



Draft Environmental Assessment
Central Fire Station
Cedar Rapids, Iowa
FEMA DR-1763-IA

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FEMA

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Abbreviations and Acronyms

ACM	Asbestos Containing Materials
APE	Area of Potential Effect
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMPO	Corridor Metropolitan Planning Organization
CO	Carbon Monoxide
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
dB	Decibels
EA	Environmental Assessment
EHP	Environmental Planning and Historic Preservation
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
HUD	U.S Department of Housing and Urban Development
IDNR	Iowa Department of Natural Resources
IDOT	Iowa Department of Transportation
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
NO ₂	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O ₃	Ozone
PM	Particulate Matter
REC	Recognized Environmental Condition

RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SHPO	State Historic Preservation Office
SHSI	State Historic Society of Iowa
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
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. The City lies on both banks of the Cedar River. Between June 11 and June 13 2008, the Central Fire Station at 222 3rd St Northwest experienced extensive damage from the flooding of the Cedar River and its tributaries along with large portions of Cedar Rapids and the surrounding area. On May 27, 2008, President Bush declared a major disaster in the State of Iowa (DR-1763-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 Central Fire Station serves Cedar Rapids with a 2010 population of 126,326 and the surrounding metropolitan area with its specialized apparatus and as the Fire Department's headquarters and housing the Bureau of Fire Prevention.

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

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. Currently, the damaged facility is located within the 100-year floodplain and subject to repetitive flooding. Rather than repair the facility at its present location, FEMA and the City of Cedar Rapids conducted a thorough review of the practicable alternatives to restoring the function of this critical facility at a location outside the floodplain and not subject to repetitive flood damage.

2. PURPOSE AND NEED

Pursuant to Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1974, as amended, the City of Cedar Rapids has requested funding through FEMA Public Assistance Program. FEMA's Public Assistance Program provides supplemental Federal disaster grant assistance for the repair, replacement, or restoration of disaster damaged, publicly owned facilities.

The purpose of this project is to assist the citizens of Cedar Rapids and Linn County in their recovery from the 2008 flooding by using the FEMA Public Assistance Program to contribute eligible funding toward restoring the Central Fire Station function. The proposed site of the new Central Fire Station is located at 712 2nd Avenue SE (also known as the Emerald Knights site) which is bounded by 1st Avenue NE to the east, 2nd Avenue SE to the west, 8th Street SE to the north, and 7th Street SE to the south. (Appendix A, Figure 1).

Since the June 2008 floods, the functional use of the existing damaged Central Fire Station has been compromised. The Fire Department has divided the City into nine response zones. Currently there are ten response zones as the Fire Department is operating out of eight permanent stations and two temporary stations. Satellite stations, numbered two through nine, have one fire engine and are staffed around the clock by three firefighters. In the event of a medical emergency, the fire department's goal is to have an engine on scene within four minutes. In the event of a fire, the goal is to have the first engine on scene within four minutes and 15 firefighters on scene within eight minutes. These are National Fire Service and Emergency Medical Service industry recommended standards for response time (CRFD 2011).

The Department estimates that initial response time capabilities decline from an area of the City that encompasses 86% of calls for service within four minutes to an area encompassing 81% of the calls for service. The area covered when apparatus from four or more stations respond to calls for service within eight minutes has declined from 71% of the City to 54%. This reduction is attributed to the post-flood relocation of Truck 1 to Station 10. The Fire Department tracks response times to all incidents and reports results to all staff members on a monthly basis. Response time is also monitored by staff on every incident. Response time calculations are provided as part of each incident report completed following the incident. According to research conducted by the National Fire Protection Association and the International Association of Firefighters, fire attack needs to begin within eight minutes of fire ignition to prevent catastrophic life and property loss. If the fire is not extinguished within eight minutes, the fire is more likely to extend from the contents of a room to the structural elements of the building. Once the fire extends to the structure, the building quickly becomes untenable for anyone still inside the building, costs to repair the structure rise quickly, and firefighting operations become more dangerous because of the increased risk of building collapse (CRFD 2011).

The temporary relocation of fire engines and fire trucks along with their associated equipment, also referred to as “apparatus,” away from the main corridors of 1st Avenue and Interstate 380 has compromised post-flood fire service. Truck 1, normally housed at the Central Fire Station, is the Fire Department’s only Truck Company with fire apparatus and a 100’ long ladder ending with a basket was moved to Fire Station 10 at 1825 Edgewood Road SW. The Central Station also housed a variety of apparatus used for special incident types serving the entire City including; the Hazardous Materials truck and trailer, the Special Operations truck and trailer, brush-fire trucks, and boats. Other unstaffed support apparatus were also relocated to Fire Station 10, also known as the Fleck Building. Two boats and the brush truck were moved to the temporary Central Fire Station to ensure quick responses to the Cedar River. Engine 1 has been located at the temporary Central Fire Station co-located with the City’s Fleet Services Department at 1010 1st Street NW. Rescue 1 was moved to co-locate at Fire Station #5, 509 Wilson Avenue SW. Car 40, the on-duty Battalion Chief, was moved to Fire Station # 3 at 1424 B Avenue NE.

The main building had two wings at the damaged location: one side housed shift firefighting personnel and the other side housed Fire Department Administration and the Bureau of Fire Prevention. The two wings were connected by the apparatus storage area. The second building on the property housed a Fleet Services shop used by mechanics to maintain fire apparatus. This facility occupies 2.46 acres located between 3rd and 4th Streets NW and B Avenue NW and Interstate 380.

The Fire Department is a critical public service agency which needs to maintain protection levels constant throughout the day and night in order to meet the needs of the community. The relocation of equipment and functions to non-centralized locations severely limits the Department’s response, and compromises effectiveness during the most critical initial minutes of firefighting. The need for this project is to replace and relocate the Central Fire Station outside of the 100-year floodplain in a manner that prevents the facility from being susceptible to repetitive flood damage. Consolidating the apparatus and functions of the damaged Central Fire Station from the temporary locations to a centralized location with access to the interstate and 1st Avenue will restore the functional capacity of the Station and reduce future risk posed by flooding. If the Central Fire Station is not relocated, the ability of the Department and the City to provide an essential service to the citizens of Cedar Rapids would continue to be jeopardized.

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. A number of alternatives were evaluated during the development of the proposed project. The alternatives included in this EA are: the Alternative 1: No Action, where no FEMA grant funding is applied towards construction of a new Central Fire Station and Alternative 2: Proposed Action, where FEMA grant funding is applied towards construction of a new Central Fire Station at a location outside the 100-year and 500-year floodplains. The City has applied for and been awarded an I-Jobs grant which is a state-run disaster recovery program to supplement FEMA funds. This program has its own requirements which are not addressed in this EA unless otherwise noted and do not supersede Federal requirements for the alternatives considered in this discussion. The discussion includes Alternatives Analyzed to repair or restore this facility at its current location, which was dismissed because practicable locations outside the 100-year and 500-year floodplains were identified. The Cedar Rapids Fire Department Station Location Working Group (hereupon Working Group) was tasked by the City with providing a recommendation of several sites for the future location of the Cedar Rapids Fire Department Central Fire Station to the City of Cedar Rapids Fire Station Location Citizen's Committee.

3.1 Alternative 1: No Action

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

For the purposes of this alternative, it is assumed that the Central Fire Station functions would remain distributed between their current, post-flood locations. Therefore, no FEMA grant funding would be applied towards construction of a new Central Fire Station. The Station functions would remain at more than one decentralized locations continuing to compromise effective response in emergencies.

3.2 Alternative 2: Proposed Action

This alternative provides eligible FEMA grant funding towards construction of a new Central Fire Station at the proposed Emerald Knights site located between 1st and 2nd Avenues and 7th and 8th Streets. The proposed Station occupies approximately 0.6 acres of the two acre parcel with a total of 64,500 square feet of enclosed space between the basement, first floor, and second floor. The

proposed site satisfied the Working Group and the Cedar Rapids Fire Station Location Citizen's Committee criteria for sites. Additionally, the site is located closer to areas where there has been a higher density of incidents that the Central Fire Station resources have responded than the damaged location (see Appendix A, Figure 7).

The proposed structure is a two story building with exterior brick and Indiana Limestone-cladding. There are seven custom four-fold glass door bays on the south or 2nd Avenue side and eight custom four-fold glass door bays on the north or 1st Avenue side. The site plan includes 22 surface parking spaces divided evenly between the 1st Avenue and 2nd Avenue sides with additional on-street parking along the 7th Street and 8th Street sides. Fire trucks and fire engines will have access to both 1st Avenue and 2nd Avenue from the building, with a drive-through design.

The apparatus room separates the predominantly storage and training wing on the west side of the structure from the east wing. The east wing contains the offices, officer and firefighter quarters, library, museum, exercise facilities, classroom, conference room, file room, and Emergency Operations Center / Community Room. The basement spans the whole structure and consists of additional storage and mechanical space and parking for up to 76 automobiles. The proposed structure is to be constructed of concrete block units (CMU) and steel stud walls with the previously mentioned exterior cladding. The main entrance and museum-conference room on the northeast corner of the structure includes two two-story glass curtain walls. Additional two-story glass curtain walls are located on the east and south sides of the west wing and on the east side of the east wing in the museum-conference room corner (see Appendix A, Figures 2-6).

3.3 Alternatives Considered and Dismissed

The key criteria for potential sites for the Central Fire Station included the following three requirements; close proximity to Interstate 380 and 1st Avenue, two contiguous acres of land, and located outside of both the 100-year and 500-year floodplains. The Acting Fire Chief worked with the Community Development Department to identify potential locations for the fire station using the City's Geographic Information Systems (GIS) and the City's property acquisition manager. The committee also received input from Fire Department staff in regard to potential locations. The Working Group initially identified ten (10) possible sites for the new Central Fire Station. Each site was evaluated by using the following key factors; 1) GIS data, 2) current emergency response profiles, 3) future response profiles based on predicted growth from the Community Development Department, and 4) on-site physical evaluations of each location.

The City initially considered the following parcels; 1500 Block 1st Avenue SW, 1000 and 1100 Block of 1st Avenue SW, 700 Block of 1st Avenue SW, 400 Block of 1st Avenue SW, 600 Block of 1st Avenue NE, 600 Block of 1st Avenue SE, 700 Block of 2nd Avenue SE, 800 Block of 1st Avenue NE, 600 Block of 3rd Avenue SE, and the damaged Central Fire Station location. Initially the Working Group intended

to score the various sites based on seventeen property considerations and additional response profile factors. However as they began, they determined that applying the key factors identified above, they could come to meaningful evaluations efficiently. Sites located within the 500-year or 100-year floodplains were removed from consideration first. While proposals for broader flood protection measures for the City are being discussed, the timeline on such measures is much longer than the Working Group was willing to consider.

The Working Group provided an analysis of each site to Fire Station Location Citizen's Committee in their report Draft 1.2 organized by levels of interest. As a result of the analysis on all ten parcels, the Working Group recommended the following sites for the new Central Fire Station; 700 Block 2nd Ave SE (Emerald Knights), 600 Block 1st Ave SE (History Center), and 600 Block 1st Ave NE (Taco Bell) that were all located outside of the 100-year and 500-year floodplains of the Cedar River. Runner-up locations identified were the 800 Block of 1st Avenue and the 600 Block of 3rd Avenue SE, in order of interest. Following the identification of the three recommended sites, the City submitted the sites to FEMA for FEMA's evaluation and input. FEMA's Environmental Planning and Historic Preservation (EHP) Branch provided a preliminary evaluation including relevant advantages and disadvantages of the three sites on March 31, 2011 (see Appendix C, Figure 1). The City of Cedar Rapids then officially selected the Emerald Knights site for the proposed action in June 2011.

3.3.1 Rebuild Existing Facility

An alternative of rebuilding the existing damaged facility was evaluated by the Working Group. This alternative would result in significant construction-related impacts and would require repairing the facility to current codes and standards. As the Station meets the definition of a "critical action" according to EO 11988 and 44 CFR Part 9, the facility would have to be elevated to or protected at the 500-year level. Elevating the Central Fire Station to the 500-year floodplain level would pose considerable challenges for ensuring adequate ingress and egress for the apparatus. Both elevating or otherwise protecting to the 500-year level would render the Station essentially an island during future flood events equal to or greater than the 2008 flood, which sustains one of the major problems the Department faced during the disaster. The Working Group identified that many challenges faced by the Fire Department during and following the flood were the result not having access to the Central Fire Station and its contents. Restoring the current damaged site would also require that the City carry flood insurance on the building in perpetuity. The significant investment within the floodplain for this option while practicable alternatives were identified outside of the floodplain demonstrated that this option was inconsistent with EO 11988 and 44 CFR Part 9. This option was determined to not be cost-effective over the life of the facility. Consideration of these multiple and significant challenges has rendered this alternative unfeasible and resulted in rebuilding and elevating or protecting being dismissed from further consideration.

4. SUMMARY OF IMPACTS AND MITIGATION

Two alternatives, the No Action and the Proposed Action, 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. The following section, Section 5, further details the anticipated impacts of both alternatives.

- 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, and 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

Environmental Resource	Alternative 1: No Action	Alternative 2: Proposed Action
Air Quality	Minor impact. Incrementally higher vehicle emissions may be anticipated as the apparatus are dispersed among temporary locations	Moderate impact. Fugitive dust is anticipated as a result of construction activities and movement of heavy equipment; best management practices and mitigation measures are required to control fugitive dust and reduce anticipated impacts to minor or negligible levels
Threatened and or Endangered Species	No impact	No impact; threatened or endangered species are not present in the project area
Cultural Resources	Negligible impact. No construction or demolition activities would be taken as part of a federal undertaking thus Section 106 requirements would not apply	Moderate impact. The adverse effects to historic properties determined to be within the proposed project's APE requires the successful completion of an MOA process and successful implementation of mitigation measures to compensate for the anticipated impacts
Geology and Soils	Minor impact. Soils exposed from the demolition of buildings on the 2 nd Avenue side of the site would remain exposed and subject to potential sediment releases	Moderate impact. Construction activities would expose soil in the proposed construction area exceeding 1 acre thus a Storm Water Pollution Prevention Plan and General NPDES Construction Permit will be required; best management practices and conformance with permit conditions are expected to reduce potential sediment and erosion impacts to minor or negligible levels

Radon	No impact	Minor impact. The entire State of Iowa has an elevated potential for radon levels; radon resistant construction techniques are recommended
Land Use and Planning	Minor impact. Continued occupancy of temporary facilities may not be consistent with the City's Planning and Zoning goals	Minor impact. The City will need to rezone the parcel to PUB to designate the land for government entity usage; proposed action is consistent with the City's Planning and Zoning goals
Hazardous Substances	Minor impact. Any existing hazardous substances would remain on the site	Moderate impact. Soil contamination is anticipated at the proposed site; the City is required to coordinate with the IDNR on the recommendations of their consultant on clean-up or containment needs; the City is 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, the City should contact the IDNR Field Office #1 (563-927-2640) and stop work until the IDNR indicates no further assessment is needed of the discovery
Noise	No impact.	Minor impact. Construction activities would increase the noise levels in the immediate area of the project; while the increased concentration of emergency vehicles in the area will result in an incremental increase in noise, FEMA expects that the impacts will be mitigated through the City's application of existing City Code and the possibility of using siren restrictions in the immediate area
Executive Order 12898, Environmental Justice	Moderate impact. Continued operation of Central Fire functions out of dispersed locations compromises its public health and safety services; direct impacts to low income and minority populations are incrementally longer response times than pre-flood levels	Moderate (positive) impact. The proposed action is expected to improve response times in areas with higher proportions of low income and minority populations, which, according to the City's Working Group report is also where some of the highest incident density is found
Transportation	Minor impact. Continued operation of Central Fire functions out of dispersed locations may maintain post-flood impacts on roads not planned for the higher level of emergency vehicle use and increased number of trips to areas not adequately served post-flood may continue to impact traffic circulation	Minor impact. Short term impacts are anticipated to include potential lane closures and some diminished level of service due to construction equipment entering or exiting the site; long term impacts are expected to include incrementally higher traffic along 1 st and 2 nd Avenues; on-going coordination between the City and the Corridor Metropolitan Planning Organization is expected to minimize both long term and short term traffic impacts resulting from the new Central Fire Station

Executive Order 11990/Wetlands	No impact.	Moderate impact. Construction activities would expose soil in the proposed construction area exceeding 1 acre thus a Storm Water Pollution Prevention Plan and General NPDES Construction Permit will be required; best management practices and conformance with permit conditions are expected to reduce potential sediment and erosion impacts to minor or negligible levels
Executive Order 11988/Floodplain Mgmt	No impact.	No impact. The proposed project is located outside of the 100-year and 500-year floodplains
Demolition	No impact.	Moderate impact. The City is 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, the City should contact the IDNR Field Office #1 (563-927-2640) and stop work until the IDNR indicates no further assessment is needed of the discovery; sediment and erosion control BMPs are required during demolition and construction activities
Cumulative Impacts	Moderate to Major impact. Emergency services would remain compromised; the City would be responsible for identifying and securing non-FEMA funds to relocate the Central Fire Station; disinvestment in inadequately served areas may increase as may the cost of providing emergency services due to the inefficiency of decentralized core services	Moderate impact. Relocating the Central Fire Station facilitates the relocation of Fire Station #3 and the demolition, in whole or in part, of the flood-damaged location at 222 3 rd Street NW; incremental modifications to traffic controls and capital improvement projects along 1 st and 2 nd Avenues may be needed; response times to the heavily flood-impacted west side of the river may increase as redevelopment increases

5. AFFECTED ENVIRONMENT AND IMPACTS

Chapter 5 describes the existing environmental conditions that may be affected by the proposed FEMA grant funding being applied towards construction of a new Central Fire Station. The environmental impacts of the Alternative 1: No Action were also analyzed.

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

5.1 Air Quality

The 1990 Clean Air Act, its amendments, and NEPA require that air quality impacts be addressed in the preparation of environmental documents. The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six “criteria” pollutants; carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide and lead, and define the allowable concentrations that may be reached but not exceeded in a given time period to protect human health (primary standard) and welfare (secondary standard) with a reasonable margin of safety.

Primary and secondary standards for NAAQS have been established for most of the criteria pollutants which are detailed in Table 5-1: National Ambient Air Quality Standards, below. The EPA is authorized to designate those locations that have not met the NAAQS as non-attainment and to classify these non-attainment areas according to their degree of severity. Attainment pertains to the compliance/violation of any of the National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants mentioned above. Each year, states are required to submit an annual monitoring network plan to EPA. The network plans provide for the creation and maintenance of monitoring stations, in accordance with EPA monitoring requirements specified in 40 CFR (Code of Federal Regulations) Part 58. The State of Iowa’s most recent Monitoring Network Plan was approved by EPA Region 7 in December 2010.

The 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. The nearest Air Quality Monitoring System location is 616 A

Avenue at the Scottish Rite Temple in Cedar Rapids. As of August 30, 2011, no area within the State of Iowa is considered a non-attainment area for the six criteria pollutants.

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

5.1.1 Alternative 1: No Action

The No Action Alternative would not affect air quality beyond the existing conditions which are within regulatory standards. No construction activities would occur with the selection of the No Action Alternative. Vehicle emissions from the various apparatus may be higher as a result of continued dispersion between temporary locations. The impact of these potential higher emissions would remain incremental and would be difficult to measure meaningfully in the short term.

5.1.2 Alternative 2: Proposed Action

Under this alternative, the Proposed Action would require the excavation of soil for the construction of the Central Fire Station, thereby short-term emissions of criteria pollutants are anticipated during the construction phase. Construction equipment and personal vehicles would generate exhaust

emissions, including NO₂ and CO. By consolidating the Central Fire functions and apparatus, any incremental increase in vehicle emissions resulting from the existing dispersed temporary locations may be reduced.

The operation of motor vehicles on unpaved surfaces and the use of earthmoving equipment may also generate particulate matter. The moving and handling of soil during construction would increase the potential for emissions of fugitive dust; however, any deterioration of air quality would be a localized, short-term condition that would be discontinued when the project has been completed and disturbed soils have been stabilized or permanently covered. The proposed action would require approximately eighteen (18) months of construction and heavy equipment including; bulldozers, scrapers, and backhoes.

Construction activities would be required to minimize fugitive dust emissions through watering, controlling entrainment of dust by vehicles, and/or other measures to reduce the disturbance of particulate matter. Increases in ambient concentrations of the criteria pollutants resulting from heavy equipment would be minimal, and federal or state air quality attainment levels would not be exceeded. The proposed action is expected to have no long-term adverse impacts on the air quality of the area.

Mitigation

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

5.2 Protected Species and Habitat

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened or endangered plants and animals and their habitats. ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened or endangered species. Biological studies consisting of literature review, field reconnaissance, and map documentation were performed. A site visit was conducted on February 22, 2010 with a subsequent visit on October 21, 2011.

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 February 22, 2010 site visit, the following list and description of threatened and endangered species that may occur in Linn County was produced. 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

5.2.1 Alternative 1: No Action

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

5.2.2 Alternative 2: Proposed Action

The impact of the proposed FEMA funded construction of a new Central Fire Station upon threatened and endangered species has been determined to be “no effect”. No remaining native habitats are present on the site as the site had been developed commercially since the 1930s and earlier. Re-vegetation of the property at the end of construction is expected to consist of plantings typical of the City and native to the area. Coordination with the City’s 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 U.S. Fish and Wildlife Service (USFWS) and the Iowa Department of Natural Resources (IDNR) for threatened and endangered species with potential to occur in Linn County. It was determined from documentation review and a field visit to the project area, that threatened or endangered species identified as having potential to occur in Linn County were not present in the area or would be impacted by the project.

5.3 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 at each alternative’s site and encompasses areas requiring ground disturbance (e.g. areas of grading, cut and fill, etc) associated with the proposed federal undertaking.

FEMA has evaluated the potential for this undertaking to affect cultural resources. On May 13, 2011, FEMA opened consultation with the Iowa State Historic Preservation Office (SHPO) regarding the APE and the effects of the undertaking on historic properties (see Appendix C, Figure 2). FEMA continued consultation with the SHPO in a correspondence dated September 12, 2011 (see Appendix C, Figure 3). The APE for this undertaking includes the disaster damaged Central Fire Station located at 222 3rd Street NW, Cedar Rapids and the location that the Cedar Rapids City Council has selected for the relocation, known as the Emerald Knights site, which is bounded by 1st Avenue SE to the north, 2nd Avenue SE to the south, 8th Street SE to the east, and 7th Street SE to the west, and the facing blocks that contain properties that are both listed in the NRHP, have been determined eligible

for listing in the NRHP and others that meet the NRHP's 50-year criterion that have not been evaluated. Additionally, the site is within the boundaries of the Grant Wood Cultural District.

FEMA has considered the potential for this undertaking to affect historic properties. Various sources were checked to determine if any previously identified historic properties are located within the APE of this undertaking 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 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. FEMA has determined and the SHPO concurred that the original Central Fire Station, constructed in 1982 does not meet the NRHP 50-year criterion or the level of importance required by Criteria Consideration G of the NRHP Criteria for evaluation. There is one extant building on the selected relocation site known as the Emerald Knights site. It is a metal-clad utilitarian structure located at 725 1st Avenue SE that currently houses Bob's Wholesale Cars. According to the City of Cedar Rapids' Assessor's website, the building was constructed in 1969. It does not meet the 50-year criterion required by the National Register Criteria for Evaluation, or the level of exceptional importance required by Criteria Consideration G to be considered eligible for listing in the NRHP.

Two buildings on the site were demolished by the private property owner in advance of the City moving forward with a purchase agreement and FEMA conducting a Section 106 review. However, documentation provided by the City indicates that the purchase price for the property includes the cost associated with the current owner's demolition of the buildings located on the southern portion of the site. Therefore these structures are subject to Section 106 review.

The Handler Motor Company Building that was located at 712 2nd Avenue SE was previously evaluated for listing in the NRHP by the City in consultation with the SHPO. The SHPO concurred with the surveyor's opinion that the building did not appear to be eligible for listing in the NRHP. The Barron Motor Supply and Bennett Tire and Battery Building that was located at 702-706 2nd Avenue SE had not been previously evaluated for eligibility for listing in the NRHP in advance of its demolition. FEMA has completed an Iowa Site Inventory Form for this structure, and concluded that the Barron Motor Supply and Bennett Tire and Battery Building was eligible for listing in the NRHP under Criteria A and C as a contributing resource to the NRHP eligible Automobile Row Historic District, located along Second Avenue SE, Cedar Rapids.

5.3.1 Archaeological Resources

5.3.1.1 Alternative 1: No Action

The No Action Alternative would not include any further demolition or construction activities at the original Central Fire Station or the relocation site, therefore no ground disturbing activities would

occur, and no archeological resources would be affected with the selection of the No Action Alternative.

5.3.1.2 Alternative 2: Proposed Action

The Proposed Action replaces the functions of the original Central Fire Station. The abandonment of the facility facilitates demolition; therefore the proposed action as defined will result in ground disturbing activities associated with the demolition of the original facility as well as demolition, site preparation and construction of the new facility. FEMA determined and the SHPO concurred that the site of the original Central Fire Station was previously profoundly disturbed by the construction of that facility and that no archaeological investigation or monitoring was required prior to demolition. FEMA has also determined and the SHPO concurred that the demolition of properties located within the block selected for relocation has been previously disturbed, and that the construction of the new facility is not likely to disturb more ground than was disturbed by the buildings on that site's original construction. Therefore FEMA will not require a Phase I Archaeological Survey in advance of the demolition or monitoring by a professional archeologist during the demolition and site preparation at the relocation site.

5.3.2 Historic Resources

5.3.2.1 Alternative 1: No Action

The No Action Alternative would result in no construction of the replacement facility or demolition of the original facility. Therefore the original Central Fire Station would not be demolished, and any demolition of the historic or non-historic properties located on the relocation site would not be performed in conjunction with the federal undertaking, therefore Section 106 review would not apply.

5.3.2.2 Alternative 2: Proposed Action

The Proposed Action will require the demolition of the Barron Motor Supply and Bennett Tire and Battery Building. FEMA has evaluated the Barron Motor Supply and Bennett Tire and Battery Building for listing in the NRHP. FEMA has determined and the SHPO concurred that the Barron Motor Supply and Bennett Tire and Battery Building is a contributing resource to the NRHP eligible Automobile Row Historic District and the district will be significantly impacted by the undertaking, however, as seven other contributing resources will remain within the district, FEMA has determined that the Automobile Row Historic District will not be compromised by the loss of this resource.

The Proposed Action, to relocate the function of the Central Fire Station to the site of the Barron Motor Supply and Bennett Tire and Battery Building, will require the demolition of a structure eligible for listing in the NRHP. The demolition of this facility means that the proposed action as defined will result in adverse effects to historic properties. FEMA has initiated the process to resolve adverse

effects to historic properties, resulting from the demolition of the Barron Motor Supply and Bennett Tire and Battery Building, by working with the SHPO, the City and all interested parties and the public to develop a Memorandum of Agreement (MOA) to stipulate measures required to mitigate the adverse effects. FEMA posted a public notice regarding this undertaking in the Cedar Rapids Gazette on August 22, 2011. FEMA presented this undertaking at the City of Cedar Rapids Historic Preservation Commission Meeting on August 25, 2011 and invited interested parties and the public to participate in the development of the MOA. A thirty-day comment period was open from August 21 through September 22, 2011 for FEMA to receive comments regarding the undertaking and suggested mitigation measures to be included in the development of an MOA. FEMA has taken into consideration the comments presented by the interested parties and the public and is currently in final development of an MOA. This MOA is anticipated to be executed concurrent with the public comment period for this EA. The resultant MOA and successful completion of the mitigation measures stipulated in the agreement is evidence of FEMA's compliance with its statutory responsibilities under section 106 of the NHPA.

5.4 Geology and Soils

The topography of the proposed Central Fire Station site slopes from 1st Avenue to 2nd Avenue and to the south corner of the parcel and it is located in a substantially developed area of Cedar Rapids. Because the proposed site is located within a highly developed portion of the City, soil classifications have not been compiled for the area and therefore are not available.

5.4.1 Alternative 1: No Action

The No-action Alternative would have no significant effect on geology or soils. This alternative would not involve any construction, improvements, or ground disturbance to the project area. Existing exposed ground would remain exposed and existing silt fencing would remain in place to minimize erosion from the site (see Appendix B, Photos 3-5).

5.4.2 Alternative 2: Proposed Action

The construction of the Central Fire Station would result in temporary disturbance of surface soils in the project area. Implementation of Best Management Practices (BMP) identified in a Storm Water Pollution Prevention Plan (SWPPP), as required by National Pollution Discharge Elimination System (NPDES) regulations, would minimize soil erosion and loss until construction is complete and the site is permanently stabilized. Therefore, the Proposed Action would have no significant impact to geology and soils. Non-structural BMP may utilize the minimization of disturbance, preservation of natural vegetation and re-vegetation of exposed slopes and soils to minimize erosion and to stabilize slopes. Structural erosion control BMP include the placement of mulch or grass and the covering of stockpiles. Structural sediment control BMP include silt fencing and sediment traps. The Applicant will

be required to coordinate with IDNR for any required NPDES permits as the project site is greater than 1 acre in size (also see 5.14 Coordination and Permitting). See 5.7 Hazardous Substances for additional discussion regarding potential soil contamination.

5.5 Radon

Radon is a naturally occurring radioactive gas that is produced by the decay of uranium found within soil, rocks, and groundwater. The U.S. Environmental Protection Agency (EPA) currently considers residential radon exposure at or above 4.0 pico Curies per liter (pCi/L) as a public health risk. The EPA created a map for each county in the U.S. which identifies 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).

5.5.1 Alternative 1: No Action

The No Action alternative would not involve any movement or excavation of soil and therefore there would be no potential for adverse effects caused by elevated concentrations of radon gas.

5.5.2 Alternative 2: Proposed Action

With the movement and excavation of the shallow soils associated with the construction of this facility there is a potential for encountering elevated concentrations of radon gas at the site and within the proposed building following construction. As the Central Fire Station will contain living quarters, the project design should incorporate Radon-resistant construction appropriate to the site, actual radon levels, and overall project design. 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 key concepts:

- Gas Permeable Layer – Usually a 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.

5.6 Land Use and Planning

The proposed location of the new Central Fire Station is the collection of parcels bound by 1st Avenue NE to the east, 2nd Avenue SE to the west, 8th Street SE to the north, and 7th Street SE to the south. This site consists of lots 1 through 10 plus the alley of Block 58 of the original town and now City of Cedar Rapids according to the legal land description. The block is currently vacant on one half and occupied on the other by a small used car business and surface parking. Land-use and zoning regulations are administered and enforced by the City of Cedar Rapids. The site is currently zoned C-4 which is designated as a Central Business Zone District under the City's zoning code and the blocks across 7th Street NE, opposite of the site are similarly zoned. The remaining blocks adjacent to the proposed site are zoned as C-3 defined as Regional Commercial Zone District (see Appendix A, Figure 8).

5.6.1 Alternative 1: No Action

The No-action Alternative would have no additional effect on land use and planning. This alternative would not involve any substantial construction. However continued occupation of temporary facilities may not be consistent with the City's zoning code and may not be consistent with the City's comprehensive plan goals for community service levels. This inconsistency would need to be addressed through the City's planning and zoning processes under the No Action Alternative.

5.6.2 Alternative 2: Proposed Action

Land required for the proposed action consists of one square block encompassing two acres that will be converted from commercial space to a public facility. The footprint of the proposed structure will occupy approximately one-quarter of the site (see 3.2 Alternative 2: Proposed Action) with the remainder of the site occupied by parking, drive-through access for the apparatus, and landscaping (see Appendix A, Figure 1). Changing the use of the parcel will require the site to be rezoned to apply the City's PUB Special Purpose Overlay District zone according to the City's standard zoning process. The PUB zone was established in the City's Zoning Code to designate land owned by governmental entities where the City designates the permitted uses of the land.

The relocation of the Central Fire Station to the proposed site appears consistent with the City's comprehensive plan and the target community service levels identified (Exhibit VII-5: Cedar Rapids' Growth Objectives and Impacts; Freilich et al, 1999). The Sasaki Neighborhood Plan identifies the site as being within the "reinvestment area" located at the edge of an area identified for business reinvestment (page 8 & 18; Sasaki, 2009).¹ The redevelopment of the proposed site as the Central

¹ Other planning documents were considered, but not included in the review for this Environmental Assessment. Such omitted resources include Sasaki's *City of Cedar Rapids Framework Plan for Reinvestment and Revitalization* (December

Fire Station will result in a more intensive land use on the site than the previous buildings and lots. Additional transportation-related planning is addressed in section 5.10 Transportation.

5.7 Hazardous Substances

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

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

In reviewing the IDNR’s Environmental Facilities geo-spatial data, FEMA identified several underground storage tanks (UST) and a leaking underground storage tank (LUST) in the vicinity of the proposed site. A former waste oil LUST (Leak # 8LTO41) was located at the north corner of the proposed site and any action from or required by the IDNR appears to have been concluded. Multiple additional sites are located within one-quarter mile of the proposed site, the majority located down-gradient from the site.

The City contracted with Terracon Consultants to perform an Environmental Site Assessment (ESA) in accordance with the ASTM Standard Practice E1527-05 to identify any Recognized Environmental Conditions (REC). The consultant’s report identifies several REC and recommends conducting additional investigation including soil and groundwater testing and proper abatement or removal of hazardous substances prior to building demolition.

The proposed project site was once the location of a filling station between 1947 and 1973 on the corner of 2nd Avenue and 7th Street with additional auto sales and service stations occupying the rest of the block historically. Adjacent properties were identified as having similar uses and while one facility has obtained a No Action Required classification, the ESA suggests that soil and/or groundwater contamination may exist. Terracon identified “an apparent benzene plume” in close

2008) and the Urban Land Institute’s *Cedar Rapids Iowa: Strategies for the Downtown, An Advisory Services Panel Report* (June 1-4, 2009) in favor of more comprehensive and / or more recent planning documents.

proximity to the proposed site in addition to the potential for vapor encroachment on the site (Terracon, 2011, Executive Summary).

5.7.1 Alternative 1: No Action

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

5.7.2 Alternative 2: Proposed Action

Construction of the proposed Central Fire Station will involve ground disturbance for the setting of footings and the structure's basement. FEMA anticipates limited soil contamination from the identified LUST as the IDNR database suggests that the leak was discovered during the tank's removal and was stopped. However, the City should coordinate with the Iowa Department of Natural Resources for any necessary permitting or guidance on the findings from Terracon's report prior to beginning work. See 5.5 Radon for additional discussion pertaining to encroachment of subsurface gases.

In the event that soil and/or groundwater contamination is discovered during construction activities, the IDNR should be contacted at Field Office #1 (563) 927-2640. Work within the sensitive area should not resume until IDNR personnel indicates no further assessment is needed of the discovery. The City must comply with local, state, and federal laws governing the removal and disposition of hazardous materials. The City is responsible for ensuring that all waste, including Asbestos Containing Materials (ACM) and lead paint, generated by the remaining demolition and construction activities proceeds according to applicable local, state and federal requirements.

5.8 Noise

As a result of the human health and welfare impacts of uncontrolled noise, the Noise Control Act was enacted in 1972; however EPA does not have regulatory authority governing noise in local communities. In 1982, the EPA shifted federal noise control policy and transferred the primary responsibility of regulating noise to state and local governments. The Noise Control Act of 1972 and the Quiet Communities Act of 1978 were not rescinded by Congress and remain in effect.

The term "noise" is considered unwanted or nuisance sound and is typically measured in decibels (dB). The day-night average sound level (Ldn) is the 24-hour average sound level, in dB, obtained after the addition of 10 dB to the sound levels occurring between 10 p.m. and 7 a.m. and is used by agencies for estimating sound impacts and establishing guidelines for compatible land uses. The U.S. Department of Housing and Urban Development (HUD) regulations set acceptable noise levels at 65 Ldn or less (24 CFR Part 51). The EPA identifies a 24-hour exposure level of 70 decibels (dB) as the level of environmental noise which will prevent any measurable hearing loss over a lifetime. Likewise,

levels of 55 dB outdoors and 45 dB indoors are identified as preventing activity interference and annoyance (e.g., spoken conversation, sleeping, working, recreation). The levels represent averages of acoustic energy over long periods of time such as 8 hours or 24 hours rather than single events. Table 5-3, below, presents some 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.

According to the Cedar Rapids Municipal Code 56.02, any noise measured over 65 dB at any time within a commercial district is prohibited; motor vehicles or combination of vehicles with gross weight rating of 10,000 pounds or more that produce noise measured at 90 dB are prohibited in speed zones of 35 MPH or less; and all other vehicles that produce noise at 80 dB are prohibited in the same areas. The City also prohibits “loud and raucous noise in the vicinity of any residence or hospital which causes unreasonable distress to the occupants thereof” (62.01, Code 2011).

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

Equipment	Typical Noise Level (dBA) at 50 ft. from Source¹	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

5.8.1 Alternative 1: No Action

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

5.8.2 Alternative 2: Proposed Action

The Proposed Action would result in short-term increases in noise levels in the vicinity of the project resulting from construction activities for approximately 18 months. The impacts of noise from construction activities will be limited to day-time hours according to City regulations. Construction noise is not expected to impact residential areas. As an emergency facility, the potential for long term increases in ambient noise are possible although incremental as the proposed site is located in the downtown district and along major corridors that are already used by emergency vehicles. Two hospitals are located within one-third of a mile from the proposed site.

Sensitive receptors are located in the area of the proposed Central Fire Station. The Carl & Mary Koehler History Center is located on the block southwest of the site, and the block northeast of the site contains the Iowa Masonic Library and Museum, the Grant Wood Studio and Visitor Center, and Cedar Memorial Grant Wood House mortuary, also known as the Douglas House. All of these sites are located within approximately 200 feet from the proposed project site. Traffic on 1st Avenue already generates a substantial amount of noise, especially at peak hours.

Best Management Practices to minimize noise impacts to the identified sensitive noise receptors are required as appropriate to the site. According to the Center for Environmental Excellence by the American Association of State Highway and Transportation Officials (AASHTO), BMPs for noise reduction include, but are not limited to the following (AASHTO 2009);

- Early and frequent communication with the public;
- Planning site access and staging to minimize or eliminate “back-up alarm” noise;
- Limiting equipment on site to only what is necessary;
- Using newer, “low-noise” models of equipment;

Using BMPs for construction noise reduction as applicable to the site is expected to minimize the short-term adverse impacts of the project. The long term impacts of emergency vehicles on these receptors may be mitigated by applying the City’s noise regulations and considering limitations on the use of sirens at the site. FEMA has determined that the proposed action is expected to have no significant long-term adverse impacts on the noise quality of the area.

5.9 Socioeconomic Considerations

Executive Order 12898, Environmental Justice

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

The data used for this Environmental Justice analysis was taken from the 2000 Census (U.S. Census Bureau, 2000) as the 2010 Decennial Census data is not sufficiently available for this analysis as of the time of this writing. The proposed project is located in Census Tract 19, Block Group 3 of Linn County which will be considered the project area for the purpose of socio-economic evaluation (Appendix A, Figure 9). As of the 2000 census, there were 120,758 people and 49,820 households residing in the City of Cedar Rapids. The proposed project area consists of 1,641 people and 877 households.

Compared to Cedar Rapids as a whole, this area has a significantly greater proportion of minority residents, exceeding the City’s proportion by nearly 20%. The proportion of the area population is white 72.35% followed by 12.39% African American and 11.13% Asian compared to the City’s proportions as a whole of 91.86%, 3.71%, and 1.77% respectively. Additionally, 2.09% of area residents report Hispanic or Latino heritage compared to the overall City proportion of 1.71%. The proposed project area has a greater proportion of residents over the age of 64 (21.6%) and a smaller proportion of residents under the age of 18 (13.9%) than the city as a whole, 13.1% and 24.5% respectively. The working-age population of the proposed project area is comparable to the city as a whole. Median age for Cedar Rapids is 34.7 while the median age of the proposed project area is older at 39.4. There are 877 households in the proposed project area with median household size of 3.21 compared to median size of 2.36 for Cedar Rapids as a whole.

Table 5-4: 2000 Total minority and below poverty level populations.

Geography	Minority Status (SF1 Data)			Poverty Status (SF3 Data)		
	Total	Minority Population	Percentage	Total	Population in Poverty	Percentage
Cedar Rapids	120,758	9,827	8.14%	117,240	8,843	7.54%
Project Area	1,671	462	27.65%	706	116	16.43%

Note: The difference between the total columns for Minority and Poverty status is due to Census methodologies between SF1 Data and SF3 Data. SF1 Data represents a 100% count whereas SF3 Data results from estimating methods for confidentiality protection.

Median household incomes within the project area are significantly lower than the city-wide median income. Block Group 3 encompassing the proposed site has a median income of \$29,677 compared to \$43,704. The population determined to be below the poverty threshold in the 2000 Census is significantly higher in the project area as defined at 16.43% compared to the City’s figure of 7.54%.

Table 5-5: Population Statistics 1980 through 2000

Jurisdiction	1980	1990	2000
Iowa	2,913,808	2,776,755	2,926,324
Linn County	169,775	168,767	191,701
City of Cedar Rapids	110,243	108,772	120,758

5.9.1 Alternative 1: No Action

The No-action Alternative would have no impact to the socioeconomics of the local area because no construction activity would occur in the short term. The effect of not consolidating the Central Fire functions may result in diminished services to the proposed project area and to the City as a whole in the long term. The results of diminished or compromised services may also compromise public health and safety and may incrementally increase response times in areas with higher proportions of minority and low income populations (see Appendix A, Figures 10-12).

5.9.2 Alternative 2: Proposed Action

Construction of the Central Fire Station under this alternative would result in a positive impact with an influx of construction workers needed for the approximately 18 months of construction activities. Construction personnel would provide short-term benefits to the local businesses, which would include the purchase of food, gas, and other services. The Proposed Action would not displace or adversely affect any nearby residents or minority populations during the construction phase. Thereby,

the relocation of the public services offered by the Central Fire Station is anticipated to be beneficial by centralizing and improving services to the area. The positive impacts are anticipated for the City as a whole and for area populations that may lack transportation options typically associated with household and personal income. The implementation of the proposed alternative would have little likelihood of having disproportionately negative impacts on any low-income or minority populations. The proposed action may in fact better serve areas with higher proportions of low income and minority populations though anticipated response times in the area between the existing Stations 3, 5, and 6 may be decreased (see Appendix A, Figures 12).

5.10 Transportation

The proposed project area is bounded by 1st Avenue NE to the east, 2nd Avenue SE to the west, 8th Street SE to the north, and 7th Street SE to the south. 1st Avenue is a Principal Arterial road and 2nd Avenue is a Minor Arterial while both 7th and 8th Streets are Collector roads. Arterial roads are typified by higher speeds, higher traffic volume, and more controlled access to and from driveways and parking lots than on Collector roads. In the Working Group's draft report, the site selection considerations include one way streets, suitability of the site for drive through design for apparatus ingress and egress, impacts to current traffic, and impacts to and from railroad crossings.

The Level of Service for the roads surrounding the proposed project site are classified as "uncongested" (Chapter 2: State of the Region; CMPO 2010) and are projected to remain so through 2040 (see Appendix A, Figure 13; CMPO 2010). 1st Avenue is considered a regionally significant corridor and was identified in the Sasaki plan as a roadway to target improvements for the entire length through the downtown area (page 10, Sasaki 2009). Some improvements between 19th Street to 27th Street are identified in the 2011-2014 Transportation Improvement Program with additional improvements at different locations identified for future funding. Interstate 380 through much of Cedar Rapids, except for a segment between 1st Street NW and 8th Avenue SE, is projected to become classified as congested by 2040 (CMPO 2010).

5.10.1 Alternative 1: No Action

With the No-action Alternative, the damaged Central Fire Station would not be relocated and the functions of the Station would remain distributed among the existing temporary locations. The current distribution of functions may have a minor to moderate negative impact on traffic and circulation in areas not planned to accommodate the higher level of emergency vehicle use. Further negative impacts due to distance from areas served impacts the Station's response time and has potential impacts to traffic and circulation throughout the City.

5.10.2 Alternative 2: Proposed Action

Under this alternative, the construction of the Central Fire Station at the proposed site would temporarily disrupt the traffic flow on the surrounding streets during the approximately 18 month construction period. Local traffic would need to slow down or stop to accommodate equipment, such as bulldozers, backhoes, and graders, used during construction. Lane closures and temporary access restrictions may be needed to permit equipment access, staging, and construction activities adjacent to the road to proceed. These restrictions are expected to be along 7th or 8th Streets primarily, though lane closures and slower-moving equipment along 1st and 2nd Avenues is possible. This activity would have a short-term effect on the level of service for the connecting roads during the construction period. This level of service would, however, be expected to return to a comparable level upon completion of the project and is anticipated to be partly mitigated by the urban street grid surrounding the site. The City should coordinate with the Corridor Metropolitan Planning Organization (CMPO) to identify ways to minimize short-term impacts during construction activities such as restrictions on heavy equipment accessing the site from 1st or 2nd Avenues during peak traffic periods.

Traffic from the more intense land use associated with the Central Fire Station may impact the level of service on the roads immediately surrounding the proposed location. Long term impacts to the transportation network resulting from the project may include the need for new traffic controls for emergency vehicles entering 1st Avenue. As 1st Avenue is part of State Highway 151, the City will need to coordinate with the Iowa Department of Transportation (IDOT) and CMPO for integration in long-term transportation planning activities and future road improvements. Comparable to pre-disaster conditions, emergency vehicles may impact Interstate 380 or A Avenue NE during periods of train traffic through town.

5.11 Water Resources

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

The U.S. Army Corps of Engineers (USACE) is responsible for permitting and enforcement functions dealing with building in U.S. waters and discharging dredged or fill material into U.S. waters. USACE regulations for building or working in navigable waters of the United States are authorized by the Rivers and Harbors Act of 1899. These regulations coincide with Section 404 of the Clean Water Act, which establishes the USACE permit program for discharging dredged or fill material. The regulations

are often used concurrently because building in navigable waters of the United States also constitutes discharging dredged or fill material into waters of the United States. In addition to regulating construction or work being done in navigable waters of the United States, USACE regulates discharging into wetlands through the Section 404 permit program (see section 5.11.1 Wetlands).

Additionally, Executive Order (EO) 11990 (Protection of Wetlands) requires federal agencies to avoid, to the extent possible, adverse impact of wetlands. EO 11988 requires the federal government to minimize the occupancy and modification to floodplains. Specifically, EO 11988 prohibits federal agencies from funding new construction in the 100-year floodplain, or 500-year floodplain for a critical facility (e.g. Hospital, Fire Station), unless there are no practical alternatives.

5.11.1 Wetlands

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

Activities disturbing jurisdictional wetlands require a permit from the USACE. Two types of authorization are available from the USACE for activities regulated under Section 404 of the Clean Water Act: general permits, which are issued for a specific category of similar activities and include nationwide permits defined in 33 CFR Part 30, and individual permits issued after review of the project, project alternative, and proposed mitigation. The 1987 *Corps of Engineers Wetlands Delineation Manual* provides methods for technical guidelines in identifying wetlands. The Corps manual requires the presence of all three parameters (greater than 50% dominance of hydrophytic vegetation, evidence of hydric soils, and presence of hydrologic indicators) for an area to be considered a wetland. Consistent with EO 11990, a review of the U.S Fish and Wildlife Service National Wetlands Inventory Map indicates no wetlands are located on the proposed project site.

5.11.1.1 Alternative 1: No Action

The No-action Alternative would not affect wetlands as the functions of the Central Fire Station would remain distributed among existing facilities. No construction activities would occur with the selection of the No-action Alternative.

5.11.1.2 Alternative 2: Proposed Action

A review of the National Wetlands Inventory Map and site visit performed in February 22, 2010 indicates that no wetlands are located on or near the proposed site. The Contractor should implement

best management practices to reduce or eliminate runoff impacts during proposed construction activities of the Proposed Action. The Applicant will be required to coordinate with IDNR for any required NPDES permits as the project site is greater than 1 acre in size in addition to preparing a SWPPP (also see 5.14 Coordination and Permitting).

5.11.2 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 (FIRMs) to identify the floodplains for the National Flood Insurance Program (NFIP). Linn County, Iowa is a participant in the NFIP. The Cedar Rapids Central Fire Station meets the definition of a “critical action” where “even a slight chance of flooding is too great” (44 CFR 9.4) and thus is considered against the 500-year floodplain.

5.11.2.1 Alternative 1: No Action

The No-action Alternative would not affect floodplains as the functions of the Central Fire Station would remain distributed among existing facilities. No construction activities would occur with the selection of the No-action Alternative.

5.11.2.2 Alternative 2: Proposed Action

Consistent with EO 11988, FIRMs were examined during the preparation of this EA. According to FIRM panel 19113C0410D, dated 4/5/2010, the proposed Central Fire Station is located in Zone X, outside the 100-year and 500-year floodplains (see Appendix A, Figures 14-15). Zone X consists of areas which may still have ponding and local drainage problems that do not warrant a detailed study or designation as a base floodplain. The construction of the new Central Fire Station should not affect base flood levels or flood values or characteristics; support occupancy or modification of floodplains; or directly or indirectly supports floodplain development.

FEMA’s procedures for implementing EO 11998 (44 CFR Part 9, Section 9.6) include an eight-step review process that decision-makers must use when considering projects that have potential impacts to or within a floodplain. However, the proposed new location for the Central Fire Station will not be within the 500-year floodplain and therefore an eight-step review process is not required.

5.12 Demolition

The parcels that comprise the Emerald Knights Site selected by the City for the proposed action was occupied by multiple structures, several demolished by the property owners in 2010. The previously demolished structures include the Barron Motor Supply and Bennett Tire and Battery Building and the Emerald Knights Drum & Bugle Corps building. As of a site visit conducted on October 21, 2011 the

site is still occupied by a CMU and metal building that was once Bob's Wholesale Auto, utility lines, parking lots, alley-way, and a retaining wall. Silt fencing and inlet protection associated with the prior demolitions are still in place for sediment and erosion control (see Appendix B, Photos 1-5).

5.12.1 Alternative 1: No Action

With the No Action Alternative, the damaged Central Fire Station would not be relocated and the remaining building on the proposed site would not be demolished.

5.12.2 Alternative 2: Proposed Action

The City of Cedar Rapids will demolish all structures, parking lot, and other appurtenances on the proposed project site prior to beginning construction on the proposed Central Fire Station. The demolition work must comply with all Federal, state, and local abatement and disposal requirements for materials containing asbestos, lead paint, and/or hazardous materials. See 5.7 Hazardous Substances for information on a previously identified LUST on the proposed site and consultant identified REC.

Iowa DNR requires that structures be tested for asbestos containing material prior to demolition. If testing is not conducted, all debris or demolition material must be disposed of as if it contained asbestos. IDNR requires at least 10 days notice prior to renovation, repairs, or demolition. Call 515-281-6175 for details or visit <http://www.iowaworkforce.org/labor/asbestos.htm>. The City will issue any required demolition permits to its selected contractors who will be required to abide by any associated conditions.

The 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.

5.13 Cumulative Impacts

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

5.13.1 Alternative 1: No Action

The No Action alternative would leave a critical function of the City in a compromised state as there would be no consolidated Central Fire Facility. In the long term the City of Cedar Rapids would be responsible for identifying and securing non-FEMA funds to relocate and consolidate the Central Fire functions. Disinvestment may increase in areas poorly served by emergency services and the cost of providing such services may also increase due to the inefficiency of decentralized core services.

5.13.2 Alternative 2: Proposed Action

Relocating the Central Fire Station to the proposed site may require some modifications to traffic controls to permit safe ingress and especially egress. Incorporation of such modifications may take place over time through regular transportation planning and capital improvement project implementation. If the heavily flood-impacted west side of the Cedar River continues to see redevelopment, the west side of the river may require additional emergency services while also seeing incrementally increased response times. As the proposed site is located in relatively close proximity to the existing Fire Station #3, also known as the Coe College Station, the Working Group has recommended that it also be relocated. While the relocation of Fire Station #3 is entirely a non-FEMA funded action, it is facilitated by the FEMA action to fund relocation of the Central Fire Station to the proposed site. The disposition of the flood-damaged facility located at 222 3rd St Northwest is not currently known however by relocating the Central Fire function to the proposed site, FEMA assumes that future demolition, in whole or in part, is reasonably foreseeable.

5.14 Coordination and Permits

Relocation of the Central Fire Station would require a building permit from the Cedar Rapids Building Department. In the event that archaeological deposits (soils, features, artifacts), or other remnants of human activity are uncovered, or if archaeological deposits are discovered during construction of the project, activities would cease in the immediate area, and the Iowa State Historic Preservation Office and the FEMA Regional Environmental Officer would be notified before work could continue (see 5.3 Cultural Resources). Work in sensitive areas cannot resume until a qualified archaeologist determines the extent of the discovery, consultations between SHSI and FEMA are complete, and the applicant has been notified by SHSI and FEMA.

Agency coordination and/or permits may be required before implementation of the Proposed Action Alternative. Cedar Rapids is required to obtain and comply with all required local, state, and federal permits. A SWPPP and General NPDES Permit are required as the project is expected to disturb 1 acre or more of soil (see 5.4 Geology and Soils). If soil contamination is discovered, the City is required to contact the Iowa Department of Natural Resources at Field Office #1 (563) 927-2640 and comply with all State environmental and EPA requirements. The City is required to coordinate with

the IDNR and comply with all local, state, and federal laws regarding proper removal and disposal of asbestos containing materials and lead paint (see 5.7 Hazardous Substances).

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 the City's standard processes. As the proposed project is located along State Highway 151 and major city corridors, the City is responsible for coordinating with the CMPO and possibly the IDOT as needed. The City should also coordinate with the CMPO to identify ways to minimize short-term impacts during construction activities such as restrictions on heavy equipment accessing the site from 1st or 2nd Avenues during peak traffic periods.

6. CONCLUSION

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

7. PARTIES CONSULTED AND REFERENCES

7.1 Parties Consulted

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7.2 References

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