

# Village of McFarland Annex

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## Community Profile

The Village of McFarland is located in the southeast quadrant of the County, north of the Town of Dunn, east of the City of Fitchburg, and south of the City of Madison. Land use is dominated by agriculture and woodlands, and dispersed one, two and multi-family homes. According to the United States Census Bureau, the Village of McFarland has a total area of 3.49 square miles, all of it land.

As of the 2010 Census, there are 7,808 people, 3,079 households, and 2,201 families residing in the Village of McFarland. The population density is 2200.0 per square mile. There are 3,200 housing units at an average density of 901.7 per square mile. The municipality population data distributed by the Wisconsin Department of Administration indicates that the 2015 population for Village of McFarland was 8,009 people. Table 1 shows the population profile by age for the Village of McFarland according to the 2010 Census.

**Table 1 Population Profile of Village of McFarland**

Category	Number	Percent
Total population	7,808	100.0
Under 5 years	469	6.0
5 to 9 years	559	7.2
10 to 14 years	670	8.6
15 to 19 years	558	7.1
20 to 24 years	284	3.6
25 to 29 years	435	5.6
30 to 34 years	455	5.8
35 to 39 years	514	6.6
40 to 44 years	624	8.0
45 to 49 years	705	9.0
50 to 54 years	683	8.7
55 to 59 years	621	8.0
60 to 64 years	429	5.5
65 to 69 years	273	3.5
70 to 74 years	178	2.3
75 to 79 years	145	1.9
80 to 84 years	103	1.3
85 years and over	103	1.3

Data Source: 2010 U.S. Census

American Community Survey estimates for 2014 indicate that the median income for a household in the Village of McFarland is \$70,750 and the median income for a family is \$91,011. The per capita income for the Village of McFarland is \$36,885. 97.9% of the population has at least a high school degree, while 49.1% 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 Village of McFarland using the same methodology in the County plan. The information to support the hazard identification and risk assessment for this Annex was collected through the 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 2 outlines the hazard identification for the Village of McFarland 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 McFarland'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 that the Village of McFarland is most vulnerable to extreme cold and heat, hail storm, tornado, winter storm and windstorm, and flooding. The vulnerability established here is a qualitative assumption based on the impacts, geographic extent, probability of future occurrence, and magnitude/severity.

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

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 Failure	3	1	1	1	0	1	1	1	1	<b>10</b>
Drought	5	1	1	0	0	1	1	3	3	<b>15</b>
Erosion	0	0	0	0	0	0	0	0	0	<b>0</b>
Extreme Cold	5	3	3	1	3	5	3	3	3	<b>29</b>
Extreme Heat	5	2	1	1	1	5	3	3	3	<b>24</b>
Flood	5	5	3	3	0	1	3	3	3	<b>25</b>
Fog	5	5	3	0	0	1	0	1	1	<b>11</b>
Hail Storm	5	3	3	5	1	1	1	3	3	<b>25</b>
Landslide	1	1	3	1	0	1	1	1	1	<b>10</b>
Lightning	5	5	5	1	1	1	1	1	3	<b>23</b>
Tornado	5	5	5	5	5	5	3	5	5	<b>43</b>
Wildfire	1	1	1	1	1	3	1	1	1	<b>11</b>
Windstorm	3	3	5	3	3	3	3	3	3	<b>28</b>
Winter Storm	5	3	3	1	1	3	3	3	3	<b>23</b>

Data Source: Village of McFarland Data Collection Guide, 2009 – the values listed were adapted to the 2015 update scale of 0-5

## **Previous Hazard Events**

Through the Data Collection Guide, the Village of McFarland 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:

### ***Flood: June 7-8 & 12<sup>th</sup>, 2008***

High lake levels and localized stormwater run off created flooding in and around water front properties in low lying areas in the Village of McFarland. The event damaged private properties to the estimated amount of \$150,000 and caused localized short-term road closures. There were no deaths or injuries reported, but there was reported damage to property. Businesses were economically affected due to the reduction access to lake and recreational areas. The Village of McFarland did not receive FEMA funds to help recover from the hazard. The Village of McFarland planning members felt such an event had a high likelihood to occur again.

### ***Drought: 2012 and 2013***

The Village reported experiencing severe drought in 2012 and 2013.

### ***Winter Storm: February 5-6, 2008; December 2009; February 1-3, 2011***

The Village of McFarland experienced severe winter storms during the times listed above. These correspond with county-wide events.

## **Asset Inventory**

Assets include the people, property, and critical facilities within the Village of McFarland 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	36	2.4
Population 18-64 with a Disability	336	6.8
Population Over 65 years old with a Disability	310	28.6
Total Population with Disability	682	8.5

Other Vulnerable Populations	Estimate	Percentage
Families Below Poverty Level	50	2.2
Individuals Below Poverty Level	267	3.3
Of those poverty: Individuals Under 18	38	1.9
Of those poverty: Individuals Over 65	41	3.8
Total Population Over 5 who Speak English less than "very well"	94	1.2
2014 ACS Total Population Estimate	8009	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>2,847</b>	<b>2,475</b>	<b>516,550,600</b>	<b>258,275,300</b>	<b>774,825,900</b>
Agriculture	3	2	158,600	79,300	237,900
Commercial	95	67	47,179,700	23,589,850	70,769,550
Utilities	19	2	307,100	153,550	460,650
Industrial	33	28	19,681,300	9,840,650	29,521,950
Institutional/ Governmental	45	3	1,158,100	579,050	1,737,150
Other	201	34	9,896,800	4,948,400	14,845,200
Residential	2,451	2,339	438,169,000	219,084,500	657,253,500

Data Source: Dane County Land Information Office, 2015

## Critical Facilities

The Village of McFarland has identified the following critical facilities important to protect from disaster impacts. These are collected in Table 5.

**Table 5 Critical Facility Summary/Essential Infrastructures**

Facility	Type*	No. of Facilities	Occupancy
All Village Roads	EI	n/a	n/a
Hwy 51 Bridge – WSOR RailRoad	EI	1	n/a
Hwy 51 Bridge – Yahara River	EI	1	n/a
Terminal Drive Bridge	EI	1	n/a
Lake Edge Road Bridge	EI	1	n/a
Burma Road Bridge	EI	1	n/a
Burma Road Water Tower	EI	1	n/a
Holscher Road Water Tower	EI	1	n/a
Public Works Facility 5115 Terminal Drive	EI	1	n/a
Municipal Center	EI	1	n/a
Alliant Energy Substation (near 3457 Siggelkow Road)	EI	1	n/a
ANR Pipeline Pumping Station	EI	1	n/a
McFarland Police Department	EI	1	n/a
Public Works Garage	EI	3	n/a
Village Hall	EI	1	n/a
Sanitary Sewer Lift Station #1: 5107 Erling Ave	EI	1	n/a
Sanitary Sewer Lift Station #2: 6407 Pheasant Run	EI	1	n/a
Sanitary Sewer Lift Station #3: 6623 Meredith Way	EI	1	n/a
Sanitary Sewer Life Station #4: 4704 Terminal Drive	EI	1	n/a
Sanitary Sewer Lift Station #5: 5107 Holscher Road	EI	1	n/a
Well #1: 5412 Long Street	EI	1	n/a
Well #3: 5001 North Autumn Lane	EI	1	n/a
Well #4: 5703 Bird Song Court	EI	1	n/a
Municipal Chlorine Storage	HM	3	n/a
Waterways and Werlands In and Around Community	NA	n/a	n/a
American Eagle Propane	HM	1	n/a

Facility	Type*	No. of Facilities	Occupancy
ARC Terminals	HM	1	n/a
ATC- Cottage Grove Site	HM	1	n/a
CHS Petroleum Terminal	HM	1	n/a
Citgo Petroleum	HM	1	n/a
Entwhistle Metal Fab Inc	HM	1	n/a
Flint Hills Resources Pine Bend LLC	HM	1	n/a
Frontier Communications	HM	1	n/a
Hightrack LLC DBA: Midwest Refrigerated Services Inc	HM	1	n/a
Klemm Tank Lines	HM	1	n/a
Kwik Trip	HM	1	n/a
Madison Station	HM	1	n/a
U.S. Oil	HM	3	n/a
Venture Fuels LLC	HM	1	n/a
Ginger Bread House	VF	1	80
Ginger Bread House	VF	1	160
Conrad Elvehjem Early Learning Center	VF	1	195
McFarland Primary School	VF	1	396
Waubesa Intermediate School	VF	1	625
Indian Mound Middle School	VF	1	632
McFarland High School	VF	1	846

Data Source: Village of McFarland Data Collection Guide, \*EI: Essential Infrastructure; VF: Vulnerable Facilities; HM: Hazardous Materials Facilities;

## 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 the Village of McFarland. 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**

<b>Hazard</b>	<b>Populations</b>	<b>Structures</b>	<b>Critical Facilities</b>	<b>Future Damage Potential</b>
<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
<b>Severe Cold</b>	See Table 2 Population	See Table 3 Property Exposure	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan
<b>Severe Heat</b>	See Table 2 Population	None	Minimal	Specifics unknown; See hazard profile in County Plan
<b>Severe Winter Storm</b>	See Table 2 Population	See Table 3 Property Exposure	See Critical Facility Inventory Table(s)	Specifics unknown; See hazard profile in County Plan
<b>Tornado</b>	See Table 2 Population	See section below	See Critical Facility Inventory Table(s)	See section below
<b>Wildfire</b>	Minimal	Minimal	Minimal	Specifics unknown; See hazard profile in County Plan
<b>Windstorm</b>	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 McFarland. 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	0	0	0	8	3	6.99

Source: Analysis based on Dane County Land Information Office Data

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

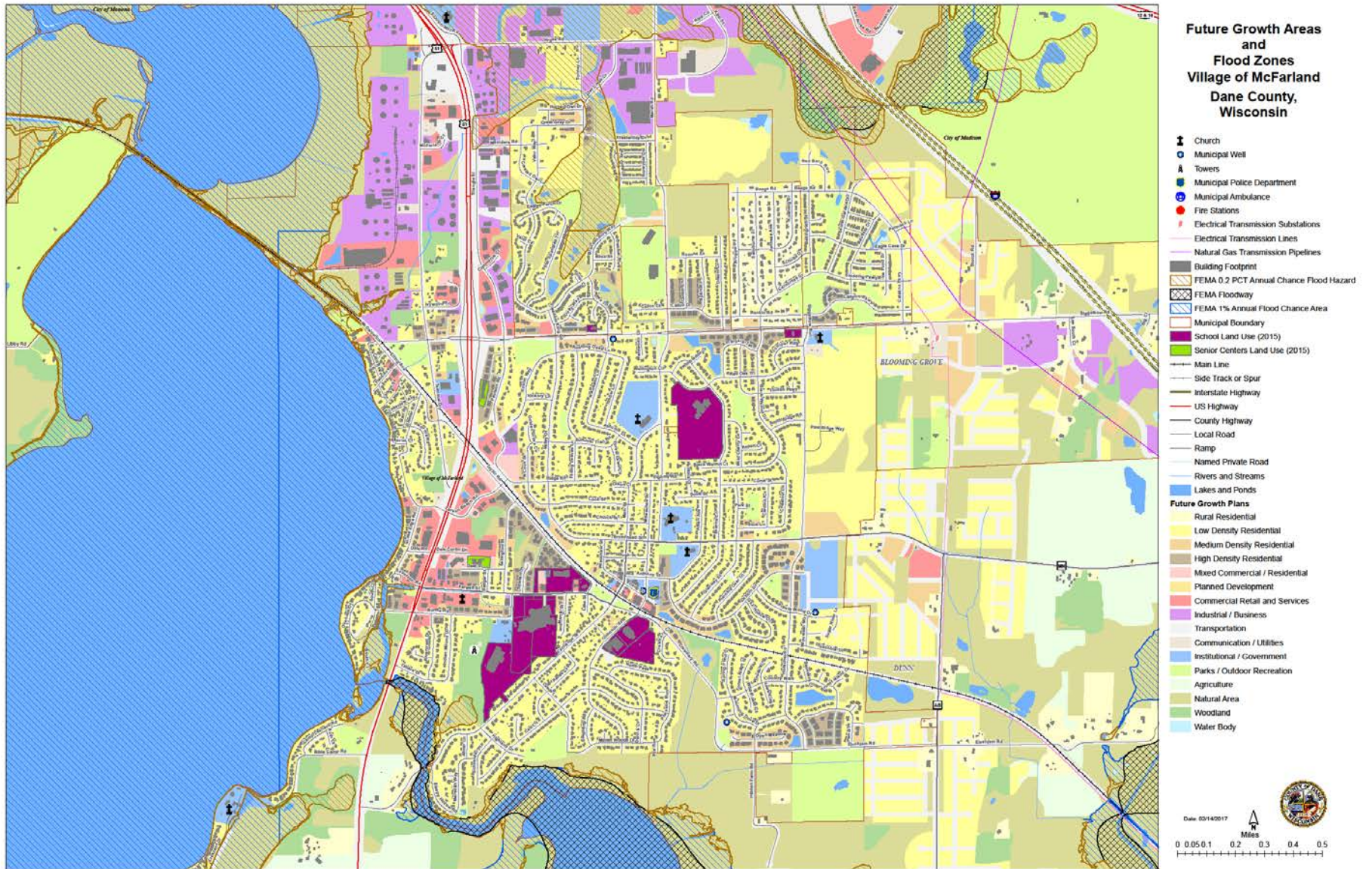
Total Floodway Properties	Floodway Improved Values	Floodway Residential Properties	Total Properties in 100 year Floodplain	Total Improved Value of Properties in 100 year Floodplain	Residential Properties in 100 year Floodplain	Total Properties in 500 year Floodplain	Total Improved Value of Properties in 500 year Floodplain	Residential Properties in 500 year Floodplain
0	\$0	0	0	\$0	0	8	\$3,285,800	3

Source: Analysis based on Dane County Land Information Office Data

### Repetitive Loss Properties and Flood Insurance Policies

According to FEMA Policy and Claim Statistics for Flood Insurance, the community has 11 flood insurance policies, with a total coverage amount of \$2,694,000. There has been one loss claim, which was closed without payment. No repetitive losses have been reported.

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
24.1%	2,926	706	\$1,003,921,800	\$242,198,294	\$121,099,147	\$60,549,573	12.1%

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 Mazomanie 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 McFarland 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
1652	1667	0.91%	734	729	-0.7%

Data Source: Dane County Planning and Wisconsin Department of Administration

**Table 11 Village of McFarland Population Projections, 2015-2035**

Population Change	5 year Growth %	2015	2020	2025	2030	2035
Increase by same percentage each year	0.35%	7,946	8,085	8,227	8,372	8,519

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 McFarland.

### **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 McFarland.

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

<b>Regulatory Tool (ordinances, codes, plans)</b>	<b>Yes/No</b>	<b>Comments</b>
General or Comprehensive plan	Yes	
Zoning ordinance	Yes	
Subdivision ordinance	Yes	
Growth management ordinance	Yes	Code only for Eastside Neighborhood Growth Plan 2008
Floodplain ordinance	Yes	
Other special purpose ordinance (stormwater, steep slope, wildfire)	Yes	
Building code	Yes	
Fire department ISO rating	4	
Erosion or sediment control program	Yes	
Stormwater management program	Yes	
Site plan review requirements	Yes	
Capital improvements plan	Yes	
Economic development plan	Yes	For certain areas
Local emergency operations plan	Yes	
Other special plans		
Flood insurance study or other engineering study for streams	Yes	FEMA Report
Elevation certificates (for floodplain development)	Yes	Part of Flood Plan mapping

Data Source: Village of McFarland 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 McFarland.

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

Personnel Resources	Yes/No	Department/Position	Comments
Planner/engineer with knowledge of land development/land management practices	N/A Contracted service through an engineering firm	McFarland Public Works	Director
Engineer/professional trained in construction practices related to buildings and/or infrastructure		Do use Dane County Land Information	Community Development Department/Building Inspector
Planner/engineer/scientist with an understanding of natural hazards		McFarland Emergency Management/Director	Staff specific depending on department
Personnel skilled in GIS		Dane County Land Information Office	
Full-time Building Official	Dane County 911 Center		
Floodplain Manager	N/A Contracted service through an engineering firm	McFarland Public Works	Director
Emergency Manager		Do use Dane County Land Information	Community Development Department/Building Inspector
Grant Writer		McFarland Emergency Management/Director	Staff specific depending on department
Other Personnel		Dane County Land Information Office	
GIS Data Resources – (land use, building footprints, etc.)	Dane County 911 Center		
GIS Data – Links to assessor’s data	N/A Contracted service through an engineering firm	McFarland Public Works	Director
Warning systems/services (Reverse 9-11, cable override, outdoor warning signals)		Do use Dane County Land Information	Community Development Department/Building Inspector
Other:		McFarland Emergency Management/Director	Staff specific depending on department

Data Source: Village of McFarland Data Collection Guide

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

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

Financial Resources	Accessible/Eligible to Use (Yes/No)
Community Development Block Grants	No
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activities	No

Data Source: Village of McFarland Data Collection Guide

### Additional Capabilities

- The Village of McFarland provides regular information for the public via website, Village newsletters and educational programs on water usage, fire safety and emergency preparedness. The community also sponsors an Earth Day event, wetland preservation and urban forest programs.
- The Village conducts aggressive fire and building code inspections. These inspections include terminal fuel storage facility inspections and cooperative response plans.

### National Flood Insurance Program Participation

The Village has participated in the NFIP since 1978; additional details are noted in Table 15.

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

Floodplain Ordinance	Dane County FIRM Panels	NFIP Participation	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date
Yes	441, 443, 444	Yes	12/17/1973	6/15/1978	9/17/2014	6/15/1978

Data Source: FEMA National Flood Insurance Program Community Status Book.

### Public Involvement Activities

The Village of McFarland 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

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level of risk the perceived within their own community. More information on these meetings can be found in the County base plan.

## **Mitigation Objectives (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 McFarland 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 McFarland

Supporting Agencies: Dane County Emergency Management

Possible Funding and Technical Assistance:

Timeline: Continuous

Priority: Moderate

Estimated Costs: Unknown

Objective 2: Continue to implement sound floodplain management practices through continued compliance with the National Flood Insurance Program, to include floodplain ordinance enforcement and periodic review, promoting the benefits of flood insurance, and continued staff training and development in floodplain management.

### Steps:

- 1) Evaluate through the existing staff, County planning staff, and additional DNR staff if necessary, the regulatory deficiencies and enforcement shortcomings in flood-related ordinances and programs (see related County objective);
- 1) Periodically update ordinances as necessary
- 2) Ensure that stop work orders and other means of compliance are being used as authorized by each ordinance;
- 3) Suggest changes to improve enforcement of and compliance with regulations and programs;
- 4) Encourage floodplain management staff to become Certified Floodplain Managers (CFM) or maintain their CFM status.
- 5) Participate in Flood Insurance Rate Map updates by adopting new maps or amendments to maps

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- 6) Utilize recently completed Digital Flood Insurance Rate maps in conjunction with GIS to improve floodplain management, such as improved risk assessment and tracking of floodplain permits.
  - 7) Promote and disperse information on the benefits of flood insurance, with assistance from partners such as the County, WDNR, or ASFPM.
  - 8) Evaluate the potential costs and benefits of becoming a participant in the Community Rating System.

Lead Implementing Agency: Public Works Director

Supporting Agencies:

- Dane County Planning and Development
- Lakes and Watershed Commission
- Land Conservation Department
- Association of State Floodplain Managers
- Wisconsin Department of Natural Resources

Possible Funding and Technical Assistance:

- Staff Time

Timeline: On going

Priority: High

Estimated Costs: Low; can be accomplished with existing staff and within existing department budget.