

# Appendices

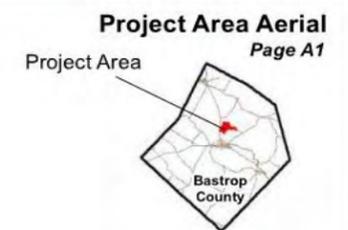
**Appendix A**

**Project Area Location Maps**



Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

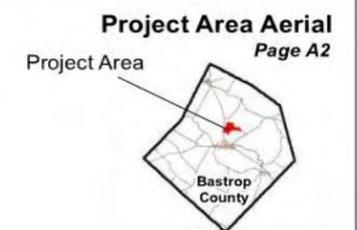
Legend  
Project Area





**Lost Pines North Hazardous Fuels Reduction**  
Bastrop County, TX

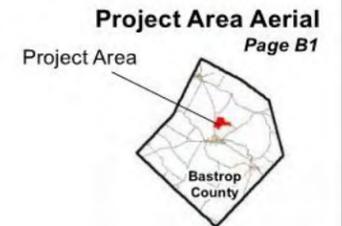
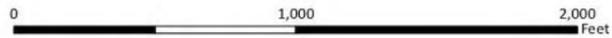
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Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

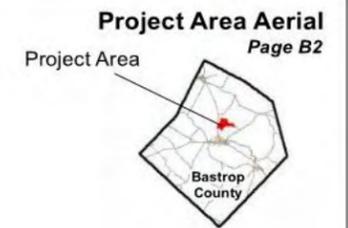
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Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

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Project Area





Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

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Project Area

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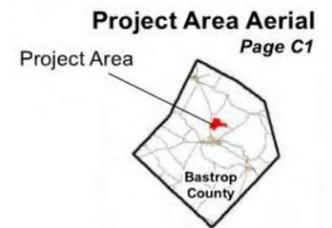
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Project Area Aerial  
Page B3  
Project Area  
Bastrop County



Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

Legend  
Project Area





Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

Legend  
Project Area

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Project Area Aerial  
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Project Area  
Bastrop County



Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

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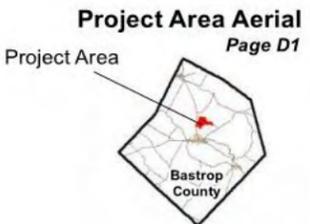
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Project Area Aerial  
Page C3  
Project Area  
Bastrop County



**Lost Pines North Hazardous Fuels Reduction**  
Bastrop County, TX

**Legend**  
Project Area

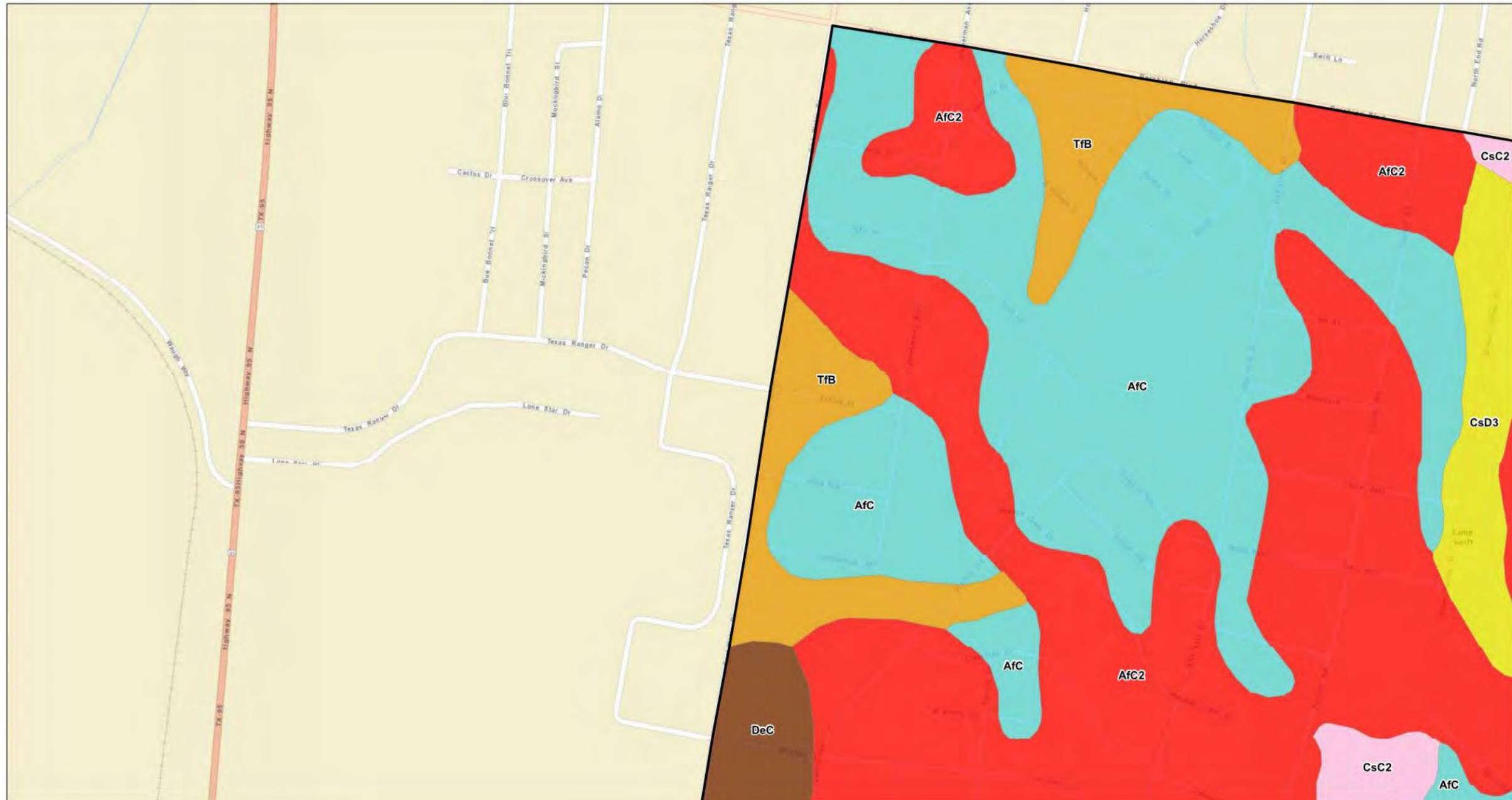


**Appendix B**

**Project Area Soils Maps**

**Soil Survey Unit Codes (legend for following map book sheets)**

| Code | Description  | Code | Description   |
|------|--|------|---|
| AfC  | Edge fine sandy loam, 1 to 5 percent slopes                      | MaA  | Mabank loam, 0 to 1 percent slopes                                  |
| AfC2 | Edge fine sandy loam, 2 to 5 percent slopes, moderately eroded   | PaE  | Padina fine sand, 1 to 12 percent slopes                            |
| AfE2 | Edge fine sandy loam, 5 to 12 percent slopes, eroded             | RoB  | Rosanky fine sandy loam, 1 to 3 percent slopes                      |
| AtD  | Edge gravelly fine sandy loam, 3 to 8 percent slopes             | Sa   | Sayers fine sandy loam, 0 to 1 percent slopes, occasionally flooded |
| CfB  | Crockett fine sandy loam, 1 to 3 percent slopes                  | SkC  | Silstid loamy fine sand, 1 to 5 percent slopes                      |
| CsC2 | Crockett fine sandy loam, 2 to 5 percent slopes, eroded          | TfA  | Tabor fine sandy loam, 0 to 1 percent slopes                        |
| CsD3 | Crockett fine sandy loam, 3 to 8 percent slopes, severely eroded | TfB  | Tabor fine sandy loam, 1 to 3 percent slopes                        |
| DeC  | Robco loamy fine sand, 1 to 5 percent slopes                     | WsB  | Wilson clay loam, 1 to 3 percent slopes                             |



**Lost Pines North Hazardous Fuels Reduction**  
Bastrop County, TX

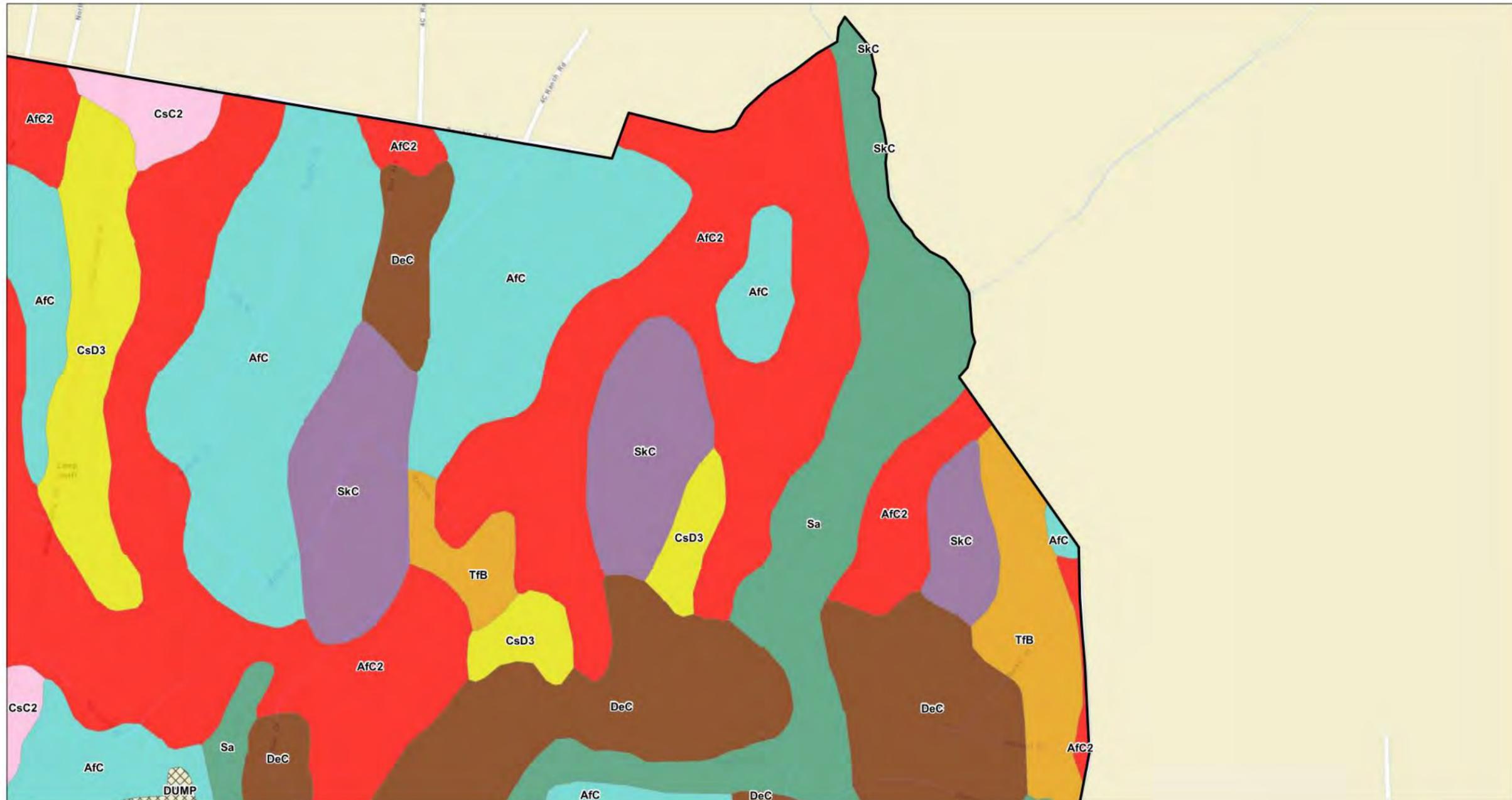
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|--------------------|------|------|------|-----|-----|-----|
| Project Area       | Afc2 | CfB  | DUMP | MaA | Sa  | TfB |
| <b>Soil Survey</b> | Afe2 | CsC2 | DeC  | PaE | SkC | W   |
| Afc                | Aid  | CsD3 | GP   | RoB | TfA | WsB |

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**Soils**  
 Page A1



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

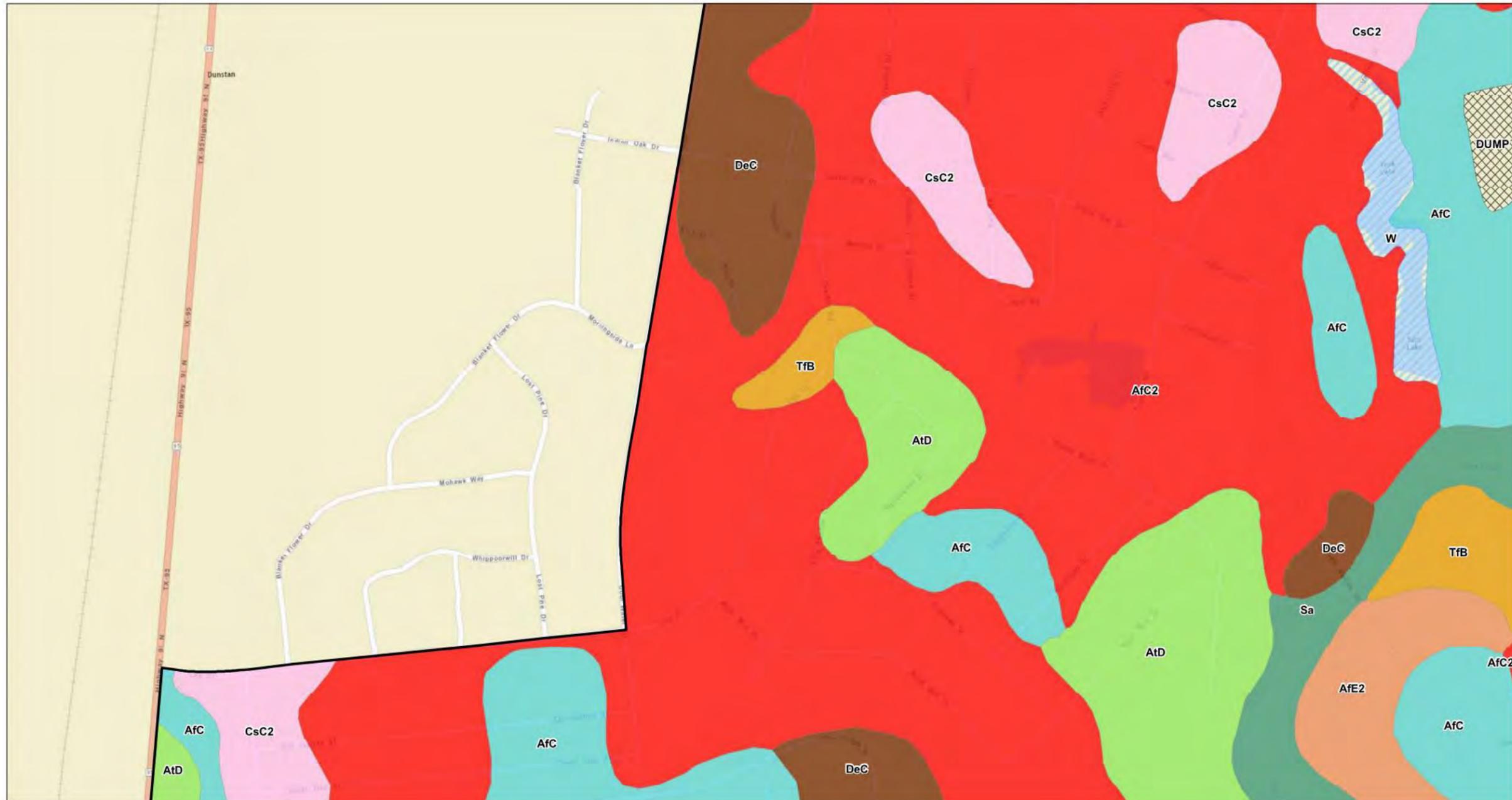
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| Project Area       | Afc2 | CfB  | DUMP | MaA | Sa  | TfB |
| <b>Soil Survey</b> | Afc  | CsC2 | DeC  | PaE | SkC | W   |
| AID                | CsD3 | GP   | RoB  | TfA | WsB |     |

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Project Area  
Bastrop County



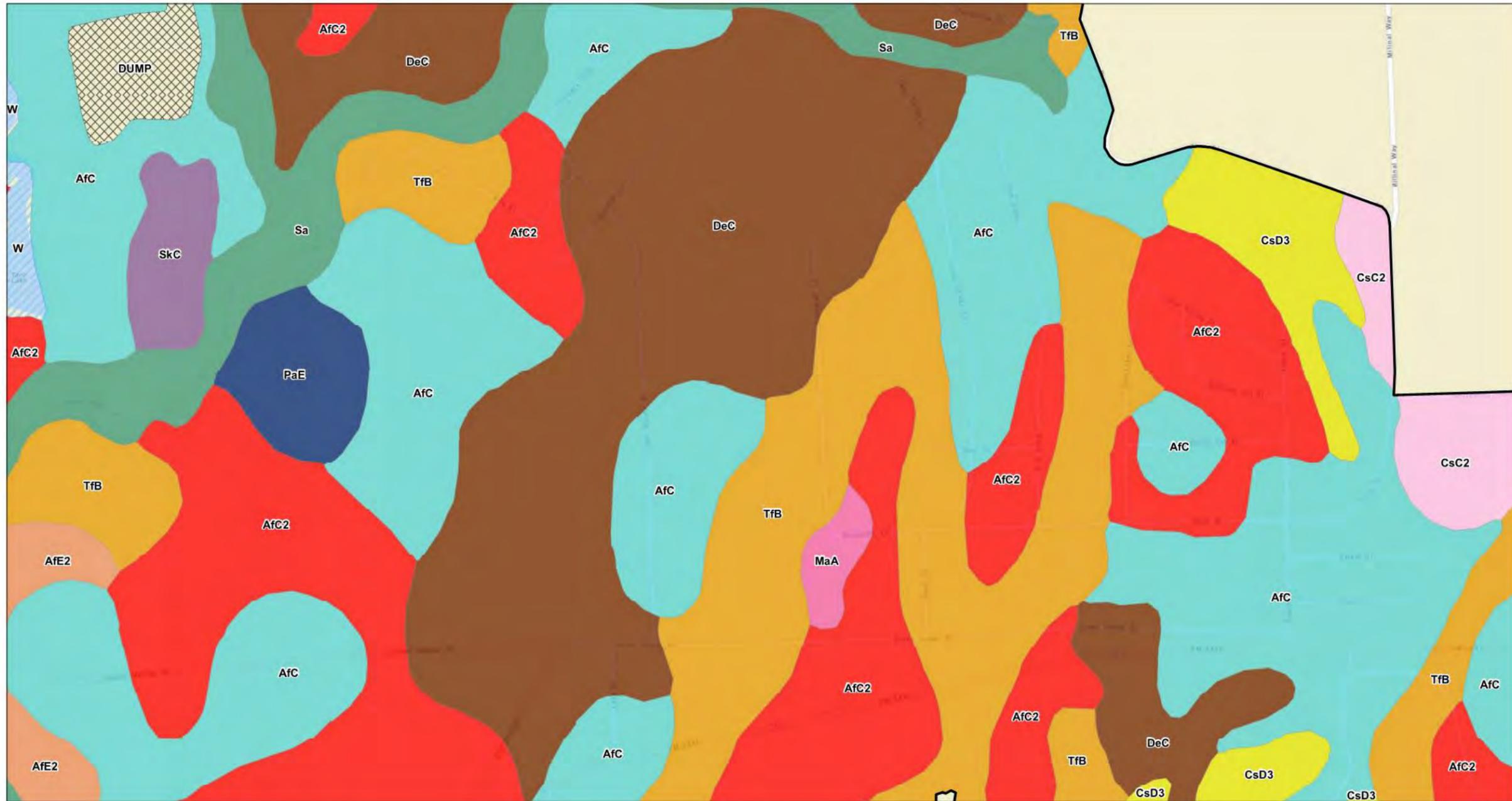
**Lost Pines North Hazardous Fuels Reduction**  
Bastrop County, TX

**Legend**

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| Project Area       | AFC2 | CfB  | DUMP | MaA | Sa  | TFB |
| <b>Soil Survey</b> | AFe2 | CsC2 | DeC  | PaE | SkC | W   |
| AFC                | AtD  | CsD3 | GP   | RoB | TfA | WsB |

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**Soils**  
 Page B1



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

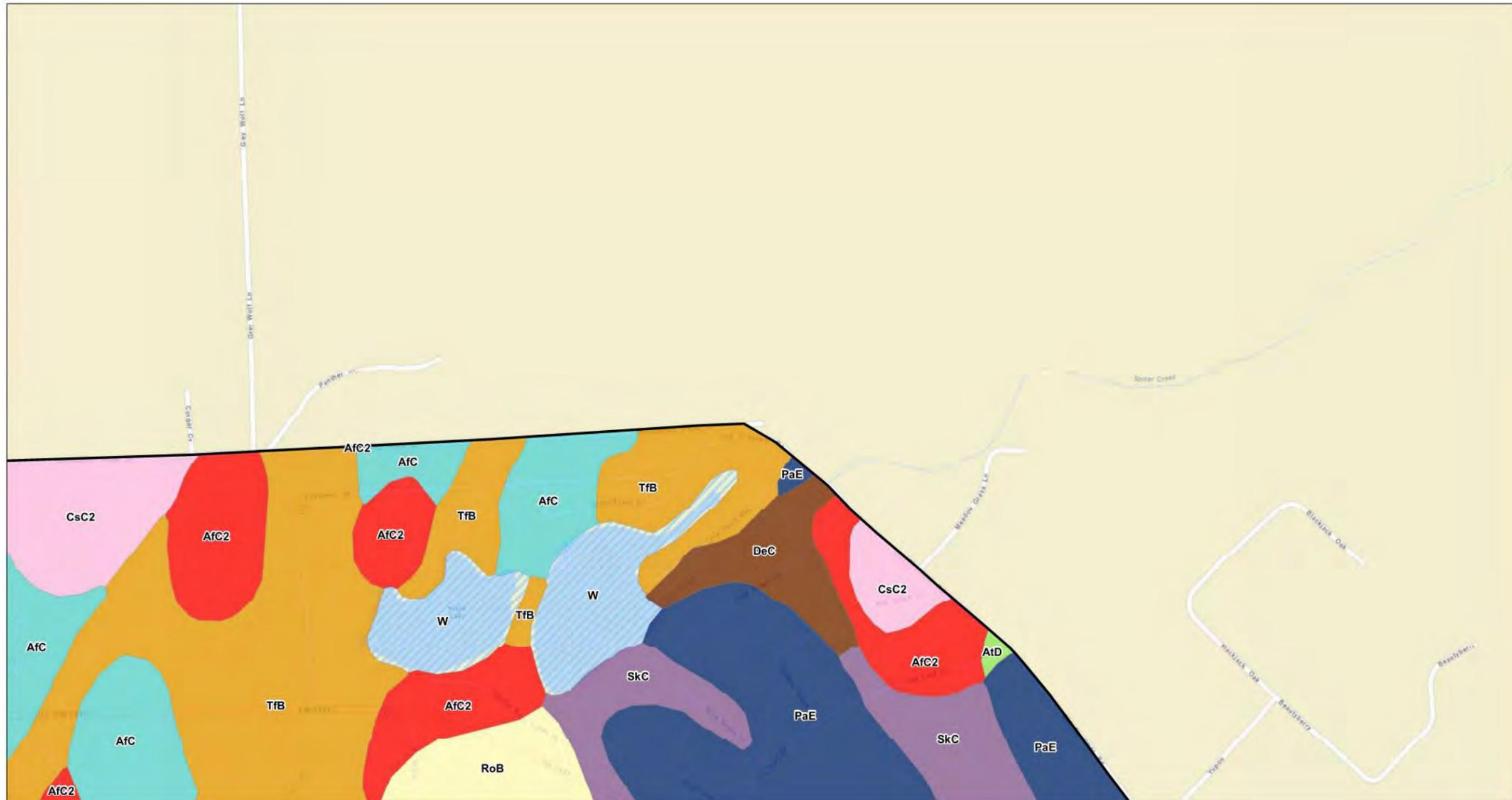
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| Afc          | Afe2 | CsC2 | DeC  | PaE | SkC | W   |
| Aid          | CsD3 | GP   | RoB  | TfA | Wsb |     |

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**Soils**  
 Page B2

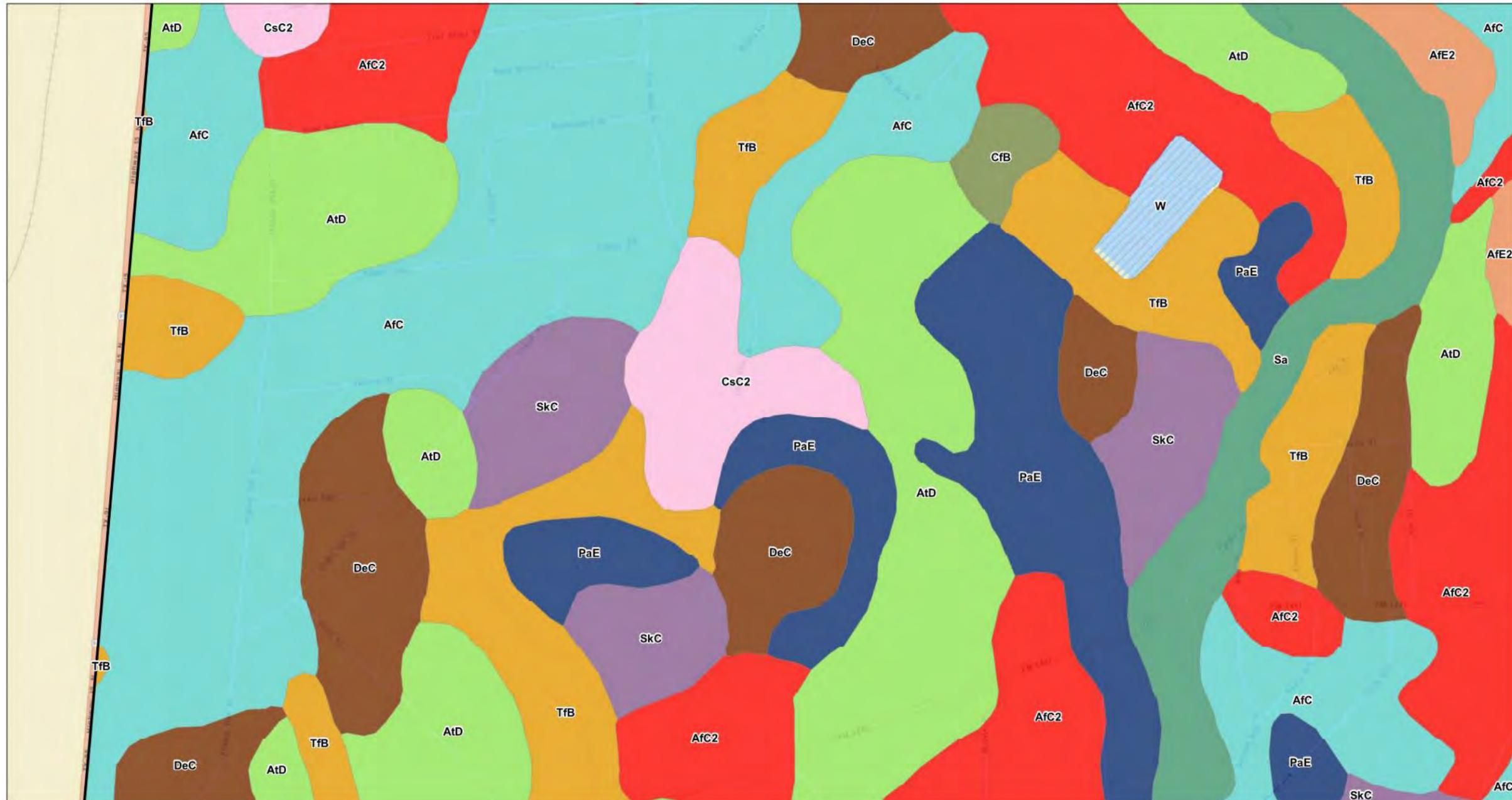


**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

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|--------------------|------|------|------|-----|-----|-----|
| Project Area       | Afc2 | CfB  | DUMP | MaA | Sa  | TfB |
| <b>Soil Survey</b> | Afc  | CsC2 | DeC  | PaE | SkC | W   |
|                    | Afc  | AtD  | CsD3 | GP  | RoB | TfA |
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**Soils**  
Page B3



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

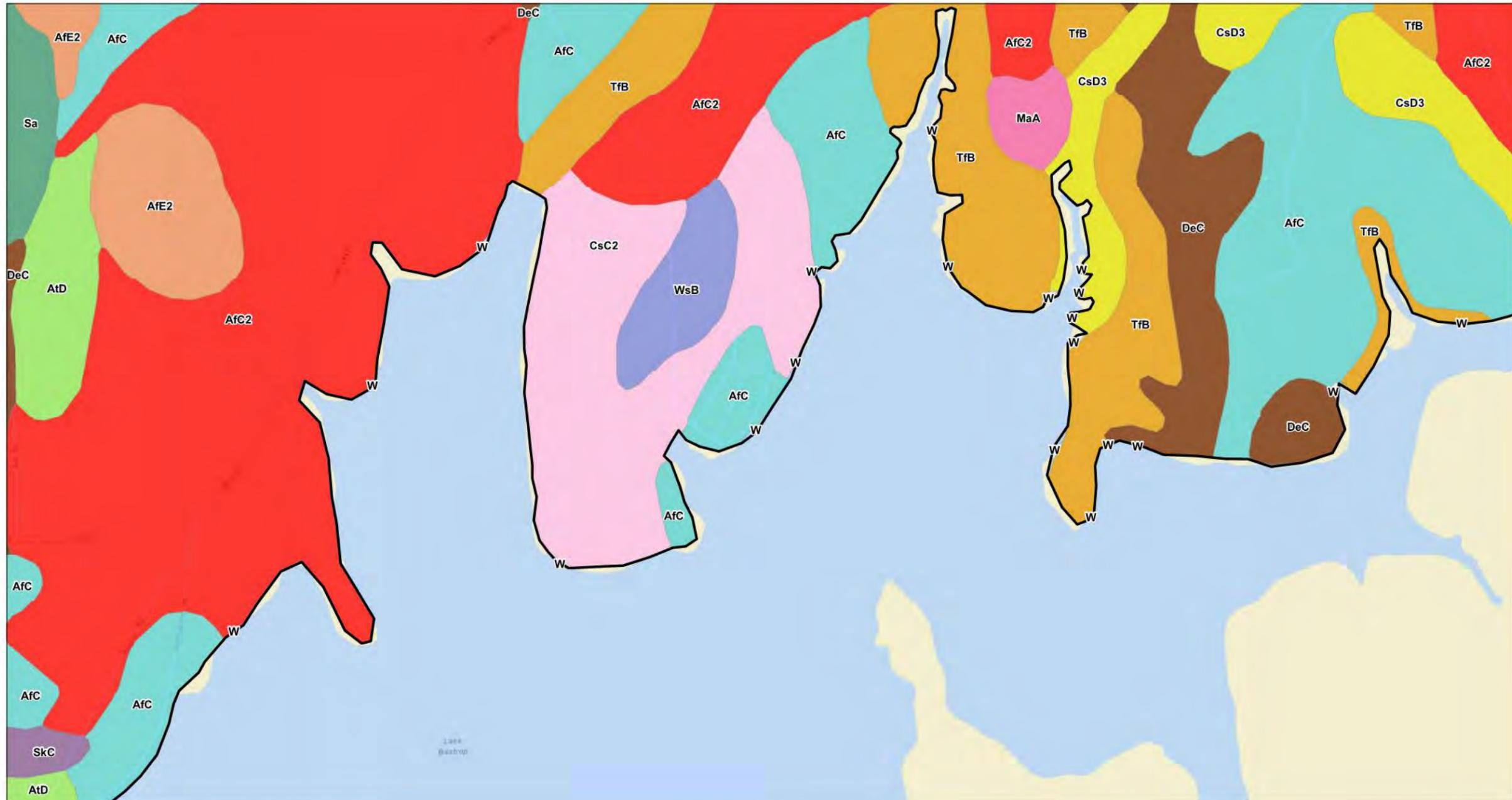
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| Project Area       | Afc2 | CfB  | DUMP | MaA | Sa  | Tfb |
| <b>Soil Survey</b> | Afe2 | Csc2 | Dec  | Pae | SkC | W   |
| Afc                | AtD  | Csd3 | GP   | RoB | TfA | Wsb |

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**Soils**  
 Page C1



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

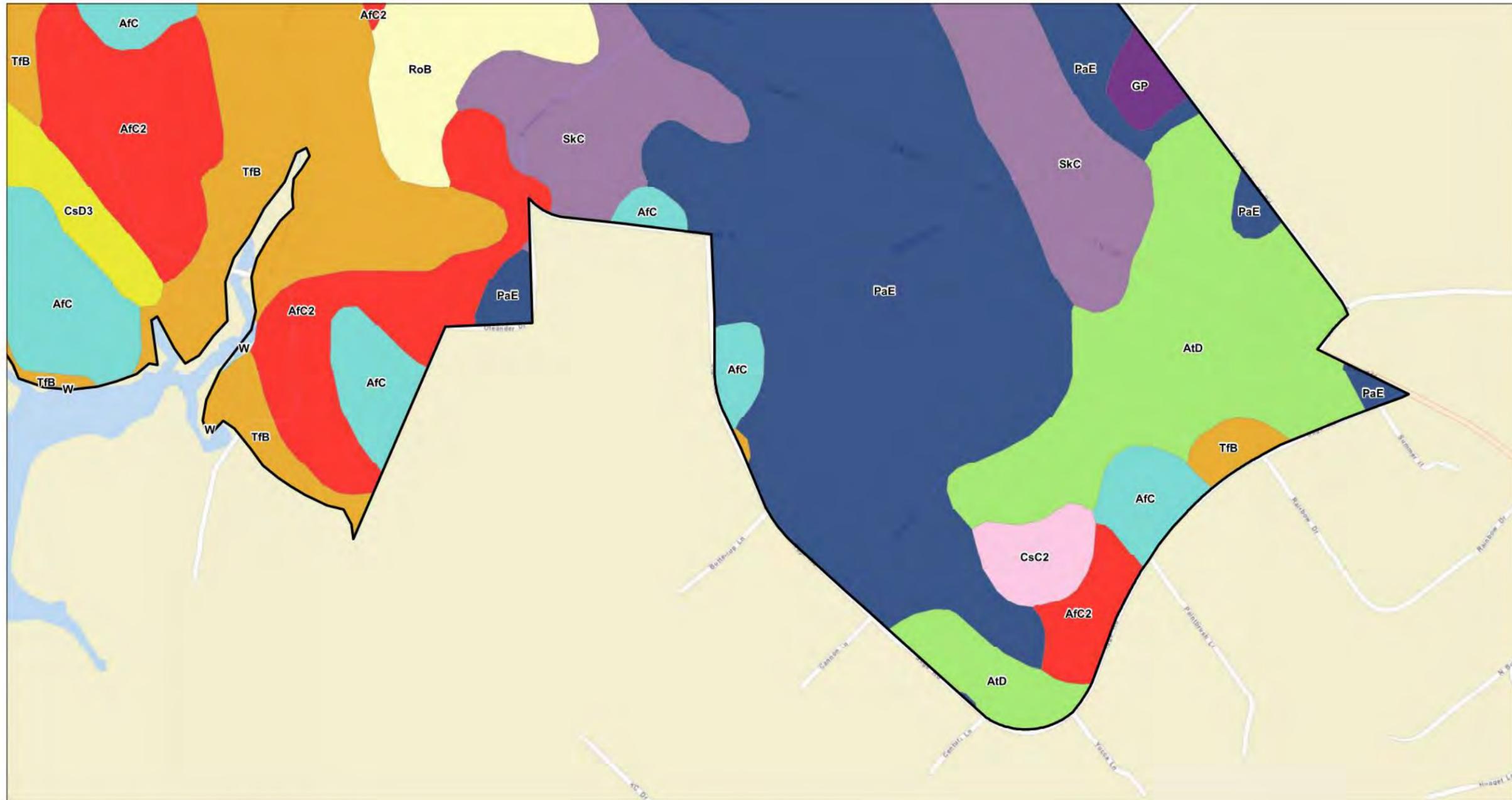
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|--------------------|------|------|------|-----|-----|-----|
| Project Area       | Afc2 | Cfb  | DUMP | MaA | Sa  | Tfb |
| <b>Soil Survey</b> | Afe2 | CsC2 | DeC  | PaE | SkC | W   |
| Afc                | AtD  | CsD3 | GP   | RoB | Tfa | WsB |

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**Soils**  
Page C2

Project Area



**Lost Pines North Hazardous Fuels Reduction**  
Bastrop County, TX

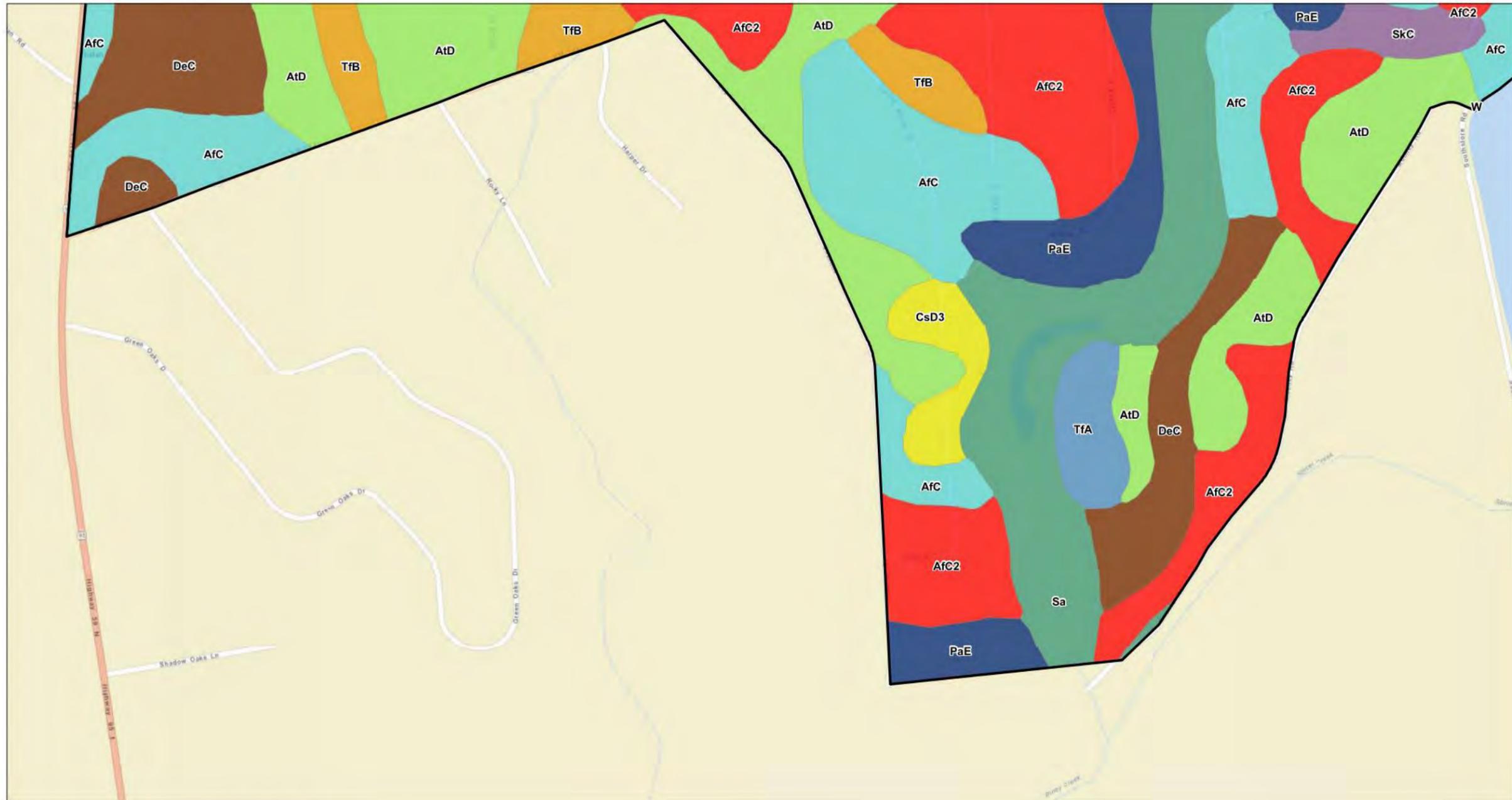
**Legend**

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|--------------------|------|------|------|-----|-----|-----|
| Project Area       | AfC2 | CfB  | DUMP | MaA | Sa  | TFB |
| <b>Soil Survey</b> | Afe2 | CsC2 | DeC  | PaE | SkC | W   |
| AfC                | AtD  | CsD3 | GP   | RoB | TfA | WsB |

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**Soils**  
Page C3

Project Area



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                    |      |      |      |     |     |     |
|--------------------|------|------|------|-----|-----|-----|
| Project Area       | AFC2 | CfB  | DUMP | MaA | Sa  | TFB |
| <b>Soil Survey</b> | Afe2 | CsC2 | DeC  | PaE | SkC | W   |
| Afc                | AtD  | CsD3 | GP   | RoB | TfA | WsB |

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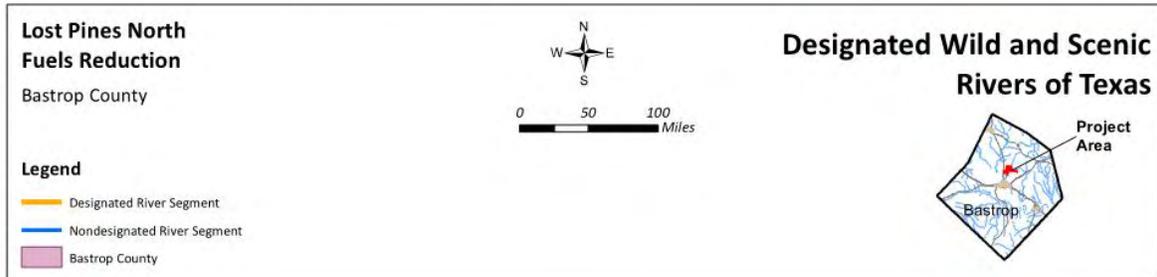
**Soils**  
Page D1

Project Area  
Bastrop County

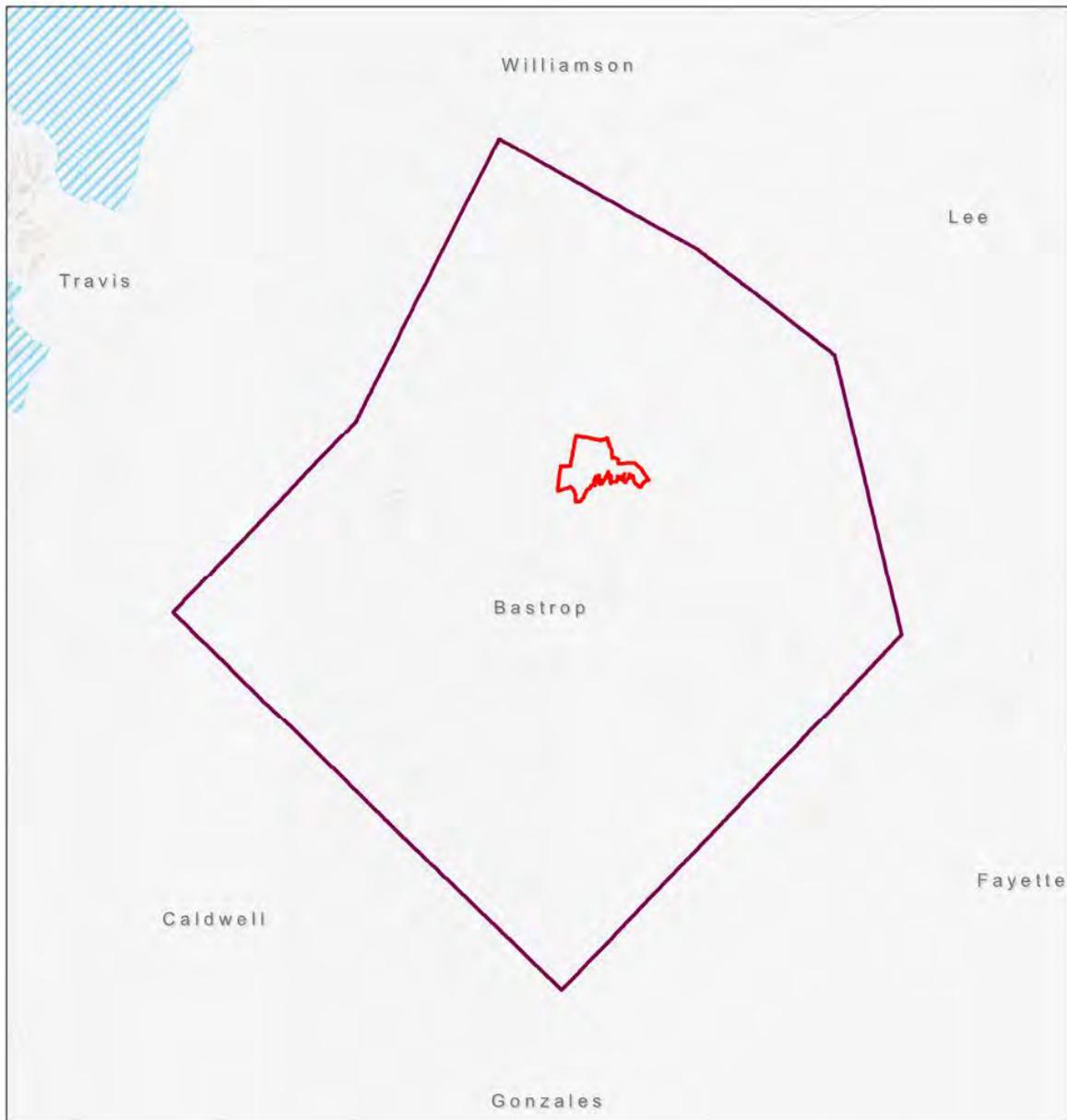
## **Appendix C**

### **Water Resources Data**

- C-1. Wild and Scenic Rivers Map
- C-2. Sole Source Aquifer Map
- C-3. Wetlands Maps
- C-4. FEMA Federal Insurance Rate Maps
- C-5. Floodplain Maps



Data Sources: NPS, TNRI  
Service Layer Credits: Sources: Esri, USGS, NOAA



**Lost Pines North  
Fuels Reduction**

Bastrop County

**Legend**

-  Project Area
-  Area of Interest
-  Sole Source Aquifer



**Sole Source Aquifers**



Data Sources: EPA, TNRIS  
Service Layer Credits: Sources: Esri, USGS, NOAA



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Freshwater Emergent Wetland | Freshwater Pond                   |
| Lake                        |                                   |

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**Wetlands**  
 Page A1  
 Project Area  
  
 Bastrop County



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Freshwater Emergent Wetland | Lake                              |
| Freshwater Pond             |                                   |

**Wetlands**  
Page A2

Project Area

Bastrop County



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Wetlands by Type            | Freshwater Pond                   |
| Freshwater Emergent Wetland | Lake                              |

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**Wetlands**  
 Page B1  
 Project Area  
  
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**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Wetlands by Type            | Freshwater Pond                   |
| Freshwater Emergent Wetland | Lake                              |

**Wetlands**  
 Page B2



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Wetlands by Type            | Freshwater Pond                   |
| Freshwater Emergent Wetland | Lake                              |

**Wetlands**  
 Page B3

Project Area



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Wetlands by Type            | Freshwater Pond                   |
| Freshwater Emergent Wetland | Lake                              |

**Wetlands**  
 Page C1

Project Area



**Lost Pines North Hazardous Fuels Reduction**  
Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Freshwater Emergent Wetland | Freshwater Pond                   |
| Lake                        |                                   |

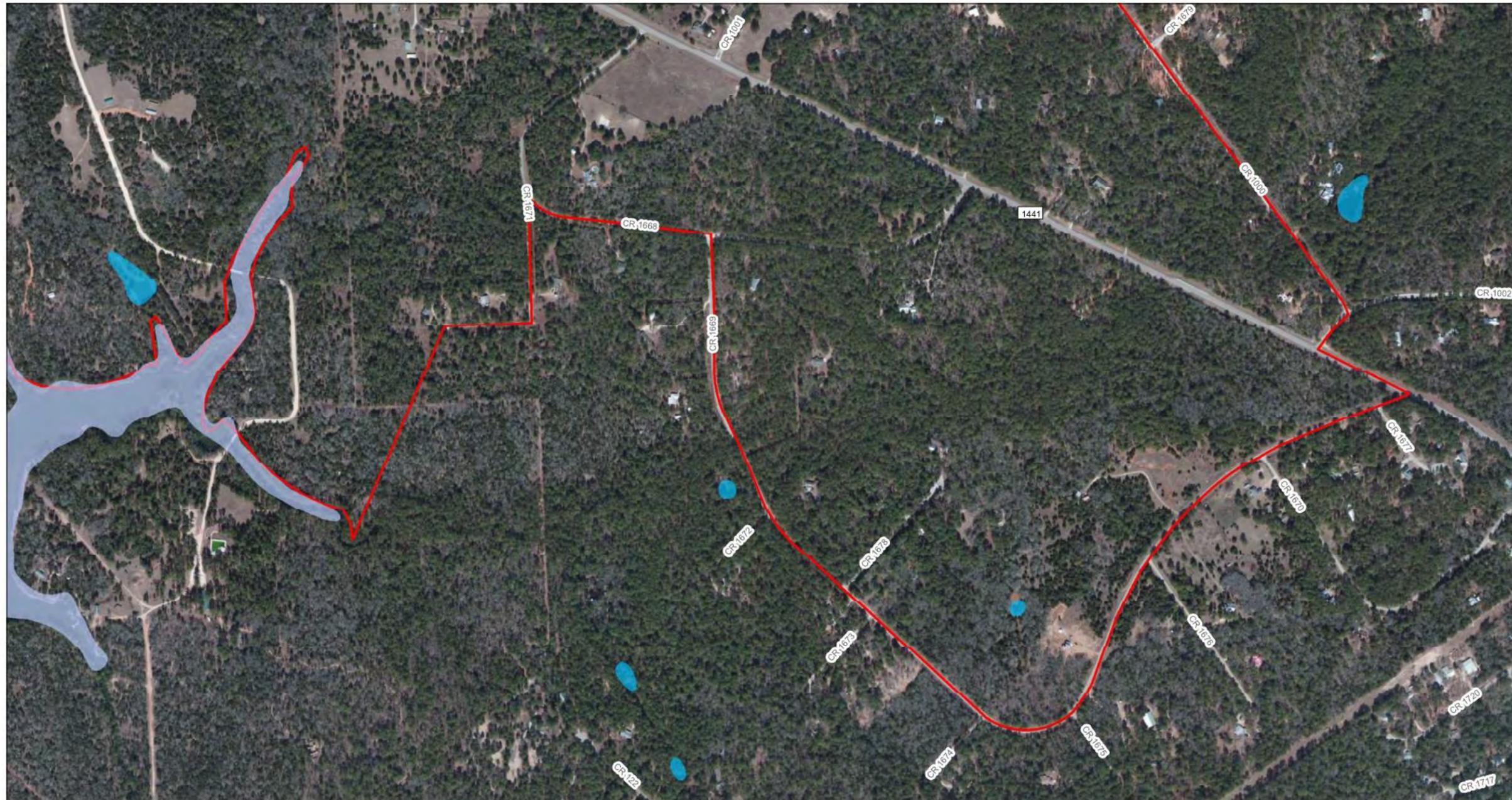
Wetlands by Type

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**Wetlands**  
Page C2

Project Area



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

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| Project Area                | Freshwater Forested/Shrub Wetland |
| Freshwater Emergent Wetland | Freshwater Pond                   |
| Lake                        |                                   |

**Wetlands**  
Page C3

Project Area

Bastrop County



**Lost Pines North Hazardous Fuels Reduction**  
 Bastrop County, TX

**Legend**

|                             |                                   |
|-----------------------------|-----------------------------------|
| Project Area                | Freshwater Forested/Shrub Wetland |
| Freshwater Emergent Wetland | Lake                              |
| Freshwater Pond             |                                   |

**Wetlands**  
Page D1

Project Area

## **Executive Order (EO) EO 11990– Wetland Management Eight-Step Decision Making Process**

EO 11990 (Protection of Wetlands) requires federal agencies to take action to minimize the loss of wetlands and prohibits FEMA from funding construction in a wetland unless no practicable alternatives available.

This eight-step process is applied to the proposed Bastrop County North Lost Pines Hazardous Fuels Reduction project. The proposed project involves vegetation management in the Lost Pines region of central Bastrop County to reduce the risk of damage to structures from wildfire. Although formal wetland delineations were not conducted, potential wetlands were identified within the proposed project area and these determinations will be confirmed in the field prior to work beginning. The steps in the decision-making process are as follows:

### **Step 1 Determine if the proposed action is located in a wetland**

The County would conduct work within potential wetlands in the project area. Potential wetlands within the project area are shown on **Figure 4.6** of the environmental assessment (EA). The proposed project would not result in the discharge of any dredged or fill material in any wetlands.

### **Step 2 Early public notice (Preliminary Notice)**

A public notice concerning the proposed hazardous fuels reduction project will be published in The *Bastrop Advertiser* newspaper along with the Notice of Availability of the draft EA document. The *Bastrop Advertiser* is the local newspaper for the Bastrop area, including where the proposed action is located.

### **Step 3 Identify and evaluate alternatives to working in wetlands**

The no action alternative is described in **Section 3** of the EA. The no action alternative would not meet the purpose and need for the project and is not a practicable alternative.

An alternative that would relocate the project out of wetlands is described here. Portions of the proposed project are located within potential wetlands. In order to protect structures in central Bastrop County, hazardous fuels reduction is needed to create a mosaic pattern of reduced fuels with areas of untreated vegetation or vacant lots throughout the community. Relocating the proposed project area to avoid wetlands would require that portions of the project area not undergo hazardous fuels reduction. This alternative was considered but rejected because it would not adequately protect residences, roadways, and other structures in the wildland-urban interface of central Bastrop County. An alternative that would relocate the project outside of wetlands would not meet the purpose and need and is not a practicable alternative. There is no practicable alternative for the portions of the project within wetlands because these areas support heavy vegetative fuel loads in close proximity to homes, schools and other infrastructure, and this wildfire risk needs to be mitigated. No alternatives outside of working in some wetlands exist that would achieve the purpose and need of the project.

#### **Step 4 Identify impacts of proposed action associated with occupancy or modification of wetlands**

##### *Impact on natural function of wetlands*

The proposed action would not significantly affect the functions and values of wetlands in the project area. The proposed action would not result in any discharge of dredged or fill materials nor would it result in any structures or fill within wetlands that would affect wetland functions. The proposed project would not promote development within wetlands. Soil disturbances would be avoided by conducting the work by hand within wetlands and within 200 feet of wetlands. No rootballs of removed vegetation would be disturbed.

The functions of wetlands to filter nutrients and impurities from runoff, floodwater storage, reduced flood velocities, reduce flood peaks, reduce sedimentation, promote infiltration and aquifer recharge will remain intact after the implementation of this project because vegetation would be thinned but not removed completely. Wetlands also provide services in the form of providing fish and wildlife habitat, breeding, and feeding grounds. These wetland values will not be adversely impacted and the overall integrity of the ecosystem will not be impacted. FEMA has determined the project may affect, but will not likely adversely affect one federally listed amphibian, the Houston toad. The project would not adversely modify or otherwise affect Houston toad critical habitat. The proposed action would have negligible impacts to native species and their habitats and population levels of native species would not be affected. The potential for adverse impacts to migratory bird species would be avoided by conducting the work during the fall and winter seasons when migratory species are not breeding. The proposed action will not adversely affect the societal and recreational benefits provided by wetlands. Open space and recreational uses in central Bastrop County will not be affected by the proposed action

The hazardous fuels reduction activities would reduce the potential for the negative effects of a major wildfire on soils if a wildfire occurs. A wildfire could alter the cycling of nutrients; the physical and chemical properties of soils; and the temperature, moisture, and biotic characteristics of the existing soils. These primary impacts from a wildfire could also result in decreased infiltration and increased runoff, which often causes increased erosion. These potential negative effects of a major wildfire on the natural wetland functions would be reduced through implementation of the proposed action.

#### **Step 5 Design or modify the proposed action to minimize impacts to wetlands and preserve and enhance the natural and beneficial wetland values**

The objective of the proposed action is to reduce the risk of wildfires impacting structures and roadways in central Bastrop County. No dredged or fill material would be discharged to wetlands as a result of the proposed project. Work within 200 feet of wetlands would be restricted to hand thinning and hand hauling of debris from the wetlands and buffer zone. The proposed hazardous fuels reduction would result in the removal of surface fuels, removal of some trees, and trimming of the lower branches of trees up to a height of 8 feet above the ground. The proposed action would have no effect on the natural and beneficial values of wetlands. As a condition of the project, no mulch or debris would be stored or staged within any wetlands or within 200 feet of wetlands.

The proposed action to reduce fuel loads would contribute to the conservation of wetlands and their natural and beneficial values. The proposed project would not result in the destruction, loss or degradation of wetlands.

Impacts to federally listed species will be mitigated by the avoidance and minimization measures outlined in the consultation with the U.S. Fish and Wildlife Service (USFWS) in Section 4.4.3 of the EA. Impacts to migratory bird species will be minimized by seasonal restrictions such that work is conducted outside of nesting season or by the deployment of a biological monitor if work must take place during nesting season.

### **Step 6 Determine if proposed action is practicable and re-evaluate alternatives.**

The proposed action would not expose any segment of the population to flood hazards related to the loss of wetland functions because it does not alter the function of wetlands, and will not facilitate development in any wetlands. The project would not disrupt wetland values because it would not change water flows to the wetlands. Therefore, it is practicable to implement the proposed action within the wetlands. Alternatives consisting of locating the project outside of the wetlands or taking no action are not practicable because these alternatives would not reduce wildfire risks to people and homes, schools, and roadways in the Lost Pines region of central Bastrop County. FEMA maintains that the proposed action alternative is the only practicable alternative to meet the purpose and need of the project. This section may be revised following public comment on the EA and this eight-step evaluation if substantive comments are received regarding wetland impacts.

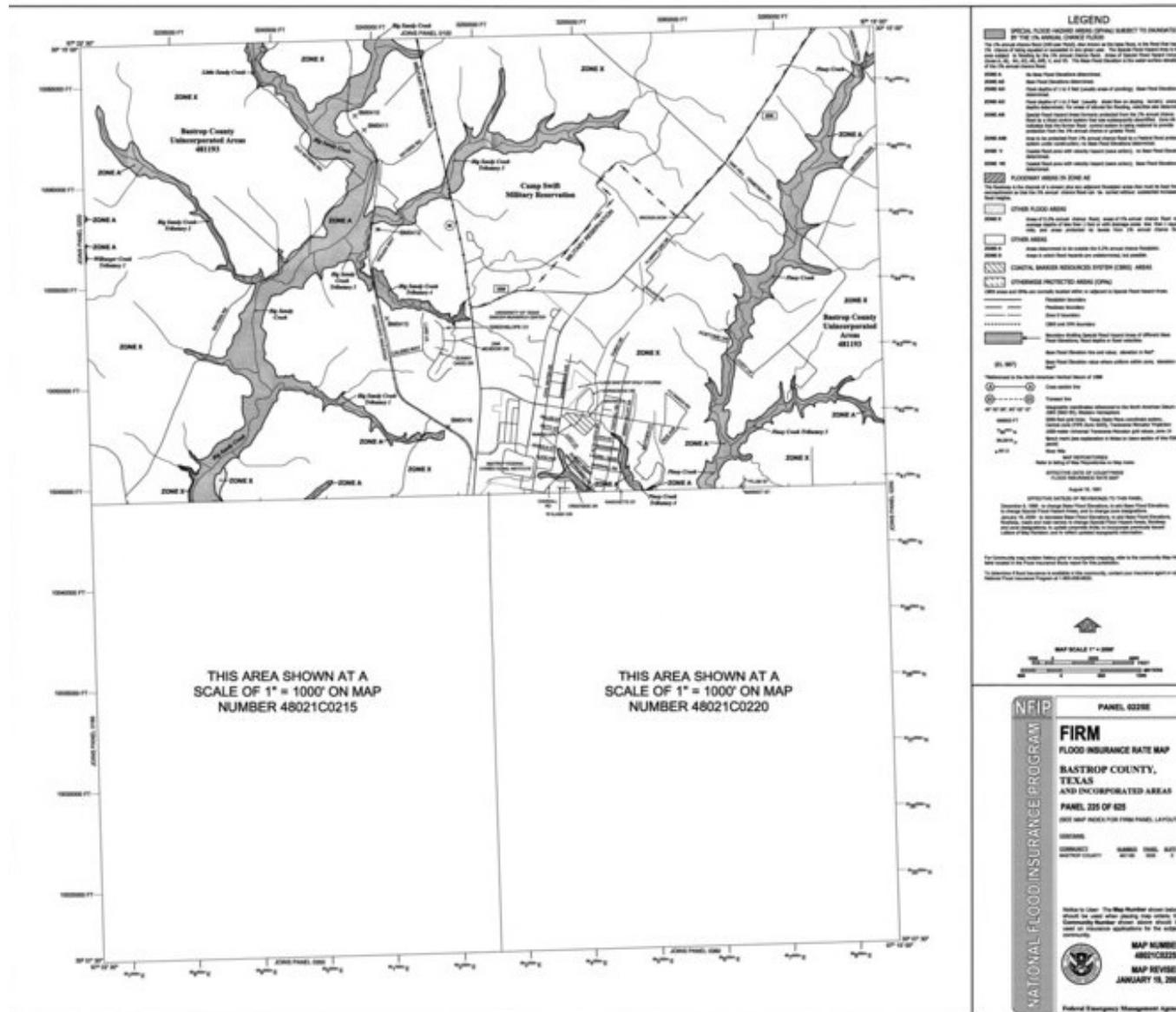
### **Step 7 Findings and public explanation (Final Notification)**

Step 7 requires that the public be provided with an explanation of any final decision that work in wetlands is the only practicable alternative. In accordance with 44 CFR §9.12, Bastrop County must prepare and provide a final public notice 15 days prior to the start of any hazardous fuels reduction activities in wetlands. Documentation of the final public notice is to be forwarded to FEMA for inclusion in the permanent project files.

### **Step 8 Implement the action**

Step 8 is the review of the implementation and post-implementation phases of the proposed action to ensure that the requirements stated in 44 CFR Part 9.11 are fully implemented. The proposed hazardous fuels reduction project will be conducted in accordance with applicable wetland protection requirements.

Conditions identified in Step 5 would be implemented.





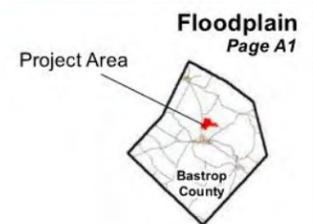






Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

- Legend
- Project Area
  - 100-yr Floodplain





Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

**Legend**  
Project Area  
100-yr Floodplain

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**Floodplain**  
Page A2  
Project Area  
Bastrop County



Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

**Legend**  
Project Area  
100-yr Floodplain

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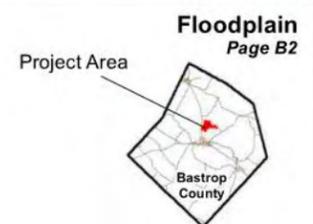
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**Floodplain**  
Page B1  
Project Area  
Bastrop County



Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

- Legend
- Project Area
  - 100-yr Floodplain





Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

**Legend**  
Project Area  
100-yr Floodplain

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**Floodplain**  
Page B3  
Project Area  
Bastrop County



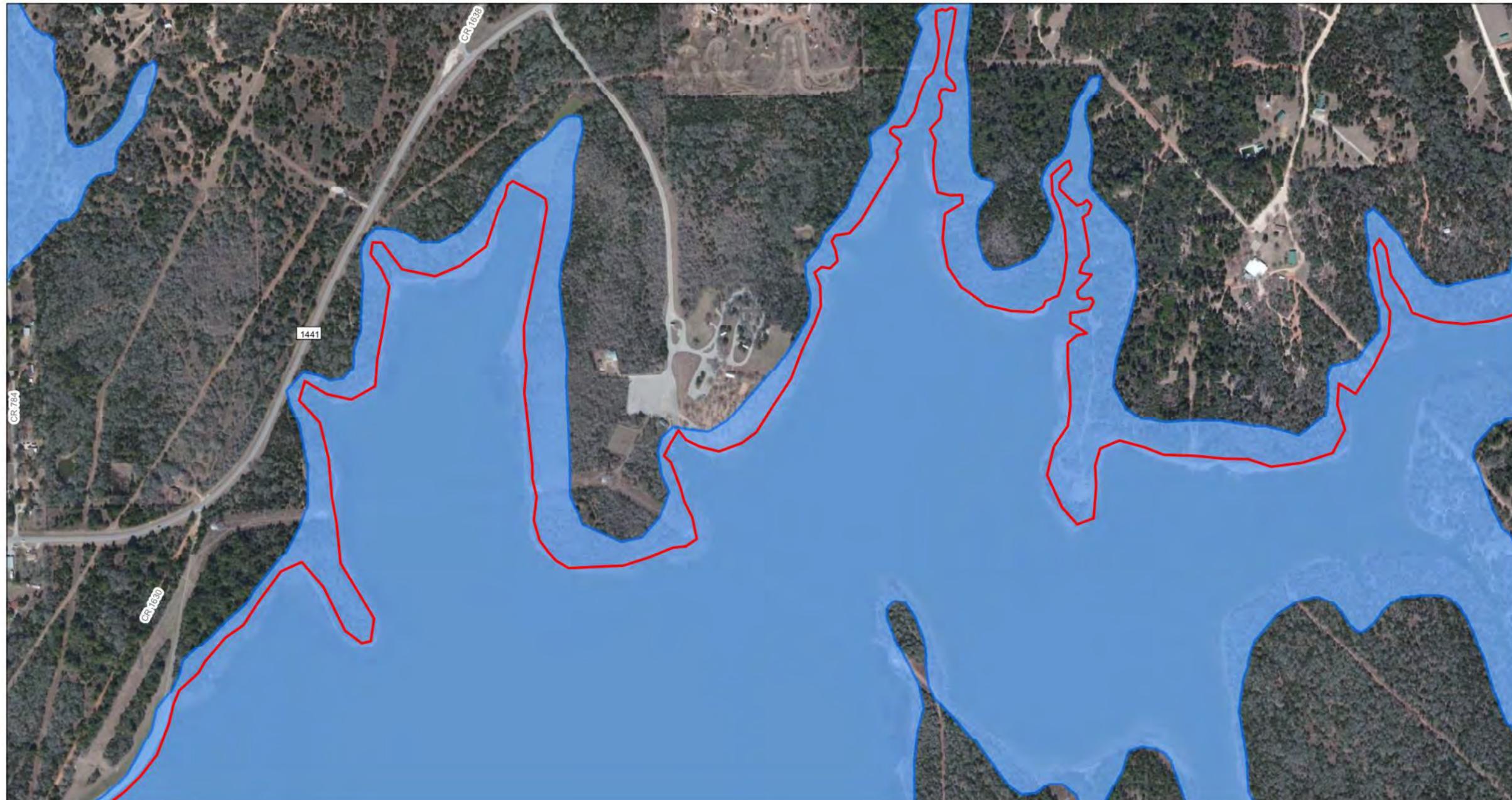
Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

**Legend**  
Project Area  
100-yr Floodplain

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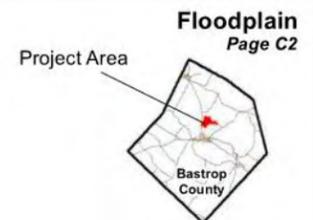
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**Floodplain**  
Page C1  
Project Area  
Bastrop County



Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

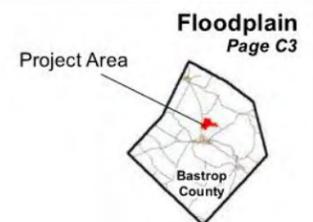
- Legend
- Project Area
  - 100-yr Floodplain





Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

- Legend
- Project Area
  - 100-yr Floodplain





Lost Pines North Hazardous Fuels Reduction  
Bastrop County, TX

**Legend**  
Project Area  
100-yr Floodplain

N  
W E  
S

0 1,000 2,000  
Feet

**Floodplain**  
Page D1  
Project Area  
Bastrop County

**Appendix D**  
**Agency Coordination Letters**



**FEMA**

November 10, 2014

Mr. Mark Wolfe  
State Historic Preservation Officer  
Texas Historical Commission  
P.O. Box 12276  
Austin, TX 78711

RE: Section 106 Review, 1,825 acres North Lost Pines Hazardous Fuels Reduction, Bastrop County, Texas

Dear Mr. Wolfe,

Bastrop County (Applicant) is requesting Hazard Mitigation Grant Program (HMGP) funding from the Federal Emergency Management Agency (FEMA) for wildlife mitigation activities in the North Lost Pines area in north-central Bastrop County. FEMA has determined that this project constitutes an undertaking and is initiating consultation under Section 106 of the National Historic Preservation Act.

The Applicant proposes to lower the occurrence of heavy under- and mid-story tree stands in the North Lost Pines area to reduce the intensity of surface fires and lower the probability of fires transitioning into the crowns of stands. This will be accomplished by using a combination of forestry type mowers, chainsaws, and chippers to reduce fuel concentrations that are more than 30 feet from a structure, and by creating shaded fuel breaks along large areas of continuous fuels adjacent to structures. The fuel reduction work includes the removal of encroaching brush species and ladder fuels (yaupon, holly, and red cedar); removal of dead vegetative materials such as branches, standing loblolly pine, and debris. No rootballs or stumps will be removed; stumps would be ground down to ground level and would not be mechanically excavated or pushed. Some living hardwoods and pines may be selectively removed. The canopy height of larger and taller trees including hardwoods and pines will be raised 5-8 feet above ground by removing the lower limbs. Vegetative material will be ground and mulch will be spread on site.

The Area of Potential Effects (APE) is described as: Beginning at State Highway 95 and FM 1441 in Bastrop County, Texas, then east on FM 1441 to Suzanne Drive. Then along Suzanne to its south end. Then to the east to Mooney St and along Mooney to Lake Bastrop. Then following the water's edge around the north portion of lake to near Oleander Drive. Then along Oleander to Bluebonnet Drive to the intersection with Sage Drive. Follow Sage to the intersection with FM 1441, then to the west a short distance on FM 1441 to Pine Path. Then NE on Pine Path to Old Firetower Road. Then NW on Old Firetower to Whispering Pines Drive. Turning north on Plum Street. from Whispering Pines, go to the dead end of Plum. From dead end of Plum, follow an

un-named tributary to Piney Creek to the eastern end of Pershing Drive. Then west on Pershing Drive to Coolwater Drive. Then south on Coolwater to LBA Drive, turning west on LBA Drive go to SH 95. Then south on SH 95 to FM 1441 and the point of beginning. (See also attached map.)

This APE as noted above and as shown on the attached map depicts a total land mass of approximately 4,646 acres. Some parcels will not be treated in this project for various reasons. There will be no fuel reduction activities performed in the following situations within the overall project boundaries: 1) within 30 feet of a structure, 2) in the 100 year floodplain, or 3) on private property without a valid consent and right of entry given by the property owner. In addition, open areas that do not require fuels reduction, such as open pasture and farmlands, will not be included as part of the project. Therefore, the estimated total area to be treated is approximately 1,825 acres.

FEMA has retained CDM Smith to prepare an environmental assessment under NEPA for this undertaking. A CDM Smith archaeologist (RPA) and FEMA archeologist have reviewed the undertaking. A cultural records file search of the Texas Archaeological and Historic Site Atlas was conducted for known historical sites. According to the Atlas there are no listed National Register of Historic Places (NRHP) properties or districts within the immediate vicinity of the APE. Bastrop State Park is the closest NHRP property or district. It is located approximately 3 miles south of the APE.

According to the Atlas, there are twenty-seven (27) previously recorded archaeological sites within the APE (including historic cemetery Site 41Bp853). One site, 41Bp351, has both historic and prehistoric components present. Nineteen (19) of these sites are undetermined prehistoric lithic scatters and open campsites (41Bp209, 210, 211, 212, 213, 214, 215, 351, 358, 359, 360, 361, 362, 363, 364, 370, 388, 655, and 656), four (4) are related to World War II era Camp Swift (14Bp348, 355, 356, and 357), two (2) are historic dumps (41Bp351 and 857), and there is one (1) historic cemetery (41Bp853), one (1) pre-1941 farmstead (41Bp858), and one (1) prehistoric isolated find (41Bp216). Of these sites, only one site, 41Bp356, has been determined eligible for listing on the NRHP. The site is an industrial water/waste water complex associated with World War II era Camp Swift. Nine (9) sites have been determined ineligible (41Bp210, 215, 216, 348, 355, 357, 361, 362, and 388). The eligibility status for the remaining seventeen sites (17) is undetermined (41Bp209, 211, 212, 213, 214, 351, 358, 359, 360, 363, 364, 370, 655, 656, 853, 857, and 858). For the purposes of this consultation, FEMA is assuming that these 17 sites are potentially eligible for listing in the NRHP.

In order to minimize ground disturbance near the previously determined eligible site and the 17 potentially eligible sites, the Applicant will hand cut within a 50 meter buffer of the site centroids. Because site 351 has a larger boundary, the Applicant will hand cut within the entire site boundary (see enclosed index and tile maps). Only man-powered equipment such as chainsaws, wheelbarrows, etc. will be used to cut and remove brush from these areas. The restrictions in these areas will be a requirement of the FEMA grant funding.

Furthermore, certain sites may be avoided by the Applicant. The exact locations of the hazardous fuels treatment areas have not yet been determined by the Applicant. The Applicant does not intend to conduct work within the floodplain, and portions of buffered sites 358 and 364 (Tile A1); 857 (Tile A2); and 655, 656, and 853 (Tile A3) are located within the floodplain. The assumption is that cutting will not take place within the floodplain portions of these sites. Also, certain sites such as 363 (Tile A1) and 356 (Tile B1) fall in areas that may not require hazardous fuels treatment because they are in areas that are not overgrown with dense vegetation or they are naturally open areas.

In addition, the Applicant will be required to adhere to the following requirement as a condition of the FEMA grant:

“In the event that archaeological deposits, including any Native American pottery, stone tools, bones, funerary objects, or human remains are uncovered, the project must be halted immediately in the vicinity of the discovery, and all reasonable measures will be taken to avoid or minimize harm to the finds. The Applicant must secure all archaeological findings and restrict access to this sensitive area. The Applicant must inform TXDPS immediately. TXDPS will notify FEMA at the earliest practicable time, but not later than 24 hours. FEMA will then consult with the State Historic Preservation Office (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 National Historic Preservation Act (NHPA) and its implementing regulations.”

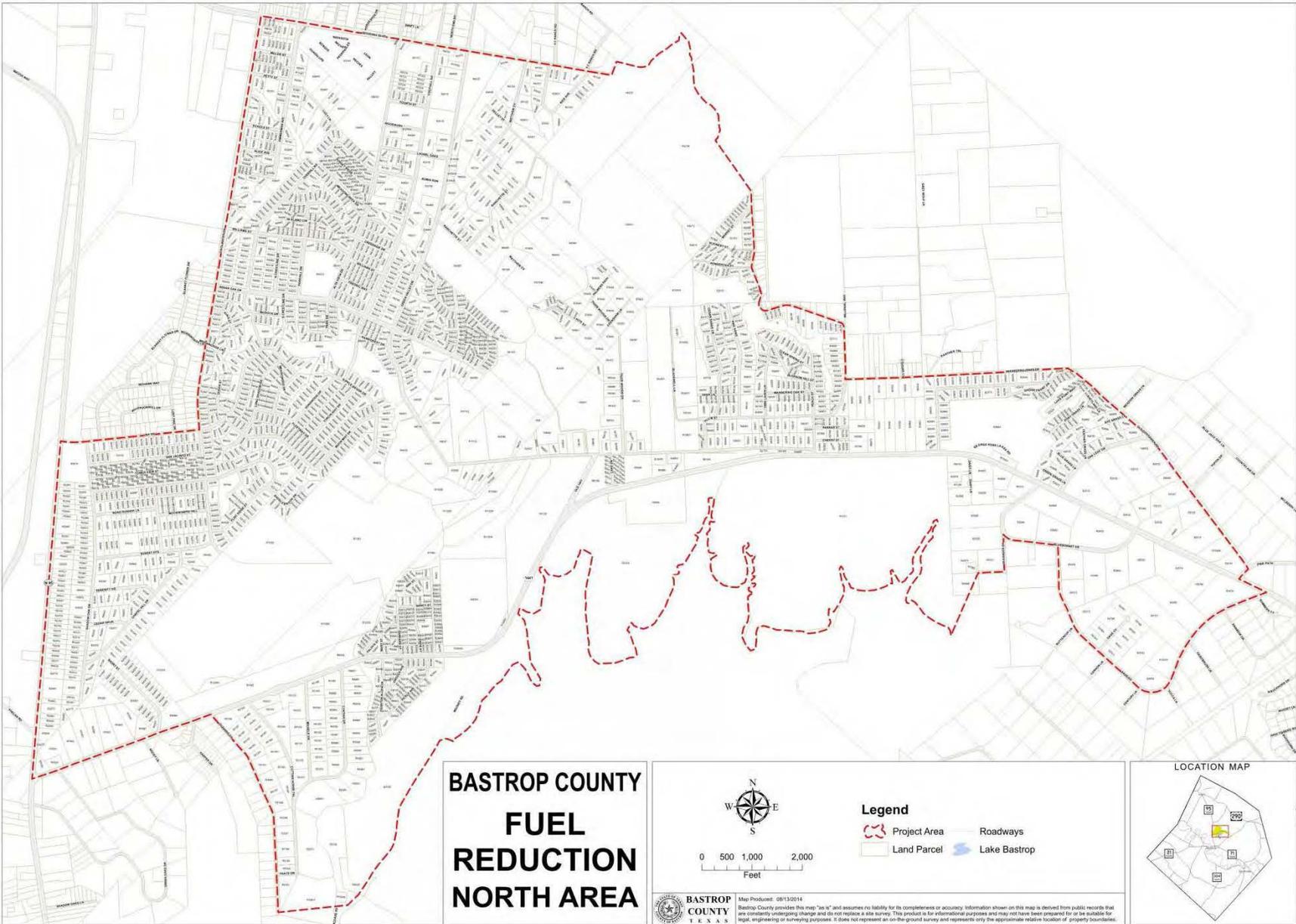
FEMA requests concurrence with the determination that these eighteen (18) historic resources will not be affected by this undertaking. Your prompt review of the project is greatly appreciated. Should you need information please contact Dorothy Weir, FEMA EHP, at (940) 383-7250.

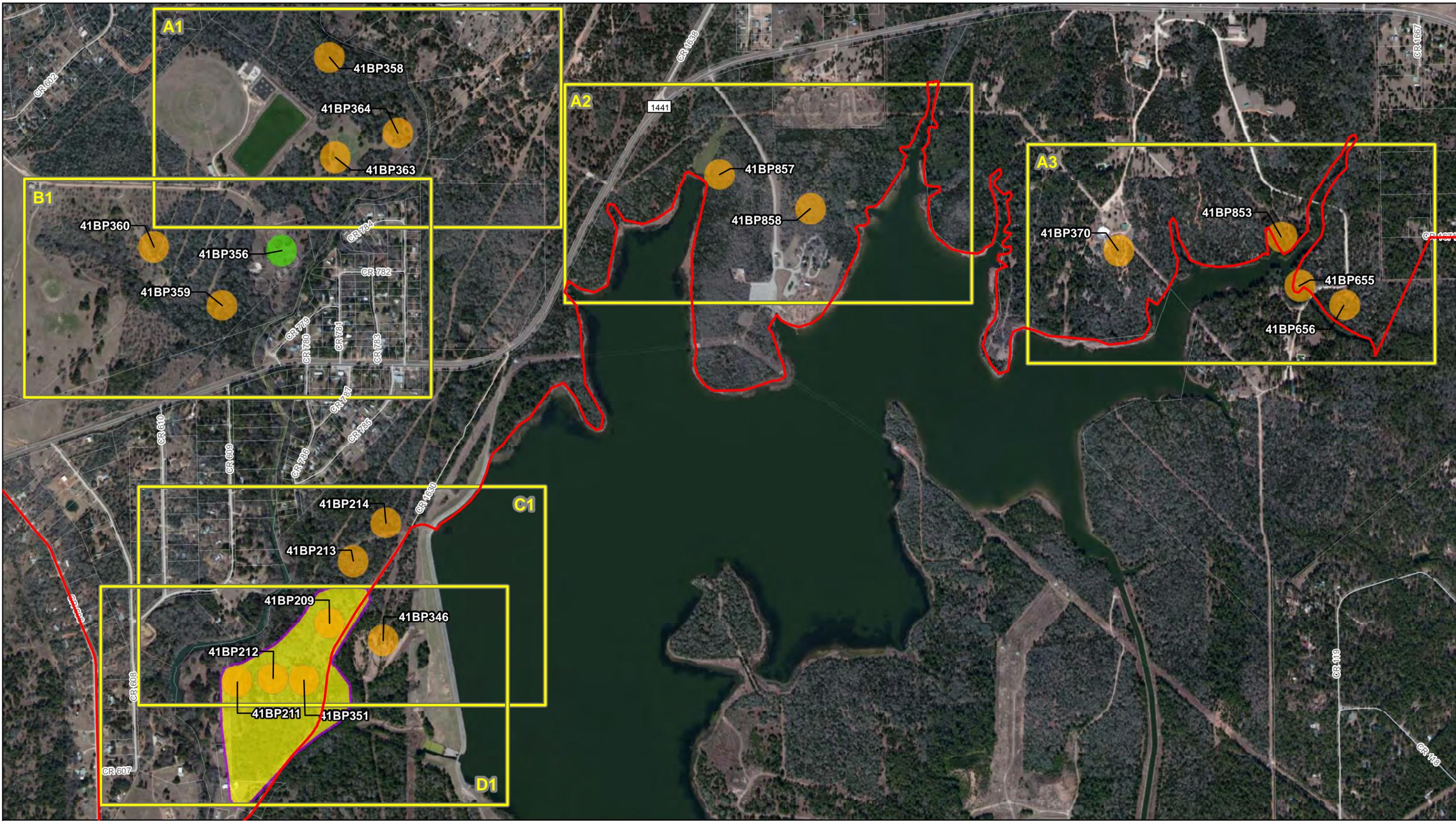
Sincerely,

  
Kevin Jaynes  
Regional Environmental Officer  
Region 6

**Enclosures**

Maps of APE  
Archeological Sites Buffer Index Map  
Archeological Sites Buffer Tile Maps





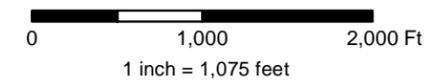
**Legend**

- ▭ Project Area
- ▭ Site 351 Approximate Buffer
- Site Status
- Eligible
- Undetermined



## Lost Pines Hazardous Fuels Reduction Project - Archaeological Sites -

*Bastrop County, TX FEMA EA project 1999-0012*





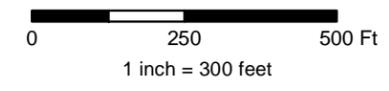
**Legend**

- Project Area
- Site 351 Approximate Buffer
- Site Status
- Eligible
- Undetermined



## Lost Pines Hazardous Fuels Reduction Project - Archaeological Sites -

*Bastrop County, TX FEMA EA project 1999-0012*





**Legend**

- Project Area
- Site 351 Approximate Buffer

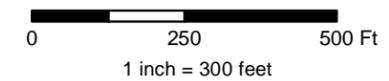
Site Status

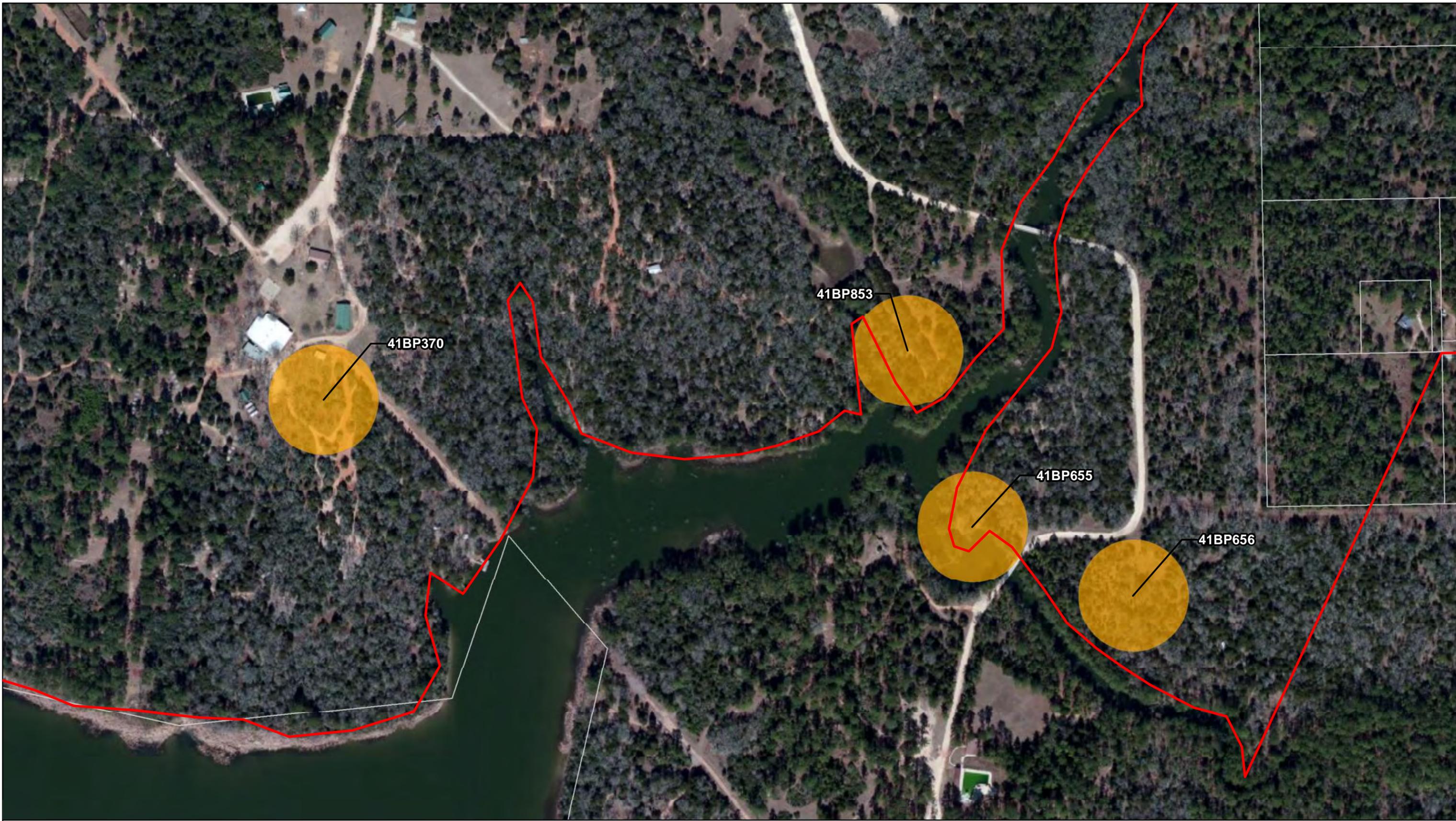
- Eligible
- Undetermined



## Lost Pines Hazardous Fuels Reduction Project - Archaeological Sites -

*Bastrop County, TX FEMA EA project 1999-0012*





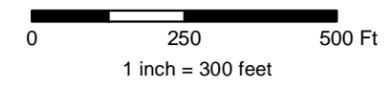
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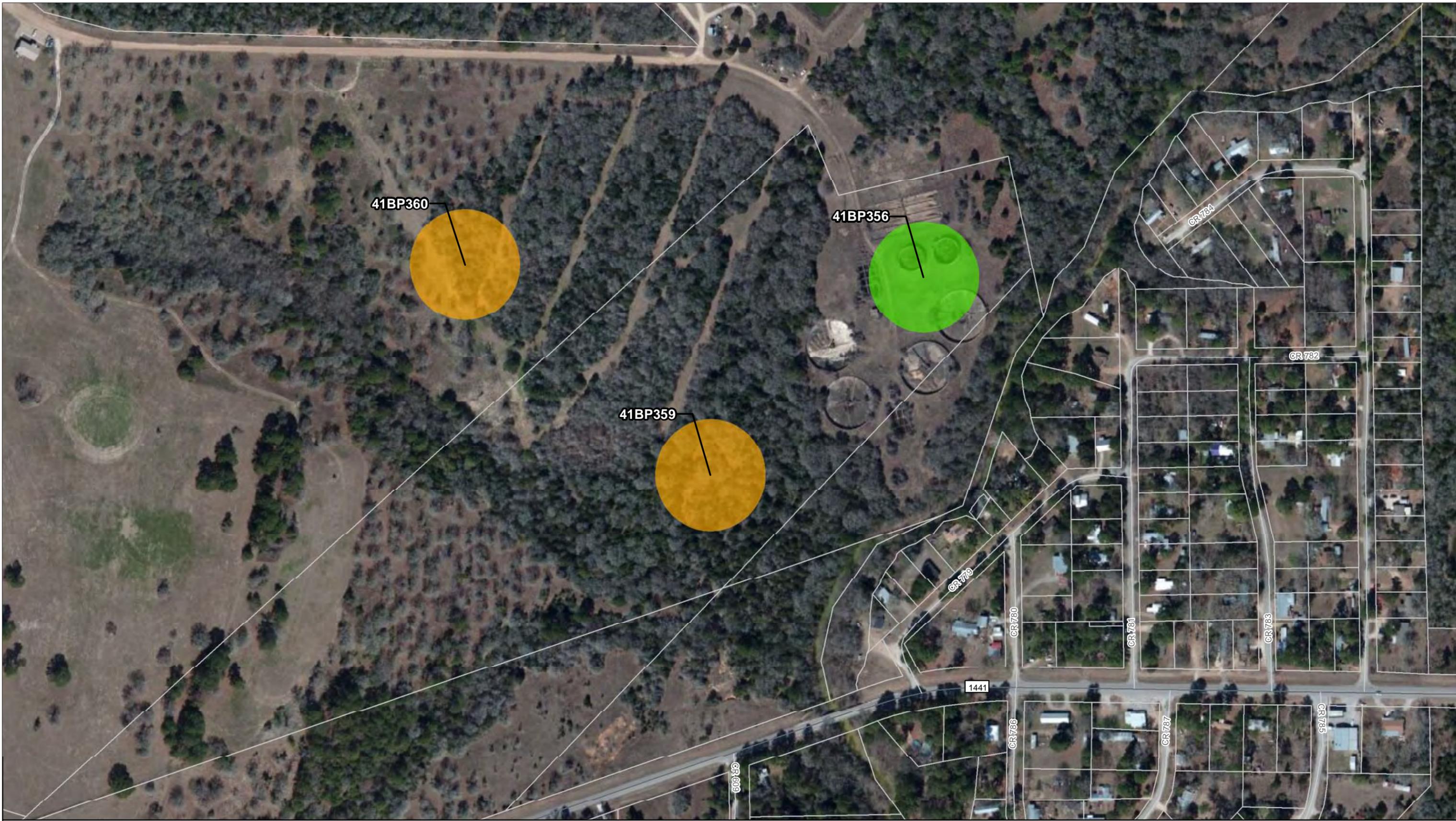
- ▭ Project Area
- ▭ Site 351 Approximate Buffer
- Site Status
- ▭ Eligible
- ▭ Undetermined



## Lost Pines Hazardous Fuels Reduction Project - Archaeological Sites -

*Bastrop County, TX FEMA EA project 1999-0012*





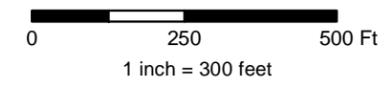
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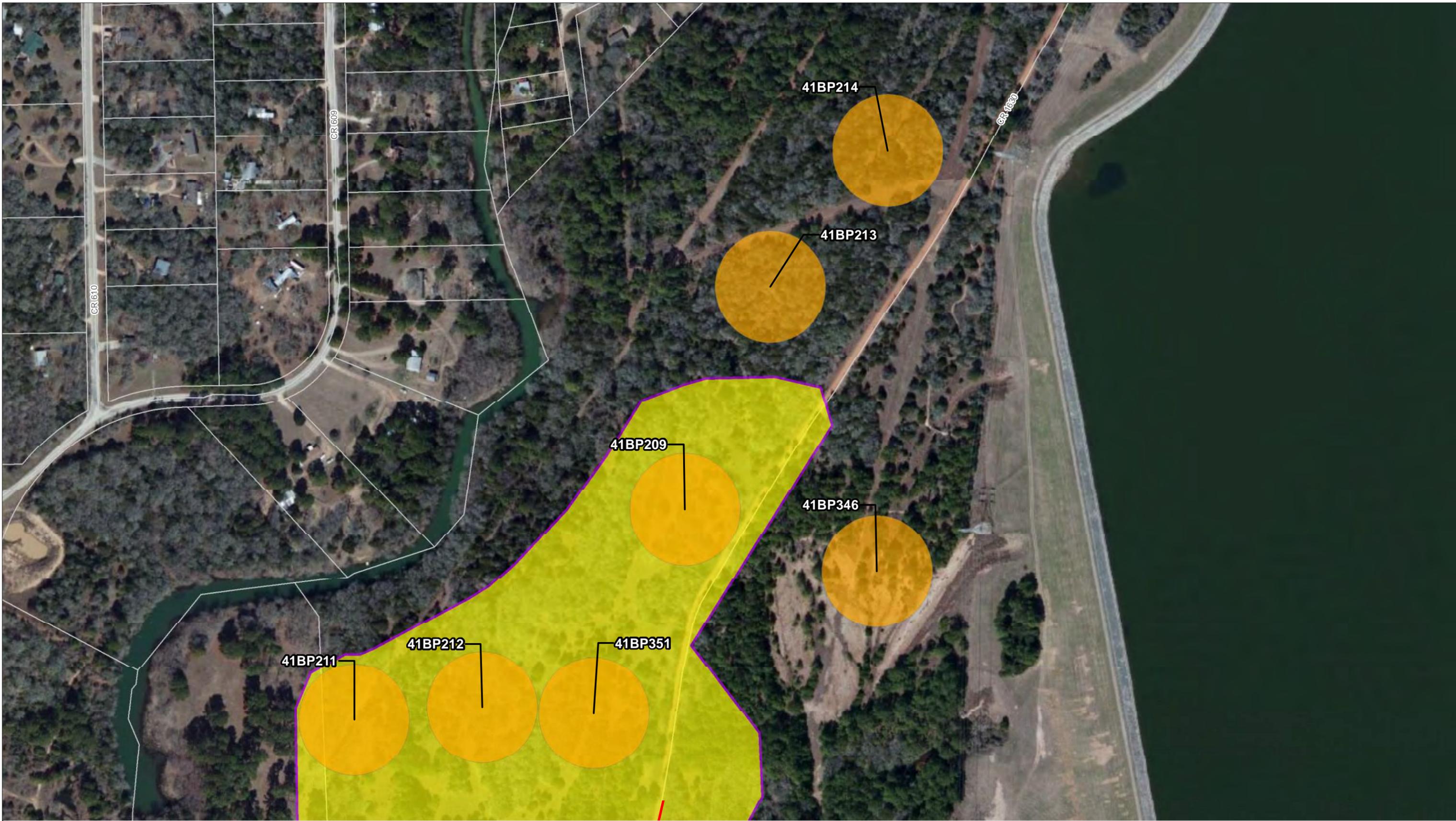
- Project Area
- Site 351 Approximate Buffer
- Site Status
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- Undetermined



## Lost Pines Hazardous Fuels Reduction Project - Archaeological Sites -

*Bastrop County, TX FEMA EA project 1999-0012*





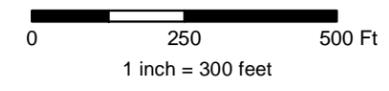
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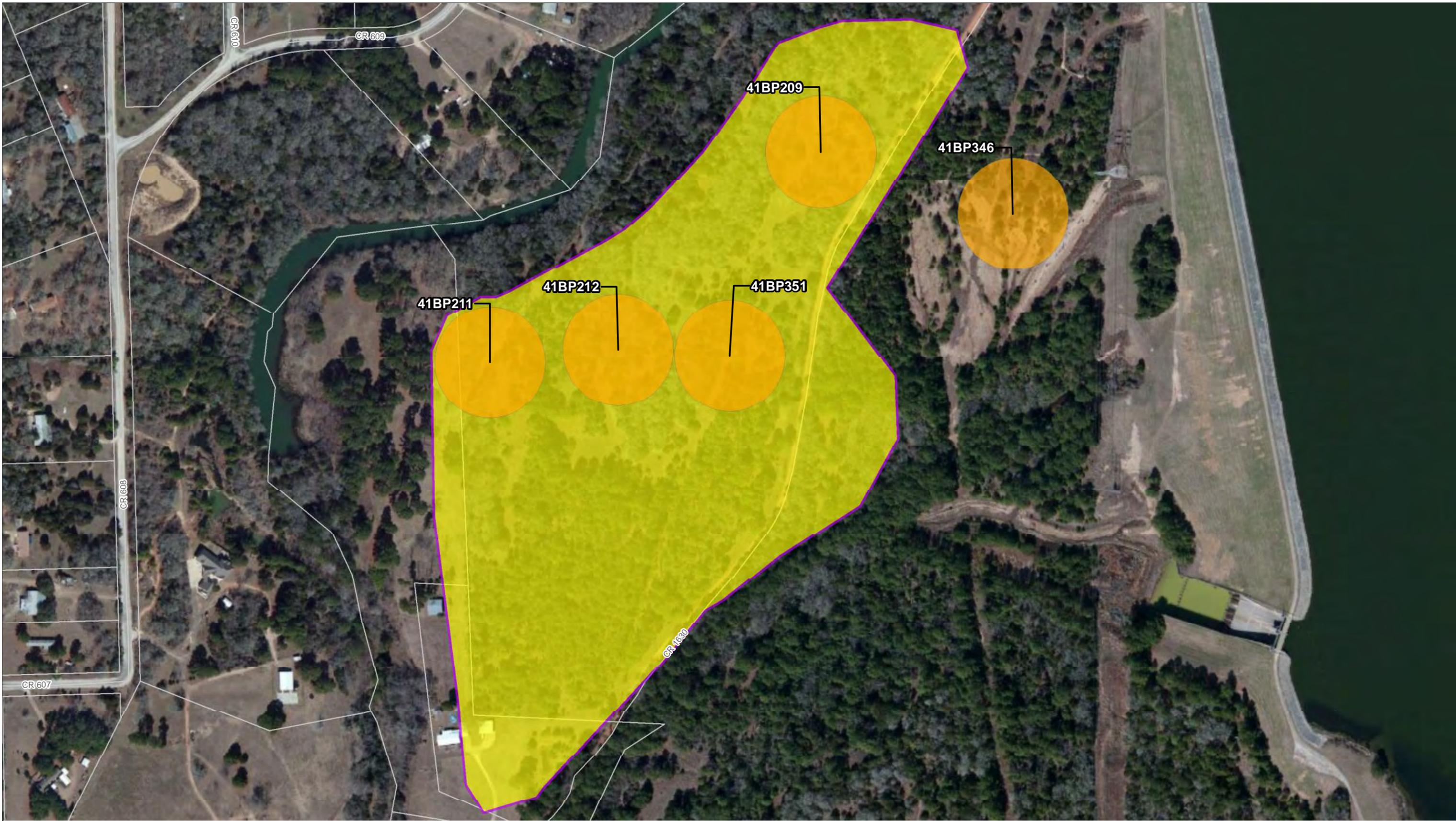
- Project Area
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## Lost Pines Hazardous Fuels Reduction Project - Archaeological Sites -

*Bastrop County, TX FEMA EA project 1999-0012*





**Legend**

- Project Area
- Site 351 Approximate Buffer

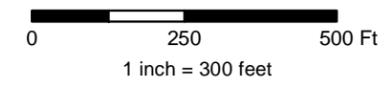
Site Status

- Eligible
- Undetermined

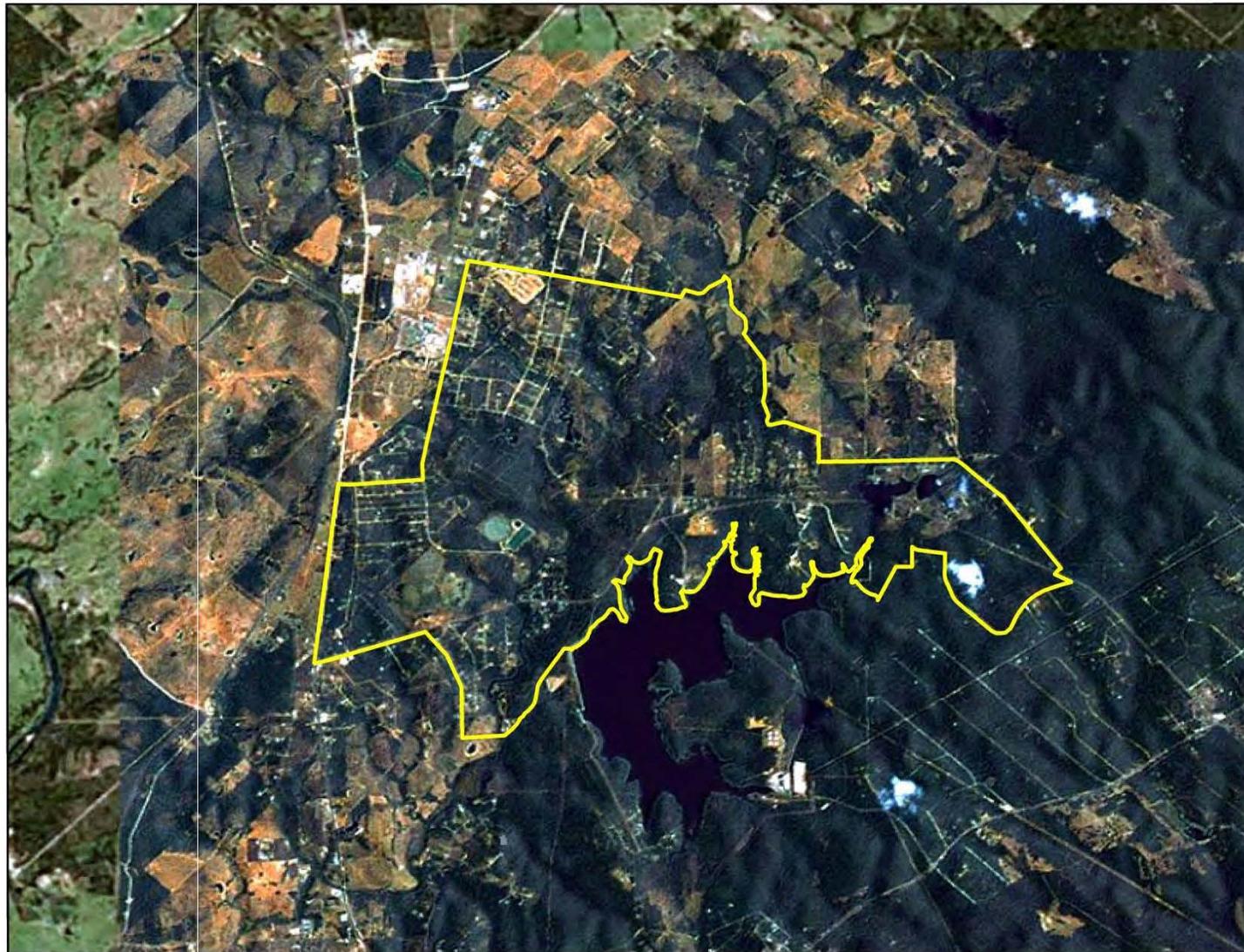


## Lost Pines Hazardous Fuels Reduction Project - Archaeological Sites -

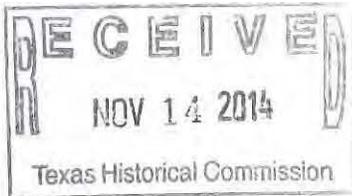
*Bastrop County, TX FEMA EA project 1999-0012*



# Bastrop County - North Lost Pines - National Register Listed Properties



0 875 1,750 3,500 5,250 7,000  
Meters



U.S. Department of Homeland Security  
Federal Emergency Management Agency  
800 North Loop 288  
Denton, Texas, 76309

RECEIVED  
FAC MAIL CENTER  
FEMA  
2014 DEC 15 P 3:12

November 10, 2014

Mr. Mark Wolfe  
State Historic Preservation Officer  
Texas Historical Commission  
P.O. Box 12276  
Austin, TX 78711

RE: Section 106 Review, 1,825 acres North Lost Pines Hazardous Fuels Reduction, Bastrop County, Texas

Dear Mr. Wolfe,

Bastrop County (Applicant) is requesting Hazard Mitigation Grant Program (HMGP) funding from the Federal Emergency Management Agency (FEMA) for wildlife mitigation activities in the North Lost Pines area in north-central Bastrop County. FEMA has determined that this project constitutes an undertaking and is initiating consultation under Section 106 of the National Historic Preservation Act.

The Applicant proposes to lower the occurrence of heavy under- and mid-story tree stands in the North Lost Pines area to reduce the intensity of surface fires and lower the probability of fires transitioning into the crowns of stands. This will be accomplished by using a combination of forestry type mowers, chainsaws, and chippers to reduce fuel concentrations that are more than 30 feet from a structure, and by creating shaded fuel breaks along large areas of continuous fuels adjacent to structures. The fuel reduction work includes the removal of encroaching brush species and ladder fuels (yaupon, holly, and red cedar); removal of dead vegetative materials such as branches, standing loblolly pine, and debris. No rootballs or stumps will be removed; stumps would be ground down to ground level and would not be mechanically excavated or pushed. Some living hardwoods and pines may be selectively removed. The canopy height of larger and taller trees including hardwoods and pines will be raised 5-8 feet above ground by removing the lower limbs. Vegetative material will be ground and mulch will be spread on site.

The Area of Potential Effects (APE) is described as: Beginning at State Highway 95 and FM 1441 in Bastrop County, Texas, then east on FM 1441 to Suzanne Drive. Then along Suzanne to its south end. Then to the east to Mooney St and along Mooney to Lake Bastrop. Then following the water's edge around the north portion of lake to near Oleander Drive. Then along Oleander to Bluebonnet Drive to the intersection with Sage Drive. Follow Sage to the intersection with FM 1441, then to the west a short distance on FM 1441 to Pine Path. Then NE on Pine Path to Old Firetower Road. Then NW on Old Firetower to Whispering Pines Drive. Turning north on Plum Street. from Whispering Pines, go to the dead end of Plum. From dead end of Plum, follow an

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This APE as noted above and as shown on the attached map depicts a total land mass of approximately 4,646 acres. Some parcels will not be treated in this project for various reasons. There will be no fuel reduction activities performed in the following situations within the overall project boundaries: 1) within 30 feet of a structure, 2) in the 100 year floodplain, or 3) on private property without a valid consent and right of entry given by the property owner. In addition, open areas that do not require fuels reduction, such as open pasture and farmlands, will not be included as part of the project. Therefore, the estimated total area to be treated is approximately 1,825 acres.

FEMA has retained CDM Smith to prepare an environmental assessment under NEPA for this undertaking. A CDM Smith archaeologist (RPA) and FEMA archeologist have reviewed the undertaking. A cultural records file search of the Texas Archaeological and Historic Site Atlas was conducted for known historical sites. According to the Atlas there are no listed National Register of Historic Places (NRHP) properties or districts within the immediate vicinity of the APE. Bastrop State Park is the closest NHRP property or district. It is located approximately 3 miles south of the APE.

According to the Atlas, there are twenty-seven (27) previously recorded archaeological sites within the APE (including historic cemetery Site 41Bp853). One site, 41Bp351, has both historic and prehistoric components present. Nineteen (19) of these sites are undetermined prehistoric lithic scatters and open campsites (41Bp209, 210, 211, 212, 213, 214, 215, 351, 358, 359, 360, 361, 362, 363, 364, 370, 388, 655, and 656), four (4) are related to World War II era Camp Swift (14Bp348, 355, 356, and 357), two (2) are historic dumps (41Bp351 and 857), and there is one (1) historic cemetery (41Bp853), one (1) pre-1941 farmstead (41Bp858), and one (1) prehistoric isolated find (41Bp216). Of these sites, only one site, 41Bp356, has been determined eligible for listing on the NRHP. The site is an industrial water/waste water complex associated with World War II era Camp Swift. Nine (9) sites have been determined ineligible (41Bp210, 215, 216, 348, 355, 357, 361, 362, and 388). The eligibility status for the remaining seventeen sites (17) is undetermined (41Bp209, 211, 212, 213, 214, 351, 358, 359, 360, 363, 364, 370, 655, 656, 853, 857, and 858). For the purposes of this consultation, FEMA is assuming that these 17 sites are potentially eligible for listing in the NRHP.

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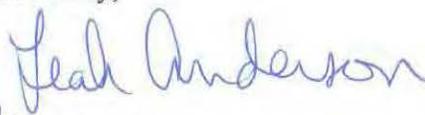
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Sincerely,

  
Kevin Jaynes  
Regional Environmental Officer  
Region 6

**Enclosures**

Maps of APE  
Archeological Sites Buffer Index Map  
Archeological Sites Buffer Tile Maps





FEMA

November 10, 2014

Mr. Jimmy Arterberry, Tribal Historic Preservation Officer  
Comanche Nation  
P.O. Box 908  
Lawton, OK 73502

RE: Section 106 Review, 1,825 acres North Lost Pines Hazardous Fuels Reduction, Bastrop County,  
Texas

Dear Mr. Arterberry:

Bastrop County (Applicant) is requesting Hazard Mitigation Grant Program (HMGP) funding from the Federal Emergency Management Agency (FEMA) for wildlife mitigation activities in the North Lost Pines area in north-central Bastrop County. FEMA has determined that this project constitutes an undertaking and is initiating consultation under Section 106 of the National Historic Preservation Act.

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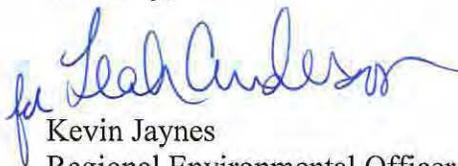
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Sincerely,



Kevin Jaynes  
Regional Environmental Officer  
Region 6

**Enclosures**

Maps of APE

Archeological Sites Buffer Index Map

Archeological Sites Buffer Tile Maps



**FEMA**

November 10, 2014

Ms. Amie Tah-Bone, NAGPRA Representative  
Kiowa Tribe of Oklahoma  
SH 9 West  
Carnegie, OK 73015

RE: Section 106 Review, 1,825 acres North Lost Pines Hazardous Fuels Reduction, Bastrop County, Texas

Dear Ms. Tah-Bone:

Bastrop County (Applicant) is requesting Hazard Mitigation Grant Program (HMGP) funding from the Federal Emergency Management Agency (FEMA) for wildlife mitigation activities in the North Lost Pines area in north-central Bastrop County. FEMA has determined that this project constitutes an undertaking and is initiating consultation under Section 106 of the National Historic Preservation Act.

The Applicant proposes to lower the occurrence of heavy under- and mid-story tree stands in the North Lost Pines area to reduce the intensity of surface fires and lower the probability of fires transitioning into the crowns of stands. This will be accomplished by using a combination of forestry type mowers, chainsaws, and chippers to reduce fuel concentrations that are more than 30 feet from a structure, and by creating shaded fuel breaks along large areas of continuous fuels adjacent to structures. The fuel reduction work includes the removal of encroaching brush species and ladder fuels (yaupon, holly, and red cedar); removal of dead vegetative materials such as branches, standing loblolly pine, and debris. No root balls or stumps will be removed; stumps would be ground down to ground level and would not be mechanically excavated or pushed. Some living hardwoods and pines may be selectively removed. The canopy height of larger and taller trees including hardwoods and pines will be raised 5-8 feet above ground by removing the lower limbs. Vegetative material will be ground and mulch will be spread on site.

The Area of Potential Effects (APE) is described as: Beginning at State Highway 95 and FM 1441 in Bastrop County, Texas, then east on FM 1441 to Suzanne Drive. Then along Suzanne to its south end. Then to the east to Mooney St and along Mooney to Lake Bastrop. Then following the water's edge around the north portion of lake to near Oleander Drive. Then along Oleander to Bluebonnet Drive to the intersection with Sage Drive. Follow Sage to the intersection with FM 1441, then to the west a short distance on FM 1441 to Pine Path. Then NE on Pine Path to Old Firetower Road. Then NW on Old Firetower to Whispering Pines Drive. Turning north on Plum Street. From Whispering Pines, go to the dead end of Plum. From dead end of Plum, follow an un-named tributary to Piney Creek to the eastern end of Pershing Drive. Then west on Pershing Drive to Coolwater Drive. Then

south on Coolwater to LBA Drive, turning west on LBA Drive go to SH 95. Then south on SH 95 to FM 1441 and the point of beginning. (See also attached map.)

This APE as noted above and as shown on the attached map depicts a total land mass of approximately 4,646 acres. Some parcels will not be treated in this project for various reasons. There will be no fuel reduction activities performed in the following situations within the overall project boundaries: 1) within 30 feet of a structure, 2) in the 100 year floodplain, or 3) on private property without a valid consent and right of entry given by the property owner. In addition, open areas that do not require fuels reduction, such as open pasture and farmlands, will not be included as part of the project. Therefore, the estimated total area to be treated is approximately 1,825 acres.

FEMA has retained CDM Smith to prepare an environmental assessment under NEPA for this undertaking. A CDM Smith archaeologist (RPA) and FEMA archeologist have reviewed the undertaking. A cultural records file search of the Texas Archaeological and Historic Site Atlas was conducted for known historical sites. According to the Atlas there are no listed National Register of Historic Places (NRHP) properties or districts within the immediate vicinity of the APE. Bastrop State Park is the closest NHRP property or district. It is located approximately 3 miles south of the APE.

According to the Atlas, there are twenty-seven (27) previously recorded archaeological sites within the APE (including historic cemetery Site 41Bp853). One site, 41Bp351, has both historic and prehistoric components present. Nineteen (19) of these sites are undetermined prehistoric lithic scatters and open campsites (41Bp209, 210, 211, 212, 213, 214, 215, 351, 358, 359, 360, 361, 362, 363, 364, 370, 388, 655, and 656), four (4) are related to World War II era Camp Swift (14Bp348, 355, 356, and 357), two (2) are historic dumps (41Bp351 and 857), and there is one (1) historic cemetery (41Bp853), one (1) pre-1941 farmstead (41Bp858), and one (1) prehistoric isolated find (41Bp216). Of these sites, only one site, 41Bp356, has been determined eligible for listing on the NRHP. The site is an industrial water/waste water complex associated with World War II era Camp Swift. Nine (9) sites have been determined ineligible (41Bp210, 215, 216, 348, 355, 357, 361, 362, and 388). The eligibility status for the remaining seventeen sites (17) is undetermined (41Bp209, 211, 212, 213, 214, 351, 358, 359, 360, 363, 364, 370, 655, 656, 853, 857, and 858). For the purposes of this consultation, FEMA is assuming that these 17 sites are potentially eligible for listing in the NRHP.

In order to minimize ground disturbance near the previously determined eligible site and the 17 potentially eligible sites, the Applicant will hand cut within a 50 meter buffer of the site centroids. Because site 351 has a larger boundary, the Applicant will hand cut within the entire site boundary (see enclosed index and tile maps). Only man-powered equipment such as chainsaws, wheelbarrows, etc. will be used to cut and remove brush from these areas. The restrictions in these areas will be a requirement of the FEMA grant funding.

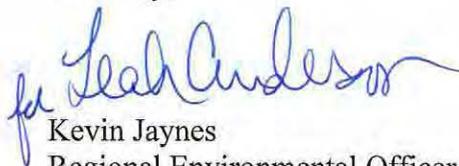
Furthermore, certain sites may be avoided by the Applicant. The exact locations of the hazardous fuels treatment areas have not yet been determined by the Applicant. The Applicant does not intend to conduct work within the floodplain, and portions of buffered sites 358 and 364 (Tile A1); 857 (Tile A2); and 655, 656, and 853 (Tile A3) are located within the floodplain. The assumption is that cutting will not take place within the floodplain portions of these sites. Also, certain sites such as 363 (Tile A1) and 356 (Tile B1) fall in areas that may not require hazardous fuels treatment because they are in areas that are not overgrown with dense vegetation or they are naturally open areas.

In addition, the Applicant will be required to adhere to the following requirement as a condition of the FEMA grant:

“In the event that archaeological deposits, including any Native American pottery, stone tools, bones, funerary objects, or human remains are uncovered, the project must be halted immediately in the vicinity of the discovery, and all reasonable measures will be taken to avoid or minimize harm to the finds. The Applicant must secure all archaeological findings and restrict access to this sensitive area. The Applicant must inform TXDPS immediately. TXDPS will notify FEMA at the earliest practicable time, but not later than 24 hours. FEMA will then consult with the State Historic Preservation Office (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 National Historic Preservation Act (NHPA) and its implementing regulations.”

FEMA requests concurrence with the determination that these eighteen (18) historic resources will not be affected by this undertaking. Your prompt review of the project is greatly appreciated. Should you have any questions or need additional information regarding these Undertakings, please contact Dorothy Weir, FEMA Environmental Specialist, at 940-383-7250 or [Dorothy.Weir@fema.dhs.gov](mailto:Dorothy.Weir@fema.dhs.gov) or Hector Abreu, Environmental and Historic Preservation Specialist Tribal Liaison, at [hector.abreu@fema.dhs.gov](mailto:hector.abreu@fema.dhs.gov), or by phone at (940) 383-7221.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin Jaynes".

Kevin Jaynes  
Regional Environmental Officer  
Region 6

**Enclosures**

Maps of APE

Archeological Sites Buffer Index Map

Archeological Sites Buffer Tile Maps



**FEMA**

November 10, 2014

Mr. Donald Patterson, Tribal Historian  
Tonkawa Tribe of Oklahoma  
1 Rush Buffalo Road  
Tonwaka, OK 74653

RE: Section 106 Review, 1,825 acres North Lost Pines Hazardous Fuels Reduction, Bastrop County, Texas

Dear Mr. Patterson:

Bastrop County (Applicant) is requesting Hazard Mitigation Grant Program (HMGP) funding from the Federal Emergency Management Agency (FEMA) for wildlife mitigation activities in the North Lost Pines area in north-central Bastrop County. FEMA has determined that this project constitutes an undertaking and is initiating consultation under Section 106 of the National Historic Preservation Act.

The Applicant proposes to lower the occurrence of heavy under- and mid-story tree stands in the North Lost Pines area to reduce the intensity of surface fires and lower the probability of fires transitioning into the crowns of stands. This will be accomplished by using a combination of forestry type mowers, chainsaws, and chippers to reduce fuel concentrations that are more than 30 feet from a structure, and by creating shaded fuel breaks along large areas of continuous fuels adjacent to structures. The fuel reduction work includes the removal of encroaching brush species and ladder fuels (yaupon, holly, and red cedar); removal of dead vegetative materials such as branches, standing loblolly pine, and debris. No root balls or stumps will be removed; stumps would be ground down to ground level and would not be mechanically excavated or pushed. Some living hardwoods and pines may be selectively removed. The canopy height of larger and taller trees including hardwoods and pines will be raised 5-8 feet above ground by removing the lower limbs. Vegetative material will be ground and mulch will be spread on site.

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south on Coolwater to LBA Drive, turning west on LBA Drive go to SH 95. Then south on SH 95 to FM 1441 and the point of beginning. (See also attached map.)

This APE as noted above and as shown on the attached map depicts a total land mass of approximately 4,646 acres. Some parcels will not be treated in this project for various reasons. There will be no fuel reduction activities performed in the following situations within the overall project boundaries: 1) within 30 feet of a structure, 2) in the 100 year floodplain, or 3) on private property without a valid consent and right of entry given by the property owner. In addition, open areas that do not require fuels reduction, such as open pasture and farmlands, will not be included as part of the project. Therefore, the estimated total area to be treated is approximately 1,825 acres.

FEMA has retained CDM Smith to prepare an environmental assessment under NEPA for this undertaking. A CDM Smith archaeologist (RPA) and FEMA archeologist have reviewed the undertaking. A cultural records file search of the Texas Archaeological and Historic Site Atlas was conducted for known historical sites. According to the Atlas there are no listed National Register of Historic Places (NRHP) properties or districts within the immediate vicinity of the APE. Bastrop State Park is the closest NHRP property or district. It is located approximately 3 miles south of the APE.

According to the Atlas, there are twenty-seven (27) previously recorded archaeological sites within the APE (including historic cemetery Site 41Bp853). One site, 41Bp351, has both historic and prehistoric components present. Nineteen (19) of these sites are undetermined prehistoric lithic scatters and open campsites (41Bp209, 210, 211, 212, 213, 214, 215, 351, 358, 359, 360, 361, 362, 363, 364, 370, 388, 655, and 656), four (4) are related to World War II era Camp Swift (14Bp348, 355, 356, and 357), two (2) are historic dumps (41Bp351 and 857), and there is one (1) historic cemetery (41Bp853), one (1) pre-1941 farmstead (41Bp858), and one (1) prehistoric isolated find (41Bp216). Of these sites, only one site, 41Bp356, has been determined eligible for listing on the NRHP. The site is an industrial water/waste water complex associated with World War II era Camp Swift. Nine (9) sites have been determined ineligible (41Bp210, 215, 216, 348, 355, 357, 361, 362, and 388). The eligibility status for the remaining seventeen sites (17) is undetermined (41Bp209, 211, 212, 213, 214, 351, 358, 359, 360, 363, 364, 370, 655, 656, 853, 857, and 858). For the purposes of this consultation, FEMA is assuming that these 17 sites are potentially eligible for listing in the NRHP.

In order to minimize ground disturbance near the previously determined eligible site and the 17 potentially eligible sites, the Applicant will hand cut within a 50 meter buffer of the site centroids. Because site 351 has a larger boundary, the Applicant will hand cut within the entire site boundary (see enclosed index and tile maps). Only man-powered equipment such as chainsaws, wheelbarrows, etc. will be used to cut and remove brush from these areas. The restrictions in these areas will be a requirement of the FEMA grant funding.

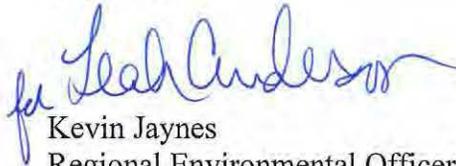
Furthermore, certain sites may be avoided by the Applicant. The exact locations of the hazardous fuels treatment areas have not yet been determined by the Applicant. The Applicant does not intend to conduct work within the floodplain, and portions of buffered sites 358 and 364 (Tile A1); 857 (Tile A2); and 655, 656, and 853 (Tile A3) are located within the floodplain. The assumption is that cutting will not take place within the floodplain portions of these sites. Also, certain sites such as 363 (Tile A1) and 356 (Tile B1) fall in areas that may not require hazardous fuels treatment because they are in areas that are not overgrown with dense vegetation or they are naturally open areas.

In addition, the Applicant will be required to adhere to the following requirement as a condition of the FEMA grant:

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FEMA requests concurrence with the determination that these eighteen (18) historic resources will not be affected by this undertaking. Your prompt review of the project is greatly appreciated. Should you have any questions or need additional information regarding these Undertakings, please contact Dorothy Weir, FEMA Environmental Specialist, at 940-383-7250 or [Dorothy.Weir@fema.dhs.gov](mailto:Dorothy.Weir@fema.dhs.gov) or Hector Abreu, Environmental and Historic Preservation Specialist Tribal Liaison, at [hector.abreu@fema.dhs.gov](mailto:hector.abreu@fema.dhs.gov), or by phone at (940) 383-7221.

Sincerely,

A handwritten signature in blue ink that reads "Kevin Jaynes". The signature is written in a cursive style and is positioned above the typed name.

Kevin Jaynes  
Regional Environmental Officer  
Region 6

**Enclosures**

Maps of APE  
Archeological Sites Buffer Index Map  
Archeological Sites Buffer Tile Maps



**FEMA**

December 4, 2014

Ms. Edith Erfling  
Field Supervisor  
U.S. Fish and Wildlife Service  
17629 El Camino Real, Suite #211  
Houston, TX 77058

Dear Ms. Erfling:

This letter is to initiate informal consultation between the Federal Emergency Management Agency (FEMA) and your office under Section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) regarding wildfire mitigation activities within approximately 1,825 acres in the Lost Pines North Area/Camp Swift/Lake Bastrop area of Bastrop County, Texas. The project is proposed for funding under FEMA's Hazard Mitigation Grant Program (HMGP); DR-1999-TX Project #12.

Three federally endangered species are known to occur in Bastrop County: Houston toad (*Bufo houstonensis*); Navasota ladies'-tresses (*Spiranthes parksii*); and whooping crane (*Grus Americana*). In addition, the project area is located within designated critical habitat for the Houston toad.

FEMA is making a "no effect" determination for Navasota ladies'-tresses (*Spiranthes parksii*) and the whooping crane (*Grus Americana*) and therefore is not consulting with the U.S. Fish and Wildlife Service (USFWS) regarding these species.

However, the proposed action is taking place in critical habitat for the Houston toad, and there is a potential for the Houston toad to be present in the project area. Therefore, FEMA is requesting informal consultation with your office in regard to this species.

#### **FEDERAL ACTIONS INCLUDED IN THIS CONSULTATION**

Through a FEMA HMGP grant, Bastrop County proposes to conduct hazardous fuels reduction in the Lost Pines North Area/Camp Swift/Lake Bastrop area of Bastrop County, Texas. The project area is approximately 1,825 acres and work would be conducted on both private property and County-owned lands. Specific property sites for treatment within the project area boundaries have not yet been identified and will be selected after project award and pending voluntary participation agreements by interested private landowners. Bastrop County will not conduct work within the 100-year floodplain, which comprises a moderate portion of the project area (see

enclosure). The project area falls just outside of burn scar from the 2011 Bastrop County Complex Fire.

The objective of the proposed project is to remove ladder fuels from the understory and create closed canopy shaded fuel breaks to reduce the risk of a crown fire. The project would reduce fuels on undeveloped lots throughout the project area that would bolster the effectiveness of defensible space on developed lots that has already been and/or is being conducted through other means. The project would also include the creation of shaded fuel breaks between residential areas and large adjacent blocks of wildland fuels. Bastrop County will use chainsaws, forestry mowers, chippers, and haul trucks for hand cutting and mechanical thinning. The fuel reduction work includes the removal of encroaching brush species and ladder fuels (yaupon, holly, and red cedar); removal of dead vegetative materials such as branches, standing loblolly pine, and debris. The canopy height of larger and taller living trees including hardwoods and pines will be raised up to 8 feet above ground by removing the lower limbs. No rootballs or stumps will be removed; stumps would be ground down to ground level and would not be mechanically excavated or pushed.

Bastrop County may selectively cut living pine and oak trees in cases where the living tree contributes to the risk of a crown fire based on the density of vegetation and other living trees in the treatment area. Again, the intent of the proposed project is not to clear cut the treatment areas, rather the intent is to reduce the threat of a crown fire while maintaining a closed or shaded canopy (see enclosed before and after photos as an example of proposed treatment). Some eastern red cedar may selectively be left in place if no hardwoods and pines are present to maintain some canopy cover.

Some cut vegetative material may be left on site to biodegrade. Most vegetative material will be ground on-site and mulch will be spread on-site. Any mulch that is left behind must cover the forest floor in no more than a 2-inch layer. The County will not use any herbicides during project implementation. The project is anticipated to take 2 years to implement given public outreach efforts. Per FEMA grant requirements, the County must maintain the areas where hazardous fuels reduction activities have been completed to achieve the proposed wildfire hazard mitigation.

### **STATUS OF HOUSTON TOAD IN PROJECT AREA**

The Houston toad depends on healthy and mature forest ecosystems with mixed species composition, significant canopy cover, an open understory layer with a diverse herbaceous component, and breeding areas (ephemeral wet-weather ponds and other water features, such as stock tanks, creeks, streams, wetlands, seeps, and springs) with shaded edges. They are most commonly found within the surrounding upland habitat adjacent to breeding sites. The toad uses drainages and riparian areas for dispersal and movement. The edges of breeding ponds are used by emerging juvenile toadlets after they metamorphose from their larval (tadpole) stage (USFWS, 2011a).

This species is largely inactive during hot, dry seasons and during the coldest months, though surface movement has been documented during the summer months (Brown et al, 2011; SSAR, 2012) depending on weather conditions. Most breeding occurs from February to April, when the minimum air temperature is above 14 C. Breeding has been reported as late as June. Breeding habitat consists of a body of water supporting the reproductive and larval toad life stages. Eggs and larvae develop in shallow water. For successful breeding, water must persist for at least 60 days. Larvae hatch in four to seven days and metamorphose in three to nine weeks, depending on the water temperature. This species locally migrates between breeding and non-breeding habitats. The adjacent uplands support adults year round and provide patch connectivity outward from the ponds for juvenile dispersal (USFWS, 2011c). The toad tends to occupy areas with 60 percent to 100 percent canopy cover (Forstner et al, 2011). Upland forests in the Lost Pines area of Bastrop County serve as occupied and dispersal habitat for the Houston toad and cover/shade is a necessity to facilitate distribution without desiccation (LPRT, 2011).

Prior to the Bastrop County Complex Fire in 2011, the Houston toad range in Bastrop County was in poor condition as a result of what is speculated to be the worst one-year drought on recorded history for this area (LPRT, 2011). Approximately 41 percent of the high suitability habitat for the Houston toad within Bastrop County was moderately to heavily burned during the fire (Forstner et al, 2011). Houston toad egg strands, tadpoles, toadlets, juveniles, and adults have all been detected inside and outside the burn perimeter in the years following the fire. Houston toads have been detected in Bastrop during chorusing season and during dispersal from the ponds in 2012, 2013, and 2014. These encounters have substantiated that the Houston toad survived the wildfire and that it is present inside and outside the burn area in Bastrop County.

The entire project area falls within Houston toad critical habitat. The Houston toad is not known to exist in approximately the western 2/3 of the project area, which is outside of the Lost Pines Habitat Conservation Plan area (Dr. Forstner, personal communication, October 2014). However, following the Bastrop County Complex Fire, Houston toads may have migrated and may be moving out from the burn area into previously unoccupied areas. As for the higher probability eastern portion of the project area, Dr. Forstner's team has not detected Houston toads at the survey site at the Boy Scout Ranch since the 2011 fire. There have been detections of Houston toads in an area east of the Lake and south of the project area where Pine Tree Loop and Porter Road intersect (roughly 30.15702 -97.26055). Dr Forstner has also recently detected a Houston toad at the northern end of Grey Wolf Lane (roughly 30.19284 -97.26162).

## **AVOIDANCE AND MINIMIZATION MEASURES**

The following avoidance and minimization measures will be implemented by Bastrop County for the proposed FEMA-funded wildfire mitigation activities in order to minimize impact to the toad. These measures are based on the USFWS Best Management Practices (2011a, 2011b); the Lost Pines Habitat Conservation Plan (Loomis Austin, 2007); FEMA consultations with USFWS for disaster recovery activities in the Bastrop burn area; and on discussions with Dr. Forstner, USFWS, and Bastrop County. Implementation of these measures is a condition of federal funding.

1. Bastrop County will deploy a Houston toad monitor that is permitted in identifying, locating, handling, removing, and transporting the Houston toad. Should a Houston toad be encountered during vegetation management activities, work must cease immediately. The biological monitor will secure and relocate the Houston toad. The Service's Clear Lake Ecological Services Field Office will be contacted at (281) 286-8282.
2. All work crews must be trained by a Houston toad biologist prior to starting work. Training will include an overview of Houston toad characteristics, life cycle, and habitat requirements, and a review of the work conditions outlined in this agreement. New crew personnel must be trained prior to starting work.
3. The number and size of entry and exit points for heavy equipment to move into and out of forested areas will be kept to the minimum needed for conducting safe and effective vegetation management operations, while also minimizing soil disturbance.
4. Any mowing equipment used for clearing grass, forbs, and small-diameter woody vegetation will be set at a height of at least 5 inches above the ground to minimize the potential for striking toads. In cases where leaving woody stumps of 5 inches tall or greater would pose a risk of damage to equipment, Bastrop County may mow vegetation at less than 5 inches above ground level. In such cases mowing shall be restricted to the minimum area necessary.
5. Any mulch, chips, or other woody debris from tree removal that is left on site must cover the forest floor in no more than a 2-inch layer.
6. Vegetation that occurs within 200 feet of a potential Houston toad breeding site (ponds, stock tanks, creeks, streams, wetlands, seeps, and springs that are within or immediately adjacent to a forested area) or riparian area will be hand cut unless otherwise approved by the Houston toad monitor. Any soil disturbance, clearing, or operation of heavy equipment within 200 feet of a potential breeding site must be approved by the Houston toad monitor prior to the start of work.
7. Streams, riparian zones, wetlands, and areas near potential Houston toad breeding sites will not be used for staging equipment or refueling. Equipment must be stored, serviced, and fueled at least 200 feet away from these sensitive areas.
8. Gasoline- and diesel- fueled field equipment must be inspected daily for signs of fuel or hydraulic leaks; such leaks must be repaired promptly and measures will be taken to prevent soil contamination. All hazardous materials related to construction or maintenance activities will be properly contained, used, and/or disposed of.
9. Following vegetation management activities, Bastrop County will ensure that equipment use and debris removal activities have not resulted in the creation of potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create an undesirable breeding pond.

10. Under no circumstances will stumps be removed mechanically (i.e., excavated or pushed).

## **DETERMINATION**

As noted above, the federal actions covered by this consultation are taking place in designated critical habitat and FEMA has a responsibility to ensure that its actions will not likely result in the destruction or adverse modification of this habitat. Destruction or adverse modification of critical habitat is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include those adversely modifying any physical or biological features that were the basis for determining the habitat to be critical. Primary constituent elements have not been designated for the critical habitat of the Houston toad, but typical habitat for the species includes areas with a soil type that allows for the weak burrowing behavior of the species and both temporary and permanent ponds (White et al, 2006). The activities proposed by Bastrop County will not impact temporary or permanent ponds nor will they alter soil type. The vegetation management activities proposed by Bastrop County do not involve extensive removal of large living pines and oaks, though in some cases these trees may be selectively removed to reduce the risk of crown fire. The forest canopy, which provides shaded habitat for toad dispersal, will be maintained. Measures are being taken to minimize the work that is conducted immediately adjacent to breeding areas (ephemeral wet-weather ponds, creeks, streams, wetlands, seeps, and springs). Measures are also being taken to minimize ground disturbance which will minimize impacts to pine and other seedling growth. The project is expected to benefit Houston toad habitat in the long term because it will reduce the risk of a destructive wildfire similar to the fire that occurred in 2011.

Though recent past surveys have not documented the Houston toad directly within the project area, there is still a potential that they may disperse across the project area and an even lower potential that they may chorus within the project area. Work will be conducted year-round, during chorusing season and during the summer and winter months when the toads are less active on the ground surface. Based on a review of the Houston toad and its habitat requirements; the assumption that adult toad population numbers are likely low in the project area based on recent past population surveys; and the implementation of the required avoidance and minimization measures detailed above, FEMA has determined that the federally funded work described above may affect, but is not likely to adversely affect the Houston toad. FEMA has also determined that its actions will not adversely modify critical habitat. Long-term benefits to Houston toad habitat and the species itself are expected to result from the project.

FEMA requests your concurrence with this effect determination and input on any additional conservation measures required to ensure accuracy of this determination. Thank you for your attention and assistance. Should you have any questions, please contact FEMA Environmental Specialist, Dorothy Weir at [Dorothy.Weir@fema.dhs.gov](mailto:Dorothy.Weir@fema.dhs.gov) or at 940-435-9275.

Sincerely,



Kevin Jaynes  
Regional Environmental Officer  
FEMA Region 6

Enclosures:

Maps of Project Area  
Map of Floodplain within Project Area  
Example Treatment Photos

REFERENCES

Brown, D., J. Baccus, D. Means, and M.R. Forstner. 2011. Potential positive effects for fire on juvenile amphibians in a southern USA pine forest. *Journal of Fish and Wildlife Management* 2(2): 135-145.

Forstner, M. R. J., D. Wallace, J. Bell, D. Stout, and J.T. Jackson. 2011. Houston toad 2011 data and final report for the LPHCP annual monitoring, Bastrop County, Texas. Bastrop County Lost Pines Habitat Conservation Plan Office, Bastrop, Texas.

Loomis Austin. 2007. Lost Pines Habitat Conservation Plan for Bastrop County, Texas. Available online at <http://www.co.bastrop.tx.us/uploads/documents/Lost%20Pines%20Habitat%20Conservation%20Plan.pdf>. Accessed November 10, 2014.

LPRT (Lost Pines Recovery Team). 2011. Bastrop County Complex Fire—Lost Pines Region—Resources Assessment and Response Report. Bastrop, Texas.

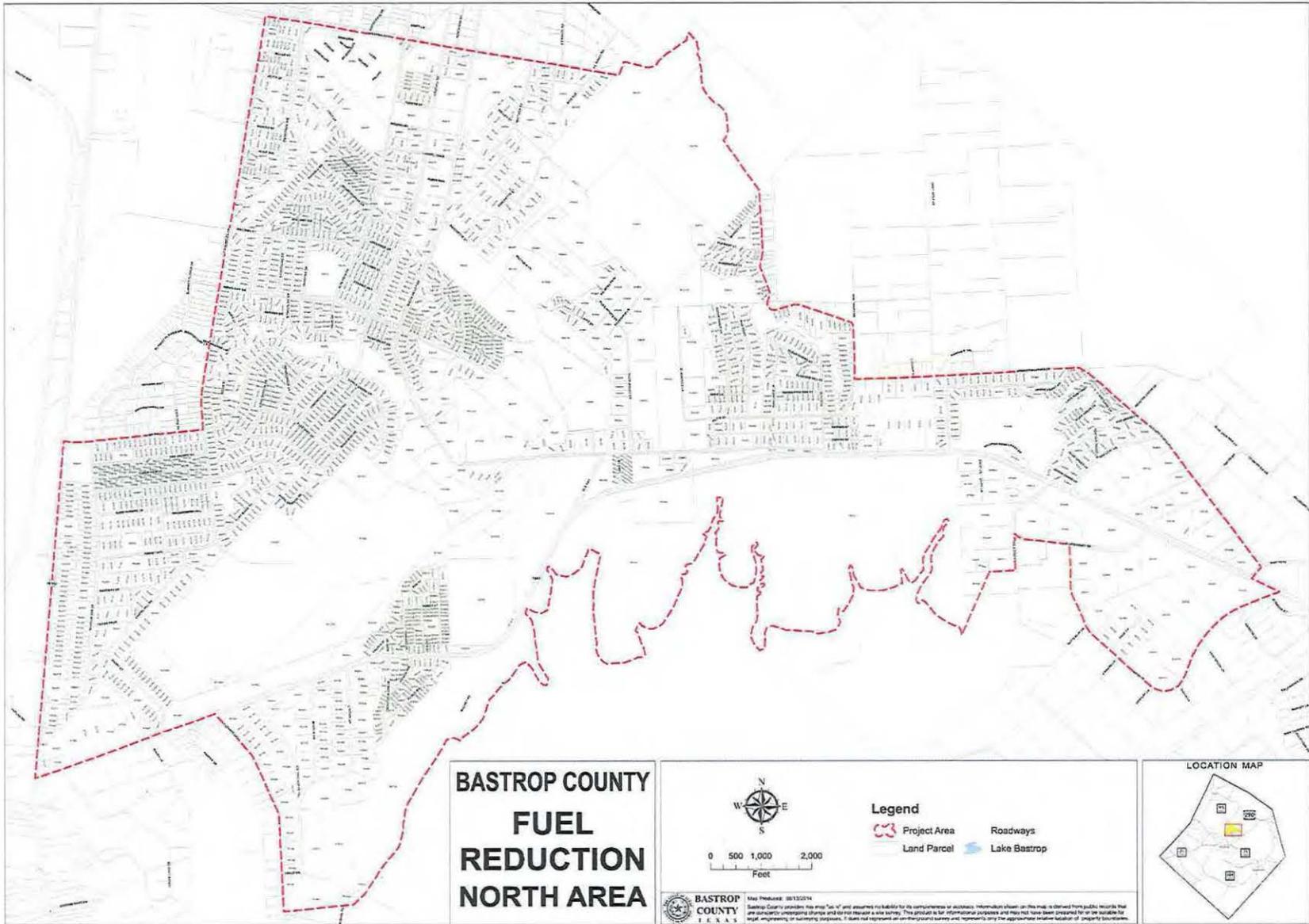
SSAR (Society for the Study of Amphibian and Reptiles). 2012. Natural History Notes. *Herpetological Review* 43(2): 117-118.

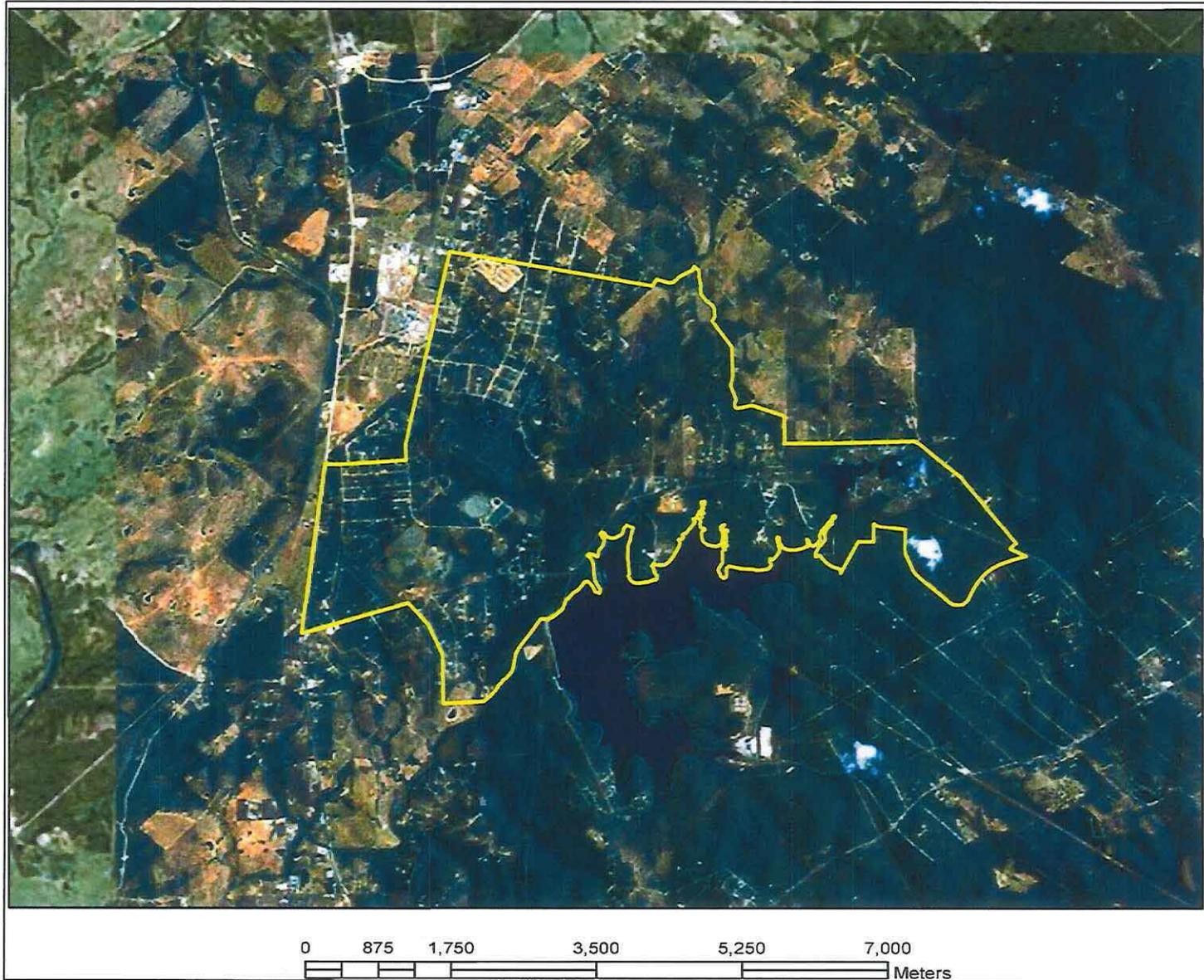
USFWS (U.S. Fish and Wildlife Service). 2011a. Post-Wildfire Clean-Up and Response in Houston Toad Habitat Best Management Practices. Available online at [http://www.fws.gov/southwest/es/Documents/R2ES/Fire\\_CleanUp\\_and\\_Response\\_BMPs20110924.pdf](http://www.fws.gov/southwest/es/Documents/R2ES/Fire_CleanUp_and_Response_BMPs20110924.pdf). Accessed November 10, 2014.

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USFWS. 2011c. Houston toad (*Bufo houstonensis*) 5-Year Review: Summary and Evaluation. Available online at [http://www.fws.gov/southwest/es/Documents/R2ES/HoustonToad\\_5-yr\\_Review\\_Nov2011.pdf](http://www.fws.gov/southwest/es/Documents/R2ES/HoustonToad_5-yr_Review_Nov2011.pdf). Accessed November 10, 2014.

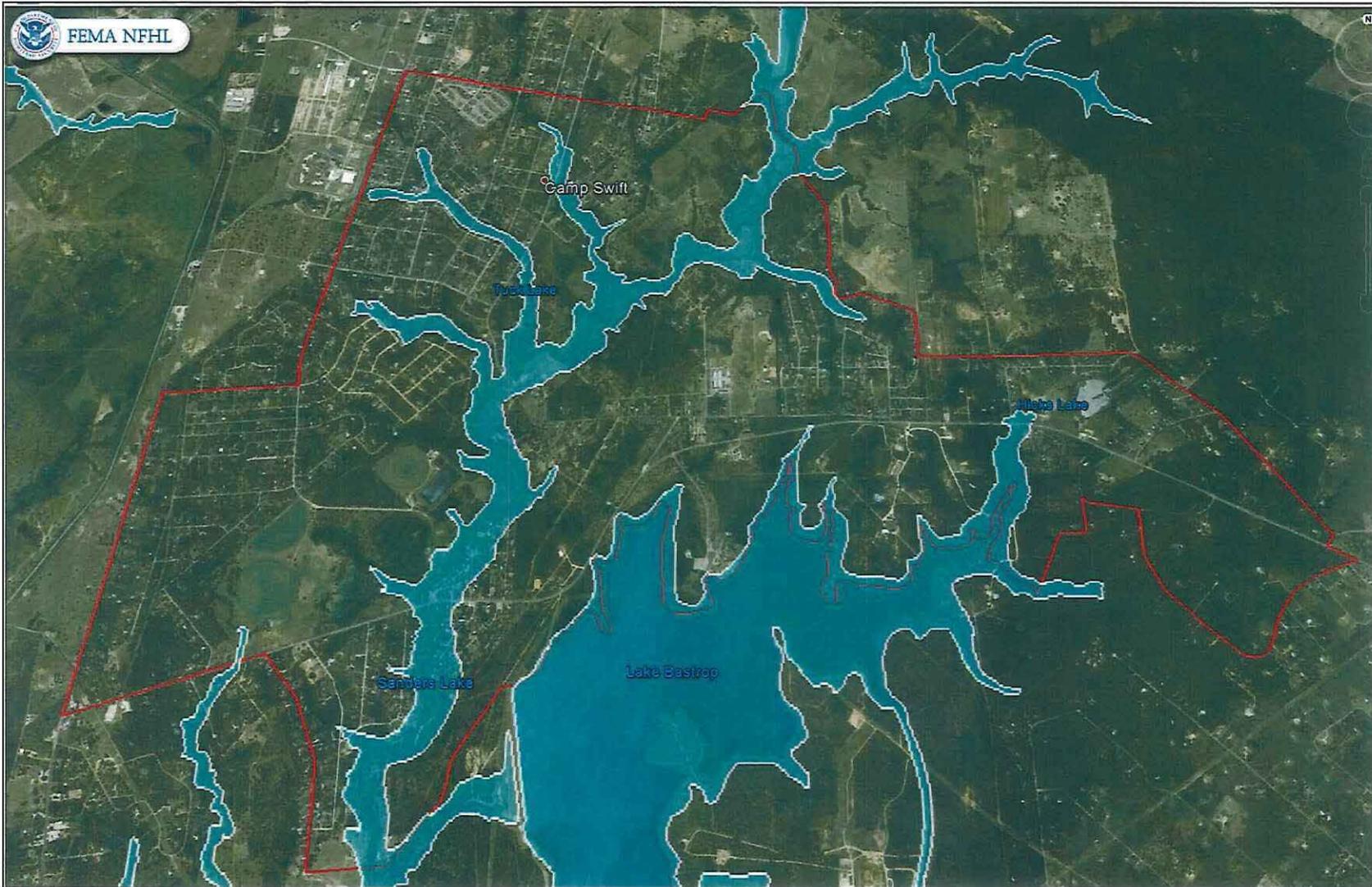
White, J., C. Giggelman, and P. Connor. 2006. Recommended Water Quality for Federally Listed Species in Texas. Available online at [http://www.fws.gov/southwest/es/Documents/R2ES/Recommended Water Quality for Federally Listed Species in Texas.pdf](http://www.fws.gov/southwest/es/Documents/R2ES/Recommended_Water_Quality_for_Federally_Listed_Species_in_Texas.pdf). Accessed November 10, 2014.





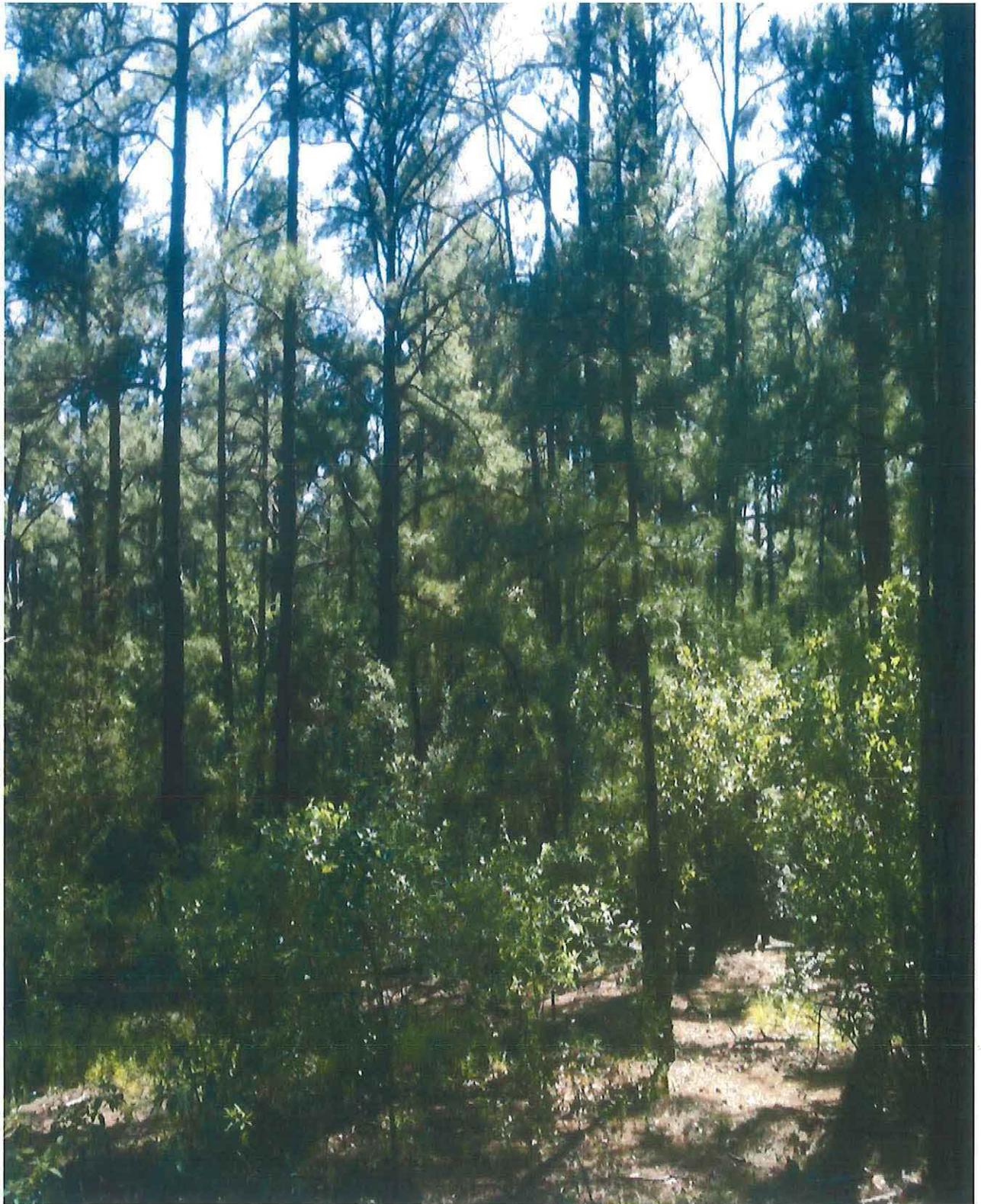
**Aerial Map of Project Area**

**HMGP-DR-1999-TX Project #12 Bastrop County Hazardous Fuels Reduction**



**Floodplain Areas within Project Area**

**HMGP-DR-1999-TX Project #12 Bastrop County Hazardous Fuels Reduction**



**Example of Treatment Area Prior to Hazardous Fuels Removal**



**Example of Treatment Area After Hazardous Fuels Removal**



In Reply Refer To:  
FWS/R2/TCES/

# United States Department of the Interior

**FISH AND WILDLIFE SERVICE**  
Texas Coastal Ecological Services Field Office  
17629 El Camino Real, Suite 211  
Houston, Texas 77058  
281/286-8282 / (FAX) 281/488-5882



January 27, 2015

Kevin Jaynes  
U.S. Department of Homeland Security  
FEMA Region 6  
800 North Loop 288  
Denton, Texas 76209-3698

Dear Mr. Jaynes:

Thank you for your letter dated December 4, 2014, initiating consultation pursuant to Section 7 of the Endangered Species Act (Act) for the Federal Emergency Management Agency's (FEMA) funding of recovery operations related to the Bastrop County Complex Fire of September 2011. FEMA is providing Hazard Mitigation Grant Program (HMGP) funding to undertake wildfire mitigation (mechanical thinning of understory vegetation) within approximately 1,825 acres in the Lost Pines North/Camp Swift/Lake Bastrop areas of Bastrop County, Texas. The fire recovery actions considered herein occur within Bastrop County, Texas and are depicted in exhibits accompanying the letter request.

The U.S. Fish and Wildlife Service (Service) participated in an early coordination meeting for this project on October 30, 2014 with FEMA, Dr. Michael Forstner (Texas State University) and Mr. Mike Fisher (Bastrop County OEM). The Service understands from the consultation request and the earlier meeting that the project includes removal of ladder fuels (understory vegetation) that will reduce the wildfire fuel load on the properties within the 1,825-acre project area. FEMA determined that the wildfire mitigation actions may affect, but are not likely to adversely affect the federally endangered Houston toad *Bufo houstonensis*. The determination is based on the following information:

1. Bastrop County will deploy a Houston toad monitor that is permitted in identifying, locating, handling, removing, and transporting the Houston toad. Should a Houston toad be encountered during vegetation management activities, work must cease immediately. The Service's Clear Lake Ecological Services Field Office will be contacted at (281) 286-8282.
2. All work crews must be trained by a Houston toad biologist prior to starting work. Training will include an overview of Houston toad characteristics, life cycle, and habitat

- requirements, and a review of the work conditions outlined in this agreement. New crew personnel must be trained prior to starting work.
3. The number and size of entry and exit points for heavy equipment to move into and out of forested areas will be kept to the minimum needed for conducting safe and effective vegetation management operations, while also minimizing soil disturbance.
  4. Any mowing equipment used for clearing grass, forbs, and small-diameter woody vegetation will be set at a height of at least 5 inches above the ground to minimize the potential for striking toads. In cases where leaving woody stumps of 5 inches tall or greater would pose a risk of damage to equipment, Bastrop County may mow vegetation at less than 5 inches above ground level. In such cases mowing shall be restricted to the minimum area necessary.
  5. Any mulch, chips, or other woody debris from tree removal that is left on site must cover the forest floor in no more than a 2-inch layer.
  6. Vegetation that occurs within 200 feet of a potential Houston toad breeding site (ponds, stock tanks, creeks, streams, wetlands, seeps, and springs that are within or immediately adjacent to a forested area) or riparian area will be hand cut unless otherwise approved by the Houston toad monitor. Any soil disturbance, clearing, or operation of heavy equipment within 200 feet of a potential breeding site must be approved by the Houston toad monitor prior to the start of work.
  7. Streams, riparian zones, wetlands, and areas near potential Houston toad breeding sites will not be used for staging equipment or refueling. Equipment must be stored, serviced, and fueled at least 200 feet away from these sensitive areas.
  8. Gasoline- and diesel- fueled field equipment must be inspected daily for signs of fuel or hydraulic leaks; such leaks must be repaired promptly and measures will be taken to prevent soil contamination. All hazardous materials related to construction or maintenance activities will be properly contained, used, and/or disposed of.
  9. Following vegetation management activities, Bastrop County will ensure that equipment use and debris removal activities have not resulted in the creation of potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create an undesirable breeding pond.
  10. Under no circumstances will stumps be removed mechanically (i.e., excavated or pushed).

Based on the aforementioned information, the Service concurs that the fuel reduction/wildfire mitigation is not likely to adversely affect the Houston toad. Our concurrence with FEMA's determination of may affect, but not likely to adversely affect pursuant to Section 7 of the Act, is

Mr. Jaynes

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based upon a review of the Service's files, our multiple site inspections in Bastrop County since the fire, communications with species experts and others, and is contingent upon adherence to the measures enumerated herein. In the event the project changes or additional information on listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Our concurrence is provided in accordance with the provisions of the Act of 1973 (16 U.S.C. 1531 et seq.). If you have any questions, or need additional information, please contact Mr. Jeff Hill, staff biologist or myself at 281/286-8282.

Sincerely,

A handwritten signature in black ink, appearing to read "Dawn Gardiner" with a stylized flourish underneath.

Dawn Gardiner  
Acting Field Supervisor