

# Village of Waterloo

RESOLUTION NUMBER 07-13-21-09

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 was signed in to law on October 30, 2000, placing new emphasis on state and local mitigation planning for natural hazards and requiring communities to adopt a hazard mitigation action plan to be eligible for pre-disaster and post-disaster federal funding for mitigation purposes; and

**WHEREAS**, a Multi-Jurisdictional Hazard Mitigation Plan was prepared by the Papio-Missouri River Natural Resources District, with assistance from JEO Consulting Group, Inc. of Lincoln, NE.

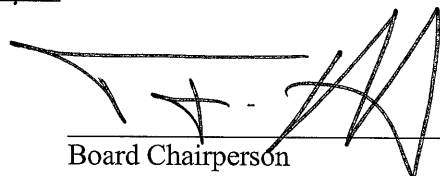
**WHEREAS**, the purpose of the mitigation plan was to lessen the effects of disasters by increasing the disaster resistance of the Natural Resources District and participating jurisdictions located within the planning boundary by identifying the hazards that affect the Papio-Missouri River Natural Resources District and prioritize mitigation strategies to reduce potential loss of life and property damage from those hazards, and

**WHEREAS**, FEMA regulations require documentation that the plan has been formally adopted by the governing body of the Village of Waterloo in the form of a resolution and further requesting approval of the plan at the Federal Level; and

**NOW, THEREFORE**, the governing body of the Village of Waterloo does herewith adopt the 2021 Papio-Missouri River Natural Resources District Multi-Jurisdictional Hazard Mitigation Plan Update in its entirety; and

PASSED AND APPROVED this 13 day of JULY, 2021.



  
\_\_\_\_\_  
Board Chairperson

ATTEST:  
  
\_\_\_\_\_

# COMMUNITY PROFILE

## **VILLAGE OF WATERLOO**

Papio-Missouri River NRD  
Multi-Jurisdictional Hazard Mitigation Plan Update

2021

## Local Planning Team

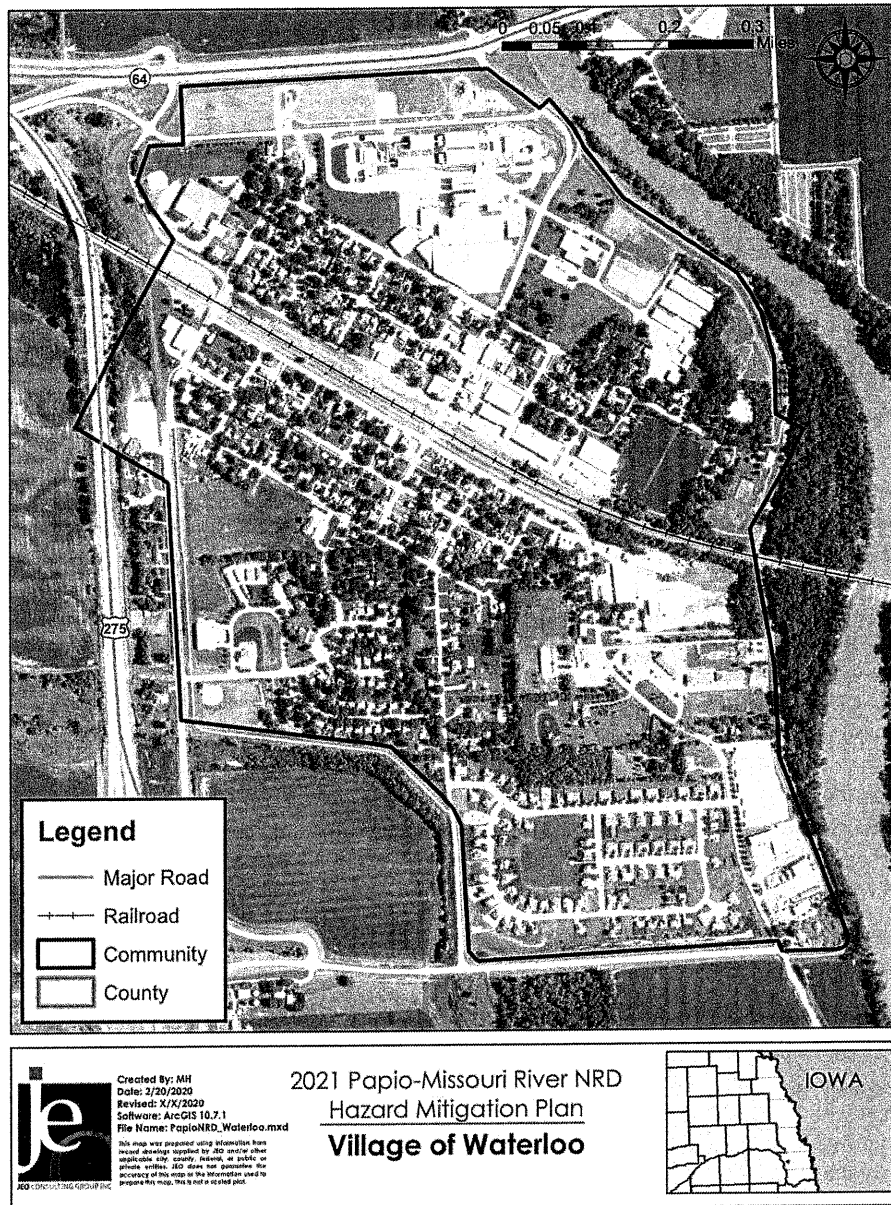
Table WLO.1: Waterloo Local Planning Team

NAME	TITLE	JURISDICTION
MELISSA JOHNSON	Village Clerk	Waterloo

## Location and Geography

The Village of Waterloo is located in the western portion of Douglas County and covers an area of 0.65 square miles. Major waterways in the area include the Elkhorn River just east of the village boundary, and the Platte River, which is a few miles west of the village.

Figure WLO.1: Village of Waterloo



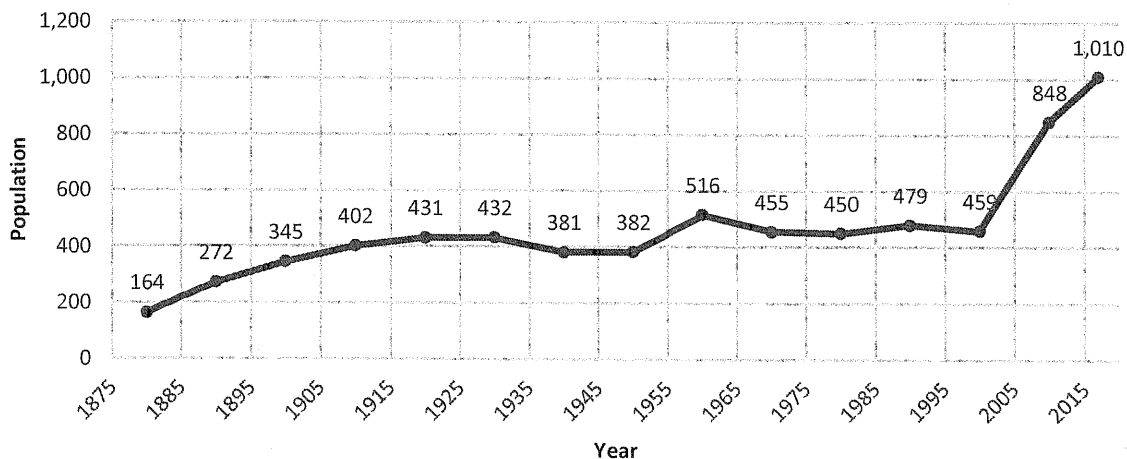
## Transportation

Waterloo's major transportation corridors include U.S. Highway 275 and Nebraska Highway 64. Highway 275 has an average of 18,585 vehicles per day with 1,670 of those being heavy commercial vehicles. Highway 64 has an average of 6,535 vehicles per day with 490 of those being heavy commercial vehicles. Highways 275 and 64 are routes of top concern, according to the local planning team. The Union Pacific Railroad has rail lines that travel through the center of the village. It is unknown if chemicals are regularly transported along local routes. Transportation information is important to hazard mitigation plans because it suggests possible evacuation corridors in the community, as well as areas more at risk to transportation incidents.

## Demographics

Waterloo's population has steadily increased, with a significant increase between 2000 and 2017. The current estimated population in 2017 was 1,010. Increasing populations are associated with increased hazard mitigation and emergency planning requirements for development. Increasing populations can also contribute to increasing tax revenues, allowing communities to pursue additional mitigation projects. Waterloo's population accounted for less than 1% percent of Douglas County's population in 2017.<sup>1</sup>

Figure WLO.2: Estimated Population 1880 – 2017



Source: U.S. Census Bureau<sup>2</sup>

The young, elderly, minorities, and poor may be more vulnerable to certain hazards than other groups. In comparison to the county, Waterloo's population was:

- **Younger.** The median age of Waterloo was 33.0 years old in 2017, compared with the county average of 34.3 years. Waterloo's population has grown older since 2010, when the median age was 29.9 years old. Waterloo had a larger proportion of people under 20 years old (31.7%) than the county (28.4%) in 2017.<sup>3</sup>
- **Lower ethnic diversity.** Since 2010, Waterloo grew more ethnically diverse. In 2010, only 1% of Waterloo's population was non-white (two or more races). By 2017, 1% of Waterloo's population was two or more races and less than 1% was American Indian, Native Hawaiian, or other races. During that time, Douglas County had: 11% (Black or African

<sup>1</sup> United States Census Bureau. "2017 American Fact Finder: S0101: Age and Sex." [database file]. <https://factfinder.census.gov/>.

<sup>2</sup> United States Census Bureau. "2017 American Fact Finder: S0101: Age and Sex." [database file]. <https://factfinder.census.gov/>.

<sup>3</sup> United States Census Bureau. "2017 American Fact Finder: S0101: Age and Sex." [database file]. <https://factfinder.census.gov/>.

## SECTION SEVEN: VILLAGE OF WATERLOO COMMUNITY PROFILE

American), grew 2% to 3% (Asian), declined 4% to 2% (other races), and 3% (two or more races) from 2010 to 2017 respectively.<sup>4</sup>

- **Less likely to be at the federal poverty line.** The poverty rate in Waterloo (7.8% of all persons living below the federal poverty line) is lower than the county's poverty rate (13.5%) in 2017.<sup>5</sup>

### Employment and Economics

The village's economic base is a mixture of industries. In comparison to Douglas County, Waterloo's economy had:

- **Different mix of industries.** Employment sectors accounting for 10% or more of employment in Waterloo included Construction, Retail Trade, Transportation and warehousing, Educational Services, and Arts and Entertainment. While Douglas County's sectors included Professional and Scientific jobs; Educational Services; and Arts and Entertainment in 2017.<sup>6</sup>
- **Greater household income.** Waterloo's median household income in 2017 (\$60,368) was about \$1,700 higher than the county (\$58,640).<sup>7</sup>
- **More long-distance commuters.** About 33.2% percent of workers in Waterloo commuted for fewer than 15 minutes, compared with about 31.7% of workers in Douglas County. About 23.1% of workers in Waterloo commute 30 minutes or more to work, compared to about 18.0% of the county workers.<sup>8</sup>

### Major Employers

The major employer in the Village of Waterloo is Syngenta. A large percentage of residents commute to Omaha and Fremont for work.

### Housing

In comparison to Douglas County, Waterloo's housing stock was:

- **Less owner occupied.** About 60.3% of occupied housing units in Waterloo are owner occupied compared with 61.1% of occupied housing in Douglas County in 2017.<sup>9</sup>
- **Smaller share of aged housing stock.** Waterloo has a smaller share of housing built prior to 1970 than the county (37.0% compared to 46.1%).<sup>10</sup>
- **More single-family homes.** The predominant housing type in the village is single family detached and Waterloo contains fewer multifamily housing with five or more units per structure than the county (9.5% compared to 23.9%). About 70.8% of housing in Waterloo was single-family detached, compared with 67.0% of the county's housing. Waterloo has no mobile and manufactured housing.<sup>11</sup>

This housing information is relevant to hazard mitigation insofar as the age of housing may indicate which housing units were built prior to state building codes being developed. Further, unoccupied housing may suggest that future development may be less likely to occur. Finally, communities with a substantial number of mobile homes may be more vulnerable to the impacts of high winds, tornadoes, and severe winter storms.

<sup>4</sup> United States Census Bureau. "2017 American Fact Finder: DP05: ACS Demographic and Housing Estimates." [database file]. <https://factfinder.census.gov/>.

<sup>5</sup> United States Census Bureau. "2017 American Fact Finder: DP03: Selected Economic Characteristics." [database file]. <https://factfinder.census.gov/>.

<sup>6</sup> United States Census Bureau. "2017 American Fact Finder: DP03: Selected Economic Characteristics." [database file]. <https://factfinder.census.gov/>.

<sup>7</sup> United States Census Bureau. "2017 American Fact Finder: DP03: Selected Economic Characteristics." [database file]. <https://factfinder.census.gov/>.

<sup>8</sup> United States Census Bureau. "2017 American Fact Finder: S0802: Means of Transportation to Work by Selected Characteristics." [database file]. <https://factfinder.census.gov/>.

<sup>9</sup> United States Census Bureau. "2017 American Fact Finder: DP04: Selected Housing Characteristics." [database file]. <https://factfinder.census.gov/>.

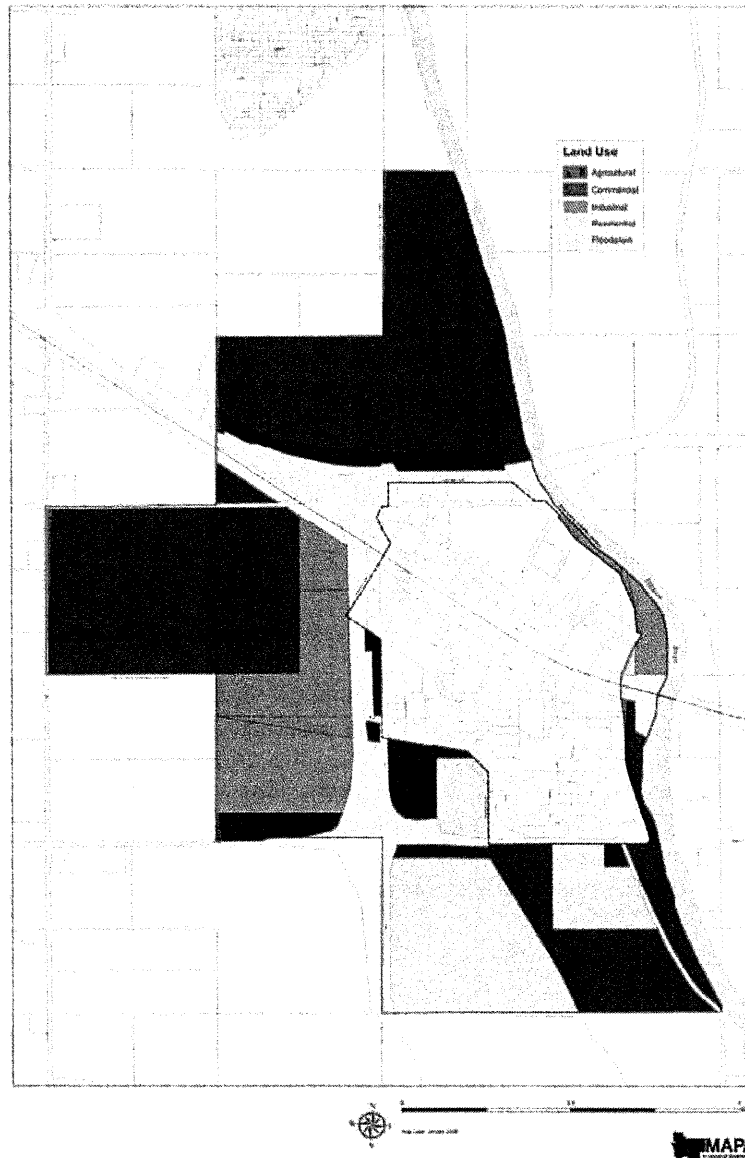
<sup>10</sup> United States Census Bureau. "2017 American Fact Finder: DP04: Selected Housing Characteristics." [database file]. <https://factfinder.census.gov/>.

<sup>11</sup> United States Census Bureau. "2017 American Fact Finder: DP04: Selected Housing Characteristics." [database file]. <https://factfinder.census.gov/>.

### Future Development Trends

There has been minimal new development for both residential and commercial real estate over the past five years, as noted by the local planning team. A small number of buildings were demolished over that time as well. According to census data, Waterloo’s population has increased over the past few decades. The planning team indicated that proximity to Omaha is a major factor in residents moving to the community. In the next five years, new housing development and apartments are planned within the levee protection area, and some areas outside of the levee are currently discussing annexation with the board. A new industrial development, to be located within the floodplain, is also planned.

**Figure WLO.3: Future Land Use Map**  
**WATERLOO, NEBRASKA FUTURE LAND USE**



## Structural Inventory and Valuation

The planning team requested GIS parcel data from the County Assessor as of December 2019. This data allowed the planning team to analyze the location, number, and value of property improvements at the parcel level. The data did not contain the number of structures on each parcel. A summary of the results of this analysis is provided in the following table. The Village of Hubbard has no filed Letter of Map Amendments (LOMA).

**Table WLO.2: Waterloo Parcel Valuation**

NUMBER OF PARCELS	NUMBER OF IMPROVEMENTS	TOTAL IMPROVEMENT VALUE	NUMBER OF IMPROVEMENTS IN FLOODPLAIN	VALUE OF IMPROVEMENTS IN FLOODPLAIN	PERCENT OF IMPROVEMENTS IN FLOODPLAIN
632	420	\$88,921,800	7	\$2,085,900	2%

Source: County Assessor

## Critical Infrastructure/Key Resources

### Chemical Storage Fixed Sites

According to the Tier II System reports submitted to the Nebraska Department of Environment and Energy, there are five chemical storage sites in Waterloo that contain hazardous chemicals.

**Table WLO.3: Chemical Storage Fixed Sites**

FACILITY NAME	ADDRESS	LOCATED IN FLOODPLAIN?
SYNGENTA SEEDS INC	101 J C Robinson Blvd	No
*LYMAN-RICHEY SAND & GRAVEL 48	27404 Pacific St	Yes
NUTRIEN AG SOLUTIONS	301 N Front St	No
*LYMAN-RICHEY SAND & GRAVEL	910 N 264th St	Yes
VERIZON WIRELESS NAPOLEON	2390 River Road Dr	No

Source: Nebraska Department of Environment and Energy<sup>12</sup>

\*Lyman-Richey facilities are located outside Waterloo's jurisdiction

The planning team indicated that no local resources or critical facilities have been impacted by a fixed site chemical spill. According to the U.S. Coast Guard National Response Center, there have been eight spills to take place from 1992 to 2010. No damages, injuries, or evacuations were reported. The main concern noted by the planning team is the risk of contamination and exposure within the community, especially along Dryers Road, N Front Road, and 3<sup>rd</sup> Street.

### Critical Facilities

Each participating jurisdiction identified critical facilities vital for disaster response, providing shelter to the public, and essential for returning the jurisdiction's functions to normal during and after a disaster. Critical facilities were identified during the original planning process and updated by the local planning team as a part of this plan update. The following table and figure provide a summary of the critical facilities for the jurisdiction.

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<sup>12</sup> Nebraska Department of Environment and Energy. "Search Tier II Data." Accessed February 2020. <https://deq-is.ne.gov/tier2/search.faces>.

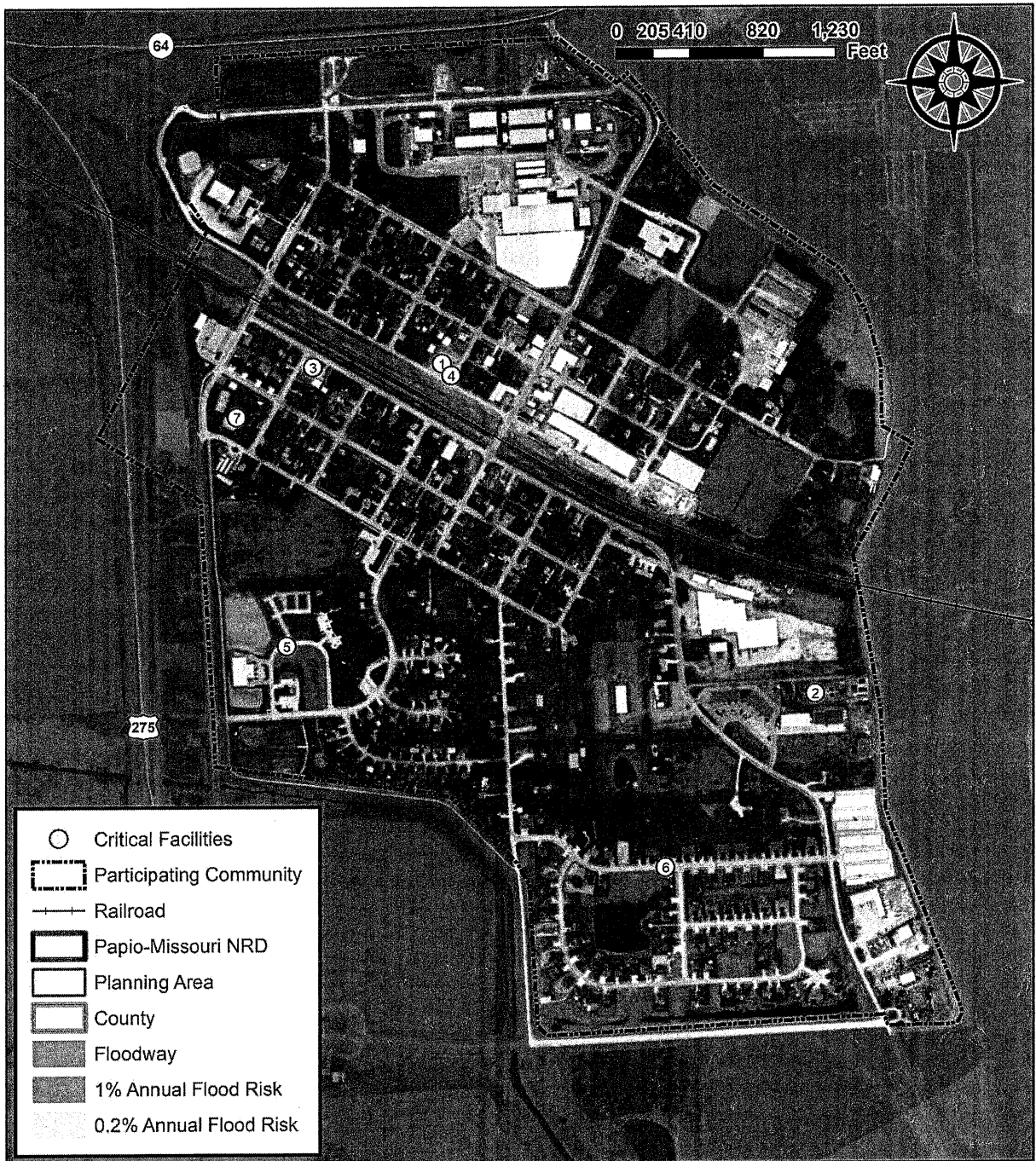
SECTION SEVEN: VILLAGE OF WATERLOO COMMUNITY PROFILE

Table WLO.4: Critical Facilities

CF NUMBER	TYPE	NAME	SHORT-TERM SHELTER (Y/N)	GENERATOR (Y/N)	FLOODPLAIN (Y/N)
1	Safety and Security	Waterloo Fire Department	N	Y	N
2	Food, Water, and Shelter	Waterloo Sewage Plant	N	Y	N
3	Safety and Security	Village Office and Waterloo Police Department	N	N	N
4	Transportation	Village Maintenance	N	N	N
5	Food, Water, and Shelter	Lift Station	N	N	N
6	Food, Water, and Shelter	Lift Station	N	N	N
7	Food, Water, and Shelter	Water Tower	N	N	N



Figure WLO.4: Critical Facilities



	<p>Created By: MW                  Date: 11/11/2020                  Software: ArcGIS 10.7.1                  File Name: PapioNRD_WaterlooCF.mxd</p> <p><small>This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.</small></p>	<p>2021 Papio-Missouri River NRD                  Hazard Mitigation Plan</p> <hr/> <p><b>Village of Waterloo                  Critical Facilities</b></p>	
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## Historical Occurrences

See the Douglas County community profile for historical hazard events.

## Hazard Prioritization

For an in-depth discussion regarding area wide hazards, please see Section Four: Risk Assessment. The hazards discussed in detail below were either identified in the previous HMP and determined to still be of top concern or were added by the local planning team based on the identification of hazards of greatest concern, hazard history, and the jurisdiction's capabilities.

### Flooding

The local planning team identified flooding as a hazard of top concern because of the adjacent Elkhorn River and the village's poor drainage. The NCEI reported 11 flood events from 2007 to 2019. The planning team indicated that heavy rains tend to flood the streets of the village due to its relative flatness and subpar stormwater drainage. Past flood events caused damage to 12 residential structures within the village's extraterritorial jurisdiction. Major flooding in 2019 resulted in minor road damage and storm drain damage within the levee system. Outside of the levee, multiple residential structures were damaged, two of which were deemed unrepairable.

Waterloo participates in the NFIP and has 7 policies in-force for \$1,575,800. There are no repetitive flood loss properties in the community. Douglas County has a Flood Insurance Study last revised May 19, 2014 and reprinted with corrections on January 17, 2020. The study includes unincorporated Douglas Counties and the communities of Bennington, Boys Town, Omaha, Ralston, Valley, and Waterloo. The study identified principal flood problems primarily from the Missouri River on the City of Omaha. The low-lying areas in the City of Valley and the unincorporated areas of Douglas County are subject to periodic flooding caused by the overflow of the Platte and Elkhorn Rivers. Most floods in the Platte River basin occur from April to June, usually as the result of rapid snowmelt and rainfall runoff. These floods are often aggravated by ice jams on the Platte River and its tributaries. The tributary floods are generally of short duration, since many of these streams have steep gradients, which cause rapid runoff. Conversely, the floods that occur along the Platte River are prolonged because of the wide, shallow valley slopes. Flood protection measures include numerous dams, reservoirs, levees, and dikes throughout the watershed. Channel straightening has also occurred on Big Papillion Creek, Cole Creek, Hell Creek, Rockbrook Creek, and West Papillion Creek.

The planning team stated that a project to install sluice gates for better water flow control is currently being planned.

### High Winds and Tornadoes

Tornadoes and high winds was identified as a hazard of top concern for Waterloo. According to NCEI data, an EF1 tornado touched traveled near Waterloo in 2014. No damages or injuries were reported. Tornadoes and high winds are common throughout the planning area and have the potential to cause significant loss of property and life. A concern of the local planning team regarding this hazard is the lack of access to shelter for residents and the Village has identified a mitigation action to develop shelter locations. Very few houses in the village have basements, and there are no safe rooms in the community. The planning team noted that a community storm shelter could be an asset for the village. Currently there are no educational outreach activities taking place in the community for this hazard.

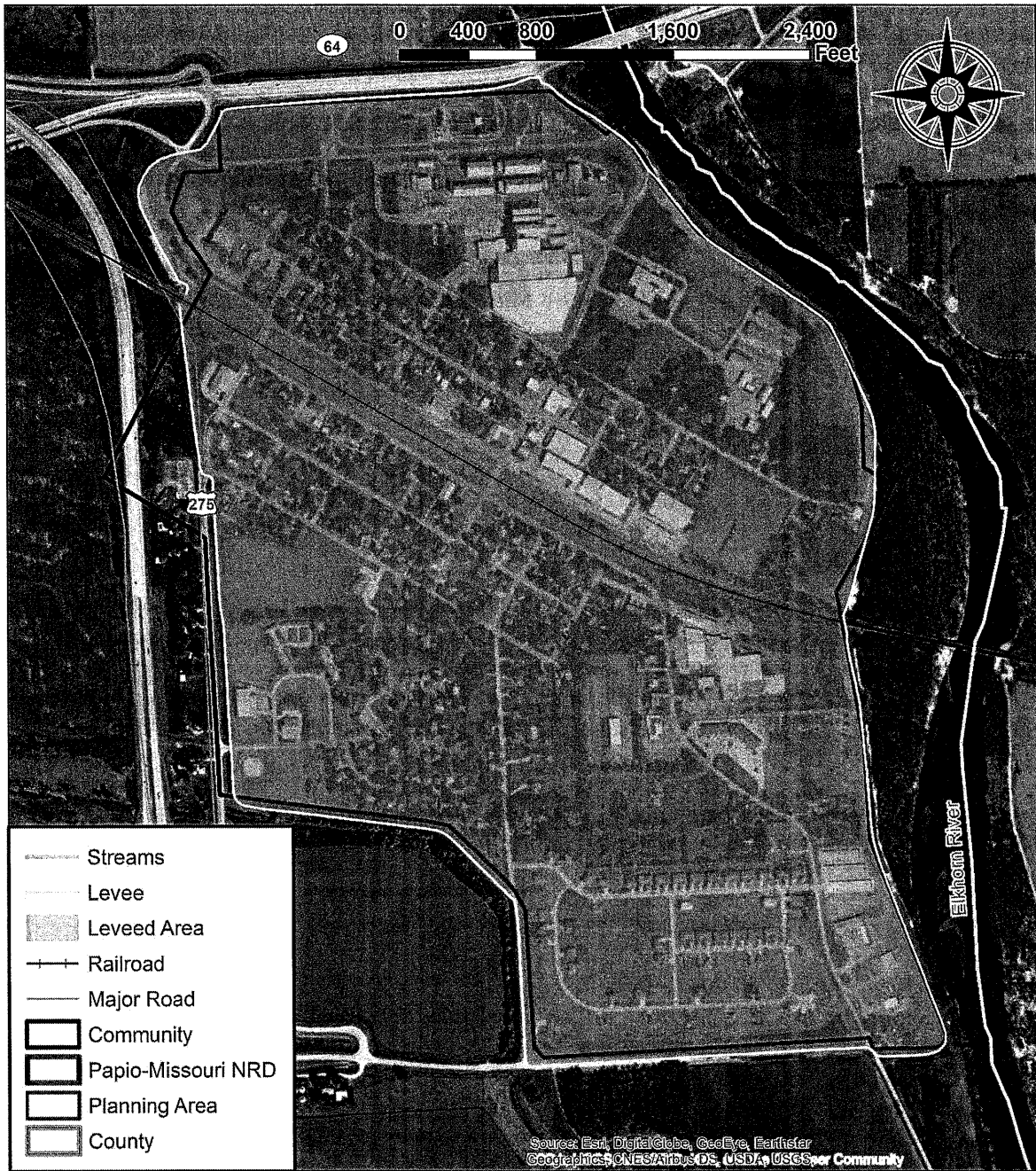
## SECTION SEVEN: VILLAGE OF WATERLOO COMMUNITY PROFILE

### **Levee Failure**

The Village of Waterloo owns a ring levee that encompasses the entire corporate limits as shown in the following map. The levee is FEMA certified and provides 1% annual flood risk protection. If the Elkhorn River were to experience sustained high water levels, it could potentially compromise the integrity of the levee. If the levee were to fail, the entire village would likely be inundated. The 2019 flood event resulted in sustained high water on the levee for up to 72 hours; however, no failure occurred. The U.S. Army Corps of Engineers is performing minor repairs on the levee due to the 2019 flooding. A project to install sluice gates on the levee is currently in the planning stages (as of fall 2020).

The village has an Emergency Action Plan in place for the Elkhorn River Basin Flood Protection Project. The EAP listed the estimated population at risk as 491 people and property value at risk as \$54million. The plan identifies specific emergency levels, actions to take per emergency level, notification charts and contact lists, and other responsibilities per agency involved in emergency response.

Figure WLO.5: Levee Map



<p><b>JEO</b> CONSULTING GROUP INC.</p>	<p>Created By: MW Date: 11/20/2020 Software: ArcGIS 10.7.1 File Name: PapioNRD_WaterlooLevee.mxd</p> <p>This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plan.</p>	<p>2021 Papio-Missouri River NRD Hazard Mitigation Plan <b>Village of Waterloo Leveed Area</b></p>	<p>IOWA</p>
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### **Severe Winter Storms**

Severe winter weather is part of the regular climate for Waterloo and was identified as a top concern for the village. Severe winter storms include blizzards, ice accumulation, extreme cold, heavy snow, and winter storms. These storms can cause power outages during bitterly cold temperatures, road closures, and economic impacts. The village identified the need for additional backup generators in town at the Village Office and police department. According to the NCEI, there were 87 severe winter storm events in Douglas County from 1996 through November 2019. These storms resulted in \$14,015,000 in property damage and \$100,000 in crop damage across the county.

The main concern regarding this hazard is the limited resources for snow removal and limited places to put piles of snow. In 2012, there was a significant snowstorm that led to financial impacts for the village due to hiring outside contractors. Severe winter storms can also cause power outages and hazardous driving conditions with low visibility and slick roads. Streets throughout the village are designated as snow routes.

### **Social Media Engagement**

The Papio-Missouri River NRD launched a “Would You Rather” themed social media campaign during the 2021 HMP update to garner local input on hazard priorities, residential capabilities, and action items residents would like to see the community take in the future to reduce potential impacts from hazard events.

The Village of Waterloo had six reported respondents in the campaign (based upon general zip code analysis). According to those respondents the top hazards of concern for them included: Flooding, High Winds and Tornadoes, and Agricultural Plant and Animal Disease. While high winds and tornadoes and flooding were identified by the local planning team as hazards of top concern for the city, agricultural plant and animal disease was not indicating a disconnect between residential concerns and city efforts.

Some ways residents have indicated they had reduced their personal risk to hazard events included attended safety related trainings or certifications, and identified safe places at home for hazard events.

The local respondents noted text alerts, radio alerts, and social media posts are the preferred methods of notification for major events and protecting people and critical facilities, and improving community notification are all very important when identifying hazard mitigation projects. Noted actions to improve hazard mitigation in the community included exploring additional flood protection measures, improving emergency text alert system, and maintaining the levee near Waterloo.

## **Governance**

A community’s governance indicates the number of boards or offices that may be available to help implement hazard mitigation actions. Waterloo has a number of offices or departments that may be involved in implementing hazard mitigation initiatives. The village has a five-member board of trustees and the following offices.

- Clerk/Treasurer
- Maintenance Department
- Utilities Department
- Police Department

- Building Department
- Library
- Fire Department

### Capability Assessment

The capability assessment consisted of a Capability Assessment Survey completed by the jurisdiction and a review of local existing policies, regulations, plans, and the programs. The survey is used to gather information regarding the jurisdiction's planning and regulatory capability; administrative and technical capability; fiscal capability; and educational and outreach capability.

Table WLO.5: Capability Assessment

SURVEY COMPONENTS/SUBCOMPONENTS		YES/NO
<b>PLANNING &amp; REGULATORY CAPABILITY</b>	Comprehensive Plan	Yes (2008)
	Capital Improvements Plan	No
	Economic Development Plan	No
	Emergency Operational Plan	Yes (2012)
	Floodplain Management Plan	No
	Storm Water Management Plan	No
	Zoning Ordinance	Yes (2000)
	Subdivision Regulation/Ordinance	Yes (1978)
	Floodplain Ordinance	Yes (2005)
	Building Codes	Yes (2012)
	National Flood Insurance Program	Yes
	Community Rating System	No
	Other (if any)	
<b>ADMINISTRATIVE &amp; TECHNICAL CAPABILITY</b>	Planning Commission	Yes
	Floodplain Administration	Yes
	GIS Capabilities	No
	Chief Building Official	Yes
	Civil Engineering	Yes
	Local Staff Who Can Assess Community's Vulnerability to Hazards	No
	Grant Manager	No
	Mutual Aid Agreement	No
	Other (if any)	
<b>FISCAL CAPABILITY</b>	Capital Improvement Plan/ 1 & 6 Year plan	No
	Applied for grants in the past	Yes
	Awarded a grant in the past	No
	Authority to Levy Taxes for Specific Purposes such as Mitigation Projects	Yes
	Gas/Electric Service Fees	No
	Storm Water Service Fees	No
	Water/Sewer Service Fees	Yes
	Development Impact Fees	No



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SURVEY COMPONENTS/SUBCOMPONENTS		YES/NO
	General Obligation Revenue or Special Tax Bonds	Yes
	Other (if any)	
<b>EDUCATION &amp; OUTREACH CAPABILITY</b>	Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. Ex. CERT Teams, Red Cross, etc.	No
	Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	No
	Natural Disaster or Safety related school programs	Yes
	StormReady Certification	No
	Firewise Communities Certification	No
	Tree City USA	No
	Other (if any)	

OVERALL CAPABILITY	LIMITED/MODERATE/HIGH
<b>FINANCIAL RESOURCES NEED TO IMPLEMENT MITIGATION PROJECTS</b>	Moderate
<b>STAFF/EXPERTISE TO IMPLEMENT PROJECTS</b>	Moderate
<b>COMMUNITY SUPPORT TO IMPLEMENT PROJECTS</b>	Moderate
<b>TIME TO DEVOTE TO HAZARD MITIGATION</b>	Moderate

**Plan Integration**

The Local Emergency Operations Plan (LEOP) for Waterloo, which was last updated in 2015, is an annex of Douglas County's LEOP. It is an all hazards plan that does not address specific natural and man-made disasters. It provides a clear assignment of responsibility in case of an emergency and shelters in the county.

The Village's Comprehensive Plan was last updated in 2008. There are currently no plans to update the plan. The Comprehensive Plan notes:

Waterloo is affected by both the Elkhorn River and Platte River Watersheds as well as their tributaries. Elkhorn River is a dominant hydrologic feature affecting the Village, located on the east side, and provides all of the surface water drainage for the community and surrounding areas. Waterloo is located in and also bordered on the north, south and west sides by a floodplain and bordered to the east by a floodway. A levee was constructed around the entire community to protect it from floodwaters. Because of the floodplain, expansion will be slow. It is imperative that floodplain regulations are followed outside of the levee.

A zoning map, indicating what areas of town are suitable for certain types of development, will essentially mirror the future land use map included herein. Subdivision regulations will

ensure that any new development is constructed to be efficient, safe and compatible with the rest of the community. Since the Village Waterloo, Nebraska: 2008 Comprehensive Plan 31 lays in a flood plain, it is imperative that flood plain regulations are enforced and strictly followed, in areas located outside of the levee.

The village's Zoning Ordinance was last fully updated in 2000 and is updated on an as needed basis. The Zoning Ordinance for the village provides specific guidance on low- and medium-density residential areas in order to preserve the character of the natural environment and accessibility to public services and facilities. For any development within the floodplain, the village requires the following:

- First floors of buildings or structures be elevated (at least) two feet BFE
- Foundations of all structures designed and constructed to withstand flood conditions
- Basements, lower floors, or appurtenances located below the elevation of the 100-year floodplain shall be designed and constructed to prevent passage of water into the building
- All electrical equipment, circuits, and appliances be located in areas as to not be subject to 100-year flood events
- Sanitary and storm sewer drains shall be equipped with valves capable of being closed manually or automatically
- Any chemical storage, explosive, buoyant, and inflammable liquid storage shall be located above the 100-year flood level and flood proofed

The village's Floodplain Ordinance was last updated in 2005. The ordinance prohibits development in flood zones AE, AO, and AH and any permitted development in other areas must be elevated to or above one foot above base flood elevation. The local planning team noted this ordinance should be updated to be consistent with the Zoning Ordinance which states development must be at least two feet above base flood elevation. The Village uses the 2006 International Building Codes and has an interlocal agreement with Douglas County for Building and Permitting.

The Village also has an Emergency Action Plan (EAP) for the Elkhorn River Basin Flood Protection Project which was developed in 2012. This plan outlines actions to take in case of levee failure events, assigns responsibilities, potential repair activities, and contact lists for emergency responders.

The local planning team noted the annual municipal budget's funds have increased in the past few years, but so have expenses particularly for village employee salaries. At this time, there is little room in the budget for additional projects. In the past, the village has allocated large portions of the budget for projects including road and park improvements; however, no large scale projects are currently planned. The local planning team also noted local funds will likely increase in the coming years as residential development continues.

### **Plan Maintenance**

Hazard Mitigation Plans should be living documents and updated regularly to reflect changes in hazard events, priorities, and mitigation actions. These updates are encouraged to occur after every major disaster event, alongside community planning documents (i.e. annual budgets and Capital Improvement Plans), during the fall before the HMA grant cycle begins, and/or prior to other funding opportunity cycles begin including CDBG, Water Sustainability Fund, Revolving State Fund, or other identified funding mechanisms.



SECTION SEVEN: VILLAGE OF WATERLOO COMMUNITY PROFILE

The local planning team is responsible for reviewing and updating this community profile as changes occur or after a major event. The local planning team will include the clerk, Village Board members, County Emergency Manager, and the Village Maintenance. The local planning team will review the plan no less than annually and will include the public in the review and revision process by: holding public meetings, bulletin board postings at the post office, village office, and library, and updating the community website.

**Mitigation Strategy**

**Completed Mitigation Actions**

MITIGATION ACTION		IMPROVE INTERIOR DRAINAGE
DESCRIPTION	Improve drainage infrastructure within the village, including at Cedar Hollow Park and other areas throughout the village	
HAZARD(S)	Flood	
STATUS	This mitigation action was completed with the conclusion of the Cedar Hollow Park project.	

MITIGATION ACTION		IMPROVE DISASTER RECOVERY TIME AND EFFECTIVENESS
DESCRIPTION	Improve disaster recovery time and effectiveness	
HAZARD(S)	All	
STATUS	Disaster recovery time and effectiveness was tested in 2019. Minor changes were made for overall improvement.	

MITIGATION ACTION		MAINTAIN WATER SUPPLY
DESCRIPTION	Maintain water supply	
HAZARD(S)	Drought and Extreme Heat	
STATUS	The village has a contract for its water supply needs with People Service.	

**Continued Mitigation Actions**

MITIGATION ACTION		BACKUP POWER GENERATORS
DESCRIPTION	Install back-up emergency power generation at critical facilities	
HAZARD(S)	All hazards	
ESTIMATED COST	\$50,000+/generator	
FUNDING	Tax dollars, Possible grant funding	
TIMELINE	2-5 years	
PRIORITY	High	
LEAD AGENCY	Village Clerk	
STATUS	The village is looking at various funding options to fund additional generators.	

SECTION SEVEN: VILLAGE OF WATERLOO COMMUNITY PROFILE

MITIGATION ACTION		CIVIL SERVICE IMPROVEMENTS
<b>DESCRIPTION</b>	Improve emergency rescue and response equipment and facilities by providing additional or updating existing emergency response equipment. This includes ATV's, fire trucks, water tanks/trunks, snow removal equipment, etc.	
<b>HAZARD(S)</b>	All hazards	
<b>ESTIMATED COST</b>	\$50,000-\$75,000	
<b>FUNDING</b>	Local taxes	
<b>TIMELINE</b>	3-5 years	
<b>PRIORITY</b>	Medium	
<b>LEAD AGENCY</b>	Maintenance	
<b>STATUS</b>	Aging village equipment needs to be updated including a brush truck squad ambulance.	

MITIGATION ACTION		DRAINAGE DITCHES
<b>DESCRIPTION</b>	Deepen drainage ditches and clean out culverts.	
<b>HAZARD(S)</b>	Flooding	
<b>ESTIMATED COST</b>	\$30,000	
<b>FUNDING</b>	Local taxes, FMA, BRIC	
<b>TIMELINE</b>	2-4 years	
<b>PRIORITY</b>	Low	
<b>LEAD AGENCY</b>	Maintenance	
<b>STATUS</b>	Ditches and culverts are cleaned throughout the year as they accumulate debris. Ditches have not yet been deepened but is needed, particularly in areas where heavy rains cause localized ponding.	

MITIGATION ACTION		MAINTAIN AND IMPROVE LEVEE
<b>DESCRIPTION</b>	Provide regular maintenance to levee to ensure proper flood protection	
<b>HAZARD(S)</b>	Flooding, Levee Failure	
<b>ESTIMATED COST</b>	Varies	
<b>FUNDING</b>	Included in village budget	
<b>TIMELINE</b>	Ongoing	
<b>PRIORITY</b>	High	
<b>LEAD AGENCY</b>	Village Maintenance	
<b>STATUS</b>	The community continues to provide regular maintenance to the levee. A project to install sluice gates is in the planning stages.	

SECTION SEVEN: VILLAGE OF WATERLOO COMMUNITY PROFILE

MITIGATION ACTION		PROVIDE SEVERE WEATHER NOTIFICATION
DESCRIPTION	Install early alert system to warn residents of potential hazards	
HAZARD(S)	All hazards	
ESTIMATED COST	Unknown	
FUNDING	Provided by county	
TIMELINE	1 year	
PRIORITY	High	
LEAD AGENCY	Village Clerk	
STATUS	Douglas County is developing a Code Red alert system that the village will become part of once implemented.	

MITIGATION ACTION		STORM SHELTERS/SAFE ROOMS
DESCRIPTION	Construct storm shelters in areas of need	
HAZARD(S)	High Winds and Tornadoes, Severe Thunderstorms	
ESTIMATED COST	\$200-\$300/sqft stand alone; \$150-\$200/sqft addition/retrofit	
FUNDING	Grants and/or tax dollars	
TIMELINE	5+ years	
PRIORITY	Medium	
LEAD AGENCY	Village Board/ Village Clerk	
STATUS	Currently exploring potential funding opportunities.	

MITIGATION ACTION		UPDATE ZONING AND FLOODPLAIN ORDINANCES
DESCRIPTION	Update local zoning and floodplain ordinances to provide consistency for floodplain development restrictions. Currently Floodplain Ordinance mandates 1 ft BFE while Zoning Ordinance mandates 2 ft BFE for all development.	
HAZARD(S)	All hazards	
ESTIMATED COST	Staff Time	
FUNDING	N/A	
TIMELINE	1 year	
PRIORITY	High	
LEAD AGENCY	Village Board, Clerk	
STATUS	This is a new mitigation action.	

**Removed Mitigation Actions**

MITIGATION ACTION		MAINTAIN NFIP STANDING
DESCRIPTION	Maintain good standing with National Flood Insurance Program (NFIP) including floodplain management practices/ requirements and regulation enforcements and updates.	
HAZARD(S)	Flood	
REASON FOR REMOVAL	While the community will continue to participate in the NFIP, this project can be removed as it is considered an ongoing effort.	