

Draft Environmental Assessment
Newton County
Defensible Space Project
HMGP-DR-1999-0017

Newton County, Texas

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Federal Emergency Management Agency
Department of Homeland Security
500 C Street, SW
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This document was prepared by



with contributions from CH2M Hill.

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Acronyms and Abbreviations

APE	area of potential effect
AQCR	air quality control region
Atlas	Texas Archeological Sites Atlas
BMPs	best management practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DBH	diameter at breast height
DETEC	Deep East Texas Electric Cooperative, Inc
EA	environmental assessment
EIS	environmental impact statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	finding of no significant impact
FPPA	Farmland Protection Policy Act
GLO	Texas General Land Office
HMGP	Hazard Mitigation Grant Program
JNEC	Jasper-Newton Electric Cooperative
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

Acronyms and Abbreviations

P.L.	Public Law
SDPHT	Texas State Department of Highways and Public Transportation
SHPO	State Historic Preservation Officer
TCEQ	Texas Commission on Environmental Quality
TDEM	Texas Division of Emergency Management
THC	Texas Historical Commission
TPWD	Texas Parks and Wildlife Department
TxDOT	Texas Department of Transportation
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

SECTION 1 Introduction

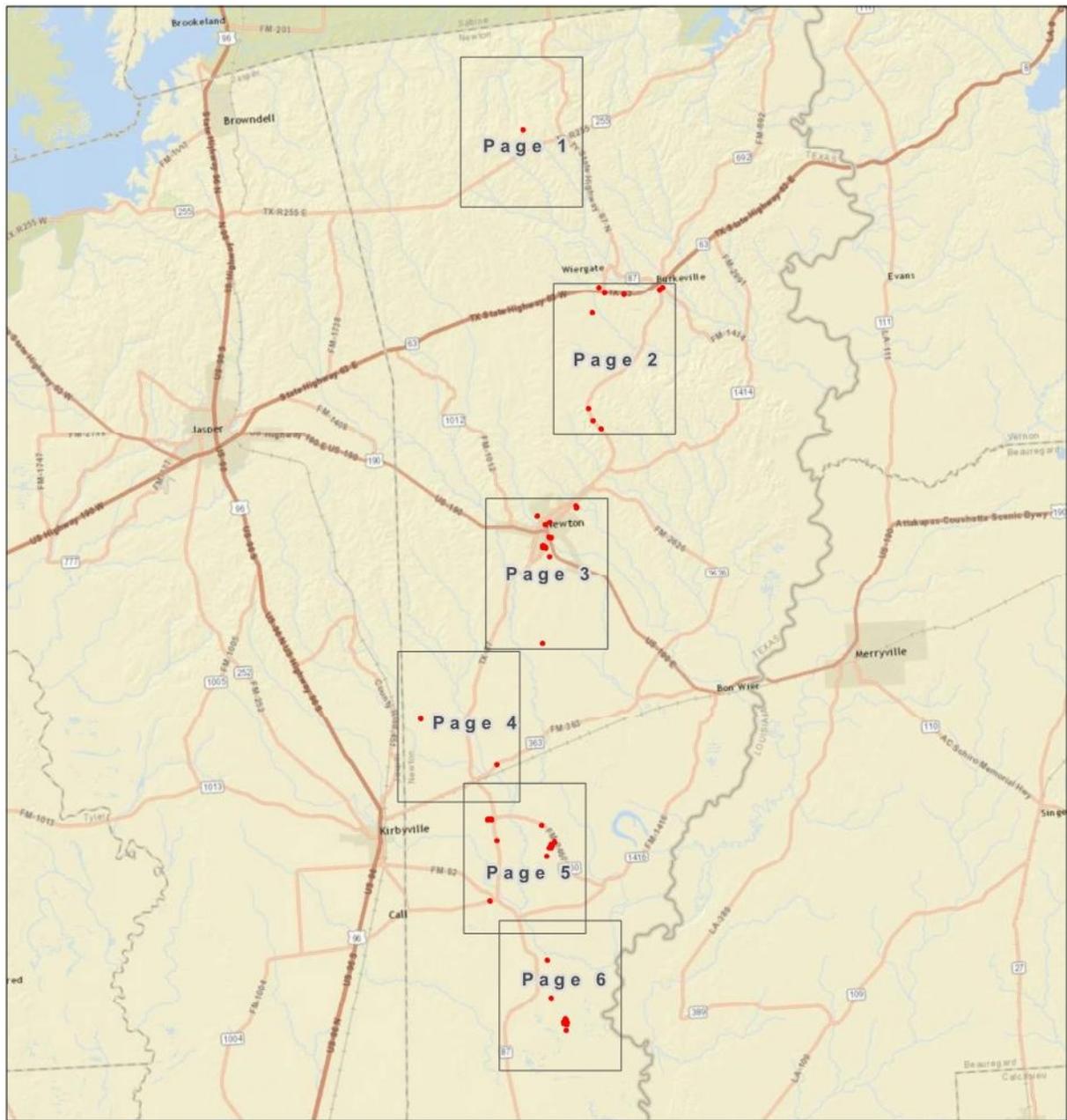
Newton County, Texas, proposes to conduct a defensible space project to clear and remove flammable fuels on 52 separate project areas to reduce wildfire hazards. The targeted land in Newton County represents a potential direct wildfire threat to nearby residences and infrastructure. Newton County has submitted an application to the Federal Emergency Management Agency (FEMA) through the Texas Division of Emergency Management (TDEM) for a grant under FEMA's Hazard Mitigation Grant Program (HMGP). TDEM is the direct applicant for the grant, and Newton County is the subapplicant. Defensible space mitigation projects are listed in Newton County's approved Hazardous Mitigation Action Plan and Community Wildfire Protection Plan.

The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Under the HMGP, federal funds pay 75 percent of the project cost, and the remaining 25 percent comes from nonfederal funding sources.

Newton County, located in east Texas along the Sabine River, is in one of the most densely forested regions of Texas. Beneath nearly continuous forest cover, dense underbrush is typical in both creek bottoms and upland areas. Thick stands of highly flammable pine plantation are interspersed throughout the county. Development patterns are typical for rural east Texas counties, with houses and communities situated in forested areas and open pastureland. Relatively high percentages of elderly, disabled, and low-income households reside in the project area. The proposed project would be conducted on 52 individual properties (through a voluntary participation program) in the Pineywoods region near the City of Newton, as shown on **Figure 1.1** and **Figure 1.2**. The combined proposed treatment area is approximately 120 acres (see **Appendix A-1** for treatment unit maps and **Appendix A-2** for project area aerial photography maps).

Defensible space work would involve removal of flammable materials, particularly vegetation, in proximity to a residential or nonresidential structure. Three concentric zones would be created around each structure. In zone 1 (0 to 30 feet from the structure), all combustible material would be eliminated. In zone 2 (30 to 100 feet from the structure), all combustible materials would be eliminated with the exception of individual and well-spaced clumps of trees and shrubs and/or a few islands of vegetation that are surrounded by areas with noncombustible materials. In zone 3 (more than 100 feet to a maximum of 150 feet from the structure) vegetation would be thinned and pruned horizontally and vertically in a more limited manner than zone 2 to improve the health of the wildlands and help slow an approaching wildfire.

This environmental assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and FEMA's regulations implementing NEPA (44 CFR Part 10). FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this draft EA is to analyze the potential environmental impacts of the proposed Newton County defensible space project. FEMA will use the findings in this draft EA to determine whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI).



Newton County Defensible Space

Newton County, TX

NOTE: Page numbers refer to project work area maps located in Appendix A-1 and Appendix A-2

Legend

 Work Area



0 15,000 30,000 Feet

Project Area

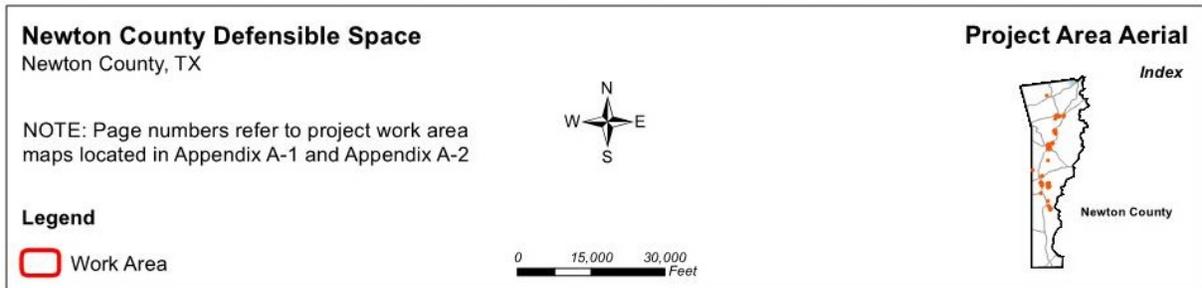
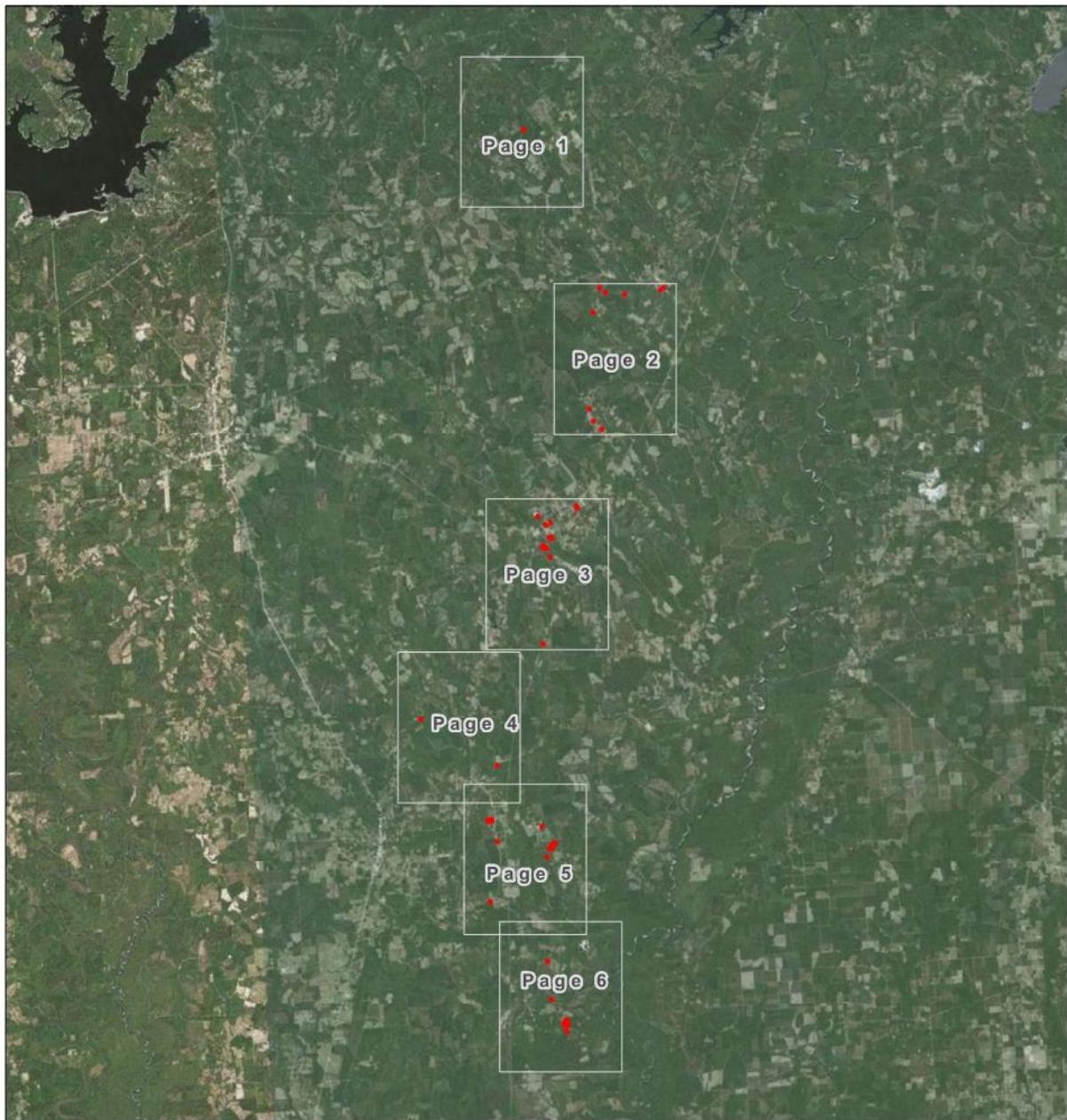
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Newton County

Data Sources: CH2M Hill, CDM Smith
 Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom.

Figure 1.1. Project Location



Data Sources: CH2M Hill, CDM Smith
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP,

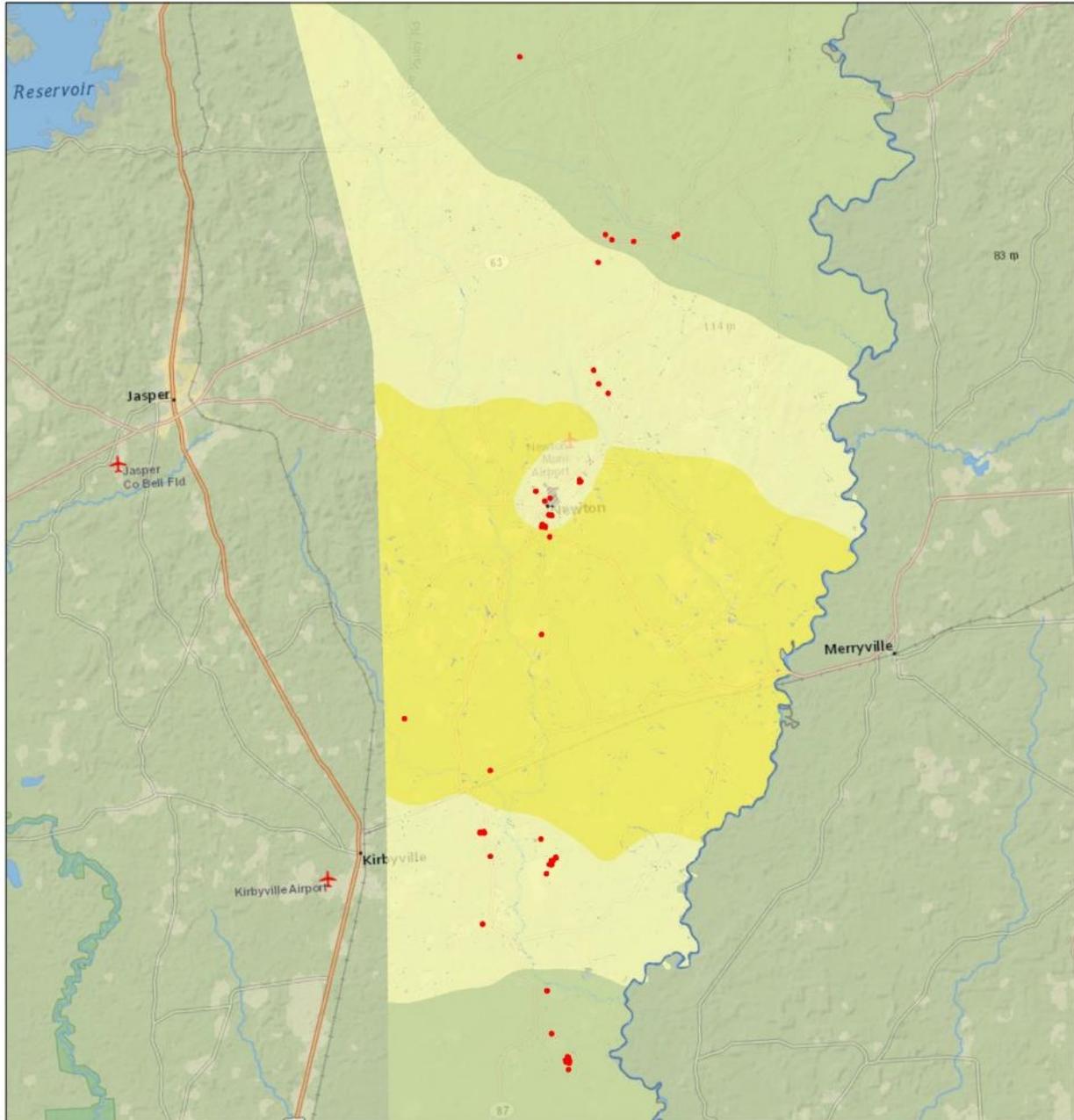
Figure 1.2. Project Areas With Aerial Imagery

SECTION 2 Purpose and Need

FEMA's HMGP provides funds to state and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable risk mitigation measures to be implemented during the immediate recovery from a declared disaster.

The purpose of the proposed defensible space project is to reduce potential wildfire hazards around residential and nonresidential structures in Newton County. Wildfire is a well-recognized hazard in Newton County. Between 2005 and 2009, an average of 71 wildfires occurred per year, with 930 acres burned per year (Texas Forest Service, Volunteer Fire Department wildfire reporting data). According to available data, in the last 10 years, approximately 1 out of every 200 homes has been destroyed by wildfire. Local fire department officials estimate 40 homes in Newton County have been destroyed or severely damaged by wildfire in the last 10 years, an average of four per year, amounting to an estimated \$450,000 in structure and contents losses per year.

The Texas Wildfire Risk Assessment rated the project area as generally 2 (low to moderate) to 4 (moderate to high) on the threat of a wildfire (see **Figure 2.1**) (Texas A&M Forest Service 2014).



Newton County Defensible Space

Newton County, TX

Legend

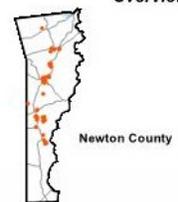
- Work Area
- Wildfire Threat**
- 1 (Low)
- 2
- 3 (Moderate)
- 4
- 5 (High)
- 6
- 7 (Very High)



0 10,000 20,000 Feet

Wildfire Threat

Overview



Data Sources: CH2M Hill, CDM Smith
 Service Layer Credits: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Figure 2.1. Wildfire Threat

SECTION 3 Alternatives

This section describes the alternatives considered, including the proposed action.

3.1 No Action Alternative

The no action alternative is included to describe potential future conditions if no action is taken to reduce wildfire hazards around structures. Under the no action alternative, no work would be conducted to reduce hazardous fuels on the project areas. Residents and homes would remain at an elevated risk in the case of a wildfire.

Because existing wildfire hazards in the area would not be reduced under the no action alternative, the probability of loss of human life and property in a wildfire would continue to be unacceptably high. Protecting structures at risk during a wildfire due to dense vegetation close to the structure may draw fire fighting resources away from efforts that could be more strategically focused on containing and extinguishing a wildfire.

Under the no action alternative, minor short-term impacts that may occur under the proposed project would be avoided because there would be no work conducted to remove hazardous fuels. The impacts avoided would include temporary increases in noise, truck traffic, and minor short-term impacts to air quality. For the reasons described in this section, the no action alternative would not meet the purpose and need of the proposed project.

3.2 Proposed Action

Newton County proposes to implement a defensible space wildfire mitigation program to reduce potential wildfire hazards. The proposed action would be conducted on 52 project areas through a voluntary agreement program with each individual property owner.

Defensible space is defined as an area that is either natural or manmade, where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire-suppression operations to occur.

The project would involve removal of flammable materials, particularly vegetation, to create a perimeter around residential and nonresidential structures. Three concentric zones would be created around each structure. Zone 1, the zone closest to the structure, would receive the highest level of fuel reduction with progressively less reduction in zones 2 and 3. The details are as follows:

- In zone 1 (0 to 30 feet from the structure), all combustible material would be eliminated including fire-prone vegetation, firewood stacks, etc. Combustible litter on roofs and gutters and tree branches that overhang the roof and chimney would be removed.
- In zone 2 (30 to 100 feet from the structure), all combustible materials would be eliminated with the exception of individual and well-spaced clumps of trees and shrubs and/or a few islands of vegetation that are surrounded by areas with noncombustible materials.

- In zone 3 (more than 100 feet to a maximum of 150 feet from the structure) vegetation would be thinned and pruned horizontally and vertically in a more limited manner than zone 2 to improve the health of the wildlands and help slow an approaching wildfire.

To prevent the horizontal spread of wildfire, crowns of trees and shrubs would be thinned so as not to intersect with each other, creating space between individual trees and shrubs. To prevent the vertical spread of wildfire, the lowest tree branches would be pruned and trimmed to create vertical separation between the tops of shrubs and grasses and the lowest tree branches. Vertical separation distance would vary depending on the species of tree and composition of the understory. Cut material would be chipped and hauled from sites daily. Work at each site would generate two truck trips per day.

No herbicides would be used during project implementation or maintenance. Project sites would be accessed on foot and by machine; work would be conducted using hand tools and gasoline and diesel-fueled power equipment. No trees larger than 10 inches diameter at breast height (DBH) are proposed to be removed. Smaller diameter trees would be cut to ground level with the subsurface root system left in place.

Soils would be protected and erosion controlled by the following measures: 1) contractors would be instructed to stop work when rainfall occurs; 2) vegetation would be cut to the ground surface only, leaving root structures intact; and 3) silt fences would be used at project sites as necessary.

Pine plantation, tallow trees, and yaupon shrub would be the primary species removed. Rare plant species, large trees, high value habitat, and/or aesthetically valuable specimens would be retained. Invasive species would be controlled by removing cut material to suitable offsite disposal locations and instructing contractors on methods to avoid spreading invasive seeds while work is being conducted.

Defensible space work would only be conducted on properties and facilities: 1) whose owners have requested the work and have signed a maintenance agreement, 2) that have vegetation and fuels that constitute a hazardous condition within a 100-foot perimeter of structures, and 3) that do not have potential for adverse historic or environmental impacts.

Each property owner would agree to maintain the cleared areas as follows:

- Maintain the area within 50 feet of the dwelling or structure (defensible space area) to prevent or suppress growth of flammable vegetation
- Prune tree crowns within the defensible space area to remove limbs within 6 feet of the ground surface
- Regularly remove limbs, pine straw, tall grass and other ground fuels from under and around trees

Fuel reduction activities would take place during the non-breeding season of the year for birds, from September through February. The work would be completed over a two-year span. No herbicides would be used during implementation or maintenance.

3.3 Additional Action Alternative Considered and Dismissed

An alternative to the proposed action considered was a public education program aimed at preventing or limiting human-caused fires. This alternative was rejected because it was concluded that the benefits of a public education program could also be achieved by the proposed action. Furthermore, because the alternative would not measurably reduce wildfire risk factors by reducing hazardous fuels near structures, the project area would continue to be at an elevated risk for the loss of structures from wildfire, and the probability of loss of human life and property would continue to unacceptably high. Thus, this alternative would not meet the purpose and need of the proposed project and was dismissed from further consideration in this EA.

Another action alternative considered was to install additional dry hydrants in the county to improve access to water at remote locations. While worthy of pursuit in the future, under this alternative, the project area would continue to be at an elevated risk for the loss of structures due to wildfire, and the probability of loss of human life and property would continue to unacceptably high. Thus, this alternative would not meet the purpose and need of the proposed project and was dismissed from further consideration in this EA.

SECTION 4 Affected Environment, Potential Impacts, and Mitigation

This section describes the environment potentially affected by the no action and proposed action alternatives, evaluates potential environmental impacts, and recommends measures to avoid or reduce those impacts.

4.1 Resources Not Affected and Not Considered Further

This section provides an overview of the environmental resources that would not be affected by the no action or proposed action alternatives and have been eliminated from further consideration in this EA.

4.1.1. Geology and Seismicity

Based on the nature and location of the project area, the proposed action would have no effect on seismicity and is very unlikely to be affected by seismic events. Seismicity is not considered further in this analysis. The creation of defensible space involves vegetation management, which is a surface activity that does not affect geology and is not affected by geology. Therefore, geology and seismicity are not considered further in this analysis.

4.1.2 Wild and Scenic Rivers

The National Wild and Scenic Rivers System (Public Law [P.L.] 90-542; 16 United States Code [U.S.C.] 1271 et seq.) was created in 1968 to preserve rivers with outstanding natural, cultural, and recreational value in a free-flowing condition. The project area is not located near any river segment designated as "wild and scenic." The Rio Grande, located along the Texas border, is the only wild and scenic river in Texas. The proposed project would not cause any impacts to wild and scenic rivers because the project site is not located within the Rio Grande watershed (see **Appendix C-1**) (Interagency Wild and Scenic Rivers Council 2014). Wild and scenic rivers are not considered further in this analysis.

4.1.3 Coastal Resources

The Coastal Zone Management Act enables coastal states to designate state coastal zone boundaries and develop coastal management programs to improve protection of sensitive shoreline resources and guide sustainable use of coastal areas. The Texas Coastal Management Program is administered by the Texas General Land Office (GLO). Newton County is not a coastal county and is approximately 72 miles from the nearest coastline; therefore, it is not included as part of the Texas Coastal Management Program (GLO 2014). There would be no potential impacts to coastal resources under either the no action or the proposed action alternative. Coastal resources are not considered further in this analysis.

4.2 Physical Resources

This section provides an overview of the affected area and potential environmental effects of the no action and proposed action alternatives on physical resources, including soils, air quality, climate change, and visual resources.

4.2.1 Soils

The project area includes 52 properties within Newton County. There are a total of 19 soil units in the proposed project area. The properties of these soils are described in more detail in **Table 4.1** (U.S. Department of Agriculture [USDA], National Resources Conservation Service [NRCS] 2015). A full soil survey for the project area is shown in **Appendix B-1** (USDA, NRCS 2015).

Five out of the 19 soils types within the project areas are hydric, which means they may support wetlands (see also **Section 4.3.2**).

Topography in the proposed project area is depicted in **Appendix B-2**. Elevations in the project area range from approximately 50 feet to 550 feet. However, because the project work areas are small, the topographic range across any one work area tends to be less than about 20 feet. The topography ranges from very flat in some areas to relatively hilly.

Table 4.1. Soil Types in the Project Area

Soil Type	Depth	Drainage	Permeability	Parent Material	Slope	Depth to Water Table	Hydric Soils (Yes or No?) *
Bienville-Alaga association (BiB)	0 to 80 inches	Somewhat excessively drained	Moderately rapid to rapid	Sandy alluvium	0 to 5 percent	More than 60 inches	Yes
Burkeville clay (BuD)	0 to 65 inches	Somewhat poorly drained	Very slow	Clayey residuum weathered from calcareous sandstone	3 to 12 percent	None within the soil profile	No
Doucette-Boykin association (DUB)	0 to 80 inches	Well drained	Moderate	Loamy residuum weathered from sandstone and shale	1 to 8 percent	None within the soil profile	No
Luka soils (lu)	0 to 64 inches	Moderately well drained	Moderate	Loamy alluvium	0 to 2 percent	More than 24 inches	No
Kirbyville-Waller association (KWB)	0 to 75 inches	Somewhat poorly drained	Moderate		0 to 4 percent		No
Letney-Tehran association (LTC)	0 to 70 inches	Well drained & excessively drained	Moderately rapid	Loamy residuum weathered from sandstone	1 to 8 percent	None within the soil profile	No
Malbis-Kirbyville association (MKB)	0 to 65 inches	Moderately well drained & Somewhat poorly drained	Moderately slow & moderate		1 to 5 percent		No

Affected Environment, Potential Impacts, and Mitigation

Soil Type	Depth	Drainage	Permeability	Parent Material	Slope	Depth to Water Table	Hydric Soils (Yes or No?) *
Malbis fine sandy loam (MaB)	0 to 72 inches	Moderately well drained	Moderately slow		1 to 5 percent		No
Mantachie and Bleakwood soils (Mn)	0 to 60 inches	Poorly drained	Moderate	Loamy alluvium	0 to 2 percent	9 to 15 inches	Yes
Melhomes soils (Mo)	0 to 65 inches	Poorly drained	Rapid	Sandy residuum weathered from sandstone and shale	0 to 5 percent	0 to 12 inches	Yes
Newco-Urland association, hilly (NEE)	0 to 65 inches	Moderately well drained	Slow	Clayey residuum weathered from sandstone and shale	5 to 20 percent	None within the soil profile	No
Pinetucky-Doucette association (PIC)	0 to 80 inches	Moderately well drained	Moderately slow	Loamy residuum weathered from sandstone and shale	1 to 8 percent	None within the soil profile	No
Redco-Woodville association (REB)	0 to 65 inches	Somewhat poorly drained	Very slow	Clayey residuum weathered from sandstone and shale	0 to 5 percent	None within the soil profile	No
Shankler-Boykin association (SBE)	0 to 80 inches	Well drained to somewhat excessively drained	Moderate	Loamy residuum weathered from sandstone and shale	8 to 20 percent	None within the soil profile	No
Spurger-Mollville association (SMB)	0 to 80 inches	Moderately well drained & poorly drained	Slow		0 to 3 percent	0 to 12 inches	No
Tehran-Letney association (TLE)	0 to 70 inches	Somewhat excessively drained & well drained	Moderately rapid	Loamy residuum weathered from sandstone and shale	8 to 20 percent	None within the soil profile	Yes
Urbo and Mantachie soils (Um)	0 to 72 inches	Somewhat poorly drained	Very slow & moderate	Clayey alluvium	0 to 1 percent	15 to 18 inches	Yes
Water (W)							No
Woodville-Redco association (WTB)	0 to 72 inches	Moderately well drained & somewhat poorly drained	Very slow	Clayey residuum weathered from sandstone and shale	0 to 5 percent	None within the soil profile	No

No Action Alternative

The no action alternative would have no effect on soils because no project-related disturbances would occur. However, a wildfire would be more likely to burn the project areas under the no action alternative, and subsequent reconstruction of structures could result in soil disturbance. These primary impacts from a wildfire can also result in decreased infiltration and increased runoff, which often causes increased erosion.

Proposed Action

The proposed project would not result in significant soil or geologic disturbance and is not expected to change the grade of the soils present. The proposed creation of defensible space would not result in any significant soil and sediment removal or transport from the project sites. The proposed action would not remove stumps of cut trees, and removal of debris and brush and tree limbing would not result in significant soil disturbance. Elevation changes within the proposed work areas are not significant; therefore, erosion of soils would not be likely with the minor soil disturbance that would occur from the proposed activities. No adverse impacts to soils are anticipated under the proposed action.

4.2.2. Prime and Unique Farmlands

Prime and unique farmlands are protected under the Farmland Protection Policy Act (FPPA) (P.L. 97-98, 7 U.S.C. §4201, July 5, 1984). The FPPA applies to prime and unique farmlands and those that are of state and local importance. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. The land could be cropland, pastureland, rangeland, forestland, or other land but not urban built-up land or water (USDA 1984).

Per the USDA, NRCS 7 CFR 658.2(a) (2000), several properties in the southern part of the county are located on sites designated as prime farmland and prime farmlands if drained; therefore, the sites listed in **Table 4.2** below would be subject to the FPPA. Prime farmland is designated on 26.48 acres and prime farmland if drained is designated on 9.13 acres for a total of 35.60 acres in the project area (**Table 4.2**).

Table 4.2. Farmland Soils Within Project Areas

Project Area No.	Area Designated as Prime Farmland (acres)	Area Designated as Prime Farmland if Drained (acres)	Total
2	2.49	--	2.49
4	2.34	--	2.34
12	2.53	--	2.53
13	--	2.22	2.22
14	2.25	--	2.25
20	--	0.03	0.03
28	2.40	0.27	2.66
29	2.37	--	2.37
35	--	2.16	2.16
44	1.74	--	1.74
45	1.56	--	1.56
48	2.50	--	2.50
26, 49	--	0.31	0.31
3, 1	2.60	--	2.60

Affected Environment, Potential Impacts, and Mitigation

Project Area No.	Area Designated as Prime Farmland (acres)	Area Designated as Prime Farmland if Drained (acres)	Total
31, 40, 41	--	1.77	1.77
5, 30, 46	3.69	--	3.69
6, 7	--	2.37	2.37
Total	26.48	9.13	35.60

Note: Totals may vary due to rounding.

No Action Alternative

The no action alternative would have no effect on the use of properties for farmland because no project-related disturbances would occur.

Proposed Action

As shown in **Table 4.2**, approximately 35.6 acres of the project area are designated as prime farmland. Although the project areas listed in **Table 4.2** would be subject to the FPPA, no development would occur on these project areas under the proposed action. As discussed in **Section 4.2.1**, the proposed project would not result in significant soil disturbance and is not expected to change the grade of the soils present. The proposed creation of defensible space would not result in any significant soil and sediment removal or transport from the sites. Because all of the work would be completed within 150 feet of existing structures there would be no direct or indirect effects on farmland. The land would not be converted to any use that would prevent its use as cropland (beyond what has already occurred with respect to the existing residential development). The project would not induce growth, which could affect farmlands. No adverse impacts on soils or farmland are anticipated under the proposed action.

4.2.3 Air Quality

The Clean Air Act (CAA; 42 U.S.C. 7401 et seq.), provides the basis for regulating air emissions. Air quality control regions (AQCRs) have been created under the CAA. The U.S. Environmental Protection Agency (EPA) classifies air quality within each AQCR according to whether the concentrations of certain pollutants called criteria air pollutants exceed National Ambient Air Quality Standards (NAAQS).

The proposed project area is within Newton County. EPA designates this region as being in attainment of all NAAQS (EPA 2014).

No Action Alternative

No impacts would occur under the no action alternative because current air quality would not change. No changes would occur that would affect air emissions. However, a wildfire would be more likely to burn the project areas under the no action alternative, and subsequent reconstruction of structures would cause pollutant emissions.

Proposed Action

Air quality impacts associated with the proposed action would be localized and temporary; occurring over a period of 2 years during implementation of the defensible space project. During project implementation, the equipment used would include a chainsaw, chipper, and trucks with trailers to haul equipment and debris. The equipment would burn hydrocarbon fuels.

Under the proposed action, the use of equipment to remove vegetation could result in low levels of particulate matter and vehicle exhaust emissions, such as hydrocarbons. Emissions would be temporary and localized, and only minor impacts on air quality in the project area would occur. To reduce emissions, labor crews would keep all vehicle and mechanical equipment running times to a minimum and ensure that all engines are properly maintained. Overall, the proposed project would not have a significant impact on air quality. Post-project maintenance would be conducted annually and as needed and is not expected to have a significant impact on air quality. The proposed action has the potential for a beneficial effect on air quality in the project area by reducing the potential for the burning of the project areas during a wildfire.

4.2.4 Climate Change

“Climate change” refers to changes in Earth’s climate caused by a general warming of the atmosphere. Its primary cause is emissions of carbon dioxide and methane. The impact climate change may have on the proposed project area is uncertain and difficult to anticipate. Climate change is capable of affecting species distribution, temperature fluctuations, sea level dynamics, and weather patterns.

No Action Alternative

The no action alternative would have no effect on climate change, as current conditions would not change. A wildfire would be more likely to burn the project areas under the no action alternative, releasing greenhouse gases that could contribute to climate change. Equipment used in subsequent reconstruction of burnt structures would cause greenhouse gases to be released that could contribute to climate change.

Proposed Action

Because of the relatively small scale and short duration of the proposed action, the contribution to climate change would be minor. The proposed action would also reduce the potential emission of greenhouse gases associated with the burning of the project areas during a wildfire. The proposed action is not anticipated to affect global climate change.

4.2.5 Visual Quality and Aesthetics

The project area is a series of defensible space actions on 52 separate project areas. Many of the structures on these project areas are completely or partially surrounded by densely vegetated trees and understory brush while other properties include a mix of vegetation including non-maintained residential, maintained lawn, residential mixed forest, mixed shrubland, pine plantation, mixed forest, and pine shrubland habitat types. The majority of the project area is dominated by a mix of pine/hardwood forest. Each project area is in a rural area with low density

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residential development. The proposed work zones would be visible to residents of each property and in some cases the work zone would be visible to residences near the defensible space zone. To a limited extent, the defensible space actions would be visible to the public traveling on public roads in the area. **Figures 4.1 through 4.7** depict the existing visual conditions in the project area as well as some of the vegetation types present.



Figure 4.1. Non-maintained Residential



Figure 4.2. Maintained Lawn



Figure 4.3. Residential Lot, Mixed Forest



Figure 4.4. Pine Shrubland



Figure 4.5. Mixed Shrubland



Figure 4.6. Mixed Forest



Figure 4.7. Pine Plantation

No Action Alternative

There would be no impact on visual quality and aesthetics under the no action alternative, as current conditions would not change. A wildfire would be more likely to burn the project areas under the no action alternative and would have negative visual effects immediately after the fire for both nearby landowners and the public that live in the area.

Proposed Action

The proposed action would implement a defensible space wildfire mitigation program to reduce potential wildfire hazards on 52 project areas through a voluntary agreement program with each individual property owner. This work would involve removal of flammable materials, particularly vegetation, in proximity of a residential or nonresidential structure. Three concentric zones, from 0 to 150 feet, would be created around each structure. Zone 1, the zone closest to the structure, would receive the highest level of fuel reduction with progressively less reduction in zones 2 and 3. The proposed project would result in some changes to visual aesthetics of the area.

The proposed work would open up some views from each project area into the surrounding areas; however, all work would be conducted with the agreement of the property owners. The proposed work would not significantly alter the visual contrast of the landscape setting around the structures. The natural vegetation close to most of the structures has already been altered through conversion to lawns and landscape plants and limbing and understory removal to open up views close to residences or institutional structures. Defensible space work around structures

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would have the potential for some impacts to visual quality and aesthetics in the form of reduced privacy screening.

To prevent the horizontal spread of wildfire, crowns of trees and shrubs would be thinned so as not to intersect with each other, creating space between individual trees and shrubs. To prevent the vertical spread of wildfire, the lowest tree branches would be pruned and trimmed to create vertical separation between the tops of shrubs and grasses and the lowest tree branches. Vertical separation distance would vary depending on the species of tree and composition of the understory. Cut material would be chipped and hauled from work sites daily. No trees larger than 10 inches DBH are proposed to be removed. Smaller diameter trees would be cut to ground level with the subsurface root system left in place. Pine plantation, tallow trees, and yaupon shrubs would be the focus for removal. Rare, large, high value habitat features or aesthetically valuable specimens would be retained.

Each property owner would agree to maintain the cleared areas as follows:

- Maintain the area within 50 feet of the dwelling or structure (defensible space area) to prevent or suppress growth of flammable vegetation
- Prune tree crowns within the defensible space area to remove limbs within 6 feet of the ground surface
- Regularly remove limbs, pine straw, tall grass, and other ground fuels from under and around trees.

Under the proposed action, wildfire hazards would be reduced, and the potential for significant visual alteration due to the burning of the project areas during a wildfire would also be reduced.

4.3 Water Resources

This section provides an overview of the affected area and potential environmental effects of the no action and proposed action alternatives on water resources, including water quality, streams, wetlands, and floodplains.

4.3.1 Water Quality

The water quality effects analysis includes both surface water and groundwater resources.

4.3.1.1 Surface Water

Sections 303(d) and 305(b) of the Clean Water Act (CWA) require all states to identify and characterize waters that do not meet, or are not expected to meet, water quality standards (U.S.C. 1313(d) and 1315(b)). The Texas Commission on Environmental Quality (TCEQ) is the regulatory agency responsible for compliance with water quality standards in Texas. The TCEQ's 2012 Integrated Report for CWA Sections 303(d) and 305(b) characterize the quality of Texas surface waters and identify those waters that do not meet water quality standards on the 303(d) list, an inventory of impaired waters (TCEQ 2015). Streams are classified by segment within their respective basin.

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All but one of the 52 proposed project areas are more than 300 feet from surface water features. In one instance (project area 38) work is proposed adjacent to Hackberry Branch. **Figure 4.8** shows surface waters within Newton County. The detail pages referenced on **Figure 4.8** are found in **Appendix C-3**.

No Action Alternative

There would be no impact on surface water under the no action alternative because current conditions would remain the same and the inputs to receiving waters would not change. In the event of a wildfire, the project areas would be more likely to burn, which could have minor impacts on surface water quality resulting from debris, increased sediment and a loss of vegetation cover that filters pollutants. Subsequent reconstruction of structures would slightly reduce vegetation cover, which would have minor effects on flooding potential, soil erosion and sedimentation, pollution from substances no longer filtered by riparian vegetation, and changes in water temperature.

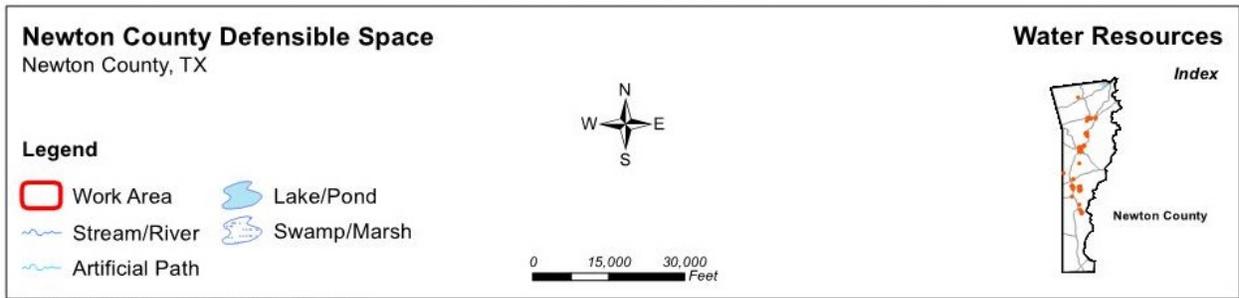
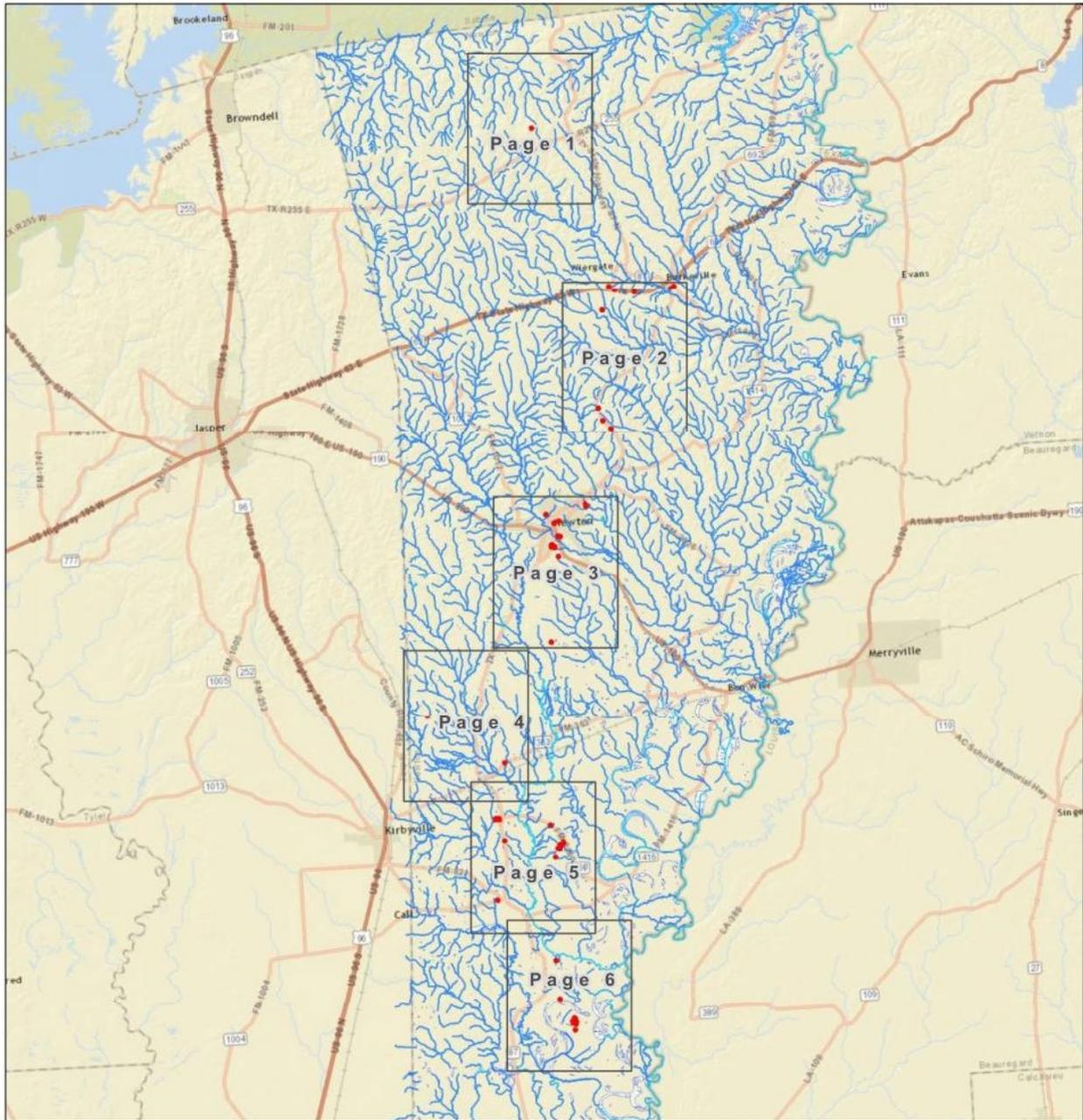
Proposed Action

The proposed action is located more than 300 feet from surface waters in all but one instance. For 51 of the 52 locations there would be no effect on surface water. At one location, project area 38, there could be temporary minor adverse impacts to nearby surface waters for a period of several weeks within the 2 year project duration from potential erosion and sedimentation. The proposed action would minimize ground disturbance by not removing the stumps of trees, but operation of heavy equipment during the work would disturb soil, which could increase erosion potential during heavy rains. Best management practices (BMPs) would be implemented to minimize transport of sediment to nearby creeks and streams. Mulch created from cut vegetation would be used for temporary erosion control to prevent soil or sediment from reaching the waterways. Appropriate barriers would be used to prevent mulch from being washed into the creeks. With the implementation of these BMPs, the effect on water quality would not be significant. In addition, the proposed work would not introduce new impervious surfaces or activities that could affect surface water quality. Therefore, effects on water quality would not be significant.

4.3.1.2 Groundwater

The major aquifer underlying the proposed project area is the Gulf Coast Aquifer. The Gulf Coast Aquifer is a major aquifer that parallels the coastline along the Gulf of Mexico. The aquifer is composed of discontinuous sand, silt, clay, and gravel beds. Water quality in the Gulf Coast Aquifer varies with depth and location and the water quality generally declines towards the coastline (Texas Water Development Board 2015).

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Data Sources: CH2M Hill, CDM Smith, USDA NRCS SSURGO
 Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom.

Figure 4.8. Project Area Water Resources

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The sole source aquifer protection program is authorized by section 1424 of the Safe Drinking Water Act of 1974 (U.S.C. 300 et seq.). EPA defines a sole source aquifer as an aquifer that supplies at least 50 percent of the drinking water for the area overlying the aquifer. Texas only has one sole source, the Edwards Aquifer. Newton County is not located on Edwards Aquifer contributing zones; therefore, the proposed work would not impact sole source aquifers (EPA 2008). There is a sole source aquifer adjacent to Newton County in Louisiana (the Chicot Aquifer), but the aquifers under Newton County have not been designated by EPA as sole source aquifers. Sole source aquifers near Newton County are shown in **Appendix C-2**.

No Action Alternative

The no action alternative would have no impact on groundwater quality because current conditions would remain the same.

Proposed Action

The proposed action would not result in the placement of impervious surfaces nor would it affect the quality of the surface waters that infiltrate down to the aquifer. Therefore, there would be no effect on groundwater within the project areas. No impact to the Gulf Coast Aquifer is expected to occur as a result of the proposed action.

4.3.2 Wetlands

Executive Order (EO) 11990, Protection of Wetlands, requires federal agencies to take action to minimize the loss of wetlands. Activities that disturb jurisdictional wetlands require a permit from the U.S. Army Corps of Engineers under Section 404 of the CWA of 1977 (33 U.S.C. 1344).

FEMA regulation 44 CFR Part 9, Floodplain Management and Protection of Wetlands, sets forth the policy, procedures, and responsibilities to implement and enforce EO 11990 and prohibits FEMA from funding construction in a wetland unless no practicable alternatives are available. To comply with EO 11990, FEMA uses the eight-step decision-making process in 44 CFR 9.6 to evaluate proposed actions that have potential to affect a wetland.

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory maps for the project area indicate that there are 6 project areas where wetlands are present within the project area (**Appendix C-4**). Freshwater ponds are located within project areas 32, 38, 51 and 52 and a combination of freshwater forested and shrubs are located within project areas 26 and 36. However, Newton County will not conduct any work within the wetlands. The proposed project would have no effect on wetlands; thus, FEMA is not required to conduct an eight-step decision-making process.

No Action Alternative

The no action alternative would have no effect on wetlands because existing conditions would not change. However, a wildfire would be more likely to burn the project areas under the no action alternative and could result in the destruction of vegetation in wetlands within the project

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areas. Vegetation destruction in wetlands would damage habitat for wildlife and lessen the effectiveness of wetlands to filter pollutants and maintain water quality.

Proposed Action

Vegetation management activities associated with the proposed action would not occur in or near wetlands. Although there are wetlands within the project areas, vegetation clearing and trimming and tree removal would not occur within the wetland areas; thus, there would be no effect on wetlands from the proposed action. Moreover, BMPs described under surface waters would prevent impacts on nearby wetlands. Long-term project maintenance also would have no impact on wetlands.

4.3.3 Floodplains

EO 11988, Floodplain Management, requires federal agencies to take actions to minimize occupancy of and modifications to floodplains. FEMA regulations in 44 CFR Part 9, Floodplain Management and Protection of Wetlands, set forth the policy, procedures, and responsibilities to implement and enforce EO 11988 and prohibit FEMA from funding improvements in the 100-year floodplain unless no practicable alternative is available.

To satisfy the requirements of EO 11988, the Water Resources Council developed an eight-step process that agencies should carry out as part of their decision-making on projects that have potential impacts on or within the floodplain. The eight steps reflect the decision-making process required in Section 2(a) of the EO and are reflected in the FEMA regulations in 44 CFR 9.3. The first step is to determine if the proposed action is in the 100-year floodplain. As discussed below, the proposed action is partially located within a floodplain. The eight-step process is documented in **Appendix C-6**.

FEMA Flood Insurance Rate Maps (FIRMs) depict floodplain areas and illustrate the extent of the 100-year floodplain within the project area. The effective FIRMs (*i.e.* the FIRMs that are currently in effect) for each property and the corresponding project areas are shown in **Table 4.3**. This table does not indicate which project areas are within floodplains. FEMA is in the process of updating floodplain maps in Newton County; therefore, this analysis considers both the effective (current) and the proposed FIRMs in the project area. Maps illustrating the effective and proposed floodplains in and around the project area are included in **Appendix C-5**. The floodplains shown on the proposed maps are considered the best available data for this floodplain analysis.

Figure 4.9 depicts the proposed work areas and extent of the effective and proposed floodplains within the project area. The currently effective FIRMs show project areas 13, 20, and 35 are located within the 100-year floodplain of Simms Branch and project area 32 is located in the 100-year floodplain of Big Cow Creek. The proposed floodplain maps show that there are 6 project areas within floodplains. Project areas 32, 7, 37, 51, 52, and 38 are located within the 100-year floodplain of Big Cow Creek, White Oak Tributary No. 1, and Whitman Branch, Caney Creek, and Hackberry Gully, respectively.

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Table 4.3. FEMA FIRMs in the Proposed Project Area

Project Area Numbers	FIRM Panel	Date
12	48351C0300C	September 21, 1998
8; 15; 16; 21; 25; 33; 34; 39; 50 – 52	48351C0285C	September 21, 1998
1 – 7; 14; 29; 30; 36; 37; 42 – 46; 48	48351C0375C	September 21, 1998
13; 20; 26 – 28; 31; 32; 35; 40; 41; 49	48351C0450C	September 21, 1998
47	48351C0150C	September 21, 1998
9 – 11; 17 – 19; 22 – 24	48351C0250C	September 21, 1998
38	48351C0305C	September 21, 1998

No Action Alternative

The no action alternative would have no effect on floodplains because current conditions would not change. However, a wildfire would be more likely to burn the project areas under the no action alternative, which could impact the floodplain.

Proposed Action

Portions of the proposed project area are within the 100-year floodplains of Simms Branch, Big Cow Creek, White Oak Tributary No. 1, Whitman Branch, Caney Creek, and Hackberry Gully. Newton County will work with contractors for mitigation measures to ensure that no subsurface disturbance occurs. BMPs will be implemented to control erosion and there will be no adverse impact to floodplains.

Newton County must comply with the appropriate local floodplain management ordinance or best available data as defined by the Proposed FIRMs, whichever is more restrictive. Newton County would be required to coordinate with the local floodplain administrator to obtain any required permits prior to initiating work. All coordination pertaining to these activities and application compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files. The full eight-step analysis is documented in **Appendix C-7**.

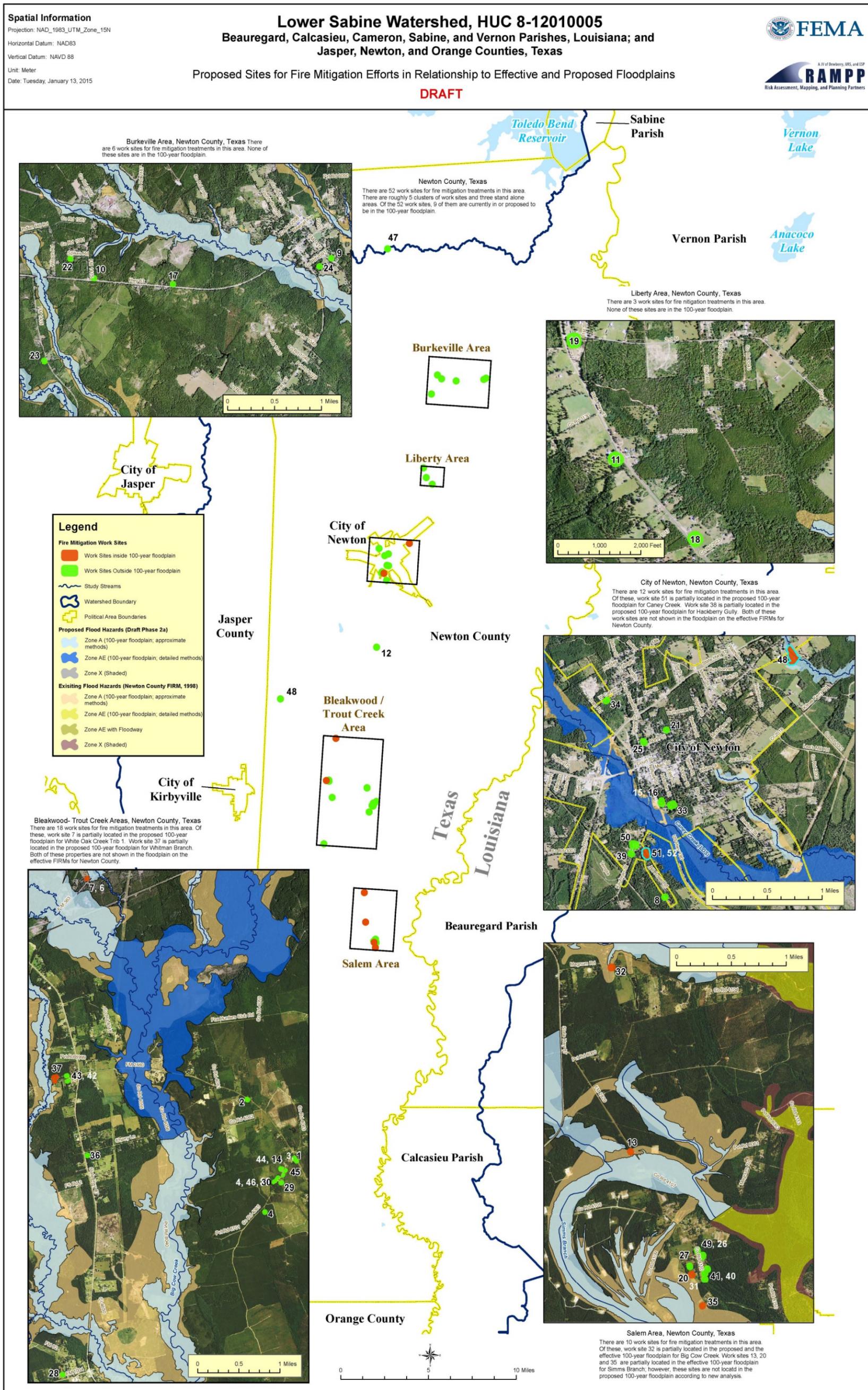


Figure 4.9. Project Area Floodplains

4.4 Biological Resources

This section provides an overview of the affected area and potential environmental effects of the no action and proposed action alternatives on vegetation, wildlife, and federal- and state-listed species.

4.4.1 Vegetation

The entire project area is located in the South Central Plains Ecoregion according to Griffith et al. (2004). This region is approximately 25,000 square miles (**Figure 4.10**).

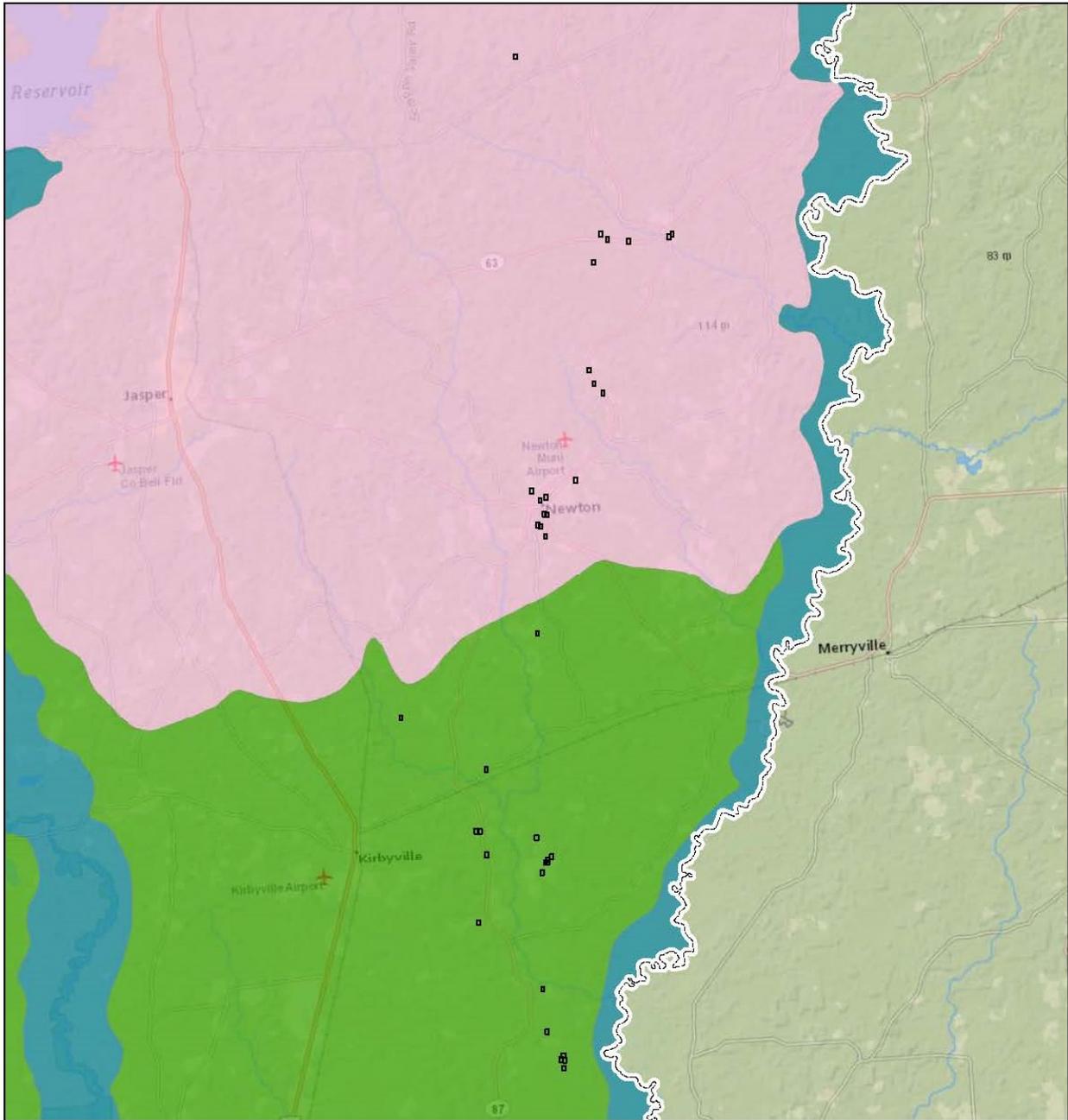
Within the South Central Plains Ecoregion are two ecological sub regions, the Southern Tertiary Uplands and the Flatwoods. The Southern Tertiary Uplands ecological sub region generally covers the remainder of longleaf pine (*Pinus palustris*) range north of the Flatwoods ecological sub region. Longleaf pines often occur on sand ridges and uplands, but open forests are also found on other soil types. On dryer sites, some American beech (*Fagus grandifolia*) or magnolia-beech-loblolly pine forests occur. Some sandstone outcrops have distinctive barrens or glades in Texas and Louisiana. Seeps in sand hills support acid bog species including southern sweetbay (*Magnolia virginiana*), hollies (*Ilex* sp.), wax-myrtles (*Myrica cerifera*), insectivorous plants, orchids, and wild azalea (*Rhododendron* sp.). This bog vegetation becomes more extensive in the Flatwoods ecological sub region. The region is more hilly and dissected than the Flatwoods to the south, and soils are generally better drained over the more permeable sediments. Large parts of the region are public National Forest land (TCEQ 2007).

The Flatwoods ecological sub region is generally flat to gently sloping and occurs in southeast Texas and southwest Louisiana. Soils on these sands are generally more clayey, poorly drained, and more acidic than the sands of the Southern Tertiary Uplands to the north. The Flatwoods upland pine community is mostly longleaf pine along with sweet-gum (*Liquidambar styraciflua*), white oak (*Quercus alba*), southern red oak (*Quercus falcata*), willow oak (*Quercus phellos*), black gum (tupelo) (*Nyssa sylvatica*), and holly (*Ilex* sp.). Poorly drained flat uplands have areas of pine savannas and small prairies with species-rich ground layers. The Flatwoods have less beech and more swamp chestnut oak (*Quercus michauxi*) compared to the Southern Tertiary Uplands ecological sub region. Loblolly pine (*Pinus taeda*) and laurel oak (*Quercus hemishpaerica*) also occur in dryer areas (TCEQ 2007).

An ecological habitat survey conducted from October 23 to October 29, 2014, determined that the project area, made up of 52 sites, is characterized by a number of habitats including pine plantation, non-maintained residential landscaping, maintained lawn, residential mixed forest, mixed shrubland, mixed forest, and pine shrubland. Habitat types are described as follows:

- **Pine Plantation** – large tracts of maintained pine plantation dominated by immature loblolly pines that comprise 100 percent of the total cover. The shrub stratum comprises 0 to 10 percent total cover and consists of yaupon (*Ilex vomitoria*), sweet-gum, and American beautyberry (*Callicarpa americana*). No ground cover is present within this habitat type.

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Newton County Defensible Space Newton County, TX

Legend

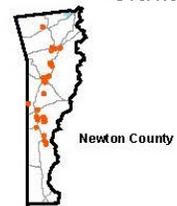
- Map Book Page
- Ecoregion**
- South Central Plains
- Sub-Region**
- Flatwoods
- Floodplains and Low Terraces
- Southern Tertiary Uplands



0 10,000 20,000 Feet

Ecoregions and Sub-Regions

Overview



Data Sources: EPA, Omernik (1987), CDM Smith
Service Layer Credits: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Figure 4.10. South Central Ecoregion in Newton County

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- Non-Maintained Residential – overgrown herbaceous areas dominated by tall goldenrod (*Solidago altissima*), big bluestem (*Andropogon gerardii*), eastern daisy fleabane (*Erigeron annuus*), annual marsh-elder (*Iva annua*), common greenbrier (*Smilax rotundifolia*), southern dewberry (*Rubus trivialis*), and muscadine grape (*Vitis rotundifolia*). The herbaceous layer comprises from 80 to 100 percent total cover. The shrub strata consists of shining sumac (*Rhus copallinum*), common persimmon (*Diospyros virginiana*), cedar elm (*Ulmus crassifolia*), water oak (*Quercus nigra*), and willow oak saplings, and comprises approximately 0 to 20 percent total cover. The canopy comprises approximately 0 to 20 percent total cover within this habitat type and is dominated by water oak, willow oak, black willow (*Salix nigra*), and loblolly pine.
- Maintained Lawn – maintained herbaceous areas dominated by various upland grasses (e.g. bermudagrass [*Cynodon dactylon*]). The herbaceous layer comprises from 80 to 100 percent total cover. The shrub stratum comprises 0 to 20 percent total cover and consists of various pruned ornamental shrubs. The canopy comprises approximately 0 to 20 percent total cover within this habitat type and is dominated by water oak, willow oak, loblolly pine, sweet-gum and eastern red cedar (*Juniperus virginiana*).
- Residential Lot-Mixed Forest – home sites surrounded by several species of large trees within maintained lawns. The canopy comprises 50 to 80 percent total cover and consists of water oak, willow oak, loblolly pine, sweet-gum, post oak (*Quercus stellata*), white oak, magnolia (*Magnolia grandifolia*), and pecan (*Carya illinoensis*). Maintained herbaceous areas dominated by various upland grasses (e.g. bermudagrass) comprise 50 to 80 percent total cover. The shrub stratum comprises 0 to 20 percent total cover and consists of various pruned ornamental shrubs including mimosa (*Albizia julibrissin*).
- Mixed Scrubland – overgrown herbaceous areas dominated by tall goldenrod, annual marsh-elder, common greenbrier, southern dewberry, Japanese honeysuckle (*Lonicera japonica*), and peppervine (*Ampelopsis arborea*). The herbaceous layer comprises from 40 to 80 percent total cover. The shrub stratum is dominated by loblolly pine, sweet-gum, mimosa, yaupon, eastern baccharis (*Baccharis halimifolia*), water oak, green alder (*Alnus viridis*), common persimmon, and wax myrtle and comprises 80 to 100 percent total cover. The canopy comprises approximately 0 to 20 percent total cover within this habitat type and is dominated by loblolly pine.
- Mixed Forest – undeveloped tracts of land that have not been cleared for development. The canopy comprises 80 to 100 percent total cover and consists of loblolly pine, sweet-gum, post oak, water oak, common persimmon, and cherry-bark oak (*Quercus pagoda*). The shrub stratum comprises 40 to 60 percent total cover and is dominated by green alder, red mulberry (*Morus rubra*), blackjack oak (*Quercus marilandica*), American elm (*Ulmus americana*), yaupon, Japanese privet (*Ligustrum japonicum*), and mimosa. Ground cover comprises 0 to 20 percent of the total cover and is dominated by common greenbrier, eastern poison ivy (*Toxicodendron radicans*), and long-leaf wood-oats (*Chasmanthium sessiliflorum*).
- Pine Shrubland – dominated by sapling loblolly pine. The herbaceous stratum comprises 20 to 50 percent total cover and is dominated by tall goldenrod, big bluestem, southern dewberry, Japanese honeysuckle, and dogfennel (*Eupatorium capillifolium*). The shrub

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stratum is dominated by loblolly pine, sweet-gum, yaupon, wax myrtle, Japanese privet, and shining sumac and comprises 80 to 100 percent total cover. The canopy comprises approximately 0 to 10 percent total cover within this habitat type and is dominated by loblolly pine and pecan.

Table 4.4 shows the acreage of each of these habitat types within each project area. Each project area is a different size as it is based on a distance from the existing structures which vary in size, number, and configuration for each project area.

Table 4.4. Habitat Types Within the Project Areas (square feet)

Project Area Number	Non-Maintained Residential	Maintained Lawn	Residential-Mixed Forest	Mixed Scrubland	Pine Plantation	Mixed Forest	Pine Shrubland
1	--	--	32,898	--	--	--	--
2	--	62,349	--	--	--	46,032	--
3	--	--	80,362	--	--	--	--
4	--	--	37,687	--	--	64,420	--
5	--	--	19,037	--	--	47,420	--
6	--	--	26,177	21,885	--	--	--
7	--	--	--	55,149	--	--	--
8	87,070	--	--	--	--	16,623	--
9	--	109,425	--	--	--	--	--
10	--	44,090	--	54,505	8,065	--	--
11	--	41,344	70,836	--	--	--	--
12	--	--	110,214	--	--	--	--
13	--	--	32,241	--	--	64,412	--
14	--	64,005	--	34,016	--	--	--
15	--	--	59,501	--	--	--	--
16	--	--	65,923	--	--	--	--
17	--	--	77,535	--	--	30,086	--
18	--	110,208	--	4,303	--	--	--
19	--	47,110	--	--	--	--	69,224
20	--	97,009	--	--	--	10,783	--
21	--	--	50,996	--	--	44,552	--
22	--	--	21,770	--	--	--	--
23	62,778	46,587	--	--	--	--	--
24	--	--	108,780	--	--	--	--
25	--	--	119,846	--	--	--	--
26	--	55,190	--	--	--	71,979	--
27	--	--	96,954	--	--	--	--
28	--	--	115,933	--	--	--	--
29	--	--	89,738	--	--	13,650	--
30	--	--	30,381	--	--	9,044	--
31	--	--	58,144	--	--	29,884	--
32	--	--	56,416	44,566	--	--	--
33	--	--	174,148	--	--	--	--

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Project Area Number	Non-Maintained Residential	Maintained Lawn	Residential-Mixed Forest	Mixed Scrubland	Pine Plantation	Mixed Forest	Pine Shrubland
34	--	--	67,422	--	--	39,149	--
35	--	62,302	--	--	--	36,546	--
36	--	16,285	--	--	--	92,439	--
37	--	--	159,251	--	--	72,471	--
38	--	50,895	--	126,067	--	131,665	--
39	--	--	63,015	--	--	45,272	--
40	--	--	58,302	--	--	40,473	--
41	--	43,645	--	--	--	44,147	--
42	--	--	62,823	--	--	39,435	--
43	--	--	31,198	--	--	66,879	--
44	--	37,885	--	38,011	--	--	--
45	--	47,232	--	--	--	20,824	--
46	--	--	21,205	--	--	33,589	--
47	--	62,349	--	--	--	--	--
48	--	--	108,937	--	--	--	--
49	--	--	110,331	--	--	--	--
50	119,048	--	--	77,223	--	--	--
51	--	--	82,888	--	--	--	--
52	--	--	91,743	--	--	--	--

There are no federally threatened or endangered plant species listed in Newton County; therefore, there would be no effect on listed plant species.

Invasive Species

EO 13112 requires federal agencies to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts that invasive species can cause. The habitat survey did not note any invasive plant or animal species listed by the Texas Department of Agriculture within the project area.

No Action Alternative

The no action alternative would have no effect on vegetation, including invasive species, because the vegetation that is currently present would persist. However, a wildfire would be more likely to burn the project areas under the no action alternative, which would result in partial or complete loss of vegetation near in the work zone. While fire is a natural component of the ecosystems near the project area, years of fire suppression has increased fuel density and likely would increase the extent and intensity of future wildfires in the area. In the event of a wildfire in the project area, non-native or invasive species might be expected to become established in the project areas.

Proposed Action

The proposed action would affect approximately 120 acres within the 52 defensible space project areas. Treated areas would extend approximately 150 feet from structures within each project area. Fuel reduction would be conducted over 3 zones. In Zone 1 (0 to 30 feet from the structure), all combustible material would be eliminated. In Zone 2 (30 to 100 feet from the structure), all combustible materials would be eliminated with the exception of individual and well-spaced clumps of trees and shrubs. In Zone 3 (greater than 100 feet up to 150 feet from the structure), vegetation would be thinned and pruned horizontally and vertically in a more limited manner than zone 2.

The vegetation in most of the project areas are already highly modified and disturbed by human activities close to residences and structures and the vegetation communities present generally do not represent native habitats. The proposed action would not have a significant impact on vegetation communities although individual trees would be affected. Since there are no listed threatened or endangered plant species in Newton County, the proposed action would not affect federally listed plant species.

The proposed action could provide avenues for the establishment of invasive plant species through accidental introduction and the removal of native vegetation. However, because the proposed action would not alter the canopy layer significantly, it would not be expected to contribute to the spread of invasive plant species. Any invasive species encountered during the vegetation management work should be removed.

4.4.2 Common Wildlife Species

In addition to the listed species discussed below in Section 4.4.3, the proposed action has the potential to impact common wildlife species and their habitats. **Table 4.5** provides a list of species that were recorded during the habitat survey conducted from October 23 through October 29, 2014.

Common species observed during the field survey are typical of forest edge, open grassland edges, and rural areas. The project areas are generally located in areas with low residential density. Wildlife noted during the surveys includes species that are adapted to these forest edge environments.

The mixed forest and mixed shrubland habitats present likely would support additional species adapted to these areas, including wild hogs, bobcats, fox, snakes, crows, wild turkeys, various song birds, owls, and hawks. Although the project areas include one stream and six wetlands; impacts would not be expected to wildlife of these areas as work would not be conducted in the stream or wetlands.

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Table 4.5. Common Wildlife Species Observed Within Project Area

Common Name	Scientific Name
Birds	
American Crow	<i>Corvus brachyrhynchos</i>
American robin	<i>Turdus migratorius</i>
Northern cardinal	<i>Cardinalis cardinalis</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>
Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>
Mammals	
Coyote	<i>Canis latrans</i>
Eastern grey squirrel	<i>Sciurus carolinensis</i>

No Action Alternative

The no action alternative would have no effect on common wildlife species in the project area. However, the the project areas are more likely to burn during a wildfire under the no action alternative, which would result in the destruction of wildlife habitat in the project areas.

Proposed Action

The birds and mammals observed within the project area and other species expected to be in the project area are species commonly found within and at the edges of forested areas and are well adapted to habitats that are influenced by human activities. The project areas are generally small and already highly modified by human activities. Potential impacts would likely be temporary and have little effect on local populations.

The following mitigation measures will be required to avoid and reduce potential impacts on migratory birds. The Migratory Bird Treaty Act protects birds that migrate across international borders and prohibits take of migratory bird species. Newton County will limit defensible space work during the peak migratory bird nesting period of March through August as much as possible to avoid destruction of individuals, nests, or eggs. If vegetation work must occur during the nesting season, Newton County will deploy a qualified biological monitor with experience conducting breeding bird surveys to survey the vegetation management area for nests prior to conducting work. The biologist will determine the appropriate timing of surveys in advance of work activities. If an occupied migratory bird nest is found, work within a buffer zone around the nest will be postponed until the nest is vacated and juveniles have fledged. The biological monitor will determine an appropriate buffering radius based on species present, real-time site conditions, and proposed vegetation management methodology and equipment. For work near an occupied nest, the biological monitor would prepare a report documenting the migratory species present and the rationale for the buffer radius determination and submit that report to FEMA for inclusion in project files.

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With implementation of mitigation measures to protect migratory birds, significant adverse impacts from the proposed action on the various songbird, mammal, and reptile species within the project area would not be expected.

4.4.3 Threatened and Endangered Species and Critical Habitat

The Endangered Species Act of 1973 gives USFWS authority for the protection of threatened and endangered species. This protection includes a prohibition of direct take (*e.g.*, killing, harassing) and indirect take (*e.g.*, destruction of critical habitat). The Texas Parks and Wildlife Department (TPWD) code prohibits take of state-listed threatened and endangered species.

The proposed project area is entirely located within Newton County, Texas. One federally listed species is known to occur in Newton County (**Table 4.6**) (USFWS 2014). Twenty three additional species are state listed as threatened and two as endangered in Newton County by TPWD. All state-listed species found in Newton County are shown in **Table 4.7** (TPWD 2014). No federally designated critical habitat exists in the project area.

Table 4.6. Federally Listed Species for Newton County, Texas

Common Name	Scientific Name	Federal Status
Birds		
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered

Table 4.7. State-Listed Species for Newton County, Texas

Common Name	Scientific Name	State Status
Birds		
American peregrine falcon	<i>Falco peregrinus anatum</i>	Threatened
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened
Backman's sparrow	<i>Aimophila aestivalis</i>	Threatened
Peregrine falcon	<i>Falco peregrinus</i>	Threatened
Piping plover	<i>Charadrius melodus</i>	Threatened
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Swallow-tailed kite	<i>Elanoides forficatus</i>	Threatened
White-faced ibis	<i>Plegadis chihi</i>	Threatened
Wood stork	<i>Mycteria americana</i>	Threatened
Fish		
Blue sucker	<i>Cycleptus elongatus</i>	Threatened
Creek chubsucker	<i>Erimyzon oblongus</i>	Threatened
Paddlefish	<i>Polyodon spathula</i>	Threatened

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Common Name	Scientific Name	State Status
Mammals		
Black bear	<i>Ursus americanus</i>	Threatened
Louisiana black bear	<i>Ursus americanus luteolus</i>	Threatened
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	Threatened
Red wolf	<i>Canis rufus</i>	Endangered
Mollusks		
Louisiana pigtoe	<i>Pleurobema riddellii</i>	Threatened
Sandbank pocketbook	<i>Lampsilis satura</i>	Threatened
Southern hickorynut	<i>Obovaria jacksoniana</i>	Threatened
Texas heelsplitter	<i>Potamilus amphichaenus</i>	Threatened
Texas pigtoe	<i>Fusconaia askewi</i>	Threatened
Reptiles		
Alligator snapping turtle	<i>Macrochelys temminckii</i>	Threatened
Louisiana pine snake	<i>Pituophis ruthveni</i>	Threatened
Northern scarlet snake	<i>Cemophora coccinea copei</i>	Threatened
Timber rattlesnake	<i>Crotalus horridus</i>	Threatened

A field survey was conducted from October 23 through October 29, 2014 to characterize wildlife communities and habitat types within the project area. The project survey area included the 52 defensible space project areas with a focus to determine the presence of potential habitat for the federally endangered Red-cockaded woodpecker. The results of the survey for Red-cockaded woodpecker are described below. (Complete field survey results are provided in **Appendix D**).

There is low potential for or unlikely for suitable habitat to be present for the state-listed American peregrine falcon, Bachman's sparrow, Peregrine falcon, Piping plover, White-faced ibis, Wood stork, blue sucker, creek chubsucker, paddlefish, black bear, Louisiana black bear, red wolf, Louisiana pigtoe, sandbank pocketbook, southern hickorynut, Texas heelsplitter, Texas pigtoe, alligator snapping turtle, and Louisiana pine snake. The field survey results are presented in Appendix D; however, for these species, either there is no suitable habitat present, the habitat present would only be suitable for short stopovers, or the habitats present are too modified by human activities to provide good cover. Therefore, no impact is anticipated on these species.

There is moderate potential for suitable habitat to be present in forested habitat types for Bald eagle, northern scarlet snake, and timber rattlesnake. Moderate potential is also estimated for the Swallow-tailed kite (near floodplains in all forested habitats) and Rafinesque's big-eared bat (in abandoned structures).

However, the field surveys did not identify any potential Bald eagle nest sites and there are no large bodies of water near any of the project areas. As described in Section 4.3.3, there are five

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project areas that include forested areas within floodplains, which is the habitat type preferred by the Swallow-tailed kite. The field surveys identified some abandoned structures that could provide habitat for bats; however, no bats were observed.

Red-cockaded Woodpecker

The federal and state listed endangered red-cockaded woodpecker requires young pine trees (*i.e.*, 30 years or older) for foraging habitat and older pine trees (*i.e.*, 60 years or older) for nesting in cavities. Preferred habitat includes widely spaced pine trees of longleaf and shortleaf pine (*Pinus echinata*) (TPWD 2014). The nesting season runs from April to July (Hooper et al. 1980).

No suitable foraging or nesting habitat for red-cockaded woodpeckers was observed at any of the project areas during the field survey. USFWS protocol guidance was referenced for field survey (USFWS 2013). All forested areas identified during the ecological field survey lacked the minimum habitat requirements (*i.e.*, 50 percent or greater stands of pines) to be considered potential red-cockaded woodpecker foraging habitat.

No Action Alternative

The no action alternative would have no effect on the Red-cockaded woodpecker.

Proposed Action

The proposed action would have no effect on the federally listed Red-cockaded woodpecker.

There are several state species with a potential to occur within at least some of the project areas, including Bald eagle, Swallow-tailed kite, Rafinesque's big-eared bat, northern scarlet snake and the timber rattlesnake. The potential for the proposed action to affect each of these species is discussed below.

The Bald eagle has been delisted by the USFWS; however, this species is protected by the Bald and Golden Eagle Protection Act, is state-listed as threatened, and may occur in Newton County. Potential habitat for Bald eagle was identified during the field survey as any forested habitat; however, evidence of actual use was not observed. Bald eagles nest from October through July; therefore, the nesting season is difficult to avoid. Since Bald eagle nests are large and readily identifiable, trees containing nests can be avoided easily. If the project activities occur adjacent to any occupied or unoccupied Bald eagle nest, the applicant must contact FEMA and consult with USFWS before work begins.

Habitat for the Swallow-tailed kite potentially occurs within the five project areas that are both in the floodplain and also within forested areas. The kites nest in tall trees, which would not be removed by the proposed project, and are less likely to occur close to human habitation, which is where the proposed work is focused. With implementation of the mitigation measures to protect migratory birds, potential effects on the Swallow-tail kite should be minimal.

Although some abandoned structures were observed that could potentially provide habitat for the Rafinesque's big-eared bat, the proposed action would not remove or alter any structures; therefore, there would be no impact on the bat or its habitat.

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The northern scarlet snake and the timber rattlesnake both could occur in forested habitats found in many of the project areas; however, these species are less likely to occur in the highly modified habitats found in close association with residential structures. If these species are present, then they could be affected by the proposed project because the proposed clearing of ground cover and low brush would reduce available suitable habitat for these species. The proposed project would not affect a significant amount of suitable habitat for these species. Consultation with TPWD concerning state-listed species would be the responsibility of the sub-applicant.

4.5 Cultural Resources

This section provides an overview of the affected area and potential environmental effects from the no action and proposed action alternatives on cultural resources, including historic structures and archeological resources.

The National Historic Preservation Act of 1966 (NHPA; 16 U.S.C. 470 et seq.) is the primary federal law protecting historic properties and promoting historic preservation in cooperation with states, tribal governments, local governments, and other consulting parties. The NHPA established the National Register of Historic Places (NRHP) and designated the State Historic Preservation Officer (SHPO) as the entity responsible for administering state-level programs. The NHPA also created the Advisory Council on Historic Preservation, the federal agency responsible for overseeing the process described in Section 106 of the NHPA (16 U.S.C. §470f) and for providing commentary on federal activities, programs, and policies that affect historic properties.

Section 106 of the NHPA and its implementing regulations (36 CFR Part 800) contain the procedures for federal agencies to follow to take into account the effect of their actions on historic properties. The Section 106 process applies to any federal undertaking that has the potential to affect historic properties, defined at 36 CFR §800.16(1)(1) as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places." Although buildings and archaeological sites are most readily recognizable as historic properties, the NRHP contains a diverse range of resources that includes roads, landscapes, and vehicles. Under Section 106, federal agencies are responsible for identifying historic properties in the area of potential effect (APE) for an undertaking, assessing the effects of the undertaking on these historic properties, if present, and considering ways to avoid, minimize, or mitigate any adverse effects. Because Section 106 of the NHPA is a process by which the federal government assesses the effects of its undertakings on historic properties, it is the primary regulatory framework that is used in the NEPA process to determine impacts on cultural resources.

To assess the potential for intact, significant cultural resources within the APE of the proposed action, an archival review of the proposed undertaking was conducted.

Cultural resources consist of locations of human activity, occupation, or use identified through field inventory, historic documentation, or oral evidence. The term includes archaeological, historic, and architectural properties and sites or places of traditional cultural or religious importance to Native American tribes or other social or cultural groups.

4.5.1 Historic Architectural Properties

Archival research conducted via the Texas Historical Commission's (THC's) Texas Archeological Sites Atlas (Atlas) web site indicated that no previously recorded historic architectural properties or NRHP properties or districts have been identified within or in the immediate vicinity of the multiple APEs.

The closest NRHP property or district to APEs 9, 24 and 47 is the Burr Ferry Bridge. The closest NRHP property or district to APEs 8, 11, 12, 15, 16, 17, 18, 19, 21, 22, 23, 25, 33, 34, 38, 39, 50, 51, and 52 is the Newton County Courthouse. The closest NRHP property or district to APEs 6, 7, and 48 is the Turner-White-McGee House. The closest NRHP property or district to APEs 1, 2, 3, 4, 5, 10, 13, 14, 20, 26, 27, 28, 29, 30, 31, 32, 35, 36, 37, 40, 41, 42, 43, 44, 45, 46, and 49 is the West Log House.

4.5.2 Archaeological Sites

A review of the Atlas indicated that small parts some of the APEs have been previously surveyed for archaeological sites. APE 9 was partially surveyed in 1975 (Texas State Department of Highways and Public Transportation [SDHPT] 1975a). APEs 15 and 16 were also partially surveyed in 1975 (SDHPT 1975b). APE 36 was partially surveyed in 1987 (Texas Department of Transportation [TxDOT]).

Archival research conducted via the Atlas indicated that no previously recorded archaeological sites have been identified within or in the immediate vicinity of the multiple APEs.

4.5.3 Native American Cultural/Religious Sites

No registered American Indian, Native Hawaiian, or Native Alaskan cultural or religious sites are on or near the proposed project site.

4.5.4 Environmental Consequences on Cultural Resources

No Action Alternative

The no action alternative would have no effect on cultural resources, and FEMA has determined that no historic architectural properties would be affected by the no action alternative.

Proposed Action

The proposed action was coordinated with the SHPO, and pertinent correspondence is included in **Appendix E**. In a letter dated August 28, 2012, a determination of "no historic properties affected; project may proceed" was provided.

There are two archaeological sites near to but outside the project area. Neither of these sites would be negatively affected by the proposed undertaking. There are no historical structures within or immediately surrounding the project areas. Based on archival research, building construction dates, and correspondence with the SHPO, FEMA has made the determination that the proposed action would have no effect on historic properties.

In the event that archeological deposits, including any Native American pottery, stone tools, bones, or human remains are uncovered, the project must be halted immediately in the vicinity of the discovery, and all reasonable measures must be taken to avoid or minimize harm to the discovered items. The subapplicant must secure all archeological findings and restrict access to the sensitive area. The subapplicant must inform FEMA immediately, and FEMA will consult with the SHPO. Work in sensitive areas must not resume until consultation is completed and until FEMA determines that appropriate measures have been taken to ensure compliance with the NHPA and its implementing regulations.

4.6 Socioeconomics

This section provides an overview of the affected area and potential environmental effects of the no action and proposed action alternatives on socioeconomic resources, including environmental justice, hazardous materials, noise, traffic, public services and utilities, and human health and safety resources.

4.6.1 Environmental Justice

Environmental justice is defined by EO 12898 (59 *Federal Register* 7629) and CEQ Guidance (1997). Under EO 12898, demographic information is used to determine whether minority populations or low-income populations are present in the areas potentially affected by the range of project alternatives. If so, a determination must be made whether implementation of the program alternatives may cause disproportionately high and adverse human health or environmental impacts on those populations.

This environmental justice analysis is focused at the local (*i.e.*, census tract and city) level. The local area included in this analysis is where project-related impacts would occur, potentially causing an adverse and disproportionately high effect on neighboring minority and low-income populations. For this project, the analysis includes census tracts 9501, 9502, and 9503 in Newton County. **Table 4.8** and **Table 4.9** provide economic and demographic characteristics for census tracts 9501, 9502, and 9503 (U.S. Census Bureau 2012). The census tracts with the project areas are shown in **Appendix E-2**. Information for Newton County is presented for comparison.

Low-Income Populations

Residents of areas with a high percentage of people living below the poverty level may be considered low-income populations. The U.S. Census Bureau poverty threshold for a family of four (two adults and two children) in 2012 was \$23,283 and \$11,720 for an individual (U.S. Census Bureau 2014). Low-income populations are also considered to include residents of areas where the median family income is less than 60 percent of the median income of the surrounding area. This analysis also considered whether the project areas' median household and per capita incomes are substantially lower than the county's average.

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Table 4.8. Income

Parameter	Census Tract 9501	Census Tract 9502	Census Tract 9503	Newton County
Percentage of population below poverty level	18.0%	20.6%	14.3%	16.2%
Median household income	\$41,250	\$32,028	\$43,162	\$38,574
Median family income	\$45,758	\$39,674	\$46,337	\$47,075

Table 4.9. Minority Populations

Ethnic Composition	Census Tract 9501		Census Tract 9502		Census Tract 9503		Newton County	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
White	1,737	70.0%	3,742	67.9%	1,714	75.0%	10,950	76.2%
Black or African American	723	29.1%	1,700	30.8%	527	23.1%	2,950	20.5%
Asian	0	0.0%	44	0.8%	0	0.0%	162	1.1%
American Indian	0	0.0%	10	0.2%	0	0.0%	28	0.2%
Native Hawaiian	0	0.0%	0	0.0%	0	0.0%	95	0.7%
Some Other Race/Multi-Ethnic	21	0.8%	17	0.3%	44	1.9%	187	1.3%
Total Population	2,481	--	5,513	--	2,285	--	14,372	--
Hispanic or Latino ¹	0	0.0%	169	3.1%	66	2.9%	424	3.0%
Total Minority Population^{2,3}	744	30.0%	1,927	35.0%	593	26.0%	3,684	25.6%

Notes:

¹ The term "Hispanic or Latino" is an ethnic category and can apply to members of any race, including respondents who self-identified as "White." The total numbers of Hispanic or Latino residents for each geographic region are tabulated separately from the racial distribution by the U.S. Census Bureau.

² A minority is defined in CEQ's environmental justice guidance as a member of the following population groups: American Indian/Alaskan Native, Asian or Pacific Islander, Black (non-Hispanic), or Hispanic (CEQ 1997).

³ "Total Minority" includes all people who are not "White alone" plus Hispanics and Latinos who are white alone.

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As shown in **Table 4.8**, census tracts 9501 and 9503 have median household incomes higher than Newton County and the poverty rate in tract 9503 (14.3 percent,) is below that in Newton County overall (16.2 percent). Median family incomes in census tracts 9501 (\$45,758) and 9503 (\$46,337) are approximately equivalent to those in Newton County as a whole (\$47,075). Census tract 9502 has median household and family incomes lower than Newton County; however, they are not less than 60 percent of the County income. Poverty rates in census tracts 9501 (18.0 percent) and 9502 (20.6 percent) are higher than that of the County (16.2 percent). However, based on the income criteria above, these census tracts are not considered low-income populations.

Minority Populations

CEQ (1997) defines the term "minority" as persons from any of the following groups: Black, Asian or Pacific Islander, American Indian or Alaskan Native, and Hispanic. The U.S. Census Bureau does not treat "Hispanic or Latino" as a racial category, so people identifying themselves as Hispanic or Latino make a separate selection of a racial category. This analysis is based on U.S. Census Bureau data from the American Community Survey. For the purposes of this analysis, "minority" includes all people who do not identify themselves as "White alone" plus Hispanics and Latinos who do identify themselves as "White alone."

As shown in **Table 4.9**, census tracts 9501, 9502, and 9503 have total minority populations (30.0, 35.0, and 26.0 percent, respectively) higher than the County as a whole (25.6 percent) (U.S. Census Bureau 2012). The project areas may be considered to have a minority population.

No Action Alternative

Under the no action alternative, all populations within the project area would continue to be at risk of a catastrophic wildfire. The no action alternative would not have a disproportionately high and adverse human health or environmental effect on low-income or minority populations and meets the requirements of EO 12898.

Proposed Action

The proposed action would have a beneficial effect on all people living and working in the project areas protected through the creation of defensible space, including any low-income or minority persons, as it would reduce the risk of harm to personal property and structures from wildfire. Because the effects of the project are localized around individual properties that have requested participation in the project and the effects are generally beneficial, there would not be an adverse impact related to environmental justice issues. No disproportionately high and adverse impacts on low-income or minority populations would result from the proposed action. Therefore, the proposed action would comply with EO 12898.

4.6.2 Hazardous Materials

Hazardous materials are those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, and the Toxic Substances Control Act. The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, which was further amended by the

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Hazardous and Solid Waste Amendments, defines hazardous wastes. In general, both hazardous materials and waste include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or to the environment when released or otherwise improperly managed.

To determine whether any hazardous waste facilities exist in the vicinity or upgradient of the project area, or whether there is a known and documented environmental issue or concern that could affect the project sites, a search for Superfund sites, toxic release inventory sites, industrial water dischargers, hazardous facilities or sites, and multi-activity sites was conducted using the EPA Envirofacts database.

According to the Envirofacts database, no hazardous sites, including Superfund, toxic release, industrial water dischargers, hazardous waste, or multi-activity sites, exist within the project areas; however, 4 facilities within one mile of the project areas have reported hazardous waste activities. Most of these facilities are located within the one mile radius of the following project areas: 8, 15, 16, 21, 25, 33, 34, 39, 50, 51, and 52. One facility is located within the one mile radius of project area 28. The figures in **Appendix E-3** show the hazardous sites in closest proximity to the project areas (EPA 2015).

No Action Alternative

No active hazardous sites were identified within the project area that would potentially affect the existing environment. Under the no action alternative, existing conditions with respect to hazardous materials would not change.

Proposed Action

Under the proposed action, no impacts from waste storage and disposal sites are anticipated because no hazardous facilities are in or near the project areas (EPA 2013b). Deposition or accumulation of soil, trash, ashes, refuse, waste, biosolids, or any other materials at the project sites as a result of the proposed action is prohibited. Cut, trimmed, dead, and downed vegetation would be mulched. In the event that site contamination or evidence of contamination is discovered during implementation of the proposed action, Newton County staff would manage the contamination in accordance with the requirements of the governing local, state, and federal regulations and guidelines.

The proposed action would involve the use of mechanical equipment, and there is always a minor threat of leaks of oils, fuels, and lubricants from the use of such equipment. The short-term nature of the project and use of equipment in good condition would reduce any potential effect to an insignificant level. Additionally, herbicides would not be used during project implementation or for long term operations and maintenance.

4.6.3 Noise

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are considered noise. Noise events that occur during the night (10 p.m. to 7 a.m.) are more annoying than those that occur during normal waking hours (7 a.m. to 10 p.m.). Noise events in the project

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area are presently associated with climatic conditions (*i.e.*, wind, rain), transportation noise (*i.e.*, traffic on roads, airplanes), and "life sounds" (*i.e.*, people talking, children playing).

Assessment of noise impacts includes the proximity of the proposed action to sensitive receptors. A sensitive receptor is defined as an area of frequent human use that would benefit from a lowered noise level. Typical sensitive receptors include residences, schools, churches, hospitals, and libraries. The majority of the project areas are adjacent to residential structures and any noise-generating activities within these areas would have the potential to affect adjacent residents in the area.

No Action Alternative

Under the no action alternative, no defensible space creation measures would occur; thus, there would be no change in existing noise levels that could affect sensitive receptors in the project area.

Proposed Action

Under the proposed action, noise would be generated by operation of equipment, such as a chainsaw, a chipper, trucks and trailers, construction and maintenance vehicles, and other required equipment. The implementation of the proposed action would increase noise levels in the immediate vicinity of the project areas. Increases in noise levels would be temporary at any one location within the project area and would occur during normal waking hours; therefore, impacts from increased noise levels on sensitive receptors in the project area would be minor. In addition, all equipment and machinery used would meet all applicable local, state, and federal noise control regulations.

4.6.4 Traffic

The project areas are accessed by county roads, state highways, private roads, and residential streets that access most of the proposed work zones. Several project areas can be accessed by state highway 87 and 505 or by county roads within Newton County.

No Action Alternative

Under the no action alternative, existing levels of local traffic would not change, and no additional costs would be incurred for road construction or maintenance. A wildfire would be more likely to burn the project areas under the no action alternative. Nearby roads could be closed if a wildfire approached or encompassed the project areas.

Proposed Action

Under the proposed action, vehicle traffic would be generated by work crews traveling to and from work sites. The amount of additional traffic would be temporary and minimal and would not interfere with local residents or other persons traveling in the general vicinity of the project areas. There would not be a significant effect on transportation from the proposed action.

4.6.5 Public Services and Utilities

4.6.5.1 Utilities

The project areas located on the north of Newton County are serviced by Deep East Texas Electric Cooperative, Inc (DETEC), Jasper-Newton Electric Cooperative (JNEC), and City of Newton. DETEC is a transmission and distribution electric cooperative owned by the members served by DETEC. DETEC provides electrical services to more than 40,000 meters of line (DETEC 2014). JNEC electrical energy provider is a cooperative owned by the members served by JNEC. JNEC provides electrical services to more than 22,000 homes and businesses over a service area of approximately 3,000 miles (JNEC 2015). City of Newton purchases power from NRG Energy Inc. and provides electricity service to over 1,100 meters. The City of Newton also provides natural gas service to over 800 customers (City of Newton 2015).

The City of Newton provides city-wide water and wastewater utility services. The City owns two deep groundwater wells which is the source of the city's water supply. The City's main water plant has a 100,000 elevated storage tank, 150,000 gallons ground storage facility, aerator, a filtration system and a generator. A secondary elevated storage tank is located within the City holding 30,000 gallons. The City operates two water booster plants with 13 lift stations capable of treating one million gallons of waste water per day (City of Newton 2015). Many of the residences in project areas outside of the City have their own water and septic systems.

No Action Alternative

Under the no action alternative, utilities in the project area would not be directly affected. However, the potential for the project areas to burn during a wildfire would be higher, and electrical services provided via overhead power lines to these structures would have the potential to spark catastrophic fires as well as being adversely affected by a wildfire.

Proposed Action

The proposed action would not directly affect or require additional utilities in the project areas. The proposed action would reduce the risk of a wildfire burning structures in the project areas and would contribute to the containment of wildfires, which would prevent or reduce potential damage to existing overhead utilities.

4.6.5.2 Emergency Services

Newton County is served by the City of Newton Fire Department, located on 154 Court Street. The department is staffed with 25 volunteer fire fighters. The emergency operations division is responsible for operating 5 fire stations, which serves approximately 14,000 people within the City. Additional emergency response services are provided by Newton County Emergency Services (City of Newton 2015).

The hospital in closest proximity to the project area is Christus Jasper Memorial Hospital located at 1275 Marvin Hancock Drive in Jasper, Texas. The hospital includes a 24-hour emergency response team, surgical services, and an intensive care unit (City of Newton 2015).

No Action Alternative

Under the no action alternative, there would be no change in emergency response time. The risk of a wildfire in the project area burning structures would continue to exist. Existing emergency services would continue to respond to wildfires in the project area. Under the no action alternative, structures would likely to burn as it would be difficult for fire fighters to defend them. During a wildfire, emergency personnel would not be available to respond to other emergencies in their service area.

Proposed Action

Under the proposed action, defensible space measures would reduce the risk of a wildfire burning structures, which would contribute to the containment of a wildfire in the project area. The proposed action would reduce the level of need for emergency services within the project area and would allow emergency responders to remain available to respond to other emergencies throughout the County. Defensible space measures may also improve conditions for firefighters within the project areas.

4.6.6 Public Health and Safety

The risk of a catastrophic fire in the project area is high, specifically to the 52 separate project areas, because of heavy fuel loading (closely spaced, over grown trees and shrubs, and dead and downed material) that has accumulated over time. If heavy rains follow a wildfire, sediment and debris may wash off into nearby waterways, which can affect downstream water quality and damage structures, roads, and utilities critical to the safety and well-being of citizens in and downgradient of the project areas.

Newton County, located in east Texas along the Sabine River, is in one of the most densely forested regions of Texas. Beneath nearly continuous forest cover, dense underbrush is typical in both creek bottoms and upland areas. Thick stands of highly flammable pine plantations are interspersed throughout the County. Development patterns are typical for rural east Texas counties, with houses and communities situated in forested areas and open pastureland. Relatively high percentages of elderly, disabled, and low-income households reside in the project area; 17.3 percent, 23 percent, and 16.2 percent respectively (U.S. Census Bureau 2015). Elderly, disabled and low-income households may not have the means or capability to maintain their properties resulting in a need for the creation of defensible space around structures in the area.

No Action Alternative

A wildfire in the project area would be more likely to burn structures under the no action alternative. If a wildfire occurred, people and structures in and near the burned area would be at risk. Wildfires that threaten residences may be more likely to result in injury or death as people delay evacuation or stay in an attempt to protect homes and belongings.

Proposed Action

Under the proposed action, the primary objective is to create defensible space to reduce the rate of spread and intensity of a wildfire within each project area and to protect structures and

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personal property from damage in a wildfire. Implementation of the proposed action would create a safer environment for firefighters, which could allow them to more easily defend structures from fires. Defensible space measures would not prevent wildfires but could contribute to containment and reduce the intensity of wildfires. This ultimately would reduce the risk factor for people living in and around the project areas. In addition, when wildfires are controlled more quickly, a smaller area is burned and less sediment and debris may be transported downstream during future precipitation events that could potentially affect water quality.

4.7 Summary of Effects and Mitigation

Table 4.10 provides a summary of the potential environmental effects from implementation of the proposed action, any required agency coordination efforts or permits, and any applicable proposed mitigation or BMPs.

Table 4.10. Summary of Impacts and Mitigation

Affected Environmental Resource Area	Impacts	Agency Coordination/ Permits	Mitigation/BMPs
Soils	Minor, short-term impacts.	N/A	Mulch will be used for erosion control.
Prime and Unique Farmlands	No impact. Land would not be permanently converted to non-farmland uses.	N/A	N/A
Air Quality	Short-term minor impacts on local air quality from mechanical equipment emissions. Potential long-term beneficial impact on air quality by reducing wildfire emissions in the project areas.	N/A	Vehicle and equipment running times will be minimized, and engines will be properly maintained.
Climate Change	Long-term beneficial effect from reduction in risk of wildfire emissions in the project areas.	N/A	N/A
Visual Quality and Aesthetics	Potential long-term beneficial effect by reducing loss of vegetation around structures	N/A	N/A
Surface Water	Minor, short-term impacts.	N/A	Mulch may be used as berms to prevent water quality impacts. Appropriate barriers

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Affected Environmental Resource Area	Impacts	Agency Coordination/ Permits	Mitigation/BMPs
			would be used to prevent mulch from being washed into creeks.
Groundwater	No impact	N/A	N/A
Wetlands	No impact	N/A	Surface water BMPs would prevent impacts on nearby wetlands if they turn out to be present.
Floodplains	No impact. The 8-step floodplain review process will be completed following public review and comment.	N/A	Newton County will implement mitigation measures to ensure that no subsurface disturbance will occur. BMPs will be implemented to control erosion. No mulch or debris would be left in the floodplain. Applicant must coordinate with the local floodplain administrator and obtain any required permits prior to initiating work.
Vegetation	No impact to listed species. No significant impact to vegetation communities.	N/A	N/A
Common Wildlife Species	Migratory birds may nest in project areas.	USFWS, TPWD	Limit defensible space work during the peak migratory bird nesting period of March through August as much as possible to avoid destruction of individuals, nests, or eggs. If defensible space activities must occur during the nesting season, Newton County will deploy a qualified biological monitor with experience conducting breeding bird surveys to survey the vegetation management area for nests prior to conducting work and determine buffer zones around occupied nests if present.
Threatened and Endangered Species/ Critical Habitat	No impact	N/A	N/A
Cultural Resources	No impact	THC	In the event that archeological deposits, including any Native American property, stone tools, bones, or human remains, are uncovered, all work in the vicinity of the discovery will be halted immediately, and all reasonable measures will be taken to avoid or minimize harm to the finds. All archeological findings will be secured, and access to the sensitive area will be restricted by Newton County. Newton County will inform FEMA immediately of such findings, and FEMA will consult with the SHPO. Work in sensitive areas shall not resume until

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Affected Environmental Resource Area	Impacts	Agency Coordination/ Permits	Mitigation/BMPs
			consultation is completed and until FEMA determines that the appropriate measures have been taken to ensure complete project compliance with the NHPA and its implementing regulations.
Environmental Justice	No impact	N/A	N/A
Hazardous Materials	No impact	TCEQ	In the event that site contamination or evidence of contamination is discovered during implementation of the proposed action, Newton County will manage the contamination in accordance with the requirements of the governing local, state, and federal regulations and guidelines. Herbicides will not be used.
Noise	Temporary impacts from the use of equipment.	N/A	All work will be conducted during daytime hours. All equipment and machinery will meet all local, state, and federal noise regulations.
Traffic	No impact.	N/A	N/A
Public Services and Utilities	Long-term beneficial effect on overhead utility power lines and potential for power outages, and improved emergency services due to the reduction in wildfire risk to homes.	N/A	N/A
Public Health and Safety	Reduction of the risk of structures burning during a wildfire that would threaten public health and safety.	N/A	N/A

SECTION 5 Cumulative Impacts

This section addresses the potential cumulative impacts associated with the implementation of the proposed action. Cumulative impacts can be defined as the impacts of a proposed action when combined with impacts of past, present, or reasonably foreseeable future actions undertaken by any agency or person. Cumulative impacts can result from individually minor but collectively significant actions.

No significant cumulative impacts are foreseen from implementation of the proposed action and other past, present, and future actions. Because the proposed action would have no impact or minimal impact on soils, visual resources, water resources, wetlands, floodplains, most wildlife, vegetation communities, prime farmlands, cultural resources, environmental justice, public services and utilities, hazardous materials, or public health and safety, the proposed action would not contribute to significant cumulative impacts on these resources.

Operation of heavy equipment during defensible space work would release some hydrocarbons and other air pollutants and create noise during the work. However, effects would be minor, localized, and short-term. There are no other known projects in the vicinity of the project areas that would contribute to impacts on air or noise at the same time as the proposed action. Therefore, there would not be cumulative impacts associated with air quality or noise.

Climate change is by its nature a cumulative impact. Carbon dioxide emissions from the proposed action would make a very small contribution to climate change.

SECTION 6 Agency Coordination, Public Involvement, and Permits

This section provides a summary of the agency coordination efforts and public involvement process for the proposed Newton County Defensible Space EA. In addition, an overview of the permits that would be required under the proposed action is included.

6.1 Agency Coordination

Consultation letters and responses from resource agencies are provided in **Appendix F**.

6.2 Public Participation

The public information process for the proposed project will include a public notice in the *Newton County News*, the general circulation newspaper that serves Newton County. The draft EA will be made available for public review at a physical location in the project area and on FEMA's web site (www.fema.gov). FEMA will conduct a 30-day public comment period commencing on the initial date of publication of the public notice. The notice will invite the public to submit their comments about the proposed project, potential impacts, and proposed mitigation measures so that they may be considered and evaluated. FEMA will consider and respond to all public comments in the final EA. If no substantive comments are received, the draft EA will become final, and a FONSI will be issued for the project. At this time, a public meeting is not planned because the proposed action is not considered controversial.

In compliance with EO 11988, Floodplains, the public notice will also state that portions of the project area are located within the 100-year floodplains of Cow Creek, Sabine River, Thickety Creek, and Trout Creek. Potential alternatives and impacts on floodplains are described in the draft EA, and the public will be invited to review and comment on the findings. Public comments on floodplain impacts will be considered in the preparation of the final EA. As described in **Section 4.3.3**, there would be no impacts on floodplains from the proposed action.

6.3 Permits

No local, state, or federal permits appear to be necessary to implement the proposed defensible space project. The proposed action does not require coverage under Texas Pollutant Discharge Elimination System construction stormwater general permit TXR150000 because it is not a construction project and would not generate stormwater associated with industrial activity as defined in 40 CFR 122.26(a)(14).

SECTION 7 References

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SECTION 8 List of Preparers

The following is a list of preparers who contributed to the development of the Newton County Defensible Space EA for FEMA.

The individuals listed below had principal roles in the preparation and content of this document. Many others had significant roles and contributions as well, and their efforts were no less important to the development of this EA. These others include senior managers, administrative support personnel, and technical staff.

CDM Smith

Preparers	Experience and Expertise	Role in Preparation
Beverly, Howard	Senior Cultural Resources Specialist	Cultural resources
Boucher, Henry	Environmental Engineer and Planner	Introduction, Purpose and Need, Alternatives, Project manager and editing
da Costa, Larissa	Water Resources Engineer	Kick off meeting, Water Resources, Socioeconomics (excluding Environmental Justice)
DeRosier, Lucy	Environmental Planner	Socioeconomic Resources, Cumulative Impacts
Kase, Sydney	GIS Specialist	Data collection, data management, general GIS support, figure production
McAuley, Erin	Environmental Planner	Environmental Justice
Perotin, Manuel	Senior Civil Engineer	Task order manager
Wade, Murray	Senior Biologist and Senior Environmental Scientist	Physical and Biological resources
Schenk, Roger	Senior Environmental Scientist	Site visit and kick off meeting
Stenberg, Kate Ph.D.	Senior Biologist, Senior Planner	NEPA documentation, biological resources, technical review

CH2M Hill

Preparer	Experience and Expertise	Role in Preparation
Speights, Jason	Biologist	Biological site visit
Trahan, Jacob	Environmental Scientist	Biological site visit and notes

Federal Emergency Management Agency

Reviewers	Role in Preparation
Jaynes, Kevin Regional Environmental Officer	Technical review and approval
Weir, Dorothy Environmental Specialist	Technical review and approval