500
Commercial	112	101	58,488,200	29,244,100	87,732,300
Utilities	19	1	1,434,500	717,250	2,151,750
Industrial	20	18	35,280,600	17,640,300	52,920,900
Institutional/ Governmental	50	8	2,822,400	1,411,200	4,233,600
Other	574	235	82,278,700	41,139,350	123,418,050
Residential	3,262	3,214	698,353,700	349,176,850	1,047,530,550

Data Source: Dane County Land Information Office, December 2015

## Critical Facilities

The Village of Waunakee has identified the following critical facilities important to protect from disaster impacts in Table 5. These were provided as part of the 2010 Natural Hazard Mitigation Plan. The Village did not submit new facilities for this table so it is assumed that the list remains unchanged.

**Table 5 Other Specific Assets for the Village of Waunakee**

Name of Asset	Type*	Replacement Value (\$)	Occupancy/Capacity (#)	Hazard Specific Issues
Community Center	EI	\$6,930,000	400	Adjacent to 6 Mile Creek
Parks Maintenance Buildings	EI	\$200,000	10	Adjacent to 6 Mile Creek
Village Park Concession Building	VF	\$25,000	10	Adjacent to 6 Mile Creek
Village Park Gazebo/Restrooms	VF	\$66,000	50	Adjacent to 6 Mile Creek
Park Shelter	VF	\$350,000	50	Adjacent to 6 Mile Creek
Utilities Facility	EI	\$1,900,000	50	Tornado; loss of power
Police Station	EI	\$2,500,000	50	Tornado; loss of power
Library	EI	\$1,690,000	100	Tornado; loss of power

Name of Asset	Type*	Replacement Value (\$)	Occupancy/Capacity (#)	Hazard Specific Issues
Water Well #1	EI	\$250,000	N/A	Adjacent to 6 Mile Creek; loss of power
Water Well #2	EI	\$100,000	N/A	Tornado; loss of power
Water Well #3	EI	\$150,000	N/A	Tornado; loss of power
Water Well #4	EI	\$200,000	N/A	Tornado; loss of power
Village Hall	EI	\$2,000,000	100	Tornado; loss of power
Radio Broadcast infrastructure	EI	\$1,600,000	N/A	Tornado; windstorm; loss of power
Public Works Facility	EI	\$2,000,000	50	Tornado; loss of power
Fire Station	EI	\$3,000,000	100	Tornado
EMS Station	EI	\$2,000,000	50	Tornado

\*EI: Essential Infrastructure; VF: Vulnerable Facilities; HM: Hazardous Materials Facilities; NA: natural assets  
Data Source: Data Collection Guide

## 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 Village of Waunakee. 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
<b>Dam Failure</b>	None	None	None	Specifics unknown; See hazard profile in County Plan
<b>Drought</b>	Minimal	None	Minimal	Specifics unknown; See hazard profile in County Plan
<b>Flooding</b>	See section below	See section below	See section below	See section below
<b>Fog</b>	Minimal	None	None	Specifics unknown; See hazard profile in County Plan
<b>Hailstorm</b>	Minimal	See Property Exposure table 3	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan
<b>Landslide/ Sinkholes/ Erosion</b>	Minimal	Minimal	Minimal	Specifics unknown; See hazard profile in County Plan
<b>Lightning</b>	See Table 2 Population	See Table 3 Property Exposure	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan

Hazard	Populations	Structures	Critical Facilities	Future Damage Potential
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 and Properties in the Floodplain

Refer to the flood profile in the mitigation plan for a description of the methodology used to identify potentially flood-prone properties. Figure 1 shows mapped floodplains, future growth areas, and critical or vulnerable facilities. Tables 7 and 8 outline the primary structures and properties with primary structures on them within the Village of Waunakee. Potential number of individuals at risk figures are based on primary residential structures and the average household size within Dane County.

**Table 7 Primary Structures in the Floodplain**

Total Floodway Structures	Floodway Residential Structures	Total Structures in 100 year Floodplain	Residential Structures in 100 year Floodplain	Potential Number of Individuals at Risk in 100 year Flood	Total Structures in 500 year Floodplain	Residential Structures in 500 year Floodplain	Potential Number of Individuals at Risk in 500 year Flood
0	0	1	1	2.33	22	20	46.6

Source: Analysis based on Dane County Land Information Office Data

**Table 8 Properties with Primary Structures in the Floodplain**

Total Floodway Properties	Floodway Improved Values	Floodway Residential Properties	Total Properties in 100 year Floodplain	Total Improved Value of Properties in 100 year Floodplain	Residential Properties in 100 year Floodplain	Total Properties in 500 year Floodplain	Total Improved Value of Properties in 500 year Floodplain	Residential Properties in 500 year Floodplain
0	\$0	0	1	\$108,000	1	22	\$6,851,000	20

Source: Analysis based on Dane County Land Information Office Data

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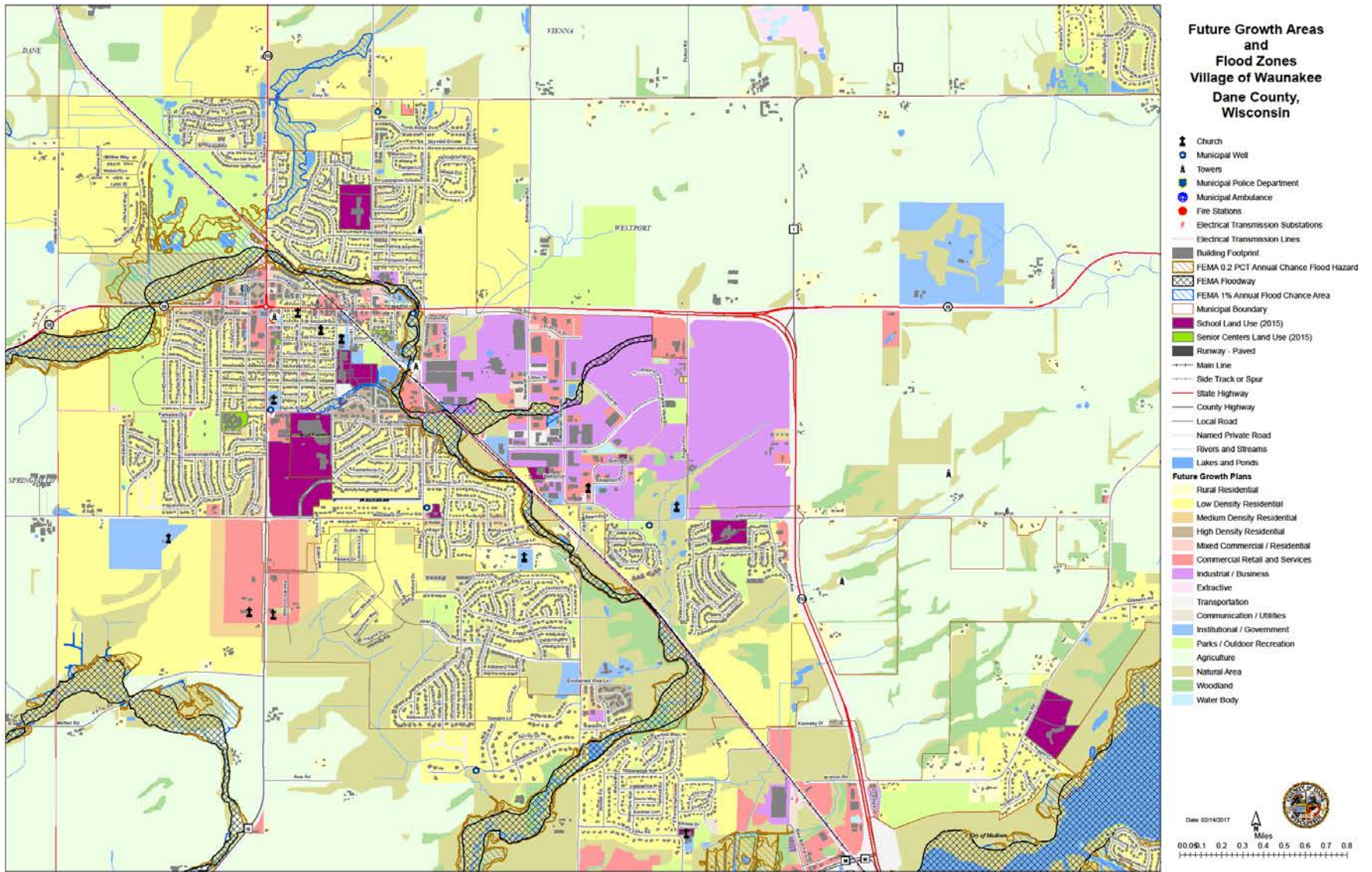
### **Repetitive Loss Properties and Flood Insurance Policies**

According to FEMA Policy and Claim Statistics for Flood Insurance, the community has nine flood insurance policies, with a total coverage amount of \$2,457,000. There have been 2 claims and \$34,220 in losses paid in flood insurance claims since 1978.

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Figure 1 Flood Hazards and Future Land Use 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 2015 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 9 Tornado Loss Estimate**

% Area of 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
12.46%	4502	561	\$1,586,114,100	\$197,570,114	\$98,785,057.04	\$49,392,528.52	6.2%

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 10 illustrates how the Village of Waunakee has grown in terms of population and number of housing units between 2010 and 2014-15. Housing data is to 2014 due to data availability. Table 11, drawn from the Demographics Services Center at the Wisconsin Department of Administration, shows population projections through 2035.

**Table 10 Village of Waunakee Change in Population and Housing Units, 2010-2014/15**

2010 Population	2015 Population	Percent Change (%) 2010-2015	2010 # of Housing Units	2014 # of Housing Units	Percent Change (%) 2010-2014
12097	12901	6.65%	4,483	4,683	4.5%

Data Source: Dane County Planning and Wisconsin Department of Administration

**Table 11 Village of Waunakee Population Projections, 2005-2025**

Population Change	5 year Growth %	2015	2020	2025	2030	2035
Increase by same percentage each year	1.30%	12,901	13,737	14,626	15,573	16,582

Data Source: Dane County Planning and Wisconsin Department of Administration

## 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 Village of Waunakee.

### Mitigation Capabilities Summary

Table 12 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 Village of Waunakee.

**Table 12 Village of Waunakee Regulatory Mitigation Capabilities**

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

Data Source: Village of Waunakee Data Collection Guide

Table 13 identifies the personnel responsible for mitigation and loss prevention activities as well as related data and systems in the Village of Waunakee.

**Table 13 Responsible Personnel and Departments for the Village of Waunakee**

Personnel Resources	Yes/No	Department/Position
Planner/engineer with knowledge of land development/land management practices	Yes	Village Engineer
Engineer/professional trained in construction practices related to buildings and/or infrastructure	Yes	Village Engineer
Planner/engineer/scientist with an understanding of natural hazards	Yes	Village Engineer
Personnel skilled in GIS	Yes	Village Engineer
Full-time Building Official	No	Village contracts with a firm to perform plan/permit review
Floodplain Manager	Yes	Village Engineer
Emergency Manager	Yes	Village Administrator
Grant Writer	Yes	The Village has hired firms in the past to assist with grant writing as needed.
Other Personnel		
GIS Data Resources – (land use, building footprints, etc.)	Yes	Village Engineer and consulting firm
GIS Data – Links to assessor’s data		
Warning systems/services (Reverse 9-11, cable override, outdoor warning signals)	Yes	Fire District

Data Source: Village of Waunakee Data Collection Guide

Table 14 identifies financial tools or resources that the Village of Waunakee could potentially use to help fund mitigation activities.

**Table 14 Financial Resources for the Village of Waunakee**

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	No
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: Village of Waunakee Data Collection Guide

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## National Flood Insurance Program Participation

**Table 15 NFIP Participation for the Village of Oregon**

Floodplain Ordinance	Dane County FIRM Panels	NFIP Participation	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date
Yes	229G	Yes	12/17/73	5/1/1978	9/17/14	5/1/78

Source: FEMA National Flood Insurance Program Community Status Book

## Public Involvement Activities

The Village of Waunakee community participated in the County public outreach process. This was a series of public workshops held around the County in which an overview of natural hazard mitigation was given and the County plan was discussed. Residents were then given the opportunity to give their input on mitigation actions that could be taken, and filled out informational surveys that assessed the level of risk the perceived within their own community. More information on these meetings can be found in the County base plan.

## Mitigation Actions

**Objective 1:** Support Dane County efforts to mitigate natural hazards at the local level through continued collaboration with County projects in the Village of Waunakee area. The Village will continue to lower its vulnerability to natural hazards by distributing County hazard mitigation information and evaluating grant opportunities for potential use on hazard mitigation projects within the Village.

### Steps:

- 1) Consider Dane County hazard mitigation information and its relevance to Village hazard mitigation efforts and resident safety.
- 2) Take necessary steps to apply for hazard mitigation grant money when available.

Lead Implementing Agency: Village of Waunakee

Supporting Agencies: Dane County Emergency Management

Possible Funding and Technical Assistance:

Timeline: Continuous

Priority: Moderate

Estimated Costs: Unknown