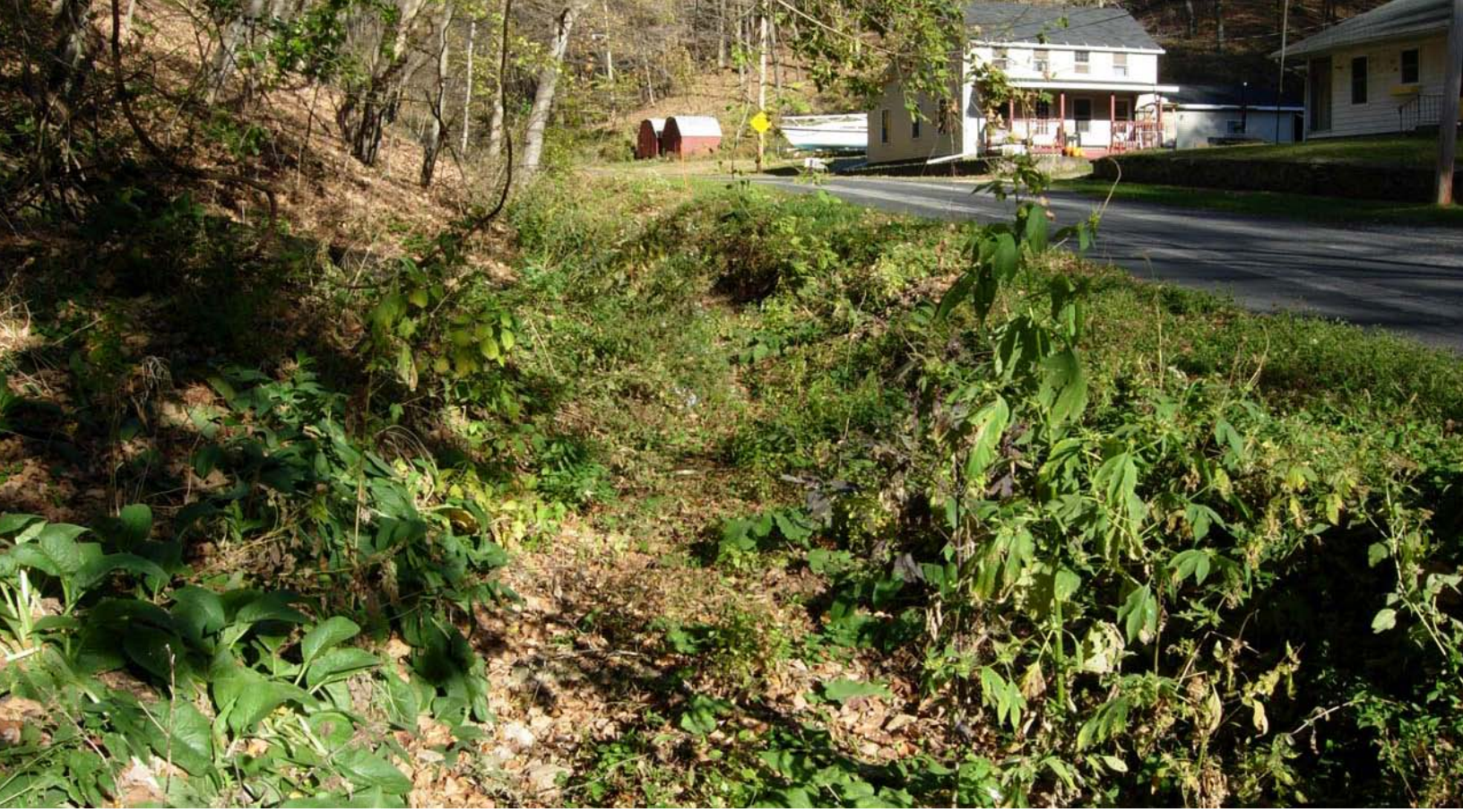

Draft Environmental Assessment

# City of McGregor Storm Water Flood Mitigation

Cedar Rapids, Iowa
FEMA DR-1763-IA

*November 21, 2011*

FEMA

**Federal Emergency Management Agency**
**Department of Homeland Security**
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# TABLE OF CONTENTS

Tables



## APPENDICES

Appendix A: Maps

## Abbreviations and Acronyms

| | |
|---|---|
| AASHTO | American Association of State Highway and Transportation Officials |
| ACHP | Advisory Council on Historic Preservation |
| APE | Area of Potential Effects |
| BMP | best management practices |
| CCC | Civilian Conservation Corps |
| CEQ | Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CFR | Code of Federal Regulations |
| cfs | cubic feet per second |
| CO | carbon monoxide |
| CWA | Clean Water Act |
| dB | decibels |
| EA | Environmental Assessment |
| EO | Executive Order |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| FIRM | Flood Insurance Rate Map |
| FONSI | Finding of No Significant Impact |
| FPPA | Farmland Protection Policy Act |
| HMGP | Hazard Mitigation Grant Program |
| HUD | U.S. Department of Housing and Urban Development |
| IDNR | Iowa Department of Natural Resources |

| | |
|---|---|
| Ldn | day-night average sound level |
| LUST | leaking underground storage tank |
| MBTA | Migratory Bird Treaty Act |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act |
| NFIP | National Flood Insurance Program |
| NHPA | National Historic Preservation Act |
| NO2 | nitrogen dioxide |
| NPDES | National Pollution Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| O3 | ozone |
| OSA | Office of the State Archaeologist |
| P.L. | Public Law |
| PM10 | particulate matter, 10 micrometers or less |
| PM2.5 | particulate matter, 2.5 micrometers or less |
| RCRA | Resource Conservation and Recovery Act |
| ROW | right-of-way |
| SHPO | State Historic Preservation Office |
| SWPPP | Storm Water Pollution Prevention Plan |
| U.S.C. | United States Code |
| UERPC | Upper Explorerland Regional Planning Commission |
| USACE | U.S. Army Corps of Engineers |
| USFWS | U.S. Fish and Wildlife Service |

# 1. INTRODUCTION

The City of McGregor is located in the unglaciated area along the Mississippi River in northeast Iowa approximately 30 miles south of the Minnesota state line and across the river from Prairie Du Chien, Wisconsin. The City is located in a small, steep-sloped valley adjacent to Pikes Peak State Park. The valley has a drainage basin of 3.6 square miles which currently has to flow through a single concrete channel before discharging into the Mississippi River. The uplands are steeply sloped and predominantly forested which contributes to vegetative debris and mud, among other debris, being washed into the valley including downtown McGregor before being discharged into the Mississippi River. This debris washed out of the surrounding hills has historically contributed to clogging of the storm water system of the City and has contributed to localized flooding.

The National Environmental Policy Act (NEPA) requires that Federal agencies evaluate the environmental effects of their proposed and alternative actions before deciding to fund an action. The President's Council on Environmental Quality (CEQ) has developed a series of regulations for implementing the NEPA. These regulations are included in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508. They require the preparation of an Environmental Assessment (EA) that includes an evaluation of alternative means of addressing the problem and a discussion of the potential environmental impacts of a proposed Federal action. An EA provides the evidence and analysis to determine whether the proposed Federal action will have a significant adverse effect on human health and the environment. An EA, as it relates to the FEMA program, must be prepared according to the requirements of the Stafford Act and 44 CFR, Part 10. This section of the Federal Code requires that FEMA take environmental considerations into account when authorizing funding or approving actions. This EA was conducted in accordance with both CEQ and FEMA regulations for NEPA and will address the environmental issues associated with the FEMA grant funding as applied towards construction of a new City of McGregor Storm Water Flood Mitigation at the proposed sites.

Executive Order (EO) 11988 (Floodplain Management) requires that Federal Agencies assume a leadership role in avoiding direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative. At present, portions of the proposed project are located within the 100-year floodplain and subject to repetitive flooding. The whole project is intended to reduce the impact of flash floods exceeding the capacity of the existing storm sewer system.

URS Group was hired to conduct an evaluation of the multiple watersheds in the project area in 2010. The consultant proceeded to initiate coordination with multiple parties and submitted a preliminary draft EA to FEMA in January 2011. Additional project information was received since the preliminary EA draft and FEMA completed the reviews and evaluation resulting in this draft EA which was presented for a public comment period from November 21, 2011 to December 15, 2011.

# 2. PURPOSE AND NEED

Pursuant to Section 404 of the Robert T. Stafford Disaster and Emergency Assistance Act of 1988, as amended and 44 CFR 206 subpart N, the City of McGregor has requested funding through FEMA's Hazard Mitigation Grant Program (HMGP). FEMA's HMGP provides grants to state and local governments to implement long-term hazard mitigation measures after major disaster declarations. The purpose of HMGP is to reduce the loss of life and property due to natural and human-related disasters and to enable mitigation measures to be implemented during the disaster recovery process.

In 2008, the City of McGregor entered into a contract to develop a Hazard Mitigation Plan intended to identify, prioritize, and evaluate natural and human-caused hazards are relevant to the City and its inhabitants. The planning process included multiple meetings with an ad-hoc hazard mitigation planning committee, the general public, and community leaders. This process and the resulting Hazard Mitigation Plan identified mitigation strategies associated with the identified hazards and prioritized according to multiple factors discussed during the process. River and Flash Flooding were both ranked as high priority hazards for the City to target resources to address.

The purpose of this project is to assist the City of McGregor and the citizens of the City in their efforts to minimize losses due to flooding by using FEMA HMGP funds toward construction of improvements to their storm sewer system. The proposed project has components located in multiple locations throughout the City and just outside of the City (Appendix A, Figure 1). The need for the project was identified in the City's FEMA-approved Hazard Mitigation Plan dated November 2008 as the City has a documented history of significant flooding from both river and flash flooding sources.

The City of McGregor has flooded numerous times in the past with recent significant events occurring in 1999, 2004, 2007, and 2008; these events primarily resulting from flash flooding due to storm water. Between 2004 and 2007, the City experienced a cumulative total of 7 days where Highway 76 was closed and more than $400,000 in damages (Meyer and Reese 2008). A single flood event in 1876 resulted in damages of $435,000 when adjusted into 2007 dollars. Additional significant flooding events from both river and storm water occurred in 1896, 1924, 1934, and 1943 with numerous minor flooding events occurring approximately every-other year during this time and additional events in the time since (Anderson 2007).

# 3. ALTERNATIVES ANALYSIS

NEPA requires the investigation and evaluation of reasonable project alternatives as part of the project environmental review process. EO 11988 requires the investigation of practicable alternatives prior to Federal agencies taking actions that provide direct or indirect support of floodplain development. Several alternatives were evaluated during the development of the proposed project. The alternatives included in this EA are: Alternative 1, the No-action Alternative, where no FEMA grant funding is applied towards construction of new and retrofitted storm sewer system components, and Alternative 2, the Proposed Action, where FEMA grant funding is applied towards construction of new and retrofitted storm sewer system components as described in 3.2 Alternative 2: Proposed Action. The discussion in section 3.3 includes Alternatives Analyzed to install a secondary storm water pipeline, which was dismissed due to multiple factors.

## 3.1 Alternative 1: No Action

Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA. The No Action Alternative is defined as maintaining the status quo with no FEMA funding for an alternative action.

The No Action Alternative is used to evaluate the effects of not providing eligible assistance for the project, thus providing a benchmark against which “action alternatives” may be evaluated. For the purposes of this alternative, the City of McGregor would continue to use and maintain the existing storm water system. Therefore, no FEMA grant funding would be applied towards construction of new and retrofitted storm sewer system components as described in 3.2 Alternative 2: Proposed Action.

## 3.2 Alternative 2: Proposed Action

This alternative provides FEMA grant funding towards construction of new and retrofitted storm sewer system components. This alternative was preferred as it best addresses the problem of storm water and flash flooding within the City of McGregor. While the goal of the proposed action was to provide structural protection up to and including 100-year flooding events, hydrological studies found that this goal is not fully met and that to meet this goal, additional, cost-prohibitive measures would need to be included. While the initial goal is not met, the proposed action provides protection for a 50-year flooding event and reduces the storm water flow of 100-year events by 806 cubic feet per second (cfs) of the approximately 1,400 cfs reduction needed for full 100-year events.

The project is for five primary components, 1) New detention basins, 2) Modification of existing basins, 3) Installation of trash racks, 4) Channel stabilization, and 5) Drainage network improvements (Appendix A, Figures 1-9). The three new basins are identified as numbers 1-3. Basins 1 and 2 are each designed to be approximately 200 feet wide, 15 feet deep and constructed with a maximum 3 to

1 slope and basin 3 is designed to be approximately 125 feet long, 12 feet deep, with a similar slope as the other two. The construction area associated with the basins is estimated to be 3 acres each.

The three basins to be modified are identified as numbers 4-6 and were constructed in 1939 by the Soil Conservation Service. The modifications to these basins consist of resizing the outflow structures to reduce peak flows in larger storm events, but not to the extent where emergency spillways would be required to pass the 100-year event.

New trash racks will be installed with the three new basins, two new trash racks will be installed with the drainage network improvements, and eight additional trash racks will be located strategically in areas where there is a history of debris clogging the downstream drainage sections. The proposed trash racks will consist of 15 foot wide concrete bases with vertical bars spaced to trap debris while permitting runoff to flow through.

The main channel along Buell Avenue has a reinforced concrete wall on one side but the other side and the bottom of the channel are comprised of erodible soil and stones. The proposed action includes installing mats of articulating concrete blocks along the unprotected side and bottom of the channel to reduce the potential for erosion.

The final component to the proposed project is for improving the existing storm water system which has areas prone to debris blockages during large storm events. The segments are located along Ash Street, 4th Street, Center Street, and Garnavillo Avenue. For the Ash Street and Garnavillo Avenue segments, the improvements are for the conversion of the open ditches into piped segments. The Center Street segment currently consists of a brick channel which will be replaced with a reinforced concrete pipe capable of carrying more storm water. The 4th Street improvements consist of a new pipe along a new alignment eliminating multiple 90 degree angles and thus reducing the occurrence of potential blockages.

- The Ash Street segment involves placing a 30-inch concrete storm sewer pipe in the existing ditch extending approximately 600 feet upstream from Prospect Street. A trash rack will be placed between this storm sewer pipe and the widening of the ditch further upstream to 30 feet wide. This will reduce the water velocity in the ditch and allowing rocks and boulders to settle out of the storm water before reaching the trash rack and storm sewer pipe.

- The 4th Street segment consists of installing approximately 305 feet of 30-inch concrete storm sewer pipe beneath an existing sidewalk adjacent to 4th Street between Prospect Street and the alley north of Saint Mary's Catholic Church.

- The Center Street segment is for the replacement of an existing open channel with 450 feet of 36-inch concrete sewer pipe.

- The Garnavillo Avenue segment is for the replacement of an existing open channel with approximately 360 feet of buried concrete storm sewer pipe.

See Appendix A for maps showing the location of the various project components.

## 3.3 Alternatives Considered and Dismissed

The City of McGregor considered one additional alternative consisting of constructing a second or supplementary storm water pipeline. The pipeline would be designed to convey the water that currently exceeds the capacity of the existing conveyance system. This secondary storm sewer would be approximately 6 feet in diameter, would be constructed beneath McGregor's Main Street, and would discharge into the Mississippi River. This new storm sewer pipeline would be approximately 3,500 feet long and construction would cause periodic disruptions to the existing sanitary sewer, water mains, and other underground services during construction. Additionally, street closures would be required, including Main Street (Highway 76), which would be closed for an extended period (minimum of 7 months). While the secondary sewer pipeline would provide enough hydraulic capacity to carry peak flows, it would remain prone to clogging from debris, which is a contributing factor to the flooding associated with the existing conveyance system. Costs associated with this alternative would be over $2.5 million. This alternative was removed from consideration due to unacceptable right-of-way (ROW) constraints, street closures, and economic factors.

# 4. SUMMARY OF IMPACTS AND MITIGATION

Two alternatives were evaluated in this EA:

- Alternative 1: No Action
- Alternative 2: Proposed Action

Table 4-1 summarizes the potential environmental impacts expected with each of the two alternatives. Additional information is located in Section 5.

As shown in table 4-1, Alternative 1: No Action would maintain existing conditions which have some negative impacts due to flooding, erosion, and temporary limitations to access due to road closures.

As shown in table 4-1, the selection of Alternative 2: Proposed Action would result in limited environmental impacts from the temporary increase in noise, potential production of fugitive dust, clearing of vegetation during construction. Use of best management practices, appropriate permitting and coordination, and use of mitigation measures detailed in this document are expected to minimize temporary impacts. No negative permanent impacts are anticipated to the human environment.

*Table 4-1: Summary of Impacts and Mitigation*

| Environmental Resource | No Action | Proposed Action |
|---|---|---|
| Air Quality | No impact | No significant impact; Fugitive dust would result from all construction activities; the project would be of short duration and would not require large amounts of heavy equipment; best management practices (BMP) and mitigation measures will be required. |
| Biological Resources | No impact | No impact; threatened or endangered species are not present in the project area; potential impacts to species located downstream will be mitigated using sediment and erosion control BMPs. |
| Executive Order 11990/Wetlands | No impact | No significant impact; Temporary impacts to wetlands are anticipated; coordination with IDNR and USACE is required and any permitting or mitigation measures required by either or both agencies are anticipated to mitigate potential impacts. |
| Executive Order 11988/Floodplain Mgmt | No additional impact; The City would remain vulnerable to flash flood events. | No significant impact; Project will have no long-term adverse effects to the floodplain. Use of BMP for erosion and sediment control is required. Project is expected to reduce the frequency and severity of flash flood events resulting from storm water. |

| | | |
|---|---|---|
| Cultural Resources | No additional impact; resources would continue to be affected by flood events. | No significant impact; The Area of Potential Effects (APE) contains multiple resources. FEMA has determined in consultation with the State Historic Preservation Office (SHPO) that 1) there will be no effect on historic standing structures, 2) no adverse effect to historic properties resulting from modifications to the existing basins and dams, and, 3) adverse effects to the NRHP eligible Methodist Hallow Storm Sewer will be avoided based on installation method. The likelihood of archaeological resources was determined in consultation to be low and that no further archaeological investigation is required. |
| Geology and Soils | No impact | No significant impact; Construction activities would expose soil in the proposed construction area; a Storm Water Pollution Prevention Plan will be required, NPDES permit will be required for ground disturbance of 1 or more acres, and BMPs to control sediment and erosion will be required. |
| Land Use and Planning | No impact | No significant impact; The project takes place largely within existing rights-of-way and new basins will remain effectively open space. The City will continue on-going planning activities with partner organizations. |
| Hazardous Substances | No impact | No impact; Known leaking underground storage tanks are in the area, however they are located down gradient from the project and are not expected to impact the project. In the event that a hazardous substance or soil contamination is discovered during construction activities, the Iowa Department of Natural Resources (IDNR) should be contacted at Field Office #1 (563) 927-2640. Work within the sensitive area should not resume until IDNR personnel indicates no further assessment is needed of the discovery. |
| Noise | No impact | No significant impact; Construction activities would increase the noise levels in the immediate area of the construction project; project conditions are expected to mitigate short-term impacts to sensitive noise receptors to acceptable levels. No long-term noise impacts are anticipated. |
| Executive Order 12898, Environmental Justice | No additional impact; Numerous properties will remain subject to isolation and flooding during flash flood events. | No impact; The project will not result in negative impacts to any one group or minorities. The results of the project are expected to minimize an existing problem impacting the entire city. |

| | | |
|---|---|---|
| Transportation | No additional impact; Temporary road closures due to flooding will continue unabated, emergency vehicles may not be able to access certain properties in a timely manner during such events. | No significant impact; Flagmen and possibly escort vehicles would be utilized; construction of the Storm Water Flood Mitigation component that would temporarily disrupt local traffic within the project area. Long-term impacts are expected to be positive in reducing the frequency and extent of road closures and reduce clean-up and repair costs. |
| Cumulative Impacts | No additional impact; Continued vulnerability to flash flood affects traffic circulation due to road closures and limits emergency vehicle access during flooding events. Storm water backups can overload existing infrastructure leading to flooding of homes and businesses, erosion and related damage, and continued clean-up costs following flood events. | No significant impact; The construction of the storm water flood mitigation measures proposed are not expected to have permanent negative impacts. While both the floodplain and some emergent wetlands are anticipated to be impacted, the use of BMPs, permitting, and mitigation measures are expected to minimize short term and long term impacts to these water-related resources. The slowing of storm water may incrementally improve floodplain and wetland functions by infiltrating more storm water into the soil and reducing erosion. Continued coordination in the event of unexpected discoveries of protected species, hazardous substances, and cultural resources would minimize or mitigate unanticipated impacts. |

# 5. AFFECTED ENVIRONMENT AND IMPACTS

Chapter 5 describes the existing environmental conditions that may be affected by the proposed FEMA grant funding being applied toward the McGregor storm water flood mitigation project. The environmental impacts of the No-action alternative were also analyzed.

This chapter also describes the potential environmental consequences of the proposed alternative by comparing them with the potentially affected environmental components. The proposed activity was also evaluated against existing environmental documentation on current and planned actions and information on anticipated future projects to determine the potential for cumulative impacts. The potential for significant environmental consequences was evaluated using the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27).

## 5.1 Air Quality

The 1990 Clean Air Act, its amendments, and NEPA require that air quality impacts be addressed in the preparation of environmental documents. The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants; carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulate matter (PM10 and PM2.5), sulfur dioxide and lead, and define the allowable concentrations that may be reached but not exceeded in a given time period to protect human health (primary standard) and welfare (secondary standard) with a reasonable margin of safety.

Primary and secondary standards for NAAQS have been established for most of the criteria pollutants. The EPA is authorized to designate those locations that have not met the NAAQS as non-attainment and to classify these non-attainment areas according to their degree of severity. Attainment pertains to the compliance/violation of any of the NAAQS for the six criteria pollutants mentioned above. Each year, states are required to submit an annual monitoring network plan to EPA. The network plans provide for the creation and maintenance of monitoring stations, in accordance with EPA monitoring requirements specified in 40 CFR Part 58. The State of Iowa's most recent Monitoring Network Plan was approved by EPA Region 7 in December 2010.

The IDNR, Air Quality Division, is authorized by the EPA to implement and enforce the Clean Air Act. The IDNR's Air Quality Division maintains a network of instruments and devices located throughout the state to monitor ambient air. The nearest Air Quality Monitoring System location is in Backbone State Park in Delaware County; however this station only measures PM10 pollutants. As of September 6, 2011, no area within the State of Iowa is considered a non-attainment area for the six criteria pollutants according to the EPA's "Currently Designated Nonattainment Areas for Criteria Pollutants" (EPA 2011).

### 5.1.1 Alternative 1: No Action

The No-action Alternative would not affect air quality. No construction activities would occur with the selection of the No-action Alternative.

### 5.1.2 Alternative 2: Proposed Action

Under this alternative, the Proposed Action would require the excavation of soil for the construction of the storm water mitigation project, thereby short-term emissions of criteria pollutants would occur during the construction phase. Construction equipment and personal vehicles would generate exhaust emissions, including NO2 and CO; the operation of motor vehicles on unpaved surfaces and the use of earthmoving equipment may also generate particulate matter. The moving and handling of soil during construction would increase the potential for emissions of fugitive dust; however, any deterioration of air quality would be a localized, short-term condition that would be discontinued when the project has been completed and disturbed soils have been stabilized or permanently covered. The proposed action would require approximately eighteen (18) months of construction and heavy equipment including; bulldozers, scrapers, and backhoes. Construction activities would be required to minimize fugitive dust emissions through watering, controlling entrainment of dust by vehicles, and/or other measures to reduce the disturbance of particulate matter. Increases in ambient concentrations of the criteria pollutants resulting from heavy equipment would be minimal, and federal or state air quality attainment levels would not be exceeded. The proposed action is expected to have no long-term adverse impacts on the air quality of the area.

<u>Mitigation</u>

- Construction activities would be required to minimize fugitive dust emissions through watering, controlling entrainment of dust by vehicles, and/or other measures to reduce the disturbance of particulate matter.
- During site preparation and construction, the contractor would:
    - Minimize land disturbance;
    - Suppress dust on traveled paths that are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust from entering ambient air;
    - Cover trucks when hauling soil;
    - Minimize soil track-out by washing or cleaning truck wheels before leaving the construction site;
    - Stabilize the surface of soil piles; and
    - Create wind breaks.
- During site restoration, the contractor would:
    - Revegetate any disturbed land not used with native species in accordance with Executive Order (EO) 13112
    - Remove unused material, and
    - Remove soil piles via covered trucks.

## 5.2 Biological Resources

Native or naturalized vegetation, wildlife, and the habitats in which they occur are collectively referred to as biological resources. Existing information on plant and animal species and habitat types in the vicinity of the proposed site was reviewed with special emphasis on the presence of any species listed as threatened or endangered by Federal or State agencies to assess their sensitivity to the effects of the alternatives. Biological studies consisting of literature review, agency consultation, and map documentation were performed.

### 5.2.1 Protected Species and Habitat

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened or endangered plants and animals and their habitats. ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened or endangered species.

All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species. The U.S. Fish and Wildlife Service (USFWS) and the IDNR Conservation and Recreation Division were both contacted for initial protected species identification. In this initial coordination, The IDNR requested that a habitat suitability assessment be conducted by a qualified botanist to determine potential impacts to state-protected threatened or endangered species.

The Migratory Bird Treaty Act (MBTA), 16 United States Code (U.S.C.) 703, was enacted in 1918. It prohibits the taking of any migratory birds, their parts, nests, or eggs, except as permitted by regulations. The USFWS consults on issues related to migratory birds.

The Bald and Golden Eagle Protection Act, 16 U.S.C. 668, was enacted in 1940. It prohibits any form of possession or taking of both bald and golden eagles. The act imposes both civil and criminal sanctions, and the penalties are increased for more than one offense. The penalties include the forfeiture of anything used to acquire eagle(s) in violation of the law. Use of eagles or eagle parts for exhibition, scientific, and Native American religious uses are exempt from the prohibitions of the Act.

*Table 5-1: Federally Protected Species of Clayton County, Iowa*

| Common Name | Scientific Name | Status | Potential Occurrence at Site | Reason |
|---|---|---|---|---|
| Western prairie fringed orchid | Platanthera praeclara | Threatened | No | No habitat |
| Prairie bush clover | Lespedeza leptostachya | Threatened | No | No habitat |
| Northern monkshood | Aconitum novaboracense | Threatened | No | No habitat |
| Higgins eye pearlymussel | Lampsilis higginsii | Endangered | No | No habitat |

| | | | | |
|---|---|---|---|---|
| Iowa Pleistocene snail | Discus macclintocki | Endangered | No | No habitat |
| Sheepnose mussel | Plethobasus cyphyus | Candidate | No | No habitat |
| Spectaclecase mussel | Cumberlandia monodonta | Candidate | No | No habitat |

### 5.2.2 Alternative 1: No Action

The No-action Alternative would not impact vegetation or wildlife in the project area. No construction activities would occur with the selection of the No-action Alternative.

### 5.2.3 Alternative 2: Proposed Action

FEMA reviewed lists from both USFWS and the Iowa Department of Natural Resources for threatened and endangered species with potential to occur in Clayton County. Based on these resources, correspondence with the USFWS, and FEMA's Threatened and Endangered Species database, threatened or endangered species identified as having potential to occur in Clayton County are not known to be present in the project area and are not expected to be impacted by the project. The nearest known protected species have been identified within the channel of the Mississippi River and within Pikes Peak State Park to the south and east of the project area.

The Iowa Department of Natural Resources requested additional coordination to identify and protect state-protected species and their habitat December 15, 2010 letter (Appendix C, Figure 3). As the request pertains to state programs, the City of McGregor is responsible for continuing such coordination. FEMA is not requiring further investigation based on currently available information.

While there are no known Bald Eagle nests in the project area, the area is favorable to Bald Eagle habitat due to the proximity to the Mississippi River. The project requires the clearing of vegetation including trees. If an active Bald Eagle nest is identified in the project area, the USFWS recommends conducting work at least 660 feet or more away from the nest. Clearing of trees, where necessary for the project, should take place from August through Mid-January to avoid Bald Eagle nesting season.

In the event that Federal threatened or endangered species are encountered in the project area, the FEMA Regional Environmental Officer shall pursue further Section 7 ESA consultation with the USFWS. The impact of the proposed FEMA funded construction of an improved storm water system upon threatened and endangered species has been determined to be "no effect" given current information.

## 5.3 Cultural Resources

The National Historic Preservation Act (NHPA) of 1966, (Public Law [P.L.] 89-665; 16 USC 470 *et seq.*) as amended, outlines Federal policy to protect historic properties and promote historic preservation in cooperation with States, Tribal Governments, local governments, and other consulting

parties. The NHPA established the National Register of Historic Places (NRHP) and designated the State Historic Preservation Office (SHPO) as the entity responsible for administering State-level programs. The NHPA also created the Advisory Council on Historic Preservation (ACHP), the Federal agency responsible for overseeing the Section 106 process and providing commentary on Federal activities, programs, and policies that affect historic properties.

Consideration of impacts to cultural resources is mandated under Section 106 of the NHPA and implemented by 36 CFR Part 800. Requirements include the identification of significant cultural resources that may be impacted by the undertaking. Cultural resources are prehistoric and historic sites, structures, districts, buildings, objects, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Only those cultural resources determined to be potentially significant under NHPA are subject to protection from adverse impacts resulting from an undertaking. To be considered significant, a cultural resource must meet one or more of the criteria established by the National Park Service that would make that resource eligible for inclusion in the NRHP. The term “eligible for inclusion in the NRHP” includes all properties that meet the NRHP listing criteria, which are specified in the Department of Interior regulations Title 36, Part 60.4 and NRHP Bulletin 15. Sites not yet evaluated may be considered potentially eligible for inclusion in the NRHP and, as such, are afforded the same regulatory consideration as nominate properties. Whether prehistoric, historic, or traditional, significant cultural resources are referred to as “historic properties.”

Section 106 of the NHPA and its implementing regulations (36 CFR 800) outlines the procedures for Federal agencies to follow to take into account the effect of their actions on historic properties. The Section 106 process applies to any Federal undertaking that has the potential to affect historic properties. Under Section 106, Federal agencies are responsible for identifying historic properties within the Area of Potential Effects (APE) for an undertaking, assessing the effects of the undertaking on those historic properties, if present, and considering ways to avoid, minimize, and mitigate any adverse effects. Because Section 106 of the NHPA is a process by which the Federal government assesses the effects of its undertakings on historic properties, it is the primary regulatory framework that is used in the NEPA process to determine impacts on cultural resources.

### 5.3.1 Affected Environment

McGregor, Iowa is located in Clayton County in the northeast portion of the state along the Mississippi River. This small river town was founded as MacGregor’s landing in 1847. Alex MacGregor, a descendent of Scottish outlaw and folk hero Rob Roy, started a ferry service across the Mississippi in 1837. In 1857, the six-block City was incorporated as McGregor. The Milwaukee & Mississippi Railroad made McGregor an important shipping hub when the railroad connected Lake Michigan to the Mississippi River at Prairie du Chien, Wisconsin. Trains from the west were disassembled at McGregor, and the cars were floated across the Mississippi River to Wisconsin where they were reassembled before continuing to Milwaukee. The City’s population grew rapidly

until 1874, when a Wisconsin businessman built a pontoon bridge over the Mississippi, eliminating the need for a McGregor workforce to disassemble and ferry trains.

Alex MacGregor's six-block town remains and approximately half of it is listed in the NRHP as the McGregor Commercial Historic District. Additional NRHP listings in McGregor include five individually-listed historic properties and a second historic district (Table 5-2).

The NRHP-listed properties are primarily two-to-three-story brick-masonry or wood-frame commercial or residential buildings dating from the mid-to-late-nineteenth century. Only the American School of Wild Life Protection Historic District is outside the downtown. This district is located north of town on one of the steep wooded bluffs that surround it.

*Table 5-2: National Register of Historic Places Listings in McGregor, IA*

| Name | Address |
|---|---|
| American House | 116 Main Street |
| American School of Wild Life Protection Historic District | McGregor Heights Road170 acres , 17 buildings in McGregor Heights |
| Christian Bloedel Wagon Works | 524-526 Main Street |
| Goedert Meat Market | 322 Main Street |
| Joseph "Diamond Jo" Reynolds Office Building and House | Corner of A and Main Streets |
| Peter Stauer House | 629 Main Street |
| McGregor Commercial Historic District | 100-300 blocks of Main Street, and 100-200 blocks of A Street |

In addition, there are three existing detention basins within the project area for the Proposed Action. These detention basins were constructed by the Civilian Conservation Corps (CCC), and the Proposed Action would include retrofits to the outlet structures of each. The CCC was established as a public work relief program for unemployed men between the ages of 18 and 24 to relieve unemployment during the Great Depression. During its existence (1933 to 1942), the CCC was not only a work relief program, but also served a critical role in the establishment of a conservation program for natural areas across our Nation. The physical embodiments of CCC projects that remain intact serve as vivid reminders of this era in the history of the United States, and are often considered eligible for listing on the NRHP. FEMA, in consultation with the SHPO has determined that the three basins, each consisting of an earthen berm, a pyramidal intake and a rectangular overflow structure, are eligible for listing in the NRHP as a discontiguous district, significant for its early engineering practices and construction methods.

McGregor, one of the earliest communities in Iowa, is located in a region known for many significant archaeological resources. Pikes Peak State Park, just south of the City, contains several archaeological sites that have been determined eligible for listing in the NRHP. Clayton County is

known for containing the highest concentration of prehistoric effigy mounds in North America; a concentration of such mounds is found in Effigy Mounds National Monument, which includes units both north and south of McGregor. McGregor itself contains several reported archaeological sites, both historic and prehistoric. One such site is reportedly located in central McGregor within a half block of one of the proposed project elements. This site was discovered during construction activities in the late nineteenth century and is recorded as containing human remains.

Based on data currently available from the Iowa Office of the State Archaeologist (OSA), there is a high potential for archaeological resources to be present in the project area. The proposed areas of construction, located along the natural drainage system, have especially high potential. There is also one mound site located immediately north of the downtown area, within a few hundred yards of one of the proposed project elements. The City has contracted with a qualified cultural resource specialist to identify and evaluate historical and archaeological properties within and adjacent to the project area. This study identified previously recorded sites within the APE and identified any additional sites located through research and/or survey. FEMA has received and reviewed the completed Phase I Archaeological Investigation for Proposed Storm Water Hazard Mitigation, and has concluded consultation with the SHPO regarding the findings of the report.

### 5.3.2 Alternative 1: No Action

The No Action Alternative would not involve any activities other than the routine maintenance of existing facilities (roads, stormwater sewers, water storage facilities, etc.). Although, this alternative would not add any additional impacts to historical or archaeological resources, existing resources would continue to be affected by flood events.

### 5.3.3 Alternative 2: Proposed Action

FEMA has determined that the project's potential to affect above-ground historic properties within McGregor is low because these infrastructure improvements would be below ground or at-grade. Therefore, mitigation requirements for listed historic properties are unlikely because of a low potential for impacts on resources or their viewsheds. The engineer for the project has also taken any vibration concerns into consideration, and as designed the proposed Action will have no effect on the historic standing structures. Based on age and era of construction, the existing detention basins have been determined eligible for listing in the NRHP, and the Proposed Action would alter the outlet structure of each of the detention basins and dams. Although changes to the NRHP eligible detention basins are proposed in this alternative, FEMA has determined and the SHPO has concurred that as the resources will remain in place, the undertaking as defined will have no adverse effect to historic properties. In addition, the Center Street section of the drainage network improvements was previously evaluated for listing in the NRHP in 1998. The Methodist Hallow Storm Sewer, as it is historically identified, was recommended eligible for listing in the NRHP under Criteria A and C, and the SHPO concurred with this recommendation. FEMA has worked with the sub-applicant to avoid or minimize adverse effects to this resource. FEMA has been informed that the segment of the

Methodist Hallow Storm Sewer, where this mitigation work will be limited, is a U shaped stone drainage way, with a sidewalk on top. The proposed method to improve water flow and prevent debris blockage is to insert a pre-cast concrete pipe into the channel from above, stabilizing the pipe with gravel, to ensure that the original stone channel is left in-situ and the improvements are fully reversible. FEMA has determined that this method will avoid adverse effects to the Methodist Hallow Storm Sewer segment, and the SHPO has concurred.

As noted above, the City has contracted with a cultural resource specialist to identify archaeological properties in the APE. FEMA has received and reviewed the completed Phase I Archaeological Investigation for Proposed Storm Water Hazard Mitigation, and has concluded consultation with the SHPO regarding the findings of the report. Several areas within the APE were determined previously profoundly disturbed or consisted of slopes too steep for suitable occupation by prehistoric or historic groups. No archaeological resources were identified during the investigation. FEMA has evaluated the methodology and findings of the survey, concurs with the recommendation that no further archaeological investigation is required, and the SHPO concurred, in a consultation letter dated October 21, 2011 (Appendix C, Figure 2).

## 5.4 Geology and Soils

Clayton County is part of the “driftless” area of Iowa, a region that was once thought to have missed being ice-covered during the last ice age. Later geologic studies indicated the area did have some glacial covering and applied the term Paleozoic Plateau. The Paleozoic Plateau region is characterized by an abundance of bedrock exposures with widespread areas of karst topography, deep and narrow valleys, and limited glacial deposits. The steep slopes, bluffs, abundant rock outcrops, waterfalls and rapids, sinkholes, springs, and entrenched stream valleys form a unique physiographic setting. These characteristics combine to form an area of many diverse microclimates that support varied flora and fauna communities not represented elsewhere in the state. The Mississippi River was a key factor in the development of the Paleozoic Plateau. The River and its tributary valleys contain well-preserved terraces, older floodplain deposit remnants, and entrenched and hanging meanders. All of these features indicate the complexity of the alluvial history and river development associated with glacial melting and drainage diversions.

The Farmland Protection Policy Act (FPPA) was enacted in 1981 (P.L. 98-98) to minimize the unnecessary conversion of farmland to nonagricultural uses as a result of Federal actions. In addition, the act seeks to ensure that Federal programs are administered in a manner that will be compatible with State and Local policies and programs that have been developed to protect farmland. The policy of the Natural Resources Conservation Service (NRCS) is to protect significant agricultural lands from conversions that are irreversible and that result in the loss of essential food and environmental resources. The NRCS has developed criteria for assessing the efforts of Federal actions on converting farmland to other uses, including Farmland Conversion Impact Rating form AD-1066 that documents a site-scoring evaluation process to assess its potential agricultural value. In accordance

with Section 1541 of the FPPA, the alternatives were reviewed for potential impacts on prime farmlands.

*Table 5-3: Soil Types in Project Area*

| Map Symbol | Soil Type | Soil Description | Farmland classification |
|---|---|---|---|
| 163D | Fayette silt loam | 9-14% slopes | Farmland of statewide importance |
| 163E | Fayette silt loam | 14-18% slopes | Farmland of statewide importance |
| 163F | Fayette silt loam | 18-25% slopes | N/A |
| 163G | Fayette silt loam | 25-40% slopes | N/A |
| 183E | Dubuque silt loam | 20-30 inches to limestone, 14-18% slopes | N/A |
| 183F | Dubuque silt loam | 20-30 inches to limestone, 18-25% slopes | N/A |
| 196C | Volney channery silt loam | 5-12% slopes | N/A |
| 478G | Rock outcrop-Nordness complex | 25-60% slopes | N/A |
| 496B | Dorchester-Volney complex | 1-5% slopes | Farmland of statewide importance |
| 499F | Nordness silt loam | 14-25% slopes | N/A |

See Appendix A, Figures 10-14 for soils maps of components located outside of City of McGregor municipal limits.

### 5.4.1 Alternative 1: No Action

The No-action Alternative would have no significant effect on geology or soils. This alternative would not involve any construction, improvements, or ground disturbance to the project area.

### 5.4.2 Alternative 2: Proposed Action

The proposed Basin #1 is located in an area dominated by Fayette silt loam (163E) but also contains some Dorchester-volney complex (496B) soils, both of which are classified as characteristic of Farmland of statewide importance (Table 5-3 and Appendix A, Figures 10-14). In coordination with the NRCS, FEMA has determined that the proposed project will not impact important farmland with soils classified as Prime, Unique, or Farmland of Statewide Importance. This determination was reached through rating the project components located in such soils outside of the City of McGregor using the Farmland Conversion Impact Rating form. The score reached was well below the 160 threshold which identifies a site as effectively committed to urban development and not subject to avoidance or mitigation measures for loss of important farmland (Appendix C, Figure 1).

The construction of the storm water system improvements would result in temporary disturbance of surface soils in the project area, primarily for the new drainage basins. Implementation of Best Management Practices (BMP) identified in the Storm Water Pollution Prevention Plan (SWPPP)

would minimize soil erosion and loss until construction is complete and the site is permanently stabilized. Therefore, the Proposed Action would have no significant impact to geology and soils. Non-structural BMPs may utilize the minimization of disturbance, preservation of natural vegetation and re-vegetation of exposed slopes and soils to minimize erosion and to stabilize slopes. Structural erosion control BMPs include the placement of mulch or grass and the covering of stockpiles. Structural sediment control BMPs include silt fencing and sediment traps.

## 5.5 Land Use and Planning

The proposed location of the McGregor storm water system improvements is located throughout the city with portions extending up to approximately one-half mile outside of the municipal borders. The topography of McGregor and its surrounding area has heavily influenced the development of the city throughout its history and is deeply intertwined with the storm water flooding hazards this project is intended to address. The City primarily occupies the valleys between the steep and largely wooded hills. The majority of the commercial and municipal facilities are located in a corridor along Highway 76. This corridor is also a collector area into which the surrounding watersheds drain before further draining into the Mississippi River. The new storm water detention basins are all located outside of the City's municipal boundaries. Except for Basin #6, the existing basins are located within municipal boundaries. The proposed trash racks are located both within and outside of the City of McGregor and all storm sewer retrofits are located within the City along existing roadways.

The City of McGregor is responsible for zoning and land use code enforcement, however development of land use plans is conducted in coordination with Upper Explorerland Regional Planning Commission (UERPC). The City and the UERPC are currently in the process of updating the City's comprehensive plan with one public open house in August 2011 and four committee meetings having taken place as of the time of this writing. The planning process projects up to three more committee meetings, another public open house in November 2011, and two public hearings in August 2012. During this process to date, participants identified the need for storm sewer improvements and discussed hazard mitigation type projects (UERPC). The City's hazard mitigation plan was adopted in November 2008 and is also a component in recent and ongoing planning processes and project development activities.

### 5.5.1 Alternative 1: No Action

The No-action Alternative would have no significant effect on land use and planning. This alternative would not involve any construction, improvements, or ground disturbance to the project.

### 5.5.2 Alternative 2: Proposed Action

Land required for the Proposed Action would involve approximately three acres of land disturbance for each of the proposed storm water detention basins encompassing access, staging, and other associated construction activities. The proposed new basins will involve the conversion of the existing

forested areas to flood control basins, however the area will remain effectively open space. Disturbance associated with modifications to the existing basins is expected to be confined to the basins, earthen berms, and other existing associated features. The land disturbance associated with the proposed trash racks is expected to be minimal and the areas will also remain effectively open space. The City of McGregor is responsible for coordinating temporary access and construction zones with Clayton County, the chosen contractors, and neighboring land owners as well as with existing and on-going planning activities.

## 5.6 Hazardous Substances

Hazardous wastes, as defined by the Resource Conservation and Recovery Act (RCRA), are defined as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may; (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or; (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed.”

Hazardous materials and wastes are regulated in Iowa by a combination of federal and state laws. Federal regulations governing the assessment and disposal of hazardous wastes include RCRA, the RCRA Hazardous and Solid Waste Amendments, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Solid Waste Act, and the Toxic Substances Control Act.

### 5.6.1 Alternative 1: No Action

The No-action Alternative would have no significant effect on unidentified hazardous substances. This alternative would not involve any construction, improvements, or ground disturbance to the project.

### 5.6.2 Alternative 2: Proposed Action

Two known leaking underground storage tank (LUST) facilities exist within 1,000 feet of the proposed project. Both are located east of Main Street, down gradient of the project. Due to the facilities’ location in relation to the project components and the facilities’ current status as verified through the IDNR online database, they are not expected to present an environmental concern to the proposed project.

In the event that soil and/or groundwater contamination is discovered during construction activities, the IDNR should be contacted at Field Office #1 (563) 927-2640. Work within the sensitive area should not resume until IDNR personnel indicates no further assessment is needed of the discovery.

## 5.7 Noise

The Noise Control Act was enacted in 1972 (P.L. 92-574). EPA does not have regulatory authority governing noise in local communities. In 1982, the EPA shifted federal noise control policy and

transferred the primary responsibility of regulating noise to state and local governments. The Noise Control Act of 1972 and the Quiet Communities Act of 1978, however, were not rescinded by Congress and remain in effect. Inadequately controlled noise presents a growing danger to the health and welfare of the nation's population. The major sources of noise include transportation vehicles and equipment, machinery, appliances, other products in commerce, climate, and recreation. Sounds, which disrupt normal activities or otherwise diminish the quality of the environment, are designated as noise. Noise can be stationary or transient, intermittent or continuous. Noise is considered unwanted sound and is typically measured in decibels (dB). The day-night average sound level (Ldn) is the 24-hour average sound level, in dB, obtained after the addition of 10 dB to the sound levels occurring between 10 p.m. and 7 a.m. and is used by agencies for estimating sound impacts and establishing guidelines for compatible land uses.

The U.S. Department of Housing and Urban Development (HUD) regulations set acceptable noise levels at 65 Ldn or less (24 CFR Part 51, Subpart B). Typical residential construction codes require a minimum exterior to interior insertion loss, or noise reduction, of 20 dB. The EPA identifies a 24-hour exposure level of 70 dB as the level of environmental noise which will prevent any measurable hearing loss over a lifetime. Likewise, levels of 55 dB outdoors and 45 dB indoors are identified as preventing activity interference and annoyance (e.g., spoken conversation, sleeping, working, recreation) (EPA 1981). The levels represent averages of acoustic energy over long periods of time such as 8 hours or 24 hours rather than single events. These noise levels are contained in the EPA document, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." The MFL Marmac Intermediate School and the Great River Center, an elderly care center, are located along Buell Avenue and are approximately 100 feet from the work components along Buell Avenue. Both facilities are considered sensitive noise receptors.

### 5.7.1 Alternative 1: No Action

The No-action Alternative would not affect noise levels within the proposed project area or the surrounding community. No construction activities would occur with the selection of the No-action Alternative.

### 5.7.2 Alternative 2: Proposed Action

The Proposed Action would result in temporary increases in noise levels in the vicinity of the project area for the construction of the proposed project. Construction activities would require approximately 18 months of construction and the use of heavy equipment. Best Management Practices to minimize noise impacts to the two sensitive noise receptors are required. According to the Center for Environmental Excellence by the American Association of State Highway and Transportation Officials (AASHTO), BMPs for noise reduction include (AASHTO 2009);

- Early and frequent communication with the public;

- Planning noisier activities and equipment usage for mid-morning to mid-afternoon;
- Planning site access and staging to minimize or eliminate “back-up alarm” noise;
- Limiting equipment on site to only what is necessary;
- Imposing “seasonal limitation on construction noise as spring and fall are critical times in residential areas due to windows being left open;”
- Using newer, “low-noise” models of equipment;
- Limiting construction activities to daylight hours;
- And, shift work to weekends rather than weeknights.

To the extent practicable, construction near the school should be scheduled during summer vacation and work should be confined to daylight hours, normally between 7 a.m. and 9 p.m. Once construction activities are completed, noise levels should return to pre-project levels. Applying BMPs for construction noise reduction is expected to minimize the short-term adverse impacts of the project. FEMA has determined that the proposed action is expected to have no long-term adverse impacts on the noise quality of the area.

## 5.8 Socioeconomic Considerations

On February 11, 1994, President Clinton signed EO 12898, *“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.”* The EO directs Federal agencies to focus attention on human health and environmental conditions in minority and/or low-income communities. Its goals are to achieve environmental justice, fostering non-discrimination in Federal programs that substantially affect human health or the environment, and to give minority or low-income communities greater opportunities for public participation in and access to public information on matter relating to human health and the environment. Also identified and addressed, as appropriate are, disproportionately high and adverse human health, or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.

The data used for this Environmental Justice analysis was taken from both the 2010 Census and the 2000 Decennial Census as not all of the desired data for this analysis was available as of the time of this writing. Consideration was given to using Census Tracts to define the area, however the relevant Census Tracts include a substantially larger area than the project is anticipated to have direct impacts on. The construction footprint for the Proposed Action effectively occupies the entire City and thus the whole City of McGregor is considered the project area for the purpose of socioeconomic evaluation. While some portions of the project are located outside of the City of McGregor, the City as delineated by the Census marks the most logical defined area for this analysis. As of the 2010 census, there were 871 people and 410 households residing in the City of McGregor; the total population in 2010 is the same as in the 2000 Census.

Compared to Clayton County, the City has a significantly greater proportion of minority residents, more than double the proportion. The proportion of the City population is white 98.05% followed by

1.03% undefined minority, 0.46% Asian, 0.34% American Indian, and 0.11% Black or African alone compared to the County's proportions of 99.18%, 0.14%, 0.23%, 0.11% and 0.34% respectively. Additionally, 1.72% of City residents report Hispanic or Latino heritage compared to the County proportion of 1.69%. The proportion of City of McGregor residents over the age of 64 (23.77%) is slightly higher than the Clayton County proportion (19.33%) and a slightly smaller proportion of residents under the age of 20 (20.67%) than the County (25.27%). The working-age population of the City and the County are comparable at 55.57% and 55.40%, respectively. Median age for Clayton County is 45 while the median age of McGregor is older at 48.3. There are 410 households in McGregor with median household size of 2.02 compared to median size of 2.35 for Clayton County as a whole.

*Table 5-4: Census minority and below poverty level populations.*

| | Minority Status (SF1 Data 2010) | | | Poverty Status (SF3 Data 2000) | |
|---|---|---|---|---|---|
| Geography | Total | Minority Population | Percentage | Population in Poverty (18 and older) | Total Percentage of Population |
| Clayton County | 18,129 | 148 | 0.82% | 1,096 | 8.60% |
| McGregor | 871 | 17 | 1.95% | 51 | 9.90% |

Note: Data taken from 2010 Census Summary File 1 (100% population count) data and the Profile of Selected Economic Characteristics: Census 2000 Summary File 3 (SF3) – Sample data.

Median household income within the City of McGregor is $30,163 which is lower than the Clayton County median income of $34,068. The population determined to be below the poverty threshold in the 2000 Census is slightly higher in the City at 9.9% compared to the County's figure of 8.6%.

*Table 5-5: Comparison of Population Statistics 1980 through 2010*

| **Jurisdiction** | **1980** | **1990** | **2000** | **2010** |
|---|---|---|---|---|
| Iowa | 2,913,808 | 2,776,831 | 2,926,324 | 3,046,355 |
| Clayton County | 21,098 | 19,054 | 18,678 | 18,129 |
| McGregor | 945 | 797 | 871 | 871 |

### 5.8.1 Alternative 1: No Action

The No-action Alternative would have no impact to the socioeconomics of the local area because no construction activity would occur.

### 5.8.2 Alternative 2: Proposed Action

Construction of the McGregor Storm Water Flood Mitigation project under this alternative would result in a positive impact with an influx of construction workers needed for the approximately 18 months of construction activities. Construction personnel would provide short-term benefits to the local

businesses, which would include the purchase of food, gas, and other services. The Proposed Action would not displace or adversely affect any nearby residents or minority populations during the construction phase. The implementation of the proposed alternative would have little likelihood of having disproportionate impacts on any low-income or minority groups. The proposed improvements would reduce the frequency and potential costs of flood-related repairs and clean-up and would not cause adverse environmental or economic impacts specific to any groups or individuals.

## 5.9 Transportation

The proposed project area is located throughout the City of McGregor and locations within one-half mile of municipal borders. The majority of the proposed work is located along existing road and highway rights of way. Two proposed detention basins are located on Klein Brewery Road, which is also State Highway 76 and with Main Street comprises the primary route into and out of the City of McGregor. This primary corridor facilitates the majority of vehicle traffic in and through the City, carrying substantially more traffic than adjoining roads. The third new detention basin is located adjacent to Cemetery Road. The proposed new trash racks are located adjacent to or in close proximity to County Highway X50, Garnavillo Avenue, State Highway 340, Church Street, Ash Street, and one approximately 300 feet northwest of Spring Street. The storm sewer retrofits are located along Buell Avenue between Tanglewood Drive and 8$^{th}$ Street; approximately 500 feet along Center Street roughly centered on the junction of Center Street and East Spring Street; 4$^{th}$ Street between Prospect Street and Main Street; and Ash Street extending approximately 500 feet northwest from Prospect Street.

UERPC (see 5.5 Land Use and Planning) coordinates regional transportation planning and associated project; the City of McGregor will continue ongoing coordination with UERPC for projects taking place in the vicinity of the proposed project. See Appendix A, Figure 15 for the Iowa Department of Transportation 2005 Annual Average Daily Traffic Flow Map for the City of McGregor.

### 5.9.1 Alternative 1: No Action

With the No-action Alternative, the Storm Water Flood Mitigation project components would not be constructed and there would be no permanent impact to the existing traffic and circulation for the City of McGregor. Roads will remain subject to temporary closure during flood events which does negatively impact circulation and access. Emergency vehicles may be prevented from accessing certain properties in a timely manner during such road closures. Repairs of flood-related damages to roads and underlying infrastructure may also result in negative impacts to traffic circulation.

### 5.9.2 Alternative 2: Proposed Action

The proposed project would temporarily disrupt the traffic flow on the surrounding streets during the approximately 18 month construction period. Work on the detention basins and the trash racks is anticipated to have the least impact to traffic as the project components are located adjacent to

roadways. Storm sewer retrofit components on Buell Avenue, Center Street, 4th Street, and Ash Street are likely to create the most disruption to local traffic. The primary route through McGregor, Highway 76 or Main Street, is not likely to be impacted by construction activities.

Local traffic would need to slow down or stop to accommodate equipment, such as bulldozers, backhoes, and graders, used during construction. Traffic restrictions, as appropriate to the type of work and location, would need to be used to sustain traffic flow while maintaining safe working and traffic conditions. This activity would have a short-term effect on the level of service for the connecting roads during the construction period. This level of service would, however, be expected to return to levels comparable to pre-construction upon completion of the project. The successful completion of this project is expected to reduce future road closures in the primary business district and along the primary road through the City due to flooding and flood clean-up activities.

## 5.10 Water Resources

The U.S. Army Corps of Engineers (USACE) regulates the placement of dredged or fill material into waters of the United States under the federal Clean Water Act (CWA). Authorization from the USACE and the Iowa Department of Natural Resources would be required under CWA Sections 404 and 401 for discharge of dredged or fill material into waters of the United States, including wetlands (see section 5.10.1, Wetlands). Furthermore, EO 11990 directs federal agencies to take actions to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the values of wetlands.

The USACE is responsible for permitting and enforcement functions dealing with building in U.S. waters and discharging dredged or fill material into U.S. waters. USACE regulations for building or working in navigable waters of the United States are authorized by the Rivers and Harbors Act of 1899. These regulations coincide with Section 404 of the CWA, which establishes the USACE permit program for discharging dredged or fill material. The regulations are often used concurrently because building in navigable waters of the United States also constitutes discharging dredged or fill material into waters of the United States. In addition to regulating construction or work being done in navigable waters of the United States, USACE regulates discharging into wetlands through the Section 404 permit program (see section 5.10.1, Wetlands).

EO 11988 (Floodplain Management) requires that a Federal agency avoid direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative. Specifically, EO 11988 prohibits federal agencies from funding new construction in the 100-year floodplain, or 500-year floodplain for a critical facility (e.g. Hospital, Fire Station), unless there are no practical alternatives. FEMA uses Flood Insurance Rate Maps (FIRM) to identify the regulatory 100-year floodplain for the National Flood Insurance Program (NFIP). Clayton County, Iowa and the City of McGregor are participants in the NFIP.

### 5.10.1 Wetlands

Wetlands are defined by the USACE as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” EO 11990, Protection of Wetlands, requires Federal agencies to take action to minimize the destruction or modification of wetlands, by considering both direct and indirect impacts to wetlands that may result from federally funded actions.

Activities disturbing jurisdictional wetlands require a permit from the USACE. Two types of authorization are available from the USACE for activities regulated under Section 404 of the Clean Water Act: general permits, which are issued for a specific category of similar activities and include nationwide permits defined in 33 CFR Part 30, and individual permits issued after review of the project, project alternative, and proposed mitigation. The 1987 *Corps of Engineers Wetlands Delineation Manual* provides methods for technical guidelines in identifying wetlands. The Corps’ manual requires the presence of all three parameters (greater than 50% dominance of hydrophytic vegetation, evidence of hydric soils, and presence of hydrologic indicators) for an area to be considered a wetland. Consistent with EO 11990 a review of the U.S Fish and Wildlife Service National Wetlands Inventory Map indicates an approximately 1.5 acre emergent wetland, classified as PEMCh, is located in the detention area created by Basin #4 adjacent to State Highway 340. No other wetlands have been identified in the project area.

#### 5.10.1.1 Alternative 1: No Action

The No-action Alternative would not affect wetlands. No construction activities would occur with the selection of the No-action Alternative.

#### 5.10.1.2 Alternative 2: Proposed Action

The proposed project is anticipated to impact the emergent wetland identified at the Basin #4 site. Proposed work at this site consists of modifications to the existing detention basin as well as the installation of two trash racks. While the impact to the wetland of the proposed work and associated construction activities is expected to be temporary, the City will be required to coordinate with the IDNR and the USACE to further assess the impacts and identify any potential conditions or mitigation measures needed.

The Contractor should implement specific best management practices to reduce or eliminate runoff impacts during proposed construction activities of the Proposed Action at all sites. Further, the Contractor should implement measures to reduce the potential for soil erosion after construction, regardless of whether a National Pollutant Discharge Elimination System (NPDES) Permit or a waiver from the permit requirement is secured.

### 5.10.2 Floodplain

The potential for flooding within McGregor is a safety concern for the community. Flooding poses a potentially life-threatening situation for persons caught in the floodwaters. The steep terrain in much of the area upgradient of the City makes McGregor a candidate for flash floods. This increases safety concerns, as rapidly rising floodwater during a flash flood which can trap people in the floodwater before they have the opportunity to move to higher ground.

Damaged and flooded roads also present a public safety concern due to direct hazards and increased response times for emergency responders. During previous flood events, portions of McGregor have been isolated from the rest of the community and inaccessible for emergency responders.

Consistent with EO 11988, FIRMs were examined during the preparation of this EA. According to FIRM panels 19043C0090E and 19043C0095E, both dated 6/2/2011, the proposed project has components located in Zone X, outside the 100- and 500-year floodplains. Existing Basin #6, the Buell Avenue retrofit, and a portion of the 4$^{th}$ Street retrofit are located within Zone A within the 100-year floodplain (see Appendix A, Figure 16).

#### 5.10.2.1 Alternative 1: No Action

The No-action Alternative would not affect floodplains. No construction activities would occur with the selection of the No-action Alternative. The City would remain vulnerable to flash flood events and continued losses as a result.

#### 5.10.2.2 Alternative 2: Proposed Action

The purpose of the project is to control storm water draining into the City of McGregor that contributes to flash floods. The Buell Avenue and 4$^{th}$ Street retrofits are not anticipated to have permanent impacts to the existing floodplain as the project components are not disrupting natural floodplain functions as these segments are currently present. The modifications to the Basin #6 is also in the floodplain and are expected to result in the detention and slowing of storm water from entering the floodplain and ultimately the Mississippi River. The slowing of flash flood water is expected to assist in infiltrating more storm water into the soil and reducing the potential for soil erosion, thus providing an incremental improvement to the floodplain. As part of the storm water conveyance system, the proposed action does not have practicable alternatives located outside of the 100-year floodplain.

FEMA's procedures for implementing EO 11998 (44 CFR Part 9, Section 9.6) include an eight-step review process that decision-makers must use when considering projects that have potential impacts to or within a floodplain. As NEPA compliance involves the same functional decision-making process to meet its objectives, the eight-step review process is considered satisfied through the implementation of the NEPA process and this document.

The Proposed Action would reduce the threat of flash floods in McGregor, reduce street flooding (including Main Street), increase access for emergency responders to the entire City during flood events, and reduce the potential risk of residents coming into contact with additional hazards associated with flood waters. With the reduction in street flooding, direct hazards associated with damaged or flooded streets would also be reduced. Decreased flooding would also benefit utilities such as McGregor's sanitary sewer and potable water distribution systems. Flooding can overload these systems and potentially cause a citywide sewer backup or loss of potable water; therefore, prevention of flooding would benefit public health and safety throughout McGregor. FEMA has determined that the proposed action will have no long-term adverse impacts to the existing floodplain.

## 5.11 Cumulative Impacts

The CEQ regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for federal projects. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR Part 1508.7). Cumulative effects are considered for both the No Action and Proposed Action alternatives. Cumulative effects were determined by combining the effects of the alternative with other past, present, and reasonably foreseeable future actions in the project vicinity.

While the proposed action will have temporary impacts to both wetlands and floodplain and will involve vegetation clearing, the impacts are expected to be temporary and/or mitigated through the application of BMPs and permitting/agency coordination as specified in this document. The no action alternative has the potential to negatively impact the local environment through continued risk of erosion associated with unmitigated flash flooding, damages to infrastructure, and flooding of homes and businesses which constitutes a negative impact to the residents of McGregor. As a geographically constrained city, this project is not expected to facilitate significant growth in the floodplain. There were no other reasonably foreseeable actions identified in the project vicinity that would have the potential for a long-term cumulative impact.

## 5.12 Coordination and Permits

The City of McGregor is responsible for issuing or exempting the selected contractor(s) from Storm Water Erosion Control and Excavating Permits, as applicable. The City is required to coordinate with the IDNR and the USACE to obtain any necessary permits and implement any requirements imposed for the impacts to the wetland identified at Basin #4 adjacent to State Highway 340. Disturbance of ground of 1 acre or more requires a Storm Water Pollution Prevention Plan and an NPDES permit and may require a Section 401 Water Quality Permit from the IDNR. The applicant will be required to follow all required conditions from the IDNR and USACE associated with all required permits.

The City will continue coordination with UERPC for updates to the comprehensive plan and transportation-related projects in the vicinity of the proposed action. In the event that archaeological deposits (soils, features, artifacts), or other remnants of human activity are uncovered, or if archaeological deposits are discovered during construction of the project, activities would cease in the immediate area, and the SHPO and the FEMA Regional Environmental Officer would be notified before work could continue (section 5.3 Cultural Resources). Work in sensitive areas cannot resume until a qualified archaeologist determines the extent of the discovery, consultations between SHPO and FEMA are complete, and the applicant has been notified by SHPO and FEMA.

The Iowa Department of Natural Resources requested additional coordination to identify and protect state-protected species and their habitat December 15, 2010 letter (Appendix C, Figure 3). The City of McGregor is responsible for continuing and resolving such coordination. If an active Bald Eagle nest is identified in the project area, the Applicant and the Applicant's consultants must follow the USFWS recommendation to conduct work at least 660 feet or more away from the nest. Clearing of trees, where necessary for the project, should take place from August through Mid-January to avoid Bald Eagle nesting season. If these conditions cannot be met, the Applicant must coordinate with the USFWS for any additional permitting or project conditions. If any other federally-protected species are encountered during the project, work must stop and FEMA will proceed with Section 7 consultation with the USFWS.

# 6. CONCLUSION

The draft EA evaluated potentially significant resources that could be affected. The evaluation resulted in identification of no significant impacts associated with the resources of climate, historic, cultural, geology and soils; floodplains; wetlands and water resources; vegetation; biological resources (endangered species act); and socioeconomic and environmental justice. Obtaining and implementing permit requirements along with appropriate BMPs will avoid or minimize any effects associated with the action. Should no significant impacts be identified during the public comment period, it is recommended that a Finding of No Significant Impact (FONSI) to the human or natural environment be issued for the Proposed Action Alternative.

# 7. PARTIES CONSULTED AND REFERENCES

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## 7.2 References


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