

Draft Environmental Assessment

Ushers Ferry Historic Village Lodge

Cedar Rapids, Iowa

FEMA 1763-DR-IA

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FEMA

**Federal Emergency Management Agency
Department of Homeland Security**

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Abbreviations and Acronyms

ACM	Asbestos Containing Material
APE	Area of Potential Effect
BMP	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
dB	Decibels
EA	Environmental Assessment
EHP	Environmental Planning and Historic Preservation
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency

Abbreviations and Acronyms continued

ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GHG	Greenhouse Gases
GPN	Geographic Parcel Number
GPS	Global Positioning System
HMGP	Hazard Mitigation Grant Program
HPC	Historic Preservation Commission
HUD	U.S. Department of Housing and Urban Development
IDNR	Iowa Department of Natural Resources
IHSEMD	Iowa Homeland Security and Emergency Management Division
Ldn	Day-night Average Sound Level
mg/m	Milligrams/Meters
MPH	Miles Per Hour
MS4	Municipal Separate Storm Sewer System
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSA	Office of the State Archaeologist
pCi/L	Pico Curies Per Liter
ppb	Parts Per Billion
ppm	Parts Per Million
RCRA	Resource Conservation and Recovery Act
sf	Square Feet
SHPO	State Historic Preservation Office
SHSI	State Historic Society of Iowa
SWPPP	Storm Water Pollution Prevention Plan
UFHV	Ushers Ferry Historic Village
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1. INTRODUCTION

Cedar Rapids is the second largest city in the State of Iowa and is the county seat of Linn County. Cedar Rapids lies on both banks of the Cedar River. Between June 11, 2008 and June 13, 2008, Ushers Ferry Historic Village at 5925 Seminole Valley Trail NE in Cedar Rapids, Iowa, along with large portions of Cedar Rapids and the surrounding area experienced extensive damage from flooding of the Cedar River and its tributaries. On May 27, 2008, President George W. Bush declared a major disaster in the State of Iowa (1763-DR-IA) pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, 42 U.S.C. Section 5121-5206. The incident period began on May 25, 2008 and closed August 13, 2008. Ushers Ferry Historic Village serves the City of Cedar Rapids and Linn County with 2010 Decennial Census populations of 126,326 and 211,226, respectively.

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 the recovery options for Ushers Ferry Historic Village.

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. Further, EO 11988 requires consideration of the 500-year floodplain for critical facilities such as hospitals and fire stations. Presently, sections where Ushers Ferry Historic Village is located are within the floodway of the 100-year floodplain and subjected to repetitive flooding. Construction of a new multi-purpose facility onsite outside the 100-year and 500-year floodplains is one of the alternatives that the Cedar Rapids has considered for its recovery options.

A public notice will be published in the Cedar Rapids newspaper, *The Gazette*, before or at the beginning of the 30-day public comment period; such a notice will also be available through Cedar Rapids' CR Progress webpage and FEMA Region VII's Environmental Documents and Public Notices webpage. Copies of this EA will be available for the duration of the public comment period at City Hall, Cedar Rapids Public Library at 221 3rd Street SE downtown and 2600 Edgewood Road SW at the Westdale Mall, and on FEMA Environmental Documents and Public Notices website.

2. PURPOSE AND NEED

Pursuant to Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1974 (42 U.S.C. 5172), as amended, the City of Cedar Rapids (hereon known, “Sub-Grantee”) requested funding through FEMA’s Public Assistance Program. FEMA’s Public Assistance Program provides supplemental Federal disaster grant assistance to State, Tribal, and local governments, and certain types of Private Nonprofit Voluntary Agencies so that communities can respond to and recover from major disasters or emergencies. The Public Assistance Program has rules whereby eligible Sub-Grantees may choose to use eligible, though capped, recovery funds for alternate or improved projects that may be more beneficial to the Sub-Grantee than what existed prior to the disaster event.

In 2008, Cedar River floodwaters inundated and severely damaged most of the structures at Ushers Ferry Historic Village (hereon known as “Ushers Ferry”). Ushers Ferry is located at 5925 Seminole Valley Trail NE in Cedar Rapids. It is a public facility opened in 1975 and operated by Cedar Rapids Parks and Recreation Department. This historic village consists of a collection of structures, moved to this site to depict life in an Iowa small town between 1890 and 1910. The village site and structures occupy approximately 11 acres of the larger 217.27 parcel (GPN: 131327600100000). Ushers Ferry offers self guided tours, as well educational programs, costumed interpreters, themed events, rental facilities, and recreational opportunities. The village had over 30 buildings prior to 2008 flood; currently there are 20 buildings remaining, 16 of which are severely damaged or have been completely destroyed.

Sub-Grantee requests an improved project to consolidate the functions of 16 damaged structures at Ushers Ferry into one (1) newly constructed “Lodge” structure. They propose to demolish seven (7) damaged structures, render two (2) structures safe and secure, relocate one (1) structure, and construct the 6,000 square foot Lodge. The Lodge would be a multi-purpose public facility that has banquet space for 300 guests for village events, weddings, company functions, and educational events. The Lodge would include restrooms, offices, catering kitchen, and storage rooms.

The purpose of the improved project is to assist the citizens of Cedar Rapids and Linn County toward their recovery and return to normalcy from the 2008 flooding. FEMA’s Public Assistance Program will contribute eligible funding toward demolishing and debris removal of the original damaged structures and constructing the new Ushers Ferry Lodge to restore and improve pre-disaster community event functions.

Ushers Ferry Lodge is not a critical facility by definition; however it does serve a vital service for community events and historical education. Presently 16 structures do not meet minimum flood protection levels to fulfill community needs during flooding events. The need is to improve facilities, equipment, and functions outside of the 100-year floodplain in order to reduce the facility susceptibility to repetitive flood damage and loss.

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. Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA. No Action Alternative is used to evaluate the effects of not providing eligible assistance for the project, thus providing a benchmark against which “Alternatives” may be evaluated. A number of alternatives were evaluated during the development of this proposed project and are defined in this section.

3.1 ALTERNATIVE 1 - NO ACTION

Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA. No Action Alternative is defined as maintaining the status quo with no FEMA funding for the Undertaking. No Action Alternative is used to evaluate the effects of not providing eligible assistance for the project, thus providing a benchmark against which “Alternatives” may be evaluated.

Under No Action Alternative, no FEMA grant funding would be applied towards the demolition and removal of seven (7) damaged structures, relocation of one (1) structure, nor towards the new construction of the Ushers Ferry Lodge. Damaged structures would remain in place. The onsite functions from those damaged structures would cease to exist. Recreational and educational opportunities would be lost from diminished resources. Results of No Action Alternative would negatively impact individual safety and well-being of guests visiting Ushers Ferry, as well as compromise long-term opportunities for community events and gatherings, historical and cultural education, and recreation activities.

3.2 ALTERNATIVE 2 - PROPOSED ACTION

For Proposed Action Alternative, FEMA provides eligible funding towards an improved project to demolish and remove damaged structures and construct the new Ushers Ferry Lodge. Ushers Ferry has 16 structures that are severely damaged or have been completely destroyed by floodwaters. Sub-Grantee proposes to demolish and remove seven (7) damaged structures, three (3) of the seven (7) structures are adjoining structures (Jail, Millinery, Barber Shop), relocate one (1) structure offsite, and construct one (1) new structure. The Lodge would consolidate the functions of the 16 severely damaged or destroyed structures into this new facility.

Proposed site for the newly constructed Lodge facility would be located at Ushers Ferry Historic Village, 5925 Seminole Valley Trail NE in Cedar Rapids (GPS: 42.007113, -91.720814). According to National Flood Insurance Program’s (NFIP) Flood Insurance Rate Map (FIRM) the proposed Lodge site (panel number 19113C0290D, dated April 5, 2010) is located in the Unshaded Zone X outside the 100-year and 500-year floodplains. Lodge site would be placed on the existing Old Caretaker’s House, which would be demolished and removed for the new structure. Areas adjacent to the proposed site are the following: existing gravel parking lot to the west, Grange Hall to the south (would be rendered safe and secure), new residential neighborhoods in development. Woody terrain is adjacent to the east-southeast of site with five (5) freshwater wetland areas approximately 315 feet, 415 feet, 500 feet, 1,275 feet, and 1,500 feet away. The Cedar River is located approximately 930 feet to east-southeast (See Wetlands Section 5.2.2).

The proposed Lodge is a 6,000 square foot facility sited on a parcel less than one (1) acre. Area of Potential Effects (APE) for new construction, site work, additional landscaping, resurfacing of existing parking lot, and installation of new parking lot may exceed one (1) acre of ground disturbance (See Appendix A, Figure 2). Lodge would be multi-purpose public facility that includes banquet space, restrooms, offices, catering kitchen, and storage rooms for 300 guests for village occasions, weddings, company functions, and educational events.

Additionally, Sub-Grantee proposes to demolish seven (7) damaged structures, render two (2) structures safe and secure, and relocate one (1) structure offsite. Seven (7) structures proposed for demolition are Old Caretaker’s House, Village Bank, Jail, Millinery, Barber Shop, Outhouse, and Post Office. Two (2) structures to be rendered safe and secure are the Land Surveyor’s Office and Grange Hall. The relocation of the Olin Train Depot back to the City of Olin has been proposed; however it may also remain onsite rendered safe and secure (See Table 3-1).

Results of the Proposed Action Alternative, would continue the community’s 2008 flood recovery effort, increase the amount of public facilities available for events, maintain endeavors to provide cultural and historical education of Iowa’s heritage, and offer additional recreational opportunities for Cedar Rapids and the larger community. Based upon environmental considerations authorized by all applicable Federal laws, regulations, and Executive Orders and criteria established by FEMA and Sub-Grantee, Proposed Action Alternative is a practical alternative for eligible funding.

Table 3-1: Listing of Ushers Ferry flood effected buildings / structures and proposed actions to mitigate structures.

Ushers Ferry Structure	Year Built	Flood Effect / Action Taken	Sub-Grantee’s Proposed Action
Village Bank	1995	Damaged	Demolition
Blacksmith Shed	Circa 1880s	Destroyed	-----
Firewood Shed	1997	Destroyed	-----
Grange Hall	Circa 1860s	Damaged	Render Safe and Secure
Ice Cream Parlor / Concession Stand	1997	Demolished	-----
Jail, Millinery, Barber Shop, Outhouse	Circa 1890 Moved 1984	Damaged	Demolition
Old Caretaker’s House	Unknown	Damaged	Demolition
Opfer’s Livery Stable	Circa 1880s	Destroyed	-----
Post Office	Circa 1880s	Damaged	Demolition
Scale House	Circa 1880s	Destroyed	-----
Section Hand’s Shed	Circa 1860s	Destroyed	-----
Land Surveyor’s Office	1999	Damaged	Render Safe and Secure
Tinkers Woodworker’s Shop	Circa 1920 Moved 1999	Destroyed	-----
Tokheim Manufacturing. Building	1993	Damaged	Demolition
Olin Train Depot	1912	Damaged	Donate and Relocate Back to Olin or

	Moved 1985		Render Safe and Secure
Log House	Circa 1870s Rebuilt 1982	Destroyed	-----

3.3 OTHER ALTERNATIVES CONSIDERED AND DISMISSED

Sub-Grantee considered and evaluated the following alternative: reconstruct those structures destroyed/demolished to pre-disaster conditions, and repair the damaged structures to pre-disaster conditions, all structures in their previous sites using mitigation measures to reduce future flood potential.

This alternative would result in significant construction-related impacts, such as demolishing seven (7) structures, removing debris, new construction, and elevating the newly constructed facility to meet current codes and standards. Ushers Ferry Lodge does not meet the definition of a “critical action” according to EO 11988 and 44 CFR Part 9. However constructing the Lodge where the seven (7) damaged structures exist would require the structure to be elevated to or protected to the 100-year flood level. This mitigation measure would provide additional flood protection for the newly constructed facility to the BFE plus two (2) feet of freeboard. BFE for Ushers Ferry at the 100-year floodplain is between 732 feet and 733 feet.

Elevating the Ushers Ferry to the 100-year floodplain level would pose considerable challenges for ensuring adequate ingress and egress for workers and guests. Much of Ushers Ferry was inundated with floodwaters causing extensive damage to most of their structures. Elevating structures and / or other flood proofing measures to the 100-year flood level would make them virtual islands during future flood events equal to or exceeding the magnitude of 2008 flood.

Restoring structures on the existing site in Ushers Ferry would also require that the Sub-Grantee to carry flood insurance on the structures in perpetuity. The significant investment within the floodplain needed for this option when practicable alternatives are identified outside of the floodplain has demonstrated that this option is inconsistent with EO 11988 and 44 CFR Part 9. This option is not the most cost-effective or the most advantageous for community benefit. Deliberation of environmental considerations and extensive challenges to restore structures and mitigate potential hazards has rendered this alternative impractical and results in it being dismissed from further consideration.

4. SUMMARY OF IMPACTS AND MITIGATION

No Action Alternative and Proposed Action Alternative were evaluated in this EA and their impacts summarized in this section using the following scale. Impacts are assumed to be negative unless noted otherwise. Chapter Five has the potential impacts of the two (2) Alternatives described in greater detail.

- No Impact – no impacts are anticipated
- Negligible Impact – no discernible impacts are anticipated or are minimal and cannot be measured meaningfully
- Minor Impact – anticipated impacts are measurable, but are minor and within or below regulatory standards and / or are confined to the project site(s)

- Moderate Impact – anticipated impacts are measurable and / or have impacts that may extend beyond the project site(s), may require permitting, may require limited mitigation actions or coordination to minimize negative impacts
- Major Impact – anticipated impacts are readily measurable, have a regional impact, require mitigation to reduce impacts, and / or exceed existing regulatory standards; permanent changes to the resources would be expected

Table 4-1: Summary of Impacts and Mitigation.

Affected Environment	Impacts	Mitigation Measures / BMPs
Geology and Soils		
Alternative 1	No Impact	Not applicable
Alternative 2	Negligible to minor impact	For ground disturbance of one (1) acre or more, a Storm Water Pollution Prevention Plan and NPDES permit are required. Appropriate sediment and erosion control BMP for ground-disturbing activities is required
Air Quality		
Alternative 1	No Impact	Not applicable
Alternative 2	Minor to Moderate Impact (short term)	Construction BMPs appropriate to site conditions and fugitive dust controls required to reduce short term impacts to negligible levels
Climate Change		
Alternative 1	No Impact	Not applicable
Alternative 2	No to Negligible Impact	Salvage or recycling of uncontaminated building components and building debris is recommended
Water Quality		
Alternative 1	Moderate Impact. Decaying structures may leach hazardous substances into surface and ground water sources	Sub-Grantee should take measures to minimize impacts from leaching hazardous contaminants
Alternative 2	Moderate Impact - Without BMPs; Negligible to Minor Impact – With BMPs	For ground disturbance of one (1) acre or more, a Storm Water Pollution Prevention Plan and NPDES permit are required. Appropriate sediment and erosion control BMP for ground-disturbing activities is required
Wetlands		
Alternative 1	Moderate Impact. Decaying structures may leach hazardous substance into nearby wetlands	Sub-Grantee should take measures to minimize impacts from leaching hazardous contaminants
Alternative 2	Moderate Impact - Without BMPs; Negligible to Minor Impact – With BMPs	Appropriate sediment and erosion control BMP for ground-disturbing activities is required
Floodplain		
Alternative 1	Minor Impact. Decaying structures and repetitive flooding may have harmful effects to downstream properties	Sub-Grantee should take measures to minimize impacts from leaching hazardous contaminants
Alternative 2	No to Negligible Impact. Action moves facility out of 100-year / 500-year floodplains and reduces flooding potential	Sub-Grantee must coordinate activities with local floodplain administrator
Protected Species and Habitat		
Alternative 1	No Impact	Not applicable
Alternative 2	No to Negligible Impact	If Bald eagle nest identified, work must take place 660

		feet or more from nest or outside of nesting season
Historic Structures		
Alternative 1	No Impact	Not applicable
Alternative 2	No Impact anticipated. No NRHP eligible structures effected	In the event that Proposed Action Alternative is approved, FEMA will assess the effects of the undertaking on historic structures within the APE and consult with the SHPO. It is not anticipated that consultation would result in a finding of adverse effects to historic structures
Archaeology		
Alternative 1	No Impact	Not applicable
Alternative 2	Moderate Impact. Two (2) known archaeological sites are within the APE	In the event of unanticipated archaeological discoveries, work must immediately stop, site secured, and FEMA immediately notified. FEMA will consult with SHPO. Work cannot resume on site until FEMA/SHPO consultation is resolved and approval to resume work is given by IHSEMD
Environmental Justice		
Alternative 1	Moderate Impact. Loss of facility may preclude loss of revenue and educational opportunities	Sub-Grantee should take measures to minimize negative impacts from missed socioeconomic opportunities
Alternative 2	Moderate Impact. Additional improved facility may increase public revenue and educational opportunities	Sub-Grantee should take measures to maximize positive impacts from increased socioeconomic opportunities
Land Use and Planning		
Alternative 1	No impact	Not applicable
Alternative 2	Negligible impact	Any re-zoning necessary would take place through the City's normal land use and zoning processes
Radon		
Alternative 1	No impact	Not applicable
Alternative 2	No to minor impact	Radon-resistant construction and design methods are recommended
Demolition and Hazardous Substances		
Alternative 1	Moderate Impact. Decaying facility may leach hazardous substances into surface and ground water / soils	Not applicable
Alternative 2	(1) Moderate Impact. Demolition and debris removal has potential to expose building contaminants to air / soils / water. (2) No to Negligible Impact for new construction.	Sub-Grantee is required to coordinate with the IDNR on the recommendations of their consultant on clean-up or containment needs and required to properly dispose of asbestos containing materials and lead paint where present in the remaining structure on the site in addition to any other hazardous materials; if unanticipated contamination is discovered during work, Sub-Grantee must contact the IDNR and stop work until the IDNR indicates no further assessment is needed of the discovery
Cumulative Impact		
Alternative 1	No Impact	Not applicable
Alternative 2	No Impact to Negligible Impact	Limited demolitions, debris removal, and construction of the proposed Lodge at Ushers Ferry are not expected to be impacted by or impact these on-going activities beyond a negligible, incremental increase in short-term debris disposal

5. AFFECTED ENVIRONMENT AND IMPACTS

FEMA must evaluate the potential effects that proposed FEMA grant funded actions may have on existing environmental conditions. Chapter Five describes the existing environmental conditions that may be affected by the proposed FEMA grant funding being applied towards the construction of the new Ushers Ferry Lodge. The environmental impacts of the No Action Alternative and Proposed Action Alternative are analyzed.

Two (2) Alternatives are compared against each other to estimate potential environmental consequences of their selections using environmental and socioeconomic components. In addition, the proposed activity was evaluated against existing environmental documentation based on current and planned actions and information on anticipated future projects in order to determine the potential for cumulative impacts. Potential for significant environmental consequences was evaluated utilizing the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1508.27).

5.1 PHYSICAL RESOURCES

5.1.1 Geology and Soils

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 Natural Resources Conservation Service (NRCS) policy is to protect significant agricultural lands from conversions that are irreversible and that result in the loss of essential food and environmental resources.

Table 5-1: Soil Types in Project Area

Map Symbol	Soil Type	Soil Description	Farmland classification
41A	Sparta loamy fine sand	0-2% slopes	Farmland of statewide importance
793B	Bertrand silt loam	2-5% slopes	Prime Farmland

The proposed Ushers Ferry Lodge is primarily located on a soil type classified as “Prime Farmland” with potential disturbance of another soil type classified as “Farmland of statewide importance.” Ushers Ferry is located within City of Cedar Rapids municipal limits however.

5.1.1.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry Lodge. No soil disturbance would occur.

5.1.1.2 Alternative 2 - Proposed Action

Demolition and removal of seven (7) damaged structures and new construction of Ushers Ferry Lodge may disturb more than one (1) acre of ground for the amount of excavation required to ensure stabilized soils, utilities, and associated site work. Ground disturbing activities of one (1) acre or more require the Sub-Grantee to prepare a Storm Water Pollution Prevention Plan (SWPPP) and to obtain and comply with a NPDES permit from the IDNR (see 5.7 Coordination and Permits). All ground disturbing activities would require site and project appropriate sediment and erosion control Best Management Practices (BMP). Proposed activities may have a moderate impact; however implementation of BMPs and permit conditions would reduce the potential impact from moderate to negligible or minor levels.

5.1.2 Air Quality

1990 Clean Air Act, its amendments, and NEPA require that air quality impacts be addressed in the preparation of environmental documents. U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six (6) “criteria” pollutants; carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂) and lead (Pb), 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 which are detailed in Table 5-2. 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 NAAQS for the six (6) 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. State of Iowa’s most recent Monitoring Network Plan was approved by EPA Region VII in December 2010. Linn County Public Health Department, Air Quality Division, is authorized by the EPA to implement and enforce the Clean Air Act and the county’s code on Air Quality. The Linn County Air Quality Division maintains a network of instruments and devices located throughout the Cedar Rapids metropolitan area to monitor ambient air. Nearest Air Quality Monitoring System location is approximately two (2) miles east of Ushers Ferry at the Army Reserve Center in Cedar Rapids. As of August 30, 2011, no area within the State of Iowa is considered a non-attainment area for the six (6) criteria pollutants.

Table 5-2: National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour	None	
	35 ppm (40 mg/m ³)	1-hour		
Lead	0.15 mg/m ³	Rolling 3-Month Average	Same as Primary	
Nitrogen Dioxide	53 ppb	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour	None	

Particulate Matter (PM ₁₀)	150 mg/m ³	24-hour	Same as Primary	
Particulate Matter (PM _{2.5})	15 mg/m ³	Annual (Arithmetic Average)	Same as Primary	
	35 mg/m ³	24-hour	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour	Same as Primary	
	0.08 ppm (1997 std)	8-hour	Same as Primary	
	0.12 ppm	1-hour	Same as Primary	
Sulfur Dioxide	0.03 ppm (1971 std)	Annual (Arithmetic Average)	0.5 ppm	3-hour
	0.14 ppm (1971 std)	24-hour		
	75 ppb	1-hour	None	

Source: USEPA 2011a

5.1.2.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry Lodge. No impact to air quality beyond the existing conditions which are within regulatory standards.

5.1.2.2 Alternative 2 - Proposed Action

Under Proposed Action Alternative, demolition and removal of seven (7) damaged structures and new construction of Ushers Ferry Lodge and site work require soil excavation thereby short-term emissions of criteria pollutants are anticipated during the demolition and construction phases. Construction equipment and personal vehicles would generate exhaust emissions, including NO₂ and CO.

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 upon project completion and until disturbed soils are stabilized or permanently covered. Proposed action would require 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, Federal or State air quality attainment levels would likely not be exceeded. Proposed actions are not expected to have long-term adverse impacts on the air quality of the area.

Required mitigation measures for Proposed Action Alternative are the following:

- 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:
 - Re-vegetate any disturbed land not used with native species in accordance with Executive Order 13112;
 - Remove unused material; and,
 - Remove soil piles via covered trucks.

5.1.3 Climate Change

Climate change encompasses changes in precipitation, sea level, temperature and other climatic variables including natural cycles and the climatic changes attributed to human actions on the environment. EPA identifies the climate change largely associated with human actions as “abrupt climate change” occurring over decades to distinguish it from that which occurs gradually over centuries or millennia. In 2010 the CEQ issued draft guidance for Federal agencies to consider climate change in NEPA documentation. Guidance uses the EPA-defined threshold for mandatory greenhouse gas (GHG) emission reporting of 25,000 metric tons per year as a level where NEPA documents determine whether a quantitative analysis is required. Threshold is equivalent to the energy needed to power 2,300 homes for a year or the emissions from 4,600 passenger vehicles per year (USEPA, 2009). FEMA has determined that the actions considered in this EA are incremental changes compared to the pre-disaster condition and the overall effects are expected to be significantly below this threshold.¹ Majority of GHG emissions result from industry, heating and cooling of buildings, and automobile non-point sources.

Between 1958 and 2007 amounts of very heavy precipitation has increased by 31 percent in the Upper Midwest encompassing Michigan, Missouri, Minnesota, Illinois, Indiana, Ohio, Wisconsin, and Iowa. During the same period, the Upper Midwest experienced a 27 percent increase in the average number of days with heavy precipitation defined as the heaviest one (1) percent of all events. Heavy downpours currently occurring once every 20 years on average are projected to increase in frequency between 10 and 25 percent through the 2090s (USGCRP, 2009).

Average temperatures in the United States have increased more than two (2) degrees Fahrenheit in the last 50 years. Average temperatures in Iowa and portions of surrounding States are projected to increase by another four (4) to six (6) degrees Fahrenheit, under low-emission models, or eight (8) to 10 degrees Fahrenheit, under high-emission models, by the end of the century. Under current projections, Iowa can anticipate increases in flooding, heat waves, droughts, invasive plant and insect species, and insect-borne diseases (USGCRP, 2009). While data needed to predict specific events and the full range of climate impacts are still being developed, enough data is available to suggest that climatic events, such as severe storms, will be localized and will be increasingly unpredictable.

¹ Draft EA developed by consultants on behalf of FEMA Region X for the Veronia K-12 School Project includes a quantification of GHG. Calculation is included in draft EA and located on FEMA’s website at; <http://www.fema.gov/library/viewRecord.do?id=4351>.

Embodied energy is a concept in measuring sustainability that has been used since the early-1970s to account for the energy, often in terms of carbon, invested into an existing material or structure. Another measure of sustainability is life-cycle or cradle-to-grave analysis which accounts for the extraction, manufacture, distribution, use, and eventual disposal of materials. While resources exist to quantify embodied energy or life cycle analysis, the calculations were not prepared by Sub-Grantee for the options presented in this EA.

5.1.3.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry Lodge. No impact or change to the overall embodied energy is expected.

5.1.3.2 Alternative 2 - Proposed Action

Demolition and removal of the seven (7) structures and the proposed construction of the Ushers Ferry Lodge would be largely confined to the existing Ushers Ferry Historic Village. Long term energy consumption in operating the Lodge is expected to be incremental and at most, minor. Depending on choice of energy efficient materials and design features, increases in energy consumption associated with the Lodge could be minimized. While the demolition of the damaged structures represents a loss of embodied energy, some of that embodied energy may be captured by salvage or recycling of uncontaminated building components.

5.2 WATER RESOURCES

5.2.1 Water Quality

Congress enacted the Federal Water Pollution Control Act in 1948 which was reorganized and expanded in 1972 and became known as the Clean Water Act (CWA) in 1977, as amended. CWA regulates discharge of pollutants into water with sections falling under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the EPA. Section 404 of the CWA establishes the USACE permit requirements for discharging dredged or fill materials into Waters of the United States and traditional navigable waterways. USACE regulation of activities within navigable waters is also authorized under the 1899 Rivers and Harbors Act. USACE jurisdiction extends to tributaries and wetlands where a “significant nexus” exists between the resources as articulated in two (2) recent Supreme Court decisions known as the SWANCC and Rapanos decisions. Under the National Pollution Discharge Elimination System (NPDES) the EPA regulates both point and non-point pollutant sources, including storm water and storm water runoff. Activities that disturb one (1) acre of ground or more are required to apply for an NPDES permit through the Iowa Department of Natural Resources (IDNR) as authorized by the EPA. The Wild and Scenic Rivers Act is another regulatory framework related to water resources; however there are no designated wild and scenic rivers in the State of Iowa.

Majority of Cedar Rapids is located on the west side of the Cedar River and within the Middle Cedar watershed (HUC 7080205) which includes Vinton, Waterloo, and Cedar Falls upstream. Remainder of Cedar Rapids is located in the Lower Cedar watershed (HUC 7080206) which extends to Columbus Junction to the southeast. Cedar River has a history of water impairment resulting from nutrient and pathogen contamination (EPA, 2011d). Cedar Rapids is further regulated by NPDES with a Municipal Separate Storm Sewer System (MS4) individual or general permit. MS4 permits require the City to develop and maintain a storm water management program (SWMP) to reduce contamination of storm water and limit contamination discharges.

5.2.1.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry. Over time, deteriorating abandoned facility has the potential for moderate (i.e., measurable) negative impacts on surface and ground water quality for Cedar River, surrounding wetlands, and ground water aquifers. Potential buildings contaminants may leach, infiltrate ground water, and wash into river waters and wetlands have detrimental effects upon the human environment, wildlife, and ambient ecological conditions.

5.2.1.2 Alternative 2 - Proposed Action

Demolition and removal of seven (7) damaged structures and new construction of Ushers Ferry Lodge would disturb more than one (1) acre of ground for the amount of excavation required to ensure stabilized soils, utilities, and associated site work. Ground disturbing activities of one (1) acre or more require the Sub-Grantee to prepare a Storm Water Pollution Prevention Plan (SWPPP) and to obtain and comply with a NPDES permit from the IDNR (see 5.7 Coordination and Permits). All ground disturbing activities would require site and project appropriate sediment and erosion control Best Management Practices (BMP). Proposed activities may have a moderate impact; however implementation of BMPs and permit conditions would reduce the potential impact from moderate to negligible / minor levels.

5.2.2 Wetlands

In addition to the CWA, Executive Order (EO) 11990 Protection of Wetlands requires Federal agencies to avoid, to the extent practicable, adverse impacts to wetlands. Under the CWA two (2) types of authorization are available from the USACE for activities regulated under Section 404 of the Clean Water Act: general nationwide 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.

1987 *Corps of Engineers Wetlands Delineation Manual* provides the technical guidelines in identifying and delineating wetlands. USACE's manual requires the presence of all three (3) 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. U.S. Fish and Wildlife Service (USFWS) maintain the National Wetlands Inventory (NWI) maps including conventional maps, downloadable digital map data, dynamic online maps² and geographic information system (GIS) data. Federal actions within identified wetlands require the Federal agency conduct the Eight (8)-Step process, which like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA's regulations on conducting the Eight (8)-Step processes are contained in 44 CFR Part 9.5.

The proposed site for Ushers Ferry Lodge has multiple Palustrine systems located down gradient east-southeast from overall project site. Palustrine wetlands are characterized as freshwater marshes, swamps, and bogs that have salinity less than 0.5 parts per thousand. These wetlands are dominated by tree, shrubs, persistent emergents, emergent mosses or lichens. There are five (5) NWI classified wetland areas within close proximity to proposed site: PSS1C: Freshwater Forested / Scrub Wetland (6.27 acres and 7.62 acres) approximately 315 feet away; PEMC: Freshwater Emergent (3.04

² U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Geospatial Wetlands Digital Data is available at; <http://www.fws.gov/wetlands/data/index.html>

acres) 415 feet away; PF01C: Freshwater Forested / Scrub Wetland (101.79 acres) 500 feet away; PUBF: Freshwater Pond (1.51 acres) 1,275 feet away; and PEMA: Freshwater Pond (0.89 acres) 1,500 feet away. The Cedar River is located approximately 930 feet to the east-southeast.

5.2.2.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry Lodge. Over time, damaged and deteriorating structures have the potential for moderate (i.e., measurable) negative impacts to surrounding wetlands. Potential buildings contaminants may leach and infiltrate wetlands have detrimental effects upon surface and ground water quality, wildlife, and the human environment.

5.2.2.2 Alternative 2 - Proposed Action

Demolition and removal of seven (7) damaged structures and new construction of Ushers Ferry Lodge have the potential for a moderate impact to wetlands. Sediment and erosion control BMPs are required and an NPDES permit would be required for one (1) acre or more of ground disturbance needed for this project and accompanying site work (see 5.7 Coordination and Permits). Implementation of BMPs and permit conditions would reduce the potential impact from moderate to negligible / minor levels.

5.2.3 Floodplain

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. FEMA uses Flood Insurance Rate Maps (FIRM) to identify the floodplains for the National Flood Insurance Program (NFIP). Federal actions within the 100-year floodplain, or 500-year floodplain for critical actions, require the Federal agency conduct the Eight (8)-Step process. This process, like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA's regulations on conducting the Eight (8)-Step processes are contained in 44 CFR Part 9.5. Cedar Rapids, Iowa is a participant in the NFIP with updated FIRMs promulgated in April of 2010.

Ushers Ferry was included the FIRM (Panel 1901870015B) dated December 15, 1982, this FIRM was in effect for the 2008 floods. Ushers Ferry was incorporated into a revised FIRM (Panel 19113C029D) issued April 5, 2010. The proposed Lodge would be placed on the existing site of the Old Caretaker's House (to be demolished and removed for new structure). According to the revised FIRM, the proposed site is located in Unshaded Zone X, outside both the 100-year and 500-year floodplains.

5.2.3.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry. Over time, damaged and deteriorating structures have the potential for minor (i.e., measurable) negative impacts to the floodplain. Repetitive flooding of abandoned structures would continue to pose threats for properties downstream and the human environment.

5.2.3.2 Alternative 2 - Proposed Action

Demolition and removal of damaged structures (located in the 100-year floodplain) would have no negative to negligible impact; may have beneficial impacts to the floodplain (eliminate threat to downstream properties). New construction of

Ushers Ferry Lodge would have no impact to the floodplain as site is previously disturbed. Future expansion shall be coordinated with the local floodplain administrator and must comply with local floodplain regulations (see 5.7 Coordination and Permits).

5.3 BIOLOGICAL RESOURCES

5.3.1 Protected Species and Habitat

1973 Endangered Species Act (ESA) 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. Biological studies consisting of literature review, field reconnaissance, and map documentation were performed. A site visit was conducted on March 29, 2012.

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. Following the March 29, 2012 site visit, the following list and description of threatened and endangered species that may occur in Linn County was produced (Table 5-2). EO 13112 prohibits Federal agencies from funding, authorizing, or carrying out actions that are likely to cause or promote the introduction or spread of invasive species in the United States.

Bald eagle (*Haliaeetus leucocephalus*) has been removed from the Federal threatened and endangered species list however the species is still protected by *The Bald and Golden Eagle Act* and the *Migratory Bird Treaty Act of 1918*. USFWS recommends that any work be conducted at least 660 feet from an active nest. No Bald eagles or nests have been identified at the 217 acre Ushers Ferry parcel. Any vegetation clearing and all construction and landscaping activities must take place outside of the nesting season if work is closer to an active nest than the USFWS recommendation. Work may take place from August through mid-January which is outside of the nesting season.

Table 5-3: Federally Protected Species of Linn County, Iowa

Common Name	Scientific Name	Status	Potential Occurrence at Site	Reason
Indiana bat	<i>Myotis sodalist</i>	Endangered	No	No habitat
Western prairie fringed orchid	<i>Platanthera praeclara</i>	Threatened	No	No habitat
Prairie bush clover	<i>Lespedeza leptostachya</i>	Threatened	No	No habitat

5.3.1.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry Lodge. No impact to threatened, endangered, or protected species expected.

5.3.1.2 Alternative 2 - Proposed Action

Demolition and removal of seven (7) damaged structures and new construction of the Lodge are not expected to impact protected species as there are no known species located at or in close proximity to Ushers Ferry. While the wetland areas

between Ushers Ferry and the Cedar River are conducive to Bald eagle habitat, FEMA has not identified active nests within 660 feet of the proposed Lodge location.

5.4 CULTURAL RESOURCES

In addition to review under NEPA, consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act (NHPA), as amended 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 (1) or more of the criteria established by the National Park Service that would make that resource eligible for inclusion in the National Register of Historic Places (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 nominated properties. Whether prehistoric, historic, or traditional, significant cultural resources are referred to as “historic properties.”

For the purposes of this analysis, the term “Area of Potential Effects” (APE) as defined under cultural resources legislation, defines all historic properties that could be affected by each action and encompasses areas requiring ground disturbance (e.g. areas of grading, cut and fill, etc.) associated with the proposed Federal undertaking. For this EA, the APE includes the flood affected Ushers Ferry as well as the proposed location for the Lodge presented in the Proposed Action Alternative.

5.4.1 Historic Structures

FEMA has considered the potential for these alternatives to affect historic properties. Various sources were checked to determine if any previously identified historic properties are located within the APE for this undertaking and to determine the potential for the APEs to contain previously unidentified historic properties. This review included the NRHP and National Historic Landmarks Databases, and the Office of the State Archaeologist’s (OSA) I-Sites GIS and Database, historic maps and aerial photographs available through the Iowa Geographic Map Server at Iowa State University and the University of Iowa Libraries’ Iowa Digital Library.

5.4.1.1 Alternative 1 - No Action

The No Action Alternative would result in neither the demolition of the original facilities, nor the construction of a new facility in conjunction with a federal undertaking; therefore Section 106 review would not apply.

5.4.1.2 Alternative 2 - Proposed Action

FEMA has evaluated the resources within the APE of the Proposed Action. Several of the resources within the Ushers Ferry were destroyed by the disaster, and although over 50-years old at the time of the disaster no longer retained integrity to be considered eligible for listing in the NRHP. Other facilities were damaged by the disaster, and will be demolished as

a component of this alternative. Some NRHP evaluations for these facilities were conducted when FEMA considered repairs to these structures in earlier consultations with the SHPO, and identified that most of those structures did not meet the criteria for listing in the NRHP. Two (2) disaster damaged facilities will be rendered safe and secure (Land Surveyor's Office and the Grange Hall), and one will be donated and offered for relocation (Olin Depot), if relocation cannot occur this building will also be rendered safe and secure. While these structures that will be rendered safe and secure, are over 50-years old and may be potentially NRHP eligible, the action of rendering them safe and secure would not have an adverse effect on historic properties, therefore FEMA has not made an NRHP eligibility determination for all of these structures. For this Alternative, in lieu of repairing or reconstructing these 16 facilities, the FEMA eligible funds will be used for the demolition of properties as noted above and the balance of funds will be used for the construction of the new Lodge. FEMA has determined in previous consultation with the SHPO that there are structures within the Ushers Ferry that were determined individually eligible for listing in the NRHP. None of these NRHP eligible facilities will be demolished in connection with this Alternative. While not all of the NRHP eligible structures are directly associated with the funding for this undertaking, they would be within the view shed of the proposed Lodge. FEMA has evaluated the potential for this Alternative to affect such properties. FEMA determined that as the Ushers Ferry is not an NRHP eligible historic district, as most of the resources within the village have been relocated to this site, and the proposed Lodge will be located in the far northeast corner of the village property, the new Lodge facility as proposed is not anticipated to adversely affect any individually NRHP eligible resources.

In the event that Proposed Action Alternative is approved, FEMA will assess the effects of the undertaking on historic structures within the APE and consult with the SHPO. It is not anticipated that consultation would result in a finding of adverse effects to historic structures.

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of a property's location, design, setting, materials, workmanship, feeling or association. Through FEMA's application of the criteria of adverse effect and consultation with the SHPO, if it is determined that Proposed Action Alternative may constitute adverse effects to historic standing structures within the APE, FEMA would initiate adverse effects consultation with the SHPO and other consulting parties, and through the development of a Memorandum of Agreement (MOA) under Section 106, develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects on historic properties. Through resolution of adverse effects, FEMA would make information regarding the undertaking and effected historic properties available to the public and provide an opportunity for the public to express their views on resolving adverse effects of the undertaking on historic structures. The resultant MOA would be evidence of FEMA's compliance with its statutory responsibilities under Section 106 of the NHPA.

5.4.2 Archaeological Resources

FEMA has considered the potential for the Alternatives to affect archaeological resources. Various sources were checked to determine if any previously identified historic properties, including archeological sites are located within the APE of these Alternatives and to determine the potential for the APE to contain previously unidentified historic properties. This review included the NRHP and National Historic Landmarks Databases, and the OSA I-Sites GIS and Database, historic maps and aerial photographs available through the Iowa Geographic Map Server at Iowa State University and the University of Iowa Libraries' Iowa Digital Library.

5.4.2.1 Alternative 1 - No Action

The No Action Alternative would not include any demolition activities at the damaged Ushers Ferry, or any construction activities for a Lodge, therefore no ground disturbing activities would occur, and no archeological resources would be affected with the selection of the No Action Alternative.

5.4.2.2 Alternative 2 - Proposed Action

Due to the sensitivity for archaeological resources along Seminole Valley Trail, and the fact that the Lodge is proposed to be located on a site previously undisturbed, FEMA in coordination with the SHPO requested that the City obtain a Phase I Archaeological Survey for this alternative. In October 2011, the field investigation was undertaken by Wapsi Valley Archaeology. The Phase I Survey indicated the presence of two (2) archaeological sites within the APE, Site 13LN1049 located adjacent to the Old Caretaker's House and near the site of the proposed Lodge; and site 13LN1051 located just south of the Olin Depot. Both sites were identified as potentially NRHP eligible for their potential to yield important information about prehistoric periods. On November 10, 2011, representatives from the SHPO, FEMA, IHSEMD and Sub-Grantee met on-site at the Ushers Ferry to discuss the findings of the report and coordinate a path forward. At that meeting it was determined that a second Phase I Survey would be required to precisely delineate the western boundary of site 13LN1049, in order for Sub-Grantee to relocate the Lodge the recommended 100-foot buffer from the site boundary. The additional Phase I would also survey any areas considered for modification of the Lodge location.

In January 2012, the second Phase I Survey was conducted by Wapsi Valley Archaeology. This Survey report delineated the western boundary of site 13LN1049, and expanded the survey area to the southwest to allow for relocation of the Lodge. This additional survey area resulted in the identification of one (1) archaeological site, 13LN1053, identified as remains of a historic farmstead, and recommended not NRHP eligible under Criterion D. Sub-Grantee has provided relocation site of the Lodge, to be located within the expanded survey area, west of the previously identified potentially eligible site 13LN1049. In accordance with the recommendations by the archaeologist, FEMA will condition the project to avoid any impact to this site, including ensuring a 100-foot buffer from the site and the site be cordoned off with protective fencing to prevent potential damage induced by heavy equipment. In addition, should the Sub-Grantee move forward with donating the Olin Depot, although that move would not be connected to the FEMA undertaking, FEMA has notified the Sub-Grantee of the potential for the move to effect archaeological site 13LN1051, and suggests measures to avoid or minimize effects to the site during the Depot relocation be considered such as the use of protective mats.

Based on the findings of the two Phase I Survey reports, and the relocated site plan for the Lodge, FEMA has determined that the Proposed Action does not require any additional archaeological investigation in advance of construction. In the event that Proposed Action Alternative is approved, FEMA will consult with the SHPO on the findings of the two (2) archaeological investigations and the effects of the undertaking on archaeological resources.

Due to the potential for archaeological discoveries on the site, FEMA would condition approval of the undertaking with the following discovery clause: In the event that any archaeological deposits (soils, features, or any other remnants of human activity) are uncovered during the undertaking, this project shall be halted, the Sub-Grantee shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The Sub-Grantee will inform IHSEMD immediately, will secure all archaeological findings and restrict access to the area. IHSEMD shall notify FEMA and FEMA will consult with the SHPO and the State Archaeologist of Iowa. Work in sensitive areas may not resume until consultations are completed or until an archaeologist who meets the Secretary of the

Interior’s Professional Qualification Standards determines the extent and historical significance of the discovery. Work may not resume at or around the delineated archaeological deposit until the Sub-Grantee is notified by IHSEMD.

If archaeological resources are encountered and subsequently recommended eligible for listing in the NRHP by an archaeologist who meets the Secretary of the Interior’s (SOI) Professional Qualifications Standards for archaeology, construction activities on the site shall halt until FEMA has re-opened and concluded consultation with the SHPO. In the event that NRHP eligible archaeological resources may be identified and the project cannot be modified to avoid adverse effects to archaeological resources, FEMA would initiate adverse effects consultation with the SHPO and other consulting parties, and through the development of a MOA under Section 106, develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects on historic archaeological resources. Through resolution of adverse effects, FEMA would make information regarding the undertaking and effected historic properties available to the public and provide an opportunity for the public to express their views on resolving adverse effects of the undertaking on archaeological resources. The resultant MOA would evidence FEMA’s compliance with its statutory responsibilities under Section 106 of the NHPA.

5.5 SOCIOECONOMIC CONSIDERATIONS

5.5.1 Environmental Justice

On February 11, 1994, President William J. Clinton signed Executive Order (EO) 12898, “*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.*” This 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 matters 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.

Data used for this Environmental Justice analysis was taken from the 2010 Census (U.S. Census Bureau, 2010). Socioeconomic indicators consider the City of Cedar Rapids overall and Proposed Action Alternative within the census tract and block group designations. Proposed Action Alternative is located in Census Tract 9.02, Block Group 3 of Linn County.

Table 5-4: 2010 Population Demographics for Cedar Rapids and Proposed Action Alternative.

<u>Location or Alternative #</u> Census Tract # Block Group #	<u>City of Cedar Rapids</u>	<u>Proposed Action Alternative: Ushers Ferry</u> Census Tract 9.02 Block Group 3
2010 Population	126,326	2,774
Housing Units	57,217	987

Median Household Size	2.29	2.81
Population Under 18 Years Old	23.5%	30.6%
Population 65 Years and Older	13.1%	10.2%
Percent Minority Population	14.0%	11.0%
Percent White	86.0%	91.3%
Percent African-American	5.6%	1.4%
Percent Asian	2.2%	3.7%
Percent Hispanic or Latino	3.3%	2.3%

Source: U.S. Census Bureau, 2010.

According to the 2010 census, there were 126,326 people and 57,217 households residing in the City of Cedar Rapids. Ushers Ferry area (Census Tract 9.02 / Block Group 3) consists of 2,774 people and 987 households. Compared to Cedar Rapids as a whole, this area has a smaller proportion of minority residents 11 percent to 14 percent. This area's proportion of White population is 97.3 percent followed by 3.7 percent Asian, and 1.4 percent African-American compared to Cedar Rapids' proportions of 86.0 percent, 2.2 percent, and 5.6 percent respectively. Additionally, 2.3 percent of area residents report themselves as Hispanic or Latino heritage compared to Cedar Rapids 3.3 percent. Ushers Ferry area has a greater proportion of residents under the age of 18 (30.6%) and a smaller proportion of residents 65 years (10.2%) compared to Cedar Rapids as a whole (23.5% and 13.1% respectively).

Table 5-5: 2010 Median Household Income and Poverty Demographics for Cedar Rapids.

<u>Location or Alternative #</u> Census Tract #	<u>City of Cedar Rapids</u>	<u>Proposed Action Alternative:</u> <u>Ushers Ferry</u> Census Tract 9.02
Median Household Income	\$49,298	\$85,640
Percent Persons Below Poverty Level (± Margin of Error)	12.0% (1.0%)	2.2% (1.4%)

Source: U.S. Census Bureau, 2010.

Median household income within Ushers Ferry area (Census Tract 9.02 totals only) is significantly greater than Cedar Rapids' overall median income, \$85,640 compared to \$49,298. Ushers Ferry area also has much lower percentage of persons below the poverty level (2.2%) compared to Cedar Rapids (12.0%). Keep in mind that Census Tract 9.02 is only 2.1 percent of Cedar Rapids' total population. Smaller samples often have skewed statistics when viewed separately from the population.

Table 5-6: Population Statistics 1980 through 2010.

Jurisdiction	1980	1990	2000	2010
Iowa	2,913,808	2,776,755	2,926,324	3,046,355
Linn County	169,775	168,767	191,701	211,226
City of Cedar Rapids	110,243	108,772	120,758	126,326

Source: U.S. Census Bureau, 2010.

5.5.1.1 Alternative 1 – No Action

Under the No Action Alternative, FEMA would not fund demolition, removal, and new construction activities for Ushers Ferry Lodge. This result would have a moderate negative socioeconomic impact upon the community due to loss of potential patronage, an improved multi-purpose structure with modern facilities, and additional revenue generated from Lodge rental. Loss of educational programs associated with Lodge may lead to decreased learning opportunities for community members about to Iowa heritage, history, and culture.

5.5.1.2 Alternative 2 - Proposed Action

Demolition, debris removal, and construction of new Ushers Ferry Lodge would have a moderate positive socioeconomic impact. Community would benefit from the improved public events structure with modern facilities. The multi-purpose facility would bring in additional revenue for the community and provide banquet space for 300 guests for village occasions, weddings, company functions, and educational events. Increased attendance at Ushers Ferry may increase knowledge, interest, and education related to Iowa heritage, history, and culture.

5.5.2 Land Use and Planning

The Cedar Rapids Community Development Department coordinates planning activities in Cedar Rapids and advises the City Council, other departments, other non-City agencies, and private stakeholders on issues of development and planning within city limits. Cedar Rapids adopted the current comprehensive plan in 1999 which established the community's priorities including vision, objectives, and goals through 2030. Land-use and zoning regulations are administered and enforced by the City of Cedar Rapids.

Ushers Ferry is zoned as an Agricultural District which is an area intended to be used for agriculture, low density residential, and outdoor recreation. Areas zoned for residential uses are located to the north of Ushers Ferry. Ushers Ferry is located outside of areas addressed in Sasaki's *Framework Plan for Reinvestment and Revitalization* and the subsequent *Neighborhood Planning Process*. The Sasaki Plans shows potential structural flood control alignments however the northern-most point of the flood control structures ends approximately two (2) miles downstream from the site.

5.5.2.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, removal and new construction activities for Ushers Ferry. No impacts to land use or planning would occur.

5.5.2.2 Alternative 2 - Proposed Action

Construction of the proposed Lodge is expected to have a negligible impact to area planning or land use. The Lodge would be consistent with the current use of the Ushers Ferry as a recreational space for citizens. If any re-zoning is necessary to retain or improve consistency with locally-administered land use or zoning regulations, Cedar Rapids would proceed through its normal land use and zoning process.

5.5.3 Radon

Radon (Rn) is a naturally occurring radioactive gas that is produced by the decay of uranium found within soil, rocks, and groundwater that accumulates in enclosed spaces such as the lowest level of buildings. EPA currently considers residential Radon exposure at or above 4.0 pico Curies per liter (pCi/L) as a public health risk as an additional risk factor for development of lung cancer. The EPA provides a map for each county in the U.S. which shows the potential for elevated indoor Radon levels, with Zone 1 having the highest potential for predicted average indoor screening levels greater than 4.0 pCi/L. According to the EPA's Map of Radon Zones, Linn County and the entire State of Iowa is mapped within Zone 1 (EPA, 2011b). Actual levels of Radon can vary significantly from property to property, even within areas with high potential for elevated radon levels. Radon testing is the only way to determine actual radon levels within an enclosed space such as the lowest floor of a structure.

5.5.3.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, removal, and new construction activities for Ushers Ferry. There would be no impact.

5.5.3.2 Alternative 2 - Proposed Action

Demolition, debris removal, and new construction activities at Ushers Ferry may increase potential for encountering elevated concentrations of Radon gas at the site and within the proposed building following construction. Project design should incorporate Radon-resistant construction appropriate to the site, actual Radon levels, and overall project design as practicable. Exact levels of Radon present at the site can only be determined by site-specific testing. Radon-resistant construction techniques may vary for different foundations and site requirements, but in general include these key concepts:

- Gas Permeable Layer – Usually a four (4) inch layer of clean gravel used beneath the slab or flooring system to allow soil-gas to move freely.
- Plastic Sheeting – Polyethylene sheeting is placed on top of the gas permeable layer and under the slab to help prevent migration of the soil gas from entering the facility.
- Vent Pipe – A PVC pipe runs from the gas permeable layer up through the structure to the roof to safely vent radon above the facility.
- Junction Box – An electrical junction box is installed in case an electrical venting fan is needed later.
- Sealing and Caulking – Openings in the concrete foundation are sealed to prevent soil gas from entering the facility.

5.5.4 Demolition and Hazardous Substances

Demolition and removal of seven (7) structures at Ushers Ferry and construction of the new Lodge structure is proposed. The proposed Lodge site presently has a damaged structure (Old Caretaker's House) slated for demolition and removal for the new structure. Demolition activities are regulated by Federal, State, and local laws ranging from local permits to licensure to appropriate disposal.

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.

Iowa Department of Natural Resources (IDNR) requires that structures be tested for asbestos containing material prior to demolition. If asbestos testing is not conducted, all debris or demolition material must be disposed of as if asbestos containing materials (ACM). IDNR requires at least 10 days notice prior to renovation, repairs, or demolition of asbestos contaminated structures. Cost of disposing ACM is significantly higher; in the Cedar Rapids area it is nearly three (3) times as expensive to dispose as uncontaminated debris as referenced in a recent article in the Cedar Rapids' newspaper *The Gazette* (Gazette, 2012).

5.5.4.1 Alternative 1 - No Action

Under the No Action Alternative, FEMA would not fund demolition, debris removal, and new construction activities for Ushers Ferry. Over time, deteriorating abandoned structures have the potential for moderate (i.e., measurable) negative impacts to surrounding ecology. Potential buildings' contaminants (i.e., hazardous substances) may leach and infiltrate ground and surface waters and soils and have detrimental effects upon the human environment, water quality and wildlife.

5.5.4.2 Alternative 2 - Proposed Action

For Proposed Action Alternative, demolition and remove of seven (7) damaged structures would transpire and have the potential for a moderate impact if hazardous substances are found. The construction of the new Lodge would have no to negligible impacts as site is located outside the 100-year floodplain. Demolition work must comply with all Federal, State, and local abatement and disposal requirements for materials containing asbestos, lead paint and/or hazardous materials.

IDNR requires that structures be tested for asbestos containing material prior to demolition. If testing is not conducted, all debris or demolition materials must be disposed of as if it contained asbestos. Contact IDNR Field Office #1 (563) 927-2640 for details or visit <http://www.iowaworkforce.org/labor/asbestos.htm>. Sub-Grantee will issue any required demolition permits to its selected contractors who will be required to abide by any associated conditions. In the event that soil and / or groundwater contamination is discovered during demolition activities, the IDNR should be contacted. Sub-Grantee is responsible for ensuring that all waste, including hazardous waste, ACM, and lead paint, generated by the

remaining demolition and construction activities must comply with Federal, State, and local laws governing the removal and disposition of hazardous materials.

Demolition activities should use BMPs to prevent the release of erosion and sedimentation to storm sewers and adjacent parcels. Non-structural BMPs may utilize the minimization of disturbance, preservation of natural vegetation, or pollution prevention / good housekeeping practices. Structural erosion control BMPs include the placement of mulch or grass, covering of stockpiles, silt fencing, inlet protection, check dams and sediment traps. The project must use BMPs that are appropriate to the project. Regular inspections and maintenance of BMPs should be performed periodically and after major rainfall events.

5.6 CUMULATIVE IMPACTS

Council for Environmental Quality (CEQ) regulations for implementing NEPA requires 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 impacts can result from individually minor but collectively significant actions taken over time. Sub-Grantee is engaged in numerous flood recovery projects including property acquisitions, residential and public building demolitions, relocation of public buildings, restoration of flood-impacted public facilities, and Cedar Rapids-desired flood protection system on both sides of the river. Cumulative effects are considered for the two (2) Alternatives.

Under the No Action Alternative, no FEMA grant funding would be provided for the construction of a new multi-purpose facility. For Proposed Action Alternative, FEMA would provide eligible funding for the construction of a new multi-purpose facility outside the 100-year floodplain.

Sub-Grantee is engaged in numerous flood recovery projects including housing acquisitions, house and public building demolitions, relocation of public buildings, restoration of flood-impacted public facilities, and a Cedar Rapids-desired flood protection system on both sides of the Cedar River. Limited demolitions, debris removal, and construction of the proposed Lodge at Ushers Ferry are not expected to be impacted by or impact these on-going activities beyond a negligible, incremental increase in short-term debris disposal. Structural flood control measures considered by the Sub-Grantee and USACE are not planned for the Ushers Ferry area.

5.7 COORDINATION AND PERMITS

Under any of the alternatives, work that disturbs one acre or more of ground must have a SWPPP developed and NPDES permit from the IDNR. Sediment and erosion control BMPs must be implemented. Any work located in the floodplain will need to be coordinated with the local floodplain administrator and must comply with local floodplain regulations. The City of Cedar Rapids will issue any required building and demolition permits to its selected contractors who will be required to abide by any associated conditions according to local standard processes. For all alternatives that result in an adverse effect to identified historic properties, resolution of adverse effects to fulfill FEMA’s section 106 responsibilities would be required.

If contamination in excess of reporting requirements is met, work must stop, the site must be stabilized, and the IDNR must be contacted at Field Office #1 (563-927-2640). Work within the sensitive area cannot resume until IDNR clean-up or containment requirements are met and IDNR personnel indicate that no further assessment is needed at the site of the discovery. Sub-Grantee must ensure compliance with all Federal, State, and local laws regarding proper removal and disposal of asbestos containing materials (ACM) and lead paint.

In the event that any archaeological deposits (soils, features, or any other remnants of human activity) are uncovered during the undertaking, this project shall be halted, Sub-Grantee shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. Sub-Grantee will inform IHSEMD immediately, will secure all archaeological findings and restrict access to the area. Iowa Homeland Security and Emergency Management Department (IHSEMD) shall notify FEMA and FEMA will consult with the Iowa State Historical Preservation Officer and the State Archaeologist of Iowa. Work in sensitive areas may not resume until consultations are completed or until an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards determines the extent and historical significance of the discovery. Work may not resume at or around the delineated archaeological deposit until the Sub-Grantee is notified by IHSEMD.

6. CONCLUSION

Draft EA evaluated potentially significant resources that could be affected. Evaluation resulted in identification of no unmitigated significant impacts associated with the resources of climate, historic, cultural, geology and soils, floodplains, wetlands and water resources, biological resources, and environmental justice. Obtaining and implementing permit requirements along with appropriate Best Management Practices and mitigation measures will avoid or minimize any negative effects associated with the alternatives considered in this EA to below the level of a significant impact. Should no significant impacts be identified during the public comment period, FEMA recommends that a Finding of No Significant Impact (FONSI) to the human or natural environment be issued for the Proposed Action Alternative.

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