

DRAFT ENVIRONMENTAL ASSESSMENT

Cedar Rapids 2nd Street SE Parkade

Cedar Rapids, Iowa

FEMA 1763-DR-IA

October 18, 2012



Federal Emergency Management Agency
Department of Homeland Security
9221 Ward Parkway, Suite 300
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Parties Consulted Documentation will be added after SHPO Consultation

Appendix D

Iowa Site Inventory Form Number 57-09539 John Blaul's Sons Co. Warehouse at 600 1st Street SE, Cedar Rapids

Appendix E

Iowa Site Inventory Form Number 57-09621 John Blaul's Sons Co. Warehouse at 600 1st Street SE, Cedar Rapids

Abbreviations and Acronyms

ACM	Asbestos Containing Material
APE	Area of Potential Effects
BMP	Best Management Practices
CAA	Clean Air Act

Abbreviations and Acronyms continued

CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
dB	Decibels
EA	Environmental Assessment
EHP	Environmental Planning and Historic Preservation
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GHG	Greenhouse Gases
HMGP	Hazard Mitigation Grant Program
HPC	Historic Preservation Commission
IDNR	Iowa Department of Natural Resources
IHSEMD	Iowa Homeland Security and Emergency Management Division
Ldn	Day-night Average Sound Level
LUST	Leaking Underground Storage Tank
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
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
SHSI	State Historic Society of Iowa
SWPPP	Storm Water Pollution Prevention Plan
ACOE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank

1. INTRODUCTION

Cedar Rapids is the second largest city in the State of Iowa (population 126,326) and it is the county seat of Iowa's second largest county, Linn County (population 211,226) (2010 Decennial Census). Cedar Rapids lies on the eastern and western banks of the Cedar River. 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.

The National Environmental Policy Act (NEPA) requires that Federal agencies evaluate the environmental effects of 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 applied for an alternate project to be used for the construction of a new parking facility in downtown Cedar Rapids at the proposed location of 201 2nd Street SE.

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 the 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, “Subgrantee”) has requested funding through the FEMA Public Assistance Program. The Public Assistance Program provides supplemental Federal disaster grant assistance to State, Tribal, and local governments, and certain types of private nonprofit organizations so that communities can respond to and recover from major disasters or emergencies. The Public Assistance Program has additional rules whereby eligible subgrantees may choose to use eligible, though capped, recovery funds for alternate or improved projects that may be more beneficial to the Subgrantee than what existed prior to the disaster event.

The 5-in-1 Hydroelectric facility located in the Cedar River in the City of Cedar Rapids, Iowa and is a public facility eligible for FEMA Public Assistance funding to repair flood damage resulting from FEMA disaster 1763-DR-IA. The Subgrantee requests that the eligible funding for the 5-in-1 Hydroelectric facility be applied toward an alternate project. Pursuant to FEMA Policy 9525.13 Alternate Projects, July 31, 2001, IV, are allowable “when restoration of the original damaged facility is not in the best interest of the public.” The Subgrantee has fulfilled FEMA Policy 9525.13, VII, 11, which requires the Subgrantee to provide FEMA with a disposition of the flood damaged facility. The Subgrantee has stated that the 5-in-1 Hydroelectric facility will be rendered safe and secure. According to FEMA Policy 9525.13, VII, 13, “no environmental reviews (are) required at the original facility” (i.e., 5-in-1 Hydroelectric facility).

The Subgrantee requests that in lieu of repairing the 5-in-1 Hydroelectric facility, the capped eligible funding for the alternate project will be applied toward a new parking facility to improve parking capacity in downtown Cedar Rapids. The proposed parking facility (hereon, “Parkade”) will be six (6) floors with the space capacity to accommodate approximately 600 vehicles. The south end of the facility is designed to contain 6,000 square feet of retail space to be built as funding allows. Construction is planned to commence in March 2013 and to be completed in February of 2014 if FEMA deems the project practicable. The Subgrantee requests this alternate project in lieu of repairing the existing 5-in-1 Hydroelectric facility repetitively damaged by flood waters.

This EA is intended to document and evaluate FEMA and Subgrantee defined alternatives for the Subgrantee’s desire to use eligible recovery funds to repair the existing 5-in-1 Hydroelectric facility towards the new construction of the Parkade under FEMA’s alternate project policies.

3. ALTERNATIVES ANALYSIS

NEPA requires the investigation and evaluation of reasonable project alternatives as part of the environmental review process for the proposed project. Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA. The No Action Alternative is used to evaluate the effects of not providing eligible assistance for the alternate project, thus providing a benchmark against which “action alternatives” may be evaluated. FEMA reviewed all applicable Federal, State, and local laws and Executive Orders for each alternative considered.

3.1 ALTERNATIVE 1 - NO ACTION

The No Action Alternative is defined as maintaining the status quo with no additional FEMA funding provided for the construction of the new Parkade facility. Currently there is a paved, surface parking lot on proposed project location used for downtown parking. The results of No Action Alternative may have a negative impact on downtown Cedar Rapids future parking needs. This may compromise long-term opportunities for community events, businesses, government practices, historical, cultural, and recreation activities due to the limited amount of downtown parking facilities.

3.2 ALTERNATIVE 2 - PROPOSED ACTION

The Proposed Action is for a FEMA-fund alternate project to construct a new multi-story parking facility “Parkade” intended to increase downtown parking capacity. The proposed location for Parkade is 201 2nd Street SE between 6th Avenue SE and 7th Avenue SE in Cedar Rapids (GPS: 41.973709, -91.663653). This location currently has a paved, surface parking lot. Parkade will be six (6) floors high and accommodate approximately 600 vehicles. The south end of the facility at 7th Avenue SE will be designed to incorporate 6,000 square feet of retail space. However, retail will only be built as part of this project if funding allows or at a later date if current funding does not permit it.

The proposed Parkade location is adjacent to a paved, surface parking lot to the southwest and the Great Furniture Mart Building occupies the lot to the northwest. Surrounding parcels include a mixture of governmental and commercial office buildings and parking lots: True North Building to the north, Federal Courthouse to the south, ARC Building of East Central Iowa to the east, Helen G. Nassif YMCA to the southeast, and the Great America Building to the west (See Appendix B).

The proposed parcel site is less than one (1) acre (i.e., .096 acres; 41,992 square feet total) in which Parkade will occupy approximately 39,000 square feet of the existing paved area. The area of potential effect (APE) for new construction, site work, additional landscaping, resurfacing of existing parking lot would likely not exceed one (1) acre of ground disturbance (See Appendix A, Figure 5). The proposed Parkade design is for a post-tensioned, poured in place concrete structure. This will have 36 drilled piers (60 inches wide) to be placed with the depth of the deep foundations between 35 and 40 feet maximum depending on field conditions and soil engineer's opinion. Excavation would be limited to the removal of the existing pavement and any potential spoil from non-extant building foundations. The proposed facility would be located approximately 500 feet west of the Cedar River (See Wetlands Section 5.2.2) and will be placed within the existing paved footprint which lies outside the 100-year floodplain (approximately 1,400 square feet of site is within the 100-year floodplain; See Floodplain Section 5.2.3). Parkade will be located within the 500-year floodplain however it is not considered a critical facility. The construction design will place mechanical and electrical equipment above the base flood elevation to the minimize risk from future flood damage.

Overall, the results of the Proposed Action would continue Cedar Rapids and Linn County’s 2008 flood recovery effort and would increase the amount of public parking available for events, residents, workers, and shoppers in downtown Cedar Rapids. Based upon the environmental considerations authorized by all applicable Federal laws, regulations, and Executive Orders, FEMA Public Assistance policy, and criteria established by FEMA and Subgrantee, the Proposed Action Alternative is a practicable alternative for eligible funding.

3.3 OTHER ALTERNATIVES CONSIDERED AND DISMISSED

The Subgrantee has elected an alternate project to fund the construction of the new Parkade. Because of this decision, FEMA has dismissed repairing the 5-in-1 Hydroelectric facility (circa 1986) damaged in 2007 from ice jams as an alternative. The 16 year-old facility was not in operation at the time of the 2008 Cedar Rapids flooding (FEMA Disaster 1763-DR-IA); however the facility was studied and evaluated for repair before additional flooding damage occurred. According to the National Flood Insurance Program’s Flood Insurance Rate Map (panel number 19113C0410D; effective April 5, 2010), the facility is located in a special flood hazard area designated Zone AE within the 100-year floodplain and the regulatory floodway of the Cedar River. The facility is prone to repetitive flood damage. The Subgrantee has abandoned potential plans to repair facility due to the additional flood damage.

The Subgrantee has informed FEMA that it intends that the disposition of the 5-in-1 Hydroelectric facility will be the removal of the remaining water and oils, clean the inside in order to render the facility safe and secure. The Subgrantee is evaluating whether or not to remove and dispose of the switch gear and transformers on top of the structure or leave them in place. Currently there is no active plan to demolish the facility; however, the Subgrantee has sought guidance from the Federal Energy Regulatory Commission (FERC) and the Iowa Department of Natural Resources (IDNR) to see what will be required for demolition. The Subgrantee stated they will comply with the recommendations and requirements of these agencies regarding the full demolition of the hydroelectric facility.

4. SUMMARY OF IMPACTS AND MITIGATION

The No Action Alternative and the Proposed Action Alternative are evaluated in this EA and their impacts are summarized in this section using the following scale. Impacts are assumed to be negative unless noted otherwise. Chapter 5 further details the anticipated impacts of both alternatives.

- 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	Minor to Moderate Impact	Construction Best Management Practices (BMP) are required to control soil erosion and sedimentation. If ground disturbance is one (1) acre or more, a Storm Water Pollution Prevention Plan (SWPPP) and NPDES permit are required. Appropriate sediment and erosion control BMPs for ground-disturbing activities are required.
Air Quality		
Alternative 1	No Impact	Not Applicable
Alternative 2	Minor to Moderate Impact (short term), Minor Impact (long term)	Construction BMPs appropriate to site conditions and fugitive dust controls to reduce short term impacts to negligible levels are required.
Climate Change		
Alternative 1	No Impact	Not Applicable
Alternative 2	Minor to Moderate to Major Impact	Not Applicable
Water Quality		
Alternative 1	No Impact	Not Applicable
Alternative 2	No to Minor Impact	Construction BMPs are required to control soil erosion and sedimentation. If ground disturbance is one (1) acre or more, a Storm Water Pollution Prevention Plan (SWPPP) and NPDES permit are required. Appropriate sediment and erosion control BMPs for ground-disturbing activities are required.
Wetlands		
Alternative 1	No Impact	Not Applicable
Alternative 2	No to Negligible Impact	Appropriate construction BMPs are required to control sediment and erosion for ground-disturbing activities.

Floodplain		
Alternative 1	No Impact	Not Applicable
Alternative 2	No Impact	Not Applicable
Protected Species and Habitat		
Alternative 1	No Impact	Not Applicable
Alternative 2	No Impact	Not Applicable
Historic Structures		
Alternative 1	No Impact	Not Applicable
Alternative 2	No Impact	In the event that Proposed Action 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	No Impact	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	Minor Impact	Not Applicable
Alternative 2	Positive Minor Impact (short-term) Positive Moderate Impact (long-term)	Not Applicable
Noise		
Alternative 1	No Impact	Not Applicable
Alternative 2	Minor to Moderate Impact	Construction BMPs to reduce impacts of construction noise during work are required.
Land Use and Planning		
Alternative 1	No Impact	Not Applicable
Alternative 2	No to Negligible Impact	No rezoning should be necessary under local requirements and standard zoning process.
Transportation		
Alternative 1	No Impact	Not Applicable
Alternative 2	Moderate Impact	Not Applicable
Public Health, Safety, and Hazardous Materials		
Alternative 1	No Impact	Not Applicable
Alternative 2	No to Negligible Impact	Any work requiring disturbance of asbestos containing materials (ACM) must be undertaken by properly licensed contractors; hazardous materials must be properly disposed. If unanticipated contamination is discovered during work, Subgrantee must contact the IDNR and stop work until the IDNR indicates no further assessment is needed of the discovery.
Demolition		
Alternative 1	No Impact	Not Applicable
Alternative 2	Minor Impact	Subgrantee 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 ACM (i.e., concrete) where present in the remaining

		structure on the site and any other hazardous materials.
Cumulative Impact		
Alternative 1	No Impact	Not Applicable
Alternative 2	Minor to Moderate Impact	Implementation of applicable Cedar Rapids regulations, air quality monitoring, use of BMPs for control of fugitive dust, sedimentation and erosion, and noise, appropriate permitting, and coordination with IDNR and SHPO are expected to limit negative impacts.

5. AFFECTED ENVIRONMENT AND IMPACTS

Chapter 5 describes the existing environmental conditions and the potential impacts and effects that may occur due to FEMA funding the alternate Parkade project. The environmental impacts of the No Action Alternative are also analyzed. In this chapter are descriptions for potential environmental consequences of the proposed alternatives by comparing them with other potentially affected environmental components. The proposed activity is evaluated against existing environmental documentation on present actions and planned actions and information on anticipated future projects to determine the potential for cumulative impacts. The potential for significant environmental consequences is evaluated utilizing the context and intensity considerations as defined in Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 CFR, 1508.27).

5.1 PHYSICAL RESOURCES

5.1.1 Geology and Soils

The proposed location of Parkade is on a previously disturbed site in a highly urbanized area of southeast Cedar Rapids. Soil classifications have not been compiled for this area and are not available for analysis.

5.1.1.1 Alternative 1 - No Action

The No Action Alternative would have no effect on geology or soils. The existing parking lot would remain and there would be no construction or ground disturbing activities associated with this alternative.

5.1.1.2 Alternative 2 - Proposed Action

The construction of the proposed Parkade would result in the permanent disturbance of surface soils and subterranean layers up with depths down to 40 feet where permanent foundation piers will be placed. Construction Best Management Practices (BMP), as identified in Storm Water Pollution Prevention Plan (SWPPP), are required by the U.S. Environmental Protection Agency (EPA) through the 1972 Clean Water Act and National Pollution Discharge Elimination System (NPDES) regulations. Implementation of BMPs should minimize soil erosion and loss until construction is complete and the site is permanently stabilized. Therefore, the Proposed Action would likely not have a significant impact to geology or soils. Structural erosion control BMP may include the placement of mulch or grass, covering stockpiles, silt fencing, and sediment traps. The Iowa Department of Natural Resources (IDNR) administers NPDES permits locally for the EPA; the Subgrantee is required to coordinate with IDNR for any NPDES permits if project ground disturbance extends to one (1) acre or greater in size (also see 5.14 Coordination and Permitting). See 5.5.5 Public Health and Safety for additional discussion regarding potential soil contamination.

5.1.2 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 EPA established National Ambient Air Quality Standards (NAAQS) for six (6) “criteria” pollutants (i.e., carbon monoxide, nitrogen dioxide, ozone, particulate matter PM₁₀ and PM_{2.5}, sulfur dioxide, and lead) and defined allowable concentrations not to be 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 below in Table 5-1. The EPA is authorized to designate locations that have not met the NAAQS as non-attainment and to classify non-attainment areas according to their degree of severity. Attainment pertains to the compliance/violation of any of the six (6) NAAQS criteria pollutants mentioned above. Each year, states are required to submit an annual monitoring network plan to the EPA. 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 VII in December 2010.

The Linn County Public Health Department's 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 air monitoring instruments located throughout the Cedar Rapids metropolitan area to measure ambient air quality. The nearest Air Quality Monitoring System location is the Scottish Rite Temple at 616 A Avenue NE, one (1) mile from the proposed Parkade site. As of March 30, 2012, the only area considered a non-attainment area for the six (6) criteria pollutants in the State of Iowa is Pottawattamie County.

Table 5-1: 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

No construction activities would occur with the selection of the No Action Alternative. Ambient air quality would not be affected beyond the existing conditions which are presently within regulatory standards.

5.1.2.2 Alternative 2 - Proposed Action

The Proposed Action would require soil excavation for construction activities. Short-term emission of criteria pollutants are anticipated during the construction phase. Construction equipment and personal vehicles would generate exhaust emissions; including carbon monoxide and nitrogen dioxide.

The operation of motor vehicles on unpaved surfaces and the use of earthmoving equipment would generate particulate matter. Soil manipulation during construction would increase the potential for emissions of fugitive dust and short-term air quality deterioration. This localized, short-term condition would be discontinued once project is completed and disturbed soils are stabilized and/or permanently covered. The Proposed Action would require approximately 12 months of construction and heavy equipment including bulldozers, scrapers, and backhoes.

Construction activities will require Best Management Practices (BMP) to minimize fugitive dust emissions. This may be achieved through watering, controlling entrainment of dust by vehicles, and/or other measures to reduce the disturbance of particulate matter. Short-term increases in ambient concentrations of criteria pollutants from heavy equipment would be minor and Federal or Iowa air quality attainment levels would not be exceeded. The Proposed Action is not expected to have long-term adverse impacts on ambient air quality in the area.

Mitigation: Requirement to Use Construction Best Management Practices

- Construction activities are 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.

5.1.3 Climate Change

According to the EPA, the premise of climate change "...refers to any significant change in the measures of climate lasting for an extended period of time" (EPA, no date). This includes major variations in precipitation, sea surface

temperatures and levels, atmospheric temperature, wind patterns, and other variables resulting over several decades or longer. The five (5) physical components responsible for the climate and its variations are the atmosphere, hydrosphere, cryosphere, lithosphere, and biosphere (EPA, no date). However EPA identifies and regulates anthropogenic or human actions that may affect climate change. This is dubbed “abrupt climate change” which occurs over decades and distinguishes it from natural variability that occurs gradually over centuries or millennia. In 2010 the CEQ issued draft guidance for Federal agencies to consider climate change in NEPA documentation. This guidance uses EPA-defined thresholds for mandatory greenhouse gas (GHG) emissions, reporting 25,000 metric tons per year as a threshold level where quantitative analysis is required. This GHG 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 (EPA, 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 The majority of GHG emissions result from industry, heating and cooling of buildings, and automobile non-point sources.

Between 1958 and 2007, heavy precipitation increased by 31 percent in the Upper Midwest (i.e., Iowa, Michigan, Ohio, Missouri, Minnesota, Illinois, Indiana, and Wisconsin). During the same period, the Upper Midwest experienced a 27 percent increase in the average number of days with heavy precipitation. Heavy downpours are projected to increase in between 10 percent and 25 percent through the 2090s (USGCRP, 2009).

Average temperatures in the United States have increased two (2) degrees Fahrenheit over the last 50 years. By the end of the century, average temperatures in Iowa are projected to increase four (4) to six (6) degrees Fahrenheit under low-emission models, or eight (8) to 10 degrees Fahrenheit under high-emission models. Under current modeled projections, Iowa may have increased occurrences of flooding, heat waves, droughts, invasive plant and insect species, and insect-borne diseases (USGCRP, 2009). While climatologists collect and manipulate data to model and predict future impacts of climate change, the available data indicates that the frequency, severity, and magnitude of atmospheric and oceanic storms will likely increase in intensity and will become more unpredictable in decades to come.

Embodied energy measures sustainability to account for the energy used by structures or to create materials. Another measure of sustainability is life-cycle or cradle-to-grave analysis which accounts for the extraction, manufacture, distribution, use, and disposal of materials. While resources exist to quantify embodied energy and life cycle analysis, the calculations were not prepared by the Subgrantee for the options presented in this EA.

Average temperatures in Cedar Rapids range from lows in January between 15 and 20 degrees Fahrenheit to highs in July between 70 and 75 degrees Fahrenheit. Peak precipitation months are June, July, and August which average four (4) to five (5) inches per month. Low precipitation months are January and February and average one (1) inch per month. Peak snowfall months are December and January averaging eight (8) to nine (9) inches per month.

5.1.3.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Embodied energy or energy would not be affected beyond the existing conditions.

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

5.1.3.2 Alternative 2 - Proposed Action

The Proposed Action would have a major impact of embodied energy from the use of concrete and metallic materials used to construct the six (6) parking facility from existing conditions (i.e., paved, surface parking lot). Energy use in the new facility would have minor to moderate increase from the current land use.

The salvage or recycling of uncontaminated debris (e.g., crushing concrete for future use as aggregate) should be implemented to mitigate demolition impacts. Such opportunities would reduce the demolition impacts to the human environment by reducing wasted embodied energy and increase landfill space for other uses. Reusing materials on-site also would reduce impacts from transporting materials off-site.

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. The CWA regulates discharge of pollutants into water with sections falling under the jurisdiction of the U.S Army Corps of Engineers (ACOE) and the EPA. Section 404 of the CWA establishes the ACOE permit requirements for discharging dredged or fill materials into Waters of the United States and traditional navigable waterways. ACOE regulates activities within navigable waters is also authorized under the 1899 Rivers and Harbors Act. ACOE jurisdiction extends to tributaries and wetlands where a “significant nexus” exists between the resources as articulated in two (2) recent Supreme Court decisions, SWANCC and Rapanos decisions. Under 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 administered in Iowa through the IDNR. The 1968 Wild and Scenic Rivers Act is another regulatory framework related to water resources; however Iowa has no designated wild and scenic rivers.

Cedar Rapids is further regulated by NPDES with Municipal Separate Storm Sewer System (MS4) individual or general permit. MS4 permits require the Subgrantee to develop and maintain a storm water management program to reduce storm water contamination and limit contamination discharges.

5.2.1.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Surface and ground water quality for Cedar River and aquifers would not be affected beyond the existing conditions.

5.2.1.2 Alternative 2 - Proposed Action

The Proposed Action would disturb less than one (1) acre of ground for the amount of excavation required to ensure stabilized soils, utilities, and associated site work. However, if construction activities are increased and disturbs one (1) acre or more, the Subgrantee is required to prepare a Storm Water Pollution Prevention Plan (SWPPP), obtain and comply with a NPDES permit from the IDNR (also see 5.7 Coordination and Permits). All ground disturbing activities would require site and project appropriate sediment and erosion control Best Management Practices (BMP). Implementation of BMP and permit conditions would reduce the potential impact of this project to 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, minimize, and/or mitigate adverse impacts to wetlands. Under the CWA two (2) types of authorizations are available from the ACOE for activities regulated under Section 404 of the CWA: 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.

“The ACOE (Federal Register, Section 328.3(b), 1991) and the EPA (Federal Register, Section 230.4(t), 1991) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water 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” (ACOE, 1987). Wetlands have three (3) diagnostic environmental characteristics (ACOE, 1987):

1. **Vegetation:** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in (a) above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions.
2. **Soil:** Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions.
3. **Hydrology:** The area is inundated either permanently, or periodically at mean water depths < 6.6 feet (~ 2 meters), or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations

The U.S. Fish and Wildlife Service (USFWS) maintain National Wetlands Inventory maps that include conventional maps, downloadable digital map data, dynamic online maps² and geographic information system data. Federal actions within identified wetlands require the Federal agency to conduct an 8-step process, which like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA’s regulations on conducting 8-step processes are contained in 44 CFR, Part 9.5.

5.2.2.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Wetlands would not be affected beyond the existing conditions.

5.2.2.2 Alternative 2 - Proposed Action

A review of the National Wetlands Inventory wetlands maps for the Proposed Action indicates that there are no wetlands located on or near the proposed site. However, the Subgrantee is required to implement construction Best Management Practices to reduce or eliminate waste runoff into the Cedar River during construction phase.

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

5.2.3 Floodplain

EO 11988 Floodplain Management requires that Federal agencies avoid funding activities that directly or indirectly support occupancy, modification, or development of the 100-year floodplain whenever there are practicable alternatives. According to 44 CFR, Part 9.4 “*Floodplain* means the lowland and relatively flat areas adjoining inland and coastal waters including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year. Wherever in this regulation the term “floodplain” is used, if a critical action is involved, “floodplain” shall mean the area subject to inundation from a flood having a 0.2 percent chance of occurring in any given year (500-year floodplain).” Further, EO 11988 requires consideration of the 500-year floodplain for critical facilities such as hospitals and fire stations. FEMA uses Flood Insurance Rate Maps (FIRM) to identify 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 to conduct an 8-step process. This process, like NEPA, requires the evaluation of alternatives prior to funding the action. FEMA’s regulations for conducting 8-step processes are contained in 44 CFR, Part 9.5. Cedar Rapids is a participant in the NFIP.

Note, FIRM panel number 1901870020B, effective December 15, 1982, was revised and updated with FIRM panel number 19113C0410D, effective April 5, 2010. Because the Subgrantee proposed an alternate project at an alternative location from the 5-in-1 Hydroelectric facility, the revised 2010 FIRM panel is used for floodplain analysis based upon best available information. According to the revised 2010 FIRM, the proposed site is located in both a Shaded Zone X within the 500-year floodplain and in a Zone A within the 100-year floodplain. The area within the Shaded Zone X encompasses approximately 97 percent of site; only an estimated 1,400 square feet of the total 41,992 square feet is located in a Zone A (100-year floodplain).

5.2.3.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. The 100-year and 500-year floodplains would not be affected beyond the existing conditions.

5.2.3.2 Alternative 2 - Proposed Action

The Proposed Action would have no to negligible impact on the 100-year floodplain. The proposed location is disturbed and functions as surface parking. The proposed construction footprint for Parkade is sited presently on existing paved portion, which is outside the 100-year floodplain. The remaining square footage is located within the 500-year floodplain. Parkade is not considered a critical facility.

The Subgrantee is required to coordinate construction activities with ACOE, IDNR, and local floodplain administrators to obtain all applicable permits and comply with all applicable Federal, State, and local laws, regulations, and executive orders pertaining to the CWA and floodplain management and present them to FEMA.

5.3 BIOLOGICAL RESOURCES

5.3.1 Protected Species and Habitat

The Endangered Species Act of 1973 establishes a Federal program to conserve, protect, and restore threatened or endangered plants and animals and their habitats. The Endangered Species Act specifically charges Federal agencies with

the responsibility of using their authority to conserve threatened or endangered species. Biological studies consisting of literature review 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. 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.

Table 5-2: 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

No construction activities would occur with the selection of the No Action Alternative. No Federally-listed (or Iowa protected species) threatened or endangered vegetation and wildlife would be impacted.

5.3.1.2 Alternative 2 - Proposed Action

The proposed construction of Parkade would have no effect upon Federally-listed (or Iowa protected species) threatened and endangered species or critical habitats for threatened and endangered species. The proposed site is completely paved; also there are no remaining native habitats present on this urban area. Any post-construction landscaping is expected to consist of native plantings and be consistent with previous Cedar Rapids landscape architecture and design. Coordination with the Cedar Rapids Forestry Department and/or the IDNR for native species should take place if a listing of approved plant species has not already been established.

FEMA reviewed lists from both USFWS and the IDNR for threatened and endangered species that have the potential to occur in Linn County. Documentation review and field visits to the project area determined that Federally-listed (and Iowa protected species) threatened or endangered species identified having the potential to occur in Linn County are not present in the area and would not be impacted by the project.

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 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 Alternative’s actions and encompasses areas requiring ground disturbance (e.g. areas of grading, cut and fill, etc.) associated with the proposed Federal undertaking. For No Action Alternative, no construction activities would occur; therefore Section 106 review would not apply. For Proposed Action Alternative evaluated in this EA, the APE for this undertaking for archaeological resources is limited to the areas of ground disturbance necessary for demolition, excavation, construction, utility connections, access, and staging that would be confined to the city block bounded by 6th Avenue SE on the Northwest, 2nd Street SE on the Northeast, 7th Avenue SE on the Southeast and 1st Street SE on the Southwest, and the public right-of-way. The APE for this undertaking regarding historic structures extends to the buildings and structures within the city block and those that surround it.

5.4.1 Historic Structures

FEMA has considered the potential for these two Alternatives to affect historic standing structures. Various sources were checked to determine if any previously identified historic properties are located within the APE for the Proposed Action Alternative for this undertaking and to determine the potential for the APE to contain previously unidentified historic properties. This review included the Iowa State Historic Preservation Office’s (SHPO) Iowa Site Inventory, 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.

The site for the proposed Parkade is currently used as surface parking that was developed following demolition of buildings and removal of rail lines on the site as evidenced by historic aerials and maps.

Constructing a parking ramp within the boundaries of a NRHP listed or eligible historic district or adjacent to an individually NRHP listed or eligible historic structure is the type of activity that has the potential to compromise the integrity of an historic property, should one be present. However, the proposed project is not within the boundaries of a district that is listed in or has been determined eligible for listing in the NRHP. Furthermore, previous historic and architectural surveys of Cedar Rapids have identified a collection of NRHP individually eligible buildings downtown Cedar Rapids, but suggest that due to losses and intrusions, the potential for an NRHP eligible historic district downtown Cedar Rapids is low. The blocks surrounding the site proposed for the Parkade contain a number of surface parking lots, and late 19th and early 20th Century redevelopment.

5.4.1.1 Alternative 1 - No Action

For No Action Alternative, no construction activities would occur; therefore Section 106 review would not apply.

5.4.1.2 Alternative 2 - Proposed Action

Proposed Action Alternative, the Subgrantee's preferred option, would require the demolition of the surface parking lot and the construction of the proposed Parkade to be located on the city block bounded by 6th Avenue SE on the Northwest, 2nd Street SE on the Northeast, 7th Avenue SE on the Southeast and 1st Street SE on the Southwest.

The surface parking lot does not meet the 50-year criterion required by the NRHP listing criteria, or the level of exceptional importance required by Criteria Consideration G for properties that have achieved significance within 50 years. Therefore, demolition of the surface parking will not affect historic structures. As stated above, the proposed project is not within the boundaries of a district that is listed in or has been determined eligible for listing in the NRHP, and previous surveys suggest that the potential for an eligible historic district is low.

In the western corner of the block at the intersection of 1st Street SE and 6th Avenue SE is the John Blaul's Sons Co. Warehouse Building that was completed in 1914, and subsequently known as the BBB Beverage Co. Building, Rockwell Collins Warehouse, Midwest Food Distributors Building and Great Furniture Mart Building. The latter occupied the building from 1995 until 2006. The building was unoccupied at the time of the 2008 flood, in which it sustained damage; however, the building has since been purchased for adaptive reuse as office space by a downtown redevelopment group.

In April, 1997, Marlys, A. Svendsen, Svendsen, Tyler, Inc. of Sarona, Wisconsin completed *Historical and Architectural Reconnaissance Survey Report for the Downtown and Industrial Corridors in Cedar Rapids, Iowa* for the City of Cedar Rapids Department of Development and the Cedar Rapids Historic Preservation Commission. As a result of the referenced survey, MS. Svendsen determined that the John Blaul's Sons Co. Warehouse Building is potentially eligible for listing in the NRHP. The John Blaul's Sons Co. Warehouse Building was also recommended eligible for listing in the NRHP under Criteria A and C by Emily Meyer, Ryan Companies US, Inc. of Cedar Rapids, Iowa Site Inventory No. 57-09539, August 5, 2009. A supplemental Iowa Site Inventory Form (ISIF) was submitted by Robert C. Vogel, Senior Historian, Pathfinder CRM, LLC of Spring Grove, MN in December 2011, Iowa Site Inventory No. 57-09621, in which Mr. Vogel concludes that the property is eligible for listing in the NRHP under Criterion A for its association with the broad theme of commerce, and Criterion C relating to its distinctive design and construction characteristics. On January 6, 2012 the State Historical Society of Iowa/State Historic Preservation Office (SHPO) concurred with this determination of NRHP eligibility. The John Blaul's Sons Co. Warehouse Building is located to the west of the proposed Parkade within the city block, and the proposed parking ramp would be adjacent to the northeast elevation of the John Blaul's Sons Co. Warehouse Building.

Four (4) buildings present at the time of Ms. Svendsen's 1997 survey within the block along 1st Street SE to the Southwest of the John Blaul's Sons Co. Warehouse Building, that were likewise recommended NRHP eligible in the survey report, are nonextant. The surrounding blocks do not contain properties that were considered potentially individually eligible for listing in the NRHP in the referenced survey, nor did the survey identify a potentially NRHP eligible historic district in the vicinity.

In the event that Proposed Action Alternative is approved, FEMA will assess the effects of the undertaking on historic properties within the APE and consult with the SHPO. It is not anticipated that construction of the Parkade in the

Proposed Action Alternative will result in adverse effects to the NRHP eligible John Blaul's Sons Co. Warehouse Building as the proposed Parkade is not expected to alter any of the characteristics that qualify the property for listing in the NRHP.

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 structures. 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 evidence 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 two 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. According to the master inventory of archaeological sites in Iowa, no previously recorded archaeological sites are located within the APE; however, multiple archaeological surveys have been conducted in the vicinity including *Phase I Archaeological Intensive Reconnaissance, and Architectural Surveys on Alternative 4C and Airport Borrow for the Cedar River Flood Risk Management Feasibility Study, Cedar Rapids, Linn County, Iowa, BCA 1739, Bear Creek Archaeology, Cresco, Iowa*, which have resulted in the identification and documentation of archaeological sites. Multiple known archaeological sites are located within one (1) mile of the APE. The site is located in a developed urban environment. The site is considered moderately sensitive for the presence of pre-historic (Native American) archaeological deposits.

5.4.2.1 Alternative 1 - No Action

For No Action Alternative, no construction activities would occur; therefore Section 106 review would not apply.

5.4.2.2 Alternative 2 - Proposed Action

Proposed Action Alternative, Subgrantee's preferred option, would require the demolition of the surface parking lot and the construction of the Parkade that would be confined to the city block bounded by 6th Avenue SE on the Northwest, 2nd Street SE on the Northeast, 7th Avenue SE on the Southeast and 1st Street SE on the Southwest and the public right-of-way.

According to the available Sanborn Fire Insurance Maps, the block previously contained a variety of commercial properties and the Illinois Central Railroad spur that ran along the alley to the Northeast of the John Blaul's Sons Co.

Warehouse Building, and has been redeveloped over time. The site is considered moderately sensitive for the presence of pre-historic (Native American) archaeological deposits; however, demolition and construction would not notably disturb more ground than was disturbed by previous construction and demolitions on the site. Therefore, FEMA will not recommend a Phase 1 Archaeological Survey in advance of the proposed undertaking, or monitoring by an archaeologist who meets the Secretary of the Interior's (SOI) Professional Qualifications Standards during the demolition and excavation.

While it is not unreasonable to assume that historic period archaeological sites consisting of building foundations and/or other features may be encountered, it is not likely that an archaeological site that would meet the NRHP listing criteria would be encountered.

In the event that the Proposed Action Alternative is approved, FEMA will consult with the SHPO on 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 Subgrantee shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The Subgrantee 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 Subgrantee is notified by IHSEMD.

If archaeological resources are encountered and subsequently recommended eligible for listing in the NRHP by an SOI qualified archaeologist, 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 including Native American Tribes as applicable., 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. The EO 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.

The proposed project location is within Census Tract 27. Select demographic data used in this analysis is contained in Appendix A, Figure 14. Census Tract 27 is mainly an urban commercial district with few residents; however this tract has a higher minority and low income proportions compared to Cedar Rapids as a whole. Census 27 has fewer population (1,549) and number of housing units (841) than Cedar Rapids population (126,326) and housing units (57,217). Census 27 has a greater minority population than Cedar Rapids, 30.7 percent compared to 12 percent. Census Tract 27 has greater proportion of men and women over 64 years-old than Cedar Rapids, 17 percent to 13 percent. Census 27 median household income is lower (\$15,110) than Cedar Rapids (\$43,704). Census Tract 27 has a greater poverty percentage than Cedar Rapids, 42.4 percent to 12 percent (poverty margin of error is 15.2%).

5.5.1.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Local demographics and socioeconomics may have minor impact if reduced parking capacity decreases adequate parking opportunities for low income and/or minority populations.

5.5.1.2 Alternative 2 - Proposed Action

The construction of the proposed Parkade under this alternative would have a short-term minor positive impact. Construction personnel would provide economic benefits to the local businesses, which would include the purchase of food, gas, and other services. The long-term effects from the Proposed Action would not displace or adversely affect minority and low-income populations and have the potential for moderate economic impacts associated with improving parking services for residents, workers, and businesses in the immediate area.

5.5.2 Noise

As a result of the human health and welfare impacts of uncontrolled noise, the Noise Control Act was enacted in 1972 and the Quiet Communities Act of 1978; however EPA does not have regulatory authority to govern noise in local communities. In 1982, the EPA transferred the primary responsibility for regulating Federal noise policy to state and local governments.

“Noise” is considered unwanted or nuisance sounds 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 10:00 p.m. and 7:00 a.m. The Ldn is used by Federal agencies for estimating sound impacts and establishing guidelines for compatible land uses. The U.S. Department of Housing and Urban Development regulations set acceptable noise levels at 65 Ldn or less (24 CFR, Part 51). The EPA identifies a 24-hour exposure level of 70 dB as the base level for environmental noise that would not affect 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). The levels represent averages of acoustic energy over long time periods such as eight (8) hours or 24 hours rather than discrete events. Table 5-3, presents common construction equipment with their estimated noise levels

and levels at various distances. Noise regulations take into account sensitive receptors which are populations or land uses that may be impacted to a greater extent by increases in ambient noise levels. Sensitive receptors generally include museums, libraries, day care centers, schools, hospitals, and places of worship, among others.

Table 5-3: Estimated Sound Levels for Construction Equipment and Attenuation at Various Distances

Equipment	Typical Noise Level (dBA) at 50 ft. from Source ¹	Estimate at 100 ft.	Estimate at 200 ft.	Estimate at 500 ft.	Estimate at 1,000 ft.
Air Compressor	81	75	69	61	55
Backhoe	80	74	68	60	54
Concrete Mixer	85	79	73	65	59
Dozer	85	79	73	65	59
Generator	81	75	69	61	55
Loader	85	79	73	65	59
Paver	89	83	77	69	63
Pneumatic Tool	85	79	73	65	59
Pump	76	70	64	56	50
Saw	76	70	64	56	50
Shovel	82	76	70	62	56
Truck	88	82	76	68	62

Source: FHWA 2006

5.5.2.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Local noise levels would not be affected beyond the existing conditions.

5.5.2.2 Alternative 2 - Proposed Action

The Proposed Action would increase noise levels in the vicinity of the project area during the construction phase and upon completion. Construction activities would require approximately 12 months of construction and the use of heavy equipment. Construction Best Management Practices (BMP) to minimize noise impacts are required. According to the Center for Environmental Excellence by the American Association of State Highway and Transportation Officials, 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 when windows are left open in residential areas;
- Using newer, “low-noise” models of equipment; and,
- Limiting construction activities to daylight hours

Once construction activities are completed, noise levels should return to near normal 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 would have minor to moderate impacts to noise quality in the area due to increased amounts of noise attributed to the increase of automobiles using Parkade and associated traffic noises in the vicinity.

5.5.3 Land Use and Planning

The Cedar Rapids Community Development Department coordinates planning activities and advises the City Council, other departments, other non-City agencies, and private stakeholders on issues of development and planning within Cedar Rapids. The city adopted the current comprehensive plan in 1999 which established the community’s priorities including vision, objectives, and goals through 2040. See Section 5.5.4 Transportation for metropolitan transportation planning discussion. Land-use and zoning regulations are administered and enforced by Cedar Rapids.

5.5.3.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Land use and planning would not be affected beyond the existing conditions.

5.5.3.2 Alternative 2 - Proposed Action

Construction of Parkade would be consistent with land use planning goals, conform to existing zoning designations, and would have no adverse impact. The proposed location is currently zoned PUB to designate land owned by governmental entities (i.e., public property) where Cedar Rapids designates permitted land uses. The southwest adjacent lot is a paved parking lot and also zoned PUB. The northwest adjacent lot is the Great Furniture Mart Building which is zoned C-4 (i.e., Central Business Zone District). Zone C-4 is designated for uses that accommodate business and residential uses that are characteristic of a downtown (Zoning Code, Sec. 32.03).

5.5.4 Transportation

The Corridor Metropolitan Planning Organization is tasked under the 1973 Highway Act to coordinate metropolitan-wide transportation planning and investment. The Corridor Metropolitan Planning Organization’s most recent Long Range Transportation Plan (See Appendix A, Figure 15), consistent with SAFETEA-LU (current Federal transportation legislation), Clean Air Act (CAA), and Title VI of the 1964 Civil Rights Act, was adopted July 15, 2010.

5.5.4.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Transportation would not be affected beyond the existing conditions.

5.5.4.2 Alternative 2 - Proposed Action

Construction of the Parkade is anticipated to have minor positive impacts to transportation services by increasing capacity of downtown parking facilities. Short-term construction affects to traffic on surrounding roads is expected to have major

impacts to traffic on 2nd Street SE between 6th Avenue SE and 7th Avenue SE, and traffic on both 6th and 7th Avenues SE between 1st Street SE and 2nd Street SE. Traffic may be marginally impacted by construction equipment entering or leaving the site, however the impacts are expected to be partially mitigated by the urban street grid with the presence of alternate routes. Long-term, moderate impacts to traffic in the vicinity of Parkade would be expected due to increased traffic congestion for patrons using parking facility.

5.5.5 Public Health, Safety, and Hazardous Materials

The Resource Conservation and Recovery Act (RCRA) defines “hazardous waste” as the following: “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.” Iowa regulates hazardous materials and wastes with a combination of Federal and state laws. In addition to RCRA (and Hazardous and Solid Waste Amendments), Federal regulations that govern the assessment and disposal of hazardous wastes include the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Solid Waste Act, and the Toxic Substances Control Act.

Radon 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 including building basements. The EPA currently considers residential radon exposure at or above 4.0 pico Curies per liter (pCi/L) as a public health risk for the development of lung cancer. The EPA provides maps for all U.S. counties indicating the potential for elevated indoor radon levels: Zone 1 has 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 enclosed spaces.

5.5.5.1 Alternative 1 - No Action

No construction activities would occur with the selection of the No Action Alternative. Soil or groundwater contaminations present would not be disturbed or affected beyond the existing conditions.

5.5.5.2 Alternative 2 - Proposed Action

Four (4) sites have/had leaking underground storage tanks (LUST) have been identified within 1,000 feet of the proposed Parkade site. The four (4) sites (Leak numbers: 7LTX61, 9LTF34, 7LTU59, and 9LTK89) are classified by IDNR through Environmental Facilities Geo-Spatial Database. Leaks 7LTX61, 9LTF34, and 9LTK89 are stopped; IDNR classifies risk as “none” or “no action”; potential for groundwater contamination is none to negligible. Leak 7LTU59 is in active status (i.e., functioning gas station); IDNR classifies risk as “low risk”; potential for groundwater contamination is negligible to minor. Potential contamination to proposed site from identified LUST sites is none to negligible impact.

With the movement, excavation, and ground disturbance of shallow soils associated with Parkade construction there is the potential for elevated concentrations of radon gas within the proposed building following construction. The project design should incorporate radon-resistant construction appropriate to the site 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 five (5) 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; and,
- Sealing and Caulking – Openings in the concrete foundation are sealed to prevent soil-gas from entering the facility.

5.5.6 Demolition

The proposed Parkade location currently has a surface-level parking lot. Beyond removing concrete and other paving materials, site preparation would not require significant alteration or demolition activities. However spoils from previous foundations may exist. Demolition activities are regulated by Federal, State, and local laws ranging from local permits to licensure to appropriate disposal. Demolition debris (i.e., concrete) is expected to be disposed of at the Cedar Rapids/Linn County Landfill #2 located at 1954 County Home Road which is authorized to receive non-friable asbestos.

If asbestos associated with previous land uses is discovered during demolition, site preparation, and foundation work is discovered, the Subgrantee must properly remove and dispose of the asbestos containing materials (ACM). Removal and disposal of ACM must be conducted in accordance with all applicable Federal, State, and local laws and documentation of proper handling and disposal must be submitted to FEMA. Parkade excavation would include removal of existing concrete paving, potential spoils from buried foundations, and placing piers currently designed for depths of 30 to 40 feet.

5.5.6.1 Alternative 1 - No Action

No construction or demolition activities would occur with the selection of the No Action Alternative. Ground disturbance would not be affected beyond the existing conditions.

5.5.6.2 Alternative 2 - Proposed Action

Demolition activities for the construction of Parkade would be a minor impact on the site overall. The potential exists that spoils from foundations of previous structures may have hazardous materials (e.g., asbestos) or contaminated soils. If contamination in excess of reporting requirements is met, work must stop, the site must be stabilized, and the IDNR Field Office must be contacted. 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. Contaminated soils and material must be properly disposed of and surrounding properties protected from being impacted between disturbance and disposal; BMP to prevent release of contaminants while in transit to a permitted disposal site must be implemented.

5.6 CUMULATIVE IMPACTS

Cumulative effects are defined by the CEQ as the impact on the environment resulting from the incremental impacts of the evaluated actions when combined with other past, present, and reasonably foreseeable future actions, regardless of the source, such as Federal or non-Federal. Cumulative impacts can result from individually minor but collectively significant actions taken over time. Cedar Rapids is currently engaged in numerous flood recovery projects including private property acquisitions, residential and public building demolitions, relocation of public buildings, restoration of flood-impacted public facilities, and the Subgrantee desired flood protection system for structures on both sides of the river.

Parkade construction is expected to increase the short-term noise impacts to the downtown area with the use of heavy machinery and truck traffic. The provision of significantly more parking spaces on the site may result in an increase the amount of vehicle traffic in the surrounding roads as well as a concentration of vehicle emissions. Emissions associated with operating the parking structure are incremental, but the potential concentration of vehicles at the site is anticipated to be a diversion of non-point sources from other areas in Cedar Rapids; Linn County Public Health will monitor the air quality impacts from the nearby monitoring station. Increased density at the site may foster more desirable downtown locations for businesses, offices, and residential uses over the moderate to long-term.

5.7 COORDINATION AND PERMITS

Construction and demolition activities that cause one (1) acre or greater ground disturbance 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. 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 the city's standard processes.

If contamination in excess of reporting requirements is met, work must stop, the site must be stabilized, and the IDNR Field Office must be contacted. 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. Cedar Rapids must ensure compliance with all Federal, State, and local laws regarding proper removal and disposal of asbestos containing materials 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, the Subgrantee shall stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The Subgrantee 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 Subgrantee is notified by IHSEMD.

6. CONCLUSION

The draft EA evaluated potentially significant resources that could be affected by the construction of the proposed 2nd Street SE Parkade in Cedar Rapids. The evaluation resulted in the 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 effects associated with the two (2) alternatives considered in this EA to below the level of a significant impact. 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

7.1 PARTIES CONSULTED

The Iowa State Historic Preservation Office and State Historic Preservation Officer (SHPO) will be consulted in consideration of impacts to cultural resources as mandated under Section 106 of the National Historic Preservation Act (NHPA), as amended and implemented by 36 CFR, Part 800. This consultation will occur after the 30-day EA public comment period has concluded.

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