

Appendix F  
Agency Correspondence  
and Responses

**APPENDIX F**

February 6, 2012

**Re: Threatened and Endangered Species  
FEMA Environmental Assessment  
Wildfire Mitigation for Smithville Research Center  
FEMA HMGP Number: FEMA-1791-DR-TX; FEMA Project Number 291**

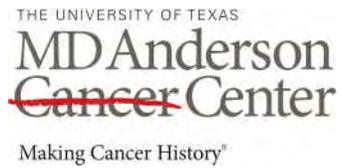
The MD Anderson Cancer Center (MDACC) has been awarded a Hazard Mitigation Grant Program (HMGP) grant from the Texas Division of Emergency Management (TDEM) for wildfire mitigation at the Smithville Research Center. The grant will be awarded pending the completion of an Environmental Assessment (EA) and the concurrence of a Finding of No Significant Impact (FONSI).

The Smithville Research Center is located in Bastrop County, within the Lost Pines region of south-central Texas. The property is located at 1808 Park Road 1C, Smithville, TX, 78957 (30° 02' 20.90" north and 97° 09' 29.66" west). Attached with this letter is both a map of the project area and a short project description.

To assist with the planning process and any agency coordination, the project team requests electronic records from the USFWS database for the study area depicted on the attached project area map.

MDACC understands the sensitivity of USFWS data, and will not present specific recorded sitings from this database to the public.

After you have had a chance to review this request and your database request schedule, please call me at (713) 745-4992 or E-mail me at [nnshah@mdanderson.org](mailto:nnshah@mdanderson.org) to inform me of a time frame on when we should expect these data.

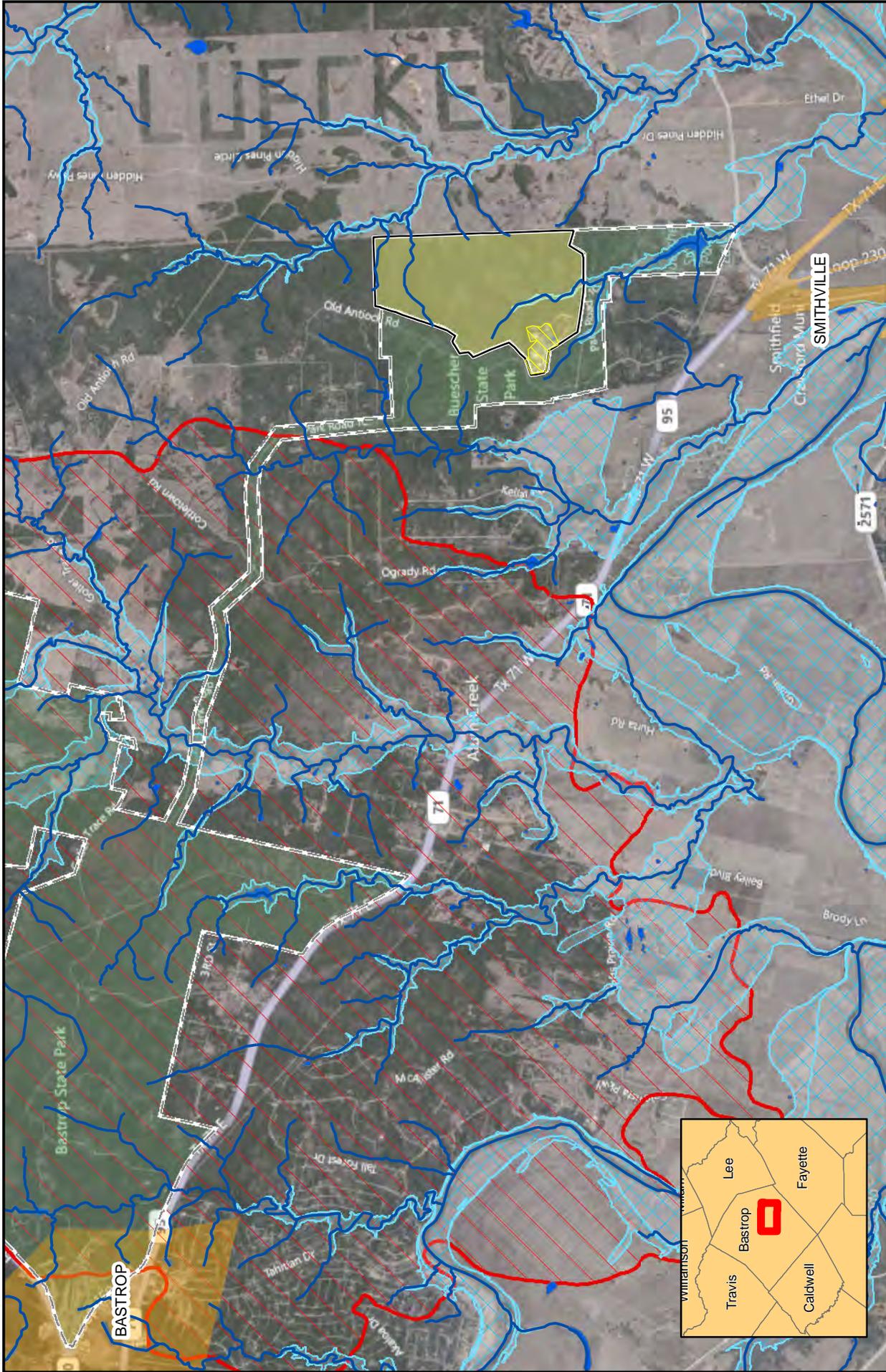


T 713-792-2207 F 713-563-4888  
Capital Planning & Management  
Unit 703  
1515 Holcombe Boulevard  
Houston, TX 77030

Sincerely yours,

Nilesh Shah  
Principal Project Manager  
Capital Planning and Management – Unit 703

Attachments



<b>Project Location Map</b>	
<b>MDACC - Smithville Research Center</b>	
Drawn By: AM	Date: 01-26-12
Project No.: 25014429	Figure: 1

**Legend**

- Streams/Rivers
- Project Location
- Bastrop County Complex Fire
- Approximate Property Boundary
- Texas State Parks
- City Limits
- 100-yr Floodplain

N

0 0.5 1 Miles  
1 inch = 1 mile

**URS**  
 10550 Richmond, Suite 155  
 Houston, TX 77042  
 Tel: 713.914.6699  
 Fax: 713.789.8404

## MD Anderson Cancer Center - Smithville Cancer Research Center

### Wildfire Mitigation Project Description

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The Smithville Cancer Research Center is a unique component of the MDACC, with the mission to investigate the molecular biology of cancer and to develop means for cancer prevention and detection. The Smithville campus is located in Lost Pines of Bastrop County near Smithville, Texas. The campus is located on Park Road 1C, approximately 1.5 miles north of Texas Highway 71 and 4 miles northwest of Smithville, Bastrop County, Texas. It sits on a 60 acre property and is comprised of 10 buildings that are a mixture of laboratories, animal facilities, physical plant, and office buildings. The entire campus is owned by The University of Texas M. D. Anderson Cancer Center.

The scope of the proposed mitigation project is to protect the Smithville Research Center from wildfire damage through the development of defensible areas along the property perimeter and building hardening measures. At this time, three alternatives are being evaluated, including the No-Action Alternative and two build alternatives.

#### Alternative 1

The Smithville Research Center already has some preliminary defense zones in place. To provide further protection, Alternative 1 includes the implementation of defense zones around the perimeter of the campus, where necessary; the installation of a sprinkler system; and protection for critical buildings and facilities. Defense zones will be at least 30 feet wide, and all dead, decaying, and woody material will be cleared from the area. In addition to the defensible areas, a wildfire sprinkler system will be installed that surrounds critical buildings on campus.

#### Alternative 2

Alternative 2 includes hardening all buildings and structures on the campus. Structural hardening measures may include replacing roofing material with non-combustible materials, reinforcing external walls with non-combustible materials, reinstalling windows with tempered glass, installing automatic dampers at air intakes, and replacing existing doors with fire-proof doors.

The wildfire protection project is expected to bring safety and protection to Smithville Research Center so that it can continue to perform invaluable research without the risk of loss during a fire.

Bryan W. Shaw, Ph.D., *Chairman*  
Buddy Garcia, *Commissioner*  
Carlos Rubinstein, *Commissioner*  
Mark R. Vickery, P.G., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

March 6, 2012

M. Nilesh Shah  
MD Anderson Cancer Center  
1515 Holcombe Boulevard  
Houston, TX 77030

Re: TCEQ Grant and Texas Review and Comment System (TRACS) #2012-116, City of Smithville, Bastrop County - Wildfire Mitigation for Smithville Research Center - FEMA HMGP Number: FEMA-1791-DR-TX; FEMA Project Number 291

Dear M. Shah:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced project and offers following comments:

A review of the project for General Conformity impact in accordance with 40 CFR Part 93 and Title 30, Texas Administrative Code § 101.30 indicates that the proposed action is located in the City of Smithville, Bastrop County, which is currently unclassified or in attainment of the National Ambient Air Quality Standards for all six criteria air pollutants. Therefore, General Conformity does not apply.

Although any demolition, construction, rehabilitation or repair project will produce dust and particulate emissions, these actions should pose no significant impact upon air quality standards. Any minimal dust and particulate emissions should be easily controlled by the construction contractors using standard dust mitigation techniques.

We do not anticipate significant long term environmental impacts from this project as long as construction and waste disposal activities are completed in accordance with applicable local, state and federal statutes and regulations. We agree with a finding of no significant impact and have no objection to the release of funds for this project. We recommend that best management practices to control runoff from construction sites be utilized to prevent impact to surface and groundwater.

Thank you for the opportunity to review this project. If you have any questions, please contact Ms. Janie Roman at (512)239-0604 or [Janie.roman@tceq.texas.gov](mailto:Janie.roman@tceq.texas.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Harrison".

Jim Harrison, Director  
Intergovernmental Relations Division

TEXAS



GENERAL LAND OFFICE

JERRY PATTERSON, COMMISSIONER

March 7, 2012

Nilesh Shah  
Principal Facilities Project Manager  
MD Anderson Cancer Center  
1515 Holcombe Blvd  
Houston, TX 77030

**Re: FEMA Environmental Assessment  
Wildfire Mitigation for Smithville Research Center  
FEMA HMGP Number: FEMA-1791-DR-TX; FEMA Project Number 291**

Dear Mr. Shah:

It has been determined that the project referenced above is outside the Texas Coastal Management Program (CMP) boundary. Therefore, it is not subject to consistency review under the Texas CMP.

Thank you for the opportunity to comment.

Sincerely,

Andrea Finch  
Consistency Review Coordinator  
Texas General Land Office

Stephen F. Austin Building • 1700 North Congress Avenue • Austin, Texas 78701-1495

Post Office Box 12873 • Austin, Texas 78711-2873

512-463-5001 • 800-998-4GLO

[www.glo.state.tx.us](http://www.glo.state.tx.us)



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

March 22, 2012

Planning, Environmental, and Regulatory Division  
Regulatory Branch

SUBJECT: Project Number SWF-2012-00120, Wildfire Mitigation-Smithville Research Center

Mr. Miles Shah  
MD Anderson Cancer Center  
Unit 703  
1515 Holcombe Boulevard  
Houston, Texas 77030

Dear Mr. Shah:

Thank you for your letter received March 1, 2012, concerning the proposal by MD Anderson Cancer Center to construct the Wildfire Mitigation for the Smithville Research Center, located in the City of Smithville, Bastrop County, Texas. This project has been assigned Project Number SWF-2012-00120. Please include this number in all future correspondence concerning this project.

Under Section 404 of the Clean Water Act the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. USACE responsibility under Section 10 of the Rivers and Harbors Act of 1899 is to regulate any work in, or affecting, navigable waters of the United States. Based on your description of the proposed work, and other information available to us, we have determined this project will not involve activities subject to the requirements of Section 404 or Section 10. Therefore, it will not require Department of the Army authorization pursuant to Section 404 and/or Section 10. The USACE based this decision on a preliminary jurisdictional determination that there are waters of the United States within the project site.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please contact Ms. Elisha Bradshaw at the address above or telephone (817) 886-1738 and refer to your assigned project number.

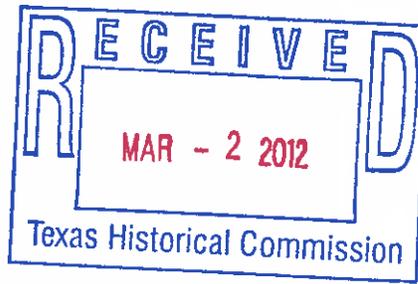
Please help the Regulatory Program improve its service by completing the survey on the following website: <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

*Elisha Bradshaw*  
Stephen L Brooks  
Chief, Regulatory Branch

February 29, 2012

Mark Wolfe  
State Historic Preservation Officer  
Texas Historical Commission  
1511 Colorado Street  
Austin, TX 78701  
(512) 463-6383



T 713-792-2207 F 713-563-4888  
Capital Planning & Management  
Unit 703  
1515 Holcombe Boulevard  
Houston, TX 77030



**Re: Historic and Archaeological Resources Verification  
FEMA Environmental Assessment  
Wildfire Mitigation for Smithville Research Center  
FEMA HMGP Number: FEMA-1791-DR-TX; FEMA Project Number 291**

The MD Anderson Cancer Center (MDACC) has been awarded a FEMA Hazard Mitigation Grant Program (HMGP) grant from the Texas Division of Emergency Management (TDEM) for wildfire mitigation at the Smithville Research Center. The grant will be awarded pending the completion of an Environmental Assessment (EA) and the concurrence of a Finding of No Significant Impact (FONSI).

The Smithville Research Center is located in Bastrop County, within the Lost Pines region of south-central Texas. The property is located at 1808 Park Road 1C, Smithville, TX, 78957 (30° 02' 20.90" north and 97° 09' 29.66" west). Attached with this letter is both a map of the project area and a short project description.

To assist with the planning process and any agency coordination, the project team requests SHPO consultation for the study area depicted on the attached project area map.

After you have had a chance to review this request and consult your database, please provide us a letter with your findings. Due to tight grant deadlines, an expedited response will be appreciated. Please call me at (713) 745-4992 or E-mail me at [nshah@mdanderson.org](mailto:nshah@mdanderson.org) if you have any questions.

Sincerely yours,

**Nilesch Shah**  
Principal Facilities Project Manager  
D 713-745-4992  
C 713-398-2702  
Attachments





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Division of Ecological Services  
17629 El Camino Real, Suite 211  
281/286-8282 / (FAX) 281/488-5882



February, 2012

Thank you for your request for threatened and endangered species information in the Clear Lake Ecological Services Office's area of responsibility. According to Section 7(a)(2) of the Endangered Species Act and the implementing regulations, it is the responsibility of each Federal agency to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed species.

Please note that while a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal agency must notify the U.S. Fish and Wildlife Service (Service) in writing of such designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

A county-by-county listing of federally-listed threatened and endangered species that occur within this office's work area can be found at [http://www.fws.gov/southwest/es/EndangeredSpecies/EndangeredSpecies\\_Lists/EndangeredSpecies\\_Lists\\_Main.cfm](http://www.fws.gov/southwest/es/EndangeredSpecies/EndangeredSpecies_Lists/EndangeredSpecies_Lists_Main.cfm). You should use the county-by-county listing and other current species information to determine whether suitable habitat for a listed species is present at your project site. If suitable habitat is present, a qualified individual should conduct surveys to determine whether a listed species is present.

After completing a habitat evaluation and /or any necessary surveys, you should evaluate the project for potential effects to the listed species and make one of the following determinations:

**No effect** – the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for species occurring in the project county is not present in, or adjacent to, the action area). No coordination or conduct with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

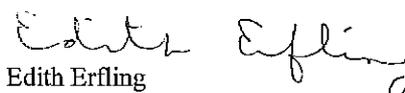
**Is not likely to adversely affect** – the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all the information and documentation used to reach your decision with your concurrence. The Service must have this documentation before issuing a concurrence.

**Is likely to adversely affect** – adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also likely to cause some adverse effect to individuals or that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal Section 7 consultation with this office.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles. The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Endangered Species Act requirements for your projects at [http://www.fws.gov/endangered/esa-library/pdf/esa\\_section7\\_handbook.pdf](http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf).

If we can further assist you in understanding a federal agency's obligations under the Endangered Species Act, please contact Donna Anderson, Moni Belton, Kelsey Gocke, Jeff Hill, Charrish Stevens, or Arturo Vale at 281-286-8282.

Sincerely,

  
Edith Erling  
Field Supervisor



April 27, 2012

Life's better outside.®

Commissioners

T. Dan Friedkin  
Chairman  
Houston

Ralph H. Duggins  
Vice-Chairman  
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Lee M. Bass  
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Fort Worth

Carter P. Smith  
Executive Director

Mr. Nilesh Shah  
MD Anderson Cancer Center  
1515 Holcombe Boulevard  
Houston, TX 77030-4009

RE: Wildfire Mitigation for Smithville Research Center  
MD Anderson Cancer Center, Bastrop County, Texas

Dear Mr. Shah:

Texas Parks and Wildlife Department (TPWD) has received your request for information regarding potential impacts to threatened and endangered species and for information on other issues of concern relating to the project referenced above. Under Section 12.0011 of the Texas Parks and Wildlife Code, TPWD is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources."

Please be aware that a written response to a TPWD recommendation or informational comment received by a state governmental agency may be required by state law. For further guidance, see the Texas Parks and Wildlife Code, Section 12.0011, which can be found online at <http://www.statutes.legis.state.tx.us/Docs/PW/htm/PW.12.htm#12.0011>. For tracking purposes, please refer to TPWD project number ERCS-93 in any return correspondence regarding this project.

### Project Description

MD Anderson Cancer Center (MDACC) has been awarded a Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP) grant for wildfire mitigation at the Smithville Research Center. The purpose of the proposed project is to protect the research center facilities from wildfire damage through the development of defensible areas along the property perimeter and building hardening measures.

According to the project description, two build alternatives have been proposed. Alternative 1 includes the implementation of defense zones around the perimeter of the campus and the installation of a sprinkler system where necessary. This

Mr. Nilesh Shah  
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April 27, 2012

alternative also includes the clearing of defense zones at least 30 feet wide in wooded areas around the facility.

After corresponding with MDACC and URS, the applicant's consultant, additional information on the proposed clearing in Alternative 1 was provided to TPWD on April 6, 2012. The figures provided outlined the areas proposed to be cleared and a proposed loop road extension that was not identified in the original project document.

TPWD has concerns about the proposed clearing activities and road outlined in Alternative 1. TPWD requests that MDACC complete an Environmental Assessment (EA) on the proposed project that outlines the potential project in detail, project impacts, and proposed mitigation. Please submit the EA to TPWD for further review.

Alternative 2 includes the structural hardening of all buildings and structures on campus. TPWD has no concerns regarding the proposed activities of Alternative 2.

#### Federal Laws

##### *Endangered Species Act (ESA)*

##### Federally-listed Species

Federally-listed animal species and their habitat are protected from "take" on any property by the ESA. Take of a federally-listed species can be allowed if it is "incidental" to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Federally-listed plants are not protected from take except on lands under federal/state jurisdiction or for which a federal/state nexus (i.e., permits or funding) exists. Any take of a federally-listed species or its habitat without the required take permit (or allowance) from U.S. Fish and Wildlife Service (USFWS) is a violation of the ESA. TPWD maintains annotated lists of rare and protected species for all counties in Texas. These lists and species range maps may be found online at [http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered\\_species/](http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species/).

##### Houston toad (*Anaxyrus houstonensis*)

The Houston toad was the first amphibian species placed on the Endangered Species List in 1973 and is a fossorial toad species. The Houston toad is associated with deep sandy soils within the Post Oak Savannah of east central Texas and is a year-round resident where found. Houston toads are known to cross unfavorable soils to reach breeding ponds, but cannot cross large areas without canopy due to the effects of temperature and desiccation. In addition, large uncanopied areas prevent recolonization of previously occupied habitat when juvenile toads disperse, effectively fragmenting the habitat further, an action that inhibits the recovery of this

Mr. Nilesh Shah  
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species. Tree clearing, road construction, and heavy equipment activity could cause mortality to toads.

**Recommendation:** TPWD has concerns about the proposed clearing and the road construction. TPWD recommends that any forested habitat within the proposed project area be surveyed for the presence of Houston toads and/or suitable habitat and the associated soil types Sparta, Carrizo, Goliad, Queen City, Recklaw, Weches and Willis. Per USFWS regulations, a minimum of 12 surveys must be completed between January and June of each year, on nights of appropriate weather conditions. As this species has been known to travel upwards of a mile from a breeding pond, all soil types within the study area should be surveyed.

**Recommendation:** TPWD recommends that the MDACC utilize the Lost Pines Habitat Conservation Plan Wildlife Management Guidelines during construction to minimize impacts to the Houston toad. Construction work in toad habitat warrants the use of environmental compliance and/or monitors to ensure the safety of this species. If Houston toads or their habitat are to be affected by the project, then consultation with the USFWS would be warranted pursuant to the ESA.

#### *Migratory Bird Treaty Act*

The Migratory Bird Treaty Act (MBTA) prohibits taking, attempting to take, capturing, killing, selling/purchasing, possessing, transporting, and importing of migratory birds, their eggs, parts and nests, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The USFWS Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.

**Recommendation:** If migratory bird species are found nesting on or adjacent to the existing or proposed project routes, they must be dealt with in a manner consistent with the MBTA. TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March through August, to avoid adverse impacts to this group. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends MDACC survey the area proposed for construction to ensure that no nests with eggs or young will be disturbed by construction. Any vegetation (trees, shrubs, and grasses) where occupied nests are located should not be disturbed until the eggs have hatched and the young have fledged.

Mr. Nilesh Shah  
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April 27, 2012

### *Clean Water Act*

Section 404 of the Clean Water Act (CWA) establishes a federal program to regulate the discharge of dredged and fill material into the waters of the United States, including wetlands. The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency are responsible for regulating water resources under this act. Although the regulation of isolated wetlands has been removed from the USACE permitting process, both isolated and jurisdictional wetlands provide habitat for wildlife and help protect water quality.

**Recommendation:** If the proposed projects would impact waterways or associated wetlands, TPWD recommends consulting with the USACE for potential impacts to waters of the United States including jurisdictional determinations, delineations, and mitigation. All waterways and associated floodplains, riparian corridors, playa lakes, and wetlands provide valuable wildlife habitat and should be protected to the maximum extent possible. Natural buffers contiguous to any wetlands or aquatic systems should remain undisturbed to preserve wildlife cover, food sources, and travel corridors. Erosion controls and sediment runoff control measures should be installed prior to construction and maintained until disturbed areas are permanently revegetated using site specific native vegetation. These measures should be properly installed in order to effectively minimize the amount of sediment and other debris entering the waterway.

**Recommendation:** In wetland habitats only vegetation impeding construction should be removed, equipment should not be driven over vegetation when it is extremely wet, and heavy machinery should not be stored on vegetative cover for long periods of time. Protective mats should be placed within streambeds during construction to reduce the amount of soil and root disturbance and aid in the recovery of plants.

If regulations pursuant to the CWA apply to the proposed activities, the Fort Worth USACE Regulatory Branch District should be contacted for guidance and permitting requirements. The Fort Worth USACE Regulatory Branch District can be contacted at (817) 886-1731.

### State Laws

#### *Section 68.015, Parks and Wildlife Code – State-listed Species*

Section 68.015 of the Parks and Wildlife Code regulates state-listed species. Please note that there is no provision for take (incidental or otherwise) of state-listed species. A copy of *TPWD Guidelines for Protection of State-Listed Species* is attached for your reference. This document includes a list of penalties for take of state-listed

Mr. Nilesh Shah  
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April 27, 2012

species. State-listed species may only be handled by persons with a scientific collection permit obtained through TPWD. For more information on this permit, please contact the Wildlife Permits Office at (512) 389-4647.

#### *Chapter 26 - State Parks*

The proposed project is adjacent to Buescher State Park. Based on the information provided, for this project, no surface disturbance would occur on TPWD property. However, if access to the park is necessary, then permission would need to be granted and MDACC would be required to comply with Chapter 26 of the Texas Parks and Wildlife Code. Chapter 26 is modeled on a federal statute, known as "section 4(f)" and codified at 49. U.S.C. §303. In fact, much of Chapter 26 is taken word for word from section 4(f). Chapter 26 requires that before a state agency can approve any project that will result in the use of taking of public land designated and used as a park, that state agency must provide certain notices to the public, conduct a hearing, and render a finding that there is no feasible and prudent alternative and that the project includes all reasonable planning to minimize harm to the park. The Texas Parks and Wildlife Commission would have to approve a "taking" of state park lands as well as grant an easement across state lands.

**Recommendation:** TPWD strongly recommends avoiding disturbance of state parks and any other managed lands. If any new ground disturbance, for this project and any other, is proposed to occur within a state park or other managed area, TPWD recommends these proposed activities be thoroughly described in the EA. Please contact David Riskind, Director of Natural Resources for the TPWD State Parks Division, at (512) 389-4897 to discuss recommended mitigation measures for impacts to TPWD property.

#### State Fish and Wildlife Resources

##### *Revegetation Plan*

For revegetation, TPWD recommends selection of species that are suited to the site conditions, ecoregion, and intended uses and to consider native species that have multiple values and provide species diversity.

**Recommendation:** TPWD recommends that disturbed areas be restored to pre-construction contours and planted with a mixture of **native** herbaceous species. Introduction of non-native species into native landscapes should be prevented. Species appropriate for the area can be found by accessing the TPWD Texas Plant Information Database at <http://tpid.tpwd.state.tx.us/overview.asp> or by accessing the TPWD Wildscapes website at <http://www.tpwd.state.tx.us/huntwild/wild/wildscapes/>.

Mr. Nilesh Shah  
Page Six  
April 27, 2012

**Recommendation:** To verify successful revegetation and to determine the need for additional restoration, TPWD recommends MDACC conduct at least 2 years of post-construction monitoring.

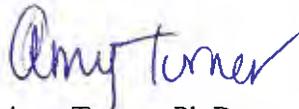
**Recommendation:** In wetlands, TPWD recommends that vegetation be allowed to reestablish naturally, though a three-year monitoring plan should be conducted to determine success. Unsuccessful revegetation would require active planting with native wetland herbaceous and woody plant species in consultation with a professional wetland ecologist.

#### Mitigation Plan

TPWD recommends MDACC prepare a mitigation plan to provide compensatory mitigation for those habitats listed above where impacts from the project cannot be avoided or minimized. This would include impacts to species and habitats covered under federal law (wetlands and associated habitats, threatened or endangered species) and state resource habitat types not covered by state or federal law (riparian areas, native prairies, certain types of bottomland hardwoods). At a minimum, TPWD recommends a replacement ratio of 1:1 for state resource habitat types.

TPWD advises review and implementation of the comments and recommendations. If you have any questions, please contact Amy Turner at (361) 576-0022 or [amy.turner@tpwd.state.tx.us](mailto:amy.turner@tpwd.state.tx.us). As the primary point-of-contact for this project, correspondence regarding this project should be addressed to Amy Turner, Ph.D., TPWD Wildlife Division, Wildlife Habitat Assessment Program, 4200 Smith School Road, Austin, TX 78744.

Sincerely,



Amy Turner, Ph.D.  
Wildlife Habitat Assessment Program  
Wildlife Division

AJT:gg.ERCS-93

Attachment

Protection of State-Listed Species  
Texas Parks and Wildlife Department Guidelines

**Protection of State-Listed Species**

State law prohibits any take (incidental or otherwise) of state-listed species. State-listed species may only be handled by persons possessing a **Scientific Collecting Permit** or a **Letter of Authorization** issued to relocate a species.

- **Section 68.002 of the Texas Parks and Wildlife (TPW) Code** states that species of fish or wildlife indigenous to Texas are endangered if listed on the United States List of Endangered Native Fish and Wildlife or the list of fish or wildlife threatened with statewide extinction as filed by the director of Texas Park and Wildlife Department. Species listed as Endangered or Threatened by the Endangered Species Act are protected by both Federal and State Law. The State of Texas also lists and protects additional species considered to be threatened with extinction within Texas.
- **Animals** - Laws and regulations pertaining to state-listed endangered or threatened animal species are contained in **Chapters 67 and 68 of the Texas Parks and Wildlife (TPW) Code** and **Sections 65.171 - 65.176 of Title 31 of the Texas Administrative Code (TAC)**. State-listed animals may be found at **31 TAC §65.175 & 176**.
- **Plants** - Laws and regulations pertaining to endangered or threatened plant species are contained in **Chapter 88 of the TPW Code** and **Sections 69.01 - 69.9 of the TAC**. State-listed plants may be found at **31 TAC §69.8(a) & (b)**.

**Prohibitions on Take of State Listed Species**

**Section 68.015 of the TPW Code** states that no person may capture, trap, take, or kill, or attempt to capture, trap, take, or kill, endangered fish or wildlife.

**Section 65.171 of the Texas Administrative Code** states that except as otherwise provided in this subchapter or **Parks and Wildlife Code, Chapters 67 or 68**, no person may take, possess, propagate, transport, export, sell or offer for sale, or ship any species of fish or wildlife listed by the department as endangered or threatened.

"Take" is defined in **Section 1.101(5) of the Texas Parks and Wildlife Code** as:

*"Take," except as otherwise provided by this code, means collect, hook, hunt, net, shoot, or snare, by any means or device, and includes an attempt to take or to pursue in order to take.*

**Penalties**

The penalties for take of state-listed species (**TPW Code, Chapter 67 or 68**) are:

- 1<sup>ST</sup> Offense = Class C Misdemeanor:  
\$25-\$500 fine
- One or more prior convictions = Class B Misdemeanor  
\$200-\$2,000 fine and/or up to 180 days in jail.
- Two or more prior convictions = Class A Misdemeanor  
\$500-\$4,000 fine and/or up to 1 year in jail.

Restitution values apply and vary by species. Specific values and a list of species may be obtained from the TPWD Wildlife Habitat Assessment Program.

May 17, 2012

Amy Turner, Ph.D.  
Texas Parks and Wildlife Department  
Wildlife Division  
Wildlife Habitat Assessment Program  
4200 Smith School Road  
Austin, TX 78744

**Re: Wildfire Mitigation for Smithville Research Center  
M.D. Anderson Cancer Center, Bastrop County, Texas**

Dear Ms. Turner:

The MD Anderson Cancer Center (MDACC) has received your correspondence describing the TPWD recommended mitigation plan. MDACC would like to clarify the Alternative 1 project description and the additional information provided to Texas Parks and Wildlife Department (TPWD) on April 6, 2012. Additionally, MDACC would like to respond to the TPWD recommendations; these responses are provided below. MDACC has listed each comment in italic font and has provided a response to each comment accordingly.

#### Project Description

*MD Anderson Cancer Center (MDACC) has been awarded a Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP) grant for wildfire mitigation at the Smithville Research Center. The purpose of the proposed project is to protect the research center facilities from wildfire damage through the development of defensible areas along the property perimeter and building hardening measures.*

*According to the project description, two build alternatives have been proposed. Alternative 1 includes the implementation of defense zones around the perimeter of the campus and the installation of a sprinkler system where necessary. This alternative also includes the clearing of defense zones at least 30 feet wide in wooded areas around the facility.*

*After corresponding with MDACC and URS, the applicant's consultant, additional information on the proposed clearing in Alternative 1 was provided to TPWD on April 6, 2012. The figures provided outlined the areas proposed to be cleared and a proposed loop road extension that was not identified in the original project document.*

*TPWD has concerns about the proposed clearing activities and road outlined in Alternative 1. TPWD requests that MDACC complete an Environmental Assessment (EA) on the proposed project that outlines the potential project in detail, project impacts, and proposed mitigation. Please submit the EA to TPWD for further review.*

*Alternative 2 includes the structural hardening of all buildings and structures on campus. TPWD has no concerns regarding the proposed activities of Alternative 2.*

### **MDACC Response:**

URS provided a draft map to the TPWD illustrating the Alternative 1 project area (April 6, 2012). As a follow-up to that draft map, URS provided an updated and final map to TPWD illustrating the Alternative 1 project area. The project area detailed in this map includes only the area that was within the original scope of the FEMA Hazard Mitigation Grant Application (HMGP) on April 20, 2012 (attachment, Figure 1). To clarify, the loop road extension is only a part of facility's future plan; therefore, the extension of the loop road is not part of this project nor within the scope of the original grant application. The impacts associated with constructing the road extension will not be evaluated as part of this Environmental Assessment.

### **Federal Laws**

#### *Endangered Species Act (ESA) Federally-listed Species*

*Federally-listed animal species and their habitat are protected from "take" on any property by the ESA. Take of a federally-listed species can be allowed if it is "incidental" to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Federally-listed plants are not protected from take except on lands under federal/state jurisdiction or for which a federal/state nexus (i.e., permits or funding) exists. Any take of a federally-listed species or its habitat without the required take permit (or allowance) from U.S. Fish and Wildlife Service (USFWS) is a violation of the ESA. TPWD maintains annotated lists of rare and protected species for all counties in Texas. These lists and species range maps may be found online at <http://www.tpwd.state.tx.us/landwater/landimapsigiskisiendangered species/>.*

### *Houston toad (*Anaxyrus houstonensis*)*

*The Houston toad was the first amphibian species placed on the Endangered Species List in 1973 and is a fossorial toad species. The Houston toad is associated with deep sandy soils within the Post Oak Savannah of east central Texas and is a year-round resident where found. Houston toads are known to cross unfavorable soils to reach breeding ponds, but cannot cross large areas without canopy due to the effects of temperature and desiccation. In addition, large uncanopied areas prevent recolonization of previously occupied habitat when juvenile toads disperse, effectively fragmenting the habitat further, an action that inhibits the recovery of this species. Tree clearing, road construction, and heavy equipment activity could cause mortality to toads.*

***Recommendation:*** *TPWD has concerns about the proposed clearing and the road construction. TPWD recommends that any forested habitat within the proposed project area be surveyed for the presence of Houston toads and/or suitable habitat and the associated soil types Sparta, Carrizo, Goliad, Queen City, Recklaw, Weches and Willis. Per USFWS regulations, a minimum of 12 surveys must be completed between January and June of each year, on nights of appropriate weather conditions. As this species has been known to travel upwards of a mile from a breeding pond, all soil types within the study area should be surveyed.*

***Recommendation:*** *TPWD recommends that the MDACC utilize the Lost Pines Habitat Conservation Plan Wildlife Management Guidelines during construction to minimize impacts to the Houston toad. Construction work in toad habitat warrants the use of environmental compliance and/or monitors to ensure the safety of this species. If Houston toads or their habitat are to be affected by the project, then consultation with the USFWS would be warranted pursuant to the ESA.*

### **MDACC Response:**

The only activity for Alternative 1 included in this proposed project is fuel reduction by thinning trees and brushes for the creation of defense zones around the perimeter of the existing, developed MDACC campus.

MDACC conducted a series of field investigations for the Houston toad for approximately 700 acres of MDACC property. Figure 2 (attachment) illustrates the

MDACC property boundary. The surveys were conducted in 2007, 2008 and 2009 and were conducted to determine the presence/absence for the Houston toad.

The surveys were performed by MDACC's consultant, SWCA Environmental Consultants (SWCA) according to USFWS protocol and were completed during the Houston toad breeding season between February 1 and April 30. The 700-acres were surveyed along three transects that were physically walked during each survey period. The results of the three years' surveys are described below in Table 1.

**Table 1**  
**Summary of Houston Toad Surveys**

Survey Year	Summary of Survey Results
2007	SWCA surveyed the Smithville Research Center property at night during the 2007 Houston toad breeding season. In addition, SWCA visited three known breeding sites (off-site) throughout the surveys for use as Houston toad reference ponds. Houston toads were observed at the three reference sites during the visits. No Houston toads, however, were observed within the MD Anderson survey area during any of the visits. <sup>1</sup>
2008	SWCA surveyed the Smithville Research Center property at night during the 2008 Houston toad breeding season. In addition, SWCA visited two known breeding sites (off-site) throughout the surveys for use as Houston toad reference ponds. Houston toads were observed at one site (Bastrop State Park Lake) during the visits. No Houston toads were observed within the MD Anderson survey area during any of the visits. <sup>2</sup>
2009	SWCA surveyed the Smithville Research Center property at nights during the 2009 Houston toad breeding season. SWCA visited two known breeding sites in Bastrop State Park (BASP) and Buescher State Park (BUSP) and multiple pond locations throughout Bastrop County prior to each survey for use as Houston toad reference ponds. No Houston toads were observed within the MD Anderson survey area, BASP, or BUSP during any of the visits. <sup>3</sup>

Sources:

1. SWCA Environmental Consultants. *Results of the 2007 Field Surveys for the Endangered Houston Toad (Bufo houstonensis) at the MD Anderson Cancer Center in Smithville, Bastrop County, Texas.* June 14, 2007.
2. SWCA Environmental Consultants. *Results of the 2008 Field Surveys for the Endangered Houston Toad (Bufo houstonensis) at the MD Anderson Cancer Center in Smithville, Bastrop County, Texas.* May 21, 2008.

3. SWCA Environmental Consultants. *Results of the 2009 Field Surveys for the Endangered Houston Toad (Bufo houstonensis) at the MD Anderson Cancer Center in Smithville, Bastrop County, Texas.* June 10, 2009.

In accordance with regulations for an environmental assessment, a field survey for potential Houston toad habitat was conducted in February 2012. For this survey, the developed area and proposed wildfire defense zone of the campus, as illustrated on Figure 1, were inspected for potential habitat. The Houston toad prefers deep, soft sands that allow the toad to burrow. The soils present at the developed area contain firm, loamy or sandy loam surfaces, as presented in Table 2. The soil conditions within the developed area are not conducive for Houston toad habitat. The field notes and relevant photographs have been included as an attachment.

**Table 2**  
**Soils within the Study Area**

Soil	% Slope	Description	Hydric	Prime Farmland
Crockett fine sandy loam	1 to 3	Found on ridge tops in prairies, moderately well drained, no flooding.	No	No
Edge gravelly fine sandy loam	0 to 1	Found on old, high terraces, moderately well drained, no flooding.	No	No
Edge fine sandy loam	3 to 8	Found on backslopes and side slopes, well drained, no flooding.	No	No

Sources: USDA NRCS, Custom Soil Resource Report for Bastrop County, 2012.  
 USDA NRCS, Hydric Soils Database, 2012.  
 USACE, *Draft Environmental Impact Statement Three Oaks Mine*, August 2002.

Although the habitat assessment for the Houston toad indicated that no favorable habitat is located within the immediate vicinity of the study area, the species may still be present. Based on the results of the previous species surveys and habitat assessment, MDACC does not anticipate impacts to the Houston toad therefore will not need to utilize the Lost Pines Habitat Conservation Plan Wildlife Management Guidelines during construction. MDACC is committed to protecting the species and will halt activity associated with wildfire mitigation if a Houston toad is observed.

### ***Migratory Bird Treaty Act***

*The Migratory Bird Treaty Act (MBTA) prohibits taking, attempting to take, capturing, killing, selling/purchasing, possessing, transporting, and importing of migratory birds,*

*their eggs, parts and nests, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The USFWS Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.*

***Recommendation:*** *If migratory bird species are found nesting on or adjacent to the existing or proposed project routes, they must be dealt with in a manner consistent with the MBTA. TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March through August, to avoid adverse impacts to this group. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends MDACC survey the area proposed for construction to ensure that no nests with eggs or young will be disturbed by construction. Any vegetation (trees, shrubs, and grasses) where occupied nests are located should not be disturbed until the eggs have hatched and the young have fledged.*

#### **MDACC Response:**

MDACC will minimize clearing activities during bird nesting season (March through August), if clearing activities must commence during this period MDACC will conduct necessary surveys to ensure no nests or young will be disturbed.

#### *Clean Water Act*

*Section 404 of the Clean Water Act (CWA) establishes a federal program to regulate the discharge of dredged and fill material into the waters of the United States, including wetlands. The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency are responsible for regulating water resources under this act. Although the regulation of isolated wetlands has been removed from the USACE permitting process, both isolated and jurisdictional wetlands provide habitat for wildlife and help protect water quality.*

***Recommendation:*** *If the proposed projects would impact waterways or associated wetlands, TPWD recommends consulting with the USACE for potential impacts to waters of the United States including jurisdictional determinations, delineations, and mitigation. All waterways and associated floodplains, riparian corridors, playa lakes, and wetlands provide valuable wildlife habitat and should be protected to the maximum extent possible. Natural buffers*

*contiguous to any wetlands or aquatic systems should remain undisturbed to preserve wildlife cover, food sources, and travel corridors. Erosion controls and sediment runoff control measures should be installed prior to construction and maintained until disturbed areas are permanently revegetated using site specific native vegetation. These measures should be properly installed in order to effectively minimize the amount of sediment and other debris entering the waterway.*

***Recommendation:*** *In wetland habitats only vegetation impeding construction should be removed, equipment should not be driven over vegetation when it is extremely wet, and heavy machinery should not be stored on vegetative cover for long periods of time. Protective mats should be placed within streambeds during construction to reduce the amount of soil and root disturbance and aid in the recovery of plants.*

*If regulations pursuant to the CWA apply to the proposed activities, the Fort Worth USACE Regulatory Branch District should be contacted for guidance and permitting requirements. The Fort Worth USACE Regulatory Branch District can be contacted at (817) 886-1731.*

### **MDACC Response:**

No wetlands have been identified in the project area. MDACC has consulted with the USACE under Section 404 of the Clean Water Act (attachment) and a determination was made by the USACE that this project will not involve activities subject to the requirements of Section 404 or Section 10.

### State Laws

#### *Section 68.015, Parks and Wildlife Code — State-listed Species*

*Section 68.015 of the Parks and Wildlife Code regulates state-listed species. Please note that there is no provision for take (incidental or otherwise) of state-listed species. A copy of TPWD Guidelines for Protection of State-Listed Species is attached for your reference. This document includes a list of penalties for take of state-listed species. State-listed species may only be handled by persons with a scientific collection permit obtained through TPWD. For more information on this permit, please contact the Wildlife Permits Office at (512) 389-4647.*

### *Chapter 26 - State Parks*

*The proposed project is adjacent to Buescher State Park. Based on the information provided, for this project, no surface disturbance would occur on TPWD property. However, if access to the park is necessary, then permission would need to be granted and MDACC would be required to comply with Chapter 26 of the Texas Parks and Wildlife Code. Chapter 26 is modeled on a federal statute, known as "section 4(f)" and codified at 49. U.S.C. §303. In fact, much of Chapter 26 is taken word for word from section 4(f). Chapter 26 requires that before a state agency can approve any project that will result in the use of taking of public land designated and used as a park, that state agency must provide certain notices to the public, conduct a hearing, and render a finding that there is no feasible and prudent alternative and that the project includes all reasonable planning to minimize harm to the park. The Texas Parks and Wildlife Commission would have to approve a "taking" of state park lands as well as grant an easement across state lands.*

***Recommendation:*** *TPWD strongly recommends avoiding disturbance of state parks and any other managed lands. If any new ground disturbance, for this project and any other, is proposed to occur within a state park or other managed area, TPWD recommends these proposed activities be thoroughly described in the EA. Please contact David Riskind, Director of Natural Resources for the TPWD State Parks Division, at (512) 389-4897 to discuss recommended mitigation measures for impacts to TPWD property.*

### **MDACC Response:**

The proposed alternatives will remain on MDACC property. No surface disturbance would occur on TPWD property. In the event access to the park is necessary, MDACC will request permission and comply with Chapter 26 of the Texas Parks and Wildlife Code.

## State Fish and Wildlife Resources

### *Revegetation Plan*

*For revegetation, TPWD recommends selection of species that are suited to the site conditions, ecoregion, and intended uses and to consider native species that have multiple values and provide species diversity.*

***Recommendation:*** *TPWD recommends that disturbed areas be restored to pre-construction contours and planted with a mixture of **native** herbaceous species. Introduction of non-native species into native landscapes should be prevented. Species appropriate for the area can be found by accessing the TPWD Texas Plant Information Database at <http://tpid.tpwd.state.tx.us/overview.asp> or by accessing the TPWD Wildscapes website at <http://www.tpwd.state.tx.us/huntwild/wildiwildscapes/>.*

***Recommendation:*** *To verify successful revegetation and to determine the need for additional restoration, TPWD recommends MDACC conduct at least 2 years of post-construction monitoring.*

***Recommendation:*** *In wetlands, TPWD recommends that vegetation be allowed to reestablish naturally, though a three-year monitoring plan should be conducted to determine success. Unsuccessful revegetation would require active planting with native wetland herbaceous and woody plant species in consultation with a professional wetland ecologist.*

### **MDACC Response:**

Revegetation in the defense zones is not part of the scope of this project, although MDACC will ensure that non-native plant species will not be introduced into cleared areas. No wetlands will be impacted by the proposed project.

### Mitigation Plan

*TPWD recommends MDACC prepare a mitigation plan to provide compensatory mitigation for those habitats listed above where impacts from the project cannot be avoided or minimized. This would include impacts to species and habitats covered under federal law (wetlands and associated habitats, threatened or endangered*

*species) and state resource habitat types not covered by state or federal law (riparian areas, native prairies, certain types of bottomland hardwoods). At a minimum, TPWD recommends a replacement ratio of 1:1 for state resource habitat types.*

### **MDACC Response:**

No negative impacts are anticipated under the implementation of Alternative 1, therefore no mitigation measures need to be developed. If, during construction, impacts are detected or are anticipated, MDACC will halt construction and initiate coordination with the necessary agencies.

MDACC understands the TPWD recommended actions necessary to protect endangered species and the native landscape that need to be undertaken when thinning vegetation in the proposed defense zones (at a minimum of 30-feet from the developed area). In summary, MDACC is committed to implementing the recommended actions when necessary and feasible, including the following:

- Minimize clearing activities during bird nesting season (March through August).
- Avoid introducing non-native plant species into cleared areas.
- Initiate coordination with necessary agencies if conditions change or negative impacts are anticipated.

Please call me at (713) 745-4992 or E-mail me at [nshah@mdanderson.org](mailto:nshah@mdanderson.org) if you have any questions.

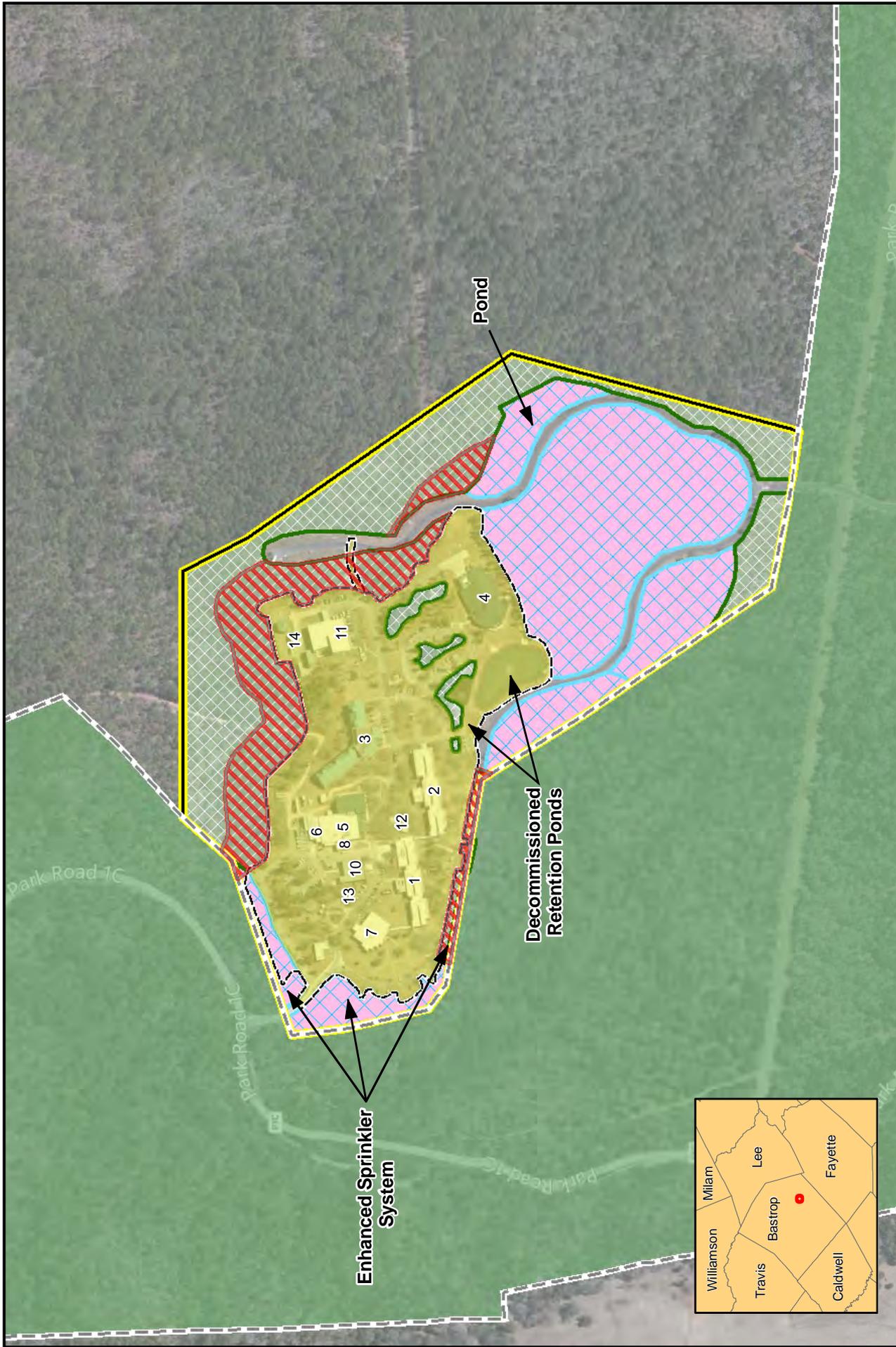
Sincerely yours,



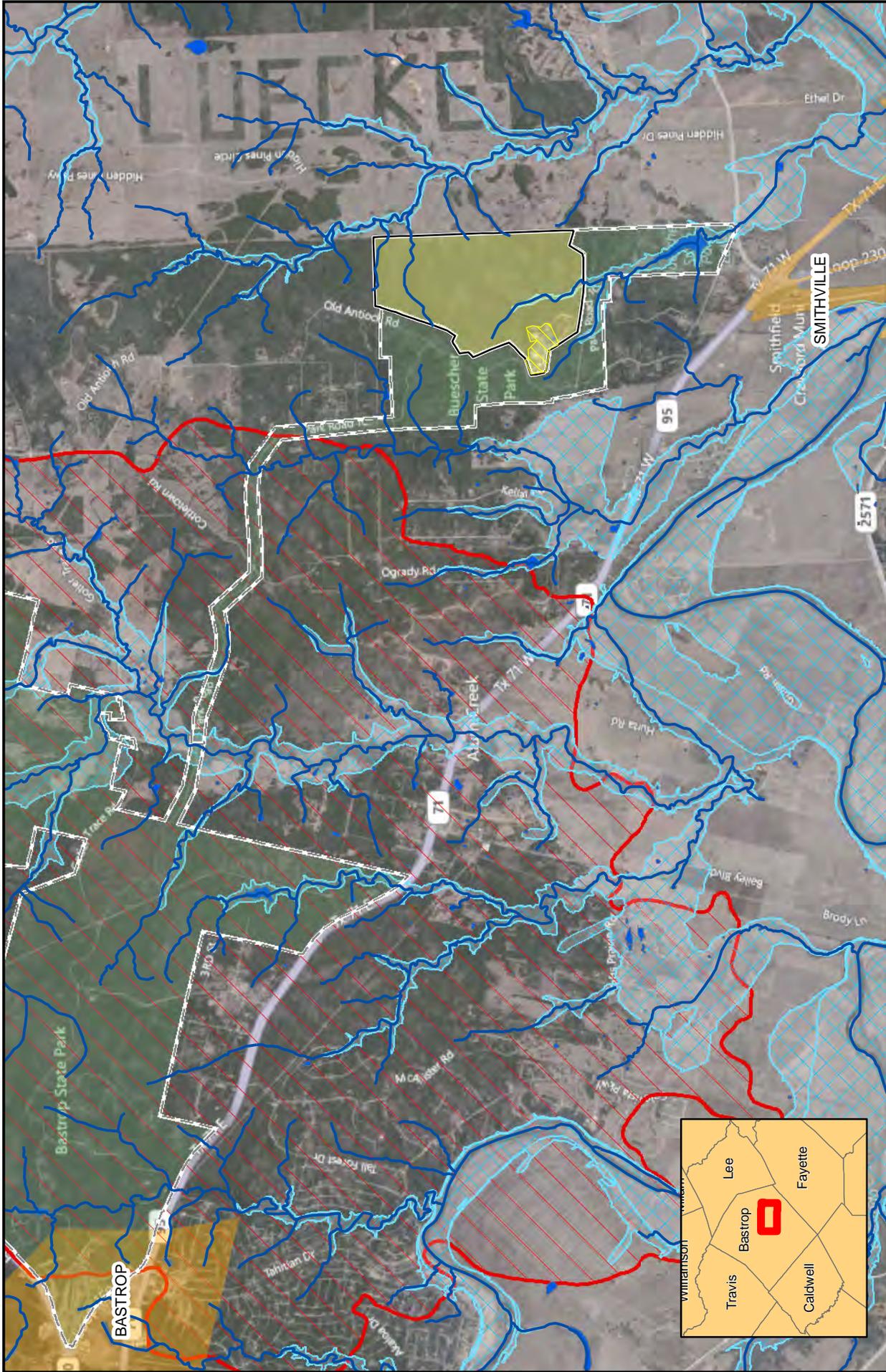
Nilesh Shah  
 Principal Project Manager  
 Capital Planning and Management – Unit 703

### **Attachments:**

- Figure 1 – Illustration of Alternative 1
- Figure 2 – Project Location Map
- Houston Toad Field Notes
- USACE Response



<p>10550 Richmond, Suite 155 Houston, TX 77042 Tel: 713.914.6699 Fax: 713.789.8404</p>		<p>--- Existing Tree Line</p> <p>State Park Boundary</p> <p>Project Location</p> <p>Unmanaged for Vegetation</p>	<p>Zone A - Existing Managed Landscape</p> <p>Zone B - Managed Underbrush and Proposed Sprinkler System</p> <p>Zone C - Proposed Management of Underbrush and Install Sprinkler System</p>	<p>0 200 400 Feet</p> <p>1 inch = 500 feet</p>	<p>Alternative 1</p> <p>MDACC - Smithville Research Center</p> <p>Date: 4/19/2012</p> <p>Drawn By: AM</p> <p>Project No.: 25014429</p> <p>Figure: 1</p>
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**Legend**

- Streams/Rivers
- Approximate Property Boundary
- Texas State Parks
- City Limits
- 100-yr Floodplain
- Bastrop County Complex Fire

**Project Location Map**

**MDACC - Smithville  
Research Center**

Drawn By: AM      Date: 01-26-12      Project No.: 25014429      Figure: 2

N

1 inch = 1 mile

**URS**  
 21050 Richmond, Suite 155  
 Houston, TX 77042  
 Tel: 713.914.6699  
 Fax: 713.789.8404



**MD Anderson Site Visit  
Bastrop County, Texas  
February 3, 2012**

Ponds on south side of campus near Lab 4

- Two man-made ponds (decommissioned retention ponds) are located west of Lab 4 (Photos 1 through 3). One pond is smaller than other. The ponds were also noted to be deep.
- No surrounding appropriate habitat for Houston toad because of adjacent development.
- The silt fencing present around both ponds is likely limiting amphibian use.
- Upon inspection, no egg strands were observed within submerged shoreline vegetation.
- Based on soil characteristics and items noted above, the pond was determined to be not suitable for Houston toad breeding.

**Photo 1: Pond on south side of campus, near Lab 4 (smaller pond)**



**Photo 2: Pond on south side of campus, near Lab 4 (larger pond)**



**Photo 3: Pond on south side of campus, near Lab 4 (larger pond)**



### Third man-made pond on southeast side of campus

- This pond is located outside of Loop Road, southeast of Lab 4 (Photos 4 and 5).
- The pond appears to be a dammed portion of natural draw leading south.
- Hydrological connection through pipe to natural draw
- The northern cricket frog (*Acris crepitans*) and the southern leopard frog (*Rana sphenocephala*) were present.
- Upon inspection, no egg strands were observed within submerged shoreline vegetation.
- The soil immediately surrounding this pond is composed of mostly clay, with gravel and exposed sandstone.
- Vegetation in the immediate vicinity of the pond consists of Loblolly pine, Oak sp., Red Cedar, Salt Willow, Yaupon, and Bermuda grass.
- Surrounding habitat is marginal at best for the Houston toad.
- The pond can be described as deep and silted with Mosquito Fish (*Gambusia sp.*) present.
- Based on soil characteristics, items noted above, and previous data from surveys, the pond was determined to be not likely suitable for Houston toad breeding.

**Photo 4: Third man-made pond on southeast side of campus**



**Photo 5: Third man-made pond on southeast side of campus**



### Perimeter and additional clearing area in northern portion

- In the remaining campus perimeter, no extensive sand or sandy loam portions were observed; although small pockets of sandy soil are present, they were very limited and sparse, and consist of mostly silty loam and clay.
- Some portions of the perimeter and additional clearing area have already been cleared (Photo 6).
- A few small drainage features and facility outlets were observed (Photo 7).
- No suitable breeding sites for the Houston toad were observed.
- Based on lack of deep, extensive sand deposits and previous data from surveys, areas were determined to be not likely suitable for Houston toad breeding.

**Photo 6: Fence, across from Conference Center**



**Photo 7: Drainage feature near Lab 3**





**FEMA**

July 6, 2012

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 at the Smithville Research Center of the MD Anderson Cancer Center (MDACC), located at 1801 Park Road 1C, Smithville, Bastrop County, TX 78957 (Latitude: 30.05940; Longitude: -97.17270), using funds associated with FEMA's Hazard Mitigation Grant Program (HMGP); DR-1791-TX Project #291.

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 Smithville Research Center is located in 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 at the project site. 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, MDACC proposes to (1) enhance and establish the defense zones around the perimeter of the developed campus at the Smithville Research Center (Zone C); (2) install a sprinkler system (Zones B and C); and (3) improve fire protection for critical building and facilities (Zone A). The proposed federal action is depicted in the enclosed Figure 1.

## **Defense Zones**

The creation of defense zones was derived from the 2009 *Wildfire Hazard Mitigation and Forest Management Recommendations*, University of Texas MD Anderson Cancer Center, Bastrop County study conducted by the Texas Parks and Wildlife Department (TPWD).

MDACC proposes to create 150-foot barrier zones where they currently do not exist on the campus and as the MDACC property boundary allows. These areas are presented as Zone C on Figure 1. Where the 150-foot defense zone is not feasible because of boundary constraints, the zone would be enhanced with a more robust sprinkler system (see below). Three areas have been identified that would require the robust sprinkler system, including the areas on either side of the northwest entrance and the area south of Laboratories 1 and 2.

Clearing of the land to create defense zones will include the removal of all dead, decaying, and woody material; all yaupon holly, due to its flammable characteristics; and all trees and shrubs with a diameter of less than 2 inches. The remaining trees will have their branches pruned to a height of 8 feet. All vegetation removal would be above ground surface. Equipment for vegetation clearing may include mowing machinery, handsaws, bobcats, grinders, and hauling trucks. Every effort will be made to hand cut when possible to minimize ground disturbance. If stump grinding is implemented and considered effective, stumps would not be excavated or mechanically removed. Preliminary estimates indicate that approximately 10 acres of vegetation will be cleared.

In general, debris resulting from the vegetation removal will temporarily be staged overnight at the MDACC campus. Vegetative material will either be staged on caliche surfaces and would be moved to its final disposal site within 24 hours; staged on asphalt surfaces and moved to its final disposal site within 72 hours; staged on undisturbed ground within an embedded enclosure which will be checked daily; or mulched and spread on site no more than 2 inches deep. All cut debris must be chipped onsite or hauled at the end of the work day to one of the temporary staging areas or to its final disposal site. Final debris disposal will be conducted in accordance with local and state regulations.

Equipment staging areas would consist of private streets, parking lots, and other areas where the ground surface has already been disturbed; thus no additional vegetation clearing would be necessary for equipment staging.

## **Sprinkler System**

In addition to the defense zones, a wildfire sprinkler system will be installed in and around the perimeter of the campus as part of the federal action in Zones B and C. Zone B is approximately 21.4 acres in size with thinned vegetation. It is anticipated that approximately 8,000 linear feet of soil will be trenched and 8,000 linear feet of water lines will be installed to support the sprinkler system in Zone B. Currently, there is no fire suppression sprinkler system in Zone C. The north part of Zone C is approximately 9 acres in size. The south part of Zone C is approximate one acre. It is anticipated that approximately 3,800 linear feet of soil will be trenched and 3,800 linear feet of water lines will be installed to support the sprinkler system in Zone C. Some

vegetation may need to be removed in order to install the sprinkler system, but clearing will be minimal. Disturbed areas will be allowed to re-vegetate back to their previous condition.

Equipment staging areas would consist of private streets, parking lots, and other areas where the ground surface has already been disturbed; thus no additional vegetation clearing would be necessary for equipment staging.

### **Structure Hardening**

Finally, critical buildings and research laboratories in Zone A (Figure 1) will be hardened in order to better withstand impacts from wildfire. The hardening measures will include mechanical additions and modifications to HVAC systems to allow for 100 percent recirculation of return air to avoid smoke infiltration. Fire resistant roofs, doors, and windows may also be installed at these buildings. Equipment staging areas would consist of private streets, parking lots, and other areas where the ground surface has already been disturbed; thus no additional vegetation clearing would be necessary for equipment staging.

### **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).

Bastrop County has been surveyed consistently from year to year since the 1970s. By 2003, Dr. Michael Forstner of Texas State University estimated the number of Houston toads in Bastrop County to be between 100 and 200 individuals. The 2011 Houston toad breeding/survey season

ended May 2011 with only six Houston toads detected in Bastrop State Park, two Houston toads detected on the Griffith League Ranch in Bastrop County, one Houston toad detected south of the Texas State Highway 290 corridor in Bastrop County, one Houston toad detected in Austin County, one Houston toad detected in Lavaca County, and one Houston toad detected on Cade Lakes in Burleson County (USFWS, 2011c). No reproductive events were observed during the 2011 breeding season, despite extensive survey attempts (Forstner and Dixon, 2011).

MDACC sponsored a series of field investigations for the Houston toad for approximately 700 acres of MDACC property where the federal action is proposed. The surveys were conducted in 2007, 2008 and 2009 and were conducted to determine the presence/absence for the Houston toad. The surveys were conducted by SWCA Environmental Consultants (SWCA) according to USFWS protocol and were completed during the Houston toad breeding season between February 1 and April 30. The 700-acres were surveyed along three transects that were physically walked during each survey period. The results of the three years' surveys are described below in Table 1. No Houston toads were observed during these surveys.

Prior to the Bastrop County Complex Fire, 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 (Forstner et al, 2011).

Since the beginning of the 2012 chorusing season, Dr. Forstner and his team have detected Houston toad chorusing events, Houston toad egg strands, and Houston toad adults, juveniles, and toadlets within the burn area. In addition, more than twenty individual Houston toads have been encountered during FEMA recovery operations within in the burn perimeter from February to July of 2012. Dr. Forstner's surveys and FEMA's encounters have substantiated that the Houston toad survived the wildfire and that it is present inside and outside the burn area in Bastrop County.

Per Greg Creacy with the Texas Parks and Wildlife Department (personal communication May 16, 2012) there is a pond about 50 yards from the project site within Buescher State Park where Houston toads have chorused in the past. Per Dr. Forstner (personal communication July 2, 2012), the site is high on a hill and Houston toads have not been detected there over the last several years. However, following the Bastrop County Complex Fire in September 2011, Houston toads may have migrated and may be continuing to laterally move out from the burn area into previously unoccupied areas such as the MDACC campus.

**Table 1  
 Summary of Houston Toad Surveys at Smithville Research Center**

Survey Year	Summary of Survey Results
2007	SWCA surveyed the Smithville Research Center property for seven nights during the 2007 Houston toad breeding season. In addition, SWCA visited three known breeding sites (off-site) throughout the surveys for use as Houston toad reference ponds. Houston toads were observed at the three reference sites on four out of seven visits. No Houston toads, however, were observed within the MD Anderson survey area during any of the seven visits (SWCA Environmental Consultants, 2007).
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**AVOIDANCE AND MINIMIZATION MEASURES**

The following avoidance and minimization measures will be implemented by MDACC for the proposed FEMA-funded wildfire mitigation activities in order to minimize impact to the toad. These measures have been adapted from the USFWS Best Management Practices (2011a, 2011b); the Lost Pines Habitat Conservation Plan (Loomis Austin, 2007) and the Bastrop Utilities Habitat Conservation Plan (2005); FEMA consultations with USFWS for debris removal activities in the Bastrop burn area; and on discussions with Dr. Forstner. Implementation of these measures is a condition of federal funding.

**Structure Hardening**

1. The structure hardening component of the federal action in Zone A can take place at any time of year.
2. 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.

3. 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.

#### **Defense Zones and Sprinkler System Installation**

4. Vegetation management activities associated with creation of defense zones and the installation of sprinkler systems can only take place from July 1 to December 31 (outside of the Houston toad breeding season and emergence period). This period may be extended, with approval of FEMA and USFWS, past December 31 if it is determined that Houston toads are not yet active in the area.
5. If the project site experiences more than 1 inch of rain over a 2-day period, work in Zones B and C will cease for 4 days after the rain ends. Any vegetative debris staged on caliche or asphalt surfaces will be removed immediately to a final disposal site or to an enclosed temporary staging area (see #11 below).
6. Hand-clearing of vegetation shall be used when practical. The use of track equipment for clearing shall be minimized.
7. 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 and sprinkler installation.
8. Operation of heavy equipment (for example, tractors, large trucks, bulldozers, skidders, trenchers) cannot occur within 200 feet (61 meters) of potential Houston toad breeding sites or riparian areas. These may include ephemeral wet weather ponds and other water features, such as stock tanks, creeks, streams, drainages, wetlands, seeps, and springs. Hand cutting and clearing is required in these areas.
9. 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, MDACC may mow vegetation at less than 5 inches above ground level. In such cases mowing shall be restricted to the minimum area necessary.
10. Small excavations (e.g., trenches for sub-surface lines) must not remain open overnight. Large excavations that remain open overnight shall be appropriately fenced so as to prevent access by anurans, and shall be inspected in the morning prior to initiating installation/ construction activities. Any toad encountered in an excavation shall be removed and placed outside of the activity area.

11. MDACC must stage and/or process debris that results from vegetation management activities via one or a combination of the following methods:
  - **Haul to Final Disposal Site:** Vegetative debris resulting from the proposed action can be hauled by the end of that work day to the final disposal site.
  - **Mulching:** Vegetative debris may be mulched on-site the day that it is cut and spread on the forest floor. Any mulch, chips, or other woody debris that is left on site must cover the forest floor in no more than a 1 to 2-inch layer.
  - **Temporary Staging:** Any debris that is not mulched or hauled to a final disposal site by the end of the work day, must be staged in one or a combination of the following areas:
    - **Staging on Caliche:** Vegetative debris may be temporarily staged on caliche parking areas/surfaces on the MDACC campus for a maximum of 24 hours. All debris at any one caliche site must be moved to final disposal within 24 hours of being deposited at that temporary staging site.
    - **Staging on Asphalt:** Vegetative debris may be temporarily staged on asphalt parking areas/surfaces on the MDACC campus for a maximum of 72 hours. All debris at any one asphalt site must be moved to final disposal within 72 hours of being deposited at that temporary staging site.
    - **Staging within an Exclosure:** Vegetative debris may be temporarily staged on undeveloped natural ground (grass, dirt, rights-of-way, etc.) on the MDACC campus within an exclosure that is separated from the natural environment by an intact silt fence that extends at least 4 inches into the ground. The silt fence must be inspected daily to ensure that it has not been compromised or breached. Any necessary silt fence repairs or replacement will be made immediately. All debris within the exclosure(s) must ultimately be moved to final disposal before January 1.
12. MDACC shall dispose of all waste materials in accordance with Texas Commission on Environmental Quality (TCEQ) standards and requirements, including obtaining any required permits for temporary staging. Final disposal of all debris will be conducted in accordance with TCEQ regulations.
13. 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.
14. 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.
15. Following vegetation management and sprinkler installation activities, MDACC will ensure that equipment used on undisturbed ground has not resulted in potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create an undesirable breeding.

16. Under no circumstances will stumps be removed mechanically (i.e., excavated or pushed).
17. Should a Houston toad be encountered during debris activities, work must cease immediately. The U.S. Fish and Wildlife Service's Clear Lake Ecological Services Office will be contacted at (281) 286-8282.

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## **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 MDACC will not impact temporary or permanent ponds nor will they alter soil type. The vegetation management activities proposed by MDACC do not involve the removal of large trees, therefore the canopy which provides shaded habitat for toad dispersal will not be adversely impacted. 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.

Though recent past surveys have not documented the Houston toad in the project area, there is still a potential that they may disperse across the project site and an even lower potential that they may chorus at the project site. Work in forested areas will not be allowed during chorusing season (January 1 to June 30). In general, Houston toads aestivate during the hot summer months and their movement along the surface is not as prevalent as during chorusing season. However, toads may be encouraged to surface and move from their sheltering locations after heavy rain events. This movement on the surface outside of chorusing season is addressed by the avoidance and minimization measures above.

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; the location of work; the restriction of work in forested areas to outside of chorusing season; and the implementation of required avoidance and minimization measures, 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.

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, CHMM  
Regional Environmental Officer  
FEMA Region 6

Attachments: Figure 1

### 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.

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**FEMA**

August 21, 2012

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 at the Smithville Research Center of the MD Anderson Cancer Center (MDACC), located at 1801 Park Road 1C, Smithville, Bastrop County, TX 78957 (Latitude: 30.05940; Longitude: -97.17270), using funds associated with FEMA's Hazard Mitigation Grant Program (HMGP); DR-1791-TX Project #291.

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 Smithville Research Center is located in 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 at the project site. 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, MDACC proposes to (1) enhance and establish the defense zones around the perimeter of the developed campus at the Smithville Research Center (Zone C); (2) install a sprinkler system (Zones B and C); and (3) improve fire protection for critical building and facilities (Zone A). The proposed federal action is depicted in the enclosed Figure 1.

## **Defense Zones**

The creation of defense zones was derived from the 2009 *Wildfire Hazard Mitigation and Forest Management Recommendations, University of Texas MD Anderson Cancer Center, Bastrop County* study conducted by the Texas Parks and Wildlife Department (TPWD).

MDACC proposes to create 150-foot barrier zones where they currently do not exist on the campus and as the MDACC property boundary allows. These areas are presented as Zone C on Figure 1. Where the 150-foot defense zone is not feasible because of boundary constraints, the zone would be enhanced with a more robust sprinkler system (see below). Three areas have been identified that would require the robust sprinkler system, including the areas on either side of the northwest entrance and the area south of Laboratories 1 and 2.

Clearing of the land to create defense zones will include the removal of all dead, decaying, and woody material; all yaupon holly, due to its flammable characteristics; and all trees and shrubs with a diameter of less than 2 inches. The remaining trees will have their branches pruned to a height of 8 feet. Although drought conditions have not severely impacted the MDACC campus, in some cases larger trees may be cut and removed if they are determined to be dead and if they add to the fuel load in the defense zones. Larger living oak trees and pine trees will not be cut as part of the creation of defense zones. The intent of the action is to thin vegetation and ladder fuels that have accumulated in Zone C. All vegetation removal would be above ground surface. Equipment for vegetation clearing may include mowing machinery, handsaws, bobcats, grinders, and hauling trucks. Every effort will be made to hand cut when possible to minimize ground disturbance. If stump grinding is implemented and considered effective, stumps would not be excavated or mechanically removed. Preliminary estimates indicate that approximately 10 acres of vegetation will be cleared.

In general, debris resulting from the vegetation removal will temporarily be staged overnight at the MDACC campus. Vegetative material will either be staged on caliche surfaces and would be moved to its final disposal site within 24 hours; staged on asphalt surfaces and moved to its final disposal site within 72 hours; staged on undisturbed ground within an embedded enclosure which will be checked daily; or mulched and spread on site no more than 2 inches deep. All cut debris must be chipped onsite or hauled at the end of the work day to one of the temporary staging areas or to its final disposal site. Final debris disposal will be conducted in accordance with local and state regulations.

Equipment staging areas would consist of private streets, parking lots, and other areas where the ground surface has already been disturbed; thus no additional vegetation clearing would be necessary for equipment staging.

## **Sprinkler System**

In addition to the defense zones, a wildfire sprinkler system will be installed in and around the perimeter of the campus as part of the federal action in Zones B and C. Zone B is approximately 21.4 acres in size with thinned vegetation. It is anticipated that approximately 8,000 linear feet of soil will be trenched and 8,000 linear feet of water lines will be installed to support the sprinkler

system in Zone B. Currently, there is no fire suppression sprinkler system in Zone C. The north part of Zone C is approximately 9 acres in size. The south part of Zone C is approximate one acre. It is anticipated that approximately 3,800 linear feet of soil will be trenched and 3,800 linear feet of water lines will be installed to support the sprinkler system in Zone C. Some vegetation, including larger dead trees, may need to be removed in order to install the sprinkler system, but clearing will be minimal. Disturbed areas will be allowed to re-vegetate back to their previous condition.

Equipment staging areas would consist of private streets, parking lots, and other areas where the ground surface has already been disturbed; thus no additional vegetation clearing would be necessary for equipment staging.

### **Structure Hardening**

Finally, critical buildings and research laboratories in Zone A (Figure 1) will be hardened in order to better withstand impacts from wildfire. The hardening measures will include mechanical additions and modifications to HVAC systems to allow for 100 percent recirculation of return air to avoid smoke infiltration. Fire resistant roofs, doors, and windows may also be installed at these buildings. Equipment staging areas would consist of private streets, parking lots, and other areas where the ground surface has already been disturbed; thus no additional vegetation clearing would be necessary for equipment staging.

### **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).

Bastrop County has been surveyed consistently from year to year since the 1970s. By 2003, Dr. Michael Forstner of Texas State University estimated the number of Houston toads in Bastrop County to be between 100 and 200 individuals. The 2011 Houston toad breeding/survey season ended May 2011 with only six Houston toads detected in Bastrop State Park, two Houston toads detected on the Griffith League Ranch in Bastrop County, one Houston toad detected south of the Texas State Highway 290 corridor in Bastrop County, one Houston toad detected in Austin County, one Houston toad detected in Lavaca County, and one Houston toad detected on Cade Lakes in Burleson County (USFWS, 2011c). No reproductive events were observed during the 2011 breeding season, despite extensive survey attempts (Forstner and Dixon, 2011).

MDACC sponsored a series of field investigations for the Houston toad for approximately 700 acres of MDACC property where the federal action is proposed. The surveys were conducted in 2007, 2008 and 2009 and were conducted to determine the presence/absence for the Houston toad. The surveys were conducted by SWCA Environmental Consultants (SWCA) according to USFWS protocol and were completed during the Houston toad breeding season between February 1 and April 30. The 700-acres were surveyed along three transects that were physically walked during each survey period. The results of the three years' surveys are described below in Table 1. No Houston toads were observed during these surveys.

Prior to the Bastrop County Complex Fire, 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 (Forstner et al, 2011).

Since the beginning of the 2012 chorusing season, Dr. Forstner and his team have detected Houston toad chorusing events, Houston toad egg strands, and Houston toad adults, juveniles, and toadlets within the burn area. In addition, more than twenty individual Houston toads have been encountered during FEMA recovery operations within in the burn perimeter from February to July of 2012. Dr. Forstner's surveys and FEMA's encounters have substantiated that the Houston toad survived the wildfire and that it is present inside and outside the burn area in Bastrop County.

Per Greg Creacy with the Texas Parks and Wildlife Department (personal communication May 16, 2012) there is a pond about 50 yards from the project site within Buescher State Park where Houston toads have chorused in the past. Per Dr. Forstner (personal communication July 2, 2012), the site is high on a hill and Houston toads have not been detected there over the last several years. However, following the Bastrop County Complex Fire in September 2011, Houston toads may have migrated and may be continuing to laterally move out from the burn area into previously unoccupied areas such as the MDACC campus.

**Table 1  
 Summary of Houston Toad Surveys at Smithville Research Center**

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**AVOIDANCE AND MINIMIZATION MEASURES**

The following avoidance and minimization measures will be implemented by MDACC for the proposed FEMA-funded wildfire mitigation activities in order to minimize impact to the toad. These measures have been adapted from the USFWS Best Management Practices (2011a, 2011b); the Lost Pines Habitat Conservation Plan (Loomis Austin, 2007) and the Bastrop Utilities Habitat Conservation Plan (2005); FEMA consultations with USFWS for debris removal activities in the Bastrop burn area; and on discussions with Dr. Forstner. Implementation of these measures is a condition of federal funding.

1. The structure hardening component of the federal action in Zone A can take place at any time of year.
2. Vegetation management activities associated with creation of defense zones and the installation of sprinkler systems in Zones B and C can only take place from July 1 to December 31 (outside of the Houston toad breeding season and emergence period). This period may be extended, with approval of FEMA and USFWS, past December 31 if it is determined that Houston toads are not yet active in the area.

3. If the project site experiences more than 2 inches of rain over a 2-day period, work in Zones B and C will cease for 4 days after the rain ends. Any vegetative debris staged on caliche or asphalt surfaces will be removed immediately to a final disposal site or to an enclosed temporary staging area (see #11 below).
4. Hand-clearing of vegetation shall be used when practical. The use of track equipment for clearing shall be minimized.
5. MDACC must not cut mature living pine trees and oak trees except in the rare case when a mature living tree interferes with sprinkler system installation and there is no alternative to cutting that tree.
6. 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 and sprinkler installation.
7. For work in Zones B and C, operation of heavy equipment (for example, tractors, large trucks, bulldozers, skidders, trenchers) cannot occur within 200 feet (61 meters) of potential Houston toad breeding sites or riparian areas. These may include ephemeral wet weather ponds and other water features, such as stock tanks, creeks, streams, drainages, wetlands, seeps, and springs. Hand cutting and clearing is required in these areas.
8. If MDACC plans to install a sprinkler system within 200 feet of the man-made pond located in Zone B on the southeast side of campus outside of Loop Road and as indicated on Figure 1, a silt fence must be installed around the entirety of that pond during the sprinkler system construction period.
9. 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, MDACC may mow vegetation at less than 5 inches above ground level. In such cases mowing shall be restricted to the minimum area necessary.
10. Small excavations (e.g., trenches for sub-surface lines) must not remain open overnight. Large excavations that remain open overnight shall be appropriately fenced so as to prevent access by anurans, and shall be inspected in the morning prior to initiating installation/ construction activities.
11. MDACC must stage and/or process debris that results from vegetation management activities via one or a combination of the following methods:
  - **Haul to Final Disposal Site**: Vegetative debris resulting from the proposed action can be hauled by the end of that work day to the final disposal site. If the final disposal site is not yet established as an existing operation, and it is located in

- Houston toad habitat, MDACC will need to submit the final disposal site plans to FEMA for re-review.
- **Mulching:** Vegetative debris may be mulched on-site the day that it is cut and spread on the forest floor. Any mulch, chips, or other woody debris that is left on site must cover the forest floor in no more than a 1 to 2-inch layer.
  - **Temporary Staging:** Any debris that is not mulched or hauled to a final disposal site by the end of the work day, must be staged in one or a combination of the following areas:
    - **Staging on Caliche:** Vegetative debris may be temporarily staged on caliche parking areas/surfaces on the MDACC campus for a maximum of 24 hours. All debris at any one caliche site must be burned or moved to final disposal within 24 hours of being deposited at that temporary staging site.
    - **Staging on Asphalt:** Vegetative debris may be temporarily staged on asphalt parking areas/surfaces on the MDACC campus for a maximum of 72 hours. All debris at any one asphalt site must be burned or moved to final disposal within 72 hours of being deposited at that temporary staging site.
    - **Staging within an Exclosure:** Vegetative debris may be temporarily staged on undeveloped natural ground (grass, dirt, rights-of-way, etc.) on the MDACC campus within an exclosure that is separated from the natural environment by an intact silt fence that extends at least 4 inches into the ground. The silt fence must be inspected daily to ensure that it has not been compromised or breached. Any necessary silt fence repairs or replacement will be made immediately. All debris within the exclosure(s) must ultimately be burned or moved to final disposal before January 1.
12. MDACC shall dispose of all waste materials in accordance with Texas Commission on Environmental Quality (TCEQ) standards and requirements, including obtaining any required permits for temporary staging. Final disposal of all debris will be conducted in accordance with TCEQ regulations.
13. 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.
14. 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.
15. Following vegetation management and sprinkler installation activities, MDACC will ensure that equipment used on undisturbed ground has not resulted in potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create an undesirable breeding.

16. Under no circumstances will stumps be removed mechanically (i.e., excavated or pushed).
17. Should a Houston toad be encountered during debris activities, work must cease immediately. The U.S. Fish and Wildlife Service's Clear Lake Ecological Services Office will be contacted at (281) 286-8282.

## **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 MDACC will not impact temporary or permanent ponds nor will they alter soil type. The vegetation management activities proposed by MDACC do not involve the removal of large trees, therefore the canopy which provides shaded habitat for toad dispersal will not be adversely impacted. 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.

Though recent past surveys have not documented the Houston toad in the project area, there is still a potential that they may disperse across the project site and an even lower potential that they may chorus at the project site. Work in forested areas will not be allowed during chorusing season (January 1 to June 30). In general, Houston toads aestivate during the hot summer months and their movement along the surface is not as prevalent as during chorusing season. However, toads may be encouraged to surface and move from their sheltering locations after heavy rain events. This movement on the surface outside of chorusing season is addressed by the avoidance and minimization measures above.

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; the location of work; the restriction of work in forested areas to outside of chorusing season; and the implementation of required avoidance and minimization measures, 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.

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

Attachments: Figure 1

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# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Division of Ecological Services  
17629 El Camino Real, Suite 211  
Houston, Texas 77058  
281/286-8282 / (FAX) 281/488-5882



In Reply Refer To:  
FWS/R2/CLES/  
21430-2012-I-0160

September 19, 2012

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 August 6, 2012, and additional information dated August 21, 2012, continuing consultation pursuant to Section 7 of the Endangered Species Act for the Federal Emergency Management Agency's (FEMA) recovery operations related to the Bastrop County Complex Fire. The subject action is the establishment of wildfire defensible zones. The establishment of these zones will include the Smithville Research Center of the MD Anderson Cancer Center (MDACC) campus located at 1801 Park Road 1C, Smithville, Bastrop County, Texas, 78957 (Latitude: 30.05940; Longitude: -97.17270), and will utilize funds associated with FEMA's Hazard Mitigation Grant Program (HMGP). The purposes of these zones are the improvement of the campus' wildfire resiliency through structure hardening, installation of sprinklers, brush management, and fuels reduction proximate to campus infrastructure. FEMA's recovery actions in Bastrop and surrounding counties are continuing as part of the major disaster declaration FEMA-4029-DR-TX. The recovery operations considered herein occur within Bastrop County, Texas.

Based on the description of the federal action, the project components will (1) enhance and establish the defense zones around the perimeter of the developed campus at the Smithville Research Center (Zone C); (2) install a sprinkler system (Zones B and C); and (3) improve fire protection for critical building and facilities (Zone A) (see attached exhibit). According to your August 6, 2012 letter and accompanying analysis, and the August 21, 2012 additional information, FEMA determined that the MDACC operations may affect, but are not likely to adversely affect the federally endangered Houston toad *Bufo houstonensis*.

FEMA made this determination based on the specific avoidance and minimization measures that will be implemented and were adapted from United States Fish and Wildlife Service (Service) developed Best Management Practices for post-fire habitat restoration; the Lost Pines Habitat Conservation Plan and the Bastrop Utilities Habitat Conservation Plan; recent FEMA consultations with the Service for debris removal activities in the Bastrop burn area; and

discussions with Dr. Michael Forstner (Texas State University). The specific avoidance and minimization measures to be employed include:

1. The structure hardening component of the federal action in Zone A can take place at any time of year.
2. Vegetation management activities associated with creation of defense zones and the installation of sprinkler systems can only take place from July 1 to December 31 (outside of the Houston toad breeding season and emergence period). This period may be extended, with approval of FEMA and the Service, past December 31 if it is determined that Houston toads are not yet active in the area.
3. If the project site experiences more than 2 inches of rain over a 2-day period, work in Zones B and C will cease for 4 days after the rain ends. Any vegetative debris staged on caliche or asphalt surfaces will be removed immediately to a final disposal site or to an enclosed temporary staging area (see #11 below).
4. Hand-clearing of vegetation shall be used when practical. The use of track equipment for clearing shall be minimized.
5. FEMA and MDACC will not cut mature living pine trees and oak trees except in the rare case when a mature living tree interferes with sprinkler system installation and there is no alternative to cutting that tree.
6. 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 and sprinkler installation.
7. For work in Zones B and C, operation of heavy equipment (for example, tractors, large trucks, bulldozers, skidders, trenchers) cannot occur within 200 feet of potential Houston toad breeding sites or riparian areas. These may include ephemeral wet weather ponds and other water features, such as stock tanks, creeks, streams, drainages, wetlands, seeps, and springs. Hand cutting and clearing is required in these areas.
8. If MDACC plans to install a sprinkler system within 200 feet of the man-made pond located in Zone B on the southeast side of campus outside of Loop Road and as indicated on Figure 1 (attached), a silt fence (an enclosure for anurans) must be installed around the entirety of that pond during the sprinkler system construction period.
9. 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, MDACC may mow vegetation at less

than 5 inches above ground level. In such cases mowing shall be restricted to the minimum area necessary.

10. Small excavations (e.g., trenches for sub-surface lines) must not remain open overnight. Large excavations that remain open overnight shall be appropriately fenced so as to prevent access by anurans, and shall be inspected in the morning prior to initiating installation/construction activities.
11. FEMA and MDACC must stage and/or process debris that results from vegetation management activities via one or a combination of the following methods:
  - **Haul to Final Disposal Site:** Vegetative debris resulting from the proposed action can be hauled by the end of that work day to the final disposal site. If the final disposal site is not yet established as an existing operation, and it is located in Houston toad habitat, MDACC will need to submit the final disposal site plans to FEMA for re-review.
  - **Mulching:** Vegetative debris may be mulched on-site the day that it is cut and spread on the forest floor. Any mulch, chips, or other woody debris that is left on site must cover the forest floor in no more than a 1 to 2-inch layer.
  - **Temporary Staging:** Any debris that is not mulched or hauled to a final disposal site by the end of the work day must be staged in one or a combination of the following areas:
    - *Staging on Caliche:* Vegetative debris may be temporarily staged on caliche parking areas/surfaces on the MDACC campus for a maximum of 24 hours. All debris at any one caliche site must be burned or moved to final disposal within 24 hours of being deposited at that temporary staging site.
    - *Staging on Asphalt:* Vegetative debris may be temporarily staged on asphalt parking areas/surfaces on the MDACC campus for a maximum of 72 hours. All debris at any one asphalt site must be burned or moved to final disposal within 72 hours of being deposited at that temporary staging site.
    - *Staging within an Exclosure:* Vegetative debris may be temporarily staged on undeveloped natural ground (grass, dirt, rights-of-way, etc.) on the MDACC campus within an exclosure that is separated from the natural environment by an intact silt fence that extends at least 4 inches into the ground. The silt fence must be inspected daily to ensure that it has not been compromised or breached. Any necessary silt fence repairs or replacement will be made immediately. All debris within the exclosure(s) must ultimately be burned or moved to final disposal before January 1.
12. FEMA and MDACC shall dispose of all waste materials in accordance with Texas Commission on Environmental Quality (TCEQ) standards and requirements, including obtaining any required permits for temporary staging. Final disposal of all debris will be conducted in accordance with TCEQ regulations.

13. 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.
14. 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.
15. Following vegetation management and sprinkler installation activities, FEMA and MDACC will ensure that equipment used on undisturbed ground has not resulted in potential artificial breeding sites. For example, large tire ruts will be restored to the previously undisturbed grade so as not to create an undesirable breeding area.
16. Under no circumstances will stumps be removed mechanically (i.e., excavated or pushed).
17. Should a Houston toad be encountered during debris activities, work will cease immediately. The Service's Clear Lake Ecological Services Office will be contacted at (281) 286-8282.

Based on the aforementioned information, the Service concurs that the FEMA and MDACC's operations as described in the August 6, 2012, consultation letter and additional information are not likely to adversely affect the Houston toad or its critical habitat. This concurrence is based upon a review of FEMA's analysis, the Service's files, communications with Dr. Michael Forstner and others, and is contingent upon the implementation of the avoidance and minimization measures 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 comments are provided in accordance with the provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.). If you have any questions, or need additional information, please contact Staff Biologist Mr. Jeff Hill or myself at 281/286-8282.

Sincerely,



Edith Erfling  
Field Supervisor