D R A F T

ENVIRONMENTAL ASSESSMENT

FOR

Bastrop County

Supplemental Disaster Recovery
Community Development Block Grant (CDBG)

WO Bastrop2016 – Phase 1

Tahitian Village Road Improvements

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ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL REVIEW RECORDS FOR
Supplemental Disaster Recovery
Community Development Block Grant (CDBG)
WO Bastrop2016 – Phase 1

Tahitian Village Road Improvements

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Texas Commission on Environmental Quality - http://www.tceq.state.tx.us/
Texas Water Development Board - http://www.twdb.state.tx.us
Texas Parks and Wildlife – http://www.tpwd.state.tx.us
US Fish & Wildlife – http://fws.com/
National Resource Conservation Center -http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
Google Earth - http://www.google.com/google earth.htm
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Council of Government- http://www.h-gac.com/
Texas Association of Regional Councils - http://www.txregionalcouncil.org/index.php
Environmental Protection Agency -http://epa.gov
Environmental Protection Agency - Environmental Protection Agency (EPA) Corrective Action Sites
US Census – http://www.census.gov
Bureau of Economic Analysis – http://www.bea.gov
Texas General Land Office – www.glo.state.tx.us/coastal/cmp.html
Wild and Scenic Rivers in Texas - http://www.nps.gov/rigr/planyourvisit/wildscenic.htm
Home Town Locator- http://www.hometownlocator.com/
County of Bastrop - http://www.co.bastrop.tx.us/
Texas Association of Regional Councils - http://www.txregionalcouncil.org/index.php
Texas Education Agency – http://www.tea.state.tx.us/
Assisted Living Federation of America – http://www.alfa.org/alfa/About_ALFA.asp?SnID=390678837
Texas Historical Commission - http://www.thc.state.tx.us/
Texas Department of Aging and Disabilities - http://www.dads.state.tx.us/
US Housing & Urban Development – NEPASSIST - http://www.epa.gov/oecaerth/nepa/nepassist-mapping.html
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TAB 1

EVIDENCE OF PUBLICATION

COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT (FONSI) AND INTENT TO REQUEST RELEASE OF FUNDS

EARLY NOTICE AND PUBLIC REVIEW OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN

FLOODPLAIN NOTICE OF EXPLANATION

US DEPARTMENT OF HOUSING & URBAN DEVELOPEMNT FLOODPLAIN AND WETLAND 8-STEP PROCESS

CORRESPONDENCE
(e.g., HUD/EPA, FEMA, FLOODPLAIN ADMINISTRATOR, RESPONSIBLE ENTITY, GRANT ADMINISTRATOR)

COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS

April 17, 2019

Bastrop County, 804 Pecan Street, Bastrop, TX 78602, Ph: (512) 332-7201, Fax: (512) 581-7103

This Notice shall satisfy the above-cited two separate but related procedural notification requirements for activities to be undertaken by Bastrop County.

REQUEST FOR RELEASE OF FUNDS

On or about May 3, 2019 Bastrop County (the County) will submit a request to the Texas General Land Office (TGLO) for the release of Community Development Block Grant Disaster Recovery (CDBG-DR) funds under Title I of the Housing & Community Development Act of 1974, as amended to undertake a project known as Tahitian Village Subdivision Phase 1–Tahitian Village Contract #13-353-000-7707 Bastrop County Grant #WFR010001.

The proposed street improvements project will take place within the County of Bastrop, Texas where the County needs sufficient ingress/egress into & out of the Tahitian Village subdivision (a residential area due east of the City of Bastrop). Specifically, as a result of the Texas Wildfires in 2011, the Tahitian Village Subdivision lacked routes for emergency services access & quick evacuation routes for residents; this threatened the public health, safety, & welfare where the Tahitian Village and Colovista subdivisions. This 2nd notice incorporates comments and response to comments. Grant funding is approximately $4,260,437.

FINDING OF NO SIGNIFICANT IMPACT

The Bastrop County has determined that the project will have no significant impact on the human environment. Therefore, an Environmental Impact Statement under the National Environmental Policy Act of 1969 (NEPA) is not required. Additional project information is contained in the Environmental Review Record (ERR) on file at Bastrop County Courthouse: Paul Pape, Judge, 804 Pecan Street, Bastrop, Texas 78602. A full description of the project may also be reviewed from 9:00 AM to 5:00 PM at 804 Pecan Street, Bastrop, Texas 78602. Comments may also be submitted via email at paul.pape@co.bastrop.tx.us

PUBLIC COMMENTS

Any individual, group, or agency may submit written comments on the Environmental Review Record to Bastrop County designated office responsible for receiving & responding to comments. All comments received by May 2, 2019, will be considered by Bastrop County, prior to authorizing submission of a request for release of funds.: Bastrop County Courthouse, ATTN: Paul Pape, County Judge, 804 Pecan Street, Bastrop, Texas 78602. paul.pape@co.bastrop.tx.us

ENVIRONMENTAL CERTIFICATION

Bastrop County certifies to TGLO that Paul Pape in his capacity as County Judge consents to accept the jurisdiction of the Federal Courts if an action is brought to enforce responsibilities in relation to the environmental review process & that these responsibilities have been satisfied. TGLO's approval of the certification satisfies its responsibilities under NEPA & related laws & authorities & allows the Bastrop County to use Program funds.

OBJECTIONS TO RELEASE OF FUNDS

TGLO will accept objections to its release of funds & Bastrop County's certification by its actual receipt of the request (whichever is later) only if they are on one of the following bases: (a) the certification was not executed by the Certifying Officer of the Bastrop County; (b) Bastrop County has omitted a step or failed to make a decision or finding required by HUD regulations at 24 CFR Part 58; (c) the grant recipient has committed funds or incurred costs not authorized by 24 CFR Part 58 before approval of a release of funds by TGLO, or (d) another Federal agency acting pursuant to 40 CFR Part 1504 has submitted a written finding that the project is unsatisfactory from the standpoint of environmental quality. Objections must be prepared & submitted in accordance with the required procedures (24 CFR Part 58) & shall be addressed to Chris Reynolds, Texas General Land Office P.O. Box 12873 Austin, Texas 78711-2873. Potential objectors should contact TGLO to verify actual last day of the objection period. Paul Pape, Bastrop County Judge.

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Comment	Date	Issue	Notes
JoAnne Egitto	2/4/2019	The proposed road would create hazards to people traveling in this specific area. The proposed road would connect to an unfinished road, Ulupau Drive, with steep elevations and blind curves that are treacherous even without smoke conditions of a forest fire.	The terrain in Tahitian Village is very hilly and there is over 200' of fall from the front of the subdivision to the river at the back. Creeks and ravines cut the landscape throughout and the existing road network is disconnected and generally conforms to this landscape. Ulapau is an unpaved road on the side of a bluff and is not dissimiliar to many of the roads in the subdivision. The County intends to work with the BCWCID #2 through interlocal agreement to make improvements to Ulupau Circle and other roads in area.
JoAnne Egitto	2/4/2019	The proposed road is in a floodplain, which causes potentially hazardous driving conditions.	A comment letter from Mr. Michael Segner, State Floodplain Coordinator was received 9/25/2017. The letter is a part of the ERR provided in Tab 2 His response incorporates the statement "our findings indicate that as a participant in the National Flood Insurance Program, Bastrop County has authority for projects within it's jurisdiction." Mr. Segner was also sent a copy of the combined notice of finding of no significant impact on 1/19/2019. Receipt confirmation occurred on Tuesday, January 22, 2019.
JoAnne Egitto	2/4/2019	The proposed route is actually right through the burn scar of the devastating 2011 Bastrop Complex Fire. Moving residents into that area (both ingression or egressing)in an emergency creates pockets of roads where emergency first responder vehicles still cannot get to people quickly, if at all.	The purpose for the roadway is to provide improved emergency access. There is no plan to move people into that area. Construction activities will take into consideration to limit other development.
JoAnne Egitto	2/4/2019	The proposed route is one of four choices not fully explained to the public and which Horizon Engineering firm emails reveal the other locations as " strawman options" and that the wording needed favoring the route needed to be robust in order to hedge against critics during the regulatory process.	The explanation of the area is relative to the BA submitted for consideration by the USFWS. "Strawman" terminology was based upon the construction of the alternatives reviewed in the BA, i.e., the beginning discussion from which to discuss the issues.
JoAnne Egitto	2/4/2019	The proposed route is probably more about land development, not safety, as the route, in its entirety, is circuitous and hardly direct to Route 71, the closest highway.	The project is consistent with the need and purpose of the project as identified within the ERR documentation and is not inviting new development. In additoin, Bastrop County does not know of any proposed development along the identified route, but any development would be impacted by the endangered Houston Toad and would either require consultation with USFWS or adhere to Bastrop County's LPHCP conservation subdivision requirements. The route is somewhat circuitous with the intent to interconnect Tahitian Village with Pine Forest and Colovista to allow as much functionality as possible and take users away from the the area. Again, the terrain was a major element considered when the preferred alignment was identified.

Comment	Date	Issue	Notes
JoAnne Egitto	2/4/2019	Bastrop County has not been forthright with the public on the needs, cost and cost oven-uns of the project, having meetings not always held at times when public can attend. As the sole public attendee the recurring meetings did not allow any questions from the public, according to emails received from the county commissioners office. When I requested agendas, assistant county district attorney Gilleland stated, in writing, that the agendas were not agendas but rather topics of discussion. Then the meetings suddenly stopped.	The meetings in question are those of the Disaster Recovery Team and were started after the 2011 Complex Fire. They started as weekly working meetings with involved staff and certain Court officials to coordinate and provided updates on recovery efforts. A quorum of the Court was not present and as organized did not meet the requirements for posting as an official open meeting. After the new Precinct 1 Commissioner took office in 2017, he expressed an interest in attending and the meetings were posted. These are working meetings and the normal formalities of Commissioners Court, such as the public comment opportunity, are not required. As Bastrop County works through recovery from the fire and five declared floods, the meetings have evolved with the transfer to Engineering and are being held as needed. The Schduele of Topics provides talking points on all recovery and associated projects not only this project. Please also note that two other interested parties have attended Disaster Recovery Team meetings.
JoAnne Egitto	2/4/2019	The biological assessment completed by Horizon Engineering was for another area of Bastrop County and no assessment was done on the actual area of the proposed route.	The BA is for the project area identified as the Tahitian Village ingress/egress improvement project. The preferred alternative is considered the proposed route.
JoAnne Egitto	2/4/2019	BCWCID2 has authority of the connecting road to the proposed road into Tahitian Village and has no written plan to improve that road within the next 5 years according to the criteria of their road plan.	Bastrop County has a long standing history of working with the BCWCID #2 to improve roads in the area and then take them into the county road system. The County intends to work with the WCID #2 through interlocal agreement to make improvements to Ulupau Circle and other roads in area.
JoAnne Egitto	2/4/2019	Bastrop County has several other options for egressing people that have not been pursued.	The BA analyzed five options for ingress/egress improvements to the area with significant concerns about .
JoAnne Egitto	2/4/2019	No public meeting was held exclusively to discuss the ingress egress project with the residents in Tahitian Village with prior notice of the subject matter.	The Judge's office received no requests for a public meeting. The Precinct 1 County Commissioner is a resident of Tahitian Village and routinely attends and speaks at BCWCID and Tahitian Village POA meetings. The County Judge spoke at the 2017 and 2018 POA annual meeting regarding this project. Commissioner Hamner spoke on it at 2019 meeting.
JoAnne Egitto	2/4/2019	Tahitian Village POA never provided residents a chance to speak with agents of the county on the project during its planning process even though residents requested that on record during POA meetings.	Bastrop County has no relationship with the Tahitian Village POA and can not be responsible for their actions or inactions. The commenter requested such a meeting at the 06/19/18 TVPOA meeting. Judge Pape was invited to speak, in detail, on the project at the 09/18/18 POA Board Meeting attended by the commenter. Additionally, the Commissioner is a resident of Tahitian Village and routinely attends and speaks at BCWCID and Tahitian Village POA meetings. The County Judge spoke at the 2017 and 2018 POA annual meetings regarding this project. Commissioner Hamner spoke on it at 2019 meeting.
JoAnne Egitto	2/4/2019	the BCWCID2 board member who chaired the road committee, sits on the Bastrop Economic Development Commission, and should recuse himself from any plans/actions/votes pertaining to this project instead of testifying in favor of it in commissioners court.	Bastrop County can not speak to the ethical requirements the BCWCID #2 or Bastrop County Development Commission place on their members regarding this type situation, but the board member spoke in response to a Department Update on the status of the project at the June 11, 2018 Commissioners Court in favor of the project. At that time, 13 citizens spoke in favor and two (including this commenter) spoke against. Because this was a Department Report, no action was required or taken by the Commissioners.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	National Environmental Policy Act of 1969, 42 U.S.C. §§ 432 l-4370e (2000).2q	
Jennifer Loda	2/4/2019	The County failed to properly notify interested parties, failed to complete an EIS, failed to analyze a reasonable range of alternatives, failed to adequately consider environmental impacts and cumulative impacts, and failed to adequately analyze or inform the public of the bases for their assertions, in violation of NEPA 42 U.S.C. § 4332(2)(C); 40 C.F.R. §§ 1502.14, 1502.16, 1502.24, 1508.7, 1508.25, 1508.27, 24 C.F.R §§ 58.37-58.40.	An Environmental Impact Statement (EIS) is required when the Grant Recipient's Environmental Assessment (Form A302) results in a Finding of Significant Impact, indicating that its proposed project or activity will significantly impact the human environment.
Jennifer Loda	2/4/2019	Here, the County failed to satisfy either of NEPA's twin aims in its EA, FONSI and ERR. The County must undertake the appropriate review and provide the public with the information necessary to properly review, understand and comment on this project. Baltimore Gas & Elec. Co. v. Natural Res. Def Council, Inc., 462 U.S. 87, 97 (1983).	Per HUD requirements posted on HUD Exchange and listed as "Finalizing the Review" The following are the steps for finalizing a Part 58 review: Publish or post a Notice of Intent to Request a Release of Funds (NOI-RROF)(applies to CEST, EA, and EIS). EA only 15 days when published Or 18 days when mailing and posting Publish or post a Notice of Finding of No Significant Impact (Notice of FONSI) if necessary (EA only); this can be combined with the NOI-RROF. Wait for the applicable comment period to elapse (see 24 CFR 58.45). Submit the Request for Release of Funds form (7015.15) to HUD (CEST, EA, and EIS). HUD will approve the release of funds with an Authority to Release Grant Funds (HUD form 7015.16) after the HUD 15-day public comment period if no valid objections are received.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	The National Environmental Policy Act ("NEPA") directs federal agencies to prepare an environmental impact statement ("EIS") whenever agencies propose "major federal actions significantly affecting the quality of the environment." 42 U.S.C. § 4332(2)(C); See also Robertson v. Methow Valley Citizens, 490 U.S. 332, 348 (1989). 42 U.S.C. § 4332(2)(C)	A detailed study regarding the federal actions was conducted in accordance with 24 CFR § 50.42 **HUD describes the EIS level of review as** - Required when an environmental assessment concludes in a Finding of Significant Impact, as the Services considered the mitigation sufficient - Applies when the complexity of the project exceeds the scope of an environmental assessment - this is a road project and is not outside the scope of an environmental assessment - Applies when extraordinary circumstances* exist and elevate the level of review - Required when noise levels exceed 75 decibels (unacceptable noise zone) - Also required when noise levels are between 65 and 75 decibels (normally unacceptable noise zone) and the project site is largely undeveloped or will encourage incompatible development **24 CFR 5§ 58.37 Environmental impact statement determinations.** (a) An EIS is required when the project is determined to have a potentially significant impact on the human environment. (b) An EIS is required under any of the following circumstances, except as provided in paragraph (c) of this section: (1) The project would provide a site or sites for, or result in the construction of, hospitals or nursing homes containing a total of 2,500 or more beds. (2) The project would remove, demolish, convert or substantially rehabilitate 2,500 or more existing housing units (but not including rehabilitation projects categorically excluded under § 58.35), or would result in the construction or installation of 2,500 or more housing units, or would provide sites for 2,500 or more housing units. (3) The project would provide enough additional water and sewer capacity to support 2,500 or more additional housing units. The project does not have to be specifically intended for residential use nor does it have to be totally new construction. If the project is designed to provide upgraded service to existing development as well as to serve new development, only that portion of the increased capacity which is intended to serve new development should be counted. (c) If, on the basis of an EA, a responsible entity determines that the thresholds in paragraph (b) of this section are the sole reason for the EIS, the responsible entity may prepare a FONSI pursuant to 40 CFR 1501.4. In such cases, the FONSI must be made available for public review for at least 30 days before the responsible entity makes the final determination whether to prepare an EIS.

Comment	Date	Issue	Notes
			24 CFR 50.42 - Cases when an EIS is required § 50.42 Cases when an EIS is required. (a) An EIS is required if the proposal is determined to have a significant impact on the human environment pursuant to subpart E. (b) An EIS will normally be required if the proposal: (1) Would provide a site or sites for hospitals or nursing homes containing a total of 2,500 or more beds; or (2) Would remove, demolish, convert, or substantially rehabilitate 2,500 or more existing housing units (but not including rehabilitation projects categorically excluded under §50.20), or which would result in the construction or installation of 2,500 or more housing units, or which would provide sites for 2,500 or more housing units. (c) When the environmental concerns of one or more Federal authorities cited in §50.4 will be affected by the proposal, the cumulative impact of all such effects should be assessed to determine whether an EIS is required. **Where all of the affected authorities provide alternative procedures for resolution, those procedures should be used in lieu of an EIS.** - Consultations with USFWS, THC and USACE were conducted and major federal actions identified provided for mitigation measures to meet federal requirements and any offsets were cross referenced for cumulative impact and approved. Every service consulted has an opportunity to identify the need for an EIS. None of the services suggested a course of action indicating that further assessments are needed and/or available mitigation is insufficient.
Jennifer Loda	2/4/2019	The scope of the environmental analysis required by NEPA includes a consideration of a range of actions, alternatives and impacts. 40 C.F.R. § 1508.25. The range of impacts includes direct, indirect, and cumulative impacts. Id. As a preliminary step, an agency may prepare an environmental assessment to determine whether a proposed action is sufficiently significant to warrant the preparation of a full EIS. 40 C.F.R. § 1508.9. Upon the preparation and subsequent review of an environmental assessment, the agency will be in a position to determine whether to prepare an EIS or to issue a Finding of No Significant Impact ("FONSI"). Id.,· 40 C.F.R. §§ 1501.4, 1508.13.1	24 CFR The alternatives and impacts have been identified within the BA. The BA alternatives are not different than the EA alternatives. The no action alternative and other locations were identified within the ERR. The alternatives identified within the BA were reviewed for impact by Horizon Environmental, engineering and based upon cumulative effect review, the best fit solution resulted. The EA reviewed identified that the alternative routes were considered but were rejected based upon feasibility, cost effectiveness and viability of all considerations and cumulatively determined the preferred route. All studies are considered a part of the EA and used to make the determinations of consistency with EA requirements. The agency determined the EA was sufficient.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	Failure to Provide Notice to Interested Parties	
Jennifer Loda	2/4/2019	Bastrop County failed to provide proper notice of its FONSI and Intent to Request Release of Funds, in violation of Hud's NEPA regulations, 24 C.F.R. § 58.43. The regulations provide that "as a minimum [the County] must send the FONS! notice to individuals and groups known to be interested in the activities .. . " 24 C.F.R. § 58.43 (emphasis added). Despite being a known interested entity, the County did not provide notice to the Center of its FONSI.	The notice dated January 19, 2019 is consistent with 24 CFR 58.43 and was published in the Bastrop Advisor the County paper of record. The listing of possible interested parties was listed at the top of the publication. The publication was sent to the possible interested parties known.
Jennifer Loda	2/4/2019	An email exchange attached to this comment letter shows that on June 13, 2018 Ms. Loda informed several County staff that the Center would like to participate in public commenting during the NEPA review process for this project and requested to be added to an email notification list for any future updates on the project and its review. The same attachment contains Carolyn Dill's response to this email, cc'ing Judge Paul Pape, where she says she will make sure that the Center receives a copy of the public notice.	As a result of the oversight of listing Ms. Loda as an interested party for the notice dated January 19, 2019, the County is republishing to ensure consistency with regulatory requirements and to provide Ms. Loda and others the opportunity to review any clarifications identified in the ERR.
Jennifer Loda	2/4/2019	In addition, the EA and additional documents in the ERR were initially only made available for review in-person during limit weekday business hours, discouraging public involvement in the review process. While the Center appreciates that the County responded to its request for an electronic version of the ERR, this took a couple of additional days to provide, further sh01tening the length of time available for comment on this project.	The notice was published consistent with regulatory requirements24 CFR 58.43 and the HUD format for the publication was used.
Jennifer Loda	2/4/2019	The Center is also aware that the landowner for private land where the Project is proposed to be constructed was also not provided notice of the FONS I, despite clearly being a party having an interest in the Project. The Center is unaware as to whether other interested patties were provided notice of the FONSI, but has additional concerns that publication of the notice during the government shutdown greatly reduced the amount of time that interested agencies like the U.S. Fish and Wildlife Service and EPA had to review the ERR and provide comment.	The notice was published consistent with regulatory requirements24 CFR 58.43 and the HUD format for the publication was used. As identified above, the notice process in place is the method for comment. An additional 15 day state comment period allows for further comment and issues to be raised. The Services have not responded to the publication they received as part of the notice requirements.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	Failure to Prepare an Environmental Impact Statement	
Jennifer Loda	2/4/2019	NEPA directs federal agencies to prepare an environmental impact statement ("EIS") whenever agencies propose "major federal actions significantly affecting the quality of the environment." 42 U.S.C. § 4332(2)(C); see also Robertson v. Methow Valley Citizens, 490 U.S. 332,348 (1989). The NEPA regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its proposed action are "significant" and thereby require preparation of an EIS. 40 C.F .R. § 1501.4. In determining whether the proposed action is "significant," the agency must consider whether "the possible effects on the human environment are highly uncertain or involve unique or unknown risks," the potential that "the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration," if the action "may adversely affect an endangered or threatened species," the "[u]unique characteristics of the geographic area;" the "degree to which the proposed action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources." Id. at § 1508.27(6). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." Id. at § 1508.27(6)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." Pub. Serv. Co. v. Andrus, 825 F. Supp. 1483, 1495 (D. Idaho I 993); see also Nat'l Audubon Soc 'y v. Hoffman, 132 F.3d 7, 18 (2d Cir. 1997). An EIS is required here because the proposed project "may adversely affect endangered or threatened species." 40 C.F .R. § 1508.27(6)(9);	This project is based upon disaster recovery assistance which resulted from deadly fires during a Central Texas drought. A case study dated September 4, 2011, conducted the Texas Forest Service - by Karen Ridenour, Sean Rissel, Wade Powell, Richard Gray, Mike Fisher, and Julie Somerfield references the fires as "The most destructive wildland urban interface wildfire in Teas history. To reference the abstract: "Within 13 minutes of the first report of the wildfire, law enforcement officers, firefighters and EMS workers started evacuations of 5,000 individuals that would continue over the next several hours as the fire intensified and moved into large developed areas." The abstract goes further to say, "Building a fire-adaptive community is complex. Multiple components interrelate to reduce structure vulnerability. Even if one piece of the puzzle is missing, the vulnerability to fire damage and destruction of a structure increases. The random nature of every fire makes it impossible to make decisions based on trends and fads. Homeowners and community leaders need to understand the individual and large-scale components in order to correctly make decisions that produce successful, more fire-resistant communities." The isolative nature of the area of concern plays a major factor in this decision. The physical conditions at the proposed project area are known. The Texas Forest Service case study identifies that the burn area is at least moderate risk for soil damage as a result of the fire, where more than half of the area is considered high risk of damage. With regard to the Houston Toad, the fires seem not to reflect the effect as expected, i.e., appearance of increased population as identified by County in surveys conducted in 2015, 2016 and 2017. Other species are not so fortunate. The Texas Forest Service report indicates that damage to soil can reduce the stability of the soil and increase its erosive potential, thereby reducing vegetative recovery. Hence flooding is more possible as well. The site visits reflect burned and/or felled trees, burned vegetation and scorched earth. Overall, the impact of reduced ingress/egress is significant and can make the difference in saving lives and saving the environment since the faster emergency vehicles can respond to the fire, the sooner the pubic health and the environment (habitat) is preserved.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	For decisions on whether or not to prepare an EIS, NEPA requires the County to take a "hard look" at the consequences of its actions, to base its decision on a consideration of relevant factors, and to provide a "convincing statement of reasons to explain why a project's impacts are insignificant." Native Ecosystems Council v. US. Forest Service, 428 F .3d 1233, 1239 (9th Cir. 2005). Here the County fails to take this "hard look" and to consider all relevant factors, and fails to provide any "statement of reasons to explain why [the] project's impacts are insignificant,"2 let alone a convincing one, in violation of NEPA. The County must go back to this assessment and ensure that it is following the requirements of NEPA to thoroughly assess and consider the impacts of the Project. However, because the Project will "significantly affect" the environment, NEPA's EIS requirement is triggered and the Center suggests the County start working on an EIS rather than trying to repair its deficient EA.	Bastrop County has long been a steward of the Houston Toad. Conditions within the county are well known and documented. The Bastrop County web page provides important information about the condition of the Toad and the community as a whole is well aware of the critical habitat in the area. The county also is very concerned about restoring and mitigating the conditions in the Tahitian Village area. According to the The Lost Pines Habitat Conservation program (Bastrop County Website), "Bastrop County was issued an "Endangered Species Incidental Take Permit" from the United States Fish and Wildlife Service (FWS) that covers approximately 124,000 acres of known and potential Houston toad habitat within the county. This permit, with its associated Lost Pines Habitat Conservation Plan (LPHCP), offers a simplified process for obtaining authorization for incidental take under section 10(a)(1)(b) of the Endangered Species Act (ESA) for a variety of activities and provides regulatory certainty for local landowners and other community interests. The permit allows Bastrop County to issue certificates of participation to landowners for harming the toad or its habitat while engaging in legal land development, agricultural or forestry practices, wildlife management, and certain other land-use activities. Landowners can voluntarily participate in the county's LPHCP in a variety of ways. Whether building a new home or business, developing a subdivision, or simply continuing with existing land-use activities, participation in the LPHCP provides the coverage necessary to ensure compliance with the ESA. The basic foundation of the LPHCP is that humans can coexist with the Houston toad. In fact, the long term preservation, restoration, enhancement, and management of toad habitat in Bastrop County is dependent on private landowners because the vast majority of known and potential habitat exists on private property." While participation is voluntary, the focus of the plan is to monitor and track development in the area to understand the ongoing efforts for conservation of the Houston Toad. It is a successful program that has provided a basis for USFWS approval. The ERR for this project has been underway since 2017. Aside from the normal ERR review, the following special studies were completed: • Biological Assessment Proposed Construction of a New Ingress/Egress Road for Tahitian Village and Colovista Developments Bastrop County, Texas • IPAC Consultation Code: 02ETAU00-2017-SLI-0367; • Prepared by Horizon Environmental with contributions by Dr. Michael R.J. Forstner, Texas State University – September 2017 and revised 2018. • Intensive Cultural Resources Survey of USACE Jurisdictional Areas within the Proposed Tahitian Village Roadway Improvements Project, Bastrop, Bastrop County, Texas – August 2018 List of Permits Obtained: USACE: SWF-2018-00213, Tahitian Village Ingress/Egress; USFWS: IPAC CONSULTATION CODE: 02ETAU00-2017-SLI-0367; Other permits may be necessary during the construction in order to ensure consistency with state and federal regulatory requirements; THC Permit Texas Antiquities Permit No. 8516 - H045-160048 Tribal consultations to those tribes showing interest for the Bastrop County area. HUD requirements identify that once a survey is triggered, the assessment results become the information for inclusion into the ERR. Considering mitigation results, it is important to identify that in all consultations that occurred, no other Service identified the need for an EIS. All agencies have this option provided. Mitigation is included as a part of this project resulting from these surveys. Please see mitigation measures in Environmental Checklist.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	The Proposed Project Will Impact Threatened, Endangered and Sensitive Species	
Jennifer Loda	2/4/2019	An EIS is needed to fully evaluate the potential cumulative impacts to wildlife that may be caused by the Project. An EIS should more thoroughly explore the presence of threatened and endangered species in the area and should also consider the impacts to non-endangered wildlife. The potential adverse impacts on sensitive species alone requires an EIS. As the Ninth Circuit has repeatedly held, the refusal to prepare an EIS to take a "hard look" at potential adverse impacts on sensitive species violates NEPA. See Nat'l Parks & Conservation Assn, 241 F .3d 722, 731-32 (9th Cir. 2001) (EIS required where impacts of proposed action on sensitive species are unce1tain or controversial); ONRC v. Goodman, 505 F.3d 884, 892-93 (9th Cir. 2007) (agency violated NEPA in not analyzing impacts on sensitive species habitat and populations); Native Ecosystems Council v. Tidwell, 599 F.3d 926, 937 (9th Cir. 2010) (Forest Service violated NEPA in not analyzing impacts to sensitive sage-grouse habitat and populations).	Other than the important impact associated with the critical habitat for the Houston Toad, the wildlife impact for the roadway is no more significant than any other roadway in Texas. The area is not located within a state or national park. The area is privately owned area which will be included as needed. Within the action area there are numerous other federal, state, tribal, local or private actions affecting the Houston toad. The Service is aware of approximately 85 prior individual HCPs and/or certificates of inclusion under the County's LPHCP for residential development within the action area. In general, these are low-density residential developments consisting of single-family homes. USFWS also referenced past Texas Department of Transportation maintenance and upgrade work on the adjacent SH 71 and of multiple small commercial developments proposed or underway along SH 71. Past and present actions also include broad-scale FEMA recovery work in the wake of the BCCF and subsequent disasters (2011-present) that included debris removal, temporary housing, hazard tree removal, road, bridge, and culvert repairs and numerous utility repairs. Thus, the available habitat is mixed oak and pine forest of varied age, with numerous natural drainage features and numerous man-made impoundments (e.g., ponds).
Jennifer Loda	2/4/2019	Here, the County appears to have narrowed its focus to only considering impacts to the endangered Houston toad, and in those considerations the focus has been specifically on the consultation with the Fish and Wildlife Service. Much of the EA appears to be pulled directly from the Biological Assessment for the Houston toad, but this is not sufficient to satisfy the requirements of NEPA. A federal agency's legal obligations under NEPA and the ESA are entirely separate; compliance with the ESA Section 7's prohibition against jeopardizing a species' continued existence, I 6 U.S.C. § I 536(a)(2), does not simultaneously satisfy NEPA's requirements to analyze significant impacts short of the threat of extinction. See Greater Yellowstone Coalition v. Flowers, 359 F.3d 1257, 1275-76 (10th Cir. 2004) (recognizing FWS conclusion that action not likely to cause jeopardy does not necessarily mean impacts are insignificant); Makua v. Rumsfeld, 163 F. Supp. 2d 1202, 1218 (D. Haw. 2001) ("A FONSI ... must be based on a review of the potential for significant impact, including impact sho1t of extinction. Clearly, there can be a significant impact on a species even if its existence is not jeopardized."); National Wildlife Federation v. Babbitt, 128 F. Supp. 2d 1274, 1302 (E.D. Cal. 2000) (requiring EIS under NEPA even though mitigation plan satisfied ESA); Portland Audubon Society v. Lujan, 795 F. Supp. 1489, 1509 (D. Or. 1992) (rejecting agency's request for the court to "accept that its consultation with [FWS under the ESA] constitutes a substitute for compliance with NEPA."). The County must consider potential impacts to the endangered Navasota Ladies' -tresses. Without a thorough survey to determine none are present, the County must assume presence and consider and address potential impacts to this orchid.	The reason the EA is taken from the BA is that these are the primary concerns and which are addressed in the BA, the cultural assessment and the USACE wetlands assessment. Other related issues are discussed in the ERR. Typically, when surveys and studies are conducted the information provided within the studies are included into the ERR because the study becomes the analysis upon which the review is based. The HUD assessment of the environmental conditions are predicated upon the primary concern for the area - the Houston Toad. As referenced within the BA and the BO, early feedback from current head starting and supplementation efforts that the population numbers in Bastrop County are on an upward trend since 2012, at least locally at the Griffith League Ranch, where post BCCF supplementation efforts have been underway since 2013 (Dr. Michael Forstner, personal communication 2017). Limited survey in Robertson County revealed several positive detection locations as we attempt to track the large population previously identified in 2014 (Forstner 2017). The reference to an EIS is based upo the decision by the agency where all of the affected authorities provide alternative procedures for resolution, those procedures should be used in lieu of an EIS. 24 CFR 50.42

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	In addition, the County failed to consider the federally-endangered Navasota Ladies'-tresses (Spiranthes parksii) in its environmental review. This endangered orchid's range includes the project area (BA at 5-1), yet the EA only notes that it is located within Bastrop County and concludes with no explanation that it is "not likely to be found in the project area." EA at 6. The EA must acknowledge the project's location lies within this endangered species' range and assess the potential for impacts. If there is evidence available to support the County's conclusion that this species is "not likely to be found in the project area," then the EA must contain this data and an explanation of how this conclusion was reached.	TPWD replied as a response to the early notice provided the basis for a comment letter. The final notice was also provided to TPWD which included mitigation measures which clearly identify a biologist will be onsite to review the project area before, during and after construction. . A full inclusion of TPWD recommendations is included as a part of the ERR which directly relate to the letter submitted. Navasota Ladies'-tresses (Spiranthes parksii) were addressed within the BA. Additional review of the plant species has been added to the BA. TPWD Recommendations: have already been added to the EA and were published as part of the public notice. These include 1. Best management practices (BMPs) for preserving water quality such as berming and silt fencing will be used. 2. Soil stabilization and revegetation will be consistent with USFWS conditions and mitigation plan. Industry and site-specific mitigation will be used to return the area to its original condition. Where possible revegetate to promote positive habitats for local species and prevent invasive species. 3. Where trenching or excavation is involved keep trenches/excavation and backfilling crews scheduled to minimize the amount of trenches/exaction areas left open. During construction if necessary, any potential open trenches will be monitored to prevent unintentional capture, if capture TPWD will be contacted for further direction. 4. Site will be examined prior to construction activities to ensure Migratory Bird Treaty Act (MBTA) compliance. 5. Avoid contact with wildlife, if wildlife encountered, stop construction and allow wildlife to leave the site. Provide listing Bastrop County TPWD Rare Threatened and Endangered Species list to construction workers; if listed species identified, stop construction and contact TPWD for further direction. Specifically inform employees and contractors spotted skunk (Spilogale putorius interrupta), Elliot's short-tailed shrew (Blarina hylophaga hylophaga), and Texas garter snake (Thamnophis sirtalis annectens) could inhabit the proposed project area. Stage construction to prevent impact. • If potential impact to aquatic wildlife occurs, TPWD will be contacted for direction. Consider construction to avoid spawning periods. Biology monitor regularly to prevent impact. Additional TPWD mitigation measures include: Remove potential hazards from proposed project area prior to construction. Daily cover & monitor open trenches. Conduct most l&-clearing in woodland & shrub l& habitats outside migratory bird primary nesting season (03/01-09/01); if not possible, biologist conducts nests survey prior to construction & follow USFWS conservation steps if found. Avoid contact with wildlife, provide list of endangered species list to contractors. Stop construction if found & contact TPWD. In addition, the entire ERR and listed mitigation, terms and conditions and recommendations have been provided to the engineers and contractors will also receive a copy.
Jennifer Loda	2/4/2019	Elsewhere in the ERR there is only a brief mention of Navasota Ladies' -tresses, found in the Biological Assessment. BA at 5-1. The BA describes that Horizon biologists familiar with the orchid conducted "field assessments" and determined that "the project area does not include the microhabitats commonly associated with known occurrences of the plant." BA at 5-1. There is no further explanation provided as to what these "field assessments" consisted of, and it is unlikely that these were sufficient to determine absence of this endangered species, especially given that much of the proposed area for the project is on private land and the Center's understanding is that the landowner did not provide Horizon biologists permission to access the property for surveys.	Several site visits were conducted as a course of the surveys, studies and normal course of the ERR. No signs of these plants were observed. Specifically as identified in Section 2.1 of the Biology Assessment, "The Navasota Ladies'-tresses' (Spiranthes parksii) range includes the project area, but based on field assessments conducted by Horizon biologists familiar with the orchid, the project area does not include the microhabitats commonly associated with known occurrences of the plant." Mitigation measures are in place that will facilitate the ongoing monitoring and assessment of the areas. The biology monitor will make sure to identify any threatened or endangered species at the sites throughout the progress of the project.
Jennifer Loda	2/4/2019	In addition, the County's failure to provide any underlying data or other information regarding the "field assessments" violates NEPA. HUD regulations require that the ERR contain "all relevant base data used or cited in the EAs, EISs, or other project review documents." 24 C.F.R. § 58.38(b)	We are unaware of any other underlying data or other information that was not provided regarding the site visits. The biology monitor will make sure to identify any threatened or endangered species at the sites throughout the progress of the project. Navasota ladies'-tresses Spiranthes parksii LE E Texas endemic; openings in post oak woodlands in sandy loams along upland drainages or intermittent streams, often in areas with suitable hydrologic factors, such as a perched water table associated with the underlying claypan; flowering populations fluctuate widely from year to year, an individual plant does not flower every year; flowering late October-early November (-early December)

Comment	Date	Issue	Notes
			The Texas Natural Diversity Database (TXNDD) identifies areas of surveys conducted within the area. The data was obtained from TPWD and considering the survey information was consistent with the BA to assess impact, no further information was provided; i.e., the surveys reflected the Houston Toad surveys conducted at the site. The Texas Garter Snake was also identified within the area. This was also referenced in the ERR and identified for mitigation. According to the TXNDD the closest study for Navasota Ladies is approximately 5 miles NE from the project area in 2004 - prior to the 2011 Bastrop fire. Overall, the scorched soils in the area are not conducive to the Navasota Ladies. As identified in the "Bastrop Complex Wildfire Case Study", the Nearly the entire burn area (94 percent) is rated as having at least a moderate risk for soil damage as a result of the fire, with more than half the area considered at high risk. Damage to the soil resulting from the fire could reduce the stability of the soil, increasing its erosive potential and slowing vegetative recovery by destroying the organic component of the soil. Ninety-seven percent of the total area has a moderate to very high wind erosion vulnerability. In terms of the potential for water erosion, the majority of the soils within the burn area have a very low erosion potential, but nearly 30 percent of the area is at increased risk for water erosion issues to occur. However, as already indicated, the biologist assigned to this project will be familiar with the overall important of threatened and endangered species and will be sure to highlight any encounter with the plant at the project site and contact TPWD in the event further documentation is warranted.
Jennifer Loda	2/4/2019	The project may also adversely impact non-endangered species through various means such as habitat loss and fragmentation, as well as through continuous road use, and noise disturbance. The area where the proposed project will be built is currently undeveloped land so the introduction of a road into the habitat will not only cause a direct loss of habitat, but also impacts from fragmentation and edge effects, noise3 and light impacts from construction and regular traffic on the new road. These impacts are not explored in the EA, which only lists non endangered species that may be present in the area, and does not properly analyze the potential impacts to these species. Impacts from these factors should be explored in an EIS because they could have a significant impact on wildlife and the environment.	The assessment of habitat loss, fragmentation and noise disturbance was included within the BA. No further assessments for these items is planned. An assessment of other species was conducted and included in Vegetation, Wildlife section of the ERR. In addition, the ERR provides a breakdown of mitigation and recommendations to prevent impact to other species at the site.
Jennifer Loda	2/4/2019	In a comment letter contained in the ERR, the Texas Parks and Wildlife Department lists several state-listed wildlife species that are likely to occur in or near the project area and be affected by project activities, and provides recommendations for avoiding or minimizing impacts to these species. However, the County does not discuss potential impacts to any of these species in the EA, nor does it include any of the specific suggested measures to avoid harm to these sensitive species. The County must assess and discuss the potential for impacts to these species and any measures they plan to put in place to reduce these impacts.	Wildlife species were addressed in Section 2.0 Pertinent Species and Resources and Section 2.1 Listed Species within the Project Area of the Biology Assessment. These sections list out the federally listed threatened or endangered species of Bastrop County. The impact to the Houston toad was the emphasis for the endangered species and critical habitat because the project area is located within areas of concern. With regard to the TPWD, consideration for listed species was incorporated into the examination as TPWD responded to the early notice identifying recommendations to facilitate limiting impact to state and federally listed species and other wildlife. The mitigation measures within the ERR incorporated these recommendations and were presented in the FONSI publication. An important notation regarding this item is the condition of the landscape during site visit in 2016, five years after the fires. The scarred and scorched terrain revealed burned and/or felled trees and vegetation. In addition, there is no other critical habitat in the County. The TPWD received a copy of the FONSI public notice. (Recommendations response letter.)

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	The EA is Insufficient	
Jennifer Loda	2/4/2019	Even assuming that an EIS was not required for this project, the EA itself was inadequate and failed to satisfy the requirements of NEPA. In the EA, the County failed to adopt an adequate statement of purpose and need, failed to consider an adequate range of alternatives, failed to adequately address and analyze cumulative effects, and failed to adequately analyze or inform the public of the bases for their asse1tions.	The range of alternatives was provided in the BA as the primary issues include the USFWS Houston toad, the potential cultural resources and the wetland impact. The state of purposes and need, as well as the project descriptions have been clarified for the EA documentation.
Jennifer Loda	2/4/2019	An environmental assessment is subject to the same general requirements as an EIS. Save our Ecosystems v. Clark, 747 F.2d 1240, 1247 (9th Cir. 1984); Southern Oregon Citizens Against Toxic Sprays v. Clark (SOCATS), 720 F.2d 1475, 1480 (9th Cir. 1983). In an environmental assessment an agency must "[b]briefly provide sufficient evidence and analysis for detaining whether to prepare an environmental impact statement or a finding of no significant impact," as well as "brief discussions of the need for the proposal, of alternatives as required by sec. 102(2)(E), [and] of the environmental impacts of the proposed action and alternatives." 40	The current conditions at Tahitian Village considers the lack of ability to stream line traffic at existing exists. Evacuation routes do not permit exiting vehicles to continue the traffic flow in both directions at Highway 71. The use of a improved ingress/egress will ensure continued flow of traffic in the event of an emergency is considered the best solution for the site. Deemed the worst fire in Texas history by the Fire Museum of Texas, the Bastrop files in 2011 took the lives of two people and burned down 1,673 homes and property damage that was estimated to be $325 million. Along with troubles evacuating from Tahitian Village (their homes) , access to the fires to extinguish the flames was complicated by the limited access points to the area by emergency vehicles.
Jennifer Loda	2/4/2019	The Purpose and Need Statement is Inadequate	
Jennifer Loda	2/4/2019	Bastrop County's purpose and need statement does not comply with NEPA because it "unreasonably narrows the agency's consideration of alternatives so that the outcome is preordained." Alaska Survival v. Surface Transp. Bd., 705 F.3d 1073 (9th Cir. 2012). Although the County indicates that the need is to allow for better movement into and out of the area in emergencies, it then narrows the need to "a new ingress and egress route into and out of Tahitian subdivision area." This limits the possibility for alternatives since it limits consideration to only construction of a new road, and does not allow for consideration of improvements to existing roads to increase traffic capacity	The purpose and need statement has been altered for clarification. The inability of residences to easily escape the deadly conditions caused panic. The current conditions at Tahitian Village considers the lack of ability to stream line traffic at existing exists. Evacuation routes do not permit exiting vehicles to continue the traffic flow in both directions at Highway 71. The use of a new exit which will ensure continued flow of traffic in the event of an emergency is considered the best solution for the site. It will also ensure human health for an area with a population of approximately 584 (according to the 2010 census) and approximately 249 housing units. Deemed the worst fire in Texas history by the Fire Museum of Texas, the Bastrop files in 2011 took the lives of two people and burned down 1,673 homes and property damage that was estimated to be $325 million. Along with troubles evacuating from Tahitian Village (their homes) , access to the fires to extinguish the flames was complicated by the limited access points to the area by emergency vehicles.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	Another one of the Center's concerns is that in other parts of the EA it appears that the County further narrows it "purpose and need" for the project to only include a road that would connect to state highway 71. E.g. EA at 3 ("Preferred route most closely meets the intent of the project by adding a new roadway that provides additional emergency access to SH 71 from the existing residential areas.")	The statement of purose and need have been updated for clarification.
Jennifer Loda	2/4/2019	Despite the existence of several roadways, the County does not consider any alternatives that would improve these existing roads to increase traffic capacity. The County must consider all reasonable alternatives in a NEPA analysis, but here restricted its analysis to alternatives that create an entirely new roadway. In addition, despite the focus on additional egress/ingress during emergencies, the County does not consider an alternative for a road that would only be open during times of emergencies. It seems that this type of restriction to the County's preferred route could reduce the impacts of the project on the Houston toad and other wildlife, as they would not be subject to year-round traffic.	The statement of purose and need have been updated for clarification.
Jennifer Loda	2/4/2019	The County Failed to Consider an Adequate Range of Alternatives	
Jennifer Loda	2/4/2019	NEPA requires the County to "study, develop, and describe appropriate alternatives to the recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources as provided by section l 02(2)(E) of the Act." 40 C.F .R §1501.2(c). This provision applies "whether an agency is preparing an EIS or an EA and requires the agency to give full and meaningful consideration to all reasonable alternatives." Shasta Resources Council v. US. Dept. of Interior, 629 F .Supp.2d 1045, l 052 (E.D. Cal. 2009). The requirement to evaluate all reasonable alternatives is not simply procedural; the Council on Environmental Quality (CEQ) has stated that the alternatives analysis is "the heart" of the NEPA analysis, the purpose of which is to "provide[e] a clear basis for choice among options by the decision maker and the public." 40 C.F.R. § 1502.14; 42 U.S.C. §§4332(2)(E); 40 C.F.R. §1507.2(d). Thus, the County must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. City of Tenakee Springs v. Clough, 915 F .2d 1308, 1310 (9th Cir. 1990).	Alternatives were considered as a part of this review and as identified made a determination that the location proposed provides the least impact both environmentally and reduces the possibility of father development in the area.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	NEPA regulations mandate that an agency "shall to the fullest extent possible: use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 40 C.F.R. § 1500.2(e). Environmental analysis documents must "[r]rigorously explore and objectively evaluate all reasonable alternatives" to the project. 40 C.F.R. § I 502.14(a). A decision maker must explore alternatives in sufficient detail to "sharply define[e] the issues and provide[e] a clear basis for choice among options by the decision maker and the public." Id. § 1502.14. All reasonable alternatives must receive a rigorous exploration and objective evaluation "of environmental effects and values." Id. § 150 l.2(b). "Conclusory statements" will not support an agency's choice of alternatives. Simmons v. US. Army Corps of Engineers, 120 F.3d 664, 670 (7th Cir. 1997); see also 40 C.F.R. § 1500.1 (b) (NEPA requires information of "high quality."). Without this analysis, the agency cannot make an informed decision.	A thorough review of the alternatives were discussed in the BA and incorporated into the ERR. Please see clarified project description and purpose and need statement.
Jennifer Loda	2/4/2019	The County fails to conduct a proper alternatives analysis in the EA, but rather makes only brief mention of alternatives considered with "conclusory statements." EA at 36. Despite the existence of several roadways, the County does not consider any alternatives that would improve these existing roads to increase traffic capacity. The County must consider all reasonable alternatives in a NEPA analysis, but here restricted its analysis to alternatives that create an entirely new roadway. In addition, despite the focus on additional egress/ingress during emergencies, the County does not consider an alternative for a road that would only be open during times of emergencies. It seems that this type of restriction to the County's preferred route could reduce the impacts of the project on the Houston toad and other wildlife, as they would not be subject to year-round traffic. The U.S. Fish and Wildlife indicated to the County that they believed that there are other alternatives that could have been considered that may have had less impacts to the endangered Houston toad, but the County failed to consider these alternatives.	The County knows the impact of the existing conditions. The area serviced by the existing roads does not provide adequate ingress/egress to promote human health and safety. The additional access provides emergency vehicles faster access to extinguish any future fires in the area. This in turn preserves human health and the environment. Please see clarified project description and purpose and need statement.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	The Description of Existing Conditions and Trends is Inadequate	
Jennifer Loda	2/4/2019	The EA's description (EA 2-3) does not satisfy NEPA. Under HUD's NEPA regulations the County must "[d]determine existing conditions and describe the character, features and resources of the project area and its surroundings; identify the trends that are likely to continue in the absence of the project." 24 C.F.R. § 58.40(a) (emphasis added). The County fails to comply with any of these requirements in its description, Rather than provide information specific to the project area and its surroundings, the EA includes a broad description of Bastrop County. This section also fails to discuss trends in the project area that would continue in the absence of the project. In addition, this section of the EA contains language that appears to belong in other sections, making it more complicated for the public to review and comment on the EA. For instance, there is information in this section that discusses the project's purpose, the project's description, and the County's conclusion regarding the preferred route. None of this language satisfies the requirements of 24 C.F.R. § 58.40(a), nor is this provision supported elsewhere in the EA.	Bastrop County fires was the reason for this project. The inability of residences to easily escape the deadly conditions caused panic. The current conditions at Tahitian Village considers the lack of ability to stream line traffic at existing exists. Evacuation routes do not permit exiting vehicles to continue the traffic flow in both directions at Highway 71. The use of a new exit which will ensure continued flow of traffic in the event of an emergency is considered the best solution for the site. It will ensure human health for an area with a population of approximately 1891 (according to the 2010 census) and approximately 844 housing units within one mile of the alignment. Emergency vehicular access to the area for fire fighting can prevent impact to human health and preserve the environment. Deemed the worst fire in Texas history by the Fire Museum of Texas, the Bastrop files in 2011 took the lives of two people and burned down 1,673 homes and property damage that was estimated to be $325 million. Along with troubles evacuating from Tahitian Village (their homes) , access to the fires to extinguish the flames was complicated by the limited access points to the area by emergency vehicles.
Jennifer Loda	2/4/2019	Additional Deficiencies of the EA and ERR	
Jennifer Loda	2/4/2019	Despite being entitled "Natural Features: Unique Natural Features/Water Resources Vegetation, Wildlife," Tab 6 Attachment 20 appears to contain copies of pages from a website for Tahitian Village, directed at prospective homebuyers. This is clearly not any kind of assessment of the natural features, vegetation, or wildlife found the in project area or its surroundings and does not contain any analysis of the likely effects of the proposed project on these features. The EA, and any potentially related documents in the ERR, simply fail to consider impacts of the project to the environment and wildlife beyond looking at the endangered Houston toad. NEPA requires much more than compliance with the Endangered Species Act, which appears to be the County's sole focus here. NEPA requires an evaluation of a wide variety of environmental impacts from a proposed project, including consideration of non-endangered wildlife.	Aside from the existing information available through the BA, there is information about the existing sites which should be considered as an existing condition within the unique natural features/water resources. The area conditions reflect that the community is residential and supports information about the conditions at the project site. There is an existing community which has formed an association. This further reflects that the proposed activities are consistent with the existing conditions at the site. The unique natural values identifies that the undulating topography accommodates residences already. The analysis of the area is found in the surveys conducted for the site.

Comment	Date	Issue	Notes
Jennifer Loda	2/4/2019	For decisions on whether or not to prepare an EIS, NEPA requires the County to provide a "convincing statement of reasons to explain why a project's impacts are insignificant." Native Ecosystems Council v. US. Forest Service, 428 F.3d 1233, 1239 (9th Cir. 2005). But here, the "Summary of Findings and Conclusions" in the EA (at 36) does not actually contain any findings and conclusions resulting from the County's environmental review of the proposed project. Rather, this section simply contains a listing of measures that the County proposes to use to "minimize the effects of the project on the Houston toad." A convincing statement of reasons is also not provided elsewhere in the EA, in violation of NEPA. The County cannot properly determine whether to reach a FONSI or to move on to an EIS without such an analysis.	The summary of findings has been clarified.
Chris and RaeAnne Parachini	2/4/2019	We formally oppose the proposed Tahitian Village Ingress/ Egress, in all of its parts, and Phases, including Phase 1, and especially any proposal to include our property, R97691,due to the fact that the Bastrop County Assistant District Attorney Greg Gilleland wrote a letter, on July 9, 2018, stating in his "Brief Factual Background," that Bastrop County is going: "to give requester an exchange of two (2) acres adjacent and adjoining the north end of his property in exchange for the one acre where the· roadway will be built;"	Commissioner Hamner met with Mr. Parachini on three occasions to discuss Bastrop County's possible need to acquire right of way during which he suggested that Mr. Parachini negotiate from a strong position such as requesting 2 units for every 1. A formal offer was not made because Bastrop County did not have AUGF. On May 18, 2018, Contract Land Staff received notice of representation from Barron, Adler, Clough & Oddo, LLP that they had been retained by the The Copperas Creek Houston Toad Preserve and all communications should be directed to them. To our knowledge that agreement is still in place and we have had no additional conversations with Mr. and/or Mrs. Parachini regarding the proposed acquisition. Once AUGF is issued, Contract Land Staff will contact Mr. Parachini's attorney to negotiate the acquisition.

February 4, 2019

Via electronic mail

Paul Pape, Judge
804 Pecan Street
Bastrop, TX 78602
paul.pape@co.bastrop.tx.us

RE: Notice of Finding of No Significant Impact and Intent to Request Release of Funds, Tahitian Village Subdivision Phase 1

Please accept the following comments on the Notice of Finding of No Significant Impact ("FONSI") and Intent to Request Release of Funds for Tahitian Village Subdivision Phase 1 ("Project") on behalf of the Center for Biological Diversity (the "Center").

The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats in the Western Hemisphere through science, policy, and environmental law. The Center has over 1.3 million members and on-line activists throughout Texas and the United States, including members within the Project vicinity.

The FONSI, EA, and ERR violate the National Environmental Policy Act (NEPA) and its implementing regulations.

THE NATIONAL ENVIRONMENTAL POLICY ACT

NEPA has "twin aims. First, it places upon [a federal] agency the obligation to consider every significant aspect of the environmental impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process." *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). Here, the County failed to satisfy either ofNEPA's twin aims in its EA, FONSI and ERR. The County must undertake the appropriate review and provide the public with the information necessary to properly review, understand and comment on this project.

The National Environmental Policy Act ("NEPA") directs federal agencies to prepare an environmental impact statement ("EIS") whenever agencies propose "major federal actions significantly affecting the quality of the environment." 42 U.S.C. § 4332(2)(C); *See also Robertson v. Methow Valley Citizens,* 490 U.S. 332, 348 (1989). The scope of the environmental analysis required by NEPA includes a consideration of a range of actions, alternatives and impacts. 40 C.F.R. § 1508.25. The range of impacts includes direct, indirect, and cumulative impacts. *Id.* As a preliminary step, an agency may prepare an environmental assessment to determine whether a proposed action is sufficiently significant to warrant the preparation of a full EIS. 40 C.F.R. § 1508.9. Upon the preparation and subsequent review of an environmental assessment, the agency will be in a position to determine whether to prepare an EIS or to issue a Finding of No Significant Impact ("FONSI"). *Id.;* 40 C.F.R. §§ 1501.4, 1508.13.[1]

I. Failure to Provide Notice to Interested Parties

Bastrop County failed to provide proper notice of its FONSI and Intent to Request Release of Funds, in violation of HUD's NEPA regulations, 24 C.F.R. § 58.43. The regulations provide that "*as a minimum* [the County] *must send* the FONSI notice to individuals and groups known to be interested in the activities ..." 24 C.F.R. § 58.43 (emphasis added). Despite being a known interested entity, the County did not provide notice to the Center of its FONSI. An email exchange attached to this comment letter shows that on June 13, 2018 Ms. Loda informed several County staff that the Center would like to participate in public commenting during the NEPA review process for this project and requested to be added to an email notification list for any future updates on the project and its review. The same attachment contains Carolyn Dill's response to this email, cc'ing Judge Paul Pape, where she says she will make sure that the Center receives a copy of the public notice. However, this did not occur, and the Center only happened to find out about the FONSI notice through a periodic check-in with the County on the status of the Project. At that point the notice had already been published for several days, limiting the amount of time the Center had available to contribute comments. In addition, the EA and additional documents in the ERR were initially only made available for review in-person during limit weekday business hours, discouraging public involvement in the review process. While the Center appreciates that the County responded to its request for an electronic version of the ERR, this took a couple of additional days to provide, further shortening the length of time available for comment on this project.

The Center is also aware that the landowner for private land where the Project is proposed to be constructed was also not provided notice of the FONSI, despite clearly being a party having an interest in the Project. The Center is unaware as to whether other interested parties were provided

[1] An environmental assessment is subject to the same general requirements as an EIS. *Save our Ecosystems* v. *Clark,* 747 F.2d 1240, 1247 (9th Cir. 1984); *Southern Oregon Citizens Against Toxic Sprays* v. *Clark (SOCATS),* 720 F.2d 1475, 1480 (9th Cir. 1983). In an environmental assessment an agency must "[b]riefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact," as well as "brief discussions of the need for the proposal, of alternatives as required by sec. 102(2)(E), [and] of the environmental impacts of the proposed action and alternatives." 40 C.F.R. § 1508.9. *See also* 40 C.F.R. § 1502.9(c)(1)(ii). Thus, an environmental assessment "must support the reasonableness of the agency's decision not to prepare [an] EIS." *SOCATS,* 720 F.2d at 1480

notice of the FONSI, but has additional concerns that publication of the notice during the government shutdown greatly reduced the amount of time that interested agencies like the U.S. Fish and Wildlife Service and EPA had to review the ERR and provide comment.

II. Failure to Prepare an Environmental Impact Statement

NEPA directs federal agencies to prepare an environmental impact statement ("EIS") whenever agencies propose "major federal actions significantly affecting the quality of the environment." 42 U.S.C. § 4332(2)(C); *see also Robertson v. Methow Valley Citizens*, 490 U.S. 332, 348 (1989). The NEPA regulations provide that, whenever there is a question as to whether an EIS is required, an agency must ordinarily at least prepare an environmental assessment to determine whether the environmental effects of its proposed action are "significant" and thereby require preparation of an EIS. 40 C.F.R. § 1501.4. In determining whether the proposed action is "significant," the agency must consider whether "the possible effects on the human environment are highly uncertain or involve unique or unknown risks," the potential that "the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration," if the action "may adversely affect an endangered or threatened species," the "[u]nique characteristics of the geographic area;" the "degree to which the proposed action affects public health and safety;" and whether the "action may cause the loss or destruction of significant scientific, cultural, or historical resources." *Id.* at § 1508.27(b). An action is also significant if it is "related to other actions with individually insignificant but cumulatively significant impacts" and "it is reasonable to anticipate a cumulatively significant impact on the environment." *Id.* at § 1508.27(b)(7). The presence of any one of these factors "should result in an agency decision to prepare an EIS." *Pub. Serv. Co. v. Andrus*, 825 F. Supp. 1483, 1495 (D. Idaho 1993); *see also Nat'l Audubon Soc'y v. Hoffman*, 132 F.3d 7, 18 (2d Cir. 1997). An EIS is required here because the proposed project "may adversely affect endangered or threatened species." 40 C.F.R. § 1508.27(b)(9);

For decisions on whether or not to prepare an EIS, NEPA requires the County to take a "hard look" at the consequences of its actions, to base its decision on a consideration of relevant factors, and to provide a "convincing statement of reasons to explain why a project's impacts are insignificant." *Native Ecosystems Council v. U.S. Forest Service*, 428 F.3d 1233, 1239 (9th Cir. 2005). Here the County fails to take this "hard look" and to consider all relevant factors, and fails to provide any "statement of reasons to explain why [the] project's impacts are insignificant,"[2] let alone a convincing one, in violation of NEPA. The County must go back to this assessment and ensure that it is following the requirements of NEPA to thoroughly assess and consider the impacts of the Project. However, because the Project will "significantly affect" the environment, NEPA's EIS requirement is triggered and the Center suggests the County start working on an EIS rather than trying to repair its deficient EA.

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[2] The "Summary of Findings and Conclusions" in the EA (at 36) does not actually contain any findings and conclusions resulting from the County's environmental review of the proposed project. Rather, this section simply contains a listing of measures that the County proposes to use to "minimize the effects of the project on the Houston toad."

A. The Proposed Project Will Impact Threatened, Endangered and Sensitive Species

An EIS is needed to fully evaluate the potential cumulative impacts to wildlife that may be caused by the Project. An EIS should more thoroughly explore the presence of threatened and endangered species in the area and should also consider the impacts to non-endangered wildlife. The potential adverse impacts on sensitive species alone requires an EIS. As the Ninth Circuit has repeatedly held, the refusal to prepare an EIS to take a "hard look" at potential adverse impacts on sensitive species violates NEPA. *See Nat'l Parks & Conservation Ass'n*, 241 F.3d 722, 731–32 (9th Cir. 2001) (EIS required where impacts of proposed action on sensitive species are uncertain or controversial); *ONRC v. Goodman*, 505 F.3d 884, 892–93 (9th Cir. 2007) (agency violated NEPA in not analyzing impacts on sensitive species habitat and populations); *Native Ecosystems Council v. Tidwell*, 599 F.3d 926, 937 (9th Cir. 2010) (Forest Service violated NEPA in not analyzing impacts to sensitive sage-grouse habitat and populations).

Here, the County appears to have narrowed its focus to only considering impacts to the endangered Houston toad, and in those considerations the focus has been specifically on the consultation with the Fish and Wildlife Service. Much of the EA appears to be pulled directly from the Biological Assessment for the Houston toad, but this is not sufficient to satisfy the requirements of NEPA. A federal agency's legal obligations under NEPA and the ESA are entirely separate; compliance with the ESA Section 7's prohibition against jeopardizing a species' continued existence, 16 U.S.C. § 1536(a)(2), does not simultaneously satisfy NEPA's requirements to analyze significant impacts short of the threat of extinction. *See Greater Yellowstone Coalition v. Flowers*, 359 F.3d 1257, 1275–76 (10th Cir. 2004) (recognizing FWS conclusion that action not likely to cause jeopardy does not necessarily mean impacts are insignificant); *Makua v. Rumsfeld*, 163 F. Supp. 2d 1202, 1218 (D. Haw. 2001) ("A FONSI . . . must be based on a review of the potential for significant impact, including impact short of extinction. Clearly, there can be a significant impact on a species even if its existence is not jeopardized."); *National Wildlife Federation v. Babbitt*, 128 F. Supp. 2d 1274, 1302 (E.D. Cal. 2000) (requiring EIS under NEPA even though mitigation plan satisfied ESA); *Portland Audubon Society v. Lujan*, 795 F. Supp. 1489, 1509 (D. Or. 1992) (rejecting agency's request for the court to "accept that its consultation with [FWS under the ESA] constitutes a substitute for compliance with NEPA.").

In addition, the County failed to consider the federally-endangered Navasota Ladies'-tresses (*Spiranthes parksii*) in its environmental review. This endangered orchid's range includes the project area (BA at 5-1), yet the EA only notes that it is located within Bastrop County and concludes with no explanation that it is "not likely to be found in the project area." EA at 6. The EA must acknowledge the project's location lies within this endangered species' range and assess the potential for impacts. If there is evidence available to support the County's conclusion that this species is "not likely to be found in the project area," then the EA must contain this data and an explanation of how this conclusion was reached.

Elsewhere in the ERR there is only a brief mention of Navasota Ladies'-tresses, found in the Biological Assessment. BA at 5-1. The BA describes that Horizon biologists familiar with the orchid conducted "field assessments" and determined that "the project area does not include the

microhabitats commonly associated with known occurrences of the plant." BA at 5-1. There is no further explanation provided as to what these "field assessments" consisted of, and it is unlikely that these were sufficient to determine absence of this endangered species, especially given that much of the proposed area for the project is on private land and the Center's understanding is that the landowner did not provide Horizon biologists permission to access the property for surveys. In addition, the County's failure to provide any underlying data or other information regarding the "field assessments" violates NEPA. HUD regulations require that the ERR contain "all relevant base data used or cited in the EAs, EISs, or other project review documents." 24 C.F.R. § 58.38(b)

The County must consider potential impacts to the endangered Navasota Ladies'-tresses. Without a thorough survey to determine none are present, the County must assume presence and consider and address potential impacts to this orchid.

The project may also adversely impact non-endangered species through various means such as habitat loss and fragmentation, as well as through continuous road use, and noise disturbance. The area where the proposed project will be built is currently undeveloped land so the introduction of a road into the habitat will not only cause a direct loss of habitat, but also impacts from fragmentation and edge effects, noise[3] and light impacts from construction and regular traffic on the new road. These impacts are not explored in the EA, which only lists non-endangered species that may be present in the area, and does not properly analyze the potential impacts to these species. Impacts from these factors should be explored in an EIS because they could have a significant impact on wildlife and the environment.

In a comment letter contained in the ERR, the Texas Parks and Wildlife Department lists several state-listed wildlife species that are likely to occur in or near the project area and be affected by project activities, and provides recommendations for avoiding or minimizing impacts to these species. However, the County does not discuss potential impacts to any of these species in the EA, nor does it include any of the specific suggested measures to avoid harm to these sensitive species. The County must assess and discuss the potential for impacts to these species and any measures they plan to put in place to reduce these impacts.

Because the Project is expected to result in take of the Houston toad, as well as impacts to sensitive species and other wildlife, the County must prepare an EIS.

III. The EA is Insufficient

Even assuming that an EIS was not required for this project, the EA itself was inadequate and failed to satisfy the requirements of NEPA. In the EA, the County failed to adopt an adequate statement of purpose and need, failed to consider an adequate range of alternatives, failed to adequately address and analyze cumulative effects, and failed to adequately analyze or inform the public of the bases for their assertions.

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[3] The EA mentions that the Houston toad may be impacted by construction noise (EA at 22), but it fails to provide a discussion of the impacts of that noise on the toad, nor does it contain any mention of the potential impacts of the traffic noise post-construction. The EA also fails to consider noise impacts on other wildlife species.

An environmental assessment is subject to the same general requirements as an EIS. *Save our Ecosystems* v. *Clark,* 747 F.2d 1240, 1247 (9th Cir. 1984); *Southern Oregon Citizens Against Toxic Sprays* v. *Clark (SOCATS),* 720 F.2d 1475, 1480 (9th Cir. 1983). In an environmental assessment an agency must "[b]riefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact," as well as "brief discussions of the need for the proposal, of alternatives as required by sec. 102(2)(E), [and] of the environmental impacts of the proposed action and alternatives." 40 C.F.R. § 1508.9. *See also* 40 C.F.R. § 1502.9(c)(1)(ii). Thus, an environmental assessment "must support the reasonableness of the agency's decision not to prepare [an] EIS." *SOCATS,* 720 F.2d at 1480.

A. The Purpose and Need Statement is Inadequate

Bastrop County's purpose and need statement does not comply with NEPA because it "unreasonably narrows the agency's consideration of alternatives so that the outcome is preordained." Alaska Survival v. Surface Transp. Bd., 705 F.3d 1073 (9th Cir. 2012). Although the County indicates that the need is to allow for better movement into and out of the area in emergencies, it then narrows the need to "a new ingress and egress route into and out of Tahitian subdivision area." This limits the possibility for alternatives since it limits consideration to only construction of a new road, and does not allow for consideration of improvements to existing roads to increase traffic capacity.[4]

Another one of the Center's concerns is that in other parts of the EA it appears that the County further narrows it "purpose and need" for the project to only include a road that would connect to state highway 71. *E.g.* EA at 3 ("Preferred route most closely meets the intent of the project by adding a new roadway that provides additional emergency access to SH 71 from the existing residential areas.")
Despite the existence of several roadways, the County does not consider any alternatives that would improve these existing roads to increase traffic capacity. The County must consider all reasonable alternatives in a NEPA analysis, but here restricted its analysis to alternatives that create an entirely new roadway. In addition, despite the focus on additional egress/ingress during emergencies, the County does not consider an alternative for a road that would only be open during times of emergencies. It seems that this type of restriction to the County's preferred route could reduce the impacts of the project on the Houston toad and other wildlife, as they would not be subject to year-round traffic.

B. The County Failed to Consider an Adequate Range of Alternatives

NEPA requires the County to "study, develop, and describe appropriate alternatives to the recommended courses of action in any proposal which involves unresolved conflicts concerning

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[4] The EA says that there are currently several roadways that provide ingress and egress routes for Tahitian Village, but that these are not sufficient because they are "narrow, two-land residential streets or county roads that have minimal traffic capacity." EA at 3.

alternative uses of available resources as provided by section 102(2)(E) of the Act." 40 C.F.R. § 1501.2(c). This provision applies "whether an agency is preparing an EIS or an EA and requires the agency to give full and meaningful consideration to all reasonable alternatives." *Shasta Resources Council v. U.S. Dept. of Interior*, 629 F.Supp.2d 1045, 1052 (E.D. Cal. 2009). The requirement to evaluate all reasonable alternatives is not simply procedural; the Council on Environmental Quality (CEQ) has stated that the alternatives analysis is "the heart" of the NEPA analysis, the purpose of which is to "provid[e] a clear basis for choice among options by the decision maker and the public." 40 C.F.R. §1502.14; 42 U.S.C. §§4332(2)(E); 40 C.F.R. §1507.2(d). Thus, the County must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1310 (9th Cir. 1990).

NEPA regulations mandate that an agency "shall to the fullest extent possible: use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." 40 C.F.R. § 1500.2(e). Environmental analysis documents must "[r]igorously explore and objectively evaluate all reasonable alternatives" to the project. 40 C.F.R. § 1502.14(a). A decision maker must explore alternatives in sufficient detail to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public." *Id.* § 1502.14. All reasonable alternatives must receive a rigorous exploration and objective evaluation "of environmental effects and values." *Id.* § 1501.2(b). "Conclusory statements" will not support an agency's choice of alternatives. *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 670 (7th Cir. 1997); *see also* 40 C.F.R. § 1500.1(b) (NEPA requires information of "high quality."). Without this analysis, the agency cannot make an informed decision.

The County fails to conduct a proper alternatives analysis in the EA, but rather makes only brief mention of alternatives considered with "conclusory statements." EA at 36.

Despite the existence of several roadways, the County does not consider any alternatives that would improve these existing roads to increase traffic capacity. The County must consider all reasonable alternatives in a NEPA analysis, but here restricted its analysis to alternatives that create an entirely new roadway. In addition, despite the focus on additional egress/ingress during emergencies, the County does not consider an alternative for a road that would only be open during times of emergencies. It seems that this type of restriction to the County's preferred route could reduce the impacts of the project on the Houston toad and other wildlife, as they would not be subject to year-round traffic. The U.S. Fish and Wildlife indicated to the County that they believed that there are other alternatives that could have been considered that may have had less impacts to the endangered Houston toad, but the County failed to consider these alternatives.

C. The Description of Existing Conditions and Trends is Inadequate

The EA's description (EA 2-3) does not satisfy NEPA. Under HUD's NEPA regulations the County must "[d]etermine existing conditions and describe the character, features and resources of the *project area and its surroundings*; identify the trends that are likely to continue in the absence of the project." 24 C.F.R. § 58.40(a) (emphasis added). The County fails to comply with

any of these requirements in its description, Rather than provide information specific to the project area and its surroundings, the EA includes a broad description of Bastrop County. This section also fails to discuss trends in the project area that would continue in the absence of the project. In addition, this section of the EA contains language that appears to belong in other sections, making it more complicated for the public to review and comment on the EA. For instance, there is information in this section that discusses the project's purpose, the project's description, and the County's conclusion regarding the preferred route. None of this language satisfies the requirements of 24 C.F.R. § 58.40(a), nor is this provision supported elsewhere in the EA.

IV. Additional Deficiencies of the EA and ERR

Despite being entitled "Natural Features: Unique Natural Features/Water Resources Vegetation, Wildlife," Tab 6 Attachment 20 appears to contain copies of pages from a website for Tahitian Village, directed at prospective homebuyers. This is clearly not any kind of assessment of the natural features, vegetation, or wildlife found the in project area or its surroundings and does not contain any analysis of the likely effects of the proposed project on these features. The EA, and any potentially related documents in the ERR, simply fail to consider impacts of the project to the environment and wildlife beyond looking at the endangered Houston toad. NEPA requires much more than compliance with the Endangered Species Act, which appears to be the County's sole focus here. NEPA requires an evaluation of a wide variety of environmental impacts from a proposed project, including consideration of non-endangered wildlife.

For decisions on whether or not to prepare an EIS, NEPA requires the County to provide a "convincing statement of reasons to explain why a project's impacts are insignificant." *Native Ecosystems Council v. U.S. Forest Service*, 428 F.3d 1233, 1239 (9th Cir. 2005). But here, the "Summary of Findings and Conclusions" in the EA (at 36) does not actually contain any findings and conclusions resulting from the County's environmental review of the proposed project. Rather, this section simply contains a listing of measures that the County proposes to use to "minimize the effects of the project on the Houston toad." A convincing statement of reasons is also not provided elsewhere in the EA, in violation of NEPA. The County cannot properly determine whether to reach a FONSI or to move on to an EIS without such an analysis.

CONCLUSION

The proposed action is likely to significantly impact the environment, and therefore the County should address the above concerns in an Environmental Impact Statement. The County must also consider a reasonable range of alternatives and options with lesser impacts prior to allowing the proposed activities and the County must repair the numerous deficiencies in the EA or create an EIS. Thank you for the opportunity to comment.

Sincerely,

Jennifer Loda
Amphibian and Reptile Staff Attorney
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
jloda@biologicaldiversity.org

Paul Pape

From: Jenny Loda <JLoda@biologicaldiversity.org>
Sent: Monday, February 04, 2019 11:57 PM
To: Paul Pape
Cc: Jenny Loda
Subject: Comment on FONSI & ERR for Tahitian Village ingress/egress
Attachments: CBD Comments on ERR and FONSI Tahitian Village.pdf; email showing interested party.pdf

CAUTION: This email is from OUTSIDE Bastrop County. Links or Attachments may be dangerous.

Please see the attached comments on behalf of the Center for Biological Diversity.

Thanks,
Jenny Loda
Amphibian and Reptile Staff Attorney
Center for Biological Diversity
1212 Broadway, Ste 800
Oakland, CA 94612
(510) 844-7100 x 336
JLoda@biologicaldiversity.org

Paul Pape

From: JoAnne Egitto <jegit82@yahoo.com>
Sent: Monday, February 04, 2019 8:30 PM
To: Paul Pape; Mel Hamner; MeLissa Nemecek; Hadassah Schloss; Jeff Hill; United States Senate; Paul Hightower; communications@oag.texas.gov
Subject: Proposed release of HUD funds for ingress/egress road Tahitian Village, Bastrop, TX

CAUTION: This email is from OUTSIDE Bastrop County. Links or Attachments may be dangerous.

Please accept this response against the proposed HUD funded project in Tahitian Village, Bastrop, Texas for the following reasons:
-The proposed road would create hazards to people traveling in this specific area. The proposed road would connect to an unfinished road, Ulupau Drive, with steep elevations and blind curves that are treacherous even without smoke conditions of a forest fire.
-The proposed road is in a floodplain, which causes potentially hazardous driving conditions.
-The proposed route is actually right through the burn scar of the devastating 2011 Bastrop Complex Fire. Moving residents into that area (both ingressing or egressing)in an emergency creates pockets of roads where emergency first responder vehicles still cannot get to people quickly, if at all.
-The proposed route is one of four choices not fully explained to the public and which Horizon Engineering firm emails reveal the other locations as " strawman options" and that the wording needed favoring the route needed to be robust in order to hedge against critics during the regulatory process.
-The proposed route is probably more about land development, not safety, as the route, in its entirety, is circuitous and hardly direct to Route 71, the closest highway.
-Bastrop County has not been forthright with the public on the needs, cost and cost overruns of the project, having meetings not always held at times when public can attend. As the sole public attendee the recurring meetings did not allow any questions from the public, according to emails received from the county commissioners office. When I requested agendas, assistant county district attorney Gilleland stated, in writing, that the agendas were not agendas but rather topics of discussion. Then the meetings suddenly stopped.
-The biological assessment completed by Horizon Engineering was for another area of Bastrop County and no assessment was done on the actual area of the proposed route.
-BCWCID2 has authority of the connecting road to the proposed road into Tahitian Village and has no written plan to improve that road within the next 5 years according to the criteria of their road plan.
-Bastrop County has several other options for egressing people that have not been pursued.
-No public meeting was held exclusively to discuss the ingress egress project with the residents in Tahitian Village with prior notice of the subject matter.
-Tahitian Village POA never provided residents a chance to speak with agents of the county on the project during its planning process even though residents requested that on record during POA meetings.
-the BCWCID2 board member who chaired the road committee, sits on the Bastrop Economic Development Commission, and should recuse himself from any plans/actions/votes pertaining to this project instead of testifying in favor of it in commissioners court.

Respectfully,
JoAnne Egitto
512.948.5759

February 4, 2019

AP
FEB 04 2019

Dear Inspector General Of HUD, The Texas Attorney General, The Texas General Land Office, and The Bastrop County Public Record,

We formally oppose the proposed Tahitian Village Ingress / Egress, in all of its parts, and Phases, including Phase 1, and especially any proposal to include our property, R97691,due to the fact that the Bastrop County Assistant District Attorney Greg Gilleland wrote a letter, on July 9, 2018, stating in his "Brief Factual Background," that Bastrop County is going:

"to give requestor an exchange of two (2) acres adjacent and adjoining the north end of his property in exchange for the one acre where the roadway will be built;"

Neither my attorneys, nor myself, has ever received said offer.

Deeply concerned,

Chris and RaeAnne Parachini, and the Parachini Family
The Copperas Creek Houston Toad Preserve
102 Norfolk Drive
Bastrop, Texas 78602

512-838-1361

RaeAnne Parachini

AUSTIN COMMUNITY NEWSPAPERS

PROOF OF PUBLICATION

STATE OF TEXAS

PUBLIC NOTICE

Before me, the undersigned authority, a Notary Public in and for the County of Bastrop, State of Texas, on this day personally appeared Jalen Rocha, Advertising Agent of the Bastrop Advertiser, which is a newspaper of general circulation published in the county of Bastrop in the state of Texas, who being duly sworn by me, states that the attached advertisement was published at the lowest published rate for Classified advertising in said newspaper on the following date(s), to wit, and that the attached is a true copy of said advertisement: the following date(s), COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDSAND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A, first date of Publication 01/19/2019, last date of Publication 01/19/2019, web and print times Published 1.

FUTURE LINK TECHNOLOGIES, INC.
P.O. BOX 90696
AUSTIN, TX 78709

Invoice/Order Number:	0000449061
Ad Cost:	$1,573.15
Paid:	$1,573.15
Balance Due:	$0.00

Signed _____
(Legal Advertising Agent)

Sworn or affirmed to, and subscribed before me, this 25th day of January, 2019 in Testimony whereof, I have hereunto set my hand and affixed my official seal, the day and year aforesaid.

Signed _____
(Notary)

SHARY GARZA
Notary Public, State of Texas
Comm. Expires 01-25-2022

Please see Ad on following page(s).

FUTURE LINK TECHNOLOGIES, INC.
P.O. BOX 90696
AUSTIN, TX 78709

Invoice/Order Number:	0000449061
Ad Cost:	$1,573.15
Paid:	$1,573.15
Balance Due:	$0.00

COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS–AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND

January 19, 2019
Bastrop County, 804 Pecan Street, Bastrop, TX 78602, Ph: (512) 332-7201, Fax: (512) 581-7103

This Notice shall satisfy the above-cited three separate but related procedural notification requirements.

TO ALL INTERESTED PARTIES: TPWD, USEPA, TGLO, USFWS, USACE, FEMA, TWDB, LCRA, CAPCOG, Bastrop County WCID #2, City of Bastrop, Groups and Individuals, Citizens of the County of Bastrop.

REQUEST FOR RELEASE OF FUNDS

On or about February 5, 2019 Bastrop County (the County) will submit a request to the Texas General Land Office (TGLO) for the release of Community Development Block Grant Disaster Recovery (CDBG-DR) funds under Title I of the Housing & Community Development Act of 1974, as amended to undertake a project known as Tahitian Village Subdivision Phase 1 – Tahitian Village Contract #13-353-000-7707 Bastrop County Grant #WFR010001. The proposed improvements will take place within the County of Bastrop, Texas where the County is in need of a new ingress & egress route into & out of the Tahitian Village subdivision during future wildfire events. Specifically, as a result of the Texas Wildfires in 2011, the Tahitian Village Subdivision did not have sufficient ingress & egress routes into & out of the subdivision which threatened the public health, safety, & welfare of this subdivision due to the lack of a sufficient access route for emergency services & a quick evacuation route for residents. USFWS consultation FWS/R2/CESFO/02ETXX0-2017-F-1025. Mitigation for the project will include: 1) County will purchase approximately 21.6-acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat. 2) Biology will monitor Houston toad's lifecycle ensuring no impact by promoting phased work outside of the Houston toad breeding season if possible & implement protective measures, such barrier silt fencing installation, monitoring & control to prevent Houston toads from entering the work zone. Clean up & reseed. 3) Prior to work commencement, permitted biologist provides awareness training on Houston toad life cycle & habitat requirements to all personnel work crews, their supervisors, & involved County employees–including new employees–working with project. 4) Provide documented construction instructions related to Conservation Measures & Reasonable & Prudent Measures for all contractor(s) which includes construction sequencing to restore critical habitat. 5) Construction stand down for 24 hours for a 2" accumulation of rain (NOAA weather records) over a 48-hour period. 6) Entry & exit points for construction equipment limited to two ends of proposed roadway. 7) Offsite staging or materials storage limited to established construction yards. 8) Equipment staging or fueling occurs on existing ROW. 9) Daily inspections for leaks of diesel & gasoline fueled equipment. 10) After construction debris mulch chips from operations must not exceed 2" surface depth & site cleanup to occur preventing artificial breeding grounds. Biological Monitoring will include: County hires a) biological monitor & respond to habitat issues as needed for construction 04/01–12/31b) qualified biologists to monitor construction from 12/31 – 04/01 & communicate regularly with Dr. Michael Forstner Texas State University. If Houston toad is identified at the worksite anytime, all construction must stop & contact USFWS immediately. Report extent of take. USFWS Terms & Conditions defines project areas, inspection frequencies, & report-

ing herbicides use – allowed only between 7/1 & 12/31. If conditions change or construction is significantly altered, re-initiation of consultation or review may be required. 11) Remove potential hazards from proposed project area prior to construction. Daily cover & monitor open trenches. 12) Conduct most l&-clearing in woodland & shrub l& habitats outside migratory bird primary nesting season (03/01-09/01); if not possible, biologist conducts nests survey prior to construction & follow USFWS conservation steps if found. Avoid contact with wildlife, provide list of endangered species list to contractors. Stop construction if found & contact TPWD. 13) If any historic properties are discovered or if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area & please contact THC for further direction 14) Bastrop County must submit a USACE certification that work, plus proposed mitigation, was completed in compliance with that nationwide permit 14 within 30 days of the completion of work. This action will significantly affect a small increment of the designated critical habitat in Bastrop County or approximately 7 acres in the permanent ROW & a total of 21.6 acres during construction, of an estimated 82,000 acres. The effects to critical habitat indirectly impact an additional approximate 1,300 acres by subjecting this area of critical habitat to road effects indefinitely into the future where that is not the case presently. Grant funding is approximately $4,260,437.

FINDING OF NO SIGNIFICANT IMPACT

Bastrop County has determined that the project will have no significant impact on the human environment. Therefore, an Environmental Impact Statement under the National Environmental Policy Act of 1969 (NEPA) is not required. Additional project information is contained in the Environmental Review Record (ERR) on file at Bastrop County Courthouse: Paul Pape, Judge, 804 Pecan Street, Bastrop, Texas 78602. A full description of the project may also be reviewed from 9:00 AM to 5:00 PM at 804 Pecan Street, Bastrop, Texas 78602. Comments may also be submitted via email at paul.pape@co.bastrop.tx.us

FINAL NOTICE AND PUBLIC EXPLANATION OF PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND

This is to give notice that the Bastrop County under Part 58 has conducted an evaluation as required by Executive Orders 11988 & 11990, in accordance with HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management & Wetlands, to determine the potential affect that its activity in the floodplain & wetland will have on the human environment for Community Development Block Grant Program for 2008 Supplemental Disaster Recovery under Title 1 of Section 104 (f) of the Housing & Community Development Act of 1974, as amended, to undertake a project known as Tahitian Village Subdivision Phase 1 – Tahitian Village Contract #13-353-000-7707 Bastrop County Grant #WFR010001.

HUD's Floodplain Management Regulations 8-Step decision-making processes of §55.20 to comply with 24 CFR Part 55 was completed because the proposed project is located within the floodplain as indicated by a proposed project identified as Street Improvements for Phase 1 Tahitian Village Subdivision as: construct a new roadway to approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base & a two course surface treatment, & perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71- approximately 17,100 lf (approximately 11,960 lf of new road). According to FEMA Map Panels 48021C0400E & 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain. In addition, according to the USFWS national wetland inventory data & field delineation, the project may impact approximately 844 linear feet (0.16 acre) of WOUS (ephemeral & perennial stream channels), USACE approved NWP 14.

Bastrop County has considered the following alternatives & mitigation measures to be taken to minimize adverse impacts & to restore & preserve natural & beneficial values. 1) Moving the project outside the Houston Toad criti-

cal habitat was considered, however, the entire area where the ingress/egress is needed is located within the critical habitat. In addition, this would not meet the need to provide additional ingress/egress to Tahitian Village Subdivision. 2) Three different alternative routes to the preferred alternative route were considered & were a) determined to be more expensive since additional bridge construction would be necessary in Alternative 1; b) Alternative 2 & 3 while reducing impact to Houston Toad would not meet the purpose of the project by not providing an additional ingress/egress to the Tahitian Village area at Highway 71. 3) Not improving ingress/egress at Tahitian Village would not impact the Houston toad, however, this would not preserve human health by providing sufficient escape routes during emergencies for residents & prevents emergency vehicles from accessing residents in case of emergency. The County will ensure consistency with state & local floodplain protection procedures.

Bastrop County has reevaluated the alternatives to building in the floodplain & wetlands & has determined that it has no practicable alternative. Environmental files that document compliance with steps 3 through 6 of Executive Order 11988 & 11990, are available for public inspection, review & copying upon request at the times & location delineated in the last paragraph of this notice for receipt of comments. This activity will have no significant impact on the environment for the following reasons: the project is a high priority for the County & construction of the new ingress/egress is economically feasible, offers minimal impact to wetlands & the 100-year floodplain & will ensure human health & the environment.

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains & wetlands & those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns & provide information about these areas. Second, an adequate public notice program can be an important public educational tool. The dissemination of information about floodplains & wetlands can facilitate & enhance Federal efforts to reduce the risks associated with the occupancy & modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains, it must inform those who may be put at greater or continued risk.

PUBLIC COMMENTS

Any individual, group, or agency may submit written comments on the Environmental Review Record to Bastrop County designated office responsible for receiving & responding to comments. All comments received by February 4, 2019 will be considered by Bastrop County, prior to authorizing submission of a request for release of funds. Written comments regarding the Final Floodplain Notice must be received by the Bastrop County at the following address on or before January 28, 2019, a minimum 7 calendar day comment period will begin the day after the publication & end on the 8th day after the publication: Bastrop County Courthouse: Paul Pape, Judge, 804 Pecan Street, Bastrop, Texas 78602.

ENVIRONMENTAL CERTIFICATION

Bastrop County certifies to TGLO that Paul Pape in his capacity as County Judge consents to accept the jurisdiction of the Federal Courts if an action is brought to enforce responsibilities in relation to the environmental review process & that these responsibilities have been satisfied. TGLO approval of the certification satisfies its responsibilities under NEPA & related laws & authorities & allows the Bastrop County to use Program funds.

OBJECTIONS TO RELEASE OF FUNDS

TGLO will accept objections to its release of funds & Bastrop County's certification by its actual receipt of the request (whichever is later) only if they are on one of the following bases: (a) the certification was not executed by the Certifying Officer of the Bastrop County; (b) Bastrop County has omitted a step or failed to make a decision or finding required by HUD regulations at 24 CFR Part 58; (c) the grant recipient has committed funds or incurred costs not authorized by 24 CFR Part 58 before approval of a release of funds by TGLO, or (d) another Federal agency acting pursuant to 40 CFR Part 1504

has submitted a written finding that the project is unsatisfactory from the standpoint of environmental quality. Objections must be prepared & submitted in accordance with the required procedures (24 CFR Part 58) & shall be addressed to Texas General Land Office grant administration office at 3429 Executive Center Drive, Suite 150, Austin Texas 78731-1658 of that office. Potential objectors should contact TGLO to verify actual last day of the objection period. Paul Pape, Bastrop County Judge.

1/19/2019

0000449051-01

From:	Michael Segner
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:39:44 AM
Importance:	High

Your message
To: Michael Segner
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 9:49:36 AM (UTC-06:00) Central Time (US & Canada)
was read on Tuesday, January 22, 2019 7:40:45 AM (UTC-06:00) Central Time (US & Canada).

From:	Carolyn Dill, P.E.
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:40:10 AM
Importance:	High

Your message
To: Carolyn Dill, P.E.
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 9:49:36 AM (UTC-06:00) Central Time (US & Canada)
was read on Monday, January 21, 2019 8:36:24 PM (UTC-06:00) Central Time (US & Canada).

From:	Celine Finney
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:40:54 AM
Importance:	High

Your message
To: Celine Finney
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 9:49:36 AM (UTC-06:00) Central Time (US & Canada)
was read on Monday, January 21, 2019 9:20:06 AM (UTC-06:00) Central Time (US & Canada).

From:	Anderson, Leah E
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:41:00 AM
Importance:	High

Your message
To: Anderson, Leah E
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 3:49:36 PM (UTC+00:00) Dublin, Edinburgh, Lisbon, London
was read on Monday, January 21, 2019 3:00:57 PM (UTC+00:00) Dublin, Edinburgh, Lisbon, London.

From:	Rick Arnic
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:42:50 AM
Importance:	High

Your message
To: Rick Arnic
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 9:49:36 AM (UTC-06:00) Central Time (US & Canada)
was read on Saturday, January 19, 2019 2:15:53 PM (UTC-06:00) Central Time (US & Canada).

From:	mharmon@future-link.biz
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:42:52 AM
Attachments:	Read_ Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND.txt
Importance:	High

Your message
To: Unknown
Subject:

From:	Paul Pape
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:43:04 AM
Importance:	High

Your message
To: Paul Pape
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 9:49:36 AM (UTC-06:00) Central Time (US & Canada)
was read on Saturday, January 19, 2019 11:16:42 AM (UTC-06:00) Central Time (US & Canada).

From:	Judy Langford
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Monday, January 28, 2019 10:43:06 AM
Importance:	High

Your message
To: Judy Langford
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 9:49:36 AM (UTC-06:00) Central Time (US & Canada)
was read on Saturday, January 19, 2019 10:33:39 AM (UTC-06:00) Central Time (US & Canada).

From:	Carter, Zach R
To:	lhertzler@future-link.biz
Subject:	Read: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Date:	Tuesday, January 29, 2019 9:35:50 AM
Importance:	High

Your message
To: Carter, Zach R
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS - AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Sent: Saturday, January 19, 2019 9:49:36 AM (UTC-06:00) Central Time (US & Canada)
was read on Monday, January 28, 2019 12:32:55 PM (UTC-06:00) Central Time (US & Canada).

lhertzler@future-link.biz

From: lhertzler@future-link.biz
Sent: Saturday, January 19, 2019 9:50 AM
To: 'leah.anderson@fema.dhs.gov'; 'houston.robert@epa.gov'; 'Zach.R.Carter@hud.gov'; 'Celine Finney'; 'Latrice Hertzler (lhertzler@future-link.biz)'; 'mharmon@future-link.biz'; 'michael.segner@twdb.texas.gov'; 'cschreck@capcog.org'; 'jim@bcwcid2.org'; 'WHAB@tpwd.texas.gov'; 'rick.arnic@lcra.org'; 'humble@cityofbastrop.org'; 'humble@cityofbastrop.org'; 'cschreck@capcog.org'
Cc: 'carolyn.dill@co.bastrop.tx.us'; 'Judy@lcmsinc.com'; 'paul.pape@co.bastrop.tx.us'; 'Sue.cerf@co.bastrop.tx.us'; 'Latrice Hertzler (lhertzler@future-link.biz)'
Subject: Bastrop County Tahitian Village Notice - COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS – AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
Attachments: Bastrop TV Combined Final Floodplain and WOUS FONSI EA Projects FINAL11519.pdf

Importance: High

Tracking:

Recipient	Read
'leah.anderson@fema.dhs.gov'	
'houston.robert@epa.gov'	
'Zach.R.Carter@hud.gov'	
'Celine Finney'	
'Latrice Hertzler (lhertzler@future-link.biz)'	
'mharmon@future-link.biz'	
'michael.segner@twdb.texas.gov'	
'cschreck@capcog.org'	
'jim@bcwcid2.org'	
'WHAB@tpwd.texas.gov'	
'rick.arnic@lcra.org'	
'humble@cityofbastrop.org'	
'humble@cityofbastrop.org'	
'cschreck@capcog.org'	
'carolyn.dill@co.bastrop.tx.us'	
'Judy@lcmsinc.com'	
'paul.pape@co.bastrop.tx.us'	
'Sue.cerf@co.bastrop.tx.us'	
'Latrice Hertzler (lhertzler@future-link.biz)'	
Rick Arnic	Read: 1/19/2019 2:16 PM
mharmon@future-link.biz	Read: 1/19/2019 1:25 PM
Paul Pape	Read: 1/19/2019 11:17 AM
Judy Langford	Read: 1/19/2019 10:34 AM
Anderson, Leah E	Read: 1/21/2019 9:01 AM
Carolyn Dill, P.E.	Read: 1/21/2019 8:36 PM

Dear Sir/Madam:

Bastrop County has been awarded funding under the Texas General Land Office (TGLO) Community Development Block Grant Program for 2008 Supplemental Disaster Recovery (CDBG-DR) for the above-referenced project located within the 100-year floodplain and wetland. This notice is being published in the Bastrop Advertiser on January 19, 2019.

In accordance with Executive Order 11988 and US HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, your organization has been

identified as a potential interested party regarding the Bastrop County Texas Community Development Block Grant – Disaster Recovery ingress/egress project which is located within the 100-year floodplain.

The project activities will be identified as Street Improvements for Phase 1 Tahitian Village Subdivision for a new roadway approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base and a two course surface treatment, and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71- approximately 17,100 lf (approximately 11,960 lf of new road). Please see publication for more information regarding project limitations and mitigations.

The County has completed an environmental review consistent with HUD requirements under the National Environmental Policy Act (NEPA) for Environmental Assessment (EA) projects and has determined that there will be no significant impact as a result of the project. Attached please find the public notice referenced as the **COMBINED NOTICE OF FINDING OF NO SIGNIFICANT IMPACT AND INTENT TO REQUEST RELEASE OF FUNDS – AND FINAL NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND.**

If you have any questions regarding this email, please contact me by telephone at 512-791-6685, electronic mail at lhertzler@future-link.biz or U.S. Mail at PO Box 90696, Austin, TX 78709.

Best Regards,

Latrice Hertzler
Environmental Service Provider

Latrice Hertzler
Future Link Technologies, Inc.
P.O. Box 90696
Austin, TX 78709
512-443-4100 ofc
512-791-6685 cell

From:	Latrice Hertzler
To:	"Jim Ouellet"
Cc:	"Melanie Harmon"; Latrice Hertzler (lhertzler@future-link.biz)
Subject:	RE: Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain & Wetland (WOUS) for Tahitian Village Bastrop County CDBG Disaster Recovery Project
Date:	Monday, September 25, 2017 8:51:00 AM
Attachments:	160048A05PABG2_DetailedView (002DRAFT).pdf

A draft map is attached.

Thanks,

Latrice Hertzler

From: Jim Ouellet [mailto:Jim@bcwcid2.org]
Sent: Monday, September 25, 2017 8:35 AM
To: Latrice Hertzler <lhertzler@future-link.biz>
Subject: RE: Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain & Wetland (WOUS) for Tahitian Village Bastrop County CDBG Disaster Recovery Project

Thank you. Would you have a map showing the location of the proposed road. Thanks, Jim

Jim Ouellet, P.E.
General Manager
BCWCID # 2
jim@bcwcid2.org
office 512 321 1688

From: Latrice Hertzler [mailto:lhertzler@future-link.biz]
Sent: Sunday, September 24, 2017 6:37 PM
To: leah.anderson@fema.dhs.gov; Michael.segner@twdb.state.tx.us; Zach.R.Carter@hud.gov; cschreck@capcog.org; houston.robert@epa.gov; WHAB@tpwd.texas.gov; Natasha.A.Robinson@usace.army.mil; rick.arnic@lcra.org; Jim Ouellet <Jim@bcwcid2.org>; humble@cityofbastrop.org; jeffrey_hill@fws.gov
Cc: 'Kelly Warner' <Kelly.Warner@GLO.TEXAS.GOV>; Judy@lcmsinc.com; Gena Hawkins <Gena.Hawkins@GLO.TEXAS.GOV>; 'Sue Cerf' <Sue.cerf@co.bastrop.tx.us>; 'Carolyn Dill' <carolyn.dill@co.bastrop.tx.us>; 'Melanie Harmon' <mharmon@future-link.biz>; 'Paul Pape' <paul.pape@co.bastrop.tx.us>; 'Lee Sherrod' <lee_sherrod@horizon-esi.com>; Latrice Hertzler <lhertzler@future-link.biz>
Subject: Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain & Wetland (WOUS) for Tahitian Village Bastrop County CDBG Disaster Recovery Project

Dear Sir/Madam:

In accordance with Executive Order 11988 and US HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, your organization has been identified as a potential interested party regarding the Bastrop County Texas Community Development Block Grant – Disaster Recovery ingress/egress project which is located within the 100-year floodplain.

The project activities will be identified as Street Improvements for Phase 1 Tahitian Village Subdivision for a new roadway approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base and a two course surface treatment, and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71- approximately 17,100 lf (approximately 11,960 lf of new road). According to FEMA Map Panels 48021C0400E and 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain. In addition, according to the USFWS national wetland inventory data and field delineation, the project may impact approximately 844 linear feet (0.16 acre) of WOUS (ephemeral and perennial stream channels).

On behalf of the Bastrop County HUD Disaster Recovery Project, you are being provided a copy of the Early Notice and Public Review of a Proposed Activity in a 100-year floodplain which is being published in the Bastrop County paper of record, "The Austin American Statesmen" (Bastrop Ads) on September 23, 2017. If you have further interest about the project activity located within the 100-year floodplain or WOUS, please refer to the publication written comment section of the ad for submitting comments to Bastrop County.

If you have other questions or need additional information regarding this letter, please contact me by telephone at 512-443-4100, electronic mail at lhertzler@future-link.biz or U.S. Mail at PO Box 90696, Austin, TX 78709.

Latrice Hertzler
Future Link Technologies, Inc.
P.O. Box 90696
Austin, TX 78709
512-443-4100 ofc
512-791-6685 cell

Latrice Hertzler

From: Jim Ouellet <Jim@bcwcid2.org>
Sent: Monday, September 25, 2017 8:35 AM
To: Latrice Hertzler
Subject: RE: Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain & Wetland (WOUS) for Tahitian Village Bastrop County CDBG Disaster Recovery Project

Thank you. Would you have a map showing the location of the proposed road. Thanks, Jim

Jim Ouellet, P.E.
General Manager
BCWCID # 2
jim@bcwcid2.org
office 512 321 1688

From: Latrice Hertzler [mailto:lhertzler@future-link.biz]
Sent: Sunday, September 24, 2017 6:37 PM
To: leah.anderson@fema.dhs.gov; Michael.segner@twdb.state.tx.us; Zach.R.Carter@hud.gov; cschreck@capcog.org; houston.robert@epa.gov; WHAB@tpwd.texas.gov; Natasha.A.Robinson@usace.army.mil; rick.arnic@lcra.org; Jim Ouellet <Jim@bcwcid2.org>; humble@cityofbastrop.org; jeffrey_hill@fws.gov
Cc: 'Kelly Warner' <Kelly.Warner@GLO.TEXAS.GOV>; Judy@lcmsinc.com; Gena Hawkins <Gena.Hawkins@GLO.TEXAS.GOV>; 'Sue Cerf' <Sue.cerf@co.bastrop.tx.us>; 'Carolyn Dill' <carolyn.dill@co.bastrop.tx.us>; 'Melanie Harmon' <mharmon@future-link.biz>; 'Paul Pape' <paul.pape@co.bastrop.tx.us>; 'Lee Sherrod' <lee_sherrod@horizon-esi.com>; Latrice Hertzler <lhertzler@future-link.biz>
Subject: Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain & Wetland (WOUS) for Tahitian Village Bastrop County CDBG Disaster Recovery Project

Dear Sir/Madam:

In accordance with Executive Order 11988 and US HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, your organization has been identified as a potential interested party regarding the Bastrop County Texas Community Development Block Grant – Disaster Recovery ingress/egress project which is located within the 100-year floodplain.

The project activities will be identified as Street Improvements for Phase 1 Tahitian Village Subdivision for a new roadway approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base and a two course surface treatment, and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71- approximately 17,100 lf (approximately 11,960 lf of new road). According to FEMA Map Panels 48021C0400E and 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain. In addition, according to the USFWS national wetland inventory data and field delineation, the project may impact approximately 844 linear feet (0.16 acre) of WOUS (ephemeral and perennial stream channels).

On behalf of the Bastrop County HUD Disaster Recovery Project, you are being provided a copy of the Early Notice and Public Review of a Proposed Activity in a 100-year floodplain which is being published in the Bastrop County paper of record, "The Austin American Statesmen" (Bastrop Ads) on September 23, 2017. If you have further interest about the project activity located within the 100-year floodplain or WOUS, please refer to the publication written comment section of the ad for submitting comments to Bastrop County.

If you have other questions or need additional information regarding this letter, please contact me by telephone at 512-443-4100, electronic mail at lhertzler@future-link.biz or U.S. Mail at PO Box 90696, Austin, TX 78709.

Latrice Hertzler
Future Link Technologies, Inc.
P.O. Box 90696
Austin, TX 78709
512-443-4100 ofc
512-791-6685 cell

Order Confirmation

Ad Order Number	Customer	Payor Customer	PO Number
0000220531	Future Link Technologies, Inc.	Future Link Technologies, Inc.	
Sales Rep.	**Customer Account**	**Payor Account**	**Ordered By**
andrea.feltner	40034	40034	LATRICE HERTZLER
Order Taker	**Customer Address**	**Payor Address**	**Customer Fax**
andrea.feltner	P.O. Box 90696 AUSTIN TX 78709 USA	P.O. Box 90696 AUSTIN TX 78709 USA	**Customer EMail**
Order Source	**Customer Phone**	**Payor Phone**	**Special Pricing**
Non Web	5124434100	5124434100	

Invoice Text

Ad Order Notes

Net Amount	Tax Amount	Total Amount	Payment Amount	Amount Due
$478.41	$0.00	$478.41	$0.00	$478.41

Ad Number	Ad Type	Production Method	Production Notes
0000220531-01	Legal	AdBooker	

External Ad Number	Ad Attributes	Ad Released	Pick Up
		No	

Ad Size	Color
1 X 111 li	

Run Date	Product	Placement	Sched Cst	Disc/Prem	Color	Pickup	Tax	Subtotal
09/23/2017	S-Bastrop Advertiser	Legals	$478.41	$0.00	$0.00	$0.00	$0.00	$478.41
09/23/2017 - 10/23/2017	S-Web	Legals	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Ad Content

Published in the Bastrop Advisor - Austin American Statesman

Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain and Wetland/WOUS

To: All interested Agencies: TPWD, USEPA, TGLO, USFWS, USACE, FEMA, TWDB, LCRA, Capital Area Council of Governments (CAPCOG), Bastrop County WCID #2, City of Bastrop, Groups and Individuals, Citizens of the County of Bastrop.

This is to give notice that County of Bastrop has determined that the following proposed action under the Texas General Land Office Contract #13-353-000-7707 Bastrop County Grant #WFR010001 will be identifying and evaluating practicable alternatives to locating the action in the floodplain and wetland or waters of the US (WOUS) and the potential impacts on the floodplain and wetland/WOUS from the proposed action as required by Executive Order 11988 in a floodplain and 11990 in wetlands in accordance with HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management and Protection of Wetlands. The proposed improvements will take place within the County of Bastrop, Texas where the County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events. Specifically, as a result of the Texas Wildfires in 2011, the Tahitian Village Subdivision did not have sufficient ingress and egress routes into and out of the subdivision which threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents.

A proposed project identified as Street Improvements for Phase 1 Tahitian Village Subdivision is described as: construct a new roadway to approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base and a two course surface treatment, and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71- approximately 17,100 lf (approximately 11,960 lf of new road) and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71. According to FEMA Map Panels 48021C0400E and 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain. In addition, according to the USFWS national wetland inventory data and field delineation, the project may impact approximately 844 linear feet (0.16 acre) of WOUS (ephemeral and perennial stream channels).

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains and/or wetland/WOUS and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Commenters are encouraged to offer alternative sites outside of the floodplain and/or wetland/WOUS, alternative methods to serve the same project purpose, and methods to minimize and mitigate impacts. Second, an adequate public notice program can be an important public educational tool. The dissemination of information and request for public comment about floodplains and/or wetland/WOUS can facilitate and enhance Federal efforts to reduce the risks and impacts associated with the occupancy and modification of these special areas. Third, as a matter of fair-

ness, when the Federal government determines it will participate in actions taking place in floodplains and/or wetland/WOUS, it must inform those who may be put at greater or continued risk. Written comments must be received at the following address on or before October 10, 2017: Bastrop County Attention: Paul Pape, Judge, 804 Pecan Street, Bastrop, Texas 78602. A full description of the project may also be reviewed from 9:00 AM to 5:00 PM at 804 Pecan Street, Bastrop, Texas 78602. Comments may also be submitted via email at paul.pape@co.bastrop.tx.us. Published Date: September 23, 2017 9-23/2017

0000220531-01

Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain and Wetland/WOUS

To: All interested Agencies: TPWD, USEPA, TGLO, USFWS, USACE, FEMA, TWDB, LCRA, Capital Area Council of Governments (CAPCOG), Bastrop County WCID #2, City of Bastrop, Groups and Individuals, Citizens of the County of Bastrop.

This is to give notice that County of Bastrop has determined that the following proposed action under the Texas General Land Office Contract #13-353-000-7707 Bastrop County Grant #WFR010001 will be identifying and evaluating practicable alternatives to locating the action in the floodplain and wetland or waters of the US (WOUS) and the potential impacts on the floodplain and wetland/WOUS from the proposed action as required by Executive Order 11988 in a floodplain and 11990 in wetlands in accordance with HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management and Protection of Wetlands. The proposed improvements will take place within the County of Bastrop, Texas where the County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events. Specifically, as a result of the Texas Wildfires in 2011, the Tahitian Village Subdivision did not have sufficient ingress and egress routes into and out of the subdivision which threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents.

A proposed project identified as Street Improvements for Phase 1 Tahitian Village Subdivision is described as: construct a new roadway to approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base and a two course surface treatment, and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71- approximately 17,100 lf (approximately 11,960 lf of new road). According to FEMA Map Panels 48021C0400E and 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain. In addition, according to the USFWS national wetland inventory data and field delineation, the project may impact approximately 844 linear feet (0.16 acre) of WOUS (ephemeral and perennial stream channels).

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains and/or wetland/WOUS and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Commenters are encouraged to offer alternative sites outside of the floodplain and/or wetland/WOUS, alternative methods to serve the same project purpose, and methods to minimize and mitigate impacts. Second, an adequate public notice program can be an important public educational tool. The dissemination of information and request for public comment about floodplains and/or wetland/WOUS can facilitate and enhance Federal efforts to reduce the risks and impacts associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains and/or wetland/WOUS, it must inform those who may be put at greater or continued risk. Written comments must be received at the following address on or before October 10, 2017: Bastrop County Attention: Paul Pape, Judge, 804 Pecan Street, Bastrop, Texas 78602. A full description of the project may also be reviewed from 9:00 AM to 5:00 PM at 804 Pecan Street, Bastrop, Texas 78602. Comments may also be submitted via email at paul.pape@co.bastrop.tx.us. Published Date: September 23, 2017

PO Box 90696
Austin, TX 78709-0696

Future Link Technologies

512 – 443-4100 (Ofc)
512-233-5269 (Fax)

Environmental and Technology Consulting

September 23, 2017

VIA EMAIL

Leah Anderson leah.anderson@fema.dhs.gov
EHP Advisor
Federal Emergency Management Agency (FEMA)
FRC 800 North Loop 288
Denton, TX 76209-3698

Michael Segner Michael.segner@twdb.state.tx.us
State National Floodplain Insurance Program
(NFIP) Coordinator
Texas Water Development Board
1700 North Congress Avenue
PO Box 13231
Austin, TX 78711-3231

Zach Carter Zach.R.Carter@hud.gov
Field Environmental Officer, Region VI
US Department of Housing and Urban
Development
Office of Environment and Energy
801 Cherry St., Unit.45 Suite 2500
Fort Worth, Texas 76102

Chris Schreck cschreck@capcog.org
Director
Planning and Economic Development
6800 Burleson Rd.
Building 310, Suite 165
Austin, TX 78744

Robert Houston houston.robert@epa.gov
Chief, Special Projects Section
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200 (6EN-WS)
Dallas, TX 75202-2733

WHAB@tpwd.texas.gov
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Regional Planning Environmental Center
Natasha.A.Robinson@usace.army.mil
U.S. Army Corps of Engineers, Fort Worth District
Regulatory Division (CESWF-DE-R)
819 Taylor Street, Room 3A37
Post Office Box 17300
Fort Worth, Texas 76102-0300

Rick Arnic, rick.arnic@lcra.org
LCRA Regional Affairs
Mid-Basin

Jim Ouellett jim@bcwcid2.org
General Manager
106 Conference Dr.
Bastrop, TX, 78602

Lynda Humble, lhumble@cityofbastrop.org
City of Bastrop
1311 Chestnut Street,
Bastrop Texas 78602

Jeff Hill jeffrey_hill@fws.gov
U.S. Fish and Wildlife Service
Fish and Wildlife Biologist
Texas Coastal Ecological Services Field Office
17629 El Camino Real, Ste. 211
Houston, TX 77058-3051

RE: Bastrop County Fires - 2011
CDBG Community Development and Revitalization
Tahitian Village Ingress/Egress
Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain & Wetland (WOUS)

Dear Sir/Madam:

In accordance with Executive Order 11988 and US HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, your organization has been identified as a potential interested party regarding the Bastrop County, Texas

Community Development Block Grant – Disaster Recovery ingress/egress project which is located within the 100-year floodplain and will occur at or adjacent to Waters of the US (WOUS).

The project activities will be identified as Street Improvements for Phase 1 Tahitian Village Subdivision for a new roadway approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base and a two course surface treatment, and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71- approximately 17,100 lf (approximately 11,960 lf of new road). According to FEMA Map Panels 48021C0400E and 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain. In addition, according to the USFWS national wetland inventory data and field delineation, the project may impact approximately 844 linear feet (0.16 acre) of WOUS (ephemeral and perennial stream channels).

On behalf of the Bastrop County HUD Disaster Recovery Project, you are being provided a copy of the Early Notice and Public Review of a Proposed Activity in a 100-year floodplain which is being published in the Bastrop County paper of record, "The Austin American Statesmen" Bastrop Ads on September 23, 2017. If you have further interest about the project activity located within the 100-year floodplain or WOUS, please refer to the publication written comment section of the ad for submitting comments to Bastrop County.

If you have other questions or need additional information regarding this letter, please contact me by telephone at 512-443-4100, electronic mail at lhertzler@future-link.biz or U.S. Mail at PO Box 90696, Austin, TX 78709.

Regards,

Latrice Hertzler
Environmental Service Provider

Enclosures: Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain

Cc: Paul Pape, County Judge
Paul.pape@co.bastrop.tx.us
Bastrop County

Sue Cerf, sue.cerf@co.bastrop.tx.us
Emergency Management Liaison
Bastrop County

Kelly Warner, kelly.warner@glo.texas.gov
Environmental Specialist
Community Development and Revitalization (CDR)
Texas General Land Office

Attachment C

Field Observation Report

Project Name: Bastrop Sanitary Village

ERR #:

Date of Field Visit: 6/16

General Information

County	Bastrop
City	—
GPS Site Location	—

Ecological Site Information

General site description (residential, commercial, forested, grassland, etc.):

Residential (partial)
Cliffs & undisturbed area

Water bodies present? If yes, describe (pond, lake, creek, river, wetland, etc.):

Yes / Creek - Pigeon roost hollow

Special or unique vegetation features?

Undulating areas - cliffs & rough terrain

Special wildlife habitat?

None observed but area is very rough (partial)

Observed wildlife:

None

National, state, or locally designated park or natural reserve at, or adjacent to, project site?

Bastrop state park across Hwy 71

Hazardous Material Issues

Yes/No	Does the project include any of the following activities (indicate all that apply)?
No	Structure demolition operations or structure modifications.
	If yes, is there potential for the building to contain asbestos or lead-based paint?
YES	Pipeline and underground utility installation or adjustments.
Yes	De-watering.
Yes	Purchase of new ROW or easement.
Yes	Trenching, drilled shafts, cuts or other excavations.

Project Site Survey

(Yes/No)	Specific concerns identified on, or adjacent to, project area:
NO	aboveground storage tanks
No	underground storage tanks

Attachment C

No	vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground
None	electrical and transformer equipment
	If yes, are there signs of leaking transformers oil (PCBs) on the ground?
None	injection wells, cisterns, sumps, dry wells flooring, drains, or walls stained by substances other than water or emitting foul odors
No	vats, 55-gallon drums (labeled/unlabeled), canisters, barrels, bottles, etc.
No	surface dumping of trash, garbage, refuse, rubbish, debris half exposed/buried, landfill, stockpiling, storage, etc.
No	damaged or discarded automotive or industrial batteries
No	stained, discolored, barren, exposed or foreign (fill) soil
No	dead, damaged or stressed vegetation
No	oil sheen or films on surface water, seeps, lagoons, ponds, or drainage basins
No	pits, ponds, or lagoons associated with waste treatment or waste disposal
No	changes in drainage patterns from possible fill areas
No	security fencing, protected areas, placards, warning signs
No	dead animals possibly due to contamination
	other concerns (*Describe below*):
Miscellaneous Observations	
(Yes/No)	**Other compliance factors identified on, or adjacent to, project area:**
No	Historic age buildings
No	Refineries
	Airports, runway strips
	Educational facilities
	Commercial facilities
	Healthcare facilities
	Social services facilities

Describe any "Yes" answers indicated above:

The area will be excavated for a new road & for drainage.

Any additional information:

This area is a critical habitat for Houston Toad

(Signature of field investigator) 6/16

Name of Site Investigator Date

Title

Company

Took photos & have maps - used GPS tracking to map out possible route -

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT:

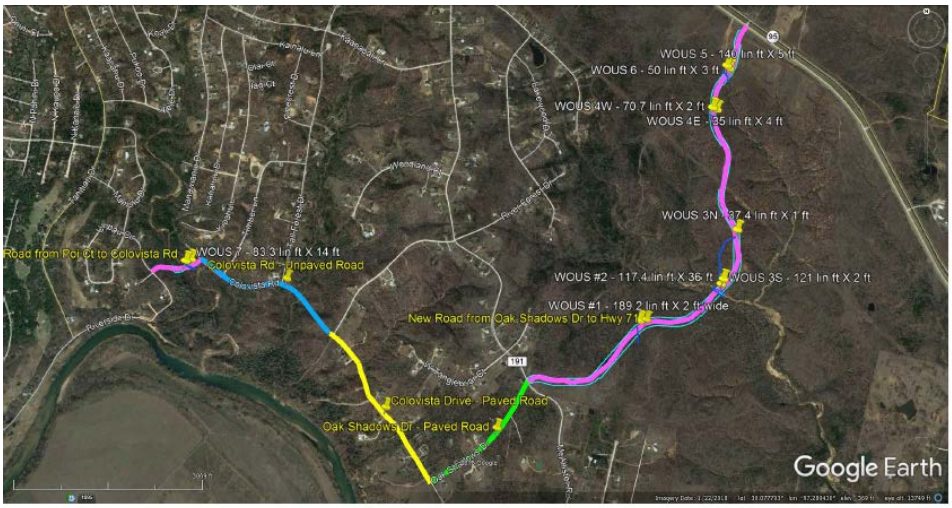
8-STEP PROCESS FOR PROJECTS WITHIN A WETLAND

-- County of Bastrop – Street Improvements – Tahitian Village Subdivision
(Project No. Bastrop2016-1)
--Decision Process for E.O. 11999 as Provided by 24 CFR §55.20

Step 1: *Determine whether the action is located in a wetland.*

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision as well as the Old Piney Trail area during future wildfire events. These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income. **Project Bastrop2016-1** will include: **Neighborhood Facilities:** Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) asphaltic concrete surface, and perform site work associated with construction.

According to the USFWS national wetland inventory data & field delineation, the project may impact approximately 844 linear feet (0.16 acre) of WOUS (ephemeral & perennial stream channels), USACE approved NWP 14.



WOUS – WATERS OF THE UNITED STATES

New Road

Step 2: *Notify the public for early review of the proposal and involve the affected and interested public in the decision making process.*

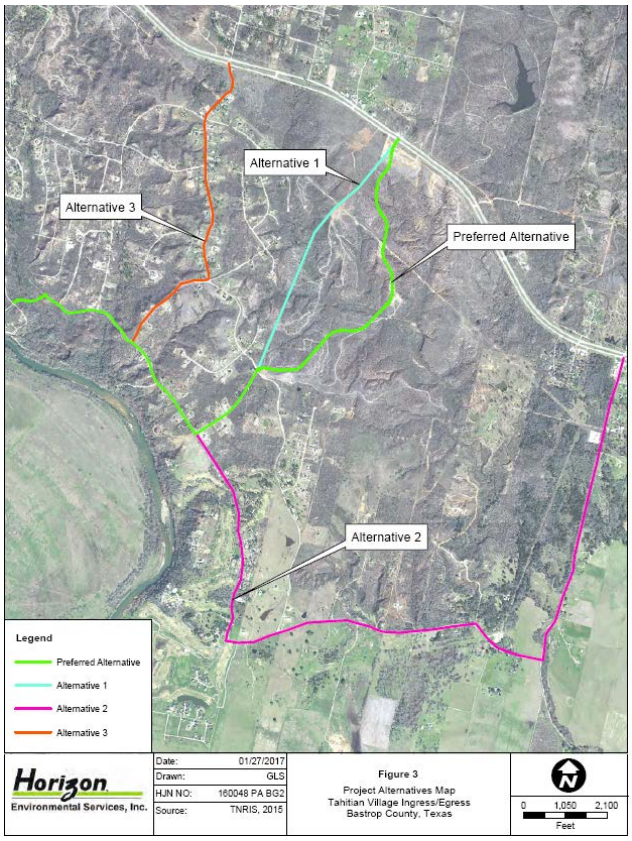
A public notice describing the project was published in the Bastrop Advertiser, the local _____. The ad targeted local residents, including those in the wetland. A copy of the published notification was kept in the project's environmental review records and attached to this document. The required 15 calendar days were allowed for public comment. As required by regulation, the notice also included the name, proposed location and description of the activity, total number of wetland acres involved, and the HUD official or responsible entity contact for information as well as the location and hours of the office at which a full Natural values include preserving the natural contours and terrain in order to ensure adequate area drainage.
Comments from the public None to the project. Supporters indicated _____
_____

Consultation with USACE occurred on May 31, 2018 Project number SWF-2018-00213, Tahitian Village Ingress/Egress. The project was submitted under the preconstruction notification procedures of Nationwide Permit General Condition 32 (Federal Register, Vol 82, No. 4, on Friday, January 6, 2017). It was determined by the USACE that discharge of dredge or fill materials into water of the US associated with the project qualified for Nationwide permit 14 for linear transportation projects. Per the USACE letter dated 12/11/2018, the construction of the activity under the NWP is valid until 3/18/2022.

Step 3: *Identify and evaluate practicable alternatives.*

The County of Bastrop project site selection criteria are:

A. Moving the project alignment to another location was considered however, the location of the alignment will utilize a significant amount of existing roadway. In order to meet the demand for ingress/egress, wetland impact is necessary. The selected location is the most practicable and economically feasible selection due to construction limitations and to minimize impact to natural values. A review of the alternate routes was conducted in a study by Horizon Environmental. Examining the impact to the Houston Toad critical habitat as well as the limitations associated with construction provided the basis for the selected alternative. Three different alternative routes to the preferred alternative route were considered & were a) determined to be more expensive since additional bridge construction would be necessary in Alternative 1; b) Alternative 2 & 3 while reducing impact to Houston Toad would not meet the purpose of the project by not providing an additional ingress/egress to the Tahitian Village area at Highway 71.



The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive.

A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

B. Using a different type of road base and water crossing was considered, however, in order to prevent significant impact to the Houston Toad and to ensure safety, it was determined that box culverts would provide the least impact to the Houston toad and the wetland areas.

No Action or Alternative Actions that Serve the Same Purpose

Not improving ingress/egress at Tahitian Village would not impact the Houston toad, however, this would not preserve human health by providing sufficient escape routes during emergencies for residents & prevents emergency vehicles from accessing residents in case of emergency.

Step 4: *Identify Potential Direct and Indirect Impacts of Associated with wetland Development.*

Direct impacts for wetland development will be long term, considering a new crossing will be constructed at the two locations along the alignment.

Some short-term temporary impacts due to construction equipment and activities for temporary easements, etc.

Short term impact includes potentially:
Construction may cause disruption to water flow during rain events.
Construction may cause erosion and stormwater runoff.
Construction may disrupt cause temporary flooding in significant rain events.
Construction may impact the unique natural features in the area
Construction may impact vegetation and wildlife in the wetland areas

Property access and/or acquisition will be necessary in order to construct a crossing at the site. This may require additional coordination with area property owners where ROW is not acquired.

Increased ingress/egress for Tahitian Village will occur.

Houston toad habitat impact will occur.

Potential area growth may occur.

Step 5: *Where practicable, design or modify the proposed action to minimize the potential adverse impacts to lives, property, and natural values within the wetland and to restore, and preserve the values of the wetland.*

The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours.

(a) Preserving Lives: In order to preserve lives, the lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events

(b) Preserving Property: Brazoria County is incorporating construction activities that ensure preservation of property by using existing roadways as much as possible. The areas located

within a wetland will include the construction of water crossings that protect area wetlands. During construction, the project will use best management practices to preserve property conditions and be consistent with Nationwide permit requirements.

(c) Preserving Natural Values and Minimizing Impacts: As identified in Attachment A from the Biology Assessment document, the restoration steps reference preparation of a seeding and planting area to the lines and grades indicated on the drawings. This may include seedbed preparation, sowing of seeds, watering, hydro-mulch, compost and other management practices, as indicated in the drawings or as directed by the Engineer or designated representative. In addition, methods of construction will include steps to preserve the critical habitat of the Houston Toad.

By shear nature of those mitigation measures the preservation of natural values and minimization impacts will occur. Some of these include: close biological monitoring of the site, construction sequencing, use of silt fencing to prevent stormwater runoff and/or other unintended consequences regarding the Houston toad, entry and exist points for heavy equipment moving in and out of the ROW (work zone), use of culvert designs to better enable flood water transport but simultaneously better enable use of these culverts by Houston toad. Other preservation includes: After construction debris mulch chips from operations must not exceed 2” surface depth & site cleanup to occur preventing artificial breeding grounds. Biological Monitoring will include: County hires a) biological monitor & respond to habitat issues as needed for construction 04/01–12/31b) qualified biologists to monitor construction from 12/31 – 04/01 & communicate regularly with Dr. Michael Forstner Texas State University. If Houston toad is identified at the worksite anytime, all construction must stop & contact USFWS immediately. Report extent of take.

The county has been an ongoing good steward for the Houston toad. The County previously implemented a Lost Pines HCP that ensures county growth is subject to the provisions for conservation for the Houston toad. If future development occurs within the area, the County will implement the LPHCP to ensure conservation measures remain in place.

Step 6: *Reevaluate the Alternatives.*

Bastrop County has reevaluated the alternatives to building in the wetland has determined that it has no practicable alternative to constructing in the wetland.

The various alternatives were examined with several considerations in mind. These include: 1) ingress/egress that ensures human health by providing an additional access point in case of emergencies into and out of the Tahitian Village subdivision (i.e., accessibility for emergency vehicles to fight fires and/or residents evacuating the area); 2) the amount of expected impact to the Houston toad and other important biology impacts at the site; 3) the amount of impact to wetlands and floodplain in the area; 4) the accessibility for construction; 5) the cost and amount of construction; and 6) the construction methods to reduce possible future development in the area.

Per the USACE letter dated 12/11/2018, the construction of the activity under the NWP is valid until 3/18/2022.

Step 7: *Determination of No Practicable Alternative*

It is our determination that there is no practicable alternative for partially locating the project in the wetland.

This is due to: 1) the selected location being the most practicable and economically feasible selection due to construction limitations and to minimize impact to natural values 2) the ability to mitigate and minimize impacts on human health, public property, and wetland values.

A public notice describing the project was published in the Bastrop Advertiser, the local and regional paper, on January 19, 2018. The ad targeted local residents, including those in the wetland. A copy of the published notification was kept in the project's environmental review records and attached to this document. The required 15 calendar days were allowed for public comment. As required by regulation, the notice also included the name, proposed location and description of the activity, total number of wetland acres involved, and the HUD official or responsible entity contact for information as well as the location and hours of the office at which a full description of the proposed action can be viewed.

Comments from the public include three specific responses including JoAnne Egitto, Jennifer Loda and Chris and RaeAnne Parachini to the project.

One mitigation factor for this authorization is that Bastrop County must submit a certification that the work, including any proposed mitigation, was completed in compliance with that nationwide permit within 30 days of the completion of work.

Step 8: *Implement the Proposed Action*

The county will assure that this plan, as modified and described above, is executed and necessary language will be included in all agreements with participating parties. The county will also take an active role in monitoring the construction process to ensure no unnecessary impacts occur nor unnecessary risks are taken.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT:

8-STEP PROCESS FOR PROJECTS WITHIN A 100 YEAR FLOODPLAIN

-- County of Bastrop – Street Improvements – Tahitian Village Subdivision
(Project No. Bastrop2016-1)
--Decision Process for E.O. 11988 as Provided by 24 CFR §55.20

Step 1: ***Determine whether the action is located in a 100-year floodplain (or a 500-year floodplain for critical actions).***

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision as well as the Old Piney Trail area during future wildfire events. These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income. **Project Bastrop2016-1** will include: **Neighborhood Facilities:** Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) asphaltic concrete surface, and perform site work associated with construction.

According to FEMA Map Panels 48021C0400E & 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain.

The project is not considered a critical action and is not located within a floodway or a coastal high hazard area. Bastrop County participates in the National Flood Insurance Program.

Step 2: ***Notify the public for early review of the proposal and involve the affected and interested public in the decision making process.***

A public notice describing the project was published in the Bastrop Advertiser, the local on _____. The ad targeted local residents, including those in the floodplain. A copy of the published notification was kept in the project's environmental review records and attached to this document. The required 15 calendar days were allowed for public comment. As required by regulation, the notice also included the name, proposed location and description of the activity, total number of floodplain acres involved, and the HUD official or responsible entity contact for information as well as the location and hours of the office at which a full Natural values include preserving the natural contours and terrain in order to ensure adequate area drainage.
Comments from the public None to the project.

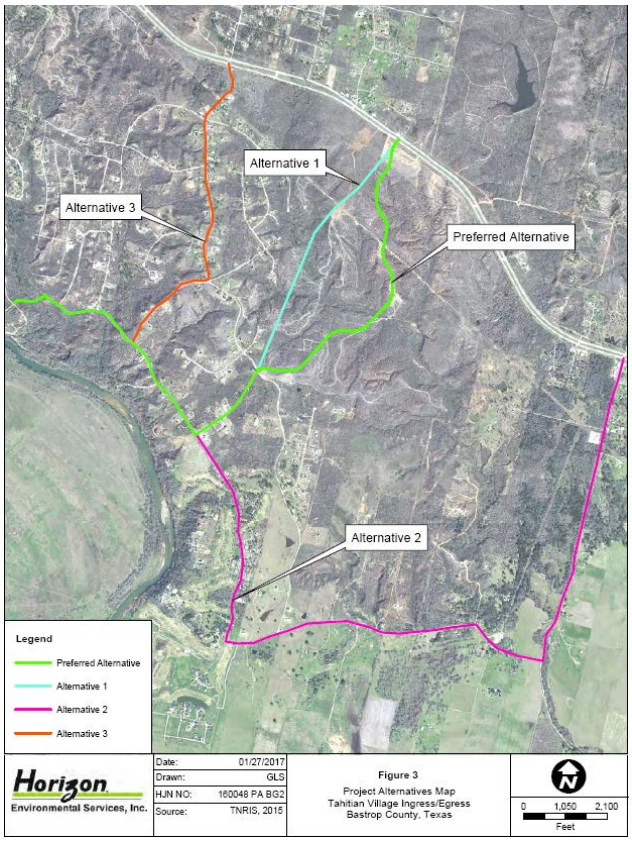
_____

FEMA and city engineers were contacted concerning mitigation requirements of the National Flood Insurance Program (NFIP) as well as local ordinances that must be implemented as part of NFIP. A response letter from TWDB regarding the project was received on September 17, 2017 indicating the project is consistent with the NFIP requirements as the City participates in the NFIP program.

Step 3: *Identify and evaluate practicable alternatives.*

The County of Bastrop project site selection criteria are:

A. Moving the project alignment to another location within the 100-year floodplain was considered however, the location of the alignment will utilize a significant amount of existing roadway. In order to meet the demand for ingress/egress, floodplain crossing in the selected alternative is necessary. The selected location is the most practicable and economically feasible selection due to construction limitations and to minimize impact to natural values. A review of the alternatives was conducted in a study by Horizon Environmental. Examining the impact to the Houston Toad critical habitat as well as the limitations associated with construction provided the basis for the selected alternative. Three different alternative routes to the preferred alternative route were considered & were a) determined to be more expensive since additional bridge construction would be necessary in Alternative 1; b) Alternative 2 & 3 while reducing impact to Houston Toad would not meet the purpose of the project by not providing an additional ingress/egress to the Tahitian Village area at Highway 71.



The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive.

A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

B. Using a different type of road base and water crossing was considered, however, in order to prevent significant impact to the Houston Toad and to ensure safety, it was determined that box culverts would provide the least impact to the Houston toad and the 100-year floodplain.

No Action or Alternative Actions that Serve the Same Purpose

Not improving ingress/egress at Tahitian Village would not impact the Houston toad, however, this would not preserve human health by providing sufficient escape routes during emergencies for residents & prevents emergency vehicles from accessing residents in case of emergency.

Step 4: *Identify Potential Direct and Indirect Impacts of Associated with Floodplain Development.*

Direct impacts for floodplain development will be long term, considering a new crossing will be constructed at the two locations along the alignment.

Some short-term temporary impacts due to construction equipment and activities for temporary easements, etc.

Short term impact includes potentially:
Construction may cause disruption to water flow during rain events.
Construction may cause erosion and stormwater runoff.
Construction may disrupt cause temporary flooding in significant rain events.
Construction may impact the unique natural features in the area
Construction may impact vegetation and wildlife in the area

Floodplain property access and/or acquisition will be necessary in order to construct a crossing at the site. This may require additional coordination with area property owners where ROW is not acquired.

Increased ingress/egress for Tahitian Village will occur.

Houston toad habitat impact will occur.

Potential area growth may occur.

Step 5: ***Where practicable, design or modify the proposed action to minimize the potential adverse impacts to lives, property, and natural values within the floodplain and to restore, and preserve the values of the floodplain.***

A minimal amount of impact is expected considering only 1.6186 of the construction will be located within the 100-year floodplain.

The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours.

(a) Preserving Lives: In order to preserve lives, the lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events

(b) Preserving Property: Brazoria County is incorporating construction activities that ensure preservation of property by using existing roadways as much as possible. The areas within the 100-year floodplain will include the construction of water crossings that ensure the continued operation of the floodplain. During construction, the project will use best management practices to preserve property conditions. Entry & exit points for construction equipment limited to two ends of proposed roadway. Offsite staging or materials storage limited to established construction yards. Equipment staging or fueling occurs on existing ROW. Daily inspections for leaks of diesel & gasoline fueled equipment.

(c) Preserving Natural Values and Minimizing Impacts: As identified in Attachment A from the Biology Assessment document, the restoration steps reference preparation of a seeding and planting area to the lines and grades indicated on the drawings. This may include seedbed preparation, sowing of seeds, watering, hydro-mulch, compost and other management practices, as indicated in the drawings or as directed by the Engineer or designated representative. In addition, methods of construction will include steps to preserve the critical habitat of the Houston Toad.

By shear nature of those mitigation measures the preservation of natural values and minimization impacts will occur. Some of these include: close biological monitoring of the site, construction sequencing, use of silt fencing to prevent stormwater runoff and/or other unintended consequences regarding the Houston toad, entry and exist points for heavy equipment moving in and out of the ROW (work zone), use of culvert designs to better enable flood water transport but simultaneously better enable use of these culverts by Houston toad. Other preservation includes: After construction debris mulch chips from operations must not exceed 2” surface depth & site cleanup to occur preventing artificial breeding grounds. Biological Monitoring will include: County hires a) biological monitor & respond to habitat issues as needed for construction 04/01–12/31b) qualified biologists to monitor construction from 12/31 – 04/01 & communicate regularly with Dr. Michael Forstner Texas State

University. If Houston toad is identified at the worksite anytime, all construction must stop & contact USFWS immediately. Report extent of take.

The county has been an ongoing good steward for the Houston toad. The County previously implemented a Lost Pines HCP that ensures county growth is subject to the provisions for conservation for the Houston toad. If future development occurs within the area, the County will implement the LPHCP to ensure conservation measures remain in place.

Step 6: *Reevaluate the Alternatives.*

Bastrop County has reevaluated the alternatives to building in the floodplain has determined that it has no practicable alternative to constructing in the 100-year floodplain.

The various alternatives were examined with several considerations in mind. These include: 1) ingress/egress that ensures human health by providing an additional access point in case of emergencies into and out of the Tahitian Village subdivision (i.e., accessibility for emergency vehicles to fight fires and/or residents evacuating the area); 2) the amount of expected impact to the Houston toad and other important biology impacts at the site; 3) the amount of impact to wetlands and floodplain in the area; 4) the accessibility for construction; 5) the cost and amount of construction; and 6) the construction methods to reduce possible future development in the area.

The USFWS included a statement in their BO suggesting there may be better alternatives to the selected. However, they also understand the County is working to implement a countywide fuel reduction program for the benefit and protection of its citizens with regard to the wildlife mitigation which generally would have beneficial effects to the Houston toad.

Step 7: *Determination of No Practicable Alternative*

It is our determination that there is no practicable alternative for partially locating the project in the flood zone.

This is due to: 1) the selected location being the most practicable and economically feasible selection due to construction limitations and to minimize impact to natural values 2) the ability to mitigate and minimize impacts on human health, public property, and floodplain values.

A public notice describing the project was published in the Bastrop Advertiser, the local and regional paper, on January 19, 2018. The ad targeted local residents, including those in the floodplain. A copy of the published notification was kept in the project's environmental review records and attached to this document. The required 15 calendar days were allowed for public comment. As required by regulation, the notice also included the name, proposed location and description of the activity, total number of floodplain acres involved, and the HUD official or responsible entity contact for information as well as the location and hours of the office at which a full description of the proposed action can be viewed. Total numbers of acres in the 100-year flood plain include 1.6186.

Comments from the public include three specific responses including JoAnne Egitto, Jennifer Loda and Chris and RaeAnne Parachini to the project. Supporters indicated _

Step 8: *Implement the Proposed Action*

The county will assure that this plan, as modified and described above, is executed and necessary language will be included in all agreements with participating parties. The county will also take an active role in monitoring the construction process to ensure no unnecessary impacts occur nor unnecessary risks are taken.

TAB 2

REQUEST FOR RELEASE OF FUNDS AND CERTIFICATION FORM

Request for Release of Funds and Certification

U.S. Department of Housing and Urban Development
Office of Community Planning and Development

OMB No. 2506-0087
(exp. 03/31/2020)

This form is to be used by Responsible Entities and Recipients (as defined in 24 CFR 58.2) when requesting the release of funds, and requesting the authority to use such funds, for HUD programs identified by statutes that provide for the assumption of the environmental review responsibility by units of general local government and States. Public reporting burden for this collection of information is estimated to average 36 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless that collection displays a valid OMB control number.

Part 1. Program Description and Request for Release of Funds (to be completed by Responsible Entity)

1. Program Title(s)	2. HUD/State Identification Number	3. Recipient Identification Number (optional)
Bastrop County - Street Improvements - Phase 1 - Tahitian Village	WFR010001	

4. OMB Catalog Number(s) 14.218 Community Development and Revitalization Program	5. Name and address of responsible entity Paul Pape, County Judge Bastrop County 804 Pecan Street Bastrop, Texas 78602
6. For information about this request, contact (name & phone number) Paul Pape, County Judge, 804 Pecan Street, Bastrop, TX 78602 512-322-7201	
8. HUD or State Agency and office unit to receive request General Land Office 3249 Executive Drive Suite 150 Austin, TX 78731 (512) 475-5057	7. Name and address of recipient (if different than responsible entity)

The recipient(s) of assistance under the program(s) listed above requests the release of funds and removal of environmental grant conditions governing the use of the assistance for the following

9. Program Activity(ies)/Project Name(s)	10. Location (Street address, city, county, State)
Street Improvements - 4 Tahitian Village Subdivision Phase 1	between Ulupau Circle and State Highway 71 in Bastrop County, TX and is needed for secondary ingress and egress routes to existing local housing developments.

11. Program Activity/Project Description

The proposed street improvements will take place within the County of Bastrop, Texas where the County needs sufficient ingress/egress into & out of the Tahitian Village subdivision (a residential area due east of the City of Bastrop). Specifically, as a result of the Texas Wildfires in 2011, the Tahitian Village Subdivision lacked routes for emergency services access & quick evacuation routes for residents; this threatened the public health, safety, & welfare where the Tahitian Village and Colovista subdivisions. The preferred route for the ingress/egress improvement is approximately 17,100 linear feet in total length. The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts. The completion of this route will provide a direct route to SH71 to the east and ultimately connecting to Tahitian Drive to the west. Bastrop County is the home of critical habitat for the Houston toad (*Bufo* [*Anaxyrus*] *houstonensis)* which requires permits, mitigation and a thorough review of the impact. The area is also known for possible cultural resource relevance, and wetland and floodplain impacts. Surveys and consultations occurred with USFWS FWS/R2/CESFO/02ETXX0-2017-F-1025, THC - cultural resource survey, USACE notification and other potential interested parties.

Grant amount: $4,260,437.63

Disturbance Area: 21.6 acres

Mitigation See Attached:

Part 2. Environmental Certification (to be completed by responsible entity)

With reference to the above Program Activity(ies)/Project(s), I, the undersigned officer of the responsible entity, certify that:

1. The responsible entity has fully carried out its responsibilities for environmental review, decision-making and action pertaining to the project(s) named above.
2. The responsible entity has assumed responsibility for and complied with and will continue to comply with, the National Environmental Policy Act of 1969, as amended, and the environmental procedures, permit requirements and statutory obligations of the laws cited in 24 CFR 58.5; and also agrees to comply with the authorities in 24 CFR 58.6 and applicable State and local laws.
3. The responsible entity has assumed responsibility for and complied with and will continue to comply with Section 106 of the National Historic Preservation Act, and its implementing regulations 36 CFR 800, including consultation with the State Historic Preservation Officer, Indian tribes and Native Hawaiian organizations, and the public.
4. After considering the type and degree of environmental effects identified by the environmental review completed for the proposed project described in Part 1 of this request, I have found that the proposal did ☐ did not ☑ require the preparation and dissemination of an environmental impact statement.
5. The responsible entity has disseminated and/or published in the manner prescribed by 24 CFR 58.43 and 58.55 a notice to the public in accordance with 24 CFR 58.70 and as evidenced by the attached copy (copies) or evidence of posting and mailing procedure.
6. The dates for all statutory and regulatory time periods for review, comment or other action are in compliance with procedures and requirements of 24 CFR Part 58.
7. In accordance with 24 CFR 58.71(b), the responsible entity will advise the recipient (if different from the responsible entity) of any special environmental conditions that must be adhered to in carrying out the project.

As the duly designated certifying official of the responsible entity, I also certify that:

8. I am authorized to and do consent to assume the status of Federal official under the National Environmental Policy Act of 1969 and each provision of law designated in the 24 CFR 58.5 list of NEPA-related authorities insofar as the provisions of these laws apply to the HUD responsibilities for environmental review, decision-making and action that have been assumed by the responsible entity.
9. I am authorized to and do accept, on behalf of the recipient personally, the jurisdiction of the Federal courts for the enforcement of all these responsibilities, in my capacity as certifying officer of the responsible entity.

Signature of Certifying Officer of the Responsible Entity	Title of Certifying Officer Paul Pape, Judge
X	Date signed

Address of Certifying Officer

804 Pecan Street, Bastrop, TX 78602

Part 3. To be completed when the Recipient is not the Responsible Entity

The recipient requests the release of funds for the programs and activities identified in Part 1 and agrees to abide by the special conditions, procedures and requirements of the environmental review and to advise the responsible entity of any proposed change in the scope of the project or any change in environmental conditions in accordance with 24 CFR 58.71(b).

Signature of Authorized Officer of the Recipient	Title of Authorized Officer
X	Date signed

Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

4.4 CONSERVATION MEASURES (Taken from the Biology Assessment)

4.4.1 Minimization and Avoidance

Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all 160048-02 Tahitian Village BA Sept 2017 5-30 personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.

Roadway modifications made to minimize impacts to the Houston toad:

Bastrop County will utilize maximum engineering design culvert sizes to better enable flood water transport but simultaneously better enable use of these culverts by the Houston toad.

conducting the construction outside the toad's primary breeding season of January 1 through April 1.

Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all personnel work crews, their supervisors, and involved County employees.

1. Construction sequencing will be as follows:
    a. Biological Monitor will initially inspect the ROW for Houston toads.
    b. When determined clear of Houston toads by the Biological Monitor, the Contractor can hand clear the edges of the new construction ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with small gaps at each end for ingress and egress.
    c. The fencing shall be trenched into the ground and there will be no gaps in the barrier.
    d. When barrier fencing has been installed, and after the Biological Monitor has conducted another inspection of the ROW for Houston Toads, the Contractor may begin site clearing, grading, and construction of facilities.
    e. The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly repaired by Contractor.
    f. When construction of the project and final grading has been completed, Contractor shall remove the barrier fencing, except that which needed to remain intact for SW3P compliance, and smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix (Turner Seed Company) shall occur per specifications (see Attachment A).
2. A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48 hour period results in a 24 hour stand-down of the project.
3. Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches.
4. The entry and exit points for heavy equipment moving in and out of the ROW work zone is limited to the two ends.

5. The contractor will be prevented from using any offsite staging or materials storage areas that are not already established construction yards.
6. All staging of equipment or refueling will be contained in the ROW for the project. All fueling will be conducted no less than 200 feet from any potential breeding or dispersal features (e.g., ponds, streams, wetlands, etc.). These locations should be on relatively level ground to minimize the potential for leaks to migrate offsite.
7. 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.
8. Following construction activities, HUD and Bastrop County will ensure that equipment used on undisturbed ground will not create potential artificial breeding 160048-02 Tahitian Village BA Sept 2017 5-31 sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area.
9. The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the project (21.6 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat. 160048-02 Tahitian Village BA Sept 2017 5-32 Bastrop County will purchase 21.6-acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

1.4.2 Mitigation

The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the project (21.6 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat. Bastrop County will purchase 21.6-acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

Taken from the USFWS BA Opinion

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, HUD and Bastrop County must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. Bastrop County proposed a number of Conservation Measures, listed in the BA and the "Description of the Proposed Action" section of this document. Bastrop County's proposed Conservation Measures are incorporated as reasonable and prudent measures by reference, including the purchase of 21.6 credits from the Houston toad Conservation Bank, and must be implemented, as proposed, in conjunction with this project.

2. In addition to the Conservation Measures proposed by Bastrop County, the Service determined the following minimization measures must also be implemented:

• The use of herbicides within the action area is restricted to the upland areas of the right-of-way for control of Johnson grass (*Sorghum halepense*). Herbicides may also be used to control vegetation growth adjacent to guard rails during normal maintenance activities post-construction. Herbicides may only be applied between July 1 and December 31 each year, during dry weather conditions, and in accordance will all other label instructions.
• Project specific locations (PSLs) may be located within the ROW of the project under construction. Additional PSLs in Houston toad habitat not previously considered must be coordinated and permitted, as appropriate, prior to the commencement of construction.

3. Bastrop County must monitor the extent of take through sufficient on-site inspections necessary to determine if the amount of allowable take is exceeded. Bastrop County must provide the Service with a brief report upon completion of the restoration of the construction and ROW vegetation. The report must include a summary of construction actions implemented, any unanticipated actions or delays in project completion, and any known incidental take that occurred and the reasons for that take.

MONITORING AND REPORTING REQUIREMENTS

The Service anticipates that one juvenile and two adult Houston toads will be taken as non-lethal incidental take, in the form of harassment from construction activities. We anticipate that two adult and nine juvenile Houston toads per year could be taken as a result of the Project's operational phase. Incidental take associated with the eastern and western projects must not exceed one adult and five juvenile Houston toads for each project. The Reasonable and Prudent Measures, with their implementing Terms and Conditions, are designed to minimize the impact of the incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

USFWS CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service is aware of Bastrop County's continuing efforts to implement a countywide fuel reduction program for the benefit and protection of its citizens with regard to wildfire mitigation. Since this program would have generally beneficial effects to the Houston toad and its habitat, the Service recommends the County continue these efforts.

While it is beyond the scope of section 7 of the ESA to drive a selection of alternatives, the Service believes there are less damaging alternatives available to the County that meet the same goals of improving safe ingress and egress to and from these developments. It is also apparent to the Service that the preferred alternative could serve to open new areas to development. While such developments are unknown to us, we recommend Bastrop County make all reasonable efforts to

inform potential developers of the Lost Pines HCP and its provisions for conservation subdivision development.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations by Bastrop County.

TPWD Recommendations:

1. Best management practices (BMPs) for preserving water quality such as berming and silt fencing will be used.
2. Soil stabilization and revegetation will be consistent with USFWS conditions and mitigation plan. Industry and site-specific mitigation will be used to return the area to its original condition. Where possible revegetate to promote positive habitats for local species and prevent invasive species.
3. Where trenching or excavation is involved keep trenches/excavation and backfilling crews scheduled to minimize the amount of trenches/exaction areas left open. During construction if necessary, any potential open trenches will be monitored to prevent unintentional capture, if capture TPWD will be contacted for further direction.
4. Site will be examined prior to construction activities to ensure Migratory Bird Treaty Act (MBTA) compliance.
5. Avoid contact with wildlife, if wildlife encountered, stop construction and allow wildlife to leave the site. Provide listing Bastrop County TPWD Rare Threatened and Endangered Species list to construction workers; if listed species identified, stop construction and contact TPWD for further direction. Specifically inform employees and contractors spotted skunk (*Spilogale putorius interrupta*), Elliot's short-tailed shrew *(Blarina hylophaga hylophaga*), and Texas garter snake (*Thamnophis sirtalis annectens*) could inhabit the proposed project area. Stage construction to prevent impact.

- If potential impact to aquatic wildlife occurs, TPWD will be contacted for direction. Consider construction to avoid spawning periods. Biology monitor regularly to prevent impact.

Historical Commission Recommendations: If any historic properties are discovered or if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area and please contact THC for further direction.

USACE Conditions: Bastrop County must submit a USACE certification that work, plus proposed mitigation, was completed in compliance with that nationwide permit 14 within 30 days of the completion of work.

TAB 3

ENVIRONMENTAL ASSESSMENT DETERMINATIONS AND COMPLIANCE FINDINGS FOR HUD-ASSISTED PROJECTS 24 CFR PART 58

- COMPLIANCE WITH 24 CFR 50.4, 58.5 AND 58.6 LAWS AND AUTHORITIES
- STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5
- ENVIRONMENTAS ASSESSMENT FACTORS 24 CFR 58.4; REF 40 CFR 1508.8 & 1508.27

U.S. Department of Housing and Urban Development
451 Seventh Street, SW
Washington, DC 20410
www.hud.gov

espanol.hud.gov

Environmental Assessment
Determinations and Compliance Findings for HUD-assisted Projects
24 CFR Part 58

Project Information

Project Name: Street Improvements – Tahitian Village Subdivision

Responsible Entity: Paul Pape – County Judge

Grant Recipient (if different than Responsible Entity): Bastrop County

State/Local Identifier: TX- Bastrop 2016 – Phase 1

Preparer: Latrice Hertzler, President, Future Link Technologies, Inc.

Certifying Officer Name and Title: Paul Pape – County Judge- 512-332-7201

Consultant (if applicable):

Direct Comments to: Paul Pape – County Judge- 512-332-7201

Project Location: Bastrop, TX

Street Improvements:	Location:	HUD Performance Measure:	Approximate Units:
Riverside Drive	From: Tahitian Drive To: South Highway 71	Linear Feet	11,960

The proposed road improvements project is located between Ulupau Circle and State Highway 71 in Bastrop County, TX and is needed for secondary ingress and egress routes to existing local housing developments. The purpose of the project is to provide improved ingress/egress during emergencies. This will increase safety, giving residents a way to evacuate and emergency crews a way to access the area in the event that one or more routes are blocked.

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]**:**

This Bastrop County street improvements project is based upon disaster recovery assistance which will facilitate improved ingress/egress resulting from deadly fires in the Tahitian Village area of Bastrop County, TX in 2011.

Deemed the worst fire in Texas history by the Fire Museum of Texas, the Bastrop fires in 2011 took the lives of two people, injured 12, burned down 1,673 homes and caused an estimated $325 million in property damage. Constricted ingress/egress roadways within the Tahitian Village subdivision caused difficulties evacuating from homes and prevented emergency crews from swift access to extinguish the fires.

Difficulties occurred for panicked evacuees rushing the exits. Some decisions to try for other egress forced residents back toward the flames. Hence, traffic flow was confused and difficult due to flames, smoke, terrain, exiting residents and entering emergency vehicles.

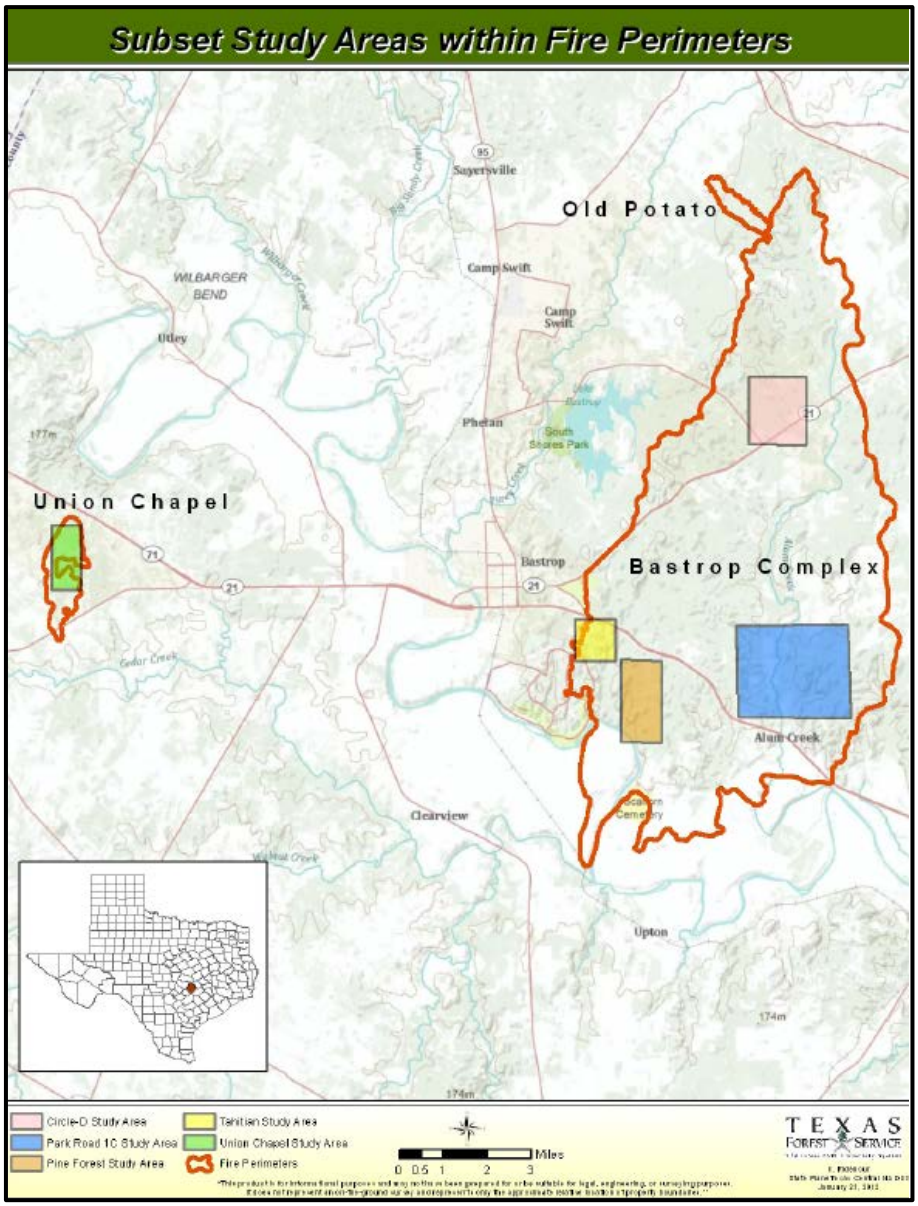


Figure 1 - Bastrop Fires - Fire Parameters

The fire parameters were primarily east of the City of Bastrop. See Figure 1. Tahitian Village Subdivision is located immediately east of the City and consists of approximately 1,430 homes, where 264 which were destroyed in the Bastrop Complex Wildfire. The fires also destroyed water service in the area leaving an additional 255 homes vulnerable with no fire hydrant service. Figure 1 identifies the burn area as well as major areas of study conducted by the Texas

Forest Service in 2012 after the fire (Bastrop Complex Wildfire Case Study – *The most destructive wildland urban interface wildfire in Texas history Sept. 4, 2011*).

One primary paved roadway at the intersection of Loop 150 (to the north) and SH 71 – Tahitian Drive (to the south) provides ingress/egress to the Tahitian Village Subdivision which is primarily urban residential in the western portion of the project area and rural residential to the east. Ingress\egress to the eastern portion of Tahitian Village includes two existing intersections to SH 71 at McAlister Road and Ponderosa Road. These existing roadways are narrow, two-lane residential streets or county roads that have minimal traffic capacity where human habitation is mixed with some densely forested areas and undulating terrain reflecting steep inclines, bluffs and curves, 5-20% slopes. Existing speed limits in the area range from 10 to 35 miles per hour. Street signs control traffic flow within the Tahitian Village subdivision. One primary light signal controls access to the Tahitian Village subdivision at the corner of Loop 150 and SH 71.

The vegetation ecological system for the area was 70 percent loblolly pine forest and woodland, 13 percent juniper shrub and 6 percent riparian (Texas Parks and Wildlife). The remaining 11 percent is classified as urban development. The Lost Pines area of Bastrop has many attributes one of which is approximately 82,400 acres of critical habitat (1978) for the Houston toad (*Bufo* [*Anaxyrus*] *houstonensis*) (listed federally endangered 1970).

With regard to construction, easements will be designated in previously disturbed areas and mitigation measures will minimize impact to ecological conditions at the site. Examples include: construction sequencing, scheduling and biological monitoring. See a complete list of measures in Mitigation section of this Checklist form.

Figure 2 reflects the preferred route to improve ingress/egress and is approximately 17,100 linear feet in total length. This route will require approximately 11,960 linear feet of new roadway and will incorporate approximately 5,500 linear feet of existing roadway. The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts. The completion of this route will provide a direct route to SH71 to the east and ultimately connecting to Tahitian Drive to the west. According to the US 2010 census, this alignment will support approximately 59 households along the alignment and approximately 1249 households within 1.5 miles of the alignment.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive. A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

Two existing water crossings along Colovista Road use culvert structures to drain water south from Tahitian Village subdivision into the Colorado River. One culvert damaged after area

flooding is located between Tall Forest Drive and River Forest Drive at an unpaved roadway on Colovista Road; and one culvert is located on at paved roadway located east of River Forest Drive west of Oak Shadows Drive on Colovista Road.

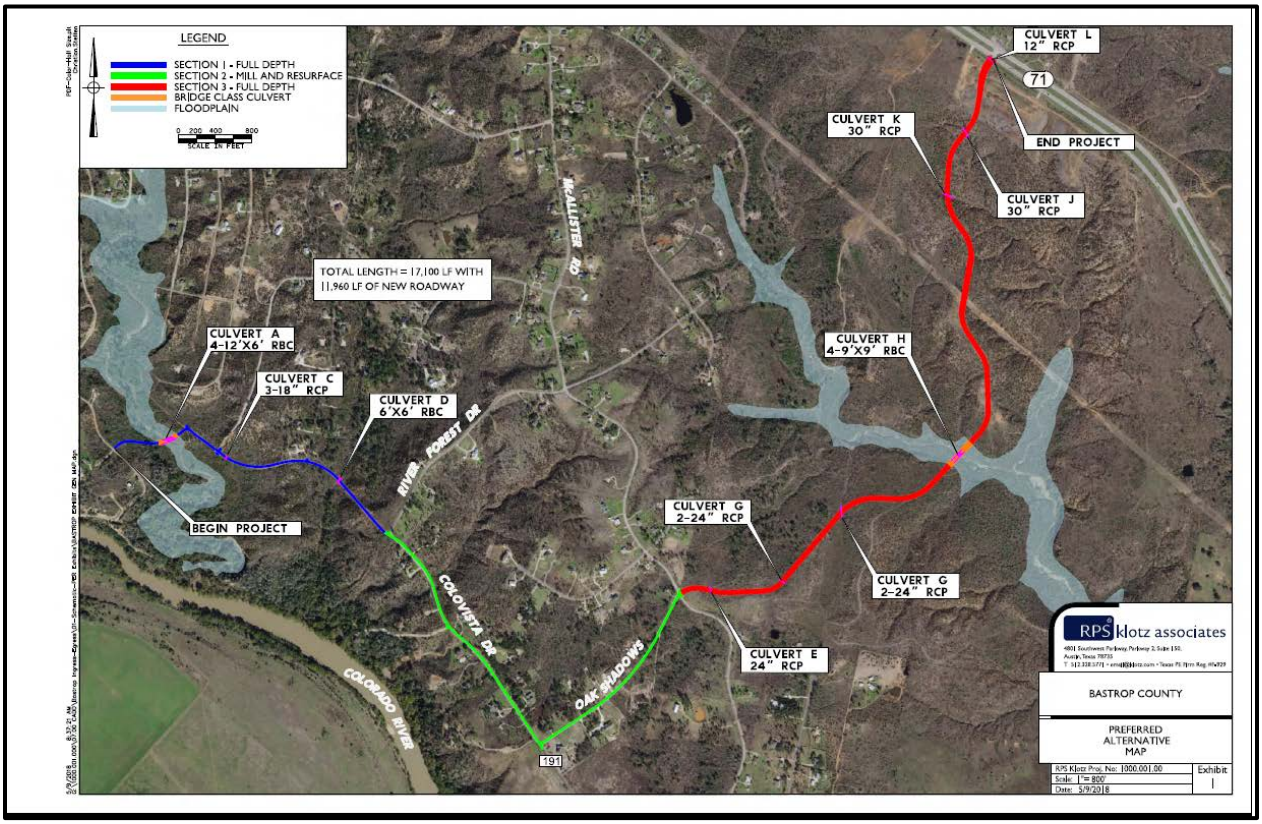


Figure 2 - Tahitian Village Preferred Alignment

The total area of disturbance for the new roadway sections varies from 50 to 135 feet wide and is 21.6 acres total. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures).

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $182 per linear foot to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 10.6 acres of new ROW to be acquired (50 feet wide).

The County has available funding from CDBG Community Development and Revitalization Program to aid areas impacted and distressed by the Texas Wildfires. The action proposed is HUD funding for road improvements to address ingress/egress safety and emergency access issues for residents living in the existing Tahitian Village and Colovista developments in Bastrop County.
The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:
In September 2011, Bastrop County suffered the most destructive wildfire in Texas history, which destroyed over 1,600 homes and included the loss of two lives and injured 12. The fires struck areas of Bastrop County in September and October 2011. Three separate fires started on September 4, 2011, as a result of strong winds caused by nearby Tropical Storm Lee, and merged into one large blaze that burned east of the city of Bastrop. The Tahitian Village subdivision was hard hit where 264 (51 percent) of the structures within the subdivision were within the fire perimeter. (*Bastrop Complex Wildfire Case Study, Texas Forest Service*) Significant ingress/egress issues were encountered in Tahitian Village and Colovista during the wildfire events of 2011 (personal communication, Mike Fisher, Bastrop County Emergency Management) (Ref BA).

The Bastrop Complex Wildfire Case Study of September 4, 2011, references the fires as "[t]he most destructive wildland urban interface wildfire in Texas history." "Within 13 minutes of the first report of the wildfire, law enforcement officers, firefighters and EMS workers started evacuations of 5,000 individuals that would continue over the next several hours as the fire intensified and moved into large developed areas." This included the Tahitian Village subdivision.

The study goes on to say: "Building a fire-adaptive community is complex. Multiple components interrelate to reduce structure vulnerability. Even if one piece of the puzzle is missing, the vulnerability to fire damage and destruction of a structure increases. The random nature of every fire makes it impossible to make decisions based on trends and fads. Homeowners and community leaders need to understand the individual and large-scale components in order to correctly make decisions that produce successful, more fire-resistant communities." In addition, homeowners should understand that in some cases, people have perished in fires by waiting too long to evacuate. The public needs to understand the hazards caused by wildfires and, when an evacuation order goes out, why they should heed the call. There may only be minutes to act. The isolative nature of the area of concern plays a major factor in these decisions. The impact of limited ingress/egress is significant and can make the difference in saving lives and saving the environment since the faster that emergency vehicles can respond to the fire, the sooner the public health and the environment (habitat) is preserved.

The existing ingress/egress roadways at the east end of Tahitian Village are narrow, two-lane residential streets or county roads that have minimal traffic capacity. In the event one or more of these existing roadways becomes impassible due to wild fire or flooding, the other existing roadways are not adequate to provide safe and efficient ingress/egress (personal communication, Mike Fisher, Bastrop County Emergency Management) (BA Documentation produced by Horizon Environmental). In addition, existing intersections to State Highway 71 provide terrain limitations to add signal controls to facilitate use for bidirectional ingress/egress. The use of an improved supplemental exit will ensure continued flow of traffic during emergencies for the underserved areas within the Tahitian Village subdivision.

Overall, as a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The public health, safety, and welfare of this subdivision was threatened due to the lack access routes for emergency services

and a quick evacuation route for residents. The purpose of the project is to provide improved ingress/egress, especially during emergencies. This will increase safety, giving residents a way to evacuate and emergency crews a way to access the area for better access to fire fight and if one or more routes are blocked. It will also preserve important environmental habitat conditions since fire fighters will arrive faster to save more homes and areas where the habitat exists.

These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income.

Existing Conditions and Trends [24 CFR 58.40(a)]:
Bastrop County is located in central Texas. The community of 896 square miles (2,320 km^2) with its population of 74,171 people (2012 Census estimate), is the county seat. Bastrop County is included in the Austin-Round Rock, TX Metropolitan Statistical Area. In terms of expected growth, according to the US Census Bureau data, the County's population estimates reflect a population of 80,527 in 2015, an increase of 3 percent (78,148) from it's 2014 estimate.

Bastrop County is a unique blend of old and new. Nestled on the banks of the Colorado River, in the heart of the Lost Pines Region, Bastrop is well known for its beautiful pine-oak trees and rich history with such Cities as Camp Swift, Elgin, Paige, Smithville and its County seat, Bastrop. The proposed project area is located within the Tahitian Village subdivision of Bastrop County, located due east of the City of Bastrop city limits.

The Lost Pines area of Bastrop has many attributes one of which is approximately 82,400 acres of critical habitat (1978) for the Houston toad (listed federally endangered 1970). In the 1990's, Bastrop County officials began exploring options for compliance with incidental take that may result from certain land-use activities. In 2007, Bastrop County sought and received funding to conduct an Environmental Assessment/Habitat Conservation Plan due to the special USFWS ecological designation of the Lost Pines area. "The Lost Pines Habitat Conservation program (LPHCP) establishes a conservation program for the Houston toad that minimizes and mitigates for expected impacts to the species arising from certain human activities within the Plan area. The overall biological goal of the LPHCP is long-term preservation, restoration, enhancement, and management of habitat for the Houston toad in Bastrop County." Additional species covered under the permit includes the endangered Navasota ladies' -tresses *(Spiranthes parkssi)*, first discovered in Bastrop County in September 2004.

The Bastrop County was issued an "Endangered Species Incidental Take Permit" from the United States Fish and Wildlife Service (FWS) that covers approximately 124,000 acres of known and potential Houston toad habitat within the county. This permit, with its associated Lost Pines Habitat Conservation Plan (LPHCP), offers a simplified process for obtaining authorization for incidental take under section 10(a)(1)(b) of the Endangered Species Act (ESA) for a variety of activities and provides regulatory certainty for local landowners and other community interests.

The permit allows Bastrop County to issue certificates of participation to landowners for harming the toad or its habitat while engaging in legal land development, agricultural or forestry practices, wildlife management, and certain other land-use activities. Landowners can voluntarily participate in the county's LPHCP in a variety of ways. Whether building a new home or business, developing a subdivision, or simply continuing with existing land-use activities, participation in the LPHCP provides the coverage necessary to ensure compliance with the ESA. The foundation of the LPHCP is that humans can coexist with the Houston toad. In fact, the long-term preservation, restoration, enhancement, and management of toad habitat in Bastrop County is dependent on private landowners because the vast majority of known and potential habitat exists on private property."

The County's use of the HCP includes approximately 85 prior individual HCPs and/or certificates of inclusion under the County's LPHCP for residential development within the action area. In general, these are low-density residential developments consisting of single-family homes. Past Texas Department of Transportation maintenance and upgrade work on the adjacent SH 71 and of multiple small commercial developments proposed or underway along SH 71 have utilized the LPHCP to facilitate habitat conservation.

Other past and present actions include broad-scale FEMA recovery work in the wake of the BCCF and subsequent disasters (2011-present) that included debris removal, temporary housing, hazard tree removal, road, bridge, and culvert repairs and numerous utility repairs.

As mentioned above, in September 2011, Bastrop County suffered the most destructive wildfire in Texas history, which destroyed over 1,600 homes, 264 of which were destroyed in the Bastrop Complex Fire in Tahitian Village. The fire furthermore caused severe damage to Bastrop State Park and the ancient Lost Pines Forest. After being largely contained in late September, the fire was declared controlled on October 10. The fire moved underground later in October and was finally extinguished on October 29.

The State of Texas received an allocation of $31,319,686 in Community Development Block Grant (CDBG) funds from the US Department of Housing and Development (HUD) as disaster recovery assistance for wildfires that occurred between August 30 and December 31, 2011. The State has been directed by HUD to target at least 80% of this assistance to Bastrop County.

Overall, Bastrop County offers a unique wildland urban interface where area growth continues to utilize the proactive measures to preserve human health and the environment in fire prone communities. These communities continue to manage this exceptional blend of environments through a mixture of tools like the existing LPHCP, fire fuel clearing efforts, and other construction control measures.

Funding Information

Grant Number	HUD Program	Funding Amount
WFR010001	Texas CDBG Disaster Recovery Block Grant	**$4,260,437.63**

Estimated Total HUD Funded Amount: $4,260,437.63
Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]**:**4,260,437.63

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes ☐ No ☒	The Project is consistent with this item. There are no airport hazards (runway clear zones and clear zones/accident potential zones) within 2,500 feet of the Project area. There are no military airports within 5 miles of the Project site. According to research, the closest airport is the Giddings – Lee County Airport located approximately 12 miles east of the Project. No impact is expected. See Tab 5, Project Location Maps and Tab 6, Attachment 1 for FAA Map of airports in relation to the proposed project locations.
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes ☐ No ☒	The project is consistent with this item. The Project area is located in central Texas and is not located within a protected Coastal Barrier Resource Area. No impact is expected. See Tab 5, Project Location Maps and Tab 6, Attachment 2 for Coastal Barrier Protected areas mapped within Proximity of Project areas.

Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes ☐ No ☒	The project is consistent with this item. According to FEMA research conducted, 6/2016 the County of Bastrop participates in the National Flood Insurance Program. See Tab 6, Attachment 3 for NFIP correspondence.
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐ No ☒	The project is consistent with this item. The Project is located in Bastrop County which is located within the Austin-Round Rock and the State Implementation Plan non-attainment area. According to TCEQ Air Quality research there are no Sites listed on the Air Pollutant Watch List within close proximity to the project site areas. There will be some short-term impacts to air quality during the Street Improvements construction. However, the contractor will utilize best management and industry accepted methods of dust and noise abatement during the construction period. No long-term impact is expected. See Tab 6, Attachment 4 for research & map.
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☐ No ☒	The project is consistent with this item. The project area is located in central Texas and not located within the Coastal Zone Management boundaries. No impact is expected. See Tab 5, Project Location Maps and Tab 6, Attachment 5 for Coastal Zone boundary areas mapped within Proximity of Project areas.
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes ☐ No ☒	The project is consistent with this item. A review of TCEQ Central Registry records for the following was conducted: Underground Injection Control Permits, Radioactive Waste Storage & Processing Permits, Brownfield Site Assessments, Voluntary Cleanup Program, Innocent Owner/Operator Program, Industrial and Hazardous Waste Disposal Registration/Permits, Municipal Solid Waste Permits and Registrations, Underground Storage Tanks or Leaking Petroleum Storage Tanks & Mapping of Tanks - None within 0.5 mile of the project area.

		Additionally, there were no Superfund Programs or Industrial and Hazardous Waste Corrective Action Sites located within 1-mile of project area. EPA NEPAssist and Enviromapper for Envirofacts reflects no RCRA sites adjacent to the Project area and no corrective action sites within one mile of Project area nor any identified with institutional or engineering controls at the property. Further EPA research; NEPAssist database indicates there are no Superfunds, Water dischargers, Air Emissions or Toxic Releases sites located within 0.5 mile of the project locations site area. According to the current spills report with the Emergency Response Notification System (ERNS) there are no incidents identified adjacent to or at the project area. See Tab 6, Attachment 6 for a review of State and Federal Databases including NEPAssist database, National Priorities List,http://www.epa.gov/superfund/sites/query/queryhtm/nplfin.htm#TX, EPA Cleanups in My Community, & the National Response Center, http://www.rtknet.org/db/erns, TCEQ Central Data Registry & the CAPCO, http://www.capcog.org/. See Tab 5, for Project Site visit pictures & notes from 4/20/16.
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes ☒ No ☐	The following federal listed species are located within Bastrop County, the Piping Plover (*Charadrius melodus),* Least Tern *(Sterna antillarum),* Red Knot *(Calidris canutus rufa),* Whooping Crane *(Grus Americana),* Smooth Pimpleback *(Quadrula Houstonensis),* Texas Fawnsfoot *(Truncilla macrodon),* Navasoda Ladies'-tresses *(Spiranthes parksii),* and Houston Toad *(Bufo (Anaxyrus houstonensis).* Of the species listed, only the Houston toad is likely to occur in the project area. *Due to this, a* biological assessment has been prepared in support of a Section 7 consultation with the US Fish and Wildlife Service (Service) as part of the above-referenced NEPA review to address potential

		effects on listed threatened or endangered species and designated critical habitats. The Biological Assessment (BA) was conducted and prepared by **HORIZON ENVIRONMENTAL SERVICES, INC. WITH CONTRIBUTIONS BY: DR. MICHAEL R.J. FORSTNER, TEXAS STATE UNIVERSITY** (September 2017) The original submittal occurred March 4, 2017. Comments were received March 14, 2017. A revised BA was submitted to address comments September 2017. The review was administratively complete October 4, 2017. The final biological opinion was received by the USFWS March 27, 2018. The results of the study revealed Dr. Michael Forstner of Texas State University has reported the occurrence of Houston toads in the general vicinity of the proposed project previously (Forstner 2016), and detected a single male of the species in chorus on 11 April 2017, approximately 0.6 miles ESE of the southern end of the new roadway (refer to Figure 5 of final BA Tab 6, Attachment 20). The USFWS biological opinion was based upon the following and is a summary of the March 28, 2018 opinion letter. The action proposed is HUD funding for construction of an improved road to address ingress and egress safety issues for residents living in the existing Tahitian Village and Colovista developments in Bastrop County. The construction would include 17,100 linear feet of 50 to 135-foot-wide road right-of-way (ROW), including approximately 11,960 linear feet of new roadway. Construction is slated to commence in the summer of 2019. The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours. The entirety of the Project lies within designated critical habitat for the Houston toad. Critical habitat for this species exists within the entirety of the action area and may be affected by the proposed action. The Wilderness Ridge Wildfire

		of 2009, the BCCF of 2011, and the Hidden Pines Wildfire of 2015 burned 1,491 acres, 31,453 acres, and 4,580 acres respectively (TPWD 2015). Some portions of Bastrop County were affected by all three fires and all, of the more than 37,000 acres burned lay within Houston toad habitat and within designated critical habitat. Approximately 45% of the 82,000 acres of Houston toad critical habitat within Bastrop County has been burned by wildfire since 2011. However, Houston toads appear capable of effectively utilizing this fire-recovering habitat for feeding, breeding and sheltering (Duarte et al 2014). Hence, the action area includes a maximum of approximately 4,200 acres of potential Houston toad habitat and lies entirely within designated critical habitat for the Houston toad. Critical habitat for the Houston toad was designated in portions of Bastrop and Burleson counties, Texas on January 31, 1978 (43 FR 4022 – 4026). Direct effects are the direct or immediate effects of the project on the species, its habitat, or designated/proposed critical habitat. Indirect effects are defined as those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR 402.02). An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. Direct and indirect effects of the proposed action along with the effects of interrelated/interdependent activities are all considered together as the "effects of the action." The following determination includes: 1) Proximity of the action which represents the entire road construction project as the project occurs within designated critical habitat. While not all occurring simultaneously, direct effects include the construction area and the area of potentially affected by construction noise. The balance of cleared ROW, when restored with native grasses and forbs, may still provide for dispersal of the species across the permanently

		maintained ROW of 24 feet. 2) Distribution of the species includes emigration and migration into and out of the action area which would be temporarily impacted by the placement of construction fencing. However, this would impact a limited number of toads considering the lower number of toads in the area (per studies in the area). However, during the operation phase of the project the movement and migration effects will give rise to both lethal and non-lethal take for the life of the project. 3) AT the time of the approval it was considered that the project would commence the summer of 2018 and continue during portions of the Houston toad breeding period (January 1 through July 1). However, as initial clearing may indicate significant stressors, commencing activities incorporating monitoring and implementing the conservation measures when the species is least active is a minimization measure. 4) The nature of the effects associated with land clear and road construction activities would directly, but minimally alter the Houston toad population and distribution within the action area. The indirect effects of the Project are difficult to quantify, but from past experiences they are expected to continue throughout the course of the project activities. The effects will include: reduction of individual fitness (e.g., expenditure of additional energy resources upon encountering a road crossing, increased susceptibility to predation); and incremental reduction in reproductive success (e.g., the road as a hindrance to movement, increased anthropogenic noise). It is not believed that the Project's effects would affect the overall population size, variability, or distribution outside of the action area. The Project was designed to minimize impacts to the Houston toad and direct effects would be largely confined within the project construction area. 5) The work is proposed to take 6 – 9 months to complete. Direct effects to the Houston toad would occur at the onset of the project during land clearing activities. Indirect effects such as alterations of the species ability to out their normal lifecycle, including emigration/immigration across the project work zone would be persist until the project is complete and vegetation is reestablished in the work areas

		and adjacent to the drainages. Beyond the construction phase of the project, the effects of degradation and fragmentation of the habitat by presence of a new road and the increased risk of injuries, predation, and mortality through exposure to road crossings will persist for the operational life of the Project. 6) With regard to disturbance, frequency, intensity, and severity, all vegetation including potential Houston toad habitat, would be removed completely from the proposed ROW at the onset of construction and distribution from road construction would continue throughout construction on the project, which is of relatively short duration and will be largely outside the most active season for adult Houston toads. Any Houston toad located in the action area after the start of construction would be taken (e.g., killed by heavy equipment and land clearing operations), however, Bastrop County has proposed measures to limit this likelihood (active search and monitoring during the clearing in addition to physical and temporal exclusion measures). Houston toad numbers in the action area are believed to be small. Thus, the risk to an individual Houston toad to this threat is considered low. The same physical and temporal exclusionary measures should also limit exposure to juveniles of the species since juveniles are likely the most mobile life stage. The final analysis of the effects indicates a loss of 7 acres of Houston toad non-breeding habitat during the land clearing of the expanded ROW. It is estimated that one juvenile Houston toad may be taken during land clearing activities with additional Houston toads taken (lethally and sub-lethally) each year thereafter during the operation life of the Project. The Houston toad habitat may or may not be occupied at the time the vegetation would be cleared within the ROW. Houston toads may be harassed during the land clearing activity if there are any present when these activities occur. If a Houston toad is found within the project work zone after construction has started, construction in that area would cease until the toad has left the area or salvaged by permitted personnel. Houston toads may be harassed due to machinery passing closely to their locations by

		noise or vibration. Noise disruptions may also harass Houston toads if it occurs during their breeding call attempts; however, Bastrop County proposed to work outside the breeding season and is not proposed to work at night when male toads would primarily be calling. The barrier fencing, installed to avoid lethal take of Houston toads by preventing them from entering the construction area, could disrupt the dispersal of Houston toads to and from adjacent areas of habitat. This alteration of their normal behavior patterns and habitat utilization, related to movement, sheltering, and feeding, would be a form of harassment. Indirect effects suggest harassment of the Houston toads occurring within the action area by limiting access to available habitat and disrupting migration and/or movements between breeding ponds and non-breeding habitat. Additionally, Houston toads may be indirectly affected by operations of the roadway (i.e., habitat degradation and vehicle strikes) and normal maintenance of the ROW. Likewise, roads and associated stormwater runoff are additional mechanisms to affect individuals of the species through exposure to pollutants (e.g. hydrocarbons, metals) and herbicides as summarized below. The effects of habitat destruction and landscape fragmentation makes the Houston toad more vulnerable to predation, competition, and hybridization. Removal of trees acts to exacerbate the effect of drought on a local scale by increasing heat at ground level and consequent moisture loss from the soil, making the deforested area unsuitable for Houston toads that need to burrow to escape desiccation (Forstner 2003). Excavation and impoundment of seasonal or ephemeral drainages or wetland areas creates permanent open water as opposed to ephemeral ponds and pools. Permanent water is more likely to harbor predators such as birds, mammals, snakes, turtles, fish, aquatic invertebrates, and bullfrogs (Quinn and Ferguson 1983, Dixon et al. 1990) and potential competitors such as Woodhouse's and Gulf Coast toads (Hillis et al. 1984).

		Habitat disturbance also encourages the establishment and proliferation of red-imported fire ants. Fire ants are known to prey on newly-metamorphosed toadlets (Freed and Neitman 1988, Dixon et al. 1990, Forstner 2002a), as well as on the invertebrate community that is an important part of the toad's food base (Bragg 1960). Paved roads can prevent or hinder dispersal and effectively isolate populations of some invertebrates, small mammals (Mader 1984, Mader et al. 1990), and amphibians (Van Gelder 1973, Reh and Seitz 1990, Soulé et al. 1992, Fahrig et al. 1995, Yanes et al. 1995, Findlay and Houlahan 1997, Gibbs 1998, Vos and Chardon 1998, Knutson et al. 1999). Highways can have serious demographic consequences by increasing mortality and reducing connectivity and migration among remnant habitat patches. Surveys along a 5-mile stretch of Highway 21 adjacent to breeding ponds near Bastrop State Park during 1990 reported 67 percent mortality of Houston toads (12 of 18 individuals) observed in the right-of-way during the breeding season (Dixon 1990, Price 1990c). Pesticides, fertilizer and contaminant effects reflect that because of their semi=permeable skin, development of their eggs and larvae in water, and their position in the food web, amphibians are vulnerable to waterborne and airborne pollutants, such as heavy metals, certain insecticides (particularly cyclodienes, such as endosulfan, endrin, toxaphene, and dieldrin), nitrates, salts, certain organophosphates (such as parathion and malathion) and petroleum hydrocarbons (Harfeinst et al, 1989, Little et al. 2002) Effects on the Critical Habitat within the action area has been previously affected by wildfire and low density residential development. Recovery from the wildfire is taking place and the species is believed to persist within low-density developments. The current project maintains that paradigm and affects only a small fraction of the designated critical habitat and near the boundary of such habitat. Thus, the permanent elimination

		of 7 acres and the reduction of function to an additional 14.6 acres are not believed to appreciably diminish the value of the critical habitat for the conservation of the Houston toad. Thus, the Project is not likely to result in the destruction or adverse modification of designated critical habitat in Bastrop County. With regard to cumulative impact: While the Tahitian Village/Colovista Ingress/Egress Project has a relatively limited scope and footprint (temporary 21.6 acres and reduced to a permanent ROW of approximately 7 acres) in the context of the thousands of acres of Houston toad habitat within the action area, the nature of improved ingress/egress includes potential long-term and detrimental effects to this population of Houston toads. The Service anticipates potential adverse effects of roads on amphibian species and the Houston toad specifically. This road expansion is located within critical habitat and bisects a portion of the core of this habitat. While initially anticipated to be lightly used (i.e., limited exposure), we recognize the likelihood of future residential and small commercial developments adjacent to proposed roadway and in keeping with the past incremental development of the area south of SH 71. The Service is aware of no additional future State, tribal, local or private actions reasonably certain to occur in the action area considered in this biological opinion. The reduced width of the proposed permanent ROW (i.e., 24 feet) and use of native vegetation to restore the temporary construction ROW will serve to limit the exposure of Houston toads to hazards of a road crossing. With regard to the jeopardy analysis the Service provided - Section 7(a)(2) of the ESA ensures that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. Low numbers of Houston toads have been documented in the action area in the preceding decades. Despite low numbers, it seems likely the population of Houston toads south of SH 71 still includes recruitment at present (i.e.,

small numbers of chorusing males persist in recent survey). Positive trends from supplementation efforts within other parts of Bastrop County are factored in this analysis of the effects of this action. While the supplementation is currently focused in other parts of the County, it is possible that future efforts could be focused much closer to the current action area (e.g., Bastrop State Park) and in numbers that were not previously possible. However, the Service also considers the proposed roadway a likely avenue to increased Houston toad road mortality and overall development pressure on this area of several square miles of habitat and designated critical habitat. In summary, there will be impacts to individual Houston toads in either their annual survival or reproductive rates.

In conclusion, we considered the current overall declining status of Houston toad and the similar condition of the species within the action area (environmental baseline). We then assessed the effects of the proposed action and the potential for cumulative effects in the action area on individuals, populations, and the species as a whole. These types of effects of the proposed action are currently considered primary factors influencing the status of the species. While they may compound those factors, as stated above, we do not anticipate any reductions in the overall RND of the Houston toad. It is the Service's Opinion that the Tahitian Village/Colovista Ingress/Egress Project, as proposed, is not likely to jeopardize the continued existence of the Houston toad and is not likely to destroy or adversely modify designated critical habitat.

The amount of taking is a combination of the assessed amount identified in the BA accompanied by the refined assessment made by the Service. This includes:

Species	Amount of Take Anticipated	Life Stage when Take is Anticipated	Type of Take	Take is Anticipated as a Result of
Houston toad	5	Juveniles	Kill	Road mortality
	1	Adults		
	4	Juveniles	Harm	

Houston toad	1	Adults		Habitat loss and fragmentation
Houston toad	2	Juveniles	Harass	Construction Activities
	1	Adults		

Effect of the take

The Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES INCLUDE THE FOLLOWING:

A) Bastrop County must fully implement the Conservation Measures (Section 4.4 and listed below) of the September 2017 Biological Assessment, including awareness training for all project personnel, construction sequencing, and biological monitoring.

Prior to commencement of work on the project, Bastrop County and/or its Contractor(s) will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.

Construction sequencing will be as follows:
a) A permitted Biological Monitor will initially inspect (i.e., conduct an intensive pedestrian survey including the examination of all potential refugia within) the ROW for Houston toads.
b) When determined clear of Houston toads by the Biological Monitor, the Contractor(s) can hand clear the edges of the ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with gates at each end and as needed for ingress and egress.

		c) The fencing shall be trenched into the ground a minimum of 12 inches and above grade 24 inches. Additional support (e.g., t-posts, metal fencing, etc.) shall be installed on the interior of the barrier to limit animals climbing into the excluded area. d) When barrier fencing is installed and after the Biological Monitor conducts another inspection of the ROW for Houston Toads, the Contractor(s) may begin site clearing, grading, and construction of facilities. e) The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly (generally within 24 hours) repaired by Bastrop County and/or its Contractor(s). f) When construction of the project and final grading is complete, Bastrop County and/or its Contractor(s) shall remove the barrier fencing, except that which needs to remain intact for SW3P compliance, smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix shall occur per specifications (see Attachment A in the revised biological assessment). • A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48-hour period shall result in a 24-hour stand-down of the project (i.e., no work). • Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches. • The entry and exit points for heavy equipment moving in and out of the ROW work zone are limited to the two ends. Additional entry and exits points are permissible with rollover gates or other approved designs for maintaining the integrity of the barrier. • Contractor(s) will be prevented from using any offsite staging or materials storage areas that are not previously established construction yards. • All staging of equipment or refueling will be contained in the ROW for the project. These activities shall be sited on level ground and not up-slope of aquatic sites (i.e., potential breeding or dispersal areas). • 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 properly disposed. • Following construction activities, Bastrop County and/or its Contractor(s) will ensure that equipment used on undisturbed ground will not create potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area. With regard to biological monitoring, the proposal included: For work to be conducted from July 1st through December 31st, then work can proceed without full-time biological monitoring with the following exceptions: •A permitted Biological Monitor will be retained by County to respond on as-needed basis. The Biological Monitor's contact information and qualifications will be shared with the Service prior to commencement of construction. •An encounter with a Houston toad at the jobsite during this project requires that work must cease immediately, and/or not begin until the biological monitor has been notified and the toad(s) safely removed by a qualified and permitted biologist. In addition, the U.S. Fish and Wildlife Service's Texas Coastal Ecological Services Field Office should also be contacted immediately at (281)286-8282. If work begins or extends between December 31st and July 1st, all of the following conditions apply: A) Bastrop County will provide Biological Monitors (qualified biologists) who are permitted in identifying, locating, handling, removing and transporting Houston toads. Biological Monitors will search the work site daily before work begins. The Biological Monitor(s) will have authority to stop work immediately if a Houston toad is encountered within the construction zone. Once the Houston toad has been safely removed (salvaged) by a qualified and permitted biologist, work may resume.

		•Toad emergence and breeding is triggered, in part, by changing barometric conditions, rainfall and warm nighttime temperatures in the late winter and early spring. Bastrop County will communicate regularly with Dr. Michael Forstner at Texas State University to keep informed about regional toad habitat monitoring in the event toad emergence occurs and breeding is assumed to be underway across the range of the Houston toad. B) Bastrop County and its contractors must also implement and employ the "Native Grassland Restoration Specifications" contained in Attachment A of the September 2017 Biological Assessment. C) Bastrop County must avoid and/or minimize take of the Houston toad to the maximum extent practicable. *D)* Bastrop County must monitor potential take of the Houston toad and provide a post-construction/restoration monitoring report to the Service within 90 days of project completion. See Tab 6. Attachment 7. The Texas Natural Diversity Database (TXNDD) identifies areas of surveys conducted within the area. The data was obtained from TPWD and considering the survey information was consistent with the BA to assess impact, no further information was provided; i.e., the surveys reflected the Houston Toad surveys conducted at the site. The Texas Garter Snake was also identified within the area. This was also referenced in the ERR and identified for mitigation. According to the TXNDD the closest study for Navasota Ladies is approximately 5 miles NE from the project area in 2004 - prior to the 2011 Bastrop fire Navasota ladies'-tresses *Spiranthes parksi*i LE E Texas endemic; habitat includes openings in post oak woodlands in sandy loams along upland drainages or intermittent streams, often in areas with suitable hydrologic factors, such as a perched water table associated with the underlying claypan - often over an impermeable clay layer, adjacent to drainages and seasonal streams; flowering populations fluctuate widely

		from year to year, an individual plant does not flower every year; flowering late October-early November (-early December). With regard to soils consistent with Navasota ladies' tresses, the USDA Natural Conservation Service (Web Soil Survey) data provides that habitat in the areas where construction will occur at width expansion of roadways are not consistent with these characteristics. Areas possibly consistent with the plant are located adjacent to water crossings at the far west side of the alignment and near the east end of the project alignment. On the west end of the alignment, adjacent soils on both side of the creek area include JeF - Jedd gravely fine sandy loam, 5 to 20 percent slopes. JeF includes ridges and is considered well drained with high runoff. This landform is located at areas adjacent to Sa – Sayers fine sandy loam 0 to 1 percent slopes occasionally flooded (considered floodplain). Sa characteristics include occasional flooding and low available water storage. The area is undulating with some deep crevasse. These areas are not consistent with the Navasota Lady's Tresses. On the east of the alignment, construction will include impact to a Pigeon Hollow creek area with Sa soils. Adjacent to the Sa soils on one side includes Padina (Pae) fine sand with 1 to 12 percent slopes. With a landform considered to be ridges with low water storage profiles and well drained. Vernia (VeD) is very gravelly loamy sand, 1 to 8 percent slopes. Considered stream terraces, the soils are well drained with low water storage in profile. According to TPWD available information, "During germination, before a new plant can obtain nutrients from the soil, many plants have readily available supplies from inside the seed coat. Orchids, on the other hand, do not; instead they provide their young essential nutrients in other ways. Orchids live in fungi-rich soils that provide the plant with nutrients. In turn, fungi can

		live off of decaying plant and animal matter. Because fungi are so important to Navasota ladies'-tresses' survival, the distribution of the root fungus likely influences the orchid's range and juvenile survival (Wonkka 2010)" Overall, the scorched soils in the area are not conducive to the Navasota Ladies. As identified in the "Bastrop Complex Wildfire Case Study", the Nearly the entire burn area (94 percent) is rated as having at least a moderate risk for soil damage as a result of the fire, with more than half the area considered at high risk. Damage to the soil resulting from the fire could reduce the stability of the soil, increasing its erosive potential and slowing vegetative recovery by destroying the organic component of the soil. Ninety-seven percent of the total area has a moderate to very high wind erosion vulnerability. In terms of the potential for water erosion, the majority of the soils within the burn area have a very low erosion potential, but nearly 30 percent of the area is at increased risk for water erosion issues to occur. As identified within the documentation review, the areas near proposed construction are not suitable for Navasota Lady's Tresses either due to the terrain or the types of soils in the areas. In addition, at least two site visits which examined the project areas resulted in no observation of the plants. As already indicated, the biologist assigned to this project will be familiar with the overall important of threatened and endangered species and will be sure to highlight any encounter with the plant at the project site and contact TPWD in the event further documentation is warranted.
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐ No ☒	The proposed project is consistent with this item. A site visit was conducted 6/20/2016, no above ground storage tanks (AST) were observed within proposed project alignment and a review of the Texas Commission on Environmental Quality (TCEQ) Central Registry data indicates no tanks located within 1 mile of the Project site area. See Tab 5, site visit Notes and pictures Tab 5 & Tab 6, Attachment 8 for tank research & mapping.

Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐ No ☒	The Project is consistent with this item. A portion of the project area is located along existing ROW. According to soils information, the project area is not located within prime farmland areas. The location for the new roadway is undulating terrain with cliffs and steep drop offs. The site is not conducive to farmland use. See Tab 6, Attachment 17. See also Tab 5, Photos and site maps.
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes ☒ No ☐	HUD's Floodplain Management Regulations 8-Step decision-making process of §55.20 to comply with 24 CFR Part 55 was completed because the proposed project is located within the floodplain as indicated by the proposed project identified as Street Improvements for Phase 1 Tahitian Village Subdivision is described as**:** construct an improved roadway to approximately 24 ft. in width, including 4" lime treated subgrade, 8" of flex base and a two course surface treatment, and perform site work associated with construction on Riverside Drive from Tahitian Village Drive to South Highway 71-approximately 17,100 lf (approximately 11,960 lf of new road). According to FEMA Map Panels 48021C0400E and 48021C0360E, approximately 1.6186 acres are located within Zone A of the 100-year floodplain. See Tab 6. Attachment 10 for FEMA Floodplain Map.
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes ☐ No ☒	The proposed project is consistent with this item. There are no direct or indirect impacts to historic properties in the Area of Potential Effect (APE). The proposed project area is not located near or adjacent to an historic district and is not surrounded by structures that are listed on or eligible for listing on the National Register of Historic Places. During the initial request for 106 review on June 6, 2016, the THC approved the project indicating no historic properties affected and the project may proceed. When the alignment was altered in order to ensure limited impact to the Houston Toad and in order to reduce costs of construction, the adjusted alignment was again submitted to THC. About that same time, the USACE permit was being investigated and the Corps indicated additional 106 consultation was necessary. The adjusted alignment was submitted to THC for a

		reevaluation in April 2018. The THC returned a response on April 30,2018 which indicated according to their maps, "the proposed project is located in an area where archeological survey has not been previously conducted and that other sites have been recorded in close proximity to the proposed location on similar landforms in Bastrop County, and we believe a professional archeologist should survey the proposed location." Consistent with the assessment identified by the Corps, a Section 106 survey was conducted by Horizon Environmental in August 2018. Hence, based on consultation conducted with the US Army Corps of Engineers, Fort Worth District (USACE), and the Texas Historical Commission (THC), the cultural resources survey focused on the portions of the overall ROW located adjacent to waterways crossing the proposed road ROWs that qualify for designation as "Waters of the US" (WOUS) under Section 404 of the Clean Water Act (CWA). For purposes of the cultural resources survey, survey activities were conducted at four locations within the overall ROW that collectively measure approximately 1.3 miles (2.1 kilometers) in length by 100.0 feet (30.5 meters) in width, covering an area of 16.2 acres (6.6 hectares). Seven jurisdictional crossings had been identified within these four locations. The proposed undertaking would involve construction of bridge-class culverts at each of these crossings, designated as Culverts A, C, D, G, H, K, and J. Three newly recorded archeological sites were documented during the survey—41BP963, 41BP964, and 41BP965. Site 41BP963 consists of an aboriginal lithic procurement area, and sites 41BP964 and 41BP965 consist of aboriginal lithic scatters. Due to the lack of temporally diagnostic artifacts, the three aboriginal sites date to unspecified prehistoric periods. The sites were only assessed within the proposed road ROWs, and the boundaries of the sites may extend outside of the proposed ROWs. No intact cultural features, temporally diagnostic

		artifacts, or intact, subsurface archeological deposits were observed on any of the three sites, and the investigated portions of the sites retain little potential to contribute meaningfully to an understanding of the prehistoric past. The investigated portion of all three sites within the investigated ROW are recommended as non-contributing to the overall eligibility of the sites for designation as State Antiquities Landmarks (SAL) and for inclusion in the National Register of Historic Places (NRHP). No further investigations are warranted within the proposed ROW on these sites. Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. In accordance with 36 CFR 800.4, Horizon made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified that meet the criteria for designation as SALs according to 13 TAC 26 or for inclusion in the NRHP according to 36 CFR 60.4. Horizon recommends a finding of "no historic properties affected," and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the Texas Historical Commission (THC) should be notified immediately. On September 24, 2018, the THC responded indicating: No historic properties are present or affected by the project as proposed and no historic properties present or affected. However if any historic properties are discovered or if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area and please

		contact THC for further direction. In addition, "After reviewing the documentation, we concur that newly recorded sites 41BP963, 41BP964, and 41BP965 that will be impacted by construction are ineligible within the Right of Way for inclusion in the National Register of Historic Places (NRHP) based on the lack of buried deposits, cultural features, or temporally diagnostic materials. The draft report that you have submitted is accepted and this project may proceed without further consultation with this office, provided that no significant archeological deposits are encountered during construction and development of the property." See Tab 6, Attachment 11 for all documentation regarding the consultation request and follow up survey.
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐ No ☒	The project is consistent with this item. The proposed Project does not involve noise sensitive use such as a residential structure, school, hospital, nursing home, etc. The proposed Street Improvements project is not considered a noise sensitive use therefore no noise study was conducted. According to research there are no churches, schools or assisted living facilities located within proximity of the construction site areas. The closest school is approximately 5 miles from Project. Construction noise may impact the Houston toad. An assessment of the impact was completed during the Biology Assessment and accompanying Biology Opinion provided by the USFWS. The effect of construction noise generated by this project will be short term. Road noise from the new section of roadway are not expected to be significant as the new section is intended as a secondary ingress/egress. Its location does provide easier routes for area residents. The existing routes will continue to be primary use. Due to proximity to local residents, contractor will utilize accepted methods of dust and *noise abatement* during the construction period. Contractor will ensure regulatory methods by using preventative equipment for construction workers consistent with OSHA Noise and

		Hearing Conservation Standards to ensure noise levels are within acceptable limits (29 CFR 1910) and ANSI standards which include a *10.46-2007, Hearing Loss Prevention In Construction and Demolition Workers*, and scheduling in order to minimize impact. This applies to all construction and demolition workers with potential noise exposures (continuous, intermittent and impulse) of 85 dBA and above. Bastrop County has no official County noise ordinance therefore, the Texas state law would apply to noise disturbances within the County. See Tab 6, Attachment 12 for noise ordinance information and Tab 6, Attachment 19 for locations of schools, churches, assisted living & nursing facilities research/mapping. See Tab 5 for general project location maps and pictures from site visit conducted 4/20/16.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☐ No ☒	The project is consistent with this item. The Project is not located over a sole source aquifer. See Tab 6, Attachment 5 for Sole Source Aquifer Map.
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☒ No ☐	This project was submitted to the USACE after the Section 7 assessment was completed. Consultation with USACE occurred on May 31, 2018 Project number SWF-2018-00213, Tahitian Village Ingress/Egress. The project was submitted under the preconstruction notification procedures of Nationwide Permit General Condition 32 (Federal Register, Vol 82, No. 4, on Friday, January 6, 2017). It was determined by the USACE that discharge of dredge or fill materials into water of the US associated with the project qualified for Nationwide permit 14 for linear transportation projects. Per the USACE letter dated 12/11/2018, the construction of the activity under the NWP is valid until 3/18/2022. Upon the initial submittal, the USACE requested additional consultation from THC occur prior to review of the preconstruction notification. They also reviewed the permit action on threatened and endangered species within the action area and took into account the direct and indirect effects of the permit action on these species and

		acknowledged the issuance of a permit under Section 7 of the Endangered Species Act (ESA) and determined the action will have no effect on threatened or endangered species beyond that of the environmental baseline. One mitigation factor for this authorization is that Bastrop County must submit a certification that the work, including any proposed mitigation, was completed in compliance with that nationwide permit within 30 days of the completion of work. See Tab 6, Attachment 14. An early notice and Public Review of a Proposed Activity in a 100-year Floodplain and Wetland WOUS) was published in the S-Bastrop Advertiser on September 23, 2017, where one comment requested a copy of the map from Jim Ouellet, PE General Manager at the Baster County WCID #2. The map was sent to Mr. Ouellett on September 25, 2017. No other comments were received. A fifteen-day Combined Notice of Finding of No Significant Impact and Intent to Request Release of Funds – And Final Notice and Public Explanation of a Proposed Activity in A 100-Year Floodplain and Wetland in accordance with 24 CFR 58.43 and 24 CFR 58.45 was published in the local newspaper Bastrop Insider on April 17, 2019.
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐ No ☒	The proposed project is consistent with this item. The only river in Texas that meets this definition of a wild and scenic river in Texas is the Rio Grande River near the Big Bend National Park. The proposed project area is approximately 275 miles northeast from the easternmost portion of the Rio Grande River that is considered Wild & Scenic. Further mapping indicates the Saline Bayou Wild & Scenic River located in Louisiana approximately 284 miles northeast from the proposed project areas. The closest National Rivers Inventory location is approximately 55 miles from the project site. The Pedernales River will not impact or be impacted by the project.
ENVIRONMENTAL JUSTICE		

Environmental Justice Executive Order 12898	Yes ☐ No ☒	The Project is consistent with this section. EPA EJ View database was used to obtain information about the social demographics of the Project site. These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income. No displacements or negative impacts to minority or low-income populations are anticipated from the proposed Street Improvements construction project.

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.
(1) Minor beneficial impact
(2) No impact anticipated
(3) Minor Adverse Impact – May require mitigation
(4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
LAND DEVELOPMENT		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	1	The proposed project is compatible with the current surrounding land use and considering the roadway is at established rural residential settings, additional development in the area is not expected. See Tab 5, photos and general location maps. According to the The Lost Pines Habitat Conservation program (Bastrop County Website), "Bastrop County was issued an

		"Endangered Species Incidental Take Permit" from the United States Fish and Wildlife Service (FWS) that covers approximately 124,000 acres of known and potential Houston toad habitat within the county. This permit, with its associated Lost Pines Habitat Conservation Plan (LPHCP), offers a simplified process for obtaining authorization for incidental take under section 10(a)(1)(b) of the Endangered Species Act (ESA) for a variety of activities and provides regulatory certainty for local landowners and other community interests. The permit allows Bastrop County to issue certificates of participation to landowners for harming the toad or its habitat while engaging in legal land development, agricultural or forestry practices, wildlife management, and certain other land-use activities. Landowners can voluntarily participate in the county's LPHCP in a variety of ways. Whether building a new home or business, developing a subdivision, or simply continuing with existing land-use activities, participation in the LPHCP provides the coverage necessary to ensure compliance with the ESA. The basic foundation of the LPHCP is that humans can coexist with the Houston toad. In fact, the long term preservation, restoration, enhancement, and management of toad habitat in Bastrop County is dependent on private landowners because the vast majority of known and potential habitat exists on private property." While participation is voluntary, the focus of the plan is to monitor and track development in the area to understand the ongoing efforts for conservation of the Houston Toad. It is a successful program that has provided a basis for USFWS approval. While not used for this project, the LPHCP provides proof of the Count's commitment and stewardship of the endangered species and rare conditions of the wildland urban interface in the county.

Soil Suitability/ Slope/ Erosion/	3	The project area is included within a USFWS defined Critical Habitat for the endangered Houston Toad *Bufo houstonensis.* The Houston toad is associated with sandy soils. Critical habitat includes areas that are essential to the conservation of a threatened or endangered species and that may require special management considerations or protection. Although not described when critical habitat was designated, essential habitat requirements for the Houston toad include seasonally-flooded breeding ponds, deep sandy soil, forested or woodland areas, and native prairies and old fields that support juvenile growth, dispersal and connectivity. The Service designated critical habitat for the Houston toad in 1978 (43 FR 4022), which includes approximately 82,000 acres in the central portion of Bastrop County, and approximately 2,000 acres surrounding Lake Woodrow in Burleson County where toads were known to occur at that time. With regard to the impact of construction on the area. A strategy is in place for the critical habitat to be restored to its original values as much as possible. The project includes a plan for critical habitat preservation which includes native grassland restoration. As identified in Tab 6, Attachment 20, (Attachment A from the Biology Assessment document), the restoration steps reference preparation of a seeding and planting area to the lines and grades indicated on the drawings. This may include seedbed preparation, sowing of seeds, watering, hydro-mulch, compost and other management practices, as indicated in the drawings or as directed by the Engineer or designated representative. Tab 6, Attachment 7 (USFWS Biological Opinion and Final County Biology Assessment).
Hazards and Nuisances including Site Safety and Noise	3	Bastrop County does not have a specific ordinance therefore, the Texas state law would apply to noise disturbances within the County. Noise from construction will be short term. Site visit was conducted by Latrice Hertzler and Melanie Harmon on 4/20/16 no detrimental hazards or nuisances were detected. There was an abandoned bus and an incidental waste burn barrel observed on County property. A mitigation measure includes: Contractor will ensure they are removed prior to construction activities occurring. BMPs like scheduling to prevent impact to local residents within proximity of construction site areas and prior to construction, all utilities should be located and marked to prevent accidental breaks or impacts. See Tab 5, projection location maps and site photos.

Energy Consumption	2	The energy consumption as a part of this Project is consistent with standard construction equipment and vehicles. No long term increase in energy consumption is expected from the improvements. Construction activities will include the use of large equipment for clearing and roadway improvements. No additional energy consumption is expected as a result of the newly installed road. See Tab 5, location maps and photos.

Environmental Assessment Factor	Impact Code	Impact Evaluation
SOCIOECONOMIC		
Employment and Income Patterns	**1**	The energy consumption as a part of this Project is consistent with standard construction equipment and vehicles. No long term increase in energy consumption is expected from the improvements. Construction activities will include the use of large equipment for clearing and roadway improvements. No additional energy consumption is expected as a result of the newly installed roadway. See Tab 5, location maps and photos.
Demographic Character Changes, Displacement	**1**	Demographics in the area will not be negatively impacted by the project construction. The proposed project would not isolate, or result in disproportionate impacts to any distinctive community, ethnic group, minority, or low income group and will not displace any citizens or communities. The Project is a positive for the residents of the area and is essential for human health and the environment in the event of critical need to exit the area.

Environmental Assessment Factor	Impact Code	Impact Evaluation
COMMUNITY FACILITIES AND SERVICES		
Educational and Cultural Facilities	2	According to available information as identified in Tab 6, Attachment 19, the Project area is not located adjacent to any education facilities or cultural facilities. A review of the type and nature of construction reflects that no cultural sites will be impacted by the addition of the improved roadway in the project area. A safer route for school children in the event of a fire is expected from the improved roadway.
Commercial Facilities	2	No commercial businesses are located along the alignment. See Tab 5, site location maps and site photos.
Health Care and Social Services	2	According to research and site visit on 4/20/16, no health care or social service facilities are located within proximity of Project area. See Tab 5 – Project mapping, Site visit notes & pictures. The improved roadway will facilitate better ingress and egress for emergency vehicles if access is needed for area residents.
Solid Waste Disposal / Recycling	2	According to research, there are no known solid waste disposal or recycling facilities adjacent or near the proposed project sites.

		See Tab 6, Attachments 13 for TCEQ research. However, the City of Bastrop operates a debris cleanup operation located at Highway 71.
Waste Water / Sanitary Sewers	2	Bastrop County is serviced by Bastrop WCID 1 – TX0110014. According to research there are no waste water or storm water permits located within close proximity of the Project areas. The construction activities will not impact city waste water services or sanitary sewer systems. In any event, precautions should be taken through best management practices like silt fencing, berming and other controls to prevent impact. Construction will include storm water pollution prevention. Construction should ensure no septic systems, sanitary sewers or waste water lines are within the project area prior to construction.
Water Supply	2	The Project area is located within Bastrop County and serviced by Aqua WSC – TX110013. Research indicates no water quality issues at the proposed site or within proximity of the Project APE.
Public Safety - Police, Fire and Emergency Medical	1	The closest emergency medical center is the St. David Emergency Center located in Bastrop, 3201 Texas 71, approximately 1 mile west of Project site area. The closest sheriff's office is located at 200 Jackson St. .75 miles west of Project site area. The closest active fire department is located on 802 Chestnut St. 1 mile southwest of Project site area. There are no hospitals within close proximity. The closest emergency medical center is the St. David Emergency Center located in Bastrop, 3201 Texas 71, approximately 7.50 miles southwest of Project site area. Improved access is expected for residents in case of emergency exit needs from and to public safety services is expected.
Parks, Open Space and Recreation	2	The action proposed is HUD funding for construction of an improved ingress/egress where safety issues are addressed for residents living in the existing Tahitian Village and Colovista developments in Bastrop County. The construction would include 17,100 linear feet of 50 to 135-foot-wide road right-of-way (ROW), including approximately 11,960 linear feet of new roadway. Construction is slated to commence in the summer of 2018. The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours. The activities will be occurring on existing property Research indicates the following parks are located within 5 miles of the Project site area. Lost Pines Nature Trail approximately 5 miles west of the project area. Bastrop State Park located across state highway 71 from the newly proposed intersection at SH71.

		Texas Parks & Wildlife corporate office is located approximately .75 miles east of the proposed intersection of the new road and SH 71.
Transportation and Accessibility	1	As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events. The project is to construct a improved county-maintained road. The project will ensure continued ingress and egress to Highway 71 for the residents of the subdivision where the improved ingress/egress will be constructed. The action proposed is HUD funding for construction of a new road to address ingress and egress safety issues for residents living in the existing Tahitian Village and Colovista developments in Bastrop County. The construction would include 17,100 linear feet of 50 to 135-foot-wide road right-of-way (ROW), including approximately 11,960 linear feet of new roadway. Construction is slated to commence in the summer of 2019. The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours. The entirety of the Project lies within designated critical habitat for the Houston toad. The project area is included within a USFWS defined Critical Habitat for the endangered Houston Toad (*Bufo houstonensis)* Critical habitat includes areas that are essential to the conservation of a threatened or endangered species and that may require special management considerations or protection. A biology assessment of the area to determine impact of the project on the endangered species and critical habitat resulted in mitigation, terms and conditions, monitoring and conservation recommendations. The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the Houston toad:

		Bastrop County must fully implement the Conservation Measures (Section 4.4) of the September 2017 Biological Assessment, including awareness training for all project personnel, construction sequencing, and biological monitoring. Bastrop County and its contractors must also implement and employ the "Native Grassland Restoration Specifications" contained in Attachment A of the September 2017 Biological Assessment. Bastrop County must avoid and/or minimize take of the Houston toad to the maximum extent practicable. Bastrop County must monitor potential take of the Houston toad and provide a postconstruction/restoration monitoring report to the Service within 90 days of project completion. These terms and conditions are non-discretionary. 1) Bastrop County proposed a number of Conservation Measures, listed in the BA and the "Description of the Proposed Action" section of this document. Bastrop County's proposed Conservation Measures are incorporated as reasonable and prudent measures by reference, including the purchase of 21.6 credits from the Houston toad Conservation Bank, and must be implemented, as proposed, in conjunction with this project. 2) In addition to the Conservation Measures proposed by Bastrop County, the Service determined the following minimization measures must also be implemented: • The use of herbicides within the action area is restricted to the upland areas of the right-of-way for control of Johnson grass (*Sorghum halepense*). Herbicides may also be used to control vegetation growth adjacent to guard rails during normal maintenance activities post-construction. Herbicides may only be applied between July 1 and December 31 each year, during dry weather conditions, and in accordance will all other label instructions. • Project specific locations (PSLs) may be located within the ROW of the project under construction. Additional PSLs in Houston toad habitat not previously considered must be coordinated and permitted, as appropriate, prior to the commencement of construction. 3) Bastrop County must monitor the extent of take through sufficient on-site inspections necessary to determine if the amount of allowable take is exceeded. Bastrop County must provide the Service with a brief report upon completion of the restoration of the construction and ROW vegetation. The report

		must include a summary of construction actions implemented, any unanticipated actions or delays in project completion, and any known incidental take that occurred and the reasons for that take. The Service anticipates that one juvenile and two adult Houston toads will be taken as non-lethal incidental take, in the form of harassment from construction activities. We anticipate that two adult and nine juvenile Houston toads per year could be taken as a result of the Project's operational phase. Incidental take associated with the eastern and western projects must not exceed one adult and five juvenile Houston toads for each project. The Reasonable and Prudent Measures, with their implementing Terms and Conditions, are designed to minimize the impact of the incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiating of consultation and review of the reasonable and prudent measures provided. FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures. According to USFWS conservation recommendations for construction of this new roadway: Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service is aware of Bastrop County's continuing efforts to implement a countywide fuel reduction program for the benefit and protection of its citizens with regard to wildfire mitigation. Since this program would have generally beneficial effects to the Houston toad and its habitat, the Service recommends the County continue these efforts. While it is beyond the scope of section 7 of the ESA to drive a selection of alternatives, the Service believes there are less damaging alternatives available to the County that meet the same

		goals of improving safe ingress and egress to and from these developments. It is also apparent to the Service that the preferred alternative could serve to open new areas to development. While such developments are unknown to us, we recommend Bastrop County make all reasonable efforts to inform potential developers of the Lost Pines HCP and its provisions for conservation subdivision development. In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations by Bastrop County. These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income.

Environmental Assessment Factor	Impact Code	Impact Evaluation
NATURAL FEATURES		
Unique Natural Features, Water Resources	2	According to the USFWS critical habitat mapping tool, the project area is located within the critical habitat for the Houston Toad. A USFWS Section 7 formal consultation has provided mitigation, avoidance and minimization, as well as to determine if potential ecological compensation is needed for construction. Bastrop County is a unique blend of old and new. Nestled on the banks of the Colorado River, in the heart of the Lost Pines Region. Bastrop is well known for its beautiful pine-oak trees and rich history with such Cities as Camp Swift, Elgin, Paige, Smithville and its County seat, Bastrop. Of has many attributes Lost Pines Region is home to approximately 82,400 acres of critical habitat (1978) for the Houston toad (listed federally endangered 1970). The area contains forested habitat consisting of loblolly pine (*Pinus taeda*), eastern redcedar (*Juniperus virginiana*), and post oak (*Quercus stellata*) with a thick understory of yaupon (*Ilex vomitoria*). Over the last few years, the County has experienced extreme natural disasters with intense drought and fires.

		Water resources are found within the preferred alignment. According to Project Number SWF-2018-0213 Tahitian Village Ingress/Egress USACE authorization, Bastrop County must submit a USACE certification upon completion showing proof that proposed mitigation was completed in compliance with that nationwide permit 14 within 30 days of the completion of work. See Tab 6, Attachment 14.
Vegetation, Wildlife	2	Due to the Project being located within the critical habitat for the Houston Toad, a USFWS Section 7 Formal Consultation was conducted in order to address the Houston Toad and proper mitigation measures regarding construction within the Habitat. The fauna associated with this region are represented by a mixture of species from the Austroriparian, Tamaulipan, Chihuahuan, Kansan, Balconian, and Texan biotic provinces. At least 49 species of mammals occur in the Texan province, including Virginia opossum (*Didelphis virginiana*), eastern mole (*Scalopus aquaticus*), fox squirrel (*Sciurus niger*), desert pocket gopher (*Geomys breviceps*), fulvous harvest mouse (*Reithrodontomys fulvescens*), white-footed mouse (*Peromyscus leucopus*), hispid cotton rat (*Sigmodon hispidus*), eastern cottontail rabbit (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), ground squirrel (*Citellus tridecemlineatus*), white-tailed deer (*Odocoileus virginiana*), hispid pocket mouse (*Perognathus hispidus*), deer mouse (*Peromyscus maniculatus*), black-tailed jackrabbit (*Lepus californicus*), pygmy mouse (*Baiomys taylori*), nine-banded armadillo (*Dasypus novemcinctus*), and jaguar (*Felis onca*). Both species of *Terrapene* known from the Austroriparian province— eastern box turtle (*T. Carolina*) and desert box turtle (*T. ornata*)—occur in the Texan. Sixteen species of lizards, including seven grassland and nine forest species, are also found, including green anole (*Anolis carolinensis*), eastern fence lizard (*Sceloporus undulates*), common ground skink (*Leiolopisma laterale*), and glass snake (*Ophiosaurus ventralis*) (grassland species), as well as collared lizard (*Crotaphytus collaris*), Texas spiny lizard (*Sceloporus olivaceous*), Texas horned lizard (*Phrynosoma cornutum*), and Great Plains skink (*Eumeces obsoletus)*forest species. Only five species of urodele fauna are known from this area, including small-mouthed salamander (*Ambystoma texanum*), tiger salamander (*Ambystoma tigrinum*), and eastern lesser siren (*Siren intermedia*), the Texan province acts as a barrier to urodele distribution between the endemic Balconian province fauna to the west and the Austroriparian fauna to the east. Anuran fauna is composed primarily of Austroriparian or otherwise widely distributed species, including eastern spadefoot

		toad (*Scaphiopus holbrookii*), Gulf Coast toad (*Bufo valliceps*), Woodhouse's toad (*Bufo woodhousii*), southern cricket frog (*Acris gryllus*), southern chorus frog (*Pseudacris nigrita*), gray treefrog (*Hyla versicolor*), green treefrog (*Hyla cinerea*), North American bullfrog (*Rana catesbeiana*), northern leopard frog (*Rana pipiens*), and narrowmouthed toad (*Microhyla carolinensis*). Additional anuran species that fail to cross from the Texan into the Austroriparian province include Pacific tree frog (*Pseudacris clarkia*), Strecker's chorus frog (*Pseudacris streckeri*), and striped whipsnake (*Microhyla olivacea*). Other reptile and amphibian species common to this biotic zone include 6-lined racerunner (*Aspidoscelis sexlineata*), rat snake (*Ptyas mucosus*), eastern hognose snake (*Heterodon platirhinos*), rough green snake (*Opheodrys aestivus*), copperhead (*Agkistrodon contortrix*), western diamondback rattlesnake (*Crotalus atrox*), Blanchard's cricket frog (*Acris crepitans*), diamondback water snake(*Nerodia rhombifer*), and Houston toad (*Bufo houstonensis*). Common bird species include northern bobwhite (*Colinus virginianus*), eastern meadowlark (*Sturnella magna*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferus*), field sparrow (*Spizella pusilla*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), belted kingfisher (*Ceyrle alcyon*), and mockingbird (*Mimus polyglottos*).
Other Factors	1	Avoidance and minimization measures, terms and conditions as well as mitigation are provided at the bottom of this document. With regard to the impact of construction on the area, a strategy is in place for the critical habitat to be restored to its original values as much as possible. The project includes a plan for critical habitat restoration which includes native grassland restoration. As identified in Tab 6, Attachment 20, (Attachment A from the Biology Assessment document), the restoration steps reference preparation of a seeding and planting area to the lines and grades indicated on the drawings. This may include seedbed preparation, sowing of seeds, watering, hydro-mulch, compost and other management practices, as indicated in the drawings or as directed by the Engineer or designated representative.

Additional Studies Performed:

- Biological Assessment Proposed Construction of a New Ingress/Egress Road for Tahitian Village and Colovista Developments Bastrop County, Texas
- IPAC Consultation Code: 02ETAU00-2017-SLI-0367

- Prepared by Horizon Environmental with contributions by Dr. Michael R.J. Forstner, Texas State University – September 2017 and revised 2018
- Intensive Cultural Resources Survey of USACE Jurisdictional Areas within the Proposed Tahitian Village Roadway Improvements Project, Bastrop, Bastrop County, Texas – August 2018

Field Inspection (Date and completed by)**:**

June 21, 2016 – Latrice Hertzler and Melanie Harmon, Future Link Technologies, Inc.

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]**:**
Texas Commission on Environmental Quality - http://www.tceq.state.tx.us/
Texas Water Development Board - http://www.twdb.state.tx.us
Texas Parks and Wildlife – http://www.tpwd.state.tx.us
US Fish & Wildlife – http://fws.com/
National Resource Conservation Center -http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
Google Earth - http://www.google.com/google earth.htm
Federal Emergency Management Agency - http://www.msc.fema.gov/
Federal Aviation Administration -http://www.faa.gov/airports_airtraffic/airports/planning_capacity/npias/
National Response Center -http://www.nrc.uscg.mil/pls/htmldb/f?p=109:1:139040664473
Council of Government- http://www.h-gac.com/
Texas Association of Regional Councils - http://www.txregionalcouncil.org/index.php
Environmental Protection Agency -http://epa.gov
US Census – http://www.census.gov
Bureau of Economic Analysis – http://www.bea.gov
Texas General Land Office – www.glo.state.tx.us/coastal/cmp.html
Wild and Scenic Rivers in Texas - http://www.nps.gov/rigr/planyourvisit/wildscenic.htm
County of Bastrop - http://www.co.bastrop.tx.us/
Texas Association of Regional Councils - http://www.txregionalcouncil.org/index.php
Texas Education Agency – http://www.tea.state.tx.us/
Assisted Living Federation of America – http://www.alfa.org/alfa/About_ALFA.asp?SnID=390678837
Texas Historical Commission - http://www.thc.state.tx.us/
Texas Department of Aging and Disabilities - http://www.dads.state.tx.us/
US Housing & Urban Development – NEPASSIST- http://www.epa.gov/oecaerth/nepa/nepassistmapping.html
US Housing & Urban Development - Tribal Interest Website http://egis.hud.gov/tdat/countyQuery.aspx?state=Texas
Texas Railroad Commission – http://www.rrc.state.tx.us
Bastrop Complex Wildfire Case Study dated September 4, 2011, conducted by the Texas Forest Service - by Karen Ridenour, Sean Rissel, Wade Powell, Richard Gray, Mike Fisher, and Julie Somerfield

List of Permits Obtained:

USACE: SWF-2018-00213, Tahitian Village Ingress/Egress

USFWS: IPAC CONSULTATION CODE: 02ETAU00-2017-SLI-0367
Other permits may be necessary during the construction in order to ensure consistency with state and federal regulatory requirements.
THC Permit Texas Antiquities Permit No. 8516 - H045-160048

Public Outreach [24 CFR 50.23 & 58.43]**:**

An Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain and Wetland/WOUS public review process was conducted in accordance with HUD requirements. This 15-day public notice identifies the approximate impact to the floodplain and WOUS and was published in the S-Bastrop Advertiser on 9/23/2017. Comments received from TPWD were addressed and are included herein.

A fifteen-day Combined Notice of Finding of No Significant Impact and Intent to Request Release of Funds – And Final Notice and Public Explanation of a Proposed Activity in A 100-Year Floodplain and Wetland in accordance with 24 CFR 58.43 and 24 CFR 58.45 was published in the local newspaper S-Bastrop Advertiser from January 19, 2019 through February 4, 2019.

Three dissenting comments were received (See Tab 1, Evidence of Publication). These include:

JoAnne Egitto, email dated February 04, 2019, submitted to Judge Paul Pape, Mel Mamner, Melissa Nemecek, Hadassah Schloss, Jeff Hill, US Senate Paul Hightower, and communications @oag.texas.gov. Subject: Proposed release of HUD funds for ingress/egress road Tahitian Village, Bastrop TX

Jennifer Loda, Amphibian and Reptile Staff Attorney, Center for Biological Diversity, 1212 Broadway, Suite 800 Oakland, CA 94612 jloda@biologicaldiversity.org dated February 04, 2019, emailed to Judge Paul Pape, paul.pape@co.bastrop.tx.us, RE: Notice of Finding of No Significant Impact and Intent to Request Release of Funs, Tahitian Village Subdivision Phase I

Chris and RaeAnne Parachini, and the Parachini Family, The Copperas Creek Houston Toad Preserve, 102 Norfolk Drive, Bastrop, TX 78602 – 512-838-1361 dated February 04, 2019, Letter sent to Dear Inspector General of HUD, The Texas Attorney General, The Texas General Land Office and the Bastrop County Public Record

A second fifteen-day Combined Notice of Finding of No Significant Impact and Intent to Request Release of Funds – And Final Notice and Public Explanation of a Proposed Activity in A 100-Year Floodplain and Wetland in accordance with 24 CFR 58.43 and 24 CFR 58.45 was published in the local newspaper Bastrop Insider on April 17, 2019. The revised and/or updated ERR was provided to all interested parties.

Cumulative Impact Analysis [24 CFR 58.32]**:**

Bastrop County is a rapidly developing community due to significant human population increases in Central Texas as a whole.

With regard to the Houston Toad, the fires seem not to reflect the effect as expected, i.e., appearance of increased population as identified by County in surveys conducted in 2015, 2016

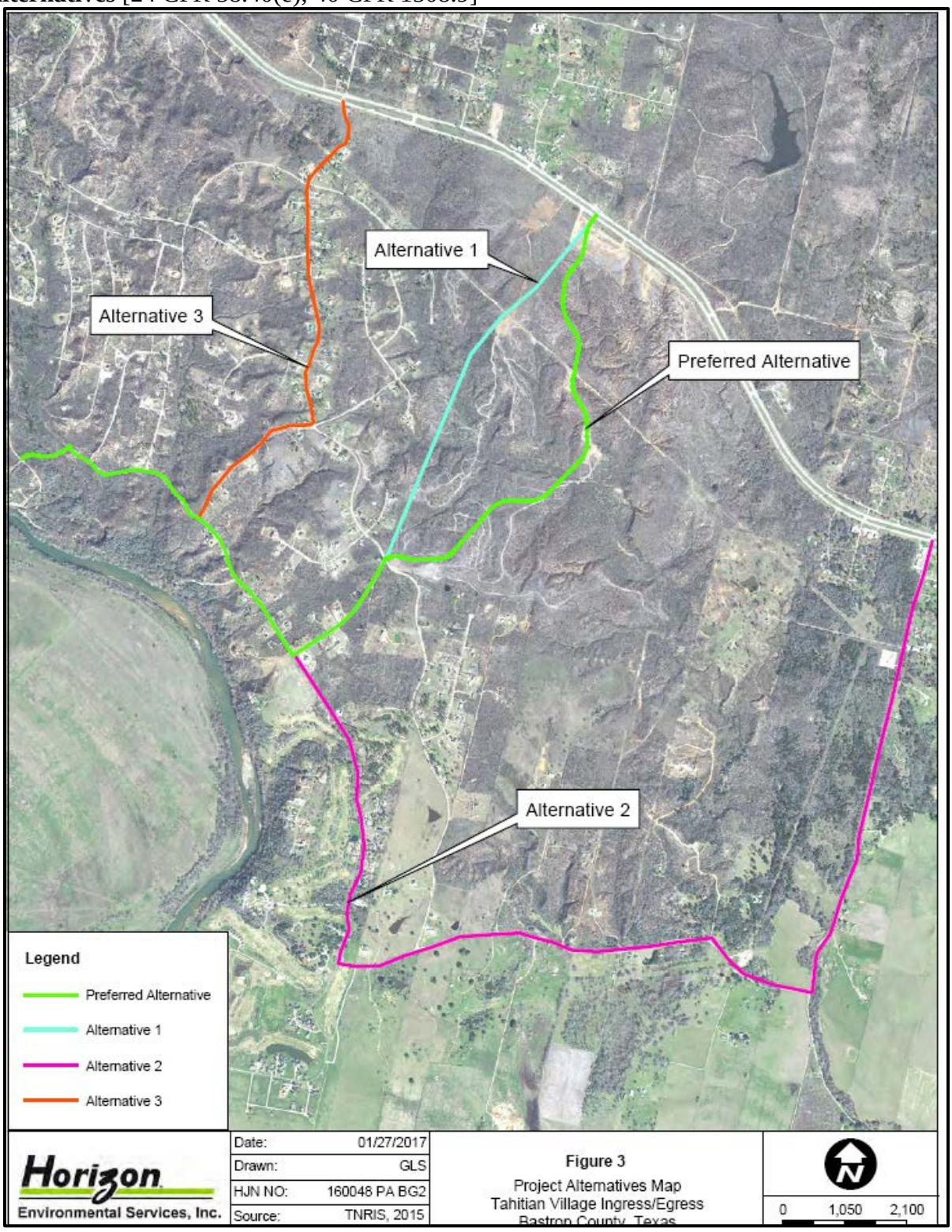
and 2017. Other species are not so fortunate. The Texas Forest Service report indicates that damage to soil can reduce the stability of the soil and increase its erosive potential, thereby reducing vegetative recovery. Hence flooding is more possible as well. The site visits reflect burned and/or felled trees, burned vegetation and scorched earth.

The direct impacts of the project construction (20.6 acres of disturbance), plus the continuing annual roadway mortality impacts (estimated at 14 adult or juvenile Houston toads), combined with the potential indirect impacts to approximately 1300 acres adjacent to the roadway add to the increasing burden on the Houston toad population as a whole in Bastrop County. However, the avoidance and minimization measures proposed in Section 4.4 of the BA, and proposed mitigation for permanent and temporary impacts help with strategic minimization

While future growth in Bastrop County is expected, the County's continuing commitment to both monitoring and stewardship of the toad enable the net impacts to be offset by conscientious efforts well into the future. The Lost Pines Conservation Plan provides the foundation of continued monitoring and tracking and will evaluate the impacts of potential development for conservation of the Houston Toad throughout the County. The LHCP is a successful program that has provided a basis for USFWS approval of the project. In addition, the Biological Analysis provides further support of this Environmental Documentation.

There is noticeable increase of participation in the regional habitat conservation plan by Bastrop citizenry as County officials indicate regular calls from the public inquiring about ways to prevent impact. In addition, there have been approximately 85 prior individual HCPs and/or certificates of inclusion under the County's LPHCP for residential development within the action area. In general, these are low-density residential developments consisting of single-family homes. and Bastrop County's efforts toward stewardship are helpful measures to reduce cumulative impacts to the Houston toad population.

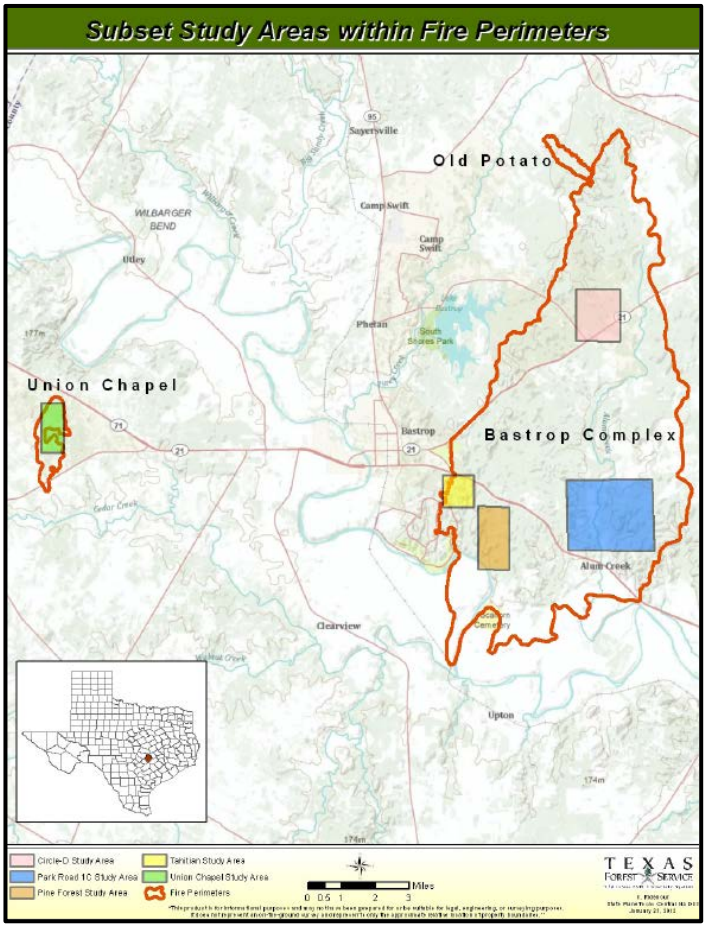
Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]



The County considered the following factors when determining if ingress/egress into the Tahitian Village Subdivision is necessary: the location of the fire east of the city of Bastrop; severity of the disaster including two deaths, homes destroyed, and significant property damage; limited simultaneous ingress/egress occurring for entering fire fighters and evacuating residents at all ingress/egress causing panicked congestion; and the magnitude of the fire on the area ecology and environmental impact.

A study conducted by the Texas Forest Service in 2012 reflects the need for more community access and shared information promoting the overall preservation of human health and the environment.

In addition to a no action alternative, four alternative locations for improved ingress/egress were considered and assessed based upon a) the area directly impacted by the fires in Tahitian Village – East of Tahitian Road – this includes the examination of available information about accessibility of ingress for emergency vehicles simultaneous to evacuating panicked residents; b) the most practicable and economically feasible selection due to construction limitations; and 3) the minimization of impacts to natural values and ecological considerations.



The review of alternatives was also informed by a study by Horizon Environmental examining potential impacts to Houston Toad critical habitat, as well as limitations associated with the construction of each alternative.

The no action alternative would not impact Houston Toad critical habitat, but this alternative would not provide improved ingress/egress and would not meet the purpose and need of the project.

Among the four alternative routes assessed, three different alternative routes to the preferred alternative route were considered and it was determined that these three alternatives a) would be more expensive since additional bridge construction would be necessary, b) would be in areas where more complicated construction would be required – indicating additional impact, or c) would not meet the purpose and need for the project.

ALTERNATIVE 1: Alternative 1 is approximately 15,550 linear feet with 10,500 linear feet being new location roadway between Ulupau Circle and Colovista Drive; it includes two proposed bridges at Copperas Creek and four culverts along the portion of new roadway between Oak Shadows Drive and SH71.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long, including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost about $240,000 to construct.

Two proposed bridges will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Assuming the bridges will be 24 feet wide, and approximately 120 feet long and 400 feet long respectively, including approach slabs and abutments, and constructed for approximately $100/SF, the bridges will cost approximately $288,000 and $960,000 to construct. Four culverts will also be required along the portion of new roadway between Oak Shadows Drive and SH 71.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $272 per linear foot to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 12.05 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $4,236,575.

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 18.95 acres. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures). The total estimated cost for this alternative would be $4,236,575, and the total area of disturbance would be approximately 18.95 acres.

This alternative will have direct and indirect impacts to the Houston toad where no roadways exist now. However, this alternative indicates additional construction to reduce slope and/or alteration to ensure safety of workers and users. The undulating terrain in this area is severe and treacherous. The likelihood of having a successful roadway as well as ongoing maintenance is not likely.

ALTERNATIVE 2: Alternative 2 is approximately 28,200 linear feet in length and will require approximately 3,350 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive, connecting Colovista Drive to Crafts Prairie Road via a new roadway, commencing along Crafts Prairie Road to Ponderosa Road, and continuing along Ponderosa Road to SH 71. Additionally, the route will consist of the acquisition of additional ROW, widening all existing roadways to 24 feet wide, as

well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct. A cross culvert will also be required along the portion of new roadway between Colovista Drive and Crafts Prairie Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $131 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 3.85 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $3,695,200.

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 6.04 acres.

This alternative uses existing ROW, but it does not meet the need and purpose of the project to provide improved ingress/egress and better emergency access. This alternative may have indirect impacts to the Houston toad. While the roadway already exists, it is does not provide swift ingress/egress for emergency vehicle access nor does it provide quick exit if the area must be evacuated. During emergency evacuations from burning areas, the urgent choices made by existing residents in a time of panic will be to use the closest exit possible. It is likely the same severe backup of traffic both directions from exiting residents and entering emergency crews will result. This alternative does not provide better access to emergency fire crews for firefighting.

ALTERNATIVE 3: Alternative 3 is approximately 11,700 linear feet in length and will require approximately 3,320 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive to River Forest Drive, continuing along River Forest Drive to McAllister Road, and completing the route along McAllister Road to SH 71. Additionally, the route will consist of the acquisition of additional ROW, widening all exiting roadways to 24 feet wide, as well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $166 per linear feet to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 3.71

acres of new ROW to be acquired if a 50-foot-wide ROW is purchased. The total cost is estimated to be $1,940,145.

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 6.0 acres.

This alternative will incorporate issues from the other alternatives by having both direct and indirect impacts to the Houston toad where no roadways exists now and utilizing some existing roadways. Already existing roadways in portions of this alignment does not provide improved swift ingress/egress for emergency vehicle access nor does it provide improved quick exit if the area must be evacuated. It is likely the same severe backup of traffic both directions from exiting residents and entering emergency crews will result. This alternative does not provide better access to emergency fire crews for firefighting.

PREFERRED ALTERNATIVE: The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts. One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive. A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

The Preferred Route best meets the purpose and need for the project by providing improved and safer ingress/egress and better emergency access to and from existing residential areas. The preferred route also enhances safety and improves ingress/egress by providing additional access from residential areas to SH 71, as well as additional access for many of the existing roadways in the project area. This route additionally makes better use of the existing topography and will impact 1 property between Oak Shadows Drive and SH 71.

The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive.

A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $182 per linear foot to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 10.6 acres of new ROW to be acquired (50 feet wide). The total cost is estimated to be $3,115,187.

This alternative is within Houston toad habitat. The total area of disturbance for the new roadway sections varies from 50 to 135 feet wide and is 21.6 acres total. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures).

This alternative will incorporate issues from the other alternatives by having direct and indirect impacts to the Houston toad where no roadways exist now but improving existing roadways as well. This alternative provides an improved ingress/egress for residents through adding a new exit to SH71. This alternative will reduce the impact of urgent exiting residents during times of potential evacuations – meeting the need and purpose of the project. This alternative also increases the risk of impacting other county listed species. However, the new road will be located in previously burned areas where there is less likelihood of impact. The area was traversed, and no wildlife was encountered during the site visit. Mitigation measures have been developed to ensure construction impacts are minimized. While this alternative may encourage future development in an undeveloped area, the County has an existing approved Lost Pines Habitat Conservation program in place already which will facilitate a managed and controlled process for addressing these concerns and require mitigation of any impacts.

No Action Alternative [24 CFR 58.40(e)]:
The County considered the following factors when determining if ingress/egress into the Tahitian Village Subdivision is necessary: the location of the fire east of the city of Bastrop; severity of the disaster including two deaths, homes destroyed, and significant property damage; limited simultaneous ingress/egress occurring for entering fire fighters and evacuating residents at all ingress/egress causing panicked congestion; and the magnitude of the fire on the area ecology and environmental impact.

The no-action alternative would have no direct impact to the Houston toad, but safe ingress and egress within the Tahitian Village and Colovista developments would not be achieved in the event of significant emergencies such as wild fires; therefore, this alternative is not practicable since it does not serve the project purpose.

Summary of Findings and Conclusions:

The following are a set of measures Bastrop County proposed to minimize the effects of the project on the Houston toad. These measures were developed and refined, in part or wholly, from lessons learned and best management practices developed as a result of the recovery efforts in the wake of the Bastrop County Complex Fire (BCCF) of 2011. The HUD assessment of the environmental conditions are predicated upon the primary concern for the area - the Houston Toad. As referenced within the BA and the BO, early feedback from current head starting and supplementation efforts that the population numbers in Bastrop County are on an upward trend since 2012, at least locally at the Griffith League Ranch, where post BCCF supplementation efforts have been underway since 2013 (Dr. Michael Forstner, personal communication 2017). Limited survey in Robertson County revealed several positive detection locations as we attempt to track the large population previously identified in 2014 (Forstner 2017).

- Prior to commencement of work on the project, Bastrop County and/or its Contractor(s) will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.
- Construction sequencing will be as follows:

  a) A permitted Biological Monitor will initially inspect (i.e., conduct an intensive pedestrian survey including the examination of all potential refugia within) the ROW for Houston toads.
  b) When determined clear of Houston toads by the Biological Monitor, the Contractor(s) can hand clear the edges of the ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with gates at each end and as needed for ingress and egress.
  c) The fencing shall be trenched into the ground a minimum of 12 inches and above grade 24 inches. Additional support (e.g., t-posts, metal fencing, etc.) shall be installed on the interior of the barrier to limit animals climbing into the excluded area.
  d) When barrier fencing is installed and after the Biological Monitor conducts another inspection of the ROW for Houston Toads, the Contractor(s) may begin site clearing, grading, and construction of facilities
  e) The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly (generally within 24 hours) repaired by Bastrop County and/or its Contractor(s).
  f) When construction of the project and final grading is complete, Bastrop County and/or its Contractor(s) shall remove the barrier fencing, except that which needs to remain intact for SW3P compliance and smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix shall occur per specifications (see Attachment A in the revised biological assessment).
- A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48-hour period shall result in a 24-hour stand-down of the project (i.e., no work).

- Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches.
- The entry and exit points for heavy equipment moving in and out of the ROW work zone are limited to the two ends. Additional entry and exits points are permissible with rollover gates or other approved designs for maintaining the integrity of the barrier.
- Contractor(s) will be prevented from using any offsite staging or materials storage areas that are not previously established construction yards.
- All staging of equipment or refueling will be contained in the ROW for the project. These activities shall be sited on level ground and not up-slope of aquatic sites (i.e., potential breeding or dispersal areas).
- 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 properly disposed of.
- Following construction activities, Bastrop County and/or its Contractor(s) will ensure that equipment used on undisturbed ground will not create potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area.

Biological Monitoring:

1. For work conducted from July 1st through December 31st, work can proceed without full-time biological monitoring with the following exceptions:

   •A permitted Biological Monitor will be retained by County to respond on as-needed basis. The Biological Monitor's contact information and qualifications will be shared with the Service prior to commencement of construction.

   •An encounter with a Houston toad at the jobsite during this project requires that work must cease immediately, and/or not begin until the biological monitor has been notified and the toad(s) safely removed by a qualified and permitted biologist. In addition, the U.S. Fish and Wildlife Service's Texas Coastal Ecological Services Field Office should also be contacted immediately at (281)286-8282.

2. If work begins or extends between December 31st and July 1st, all of the following conditions apply.

   •Bastrop County will provide Biological Monitors (qualified biologists) who are permitted in identifying, locating, handling, removing and transporting Houston toads. Biological Monitors will search the work site daily before work begins. The Biological Monitor(s) will have authority to stop work immediately if a Houston toad is encountered within the construction zone. Once the Houston toad has been safely removed (salvaged) by a qualified and permitted biologist, work may resume.

   •Toad emergence and breeding is triggered, in part, by changing barometric conditions, rainfall and warm nighttime temperatures in the late winter and early spring. Bastrop County will communicate regularly with Dr. Michael Forstner at Texas State University to keep informed about regional toad habitat monitoring in the event toad emergence occurs and breeding is assumed to be underway across the range of the Houston toad.

- There are no compliance issues with comprehensive plans. Within the action area there are numerous other federal, state, tribal, local or private actions affecting the Houston toad.

The Service is aware of approximately 85 prior individual HCPs and/or certificates of inclusion under the County's LPHCP for residential development within the action area. In general, these are low-density residential developments consisting of single-family homes. USFWS also referenced past Texas Department of Transportation maintenance and upgrade work on the adjacent SH 71 and of multiple small commercial developments proposed or underway along SH 71. Past and present actions also include broad-scale FEMA recovery work in the wake of the BCCF and subsequent disasters (2011-present) that included debris removal, temporary housing, hazard tree removal, road, bridge, and culvert repairs and numerous utility repairs. Thus, the available habitat is mixed oak and pine forest of varied age, with numerous natural drainage features and numerous man-made impoundments (e.g., ponds).

- No negative urban impact is anticipated. These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income.
  No displacements or negative impacts to minority or low-income populations are anticipated from the proposed Street Improvements construction project. There will be no impact to the demographic character of the community.

- Temporary traffic delays are possible during construction periods due to existing roadways being well traveled and two lane.

- Positive impact to fire, police or other emergency functions is expected at this time.

- The Project Sites located within the 100 year floodplain,and is located near wetlands. This project was submitted to the USACE after the Section 7 assessment was completed. Consultation with USACE occurred on May 31, 2018 Project number SWF-2018-00213, Tahitian Village Ingress/Egress. The project was submitted under the preconstruction notification procedures of Nationwide Permit General Condition 32 (Federal Register, Vol 82, No. 4, on Friday, January 6, 2017). It was determined by the USACE that discharge of dredge or fill materials into water of the US associated with the project qualified for Nationwide permit 14 for linear transportation projects. Per the USACE letter dated 12/11/2018, the construction of the activity under the NWP is valid until 3/18/2022.

- No impact from hazardous materials expected.

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

4.4 CONSERVATION MEASURES (Taken from the Biology Assessment)

4.4.1 Minimization and Avoidance

Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all 160048-02 Tahitian Village BA Sept 2017 5-30 personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.

Roadway modifications made to minimize impacts to the Houston toad:

Bastrop County will utilize maximum engineering design culvert sizes to better enable flood water transport but simultaneously better enable use of these culverts by the Houston toad.

Conducting the construction outside the toad's primary breeding season of January 1 through April 1.

Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all personnel work crews, their supervisors, and involved County employees.

1. Construction sequencing will be as follows:
    a. Biological Monitor will initially inspect the ROW for Houston toads.
    b. When determined clear of Houston toads by the Biological Monitor, the Contractor can hand clear the edges of the new construction ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with small gaps at each end for ingress and egress.
    c. The fencing shall be trenched into the ground and there will be no gaps in the barrier.
    d. When barrier fencing has been installed, and after the Biological Monitor has conducted another inspection of the ROW for Houston Toads, the Contractor may begin site clearing, grading, and construction of facilities.
    e. The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly repaired by Contractor.
    f. When construction of the project and final grading has been completed, Contractor shall remove the barrier fencing, except that which needed to remain intact for SW3P compliance and smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix (Turner Seed Company) shall occur per specifications (see Attachment A).
2. A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48 hour period results in a 24 hour stand-down of the project.
3. Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches.

4. The entry and exit points for heavy equipment moving in and out of the ROW work zone is limited to the two ends.
5. The contractor will be prevented from using any offsite staging or materials storage areas that are not already established construction yards.
6. All staging of equipment or refueling will be contained in the ROW for the project. All fueling will be conducted no less than 200 feet from any potential breeding or dispersal features (e.g., ponds, streams, wetlands, etc.). These locations should be on relatively level ground to minimize the potential for leaks to migrate offsite.
7. 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.
8. Following construction activities, HUD and Bastrop County will ensure that equipment used on undisturbed ground will not create potential artificial breeding 160048-02 Tahitian Village BA Sept 2017 5-31 sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area.
9. The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the project (21.6 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat. 160048-02 Tahitian Village BA Sept 2017 5-32 Bastrop County will purchase 21.6-acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

5.4.2 Mitigation

The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the project (21.6 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat. Bastrop County will purchase 21.6-acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

Taken from the USFWS BA Opinion

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, HUD and Bastrop County must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. Bastrop County proposed a number of Conservation Measures, listed in the BA and the "Description of the Proposed Action" section of this document. Bastrop County's proposed Conservation Measures are incorporated as reasonable and prudent measures by reference,

including the purchase of 21.6 credits from the Houston toad Conservation Bank, and must be implemented, as proposed, in conjunction with this project.

2. In addition to the Conservation Measures proposed by Bastrop County, the Service determined the following minimization measures must also be implemented:
   • The use of herbicides within the action area is restricted to the upland areas of the right-of-way for control of Johnson grass (*Sorghum halepense*). Herbicides may also be used to control vegetation growth adjacent to guard rails during normal maintenance activities post-construction. Herbicides may only be applied between July 1 and December 31 each year, during dry weather conditions, and in accordance will all other label instructions.
   • Project specific locations (PSLs) may be located within the ROW of the project under construction. Additional PSLs in Houston toad habitat not previously considered must be coordinated and permitted, as appropriate, prior to the commencement of construction.

3. Bastrop County must monitor the extent of take through sufficient on-site inspections necessary to determine if the amount of allowable take is exceeded. Bastrop County must provide the Service with a brief report upon completion of the restoration of the construction and ROW vegetation. The report must include a summary of construction actions implemented, any unanticipated actions or delays in project completion, and any known incidental take that occurred and the reasons for that take.

MONITORING AND REPORTING REQUIREMENTS

The Service anticipates that one juvenile and two adult Houston toads will be taken as non-lethal incidental take, in the form of harassment from construction activities. We anticipate that two adult and nine juvenile Houston toads per year could be taken as a result of the Project's operational phase. Incidental take associated with the eastern and western projects must not exceed one adult and five juvenile Houston toads for each project. The Reasonable and Prudent Measures, with their implementing Terms and Conditions, are designed to minimize the impact of the incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiating of consultation and review of the reasonable and prudent measures provided. FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

USFWS CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service is aware of Bastrop County's continuing efforts to implement a countywide fuel reduction program for the benefit and protection of its citizens with regard to wildfire mitigation. Since this program would have generally beneficial effects to the Houston toad and its habitat, the Service recommends the County continue these efforts.

While it is beyond the scope of section 7 of the ESA to drive a selection of alternatives, the Service believes there are less damaging alternatives available to the County that meet the same goals of improving safe ingress and egress to and from these developments. It is also apparent to the Service that the preferred alternative could serve to open new areas to development. While such developments are unknown to us, we recommend Bastrop County make all reasonable efforts to inform potential developers of the Lost Pines HCP and its provisions for conservation subdivision development.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations by Bastrop County.

TPWD Recommendations:

1. Best management practices (BMPs) for preserving water quality such as berming and silt fencing will be used.
2. Soil stabilization and revegetation will be consistent with USFWS conditions and mitigation plan. Industry and site specific mitigation will be used to return the area to its original condition. Where possible revegetate to promote positive habitats for local species and prevent invasive species.
3. Where trenching or excavation is involved keep trenches/excavation and backfilling crews scheduled to minimize the amount of trenches/exaction areas left open. During construction if necessary, any potential open trenches will be monitored to prevent unintentional capture, if capture TPWD will be contacted for further direction.
4. Site will be examined prior to construction activities to ensure Migratory Bird Treaty Act (MBTA) compliance.
5. Avoid contact with wildlife, if wildlife encountered, stop construction and allow wildlife to leave the site. Provide listing Bastrop County TPWD Rare Threatened and Endangered Species list to construction workers; if listed species identified, stop construction and contact TPWD for further direction. Specifically inform employees and contractors spotted skunk (*Spilogale putorius interrupta*), Elliot's short-tailed shrew *(Blarina hylophaga hylophaga*), and Texas garter snake (*Thamnophis sirtalis annectens*) could inhabit the proposed project area. Stage construction to prevent impact.

- If potential impact to aquatic wildlife occurs, TPWD will be contacted for direction. Consider construction to avoid spawning periods. Biology monitor regularly to prevent impact.

Historical Commission Recommendations: If any historic properties are discovered or if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area and please contact THC for further direction.

USACE Conditions: Bastrop County must submit a USACE certification that work, plus proposed mitigation, was completed in compliance with that nationwide permit 14 within 30 days of the completion of work.

Determination:

☒ **Finding of No Significant Impact** [24 CFR 58.40(g)(1); 40 CFR 1508.27]
The project will not result in a significant impact on the quality of the human environment.

☐ **Finding of Significant Impact** [24 CFR 58.40(g)(2); 40 CFR 1508.27]
The project may significantly affect the quality of the human environment.

Preparer Signature: _____Date: 04/16/2017

Name/Title/Organization: Latrice Hertzler, President, Future Link Technologies Inc.

Certifying Officer Signature: _____Date:_____

Name/Title: Paul Pape – County Judge

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

TAB 4

PROJECT DESCRIPTION

- FORM 314

- Project Description Email to Engineers

(A314) Project Description Sheet

CONTRACTOR LOCALITY: County of Bastrop

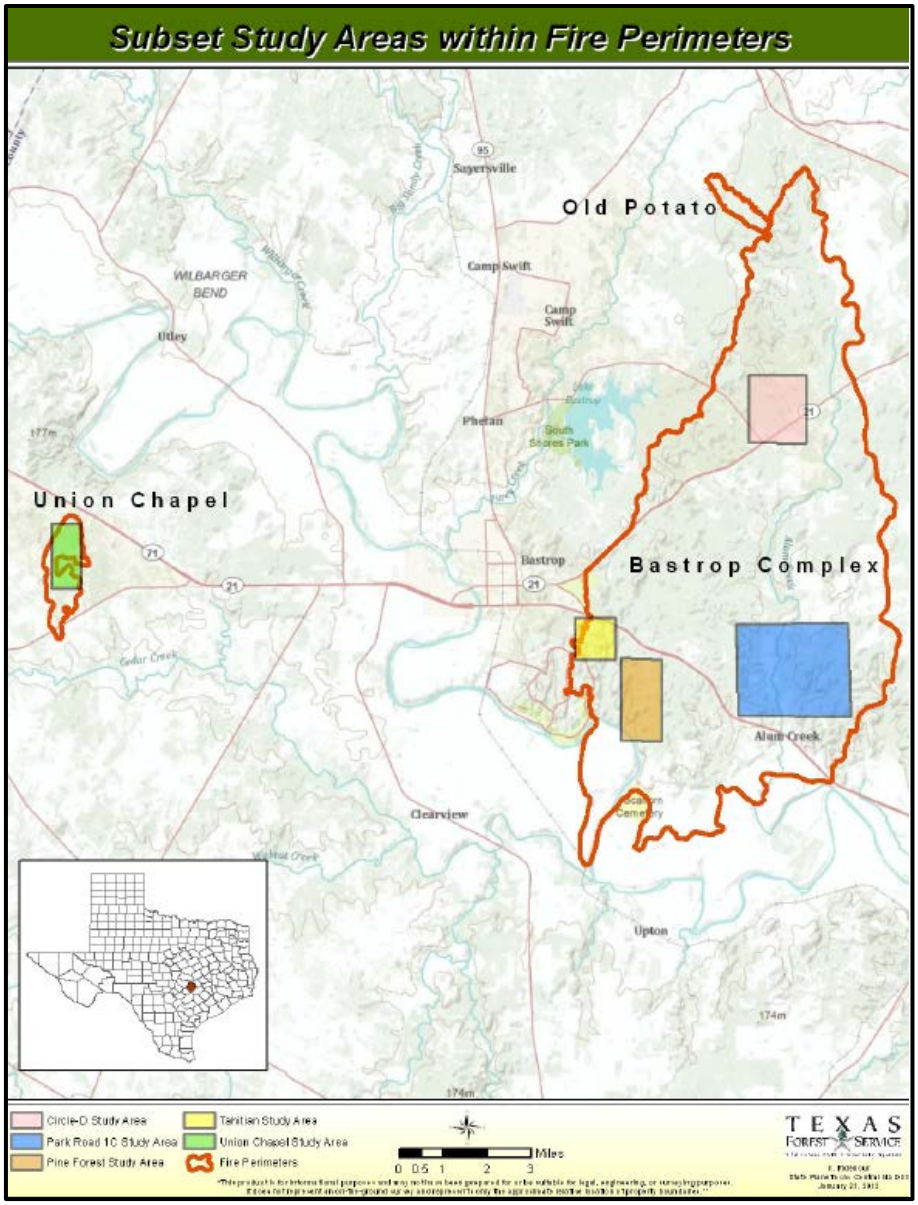
CHIEF ELECTED OFFICIAL: Paul Pape, Judge

TxCDBG CONTRACT NO: DRSBastrop2016,

PROJECT NAME: Street Improvements - Phase 1 – Tahitian Village

PROJECT NARRATIVE:

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision area during future wildfire events.



These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income.

PROJECT DESCRIPTION:

Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting

of the sub-grade, and a two-inch (2 in.) asphaltic concrete surface, and perform site work associated with construction.

This Bastrop County street improvements project is based upon disaster recovery assistance which will facilitate improved ingress/egress resulting from deadly fires in the Tahitian Village area of Bastrop County, TX in 2011.

Deemed the worst fire in Texas history by the Fire Museum of Texas, the Bastrop fires in 2011 took the lives of two people, injured 12, burned down 1,673 homes and caused an estimated $325 million in property damage. Constricted ingress/egress roadways within the Tahitian Village subdivision caused difficulties evacuating from homes and prevented emergency crews from swift access to extinguish the fires.

Difficulties occurred for panicked evacuees rushing the exits. Some decisions to try for other egress forced residents back toward the flames. Hence, traffic flow was confused and difficult due to flames, smoke, terrain, exiting residents and entering emergency vehicles.

The fire parameters were primarily east of the City of Bastrop. See Figure 1. Tahitian Village Subdivision is located immediately east of the City and consists of approximately 1,430 homes, where 264 which were destroyed in the Bastrop Complex Wildfire. The fires also destroyed water service in the area leaving an additional 255 homes vulnerable with no fire hydrant service. Figure 1 identifies the burn area as well as major areas of study conducted by the Texas Forest Service in 2012 after the fire (Bastrop Complex Wildfire Case Study – *The most destructive wildland urban interface wildfire in Texas history Sept. 4, 2011*).

One primary paved roadway at the intersection of Loop 150 (to the north) and SH 71 – Tahitian Drive (to the south) provides ingress/egress to the Tahitian Village Subdivision which is primarily urban residential in the western portion of the project area and rural residential to the east. Ingress\egress to the eastern portion of Tahitian Village includes two existing intersections to SH 71 at McAlister Road and Ponderosa Road. These existing roadways are narrow, two-lane residential streets or county roads that have minimal traffic capacity where human habitation is mixed with some densely forested areas and undulating terrain reflecting steep inclines, bluffs and curves, 5-20% slopes. Existing speed limits in the area range from 10 to 35 miles per hour. Street signs control traffic flow within the Tahitian Village subdivision. One primary light signal controls access to the Tahitian Village subdivision at the corner of Loop 150 and SH 71.

The vegetation ecological system for the area was 70 percent loblolly pine forest and woodland, 13 percent juniper shrub and 6 percent riparian (Texas Parks and Wildlife). The remaining 11 percent is classified as urban development. The Lost Pines area of Bastrop has many attributes one of which is approximately 82,400 acres of critical habitat (1978) for the Houston toad (*Bufo* [*Anaxyrus*] *houstonensis*) (listed federally endangered 1970).

Figure 1 - Bastrop Fires - Fire Parameters

With regard to construction, easements will be designated in previously disturbed areas and mitigation measures will minimize impact to ecological conditions at the site. Examples include: construction sequencing, scheduling and biological monitoring. See a complete list of measures in Mitigation section of this Checklist form.

Figure 2 reflects the preferred route to improve ingress/egress and is approximately 17,100 linear feet in total length. This route will require approximately 11,960 linear feet of new roadway and will incorporate approximately 5,500 linear feet of existing roadway. The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts. The completion of this route will provide a direct route to SH71 to the east and ultimately connecting to Tahitian Drive to the west. According to the US 2010 census, this alignment will support approximately 59 households along the alignment and approximately 1249 households within 1.5 miles of the alignment.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive. A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

Two existing water crossings along Colovista Road use culvert structures to drain water south from Tahitian Village subdivision into the Colorado River. One culvert damaged after area flooding is located between Tall Forest Drive and River Forest Drive at an unpaved roadway on Colovista Road; and one culvert is located on at paved roadway located east of River Forest Drive west of Oak Shadows Drive on Colovista Road.

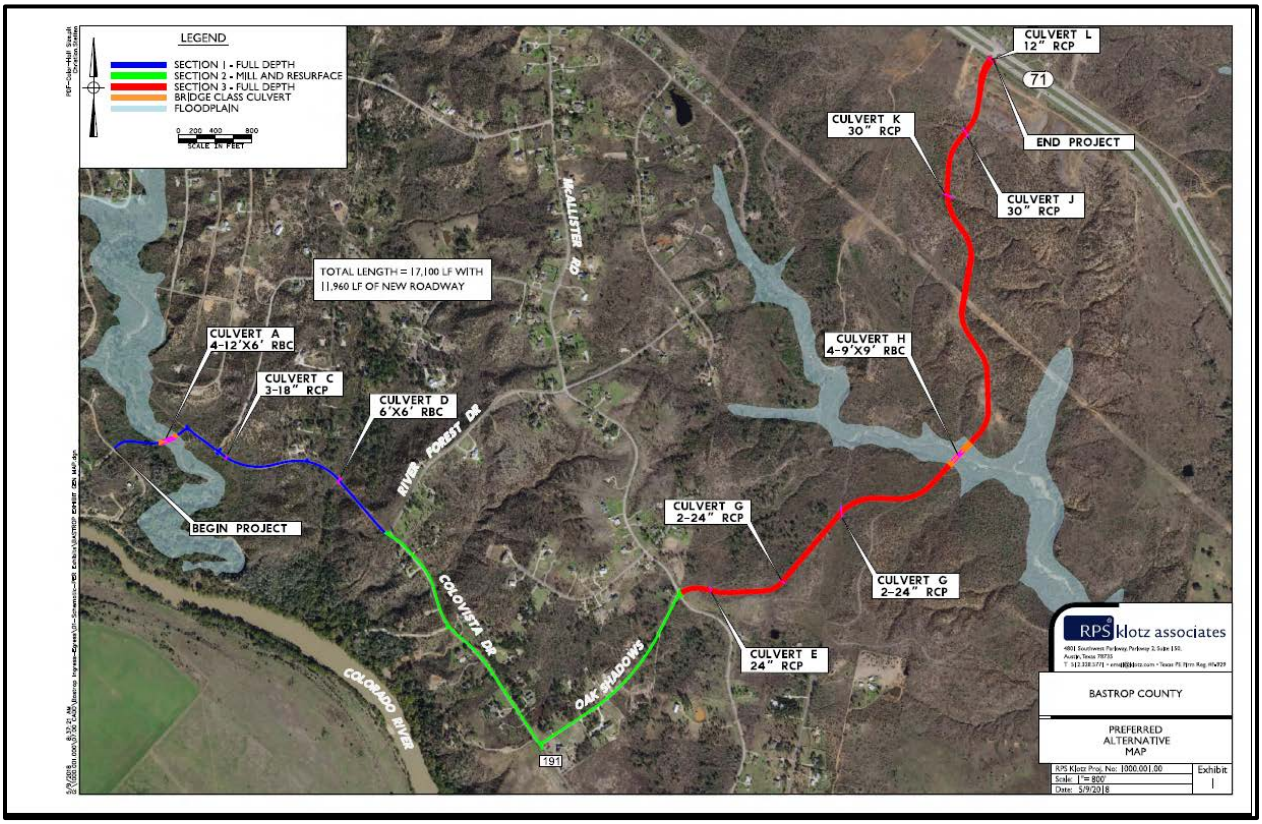


Figure 2 - Tahitian Village Preferred Alignment

The total area of disturbance for the new roadway sections varies from 50 to 135 feet wide and is 21.6 acres total. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures).

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $182 per linear foot to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 10.6 acres of new ROW to be acquired (50 feet wide).

The County has available funding from CDBG Community Development and Revitalization Program to aid areas impacted and distressed by the Texas Wildfires. The action proposed is HUD funding for road improvements to address ingress/egress safety and emergency access issues for residents living in the existing Tahitian Village and Colovista developments in Bastrop County.
The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:
In September 2011, Bastrop County suffered the most destructive wildfire in Texas history, which destroyed over 1,600 homes and included the loss of two lives and injured 12. The fires struck areas of Bastrop County in September and October 2011. Three separate fires started on September 4, 2011, as a result of strong winds caused by nearby Tropical Storm Lee, and merged into one large blaze that burned east of the city of Bastrop. The Tahitian Village subdivision was hard hit where 264 (51 percent) of the structures within the subdivision were within the fire perimeter. (*Bastrop Complex Wildfire Case Study, Texas Forest Service*) Significant ingress/egress issues were encountered in Tahitian Village and Colovista during the wildfire events of 2011 (personal communication, Mike Fisher, Bastrop County Emergency Management) (Ref BA).

The Bastrop Complex Wildfire Case Study of September 4, 2011, references the fires as "[t]he most destructive wildland urban interface wildfire in Texas history." "Within 13 minutes of the first report of the wildfire, law enforcement officers, firefighters and EMS workers started evacuations of 5,000 individuals that would continue over the next several hours as the fire intensified and moved into large developed areas." This included the Tahitian Village subdivision.

The study goes on to say: "Building a fire-adaptive community is complex. Multiple components interrelate to reduce structure vulnerability. Even if one piece of the puzzle is missing, the vulnerability to fire damage and destruction of a structure increases. The random nature of every fire makes it impossible to make decisions based on trends and fads. Homeowners and community leaders need to understand the individual and large-scale components in order to correctly make decisions that produce successful, more fire-resistant communities." In addition, homeowners should understand that in some cases, people have perished in fires by waiting too long to evacuate. The public needs to understand the hazards caused by wildfires and, when an evacuation order goes out, why they should heed the call. There may only be minutes to act. The isolative nature of the area of concern plays a major factor in these decisions. The impact of limited ingress/egress is significant and can make the difference in saving lives and saving the environment since the faster that emergency vehicles can respond to the fire, the sooner the public health and the environment (habitat) is preserved.

The existing ingress/egress roadways at the east end of Tahitian Village are narrow, two-lane residential streets or county roads that have minimal traffic capacity. In the event one or more of these existing roadways becomes impassible due to wild fire or flooding, the other existing roadways are not adequate to provide safe and efficient ingress/egress. (personal communication, Mike Fisher, Bastrop County Emergency Management) (BA Documentation produced by Horizon Environmental). In addition, existing intersections to State Highway 71 provide terrain limitations to add signal controls to facilitate use for bidirectional ingress/egress. The use of an improved supplemental exit will ensure continued flow of traffic during emergencies for the underserved areas within the Tahitian Village subdivision.

Overall, as a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The public health, safety, and welfare of this subdivision was threatened due to the lack access routes for emergency services

and a quick evacuation route for residents. The purpose of the project is to provide improved ingress/egress, especially during emergencies. This will increase safety, giving residents a way to evacuate and emergency crews a way to access the area for better access to fire fight and if one or more routes are blocked. It will also preserve important environmental habitat conditions since fire fighters will arrive faster to save more homes and areas where the habitat exists.

These activities shall benefit five thousand three hundred seventy (5,370) persons, of which one thousand nine hundred twenty (1,920) persons, or thirty-five percent (35%), are of low to moderate income.

TOTAL AREA OF DISTURBANCE: Approximately 21.6 acres

MITIGATION MEASURES:

4.4 CONSERVATION MEASURES (Taken from the Biology Assessment)

4.4.1 Minimization and Avoidance

Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all 160048-02 Tahitian Village BA Sept 2017 5-30 personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.

Roadway modifications made to minimize impacts to the Houston toad:

Bastrop County will utilize maximum engineering design culvert sizes to better enable flood water transport but simultaneously better enable use of these culverts by the Houston toad.

Conducting the construction outside the toad's primary breeding season of January 1 through April 1.

Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all personnel work crews, their supervisors, and involved County employees.

1. Construction sequencing will be as follows:
    a. Biological Monitor will initially inspect the ROW for Houston toads.
    b. When determined clear of Houston toads by the Biological Monitor, the Contractor can hand clear the edges of the new construction ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with small gaps at each end for ingress and egress.

c. The fencing shall be trenched into the ground and there will be no gaps in the barrier.

d. When barrier fencing has been installed, and after the Biological Monitor has conducted another inspection of the ROW for Houston Toads, the Contractor may begin site clearing, grading, and construction of facilities.

e. The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly repaired by Contractor.

f. When construction of the project and final grading has been completed, Contractor shall remove the barrier fencing, except that which needed to remain intact for SW3P compliance, and smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix (Turner Seed Company) shall occur per specifications (see Attachment A).

2. A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48 hour period results in a 24 hour stand-down of the project.

3. Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches.

4. The entry and exit points for heavy equipment moving in and out of the ROW work zone is limited to the two ends.

5. The contractor will be prevented from using any offsite staging or materials storage areas that are not already established construction yards.

6. All staging of equipment or refueling will be contained in the ROW for the project. All fueling will be conducted no less than 200 feet from any potential breeding or dispersal features (e.g., ponds, streams, wetlands, etc.). These locations should be on relatively level ground to minimize the potential for leaks to migrate offsite.

7. 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.

8. Following construction activities, HUD and Bastrop County will ensure that equipment used on undisturbed ground will not create potential artificial breeding 160048-02 Tahitian Village BA Sept 2017 5-31 sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area.

9. The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the project (21.6 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat. 160048-02 Tahitian Village BA Sept 2017 5-32 Bastrop County will purchase 21.6 acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

1.4.2 Mitigation

The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the

project (21.6 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat. Bastrop County will purchase 21.6 acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

Taken from the USFWS BA Opinion

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, HUD and Bastrop County must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. Bastrop County proposed a number of Conservation Measures, listed in the BA and the "Description of the Proposed Action" section of this document. Bastrop County's proposed Conservation Measures are incorporated as reasonable and prudent measures by reference, including the purchase of 21.6 credits from the Houston toad Conservation Bank, and must be implemented, as proposed, in conjunction with this project.

2. In addition to the Conservation Measures proposed by Bastrop County, the Service determined the following minimization measures must also be implemented:

   • The use of herbicides within the action area is restricted to the upland areas of the right-of-way for control of Johnson grass (*Sorghum halepense*). Herbicides may also be used to control vegetation growth adjacent to guard rails during normal maintenance activities post-construction. Herbicides may only be applied between July 1 and December 31 each year, during dry weather conditions, and in accordance will all other label instructions.

   • Project specific locations (PSLs) may be located within the ROW of the project under construction. Additional PSLs in Houston toad habitat not previously considered must be coordinated and permitted, as appropriate, prior to the commencement of construction.

3. Bastrop County must monitor the extent of take through sufficient on-site inspections necessary to determine if the amount of allowable take is exceeded. Bastrop County must provide the Service with a brief report upon completion of the restoration of the construction and ROW vegetation. The report must include a summary of construction actions implemented, any unanticipated actions or delays in project completion, and any known incidental take that occurred and the reasons for that take.

MONITORING AND REPORTING REQUIREMENTS

The Service anticipates that one juvenile and two adult Houston toads will be taken as non-lethal incidental take, in the form of harassment from construction activities. We anticipate that two adult and nine juvenile Houston toads per year could be taken as a result of the Project's operational phase. Incidental take associated with the eastern and western projects must not exceed one adult and five juvenile Houston toads for each project. The Reasonable and Prudent Measures, with their implementing Terms and Conditions, are designed to minimize the impact of the incidental take that

might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

USFWS CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service is aware of Bastrop County's continuing efforts to implement a countywide fuel reduction program for the benefit and protection of its citizens with regard to wildfire mitigation. Since this program would have generally beneficial effects to the Houston toad and its habitat, the Service recommends the County continue these efforts.

While it is beyond the scope of section 7 of the ESA to drive a selection of alternatives, the Service believes there are less damaging alternatives available to the County that meet the same goals of improving safe ingress and egress to and from these developments. It is also apparent to the Service that the preferred alternative could serve to open new areas to development. While such developments are unknown to us, we recommend Bastrop County make all reasonable efforts to inform potential developers of the Lost Pines HCP and its provisions for conservation subdivision development.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations by Bastrop County.

TPWD Recommendations:

1. Best management practices (BMPs) for preserving water quality such as berming and silt fencing will be used.
2. Soil stabilization and revegetation will be consistent with USFWS conditions and mitigation plan. Industry and site specific mitigation will be used to return the area to its original condition. Where possible revegetate to promote positive habitats for local species and prevent invasive species.
3. Where trenching or excavation is involved keep trenches/excavation and backfilling crews scheduled to minimize the amount of trenches/exaction areas left open. During construction if necessary, any potential open trenches will be monitored to prevent unintentional capture, if capture TPWD will be contacted for further direction.
4. Site will be examined prior to construction activities to ensure Migratory Bird Treaty Act (MBTA) compliance.
5. Avoid contact with wildlife, if wildlife encountered, stop construction and allow wildlife to leave the site. Provide listing Bastrop County TPWD Rare Threatened and Endangered Species list to construction workers; if listed species identified, stop construction and contact TPWD for further direction. Specifically inform employees and contractors spotted skunk (*Spilogale putorius interrupta*), Elliot's short-tailed shrew

(Blarina hylophaga hylophaga), and Texas garter snake (*Thamnophis sirtalis annectens*) could inhabit the proposed project area. Stage construction to prevent impact.

- If potential impact to aquatic wildlife occurs, TPWD will be contacted for direction. Consider construction to avoid spawning periods. Biology monitor regularly to prevent impact.

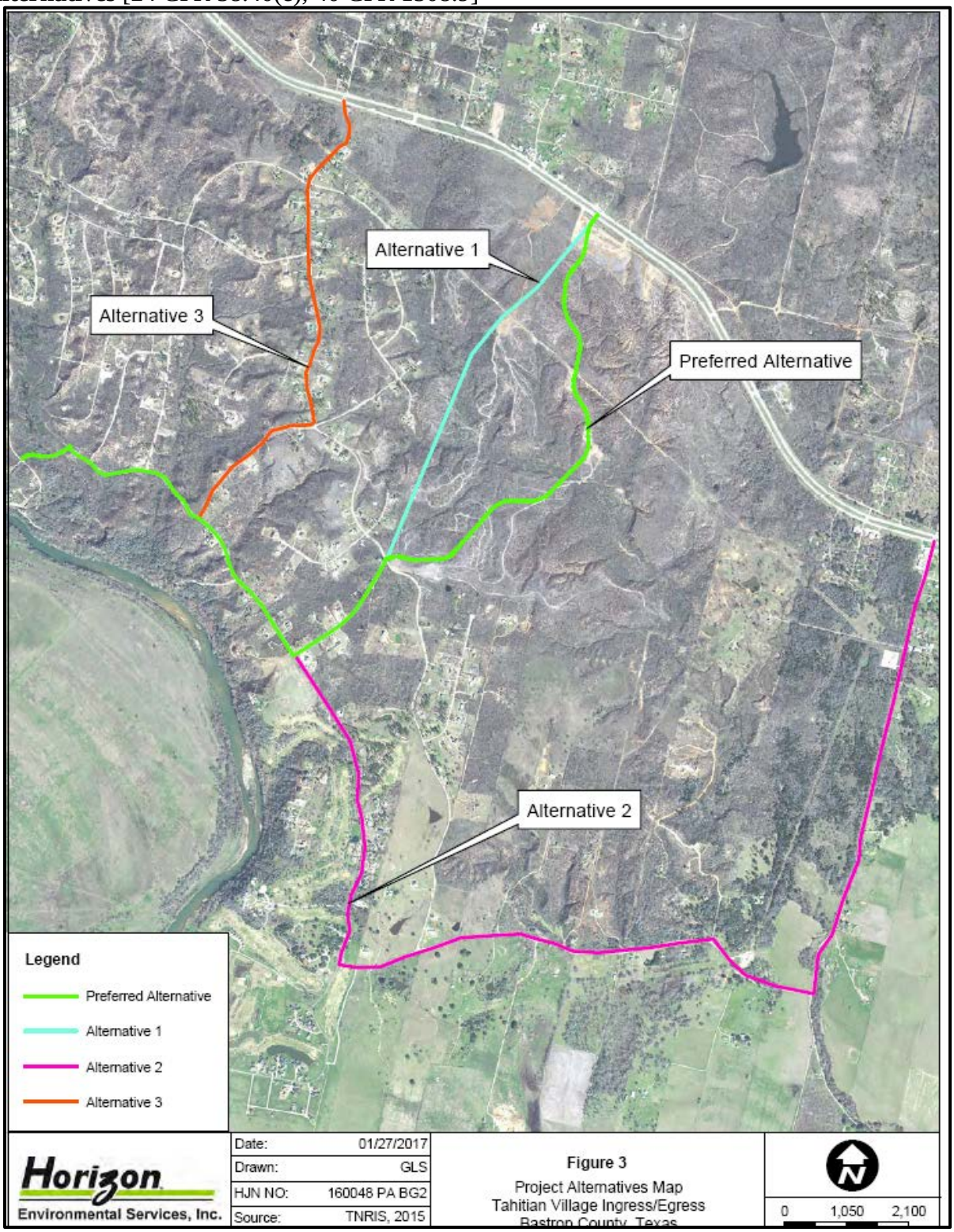
THC Conditions:

If any historic properties are discovered or if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area and please contact THC for further direction.

USACE Conditions:
Bastrop County must submit a USACE certification that work, plus proposed mitigation, was completed in compliance with that nationwide permit 14 within 30 days of the completion of work.

PROJECT ALTERNATIVES:

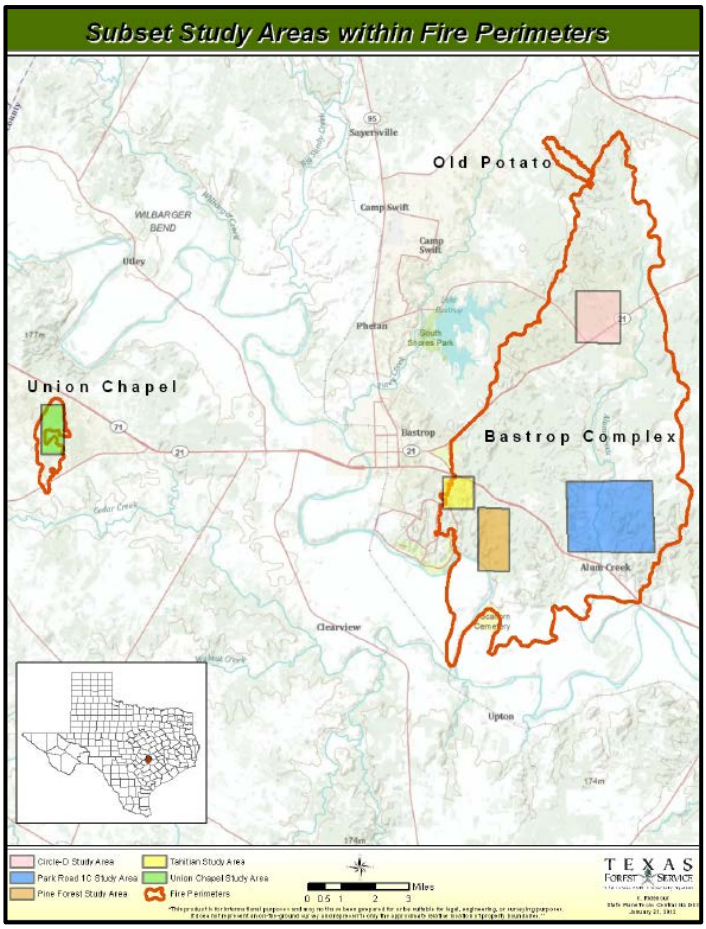
Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]



The County considered the following factors when determining if ingress/egress into the Tahitian Village Subdivision is necessary: the location of the fire east of the city of Bastrop; severity of the disaster including two deaths, homes destroyed, and significant property damage; limited simultaneous ingress/egress occurring for entering fire fighters and evacuating residents at all ingress/egress causing panicked congestion; and the magnitude of the fire on the area ecology and environmental impact.

A study conducted by the Texas Forest Service in 2012 reflects the need for more community access and shared information promoting the overall preservation of human health and the environment.

In addition to a no action alternative, four alternative locations for improved ingress/egress were considered and assessed based upon a) the area directly impacted by the fires in Tahitian Village – East of Tahitian Road – this includes the examination of available information about accessibility of ingress for emergency vehicles simultaneous to evacuating panicked residents; b) the most practicable and economically feasible selection due to construction limitations; and 3) the minimization of impacts to natural values and ecological considerations.



The review of alternatives was also informed by a study by Horizon Environmental examining potential impacts to Houston Toad critical habitat, as well as limitations associated with the construction of each alternative.

The no action alternative would not impact Houston Toad critical habitat, but this alternative would not provide improved ingress/egress and would not meet the purpose and need of the project.

Among the four alternative routes assessed, three different alternative routes to the preferred alternative route were considered and it was determined that these three alternatives a) would be more expensive since additional bridge construction would be necessary, b) would be in areas where more complicated construction would be required – indicating additional impact, or c) would not meet the purpose and need for the project.

ALTERNATIVE 1: Alternative 1 is approximately 15,550 linear feet with 10,500 linear feet being new location roadway between Ulupau Circle and Colovista Drive; it includes two

proposed bridges at Copperas Creek and four culverts along the portion of new roadway between Oak Shadows Drive and SH71.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long, including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost about $240,000 to construct.

Two proposed bridges will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Assuming the bridges will be 24 feet wide, and approximately 120 feet long and 400 feet long respectively, including approach slabs and abutments, and constructed for approximately $100/SF, the bridges will cost approximately $288,000 and $960,000 to construct. Four culverts will also be required along the portion of new roadway between Oak Shadows Drive and SH 71.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $272 per linear foot to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 12.05 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $4,236,575.

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 18.95 acres. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures). The total estimated cost for this alternative would be $4,236,575, and the total area of disturbance would be approximately 18.95 acres.

This alternative will have direct and indirect impacts to the Houston toad where no roadways exist now. However, this alternative indicates additional construction to reduce slope and/or alteration to ensure safety of workers and users. The undulating terrain in this area is severe and treacherous. The likelihood of having a successful roadway as well as ongoing maintenance is not likely.

ALTERNATIVE 2: Alternative 2 is approximately 28,200 linear feet in length and will require approximately 3,350 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive, connecting Colovista Drive to Crafts Prairie Road via a new roadway, commencing along Crafts Prairie Road to Ponderosa Road, and continuing along Ponderosa Road to SH 71. Additionally, the route will consist of the acquisition of additional ROW, widening all existing roadways to 24 feet wide, as well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct. A cross culvert will also be required along the portion of new roadway between Colovista Drive and Crafts Prairie Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $131 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade,

flexible base and a seal coat surface treatment. The alignment would require about 3.85 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $3,695,200.

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 6.04 acres.

This alternative uses existing ROW, but it does not meet the need and purpose of the project to provide improved ingress/egress and better emergency access. This alternative may have indirect impacts to the Houston toad. While the roadway already exists, it is does not provide swift ingress/egress for emergency vehicle access nor does it provide quick exit if the area must be evacuated. During emergency evacuations from burning areas, the urgent choices made by existing residents in a time of panic will be to use the closest exit possible. It is likely the same severe backup of traffic both directions from exiting residents and entering emergency crews will result. This alternative does not provide better access to emergency fire crews for firefighting.

ALTERNATIVE 3: Alternative 3 is approximately 11,700 linear feet in length and will require approximately 3,320 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive to River Forest Drive, continuing along River Forest Drive to McAllister Road, and completing the route along McAllister Road to SH 71. Additionally, the route will consist of the acquisition of additional ROW, widening all exiting roadways to 24 feet wide, as well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $166 per linear feet to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 3.71 acres of new ROW to be acquired if a 50-foot-wide ROW is purchased. The total cost is estimated to be $1,940,145.

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 6.0 acres.

This alternative will incorporate issues from the other alternatives by having both direct and indirect impacts to the Houston toad where no roadways exists now and utilizing some existing roadways. Already existing roadways in portions of this alignment does not provide improved swift ingress/egress for emergency vehicle access nor does it provide improved quick exit if the area must be evacuated. It is likely the same severe backup of traffic both directions from exiting residents and entering emergency crews will result. This alternative does not provide better access to emergency fire crews for firefighting.

PREFERRED ALTERNATIVE: The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts. One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive. A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

The Preferred Route best meets the purpose and need for the project by providing improved and safer ingress/egress and better emergency access to and from existing residential areas. The preferred route also enhances safety and improves ingress/egress by providing additional access from residential areas to SH 71, as well as additional access for many of the existing roadways in the project area. This route additionally makes better use of the existing topography and will impact 1 property between Oak Shadows Drive and SH 71.

The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive.

A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $182 per linear foot to construct. This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 10.6 acres of new ROW to be acquired (50 feet wide). The total cost is estimated to be $3,115,187.

This alternative is within Houston toad habitat. The total area of disturbance for the new roadway sections varies from 50 to 135 feet wide and is 21.6 acres total. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures).

This alternative will incorporate issues from the other alternatives by having direct and indirect impacts to the Houston toad where no roadways exist now but improving existing roadways as well. This alternative provides an improved ingress/egress for residents through adding a new exit to SH71. This alternative will reduce the impact of urgent exiting residents during times of potential evacuations – meeting the need and purpose of the project. This alternative also increases the risk of impacting other county listed species. However, the new road will be located in previously burned areas where there is less likelihood of impact. The area was traversed, and no wildlife was encountered during the site visit. Mitigation measures have been developed to ensure construction impacts are minimized. While this alternative may encourage future development in an undeveloped area, the County has an existing approved Lost Pines Habitat Conservation program in place already which will facilitate a managed and controlled process for addressing these concerns and require mitigation of any impacts.

No Action Alternative [24 CFR 58.40(e)]:
The County considered the following factors when determining if ingress/egress into the Tahitian Village Subdivision is necessary: the location of the fire east of the city of Bastrop; severity of the disaster including two deaths, homes destroyed, and significant property damage; limited simultaneous ingress/egress occurring for entering fire fighters and evacuating residents at all ingress/egress causing panicked congestion; and the magnitude of the fire on the area ecology and environmental impact.

The no-action alternative would have no direct impact to the Houston toad, but safe ingress and egress within the Tahitian Village and Colovista developments would not be achieved in the event of significant emergencies such as wild fires; therefore, this alternative is not practicable since it does not serve the project purpose.

DESCRIPTION OF SURROUNDING AREAS:
Bastrop County is located in central Texas. The community of 896 square miles (2,320 km^2) with its population of 74,171 people (2012 Census estimate), is the county seat. Bastrop County is included in the Austin-Round Rock, TX Metropolitan Statistical Area.

In September 2011, Bastrop County suffered the most destructive wildfire in Texas history, which destroyed over 1,600 homes. The fires struck areas of Bastrop County in September and October 2011. Three separate fires started on September 4, 2011, as a result of strong winds caused by nearby Tropical Storm Lee, and merged into one large blaze that burned east of the city of Bastrop. The fire furthermore caused severe damage to Bastrop State Park and the ancient Lost Pines Forest. After being largely contained in late September, the fire was declared controlled on October 10. The fire moved underground later in October and was finally extinguished on October 29. The County has received funding from CDBG Community Development and Revitalization Program to aid areas impacted and distressed by the Texas Wildfires.

The State of Texas received an allocation of $31,319,686 in Community Development Block Grant (CDBG) funds from the US Department of Housing and Development (HUD) as disaster

recovery assistance for wildfires that occurred between August 30 and December 31, 2011. The State has been directed by HUD to target at least 80% of this assistance to Bastrop County.

Bastrop County is a unique blend of old and new. Nestled on the banks of the Colorado River, in the heart of the Lost Pines Region. Bastrop is well known for its beautiful pine-oak trees and rich history with such Cities as Camp Swift, Elgin, Paige, Smithville and its County seat, Bastrop. The need for additional ingress and egress from the Tahitian Village subdivision is vital to the area. The area contains a critical habitat for the endangered Houston Toad *Bufo houstonensis*. The area habitat consists of loblolly pine (*Pinus taeda*), eastern red cedar (*Juniperus virginiana*), and post oak (*Quercus stellata*) with a thick understory of yaupon (*Ilex vomitoria*).

The Project will include acquisition and consist of constructing a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) asphaltic concrete surface, and perform site work associated with construction.

Significant ingress/egress issues were encountered in Tahitian Village and Colovista during the wildfire events of 2011 (personal communication, Mike Fisher, Bastrop County Emergency Management). Multiple ingress/egress routes are needed to allow for safe ingress/egress during emergencies. Several roadways currently provide ingress/egress to these existing residential subdivisions; however, the existing roadways are narrow, two-lane residential streets or county roads that have minimal traffic capacity. In the event one or more of these roadways becomes impassible due to wild fire or flooding, the other existing roadways are not adequate to provide safe and efficient ingress/egress (BA Documentation produced by Horizon Environmental). A biological assessment has been prepared in support of a Section 7 consultation with the US Fish and Wildlife Service as part of the above-referenced NEPA review to address potential effects on listed threatened or endangered species and designated critical habitats.

The Preferred Route most closely meets the intent of the project by adding a new roadway that provides additional emergency access to SH 71 from the existing residential areas. The route also provides additional access for many of the existing roadways in the project area. This route additionally makes better use of the existing topography and will impact 1 property between Oak Shadows Drive and SH 71.

PUBLIC NOTICE:

An Early Notice and Public Review of a Proposed Activity in a 100-Year Floodplain and Wetland/WOUS public review process was conducted in accordance with HUD requirements. This 15-day public notice identifies the approximate impact to the floodplain and WOUS and was published in the S-Bastrop Advertiser on 9/23/2017. Comments received from TPWD were addressed and are included herein.

A fifteen-day Combined Notice of Finding of No Significant Impact and Intent to Request Release of Funds – And Final Notice and Public Explanation of a Proposed Activity in A 100-

Year Floodplain and Wetland in accordance with 24 CFR 58.43 and 24 CFR 58.45 was published in the local newspaper S-Bastrop Advertiser from January 19, 2019 through February 4, 2019.

Three dissenting comments were received (See Tab 1, Evidence of Publication). These include:

JoAnne Egitto, email dated February 04, 2019, submitted to Judge Paul Pape, Mel Mamner, Melissa Nemecek, Hadassah Schloss, Jeff Hill, US Senate Paul Hightower, and communications @oag.texas.gov. Subject: Proposed release of HUD funds for ingress/egress road Tahitian Village, Bastrop TX

Jennifer Loda, Amphibian and Reptile Staff Attorney, Center for Biological Diversity, 1212 Broadway, Suite 800 Oakland, CA 94612 jloda@biologicaldiversity.org dated February 04, 2019, emailed to Judge Paul Pape, paul.pape@co.bastrop.tx.us, RE: Notice of Finding of No Significant Impact and Intent to Request Release of Funs, Tahitian Village Subdivision Phase I

Chris and RaeAnne Parachini, and the Parachini Family, The Copperas Creek Houston Toad Preserve, 102 Norfolk Drive, Bastrop, TX 78602 – 512-838-1361 dated February 04, 2019, Letter sent to Dear Inspector General of HUD, The Texas Attorney General, The Texas General Land Office and the Bastrop County Public Record

A second fifteen-day Combined Notice of Finding of No Significant Impact and Intent to Request Release of Funds – And Final Notice and Public Explanation of a Proposed Activity in A 100-Year Floodplain and Wetland in accordance with 24 CFR 58.43 and 24 CFR 58.45 was published in the local newspaper Bastrop Insider on April 17, 2019. The revised and/or updated ERR was provided to all interested parties.

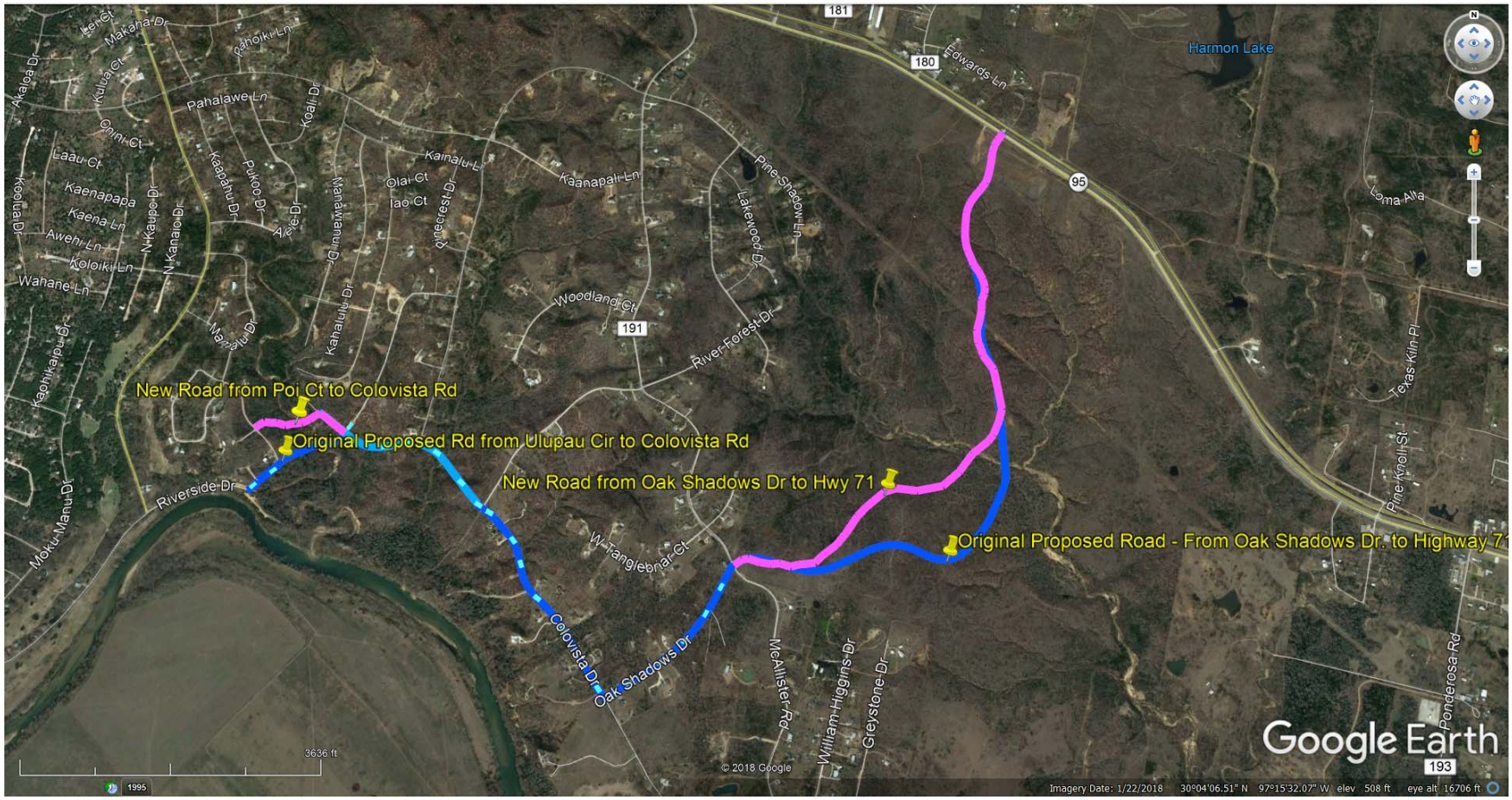
COMPARISON WITH APPLICABLE PLANS:

	Project Is In Compliance		
	Yes	No (Explain)	N.A.
Factor			
Local Comprehensive Plans Including Land Use and Growth Management Elements	X		
Area and Regional Plans	X		
Local Zoning Ordinances	X		

TAB 5

GENERAL PROJECT LOCATION AND AERA OF POTENTIAL EFFECT

- GOOGLE MAP/AERIAL PROJECT BOUNDARIES
- SITE VISIT PICTURES
- SITE VISIT NOTES AND
- PROJECT ENGINEERING

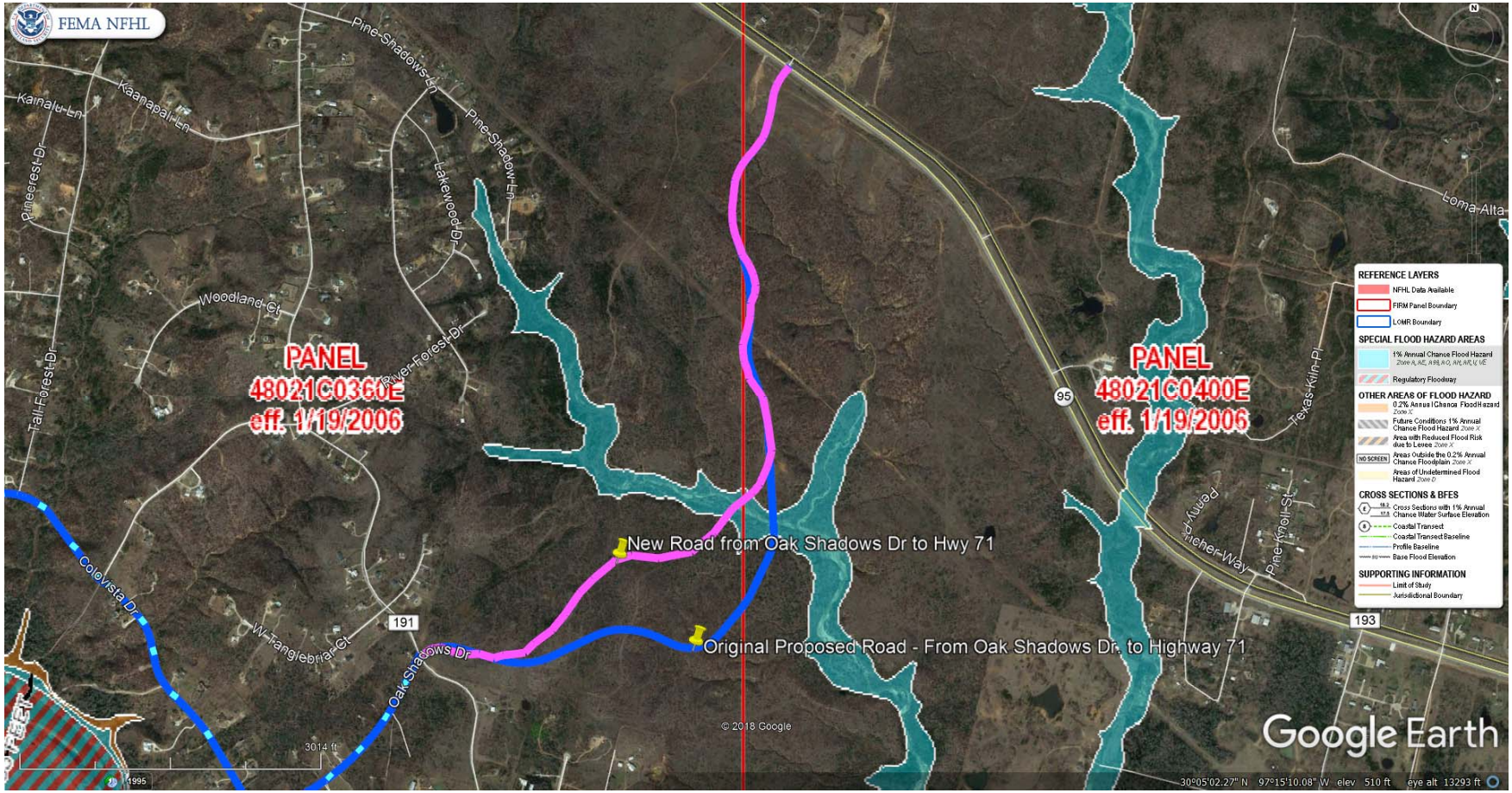


Overall Streets

New Alignment (Changes)

Original Alignment

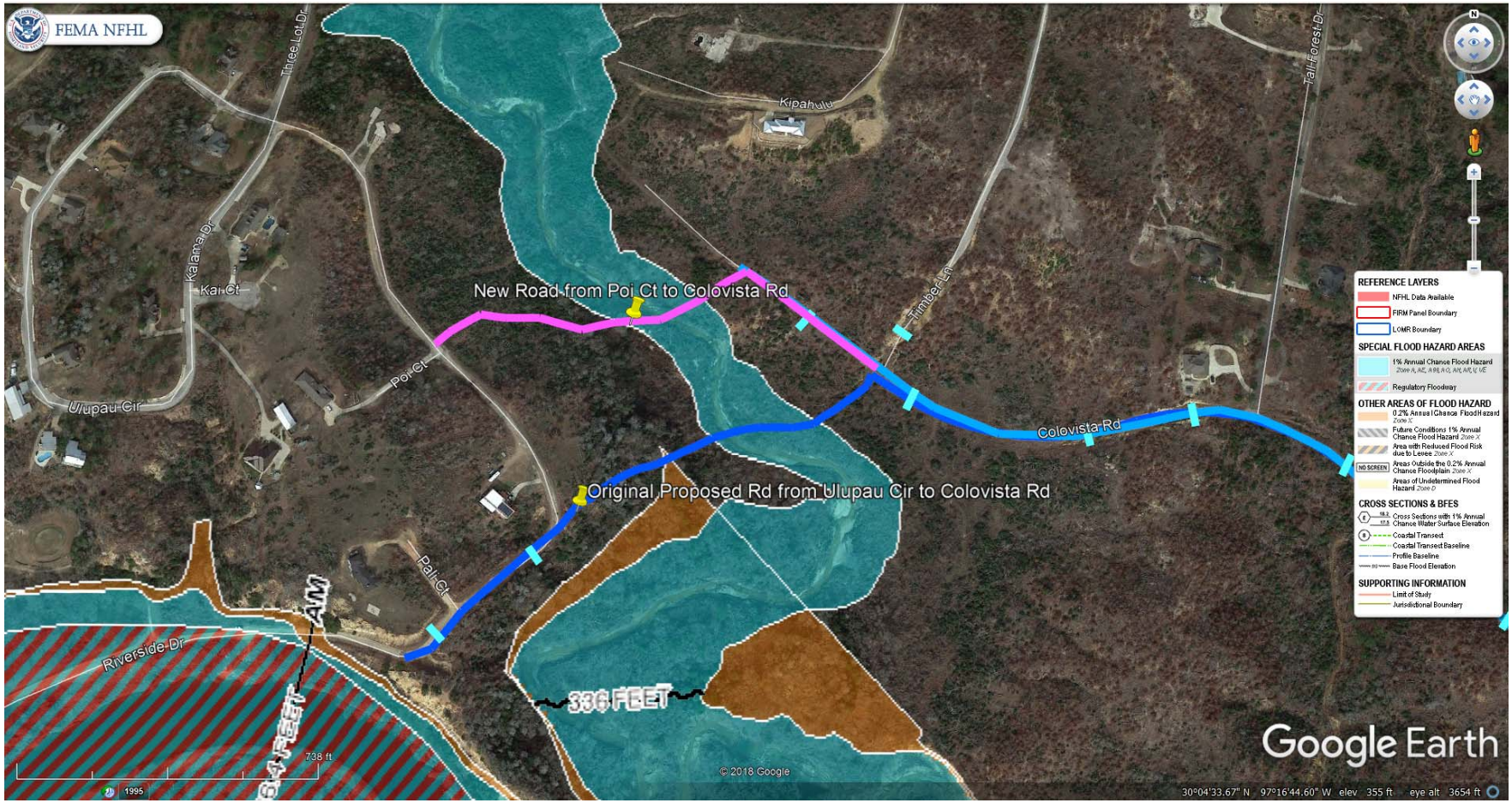
Client Name	Bastrop County – Street Improvements	Future Link Technologies
Contract #	Bastrop 2016-1 – Tahitian Village Subdivision	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Project Location Map – Map of Changed Alignment	512-443-4100
Date	April 18	Environmental Service Provider



New Alignment (Change)

Original Alignment

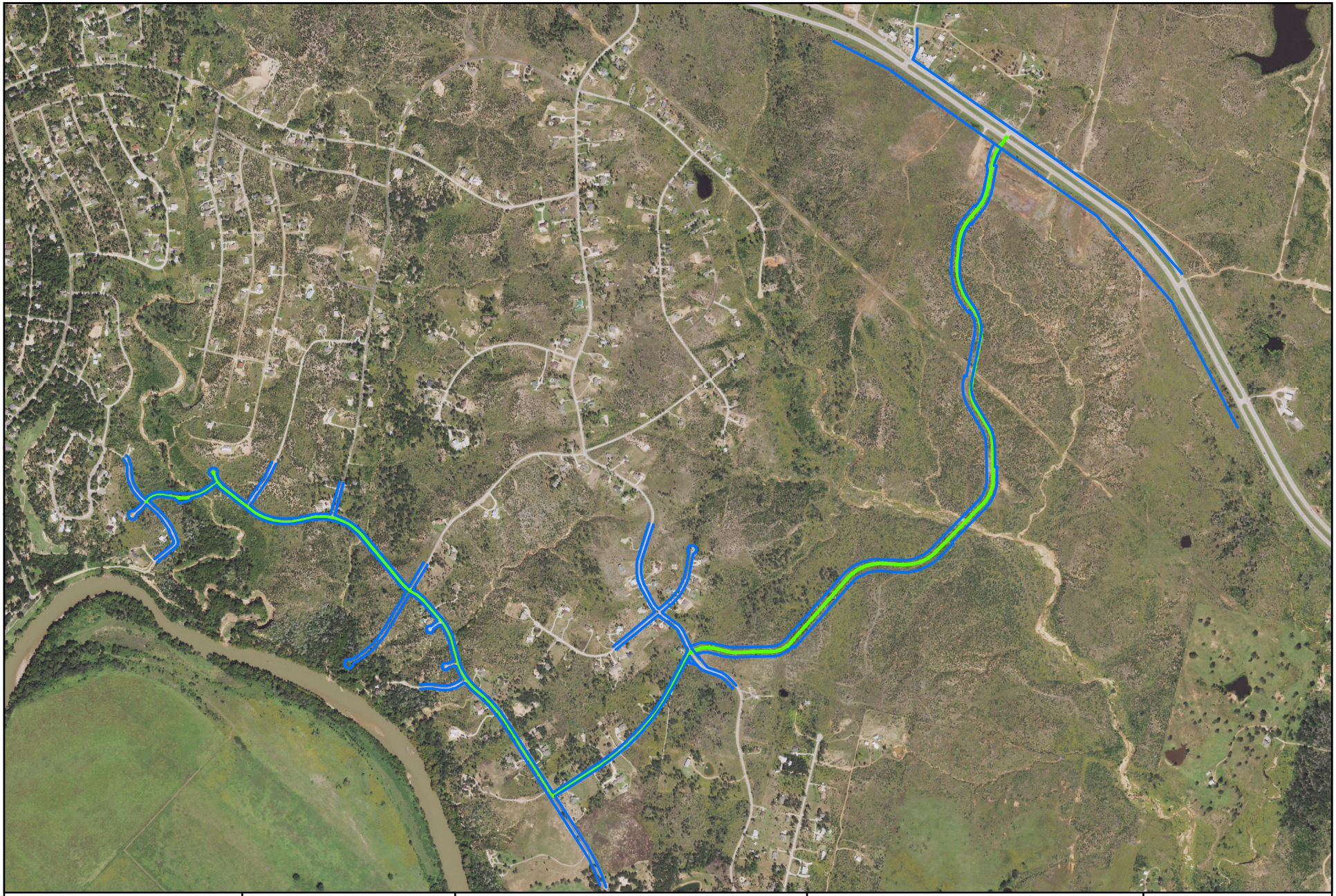
Client Name	Bastrop County – Street Improvements	Future Link Technologies
Contract #	Bastrop 2016-1 – Tahitian Village Subdivision	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Project Location Map – Map of Changed Alignment	512-443-4100
Date	April 18	Environmental Service Provider



New Alignment (Change)

Original Alignment

Client Name	Bastrop County – Street Improvements	Future Link Technologies
Contract #	Bastrop 2016-1 – Tahitian Village Subdivision	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Project Location Map – Map of Changed Alignment	512-443-4100
Date	April 18	Environmental Service Provider



Horizon™
Environmental Services, Inc.

Date:	08/17/2017
Drawn:	GLS
HJN NO:	160048
Source:	USDA, 2016

Legend

ROW

Preferred Alternative

Figure X

Detailed View
Tahitian Village Ingress/Egress
Bastrop County, Texas

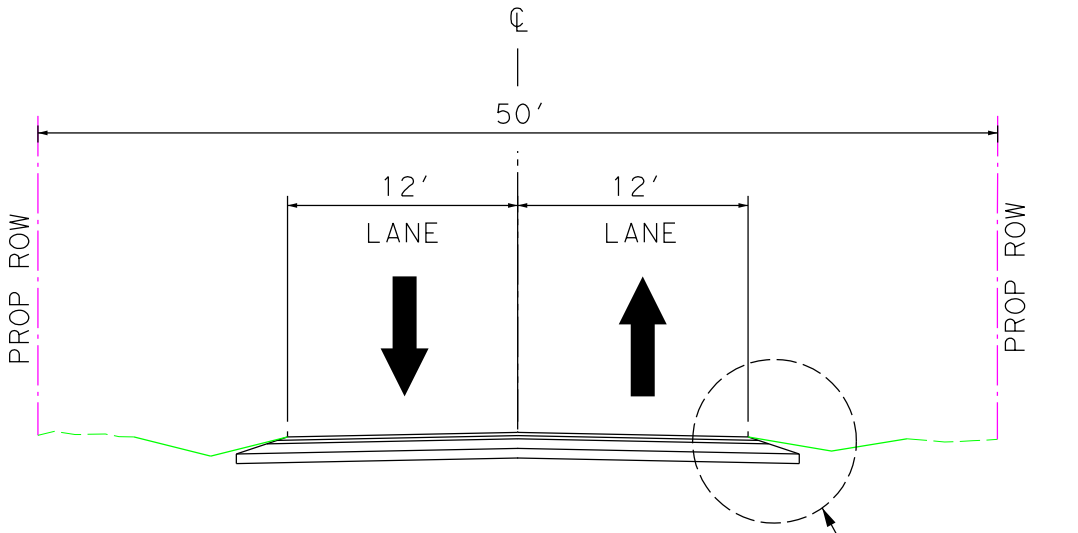
0 750 1,500
Feet

160048 - Bastrop County Roadways\Graphics\Tahitian Village Figures/160048A05PABG2_DetailedView.mxd

DRAFT - FOR DISCUSSION

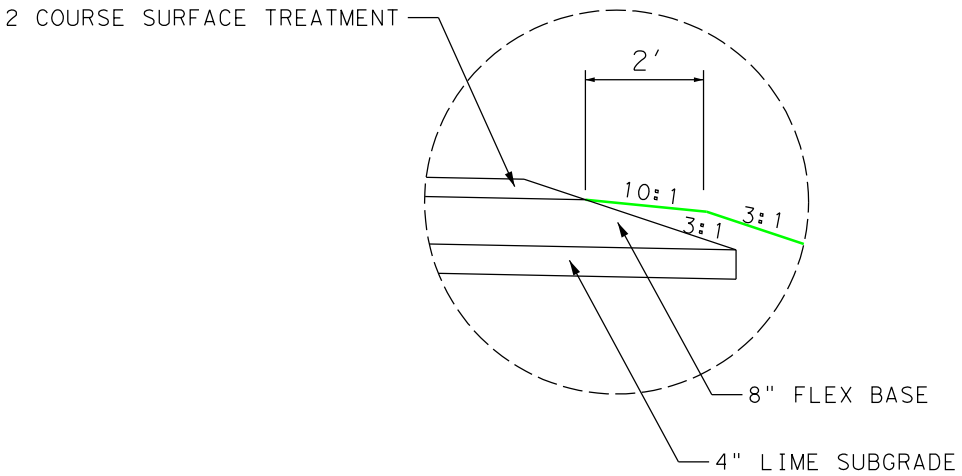
DRAFT - FOR DISCUSSION

PDF-Color-Half Size.plt
Taylor.Banfield



PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 1
(ULUPAU TO RIVER FOREST DR.)



DETAIL A

RPS® klotz associates
4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

BASTROP COUNTY

SECTION 1
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 1
Scale: NTS	
Date: 10/12/2016	

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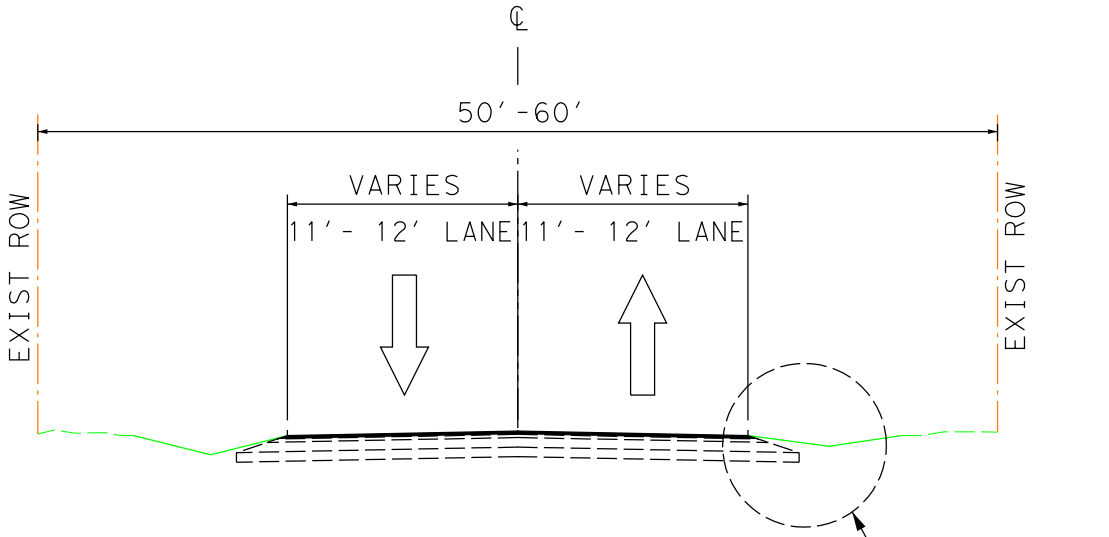
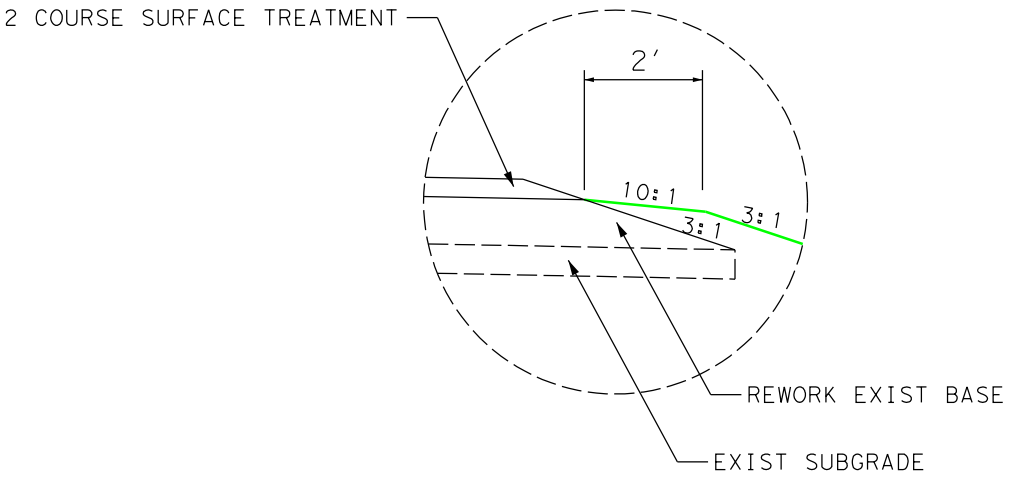


PROPOSED TYPICAL SECTION

MILL AND RESURFACE
SECTION 2
(RIVER FOREST DR. TO MCALLISTER RD.)



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Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

BASTROP COUNTY

SECTION 2
TYPICAL SECTION

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Date: 10/12/2016	

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Taylor.Banfield
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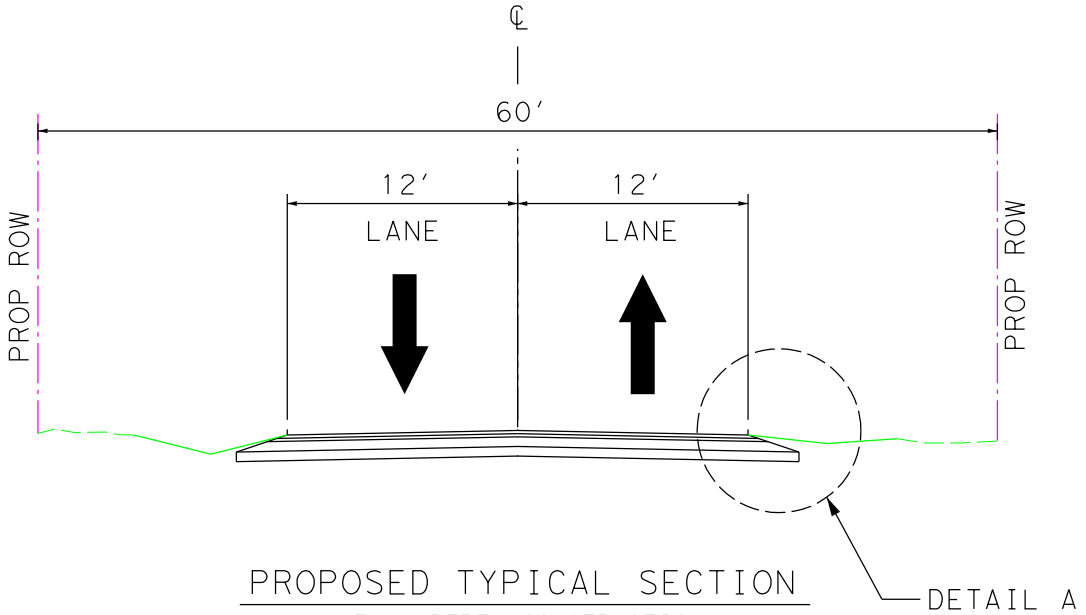
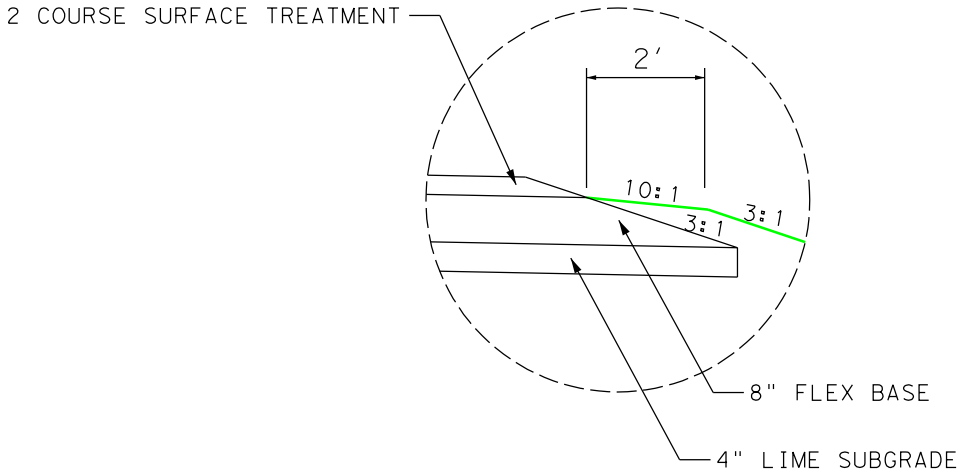
PDF-Color-Half Size.plt
Taylor.Banfield



PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 3
(MCALLISTER RD. TO SH 71)



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BASTROP COUNTY

SECTION 3
TYPICAL SECTION

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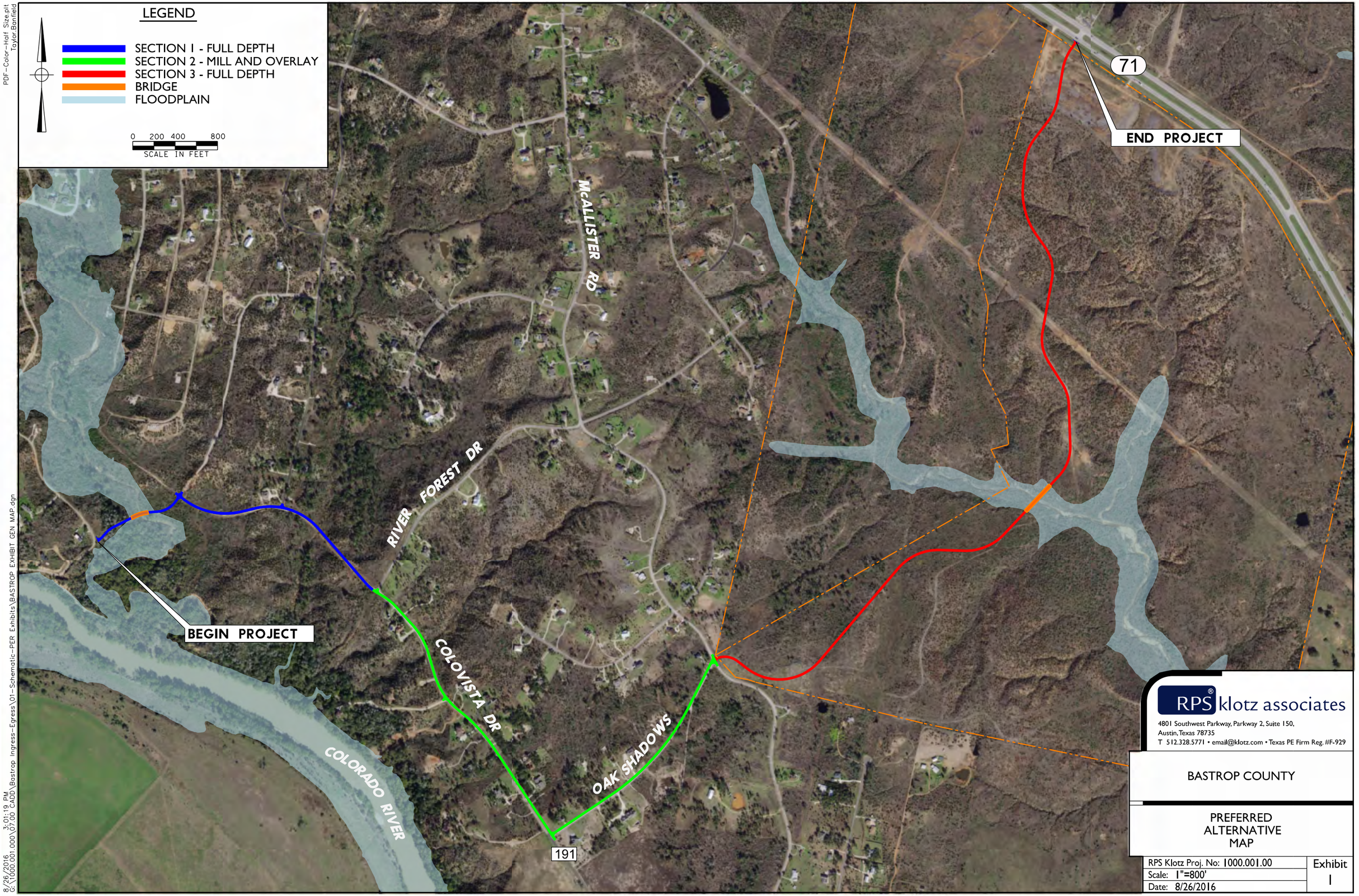

RPS klotz associates

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Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

BASTROP COUNTY

PREFERRED ALTERNATIVE MAP

RPS Klotz Proj. No: 1000.001.00	Exhibit 1
Scale: 1"=800'	
Date: 8/26/2016	

PDF-Color-Half Size.plt
Taylor Banfield

8/26/2016 3:01:19 PM
G:\1000.001.000\07.00 CADD\Bastrop Ingress-Egress\01-Schematic-PER Exhibits\BASTROP EXHIBIT GEN MAP.dgn

Acquisition Parcel Information – east end

Owner: Lamesa Corporation
Parcel #s: 103417 and 103419

Client Name	Bastrop County	Future Link Technologies
Contract #	Bastrop 2016 – Tahitian Village	PO Box 90696 Austin, TX 78709
Map Information	County Parcel Information – CAPCOG – New ROW	512-443-4100
Date	December 18	Environmental Service Provider

Acquisition Parcel Information – west end

Owner: Colovista Estates
Parcel #: 39020

Owner: Copperas Creek Houston Toad Preserve – Chris Parachini contact
Parcel #: 97691

Client Name	Bastrop County	Future Link Technologies
Contract #	Bastrop 2016 – Tahitian Village	PO Box 90696 Austin, TX 78709
Map Information	County Parcel Information – CAPCOG – New ROW	512-443-4100
Date	December 18	Environmental Service Provider

Riverside Road at Ulupau

Riverside Road at Ulupau—looking east

Ulupau Road—looking north

Looking north at new road at Ulupau Rd

Area of Proposed intersection of Ulupau and New Road

New Road Facing north

New Road Facing north

New Road Facing north

Drainage on Ulupau

Colovista Rd—Unpaved Road out Looking east

Colovista Rd—Unpaved Road out Looking east

Colovista Rd—Unpaved Road out Looking south

Colovista Rd—Unpaved Rd at River Forest Looking west

Colovista Roadat Tall Forest Looking West

Colovista Roadat Tall Forest Looking West at closed road

Colovista Road— for rehab—looking east

Colovista Road— for rehab—looking east

Colovista Drive Paved Road looking Southeast

Oak Shadows Dr Paved Road looking North

Intersection of Oak Shadows Dr and McAlister—paved

New Road—From Oak Shadows Dr to Hwy 71—Looking East

New Road—From Oak Shadows Dr to Hwy 71—Looking East

New Road—From Oak Shadows Dr to Hwy 71—Fallen Trees

Comment 1

New Road— Vegetation—looking northeast

New Road— Vegetation—looking northeast

New Road—looking north

New Road—at Pigeon Hollow looking northwest

New Road—Pigion Hollow looking east

New Road— looking north

New Road— looking north at Utility easement

New Road pile of burned logs

New Road—Cleared Area

New Road—Approximately 1000 lf from Highway 71—looking north

New Road—Approximately 1000 lf from Highway 71—looking north

New Road—Approximately 500lf from Highway 71—looking north

TAB 6

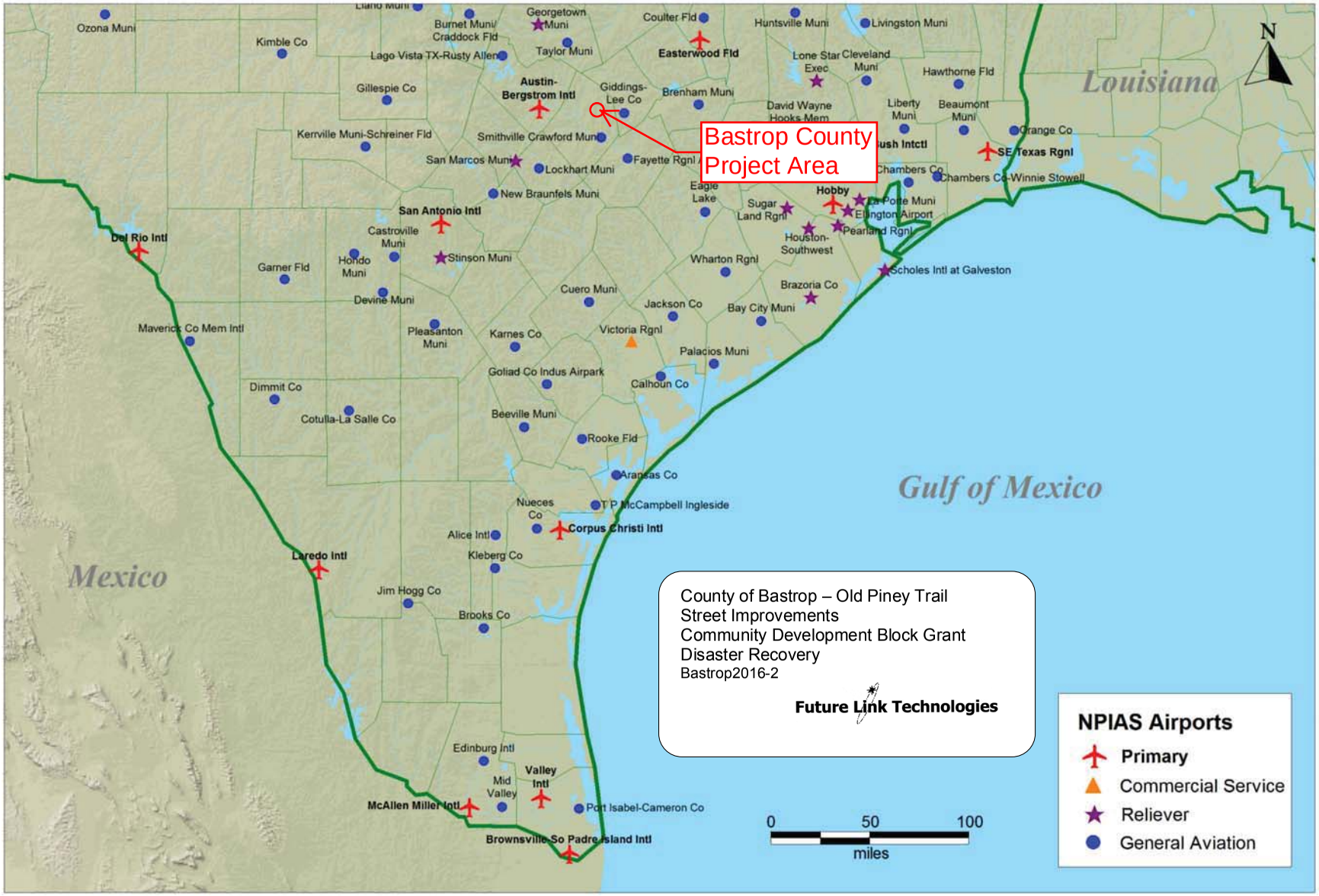
ATTACHMENTS

ATTACHMENT 1

Airport Clear Zones and Accident Potential Zones

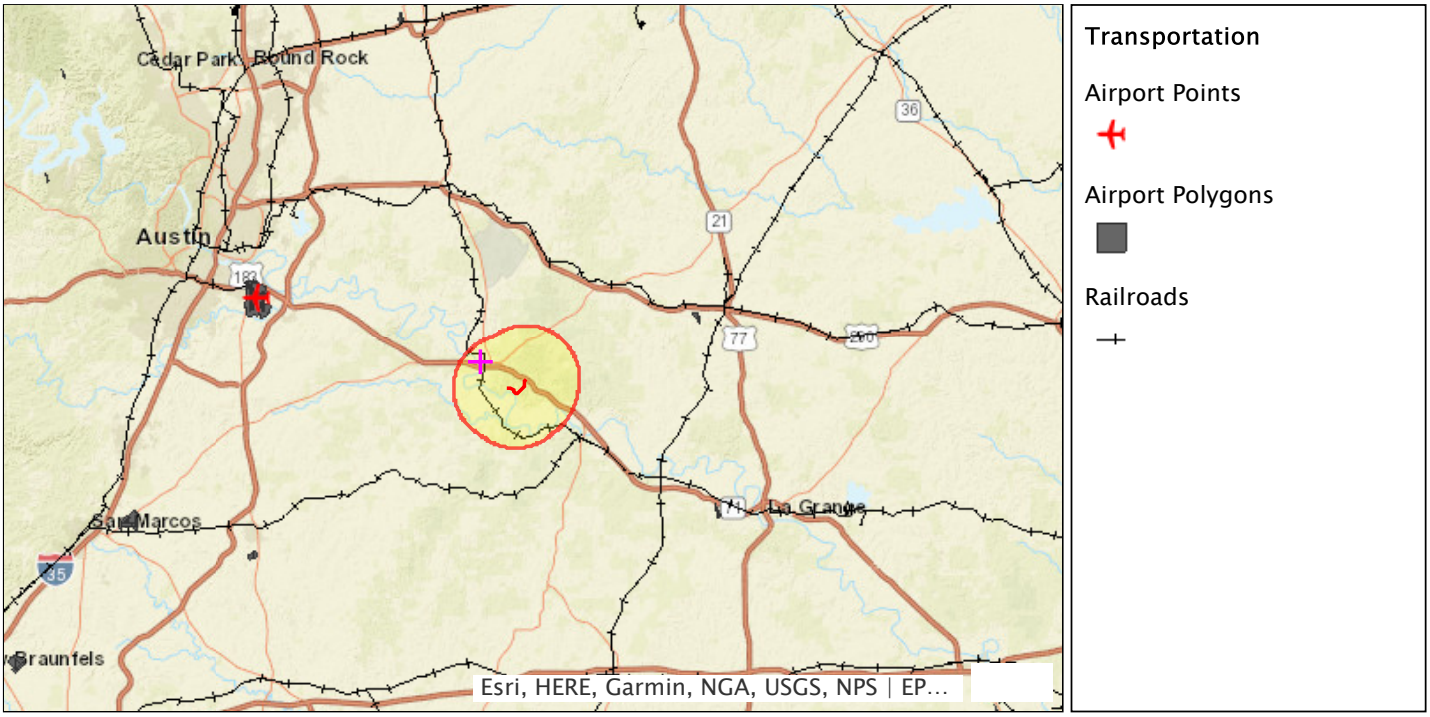
- FAA - Maps
- NEPAssist Transportation Mapping

Texas (South/Southeast)



Tahitian Village Alignment

Map



Geographic coordinates:

LINE
(30.074319,-97.278374,30.075321,-97.275628,30.074727,-97.274469,30.074987,-97.272881,30.074839,-97.272280,30.071830,-97.268761,30.070085,-97.268161,30.066296,-97.264985,30.067671,-97.262410,30.070530,-97.259792,30.072387,-97.256
with buffer 5 miles

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	2.94 mi
Within 5 miles of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 5 miles of a Federal Land?	yes
Within 5 miles of an impaired stream?	no
Within 5 miles of an impaired waterbody?	no
Within 5 miles of a waterbody?	yes

Within 5 miles of a stream?	yes
Within 5 miles of an NWI wetland?	click here ***May take several minutes***
Within 5 miles of a Brownfields site?	yes
Within 5 miles of a Superfund site?	no
Within 5 miles of a Toxic Release Inventory (TRI) site?	no
Within 5 miles of a water discharger (NPDES)?	yes
Within 5 miles of a hazardous waste (RCRA) facility?	yes
Within 5 miles of an air emission facility?	yes
Within 5 miles of a school?	yes
Within 5 miles of an airport?	no
Within 5 miles of a hospital?	no
Within 5 miles of a designated sole source aquifer?	no
Within 5 miles of a historic property on the National Register of Historic Places?	yes
Within 5 miles of a Toxic Substances Control Act (TSCA) site?	no
Within 5 miles of a RADInfo site?	no

Save to Excel Save as PDF

Texas Report
Demographic Reports
USFWS IPaC Report

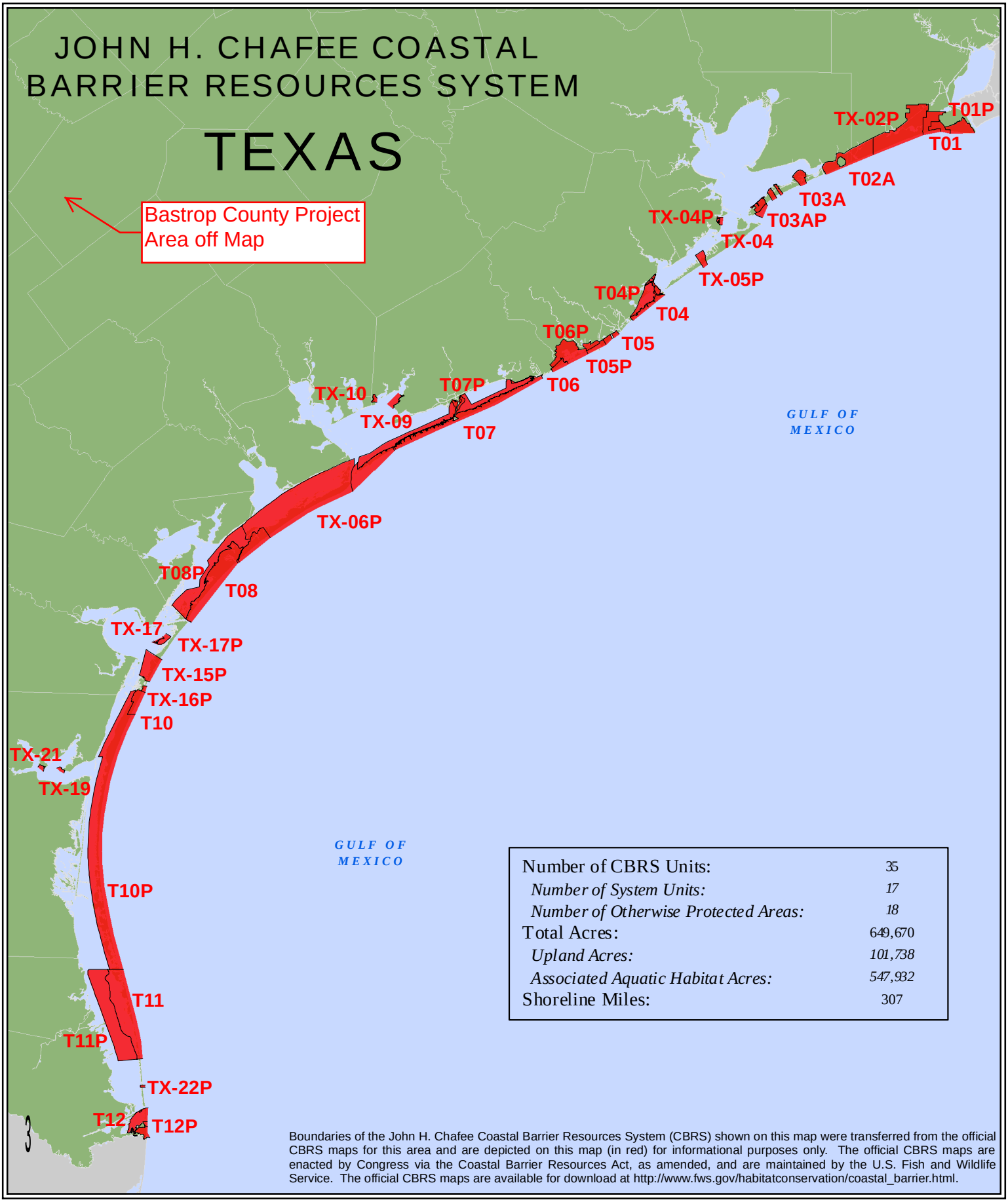
ATTACHMENT 2

Coastal Barrier Resources
(When Needed)

- John H. Chafee Coastal Barrier Resource System Map

JOHN H. CHAFEE COASTAL BARRIER RESOURCES SYSTEM

TEXAS



Number of CBRS Units:	35
Number of System Units:	*17*
Number of Otherwise Protected Areas:	*18*
Total Acres:	649,670
Upland Acres:	*101,738*
Associated Aquatic Habitat Acres:	*547,932*
Shoreline Miles:	307

Boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) shown on this map were transferred from the official CBRS maps for this area and are depicted on this map (in red) for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and are maintained by the U.S. Fish and Wildlife Service. The official CBRS maps are available for download at http://www.fws.gov/habitatconservation/coastal_barrier.html.

ATTACHMENT 3

Flood Insurance

- Federal Emergency Management Agency (FEMA) Documentation of National Flood Insurance Program

Federal Emergency Management Agency
Community Status Book Report
TEXAS
Communities Participating in the National Flood Program

CID	Community Name	County	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
	The city of Aurora has adopted the wise county map						
480704#	AUSTIN COUNTY *	AUSTIN COUNTY	02/25/77	01/17/90	09/03/10	01/17/90	No
480624#	AUSTIN, CITY OF	HAYS COUNTY/WILLIAMSON COUNTY/TRAVIS COUNTY	09/13/74	09/02/81	01/06/16	09/02/81	No
481086A	AUSTWELL, CITY OF	REFUGIO COUNTY	05/28/76	09/04/85	09/26/14	09/04/85	No
480983	AVERY, CITY OF	RED RIVER COUNTY	08/13/76	09/14/82	09/14/82(M)	09/14/82	No
480584#	AZLE, CITY OF	PARKER COUNTY/TARRANT COUNTY	03/08/74	10/15/85	09/25/09	10/15/85	No
481206	BAILEY COUNTY *	BAILEY COUNTY				03/06/01(E)	No
480065#	BAILEY'S PRAIRIE, VILLAGE OF	BRAZORIA COUNTY	11/08/74	12/15/83	06/05/89	12/15/83	No
480808#	BAILEY, CITY OF	FANNIN COUNTY	11/05/76	07/01/92	02/18/11(M)	07/01/92	No
480722	BAIRD,CITY OF	CALLAHAN COUNTY	06/11/76	04/01/87	04/01/87(L)	04/01/87	No
480166#	BALCH SPRINGS, CITY OF	DALLAS COUNTY	03/08/74	09/03/80	07/07/14	09/03/80	No
481094#	BALCONES HEIGHTS, CITY OF	BEXAR COUNTY	08/15/75	04/15/80	09/29/10	04/15/80	No
480549#	BALLINGER, CITY OF	RUNNELS COUNTY	06/28/74	02/16/90	02/16/90	02/16/90	No
480537#	BALMORHEA, CITY OF	REEVES COUNTY	06/28/74	09/16/88	09/16/88	11/01/85	No
480020#	BANDERA COUNTY *	BANDERA COUNTY	06/18/76	11/01/78	02/04/11	11/01/78	No
480021#	BANDERA, CITY OF	BANDERA COUNTY	04/12/74	12/01/77	02/04/11	12/01/77	No
480718A	BANGS, CITY OF	BROWN COUNTY	08/06/76	06/19/85	08/28/18(M)	06/19/85	No
481087#	BARDWELL, CITY OF	ELLIS COUNTY	07/30/76	03/01/91	06/03/13	03/01/91	No
480951#	BARRY, CITY OF	NAVARRO COUNTY	07/30/76	06/05/12	06/05/12(M)	06/05/12	No
480707#	BARTLETT, CITY OF	WILLIAMSON COUNTY/BELL COUNTY	09/12/75	11/02/95	09/26/08(M)	03/25/85	No
481501#	BARTONVILLE, TOWN OF	DENTON COUNTY	06/12/79	09/01/87	04/18/11	09/01/87	No
481193B	BASTROP COUNTY *	BASTROP COUNTY	08/09/77	08/19/91	01/06/16	08/19/91	No
480022#	BASTROP, CITY OF	BASTROP COUNTY	03/19/76	08/19/91	01/19/06	08/19/91	No
485455#	BAY CITY, CITY OF	MATAGORDA COUNTY		04/23/71	06/05/85	04/23/71	No
481207#	BAYLOR COUNTY*	BAYLOR COUNTY		04/15/86	04/15/86(M)	04/15/86	No
481589#	BAYOU VISTA, CITY OF	GALVESTON COUNTY				04/09/71	No
	USE THE GALVESTON COUNTY [485470] FIRM.						
481586#	BAYSIDE, CITY OF	REFUGIO COUNTY		03/18/85	09/26/14	03/18/85	No
485456E	BAYTOWN, CITY OF	CHAMBERS COUNTY/HARRIS COUNTY	02/26/70	02/26/70	01/19/18	07/01/74	No
480102A	BAYVIEW, TOWN OF	CAMERON COUNTY	04/25/75	02/16/18	02/16/18	09/01/81	No
480121B	BEACH CITY, CITY OF	CHAMBERS COUNTY	05/20/77	01/19/83	05/04/15	01/19/83	No
481679#	BEAR CREEK, VILLAGE OF	HAYS COUNTY		02/18/98	09/02/05	03/24/98	No
	THE VILLAGE OF BEAR CREEK HAS ADOPTED THE HAYS COUNTY (480321) FIRM.						
481654B	BEASLEY, CITY OF	FORT BEND COUNTY	07/09/76	08/05/86	12/21/17	04/01/04	No
485457#	BEAUMONT, CITY OF	JEFFERSON COUNTY	09/02/70	09/02/70	08/06/02	10/30/70	No
480585#	BEDFORD, CITY OF	TARRANT COUNTY	12/28/73	07/18/77	09/25/09	07/18/77	No
481610#	BEE CAVE, CITY OF	TRAVIS COUNTY		09/26/08	09/26/08	04/12/88	No
480026#	BEE COUNTY *	BEE COUNTY	10/18/74	04/01/82	05/20/10	04/01/82	No
480027#	BEEVILLE, CITY OF	BEE COUNTY	05/10/74	01/20/82	05/20/10	01/20/82	No
480706#	BELL COUNTY *	BELL COUNTY	01/10/75	02/15/84	09/26/08	02/15/84	No
	THE CITY OF SALEDO, BELL COUNTY (480033) IS A PART OF THE UNINCORPORATED AREA OF BELL COUNTY (480706).						
480289#	BELLAIRE, CITY OF	HARRIS COUNTY	06/28/74	09/30/81	06/18/07	09/30/81	No
480457#	BELLMEAD, CITY OF	MCLENNAN COUNTY	03/15/74	09/15/78	09/26/08	09/15/78	No
481095#	BELLVILLE, CITY OF	AUSTIN COUNTY	11/19/76	01/17/90	09/03/10(M)	06/17/98	No
480028#	BELTON, CITY OF	BELL COUNTY	03/08/74	07/05/82	09/26/08	07/05/82	No

STATUTES EXECUTIVE ORDERS AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5

ATTACHMENT 4

Air Quality

- TCEQ or NEPAssist Nonattainment Area Mapping
- Texas Air Quality Control Measures
- Air Pollutant Watch List

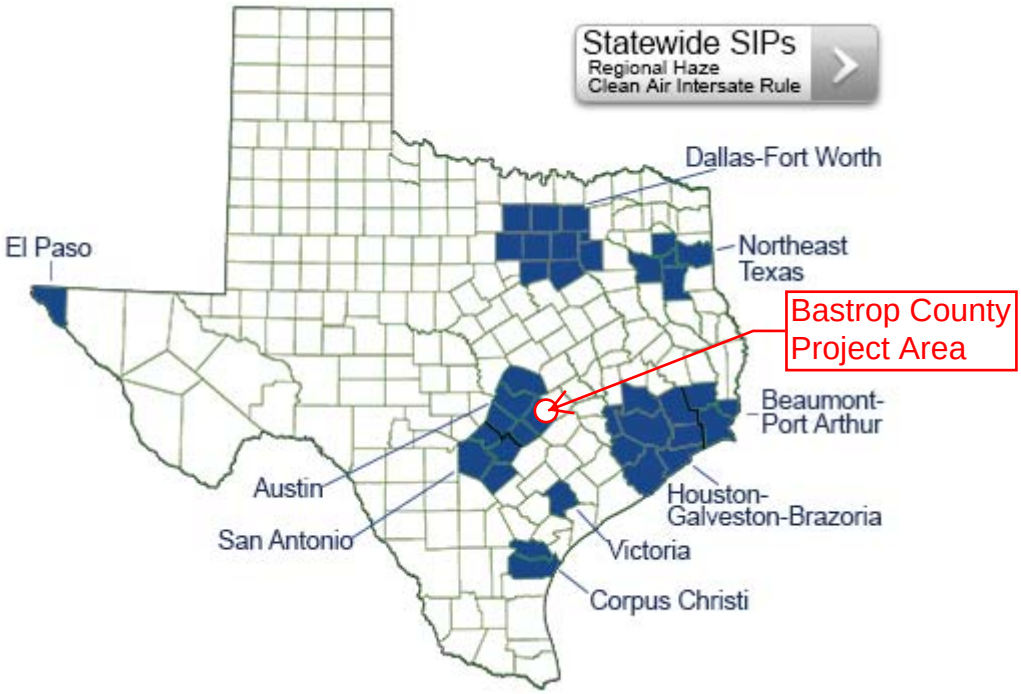
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Menu

Texas State Implementation Plan

The Texas State Implementation Plan (SIP) is the state's comprehensive plan to clean the air and meet federal air quality standards.

Click on an area of the map for information about that area's air quality plans:



Additional information on Texas air quality planning

Introduction

General information about state implementation plans

SIP Hot Topics

Current issues related to the Texas SIP

SIP Glossary

Special terms and abbreviations used in the Texas SIP

Texas Air Quality Rules

County of Bastrop – Old Piney Trail Street Improvements
Community Development Block Grant Disaster Recovery
Bastrop2016-2

Future Link Technologies

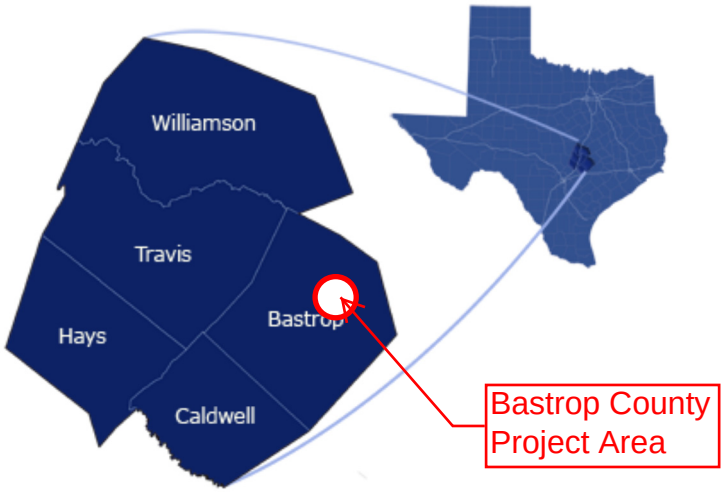
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

You are here: Home[1] / Air Quality[2] / SIP[3] / Austin SIP

›› Questions or Comments:
siprules@tceq.texas.gov

Austin-Round Rock and the State Implementation Plan

Information on the State Implementation Plan (SIP) to improve air quality in the Austin-Round Rock area and meet the requirements of the Federal Clean Air Act. The area includes Travis, Williamson, Bastrop, Hays, and Caldwell counties.



Attainment Status

Current air quality designations for the six criteria pollutants

Current Attainment Status[4]
Ozone Design Values[5]

Air Quality History

Austin air quality history from the 1990s
to the present

Ozone History[6]

Latest Activities

Information about the latest events and activities related to Austin and the SIP

Latest Ozone Planning Activities [7]

Air Quality Plans

Adopted SIP revisions and agreements from the 1970s to the present

Current Ozone Air Quality Plan[8]
Complete List of Texas SIP Revisions[9] (see *AUS* column)

Air Quality Control Measures

Information on air quality control measures implemented in Texas

Texas Air Quality Rules[10]
Stationary Source Rules for the Austin-Round Rock Area[11]

Contact Information and Related Links

How to contact[12] TCEQ SIP staff, local air quality planning groups, and other helpful links

[1] http://www.tceq.texas.gov

[2] http://www.tceq.texas.gov/airquality

[3] http://www.tceq.texas.gov/airquality/sip

[4] http://www.tceq.texas.gov/airquality/sip/aus/aus-status

County of Bastrop – Old Piney Trail
Street Improvements
Community Development Block Grant
Disaster Recovery
Bastrop2016-2
Future Link Technologies

ATTACHMENT 5

Coastal Zone Management

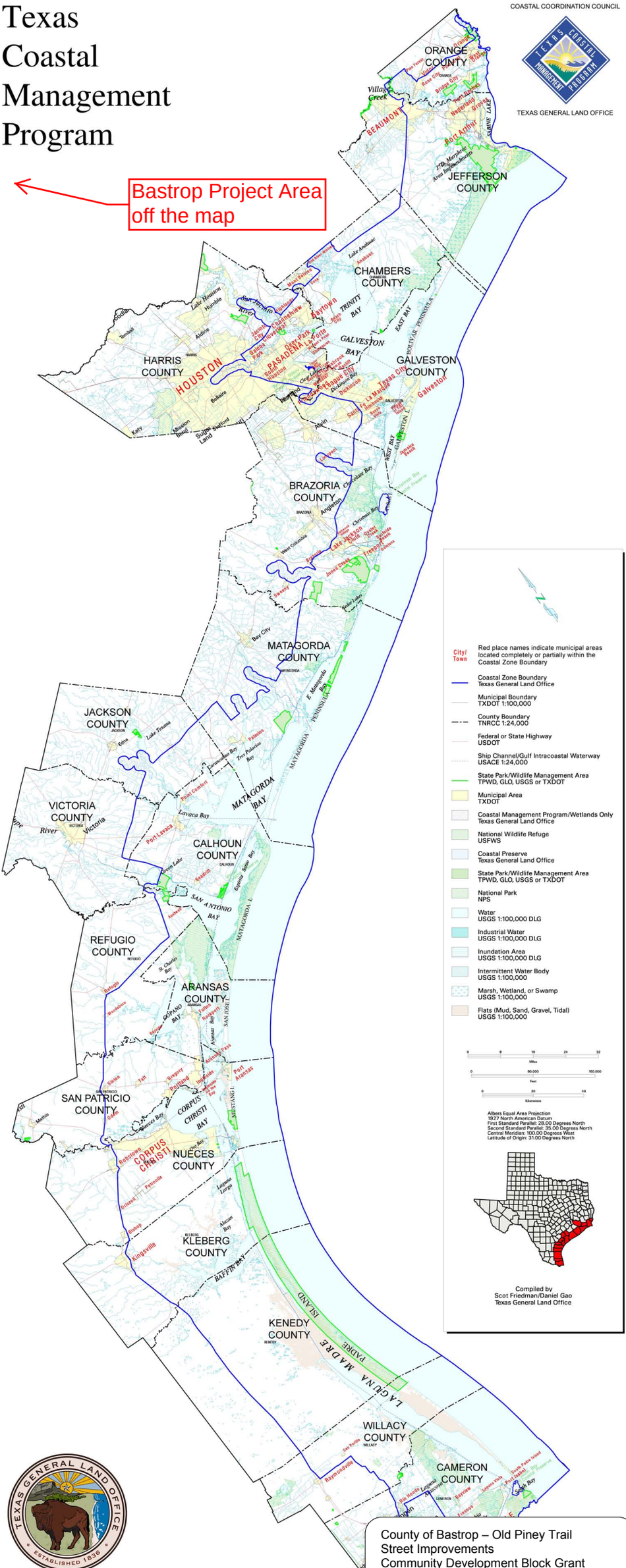
- Texas Coastal Management Program Map

Texas Coastal Management Program

COASTAL COORDINATION COUNCIL

TEXAS GENERAL LAND OFFICE

Bastrop Project Area off the map



TEXAS GENERAL LAND OFFICE
ESTABLISHED 1836

County of Bastrop – Old Piney Trail
Street Improvements
Community Development Block Grant
Disaster Recovery
Bastrop2016-2

Future Link Technologies

The Texas General Land Office makes no representations or warranties regarding the accuracy or completeness of the information depicted on this map or the data from which it was produced. This map IS NOT suitable for navigational purposes and does not purport to depict or establish boundaries between private and public land.

ATTACHMENT 6

Contamination and Toxic Substances

Federal

US Environmental Protection Agency (EPA)

- EnviroMapper for Envirofacts and NEPASSIST - (Listing of Regulated (RCRA) Facilities)
  - EPA RCRA Corrective Action Sites – Map
  - Brownfields MAP
- National Priorities Listing (NPL)

National Response Center

- Current Spills Report

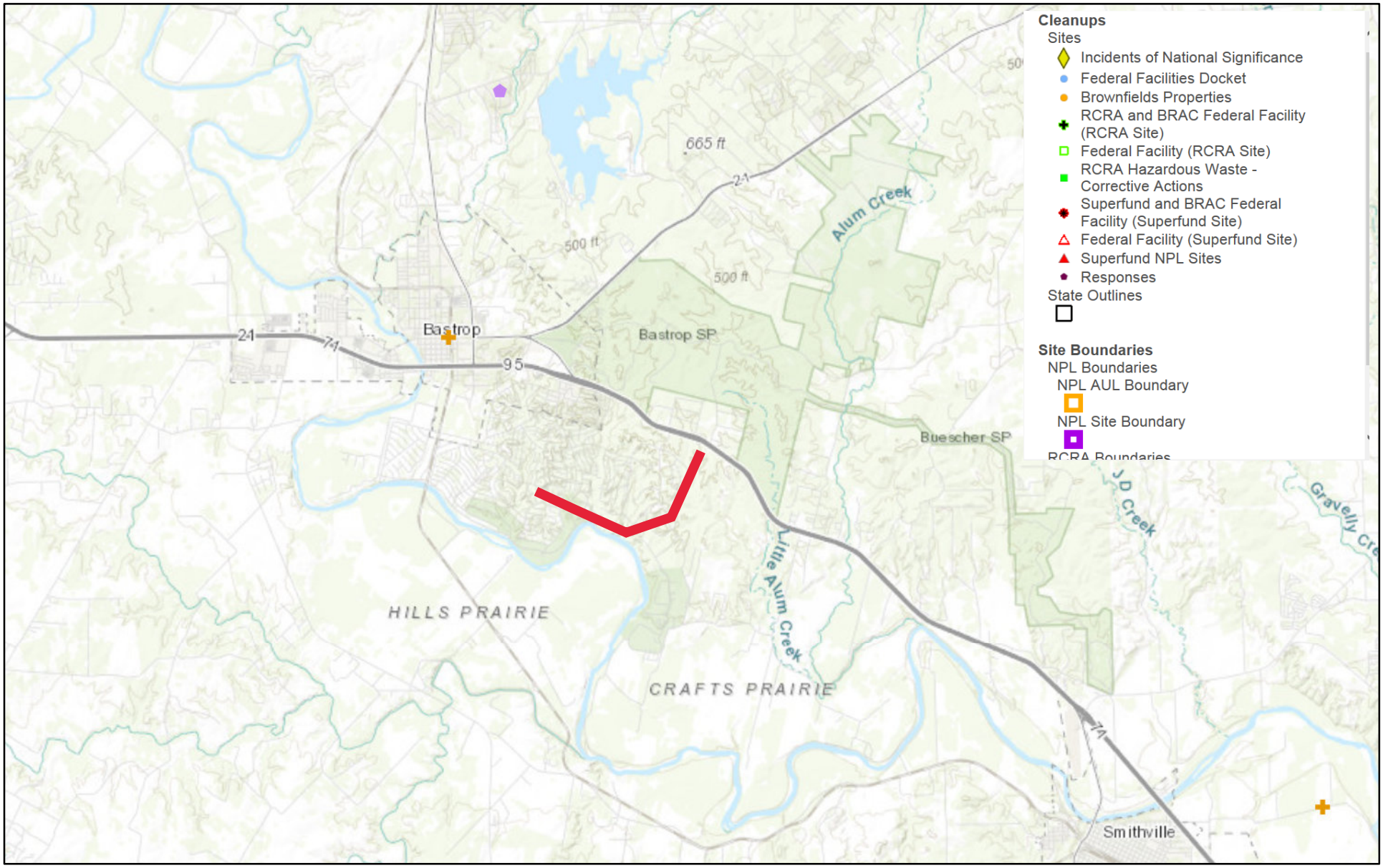
State and Local Statutes

TCEQ Central Registry Database Listings

- Underground Injection Control Permits
- Radioactive Waste Storage & Processing Permits
- Brownfield Site Assessments
- Voluntary Cleanup Program
- Superfund Program
- Innocent Owner/Operator Program
- Industrial and Hazardous Waste Disposal Registration/Permits
- Industrial and Hazardous Waste Corrective Action Sites
- Petroleum Storage Tanks Registration & Mapping of Tanks
  - Underground Storage Tanks
- Leaking Petroleum Storage Tanks & Mapping of Tanks

Closed and Abandoned Landfills

Bastrop- Tahitian Village - 2016 CIMC



December 27, 2018

1:141,288

0 1.25 2.5 5 mi

0 1.75 3.5 7 km

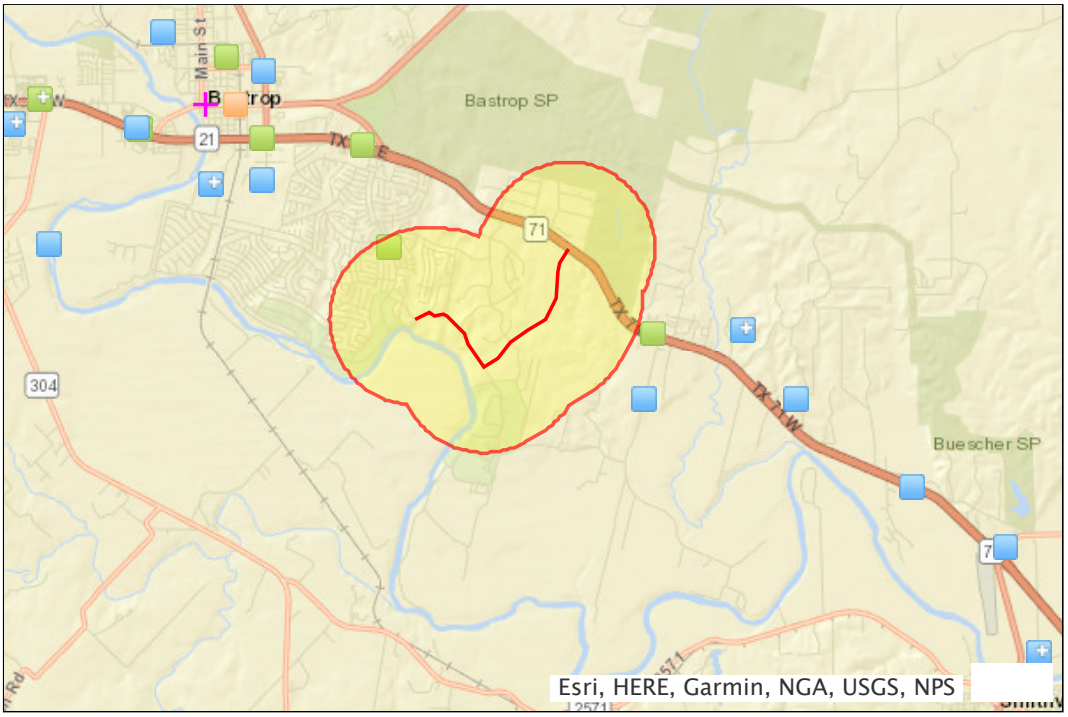
Proposed Project Area

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

Generated from: Cleanups in My Community: Date above is the date map was printed.
Federal Area Cleanups

Tahitian Village Alignment

Map



- Hazardous Waste (RCRAInfo)
- Air Pollution (ICIS-AIR)
- Water Dischargers (NPDES)
- Toxic Releases (TRI)
- Superfund (NPL)
- Brownfields (ACRES)
- RADInfo
- Toxic Substances Control Act (TSCA)

Geographic coordinates:

LINE
(30.074319,-97.278374,30.075321,-97.275628,30.074727,-97.274469,30.074987,-97.272881,30.074839,-97.272280,30.071830,-97.268761,30.070085,-97.268161,30.066296,-97.264985,30.067671,-97.262410,30.070530,-97.259792,30.072387,-97.256
with buffer 1 mile

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	2.94 mi
Within 1 mile of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Federal Land?	no
Within 1 mile of an impaired stream?	no
Within 1 mile of an impaired waterbody?	no
Within 1 mile of a waterbody?	yes

Within 1 mile of a stream?	yes
Within 1 mile of an NWI wetland?	click here ***May take several minutes***
Within 1 mile of a Brownfields site?	no
Within 1 mile of a Superfund site?	no
Within 1 mile of a Toxic Release Inventory (TRI) site?	no
Within 1 mile of a water discharger (NPDES)?	no
Within 1 mile of a hazardous waste (RCRA) facility?	yes
Within 1 mile of an air emission facility?	no
Within 1 mile of a school?	no
Within 1 mile of an airport?	no
Within 1 mile of a hospital?	no
Within 1 mile of a designated sole source aquifer?	no
Within 1 mile of a historic property on the National Register of Historic Places?	no
Within 1 mile of a Toxic Substances Control Act (TSCA) site?	no
Within 1 mile of a RADInfo site?	no

Save to Excel Save as PDF

Texas Report

Within 1 mile of a Wild and Scenic River?	no
Within 1 mile of the 100 year flood plain?	yes
Within 1 mile of the 500 year flood plain?	yes
Within 1 mile of a federal/state park or wildlife area?	yes

Demographic Reports

Note: The demographic reports are provided by EJSCREEN. The reports are generated based on your project area and buffer. For more information, visit the EJSCREEN website.

2012-2016 ACS Summary Report EXIT NEPAssist

Census 2010 Summary (SF1) EXIT NEPAssist

USFWS IPaC Report

PO Box 90696 Austin, TX
78709-0696

512 – 443-4100 (Ofc)

Future Link Technologies

Environmental and Technology Consulting

Bastrop County
Community Development Block Grant
Supplemental Disaster Recovery
WO # Bastrop2016 – Phase I
Criteria: Bastrop County, Zip code 78602
Research
Hazardous Materials Search Results

Database searched	Search Distance (in miles)	Number of Sites found
Federal Databases		
NPL site list	1.0	0
Delisted NPL site list	0.5	0
CERCLIS list	0.5	0
CERCLIS NFRAP site list	0.5	0
RCRA ORRACTS facilities list	1.0	0
RCRA non-CORRACTS TSD facilities list	0.5	0
RCRA generators list	property and adjoining properties	0
Institutional control/engineering control registries	property only	0
ERNS list	property only	0
State/Tribal Databases		
NPL	1.0	0
CERCLIS	0.5	0
Landfill and/or solid waste disposal site lists	0.5	0
Leaking storage tank list	0.5	0
Registered storage tank list	property and adjoining properties	0
Institutional control/engineering control registries	property only	0
Voluntary cleanup sites Owner/Operator	0.5	0
Brownfield sites	0.5	0
Current Spills Report	At Project location or within close proximity to Site	0

ATTACHMENT 7

Endangered Species

- U. S. Fish & Wildlife Section 7 Biology Assessment & USFWS Approval

- Texas Parks and Wildlife Department List of Rare, Threatened and Endangered Species

- Texas Parks and Wildlife Natural Diversity Database (TXNDD) Mapping of Rare, Threatened and Endangered Resources

United States Department of the Interior

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

In Reply Refer To:
FWS/R2/CESFO/
02ETXX0-2017-
F-1025

March 27, 2018

The Honorable Paul Pape
Bastrop County Judge
804 Pecan Street
Bastrop, Texas 78602

Dear Judge Pape:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (Opinion) based on our review of the proposed Tahitian Village/Colovista Ingress Egress Project (Project) located in Bastrop County, Texas and its effects on the federally endangered Houston toad *Bufo houstonensis* and designated critical habitat for the same in accordance with section 7 of the Endangered Species Act (Act) of 1973 (16 U.S.C. 1531 et seq.), as amended. The Department of Housing and Urban Development (HUD) is the funding agency for the project under their Community Development and Revitalization (CDR) program. Under HUD regulations at 24 CFR 58.14, Bastrop County is the responsible entity for section 7 consultation. Your request for formal consultation was administratively complete on October 4, 2017.

This Opinion is based on information provided: in HUD's October 18, 2016 letter; the September 2017 revised biological assessment; discussions with species experts; telephone conversations; field investigations; and other sources of information. The consultation history can be found with the Literature Cited. A complete administrative record of this consultation is on file at this office.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

As defined in the ESA Section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies in the United States or upon the high seas." The "action area" is defined as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action."

The following is a summary of the proposed action and a detailed description can be found in Bastrop County's Biological Assessment prepared by Horizon Environmental and dated September 2017.

The action proposed is HUD funding for construction of a new road to address ingress and egress safety issues for residents living in the existing Tahitian Village and Colovista developments in Bastrop County. The construction would include 17,100 linear feet of 50 to 135-foot-wide road right-of-way (ROW), including approximately 11,960 linear feet of new roadway. Construction is slated to commence in the summer of 2018. The length of construction from initial survey and clearing until demobilization and final restoration is anticipated to last 6-9 months with a 5-day work week and work occurring only during daylight hours. The entirety of the Project lies within designated critical habitat for the Houston toad.

Proposed Conservation Measures

The following are a set of measures Bastrop County proposed to minimize the effects of the project on the Houston toad. These measures were developed and refined, in part or wholly, from lessons learned and best management practices developed as a result of the recovery efforts in the wake of the Bastrop County Complex Fire (BCCF) of 2011.

- Prior to commencement of work on the project, Bastrop County and/or its Contractor(s) will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.
- Construction sequencing will be as follows:
  a. A permitted Biological Monitor will initially inspect (i.e., conduct an intensive pedestrian survey including the examination of all potential refugia within) the ROW for Houston toads.
  b. When determined clear of Houston toads by the Biological Monitor, the Contractor(s) can hand clear the edges of the ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with gates at each end and as needed for ingress and egress.
  c. The fencing shall be trenched into the ground a minimum of 12 inches and above grade 24 inches. Additional support (e.g., t-posts, metal fencing, etc.) shall be installed on the interior of the barrier to limit animals climbing into the excluded area.
  d. When barrier fencing is installed and after the Biological Monitor conducts another inspection of the ROW for Houston Toads, the Contractor(s) may begin site clearing, grading, and construction of facilities.

e. The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly (generally within 24 hours) repaired by Bastrop County and/or its Contractor(s).

f. When construction of the project and final grading is complete, Bastrop County and/or its Contractor(s) shall remove the barrier fencing, except that which needs to remain intact for SW3P compliance, and smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix shall occur per specifications (see Attachment A in the revised biological assessment).

- A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48-hour period shall result in a 24-hour stand-down of the project (i.e., no work).
- Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches.
- The entry and exit points for heavy equipment moving in and out of the ROW work zone are limited to the two ends. Additional entry and exits points are permissible with rollover gates or other approved designs for maintaining the integrity of the barrier.
- Contractor(s) will be prevented from using any offsite staging or materials storage areas that are not previously established construction yards.
- All staging of equipment or refueling will be contained in the ROW for the project. These activities shall be sited on level ground and not up-slope of aquatic sites (i.e., potential breeding or dispersal areas).
- 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 properly disposed of.
- Following construction activities, Bastrop County and/or its Contractor(s) will ensure that equipment used on undisturbed ground will not create potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area.

Biological Monitoring:

<u>1. For work conducted from July 1st through December 31st, work can proceed without full-time biological monitoring with the following exceptions:</u>

- A permitted Biological Monitor will be retained by County to respond on as-needed basis. The Biological Monitor's contact information and qualifications will be shared with the Service prior to commencement of construction.
- An encounter with a Houston toad at the jobsite during this project requires that work must cease immediately, and/or not begin until the biological monitor has been notified and the toad(s) safely removed by a qualified and permitted biologist. In addition, the U.S. Fish and Wildlife Service's Texas Coastal Ecological Services Field Office should also be contacted immediately at (281)286-8282.

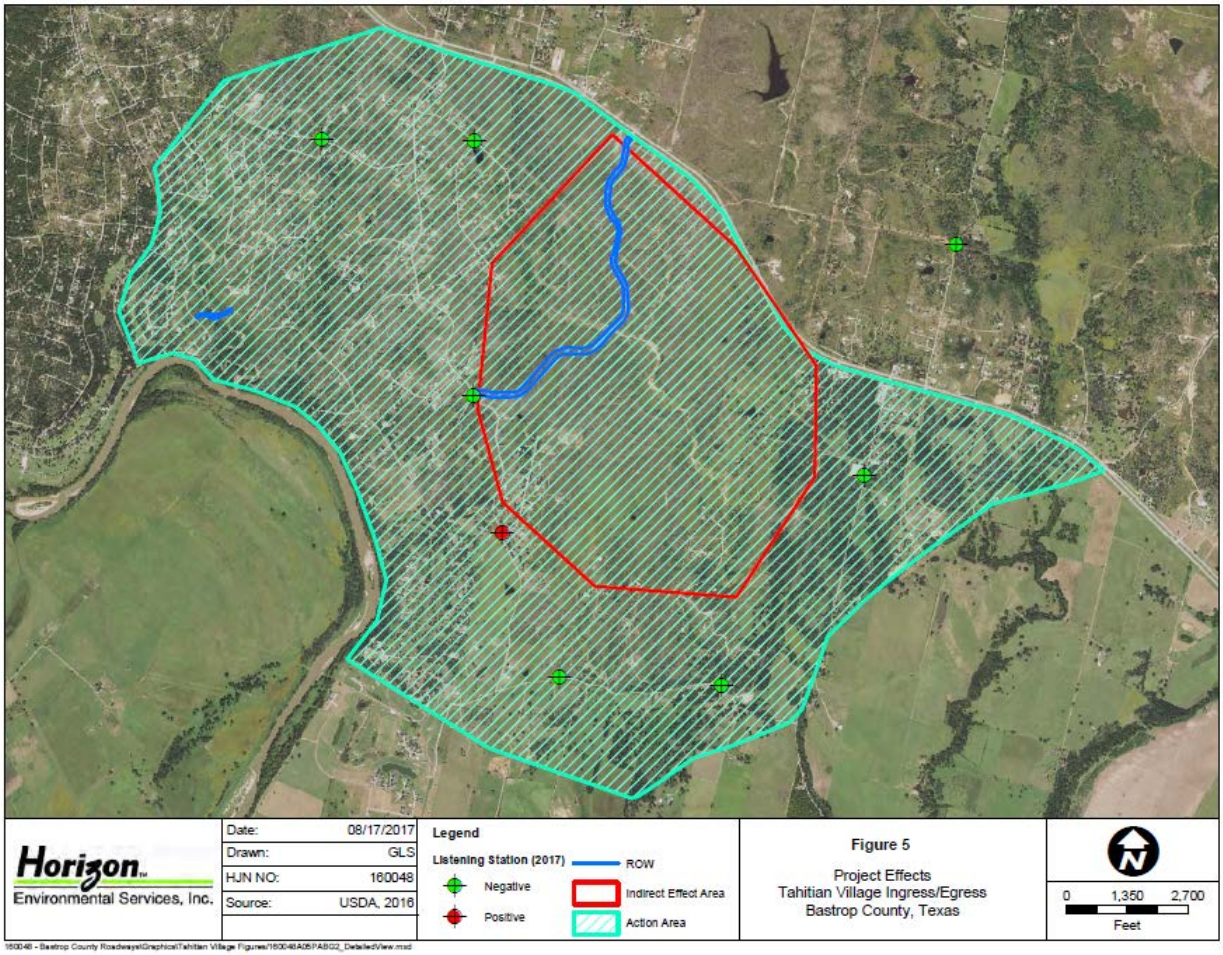
<u>2. If work begins or extends between December 31st and July 1st, all of the following conditions apply.</u>

- Bastrop County will provide Biological Monitors (qualified biologists) who are permitted in identifying, locating, handling, removing and transporting Houston toads. Biological Monitors will search the work site daily before work begins. The Biological Monitor(s) will have authority to stop work immediately if a Houston toad is encountered within the construction zone. Once the Houston toad has been safely removed (salvaged) by a qualified and permitted biologist, work may resume.
- Toad emergence and breeding is triggered, in part, by changing barometric conditions, rainfall and warm nighttime temperatures in the late winter and early spring. Bastrop County will communicate regularly with Dr. Michael Forstner at Texas State University to keep informed about regional toad habitat monitoring in the event toad emergence occurs and breeding is assumed to be underway across the range of the Houston toad.

ACTION AREA

The action area is defined at (50 CFR 402.02) as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. The Service has determined that the action area for this project is the area potentially directly and indirectly affected by the proposed project activities, including but not limited to, the proposed project site and additional areas within the geographic area depicted in **Figure 1**. This area was chosen as it constitutes a conservative estimate of the area of potential dispersal of juvenile Houston toads proximate to the project. Thus, the action area for the project includes the aforementioned 50 to 135-foot ROW along the 17,100 linear feet of proposed improved and new road, a total of approximately 21.6 acres, and includes an additional area extending approximately 5km from the centerline of the road with the following exceptions. As State Highway (SH) 71 and additional past habitat degradations adjacent to that corridor form a significant barrier to movement and with recent scarcity of detections along SH 71, we believe areas north of SH 71 are unlikely to contribute movement of animals into the project site. Similarly, we do not include areas south of the Colorado River as Houston toads as have not been detected there in Bastrop County. In addition, we believe that areas greater than 2.5 km east of the proposed roadway, due to their lack of suitable habitat conditions, are not likely to support the species. Thus, the action area includes a maximum of approximately 4,200 acres of potential Houston toad habitat and lies entirely within designated critical habitat for the Houston toad.

Figure 1. Tahitian Village/Colovista Ingress/Egress action area.



STATUS OF THE SPECIES

Per the ESA Section 7 regulations (50 CFR 402.14(g)(2)), it is the Service's responsibility to "evaluate the current status of the listed species or critical habitat."

The Houston toad was federally listed as an endangered species on October 13, 1970 (35 FR 16047 – 16048). The Service assigned the Houston toad a recovery priority number of 2C, meaning that the species has a high recovery potential (the low number), and additionally that the recovery of the species is in conflict with construction or other development projects (48 CFR 43098). The Houston toad is also listed as endangered by the State of Texas.

The Service's profile and status of the Houston toad, including the most recent 5-year review, can be found on our Environmental Conservation Online System (ECOS) website at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=D004. For a more detailed account of the species description, life history, population dynamics, threats, and conservation needs, refer to the website and the 5-year review completed in 2011.

To assess the current status of the species, it is helpful to understand the species' conservation needs that are generally described in terms of reproduction, numbers, and distribution (RND). The Service frequently characterizes RND for a given species via the conservation principles of resiliency (ability of species/populations to withstand stochastic events – numbers, growth rates), redundancy (ability of a species to withstand catastrophic events – number of populations and their distribution), and representation (variation/ability of a species to adapt to changing conditions) (collectively known as the three Rs).

The Recovery Plan for the Houston toad was published in 1984 and lacks specific quantitative recovery measures (USFWS 1984). However, a draft recovery plan, including quantitative recovery goals and objectives is under review in the Service's Southwest Regional Office. In general, the recovery goals outlined in Hatfield et al (2004) are similar to those described in the draft revised recovery plan.

Hatfield et al.'s 2004 population viability analysis estimated that a population size (carrying capacity of the habitat) of 5,000 breeding females, a minimum of two subpopulations, and a juvenile survival rate of at least one percent would be necessary to reduce the likelihood of extinction in 100 years. However, Hatfield et al. (2004) also indicated that if two or three separate subpopulations of Houston toads are protected (with interconnectivity among them), then a carrying capacity of as few as 1,000 female toads (at least 1 year old) would have a low probability of extinction in 100 years.

Reproduction

The life expectancy of the Houston toad is at least three years, but may be longer (Price 1993). The Houston Zoo had a wild, but captive reared female Houston toad that lived to be 9 years old and reproduction is known from 6+ year old females in captivity. Males reach sexual maturity at about one year of age, but females require one to two years to achieve reproductive maturity (Quinn 1981, Quinn and Mengden 1984). In mark-recapture surveys of Houston toads in Bastrop County, observed sex ratios of males to females are highly skewed in favor of males ranging from 3:1 to 10:1 (Dixon et al. 1990, Forstner 2002a, 2002b, 2003, 2006). The Houston toad is an "explosive" breeder, historically appearing in large numbers at breeding ponds where the males call to attract females over a period of a few nights throughout the breeding season, beginning as early as January 18 (Hillis et al. 1984, Dixon et al. 1990). Houston toads typically breed from late January to June (Kennedy 1962, Hillis et al. 1984). Reported egg-laying dates in the field range from February 18 to June 26 (Kennedy 1962, Dixon 1982, Hillis et al. 1984). Breeding is believed to be triggered in part by rainfall and warm night time temperatures (Kennedy 1962). Other factors may also play a role in initiating chorusing activity. For example, Price (1992) found that Houston toads do not generally call 7 to 10 days prior to a full moon. However, all cues that may stimulate Houston toad breeding activity are not known.

This species tends to concentrate reproductive efforts into producing large numbers of eggs, but

each egg has less than one percent probability of survival (Seal 1994). Eggs are laid in strings in the water and hatch into tadpoles that metamorphose into juvenile toadlets approximately 60 days after egg deposition (Hillis et al. 1984). After metamorphosis, juvenile Houston toads move into the surrounding terrestrial habitats where they grow and develop into adults (Forstner 2003).

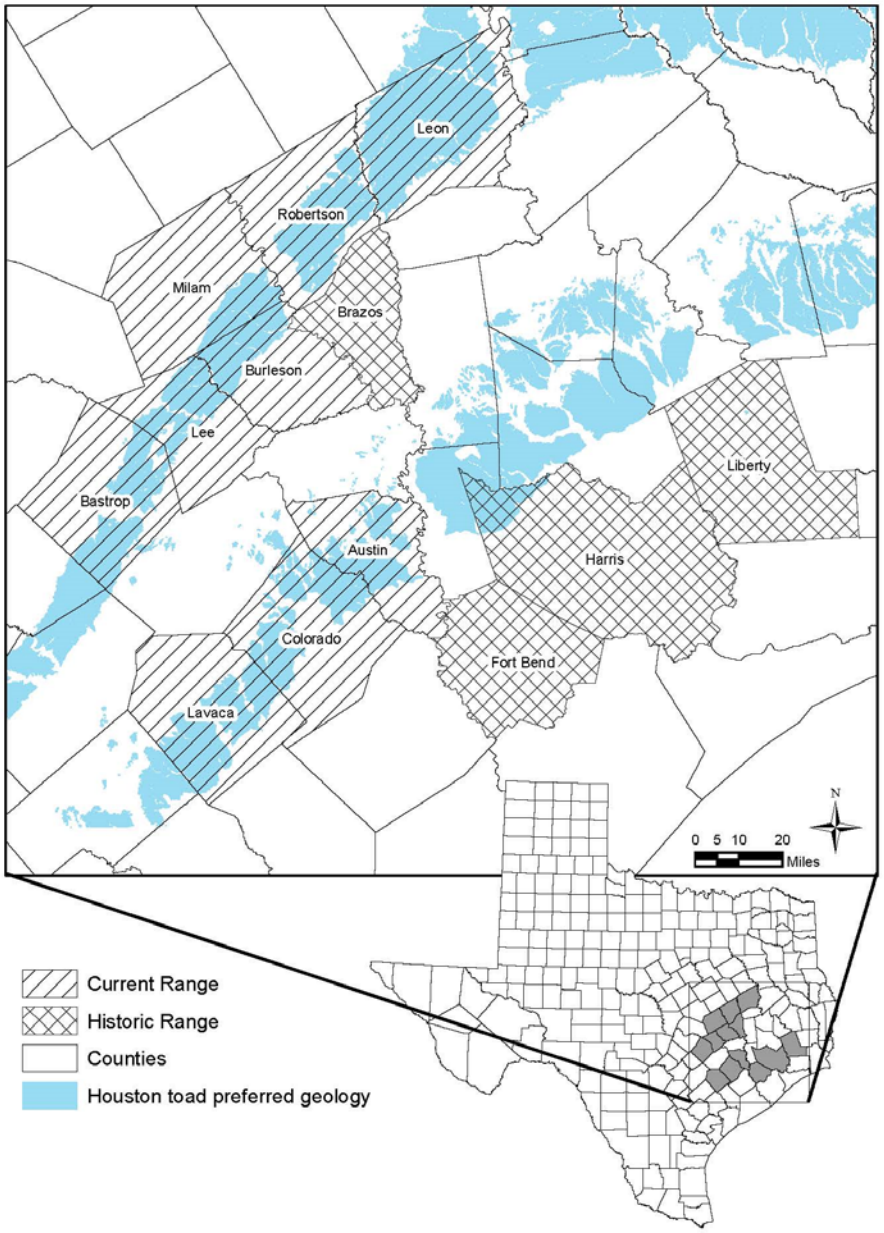
Under suitable environmental conditions, pairs remain in amplexus, the copulatory embrace for toads and frogs, for six hours at minimum and eggs are laid in the early morning hours among vegetation or debris in the water near the bank (Hillis et al. 1984). Reported clutch sizes per female vary from 512 to 6,199 eggs (Kennedy 1962, Quinn and Mengden 1984, Quinn et al. 1987). In wet years, breeding may occur wherever sufficient standing water is present. This species typically uses ephemeral rain pools for breeding, although it has been known to breed in flooded fields and permanent ponds. Often, the most reliable breeding sites for locating Houston toads are stock ponds and similar impoundments, since they are permanent water bodies. Unfortunately, permanent water bodies tend to support more predators, such as fish, turtles, bullfrogs (*Rana catesbeiana*), aquatic invertebrates, and snakes (Forstner 2001) that prey on Houston toads. For successful breeding, water must persist for at least 60 days to allow for egg hatching, tadpole maturation, and emergence of toadlets (Hillis et al. 1984, Price 1992).

Development rates of Houston toads vary depending on temperature and other factors. Eggs may hatch within seven days and tadpoles may remain in the pond for 40 to 80 days depending on environmental conditions. Metamorphosis of tadpoles in a given pond generally occurs at approximately the same time over a period of a few hours, resulting in post-metamorphic aggregations of toadlets that remain at the edge of the pond for seven to ten days or more (Hillis et al. 1984, Dixon et al. 1990, Forstner 2002a). Hillis et al. (1984) observed large numbers of toadlets moving as far as 330 feet in daylight from their natal ponds along the same gulleys used by adult toads during the breeding season. Mortality in young is extremely high due to predation and drying of breeding sites, and less than one percent of eggs laid are believed to survive to adulthood (Quinn 1981; Price 1992; Forstner 2002a, 2002b, 2003; Greuter and Forstner 2004). The results from field surveys in 2006 found the Houston toad juvenile survival rate to be approximately 0.03 percent (Forstner 2006). Forstner (2002c) documented instances of chorusing that did not appear to result in eggs or toadlets; therefore, successful chorusing may not mean successful breeding.

Distribution

The Houston toad is endemic to east-central Texas (Dixon 2013). The known historical range of the Houston toad included 13 Texas counties (Hillis et al. 1984, Yantis 1989, 1990, 1991, 1992, Forstner and Dixon 2011, MacLaren and Forstner 2017): Austin, Bastrop, Burleson, Brazos Colorado, Fort Bend, Harris, Lavaca, Lee, Leon, Liberty, Milam, and Robertson. (**Figure 2**) Additional range expansions are hypothesized, however, range-wide audio surveys conducted from 2006 to present resulted in the detection of the species in only nine counties: Austin, Bastrop, Burleson, Colorado, Lavaca, Lee, Leon, Milam, and Robertson (Forstner et al. 2007, Forstner and Dixon 2011; Figure 1). It appears likely that the Houston toad is now

Figure 2. Houston toad range map with preferred geology.



extirpated from Fort Bend, Harris, and Liberty counties (Forstner and Dixon 2011). Brazos County, owing to a recent "re-discovery", has not been specifically surveyed for Houston toads to our knowledge.

Likewise, several of these populations were not observed since they were first discovered (recorded in Lee County in 2001; Gaston et al. 2001). Current efforts focus on monitoring known populations and conducting focused survey efforts beyond the known range in potentially suitable habitat as the discovery of unknown populations may be crucial to recovery.

Abundance

Population estimates for the Houston toad are difficult to develop because: the non-random nature of historical surveys; lack of access to private lands to conduct surveys; lack of methods to extrapolate breeding counts to the population as a whole; and the difficulty in locating the toad in times other than the breeding season (Forstner 2003, Forstner 2006, Forstner et al. 2007). Houston toad numbers in Bastrop State Park have shown an overall, long-term negative trend (Price 2003) and were not heard in chorus during survey years 2015-2016. Surveys in 2017 were once again positive for Houston toads at Bastrop State Park, but in low numbers of chorusing males (Forstner 2017). The Lost Pines region experienced a severe drought in the 1990's, which may have contributed to the decline, and the region again experienced drought conditions in 2005 and 2006. Low numbers of Houston toads observed during Bastrop County survey efforts in 2006 and 2007 indicate this species continues to decline with regard to abundance over the long-term (Forstner 2006, Forstner et al. 2007). This decline has continued to the present day despite additional intensive countywide survey efforts in 2009 and in 2012 following the BCCF (Forstner and Dixon 2011, Forstner et al. 2012). The record statewide drought of 2011, for example, resulted in the detection of 8 individuals in Bastrop County during the 2011 breeding season and no reproductive events (Forstner et al. 2012). Detections for 2012 to present have increased steadily from the 2011 surveys, but this is increasingly attributed to our intervention efforts (supplementation). Range-wide detections are still at numbers that suggest the species continues to decline which could lead to extinction.

Previous data indicated that the Lost Pines region in Bastrop and Lee Counties supported the largest known and best studied population of Houston toads (Sanders 1953; Brown 1971; Yantis 1989, 1990, 1991, 1992; Dixon 1982; Price 1990a, 1990b, 1990c, 1992, 1993; Forstner 2002a, 2002b, 2003, 2006, Forstner et al. 2007, Forstner and Dixon 2011). The Bastrop County Houston toad population is likely part of a historically larger biologically relevant subpopulation occurring in the area bounded by the Colorado River on the south and extending well into Lee County on the north (Forstner 2003, 2006, Forstner et al. 2007). Houston toad habitat was found north of the critical habitat delineation in Bastrop County and into Lee County in 2000-2001; however, much of this habitat was cleared and converted into pasture by the end of 2001 (Forstner 2006, Forstner et al. 2007). A local population in Robertson County was rediscovered in 2014 as a result of monitoring associated with a regulatory action. It appears that this population may rival or exceed the remaining population in Bastrop County. The Bastrop County population was impacted by a record drought in 2011 and by catastrophic wildfires in the period of 2009-2015.

Past estimates of population size in Bastrop County ranged from 300 to 2,000 (Brown 1975, Seal 1994) based on data collected primarily at Bastrop State Park. However, the observed sex ratio is on the order of five males to one female, so the effective population size may be much smaller (Forstner 2002a, Forstner 2003, Swannack and Forstner 2004, Forstner 2006, Forstner et al. 2007, Swannack and Forstner 2007), with possibly only two or three counties in the range thought to have effective breeding populations (Forstner et al. 2007). In 2010, survey results confirmed this assumption by identifying and collecting 21 wild egg strands from three counties (Crump et al. 2010). Eggs were collected from four locations within Bastrop County, one location in Austin County, and one location in Leon County (Crump et al. 2010). Dr. Forstner estimated that the current adult wild population may number less than 500 (Dr. Michael Forstner unpublished data).

As recently as 2011, Dr. Forstner called the BCCF an extinction level event (NYT 2012). Overall trends for Houston toad abundance are still declining across its range (McHenry and Forstner 2009; Forstner and Dixon 2011). However, we have early feedback from current headstarting and supplementation efforts that the population numbers in Bastrop County are on an upward trend since 2012, at least locally at the Griffith League Ranch, where post BCCF supplementation efforts have been underway since 2013 (Dr. Michael Forstner, personal communication 2017). Limited survey in Robertson County revealed several positive detection locations as we attempt to track the large population previously identified in 2014 (Forstner 2017). No Houston toads were identified from county level surveys in Colorado County in 2017 (Forstner 2017). The population in Austin County has likewise been declining and appears to support a small population at the core of the remaining habitat. The status of the population in Burleson and Milam County is currently unknown as the prior surveys or anecdotal reports are now five or more years old. Thus, currently and as a whole, the range-wide status of the species is declining.

The primary factors influencing the status of the Houston toad include habitat loss through destruction, fragmentation, and fire suppression, including conversion to agriculture and subsequent urbanization. Predation, including direct and indirect effects of invasive species (e.g., red-imported fire ants), inter-specific competition, effects from herbicides and pesticides, disease (e.g. chytrid fungus), and effects from drought are additional significant threats to the species. Despite these threats, the species is thought to be recoverable. Recent headstarting, captive propagation and supplementation efforts make this plausible so long as sufficient habitat can be identified, restored, maintained, and conserved to provide for multiple sustainable populations across the range.

STATUS OF CRITICAL HABITAT

Critical habitat for the Houston toad was designated in portions of Bastrop and Burleson counties, Texas on January 31, 1978 (43 FR 4022 – 4026). Critical habitat for this species exists within the entirety of the action area and may be affected by the proposed action.

The Wilderness Ridge Wildfire of 2009, the BCCF of 2011, and the Hidden Pines Wildfire of 2015 burned 1,491 acres, 31,453 acres, and 4,580 acres respectively (TPWD 2015). Some portions of Bastrop County were affected by all three fires and all of the more than 37,000 acres burned lay within Houston toad habitat and within designated critical habitat. Approximately 45% of the 82,000 acres of Houston toad critical habitat within Bastrop County has been burned by wildfire since 2011. However, Houston toads appear capable of effectively utilizing this fire-recovering habitat for feeding, breeding and sheltering (Duarte et al 2014). The approximate 2,000 acres of designated critical habitat in Burleson County surrounding Lake Woodrow exists in a similar condition to when it was designated.

ENVIRONMENTAL BASELINE

Regulations implementing the ESA (50 CFR 402.02) define the environmental baseline as the past and present impacts of all federal, state, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated and/or ongoing impacts of all proposed federal projects in the action area that have undergone Section 7 consultation, and the impacts of state and private actions which are contemporaneous with the consultation in progress.

Status of the species within the action area

Bastrop County is preparing for the potential new roadway by conducting Houston toad surveys of those areas publically accessible. While no explicit surveys for any of the proposed routings have been completed, Bastrop County completed surveys in 2015 (24% of sites surveyed were south of Highway 71), 2016 (20% of sites surveyed were south of Highway 71), and 2017 (36% of sites surveyed were south of Highway 71). The species was not detected by manual call survey south of Highway 71 at the survey sites during 2015,and 2016. One site was positive for Houston toad chorusing during the 2017 surveys. That site is located at the intersection of McAllister Road and William Higgins Drive. This 2017 positive location is approximately 0.6 miles ESE of the southern entrance to the proposed alignment.

Within the action area there are numerous other federal, state, tribal, local or private actions affecting the Houston toad. The Service is aware of approximately 85 prior individual HCPs and/or certificates of inclusion under the County's LPHCP for residential development within the action area. In general, these are low-density residential developments consisting of single-family homes. We are also aware of past Texas Department of Transportation maintenance and upgrade work on the adjacent SH 71 and of multiple small commercial developments proposed or underway along SH 71. Past and present actions also include broad-scale FEMA recovery work in the wake of the BCCF and subsequent disasters (2011-present) that included debris removal, temporary housing, hazard tree removal, road, bridge, and culvert repairs and numerous utility repairs. Thus, the available habitat is mixed oak and pine forest of varied age, with numerous natural drainage features and numerous man-made impoundments (e.g., ponds).

Status of Critical Habitat within the Action Area

Of the approximate 4,200 acres of critical habitat within the action area described above, terrain features and anthropogenic disturbances on both the north and south ends of the Project likely limit this area to no more than 2,800 acres, and of that, only about 1,300 acres is not currently traversed by roadway or other access. For this area, physical and biological features essential to the conservation of the species include mixed pine hardwood forest, numerous surface water features capable of supporting breeding, and several riparian areas that are believed to function as paths of movement and dispersal through otherwise inhospitable habitat. Nearly all of the action area was burned, most of it catastrophically, in the 2011 BCCF.

EFFECTS OF THE ACTION

Direct effects are the direct or immediate effects of the project on the species, its habitat, or designated/proposed critical habitat. Indirect effects are defined as those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR 402.02). An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. Direct and indirect effects of the proposed action along with the effects of interrelated/interdependent activities are all considered together as the "effects of the action."

<u>Factors to be considered</u>

Proximity of the action

The proposed construction of the Tahitian Village/Colovista ingress/egress project would occur within the occupied range of the Houston toad and entirely within designated critical habitat. The construction footprint and cleared ROW would permanently eliminate approximately 7 acres of Houston toad designated critical habitat in the action area. Approximately 21.6 acres of Houston toad critical habitat would be directly affected during construction within the 50-135-foot-wide ROW. Direct effects would also include an area including the construction area and the area potentially affected by construction noise, which we estimate as a total area of approximately 1,300 acres based on the terrain and existing anthropogenic disturbances (e.g., existing roads and houses). However, not all of the direct effects would be at once and only an increment would be temporarily affected, as with noise, at a given time. The balance of the cleared ROW, when restored with native grasses and forbs, may still provide for dispersal of the species across the permanently maintained ROW of 24 feet.

Distribution

Given the measures to isolate the construction area, the effects would be largely localized to the existing and proposed ROW area surrounding the Project, along the 17,100-foot-long corridor, in

a total area of approximately 21.6 acres. More broadly, emigration and migration into and out of the action area would be temporarily interrupted by the placement of the exclusionary fence and permanently interrupted by the presence of a 24-foot-wide road ROW. During the construction phase of the Project we believe, given the low numbers of Houston toads, this project would likely only affect a few individuals, limiting their foraging and their individual fitness at non-lethal levels. For the operational phase of the Project, we believe these movement and migration effects will give rise to both lethal (e.g., road strike) and non-lethal take (reduction of individual fitness and reproductive success) for the life of the Project.

Timing

Clearing of Houston toad habitat for the Project is anticipated to commence in the summer of 2018 and is likely to continue during portions of the Houston toad breeding period (January 1 thru July 1). However, as initial clearing likely constitutes the most intensive stressor, undertaking the clearing when the species is least active is a minimization measure. Similarly, effects to individual toads should be limited as a result of project scheduling and active monitoring during the breeding season in addition to the host of conservation measures as noted above. Likewise, no breeding habitat occurs within the Project ROW. Therefore habitat clearing should have limited effects on Houston toads around their breeding locations.

Nature of the effect

The effects associated with land clearing and road construction activities would directly, but minimally alter the Houston toad population and distribution within the action area. The indirect effects of the Project are difficult to quantify, but road mortality of Houston toad is well documented such that these operational effects (e.g., road mortality, loss of individual fitness from habitat fragmentation, noise) to the species are likely and will persist throughout the life of the Project. Similarly, the habitat degradation and fragmentation caused by the presence of a road where there is not such access currently will be a persistent alteration of this patch of habitat. We anticipate that such effects on individuals of the species will include: reduction of individual fitness (e.g., expenditure of additional energy resources upon encountering a road crossing, increased susceptibility to predation); and incremental reduction in reproductive success (e.g., the road as a hindrance to movement, increased anthropogenic noise). It is not believed that the Project's effects would affect the overall population size, variability, or distribution outside of the action area. The Project was designed to minimize impacts to the Houston toad and direct effects would be largely confined within the project construction area. Bastrop County proposed a host of measures to temporally and physically exclude the Houston toad from the action area. These measures are intended to minimize alterations to the Houston toad's lifecycle by minimizing the most impactful work outside of the Houston toad breeding season and excluding the animals from the work zone through use of barrier silt fencing.

Duration

Work is proposed to begin on the Project in the summer of 2018 and is anticipated to take 6-9 months to complete. Direct effects to the Houston toad would occur at the onset of the project during land clearing activities. Indirect effects, such as alterations of the species ability to carry out their normal lifecycle, including emigration/immigration across the project work zone, would persist until the project is complete and vegetation is reestablished in the work areas and adjacent to the drainages. Beyond the construction phase of the project, the effects of degradation and fragmentation of the habitat by presence of a new road and the increased risk of injuries, predation, and mortality through exposure to road crossings will persist for the operational life of the Project.

Disturbance frequency, intensity, severity

All vegetation, including potential Houston toad habitat, would be removed completely from the proposed ROW at the onset of construction and disturbance from road construction would continue throughout construction on the project, which is of relatively short duration and will be largely outside the most active season for adult Houston toads. Any Houston toad located in the action area after the start of construction would be taken (e.g., killed by heavy equipment and land clearing operations), however, Bastrop County has proposed measures to limit this likelihood (active search and monitoring during the clearing in addition to physical and temporal exclusion measures). Houston toad numbers in the action area are believed to be small. Thus, the risk to an individual Houston toad to this threat is considered low. The same physical and temporal exclusionary measures should also limit exposure to juveniles of the species since juveniles are likely the most mobile life stage.

<u>Analysis for effects of the action</u>

Beneficial effects

It is not anticipated that the Project will have any beneficial effects on the Houston toad.

Direct Effects

The direct effects to the Houston toad within the action area would be from the permanent loss of 7 acre of Houston toad non-breeding habitat during land clearing of the expanded ROW. We estimate that one juvenile Houston toad may be taken during land clearing activities with additional Houston toads taken (lethally and sub-lethally) each year thereafter during the operational life of the Project. The Houston toad habitat may or may not be occupied at the time the vegetation would be cleared within the ROW. Houston toads may be harassed during the land clearing activity if they are present when these activities occur. If a Houston toad is found within the project work zone after construction has started, construction in that area would cease until the toad has left the area or salvaged by permitted personnel. Houston toads may be

harassed due to machinery passing closely to their locations by noise or vibration. Noise disruption may also harass Houston toads if it occurs during their breeding call attempts; however, Bastrop County proposed to work outside the breeding season and is not proposing to work at night when male toads would primarily be calling. The barrier fencing, installed to avoid lethal take of Houston toads by preventing them from entering the construction area, could disrupt the dispersal of Houston toads to and from adjacent areas of habitat. This alteration of their normal behavior patterns and habitat utilization, related to movement, sheltering, and feeding, would be a form of harassment.

Indirect effects

The increased activity related to road operation is expected to harass the Houston toads occurring within the action area by limiting access to available habitat and disrupting migration and/or movements between breeding ponds and non-breeding habitat. Additionally, Houston toads may be indirectly affected by operations of the roadway (i.e., habitat degradation and vehicle strikes) and normal maintenance of the ROW. Likewise, roads and associated stormwater runoff are additional mechanisms to affect individuals of the species through exposure to pollutants (e.g. hydrocarbons, metals) and herbicides as summarized below.

Habitat Destruction and Landscape Fragmentation Effects

Habitat conversion and fragmentation make the Houston toad more vulnerable to predation, competition, and hybridization. Removal of trees acts to exacerbate the effect of drought on a local scale by increasing heat at ground level and consequent moisture loss from the soil, making the deforested area unsuitable for Houston toads that need to burrow to escape desiccation (Forstner 2003). Excavation and impoundment of seasonal or ephemeral drainages or wetland areas creates permanent open water as opposed to ephemeral ponds and pools. Permanent water is more likely to harbor predators such as birds, mammals, snakes, turtles, fish, aquatic invertebrates, and bullfrogs (Quinn and Ferguson 1983, Dixon et al. 1990) and potential competitors such as Woodhouse’s and Gulf Coast toads (Hillis et al. 1984).

Habitat disturbance also encourages the establishment and proliferation of red-imported fire ants. Fire ants are known to prey on newly-metamorphosed toadlets (Freed and Neitman 1988, Dixon et al. 1990, Forstner 2002a), as well as on the invertebrate community that is an important part of the toad's food base (Bragg 1960). Fire ants are associated with open habitats disturbed as a result of human activity (such as old fields, lawns, roadsides, ponds, and other open, sunny habitats), but are absent or rare in late succession or climax communities such as mature forest (Tschinkel 1988). Thus, maintaining large, undisturbed areas of woodlands may help control the spread of fire ants (Porter et al. 1991) and protect native ant populations (Porter et al. 1988, 1991; Suarez et al. 1998).

Paved roads can prevent or hinder dispersal and effectively isolate populations of some invertebrates, small mammals (Mader 1984, Mader et al. 1990), and amphibians (Van Gelder

1973, Reh and Seitz 1990, Soulé et al. 1992, Fahrig et al. 1995, Yanes et al. 1995, Findlay and Houlahan 1997, Gibbs 1998, Vos and Chardon 1998, Knutson et al. 1999). Highways can have serious demographic consequences by increasing mortality and reducing connectivity and migration among remnant habitat patches. Surveys along a 5-mile stretch of Highway 21 adjacent to breeding ponds near Bastrop State Park during 1990 reported 67 percent mortality of Houston toads (12 of 18 individuals) observed in the right-of-way during the breeding season (Dixon 1990, Price 1990c).

Pesticide, Fertilizer, and Contaminant Effects

Because of their semi-permeable skin, development of their eggs and larvae in water, and their position in the food web, amphibians are vulnerable to waterborne and airborne pollutants, such as heavy metals, certain insecticides (particularly cyclodienes, such as endosulfan, endrin, toxaphene, and dieldrin), nitrites, salts, certain organophosphates (such as parathion and malathion), and petroleum hydrocarbons (Harfenist et al. 1989, Little et al. 2002). Pesticides can also change the quality and quantity of amphibian food and habitat (Bishop and Pettit 1992). No progress has been made to evaluate the effects of pesticides or herbicides specifically on the Houston toad (Forstner and Dixon 2011).

Effects on Critical Habitat

The proposed construction of the Tahitian Village/Colovista ingress/egress project would occur within the occupied range of the Houston toad and entirely within designated critical habitat. The construction footprint and cleared ROW would permanently eliminate approximately 7 acres of Houston toad designated critical habitat in the action area. Approximately 21.6 acres of Houston toad critical habitat would be directly affected during construction within the 50-135-foot-wide ROW. As previously stated, the designated critical habitat for the Houston toad encompasses some 84,000 acres in Bastrop and Burleson Counties. The habitat within the action area has been previously affected by wildfire and low density residential development. Recovery from the wildfire is taking place and the species is believed to persist within low-density developments. The current project maintains that paradigm and affects only a small fraction of the designated critical habitat and near the boundary of such habitat. Thus, the permanent elimination of 7 acres and the reduction of function to an additional 14.6 acres are not believed to appreciably diminish the value of the critical habitat for the conservation of the Houston toad. Thus, the project is not likely to result in the destruction or adverse modification of designated critical habitat in Bastrop County.

Cumulative Effects

Cumulative effects are those “effects of future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area” considered in this Opinion (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation under section 7 of the Act.

While the Tahitian Village/Colovista Ingress/Egress Project has a relatively limited scope and footprint (temporary 21.6 acres and reduced to a permanent ROW of approximately 7 acres) in the context of the thousands of acres of Houston toad habitat within the action area, the nature of new roadways includes potential long-term and detrimental effects to this population of Houston toads. The Service anticipates potential adverse effects of roads on amphibian species and the Houston toad specifically. This road expansion is located within critical habitat and bisects a portion of the core of this habitat. While initially anticipated to be lightly used (i.e., limited exposure), we recognize the likelihood of future residential and small commercial developments adjacent the proposed roadway and in keeping with the past incremental development of the area south of SH 71. The Service is aware of no additional future State, tribal, local or private actions reasonably certain to occur in the action area considered in this biological opinion. The reduced width of the proposed permanent ROW (i.e., 24 feet) and use of native vegetation to restore the temporary construction ROW will serve to limit the exposure of Houston toads to hazards of a road crossing.

JEOPARDY AND ADVERSE MODIFICATION ANALYSIS

Section 7(a)(2) of the ESA requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat.

Jeopardy Analysis Framework

"Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02). The following analysis relies on 4 components: (1) Status of the Species, (2) Environmental Baseline, (3) Effects of the Action, and (4) Cumulative Effects. The jeopardy analysis in this Opinion emphasizes the range-wide survival and recovery needs of the listed species and the role of the action area in providing for those needs. It is within this context that we evaluate the significance of the proposed federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Low numbers of Houston toads have been documented in the action area in the preceding decades, though some of this undoubtedly owes to historic scarcity and quality of survey. Despite low numbers, it seems likely the population of Houston toads south of SH 71 still includes recruitment at present (i.e., small numbers of chorusing males persist in recent survey). We are also encouraged by the recent positive trend from supplementation efforts within other parts of Bastrop County and factor this into our analysis of the effects of this action. While the supplementation is currently focused in other parts of the County, it is possible that future efforts could be focused much closer to the current action area (e.g., Bastrop State Park) and in numbers

that were not previously possible. However, the Service also considers the proposed roadway a likely avenue to increased Houston toad road mortality and overall development pressure on this area of several square miles of habitat and designated critical habitat.

Destruction/Adverse Modification Analysis Framework

The final rule revising the regulatory definition of "destruction or adverse modification of critical habitat" became effective on March 14, 2016 (81 FR 7214). The revised definition states: "Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features."

The following analysis relies on 4 components: (1) Status of Critical Habitat, (2) Environmental Baseline, (3) Effects of the Action, and (4) Cumulative Effects. For purposes of making the destruction or adverse modification determination, the effects of the proposed federal action, together with any cumulative effects, are evaluated to determine if the critical habitat range wide would remain functional (or retain the current ability for the physical or biological features (PBFs) to be functionally re-established in areas of currently unsuitable but capable habitat) to serve its intended conservation/recovery role for the species.

Analysis for Jeopardy/Adverse Modification

Impacts to Individuals –
The proposed action includes the construction of a 50 to 135-foot-wide road ROW in occupied Houston toad habitat and designated critical habitat. As discussed in the Effects of the Action Section, potential effects of the action include effects to Houston toads present within the action area during the construction phase of the project and indefinitely into the future for the operational phase of the road. Effects generally include lethal to injurious road strikes, sub-lethal loss of fitness and reproductive success from habitat degradation, fragmentation, noise, and maintenance activities such as mowing.

In summary, there will be impacts to individual Houston toads in either their annual survival or reproductive rates.

Conclusion

We considered the current overall declining status of Houston toad and the similar condition of the species within the action area (environmental baseline). We then assessed the effects of the proposed action and the potential for cumulative effects in the action area on individuals, populations, and the species as a whole. These types of effects of the proposed action are currently considered primary factors influencing the status of the species. While they may

compound those factors, as stated above, we do not anticipate any reductions in the overall RND of the Houston toad. It is the Service's Opinion that the Tahitian Village/Colovista Ingress/Egress Project, as proposed, is not likely to jeopardize the continued existence of the Houston toad and is not likely to destroy or adversely modify designated critical habitat.

1. The total amount of habitat to be permanently lost or degraded is approximately 7 acres and does not contain breeding habitat. Occupied habitat totaling approximately 21.6 acre will be lost during construction, but the balance will be restored to native vegetation that is generally supportive of the species. This is a small fraction of the more than the estimated 124,000 acres of potential Houston toad habitat in Bastrop County.
2. We recognize that the 24-foot-wide permanent ROW and the remaining restored ROW for the road will present an obstacle, filter and reduce the integrity of this habitat, but are not so large as to create an absolute barrier to Houston toad movement and dispersal.
3. The best available scientific information indicates that numbers of individual Houston toads are likely to be low in the immediate area of the Project, thus reducing the likelihood of unanticipated take during construction.
4. A host of conservation measures and mitigation are proposed to minimize or offset the effects of this Project on the Houston toad.
5. Current reintroduction efforts by others are ongoing in the County and supplementing the Bastrop County population of Houston toads. At present it is believed that these efforts are having at least some incremental effect on the Bastrop County population of Houston toads.

Critical habitat for this species was designated in Bastrop and Burleson Counties as previously described. This action will significantly affect a small increment of the designated critical habitat in Bastrop County or approximately 7 acres in the permanent ROW and a total of 21.6 acres during construction, of an estimated 82,000 acres. We have also previously quantified the effects to critical habitat as indirectly affecting an additional approximate 1,300 acres by subjecting this area of critical habitat to road effects indefinitely into the future where that is not the case presently. Such alteration, admittedly incremental, reduces the value of this habitat for the Houston toad. However, we believe that with the Project measures adopted by Bastrop County (e.g., reduction of the permanent ROW, restoration of additional ROW with native vegetation) the Project will not appreciably diminish the critical habitat or result in its destruction or adverse modification.

The conclusions of this BO are based on full implementation of the Project as described in the "Description of the Proposed Action" section of this document, including any Conservation Measures that were incorporated into the project design and as enumerated above.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and federal regulation pursuant to Section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering (50 CFR § 17.3). Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be undertaken by HUD so that they become binding conditions of any grant or permit issued to Bastrop County (including its contractors), as appropriate, for the exemption in section 7(o)(2) to apply. HUD, and Bastrop County, as the responsible entity, have a continuing duty to regulate the activity covered by this incidental take statement. If HUD and/or Bastrop County (1) fails to assume and implement the terms and conditions or (2) fails to require the responsible entity to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Bastrop County must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

AMOUNT OR EXTENT OF TAKE ANTICIPATED

Bastrop County analyzed the effects to the species in its biological assessment and derived an estimate of take based on survey information, project scope, life history of the species, known and suspected effects of road projects and the current status of the species in the action area. The Service reviewed the analysis, consulted species experts, and refined the components of take for the project . The Service's anticipated take resulting from the Project is described in the **Table 1** below.

Table 1. Amount and type of anticipated incidental take.

Species	**Amount of Take Anticipated**	**Life Stage when Take is Anticipated**	**Type of Take**	**Take is Anticipated as a Result of**
Houston toad	5	Juveniles	Kill	Road mortality
	1	Adults		
Houston	4	Juveniles	Harm	Habitat loss and

toad	1	Adults		fragmentation
Houston toad	2	Juveniles	Harass	Construction activities
	1	Adults		

The Service anticipates that one adult and two juvenile Houston toads will be taken as non-lethal incidental take, in the form of harassment from construction activities. It is anticipated such take will occur during the construction activity and through changes to Houston toad habitat within the construction zone and new ROW within the 21.6-acre Project area and broader 4,200-acre action area. The Service believes non-lethal harassment related to construction activity is reasonably certain to occur for those activities involving significant ground disturbance in close proximity to the 21.6 acres of Houston toad habitat that would be cleared for the project. We anticipate that two adult and nine juvenile Houston toads per year could be taken as a result of the Project's operational phase. That is take of one adult and four juvenile Houston toads per year by harm, be it kill or injure (e.g., road strike or significant habitat degradation or fragmentation), and the sub-lethal take of one adult and five juvenile Houston toads per year in the form of harassment from reduction in individual fitness (e.g., road maintenance, mowing, noise). While the current abundance of Houston toads in the Project area is unknown, the numbers are currently likely low given the scarcity of individuals identified through rapid, county-level, (human) auditory survey. The take anticipated here attempts to account for current reintroduction efforts, the recovery of large areas of forested habitat from catastrophic wildfire and the recent, albeit short-term, trend data for other areas of Bastrop County. Due to the cryptic nature of the Houston toad, particularly when located in non-breeding habitat, monitoring is acknowledged to be difficult, but not impossible, and we anticipate that any unanticipated take (during the construction phase) will be reported and re-initiation procedures commenced accordingly. The Service and Bastrop County will continue monitoring for this Project and others in an effort to revise and refine our conservation strategies and assessment of incidental take.

Effect of the take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the Houston toad:

1. Bastrop County must fully implement the Conservation Measures (Section 4.4) of the September 2017 Biological Assessment, including awareness training for all project personnel, construction sequencing, and biological monitoring.

2. Bastrop County and its contractors must also implement and employ the "Native Grassland Restoration Specifications" contained in Attachment A of the September 2017 Biological Assessment.

3. Bastrop County must avoid and/or minimize take of the Houston toad to the maximum extent practicable.

4. Bastrop County must monitor potential take of the Houston toad and provide a post-construction/restoration monitoring report to the Service within 90 days of project completion.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, HUD and Bastrop County must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. Bastrop County proposed a number of Conservation Measures, listed in the BA and the "Description of the Proposed Action" section of this document. Bastrop County's proposed Conservation Measures are incorporated as reasonable and prudent measures by reference, including the purchase of 21.6 credits from the Houston toad Conservation Bank, and must be implemented, as proposed, in conjunction with this project.

2. In addition to the Conservation Measures proposed by Bastrop County, the Service determined the following minimization measures must also be implemented:
    - The use of herbicides within the action area is restricted to the upland areas of the right-of-way for control of Johnson grass (*Sorghum halepense*). Herbicides may also be used to control vegetation growth adjacent to guard rails during normal maintenance activities post-construction. Herbicides may only be applied between July 1 and December 31 each year, during dry weather conditions, and in accordance will all other label instructions.
    - Project specific locations (PSLs) may be located within the ROW of the project under construction. Additional PSLs in Houston toad habitat not previously considered must be coordinated and permitted, as appropriate, prior to the commencement of construction.

3. Bastrop County must monitor the extent of take through sufficient on-site inspections necessary to determine if the amount of allowable take is exceeded. Bastrop County must provide the Service with a brief report upon completion of the restoration of the construction and ROW vegetation. The report must include a summary of construction actions implemented, any unanticipated actions or delays in project completion, and any known incidental take that occurred and the reasons for that take.

MONITORING AND REPORTING REQUIREMENTS

The Service anticipates that one juvenile and two adult Houston toads will be taken as non-lethal incidental take, in the form of harassment from construction activities. We anticipate that two adult and nine juvenile Houston toads per year could be taken as a result of the Project's operational phase. Incidental take associated with the eastern and western projects must not exceed one adult and five juvenile Houston toads for each project. The Reasonable and Prudent Measures, with their implementing Terms and Conditions, are designed to minimize the impact of the incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. FHWA must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service is aware of Bastrop County's continuing efforts to implement a countywide fuel reduction program for the benefit and protection of its citizens with regard to wildfire mitigation. Since this program would have generally beneficial effects to the Houston toad and its habitat, the Service recommends the County continue these efforts.

While it is beyond the scope of section 7 of the ESA to drive a selection of alternatives, the Service believes there are less damaging alternatives available to the County that meet the same goals of improving safe ingress and egress to and from these developments. It is also apparent to the Service that the preferred alternative could serve to open new areas to development. While such developments are unknown to us, we recommend Bastrop County make all reasonable efforts to inform potential developers of the Lost Pines HCP and its provisions for conservation subdivision development.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations by Bastrop County.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Sincerely,

Charles Ardizzone
Project Leader
Coastal Ecological Services Field Office

CONSULTATION HISTORY

Consultation History

October 7, 2015:	Bastrop County Office of Emergency Management personnel introduced the Project to Service personnel at an informal meeting in Bastrop County.
October 8, 2015:	Bastrop County Office of Emergency Management personnel provided the Service, by email, with an informal project description and brief summary of the purpose and need for the Project.
March 24, 2016:	Bastrop County Office of Emergency Management personnel, Texas General Land Office representative, Horizon Environmental consultants, Dr. Michael Forstner, and Service personnel participated in an early planning meeting for the Project. The Service recommends separating this Project and biological assessment from another pending HUD-funded Bastrop County road project for the Squirrel Run extension for similar ingress/egress purposes.
March 2, 2017:	Bastrop County submitted the biological assessment for the Tahitian Village/Colovista Ingress/Egress road project and requested initiation of section 7 consultation.
March 14, 2017:	The Service responded to the request for initiation of formal consultation and requested updated or supplemental information regarding the biological assessment.
October 4, 2017:	Horizon Environmental consultants provided a revised biological assessment for the Project.
March 27, 2018:	The Service provided a draft BO to HUD and Bastrop County for review and comment.

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Horizon™
Environmental Services, Inc.

BIOLOGICAL ASSESSMENT
PROPOSED CONSTRUCTION OF A NEW INGRESS/EGRESS ROAD FOR TAHITIAN VILLAGE AND COLOVISTA DEVELOPMENTS
BASTROP COUNTY, TEXAS
IPAC CONSULTATION CODE: 02ETAU00-2017-SLI-0367

PREPARED FOR:

US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
AND
BASTROP COUNTY, TEXAS

PREPARED BY:

HORIZON ENVIRONMENTAL SERVICES, INC.

WITH CONTRIBUTIONS BY:

DR. MICHAEL R.J. FORSTNER, TEXAS STATE UNIVERSITY

SEPTEMBER 2017

160048-02 Tahitian Village BA Sept 2017

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ATTACHMENTS

A NATIVE GRASSLAND RESTORATION SPECIFICATION
B ALTERNATIVES COST ANALYSIS
C TYPICAL PROJECT PLAN DRAWINGS

1.0 INTRODUCTION

The proposed project is a roadway construction project proposed to address safety issues with ingress/egress to existing residential properties in Tahitian Village and Colovista Developments in Bastrop County, Texas (Figure 1). Funds for the project will be made available from the Texas Community Development and Revitalization (CDR) Program.

The State of Texas received an allocation of $31,319,686 in Community Development Block Grant (CDBG) funds from the US Department of Housing and Development (HUD) as disaster recovery assistance for wildfires that occurred between August 30 and December 31, 2011. The State has been directed by HUD to target at least 80% of this assistance to Bastrop County.

Before expending funds, an environmental review of the proposed project must be completed in accordance with the National Environmental Policy Act (NEPA) and 24 CFR Part 58. The environmental review evaluates potential environmental impacts of the project, and also provides an opportunity for members of the general public to comment on the information found in the review.

This biological assessment has been prepared in support of a Section 7 consultation with the US Fish and Wildlife Service (Service) as part of the above-referenced NEPA review to address potential effects on listed threatened or endangered species and designated critical habitats.

Legend

Preferred Alternative

Date:	01/27/2017
Drawn:	GLS
HJN NO:	160048 PA BG2
Source:	OSM, 2016

Horizon Environmental Services, Inc.

Figure 1

Vicinity Map
Tahitian Village Ingress/Egress
Bastrop County, Texas

0 1,000 2,000
Feet

160048 - Bastrop County Roadways\Graphics\Tahitian Village Figures\160048A01PABG2_Vicinity.mxd

2.0 PERTINENT SPECIES AND RESOURCES

The following species listed by the Service were reviewed for potential impacts from the proposed activity.

Table 1
Federally Listed Threatened or Endangered Species of Bastrop County

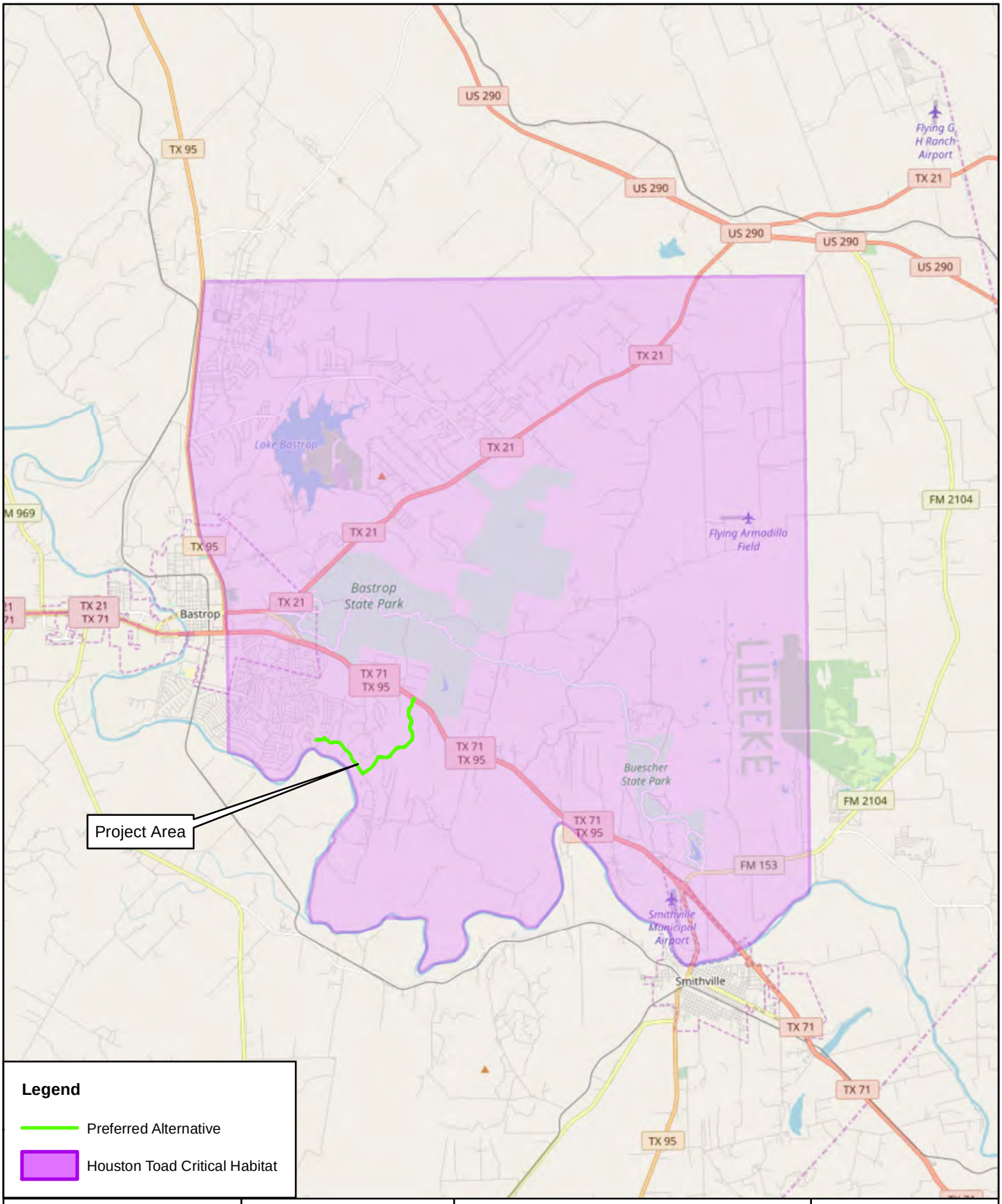
Common Name	Scientific Name	Federal Status	Habitat Description	Habitat Present	Effect/ Impact
Piping Plover	*Charadrius melodus*	T	Beaches, bayside mud or salt flats-migratory	N	N
Least Tern	*Sterna antillarum*	E	Sand bars along major streams	N	N
Red Knot	*Calidris canutus rufa*	T	Beaches, bayside mud or salt flats-migratory	N	N
Whooping Crane	*Grus americana*	E	Winters in Aransas National Wildlife Refuge- migratory	N	N
Smooth Pimpleback	*Quadrula houstonensis*	C	Rivers and streams	N	N
Texas Fawnsfoot	*Truncilla macrodon*	C	Rivers and streams	N	N
Navasota Ladies'-tresses	*Spiranthes parksii*	E	Post oak woodlands with ephemeral stream drainages and sandy soil	N	N
Houston Toad	*Bufo (Anaxyrus) houstonensis*	E/CH	Pine-Oak woodlands with sandy soils	Y	Y

E = endangered; T = threatened; C = candidate species; DM = delisted taxon, recovered, being monitored first five years; CH = critical habitat.

Source: Service, 2017

2.1 LISTED SPECIES WITHIN THE PROJECT AREA

Of the species listed in Table 1, only the Houston toad (*Bufo* (*Anaxyrus) houstonensis*) is likely to occur in the project area. The project area is located within designated critical habitat for the Houston toad (Figure 2). The least tern (*Sterna antillarum*) is usually found along streams and rivers on sand or gravel bars; the largely ephemeral to intermittent streams crossed by the project do not provide suitable for the least tern. The piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), and whooping crane (*Grus americana*) occur primarily along the coast in Texas; they would only be migrants in Bastrop County. The two mussels listed, smooth pimpleback (*Quadrula houstonensis*) and Texas fawnsfoot (*Truncilla macrodon*) both occur in areas of hydric habitat (streams, rivers, and some reservoirs). The smooth pimpleback has been documented in the Colorado River upstream of the project area. The largely ephemeral to intermittent tributaries crossed by the project are unlikely to support either the smooth pimpleback or the Texas fawnsfoot. The Navasota Ladies'-tresses' (*Spiranthes parksii*) range includes the project area, but based on field assessments conducted by Horizon biologists familiar with the orchid, the project area does not include the microhabitats commonly associated with known occurrences of the plant.



Horizon Environmental Services, Inc.

Date:	01/27/2017
Drawn:	GLS
HJN NO:	160048 PA BG2
Source:	Service 2003; OSM, 2016.

Figure 2

Houston Toad Critical Habitat Map
Tahitian Village Ingress/Egress
Bastrop County, Texas

0 1.25 2.5
Miles

160048 - Bastrop County Roadways\Graphics\Tahitian Village Figures\160048A02PABG2_Toad_Habitat.mxd

2.2 CRITICAL HABITAT WITHIN THE PROJECT AREA

The project location is within the designated critical habitat for the Houston toad. In Texas, critical habitat for the piping plover and whooping crane is located along the Texas Coast and will not be affected by this project. Critical habitat is not designated for the other listed species.

2.3 MIGRATORY BIRD SPECIES

The Migratory Bird Treaty Act (USC 16 § 703) and the Texas Parks and Wildlife Code (TPWC § 63) provide for the protection of all bird species considered to be migratory by the Service and the Texas Parks and Wildlife Department (TPWD). This includes all birds except European starlings, English sparrows, ravens (but not crows), and feral pigeons. Protection is afforded to prevent direct death or injury, capture, possession, transport, or sale of individuals of the species, dead or alive, including their parts, eggs and nests.

Since most migratory birds are highly mobile as adults, direct death or injury as an incidental occurrence to land disturbance activities is not likely. The principal concern is the potential destruction of nests, eggs, or fledglings that might be present in woody vegetation (shrubs and trees) during land clearing activities during the nesting season. The primary protection strategy is to conduct most land-clearing in woodland and shrubland habitats outside of the primary nesting season. In most of Texas, the primary season for nesting and fledging is March 1 to September 1. However, after early June, only sporadic late nesting occurs until late August. To the extent reasonably possible, major clearing operations should be conducted outside of the primary nesting season.

If complete seasonal avoidance is not reasonably possible, then detailed surveys for active nests can be conducted by qualified biologists during the primary nesting season (March 1 to September 1) in advance of clearing to locate all active nests with eggs or offspring present. If active nests are found, clearing within 30 feet of the nests should be avoided until nesting is completed. Monitoring is required during this period to document when fledglings leave the nests. Once nest abandonment has occurred, clearing may be completed.

3.0 PROJECT DESCRIPTION

3.1 LOCATION

The preferred route for the ingress/egress road improvements is located between Ulupau Circle and Highway 71 in Bastrop County, Texas (see Figure 1).

3.2 SITE DESCRIPTION

The preferred route is approximately 17,100 linear feet in length and will require approximately 11,960 linear feet of new roadway. The area contains previously forested habitat (affected by wildfire) now in regeneration consisting of a dense regrowth of loblolly pine (*Pinus taeda*), sumac (*Rhus glabra*), American beautyberry (*Callicarpa americana*), sparkleberry (*Vaccinium arboretum*), post oak (*Quercus stellata*), and yaupon (*Ilex vomitoria*). Common herbaceous species include little bluestem (*Schizachyrium* scoparium), western ragweed (*Ambrosia psilostachya*), dewberry (*Rubus trivialis*), threeawn (*Aristida* sp.), Mexican hat (*Ratibida columnaris*), paspalum (*Paspalum* sp.), panium (*Panicum* sp.), and horse mint (*Monarda* sp.). The preferred route will cross Copperas Creek and several additional unnamed tributaries. With a 50- to 135-foot wide construction zone, the road will have direct impacts up to 21.6 acres of undeveloped land.

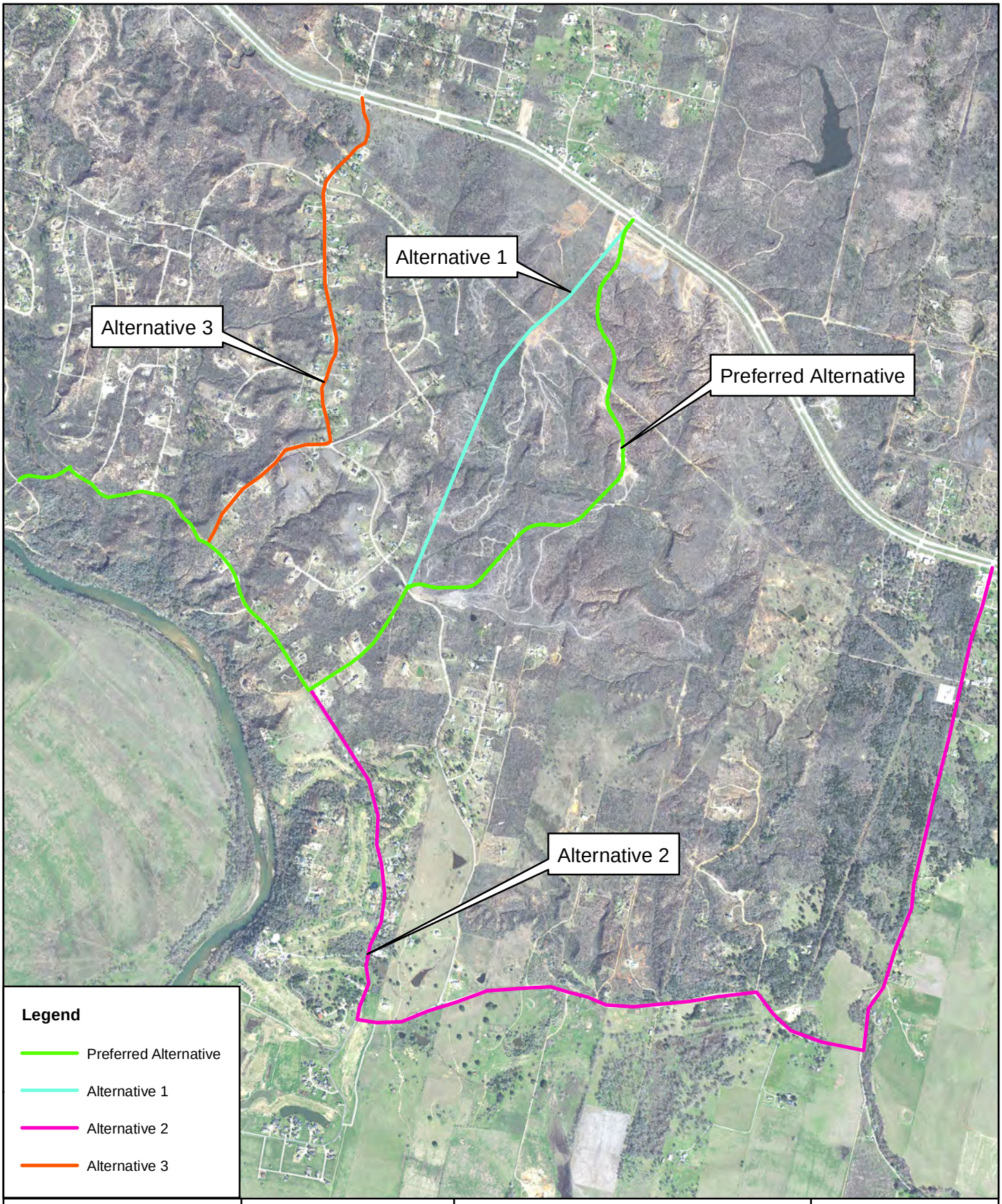
3.3 NEED AND PURPOSE

This project consists of new roadway construction and existing roadway improvements to address safety issues with ingress/egress to existing and future residences within the Tahitian Village and Colovista developments in Bastrop County, TX. Significant ingress/egress issues were encountered in Tahitian Village and Colovista during the wildfire events of 2011(personal communication, Mike Fisher, Bastrop County Emergency Management). Multiple ingress/egress routes are needed to allow for safe ingress/egress during emergencies. Several roadways currently provide ingress/egress to these existing residential subdivisions; however, the existing roadways are narrow, two-lane residential streets or county roads that have minimal traffic capacity. In the event one or more of these roadways becomes impassible due to wild fire or flooding, the other existing roadways are not adequate to provide safe and efficient ingress/egress (personal communication, Mike Fisher, Bastrop County Emergency Management).

The proposed road project is located between Ulupau Circle and State Highway 71 in Bastrop County, TX and is needed for secondary ingress and egress routes to existing local housing developments. The purpose of the project is to provide additional ingress/egress during emergencies. This will increase safety, giving residents a way to evacuate and emergency crews a way to access the area in the event that one or more routes are blocked.

3.4 ALTERNATIVES ANALYSIS

Alternatives considered include the no-action alternative, the preferred route, and 3 additional alternative routes developed by RPS Klotz Associates (RPS, 2017) (Figure 3).



Horizon Environmental Services, Inc.

Date:	01/27/2017
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Source:	TNRIS, 2015

Figure 3

Project Alternatives Map
Tahitian Village Ingress/Egress
Bastrop County, Texas

0 1,050 2,100
Feet

160048 - Bastrop County Roadways\Graphics\Tahitian Village Figures\160048A03PABG2_Project_Alternatives.mxd

3.4.1 No-Action Alternative

The no-action alternative would have no direct impact to the Houston toad, but safe ingress and egress within the Tahitian Village and Colovista developments would not be achieved in the event of significant landscape emergencies such as wild fires; therefore, this alternative is not practicable since it does not serve the project purpose.

3.4.2 Preferred Route Alternative

For the purposes of this report, the “preferred alternative” will be referred to as preferred route.

The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the acquisition of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive.

A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $182 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 10.6 acres of new ROW to be acquired (50 feet wide). The total cost is estimated to be $3,115,187 (see Attachment B).

This alternative is within Houston toad habitat. The total area of disturbance for the new roadway sections varies from 50 to 135 feet wide and is 21.6 acres total. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures).

3.4.3 Alternative 1

Alternative 1 is approximately 15,550 linear feet in length and will require approximately 10,500 linear feet of new location roadway (see Figure 3). The route will require connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new roadway. Additionally, the route

will consist of the acquisition of additional ROW, widening all existing roadways to 24 feet wide, as well as three new bridges.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long, including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost about $240,000 to construct.

Two proposed bridges will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Assuming the bridges will be 24 feet wide, and approximately 120 feet long and 400 feet long respectively, including approach slabs and abutments, and constructed for approximately $100/SF, the bridges will cost approximately $288,000 and $960,000 to construct. Four culverts will also be required along the portion of new roadway between Oak Shadows Drive and SH 71.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $272 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 12.05 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $4,236,575 (see Attachment B).

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 18.95 acres. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures).

3.4.4 Alternative 2

Alternative 2 is approximately 28,200 linear feet in length and will require approximately 3,350 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive, connecting Colovista Drive to Crafts Prairie Road via a new roadway, commencing along Crafts Prairie Road to Ponderosa Road, and continuing along Ponderosa Road to SH 71. Additionally, the route will consist of the acquisition of additional ROW, widening all existing roadways to 24 feet wide, as well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct. A cross culvert will also be required along the portion of new roadway between Colovista Drive and Crafts Prairie Road.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $131 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 3.85 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $3,695,200 (see Attachment B).

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 6.04 acres. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad. (see below on Houston toad avoidance and minimization measures)

3.4.5 Alternative 3

Alternative 3 is approximately 11,700 linear feet in length and will require approximately 3,320 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive to River Forest Drive, continuing along River Forest Drive to McAllister Road, and completing the route along McAllister Road to SH 71. Additionally, the route will consist of the acquisition of additional ROW, widening all exiting roadways to 24 feet wide, as well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $166 per linear feet to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 3.71 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $1,940,145 (see Attachment B).

This alternative is within Houston toad habitat. In approximate proportion, the total area of disturbance for this alternative would be approximately 6.0 acres. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad (see below on Houston toad avoidance and minimization measures).

3.4.6 Conclusion

The no-action alternative is not considered practicable since it does not fulfill the project purpose and need.

The Preferred Route most closely meets the intent of the project by adding a new roadway that provides additional emergency access to SH 71 from the existing residential areas. The route also provides additional access for many of the existing roadways in the project area. This route additionally makes better use of the existing topography and will impact 1 property between Oak Shadows Drive and SH 71.

Alternative 1 would add a new roadway and would provide the required additional emergency access to SH 71. However, the route is more expensive than the Preferred Route. The route would require an additional bridge over the Copperas Creek 100-year floodplain and would need steeper slopes and safety improvements to accommodate the existing topography. The route would impact 2 properties between Oak Shadows Drive and SH 71.

Alternative 2 would mainly consist of upgrades/reconstruction to the existing roadways in the area and would be the longest route. This route would add the connection between Ulupau Circle and Colovista Drive, which would provide better connectivity within the existing roadway network. However, the route would not meet the purpose of the project in that it does not provide additional emergency access to SH 71.

Alternative 3 also would mainly consist of upgrades/reconstruction to the existing roadways in the area and is the shortest route. This route would add the connection between Ulupau Circle and Colovista Drive, which would provide better connectivity within the existing roadway network. However, the route would not meet the purpose of the project in that it does not provide additional emergency access to SH 71.

4.0 THREATENED OR ENDANGERED SPECIES AND THEIR HABITATS

As described in Section 2.1, eight federally-listed species have distribution ranges that include Bastrop County, Texas. Only one species, the Houston toad, is likely to occur in the project area. Sections 4.1 to 4.3 below describe the Houston toad in detail, its habitat, and possible short-term and long-term effects of the proposed project on the species. Management actions designed to minimize, avoid, or offset effects are described in Section 4.4.

4.1 HOUSTON TOAD

The following description of the Houston toad and its habitat is excerpted in part from a recent biological opinion issued by the Service for a proposed TxDOT rehabilitation project on a portion of US Highway (US) 290 located in Bastrop County (Service 2016) and has been augmented with updated information by Dr. Forstner.

Status of the Species/Critical Habitat

Description

The Houston toad is one of six members of the Americanus Group (Forstner 2003). They are generally brown and speckled, although individual toad coloration can vary considerably. Some may appear light brown, others almost black, and they may also have a slightly reddish, yellowish, or greyish hue. Two dark bands extend down from each eye to the mouth, and their legs are also banded with darker pigment. A variable white stripe streaks along the sides of the Houston toad's body. The underside is usually pale with small, dark spots. Males have dark throats, which appear bluish when distended. Adult Houston toads are 2 to 3.5 inches long, are covered with raised patches of skin that resemble warts, and have two parotoid glands that contain chemicals that make the toad distasteful and sometimes poisonous to predators (Brown 1971). Although Houston toads are similar in appearance to the closely-related Gulf Coast toad (*Bufo* [*Incilius] valliceps*) and Woodhouse's toad (*Bufo* (*Anaxyrus) woodhousii)*, the species can be discerned by physical characteristics (Brown 1971).

Current Legal Status

The Houston toad was federally listed as an endangered species on October 13, 1970 (35 FR 16047 – 16048). The Service has assigned the Houston toad a recovery priority number of 2C, meaning that the species has a high recovery potential (the low number), and additionally that the recovery of the species is in conflict with construction or other development projects (48 CFR 43098). Critical habitat for the Houston toad was designated in portions of Bastrop and Burleson counties, Texas on January 31, 1978 (43 FR 4022 – 4026). The Houston toad is also listed as endangered by the State of Texas.

Critical Habitat

Critical habitat includes areas that are essential to the conservation of a threatened or endangered species and that may require special management considerations or

protection. Although not described when critical habitat was designated, essential habitat requirements for the Houston toad include seasonally-flooded breeding ponds, deep sandy soil, and forested or woodland areas. The Service designated critical habitat for the Houston toad in 1978 (43 FR 4022), which includes approximately 98,000 acres in the central portion of Bastrop County, and approximately 2,000 acres surrounding Lake Woodrow in Burleson County where toads were known to occur at that time.

Little was known about the habitat requirements of the Houston toad at the time of listing and designation of critical habitat. Since that time, occupied Houston toad habitat has been documented in several additional counties..

Distribution and Abundance

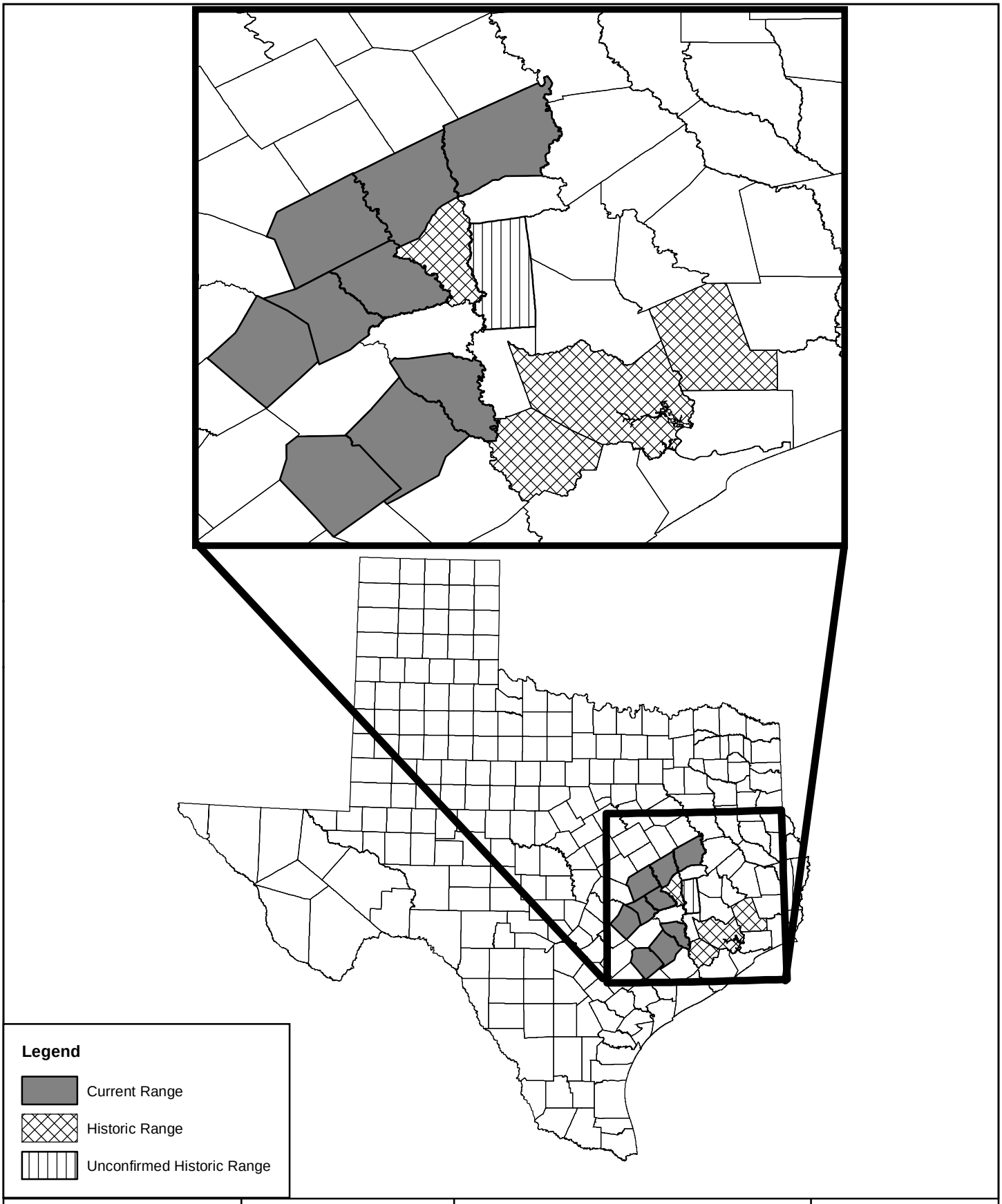
Distribution

Houston toad populations occur only in Texas and typically only along two parallel bands of geologic formations. According to the Bureau of Economic Geology, one band runs through Bastrop, Lee, Burleson, Milam, Robertson, Leon, and Freestone Counties and includes the Carrizo, Queen City, Reklaw, Sparta, and Weches formations. The other band runs through Austin, Colorado, and Lavaca Counties and includes the Willis and Goliad formations. These geologic formations form various sandy soils, including loamy fine sands and fine sandy loams. Current and historic ranges are shown in Figure 4.

Surveys conducted by Yantis from 1989 to 1992 found Houston toads occurring in Bastrop, Burleson, Freestone, Lee, Milam, Robertson, Leon, Lavaca, Colorado, and Austin Counties. There are also historical records from Brazos, Fort Bend, Harris, and Liberty Counties, but extensive surveys and documentation of the extent of habitat loss and degradation have confirmed the Houston toad's extirpation from Fort Bend, Harris, and Liberty Counties (Hillis et al. 1984, Yantis 1989, 1990, 1991, 1992a). There are also unconfirmed reports of Houston toads from Grimes County (Service, 2016b, pers. comm.).

Houston toads have not been found at the critical habitat site (Woodrow Lake) in Burleson County since 1983, although other populations have been found in the county (Dixon 1983, Yantis 1989, 1990, 1991, 1992a, 1992b).

Range-wide surveys conducted in 2009 indicated that Houston toads could be found in as few as six counties (Bastrop, Austin, Milam, Colorado, Leon, and Lee), although only two or possibly three of these counties were thought to have breeding populations. Forstner et al. confirmed extensive chorusing in Robertson County during 2014, and confirmed the species remains present in Lavaca County in 2010 and Burleson County in 2011. Furthermore, MacLaren and Forstner (2017) report on a specimen from Brazos County collected in 1962.



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Source:	FWS, 2016

Figure 4

Houston Toad Range Map

160048 - Bastrop County Roadways\Graphics\Tahitian Village Figures/160048A04PABG2_Houston_Toad_Map.mxd

Abundance

Population estimates for the Houston toad are difficult to develop because of the non-random nature of historical surveys, lack of access to private lands to conduct surveys, lack of methods to extrapolate breeding counts to the population as a whole, and the difficulty in locating the toad in times other than the breeding season (Forstner 2003, Forstner 2006, Forstner et al. 2007). Houston toad numbers in Bastrop State Park have shown an overall, long-term negative trend (Price 2003). The Lost Pines region experienced a severe drought in the 1990's, which may have greatly contributed to the decline, and the region again experienced drought conditions in 2005 and 2006. Low numbers of Houston toads observed during Bastrop County survey efforts in 2006 and 2007 indicate this species continues to decline with regard to abundance over the long-term (Forstner 2006, Forstner et al. 2007). This decline was confirmed despite additional intensive countywide survey efforts in 2009 and in 2012 following the BCCF (Forstner and Dixon 2011, Forstner et al. 2012). The record statewide drought of 2011, for example, resulted in the detection of 8 individuals in Bastrop County during the 2011 breeding season and no reproductive events (Forstner et al. 2012). Detections for 2012 and 2013 were increased from the 2011 surveys, but remained at numbers that suggest the species continued a decline toward extinction. Additional surveys in 2014 and 2015 indicated a spike in detections for 2014, but another significant decline in 2015 (Forstner and Duvall-Jisha, 2015). Figure 5 provides a representation of the survey results from 2009 to 2015 within the Lost Pines Habitat Conservation Plan area in Bastrop County. While there is significant variation between the individual years (perhaps explained in part by climatic and landscape conditions any given year), the overall general trend is downward.

Available data indicate that the Lost Pines region in Bastrop counties once supported the largest known and certainly the best studied population of Houston toads (Sanders 1953; Brown 1971; Yantis 1989, 1990, 1991, 1992a; Dixon 1982; Price 1990a, 1990b, 1990c, 1992, 1993; Forstner 2002a, 2002b, 2003, 2006, Forstner et al. 2007, Forstner and Dixon 2011). The Bastrop County Houston toad population is likely historically part of a larger biologically relevant subpopulation occurring in the area bounded by the Colorado River on the south and extending well into Lee County on the north (Forstner 2003, 2006, Forstner et al. 2007). Houston toad habitat was found north of the critical habitat delineation in Bastrop County and into Lee County in 2000-2001; however, much of this habitat was cleared and converted into pasture by the end of 2001 (Forstner 2006, Forstner et al. 2007). Survey efforts in the remaining counties have not been conducted with regularity, nor have there been surveys that are normally as extensive as those conducted Bastrop County. In 2014, Forstner et al., conducted surveys in Robertson County and found an area of nearly 40 square miles contained active chorusing Houston toads. This is in stark contrast to five previously known locations, only two of which where known positive during the past thirty years. The number of toads detected in Robertson County in 2014 was approximately 100 chorusing males, or nearly ten times that found in Bastrop County for a similar area surveyed. Surveys for all other counties, excepting Austin County have not been consistent, nor extensive enough to enable effective estimates. In Austin County, Houston toad detects exceeded thirty individuals detected in 2012, but have declined in each year since then with fewer than ten individuals detected in each of the last three years.

Past estimates of population size in Bastrop County have ranged from 300 to 2,000 (Brown 1975) based on data collected primarily at Bastrop State Park. However, the observed sex ratio is on the order of five males to one female, so the effective population size may be much smaller (Forstner 2002a, Forstner 2003, Swannack and Forstner 2004a, Forstner 2006, Forstner et al. 2007, Swannack and Forstner 2007), with possibly only two or three counties in the range thought to have effective breeding populations (Forstner et al. 2007). Using data from the Griffith League Ranch (GLR), Duarte et al., (2011) provided the first updated estimate of the toad's abundance using modern analytical methods since Hatfield et al. (2004). Duarte et al. (2014) reveal between 201-307 adult males to be a robust estimate of the Houston toad population accessing the GLR. The data applied in that study were collected prior to the 2011 Bastrop Complex Fire. Houston toads persist in the largest numbers on the landscape as juveniles. Juvenile survivorship has been fairly well characterized in work completed since 2000 (e.g. Swannack et al. 2009), but the reality that the vast majority of Houston toads in the wild must be juveniles given the very low survivorship is often overlooked. Using the robust estimate from the GLR (Duarte et al. 2011), we can extrapolate from the adults to estimate the population of juveniles and adult male and female Houston toads. Thus, thousands of Houston toads exist in Bastrop County today, the majority of which are juveniles from the 2017 and 2016 breeding events.

Bastrop County has been preparing for the potential new roadway by conducting Houston toad surveys of those areas now publically accessible (Figure 5). While no explicit surveys for any of the proposed routings have been completed, we have completed surveys in 2015 (24% of sites surveyed were south of Highway 71), 2016 (20% of sites surveyed were south of Highway 71), and 2017 (36% of sites surveyed were south of Highway 71). The species was not detected by manual call survey south of Highway 71 at the survey sites during 2015, nor 2016. One site was positive for Houston toad chorusing in the 2017 surveys. That site is located at the intersection of McAllister Road and William Higgins Drive. This 2017 positive location is approximately 0.6 miles ESE of the southern entrance to the preferred alternative. This location is within the indirect affect zone specified in our evaluation.

The Bastrop County Lost Pines Habitat Conservation Plan surveys are specifically designed to assess occupancy and trends over time for the Houston toad within the Plan area. There are a total of 25 survey locations, manually surveyed a minimum of 20 times, inclusive of surveys during daylight hours seeking evidence of juvenile emergence, or egg strand production along public roadways. Figure 5 demonstrates that the trend among sites immediately after the Bastrop Complex Fire of 2011 was up, but has now been more or less stable at eleven or fewer individuals detected across those sites in each of the last three years. Similarly, the number of sites has been steady at fewer than ten positive locations across the sites for the last three years.

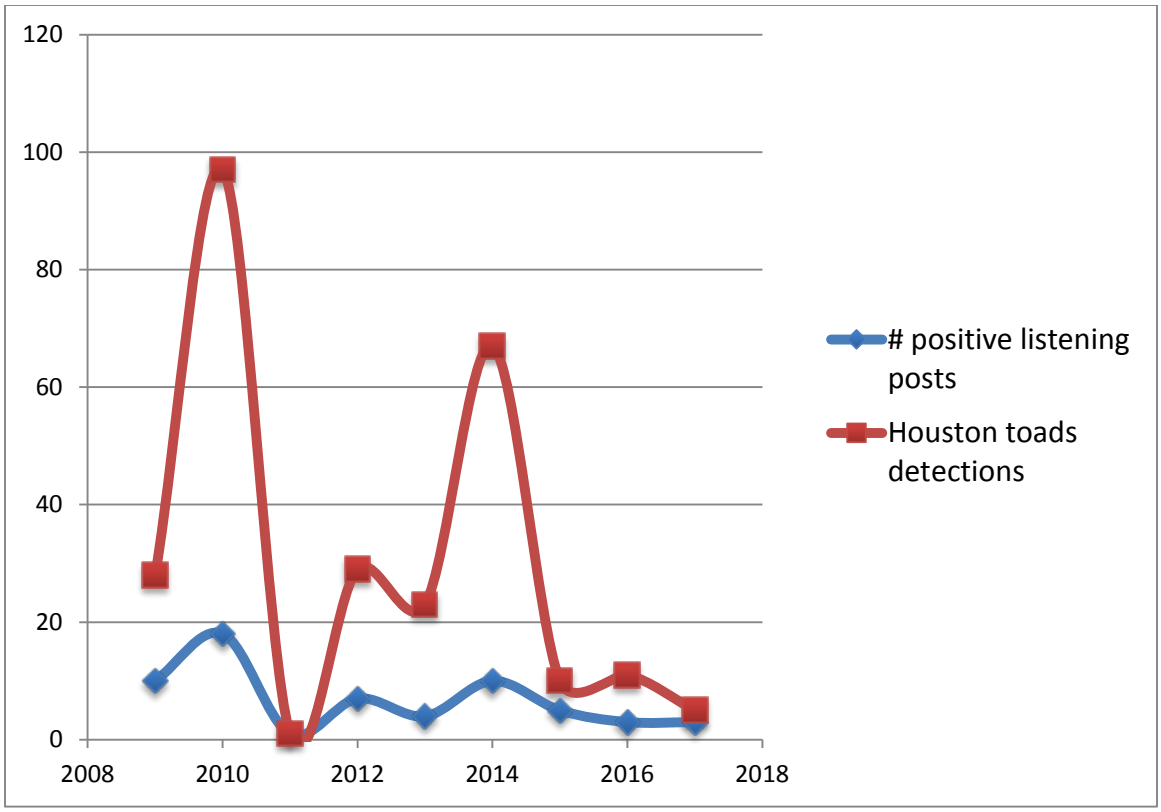

Figure 5. Annual variation in the number of positive listening posts and the total number of male Houston toads (*Bufo houstonensis*) detected for the Lost Pines Habitat Conservation Plan monitoring surveys in Bastrop County, Texas. These represent total detections and the total number of unique individuals will always be smaller, obviously excepting the single individual in 2011.

Habitat

Houston toads are associated with sandy soils. Based on 1997 satellite imagery (Service unpublished data), aerial photographs, U.S. Geological Survey topographic maps, and 1977 land cover maps (Texas Department of Water Resources 1978), all of the current known Houston toad populations and a historic locality in Liberty County are associated with tracts of forests dominated by pines and oaks, and other deciduous trees. In stark contrast, the localities in Harris County were characterized as coastal prairie (Brown and Thomas1982). At present, Houston toad habitat consists of rolling uplands characterized by pine and/or oak woodlands underlain by deep, sandy soils (Forstner 2003). Tree species vary from one region to the next, but typically include loblolly pine (*Pinus taeda)*, post oak (*Quercus stellate)*, blackjack oak (*Q. marilandica)*, and/or sandjack oak (*Q. incana)*. Although Houston toad occurrence does not appear to be correlated with the presence of a particular tree species, loblolly pine is dominant in the Lost Pines region of Bastrop County and occurs in other counties within the Houston toad's range. The Lost Pines is the most extensive stand of loblolly pines outside of the East Texas pine belt about 100 miles to the east, geographically separated by intervening prairie and savannah. Forests provide habitat partitioning that reduces competition with other toad

species, cover to escape from predators and harsh climatic conditions, shade to prevent heating of the sandy soils, and food supplies. Forests also provide habitat continuity needed to maintain dispersal corridors between breeding and terrestrial habitats (Laan and Verboom 1990, Rudolph and Dickson 1990, Welsh 1990, deMaynadier and Hunter 1998, Gibbs 1998, Knutson et al. 1999).

Like the loblolly pines, Houston toads are found in areas of sandy soils (no more than 20 percent clay), which form over the Sparta, Queens City, Carrizo, Willis, Weches, Reklaw, and Goliad formations (Yantis 1991, Forstner 2003). These sandy soils effectively catch rainfall, and little is lost to runoff (Soil Conservation Service 1979). The Calvert Bluff Formation, which is a mudstone with varying amounts of sandstone, lignite, and ironstone, is associated with fewer Houston toad breeding locations. However, breeding ponds have been found on the Calvert Bluff close to the Carrizo Sand (Forstner 2003). Like most amphibians, the Houston toad and its skin are highly vulnerable to desiccation. To aid against desiccation, they become dormant during harsh weather conditions. They seek protection from the winter cold (hibernation) and summer heat and drought (aestivation) by burrowing into moist sand or hiding under rocks, leaf litter, logs, or in abandoned animal burrows (Forstner 2003).

Terrestrial juveniles are found in areas with shade and leaf litter (Greuter and Forstner 2004). The presence of water is important for the Houston toad. Rainfall may stimulate breeding (Kennedy 1962, Price 1992) and movement (Quinn et al. 1984), prevents desiccation, and provides pools of water for reproduction. Alternately, an abundance of man-made surface water, presently above the historic condition, may be contributing to reduced aggregations of chorusing males, thus negatively affecting reproduction (Gaston et al. 2010). Breeding occurs in shallow, rain-fed puddles and pools that persist long enough (about 60 to 80 days) for the eggs laid to hatch into tadpoles and metamorphose into toadlets (Hillis et al. 1984, Price 1992). Houston toads have also been documented as breeding in permanent ponds and stock tanks within suitable habitat, although stock tanks and ponds with heavily impacted margins caused by frequent cattle disturbance are not used by the toads (Forstner 2001). Shading has been known to decrease pond temperatures, prolong metamorphosis, and delay emergence (Greuter and Forstner 2004).

A study of reintroduction and survivorship in prairie habitats at the Attwater's Prairie Chicken National Wildlife Refuge (APCNWR) in Colorado County (Marsh and Forstner, 2015) found that Houston toads can persist in prairie habitats for more than 1 year. In fact when surviving the species did very well in native grasslands, with the surviving prairie individuals exceeding the mass of every individual wild Houston toad collected in Bastrop County since 2001. Further, while the highest survival rates occurred within canopied habitats, toad body condition was greatest in prairie. This confirms that Houston toads strongly benefit from a more natural open woodland and are not a rigorously forest dependent species.

Life History

The life expectancy of the Houston toad is at least three years and perhaps longer (Price 1992). Captive individuals at the Houston Zoo facility are known to live to 5 years or more (Paul Crump, pers. comm.). Males reach sexual maturity at about one year, but females

require one to two years to achieve reproductive maturity (Quinn 1981). In mark-recapture surveys of Houston toads in Bastrop County, observed sex ratios of males to females have been highly skewed in favor of males, ranging from 3:1 to 10:1 (Dixon et al. 1990; Forstner 2002a, 2002b, 2003; Hillis et al. 1984; Swannack and Forstner 2004a, 2007), with Swannack and Forstner hypothesizing the observed male-bias is most likely due to the difference in age at first reproduction. The Houston toad is an “explosive” breeder, appearing in large numbers at breeding ponds where the males call to attract females over a period of a few nights throughout the breeding season (Dixon 1982). Houston toads chorus from January to June (Kennedy 1962, Hillis et al. 1984), with a peak in breeding in February and March. Large numbers of males congregate at a single location while only small numbers of individuals may appear at nearby ponds. Many locations in Bastrop County have failed to reach numbers of chorusing males likely to attract females (Forstner 2002b). Chorusing from individual ponds lasts from three to five days, and may not be synchronized with other ponds in the area. Two or three primary breeding periods separated by two to six week intervals occur at suitable ponds, and males may mate during more than one breeding episode (Hillis et al. 1984). Reported egg-laying dates in the field range from February 18 to June 26 (Kennedy 1962, Dixon 1982, Hillis et al. 1984).

Under suitable environmental conditions, pairs remain in amplexus, the copulatory embrace for toads and frogs, for six hours at minimum and eggs are laid in the early morning hours among vegetation or debris near the bank (Hillis et al. 1984). Reported clutch sizes per female vary from 512 to 6,199 eggs (Kennedy 1962, Quinn and Mengden 1984, Quinn et al. 1987). In wet years, breeding may occur wherever sufficient standing water is present. This species typically uses ephemeral rain pools for breeding, although it has been known to breed in flooded fields and permanent ponds. Often, the most reliable breeding sites for locating Houston toads are stock ponds and similar impoundments, since they are permanent water bodies. Unfortunately, permanent water bodies tend to support more predators, such as fish, turtles, bullfrogs (*Rana catesbeiana)*, aquatic invertebrates, and snakes (Forstner 2001) that prey on Houston toads. For successful breeding, water must persist for at least 60 days to allow for egg hatching, tadpole maturation, and emergence of toadlets (Hillis et al. 1984, Price 1992).

Development rates of Houston toads vary depending on temperature and other factors. Eggs may hatch within seven days and tadpoles may remain in the pond for 40 to 80 days depending on environmental conditions. Metamorphosis of tadpoles in a given pond generally occurs at approximately the same time over a period of a few hours, resulting in post-metamorphic aggregations of toadlets that remain at the edge of the pond for seven to ten days or more (Hillis et al. 1984, Dixon et al. 1990, Forstner 2002a). Hillis et al. (1984) observed large numbers of toadlets moving as far as 330 feet in daylight from their natal ponds along the same gulleys used by adult toads during the breeding season. Mortality in young is extremely high due to predation and drying of breeding sites, and less than one percent of eggs laid are believed to survive to adulthood (Quinn 1981; Price 1992; Forstner 2002a, 2002b, 2003; Greuter and Forstner 2004). The results from field surveys in 2006 found the Houston toad juvenile survival rate to be approximately 0.03 percent (Forstner 2006). Forstner (2002c) has documented instances of chorusing that did not appear to result in eggs or toadlets; therefore, successful chorusing may not mean successful breeding.

Activity

Many amphibians occupy upland sites at substantial distances from the nearest breeding pond, and members of the *Bufo* (*Anaxyrus*) genus are among the most terrestrial anurans. They live on land following metamorphosis and return to water only briefly during the breeding season (Christein and Taylor 1978). Houston toads may range widely throughout upland habitats (Price 1990a,1992; Dixon et al. 1990; Yantis 1994). Breeding is often followed by aestivation, a state of dormancy, but toads are known to emerge and be active during the non-breeding season (Dodd and Cade 1998, Dixon et al. 1990, Dronen 1991, Forstner 2002a). However, because of the toad's secretive nature, little is known about its distribution and activities during this period. Dronen (1991) reported frequent captures of small (approximately 1.5 inches in body length) Houston toads in pitfall traps during the fall (September through early November) and late winter (late January and early February). Toads were generally captured when temperatures were mild (59 to 77 degrees F) and following periods of rainfall. No Houston toads were captured during colder weather conditions. Forstner (2000, 2001, 2002a) has collected Houston toads throughout the year. Adults were mainly collected between February and May, during the breeding season. However, one male toad was collected in December, which Forstner (2002a) believes is due to a warming that typically occurs in December. Juveniles were collected in all months except January and February. Dixon et al. (1990), Price (1990a), and Yantis (1994) found that during the breeding season adult Houston toads would travel over a mile, sometimes across inhospitable areas such as roads, gravel soils, and pastures. However, telemetry and pit fall trap data indicates that adult Houston toads do not move more than about 49 feet away from forested canopy cover (Swannack et al. 2004, Swannack and Forstner 2004b).

During the breeding season, adult Houston toads travel between different sites. A marked adult male traveled a minimum of 4,469 feet each way back and forth between two ponds in a two- year period. Another marked individual in the same study covered 1,592 feet within a 24-hour period (Price 1992). Price (unpublished data, 2001) has documented the same individually- marked male and female Houston toads using breeding ponds that are over one mile apart (straight-line distance) and in different watersheds. Mark-recapture studies have documented individual Houston toads traveling up to 3,900 feet to breeding ponds through areas that included gravel roads, divided highways, and pastures (Dixon et al. 1990, Price 1990a, Yantis 1994). Juvenile dispersal of 4,400 feet in a 5 week period has been documented utilizing genetic mark- recapture techniques (Vandewege et al. 2012).

Food Habits

Houston toads feed on a variety of insects and other invertebrates. Bragg (1960) reported that captive Houston toads favored many small to medium-sized carabids (ground beetles), several small beetles of unknown families, several dipteral (flies), green lacewings, and many types of small moths.

Houston toad tadpoles are known to ingest algae and pollen. Hillis et al. (1984) reported tadpoles consuming the jelly envelopes of recently hatched Houston toad eggs (none were observed eating eggs before they hatched) as well as pine pollen. Tadpoles remain on the bottom of the ponds during the day, and at night they feed on material attached to

vegetation in water and along the pond's edge (Hillis et al. 1984). Once they leave the pond after metamorphosis, juvenile Houston toads presumably feed on small invertebrates found on the forest floor.

Population Dynamics

The Houston toad's population structure appears to fit the definition of a metapopulation (Soulé 1987, Marsh and Trenham 2001) because it consists of subpopulations in somewhat geographically isolated patches, interconnected through patterns of gene flow, extinction, and re- colonization (Soulé 1987, Marsh and Trenham 2001). In some areas, what were once subpopulations of larger metapopulations are now apparently isolated from each other by urbanization, heavily used roads, and agriculture. Some of these changes may be reversible, allowing currently isolated populations to become part of greater metapopulations. In other cases, the changes have been so extensive that reconnection may no longer be an option. Other populations appear to be naturally isolated by riverine basins and geologic formations, and may historically be part of separate metapopulations.

Hatfield et al.'s 2004 population viability analysis estimated that a population size (carrying capacity of the habitat) of 5,000 breeding females, a minimum of two subpopulations, and a juvenile survival rate of at least 1percent would be necessary to reduce the likelihood of extinction in 100 years. However, Hatfield et al. (2004) also indicated that if two or three separate subpopulations of Houston toads are protected (with interconnectivity among them), then a carrying capacity of as few as 1,000 female toads (at least 1 year old) would have a low probability of extinction in 100 years.

Forstner (2006) and Forstner et al. (2007) argued that Bastrop may be the only remaining sustainable subpopulation of Houston toads, since chorusing Houston toads confirmed in Lee County in 2000-2001 were not heard in 2006 and 2007 surveys. Forstner had considered the Houston toad to be extirpated in Lavaca County until finding a single male in 2011 and again in 2013, unlikely to remain at any appreciable populations in Lee County, and at very low numbers in Austin, Colorado, and Leon counties (2008). In addition, the estimated female population is thought to be well below 5,000 individuals (Forstner et al. 2007), juvenile survivorship has been estimated at less than 1 percent (Forstner et al. 2007), and there is an observed male-bias in the Houston toad population (Dixon et al. 1990; Forstner 2002a, 2002b, 2003; Hillis et al. 1984; Swannack and Forstner 2004a, 2007). The detections of more individuals in chorus in Robertson County than across all other detections range-wide during the 2014 season represented a reprieve from what seemed in summary, to be a trend toward extinction in the wild since at least the early 1990s. The BCCF may yet prove to be the extinction level event that Dr. Forstner proclaimed it to be in the immediate wake of the fire. In all, the numbers of adult breeding individuals in the wild have been insufficient to recover the species without intervention and active management. In that stark light, the ongoing successes of headstarting on the GLR are good evidence of how conscientious avoidance, active land management, and proactive stewardship have led to an increase of nearly 400% of toad detections in just three years (2014-2017).

Reasons for Listing/Threats to Survival

Habitat loss, fragmentation, and degradation are the main threats facing the Houston toad. This includes expanding urbanization, conversion of woodlands to agricultural use, road construction, and wetland destruction or alteration. Extensive clearing of native vegetation near breeding ponds and on the uplands adjacent to these ponds reduces habitat quality, and increases the chances of predation and hybridization. Conversion of native grassland and woodland savannah to Bermuda grass (*Cynodon dactylon)* or other heavy, rhizomatous mat-forming grasses, eliminates habitat because these grasses are generally too dense for the Houston toad to move through.

Draining a wetland or converting an ephemeral wetland to a permanent pond can cause Houston toads to decline in the area around the pond or be eliminated entirely. Survival of eggs, tadpoles, and emerging juveniles may be low in permanent water bodies (Forstner 2003) because they are more likely to harbor predators such as birds, mammals, snakes, turtles, fish, aquatic invertebrates, and bullfrogs (Quinn and Ferguson 1983, p. 8-9; Dixon et al. 1990; Price 1992, p. 6; Price 1993, p. 4) and potential competitors, such as Woodhouse's and Gulf Coast toads (Hillis et al. 1984). Permanent water bodies also have an increased probability of livestock usage (Forstner 2003), which can negatively impact the quality of habitat along the shoreline of breeding ponds (Forstner 2001, Forstner 2003). Red-imported fire ants (*Solenopsis invicta)* threaten Houston toads by killing young toadlets emerging from ponds (Freed and Neitman 1988, Forstner 2002). They have also been known to drastically reduce the abundance of native insect species that serve as the Houston toad's food source.

Small, sedentary species with restricted distributions, specialized habitat niches, and narrow climatic tolerances are particularly vulnerable to extinction (Welsh 1990, deMaynadier and Hunter 1998). The distribution of the Houston toad appears to be restricted naturally as the result of specific habitat requirements for breeding and development. These natural restrictions make them particularly vulnerable to the negative effects of human-induced changes that result in habitat loss, degradation, and fragmentation. Threats include expanding urbanization, conversion of woodlands to agriculture, logging, mineral production, alteration of watershed drainages, wetland degradation or destruction, species competition and other human-induced processes that contribute to loss of suitable breeding, feeding, or sheltering habitat. In addition, their restrictive habitat requirements make them vulnerable to natural processes such as drought and climate change. Since many of the threats to the Houston toad are interdependent on one another, the following descriptions may address multiple threats.

Drought

Drought conditions can have a severe effect on the Houston toad as breeding ponds fail to fill or dry up before eggs or tadpoles can metamorphose. The low numbers of chorusing males recorded in the late 1990s compared to the numbers encountered in 1989-1990 may be the result of the mid-1990s drought (Price 2003, Forstner 2000), while a 2005-2006 drought may have led to reduced numbers of chorusing males in 2006 and 2007 (Forstner et al. 2007). In 2005-09, central Texas experienced harsh drought conditions with only a single wet year in 2007. Compared to historical droughts of the 20th and 21st centuries, the 2008-2009 Texas drought was one of the most severe droughts on record

from a precipitation standpoint alone (Nielsen- Gammon and McRoberts 2009). With a brief respite from significant rains in 2010, 2011 brought an unprecedented lack of rainfall since records began being kept in 1895 (Nielsen- Gammon 2011). Both 2012 and 2013 were closer to "normal" precipitation years during the spring breeding season, but the south central portion of Texas remained in a "moderate" drought in the spring of both 2012 and 2013 (Texas Water Development Board 2013). Although Houston toads persisted through droughts in prehistoric times, habitat loss from anthropogenic impacts has reduced the number of subpopulations and total number of individuals found range- wide (Dr. Michael Forstner, pers. comm.; McHenry and Forstner 2009). This is especially important because low abundance, recruitment, and survivorship of Houston toads significantly affect their ability to rebound from factors that negatively affect their environment (Soulé et al. 1992). Smaller populations are thus at higher risk of extirpation during episodes of drought and may not be recolonized (Blaustein et al. 1994, Forstner 2008). This is especially important as the sex ratio results from Bastrop County indicating fewer females than males exacerbate the situation (Swannack and Forstner 2007). Much of central Texas, including Bastrop County and other portions of the Houston toad's range, has been experiencing extreme drought conditions from 2008 to 2011. Drought can severely impact Houston toad breeding habitat and reduce the survivorship of juvenile toads.

Habitat Destruction and Landscape Fragmentation

Habitat conversion and fragmentation make the Houston toad more vulnerable to predation, competition, and hybridization. Removal of trees acts to exacerbate the effect of drought on a local scale by increasing heat at ground level and consequent moisture loss from the soil, making the deforested area unsuitable for Houston toads that need to burrow to escape desiccation (Forstner 2003). Excavation and impoundment of seasonal or ephemeral drainages or wetland areas creates permanent open water as opposed to ephemeral ponds and pools. Permanent water is more likely to harbor predators such as birds, mammals, snakes, turtles, fish, aquatic invertebrates, and bullfrogs (Quinn and Ferguson 1983, Dixon et al. 1990) and potential competitors such as Woodhouse's and Gulf Coast toads (Hillis et al. 1984).

Habitat disturbance also encourages the establishment and proliferation of red-imported fire ants. Fire ants are known to prey on newly-metamorphosed toadlets (Freed and Neitman 1988, Dixon et al. 1990, Forstner 2002a), as well as on the invertebrate community that is an important part of the toad's food base (Bragg 1960). Fire ants are associated with open habitats disturbed as a result of human activity (such as old fields, lawns, roadsides, ponds, and other open, sunny habitats), but are absent or rare in late succession or climax communities such as mature forest (Tschinkel 1988). Thus, maintaining large, undisturbed areas of woodlands may help control the spread of fire ants (Porter et al. 1991) and protect native ant populations (Porter et al. 1988,1991; Suarez et al. 1998).

Paved roads can prevent or hinder dispersal and effectively isolate populations of some invertebrates, small mammals (Mader 1984, Mader et al. 1990), and amphibians (Van Gelder 1973, Reh and Seitz 1990, Soulé et al. 1992, Fahrig et al. 1995, Yanes et al. 1995, Findlay and Houlahan 1997, Gibbs 1998, Vos and Chardon 1998, Knutson et al. 1999). Highways can have serious demographic consequences by increasing mortality and

reducing connectivity and migration among remnant habitat patches. Surveys along a 5-mile stretch of Highway 21 adjacent to breeding ponds near Bastrop State Park during 1990 reported 67 percent mortality of Houston toads (12 of 18 individuals) observed in the right-of-way during the breeding season (Dixon 1990, Price 1990c).

Agricultural production may contribute to habitat loss by converting forests to pasture or cropland; draining, filling, or deepening of wetlands; and compacting the soil. Plowing, mowing, applying herbicides, pesticides, and fertilizers, and disturbing aestivating toads can result in direct toad mortalities (Knutson et al. 1999, Little et al. 2002). Habitat conversion to cropland or pasture also encourages the establishment of fire ants. Livestock and hay production are common land uses throughout much of the Houston toad's range (Yantis 1989, 1991). Dense sod-forming grasses, such as Bermuda grass can inhibit the Houston toad's mobility (Yantis 1989). Although Houston toads may migrate across cleared areas (Dixon et. al. 1990), they are rarely found far from a forested edge (Swannack and Forstner 2004b). Livestock grazing is a common use of woodlands within the range of the Houston toad. Livestock can trample egg clutches, larvae, toadlets, and wetland vegetation in and around breeding pools, and juveniles, adult toads, and vegetation may be crushed by livestock (Dr. Forstner pers. com.). Forstner (2001) reported a dramatic return of wetland vegetation and an increase in Houston toad breeding success with the removal of cattle.

As conversion of forested areas to pastureland continues to occur and more grazing operations are established, landowners are becoming more dependent on permanent water sources. Often times these water sources are created stock ponds. Although the Houston toads utilize permanent water bodies as breeding locations, numerous ponds on the landscape can affect the density of small populations. Smaller or less dense breeding aggregations may attract fewer females, thereby reducing mating probability for males attending smaller choruses, and may have subsequent negative population impacts (Gaston et. al. 2010).

Competition and Hybridization

Competitors of the Houston toad include Woodhouse's toad and the Gulf Coast toad. All three species are found in areas of deep, sandy soils. Breeding activity in the Gulf Coast toad has been observed after the peak in Houston toad breeding activity (Swannack et al. 2004). This temporal difference in breeding activity likely reduces competition between the two species. While the Woodhouse's toad has a breeding season that is similar to the Houston toad, the Woodhouse's toad is found more often in open areas. Hybridization with these species has been documented (Hillis et al. 1984). Most hybrids have been found where the habitat of the Houston toad has been altered from woodlands to pasture or suburban development, allowing invasion by the other species (Hillis et al. 1984; Yantis 1991; Forstner 2002a, 2003). Based on a 2012 county-wide survey following the BCCF in September of 2011, post-fire occurrences of Gulf Coast toads in the catastrophically burned area increased significantly as these animals rapidly colonized previously unoccupied areas in the burn zone (Dr. Forstner, pers. comm.).

Wildfire and Fire Suppression

Frequent and/or severe forest fires may be detrimental to the Houston toad, particularly for small, fragmented populations. Fire suppression is of primary concern, particularly in the wake of the 2011 catastrophic BCCF, but this issue has been regarded as significant at least as early as the recovery plan (Service 1984). On the other hand, periodic controlled burns may be necessary to reduce fuel loads, prevent catastrophic fires, and improve habitat conditions beneath the forest canopy (Yantis 1989, Price 1993). Although necessary to determine the short and long-range effects of various fire regimes, little research has addressed the effects of fire on amphibians (deMaynadier and Hunter 1995). Direct mortality to the Houston toad resulting from wildfires is thought to be low, as amphibians have been shown to survive fire by moving under the soil or seeking refuge within the burrows of other animals (Russell et al. 1999). Short term juvenile amphibian capture and body condition changes post-fire have been recently examined (Brown et al. 2011) and results indicate that fire does not appear to negatively impact short term terrestrial juvenile amphibian survivorship or health. The most considerable effects to the Houston toad from catastrophic wildfire are the adverse changes to its habitat. The loss of understory vegetation, surface debris (leaf litter and logs), and canopy cover can lead to increased exposure to temperature extremes and predation, loss of habitat availability, and reduced dispersal and foraging capabilities. Soil erosion, which is a typical occurrence following wildfires (Kocher et al. 2009, p. 3), can affect Houston toad breeding habitat by decreasing water quality in ponds.

Pesticide, Fertilizer, and Contaminant Impacts

Because of their semi-permeable skin, development of their eggs and larvae in water, and their position in the food web, amphibians are vulnerable to waterborne and airborne pollutants, such as heavy metals, certain insecticides (particularly cyclodienes, such as endosulfan, endrin, toxaphene, and dieldrin), nitrites, salts, certain organophosphates (such as parathion and malathion), and petroleum hydrocarbons (Harfenist et al. 1989, Little et al. 2002). Pesticides can also change the quality and quantity of amphibian food and habitat (Bishop and Pettit 1992). No progress has been made to evaluate the effects of pesticides or herbicides specifically on the Houston toad (Forstner and Dixon 2011).

Mineral Production Impacts

Oil and gas fields occur throughout much of the Houston toad's range. The installation of oil and gas wells, roadways, staging areas, pipelines, and the subsequent maintenance of these facilities can result in toad mortality, habitat loss, and fragmentation. Trenching or construction in areas inhabited by aestivating toads and trapping toads in open trenches or pits can result in toad mortality and reproduction can be disrupted by destroying breeding sites. In addition to oil and gas production, mining operations (including lignite, gravel, and sand) can also result in severe, if not total, habitat loss in areas occupied by the Houston toad. Direct mortality of Houston toads and complete destruction of their habitat may occur in the mine area. In addition, Dixon (1982) identified possible indirect impacts from lignite mining: dewatering may draw down surface waters and dry out the subsurface moisture, which may reduce the carrying capacity of permanent surface ponds and/or ephemeral pools; and leaching of sulphur and weak carbonic acids from the mine may produce poor water quality downstream in areas used by the Houston toad.

Recovery Efforts

Relatively consistent survey and monitoring efforts for the Houston toad have been ongoing continuously in Bastrop County since the late 1990s. A robust research effort has led to numerous contributions on the species' genetics (McHenry & Forstner 2009), habitat modeling (Buzo 2008), ecological monitoring (Swannack et al. 2009), abundance estimates (Duarte et al. 2011), response to prescribed fire (Brown et al 2011), response to red imported fire ants (Brown et al, 2012), etc. In accord with the draft revised Houston Toad Recovery Plan (unpublished data), the Houston Toad Recovery Team has identified four "focus areas" to concentrate on-the- ground recovery actions for the Houston toad. The geographic extent of these areas is based on habitat suitability models completed for each county within the Houston toad's range utilizing variables of cover, soils, and distance to water (Buzo 2008).

A portion of the excerpted document that is relevant only to the previous (US 290) project has been omitted here.

A Houston toad headstarting program was initiated in 2007 by Texas State University, Houston Zoo, Inc., the US Fish and Wildlife Service, and Texas Parks and Wildlife Department (TPWD). The first Breeding and Transfer Plan for the Houston toad has been finalized (Crump and Schad 2012). These actions culminated in the Service, in cooperation with the Houston Zoo, Texas State University, TPWD, and other partners, completing in 2013, the first rounds of captive breeding and re-introductions, continuing headstarting of wild egg strands, and identifying a new location of the Houston toad. Captive breeding and release of Houston toads is not a novel action as the Houston Zoo had a captive breeding program dating back to the 1980s. However, funding and monitoring issues plagued that effort. The Zoo undertook the current attempts of captive breeding in 2012 and information on captive breeding has been updated and revised in each subsequent attempt, leading up to the successes of the spring 2013 captive breeding which resulted in approximately 36k eggs being released into the wild in Bastrop County. Additionally, the Service and partners have been focused on identifying private landowners to enlist in habitat restoration and recovery actions, including releases. Those efforts are rangewide and currently gaining momentum through a number of landowner outreach events, educator education, and the efforts of the Houston Zoo's media relations. A number of section 7 actions in the last 2 years have also added to our understanding of the species and promoted recovery.

Environmental Baseline

Under section 7(a)(2) of the Act, when considering the effects of the proposed action on federally listed species, the Service is required to take into consideration the environmental baseline. The environmental baseline includes past and present impacts of all Federal, State, or private actions and other activities in the action area (50 CFR 402.02), including Federal actions in the area that have already undergone section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in progress.

The reasons for the decline of the Houston toad throughout its range have been speculated on since the recognition that numbers were dwindling almost immediately after its discovery in the late 1940's and description by Sanders in 1953. Dr. Lauren Brown advocated for saving the Houston toad in the mid-1970's as it disappeared from Harris County (Brown 1975) and following its listing in 1970 under the Endangered Species Conservation Act of 1969 (35 FR 16047). Dr. Andy Price and Jim Yantis with TPWD studied the species and reported on its' extirpation from Liberty, Fort Bend and Harris counties in the 1990's. Dr. James Dixon (Professor Emeritus, Texas A&M University) and the current generation of Houston toad researchers, led by Dr. Michael Forstner of Texas State University, have documented the species' trajectory toward extinction and are largely responsible for the findings that have driven the most recent efforts at managing recovery of the species.

Habitat loss through destruction, fragmentation, and fire suppression and including conversion to agriculture and subsequent urbanization are primary threats to the species' continued existence. Predation, including direct and indirect effects of invasive species (e.g., red-imported fire ants), inter-specific competition, effects from herbicides and pesticides, disease (e.g. Chytrid fungus), and effects from drought are additional significant threats to the species. Despite these threats, the species is thought to be recoverable. Recent headstarting and captive propagation efforts make this plausible so long as sufficient habitat can be identified, restored, maintained, and conserved to provide for multiple sustainable populations across the range.

Status of the species within the action area

The status of the species in the nine county range is better understood today that in past decades due to the broader consistent survey efforts since 2000. However, their numbers do not give reason for optimism. Surveys in 2011 documented a total of 12 chorusing males rangewide. The drought of 2011 was the 1-year drought of record for the State of Texas (Nielsen-Gammon 2011) and part of a longer drought cycle that has been affecting Texas since 2005. Compounding the drought, the wildfire in BCCF in September 2011 burned, largely catastrophically, approximately 40 percent of the remaining habitat in that population (Brown et al. 2012). Dr. Forstner, a principle investigator of the Houston toad over the last decade or more, has described the BCCF as an extinction-level event for the Houston toad (pers. comm.). An intense countywide survey in 2012 accompanying the human recovery efforts demonstrated that the species weathered the drought and fire, even appearing and breeding in areas that had been catastrophically burned the prior summer/fall (Forstner et. al 2012). Sustained survey efforts within Robertson County identified a broad area of occupied habitat, with a robust chorusing population of more than 100 individuals detected (Forstner 2014 data, unpublished). While Bastrop County survey detections have declined since the BCCF, the species has improved dramatically on the GLR during the past two years following rigorous headstarting efforts of more than 1 million eggs fostered in the natal ponds.

4.2 PRESENCE IN THE PROJECT AREA

Dr. Michael Forstner of Texas State University has reported the occurrence of Houston toads in the general vicinity of the proposed project previously (Forstner 2016), and detected a

single male of the species in chorus on 11 April 2017, approximately 0.6 miles ESE of the southern end of the new roadway (refer to Figure 5).

4.3 EFFECTS OF THE PROJECT

Direct Effects:

Direct impacts to Houston toad habitat will be limited to habitat loss within the 11,960-feet of construction disturbance that varies from 50 to 135 feet wide (21.6 acres). Ultimately, after completion of construction, only the area of the 24-by-11,960-foot road surface (6.59 acres) will permanently modify Houston toad habitat. Several new crossings (culvert or bridge) of ephemeral and intermittent streams may slightly effect dispersal habitat for juvenile toads. The remainder of the area within the ROW will experience temporal loss of habitat functions during construction and for a number of years during vegetation reestablishment. The ROW beyond the paved road surface will be planted with native herbaceous vegetation after construction.

The construction schedule is expected to be 6-9 months in duration with work during daylight hours only, 5 days per week. Noise effects from construction equipment would be expected during this time and would be expected to extend beyond the project ROW for some distance.

The new roadway is intended to supplement currently limited ingress/egress during flooding, fires, or other emergency situations for existing residential properties. The new roadway will traverse one currently undeveloped parcel. While the new roadway through this parcel may facilitate and serve future development of this parcel, development on this parcel could occur independent of the roadway. Additionally, subdivision of this parcel would also be subject to potentially lengthy and expensive procedures requiring compliance with the County subdivision process and participation of the Bastrop County HCP for the Houston Toad. Because of this, no significant secondary or indirect effects on the toad or its habitat are expected related to the roadway. The new roadway may slightly increase the likelihood of toad mortalities from automobile encounters. However, since the road extension will only provide an alternate route of ingress/egress for local residents, no increase in overall traffic volume in the area is expected.

The increased activity related to construction could be expected to harass any Houston toads occurring within the action area by limiting access to available habitat and disrupting migration and/or seasonal movements between breeding ponds and non-breeding habitat. Noise effects on Houston toads have not been documented and a prediction of the temporary adverse effects resulting from construction noise cannot be predicted. We believe that our many years of experience enable us to utilize avoidance measures successfully (as described below) during construction, and immediate post construction demobilization to prevent any direct mortality of the species during the construction phase. Additionally, Houston toads may be indirectly affected by removal of construction BMPs after construction is complete and by normal maintenance of the ROW. Maintenance of the ROW following construction would be limited to occasional mowing immediately adjacent to the roadway pavement for fire and traffic safety. However, mowing will be restricted during critical time periods for the species each year (as below).

Horizon Environmental Services, Inc.

Date:	08/17/2017
Drawn:	GLS
HJN NO:	160048
Source:	USDA, 2016

Legend

Listening Station (2017)

- Negative
- Positive
- ROW
- Indirect Effect Area
- Action Area

Figure 5

Project Effects
Tahitian Village Ingress/Egress
Bastrop County, Texas

0 1,350 2,700
Feet

160048 - Bastrop County Roadways\Graphics\Tahitian Village Figures/160048A05PABG2_DetailedView.mxd

Indirect Effects:

Indirect effects on any wildlife species can be difficult to accurately predict. For the current project we have categorized the indirect effects based on expert knowledge of the species (M. Forstner, PhD) and knowledge of road ecology for amphibian species generally. This allows two general predictions, roadway mortality and increased access, with attendant opening of this area to development. This project will result in automobile traffic in an area without any such traffic today. Roadways represent a barrier, filter, or avoidance obstacle to wildlife, and Houston toad road mortalities are well documented within Bastrop County on Highway 21. Thus, the newly proposed roadway will enable road mortalities into the future, where such mortalities are not possible today. The area affected by roadways and negative interactions with wildlife have been studied but there are no clear data today regarding Houston toad roadway impacts. What can be extrapolated is the known dispersal distances and hence the potential area "sampled" by the roadway for Houston toads likely extends, at minimum, 5km centered on the proposed new roadway. That said, the entirety of that area is not likely to be selected by Houston toads for dispersal or occupied habitats. To be explicit, we do not include the area south of the Colorado River, nor the area north of Highway 71 in our estimated indirect affect area. We also exclude the areas greater than 2.5 km due east of the roadway as these have never been proposed to support the species. Further, the steeper slopes of hillsides adjacent to the roadway are much less likely to be useful to the species than the drainage corridors in the region traversed by the proposed roadway. Thus, the area indirectly affected over time could be reasonably calculated to be as large as 4,200 acres (5 km (3 miles) on either side of the roadway length), however given the actual terrain, the anthropogenic disturbances on both the north and south ends of the roadway, the maximum indirect affect area is likely no more than 2,800 acres. The truly new indirect area would be only that area not currently traversed by any current roadway or other access and this is an area of approximately 1,300 acres (refer to Figure 5).

From that area of sampling it becomes an extrapolation of traffic volume and traffic velocity to begin to evaluate the potential for roadway mortality. The estimates for traffic volume for egress only usage from current development have been estimated using the values for two current roadways in use. McAllister (north end example) provides a daily estimate of approximately 570 vehicles daily, and a comparable roadway to the proposed, further east, Tahitian Dr. currently supports approximately 1,150 daily vehicles. Neither of these are meant to be representative of absolute numbers for the new roadway as it will alleviate some of those usages, but it would seem reasonable to estimate traffic at or above 500 daily vehicle transits upon completion. The roadway proposed will not be high speed, constrained to between 20 and 35 mph along its length. Thus, indirect roadway mortality can be speculated from a relatively low speed roadway, with moderate daily traffic, and a total length of approximately 2 miles of new roadway surface. Houston toads are not abundant across the landscape, while documented proximal to the north end of the proposed roadway, annual efforts to detect the species by manual call survey in 2016 and 2017 have not detected the species on the southern end of the proposed roadway. We consider an estimate of Take (e.g. road mortality, or harassment) of 14 adult or juvenile Houston toads annually to be very liberal, but in keeping with both the biological reality of dispersal distances and the physical position of the new roadway within the Critical Habitat for

the species. We also note that this estimate is in keeping with our recent Old Piney Trail assessment for effect size and magnitude.

Indirect effects could also be considered to include the expansion of development enabled by the new roadway, but Bastrop County has neither control nor information regarding future plans in this area. Additionally, any new development that might occur in the future would be subject to individual assessment of effects to Houston toads and mitigation measures through the Bastrop County HCP.

4.4 CONSERVATION MEASURES

4.4.1 Minimization and Avoidance

The effects associated with land clearing and highway construction activities could directly alter the Houston toad population and distribution within the action area, but would not affect the overall population size, viability, or distribution outside of the action area. The project has been designed to minimize impacts to the Houston toad and effects would only occur within the project work zone. Bastrop County would attempt to avoid altering the Houston toad's lifecycle by phasing work outside of the Houston toad breeding season if possible and by implementing protective measures, such as the installation of barrier silt fencing, to prevent Houston toads from entering the work zone.

Roadway modifications made to minimize impacts to the Houston toad:

Culverts: Larger culvert diameters under the new roadway will better allow flood prone wildfire areas to address strong rainfall events, but also better enable Houston toad utilization of the drainage crossings as under roadway dispersal corridors. Thus, Bastrop County will utilize maximum engineering design culvert sizes to better enable flood water transport but simultaneously better enable use of these culverts by the Houston toad. These modifications will include the use of the maximum size and height culverts (creating more suitable dispersal availability) that can be accommodated within practical expense and engineering constraints. There will be explicit efforts made at these crossings to retain the maximum of available canopy trees as a secondary approach to maximizing their success as under-roadway corridors for the species.

Work on the roadway is proposed to begin in the late spring of 2018 and be substantially completed by the end of 2018, which reduces impact by conducting the construction outside the toad's primary breeding season of January 1 through April 1. However, some breeding activity may occur as late as June. As additional measures to avoid and minimize impacts to the Houston toad, Bastrop County agrees to implement the following measures regardless of season:

- Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all

personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.

- Construction sequencing will be as follows:
  a. Biological Monitor will initially inspect the ROW for Houston toads.
  b. When determined clear of Houston toads by the Biological Monitor, the Contractor can hand clear the edges of the new construction ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with small gaps at each end for ingress and egress.
  c. The fencing shall be trenched into the ground and there will be no gaps in the barrier.
  d. When barrier fencing has been installed, and after the Biological Monitor has conducted another inspection of the ROW for Houston Toads, the Contractor may begin site clearing, grading, and construction of facilities.
  e. The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly repaired by Contractor.
  f. When construction of the project and final grading has been completed, Contractor shall remove the barrier fencing, except that which needed to remain intact for SW3P compliance, and smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix (Turner Seed Company) shall occur per specifications (see Attachment A).
- A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48 hour period results in a 24 hour stand-down of the project.
- Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches.
- The entry and exit points for heavy equipment moving in and out of the ROW work zone is limited to the two ends.
- The contractor will be prevented from using any offsite staging or materials storage areas that are not already established construction yards.
- All staging of equipment or refueling will be contained in the ROW for the project. All fueling will be conducted no less than 200 feet from any potential breeding or dispersal features (e.g., ponds, streams, wetlands, etc.). These locations should be on relatively level ground to minimize the potential for leaks to migrate offsite.
- 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.
- Following construction activities, HUD and Bastrop County will ensure that equipment used on undisturbed ground will not create potential artificial breeding

sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area.

Biological Monitoring:

1. For work conducted from April 1st through December 31st, work can proceed without full-time biological monitoring with the following exceptions:

- Full time biological monitoring will occur during the initial clearing of the roadway and continue until the silt fence containment is complete.
- A biological monitor will be retained by the County to respond on as-needed basis. The biological monitor's information will be shared with the Service prior to commencement of construction.
- An encounter with a Houston toad at the jobsite during this project requires that work must cease immediately, and/or not begin until the biological monitor has been notified and the toad(s) safely removed by a qualified and permitted biologist. In addition, the U.S. Fish and Wildlife Service's Texas Coastal Ecological Services Field Office should also be contacted immediately at (281)286-8282.

2. If work begins or extends between December 31st and April 1st, all of the following conditions apply.

- Bastrop County will provide Houston toad monitors (qualified biologists) who are permitted in identifying, locating, handling, removing and transporting Houston toads. Monitors will be prepared to continue monitoring intensively inside the work space even after the barrier is erected. A combination of visual survey, pitfall traps and cover boards may be utilized to ensure that no toads are trapped inside the work space. The biological monitor(s) will have authority to stop work immediately if a Houston toad is encountered within the construction zone. Once the Houston toad has been safely removed by a qualified and permitted biologist, work may resume.
- Toad emergence and breeding is triggered, in part, by rainfall and warm nighttime temperatures in the late winter and early spring. Bastrop County will communicate regularly with Dr. Michael Forstner at Texas State University to keep informed about regional toad habitat monitoring in the event toad emergence occurs and breeding is assumed to be underway across the range of the Houston toad.

4.4.2 Mitigation

The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the project (21.6 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

Bastrop County will purchase 21.6 acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

5.0 CUMMULATIVE IMPACTS

Bastrop County is rapidly developing due to significant human population increases in Central Texas as a whole. The direct impacts of the project construction (20.6 acres of disturbance), plus the continuing annual roadway mortality impacts (estimated at 14 adult or juvenile Houston toads), combined with the potential indirect impacts to approximately 1300 acres adjacent to the roadway add to the increasing burden on the Houston toad population as a whole in Bastrop County. However, the avoidance and minimization measures proposed in Section 4.4, and proposed mitigation for permanent and temporary impacts help with strategic minimization. The County's continuing commitment to both monitoring and stewardship of the toad enable the net impacts to be at least somewhat offset by conscientious efforts well into the future. The increase of participants in the regional habitat conservation plan and Bastrop County's efforts toward stewardship are helpful measures to reduce cumulative impacts to the Houston toad population.

6.0 DETERMINATION OF EFFECT

6.1 CRITICAL HABITAT

The proposed Tahitian Village Ingress/Egress project will permanently alter 6.59 acres of critical habitat for the new paved travel lanes. Temporary disturbance within the ROW will impact an additional 14 acres for a maximum total disturbance of 20.6 acres of critical habitat, which does not include any aquatic features for breeding, but does include several crossings of ephemeral or intermittent streams that are potential dispersal corridors for toads. Of the total 84,000 acres of designated critical habitat in Bastrop and Burleson Counties, the proposed project will adversely affect less than 0.025%. The project is not likely to appreciably diminish the value of designated critical habitat for both survival and recovery of the Houston toad with the implemented avoidance, minimization, and mitigation measures.

6.2 SPECIES

The proposed project may affect, and is likely to adversely affect the Houston toad. However, considering the minimal quality and quantity of habitat to be impacted, in addition to the proposed avoidance, minimization, and compensation measures, it is expected that the overall effects to the Houston toad will be minimal and will be fully mitigated. This action is not expected to jeopardize the continued existence of the species.

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ATTACHMENT A

NATIVE GRASSLAND RESTORATION SPECIFICATIONS

Native Grassland Restoration

Description

This item shall govern the preparation of a seeding and planting area to the lines and grades indicated on the Drawings. This may include seedbed preparation, sowing of seeds, watering, hydromulch, compost and other management practices, as indicated in the Drawings or as directed by the Engineer or designated representative.

Submittals

The submittal requirements for this specification item shall include:

A. Identification of the species, source, mixture and rate of application of the seeding.

B. Type of mulch or compost.

C. Watering frequency and amount.

Materials

A. The seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within twelve months of the time of delivery to the project. Each variety of seed shall be furnished and delivered in separate bags or containers. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Engineer or designated representative.

The amount of seed planted per 1000 square feet shall be of the type specified below.

B. Water shall be clean and free of industrial wastes and other substances harmful to the growth of grass in the area irrigated.

Construction Methods

A. General.

The Contractor shall limit preparation to areas that will be immediately seeded.

B. Seed Bed Preparation.

In areas with soil disturbance, an even seedbed shall be prepared with limited irregularities, lumps or soil clods and the surface shall be raked to facilitate seed to soil contact.

C. Watering.

Seeded areas shall immediately be watered as needed and in the manner and quantity as directed by the Engineer or designated representative.

Watering applications shall insure that the seedbed is maintained in a moist condition favorable for the growth of grass. Watering shall continue until minimum coverage is achieved and accepted by the Engineer or designated representative. Watering may be postponed immediately after a 1/2 inch or greater rainfall on the site but shall be resumed before the soil dries out.

Native Grassland Seeding and Planting

Seeding and planting shall be performed in accordance with the requirements hereinafter described. The optimum depth for seeding shall be from 1/16 inch to 1/8 inch. Seed shall be applied by a method that achieves consistent distribution and proper seed to soil contact (i.e. hand broadcasting, hydromulch, or drill method). Mulching is not required.

The seed mix shall be applied at a rate of 20 lbs/ac (0.46 lb/1000 sq ft) as follows:

Native Little Bluestem	9.6 lbs/ac	(0.22 lb/1000 sq ft)
Cheyenne Indiangrass	2.0 lbs/ac	(0.05 lb/1000 sq ft)
Purpletop	1.6 lbs/ac	(0.04 lb/1000 sq ft)
Blackwell Switchgrass	0.8 lb/ac	(0.02 lb/1000 sq ft)
Van Horn Green Sprangletop	1.4 lbs/ac	(0.03 lb/1000 sq ft)
Illinois Bundleflower	2.8 lbs/ac	(0.06 lb/1000 sq ft)
Maximillian Aztec Sunflower	0.4 lb/ac	(0.01 lb/1000 sq ft)
Comanche Partridge Pea	1.4 lbs/ac	(0.03 lb/1000 sq ft)

The seed mix may be obtained from Turner Seed Company (800)722-8616 or similar seed supply company.

Success Criteria

A minimum of 65 percent coverage with no bare areas exceeding 32 square feet and a 1.5-inch tall stand of grass. Excessive bare areas shall be re-prepared and reseeded as required by the Engineer or designated representative in order to develop an acceptable stand of grass.

ATTACHMENT B

ALTERNATIVES COST ESTIMATES

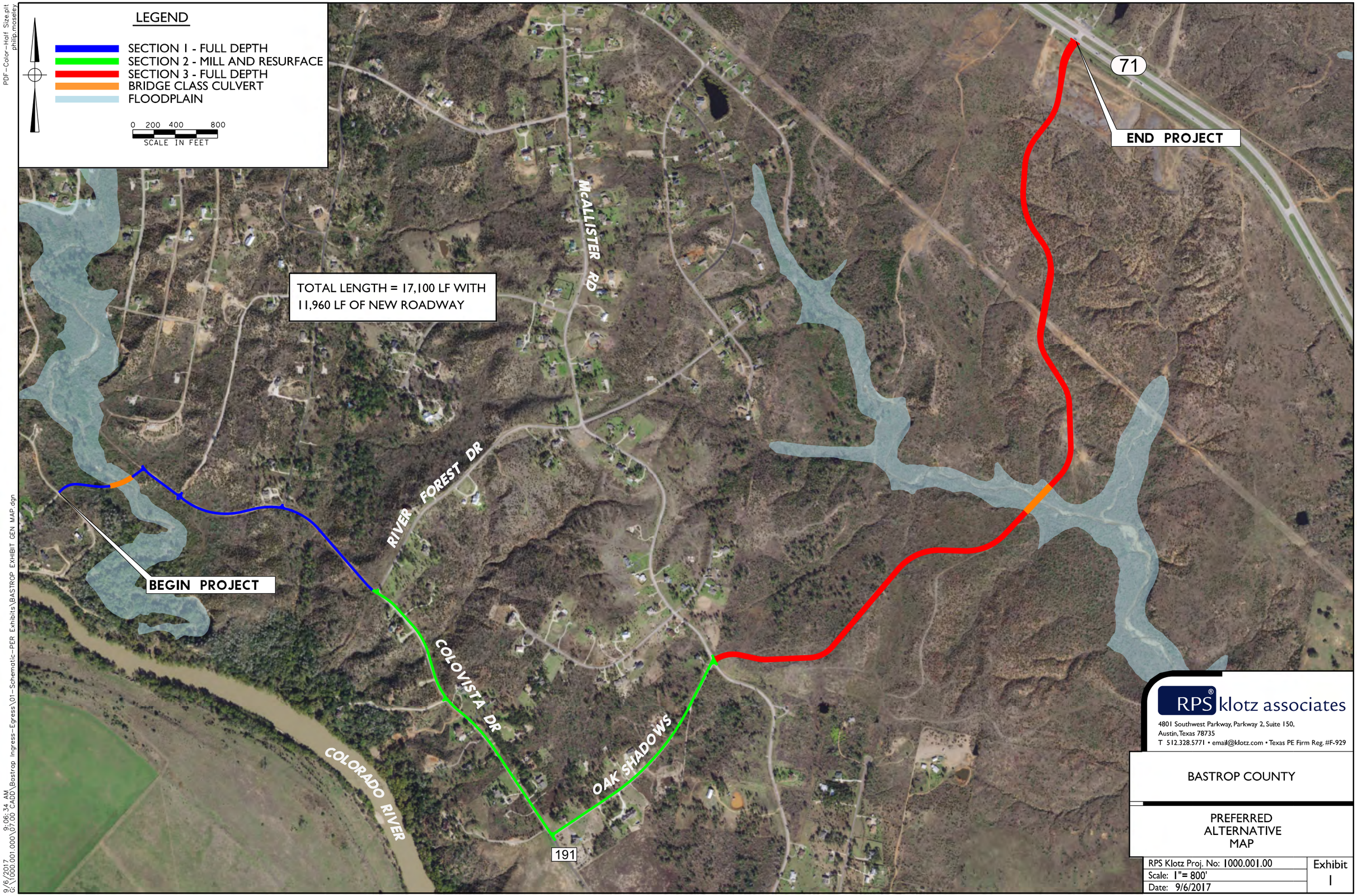
RPS klotz associates

ATTACHMENT B
BASTROP COUNTY, TEXAS
INGRESS/EGRESS ROAD
COST PER LINEAR FOOT

ROUTE	LENGTH OF ROADWAY (LF)	TOTAL CONSTRUCTION COST	COST / LF
PREFERRED ROUTE	17,100	$3,115,187.00	$182
ALTERNATE 1	15,550	$4,236,575.00	$272
ALTERNATE 2	28,200	$3,695,200.00	$131
ALTERNATE 3	11,700	$1,940,145.00	$166

ATTACHMENT C

TYPICAL PROJECT PLAN DRAWINGS



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BASTROP COUNTY

PREFERRED
ALTERNATIVE
MAP

RPS Klotz Proj. No: 1000.001.00	Exhibit
Scale: 1"= 800'	1
Date: 9/6/2017	

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philip.moseley

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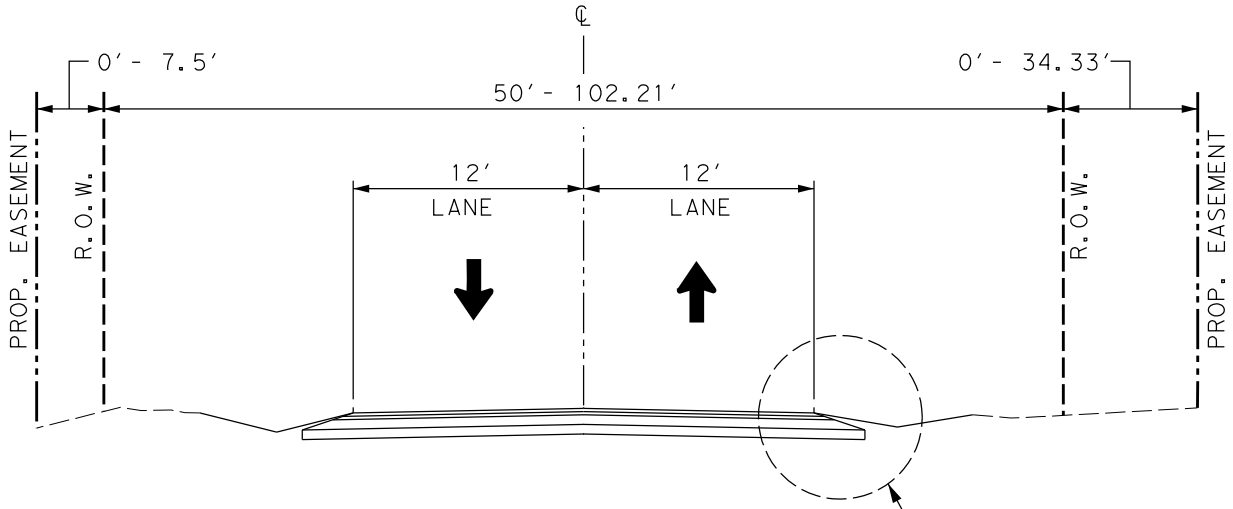
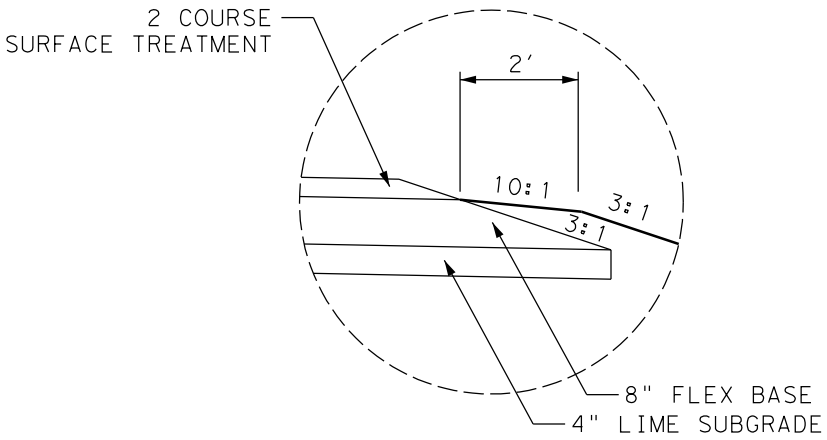


PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 1
(ULUPAU TO RIVER FOREST DR.)



DETAIL A

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Austin, Texas 78735
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BASTROP COUNTY

SECTION 1
TYPICAL SECTION
POI CT.

RPS Klotz Proj. No: 1000.001.000	Exhibit
Scale: NTS	1
Date: 09/06/2017	

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philip.moseley
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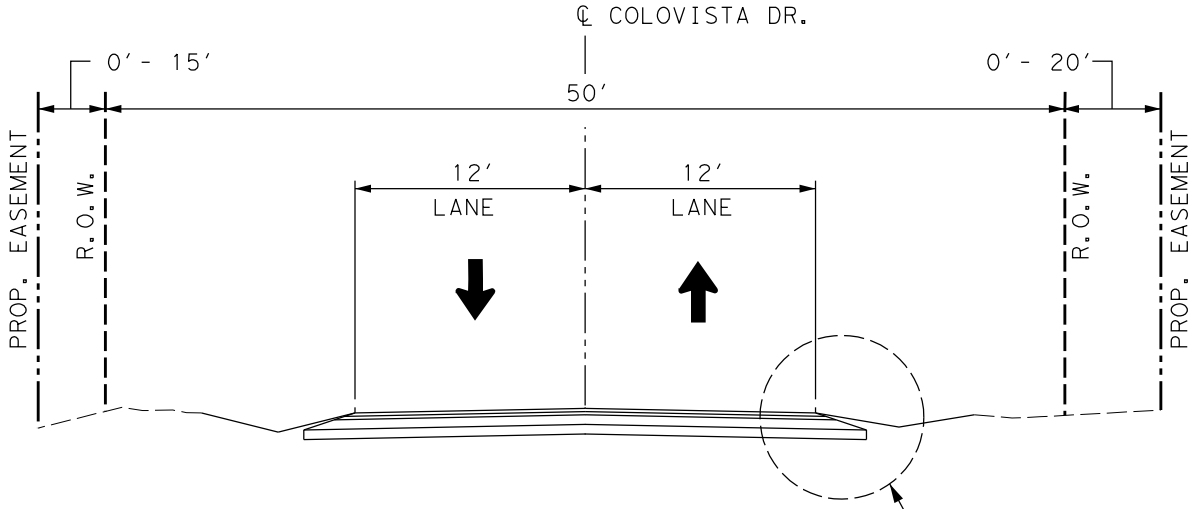
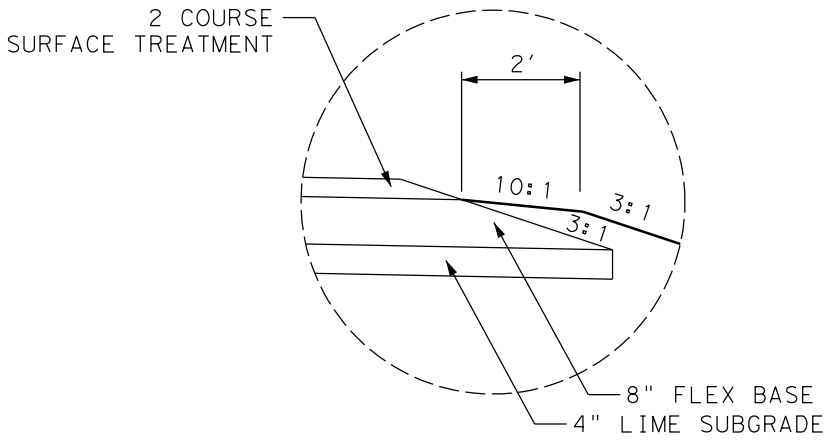


PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 1
(COLOVISTA DR.)



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BASTROP COUNTY

SECTION 2
TYPICAL SECTION
COLOVISTA DR.

RPS Klotz Proj. No: 1000.001.000	Exhibit 2
Scale: NTS	
Date: 09/06/2017	

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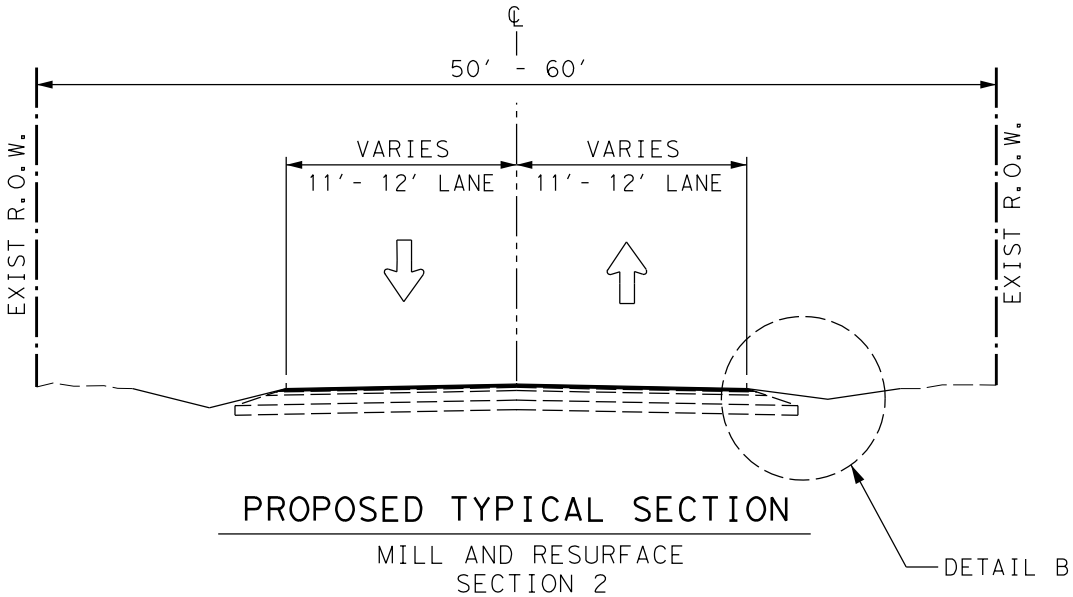
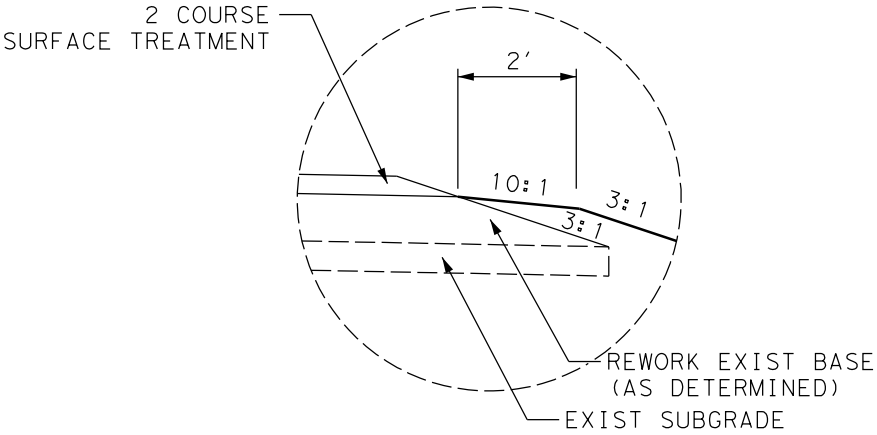


PROPOSED TYPICAL SECTION

MILL AND RESURFACE
SECTION 2
(RIVER FOREST DR. TO McALLISTER RD.)



DETAIL B

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BASTROP COUNTY

SECTION 3
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 3
Scale: NTS	
Date: 09/06/2017	

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philip.moseley
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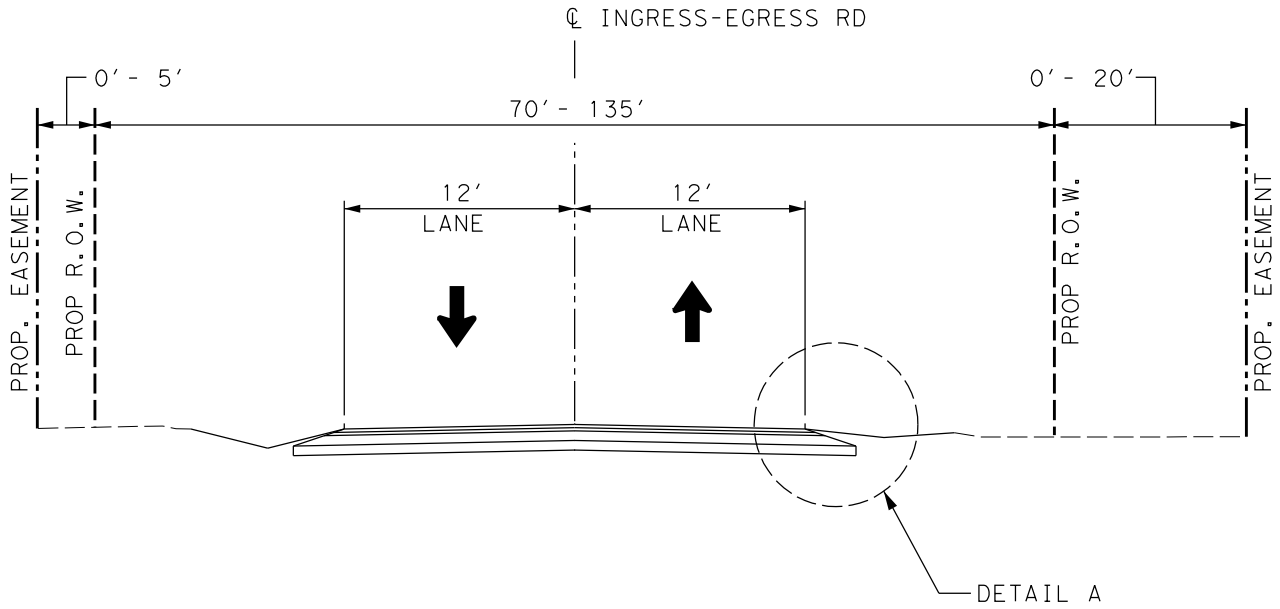

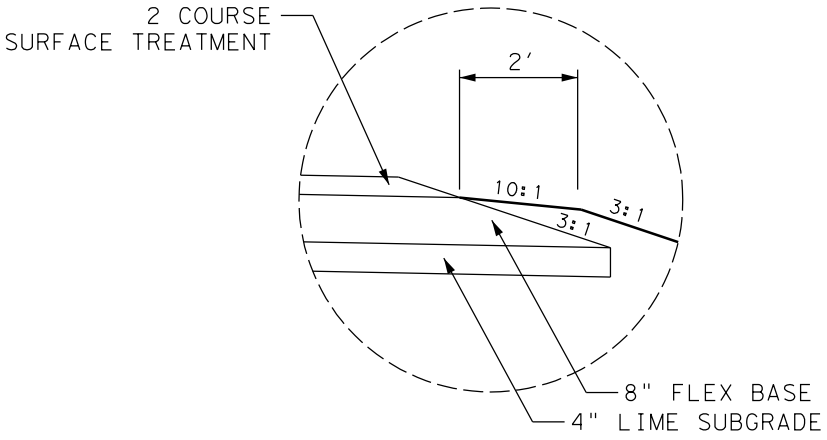

DETAIL A

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BASTROP COUNTY

SECTION 4
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 4
Scale: NTS	
Date: 09/06/2017	

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philip.moseley
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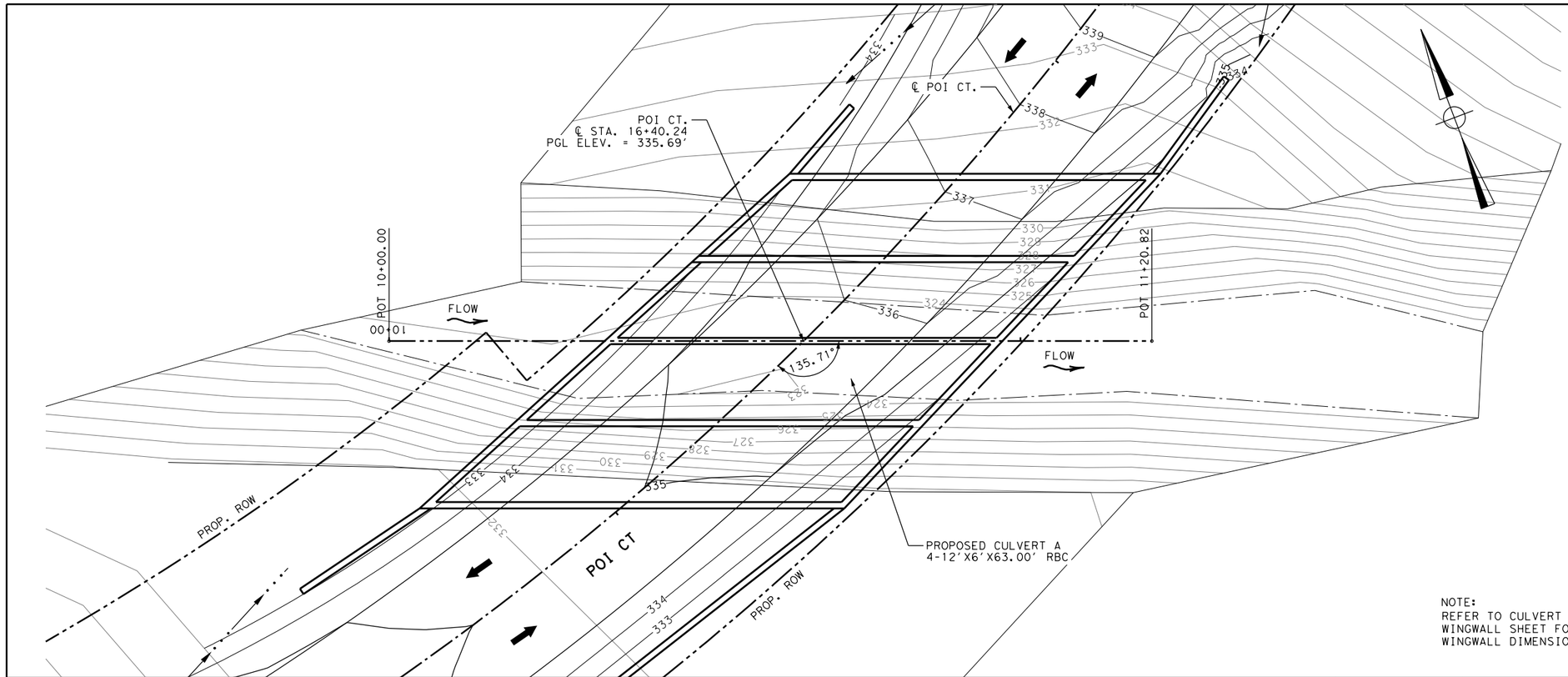
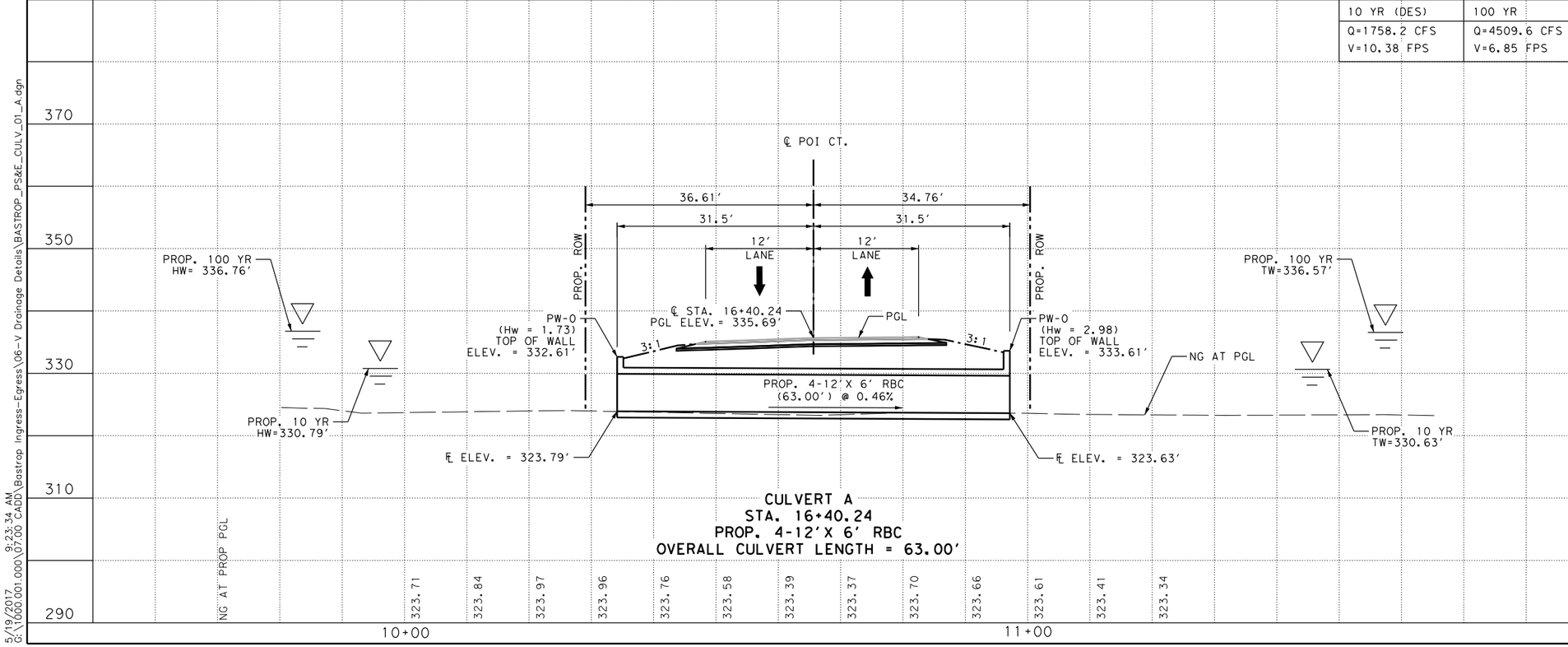


NOTE:
REFER TO CULVERT A
WINGWALL SHEET FOR
WINGWALL DIMENSIONS

10 YR (DES)	100 YR
Q=1758.2 CFS	Q=4509.6 CFS
V=10.38 FPS	V=6.85 FPS



CULVERT A
STA. 16+40.24
PROP. 4-12'X 6' RBC
OVERALL CULVERT LENGTH = 63.00'

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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 — PROPOSED CONTOUR
- 700 — EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT A
PLAN AND PROFILE
POI CT.
STA. 16+40.24

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 109

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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V 0 10 20

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5/19/2017
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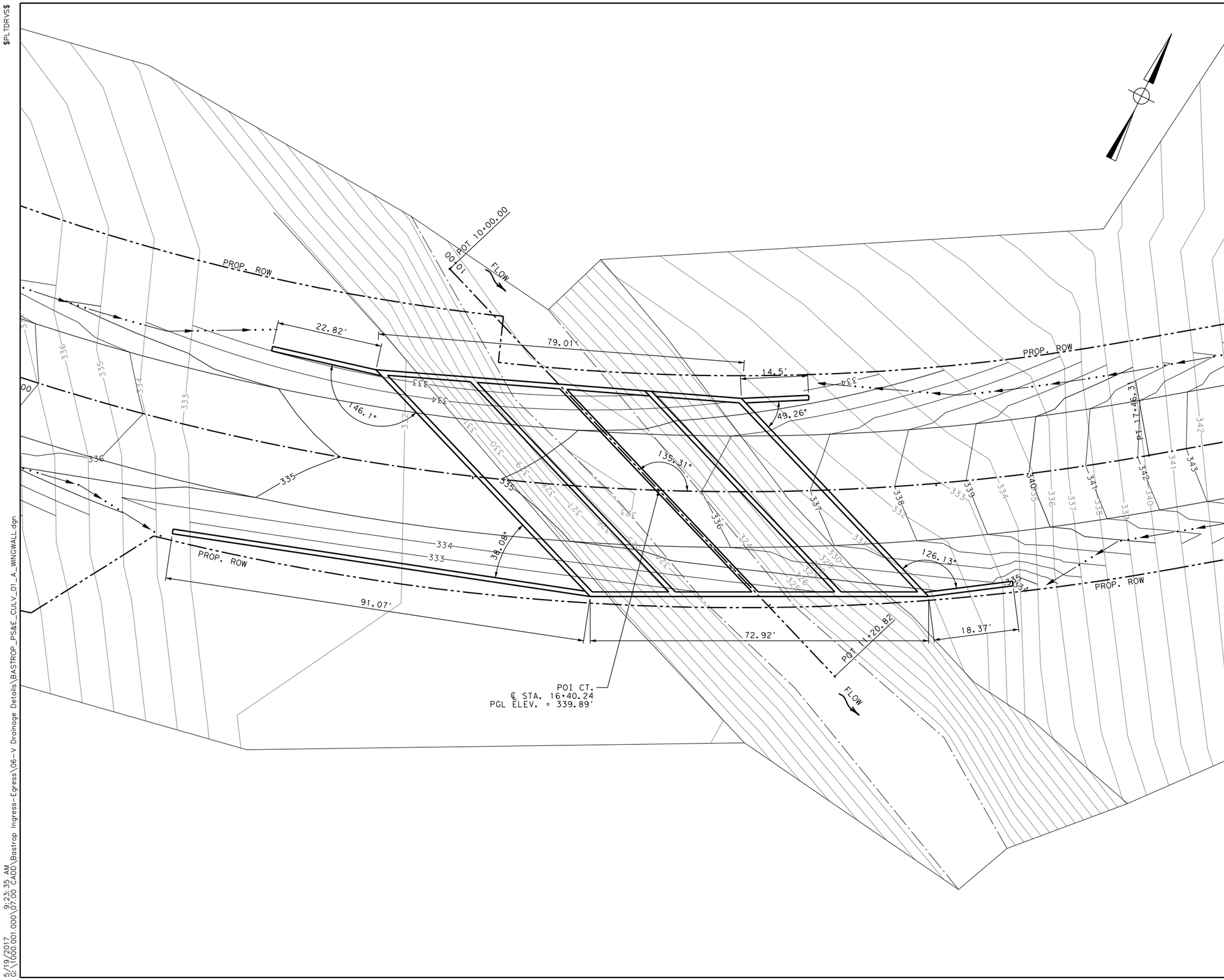

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THE STATE OF TEXAS
COUNTY OF BASTROP

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT A
WINGWALL PLAN

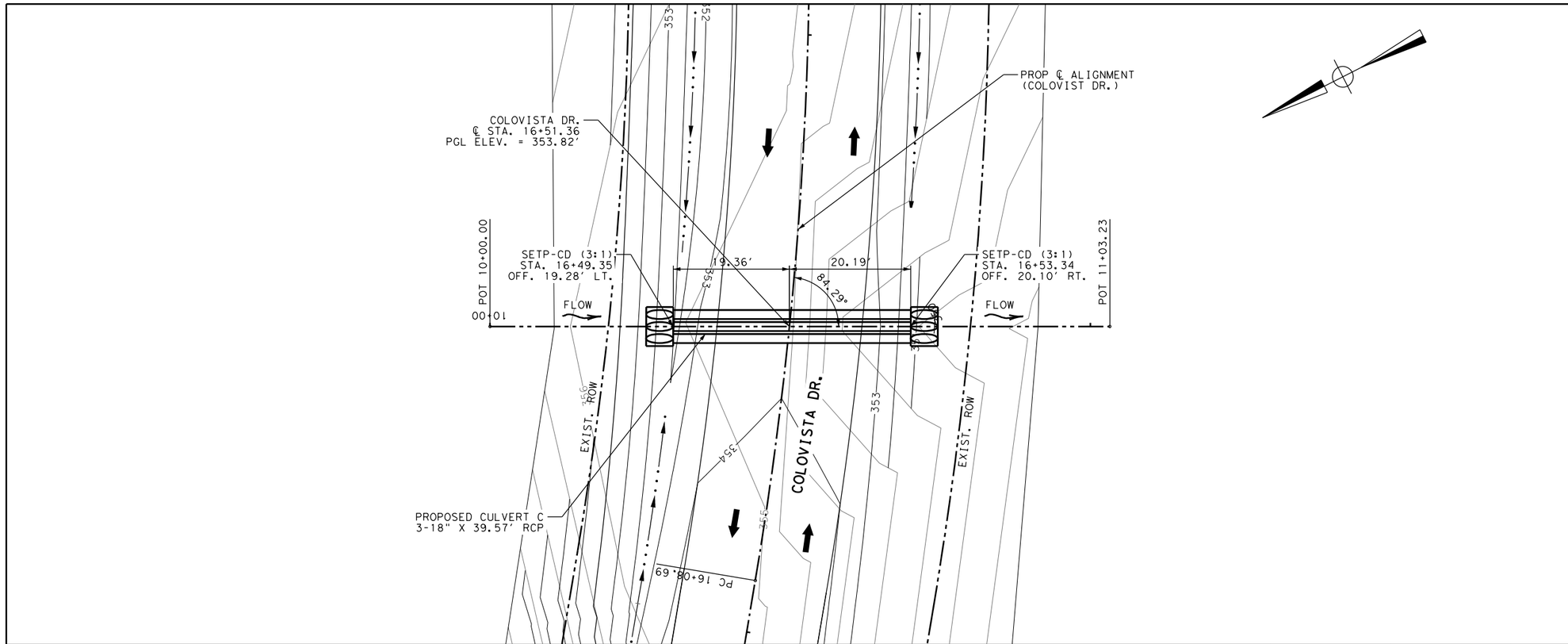
SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000	SHEET NO.
PROJECT_#	110

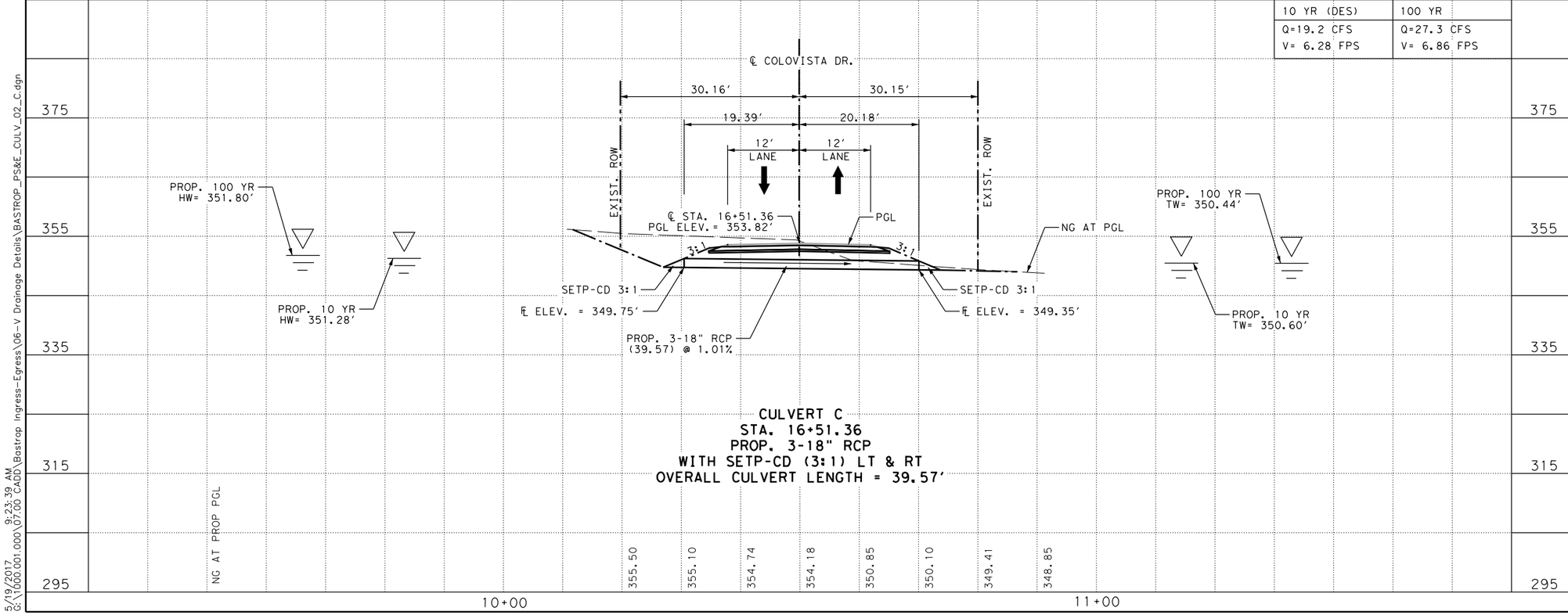
COUNTY OF BASTROP

Scale:
Date: 5/19/2017

H 0 10 20
V 0 10 20



10 YR (DES)	100 YR
Q=19.2 CFS	Q=27.3 CFS
V= 6.28 FPS	V= 6.86 FPS



CULVERT C
STA. 16+51.36
PROP. 3-18" RCP
WITH SETP-CD (3:1) LT & RT
OVERALL CULVERT LENGTH = 39.57'

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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 — PROPOSED CONTOUR
- 700 — EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

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TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT C
PLAN AND PROFILE
COLOVISTA RD.
STA. 16+51.36

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 112

COUNTY OF BASTROP

Scale: H 0 10 20 / V 0 10 20
Date: 5/19/2017

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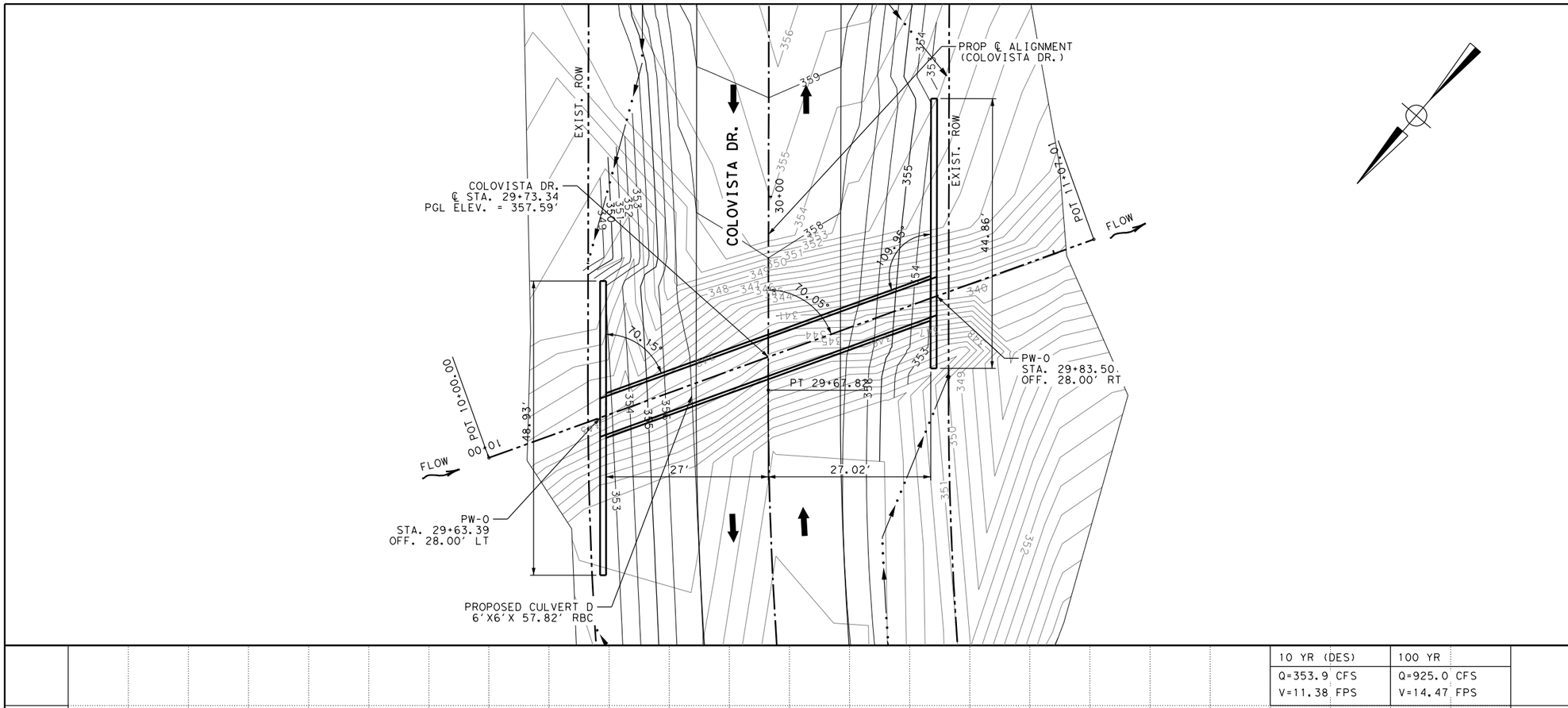
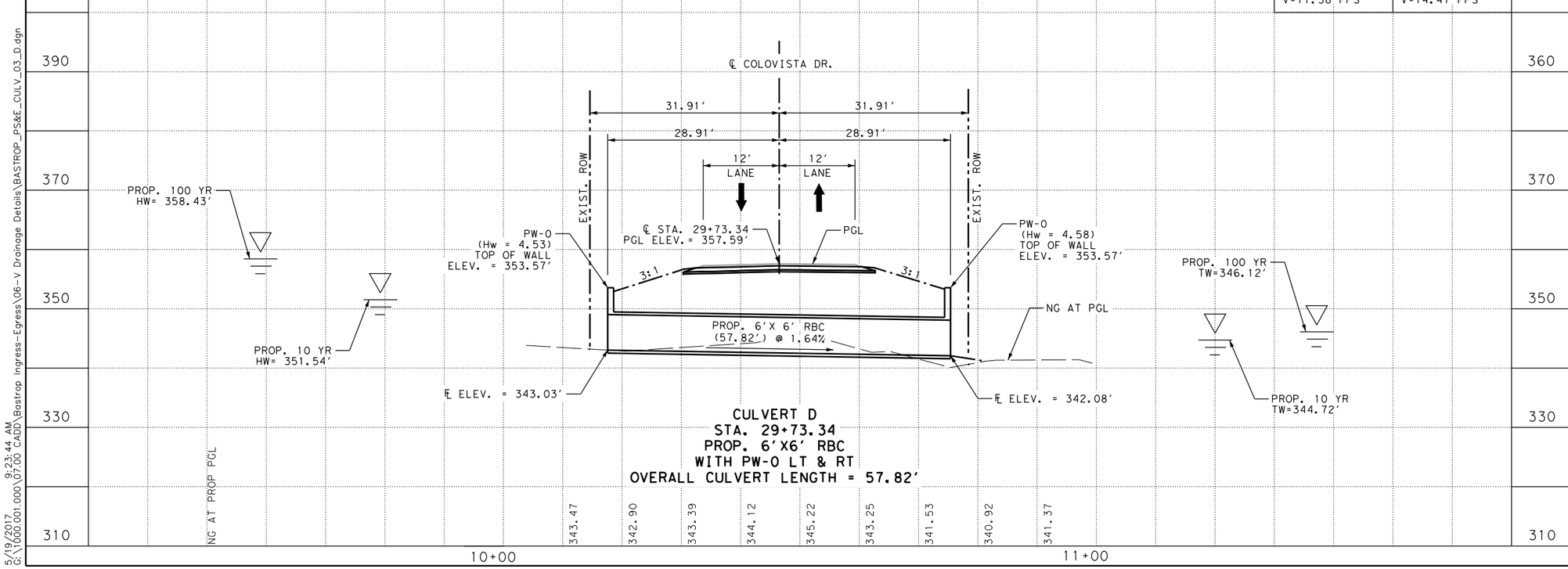


10 YR (DES)	100 YR
Q=353.9 CFS	Q=925.0 CFS
V=11.38 FPS	V=14.47 FPS



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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT D
PLAN AND PROFILE
COLOVISTA RD.
STA. 29+73.34

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000 | SHEET NO. 114
PROJECT_#
COUNTY OF BASTROP
Scale:
Date: 5/19/2017

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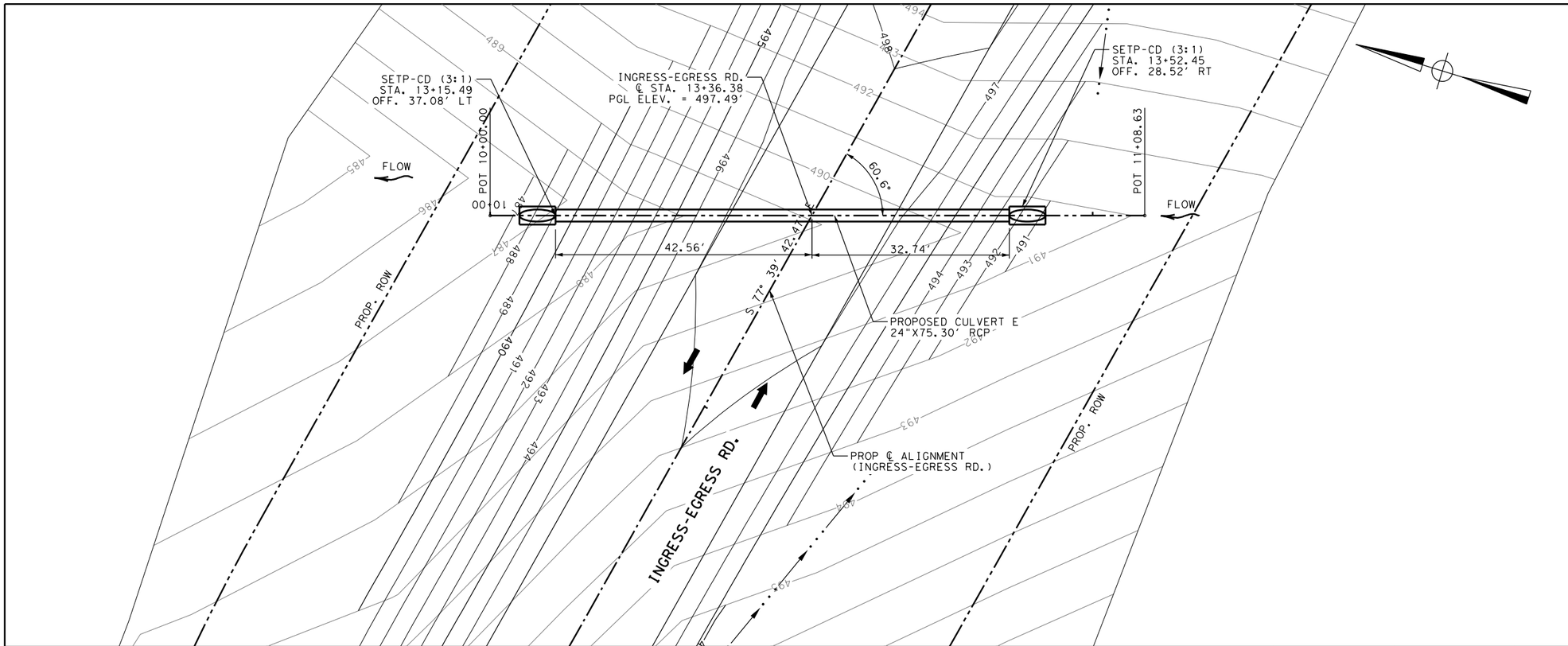
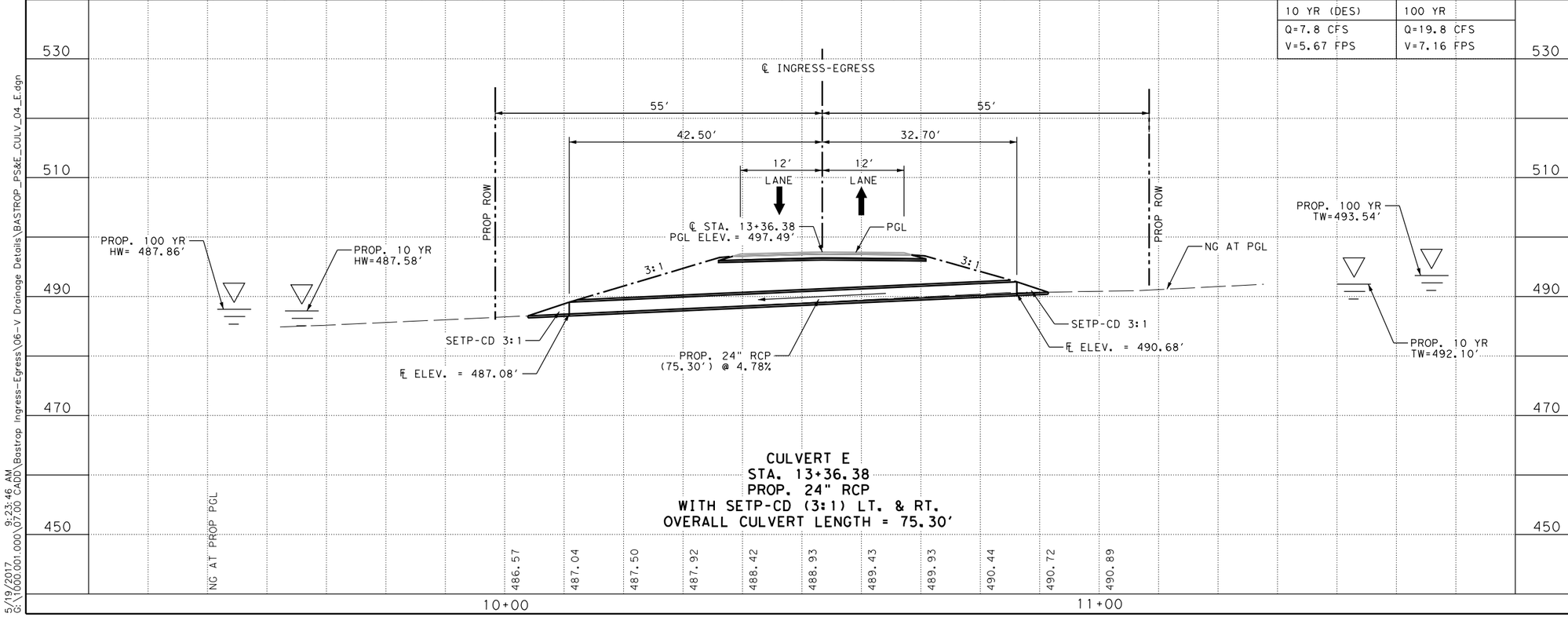


10 YR (DES)	100 YR
Q=7.8 CFS	Q=19.8 CFS
V=5.67 FPS	V=7.16 FPS



CULVERT E
STA. 13+36.38
PROP. 24" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 75.30'

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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT E
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 13+36.38

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 116

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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V 0 10 20

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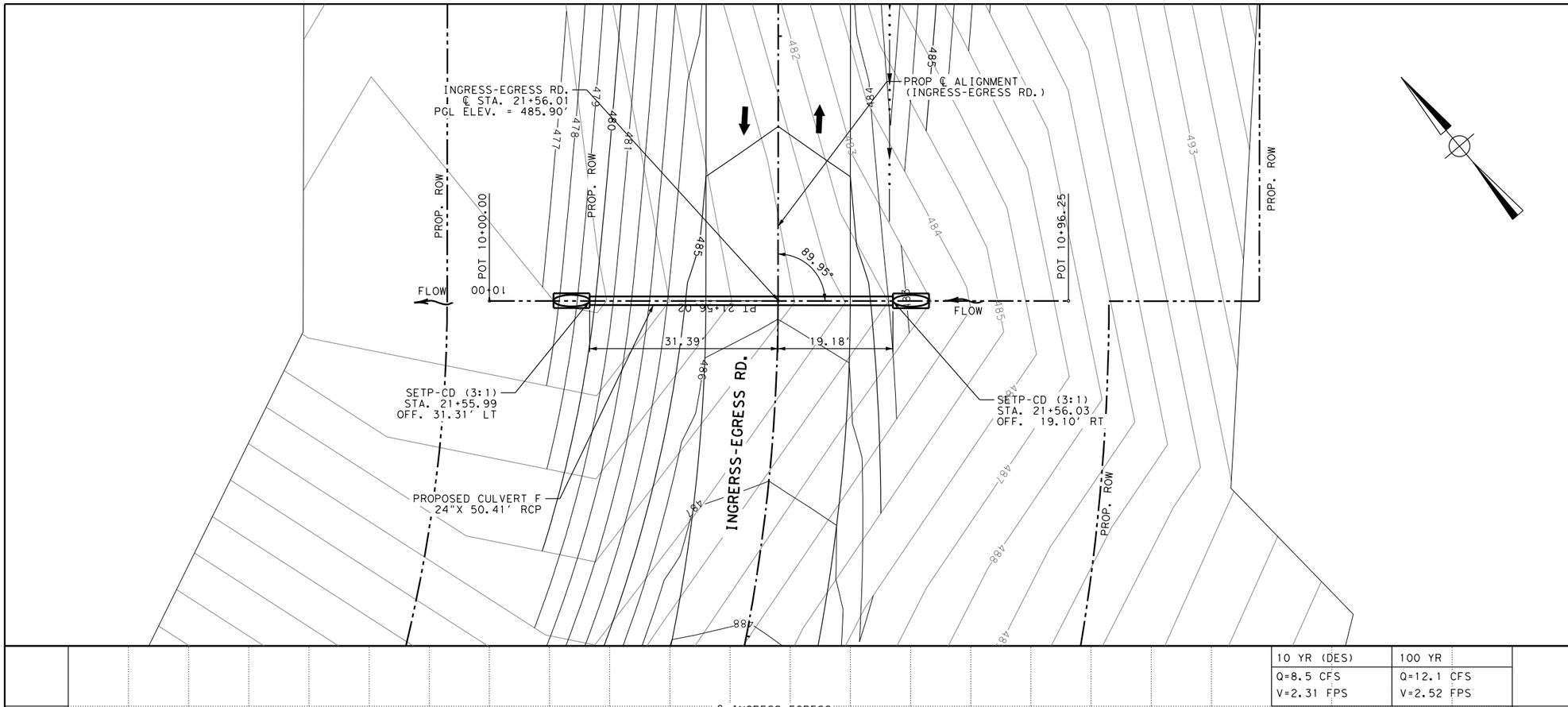
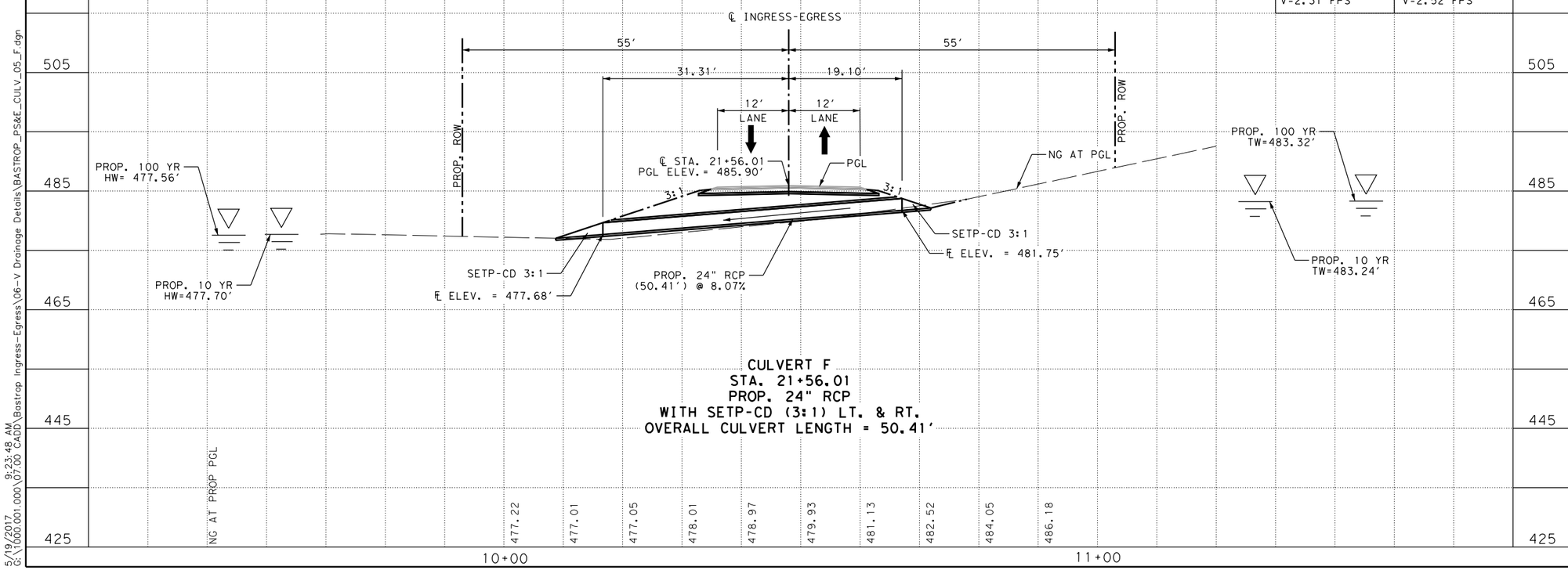


10 YR (DES)	100 YR
Q=8.5 CFS	Q=12.1 CFS
V=2.31 FPS	V=2.52 FPS



CULVERT F
STA. 21+56.01
PROP. 24" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 50.41'

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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

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TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT F
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 21+56.01

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 118

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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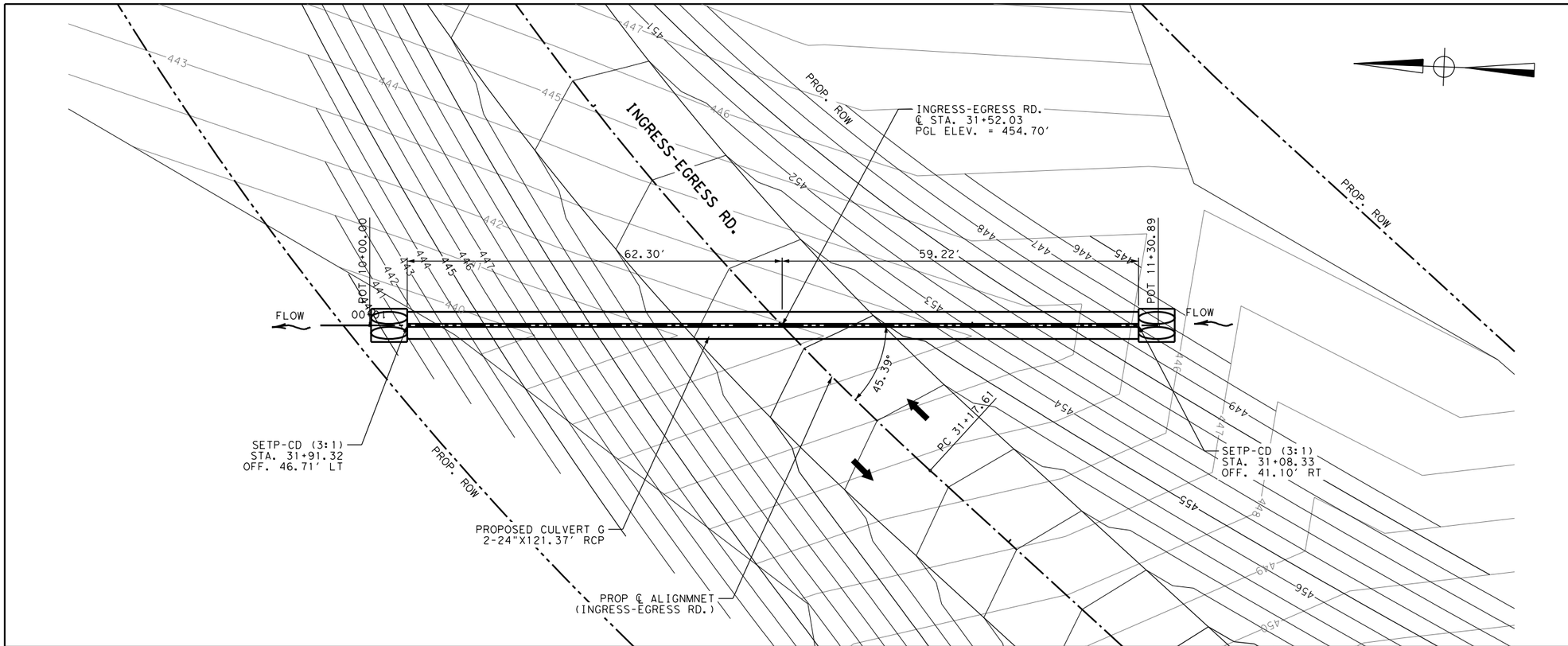
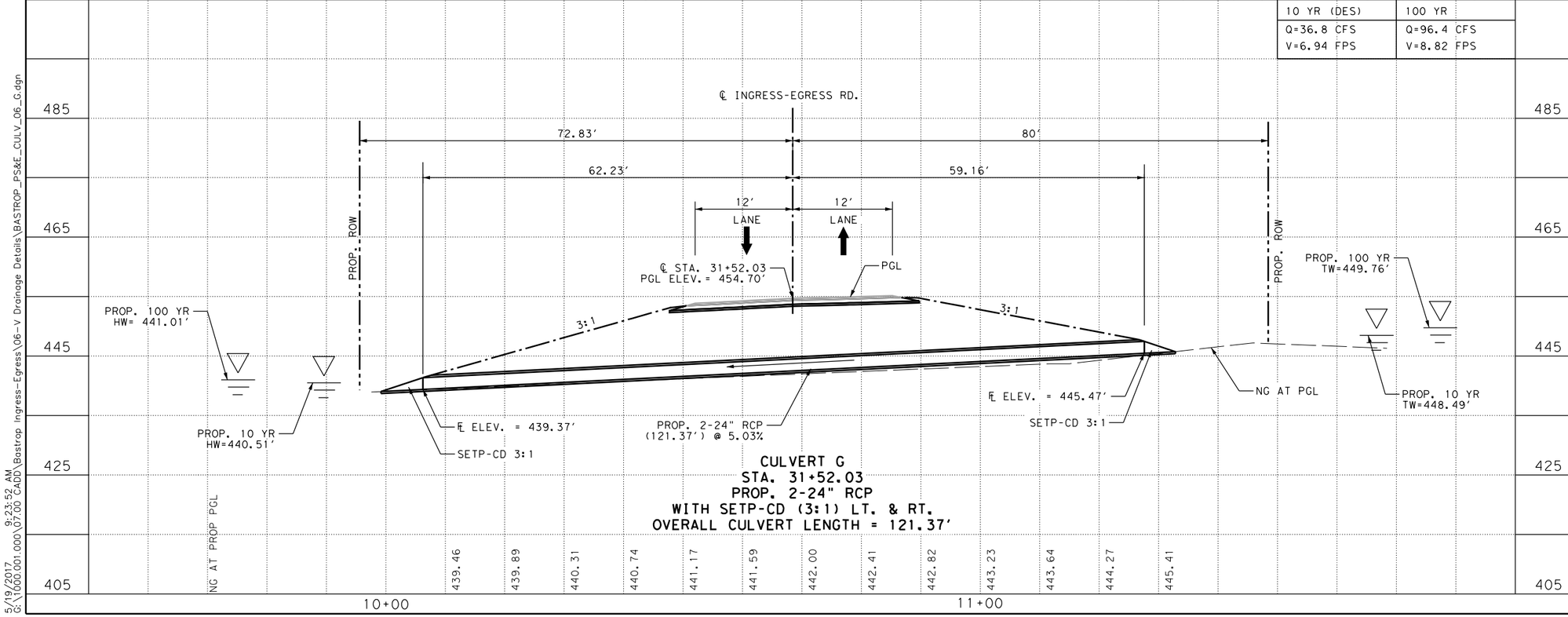


10 YR (DES)	100 YR
Q=36.8 CFS	Q=96.4 CFS
V=6.94 FPS	V=8.82 FPS



CULVERT G
STA. 31+52.03
PROP. 2-24" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 121.37'

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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT G
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 31+52.03

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 120

COUNTY OF BASTROP

Scale:
Date: 5/19/2017
H 0 10 20
V 0 10 20

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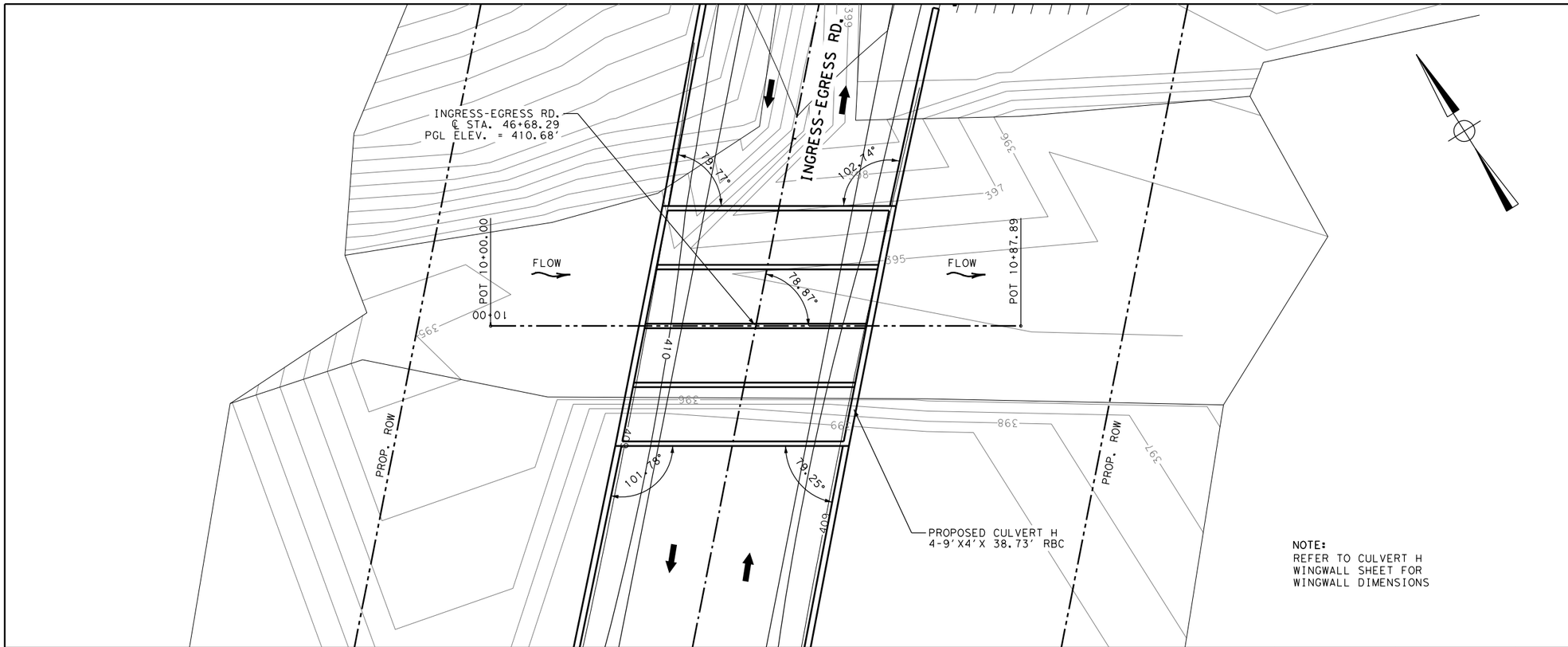
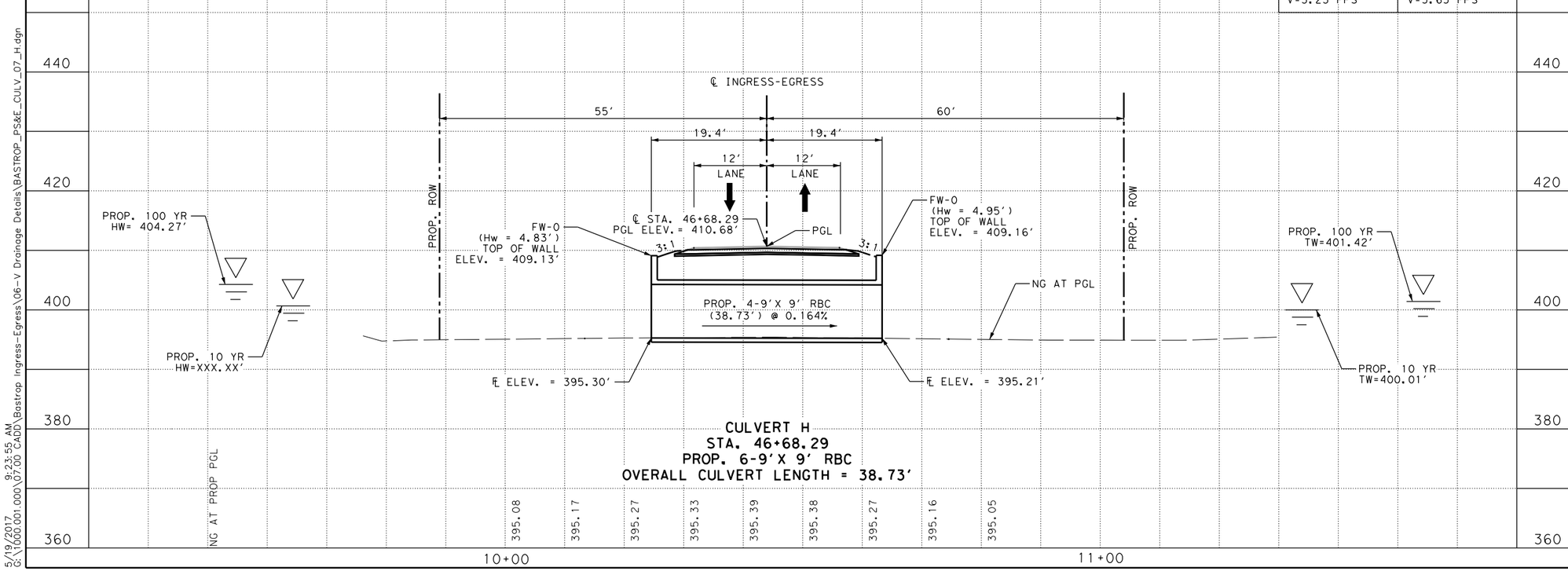


10 YR (DES)	100 YR
Q=975.0 CFS	Q=2516.9 CFS
V=3.23 FPS	V=5.65 FPS



CULVERT H
STA. 46+68.29
PROP. 6-9'X 9' RBC
OVERALL CULVERT LENGTH = 38.73'

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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

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TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT H
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 46+68.29

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 122

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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V 0 10 20

$PLTDRVS$

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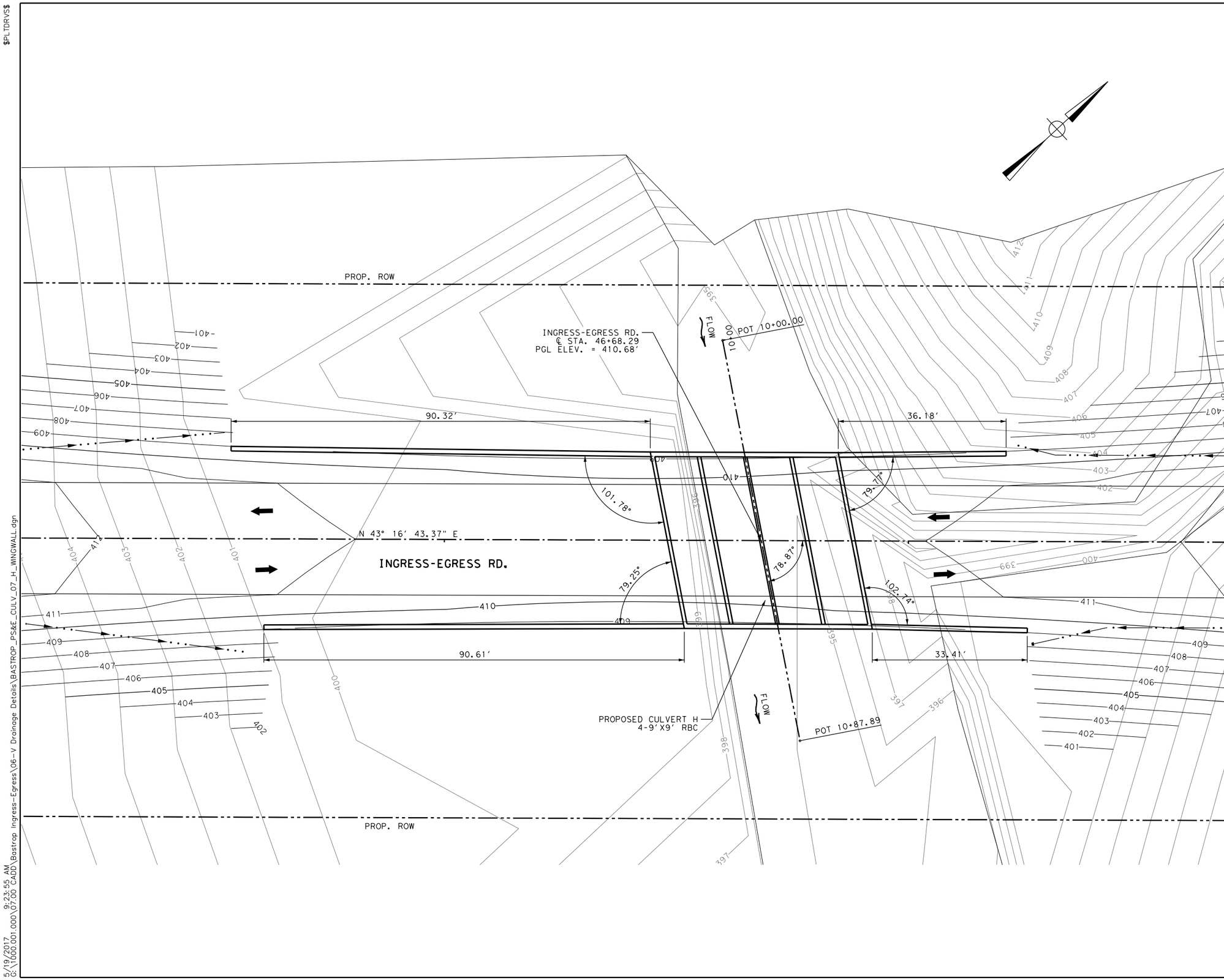

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Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

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5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT H
WINGWALL PLAN

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000	SHEET NO.
PROJECT_#	123

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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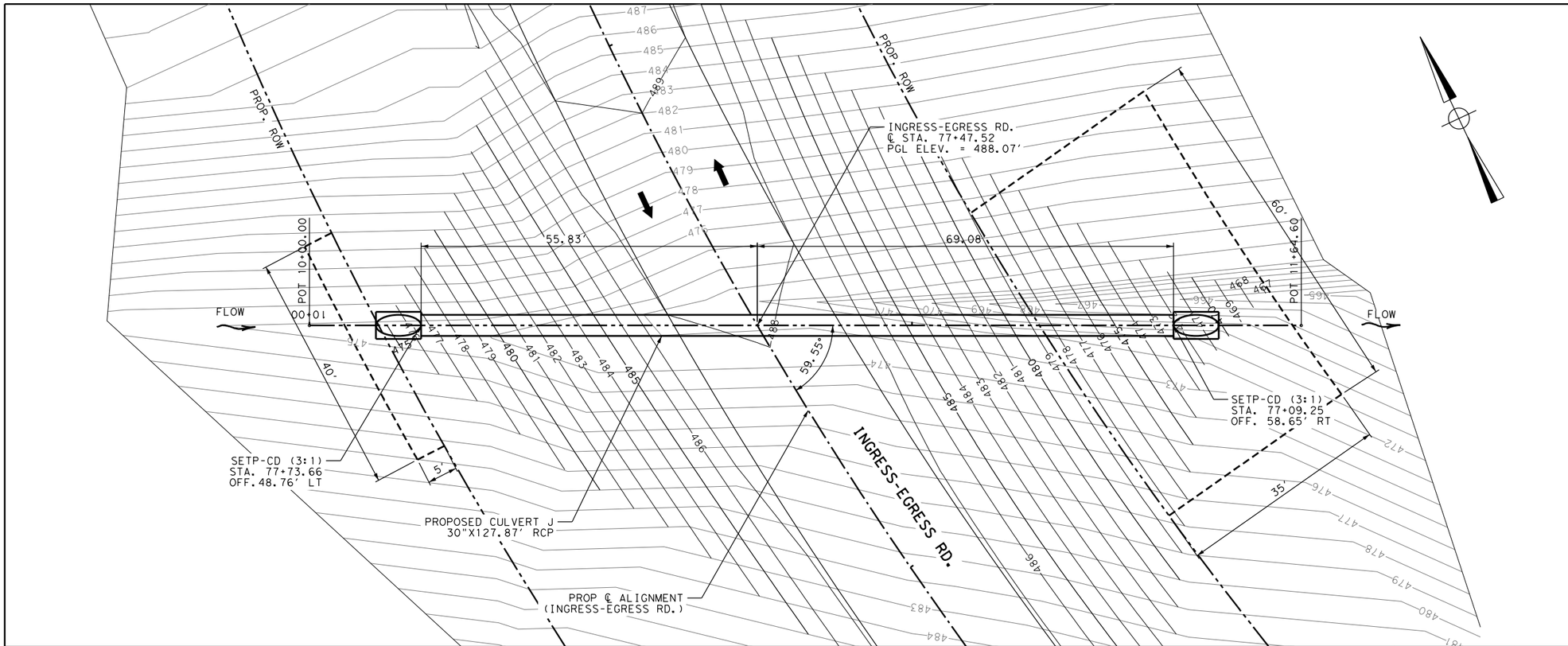

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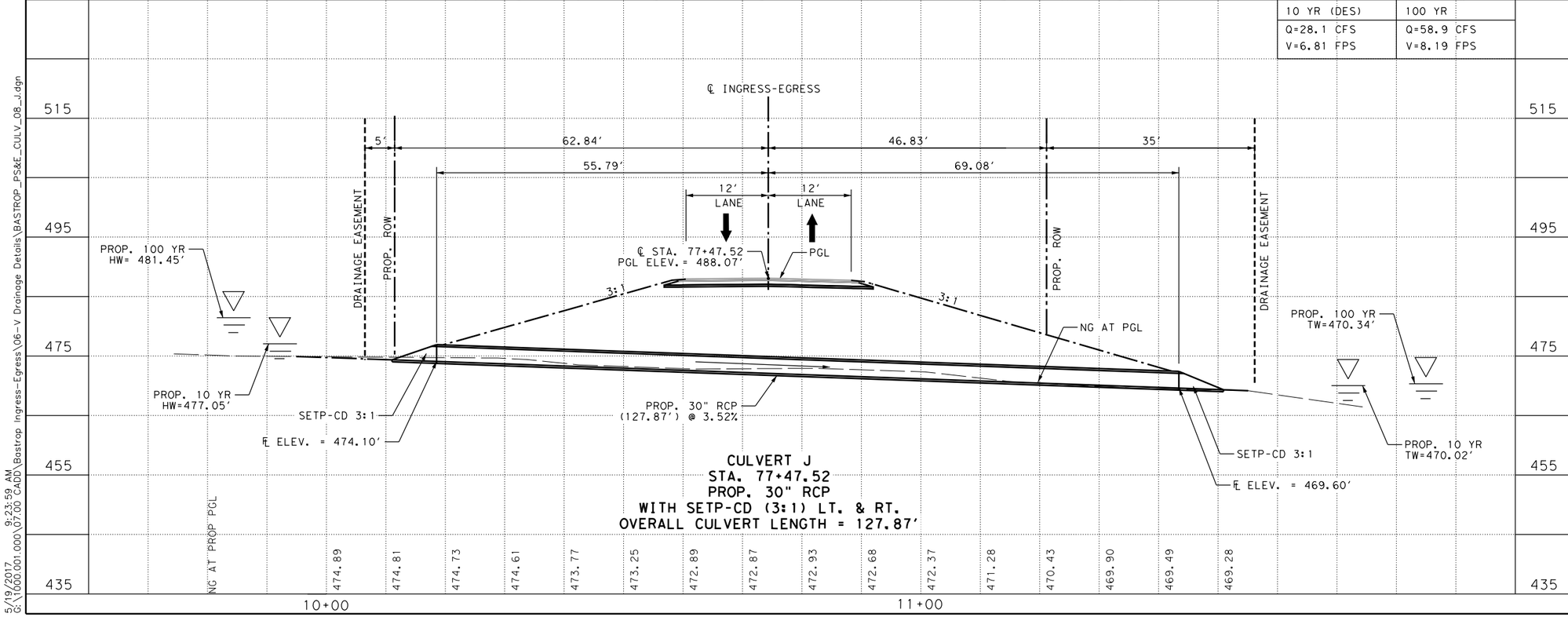

CULVERT J
STA. 77+47.52
PROP. 30" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 127.87'

RPS klotz associates
4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES.

KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT J
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 77+47.52

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
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COUNTY OF BASTROP

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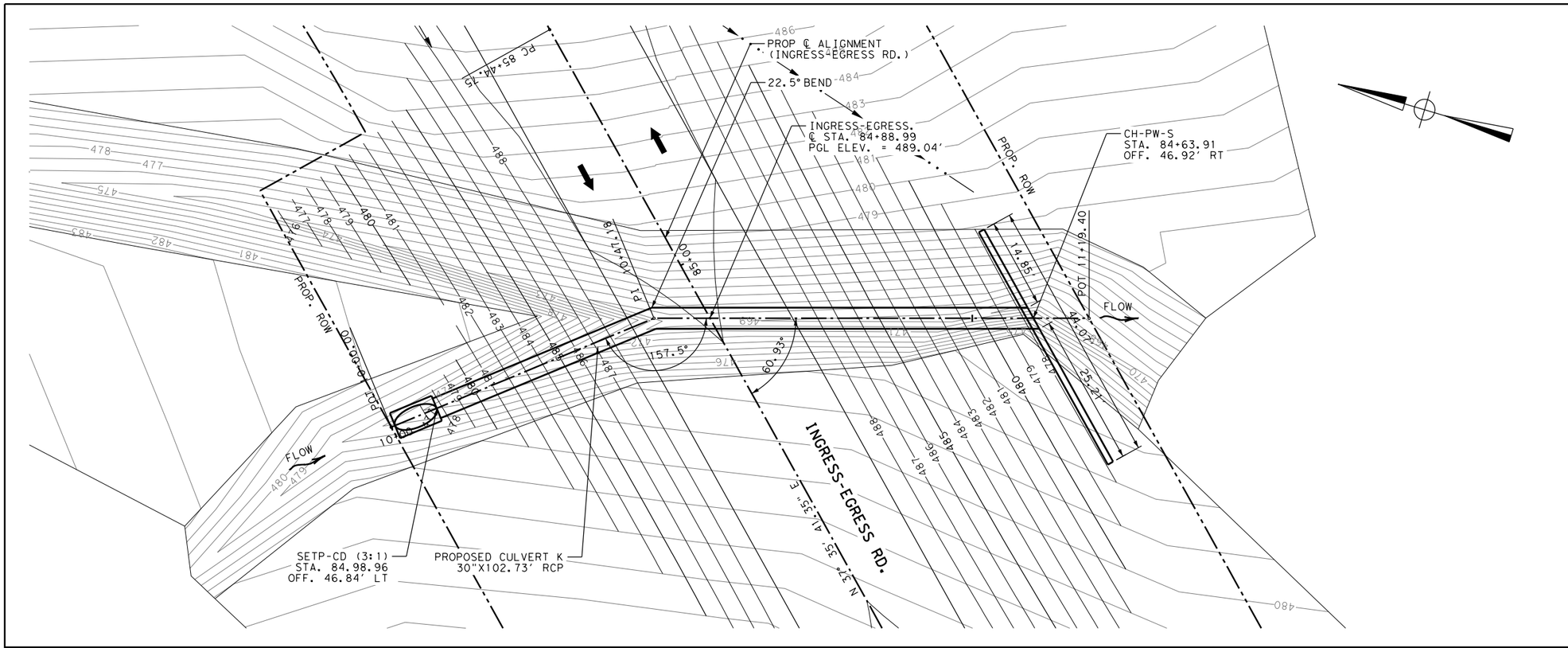

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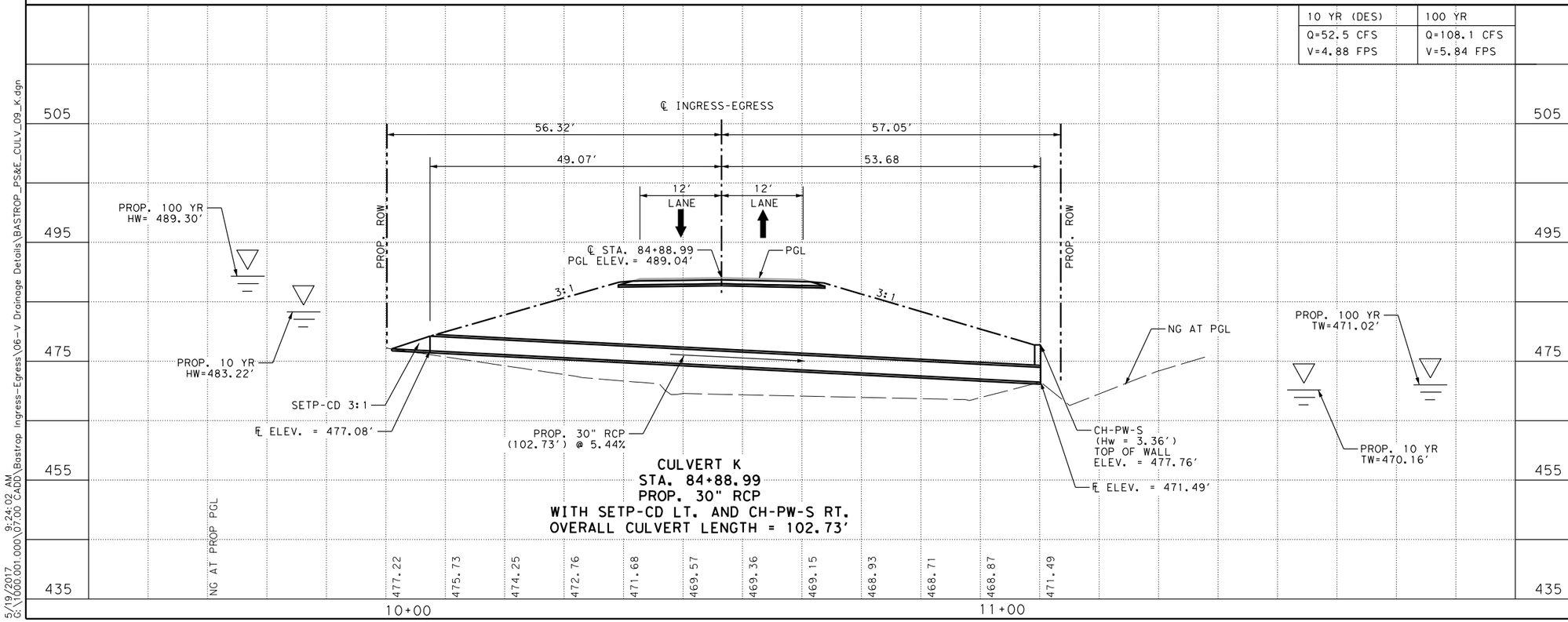

RPS klotz associates
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Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT K
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 84+88.99

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 127

COUNTY OF BASTROP

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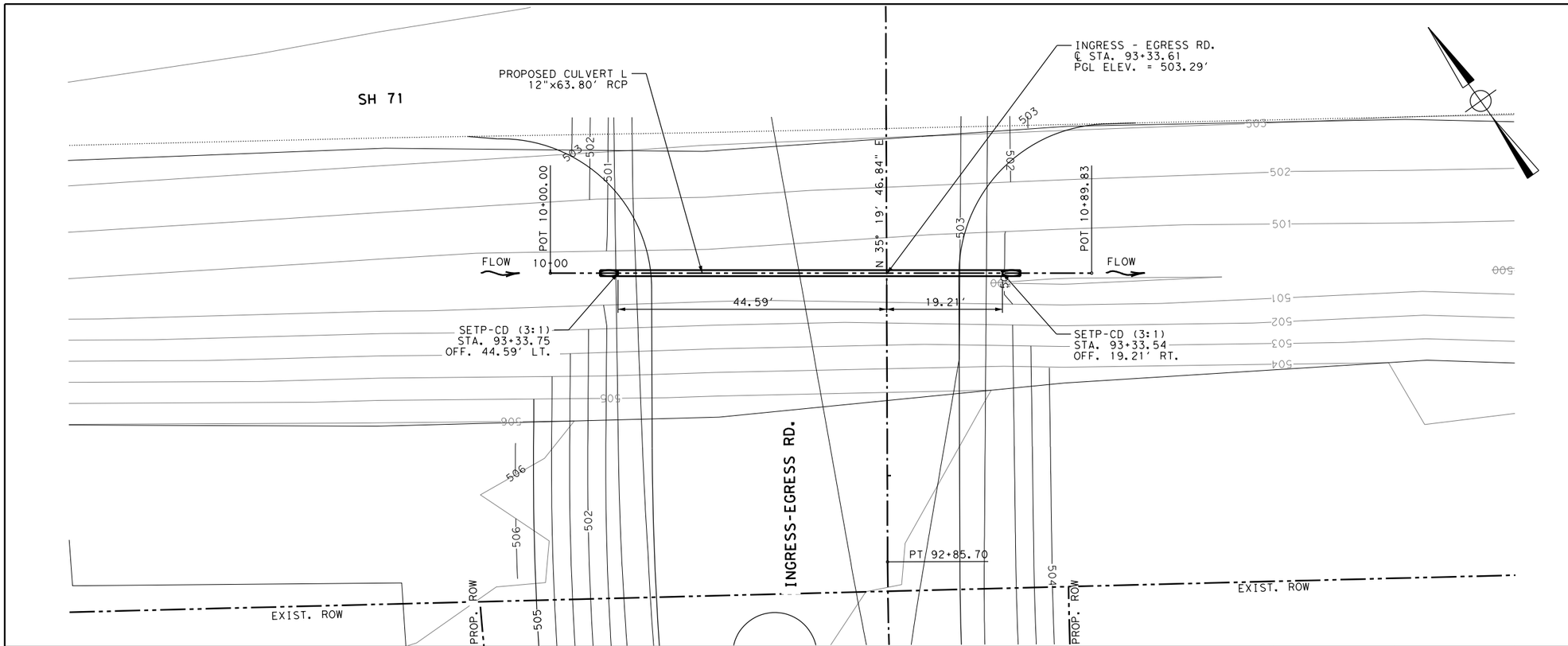

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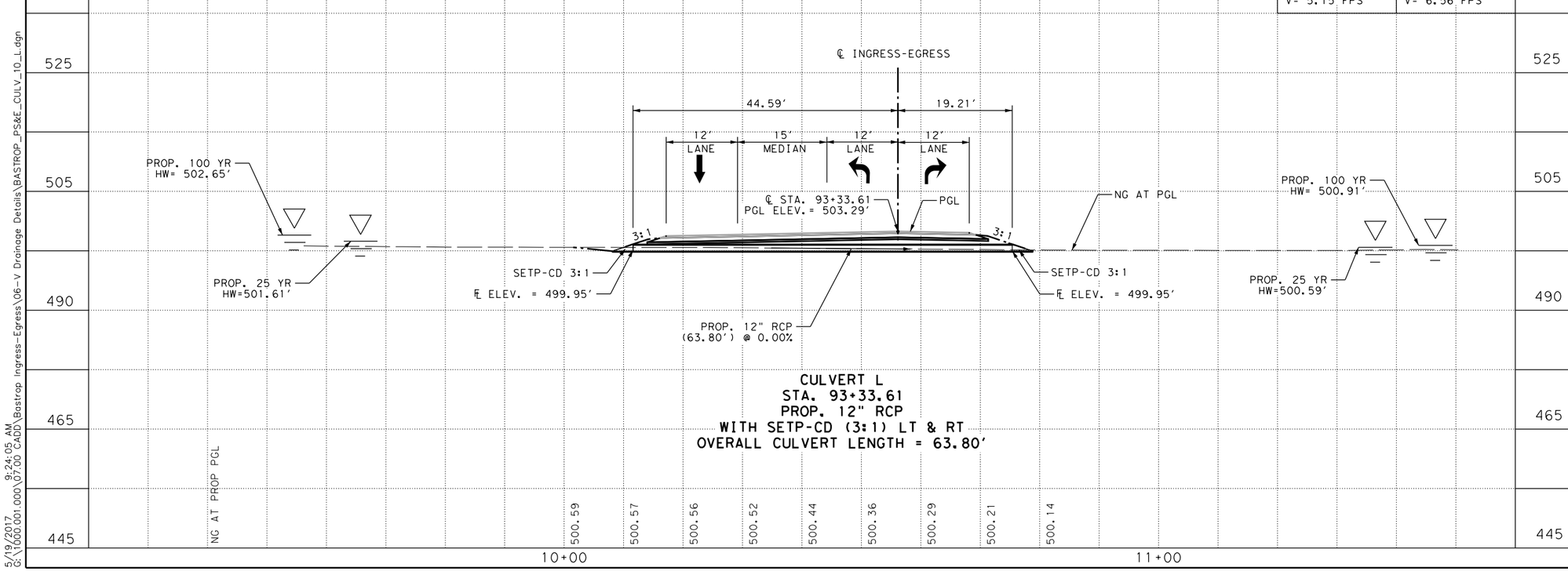

CULVERT L
STA. 93+33.61
PROP. 12" RCP
WITH SETP-CD (3:1) LT & RT
OVERALL CULVERT LENGTH = 63.80'

RPS klotz associates
4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES.

KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT L
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 93+33.61

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 129

COUNTY OF BASTROP

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Date: 5/19/2017

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TAHITIAN VILLAGE INGRESS/EGRESS BIOLOGICAL ASSESSMENT		
FWS COMMENT		**RESPONSE**
The Service understands funding for this Project arises from HUD and is distributed by the Texas General Land Office (GLO) to Bastrop County as the "responsible entity". The Service requests that HUD provide a brief letter to this office affirming Bastrop County as the responsible entity.		A letter dated May 3, 2017 from HUD to FWS is attached.
A clear depiction of the action area (i.e., a polygon on a map) for this Project is requested. The action area includes all areas affected directly or indirectly by the federal action and not merely the immediate area involved in the action. As some stressors (e.g., noise) are certain to occur beyond the limits of the right-of-way, along with their potential effects, the action area should reflect a science-based evaluation of such.		Figure 5, Page 5-27, provides the anticipated action area (direct and indirect effects).
The Service requests clarification of the purpose of the proposed action. It is stated as a "roadway improvement project". As most of the proposed construction is new road in previously undeveloped land, it seems the project is more appropriately characterized as a road construction project. Please clarify how this project is an improvement project as opposed to new construction.		Terminology in the document (Title Page and Section 3.3) has been changed to indicate new road construction as well as upgrades to existing roadways.
Also, the Project purpose states several existing roadways currently·provide ingress/egress for the subdivisions, but that these are narrow, two-lane residential streets or county roads that have minimal traffic capacity. Please provide detailed plan and cross section depictions of the proposed roadway. Is the proposed Project meant to serve as a higher traffic, higher speed thoroughfare? Will there be stops between McAllister Road and State Highway 71?		The proposed roadway will consist of new construction and upgrades to existing roadways to a 24 ft wide, two lane roadway intended to support a 30-35 mile per hour maximum speed limit. Other than existing roadway crossings at and west of McAllister, new intersections are not planned. Typical project plan drawings are included in Attachment C
Please update the,population dynamics section to include information from Robertson County in 2014.		Dr. Mike Forstner has updated the biological information in Section 4.1 to include the most current knowledge
The Service requests additional information and detail regarding the depiction of the preferred alternative submitted in Figure 1. What are the alternating tick marks along the depicted alignment? Driveways? Culverts?		The tick marks were linear stationing measurements. Since they were too small to read at the scale of the maps, they were deleted.
The preferred alternative includes the specification of "two bridge class culverts". Please provide details (e.g., scaled plan and cross section depictions) of these culvert crossings.		Typical project plan drawings are included in Attachment C
The preferred alternative also mentions "cross culvert" locations. Please provide details on the location and sizing of all culverts and drainage improvements associated with the Project.		Typical project plan drawings are included in Attachment C
The conclusion section states that the preferred alternative, "while not the most cost efficient, does most closely meet the intent of the project by adding a new roadway that provides additional emergency access to SH 71 from the existing residential areas." It appears that the latter portion of this statement reads more like the Project's purpose than a "roadway improvement project."		Terminology within the document has been changed to indicate new road construction as well as upgrades to existing roadways.
The Houston toad species distribution information should be updated in the BA. For example, Burleson County, Lavaca County and Robertson County are all known to be recently positive for the species. Also, identification of successful breeding and the detection of relatively large numbers of adults in Robertson County in 2014 and additional multi-male choruses this spring, it seems likely that a breeding population still exists there.		Dr. Mike Forstner has updated the biological information in Section 4.1 to include the most current knowledge
The BA provides little discussion on the environmental baseline. Please recall that this part of the BA should describe past and present effects of human actions on the species or critical habitat in the action area. For example, the Project area was undoubtedly affected by the 2011 Bastrop County Complex Fire (BCCF) and the associated recovery actions. Please note that there is a recent biological opinion written for the Vista Ridge pipeline project that crosses a portion of Bastrop County. That BO can provide additional information you may find useful on this component of your BA.		Updated.
The section of the BA addressing effects of the Project speaks only to effects in general, without analysis of the intensity of such effects on the species. In order to achieve an adequate analysis, the Service requests that the assessment be revised considering the potential effects (e.g., on a continuum from no effect to lethal effects) in terms of exposure (e.g, the construction noise, or to being crushed by construction equipment, or residing in a more fragmented patch of habitat due to presence of the Project) and response (e.g., avoidance of an area around the stressor, death, or potentially lack of reproductive success). For each potential effect, consider and document the likely and reasonable response(s) of individuals of the species taking into consideration their potential presence, the length of exposure to a stressor, the magnitude or severity of the stressor, the sensitivity of the species to such stressor, and the life stage or stages that may be differentially affected with regard to their feeding, breeding or sheltering.		Dr. Mike Forstner has updated the potential effects section to include direct, indirect, and continuing impact information.
Please also provide information on the operational and maintenance effects of the Project on the species. For example does the County have a schedule for mowing or anticipate the use of herbicides within the maintained ROW?		Dr. Mike Forstner has updated the potential effects section to include direct, indirect, and continuing impact information.
Other State or private developments and actions in the action area may contribute to cumulative effects on the species. These should be analyzed as above. For example, if the County is aware of pending developments in the action area, these should be disclosed and their effects, if any, analyzed.		There are no other known or pending developments in the action area

Similarly, the effects of the action should be analyzed for its impact on designated critical habitat for the Houston toad. The current status of critical habitat in the action area should also be detailed. For example, the BCCF altered the critical habitat to a varying degree. The BA should reflect this for the action area.		Updated.
The discussion of the Project's effects on critical habitat should include an analysis of the Project's effects on critical habitat in its entirety not just that designated in Bastrop County.		The total Critical Habitat in Bastrop and Burleson was added.
Please provide a detailed schedule (e.g., anticipated start and complete dates). The BA currently mentions commencement of work in late summer 2017 and road completion by the end of the calendar year, but elsewhere in the document (e.g., Section 4.3) a schedule of 6 to 9 months is stated. Please reconcile this discrepancy.		An anticipated construction schedule of 6 to 9 months is still anticipated. As stated in section 4.4.1, start of construction is now anticipated in late spring of 2018 and would be completed by end of 2018. However, the start of construction is dependent on completion of all regulatory requirements which are not totally predictable.
Please address the potential indirect effects of the Project. For example, indirect effects may include adjacent development (Le., additional residential and commercial development), road mortality post-construction, mortality associated with maintenance (e.g., mowing of the ROW), etc.		The indirect effects have been update by Dr. Forstner in Section 4.3, page 5-28.
For the proposed conservation measures regarding installation of exclusionary fencing, there can be not gaps in the barrier. Similarly, the monitors should be prepared to continue monitoring intensively inside the work space even after the barrier is erected. A combination of visual survey, pitfall traps and cover boards may be utilized to ensure that no toads are trapped inside the work space.		Added to Section 4.4.1, page 5-31
Regarding the proposed conservation measure and entry and exit points for heavy equipment, a single entry and exit at each end of a several mile-long work space and with existing roads and intersections, does not seem feasible. Please clarify and/or discuss with the Service this statement and potential options.		For the new section of roadway construction between McAllister and Hwy 71, the engineer believes single access points on each end are feasible. The temporary work space along the route is expanded to accommodate construction needs. The expanded work space is reflected in the project impacts (21.6 acres).
Regarding the use of offsite staging and equipment areas. If any of these exist within Houston toad habitat, they should be similarly enclosed with exclusionary fencing and monitored in the same manner as the construction ROW. Please advise and provide a depiction of all of these areas, if known. If these project specific locations (PSLs) are currently unknown, the County's contractors should be made aware of these additional measures as soon as possible and avoidance of Houston toad habitat should be paramount in, identifying such locations.		As noted above, the temporary work space along the new construction section has been expanded to accompdate construction needs. No additional offsite staging is believed to be needed. However, if the contractor should need additional space, they will be required to yards already in existence.
Regarding the daily storage and fueling of vehicles, the Service recommends the County also stipulate tha't such activities take place no less than 200 feet from potential breeding or dispersal features (e.g., ponds, streams, wetlands, etc.). These locations should be on relatively level ground to minimize the potential for leaks to migrate offsite.		Added to Section 4.4.1, page 5-30
The effects of the Project on designated critical habitat for the Houston toad should include a quantitative analysis of the Project's reduction of such habitat in support of the determination that the Project "is not likely to appreciably diminish the value of designated critical habitat".		The quantitative analysis is provided in Section 6.1
The BA text is borrowed substantially from a prior Service biological opinion. The list of references in the BA need to reflect those used to support the premises and conclusions in the current document. Please revise the list of references to include all of the literature, reports, personal communications, etc. cited in the BA.		References are updated.

Old Piney Trail - passed up for review / signature
2-3 weeks to respond.

United States Department of the Interior

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

In Reply Refer To:
FWS/R2/CESFO/
02ETXX0-2017-
F-1025

March 14, 2017

The Honorable Paul Pape
Bastrop County Judge
804 Pecan Street
Bastrop, Texas 78602

Dear Judge Pape:

Thank you for your March 4, 2017 request to initiate formal consultation under section 7 of the Endangered Species Act (Act) for the Tahitian Village/Colovista Road Improvements Project (Project). Previously, the U.S. Fish and Wildlife Service (Service), Bastrop County (County) and Texas General Land Office (GLO) representatives held early project coordination meetings in October 2015 and February 2016 regarding the proposed project. The Project proposes to address safety issues with ingress/egress for residents living in the Tahitian Village and Colovista subdivisions in Bastrop County, Texas. Specifically, the project consists of the construction of 17,100 linear feet of a 50-foot wide road right-of-way (ROW), including approximately 11,960 linear feet of new roadway through currently undeveloped land. The Department of Housing and Urban Development (HUD) is the funding agency for the project under their Community Development and Revitalization (CDR) program. In accordance with HUD regulations at 24 CFR 58.14, Bastrop County is the responsible entity and will serve as the action agency regarding the subject section 7 consultation. The Service's Texas Coastal Ecological Services Field Office (CESFO) has received and reviewed a biological assessment (BA) accompanying your letter request and in accordance with section 7 of the Act, our implementing regulations at 50 CFR 402, and Service guidance. The activities contemplated for the Project are located entirely within Bastrop County, Texas.

This response is provided in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.). As described in the March 2, 2017 BA, Bastrop County determined that the road construction may affect, and is likely to adversely affect, the federally endangered Houston toad *Bufo houstonensis*.

Upon our review of the BA, the Service requests the County address the following updates or deficiencies:

- The Service understands funding for this Project arises from HUD and is distributed by the Texas General Land Office (GLO) to Bastrop County as the "responsible entity". The Service requests that HUD provide a brief letter to this office affirming Bastrop County as the responsible entity.
- A clear depiction of the action area (i.e., a polygon on a map) for this Project is requested. The action area includes all areas affected directly or indirectly by the federal action and not merely the immediate area involved in the action. As some stressors (e.g., noise) are certain to occur beyond the limits of the right-of-way, along with their potential effects, the action area should reflect a science-based evaluation of such.
- The Service requests clarification of the purpose of the proposed action. It is stated as a "roadway improvement project". As most of the proposed construction is new road in previously undeveloped land, it seems the project is more appropriately characterized as a road construction project. Please clarify how this project is an improvement project as opposed to new construction.
- Also, the Project purpose states several existing roadways currently provide ingress/egress for the subdivisions, but that these are narrow, two-lane residential streets or county roads that have minimal traffic capacity. Please provide detailed plan and cross section depictions of the proposed roadway. Is the proposed Project meant to serve as a higher traffic, higher speed thoroughfare? Will there be stops between McAllister Road and State Highway 71?
- Please update the population dynamics section to include information from Robertson County in 2014.
- The Service requests additional information and detail regarding the depiction of the preferred alternative submitted in Figure 1. What are the alternating tick marks along the depicted alignment? Driveways? Culverts?
- The preferred alternative includes the specification of "two bridge class culverts". Please provide details (e.g., scaled plan and cross section depictions) of these culvert crossings.
- The preferred alternative also mentions "cross culvert" locations. Please provide details on the location and sizing of all culverts and drainage improvements associated with the Project.
- The conclusion section states that the preferred alternative, "while not the most cost efficient, does most closely meet the intent of the project by adding a new roadway that provides additional emergency access to SH 71 from the existing residential areas." It appears that the latter portion of this statement reads more like the Project's purpose than a "roadway improvement project."
- The Houston toad species distribution information should be updated in the BA. For example, Burleson County, Lavaca County and Robertson County are all known to be recently positive for the species. Also, identification of successful breeding and the detection of relatively large numbers of adults in Robertson County in 2014 and additional multi-male choruses this spring, it seems likely that a breeding population still exists there.
- The BA provides little discussion on the environmental baseline. Please recall that this part of the BA should describe past and present effects of human actions on the species or critical habitat in the action area. For example, the Project area was undoubtedly affected

by the 2011 Bastrop County Complex Fire (BCCF) and the associated recovery actions. Please note that there is a recent biological opinion written for the Vista Ridge pipeline project that crosses a portion of Bastrop County. That BO can provide additional information you may find useful on this component of your BA.

- The section of the BA addressing effects of the Project speaks only to effects in general, without analysis of the intensity of such effects on the species. In order to achieve an adequate analysis, the Service requests that the assessment be revised considering the potential effects (e.g., on a continuum from no effect to lethal effects) in terms of exposure (e.g, to construction noise, or to being crushed by construction equipment, or residing in a more fragmented patch of habitat due to presence of the Project) and response (e.g., avoidance of an area around the stressor, death, or potentially lack of reproductive success). For each potential effect, consider and document the likely and reasonable response(s) of individuals of the species taking into consideration their potential presence, the length of exposure to a stressor, the magnitude or severity of the stressor, the sensitivity of the species to such stressor, and the life stage or stages that may be differentially affected with regard to their feeding, breeding or sheltering.
- Please also provide information on the operational and maintenance effects of the Project on the species. For example, does the County have a schedule for mowing or anticipate the use of herbicides within the maintained ROW?
- Other State or private developments and actions in the action area may contribute to cumulative effects on the species. These should be analyzed as above. For example, if the County is aware of pending developments in the action area, these should be disclosed and their effects, if any, analyzed.
- Similarly, the effects of the action should be analyzed for its impact on designated critical habitat for the Houston toad. The current status of critical habitat in the action area should also be detailed. For example, the BCCF altered the critical habitat to a varying degree. The BA should reflect this for the action area.
- The discussion of the Project's effects on critical habitat should include an analysis of the Project's effects on critical habitat in its entirety not just that designated in Bastrop County.
- Please provide a detailed schedule (e.g., anticipated start and complete dates). The BA currently mentions commencement of work in late summer 2017 and road completion by the end of the calendar year, but elsewhere in the document (e.g., Section 4.3) a schedule of 6 to 9 months is stated. Please reconcile this discrepancy.
- Please address the potential indirect effects of the Project. For example, indirect effects may include adjacent development (i.e., additional residential and commercial development), road mortality post-construction, mortality associated with maintenance (e.g., mowing of the ROW), etc.
- For the proposed conservation measures regarding installation of exclusionary fencing, there can be not gaps in the barrier. Similarly, the monitors should be prepared to continue monitoring intensively inside the work space even after the barrier is erected. A combination of visual survey, pitfall traps and cover boards may be utilized to ensure that no toads are trapped inside the work space.

- Regarding the proposed conservation measure and entry and exit points for heavy equipment, a single entry and exit at each end of a several mile-long work space and with existing roads and intersections, does not seem feasible. Please clarify and/or discuss with the Service this statement and potential options.
- Regarding the use of offsite staging and equipment areas. If any of these exist within Houston toad habitat, they should be similarly enclosed with exclusionary fencing and monitored in the same manner as the construction ROW. Please advise and provide a depiction of all of these areas, if known. If these project specific locations (PSLs) are currently unknown, the County's contractors should be made aware of these additional measures as soon as possible and avoidance of Houston toad habitat should be paramount in identifying such locations.
- Regarding the daily storage and fueling of vehicles, the Service recommends the County also stipulate that such activities take place no less than 200 feet from potential breeding or dispersal features (e.g., ponds, streams, wetlands, etc.). These locations should be on relatively level ground to minimize the potential for leaks to migrate offsite.
- The effects of the Project on designated critical habitat for the Houston toad should include a quantitative analysis of the Project's reduction of such habitat in support of the determination that the Project "is not likely to appreciably diminish the value of designated critical habitat".
- The BA text is borrowed substantially from a prior Service biological opinion. The list of references in the BA need to reflect those used to support the premises and conclusions in the current document. Please revise the list of references to include all of the literature, reports, personal communications, etc. cited in the BA.

The Service appreciates Bastrop County's incorporation of many of our early consultation recommendations and its ongoing conservation efforts for this species. If you need clarification of our comments, have questions, or need additional information, please contact staff biologist Jeff Hill at 281/286-8282 ext. 241.

Sincerely,

Charles Ardizzone
Field Supervisor

Horizon™
Environmental Services, Inc.

DRAFT

BIOLOGICAL ASSESSMENT
PROPOSED INGRESS/EGRESS
ROAD IMPROVEMENTS
FOR TAHITIAN VILLAGE AND
COLOVISTA DEVELOPMENTS
BASTROP COUNTY, TEXAS
IPAC CONSULTATION CODE: 02ETAU00-2017-SLI-0367

PREPARED FOR:

US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
AND
BASTROP COUNTY, TEXAS

PREPARED BY:

HORIZON ENVIRONMENTAL SERVICES, INC.

FEBRUARY 2017

160048-02 Tahitian Village BA DRAFT Feb 2017 (LS Clean)2-2017

CORPORATE HEADQUARTERS
1507 S Interstate 35 ★ Austin, TX 78741-2502 ★ (512) 328-2430 ★ www.horizon-esi.com
Certified WBE/HUB/DBE/SBE

Horizon
Environmental Services, Inc.

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ATTACHMENTS

A NATIVE GRASSLAND RESTORATION SPECIFICATION
B ALTERNATIVES COST ANALYSIS

1.0 INTRODUCTION

The proposed project is a roadway improvement project proposed to address safety issues with ingress/egress to existing residential properties in Tahitian Village and Colovista Developments in Bastrop County, Texas (Figure 1). Funds for the project will be made available from the Texas Community Development and Revitalization (CDR) Program.

The State of Texas received an allocation of $31,319,686 in Community Development Block Grant (CDBG) funds from the US Department of Housing and Development (HUD) as disaster recovery assistance for wildfires that occurred between August 30 and December 31, 2011. The State has been directed by HUD to target at least 80% of this assistance to Bastrop County.

Before expending funds, an environmental review of the proposed project must be completed in accordance with the National Environmental Policy Act (NEPA) and 24 CFR Part 58. The environmental review evaluates potential environmental impacts of the project, and also provides an opportunity for members of the general public to comment on the information found in the review.

This biological assessment has been prepared in support of a Section 7 consultation with the US Fish and Wildlife Service (Service) as part of the above-referenced NEPA review to address potential effects on listed threatened or endangered species and designated critical habitats.

Horizon Environmental Services, Inc.	Date: 01/27/2017	**Figure 1**
	Drawn: GLS	Vicinity Map
	HJN NO: 160048 PA BG2	Tahitian Village Ingress/Egress
	Source: OSM, 2016	Bastrop County, Texas

0 1,000 2,000
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2.0 PERTINENT SPECIES AND RESOURCES

The following species listed by the Service were reviewed for potential impacts from the proposed activity.

Table 1
Federally Listed Threatened or Endangered Species of Bastrop County

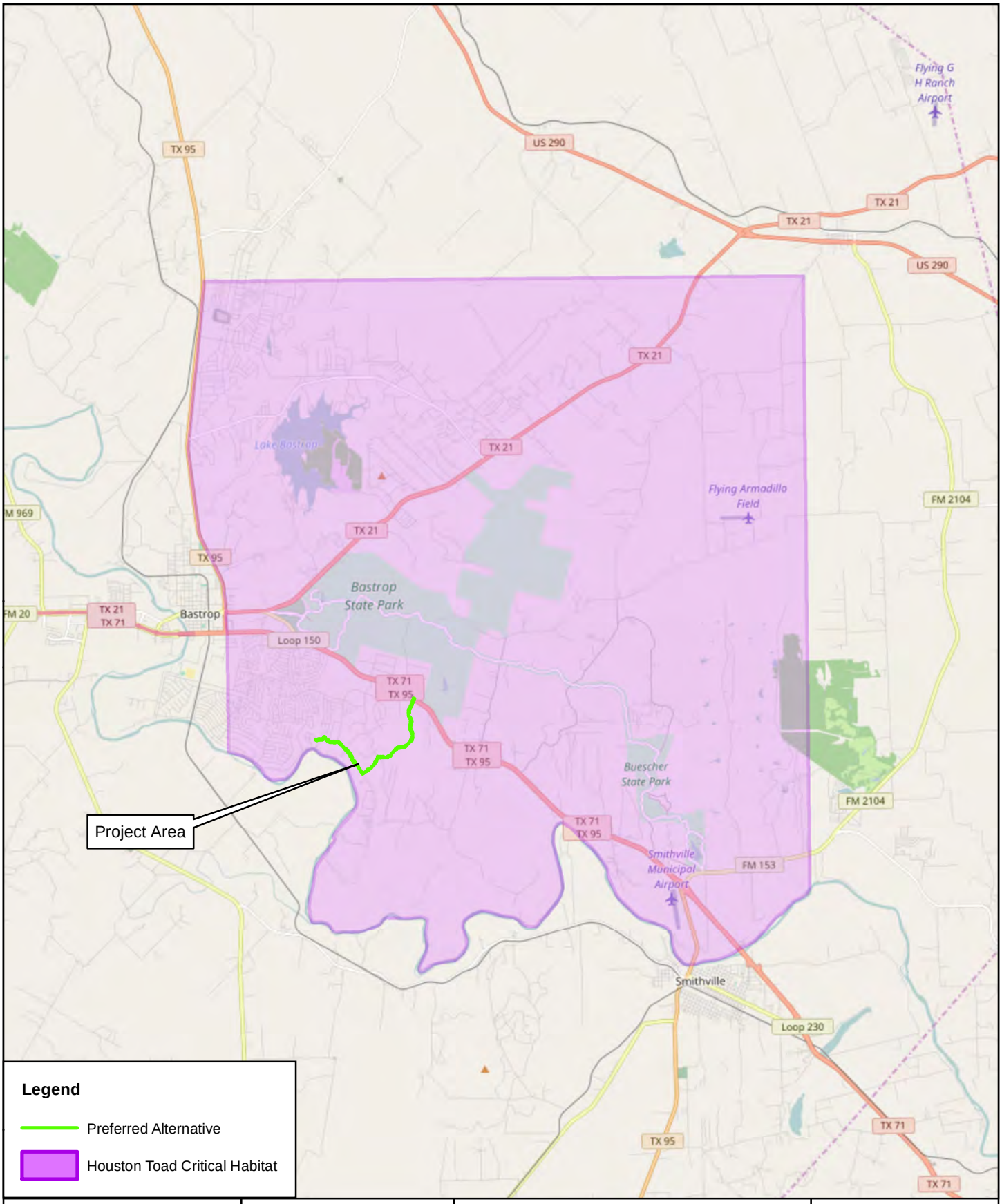
Common Name	Scientific Name	Federal Status	Habitat Description	Habitat Present	Effect/ Impact
Piping Plover	*Charadrius melodus*	T	Beaches, bayside mud or salt flats-migratory	N	N
Least Tern	*Sterna antillarum*	E	Sand bars along major streams	N	N
Red Knot	*Calidris canutus rufa*	T	Beaches, bayside mud or salt flats-migratory	N	N
Whooping Crane	*Grus americana*	E	Winters in Aransas National Wildlife Refuge- migratory	N	N
Smooth Pimpleback	*Quadrula houstonensis*	C	Rivers and streams	N	N
Texas Fawnsfoot	*Truncilla macrodon*	C	Rivers and streams	N	N
Navasota Ladies'-tresses	*Spiranthes parksii*	E	Post oak woodlands with ephemeral stream drainages and sandy soil	N	N
Houston Toad	*Anaxyrus houstonensis*	E/CH	Pine-Oak woodlands with sandy soils	Y	Y

E = endangered; T = threatened; C = candidate species; DM = delisted taxon, recovered, being monitored first five years; CH = critical habitat.

Source: Service, 2017

2.1 LISTED SPECIES WITHIN THE PROJECT AREA

Of the species listed in Table 1, only the Houston toad (*Anaxyrus houstonensis*) is likely to occur in the project area. The project area is located within designated critical habitat for the Houston toad (Figure 2). The least tern (*Sterna antillarum*) is usually found along streams and rivers on sand or gravel bars; the largely ephemeral to intermittent streams crossed by the project do not provide suitable for the least tern. The piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), and whooping crane (*Grus americana*) occur primarily along the coast in Texas; they would only be migrants in Bastrop County. The two mussels listed, smooth pimpleback (*Quadrula houstonensis*) and Texas fawnsfoot (*Truncilla macrodon*) both occur in areas of hydric habitat (streams, rivers, and some reservoirs). The smooth pimpleback has been documented in the Colorado River upstream of the project area. The largely ephemeral to intermittent tributaries crossed by the project are unlikely to support either the smooth pimpleback or the Texas fawnsfoot. The Navasota Ladies'-tresses' (*Spiranthes parksii*) range includes the project area, but the project area does not include the microhabitats necessary to support the plant.



Horizon Environmental Services, Inc.

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Source:	Service 2003; OSM, 2016.

Figure 2

Houston Toad Critical Habitat Map
Tahitian Village Ingress/Egress
Bastrop County, Texas

0 1.25 2.5
Miles

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2.2 CRITICAL HABITAT WITHIN THE PROJECT AREA

The project location is within the designated critical habitat for the Houston toad. In Texas, critical habitat for the piping plover and whooping crane is located along the Texas Coast and will not be affected by this project. Critical habitat is not designated for the other listed species.

2.3 MIGRATORY BIRD SPECIES

The Migratory Bird Treaty Act (USC 16 § 703) and the Texas Parks and Wildlife Code (TPWC § 63) provide for the protection of all bird species considered to be migratory by the Service and the Texas Parks and Wildlife Department (TPWD). This includes all birds except European starlings, English sparrows, ravens (but not crows), and feral pigeons. Protection is afforded to prevent direct death or injury, capture, possession, transport, or sale of individuals of the species, dead or alive, including their parts, eggs and nests.

Since most migratory birds are highly mobile as adults, direct death or injury as an incidental occurrence to land disturbance activities is not likely. The principal concern is the potential destruction of nests, eggs, or fledglings that might be present in woody vegetation (shrubs and trees) during land clearing activities during the nesting season. The primary protection strategy is to conduct most land-clearing in woodland and shrubland habitats outside of the primary nesting season. In most of Texas, the primary season for nesting and fledging is March 1 to September 1. However, after early June, only sporadic late nesting occurs until late August. To the extent reasonably possible, major clearing operations should be conducted outside of the primary nesting season.

If complete seasonal avoidance is not reasonably possible, then detailed surveys for active nests can be conducted by qualified biologists during the primary nesting season (March 1 to September 1) in advance of clearing to locate all active nests with eggs or offspring present. If active nests are found, clearing within 30 feet of the nests should be avoided until nesting is completed. Monitoring is required during this period to document when fledglings leave the nests. Once nest abandonment has occurred, clearing may be completed.

3.0 PROJECT DESCRIPTION

3.1 LOCATION

The preferred route for the ingress/egress road improvements is located between Riverside Drive and Highway 71 in Bastrop County, Texas (see Figure 1).

3.2 SITE DESCRIPTION

The preferred route is approximately 17,100 linear feet in length and will require approximately 11,960 linear feet of new roadway. The area contains previously forested habitat (destroyed by wildfire) now in regeneration consisting of a dense regrowth of loblolly pine (*Pinus taeda*), sumac (*Rhus glabra*), American beautyberry (*Callicarpa americana*), sparkleberry (*Vaccinium arboretum*), post oak (*Quercus stellata*), and yaupon (*Ilex vomitoria*). Common herbaceous species include little bluestem (*Schizachyrium* scoparium), western ragweed (*Ambrosia psilostachya*), dewberry (*Rubus trivialis*), threeawn (*Aristida* sp.), Mexican hat (*Ratibida columnaris*), paspalum (*Paspalum* sp.), panium (*Panicum* sp.), and horse mint (*Monarda* sp.). The preferred route will cross Copperas Creek and one of its tributaries. With a 50-foot wide ROW, the route will have new impacts up to 13.73 acres of undeveloped land.

3.3 NEED AND PURPOSE

This project consists of proposed roadway improvements to address safety issues with ingress/egress to existing and future residences within the Tahitian Village and Colovista developments in Bastrop County, TX. Significant ingress/egress issues were encountered in Tahitian Village and Colovista during the wildfire events of 2011. Multiple ingress/egress routes are needed to allow for safe ingress/egress during emergencies. Several roadways currently provide ingress/egress to these existing residential subdivisions; however, the existing roadways are narrow, two-lane residential streets or county roads that have minimal traffic capacity. In the event one or more of these roadways becomes impassible due to wild fire or flooding, the other existing roadways are not adequate to provide safe and efficient ingress/egress.

The proposed road project is located between Riverside Drive and State Highway 71 in Bastrop County, TX and is needed for secondary ingress and egress routes to existing local housing developments. The purpose of the project is to provide additional ingress/egress during emergencies. This will increase safety, giving residents a way to evacuate and emergency crews a way to access the area in the event that one or more routes are blocked.

3.4 ALTERNATIVES ANALYSIS

Alternatives considered include the no-action alternative, the preferred route, and 3 additional alternative routes developed by RPS Klotz Associates (RPS, 2017) (Figure 3).

3.4.1 No-Action Alternative

The no-action alternative would have no direct impact to the Houston toad, but safe ingress and egress within the Tahitian Village and Colovista developments would not be achieved

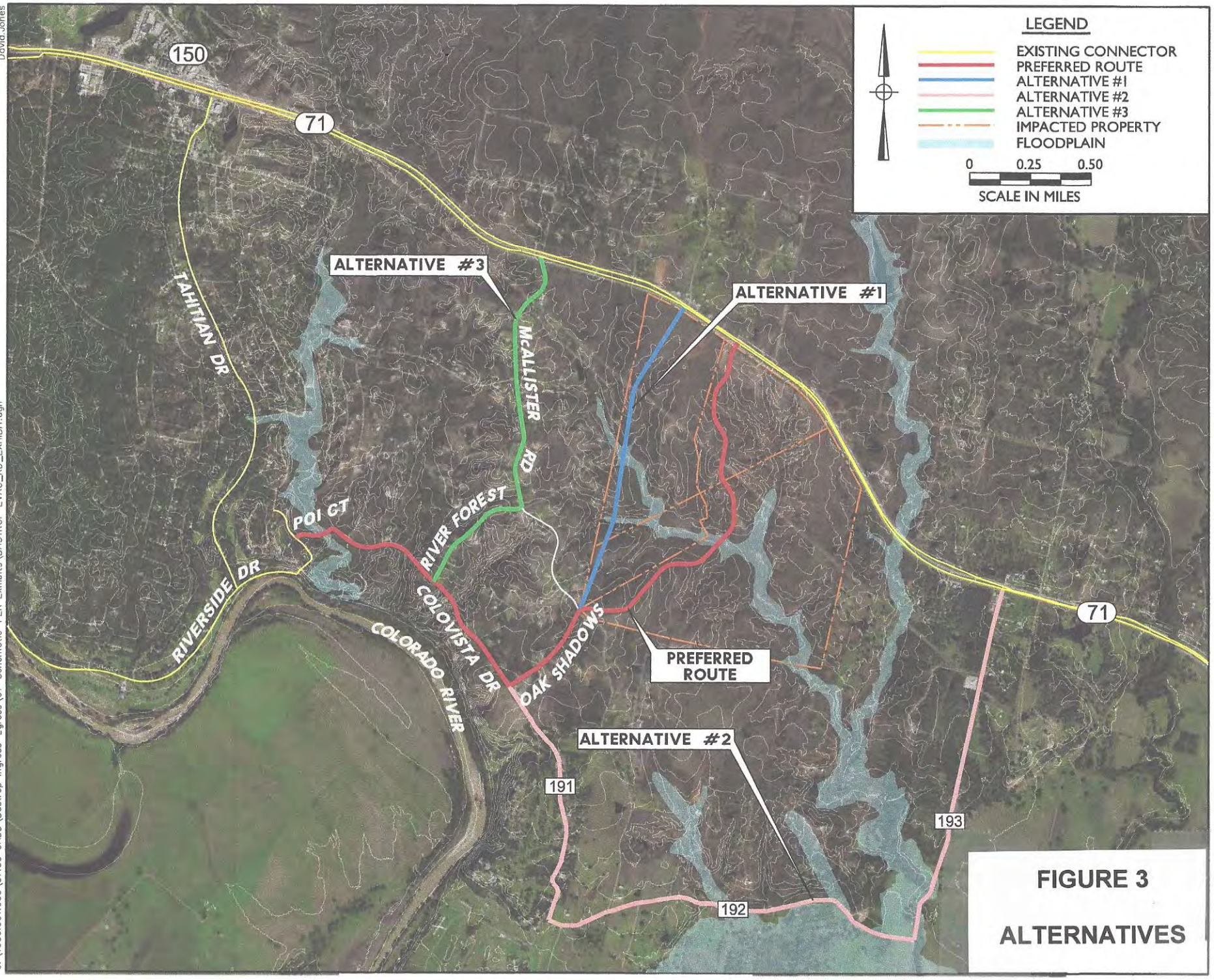

FIGURE 3

ALTERNATIVES

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in the event of significant landscape emergencies such as wild fires; therefore, this alternative is not practicable since it does not serve the project purpose.

3.4.2 Preferred Route Alternative

For the purposes of this report, the “preferred alternative” will be referred to as preferred route.

The preferred route is approximately 17,100 linear feet in total length and will require approximately 11,960 linear feet of new roadway (see Figure 3). The route will begin at Ulupau Circle from Poi Court to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new location roadway. Additionally, the route will require the purchase of additional ROW, widening of all existing roadways to 24 feet wide, as well as two new bridge class culverts.

One proposed bridge class culvert will cross a tributary of Copperas Creek along the portion of new roadway across from Poi Court connecting to Colovista Drive.

A second proposed bridge class culvert will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Seven (7) additional cross culverts will also be required along the segment of new roadway between Oak Shadows Drive and SH 71 to accommodate local drainage patterns.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $182 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 10.6 acres of new ROW to be acquired if a 50 foot wide ROW is donated. The total cost is estimated to be $3,115,187 (see Attachment B).

This alternative is within Houston toad habitat. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad.

3.4.3 Alternative 1

Alternative 1 is approximately 15,550 linear feet in length and will require approximately 10,500 linear feet of new location roadway (see Figure 3). The route will require connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive to Oak Shadows Drive, and connecting Oak Shadows Drive to SH 71 via a new roadway. Additionally, the route will consist of the purchase of additional ROW, widening all existing roadways to 24 feet wide, as well as three new bridges.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long, including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost about $240,000 to construct.

Two proposed bridges will cross Copperas Creek along the portion of new roadway between Oak Shadows Drive and SH 71. Assuming the bridges will be 24 feet wide, and approximately 120 feet long and 400 feet long respectively, including approach slabs and abutments, and constructed for approximately $100/SF, the bridges will cost approximately $288,000 and $960,000 to construct. Four culverts will also be required along the portion of new roadway between Oak Shadows Drive and SH 71.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $272 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 12.05 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $4,236,575 (see Attachment B).

This alternative is within Houston toad habitat. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad.

3.4.4 Alternative 2

Alternative 2 is approximately 28,200 linear feet in length and will require approximately 3,350 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive, connecting Colovista Drive to Crafts Prairie Road via a new roadway, commencing along Crafts Prairie Road to Ponderosa Road, and continuing along Ponderosa Road to SH 71. Additionally, the route will consist of the purchase of additional ROW, widening all existing roadways to 24 feet wide, as well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct. A cross culvert will also be required along the portion of new roadway between Colovista Drive and Crafts Prairie Road.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $131 per linear foot to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 3.85 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $3,695,200 (see Attachment B).

This alternative is within Houston toad habitat. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad.

3.4.5 Alternative 3

Alternative 3 is approximately 11,700 linear feet in length and will require approximately 3,320 linear feet of new roadway (see Figure 3). The route will consist of connecting Ulupau Circle to Colovista Drive, commencing along Colovista Drive to River Forest Drive, continuing along River Forest Drive to McAllister Road, and completing the route along McAllister Road to SH 71. Additionally, the route will consist of the purchase of additional ROW, widening all exiting roadways to 24 feet wide, as well as a new bridge. The alternative requires mainly upgrading the existing roadways within the network.

One proposed bridge will cross a tributary of Copperas Creek along the portion of new roadway between Ulupau Circle and Colovista Drive. Assuming the bridge will be 24 feet wide, and approximately 100 feet long including approach slabs and abutments, and constructed for approximately $100/SF, the bridge will cost approximately $240,000 to construct.

Using the proposed flexible pavement cross section and statewide average low bid prices from TxDOT, this alternative is estimated to cost $166 per linear feet to construct (see Attachment B). This estimated price includes clearing ROW, cross drainage, earthwork, SW3P and seeding, final striping, lime subgrade, flexible base and a seal coat surface treatment. The alignment would require about 3.71 acres of new ROW to be acquired if a 50 foot wide ROW is purchased. The total cost is estimated to be $1,940,145 (see Attachment B).

This alternative is within Houston toad habitat. All cross culvert locations will incorporate measures to accommodate movement of the Houston toad.

3.4.6 Conclusion

The no-action alternative is not considered practicable since it does not fulfill the project purpose and need.

The Preferred Route, while not the most cost efficient, does most closely meet the intent of the project by adding a new roadway that provides additional emergency access to SH 71 from the existing residential areas. The route also provides additional access for many of the existing roadways in the project area. This route also makes better use of the existing topography and will impact 1 property between Oak Shadows Drive and SH 71.

Alternative 1 will add a new roadway and will provide the required additional emergency access to SH 71. However, the route is more expensive than the Preferred Route. The route will require an additional bridge over the Copperas Creek 100 year floodplain and will need steeper slopes and safety improvements to accommodate the existing topography. The route will impact 2 properties between Oak Shadows Drive and SH 71.

Alternative 2 mainly consists of upgrades/reconstruction to the existing roadways in the area and is the longest route. This route will add the connection between Ulupau Circle and Colovista Drive, which will provide better connectivity within the existing roadway network.

However, the route will not meet the purpose of the project in that it does not provide additional emergency access to SH 71.

Alternative 3 also mainly consists of upgrades/reconstruction to the existing roadways in the area and is the shortest route. This route will add the connection between Ulupau Circle and Colovista Drive, which will provide better connectivity within the existing roadway network. However, the route will not meet the purpose of the project in that it does not provide additional emergency access to SH 71.

4.0 THREATENED OR ENDANGERED SPECIES AND THEIR HABITATS

As described in Section 2.1, eight federally-listed species have distribution ranges that include Bastrop County, Texas. Only one species, the Houston toad, is likely to occur in the project area. Sections 4.1 to 4.3 below describe the Houston toad in detail, its habitat, and possible short-term and long-term effects of the proposed project on the species. Management actions designed to minimize, avoid, or offset effects are described in Section 4.4.

4.1 HOUSTON TOAD

The following description of the Houston toad and its habitat is excerpted from a recent biological opinion issued by the Service for a proposed TxDOT rehabilitation project on a portion of US Highway (US) 290 located in Bastrop County (Service 2016). The document provides a current summary of Houston toad information including status of the species, critical habitat, distribution and abundance, habitat, life history, population dynamics, reason for listing/threats to survival, recovery efforts, and environmental baseline.

Status of the Species/Critical Habitat

Description

The Houston toad is one of six members of the Americanus Group (Forstner 2003). They are generally brown and speckled, although individual toad coloration can vary considerably. Some may appear light brown, others almost black, and they may also have a slightly reddish, yellowish, or greyish hue. Two dark bands extend down from each eye to the mouth, and their legs are also banded with darker pigment. A variable white stripe streaks along the sides of the Houston toad's body. The underside is usually pale with small, dark spots. Males have dark throats, which appear bluish when distended. Adult Houston toads are 2 to 3.5 inches long, are covered with raised patches of skin that resemble warts, and have two parotoid glands that contain chemicals that make the toad distasteful and sometimes poisonous to predators (Brown 1971). Although Houston toads are similar in appearance to the closely-related Gulf Coast toad (*Incilius (Anaxyrus) valliceps*) and Woodhouse's toad (*Anaxyrus woodhousii)*, the species can be discerned by physical characteristics (Brown 1971).

Current Legal Status

The Houston toad was federally listed as an endangered species on October 13, 1970 (35 FR 16047 – 16048). The Service has assigned the Houston toad a recovery priority number of 2C, meaning that the species has a high recovery potential (the low number), and additionally that the recovery of the species is in conflict with construction or other development projects (48 CFR 43098). Critical habitat for the Houston toad was designated in portions of Bastrop and Burleson counties, Texas on January 31, 1978 (43 FR 4022 – 4026). The Houston toad is also listed as endangered by the State of Texas.

Critical Habitat

Critical habitat includes areas that are essential to the conservation of a threatened or endangered species and that may require special management considerations or protection. Although not described when critical habitat was designated, essential habitat requirements for the Houston toad include seasonally-flooded breeding ponds, deep sandy soil, and forested or woodland areas. The Service designated critical habitat for the Houston toad in 1978 (43 FR 4022), which includes approximately 98,000 acres in the central portion of Bastrop County, and approximately 2,000 acres surrounding Lake Woodrow in Burleson County where toads were known to occur at that time.

Little was known about the habitat requirements of the Houston toad at the time of listing and designation of critical habitat. Since that time, occupied Houston toad habitat has been documented in several additional counties and the area designated as critical habitat in Burleson County is no longer occupied. However, Houston toads were detected in other areas of Burleson County in May 2011 (Dr. Michael Forstner personal communication).

Distribution and Abundance

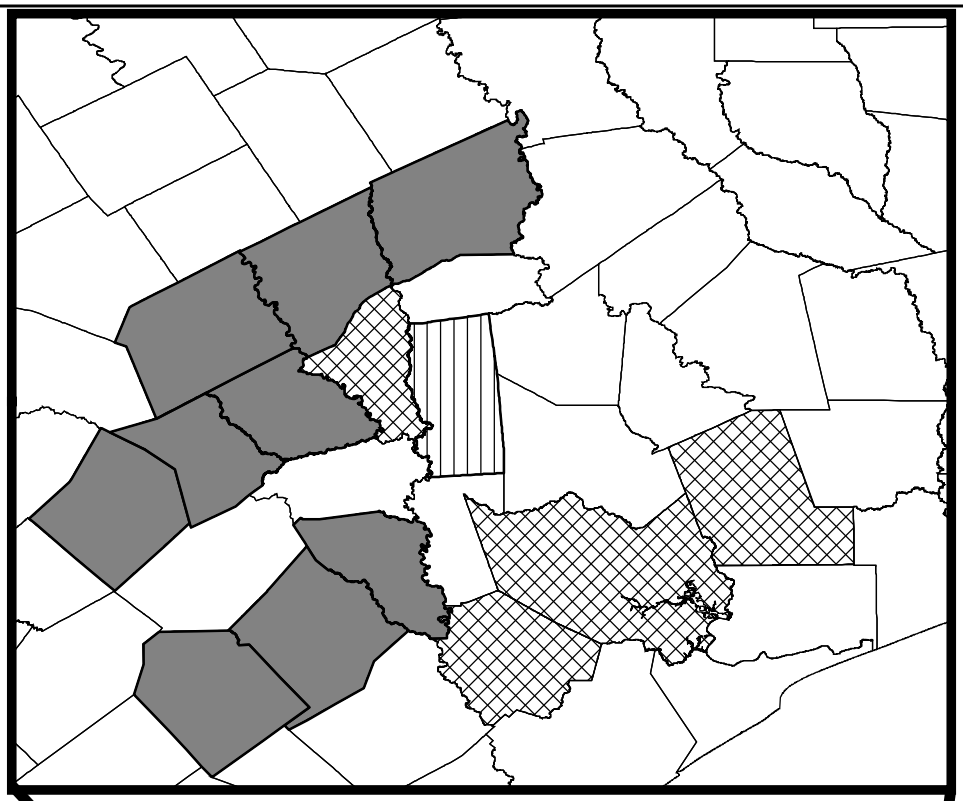
Distribution

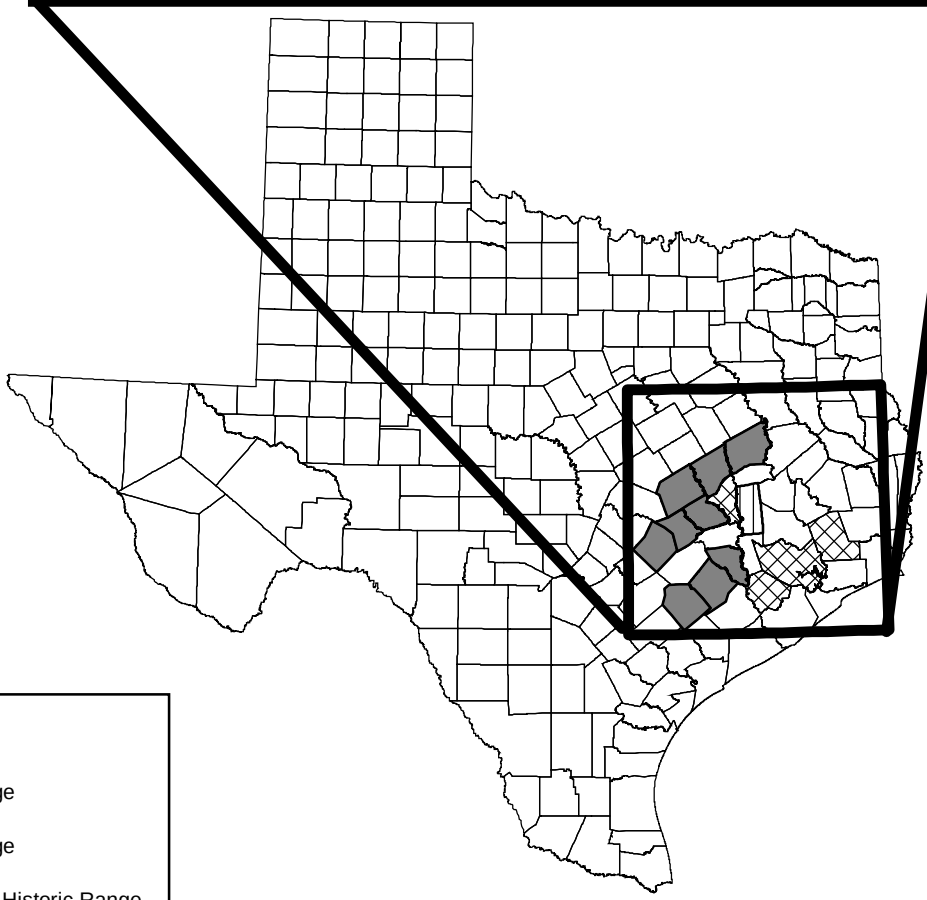
Houston toad populations occur only in Texas and typically only along two parallel bands of geologic formations. According to the Bureau of Economic Geology, one band runs through Bastrop, Lee, Burleson, Milam, Robertson, Leon, and Freestone Counties and includes the Carrizo, Queen City, Reklaw, Sparta, and Weches formations. The other band runs through Austin, Colorado, and Lavaca Counties and includes the Willis and Goliad formations. These geologic formations form various sandy soils, including loamy fine sands and fine sandy loams. Current and historic ranges are shown in Figure 4.

Surveys conducted by Yantis from 1989 to 1992 found Houston toads occurring in Bastrop, Burleson, Lee, Milam, Robertson, Leon, Lavaca, Colorado, and Austin Counties. There are also historical records from Brazos, Fort Bend, Harris, and Liberty Counties, but extensive surveys and documentation of the extent of habitat loss and degradation have confirmed the Houston toad's extirpation from Fort Bend, Harris, and Liberty Counties (Hillis et al. 1984, Yantis 1989, 1990, 1991, 1992a). There are also unconfirmed reports of Houston toads from Grimes County (Service, 2016b, pers. comm.).

Houston toads have not been found at the critical habitat site (Woodrow Lake) in Burleson County since 1983, although other populations have been found in the county (Dixon 1983, Yantis 1989, 1990, 1991, 1992a, 1992b).

Range-wide surveys conducted in 2009 indicate that Houston toads may currently be found in as few as six counties (Bastrop, Austin, Milam, Colorado, Leon, and Lee), although only two or possibly three of these counties were thought to have breeding populations.





Legend

- Current Range
- Historic Range
- Unconfirmed Historic Range

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Source:	FWS, 2016

Figure 4

Houston Toad Range Map

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Abundance

Population estimates for the Houston toad are difficult to develop because of the non-random nature of historical surveys, lack of access to private lands to conduct surveys, lack of methods to extrapolate breeding counts to the population as a whole, and the difficulty in locating the toad in times other than the breeding season (Forstner 2003, Forstner 2006, Forstner et al. 2007). Houston toad numbers in Bastrop State Park have shown an overall, long-term negative trend (Price 2003). The Lost Pines region experienced a severe drought in the 1990's, which may have greatly contributed to the decline, and the region again experienced drought conditions in 2005 and 2006. Low numbers of Houston toads observed during Bastrop County survey efforts in 2006 and 2007 indicate this species continues to decline with regard to abundance over the long-term (Forstner 2006, Forstner et al. 2007). This decline has continued to the present day despite additional intensive countywide survey efforts in 2009 and in 2012 following the BCCF (Forstner and Dixon 2011, Forstner et al. 2012). The record statewide drought of 2011, for example, resulted in the detection of 8 individuals in Bastrop County during the 2011 breeding season and no reproductive events (Forstner et al. 2012). Detections for 2012 and 2013 were increased from the 2011 surveys, but still at numbers that suggest the species continues a decline toward extinction. Additional surveys in 2014 and 2015 indicated a spike in detections for 2014, but another significant decline in 2015 (Forstner and Duvall-Jisha, 2015). Figure 5 provides a representation of the survey results from 2009 to 2015 within the Lost Pines Habitat Conservation Plan area in Bastrop County. While there is significant variation between the individual years (perhaps explained in part by climatic and landscape conditions any given year), the overall general trend is downward.

Available data indicate that the Lost Pines region in Bastrop and Lee Counties continues to support the largest known and best studied population of Houston toads (Sanders 1953; Brown 1971; Yantis 1989, 1990, 1991, 1992a; Dixon 1982; Price 1990a, 1990b, 1990c, 1992, 1993; Forstner 2002a, 2002b, 2003, 2006, Forstner et al. 2007, Forstner and Dixon 2011). The Bastrop County Houston toad population is likely historically part of a larger biologically relevant subpopulation occurring in the area bounded by the Colorado River on the south and extending well into Lee County on the north (Forstner 2003, 2006, Forstner et al. 2007). Houston toad habitat was found north of the critical habitat delineation in Bastrop County and into Lee County in 2000-2001; however, much of this habitat was cleared and converted into pasture by the end of 2001 (Forstner 2006, Forstner et al. 2007).

Past estimates of population size in Bastrop County have ranged from 300 to 2,000 (Brown 1975) based on data collected primarily at Bastrop State Park. However, the observed sex ratio is on the order of five males to one female, so the effective population size may be much smaller (Forstner 2002a, Forstner 2003, Swannack and Forstner 2004a, Forstner 2006, Forstner et al. 2007, Swannack and Forstner 2007), with possibly only two or three counties in the range thought to have effective breeding populations (Forstner et al. 2007). In 2010, survey results confirmed this assumption by identifying and collecting 21 wild egg strands from three counties (Crump et al. 2010). Eggs were collected from four locations within Bastrop County, one location in Austin County, and one location in Leon County (Crump et al. 2010).

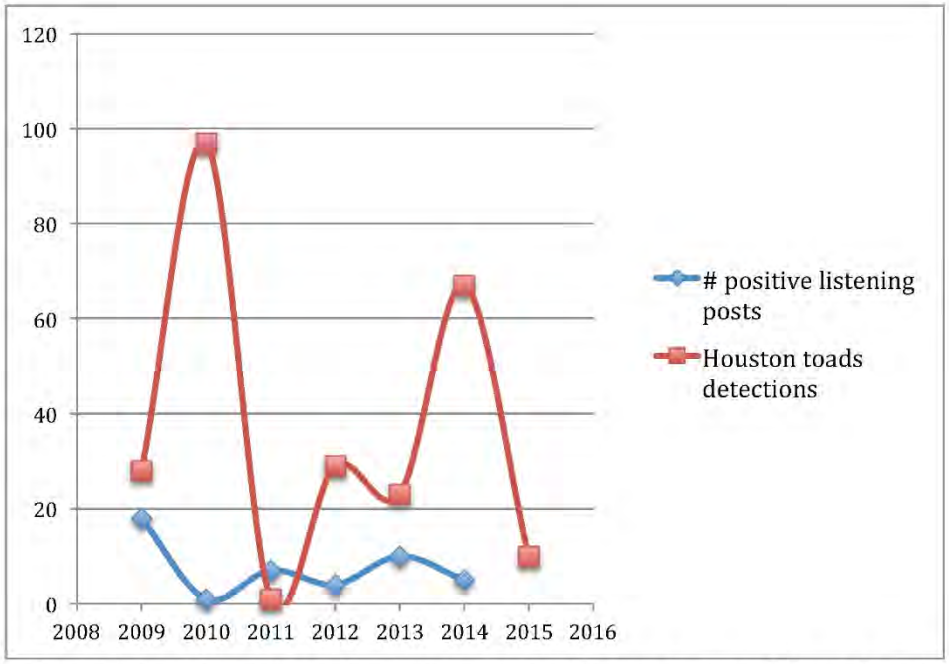

Figure 5. Annual variation in the number of positive listening posts and the total number of male Houston toads (*Bufo houstonensis*) detected for the Lost Pines Habitat Conservation Plan monitoring surveys in Bastrop County, Texas. These represent total detections and the total number of unique individuals will always be smaller, obviously excepting the single individual in 2011 (From: Forstner and Duvall-Jisha, 2015).

Habitat

Houston toads are associated with sandy soils. Based on 1997 satellite imagery (Service unpublished data), aerial photographs, U.S. Geological Survey topographic maps, and 1977 land cover maps (Texas Department of Water Resources 1978), all of the current known Houston toad populations and a historic locality in Liberty County are associated with tracts of forests dominated by pines and oaks, and other deciduous trees. Historically, localities in Harris County were characterized as coastal prairie (Brown and Thomas1982). At present, Houston toad habitat consists of rolling uplands characterized by pine and/or oak woodlands underlain by deep, sandy soils (Forstner 2003). Tree species vary from one region to the next, but typically include loblolly pine (*Pinus taeda)*, post oak (*Quercus stellate)*, blackjack oak (*Q. marilandica)*, and/or sandjack oak (*Q. incana)*. Although Houston toad occurrence does not appear to be correlated with the presence of a particular tree species, loblolly pine is dominant in the Lost Pines region of Bastrop County and occurs in other counties within the Houston toad's range. The Lost Pines is the most extensive stand of loblolly pines outside of the East Texas pine belt about 100 miles to the east, geographically separated by intervening prairie and savannah. Forests provide habitat partitioning that reduces competition with other toad species, cover to escape from predators and harsh climatic conditions, shade to prevent heating of the sandy soils, and food supplies. Forests also provide habitat continuity

needed to maintain dispersal corridors between breeding and terrestrial habitats (Laan and Verboom 1990, Rudolph and Dickson 1990, Welsh 1990, deMaynadier and Hunter 1998, Gibbs 1998, Knutson et al. 1999).

Like the loblolly pines, Houston toads are found in areas of sandy soils (no more than 20 percent clay), which form over the Sparta, Queens City, Carrizo, Willis, Weches, Reklaw, and Goliad formations (Yantis 1991, Forstner 2003). These sandy soils effectively catch rainfall, and little is lost to runoff (Soil Conservation Service 1979). The Calvert Bluff Formation, which is a mudstone with varying amounts of sandstone, lignite, and ironstone, is not known to be associated with Houston toad breeding locations. However, breeding ponds have been found on the Calvert Bluff close to the Carrizo Sand (Forstner 2003). Like most amphibians, the Houston toad and its skin are highly vulnerable to desiccation. To aid against desiccation, they become dormant during harsh weather conditions. They seek protection from the winter cold (hibernation) and summer heat and drought (aestivation) by burrowing into moist sand or hiding under rocks, leaf litter, logs, or in abandoned animal burrows (Forstner 2003).

Terrestrial juveniles are found in areas with shade and leaf litter (Greuter and Forstner 2004). The presence of water is important for the Houston toad. Rainfall may stimulate breeding (Kennedy 1962, Price 1992) and movement (Quinn et al. 1994), prevents desiccation, and provides pools of water for reproduction. Alternately, an abundance of man-made surface water, presently above the historic condition, may be contributing to reduced aggregations of chorusing males, thus negatively affecting reproduction (Gaston et al. 2010). Breeding occurs in shallow, rain-fed puddles and pools that persist long enough (about 60 to 80 days) for the eggs laid to hatch into tadpoles and metamorphose into toadlets (Hillis et al. 1984, Price 1992). Houston toads have also been documented as breeding in permanent ponds and stock tanks within suitable habitat, although stock tanks and ponds with heavily impacted margins caused by frequent cattle disturbance are not used by the toads (Forstner 2001). Shading has been known to decrease pond temperatures, prolong metamorphosis, and delay emergence (Greuter and Forstner 2004).

A study of reintroduction and survivorship in prairie habitats at the Attwater's Prairie Chicken National Wildlife Refuge (APCNWR) in Colorado County (Marsh and Forstner, 2015) (found that Houston toads can persist in prairie habitats for more than 1 year, but that highest survival and body condition were achieved in a canopied setting confirming that Houston toads are predominantly woodland species.

Life History

The life expectancy of the Houston toad is at least three years and perhaps longer (Price 1992). Captive individuals at the Houston Zoo facility are known to live to 5 years or more (Paul Crump, pers. comm.). Males reach sexual maturity at about one year, but females require one to two years to achieve reproductive maturity (Quinn 1981). In mark-recapture surveys of Houston toads in Bastrop County, observed sex ratios of males to females have been highly skewed in favor of males, ranging from 3:1 to 10:1 (Dixon et al. 1990; Forstner 2002a, 2002b, 2003; Hillis et al. 1984; Swannack and Forstner 2004a, 2007), with Swannack and Forstner hypothesizing the observed male-bias is most likely due to the difference in age at first reproduction. The Houston toad is an "explosive" breeder,

appearing in large numbers at breeding ponds where the males call to attract females over a period of a few nights throughout the breeding season (Dixon 1982). Houston toads chorus from January to June (Kennedy 1962, Hillis et al. 1984), with a peak in breeding in February and March. Large numbers of males congregate at a single location while only small numbers of individuals may appear at nearby ponds. Many locations in Bastrop County have failed to reach numbers of chorusing males likely to attract females (Forstner 2002b). Chorusing from individual ponds lasts from three to five days, and may not be synchronized with other ponds in the area. Two or three primary breeding periods separated by two to six week intervals occur at suitable ponds, and males may mate during more than one breeding episode (Hillis et al. 1984). Reported egg-laying dates in the field range from February 18 to June 26 (Kennedy 1962, Dixon 1982, Hillis et al. 1984).

Under suitable environmental conditions, pairs remain in amplexus, the copulatory embrace for toads and frogs, for six hours at minimum and eggs are laid in the early morning hours among vegetation or debris near the bank (Hillis et al. 1984). Reported clutch sizes per female vary from 512 to 6,199 eggs (Kennedy 1962, Quinn and Mengden 1984, Quinn et al. 1987). In wet years, breeding may occur wherever sufficient standing water is present. This species typically uses ephemeral rain pools for breeding, although it has been known to breed in flooded fields and permanent ponds. Often, the most reliable breeding sites for locating Houston toads are stock ponds and similar impoundments, since they are permanent water bodies. Unfortunately, permanent water bodies tend to support more predators, such as fish, turtles, bullfrogs (*Rana catesbeiana)*, aquatic invertebrates, and snakes (Forstner 2001) that prey on Houston toads. For successful breeding, water must persist for at least 60 days to allow for egg hatching, tadpole maturation, and emergence of toadlets (Hillis et al. 1984, Price 1992).

Development rates of Houston toads vary depending on temperature and other factors. Eggs may hatch within seven days and tadpoles may remain in the pond for 40 to 80 days depending on environmental conditions. Metamorphosis of tadpoles in a given pond generally occurs at approximately the same time over a period of a few hours, resulting in post-metamorphic aggregations of toadlets that remain at the edge of the pond for seven to ten days or more (Hillis et al. 1984, Dixon et al. 1990, Forstner 2002a). Hillis et al. (1984) observed large numbers of toadlets moving as far as 330 feet in daylight from their natal ponds along the same gulleys used by adult toads during the breeding season. Mortality in young is extremely high due to predation and drying of breeding sites, and less than one percent of eggs laid are believed to survive to adulthood (Quinn 1981; Price 1992; Forstner 2002a, 2002b, 2003; Greuter and Forstner 2004). The results from field surveys in 2006 found the Houston toad juvenile survival rate to be approximately 0.03 percent (Forstner 2006). Forstner (2002c) has documented instances of chorusing that did not appear to result in eggs or toadlets; therefore, successful chorusing may not mean successful breeding.

Activity

Many amphibians occupy upland sites at substantial distances from the nearest breeding pond, and members of the Anaxyrus genus are among the most terrestrial anurans. They live on land following metamorphosis and return to water only briefly during the breeding season (Christein and Taylor 1978). Houston toads may range widely throughout upland habitats (Price 1990a,1992; Dixon et al. 1990; Yantis 1994). Breeding is often followed

by aestivation, a state of dormancy, but toads are known to emerge and be active during the non-breeding season (Dodd and Cade 1998, Dixon et al. 1990, Dronen 1991, Forstner 2002a). However, because of the toad's secretive nature, little is known about its distribution and activities during this period. Dronen (1991) reported frequent captures of small (approximately 1.5 inches in body length) Houston toads in pitfall traps during the fall (September through early November) and late winter (late January and early February). Toads were generally captured when temperatures were mild (59 to 77 degrees F) and following periods of rainfall. No Houston toads were captured during colder weather conditions. Forstner (2000, 2001, 2002a) has collected Houston toads throughout the year. Adults were mainly collected between February and May, during the breeding season. However, one male toad was collected in December, which Forstner (2002a) believes is due to a warming that typically occurs in December. Juveniles were collected in all months except January and February. Dixon et al. (1990), Price (1990a), and Yantis (1994) found that during the breeding season adult Houston toads would travel over a mile, sometimes across inhospitable areas such as roads, gravel soils, and pastures. However, telemetry and pit fall trap data indicates that adult Houston toads do not move more than about 49 feet away from forested canopy cover (Swannack et al. 2004, Swannack and Forstner 2004b).

During the breeding season, adult Houston toads travel between different sites. A marked adult male traveled a minimum of 4,469 feet each way back and forth between two ponds in a two- year period. Another marked individual in the same study covered 1,592 feet within a 24-hour period (Price 1992). Price (unpublished data, 2001) has documented the same individually- marked male and female Houston toads using breeding ponds that are over one mile apart (straight-line distance) and in different watersheds. Mark-recapture studies have documented individual Houston toads traveling up to 3,900 feet to breeding ponds through areas that included gravel roads, divided highways, and pastures (Dixon et al. 1990, Price 1990a, Yantis 1994). Juvenile dispersal of 4,400 feet in a 5 week period has been documented utilizing genetic mark- recapture techniques (Vandewege et al. 2012).

Food Habits

Houston toads feed on a variety of insects and other invertebrates. Bragg (1960) reported that captive Houston toads favored many small to medium-sized carabids (ground beetles), several small beetles of unknown families, several dipteral (flies), green lacewings, and many types of small moths.

Houston toad tadpoles are known to ingest algae and pollen. Hillis et al. (1984) reported tadpoles consuming the jelly envelopes of recently hatched Houston toad eggs (none were observed eating eggs before they hatched) as well as pine pollen. Tadpoles remain on the bottom of the ponds during the day, and at night they feed on material attached to vegetation in water and along the pond's edge (Hillis et al. 1984). Once they leave the pond after metamorphosis, juvenile Houston toads presumably feed on small invertebrates found on the forest floor.

Population Dynamics

The Houston toad's population structure appears to fit the definition of a metapopulation (Soulé 1987, Marsh and Trenham 2001) because it consists of subpopulations in somewhat geographically isolated patches, interconnected through patterns of gene flow, extinction, and re- colonization (Soulé 1987, Marsh and Trenham 2001). In some areas, what were once subpopulations of larger metapopulations are now apparently isolated from each other by urbanization, heavily used roads, and agriculture. Some of these changes may be reversible, allowing currently isolated populations to become part of greater metapopulations. In other cases, the changes have been so extensive that reconnection may no longer be an option. Other populations appear to be naturally isolated by riverine basins and geologic formations, and may historically be part of separate metapopulations.

Hatfield et al.'s 2004 population viability analysis estimated that a population size (carrying capacity of the habitat) of 5,000 breeding females, a minimum of two subpopulations, and a juvenile survival rate of at least 1percent would be necessary to reduce the likelihood of extinction in 100 years. However, Hatfield et al. (2004) also indicated that if two or three separate subpopulations of Houston toads are protected (with interconnectivity among them), then a carrying capacity of as few as 1,000 female toads (at least 1 year old) would have a low probability of extinction in 100 years.

Forstner (2006) and Forstner et al. (2007) argued that Bastrop may be the only remaining sustainable subpopulation of Houston toads, since chorusing Houston toads confirmed in Lee County in 2000-2001 were not heard in 2006 and 2007 surveys. Forstner had considered the Houston toad to be extirpated in Lavaca County until finding a single male in 2011 and again in 2013, unlikely to remain at any appreciable populations in Lee County, and at very low numbers in Austin, Colorado, and Leon counties (2008). In addition, the estimated female population is thought to be well below 5,000 individuals (Forstner et al. 2007), juvenile survivorship has been estimated at less than 1 percent (Forstner et al. 2007), and there is an observed male-bias in the Houston toad population (Dixon et al. 1990; Forstner 2002a, 2002b, 2003; Hillis et al. 1984; Swannack and Forstner 2004a, 2007). In summary, the population has been on a trend toward extinction in the wild since at least the early 1990s. The BCCF may prove to be the extinction level event that Dr. Forstner proclaimed it to be in the immediate wake of the fire. In all, the numbers of adult breeding individuals in the wild are insufficient to recover the species without intervention and active management.

Reasons for Listing/Threats to Survival

Habitat loss, fragmentation, and degradation are the main threats facing the Houston toad. This includes expanding urbanization, conversion of woodlands to agricultural use, road construction, and wetland destruction or alteration. Extensive clearing of native vegetation near breeding ponds and on the uplands adjacent to these ponds reduces habitat quality, and increases the chances of predation and hybridization. Conversion of native grassland and woodland savannah to Bermuda grass (*Cynodon dactylon)* or other heavy, rhizomatous mat-forming grasses, eliminates habitat because these grasses are generally too dense for the Houston toad to move through.

Draining a wetland or converting an ephemeral wetland to a permanent pond can cause Houston toads to decline in the area around the pond or be eliminated entirely. Survival of eggs, tadpoles, and emerging juveniles may be low in permanent water bodies (Forstner 2003) because they are more likely to harbor predators such as birds, mammals, snakes, turtles, fish, aquatic invertebrates, and bullfrogs (Quinn and Ferguson 1983, p. 8-9; Dixon et al. 1990; Price 1992, p. 6; Price 1993, p. 4) and potential competitors, such as Woodhouse's and Gulf Coast toads (Hillis et al. 1984). Permanent water bodies also have an increased probability of livestock usage (Forstner 2003), which can negatively impact the quality of habitat along the shoreline of breeding ponds (Forstner 2001, Forstner 2003). Red-imported fire ants (*Solenopsis invicta)* threaten Houston toads by killing young toadlets emerging from ponds (Freed and Neitman 1988, Forstner 2002). They have also been known to drastically reduce the abundance of native insect species that serve as the Houston toad's food source.

Small, sedentary species with restricted distributions, specialized habitat niches, and narrow climatic tolerances are particularly vulnerable to extinction (Welsh 1990, deMaynadier and Hunter 1998). The distribution of the Houston toad appears to be restricted naturally as the result of specific habitat requirements for breeding and development. These natural restrictions make them particularly vulnerable to the negative effects of human-induced changes that result in habitat loss, degradation, and fragmentation. Threats include expanding urbanization, conversion of woodlands to agriculture, logging, mineral production, alteration of watershed drainages, wetland degradation or destruction, species competition and other human-induced processes that contribute to loss of suitable breeding, feeding, or sheltering habitat. In addition, their restrictive habitat requirements make them vulnerable to natural processes such as drought and climate change. Since many of the threats to the Houston toad are interdependent on one another, the following descriptions may address multiple threats.

Drought

Drought conditions can have a severe effect on the Houston toad as breeding ponds fail to fill or dry up before eggs or tadpoles can metamorphose. The low numbers of chorusing males recorded in the late 1990s compared to the numbers encountered in 1989-1990 may be the result of the mid-1990s drought (Price 2003, Forstner 2000), while a 2005-2006 drought may have led to reduced numbers of chorusing males in 2006 and 2007 (Forstner et al. 2007). In 2005-09, central Texas experienced harsh drought conditions with only a single wet year in 2007. Compared to historical droughts of the 20th and 21st centuries, the 2008-2009 Texas drought was one of the most severe droughts on record from a precipitation standpoint alone (Nielsen- Gammon and McRoberts 2009). With a brief respite from significant rains in 2010, 2011 brought an unprecedented lack of rainfall since records began being kept in 1895 (Nielsen- Gammon 2011). Both 2012 and 2013 were closer to "normal" precipitation years during the spring breeding season, but the south central portion of Texas remained in a "moderate" drought in the spring of both 2012 and 2013 (Texas Water Development Board 2013). Although Houston toads persisted through droughts in prehistoric times, habitat loss from anthropogenic impacts has reduced the number of subpopulations and total number of individuals found range- wide (Dr. Michael Forstner, pers. comm.; McHenry and Forstner 2009). This is especially important because low abundance, recruitment, and survivorship of Houston toads significantly affect their ability to rebound from factors that negatively affect their

environment (Soulé et al. 1992). Smaller populations are thus at higher risk of extirpation during episodes of drought and may not be recolonized (Blaustein et al. 1994, Forstner 2008). This is especially important as the sex ratio results from Bastrop County indicating fewer females than males exacerbate the situation (Swannack and Forstner 2007). Much of central Texas, including Bastrop County and other portions of the Houston toad's range, has been experiencing extreme drought conditions from 2008 to 2011. Drought can severely impact Houston toad breeding habitat and reduce the survivorship of juvenile toads.

Habitat Destruction and Landscape Fragmentation

Habitat conversion and fragmentation make the Houston toad more vulnerable to predation, competition, and hybridization. Removal of trees acts to exacerbate the effect of drought on a local scale by increasing heat at ground level and consequent moisture loss from the soil, making the deforested area unsuitable for Houston toads that need to burrow to escape desiccation (Forstner 2003). Excavation and impoundment of seasonal or ephemeral drainages or wetland areas creates permanent open water as opposed to ephemeral ponds and pools. Permanent water is more likely to harbor predators such as birds, mammals, snakes, turtles, fish, aquatic invertebrates, and bullfrogs (Quinn and Ferguson 1983, Dixon et al. 1990) and potential competitors such as Woodhouse's and Gulf Coast toads (Hillis et al. 1984).

Habitat disturbance also encourages the establishment and proliferation of red-imported fire ants. Fire ants are known to prey on newly-metamorphosed toadlets (Freed and Neitman 1988, Dixon et al. 1990, Forstner 2002a), as well as on the invertebrate community that is an important part of the toad's food base (Bragg 1960). Fire ants are associated with open habitats disturbed as a result of human activity (such as old fields, lawns, roadsides, ponds, and other open, sunny habitats), but are absent or rare in late succession or climax communities such as mature forest (Tschinkel 1988). Thus, maintaining large, undisturbed areas of woodlands may help control the spread of fire ants (Porter et al. 1991) and protect native ant populations (Porter et al. 1988,1991; Suarez et al. 1998).

Paved roads can prevent or hinder dispersal and effectively isolate populations of some invertebrates, small mammals (Mader 1984, Mader et al. 1990), and amphibians (Van Gelder 1973, Reh and Seitz 1990, Soulé et al. 1992, Fahrig et al. 1995, Yanes et al. 1995, Findlay and Houlahan 1997, Gibbs 1998, Vos and Chardon 1998, Knutson et al. 1999). Highways can have serious demographic consequences by increasing mortality and reducing connectivity and migration among remnant habitat patches. Surveys along a 5-mile stretch of Highway 21 adjacent to breeding ponds near Bastrop State Park during 1990 reported 67 percent mortality of Houston toads (12 of 18 individuals) observed in the right-of-way during the breeding season (Dixon 1990, Price 1990c).

Agricultural production may contribute to habitat loss by converting forests to pasture or cropland; draining, filling, or deepening of wetlands; and compacting the soil. Plowing, mowing, applying herbicides, pesticides, and fertilizers, and disturbing aestivating toads can result in direct toad mortalities (Knutson et al. 1999, Little et al. 2002). Habitat conversion to cropland or pasture also encourages the establishment of fire ants. Livestock and hay production are common land uses throughout much of the Houston

toad's range (Yantis 1989, 1991). Dense sod-forming grasses, such as Bermuda grass can inhibit the Houston toad's mobility (Yantis 1989). Although Houston toads may migrate across cleared areas (Dixon et. al. 1990), they are rarely found far from a forested edge (Swannack and Forstner 2004b). Livestock grazing is a common use of woodlands within the range of the Houston toad. Livestock can trample egg clutches, larvae, toadlets, and wetland vegetation in and around breeding pools, and juveniles, adult toads, and vegetation may be crushed by livestock (Dr. Forstner pers. com.). Forstner (2001) reported a dramatic return of wetland vegetation and an increase in Houston toad breeding success with the removal of cattle.

As conversion of forested areas to pastureland continues to occur and more grazing operations are established, landowners are becoming more dependent on permanent water sources. Often times these water sources are created stock ponds. Although the Houston toads utilize permanent water bodies as breeding locations, numerous ponds on the landscape can affect the density of small populations. Smaller or less dense breeding aggregations may attract fewer females, thereby reducing mating probability for males attending smaller choruses, and may have subsequent negative population impacts (Gaston et. al. 2010).

Competition and Hybridization

Competitors of the Houston toad include Woodhouse's toad and the Gulf Coast toad. All three species are found in areas of deep, sandy soils. Breeding activity in the Gulf Coast toad has been observed after the peak in Houston toad breeding activity (Swannack et al. 2004). This temporal difference in breeding activity likely reduces competition between the two species. While the Woodhouse's toad has a breeding season that is similar to the Houston toad, the Woodhouse's toad is found more often in open areas. Hybridization with these species has been documented (Hillis et al. 1984). Most hybrids have been found where the habitat of the Houston toad has been altered from woodlands to pasture or suburban development, allowing invasion by the other species (Hillis et al. 1984; Yantis 1991; Forstner 2002a, 2003). Based on a 2012 county-wide survey following the BCCF in September of 2011, post-fire occurrences of Gulf Coast toads in the catastrophically burned area increased significantly as these animals rapidly colonized previously unoccupied areas in the burn zone (Dr. Forstner, pers. comm.).

Wildfire and Fire Suppression

Frequent and/or severe forest fires may be detrimental to the Houston toad, particularly for small, fragmented populations. Fire suppression is of primary concern, particularly in the wake of the 2011 catastrophic BCCF, but this issue has been regarded as significant at least as early as the recovery plan (Service 1984). On the other hand, periodic controlled burns may be necessary to reduce fuel loads, prevent catastrophic fires, and improve habitat conditions beneath the forest canopy (Yantis 1989, Price 1993). Although necessary to determine the short and long-range effects of various fire regimes, little research has addressed the effects of fire on amphibians (deMaynadier and Hunter 1995). Direct mortality to the Houston toad resulting from wildfires is thought to be low, as amphibians have been shown to survive fire by moving under the soil or seeking refuge within the burrows of other animals (Russell et al. 1999). Short term juvenile amphibian capture and body condition changes post-fire have been recently examined (Brown et al.

2011) and results indicate that fire does not appear to negatively impact short term terrestrial juvenile amphibian survivorship or health. The most considerable effects to the Houston toad from catastrophic wildfire are the adverse changes to its habitat. The loss of understory vegetation, surface debris (leaf litter and logs), and canopy cover can lead to increased exposure to temperature extremes and predation, loss of habitat availability, and reduced dispersal and foraging capabilities. Soil erosion, which is a typical occurrence following wildfires (Kocher et al. 2009, p. 3), can affect Houston toad breeding habitat by decreasing water quality in ponds.

Pesticide, Fertilizer, and Contaminant Impacts

Because of their semi-permeable skin, development of their eggs and larvae in water, and their position in the food web, amphibians are vulnerable to waterborne and airborne pollutants, such as heavy metals, certain insecticides (particularly cyclodienes, such as endosulfan, endrin, toxaphene, and dieldrin), nitrites, salts, certain organophosphates (such as parathion and malathion), and petroleum hydrocarbons (Harfenist et al. 1989, Little et al. 2002). Pesticides can also change the quality and quantity of amphibian food and habitat (Bishop and Pettit 1992). No progress has been made to evaluate the effects of pesticides or herbicides specifically on the Houston toad (Forstner and Dixon 2011).

Mineral Production Impacts

Oil and gas fields occur throughout much of the Houston toad's range. The installation of oil and gas wells, roadways, staging areas, pipelines, and the subsequent maintenance of these facilities can result in toad mortality, habitat loss, and fragmentation. Trenching or construction in areas inhabited by aestivating toads and trapping toads in open trenches or pits can result in toad mortality and reproduction can be disrupted by destroying breeding sites. In addition to oil and gas production, mining operations (including lignite, gravel, and sand) can also result in severe, if not total, habitat loss in areas occupied by the Houston toad. Direct mortality of Houston toads and complete destruction of their habitat may occur in the mine area. In addition, Dixon (1982) identified possible indirect impacts from lignite mining: dewatering may draw down surface waters and dry out the subsurface moisture, which may reduce the carrying capacity of permanent surface ponds and/or ephemeral pools; and leaching of sulphur and weak carbonic acids from the mine may produce poor water quality downstream in areas used by the Houston toad.

Recovery Efforts

Relatively consistent rangewide survey and monitoring efforts for the Houston toad have been ongoing continuously with the current group of researchers since the late 1990s with a focus on the largest remaining population in Bastrop County. A robust research effort has led to numerous contributions on the species' genetics (McHenry & Forstner 2009), habitat modeling (Buzo 2008), ecological monitoring (Swannack et al. 2009), abundance estimates (Duarte et al. 2011), response to prescribed fire (Brown et al 2011), response to red imported fire ants (Brown et al, 2012), etc. In accord with the draft revised Houston Toad Recovery Plan (unpublished data), the Houston Toad Recovery Team has identified four "focus areas" to concentrate on-the- ground recovery actions for the Houston toad. The geographic extent of these areas is based on habitat suitability models completed for

each county within the Houston toad's range utilizing variables of cover, soils, and distance to water (Buzo 2008).

A portion of the excerpted document that is relevant only to the previous (US 290) project has been omitted here.

A Houston toad headstarting program was initiated in 2007 by Texas State University, Houston Zoo, Service, and Texas Parks and Wildlife Department (TPWD). The first Breeding and Transfer Plan for the Houston toad has been finalized (Crump and Schad 2012). These actions culminated in the Service, in cooperation with the Houston Zoo, Texas State University, TPWD, and other partners, completing in 2013, the first rounds of captive breeding and re-introductions, continuing headstarting of wild egg strands, and identifying a new location of the Houston toad. Captive breeding and release of Houston toads is not a novel action as the Houston Zoo had a captive breeding program dating back to the 1980s. However, funding and monitoring issues plagued that effort. The Zoo undertook the current attempts of captive breeding in 2012 and information on captive breeding has been updated and revised in each subsequent attempt, leading up to the successes of the spring 2013 captive breeding which resulted in approximately 36k eggs being released into the wild in Bastrop County. Additionally, the Service and partners have been focused on identifying private landowners to enlist in habitat restoration and recovery actions, including releases. Those efforts are rangewide and currently gaining momentum through a number of landowner outreach events, educator education, and the efforts of the Houston Zoo's media relations. A number of section 7 actions in the last 2 years have also added to our understanding of the species and promoted recovery.

Environmental Baseline

Under section 7(a)(2) of the Act, when considering the effects of the proposed action on federally listed species, the Service is required to take into consideration the environmental baseline. The environmental baseline includes past and present impacts of all Federal, State, or private actions and other activities in the action area (50 CFR 402.02), including Federal actions in the area that have already undergone section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in progress.

The reasons for the decline of the Houston toad throughout its range have been speculated on since the recognition that numbers were dwindling almost immediately after its discovery in the late 1940's and description by Sanders in 1953. Dr. Lauren Brown advocated for saving the Houston toad in the mid-1970's as it disappeared from Harris County (Brown 1975) and following its listing in 1970 under the Endangered Species Conservation Act of 1969 (35 FR 16047). Dr. Andy Price and Jim Yantis with TPWD studied the species and reported on its' extirpation from Liberty, Fort Bend and Harris counties in the 1990's. Dr. James Dixon (Professor Emeritus, Texas A&M University) and the current generation of Houston toad researchers, led by Dr. Michael Forstner of Texas State University, have documented the species' trajectory toward extinction and are largely responsible for the findings that have driven the most recent efforts at managing recovery of the species.

Habitat loss through destruction, fragmentation, and fire suppression and including conversion to agriculture and subsequent urbanization are primary threats to the species' continued existence. Predation, including direct and indirect effects of invasive species (e.g., red-imported fire ants), inter-specific competition, effects from herbicides and pesticides, disease (e.g. Chytrid fungus), and effects from drought are additional significant threats to the species. Despite these threats, the species is thought to be recoverable. Recent headstarting and captive propagation efforts make this plausible so long as sufficient habitat can be identified, restored, maintained, and conserved to provide for multiple sustainable populations across the range.

Status of the species within the action area

The status of the species in the nine county range is better understood today that in past decades due to the broader consistent survey efforts since 2000. However, their numbers do not give reason for optimism. Surveys in 2011 documented a total of 12 chorusing males rangewide. The drought of 2011 was the 1-year drought of record for the State of Texas (Nielsen-Gammon 2011) and part of a longer drought cycle that has been affecting Texas since 2005. Compounding the drought, the wildfire in BCCF in September 2011 burned, largely catastrophically, approximately 40 percent of the remaining habitat in that population (Brown et al. 2012). Dr. Forstner, a principle investigator of the Houston toad over the last decade or more, has described the BCCF as an extinction-level event for the Houston toad (pers. comm.). An intense countywide survey in 2012 accompanying the human recovery efforts demonstrated that the species weathered the drought and fire, even appearing and breeding in areas that had been catastrophically burned the prior summer/fall (Forstner et. al 2012).

4.2 PRESENCE IN THE PROJECT AREA

Dr. Michael Forstner of Texas State University has reported the occurrence of Houston toads in the general vicinity of the proposed project (Forstner 2016).

4.3 EFFECTS OF THE PROJECT

Direct impacts to Houston toad habitat will be limited to habitat loss within the 50-by-11,960-foot of new ROW (13.73 acres). Ultimately, after completion of construction, only the area of the 24-by-11,960-foot road surface (6.59 acres) will permanently modify Houston toad habitat. Several new crossings (culvert or bridge) of ephemeral and intermittent streams may slightly effect dispersal habitat for juvenile toads. The remainder of the area within the ROW will experience temporal loss of habitat functions during construction and for a number of years during vegetation reestablishment. The ROW beyond the paved road surface will be planted with native herbaceous vegetation after construction.

The construction schedule is expected to be 6-9 months in duration with work during daylight hours only, 5 days per week. Noise effects from construction equipment would be expected during this time and would be expected to extend beyond the project ROW for some distance.

The new roadway is intended to supplement currently limited ingress/egress during flooding, fires, or other emergency situations for existing residential properties. The new roadway will traverse one currently undeveloped parcel. While the new roadway through this parcel may facilitate and serve future development of this parcel, development on this parcel could occur independent of the roadway. Additionally, subdivision of this parcel would also be subject to potentially lengthy and expensive procedures requiring compliance with the County subdivision process and participation of the Bastrop County HCP for the Houston Toad. Because of this, no significant secondary or indirect effects on the toad or its habitat are expected related to the roadway. The new roadway may slightly increase the likelihood of toad mortalities from automobile encounters. However, since the road extension will only provide an alternate route of ingress/egress for local residents, no increase in overall traffic volume in the area is expected.

The increased activity related to construction could be expected to harass any Houston toads occurring within the action area by limiting access to available habitat and disrupting migration and/or seasonal movements between breeding ponds and non-breeding habitat. Noise effects on Houston toads have not been documented and a prediction of the temporary adverse effects resulting from construction noise cannot be predicted. Additionally, Houston toads may be indirectly affected by removal of construction BMPs after construction is complete and by normal maintenance of the ROW. Maintenance of the ROW following construction would be limited to occasional mowing immediately adjacent to the roadway pavement for fire and traffic safety.

4.4 CONSERVATION MEASURES

4.4.1 Minimization and Avoidance

The effects associated with land clearing and highway construction activities could directly alter the Houston toad population and distribution within the action area, but would not affect the overall population size, viability, or distribution outside of the action area. The project has been designed to minimize impacts to the Houston toad and effects would only occur within the project work zone. Bastrop County would attempt to avoid altering the Houston toad's lifecycle by phasing work outside of the Houston toad breeding season if possible and by implementing protective measures, such as the installation of barrier silt fencing, to prevent Houston toads from entering the work zone.

Work on the roadway is proposed to begin in the late summer of 2017 and be substantially completed by the end of 2017, which reduces impact by conducting the construction outside the toad's primary breeding season of January 1 through April 1. However, some breeding activity may occur as late as June. As additional measures to avoid and minimize impacts to the Houston toad, Bastrop County agrees to implement the following measures regardless of season:

- Prior to commencement of work on the project Bastrop County will have an appropriately permitted biologist provide an introductory training course (i.e., awareness training) on Houston toad life cycle and habitat requirements for all

personnel work crews, their supervisors, and involved County employees. All new personnel will receive such awareness training prior to conducting or becoming involved in any work activities for this project. Instructions specific to the contractor(s) related to implementation of the Conservation Measures and Reasonable and Prudent Measures must be provided to the contractor(s) and documented in writing.

- Construction sequencing will be as follows:
  a. Biological Monitor will initially inspect the ROW for Houston toads.
  b. When determined clear of Houston toads by the Biological Monitor, the Contractor can hand clear the edges of the ROW for installation of Houston toad barrier fencing (silt fence) and install the fencing along all borders with small gaps at each end for ingress and egress.
  c. The fencing shall be trenched into the ground.
  d. When barrier fencing has been installed, and after the Biological Monitor has conducted another inspection of the ROW for Houston Toads, the Contractor may begin site clearing, grading, and construction of facilities.
  e. The barrier fencing shall be inspected daily. Any damage to the barrier fencing, including holes, tears, or knock-down shall be promptly repaired by Contractor.
  f. When construction of the project and final grading has been completed, Contractor shall remove the barrier fencing, except that which needed to remain intact for SW3P compliance, and smooth the disturbed ground for seeding. Seeding with Bastrop Restoration Seed Mix (Turner Seed Company) shall occur per specifications (see Attachment A).
- A 2" accumulation of rain occurring within the project area (as recorded by NOAA weather rainfall total accumulation mapping) during a 48 hour period results in a 24 hour stand-down of the project.
- Any mulch, chips, or other woody debris from operations left on site must not exceed a surface depth of 2-inches.
- The entry and exit points for heavy equipment moving in and out of the ROW work zone is limited to the two ends.
- The contractor will be prevented from using any offsite staging or materials storage areas that are not already established construction yards.
- All staging of equipment or refueling will be contained in the ROW for the project.
- 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.
- Following construction activities, HUD and Bastrop County will ensure that equipment used on undisturbed ground will not create potential artificial breeding sites. For example, large tire ruts will be smoothed so as not to create any undesirable breeding ponds along the project work area.

Biological Monitoring:

1. For work conducted from April 1st through December 31st, work can proceed without full-time biological monitoring with the following exceptions:

- A biological monitor will be retained by the County to respond on as-needed basis. The biological monitor's information will be shared with the Service prior to commencement of construction.
- An encounter with a Houston toad at the jobsite during this project requires that work must cease immediately, and/or not begin until the biological monitor has been notified and the toad(s) safely removed by a qualified and permitted biologist. In addition, the U.S. Fish and Wildlife Service's Texas Coastal Ecological Services Field Office should also be contacted immediately at (281)286-8282.

2. If work begins or extends between December 31st and April 1st, all of the following conditions apply.

- Bastrop County will provide Houston toad monitors (qualified biologists) who are permitted in identifying, locating, handling, removing and transporting Houston toads. Monitors will search the work site daily before work begins. The biological monitor(s) will have authority to stop work immediately if a Houston toad is encountered within the construction zone. Once the Houston toad has been safely removed by a qualified and permitted biologist, work may resume.
- Toad emergence and breeding is triggered, in part, by rainfall and warm nighttime temperatures in the late winter and early spring. Bastrop County will communicate regularly with Dr. Michael Forstner at Texas State University to keep informed about regional toad habitat monitoring in the event toad emergence occurs and breeding is assumed to be underway across the range of the Houston toad.

4.4.2 Mitigation

The actual incidental take of the individual toad would be difficult to monitor given the unpredictable nature of the Houston toad while in non-breeding, upland habitat; therefore, Bastrop County proposes to estimate the amount of take by the amount of toad habitat permanently and temporarily impacted by the project (13.73 acres). Bastrop County will purchase the appropriate amount of credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

Bastrop County will purchase 13.73 acre credits from an approved Conservation Bank for Houston toads to minimize the loss of Houston toad habitat.

5.0 CUMMULATIVE IMPACTS

Bastrop County is rapidly developing due to significant population increases in Central Texas as a whole. However, due to the relatively small area affected by the project and its intended purpose of ensuring emergency ingress/egress to existing development in Tahitian Village and Colovista, impact beyond the initial construction is anticipated to be negligible. The area of the proposed roadway impacts does not include any breeding habitat; so, given the proposed avoidance and minimization measures proposed in Section 4.4, and proposed mitigation for permanent and temporary impacts, any cumulative impacts would be *de minimus*.

6.0 DETERMINATION OF EFFECT

6.1 CRITICAL HABITAT

The proposed Tahitian Village Ingress/Egress project will permanently alter 6.59 acres of critical habitat for the paved travel lanes. Temporary disturbance within the ROW will impact an additional 7.14 acre for a maximum total disturbance of 13.73 acres of critical habitat, which does not include any aquatic features for breeding, but does include several crossings of ephemeral or intermittent streams that are potential dispersal corridors for toads. Of the total 98,000 acres of designated critical habitat in Bastrop County, the proposed project will adversely affect less than 0.002%. The project is not likely to appreciably diminish the value of designated critical habitat for both survival and recovery of the Houston toad with the implemented avoidance, minimization, and mitigation measures.

6.2 SPECIES

The proposed project may affect, and is likely to adversely affect the Houston toad. However, considering the minimal quality and quantity of habitat to be impacted, in addition to the proposed avoidance, minimization, and compensation measures, it is expected that the overall effects to the Houston toad will be minimal and will be fully mitigated. This action is not expected to jeopardize the continued existence of the species.

6.3 MITIGATION POLICY

On November 3, 2015, the Office of the President issued an Executive Memorandum to the Departments of Defense, Interior, and Agriculture; the Environmental Protection Agency, and the National Oceanic and Atmospheric Administration, and all bureaus and agencies within them (agencies) establishing a policy to avoid, and then minimize harmful effects to land, water, wildlife, and other ecological resources (natural resources) caused by land- or water-disturbing activities, and to ensure that any remaining harmful effects are effectively addressed, consistent with existing mission and legal authorities. The agencies' mitigation policies should establish a net benefit goal or, at a minimum, a no net loss goal for natural resources the agencies manage that are important, scarce, or sensitive, or wherever doing so is consistent with the agency mission and established natural resource objectives.

This project conforms to the Executive directive by providing avoidance and minimization measures to the extent practicable, then fully mitigating the unavoidable permanent impacts to the species.

7.0 REFERENCES

Forstner, Michael. Associate Professor, Department of Biology, Texas State University San Marcos. Personal communication at project meeting, Bastrop County offices, Bastrop, Texas. 24 March 2016.

Forstner, Michael R. J. and John Duvall-Jisha. Houston Toad 2015 Chorusing Survey: Final Report for Bastrop County and the Lost Pines Habitat Conservation Plan. November 11, 2015.

Marsh, Madeleine and Michael R.J. Forstner. Houston Toad Juvenile Survivorship 2015 Preliminary Report. Prepared for Attwater's Prairie Chicken National Wildlife Refuge and U.S. Fish and Wildlife Service. July 29, 2015.

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(Service) Fish and Wildlife Service, US Department of the Interior. 2017. IPac Official Species List: Tahitian Village Ingress-Egress, Bastrop County, Texas, <https://ecos.fws./ipac. 19 January 2017.

_____. 2016. Revised biological opinion on proposed rehabilitation of US Highway 290 in Bastrop County, Texas. Consultation No. 02ETAU00-2006-F-0126-R. Prepared for Federal Highway Administration, Texas Division Office. Division of Ecological Services, Austin, Texas. 2015.

_____. Final Critical Habitat for the Houston toad (*Bufo houstonensis*). Vector digital data downloaded 11 March 2016 from <http://ecos.fws.gov/ecp/report/table/critical-habitat.html>. Published 2003.

ATTACHMENT A

NATIVE GRASSLAND RESTORATION SPECIFICATIONS

Native Grassland Restoration

Description

This item shall govern the preparation of a seeding and planting area to the lines and grades indicated on the Drawings. This may include seedbed preparation, sowing of seeds, watering, hydromulch, compost and other management practices, as indicated in the Drawings or as directed by the Engineer or designated representative.

Submittals

The submittal requirements for this specification item shall include:

A. Identification of the species, source, mixture and rate of application of the seeding.

B. Type of mulch or compost.

C. Watering frequency and amount.

Materials

A. The seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within twelve months of the time of delivery to the project. Each variety of seed shall be furnished and delivered in separate bags or containers. A sample of each variety of seed shall be furnished for analysis and testing when directed by the Engineer or designated representative.

The amount of seed planted per 1000 square feet shall be of the type specified below.

B. Water shall be clean and free of industrial wastes and other substances harmful to the growth of grass in the area irrigated.

Construction Methods

A. General.

The Contractor shall limit preparation to areas that will be immediately seeded.

B. Seed Bed Preparation.

In areas with soil disturbance, an even seedbed shall be prepared with limited irregularities, lumps or soil clods and the surface shall be raked to facilitate seed to soil contact.

C. Watering.

Seeded areas shall immediately be watered as needed and in the manner and quantity as directed by the Engineer or designated representative.

Watering applications shall insure that the seedbed is maintained in a moist condition favorable for the growth of grass. Watering shall continue until minimum coverage is achieved and accepted by the Engineer or designated representative. Watering may be postponed immediately after a 1/2 inch or greater rainfall on the site but shall be resumed before the soil dries out.

Native Grassland Seeding and Planting

Seeding and planting shall be performed in accordance with the requirements hereinafter described. The optimum depth for seeding shall be from 1/16 inch to 1/8 inch. Seed shall be applied by a method that achieves consistent distribution and proper seed to soil contact (i.e. hand broadcasting, hydromulch, or drill method). Mulching is not required.

The seed mix shall be applied at a rate of 20 lbs/ac (0.46 lb/1000 sq ft) as follows:

Native Little Bluestem	9.6 lbs/ac	(0.22 lb/1000 sq ft)
Cheyenne Indiangrass	2.0 lbs/ac	(0.05 lb/1000 sq ft)
Purpletop	1.6 lbs/ac	(0.04 lb/1000 sq ft)
Blackwell Switchgrass	0.8 lb/ac	(0.02 lb/1000 sq ft)
Van Horn Green Sprangletop	1.4 lbs/ac	(0.03 lb/1000 sq ft)
Illinois Bundleflower	2.8 lbs/ac	(0.06 lb/1000 sq ft)
Maximillian Aztec Sunflower	0.4 lb/ac	(0.01 lb/1000 sq ft)
Comanche Partridge Pea	1.4 lbs/ac	(0.03 lb/1000 sq ft)

The seed mix may be obtained from Turner Seed Company (800)722-8616 or similar seed supply company.

Success Criteria

A minimum of 65 percent coverage with no bare areas exceeding 32 square feet and a 1.5-inch tall stand of grass. Excessive bare areas shall be re-prepared and reseeded as required by the Engineer or designated representative in order to develop an acceptable stand of grass.

ATTACHMENT B

ALTERNATIVES COST ESTIMATES

RPS klotz associates

ATTACHMENT B
BASTROP COUNTY, TEXAS
INGRESS/EGRESS ROAD
COST PER LINEAR FOOT

ROUTE	LENGTH OF ROADWAY (LF)	TOTAL CONSTRUCTION COST	COST / LF
PREFERRED ROUTE	17,100	$3,115,187.00	$182
ALTERNATE 1	15,550	$4,236,575.00	$272
ALTERNATE 2	28,200	$3,695,200.00	$131
ALTERNATE 3	11,700	$1,940,145.00	$166

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Executive Director

October 19, 2017

The Honorable Paul Pape
Judge of Bastrop County Court
804 Pecan Street
Bastrop, TX 78062

RE: Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain for Tahitian Village Bastrop County, Community Development Block Grant Disaster Recovery Project; Bastrop, Bastrop County, Texas

Dear Judge Pape:

Texas Parks and Wildlife Department (TPWD) received the request for review of the proposed project referenced above for rare, threatened and endangered species.

Project Description

Future Link Technologies, Inc., on behalf of Bastrop County, has submitted an Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain. Bastrop County (the County) proposes street improvements within the Tahitian Village Subdivision. These improvements entail a new roadway approximately 24-feet in width, including 4-inch lime treated subgrade, 8-inch of flex base, a two course surface treatment, and site work associated with construction. The project area consists of Riverside Drive from Tahitian Village Drive to South Highway 71 (approximately 17,100-linear feet, approximately 11,960-linear feet of new road).

The submitted notice includes reference to approximately 1.62-acres of wetlands and approximately 844-linear feet of ephemeral and perennial streams (Waters of the United States) potentially being impacted by the project.

TPWD, as the state agency with primary responsibility for protecting the state's fish and wildlife resources and in accordance with the authority granted by Parks and Wildlife Code §12.0011, hereby provides the following recommendations to minimize the adverse impacts to the state's fish and wildlife resources in the construction and operation of the proposed project. Please reference TPWD 38584 in any return correspondence on this project.

General Construction Recommendations

Recommendation: TPWD recommends the judicious use and placement of sediment control fence to exclude wildlife from the construction area. In many cases, sediment control fence placement for the purposes of controlling erosion and protecting water quality can be modified minimally to also provide the benefit of excluding wildlife access to construction areas. The exclusion fence should be

buried at least six inches and be at least 24 inches high. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated. Construction personnel should be encouraged to examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities.

Recommendation: Where trenching or other excavation is involved in construction TPWD recommends that contractors keep trenching/excavation and backfilling crews close together to minimize the amount of trenches/excavation areas left open at any given time during construction. TPWD recommends that any open trenches or excavation areas be covered overnight and/or inspected every morning to ensure no toads or other wildlife species have been trapped. Trenches left open for more than two daylight hours should be inspected for the presence of trapped toads, and other wildlife, prior to backfilling. If trenches/excavation areas cannot be backfilled the day of initial excavation, then escape ramps should be installed at least every 90 meters. Escape ramps can be short lateral trenches or wooden planks sloping to the surface at an angle less than 45 degrees (1:1).

Recommendation: For soil stabilization and/or revegetation of disturbed areas within the proposed project area, TPWD recommends erosion and seed/mulch stabilization materials that avoid entanglement hazards to snakes and other wildlife species. Because the mesh found in many erosion control blankets or mats pose an entanglement hazard to wildlife TPWD recommends the use of no-till drilling, hydromulching and/or hydroseeding rather than erosion control blankets or mats due to a reduced risk to wildlife. If erosion control blankets or mats will be used, the product should contain no netting or contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic mesh matting should be avoided.

Federal Laws

Migratory Bird Treaty Act (MBTA)

The 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 U.S. Fish and Wildlife Service (USFWS) Migratory Bird Office can be contacted at (505) 248-7882 for information on potential impacts to migratory birds.

Recommendation: TPWD recommends any vegetation clearing be scheduled outside of the general bird nesting season of March 15th to September 15th; however, if clearing must occur during nesting season, nest surveys should be conducted prior to clearing. If nests are observed during surveys, a vegetation buffer area of no less than 25-feet in diameter should remain around the nest until all young have fledged.

Endangered Species Act (ESA)

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 jurisdiction or for which a federal nexus (i.e., permits or funding) exists. Take of a federally-listed species or its habitat without allowance from USFWS is a violation of the ESA.

The project review request indicated that the County seeks documented clearance and consultation regarding the Endangered Species Act of 1973. Please note that while TPWD makes recommendations for minimizing potential impacts to federally-listed species, which are also listed at the state level, TPWD is not the lead authority regarding federally-listed species and TPWD does not make effects determinations pursuant to the ESA. It is the responsibility of the project sponsor to coordinate with the USFWS under Section 7 or 10 of the ESA when a project is likely to have impacts to federally-listed species.

> **Recommendation:** The USFWS should be contacted for species occurrence data, guidance, permitting, survey protocols, and mitigation for federally listed species. For the USFWS rare species lists by county please visit the USFWS Information for Planning and Consultation (IPaC) webpage.

TPWD provides online access to federally-listed species information through the TPWD Rare, Threatened, and Endangered Species of Texas (RTEST) application. This application provides county-level information regarding occurrence of protected species (federal- or state-listed threatened or endangered) species and may be utilized to inform development project planning. Additionally, records of occurrence for these protected species are tracked within the Texas Natural Diversity Database (TXNDD) and are publicly available by request.

Based upon review of the RTEST and TXNDD resources, the federally- and state-listed endangered Houston toad (*Anaxyrus houstonensis*) has been recorded within the vicinity of the project, and that suitable habitat could be present within the site. The project area occurs within USFWS designated Critical Habitat for the Houston toad. Please note that the Houston toad is a year-round resident where found and its presence is most easily detected during the breeding season when males may be heard calling. Plants that are often present in Houston toad habitat include loblolly pine (*Pinus taeda*), post oak (*Quercus stellate*), bluejack or sand jack oak (*Q. incana*), yaupon (*Ilex vomitoria*), and little bluestem (*Schizachyrium scoparium*), species which appear to be present within the project site. Houston toads utilize both permanent and ephemeral water sources.

> **Recommendation:** TPWD is not confident that the Houston toad can be excluded from consideration, based on project documents and publicly-available data. TPWD recommends avoiding disturbance to woodland savannahs located within areas of deep, sandy soils. If disturbance is anticipated, TPWD recommends a

qualified biologist conduct pre-construction surveys for Houston toad following USFWS survey protocols. TPWD recommends that if Houston toad or their habitat would be impacted by the proposed project, the County should coordinate with the USFWS directly, to determine avoidance, minimization, and mitigation strategies pursuant to the ESA. The USFWS should be contacted for additional species occurrence data, guidance, permitting, survey protocols, and mitigation for federally-listed species. Please note that while TPWD makes recommendations for minimizing potential impacts to federally-listed species, which are also listed at the state level, TPWD is not the lead authority regarding federally-listed species and TPWD does not make effects determinations pursuant to the ESA. It is the responsibility of the project sponsor to coordinate with the USFWS under Section 7 or 10 of the ESA when a project is likely to have impacts to federally-listed species.

Recommendation: Houston toads, especially the juvenile toadlets, are suspected to utilize non-preferred habitats during dispersal; thus, this species may be encountered in a habitat not considered typical for Houston toad. As identification of Houston toad can be difficult, TPWD recommends that contractors should avoid impacts to all toads and any toad observed in the work area should be allowed to safely leave the premises.

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 U.S., including wetlands. The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency are responsible for making jurisdictional determinations and regulating wetlands and other waters under Section 404 of the CWA.

Wetland mitigation is out-of-kind and insufficient to compensate for impacts to stream functions. For unavoidable stream impacts, stream compensation is required under 33 CFR §332.3(e)(3); item 11.B.2. in Compensatory Mitigation for Losses of Aquatic Resources (73 Federal Register 19596, April 10, 2008); and the Galveston District Stream Condition Assessment Standard Operating Procedure for Compensatory Stream Mitigation.

Recommendation: TPWD recommends consulting with the USACE for potential impacts to waters of the U.S. including jurisdictional determinations, delineations, and mitigation.

Recommendation: TPWD recommends mitigation for all impacts to aquatic resources. The wetland and stream mitigation plan should be developed in consultation with TPWD. The applicant should coordinate with Tom Heger at (512) 389-4583 or Tom.Heger@tpwd.texas.gov regarding aquatic habitat impacts and mitigation.

State Laws

Aquatic Resources

TPW Code Section 1.011 grants TPWD authority to regulate and conserve aquatic animal life of public waters. Title 31, Chapter 57, Subchapter B, Section 57.157 of Texas Administrative Code (TAC) regulates take of mussels which are **not limited to state-listed mussels.** Section 12.301 of TPW Code identifies liability for wildlife taken in violation of TPW Code or a regulation adopted under TPW Code.

Under TPW Code Section 12.015, 12.019, 66.015 and TAC 52.101-52.105, 52.202, and 57.251-57.259, TPWD regulates the introduction and stocking of fish, shellfish, and aquatic plants into public waters of the state. *The Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters* allows for movement (i.e., introduction, stocking, transplant, relocation) of aquatic species in waters of the state. Movement of aquatic species, even within the same river or estuary, has potential natural resources risk (e.g., exotics, timing for successful survival); therefore, a permit is required to minimize that risk.

Dewatering or other construction activities can trample, dredge or fill areas exhibiting stationary aquatic resources such as plants and mussels. To avoid or reduce impacts if dewatering or other construction activities are proposed in aquatic habitat, TPWD recommends relocating aquatic life, including, but not limited to, fish, turtles, and mussels, to an area of suitable habitat outside the project footprint. Relocation activities are done under the authority of a TPWD *Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters.*

Recommendation: Aquatic Resource Relocation Plans (ARRPs) are used to plan resource handling activities and assist in the permitting process. If construction occurs during times when water is present in streams and dewatering activities or other harmful construction activities are involved (such as placement of temporary or permanent fills), then TPWD recommends relocating potentially impacted native aquatic resources in conjunction with a Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters and an ARRP. The ARRP should be completed and approved by the department 30 days prior to activity within project waters and/or resource relocation and submitted with an application for a no-cost *Permit to Introduce Fish, Shellfish, or Aquatic Plants into Public Waters*. Please contact Travis Tidwell at (512) 389-8612 or Travis.Tidwell@tpwd.texas.gov regarding submittal of ARRPs.

Recommendation: All waterways and associated floodplains, riparian corridors, and wetlands, regardless of their jurisdictional status, provide valuable wildlife habitat and should be protected to the maximum extent possible. If dewatering activities and other project-related activities cause mortality to fish and wildlife species, then the responsible party would be subject to investigation by the TPWD Kills and Spills Team (KAST) and will be liable for the value of the lost resources under the authority of TPW Code Sections 12.001 1 (b) (1) and 12.301.

State-Listed Species

Section 68.015 of the Parks and Wildlife Code regulates state-listed species. Please note that there is no provision for capture, trap, take, or kill (incidental or otherwise) of state-listed species. The TPWD Guidelines for Protection of State-Listed Species includes a list of penalties for take of species, and is accessible through the TPWD Wildlife Habitat Assessment Program: Laws and Regulations Applicable to TPWD Review webpage.

TPWD provides online access to state-listed species information through the TPWD RTEST application. This application provides county-level information regarding occurrence of protected species (federal- or state-listed threatened or endangered) species and may be utilized to inform development project planning. Additionally, records of occurrence for these protected species are tracked within the TXNDD and are publicly available by request.

Based on habitat requirements, state-listed threatened wildlife of Bastrop County with greatest potential to occur in or near the project area and to be impacted by project activities include the timber rattlesnake (*Crotalus horridus*), smooth pimpleback mussel (*Quadrula houstonensis*), Texas pimpleback mussel (*Q. petrina*), and false spike mussel (*Q. mitchelli*).

Timber rattlesnakes utilize a variety of habitats, which include swamps, floodplains, lowland forests, upland pine and deciduous woodlands, riparian areas, thickets, and abandoned farmland. Timber rattlesnakes prefer areas with dense groundcover. Tree stumps, logs and branches, and limestone bluffs are important habitat features, since these structures provide important refugia for the timber rattlesnake.

Recommendation: TPWD recommends a biological monitor be present during construction to relocate state-listed threatened species, if found. If the presence of a biological monitor during construction is not feasible, state-listed threatened terrestrial species observed during construction should be allowed to safely leave the site or be relocated by a TPWD-permitted individual to a nearby area with similar habitat that would not be disturbed during construction. TPWD recommends that any translocations of reptiles be the minimum distance possible and no greater than one mile, preferably within 100-200 yards from the initial encounter location. For purposes of relocation, surveys, monitoring, and research, terrestrial state-listed species may only be handled by persons authorized through the TPWD Wildlife Permits Office.

Recommendation: A mixture of cover, food sources, and open ground is important to the and timber rattlesnake. TPWD recommends disturbed areas within suitable habitat for this species be revegetated with site-specific native, patchy vegetation rather than sod-forming grasses.

Recommendation: Because snakes are generally perceived as a threat and killed when encountered during clearing or construction, TPWD recommends the project proponent inform employees and contractors of the potential for the state-

listed threatened timber rattlesnake to occur in the project area. Contractors should be advised to avoid impacts to this and other native snakes. Contractors should avoid contact with snakes if encountered and allow all native snakes to safely leave the premises.

Freshwater mussels are one of the most imperiled groups of animals in the U.S. Texas hosts more than 50 species of native freshwater mussels; fifteen freshwater mussel species are listed as threatened in Texas. Populations of these invertebrates have declined precipitously across North America. Because scientists have only recently become aware of the severe decline in mussel populations, some species may have become extinct before their decline was even documented.

Most species are very sensitive to disturbance due to their sedentary lifestyle and dependence upon good water quality. Habitat alteration and loss, illegal and over-harvesting, and competition from introduced species are some of the factors in their decline.

Recommendations: TPWD recommends use of best management practices (BMPs) for riparian areas to minimize impacts on mussels (as well as all fish species which may serve as the mussels' larval host). BMPs would include measures such as avoiding construction during fish and mussel spawning periods, completing construction through the streambed during periods of drought when the stream is dry, and use of double silt fences and doubling soil stabilization measures along the banks to avoid increasing the turbidity of the creek. If mussel populations are present within the limits of the proposed project area, those populations should be protected from disturbance to the greatest extent possible. To avoid or reduce impacts, TPWD may recommend relocating aquatic life to an area of suitable habitat outside the project footprint. If dewatering activities and other project-related activities cause mortality to fish and wildlife species, then the responsible party would be subject to investigation by the TPWD KAST and will be liable for the value of the lost resources under the authority of TPW Code Sections 12.0011 (b) (1) and 12.301.

TPWD recommends review and implementation of strategies discussed in above sections regarding aquatic resources and CWA compliance.

State Fish and Wildlife Resources

TPWD provides online access to rare species information through the TPWD RTEST application and the TXNDD. Additionally, records of occurrence for these species are tracked within the TXNDD and are publicly available by request. In addition to state- and federally-protected species, Texas contains over 1,300 species of greatest conservation need (SGCN). Native animals or plants designated as a SGCN are generally those that are declining or rare and in need of attention to recover or to prevent the need to list under state or federal regulation. TPWD actively promotes conservation of SGCN, natural communities, and special features and considers it important to minimize impacts to these resources in order to reduce the likelihood of endangerment.

Based on a review of the project document and the resources mentioned above, the plains spotted skunk (*Spilogale putorius interrupta*), Elliot's short-tailed shrew (*Blarina hylophaga hylophaga*), and Texas garter snake (*Thamnophis sirtalis annectens*) could inhabit the proposed project area.

Recommendation: TPWD recommends the County inform employees and contractors that the rare plains spotted skunk, Elliot's short-tailed shrew, and Texas garter snake could occur in the project area. Construction staging areas should be consolidated within disturbed areas where possible and avoid unnecessary impacts to skunk dens, and/or the mesic habitats preferred by Elliot's short-tailed shrew and Texas garter snake. Any wildlife observed during construction should be allowed to safely leave the site.

Monarch and Pollinator Conservation

There is widespread concern regarding the decline of monarch butterflies (*Danaus plexippus*) and other native insect pollinator species due to reductions in native floral resources. To support pollinators and migrating monarchs, TPWD encourages the establishment of native wildflower habitats on private and public lands. Establishing wildflower habitats in new developments can contribute to pollinator conservation. Roadsides can provide habitat for a diverse community of pollinators. Roadside habitat can include forage for food and breeding or nesting opportunities. Roadsides extend across a variety of landscapes and can aid dispersal of pollinators by linking fragmented habitats. By acting as refugia for pollinators in otherwise inhospitable landscapes, roadside habitat can contribute to the maintenance of healthy ecosystems and provision of ecological services such as crop pollination services. Recent publications on conserving pollinators in Texas can be found at the TPWD Wildlife Habitat Assessment Program: Planning Tools and Best Management Practices webpage.

Recommendation: To enhance the function and aesthetics of the landscaped surroundings, and to contribute to pollinator conservation efforts, TPWD encourages the County to revegetate greenspaces with vegetation which provides habitat for monarch butterflies and other pollinator species. A combination of early, middle, and late blooming species with overlap in flowering times will best benefit pollinators and provide attractive blooms throughout the flowering season. Species appropriate for the project area can be found by accessing the Lady Bird Johnson Wildflower Center, working with TPWD biologists to develop an appropriate list of species, or utilizing resources found at the Xerces Society's Guidelines webpage.

Recommendation: TPWD advises against planting the non-native milkweed species black swallow-wort (*Cynanchum louiseae*) and pale swallow-wort (*C. rossicum*). Monarch butterflies will lay eggs on these plant species, but the larvae are unable to feed and complete their life cycle. Additionally, these plant species can be highly invasive.

Comment Period

Please note the TPWD strives to respond to requests for project review within a 45-day review period. Responses may be delayed due to workload and lack of staff. Failure to meet the 45-day review timeframe does not constitute a concurrence from TPWD that the proposed project will not adversely impact fish and wildlife resources. Please submit future project review requests per the TPWD 45-day review period, if at all possible.

Thank you for considering project impacts to Texas' fish, wildlife, and plant resources. If you have any questions, please contact me at Rachel.Lange@tpwd.texas.gov or (361)412-9012.

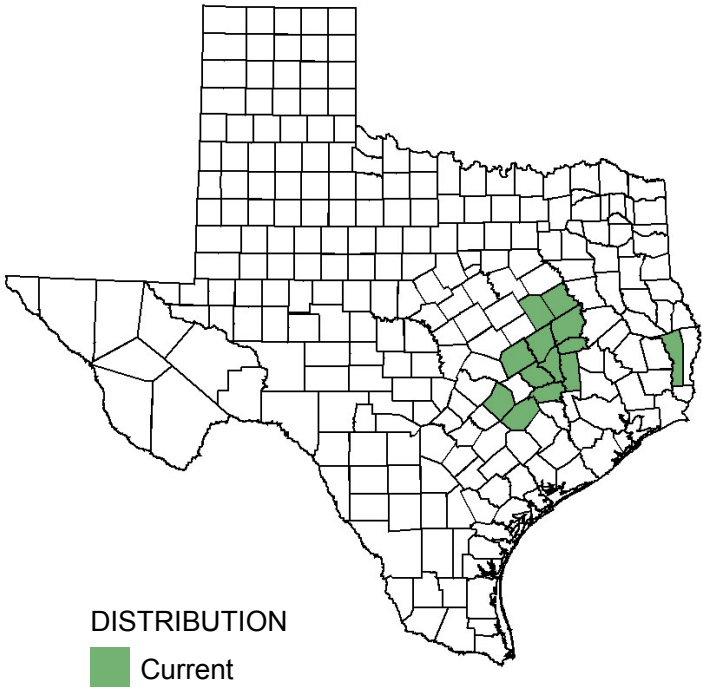
Sincerely,

Rachel Lange
Wildlife Habitat Assessment Program
Wildlife Division

RAL/38584

Skip to Content

Federal And State Listed Species Of Texas: Navasota Ladies'-Tresses



Distribution map of Navasota ladies'-tresses (*Spiranthes parksii*).

Scientific Name
Spiranthes parksii

Other Scientific Names
None

Other Common Names
None

Status
Federally and State Endangered

Global Rank

G3 (http://explorer.natureserve.org/granks.htm)

State Rank
S3 (http://explorer.natureserve.org/nsranks.htm)

Global Location

Navasota ladies'-tresses is known from the Post Oak Savannah in Bastrop, Brazos, Burleson, Fayette, Freestone, Grimes, Jasper, Leon, Limestone, Madison, Milam, Robertson, and Washington counties in eastern Texas.

Description

An erect, 15-33 cm tall perennial, Navasota ladies’-tresses has basal leaves that end in a point and have roughly linear sides. The leaves are absent on Navasota ladies’-tresses when it flowers. A single row of creamy white flowers spiral around the upper 5 cm of the floral stalk (this tight, vertical spiral has about five flowers per rotation). A single, green, leaf-like structure (a bract), which is teardrop-shaped, 8-10 mm, and white-tipped, cups the base of each flower. Three white petal-like structures (sepals) surround the three smaller petals. There is one upper sepal and two lower, narrowly triangular side sepals. All are covered in a layer of minute hairs. Interior to the sepals are three creamy white petals, which consist of two side petals and one lower petal. The side petals are egg-shaped to almost round and have a central green stripe. The single bottom petal is oval. The fruit dries at maturity, splits open, and releases many seeds.

Navasota ladies'-tresses have green, white-tipped leaf-like structures, which cup the base of each flower. The flowers have sepals that are longer than the petals.

Credit: Jackie Poole - Texas Parks & Wildlife Dept.

Similar Species

Two other ladies'-tresses are similar to Navasota ladies’-tresses and occur in the same habitat: nodding ladies’-tresses (*Spiranthes cernua*) and slender ladies’-tresses (*Spiranthes lacera* var. *gracilis*). However, the creamy white petals of Navasota ladies’-tresses are shorter, rounder, and the lower petal is oval. Each flower has a central green stripe on its side petals and white-tipped bracts, which attach just under the flower’s base. Below is a table that can be used to identify the three species. A comparison of Navasota ladies’-tresses, nodding ladies’-tresses, and slender ladies’-tresses can also be found online on at the Texas A&M Biology Navasota ladies’-tresses website (http://botany.csdl.tamu.edu/FLORA/hdwsp/parksii_id_1001a.htm).

Slender ladies’-tresses flowers have a lower petal with a green center and the sepals are longer than the petals.

Credit: Hugh Wilson - TX A&M Vascular Plant Image Gallery

Nodding ladies'-tresses has a 'closed' flower type where the sepals and petals remain clasped together.

Credit: Darren Henrichs - TX A&M Vascular Plant Image Gallery

Nodding ladies'-tresses have all green leaf-like structures, which cup the base of each flower, and the flowers have a lower petal with a yellow center.

Credit: James Manhart - TX A&M Vascular Plant Image Gallery

The flowers of slender ladies’-tresses are generally more numerous and spiral less tightly around the floral stalk than Navasota ladies’-tresses.

Credit: Darren Henrichs - TX A&M Vascular Plant Image Gallery

Floral Characters

	petal color	lower petal coloring	side petal shape	sepal longer than petal?	lower petal shape	bract tip color
Navasota ladies'-tresses	creamy white	green stripe (usually)	egg-shaped to almost round	yes	oval	usually white
slender ladies'-tresses	creamy white	green center	teardrop	yes	egg-shaped	green
nodding ladies'-tresses	bright white	often yellow center	narrow teardrop	no	egg-shaped (can be constricted in the middle)	green

Habitat

Navasota ladies’-tresses occurs primarily in openings of post oak woodlands in sandy loam soils, often over an impermeable clay layer, adjacent to drainages and seasonal streams. In Jasper County, the orchid grows in grasslands and post oak-black hickory woodlands, and in association with sandstone glades.

Habitat of Navasota ladies'-tresses.

Credit: Elray Nixon - Stephen F. Austin State University

Life Cycle Events

Flowering occurs from October to December.

Survey Season

Navasota ladies'-tresses are recognizable while in bloom from October to December.

Comments

During germination, before a new plant can obtain nutrients from the soil, many plants have readily available supplies from inside the seed coat. Orchids, on the other hand, do not; instead they provide their young essential nutrients in other ways. Orchids live in fungi-rich soils that provide the plant with nutrients. In turn, fungi can live off of decaying plant and animal matter. Because fungi are so important to Navasota ladies'-tresses' survival, the distribution of the root fungus likely influences the orchid's range and juvenile survival (Wonkka 2010)

Citations

Wonkka, C.L. 2010. Large herbivore impact on demographic characteristics and population dynamics of an endangered orchid (*Spiranthes parksii* Correll). Dissertation. Texas A&M University (http://oaktrust.library.tamu.edu/bitstream/handle/1969.1/ETD-TAMU-2010-12-8991/WONKKA-THESIS.pdf?sequence=2)

Wilson, H. Distinctive features of *Spiranthes parksii* as compared to other fall-blooming species in the Navasota Flora. (http://botany.csdl.tamu.edu/FLORA/hdwsp/parksii_id_1001a.htm)

()

Additional Information

Rare Plants of Texas (http://www.tamupress.com/product/Rare-Plants-of-Texas,1812.aspx)

U.S. Fish and Wildlife Service (https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=1570)

NatureServe (http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Spiranthes+parksii)

Center for Plant Conservation (http://saveplants.org/plant-detail-page/?plant_id=4079)

Flora of North America (http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101962)

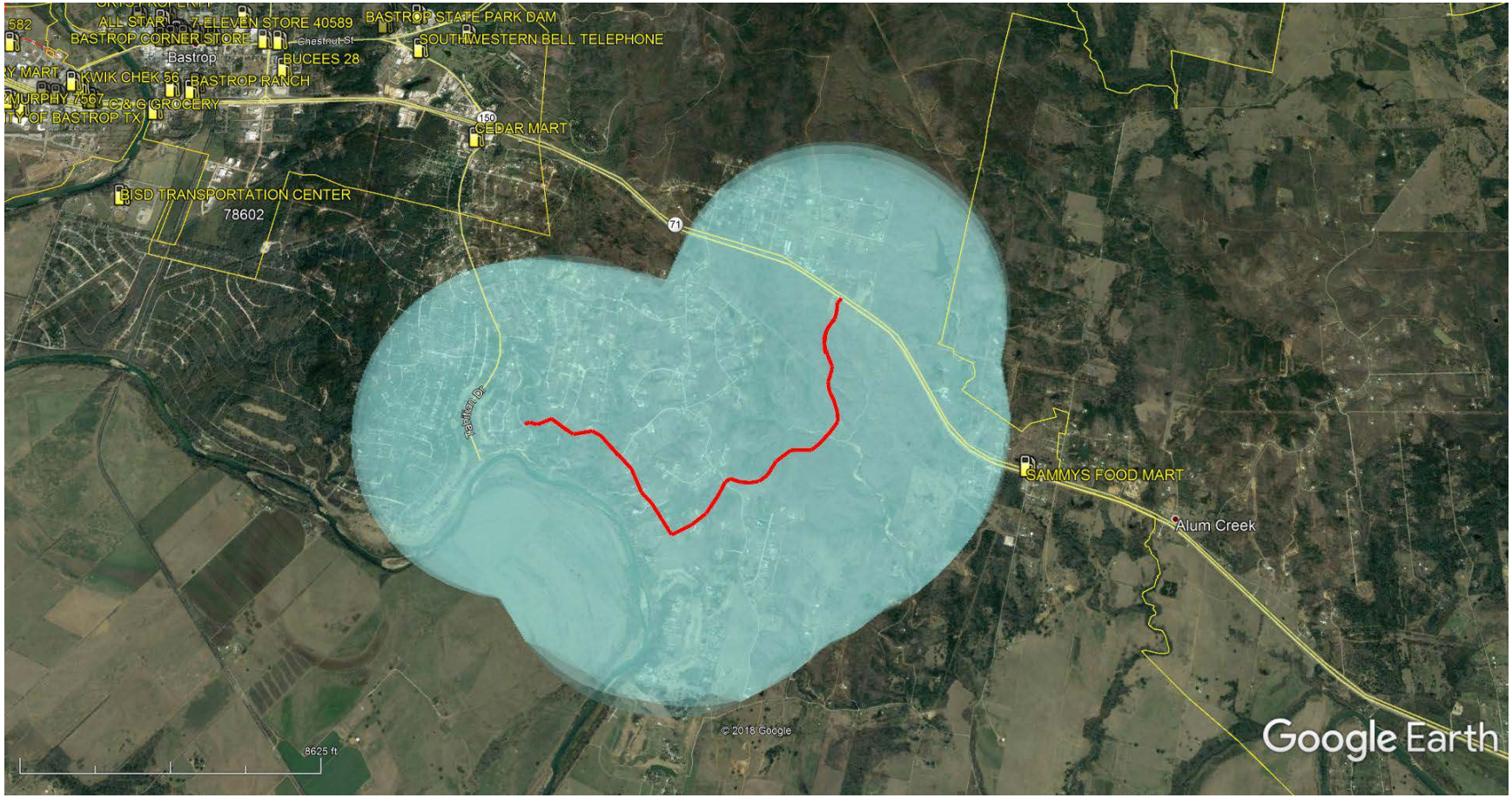
Poole, J.M. and G.K. Janssen 1997. Managing and monitoring rare and endangered plants on highway right-of-ways in Texas. Section 6 final report. Austin: Texas Parks & Wildlife Department. (/business/grants/wildlife/section_6/projects/plants)

Wilson, H. *Spiranthes parksii* - Endangered Orchid of the Texas Post Oak Savannah. (http://botany.csdl.tamu.edu/FLORA/hdwsp/sp_contents.htm)

ATTACHMENT 8

Explosive and Flammable Operations
[24 CFR 51C]

- Petroleum Storage Tanks Registration & Mapping of Tanks
    - Above Ground Storage Tanks and Acceptable Separation Distance



1 mile

Proposed Project Area

No Petroleum Storage Tanks are located within one mile of the project area.

Client Name	Bastrop County	Future Link Technologies
Contract #	Bastrop 2016 – Tahitian Village	PO Box 90696 Austin, TX 78709
Map Information	TCEQ Petroleum Storage Tank Data	512-443-4100
Date	December 18	Environmental Service Provider

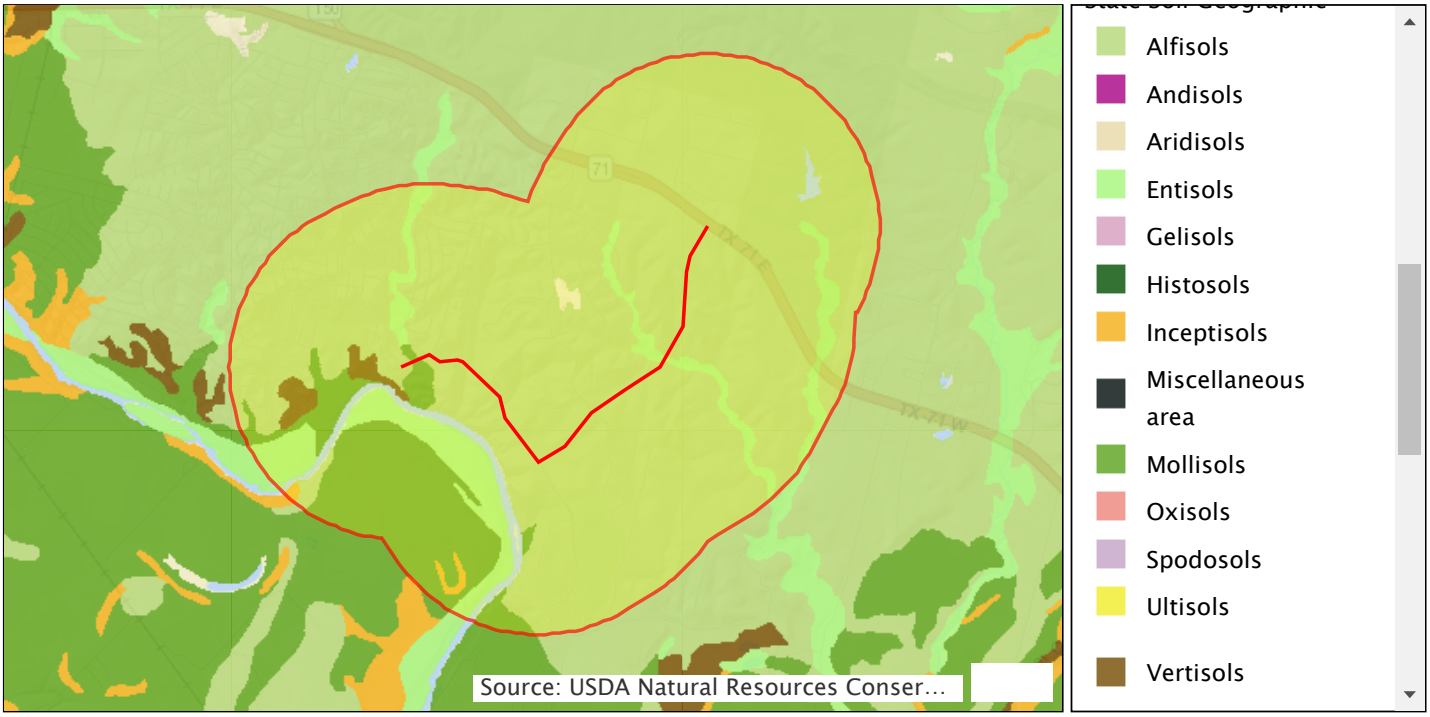
ATTACHMENT 9

FARMLANDS PROTECTION

- Farmland Protection Agency Act

Tahitian Village Alignment

Map



Geographic coordinates:

LINE
(30.074319,-97.278374,30.075321,-97.275628,30.074727,-97.274469,30.074987,-97.272881,30.074839,-97.272280,30.071830,-97.268761,30.070085,-97.268161,30.066296,-97.264985,30.067671,-97.262410,30.070530,-97.259792,30.072387,-97.256
with buffer 1 mile

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	2.94 mi
Within 1 mile of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Federal Land?	no
Within 1 mile of an impaired stream?	no
Within 1 mile of an impaired waterbody?	no
Within 1 mile of a waterbody?	yes

Within 1 mile of a stream?	yes
Within 1 mile of an NWI wetland?	click here ***May take several minutes***
Within 1 mile of a Brownfields site?	no
Within 1 mile of a Superfund site?	no
Within 1 mile of a Toxic Release Inventory (TRI) site?	no
Within 1 mile of a water discharger (NPDES)?	no
Within 1 mile of a hazardous waste (RCRA) facility?	yes
Within 1 mile of an air emission facility?	no
Within 1 mile of a school?	no
Within 1 mile of an airport?	no
Within 1 mile of a hospital?	no
Within 1 mile of a designated sole source aquifer?	no
Within 1 mile of a historic property on the National Register of Historic Places?	no
Within 1 mile of a Toxic Substances Control Act (TSCA) site?	no
Within 1 mile of a RADInfo site?	no

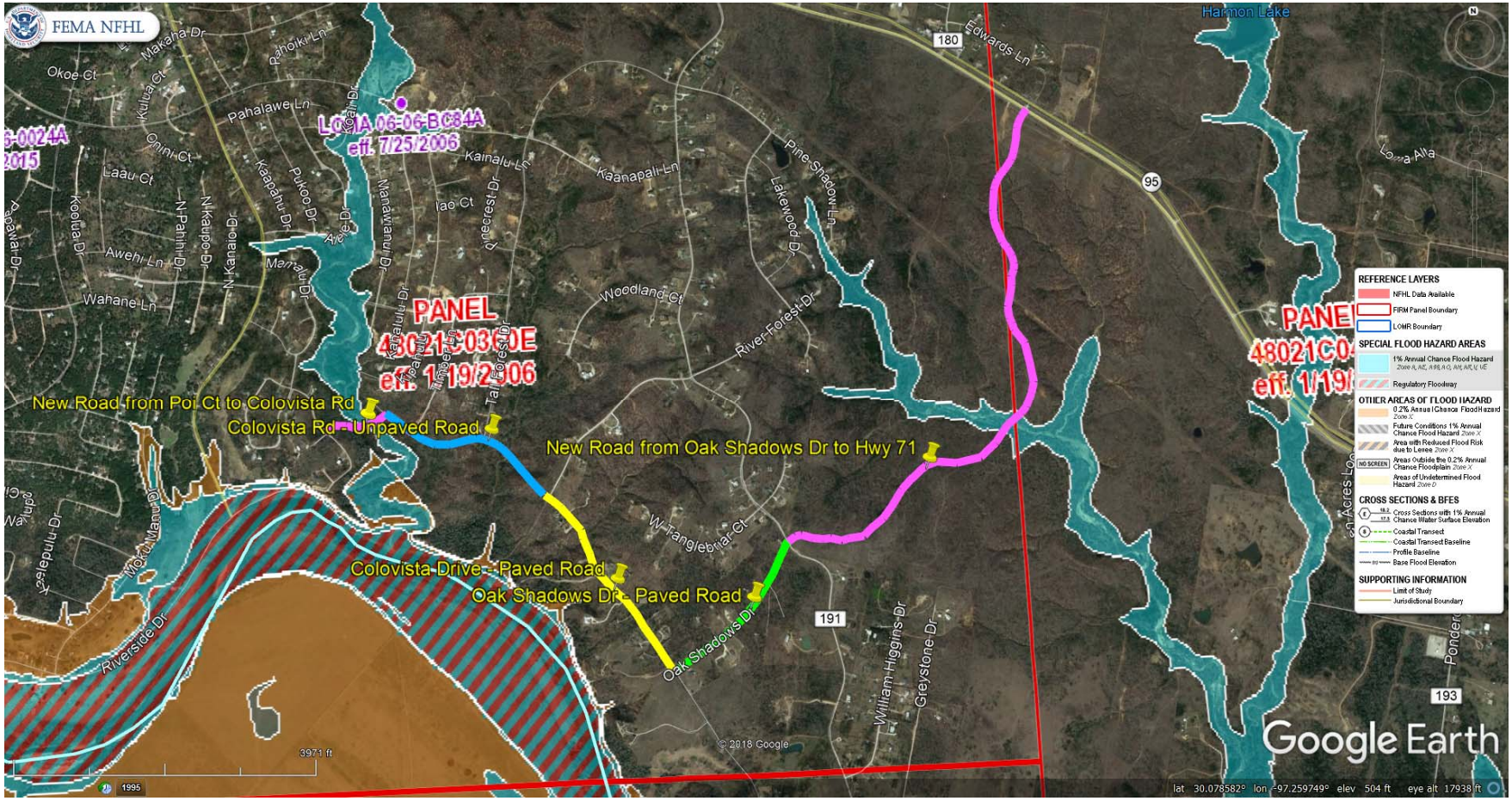
Save to Excel Save as PDF

Texas Report
Demographic Reports
USFWS IPaC Report

ATTACHMENT 10

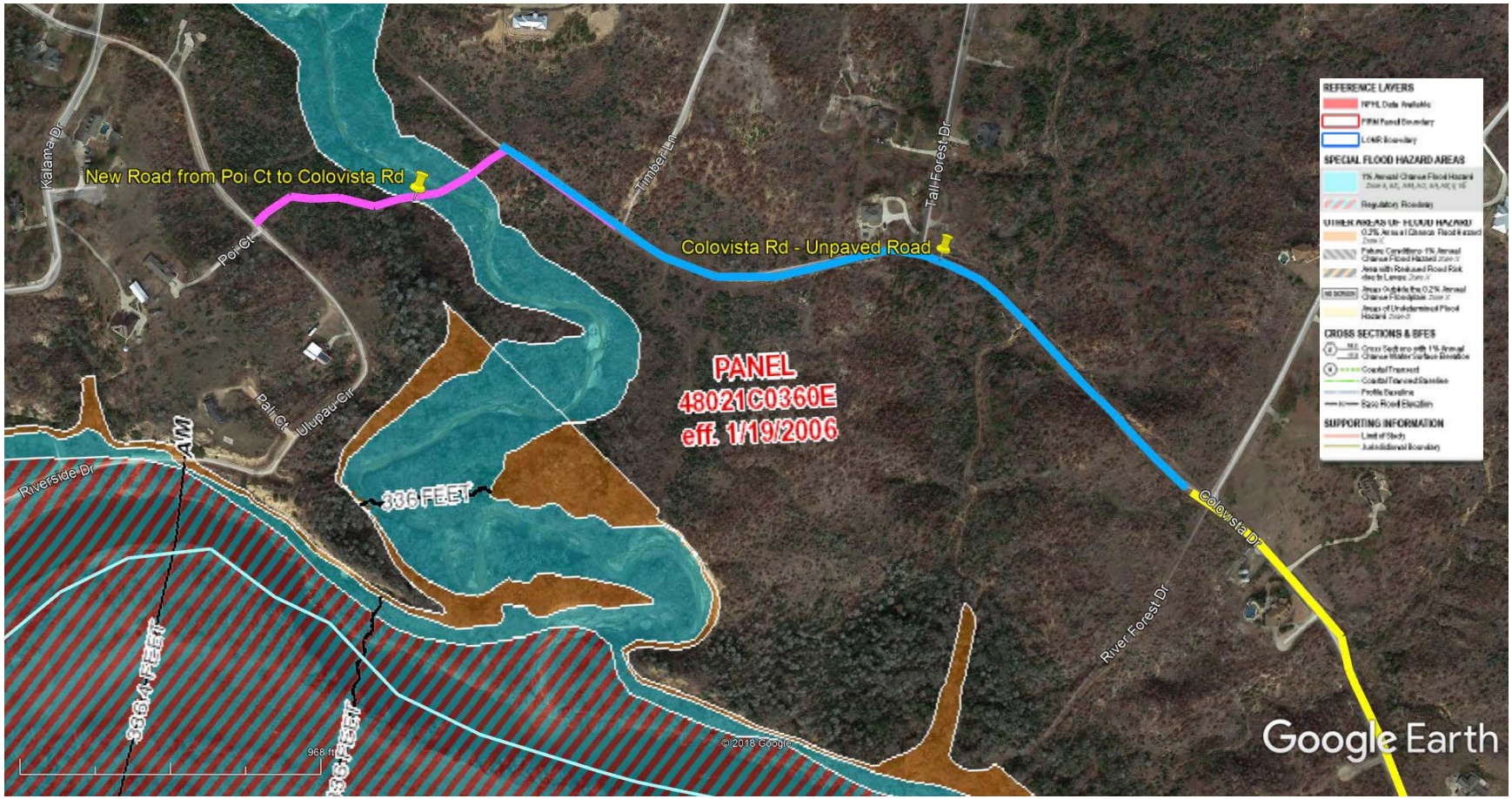
Floodplain Management

- Federal Emergency Management Agency (FEMA) Floodplain Map



- Ulupau Circle - Paved Road Rehab
- New Road (From Ulupau to Colovista Rd)
- Colovista Road – Unpaved Road
- Colovista Drive – Paved Road
- Oak Shadows Drive – Paved Road
- New Road – From Oak Shadows Dr. to Highway 71

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Federal Emergency Management Agency – FIRM Map	512-443-4100
Date	May 18	Environmental Service Provider



	Ulupau Circle - Paved Road Rehab
	New Road (From Ulupau to Colovista Rd)
	Colovista Road – Unpaved Road
	Colovista Drive – Paved Road
	Oak Shadows Drive – Paved Road
	New Road – From Oak Shadows Dr. to Highway 71

Approximately 200 lf of the roadway is located within a 100-year floodplain. Total Acres: .111019

Floodplain panels include:
48021C0360E (effective 1/19,2006)

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Federal Emergency Management Agency – FIRM Map	512-443-4100
Date	May 18	Environmental Service Provider

	Ulupau Circle - Paved Road Rehab
	New Road (From Ulupau to Colovista Rd)
	Colovista Road – Unpaved Road
	Colovista Drive – Paved Road
	Oak Shadows Drive – Paved Road
	New Road – From Oak Shadows Dr. to Highway 71

Approximately 340lf of the roadway is located within a 100-year floodplain. Total Acres: .18732

Floodplain panels include:

48021C0400E (effective 1/19,2006)
48021C0360E (effective 1/19/2006)

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Federal Emergency Management Agency – FIRM Map	512-443-4100
Date	May 18	Environmental Service Provider

Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

September 25, 2017

Latrice Hertzler
Future Link Technologies
P.O. Box 90696
Austin, TX 78709

Re: Bastrop County Fires - 2011
Community Development Block Grant - Community Development Revitalization
Tahitian Village Ingress/Egress
Early Notice and Public Review of a Proposed Activity in a 100-year Floodplain & Wetland (WOUS)

Dear Ms. Hertzler:

This is in response to your letter dated September 23, 2017 regarding Bastrop County's early notice and public review for the Community Development Block Grant - Community Development Revitalization in Tahitian Village Ingress/Egress.

After review of the information provided for possible activity in a floodplain, our findings indicate that as a participant in the National Flood Insurance Program, Bastrop County has authority for projects within it's jurisdiction. Please ensure that you coordinate with the community for any specific details concerning development within the Special Flood Hazard Area.

Thank you for bringing this matter to our attention.

Sincerely,

Michael Segner
State Coordinator, National Flood Insurance Program

Our Mission

To provide leadership, information, education, and support for planning, financial assistance, and outreach for the conservation and responsible development of water for Texas

Board Members

Bech Bruun, Chairman | Kathleen Jackson, Board Member | Peter Lake, Board Member

Jeff Walker, Executive Administrator

ATTACHMENT 11

HISTORIC PRESERVATION

- Texas Historical Commission Approval
- Tribal Consultation For Tribes With Interests In Historic Properties Of Religious And Cultural Significance To Tribes
- Tribal Correspondence

Jesse Owens

From: noreply@thc.state.tx.us
Sent: Monday, September 24, 2018 11:23 AM
To: Jesse Owens; reviews@thc.state.tx.us; james.e.barrera@usace.army.mil
Subject: Project Review: 201900097

TEXAS HISTORICAL COMMISSION
real places telling real stories

Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
Permit 8516
201900097
Tahitian Village Roadway Improvements Project
Colovista Road & Oak Shadows Drive
Bastrop,TX 78602

Dear Jeffrey D. Owens:
Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The review staff led by Jeff Durst and Caitlin Brashear has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

Archeology Comments

- No historic properties present or affected. However, if buried cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division at 512-463-6096 to consult on further actions that may be necessary to protect the cultural remains.
- THC/SHPO concurs with information provided
- Draft report acceptable. Please submit another copy as a final report along with shapefiles showing the area where the archeological work was conducted. Shapefiles should be submitted electronically to Archeological_projects@thc.texas.gov.

We have the following comments: After reviewing the documentation, we concur that newly recorded sites 41BP963, 41BP964, and 41BP965 that will be impacted by construction are ineligible within the Right of Way

for inclusion in the National Register of Historic Places (NRHP) based on the lack of buried deposits, cultural features, or temporally diagnostic materials. The draft report that you have submitted is accepted and this project may proceed without further consultation with this office, provided that no significant archeological deposits are encountered during construction and development of the property.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: Jeff.Durst@thc.texas.gov, caitlin.brashear@thc.texas.gov.

Sincerely,

For Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

cc: james.e.barrera@usace.army.mil

Intensive Cultural Resources Survey of USACE Jurisdictional Areas within the Proposed Tahitian Village Roadway Improvements Project, Bastrop, Bastrop County, Texas

By:

Briana N. Smith and Jeffrey D. Owens

Texas Antiquities Permit No. 8516
H045-160048

Prepared for:

Future-Link Technologies, Inc.
Austin, Texas

Prepared by:

Horizon Environmental Services, Inc.
Austin, Texas

August 2018

Intensive Cultural Resources Survey of USACE Jurisdictional Areas within the Proposed Tahitian Village Roadway Improvements Project, Bastrop, Bastrop County, Texas

By:

Briana N. Smith and Jeffrey D. Owens

Prepared for:

Future-Link Technologies, Inc.
225 S. Commons Ford Road, Suite 123
Austin, Texas 78733

Prepared by:

Horizon Environmental Services, Inc.
1507 S. Interstate 35
Austin, Texas 78741

Jeffrey D. Owens, Principal Investigator
H045-160048

Texas Antiquities Permit No. 8516

August 2018

MANAGEMENT SUMMARY

Horizon Environmental Services, Inc. (Horizon) was selected by Future Link Technologies, Inc. (Future Link) on behalf of Bastrop County to conduct a cultural resources inventory survey and assessment for the proposed Tahitian Village Roadway Improvements Project in Bastrop, Bastrop County, Texas. The proposed undertaking would involve construction of two new segments of roadway located approximately 3.0 miles (4.8 kilometers) southeast of Bastrop between State Highway (SH) 71 and the Colorado River. These segments include (1) approximately 1.6 miles (2.6 kilometers) of new roadway that would extend the intersection of Oak Shadows Drive and County Road (CR) 191 (a.k.a. McAllister Road) northeastward to SH 71, and (2) approximately 0.7 mile (1.1 kilometers) of roadway improvements and proposed new roadway along Colovista Drive extending northwestward from the intersection of Colovista Drive and River Forest Drive. The latter segment includes approximately 0.5 mile (0.8 kilometer) of roadway improvements along an existing washed-out gravel segment of Colovista Drive plus approximately 0.2 mile (0.3 kilometer) of new roadway connecting the northwestern end of Colovista Drive southwestward to Ulupau Circle. Thus, the overall project area measures a total linear distance of 2.3 miles (3.7 kilometers) in length within a 100.0-foot- (30.5-meter-) wide right-of-way (ROW).

Based on consultation conducted with the US Army Corps of Engineers, Fort Worth District (USACE), and the Texas Historical Commission (THC), the cultural resources survey focused on the portions of the overall ROW located adjacent to waterways crossing the proposed road ROWs that qualify for designation as “Waters of the US” (WOUS) under Section 404 of the Clean Water Act (CWA). For purposes of the cultural resources survey, survey activities were conducted at four locations within the overall ROW that collectively measure approximately 1.3 miles (2.1 kilometers) in length by 100.0 feet (30.5 meters) in width, covering an area of 16.2 acres (6.6 hectares). Seven jurisdictional crossings had been identified within these four locations. The proposed undertaking would involve construction of bridge-class culverts at each of these crossings, designated as Culverts A, C, D, G, H, K, and J.

The proposed undertaking would be sponsored by Bastrop County, a political subdivision of the state of Texas; as such, the project would fall under the regulatory jurisdiction of the Antiquities Code of Texas. In addition, the project area would traverse seven stream channels that qualify as WOUSs under Section 404 of the CWA that require permitting by the USACE. As such, those portions of the overall ROW that fall within the federal permit area would also fall

under the regulatory jurisdiction of Section 106 of the National Historic Preservation Act (NHPA). As the proposed project represents a publicly sponsored undertaking, the project sponsor was required to provide the applicable federal agencies and the THC, which serves as the State Historic Preservation Office (SHPO) for the state of Texas, with an opportunity to review and comment on the project's potential to adversely affect historic properties listed on or considered eligible for listing on the National Register of Historic Places (NRHP) and for designation as State Antiquities Landmarks (SAL).

Horizon Project Archeologist Briana Nicole Smith, with the assistance of archeological field technicians Jacob Lyons and Foster Duncan and under the overall direction of Jeffrey D. Owens, Principal Investigator, performed an intensive cultural resources survey of the project area from August 6 to 8, 2018, to locate any cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologists traversed the archeological survey area on foot and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The vast majority of the project area had been burned during the 2011 Bastrop County Complex Fire. As a result, the vegetation is currently characterized by loblolly pine saplings, blackjack oak saplings, hackberry, various grasses, and fallen, charred pines. Visibility of the modern ground surface ranged from low (<30%) in more densely vegetated areas to high (100%) on eroded uplands. Natural chert cobbles and gravels were abundant on the surface throughout the project area, and much of it was thermally altered from the wildfire. Seven streams cross the proposed road ROWs, including Pigeonroost Hollow, Copperas Creek, and various small, unnamed tributaries.

In addition to pedestrian walkover and surface inspection, the Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 16 shovel tests per 1.0 mile (1.6 kilometers) for each 100.0-foot- (30.5-meter-) wide transect for linear surveys. As such, a minimum of 21 shovel tests would be required within the collective 1.3 miles (2.0 kilometers) of survey area to meet the TSMASS requirements. Horizon excavated a total of 75 shovel tests, thereby exceeding the TSMASS for a linear survey of this size. Shovel testing revealed gravelly fine sandy loam overlying dense chert cobbles, sandstone, or clay at an average depth of 11.8 inches (30.0 centimeters) below surface on uplands, and loose, fine sand to an average depth of 39.4 inches (100.0 centimeters) below surface near stream channels.

Three newly recorded archeological sites were documented during the survey—41BP963, 41BP964, and 41BP965. Site 41BP963 consists of an aboriginal lithic procurement area, and sites 41BP964 and 41BP965 consist of aboriginal lithic scatters. Due to the lack of temporally diagnostic artifacts, the three aboriginal sites date to unspecified prehistoric periods. The sites were only assessed within the proposed road ROWs, and the boundaries of the sites may extend outside of the proposed ROWs. No intact cultural features, temporally diagnostic artifacts, or intact, subsurface archeological deposits were observed on any of the three sites, and the investigated portions of the sites retain little potential to contribute meaningfully to an understanding of the prehistoric past. The investigated portion of all three sites within the investigated ROW are recommended as non-contributing to the overall eligibility of the sites for designation as State Antiquities Landmarks (SAL) and for inclusion in the National Register of

Historic Places (NRHP). No further investigations are warranted within the proposed ROW on these sites.

Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. In accordance with 36 CFR 800.4, Horizon has made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified that meet the criteria for designation as SALs according to 13 TAC 26 or for inclusion in the NRHP according to 36 CFR 60.4. Horizon recommends a finding of "no historic properties affected," and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the Texas Historical Commission (THC) should be notified immediately.

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1.0 INTRODUCTION

Horizon Environmental Services, Inc. (Horizon) was selected by Future Link Technologies, Inc. (Future Link) on behalf of Bastrop County to conduct a cultural resources inventory survey and assessment for the proposed Tahitian Village Roadway Improvements Project in Bastrop, Bastrop County, Texas. The proposed undertaking would involve construction of two new segments of roadway located approximately 3.0 miles (4.8 kilometers) southeast of Bastrop between State Highway (SH) 71 and the Colorado River. These segments include (1) approximately 1.6 miles (2.6 kilometers) of new roadway that would extend the intersection of Oak Shadows Drive and County Road (CR) 191 (a.k.a. McAllister Road) northeastward to SH 71, and (2) approximately 0.7 mile (1.1 kilometers) of roadway improvements and proposed new roadway along Colovista Drive extending northwestward from the intersection of Colovista Drive and River Forest Drive. The latter segment includes approximately 0.5 mile (0.8 kilometer) of roadway improvements along an existing washed-out gravel segment of Colovista Drive plus approximately 0.2 mile (0.3 kilometer) of new roadway connecting the northwestern end of Colovista Drive southwestward to Ulupau Circle. Thus, the overall project area measures a total linear distance of 2.3 miles (3.7 kilometers) in length within a 100.0-foot- (30.5-meter-) wide right-of-way (ROW).

Based on consultation conducted with the US Army Corps of Engineers, Fort Worth District (USACE), and the Texas Historical Commission (THC), the cultural resources survey focused on the portions of the overall ROW located adjacent to waterways crossing the proposed road ROWs that qualify for designation as “Waters of the US” (WOUS) under Section 404 of the Clean Water Act (CWA). For purposes of the cultural resources survey, survey activities were conducted at four locations within the overall ROW that collectively measure approximately 1.3 miles (2.1 kilometers) in length by 100.0 feet (30.5 meters) in width, covering an area of 16.2 acres (6.6 hectares). Seven jurisdictional crossings had been identified within these four locations. The proposed undertaking would involve construction of bridge-class culverts at each of these crossings, designated as Culverts A, C, D, G, H, K, and J (Figures 1 to 5).

The proposed undertaking would be sponsored by Bastrop County, a political subdivision of the state of Texas; as such, the project would fall under the regulatory jurisdiction of the Antiquities Code of Texas. In addition, the project area would traverse seven stream channels that qualify as WOUSs under Section 404 of the CWA that require permitting by the USACE. As

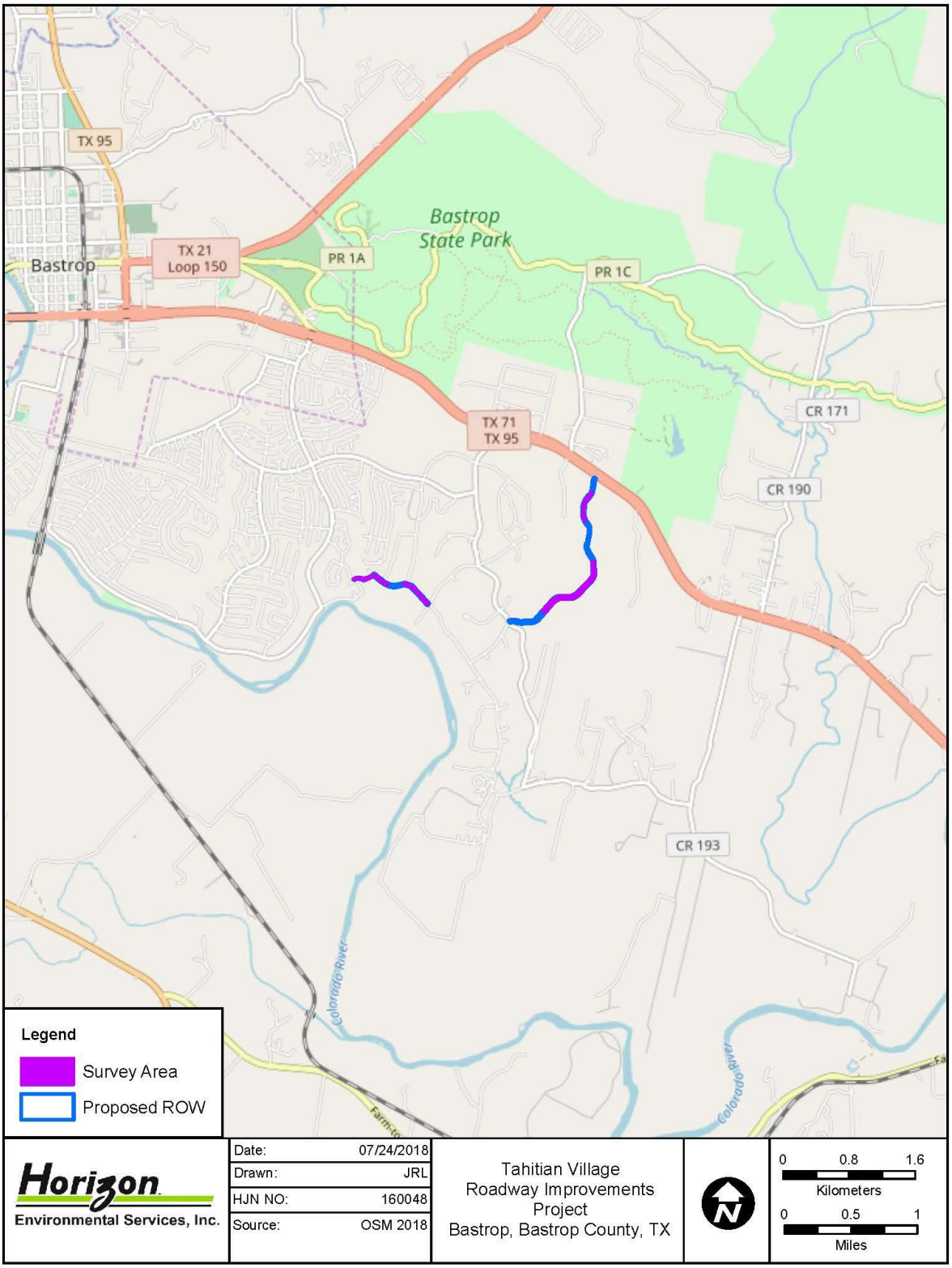

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Figure 1. Vicinity Map of Project Area

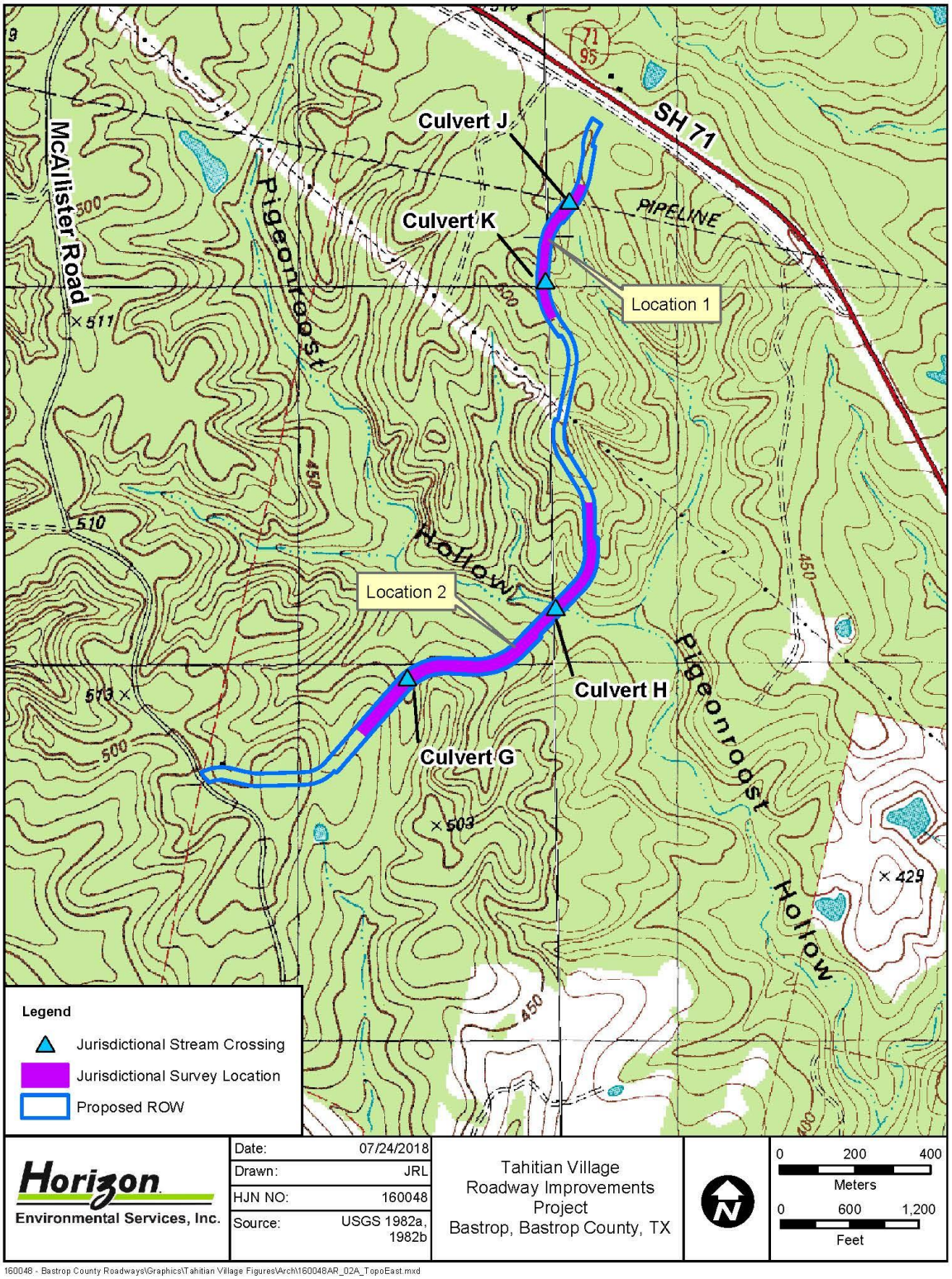

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Figure 2. Location of Proposed ROW from Oak Shadow Drive to SH 71 on USGS Topographic Map

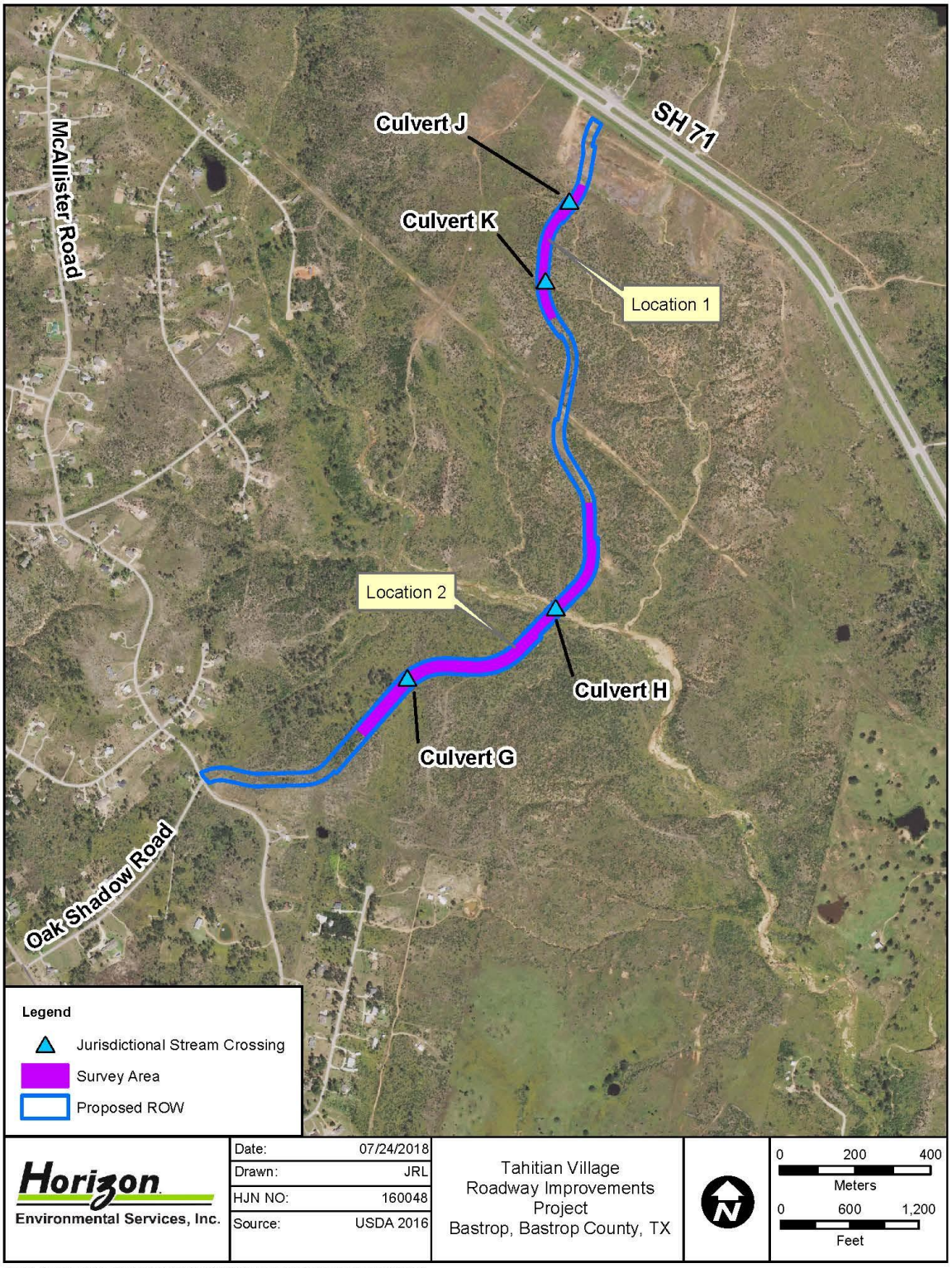

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Figure 3. Location of Proposed ROW from Oak Shadow Drive to SH 71 on Aerial Photograph

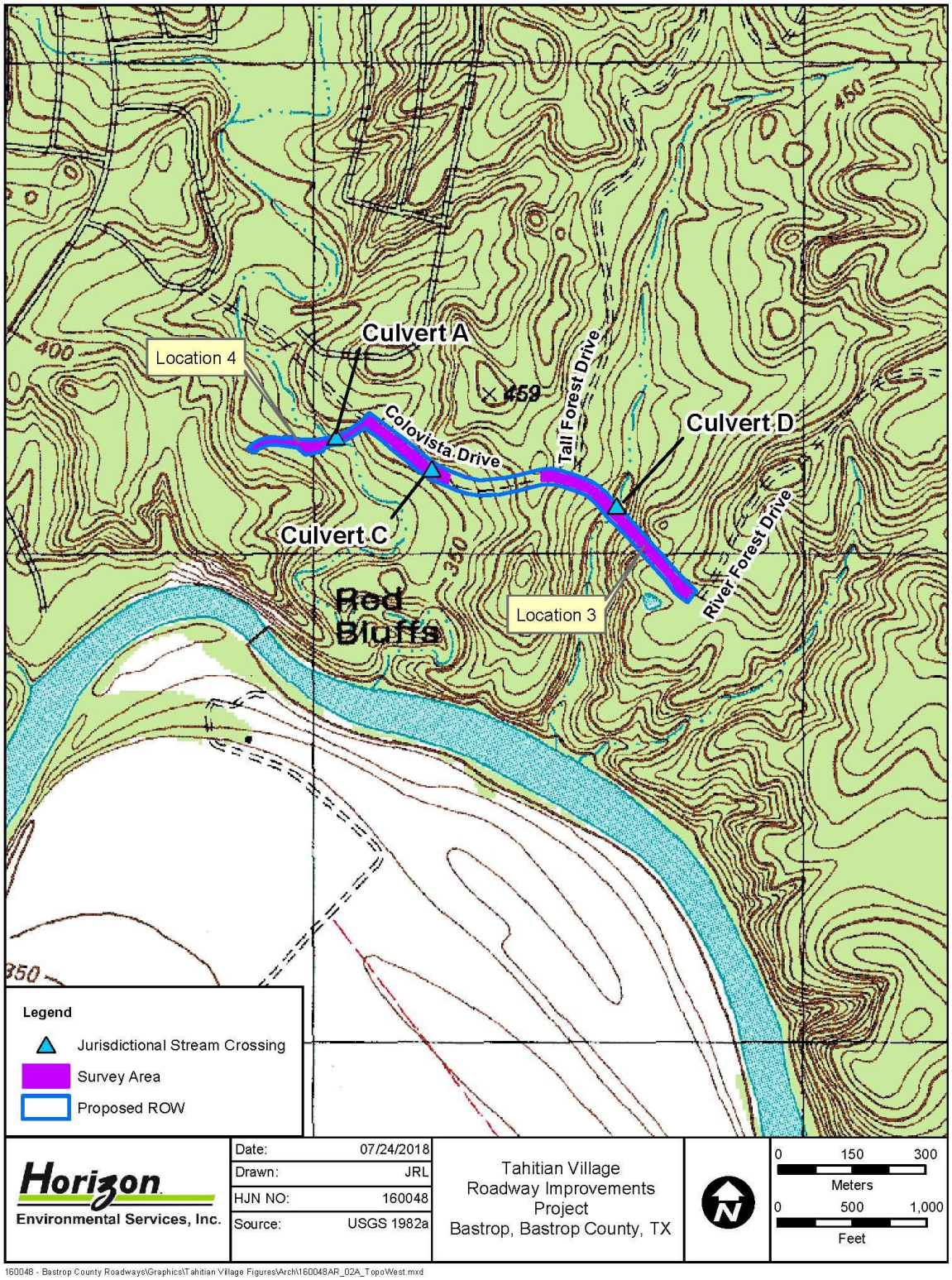

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Figure 4. Location of Proposed ROW along Colovista Drive to Ulupau Circle on USGS Topographic Map

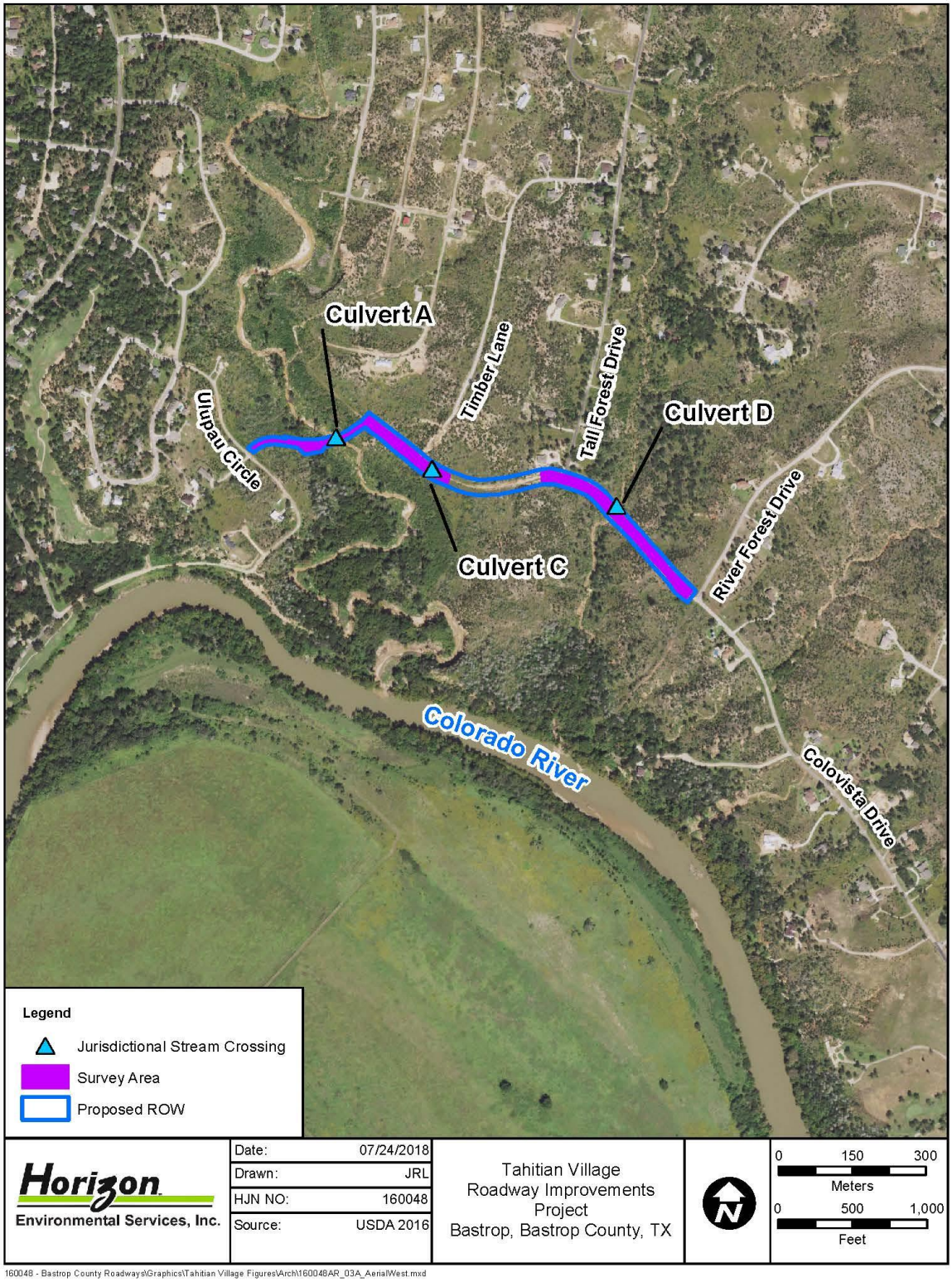

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Figure 5. Location of Proposed ROW along Colovista Drive to Ulupau Circle on Aerial Photograph

such, those portions of the overall ROW that fall within the federal permit area would also fall under the regulatory jurisdiction of Section 106 of the National Historic Preservation Act (NHPA). As the proposed project represents a publicly sponsored undertaking, the project sponsor was required to provide the applicable federal agencies and the THC, which serves as the State Historic Preservation Office (SHPO) for the state of Texas, with an opportunity to review and comment on the project's potential to adversely affect historic properties listed on or considered eligible for listing on the National Register of Historic Places (NRHP) and for designation as State Antiquities Landmarks (SAL).

Horizon Project Archeologist Briana Nicole Smith, with the assistance of archeological field technicians Jacob Lyons and Foster Duncan and under the overall direction of Jeffrey D. Owens, Principal Investigator, performed an intensive cultural resources survey of the project area from August 6 to 8, 2018, to locate any cultural resources that potentially would be impacted by the proposed undertaking. The cultural resources investigation consisted of an archival review, an intensive pedestrian survey with shovel testing, and the production of a report suitable for review by the State Historic Preservation Officer (SHPO) in accordance with the Texas Historical Commission's (THC) Rules of Practice ad Procedure, Chapter 26, Section 27, and the Council of Texas Archeologists (CTA) Guidelines for Cultural Resources Management Reports.

Following this introductory chapter, Chapters 2.0 and 3.0 present the environmental and cultural backgrounds, respectively, of the project area. Chapter 4.0 describes the results of background archival research, and Chapter 5.0 discusses cultural resources survey methods. Chapter 6.0 presents the results of the cultural resources survey, and Chapter 7.0 presents cultural resources management recommendations for the project. Chapter 8.0 lists the references cited in the report. Appendix A summarizes shovel test data.

2.0 ENVIRONMENTAL SETTING

2.1 PHYSIOGRAPHY AND HYDROLOGY

The project area is located along the eastern margin of the city of Bastrop in central Bastrop County, Texas, near the boundary of two significant physiographic provinces—the Edwards Plateau and the Blackland Prairie. The Blackland Prairie, the narrow physiographic zone situated between the Edwards Plateau on the west and the Gulf Coastal Plain on the east, is a low, rolling land that extends in a narrow band along the eastern edge of the Balcones fault zone from the Red River Valley in northeastern Texas to the southern edge of the Edwards Plateau. This is an area of low topographic relief and poor drainage in which water often ponds after rainstorms and streams flow at very gentle gradients. The Edwards Plateau and Balcones Escarpment are associated with a great fault system that arcs across Texas to form a distinct boundary between uplands composed primarily of limestone bedrock and lower plains composed mostly of softer rocks. In places, this boundary is marked by an abrupt scarp (the Balcones Escarpment) and in others by a more gradational ramp, but the entire length of this transition zone is a major ecotone in terms of topography, bedrock, hydrology, soil, vegetation, and animal life.

Physiographically, the project area is situated within the hilly Lost Pines Forest region north of the Colorado River. Topography within the project area is characterized by prominent, dissected uplands. Elevations within the project area ranges from approximately 350.0 feet (106.7 meters) to 500.0 feet (152.4 meters) above mean sea level (amsl).

Hydrologically, the project area is situated within the Colorado River basin. At its closest point, the Colorado River is located 1,033.5 feet (315.0 meters) southwest of the project area. The Colorado River flows southeastward across the Blackland Prairie and the Gulf Coastal Plain, ultimately discharging into the Gulf of Mexico a short distance northeast of Matagorda Bay.

2.2 GEOLOGY AND GEOMORPHOLOGY

Geologically, the project area is situated on Eocene-age sedimentary rock and sandstone formations, while areas of alluvium may be present adjacent to major streams and rivers. Specifically, the survey area traverses seven distinct soil units (Table 1; Figures 6 to 7) (NRCS 2018). These soil units consist of residuum weathered from sandstones and Eocene-age formations as well as loamy and sandy alluvium of Holocene and Pleistocene age.

Table 1. Mapped Soils Located within Project Area

Soil Name	Soil Description	Typical Profile/Horizon (inches)
Padina fine sand, 1 to 12 % slopes (PaE)	Residuum weathered from Eocene sandstones of the Carrizo, Queen City, Simsboro, and Sparta formations	0-20: Fine sand 20-124: Fine sand 124-165: Sandy clay loam 165-208: Sandy clay loam
Jedd gravelly fine sandy loam, 5 to 20% slopes (JeF)	Residuum weathered from sandstones in the Reklaw, Queen City, Weches, Sparta Sand, and Cook Mountain formations of Eocene age	0-12: Very gravelly sandy loam 12-17: Very gravelly sandy loam 17-28: Clay 28-60: Sandstone
Silstid loamy fine sand, 1 to 5% slopes (SkC)	Sandy residuum weathered from sandstone and/or loamy residuum weathered from sandstone	0-25: Fine sand 25-37: Fine sand 37-42: Sandy clay loam 42-52: Sandy clay loam 52-84: Sandy clay loam
Vernia very gravelly loamy sand, 1 to 8% slopes (VeD)	Sandy and gravelly alluvium of Pleistocene age derived from mixed sources	0-14: Very gravelly sand 14-44: Very gravelly sand 44-56: Very gravelly sandy clay loam 56-66: Gravelly sandy clay loam 66-72: Gravelly sandy clay loam 72-80: Gravelly sandy loam
Edge gravelly fine sandy loam, 3 to 8% slopes (AtD)	Residuum weathered from shale and siltstone in the Wilcox Formation of Eocene age	0-10: Fine sandy loam 10-24: Loamy fine sand 24-60: Fine sand
Sayers fine sandy loam, 0 to 1% slopes, occasionally flooded (Sa)	Sandy alluvium of Holocene age derived from mixed sources	0-10: Fine sandy loam 10-24: Loamy fine sand 24-60: Fine sand
Bosque loam, 0 to 1% slopes, occasionally flooded (Bo)	Loamy alluvium of Holocene age derived from mixed sources on floodplains	0-5: Loam 5-20: Loam 20-38: Clay loam 38-50: Clay loam 50-60: Clay

Source: NRCS 2018

Aboriginal cultural resources are commonly encountered adjacent to streams and springs as well as in upland settings in Central Texas. Historic-era resources may occur in virtually any physiographic setting but are most common in urban settings and in rural areas suitable for agriculture. The relative antiquity of the pre-Holocene-age uplands that characterize the project area suggests that any cultural resources in these areas would be constrained to the modern ground surface and/or in shallowly buried contexts in erosional settings lacking integrity and depth. However, the Bosque and Sayers soil units, which are present within a small portion of the proposed ROW, consist of Holocene-age alluvium; as such, these soil units have the potential to contain subsurface cultural resources.

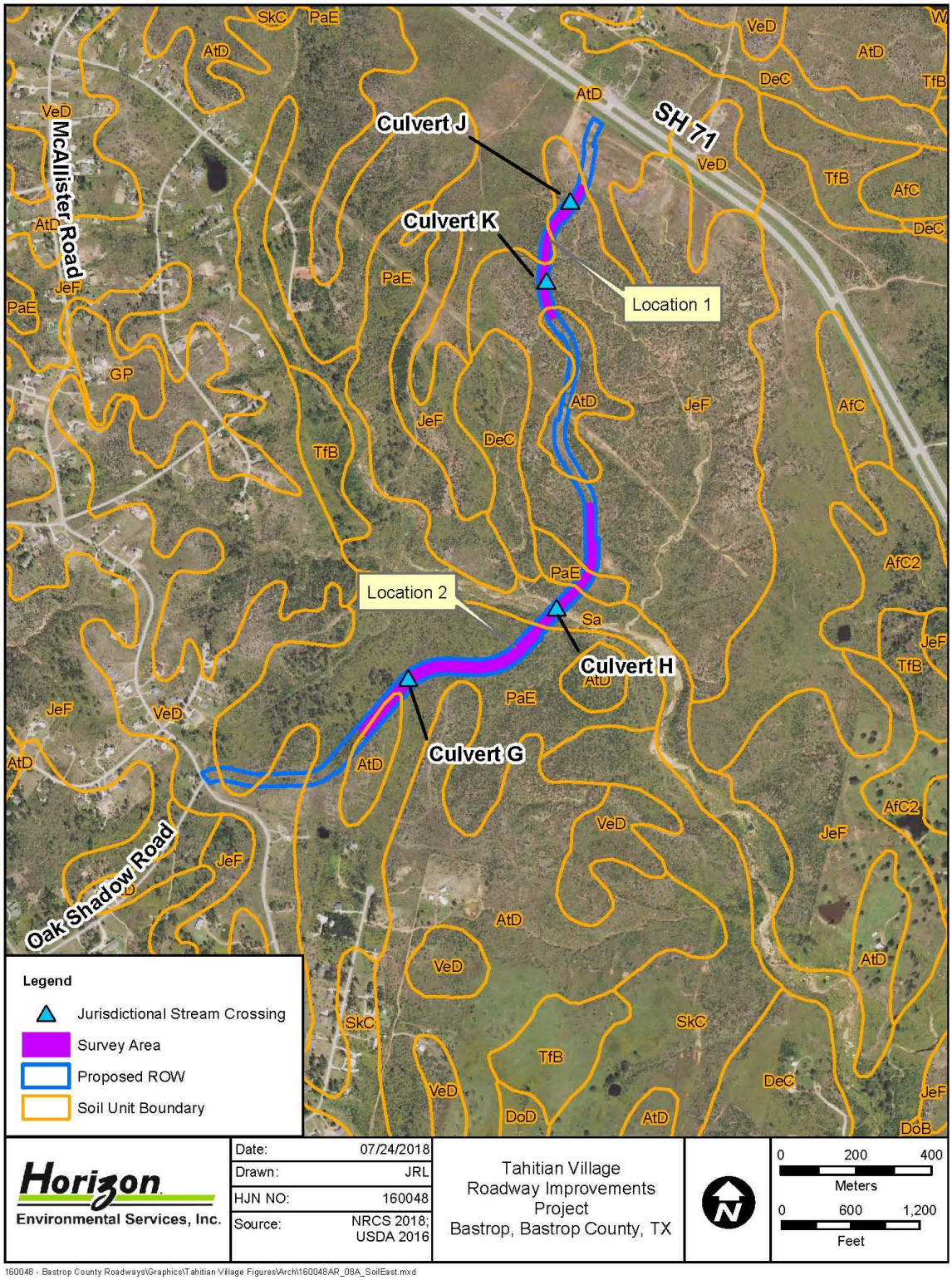

Figure 6. Distribution of Soil Types Mapped within Proposed ROW from Oak Shadow Drive to SH 71

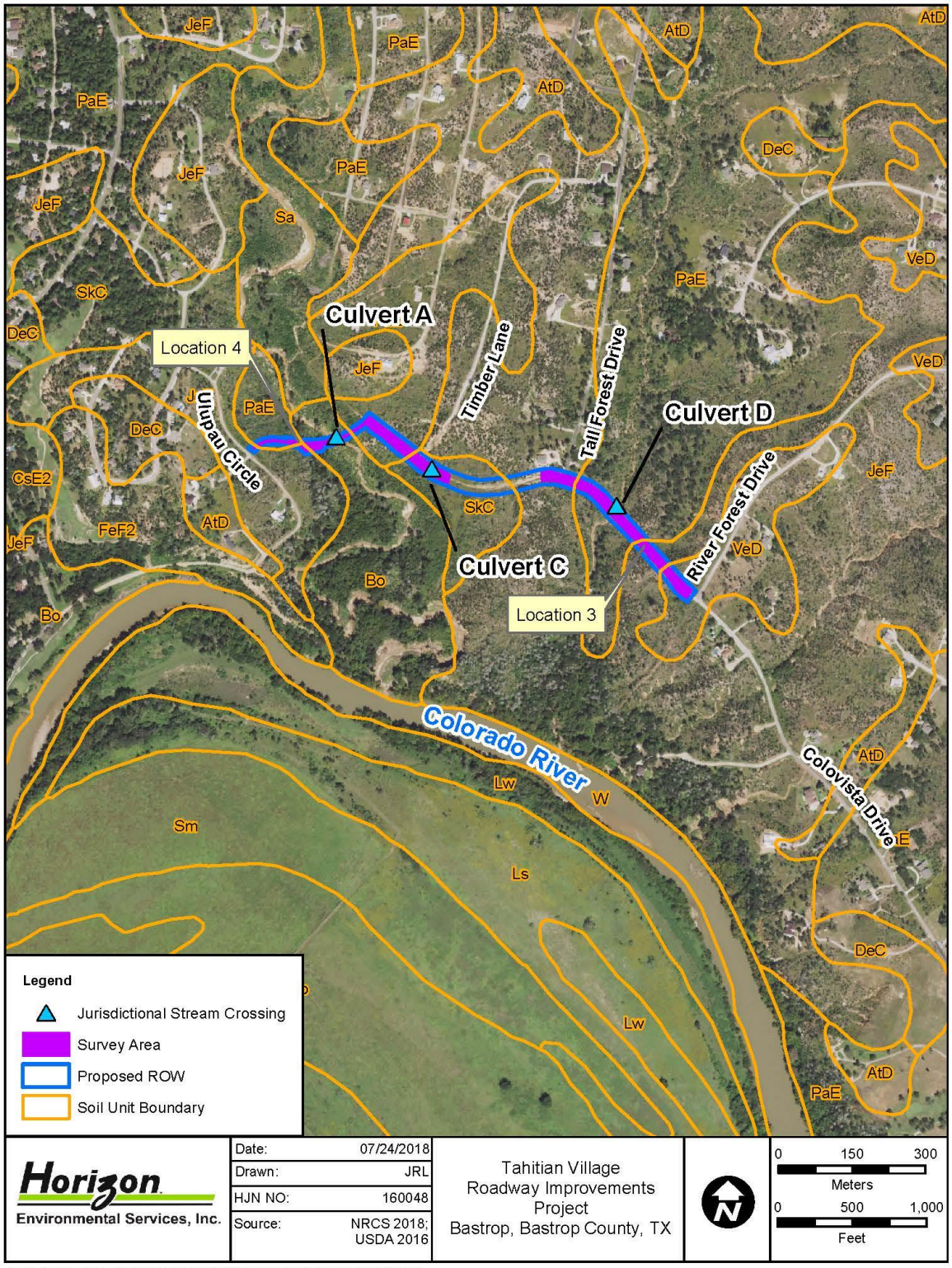

Figure 7. Distribution of Soil Types Mapped within Proposed ROW along Colovista Drive to Ulupau Circle

2.3 CLIMATE

Evidence for climatic change from the Pleistocene to the present is most often obtained through studies of pollen and faunal sequences (Bryant and Holloway 1985; Collins 1995). Bryant and Holloway (1985) present a sequence of climatic change for nearby east-central Texas from the Wisconsin Full Glacial period (22,500 to 14,000 B.P.) through the Late Glacial period (14,000 to 10,000 B.P.) to the Post-Glacial period (10,000 B.P. to present). Evidence from the Wisconsin Full Glacial period suggests that the climate in east-central Texas was considerably cooler and more humid than at present. Pollen data indicate that the region was more heavily forested in deciduous woodlands than during later periods (Bryant and Holloway 1985). The Late Glacial period was characterized by slow climatic deterioration and a slow warming and/or drying trend (Collins 1995). In east-central Texas, the deciduous woodlands were gradually replaced by grasslands and post oak savannas (Bryant and Holloway 1985). During the Post-Glacial period, the east-central Texas environment appears to have been more stable. The deciduous forests had long since been replaced by prairies and post oak savannas. The drying and/or warming trend that began in the Late Glacial period continued into the mid-Holocene, at which point there appears to have been a brief amelioration to more mesic conditions lasting from roughly 6,000 to 5,000 B.P. Recent studies by Bryant and Holloway (1985) indicate that modern environmental conditions in east-central Texas were probably achieved by 1,500 years ago.

Bastrop County is located within the south-central climatic division. The modern climate is typically dry to subhumid with long, hot summers and short, mild winters. The climate is influenced primarily by tropical Maritime air masses from the Gulf of Mexico, but it is modified by polar air masses. Tropical Maritime air masses predominate throughout spring, summer, and fall. Modified polar air masses are dominant in winter and provide a continental climate characterized by considerable variations in temperature.

On average throughout the past century, precipitation and temperature in Texas manifest regional clines with mean annual precipitation totals declining fairly regularly from east to west and mean annual temperature declining equally evenly from northwest to southeast (Larkin and Bomar 1983). In Central Texas, climate has fluctuated from subtropical humid to subtropical subhumid. Average annual precipitation totals 81.3 centimeters (32.0 inches) and temperature averages 19°Celsius (C) (67°Fahrenheit [F]) annually, ranging from 36°C (96°F) in August (the warmest month) to 15°C (59°F) in January (the coldest month). During this time, however, drier periods lasting from three to seven years, when total annual rainfall ranged from 30.5 to 63.5 centimeters (12.0 to 25.0 inches), were followed by abnormally wet years with 114.3 to 127.0 centimeters (45.0 to 50.0 inches) of rainfall.

Two annual precipitation peaks, which typically occur in May and September, are associated with frontal storms that form when southward-moving cool air masses collide with warm, moist air masses moving inland from the Gulf of Mexico (Bomar 1983; Carr 1967). The topographic discontinuity along the Balcones Escarpment lies directly in the path of the Gulf storm trace and increases the lift in convective storms to produce extreme amounts of rainfall. Two extreme examples are the excess of 91.4 centimeters (36.0 inches) of rain that fell within an 18-hour period in the vicinity of Thrall, Texas, in September 1921, and the 55.9-centimeter (22.0-

inch) deluge that fell in less than three hours near O'Harris, Texas, in May 1935. Lower rainfall amounts are characteristic of winter and late summer. In winter, frontal storms pass so frequently that there is little time for moisture to increase, and prevailing upper-level winds from west to east often dominate over meridional flow, meaning that much of the available moisture is derived from the Pacific rather than from the Gulf of Mexico. In summer, cool fronts rarely penetrate into the region, and rainfall occurs primarily as localized, thermal convective storms.

2.4 FLORA AND FAUNA

The project area is situated in the southwestern portion of the Texan biotic province (Blair 1950), an intermediate zone between the forests of the Austroriparian and Carolinian provinces and the grasslands of the Kansan, Balconian, and Tamaulipan provinces (Dice 1943). Some species reach the limits of their ecological range within the Texan province. The boundary, characterized as "approximate," between Blair's (1950) Texan and Balconian provinces passes through western Williamson County, northwest of the project area. Rainfall in the Texan province is barely in excess of water need, and the region is classified as a C_2 (moist subhumid) climate with a moisture surplus index of from 0 to 20%.

Edaphic controls on vegetation types are important in the Texan biotic province, which is located near the border between moisture surplus and moisture deficiency. Sandy soils support oak-hickory forests dominated by post oak (*Quercus stellata*), blackjack oak (*Q. marilandica*), and hickory (*Carya buckleyi*). Clay soils originally supported a tall-grass prairie, but much of this soil type has been placed under cultivation. Dominant tall-grass prairie species include western wheatgrass (*Agrophyron smithii*), silver beardgrass (*Andropogon saccharoides*), little bluestem (*Andropogon scoparius*), and Texas wintergrass (*Stipa leucotricha*). Major areas of oak-hickory forest include the Eastern and Western Cross Timbers, and major tall-grass prairie areas include the Blackland, Grand, and Coastal prairies. Some characteristic associations of the Austroriparian province occur locally in the Texan province, such as a mixed stand of loblolly pine (*Pinus taeda*) and blackjack and post oak in Bastrop County, as well as a series of peat and bog marshes distributed in a line extending from Leon to Gonzales counties.

The fauna associated with this region are represented by a mixture of species from the Austroriparian, Tamaulipan, Chihuahuan, Kansan, Balconian, and Texan biotic provinces. At least 49 species of mammals occur in the Texan province, including Virginia opossum (*Didelphis virginiana*), eastern mole (*Scalopus aquaticus*), fox squirrel (*Sciurus niger*), desert pocket gopher (*Geomys breviceps*), fulvous harvest mouse (*Reithrodontomys fulvescens*), white-footed mouse (*Peromyscus leucopus*), hispid cotton rat (*Sigmodon hispidus*), eastern cottontail rabbit (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), ground squirrel (*Citellus tridecemlineatus*), white-tailed deer (*Odocoileus virginiana*), hispid pocket mouse (*Perognathus hispidus*), deer mouse (*Peromyscus maniculatus*), black-tailed jackrabbit (*Lepus californicus*), pygmy mouse (*Baiomys taylori*), nine-banded armadillo (*Dasypus novemcinctus*), and jaguar (*Felis onca*). Both species of *Terrapene* known from the Austroriparian province—eastern box turtle (*T. Carolina*) and desert box turtle (*T. ornata*)—occur in the Texan.

Sixteen species of lizards, including seven grassland and nine forest species, are also found, including green anole (*Anolis carolinensis*), eastern fence lizard (*Sceloporus undulates*),

common ground skink (*Leiolopisma laterale*), and glass snake (*Ophiosaurus ventralis*) (grassland species), as well as collared lizard (*Crotaphytus collaris*), Texas spiny lizard (*Sceloporus olivaceous*), Texas horned lizard (*Phrynosoma cornutum*), and Great Plains skink (*Eumeces obsoletus*) (forest species). Only five species of urodele fauna are known from this area, including small-mouthed salamander (*Ambystoma texanum*), tiger salamander (*Ambystoma tigrinum*), and eastern lesser siren (*Siren intermedia*), and the Texan province acts as a barrier to urodele distribution between the endemic Balconian province fauna to the west and the Austroriparian fauna to the east.

Anuran fauna is composed primarily of Austroriparian or otherwise widely distributed species, including eastern spadefoot toad (*Scaphiopus holbrookii*), Gulf Coast toad (*Bufo valliceps*), Woodhouse's toad (*Bufo woodhousii*), southern cricket frog (*Acris gryllus*), southern chorus frog (*Pseudacris nigrita*), gray treefrog (*Hyla versicolor*), green treefrog (*Hyla cinerea*), North American bullfrog (*Rana catesbeiana*), northern leopard frog (*Rana pipiens*), and narrow-mouthed toad (*Microhyla carolinensis*). Additional anuran species that fail to cross from the Texan into the Austroriparian province include Pacific tree frog (*Pseudacris clarkia*), Strecker's chorus frog (*Pseudacris streckeri*), and striped whipsnake (*Microhyla olivacea*). Other reptile and amphibian species common to this biotic zone include 6-lined racerunner (*Aspidoscelis sexlineata*), rat snake (*Ptyas mucosus*), eastern hognose snake (*Heterodon platirhinos*), rough green snake (*Opheodrys aestivus*), copperhead (*Agkistrodon contortrix*), western diamondback rattlesnake (*Crotalus atrox*), Blanchard's cricket frog (*Acris crepitans*), diamondback water snake (*Nerodia rhombifer*), and Houston toad (*Bufo houstonensis*).

Common bird species include northern bobwhite (*Colinus virginianus*), eastern meadowlark (*Sturnella magna*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferus*), field sparrow (*Spizella pusilla*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), belted kingfisher (*Ceyrle alcyon*), and mockingbird (*Mimus polyglottos*).

Small herds of bison and antelope were common during the late prehistoric and early historic periods, but these species are no longer native to this region (Jurney et al. 1989:13-14).

3.0 CULTURAL BACKGROUND

The project area is located within Prewitt's (1981, 1985) Central Texas Archeological Region. The indigenous human inhabitants of Central Texas practiced a generally nomadic hunting and gathering lifestyle throughout all of prehistory, and, in contrast to much of the rest of North America, mobility and settlement patterns do not appear to have changed markedly through time in this region.

3.1 PALEOINDIAN PERIOD (CA. 12,000 TO 8500 B.P.)

The initial human occupations in the New World can now be confidently extended back before 12,000 B.P. (Dincauze 1984; Haynes et al. 1984; Kelly and Todd 1988; Lynch 1990; Meltzer 1989). Evidence from Meadowcroft Rockshelter in Pennsylvania suggests that humans were present in Eastern North America as early as 14,000 to 16,000 years ago (Adovasio et al. 1990), while more recent discoveries at Monte Verde in Chile provide unequivocal evidence for human occupation in South America by at least 12,500 years ago (Dillehay 1989, 1997; Meltzer et al. 1997). Most archeologists have historically discounted claims of much earlier human occupation during the Pleistocene glacial period. However, recent investigations of the Buttermilk Creek Complex in Bell County, Texas, have raised the possibility that a pre-Clovis culture may have been present in North America as early as 15,500 years ago (Waters et al. 2011).

The earliest generalized evidence for human activities in Central Texas is represented by the PaleoIndian period (12,000 to 8500 B.P.) (Collins 1995). This stage coincided with ameliorating climatic conditions following the close of the Pleistocene epoch that witnessed the extinction of herds of mammoth, horse, camel, and bison. Cultures representing various periods within this stage are characterized by series of distinctive, relatively large, often fluted, lanceolate projectile points. These points are frequently associated with spurred end scrapers, gravers, and bone foreshafts. PaleoIndian groups are often inferred to have been organized into egalitarian bands consisting of a few dozen individuals that practiced a fully nomadic subsistence and settlement pattern. Due to poor preservation of floral materials, subsistence patterns in Central Texas are known primarily through the study of faunal remains. Subsistence focused on the exploitation of plants, small animals, fish, and shellfish, even during the PaleoIndian period. There is little evidence in this region for hunting of extinct megafauna, as has been documented elsewhere in North America. Rather, a broad-based subsistence pattern appears to have been practiced throughout all prehistoric time periods. In Central Texas, the PaleoIndian stage is divided into two periods based on recognizable differences in projectile point styles. These

include the Early PaleoIndian period, which is recognized based on large, fluted projectile points (i.e., Clovis, Folsom, Dalton, San Patrice, and Big Sandy), and the Late PaleoIndian period, which is characterized by unfluted lanceolate points (i.e., Plainview, Scottsbluff, Meserve, and Angostura).

3.2 ARCHAIC PERIOD (CA. 8500 TO 1200 B.P.)

The onset of the Hypsithermal drying trend marks the beginning of the Archaic period (8500 to 1200 B.P.) (Collins 1995). This climatic trend marked the beginning of a significant reorientation of lifestyle throughout most of North America, but this change was far less pronounced in Central Texas. Elsewhere, the changing climatic conditions and corresponding decrease in the big game populations forced people to rely more heavily upon a diversified resource base composed of smaller game and wild plants. In Central Texas, however, this hunting and gathering pattern is characteristic of most of prehistory. The appearance of a more diversified tool kit, the development of an expanded groundstone assemblage, and a general decrease in the size of projectile points are hallmarks of this cultural stage. Material culture shows greater diversity during this broad cultural period, especially in the application of groundstone technology.

Traditionally, the Archaic period is subdivided into Early, Middle, and Late subperiods. Changes in projectile point morphology are often used as markers differentiating these three subperiods, though other changes in material culture occurred as well. Perhaps most markedly, burned rock middens appear during the Middle Archaic subperiod, continuing into the Late Archaic subperiod, and large cemeteries appear during the Late Archaic subperiod. In addition, the increasing density of prehistoric sites through time is often considered to constitute evidence of population growth, though differential preservation probably at least partially accounts for the lower numbers of older sites.

3.3 LATE PREHISTORIC PERIOD (CA. 1200 TO 350 B.P.)

The onset of the Late Prehistoric period (1200 to 350 B.P.) (Collins 1995) is defined by the appearance of the bow and arrow. In Central Texas, pottery also appears during the Late Prehistoric period (though ceramics appear earlier in Southeast Texas). Use of the atlatl (i.e., spearthrower) and spear was generally discontinued during the Late Prehistoric period, though they continued to be used in the inland subregion of Southeast Texas along with the bow and arrow through the Late Prehistoric period (Patterson 1980, 1995; Wheat 1953). In Texas, unifacial arrow points appear to be associated with a small prismatic blade technology. The Late Prehistoric period is generally divided into two phases, the Austin and Toyah phases. Austin phase sites occur earliest to the north, which has led some researchers (e.g., Prewitt 1985) to suggest that the Austin-phase populations of Central Texas were migrants from the north, and lack the ceramic industry of the later Toyah phase.

3.4 HISTORIC PERIOD (CA. 350 B.P TO PRESENT)

The first European incursion into what is now known as Texas occurred in 1519, when Álvarez de Pineda explored the northern shores of the Gulf of Mexico. In 1528, Cabeza de Vaca

crossed South Texas after being shipwrecked along the Texas Coast near Galveston Bay; however, de Vaca did not approach the Colorado River basin or the Bastrop region. It was not until 1691, when Domingo Terán de los Ríos led an expedition along the route that became known as the Camino Real, that exploration of this region began.

In the late 17th century, natives from northern Mexico and southern Texas began migrating into Central Texas to escape forced occupation and labor in the Spanish mines and missions and on Spanish ranches. At approximately the same time, horses stolen from the Spanish had become an integral part of the Apache way of life. These mounted, nomadic bison hunters of the High Plains enjoyed a tremendous advantage over their pedestrian enemies. They terrorized native groups to the east and southeast of their High Plains homeland, forcing many to flee, some into Central Texas (Newcomb 1993:2). Thus, the first Europeans into the region encountered native groups fragmented by the growth of the Spanish missions, the raids of the Apache, and the diseases that swept before the physical presence of Europeans. Their accounts, therefore, do not provide direct analogues to prehistoric cultural patterns, but rather represent a time of drastic cultural change (Collins 1995). A few indigenous cultural patterns may have prevailed through time. Large, diffuse encampments composed of peoples with mixed ethnic affiliations and small, band-sized residential camps date to this particular period in Central Texas (Collins 1995:386). The smaller sites may represent indigenous groups.

Historical documents dating from the 1730s to 1800 make reference to remnants of native groups living in the missions, primarily in Bexar County (Collins 1995). Toward the end of this time, the Comanche began to move into Northwestern Texas from the high plains. Records of their presence in Central Texas at this time tend to be highly biased since they are provided mostly from the hostile perspective of Anglo settlers (Collins 1995).

During the early part of the 19th century, the Native American presence in Central Texas was composed of small numbers of mission Indians, “far flung nomadic native groups (primarily the Comanche)” (Collins 1995:387), with EuroAmerican settlers becoming increasingly common. The Comanche presence began fading in the mid- to late 19th century. Their final expulsion heralded the end of Native American presence in Central Texas.

In 1804, a Spanish fort was built on the Old San Antonio Road Colorado River crossing. The self-proclaimed Baron of Bastrop, a German immigrant who had been given permission by the Mexican government to settle near this crossing, established the settlement of Bastrop in 1823. Further attempts to settle the area failed until a new settlement was established by Stephen F. Austin in 1827. Many well known Texas pioneers first settled in the Bastrop area. One of these early settlers, James Burleson, owned a parcel of land that would become a portion of Buescher State Park. The population of the Bastrop settlement at the time of the Texas Revolution was around 400 individuals.

The railroad came to Bastrop in the early 1870s and helped establish logging as the major local economic activity. Iron, coal, and manufacturing became important industries by the late 19th century. By 1900, the population of Bastrop County had increased to 26,845, up from around 7,000 at the start of the Civil War.

4.0 ARCHIVAL RESEARCH

Prior to initiating fieldwork, Horizon personnel reviewed the THC's online *Texas Archeological Sites Atlas* (TASA) and *Texas Historic Sites Atlas* (THSA), the National Park Service's (NPS) online *National Register Information System* (NRIS), and the Texas State Historical Association's (TSHA) *The Handbook of Texas Online* for information on previously recorded archeological sites and previous archeological investigations conducted within a 1.0-mile (1.6-kilometer) radius of the project areas. Based on this archival research, ten previously recorded archeological sites are located within a 1.0-mile (1.6-kilometer) radius of the project area (Table 2; Figure 8) (THC 2018). The ten known archeological sites are located outside of the proposed ROWs and would not be disturbed as a result of the proposed undertaking. The previously recorded archeological sites include four aboriginal campsites, five aboriginal lithic scatters, and one aboriginal lithic quarry site.

One previous linear cultural resources survey conducted for a linear utility corridor crosses the eastern portion of the project area that extends from Oak Shadows Drive to SH 71; however, the vast majority of the project area has not been previously surveyed for cultural resources (THC 2018).

4.1 HISTORICAL MAP RESEARCH

No aerial photographs containing the project area could be found prior to 1995. However, a review of historical topographic maps containing the project area revealed that no structures are visible on these maps within the proposed ROWs at any time between 1950 and present (NETR 2018). Additionally, no artifacts or cultural features were observed within the proposed ROWs during the survey that would indicate the presence of any historic-age cultural components.

Table 2. Summary of Known Cultural Resources within 1.0 Mile of Project Area

Site No./Name	Site Type	NRHP/SAL Eligibility Status[1]	Distance/Direction from Project Area	Potential to be Impacted by Project?
Archeological Sites				
41BP66	Aboriginal campsite (undetermined prehistoric)	Undetermined	0.1 mile south	No
41BP312	Aboriginal campsite (undetermined prehistoric)	Undetermined	0.6 mile southwest	No
41BP467	Aboriginal lithic quarry (undetermined prehistoric)	Determined ineligible	0.4 mile northwest	No
41BP637	Aboriginal campsite (undetermined prehistoric)	Undetermined	0.2 mile west	No
41BP639	Aboriginal campsite (undetermined prehistoric)	Undetermined	0.5 mile north	No
41BP894	Aboriginal lithic scatter (undetermined prehistoric)	Determined eligible	0.8 mile north	No
41BP895	Aboriginal lithic scatter (undetermined prehistoric)	Determined ineligible	0.8 mile northeast	No
41BP896	Aboriginal lithic scatter (undetermined prehistoric)	Determined eligible	0.4 mile northeast	No
41BP897	Aboriginal lithic scatter (undetermined prehistoric)	Determined ineligible	0.6 mile northeast	No
41BP898	Aboriginal lithic scatter (undetermined prehistoric)	Determined ineligible	0.8 mile east-northeast	No

[1] *Determined eligible/ineligible* = Site determined eligible/ineligible by SHPO
Recommended eligible/eligible = Site recommended as eligible/ineligible by site recorder and/or sponsoring agency but eligibility has not been determined by SHPO
Undetermined = Eligibility not assessed or no information available

NRHP National Register of Historic Places

SAL State Antiquities Landmark

SHPO State Historic Preservation Office

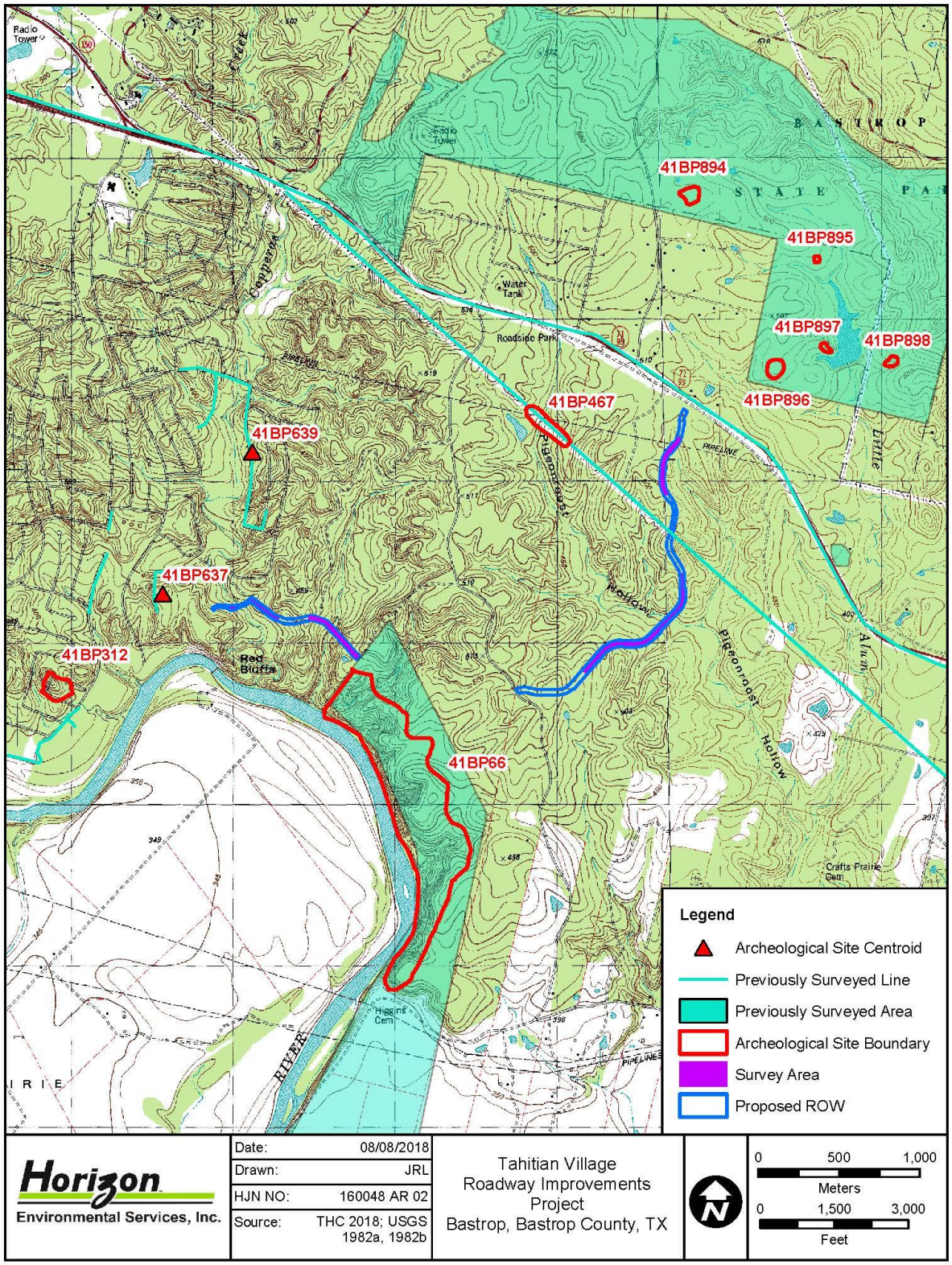

Figure 8. Locations of Known Cultural Resources within 1.0 Mile of Project Area

5.0 SURVEY METHODOLOGY

Horizon staff archeologists performed an intensive cultural resources survey of the project area from August 6 to 8, 2018, to locate any cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologists traversed the archeological survey area on foot and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The vast majority of the project area was burned during the 2011 Bastrop County Complex Fire. As a result, the vegetation is characterized by recent growth, including loblolly pine saplings, blackjack oak saplings, hackberry, various grasses, and fallen, charred pines. Visibility of the modern ground surface ranged from low (<30%) in more densely vegetated areas to high (100%) on eroded uplands. Natural chert cobbles and gravels were abundant on the modern ground surface throughout the project area, and much of it was heavily burned from the wildfire. Two major streams cross the proposed ROWs, Pigeonroost Hollow and Copperas Creek, along with various smaller drainages and tributaries (Figures 9 to 17).

In addition to pedestrian walkover and surface inspection, the Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 16 shovel tests per 1.0 mile (1.6 kilometers) for each 100.0-foot- (30.5-meter-) wide transect for linear surveys. As such, a minimum of 21 shovel tests would be required within the collective 1.3 miles (2.0 kilometers) of survey area to meet the TSMASS requirements. Horizon excavated a total of 75 shovel tests, thereby exceeding the TSMASS for a linear survey of this size (Figures 18 to 20). Shovel testing revealed gravelly fine sandy loam overlying dense chert cobbles, sandstone, or clay at an average depth of 11.8 inches (30.0 centimeters) below surface on uplands, and loose, fine sand to an average depth of 39.4 inches (100.0 centimeters) below surface near stream channels.

In general, shovel tests measured approximately 11.8 inches (30.0 centimeters) in diameter, and all sediments were screened through 0.25-inch (6.35-millimeter) hardware cloth. The Universal Transverse Mercator (UTM) coordinates of all shovel tests were determined using hand-held Garmin eTrex 30x global positioning system (GPS) devices based on the North American Datum of 1983 (NAD 83). Shovel test data are summarized in Appendix A. During the survey, field notes were maintained on terrain, vegetation, soils, landforms, survey methods, and shovel test results. Digital photographs were taken, and a photographic log was maintained. Horizon employed a non-collection policy for cultural resources. Diagnostic artifacts (e.g., projectile points, ceramics, historic materials with maker's marks) and non-diagnostic artifacts (e.g., lithic debitage, burned rock, historic glass, and metal scrap) were described, sketched, and/or photo-documented in the field and replaced in the same location in which they were found.

Figure 9. View of Jurisdictional Stream at Culvert H, Pigeonroost Hollow (Facing South)

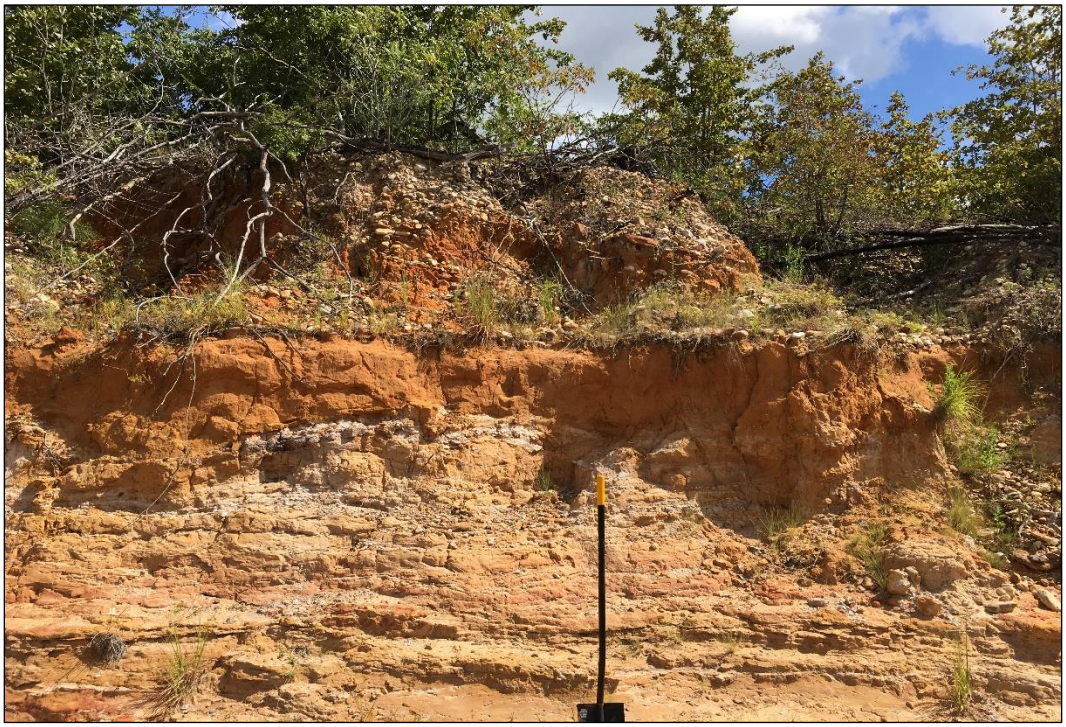

Figure 10. Profile of the North Bank of Pigeonroost Hollow (Facing Northeast)

Figure 11. General View of Jurisdictional Survey Location 1 (Facing South-Southwest)

Figure 12. View of Jurisdictional Stream at Culvert J (Facing North)

Figure 13. General View of Jurisdictional Survey Location 2 (Facing Southwest)

Figure 14. View of Jurisdictional Stream at Culvert D (Facing Southeast)

Figure 15. General View of Jurisdictional Survey Location 3 (Facing Northwest)

Figure 16. General View of Jurisdictional Survey Location 4 (Facing Northwest)

Figure 17. View of Drop-off to Culvert A, Copperas Creek (Facing West)

Three newly recorded sites—41BP963, 41BP964, and 41BP965—were documented within the project area during the survey. During the site recording process, a standard site recording form was used to record pertinent information on location, physiographic setting, and local environmental characteristics; types and quantities of artifacts observed; distribution and densities of artifacts; artificial and natural impacts; and the condition of surface and subsurface archeological deposits. A scaled sketch map was drawn that illustrates the site boundary; locations of shovel tests, cultural features, and/or material concentrations; as well as notable features of the landscape. The sites were thoroughly photo-documented using color digital photography, and a photographic log was maintained of all photographs taken. Based on the information recorded on the standard archeological site recording form in the field, a *Texas Archeological Data Site Form* was completed by Horizon's laboratory personnel for the newly recorded archeological sites using the most current version of the Texas Archeological Research Laboratory's (TARL) *TexSite* archeological data collection software. The completed *TexSite* forms were submitted to TARL, and site trinomials were obtained for the newly recorded sites.

The survey methods employed during the survey represented a "reasonable and good-faith effort" to locate significant archeological sites within the project area as defined in 36 Code of Federal Regulations (CFR) 800.3.

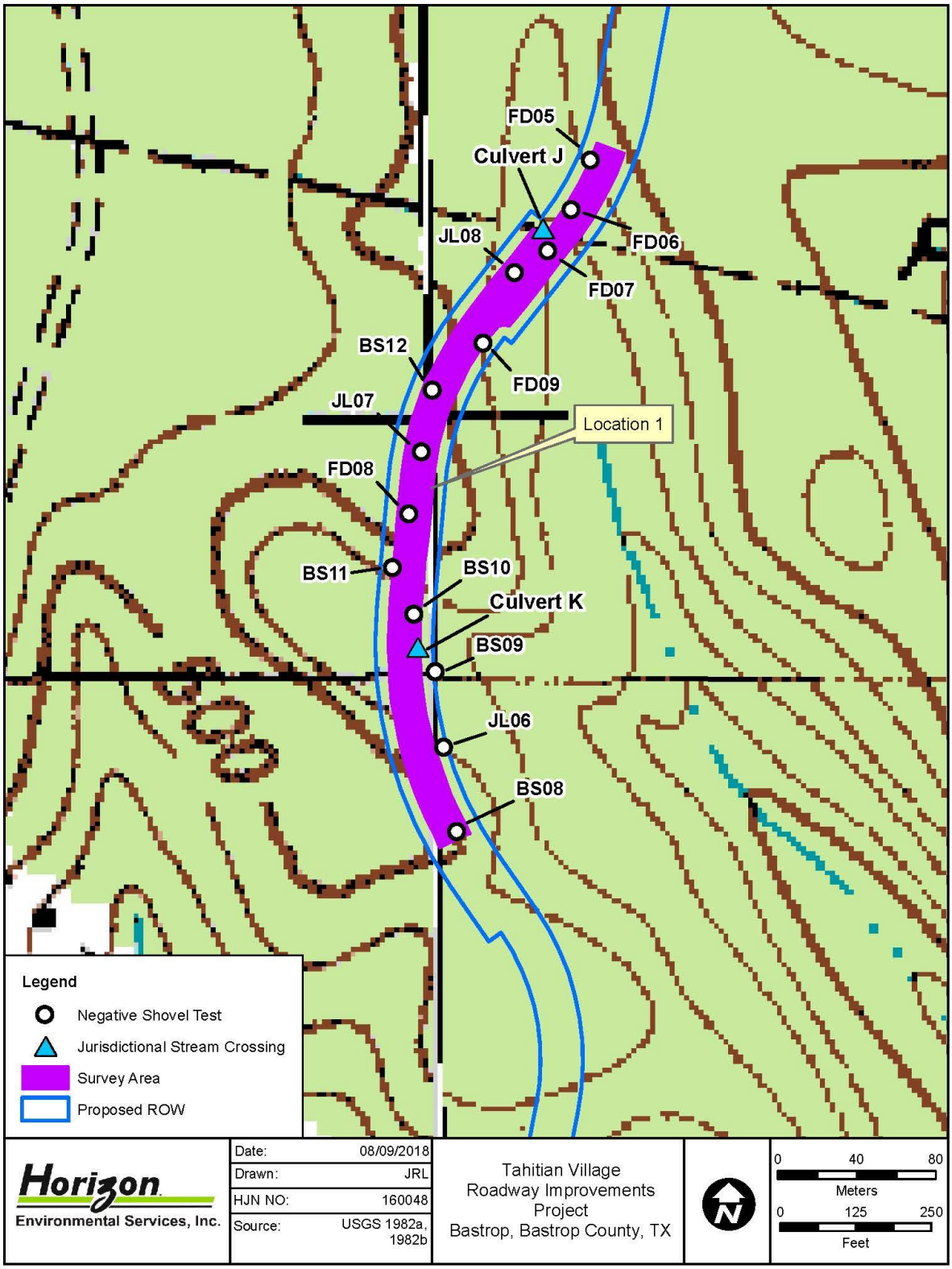

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Figure 18. Shovel Tests Excavated within Jurisdictional Survey Location 1

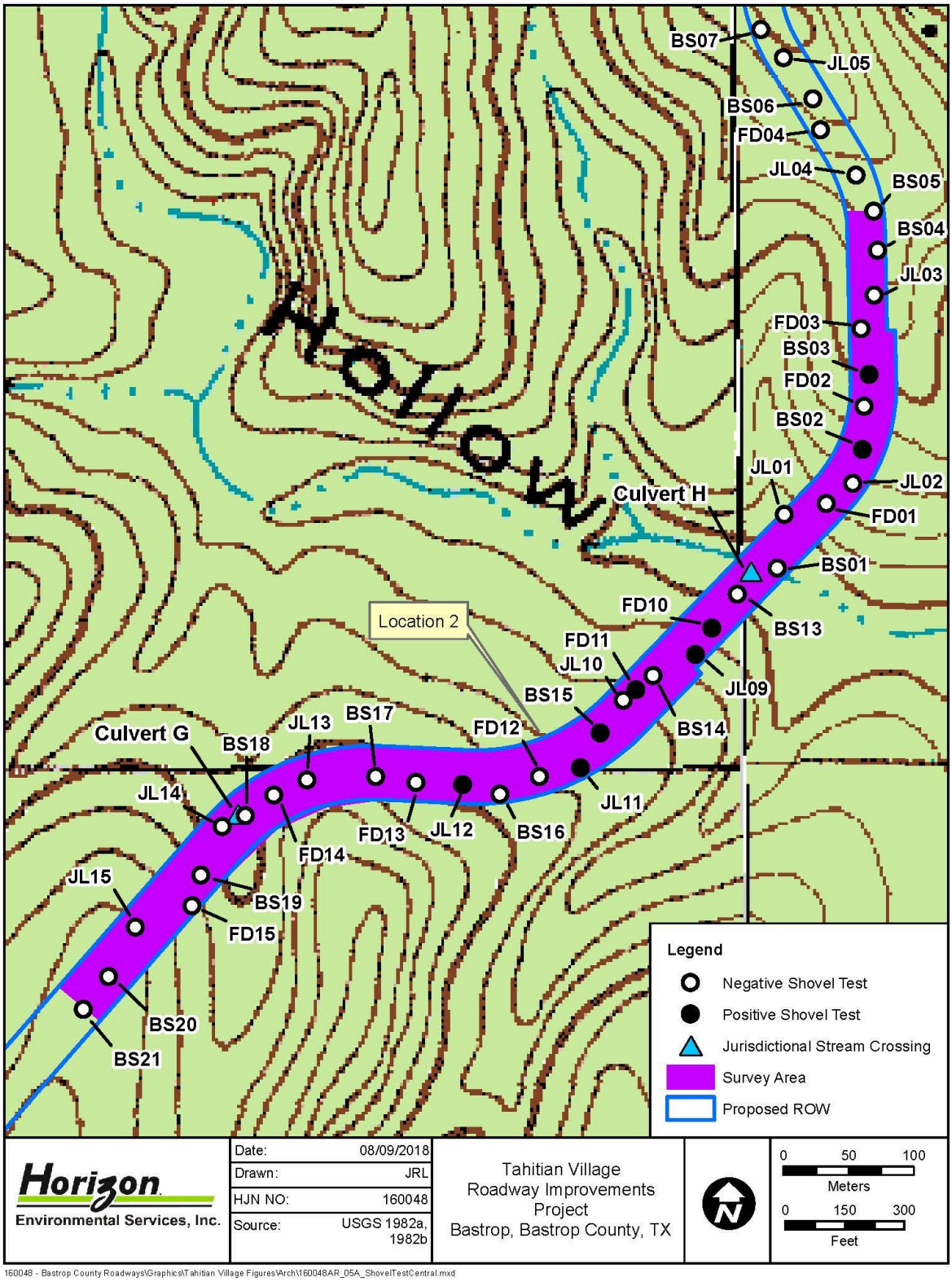

Figure 19. Shovel Tests Excavated within Jurisdictional Survey Location 2

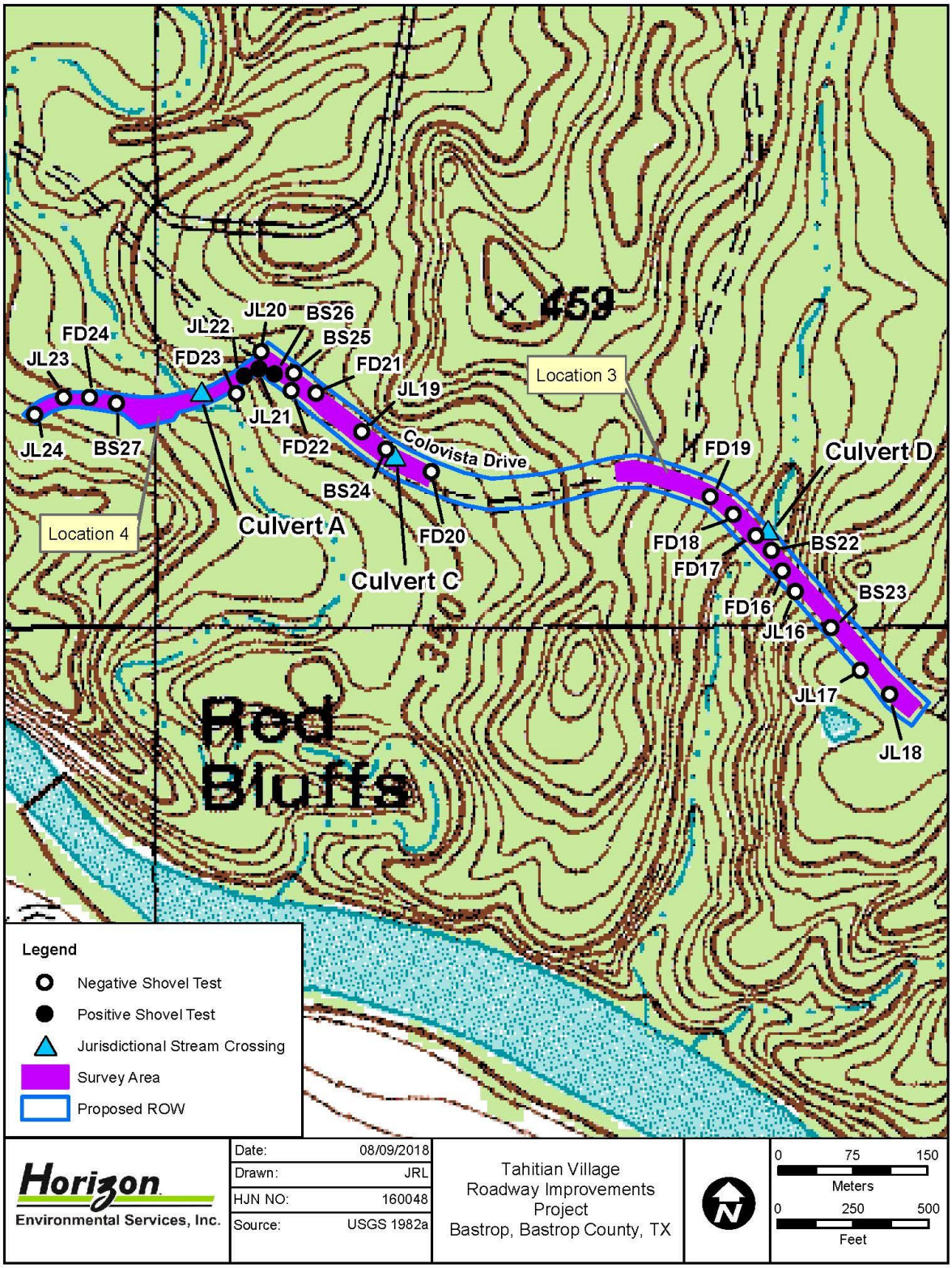

Figure 20. Shovel Tests Excavated within Jurisdictional Survey Location 3 and 4

6.0 RESULTS OF INVESTIGATIONS

Three newly recorded archeological sites—41BP963, 41BP964, and 41BP965—were documented within the proposed ROWs during the cultural resources assessment (Figure 21). The sites are discussed in detail below.

6.1 SITE 41BP963

General Description

Site 41BP963 consists of an aboriginal lithic procurement area situated along the slope and summit of a prominent ridge approximately 278.9 feet (85.0 meters) north of Pigeonroost Hollow in jurisdictional survey Location 2 (Figure 22). In 2011, the site was burned during the Bastrop County Complex Fire. Chert cobbles and gravels are abundant on the surface of the site, most of which were thermally altered during the wildfire. Multiple push piles around the site containing chert gravels and burned loblolly pines indicate the site was cleared after the wildfire occurred. A two-track road is also present through the center of the site. (Figures 23 to 24).

Vegetation on the site consists of blackjack oak saplings, loblolly pine saplings, grasses, weeds and charred loblolly pines, both standing and fallen. Vegetation was dense on the southern end of the site near Pigeonroost Hollow and sparser to the north on the summit of the landform, allowing for higher ground surface visibility. Elevations across the site range from 430.0 to 490.0 feet (131.1 to 149.4 meters) amsl. A total of 10 shovel tests were excavated on site 41BP963, two of which were positive for subsurface cultural materials. The site was only recorded within the confines of the proposed ROW, and the boundaries of the site may extend east and west outside of the proposed ROW.

Horizontal and Vertical Extents of Cultural Materials

Based on the distribution of cultural materials on the modern ground surface as well as subsurface in shovel tests within the proposed ROW, site 41BP963 measures approximately 945.0 feet (288.0 meters) north to south by 100.0 feet (30.5 meters) east to west within the proposed ROW. Ten shovel tests were excavated within the final delineated boundaries of site 41BP963 (see Figure 22). Two of these shovel tests were positive for cultural materials from 3.9 to 23.6 inches (10.0 to 60.0 centimeters) below surface. Shovel testing revealed deep, loose fine sandy soils on the southern end of the site near the stream and shallow, gravelly sandy soils overlying sandstone bedrock or clay on the eroded northern end of the site.

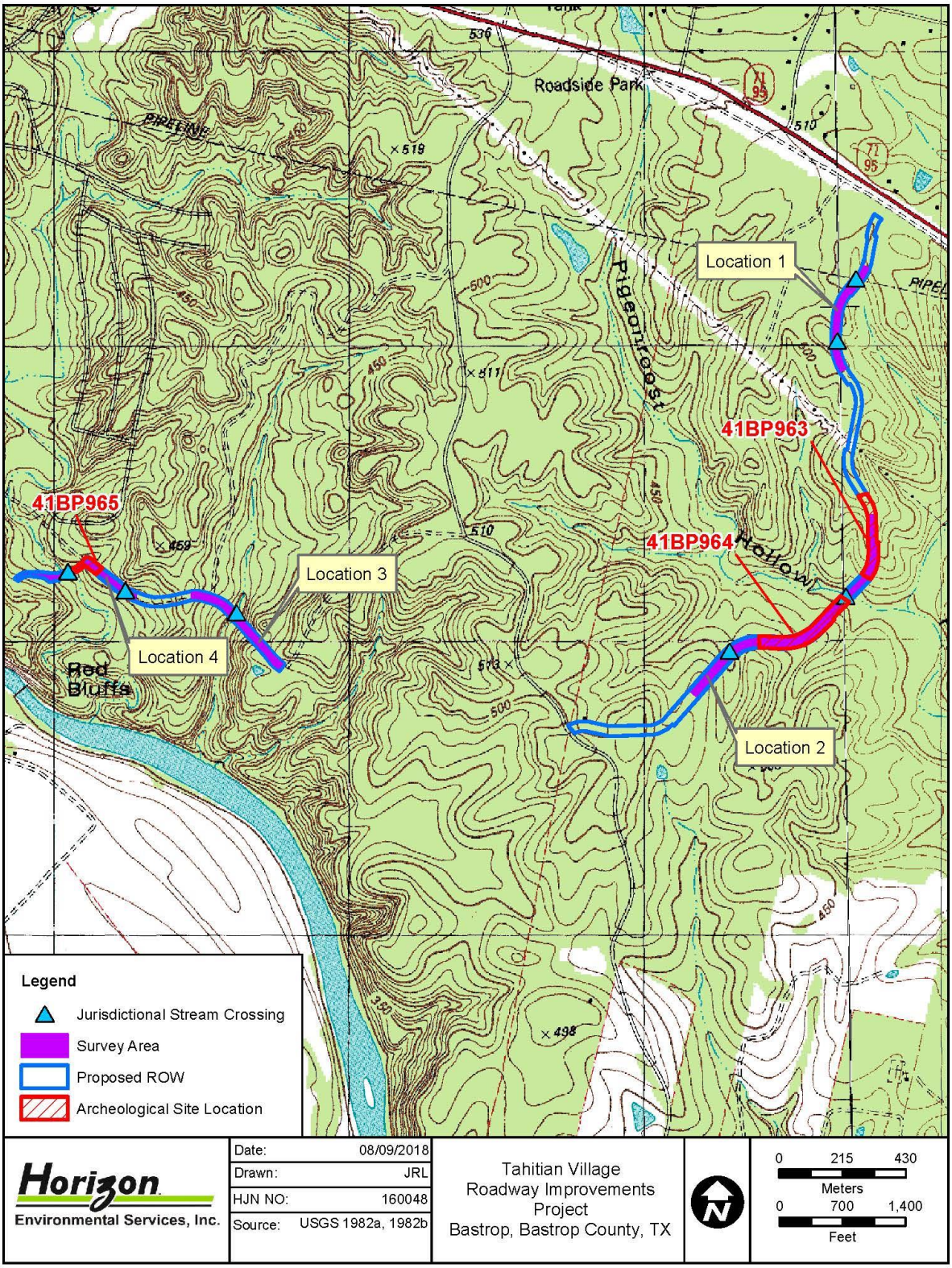

Figure 21. Location of Newly Recorded Sites on USGS Topographic Quadrangle

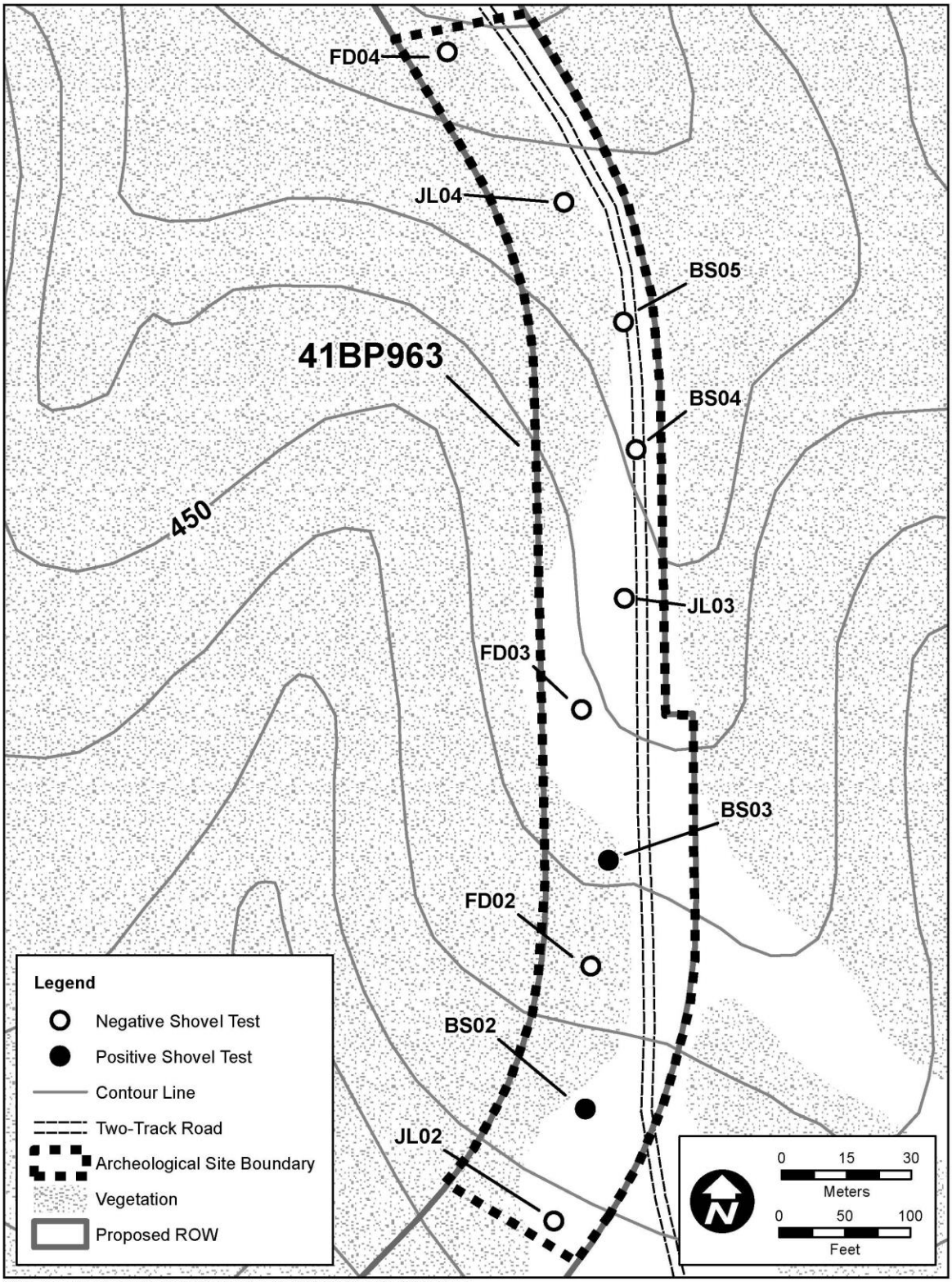

Figure 22. Digital Sketch Map of Site 41BP963

Figure 23. View of Two-Track Road on Site 41BP963 (Facing North)

Figure 24. View of Modern Ground Surface on the Northern End of Site 41BP963

Observed Cultural Features

No evidence of any cultural features was observed on the modern ground surface or within any of the 10 shovel tests excavated on site 41BP963.

Observed Cultural Materials

A low-density scatter of tested chert cobbles, cores, and flakes was observed on the modern ground surface of the site as well as subsurface within two shovel tests. Three bifaces were also found outside of the proposed ROW within the dry Pigeonroost Hollow creek bed to the south of the site and a dry tributary to the east of the site (Figures 25 to 26). These bifaces may be associated with site 41BP963 or another nearby site. No temporally diagnostic tools were observed on the site.

Summary and Recommendations

Site 41BP963 consists of a low-density aboriginal lithic procurement area of undetermined prehistoric age located along a slope and summit of a ridge north of Pigeonroost Hollow. The site was burned during the 2011 Bastrop County Complex Fire and was disturbed by subsequent clearing events. Additionally, a two-track road bisects the site from north to south. The modern ground surface is densely covered in natural chert gravels, much of which has been thermally altered due to the wildfire. A low-density scatter of tested chert cobbles, cores, and flakes were observed on the modern ground surface of the site as well as subsurface within shovel tests. A total of 10 shovel tests were excavated within the final delineated boundaries of site 41BP963. Two of these shovel tests were positive for cultural materials from 3.9 to 23.6 inches (10.0 to 60.0 centimeters) below surface in very loose, sandy soils.

As the site boundaries were delineated only within the proposed ROW, uninvestigated portions of site 41BP963 could potentially extend beyond the currently documented site boundary. As the entire extent of site 41BP963 was not assessed, its overall NRHP and SAL eligibility remains undetermined. However, based on the lack of temporally diagnostic artifacts, preserved flora or fauna, and intact archeological deposits, it is Horizon's opinion that the portion of site 41BP963 within the proposed ROW is considered to be a non-contributing element to the site's overall NRHP/SAL eligibility. Therefore, no additional investigations are recommended on site 41BP963 in connected with the currently proposed undertaking.

6.2 SITE 41BP964

General Description

Site 41BP964 consists of a low-density, subsurface aboriginal lithic scatter located on the slope and summit of a prominent ridge located south of Pigeonroost Hollow in jurisdictional survey Location 2 (Figure 27). In 2011, the site was burned during the Bastrop County Complex Fire. Chert cobbles and gravels are abundant on the surface of the site, most of which was thermally altered during the wildfire. An overgrown two-track road runs northeast to southwest through the middle of the site (Figures 28 to 29).

Figure 25. Aboriginal Lithic Artifacts Observed on Site 41BP963

Figure 26. Aboriginal bifacial tools Found in Stream Beds near Site 41BP963

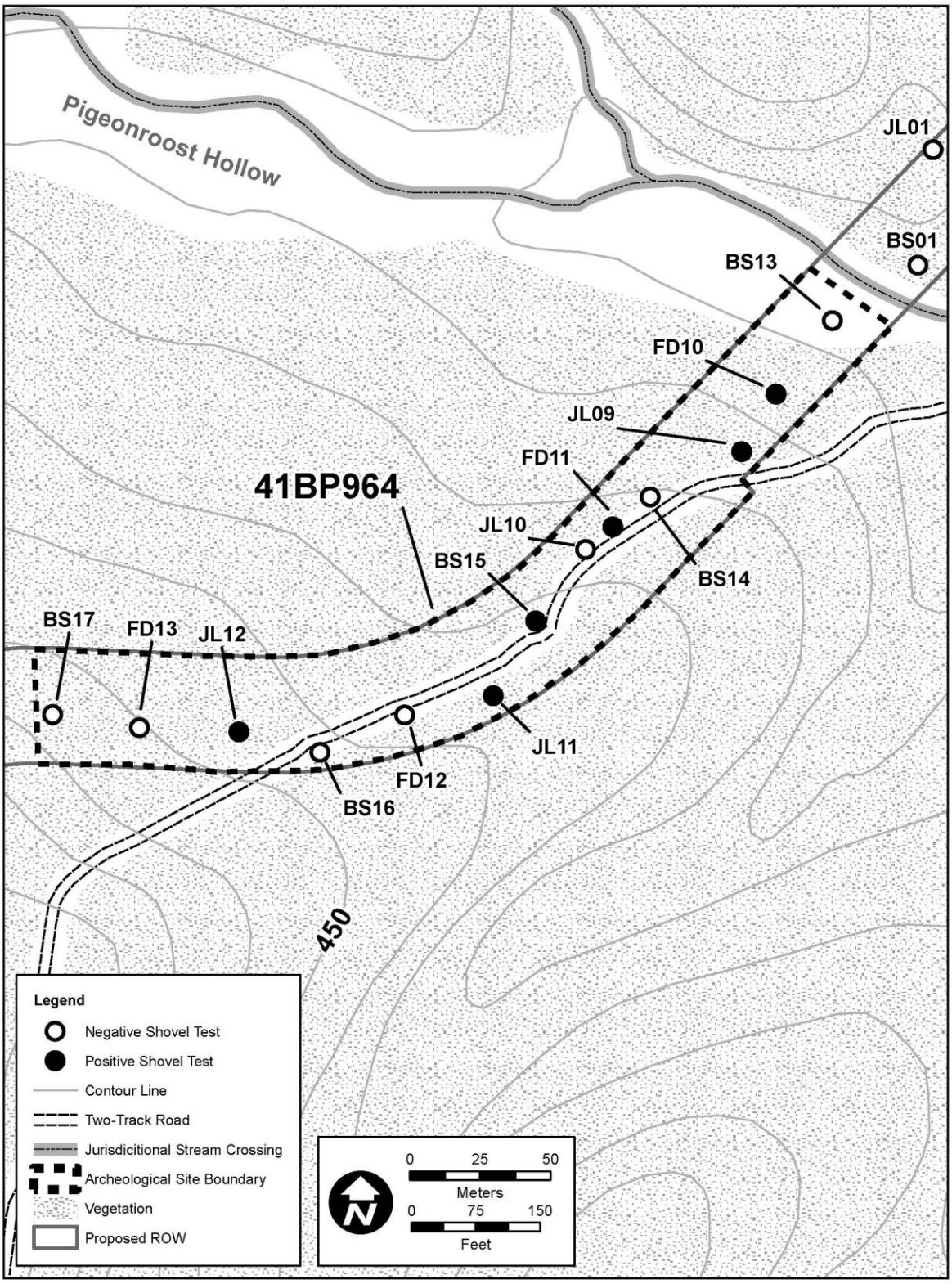

Figure 27. Digital Sketch Map of Site 41BP964

Unlike site 41BP963 to the north, no evidence of recent clearing is present on the site; as a result, vegetation is somewhat denser. Vegetation on site 41BP964 consists of blackjack oak saplings, loblolly pine saplings, greenbrier, dewberry, mustang berry, prickly pear, grasses, weeds, and charred loblolly pines, both standing and fallen (Figures 28 to 29). Elevations across the site range from 400.0 to 460.0 feet (121.9 and 140.2 meters) amsl. Thirteen shovel tests were excavated on site 41BP964, six of which were positive for subsurface cultural materials. The site was only recorded within the confines of the proposed ROW, and the boundaries of the site may extend outside of the proposed ROW.

Horizontal and Vertical Extents of Cultural Materials

Based on the distribution of cultural materials in shovel tests, site 41BP964 measures approximately 1,076.1 feet (328.0 meters) northeast to southwest by an average of 100.0 feet (30.5 meters) northwest to southeast. A total of 13 shovel tests were excavated within the final delineated boundaries of site 41BP964 (see Figure 27). Six of these shovel tests were positive for cultural materials from 7.9 to 39.4 inches (20.0 to 100.0 centimeters) below surface. Shovel testing revealed deep, loose, fine sandy soils on the northeastern end of the site near the stream and shallow, gravelly sandy soils overlying sandstone bedrock, dense chert gravels, or clay on the southwestern end of the site approaching the summit of the eroded landform.

Observed Cultural Features

No evidence of any cultural features was observed on the modern ground surface or within any of the 13 shovel tests excavated on site 41BP964.

Observed Cultural Materials

A low-density scatter of subsurface lithic materials was observed on the site, including one core, five secondary flakes, 16 tertiary thinning flakes, and one large tertiary flake with a utilized edge (Figures 30 to 31). No temporally diagnostic tools were observed on the site.

Summary and Recommendations

Site 41BP964 consists of a low-density aboriginal lithic scatter situated along the slope and summit of a prominent ridge immediately south of Pigeonroost Hollow. In 2011, the site was burned during the Bastrop County Complex Fire. The ground surface is densely covered in natural chert gravels, much of which has been thermally altered due to the wildfire. All lithic materials were observed subsurface within shovel tests. A total of 13 shovel tests were excavated within the final delineated boundaries of site 41BP964. Six of these shovel tests were positive for cultural materials from 7.8 to 39.4 inches (20.0 to 100.0 centimeters) below surface in loose, sandy soils.

As the site boundaries were delineated only within the proposed ROW, portions of site 41BP964 could potentially extend beyond the currently documented site boundary. As the entire extend of site 41BP964 was not assessed, its overall NRHP and SAL eligibility remains undetermined. However, based on the lack of temporally diagnostic artifacts, preserved flora or fauna, and intact stratified buried deposits, it is Horizon's opinion that the investigated portion of

Figure 28. General View of Site 41BP964 (Facing Northeast)

Figure 29. View of Ground Surface on Site 41BP964

Figure 30. Aboriginal Lithic Artifacts Observed on Site 41BP964

Figure 31. Aboriginal Lithic Core Observed on Site 41BP964

site 41BP964 within the proposed ROW is considered to be a non-contributing element to the site's overall NRHP/SAL eligibility. Therefore, no additional investigations are recommended on site 41BP964 in connected with the currently proposed undertaking.

6.3 SITE 41BP965

General Description

Site 41BP965 consists of a low-density aboriginal lithic scatter situated along the western slope of a prominent ridge immediately east of Copperas Creek within jurisdictional survey Location 4 (Figure 32). A heavily eroded two-track road runs northwest to southeast through the center of the site. In 2011, the site was burned during the Bastrop County Complex Fire. Dense chert gravels are abundant on the surface of the site, most of which are thermally altered due to the wildfire (Figures 33 to 34). Artifacts were found both on the surface of the site eroding out of the two-track road as well as subsurface within shovel tests. A total of seven shovel tests were excavated on site 41BP965, three of which were positive for subsurface cultural materials.

Vegetation on the site consists of blackjack oak saplings, loblolly pine saplings, grasses, weeds, and fallen burned pine trees. Elevations across the site range from 340.0 to 360.0 feet (103.6 to 109.7 meters) amsl. The site was only recorded within the confines of the proposed ROW; however, artifacts appear to be eroding downhill from the summit of the ridge. Therefore the boundaries of the site likely continue outside of the proposed ROW towards the apex of the landform.

Horizontal and Vertical Extents of Cultural Materials

Based on the distribution of cultural materials on the modern ground surface as well as subsurface in shovel tests within the proposed ROW, site 41BP965 measures approximately 213.3 feet (65.0 meters) northwest to southeast by an average of 213.3 feet (65.0 meters) northeast to southwest. A total of seven shovel tests were excavated within the final delineated boundaries of site 41BP965 (see Figure 32). Three of these shovel tests were positive for cultural materials from 3.9 to 25.6 inches (10.0 to 65.0 centimeters) below surface. Shovel testing revealed loose, fine sandy soils overlying eroding sandstone bedrock or dense chert cobbles.

Observed Cultural Features

No evidence of any cultural features was observed on the modern ground surface or within any of the seven shovel tests excavated on site 41BP965.

Observed Cultural Materials

Observed cultural materials on site 41BP965 included two primary flakes, seven secondary flakes, six tertiary flakes, two cores, and one thermally altered biface (Figures 35 to 36). No temporally diagnostic artifacts were observed on the site.

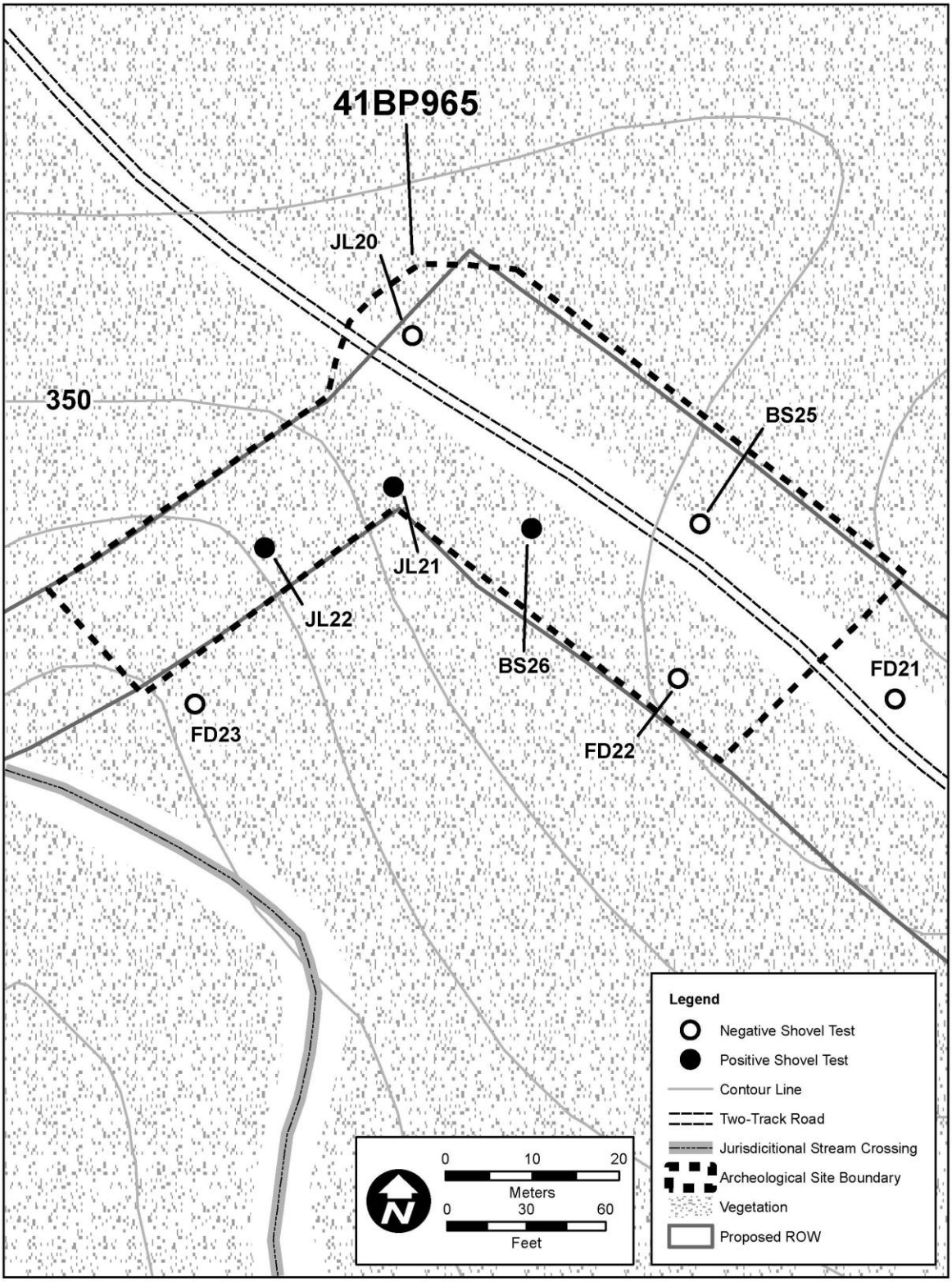

Figure 32. Sketch Map of Site 41BP965

Figure 33. General View of Site 41BP965 within Proposed ROW (Facing Southeast)

Figure 34. Eroded Two-Track with Exposed Artifacts on Site 41BP965 (Facing Southeast)

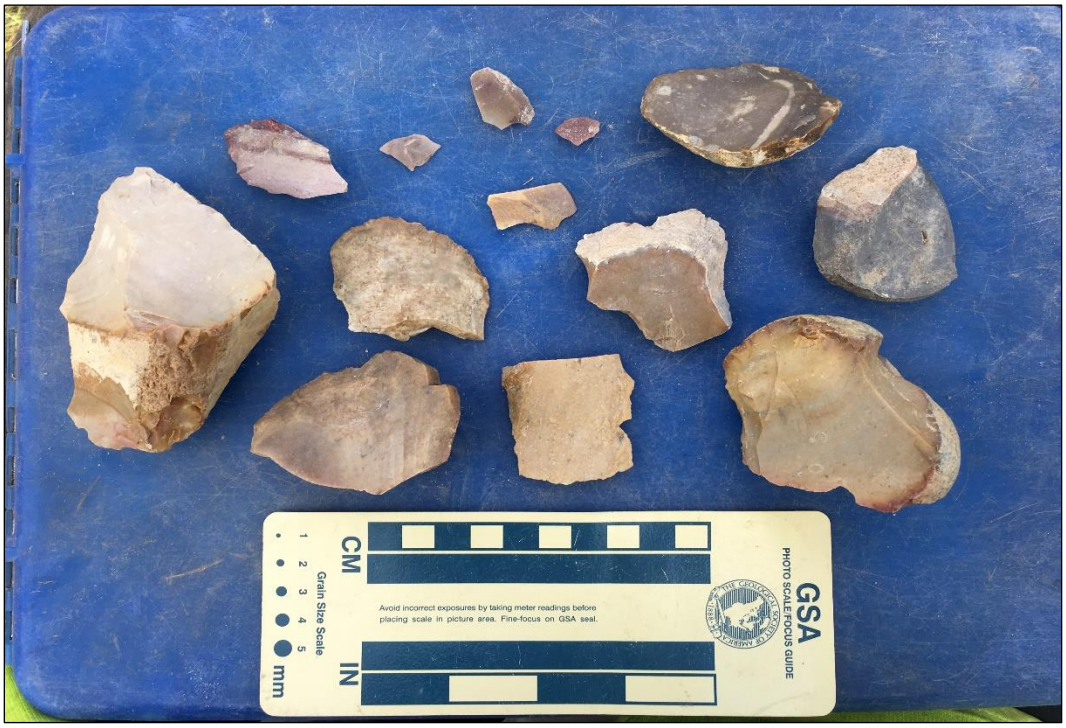

Figure 35. Aboriginal Lithic Artifacts Observed on site 41BP965

Figure 36. Aboriginal Lithic Core Observed on Site 41BP965

Summary and Recommendations

Site 41BP965 consists of a low-density aboriginal lithic scatter of undetermined prehistoric age situated on a gentle western slope above Copperas Creek. The site is bisected by a heavily eroded two-track road and was burned during the 2011 Bastrop County Complex Fire. Dense chert gravels are abundant on the surface of the site, most of which are thermally altered due to the wildfire. Artifacts were found both on the surface of the site eroding out of the two-track road as well as subsurface within shovel tests. A total of seven shovel tests were excavated within the final delineated boundaries of site 41BP965, three of which were positive for subsurface cultural materials.

As the site boundaries were delineated only within the proposed ROW, portions of site 41BP965 could potentially extend beyond the currently documented site boundary. As the entire extend of site 41BP965 was not assessed, its overall NRHP and SAL eligibility remains undetermined. However, based on the lack of temporally diagnostic artifacts, preserved flora or fauna, and intact stratified buried deposits, it is Horizon's opinion that the portion of site 41BP965 within the proposed ROW is considered to be a non-contributing element to the site's overall NRHP/SAL eligibility. Therefore, no additional investigations are recommended on site 41BP965 in connected with the currently proposed undertaking.

7.0 SUMMARY AND RECOMMENDATIONS

7.1 CONCEPTUAL FRAMEWORK

The archeological investigations documented in this report were undertaken with three primary management goals in mind:

- Locate all historic and prehistoric archeological resources that occur within the designated survey area.
- Evaluate the significance of these resources regarding their potential for inclusion in the NRHP and for designation as SALs.
- Formulate recommendations for the treatment of these resources based on their NRHP and SAL evaluations.

At the survey level of investigation, the principal research objective is to inventory the cultural resources within the project area and to make preliminary determinations of whether or not the resources meet one or more of the pre-defined eligibility criteria set forth in the state and/or federal codes, as appropriate. Usually, management decisions regarding archeological properties are a function of the potential importance of the sites in addressing defined research needs, though historic-age sites may also be evaluated in terms of their association with important historic events and/or personages. Under the NHPA and the Antiquities Code of Texas, archeological resources are evaluated according to criteria established to determine the significance of archeological resources for inclusion in the NRHP and for designation as SALs, respectively.

Analyses of the limited data obtained at the survey level are rarely sufficient to contribute in a meaningful manner to defined research issues. The objective is rather to determine which archeological sites could be most profitably investigated further in pursuance of regional, methodological, or theoretical research questions. Therefore, adequate information on site function, context, and chronological placement from archeological and, if appropriate, historical perspectives is essential for archeological evaluations. Because research questions vary as a function of geography and temporal period, determination of the site context and chronological placement of cultural properties is a particularly important objective during the inventory process.

7.2 ELIGIBILITY CRITERIA FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES

Determinations of eligibility for inclusion in the NRHP are based on the criteria presented in the Code of Federal Regulations (CFR) in 36 CFR §60.4(a-d). The 4 criteria of eligibility are applied following the identification of relevant historical themes and related research questions:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> a. [T]hat are associated with events that have made a significant contribution to the broad patterns of our history; or,
>
> b. [T]hat are associated with the lives of persons significant in our past; or,
>
> c. [T]hat embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> d. [T]hat have yielded, or may be likely to yield, information important in prehistory or history.

The first step in the evaluation process is to define the significance of the property by identifying the particular aspect of history or prehistory to be addressed and the reasons why information on that topic is important. The second step is to define the kinds of evidence or the data requirements that the property must exhibit to provide significant information. These data requirements in turn indicate the kind of integrity that the site must possess to be significant. This concept of integrity relates both to the contextual integrity of such entities as structures, districts, or archeological deposits and to the applicability of the potential database to pertinent research questions. Without such integrity, the significance of a resource is very limited.

For an archeological resource to be eligible for inclusion in the NRHP, it must meet legal standards of eligibility that are determined by three requirements: (1) properties must possess significance, (2) the significance must satisfy at least one of the four criteria for eligibility listed above, and (3) significance should be derived from an understanding of historic context. As discussed here, historic context refers to the organization of information concerning prehistory and history according to various periods of development in various times and at various places. Thus, the significance of a property can best be understood through knowledge of historic development and the relationship of the resource to other, similar properties within a particular period of development. Most prehistoric sites are usually only eligible for inclusion in the NRHP under Criterion D, which considers their potential to contribute data important to an understanding of prehistory. All four criteria employed for determining NRHP eligibility potentially can be brought to bear for historic sites.

7.3 ELIGIBILITY CRITERIA FOR LISTING AS A STATE ANTIQUITIES LANDMARK

The criteria for determining the eligibility of a prehistoric or historic cultural property for designation as an SAL are presented in Chapter 191, Subchapter D, Section 191.092 of the Antiquities Code of Texas, which states that SALs include:

> Sites, objects, buildings, artifacts, implements, and locations of historical, archeological, scientific, or educational interest including those pertaining to prehistoric and historical American Indians or aboriginal campsites, dwellings, and habitation sites, their artifacts and implements of culture, as well as archeological sites of every character that are located in, on, or under the surface of any land belonging to the State of Texas or to any county, city, or political subdivision of the state are state antiquities landmarks and are eligible for designation.

For the purposes of assessing the eligibility of a historic property for designation as an SAL, a historic site, structure, or building has historical interest if the site, structure, or building:

1. [W]as the site of an event that has significance in the history of the United States or the State of Texas;
2. [W]as significantly associated with the life of a famous person;
3. [W]as significantly associated with an event that symbolizes an important principle or ideal;
4. [R]epresents a distinctive architectural type and has value as an example of a period, style, or construction technique; or,
5. [I]s important as part of the heritage of a religious organization, ethic group, or local society.

The Antiquities Code of Texas establishes the THC as the legal custodian of all cultural resources, historic and prehistoric, within the public domain of the State of Texas. Under Part II of Title 13 of the Texas Administrative Code (13 TAC 26), the THC may designate a historic building, structure, cultural landscape, or non-archeological site, object, or district as an SAL if it meets at least on one of following criteria:

A. [T]he property is associated with events that have made a significant contribution to the broad patterns of our history, including importance to a particular cultural or ethnic group;

B. [T]he property is associated with the lives of persons significant in our past;

C. [T]he property embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction;

D. [T]he property has yielded, or may be likely to yield, information important in Texas culture or history.

Furthermore, the THC may designate an archeological site as an SAL if the site meets one or more of the following criteria:

1. [T]he site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
2. [T]he site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interests of the site;
3. [T]he site possesses unique or rare attributes concerning Texas prehistory and/or history;
4. [T]he study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge; or,
5. [T]he high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected.

7.4 SUMMARY OF INVENTORY RESULTS

Three newly recorded archeological sites were documented during the survey—41BP963, 41BP964, and 41BP965. Site 41BP963 consists of an aboriginal lithic procurement area, and sites 41BP964 and 41BP965 consist of aboriginal lithic scatters. Due to the lack of temporally diagnostic artifacts, the three aboriginal sites date to unspecified prehistoric periods. The sites were only assessed within the proposed road ROWs, and the boundaries of the sites may extend outside of the proposed ROWs. No intact cultural features, temporally diagnostic artifacts, or intact, subsurface archeological deposits were observed on any of the three sites, and the investigated portions of the sites retain little potential to contribute meaningfully to an understanding of the prehistoric past. The investigated portion of all three sites within the investigated ROW are recommended as non-contributing to the overall eligibility of the sites for designation as SALs and for inclusion in the NRHP. No further investigations are warranted within the proposed ROW on these sites.

7.5 MANAGEMENT RECOMMENDATIONS

Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. In accordance with 36 CFR 800.4, Horizon has made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified that meet the criteria for designation as SALs according to 13 TAC 26 or for inclusion in the NRHP according to 36 CFR 60.4. Horizon recommends a finding of "no historic properties affected," and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously

surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the THC should be notified immediately.

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APPENDIX A:

Shovel Test Data

Table A-1. Shovel Test Summary Data

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
FD01	668710	3328404	0-20	Dark gray sandy loam	None
			20-80	Pale brown fine sand	None
			80-85	Gray sand	None
			85-110+	Orange-brown sandy clay	None
FD02	668739	3328479	0-20	Compact pale brown sand with chert gravels	None
			20-45+	Red clay	None
FD03	668737	3328539	0-25	Compact pale brown sand with chert gravels	None
			25-35+	Red clay	None
FD04	668705	3328691	0-20	Dark gray gravelly sand	None
			20-45+	Compact gray gravelly sand	None
FD05	668711	3329464	0-50+	Compact pale brown gravelly and cobbly sand	None
FD06	668701	3329439	0-30+	Very compact pale brown gravelly and cobbly sand	None
FD07	668689	3329419	0-10	Compact pale brown gravelly sandy loam	None
			10-30+	Red clay with orange-brown/white mottling	None
FD08	668619	3329286	0-30	Dark grayish-brown gravelly fine sand	None
			30-45	Coarse dark gray gravelly sand	None
			45-80+	Coarse reddish-brown gravelly sand	None
FD09	668657	3329372	0-30	Pale brown gravelly fine sandy loam	None
			30-55	Coarse reddish-brown gravelly fine sand	None
			55-65+	Red clay	None
FD10	668622	3328309	0-20	Gray fine sand	None
			20-70	Grayish-brown fine sand	2 tertiary flakes at 40 cmbs
			70-90	Reddish-brown gravelly fine sand	1 tertiary flake at 80-90 cmbs
			90-95	Gray gravelly sand	1 secondary flake and 1 tertiary flake at 90-95 cmbs

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
			95-115	Reddish-brown gravelly fine sand	4 tertiary flakes at 95-100 cmbs
			115+	Gravel bedrock	None
FD11	668564	3328262	0-30	Pale brown sand	1 tertiary flake at 20 cmbs
			30-100+	Reddish pale brown	None
FD12	668490	3328195	0-15	Gray sand	None
			15-100+	Pale brown sand	None
FD13	668395	3328190	0-15	Compact gravelly dark brown sand	None
			15-30+	Compact cobbly brown sand	None
FD14	668286	3328181	0-20	Dark gray gravelly fine sand	None
			20-70	Pale brown gravelly fine sand	None
			70-100+	Reddish-pale brown gravelly fine sand	None
FD15	668223	3328096	0-15	Dark brown gravelly sand	None
			15-40+	Dark brown cobbly sand	None
FD16	666603	3328255	0-10+	Compact red gravelly sand	None
FD17	666576	3328291	0-10	Dark brown gravelly sand	None
			10-25+	Red gravelly silty sand	None
FD18	666554	3328313	0-10	Compact reddish-brown gravelly sand	None
			10-20+	Red clay	None
FD19	666530	3328330	0-10	Compact reddish-brown gravelly sand	None
			10-20+	Red clay	None
FD20	666249	3328356	0-25	Pale brown fine sand	None
			25-30+	Orange-brown sandstone	None
FD21	666132	3328435	0-20	Gravelly fine sandy clay	None
			20-65	Compact orange-brown gravelly sand	None
			65-70+	Decaying orange reddish-brown sandstone	None
FD22	666107	3328437	0-25	Brown gravelly fine sand	None
			25-45+	Orange-brown gravelly fine sand	None
			45-50+	Decaying sandstone	None

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
FD23	666052	3328434	0-20	Dark grayish-brown gravelly fine sand	None
			20-35+	Decaying sandstone	None
FD24	665904	3328431	0-30	Dark grayish-brown gravelly fine sand	None
			30-40	Pale brown fine sand	None
			40-60	Gray fine sand	None
			60+	Orange-brown sand stone	None
JL01	668678	3328396	0-45	Very pale brown fine rocky sand	None
			45+	Hematitic sandstone bedrock	None
JL02	668730	3328420	0-60	Very pale brown fine gravelly sand	None
			60-110	Pale orange-brown fine gravelly sand	None
			110-115+	Reddish-orange compact sandy clay	None
JL03	668747	3328565	0-25	Very pale brown fine rocky sand	None
			25-35+	Dark red compact sandy clay	None
JL04	668733	3328656	0-40	Very pale brown fine rocky sand	None
			40-50+	Stream cobbles	None
JL05	668677	3328747	0-30	Very pale brown fine rocky sand	None
			30-40+	Dark red compact sandy clay	None
JL06	668637	3329168	0-30	Pale brown fine rocky sand	None
			30-40+	Stream cobbles	None
JL07	668625	3329317	0-45	Pale brown fine rocky sand	None
			45-60	Pale orange-brown coarse rocky sand	None
			60+	Decayed sandstone bedrock	None
JL08	668673	3329407	0-75	Very pale brown fine rocky sand	None
			75+	Stream cobbles	None
JL09	668610	3328289	0-80	Pale brown fine gravelly sand	None
			80-115	Pale reddish-brown fine gravelly sand	1 secondary and 1 tertiary flake at 80-90 cmbs; 1 tertiary flake at 90-100 cmbs

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
			115+	Sandstone gravels	None
JL10	668554	3328254	0-30	Pale brown fine gravelly sand	None
			30-100	Pale reddish-brown slightly compact gravelly sand	None
			100-110+	Decaying sandstone	None
JL11	668521	3328202	0-40	Pale brown fine gravelly sand	1 tertiary flake at 20-30 cmbs
			40-110+	Pale reddish-brown fine gravelly sand	2 tertiary flakes at 40-50 cmbs; 1 tertiary flake at 60-70 cmbs; 1 tertiary flake at 80-90 cmbs
JL12	668431	3328189	0-60	Pale brown fine rocky sand	1 tertiary flake at 40-50 cmbs; 1 core at 40-50 cmbs; 1 tertiary flake at 50-60 cmbs
			60+	Stream cobbles	None
JL13	668312	3328192	0-100+	Very pale brown fine gravelly sand	None
JL14	668247	3328157	0-50	Very pale brown fine gravelly sand	None
			50-80	Very pale yellow brown fine gravelly sand	None
			80-90+	Dark orange-brown sandy clay with decayed sandstone inclusions	None
JL15	668180	3328080	0-30	Pale brown rocky sandy loam	None
			30+	Stream cobbles	None
JL16	666616	3328234	0-5	Dark red rocky sand	None
			5+	Sandstone bedrock	None
JL17	666682	3328155	0-5	Dark red rocky sand	None
			5+	Sandstone bedrock	None
JL18	666711	3328131	0-5	Dark brown gravelly sandy loam	None
			5+	Sandstone bedrock	None
JL19	666178	3328396	0-15	Dark grayish-brown gravelly fine sandy loam	None
			15-30	Dark red coarse rocky sandy clay	None

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
			30+	Sandstone bedrock	None
JL20	666077	3328477	0-60	Orange-brown compact gravelly sandy clay loam	None
			60-70+	Dark reddish-brown coarse compact sandy clay	None
JL21	666074	3328459	0-10	Grayish-brown rocky sandy loam	1 primary flake at 0-10 cmbs
			10-30+	Dark reddish-brown coarse rocky sandy clay	None
JL22	666060	3328452	0-35	Pale brown fine gravelly sandy loam	1 tertiary flake at 0-10 cmbs; 1 core at 10-20 cmbs; 1 tertiary flake and 1 secondary flake at 20-30 cmbs
			35-45+	Dark red coarse compact sandy clay	None
JL23	665877	3328431	0-40	Dark reddish-brown coarse compact gravelly sandy clay loam	None
			40-50+	Mottled light gray/yellow/red degraded sandstone	None
JL24	665848	3328413	0-5	Grayish-brown fine rocky sandy loam	None
			5-30+	Dark reddish-brown coarse rocky sandy clay	None
BS01	668672	3328355	0-80	Pale brown fine sand	None
			80-100+	Light reddish-brown fine sand	None
BS02	668738	3328446	0-30	Pale brown gravelly fine sand	2 secondary flakes at 20-30 cmbs
			30-65	Light reddish-brown very gravelly fine sand	1 tertiary flake at 50-60 cmbs
			65+	Dense gravels with compact red sandy clay	None
BS03	668743	3328504	0-30	Light grayish-brown extremely gravelly fine sand	1 tertiary flake at 0-10 cmbs
			30+	Dense chert gravels	None
BS04	668749	3328599	0-10	Brown gravelly fine sand	None
			10-30+	Compact red clay	None

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
BS05	668746	3328629	0-5	Pale brown very gravelly fine sand	None
			5-20+	Red compact clay	None
BS06	668700	3328715	0-30	Pale brown very gravelly very fine sand	None
			30+	Dense chert rocks and gravels	None
BS07	668660	3328768	0-25	Pale brown very gravelly fine sand	None
			25-30+	Compact dark red clay	None
BS08	668643	3329126	0-45	Pale brown very gravelly fine sand	None
			45+	Dense cobbles and gravels	None
BS09	668633	3329206	0-55	Pale brown very gravelly very fine sand	None
			55+	Dense cobbles and gravels	None
BS10	668622	3329235	0-30	Pale brown very gravelly very fine sand	None
			30+	Dense cobbles and gravels	None
BS11	668611	3329259	0-40	Pale brown very gravelly very fine sand	None
			40+	Dense gravels and cobbles	None
BS12	668631	3329348	0-30	Light reddish-brown very gravelly very fine sand	None
			30+	Dense chert cobbles and gravels	None
BS13	668642	3328335	0-100+	Pale brown very fine sandy loam	None
BS14	668577	3328273	0-65	Light reddish-brown very fine sandy loam	None
			65+	Degrading sandstone	None
BS15	668536	3328228	0-30	Pale brown very fine sandy loam	None
			30-100	Light reddish-brown very fine sandy loam	1 tertiary flake at 30-40 cmbs, 1 tertiary flake at 40-50 cmbs, 1 secondary flake at 50-60 cmbs, 1 burned rock fragment at 90-100 cmbs

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
			100+	Compact light reddish-brown very fine sandy loam with red clay nodules	None
BS16	668460	3328182	0-100+	Compact light reddish-brown very fine sandy loam with red clay	None
BS17	668365	3328195	0-30	Pale brown very gravelly very fine sandy loam	None
			30+	Dense cobbles and gravels	None
BS18	668264	3328165	0-30	Light grayish-brown very fine sandy loam	None
			30-60	Pale yellow gravelly very fine sandy loam	None
			60+	Dense rocky and gravels	None
BS19	668230	3328119	0-40	Light reddish-brown gravelly very fine sand	None
			40+	Dense chert cobbles and gravels	None
BS20	668160	3328042	0-30	Pale brown very gravelly very fine sand	None
			30+	Dense gravels and cobbles	None
BS21	668140	3328017	0-15	Light reddish-brown gravelly very fine sand	None
			15+	Dense gravels	None
BS22	666592	3328276	0-10	Red gravelly silty loam	None
			10+	Sandstone bedrock	None
BS23	666652	3328198	0-20	Mottled red/gray/yellowish-red sandy clay	None
			20+	Dense rocks	None
BS24	666203	3328378	0-30	Light grayish-brown fine sandy loam	None
			30-35+	Compact red gravelly clay	None
BS25	666110	3328455	0-40	Pale brown gravelly fine sandy loam	None
			40-45+	Compact very dark red sandy clay loam with decaying sandstone	None

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
BS26	666090	3328454	0-65	Pale brown very fine sandy loam	2 tertiary flakes at 0-20 cmbs; 2 tertiary flakes at 20-30 cmbs; 2 tertiary flakes and 2 burned rocks at 30-40 cmbs; 1 secondary flake at 40-50 cmbs; 1 burned rock at 50-60 cmbs; 3 burned rocks at 60-65 cmbs
			65+	Dense rocky cobbles	None
BS27	665930	3328425	0-70	Pale yellow very fine sand	None
			70-75+	Very compact light reddish-brown gravelly sandy clay	None

[1] All UTM coordinates are located in Zone 14 and utilize the North American Datum of 1983 (NAD 83).

cmbs = Centimeters below surface

ST = Shovel test

UTM = Universal Transverse Mercator

April 30, 2018

Latrice Hertzler
Future Link Technologies, Inc
225 Commons Ford Rd. Suite 123
Austin, Texas 78733

Re: Project review under Section 106 of the National Historic Preservation Act of 1966 and the Antiquities Code of Texas.
Proposed Street Improvements-Tahitian Village Subdivision, Bastrop County, Texas.

Dear Ms. Hertzler:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed federal undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission. As the state agency responsible for administering the Antiquities Code of Texas, these comments also provide recommendations on compliance with state antiquities laws and regulations.

The review staff, led by Jeff Durst, has examined our records. According to our maps, the proposed project is located in an area where archeological survey has not been previously conducted. Archeological sites have been recorded in close proximity to the proposed location on similar landforms in Bastrop County, and we believe a professional archeologist should survey the proposed location.

The work should meet the minimum archeological survey standards posted on-line at www.thc.state.tx.us. A report of investigations should be produced in conformance with the Secretary of the Interior's Guidelines for Archaeology and Historic Preservation, and submitted to this office for review. If any of this work will occur on land owned by the state of Texas, an Antiquities Permit must be secured from our office before fieldwork may begin.

Thank you for your cooperation in this federal and state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Jeff Durst at 512/463-8884.**

Sincerely,

for
Mark Wolfe, State Historic Preservation Officer

MW/jjd

DISASTER RECOVERY PROGRAM

REQUEST FOR SHPO CONSULTATION:
Section 106 of the National Historic Preservation Act

Send completed submission and attachments to:
Mark Wolfe, State Historic Preservation Officer
c/o Lydia Woods
Texas Historical Commission
P.O. Box 12276, Austin, TX 78711-2276 (mail service)
108 W. 16th Street, Austin, TX 78701 (courier service)

Instructions for Section 106 submissions are available on the Texas Historical Commission (THC) website at http://www.thc.state.tx.us/crm/crmsend.shtml. Pursuant to the Programmatic Agreement between THC and the Texas General Land Office, architectural projects will have an expedited review process of 14 calendar days upon receipt. Projects requiring review from THC staff archeologists will be allowed the full 30-day period. If you have any questions or concerns regarding review of your project, please contact Lydia Woods Project Liaison for the Disaster Recovery Program, at 512-463-7687

TEXAS HISTORICAL COMMISSION

REQUEST FOR SHPO CONSULTATION:
Projects Subject to Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas

Submission of this form only initiates consultation with the Texas Historical Commission, the State Historic Preservation Officer (SHPO) for Texas. The SHPO may require additional information to complete the review for some projects.

FCC projects: this form should not be completed when submitting Form 620 or 621 for communications towers.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to consider the effects of their undertakings on historic properties and to consult with the State Historic Preservation Officer (SHPO) regarding the undertaking. An undertaking is any action by or on behalf of a federal agency that has the potential to affect historic resources and includes funding, permits, or other approvals. Federal agencies are required to identify historic resources that may be affected and to avoid, minimize, or mitigate any adverse effects. The Section 106 regulations are codified in 36 CFR 800 and are available from the Advisory Council on Historic Preservation website at www.achp.gov. Regulations allow 30 days upon receipt for SHPO review.

The Antiquities Code of Texas (Title 9, Chapter 191 of the Texas Natural Resources Code) is intended to protect historic and archeological landmarks and is applicable to public lands owned by the state of Texas or a political subdivision of the state, including state agencies, counties, cities, school districts, and public colleges and universities, as well as other public authorities. Notification of the Texas Historical Commission is required before breaking ground at a project location on state or local public land.

☐ This is a new submission
Complete all pages of this form and include required attachments.

☐ This is additional information relating to original submission made on or about 2016-08951
Complete only the first page of this form and add any new information, including attachments.

1. Project Information

PROJECT NAME
County of Bastrop - Street Improvements - Tahitian Village Subdivision Bastrop2016-1

PROJECT ADDRESS	PROJECT CITY	PROJECT ZIP CODE(S)
Bastrop County: From: Riverside Drive To: Hwy 71	Bastrop	78602

PROJECT COUNTY OR COUNTIES
Bastrop

PROJECT TYPE (Check all that apply)

- ■ Road/Highway Construction or Improvement
- ■ Site Excavation
- ■ Utilities & Infrastructure
- ■ New Construction
- ■ Repair, Rehabilitation or Renovation of Structure(s)
- ☐ Addition to Existing Structure(s)
- ☐ Demolition or Relocation of Existing Structure(s)
- ☐ None of these

BRIEF PROJECT SUMMARY: Please provide a one or two sentence description to explain the project. More details will be provided separately in Part 5, the Project Work Description Attachment.

Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) asphaltic concrete surface, and perform site work associated with construction. The alignment has been altered in 2 locations - See Maps Attach.

2. Project Contact Information

PROJECT CONTACT NAME	TITLE	ORGANIZATION
Latrice Hertzler	Environmental Reviewer	Future Link Technologies, Inc.

ADDRESS		CITY	STATE	ZIP
225 Commons Ford Rd	Suite 123	Austin,	TX	78733

PHONE	EMAIL
512-443-4100	lhertzler@future-link.biz

For SHPO Use Only **Date Stamp Below:**

Track Review to:

☐Archeology Division: Reviewer:

☐History Programs Division: Reviewer:

☐Architecture Division: Reviewer:

3. Federal Involvement

Does this project involve approval, permit, license, or funding from a federal agency?

☐ Yes (Please complete this section) ☐ No (Skip to next box)

FEDERAL AGENCY

FEDERAL PROGRAM, FUNDING, OR PERMIT TYPE:

FEDERAL AGENCY CONTACT PERSON

PHONE

ADDRESS

EMAIL

Has the federal agency (if other than HUD) formally delegated authority to consult with SHPO on the agency's behalf? ☐ Yes (Please attach delegation letter) ☐ No

4. State Involvement

Does this project involve approval, permit, license, or funding from a state agency?

☐ Yes (Please complete this section) ☐ No (Skip to next box)

STATE AGENCY
Texas General Land Office

STATE PROGRAM, FUNDING, OR PERMIT TYPE:
Community Development and Revitalization

STATE AGENCY CONTACT PERSON
Kelly Warner

PHONE
512-475-5057

ADDRESS
3249 Executive Dr
Suite 150
Austin, TX 78731

EMAIL
Kelly.Warner@glo.texas.gov

Will this project involve public land owned by the State of Texas or a political subdivision of the state? (State Agency, County, City, School District, Public Authority, Public College or University, etc.)

☐ Yes ☐ No

CURRENT OR FUTURE OWNER OF THE PUBLIC LAND
Bastrop County

5. Project Work Description

Attach a detailed written description of the project that fully explains what will be constructed, altered, or demolished. Include architectural or engineering plans, site plans, specifications, or NEPA documents, as necessary, to illustrate the project.

6. Identification of Project Location and Area of Potential Effect (APE)

The APE includes the entire area within which historic properties could be affected by the project. This includes all areas of construction, demolition, and ground disturbance (direct effects) and the broader surrounding area that might experience visual or other effects from the project (indirect effects).

1. **Attach** map(s) indicating the location and specific boundaries of the project. Road names must be included and legible. Identify the project location, boundaries, and APE on the map(s) as precisely as possible. Suggested maps may include USGS 7.5 minute quadrangle maps (or relevant portions thereof), tax maps, satellite images, etc. The number and types of map(s) will depend on the nature and complexity of the project as well as the extent of the APE. **Projects involving ground disturbance must include the appropriate 7.5 minute USGS quadrangle.**
2. **Attach** a brief written description of the APE, including a discussion of the potential for direct and indirect effects that might result from the project and the justification for the boundaries chosen for the APE.

7. Identification of Historic Properties within the APE (Attach additional materials as necessary)

A. Archeological Resources

Does this project involve ground-disturbing activity?

☐ Yes (Please complete this section) ☐ No (Skip to Structures section)

Describe the nature, width, length, and depth of the proposed ground-disturbing activity.

Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) concrete surface.

Describe previous land use and disturbances.

Portions of the proposed roadway project have been preexisting. Other areas have been used for ranchland. Some areas have not been disturbed for various reasons to protect the critical habitat of the Houston Toad, an endangered species of amphibian.

Describe the current land use and conditions.

Portions of the proposed roadway project have been preexisting in neighborhoods and not used for anything due to severe forest fires in 2011 and 2012. All proposed construction areas are currently considered critical habitat for the Houston Toad. Some areas currently exhibit vast terrain variances including undulating hills, fallen and burned trees and other vegetation.

B. Structures

Are there any structures, buildings, or designed landscape features (park, cemetery, etc.) 45 years old or older within the project area or APE?

☐ Yes ☐ No

Is the project located within or adjacent to a district that is listed in or eligible for the National Register of Historic Places? Eligible districts may include locally designated districts or areas identified in historic resource surveys.

☐ Yes, name of district: _____ ☐ No ☐ Do not know

If the Texas Historic Sites Atlas (http://atlas.thc.state.tx.us) has been consulted, were previously identified architectural resources identified within the project area or APE?

☐ Yes ☐ No ☐ Did not consult Atlas

If the answer to any of the above questions is yes, use the space below or provide an attachment indentifying each structure, building, designed landscape feature, or district within the APE that is 45 years old or older. Include an actual or estimated date of construction and the location of each of the features.

Does the project involve the rehabilitation, alteration, removal, or demolition of any structure, building, designed landscape feature, or district that is 45 years old or older?

☐ Yes ☐ No

If yes, include information with the attachments for Part 5: Project Work Description and Part 8: Photographs.

8. Photographs

Attach clear, high-resolution color photographs that illustrate the project area and APE as defined in Section 6. Images from the internet are not acceptable due to low resolution. Photography should document the project area and properties within the APE, including clear views of any buildings or structures. Please number and label all photographs, and include a map or site plan labeled to show the location and direction of each view. Where applicable, include photographs of the surrounding area from the project site and streetscape images. Should your project entail the alteration of existing structures, please also provide photographs of the existing conditions of sites, buildings, and exterior and interior areas to be affected.

9. Consulting Parties/Public Notification (Section 106 only)

Attach a description of the actions taken to notify the public or invite consultation with parties other than SHPO. Provide a summary of any consultation and comments received from consulting parties or the public.

The SHPO is only one consulting party under Section 106. Refer to 36 CFR 800.2 for information about other participants who are entitled to comment on the Section 106 process, including Native American tribes, interested parties, and the public. Consultation with the SHPO is not a substitution for consultation with Native American tribes. When identifying historic resources within the APE and determining the effect of an undertaking, applicants should consider consulting with the county historical commission and the local historic preservation officer, if any.

10. Applicant's Determination of Effect (Section 106 only)

An effect occurs when an action alters the characteristics of a property that qualify it for listing in the National Register of Historic Places, including changes to the property's location, design, setting, materials, workmanship, feeling, and association. Effects can be direct or indirect, and can be physical, visual, audible, or economic. They may include a change in ownership or change in use.

- ☒ **No Historic Properties Affected** based on 36 CFR 800.4(d)(1). Please provide the basis for this determination.
- ☐ **No Adverse Effect** on historic properties based on 36 CFR 800.5(b). Please explain why the criteria of adverse effect at 36 CFR 800.5(a)(1) were not found to be applicable for your project.
- ☐ **Adverse Effect** on historic properties based on 36 CFR 800.5(d)(2). Please explain why the criteria of adverse effect at 36 CFR 800.5(a)(1) were found to be applicable to your project. You may also wish to include an explanation of how these adverse effects might be avoided, minimized, or mitigated.

In the space below or as an attachment, please explain the effect of the project on historic properties.

Submit Completed Form and Attachments to:

Via mail:
Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
PO Box 12276
Austin, TX 78711

Via hand delivery or private express delivery:
Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
108 West 16th St.
Austin, TX 78701

Faxes and email are not acceptable.

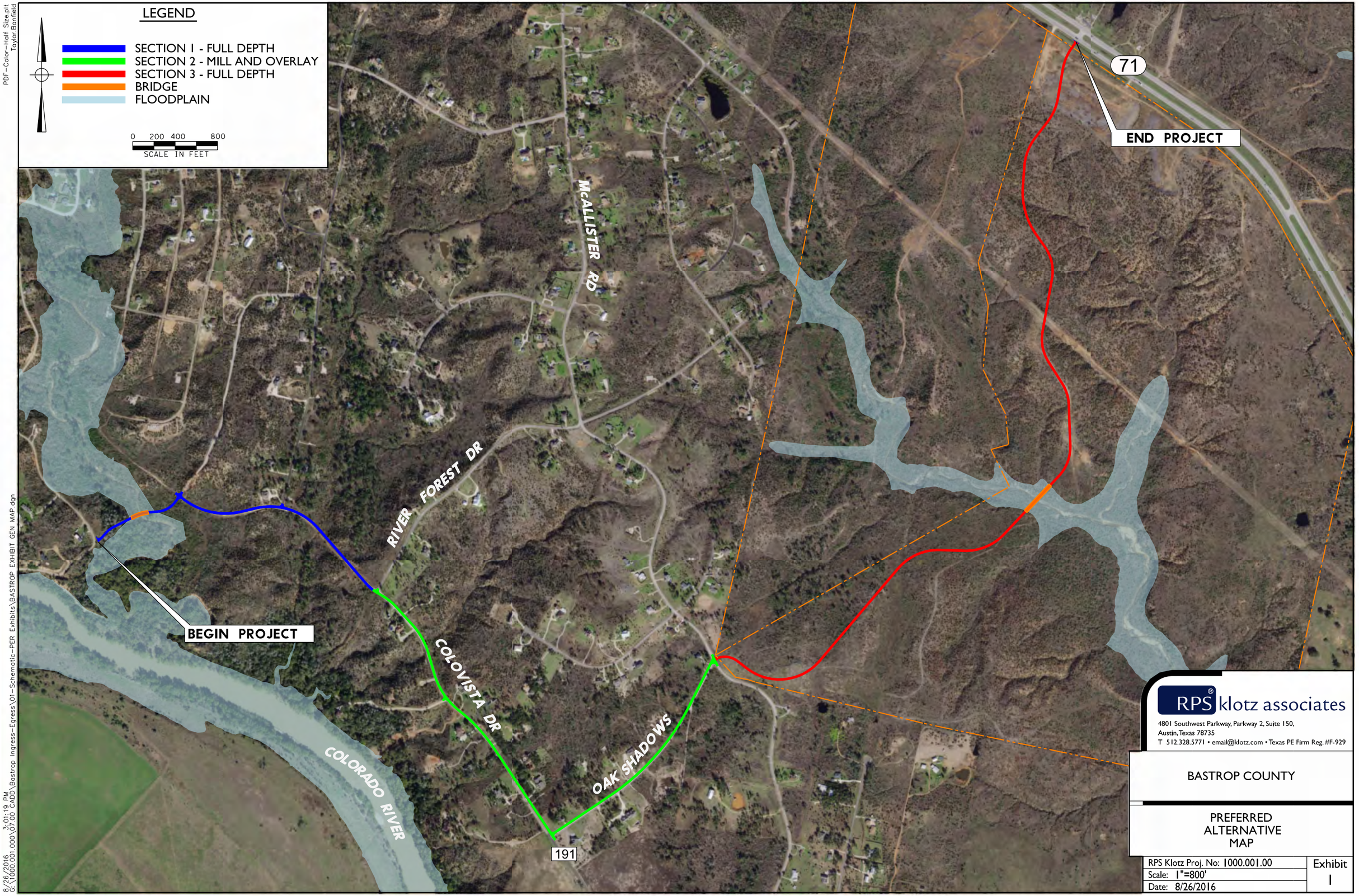
For SHPO Use Only

PROJECT NAME		
County of Bastrop - Street Improvements - Tahitian Village Subdivision		Bastrop2016-1
PROJECT ADDRESS	PROJECT CITY	PROJECT ZIP CODE(S)
Bastrop County: From: Riverside Drive To: Hwy 71	Bastrop	78602
PROJECT COUNTY OR COUNTIES		
Bastrop		

PROJECT CONTACT NAME	TITLE	ORGANIZATION
Latrice Hertzler	Environmental Reviewer	Future Link Technologies, Inc.

ADDRESS		CITY	STATE	ZIP
225 Commons Ford Rd	Suite 123	Austin,	TX	78733

PHONE	EMAIL
512-443-4100	lhertzler@future-link.biz



RPS klotz associates

4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

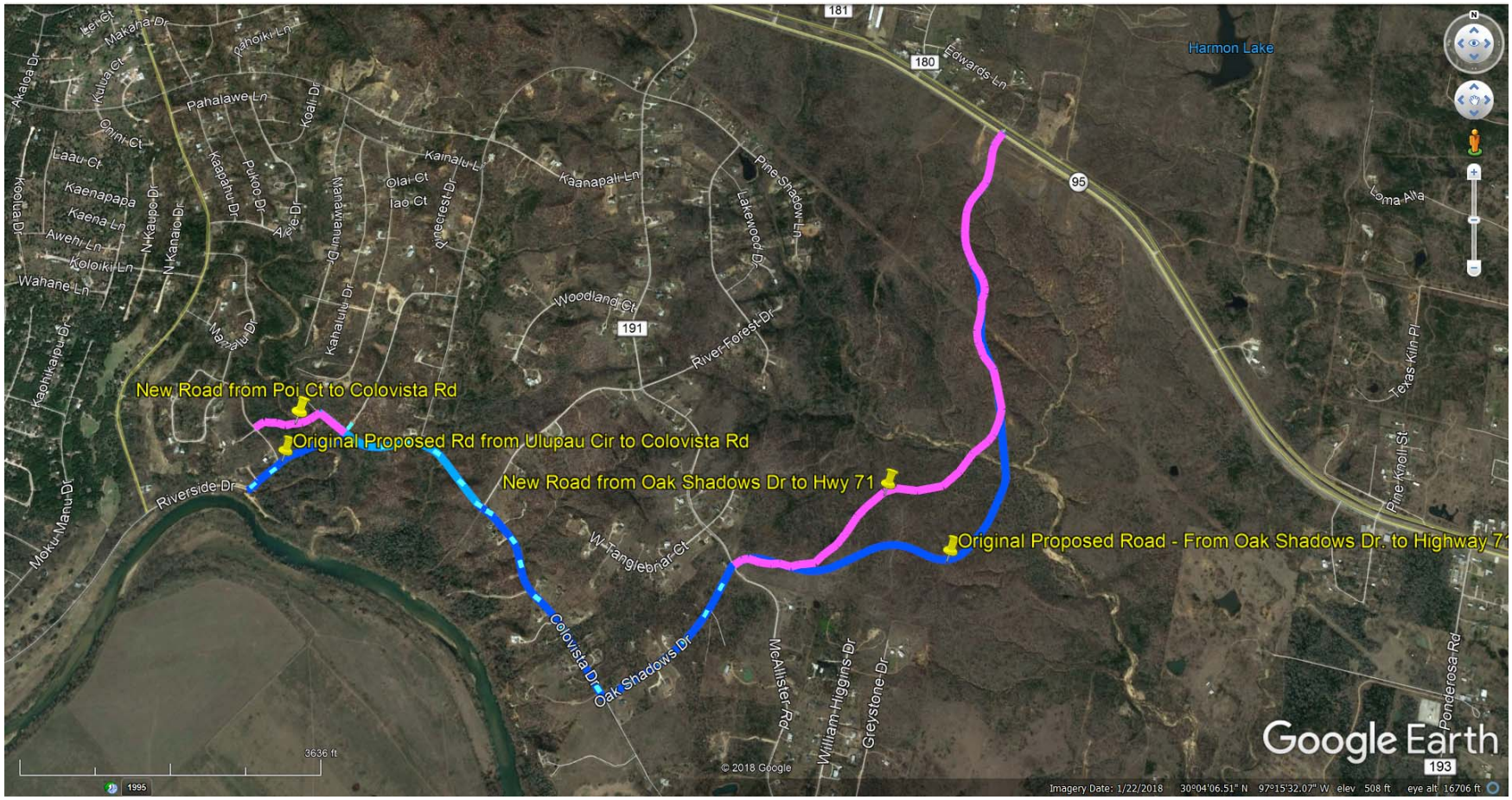
BASTROP COUNTY

PREFERRED ALTERNATIVE MAP

RPS Klotz Proj. No: 1000.001.00	Exhibit 1
Scale: 1"=800'	
Date: 8/26/2016	

PDF-Color-Half Size.plt
Taylor Banfield

8/26/2016 3:01:19 PM
G:\1000.001.000\07.00 CADD\Bastrop Ingress-Egress\01-Schematic-PER Exhibits\BASTROP EXHIBIT GEN MAP.dgn

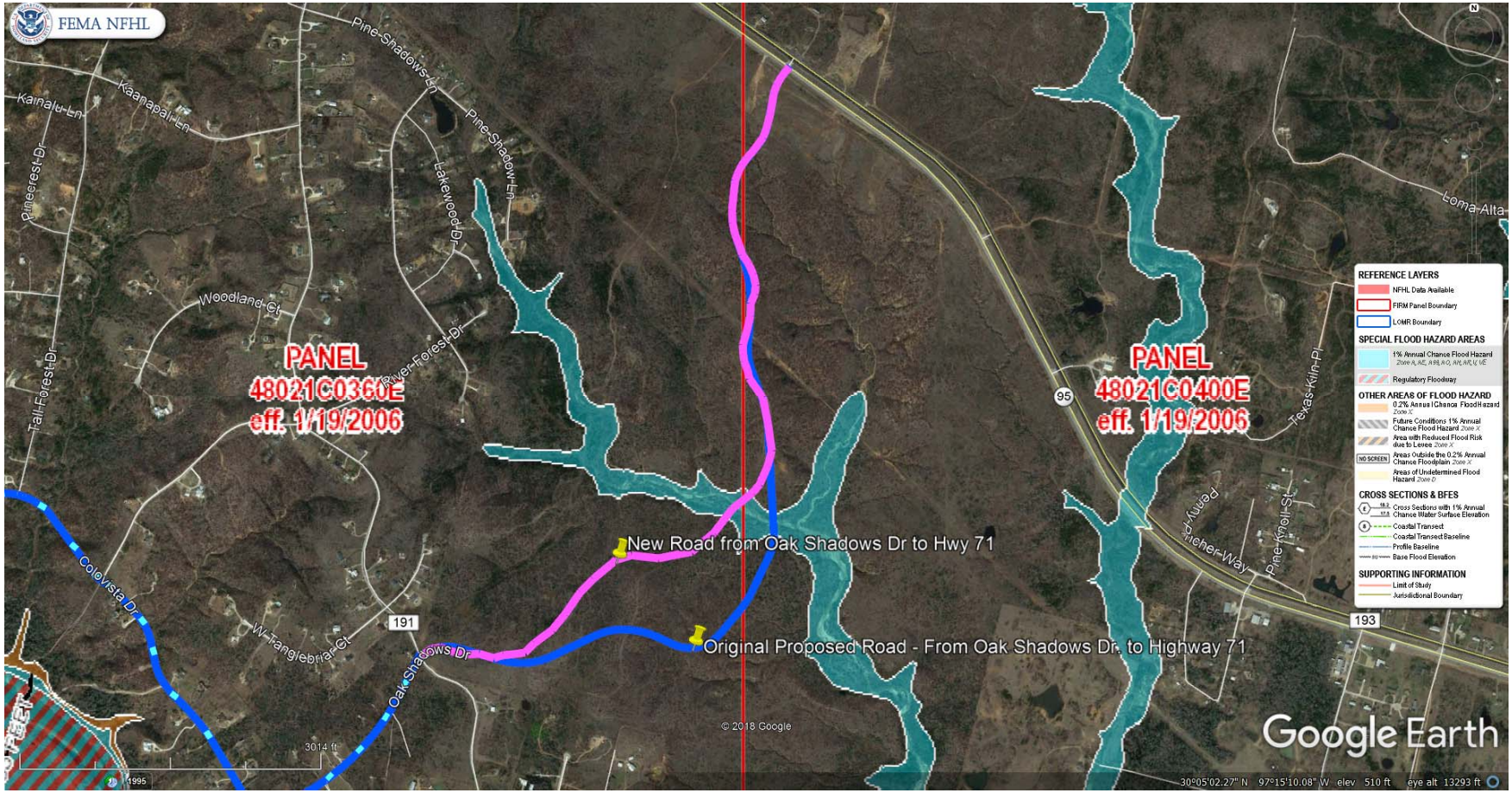


Overall Streets

New Alignment (Changes)

Original Alignment

Client Name	Bastrop County – Street Improvements	Future Link Technologies
Contract #	Bastrop 2016-1 – Tahitian Village Subdivision	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Project Location Map – Map of Changed Alignment	512-443-4100
Date	April 18	Environmental Service Provider



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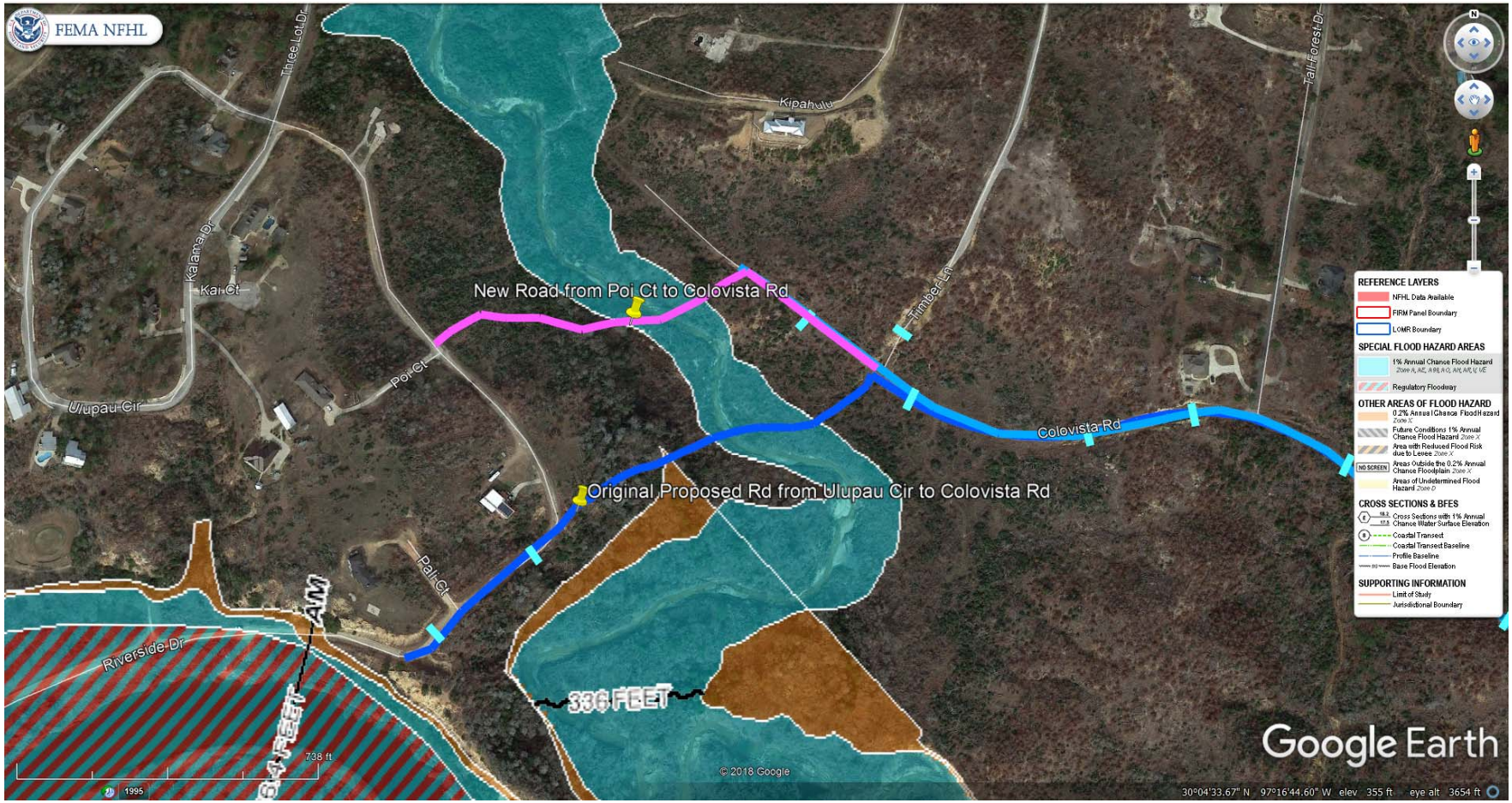
Date	April 18	Environmental Service Provider



New Alignment (Change)

Original Alignment

Client Name	Bastrop County – Street Improvements	Future Link Technologies
Contract #	Bastrop 2016-1 – Tahitian Village Subdivision	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Project Location Map – Map of Changed Alignment	512-443-4100
Date	April 18	Environmental Service Provider

DISASTER RECOVERY PROGRAM

REQUEST FOR SHPO CONSULTATION:
Section 106 of the National Historic Preservation Act

Send completed submission and attachments to:
Mark Wolfe, State Historic Preservation Officer
c/o Lydia Woods
Texas Historical Commission
P.O. Box 12276, Austin, TX 78711-2276 (mail service)
108 W. 16th Street, Austin, TX 78701 (courier service)

Instructions for Section 106 submissions are available on the Texas Historical Commission (THC) website at http://www.thc.state.tx.us/crm/crmsend.shtml. Pursuant to the Programmatic Agreement between THC and the Texas General Land Office, architectural projects will have an expedited review process of 14 calendar days upon receipt. Projects requiring review from THC staff archeologists will be allowed the full 30-day period. If you have any questions or concerns regarding review of your project, please contact Lydia Woods Project Liaison for the Disaster Recovery Program, at 512-463-7687

TEXAS HISTORICAL COMMISSION

REQUEST FOR SHPO CONSULTATION:
Projects Subject to Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas

Submission of this form only initiates consultation with the Texas Historical Commission, the State Historic Preservation Officer (SHPO) for Texas. The SHPO may require additional information to complete the review for some projects.

FCC projects: this form should not be completed when submitting Form 620 or 621 for communications towers.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to consider the effects of their undertakings on historic properties and to consult with the State Historic Preservation Officer (SHPO) regarding the undertaking. An undertaking is any action by or on behalf of a federal agency that has the potential to affect historic resources and includes funding, permits, or other approvals. Federal agencies are required to identify historic resources that may be affected and to avoid, minimize, or mitigate any adverse effects. The Section 106 regulations are codified in 36 CFR 800 and are available from the Advisory Council on Historic Preservation website at www.achp.gov. Regulations allow 30 days upon receipt for SHPO review.

The Antiquities Code of Texas (Title 9, Chapter 191 of the Texas Natural Resources Code) is intended to protect historic and archeological landmarks and is applicable to public lands owned by the state of Texas or a political subdivision of the state, including state agencies, counties, cities, school districts, and public colleges and universities, as well as other public authorities. Notification of the Texas Historical Commission is required before breaking ground at a project location on state or local public land.

☐ This is a new submission
Complete all pages of this form and include required attachments.

☐ This is additional information relating to original submission made on or about 2016-08951
Complete only the first page of this form and add any new information, including attachments.

1. Project Information

PROJECT NAME
County of Bastrop - Street Improvements - Tahitian Village Subdivision Bastrop2016-1

PROJECT ADDRESS	PROJECT CITY	PROJECT ZIP CODE(S)
Bastrop County: From: Riverside Drive To: Hwy 71	Bastrop	78602

PROJECT COUNTY OR COUNTIES
Bastrop

PROJECT TYPE (Check all that apply)

- ■ Road/Highway Construction or Improvement
- ■ Site Excavation
- ■ Utilities & Infrastructure
- ■ New Construction
- ■ Repair, Rehabilitation or Renovation of Structure(s)
- ☐ Addition to Existing Structure(s)
- ☐ Demolition or Relocation of Existing Structure(s)
- ☐ None of these

BRIEF PROJECT SUMMARY: Please provide a one or two sentence description to explain the project. More details will be provided separately in Part 5, the Project Work Description Attachment.

Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) asphaltic concrete surface, and perform site work associated with construction. The alignment has been altered in 2 locations - See Maps Attach.

2. Project Contact Information

PROJECT CONTACT NAME	TITLE	ORGANIZATION
Latrice Hertzler	Environmental Reviewer	Future Link Technologies, Inc.

ADDRESS		CITY	STATE	ZIP
225 Commons Ford Rd	Suite 123	Austin,	TX	78733

PHONE	EMAIL
512-443-4100	lhertzler@future-link.biz

For SHPO Use Only **Date Stamp Below:**

Track Review to:

☐Archeology Division: Reviewer:

☐History Programs Division: Reviewer:

☐Architecture Division: Reviewer:

3. Federal Involvement

Does this project involve approval, permit, license, or funding from a federal agency?

☐ Yes (Please complete this section) ☐ No (Skip to next box)

FEDERAL AGENCY

FEDERAL PROGRAM, FUNDING, OR PERMIT TYPE:

FEDERAL AGENCY CONTACT PERSON

PHONE

ADDRESS

EMAIL

Has the federal agency (if other than HUD) formally delegated authority to consult with SHPO on the agency's behalf? ☐ Yes (Please attach delegation letter) ☐ No

4. State Involvement

Does this project involve approval, permit, license, or funding from a state agency?

☐ Yes (Please complete this section) ☐ No (Skip to next box)

STATE AGENCY
Texas General Land Office

STATE PROGRAM, FUNDING, OR PERMIT TYPE:
Community Development and Revitalization

STATE AGENCY CONTACT PERSON
Kelly Warner

PHONE
512-475-5057

ADDRESS
3249 Executive Dr
Suite 150
Austin, TX 78731

EMAIL
Kelly.Warner@glo.texas.gov

Will this project involve public land owned by the State of Texas or a political subdivision of the state? (State Agency, County, City, School District, Public Authority, Public College or University, etc.)

☐ Yes ☐ No

CURRENT OR FUTURE OWNER OF THE PUBLIC LAND
Bastrop County

5. Project Work Description

Attach a detailed written description of the project that fully explains what will be constructed, altered, or demolished. Include architectural or engineering plans, site plans, specifications, or NEPA documents, as necessary, to illustrate the project.

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1. **Attach** map(s) indicating the location and specific boundaries of the project. Road names must be included and legible. Identify the project location, boundaries, and APE on the map(s) as precisely as possible. Suggested maps may include USGS 7.5 minute quadrangle maps (or relevant portions thereof), tax maps, satellite images, etc. The number and types of map(s) will depend on the nature and complexity of the project as well as the extent of the APE. **Projects involving ground disturbance must include the appropriate 7.5 minute USGS quadrangle.**
2. **Attach** a brief written description of the APE, including a discussion of the potential for direct and indirect effects that might result from the project and the justification for the boundaries chosen for the APE.

7. Identification of Historic Properties within the APE (Attach additional materials as necessary)

A. Archeological Resources

Does this project involve ground-disturbing activity?

☐ Yes (Please complete this section) ☐ No (Skip to Structures section)

Describe the nature, width, length, and depth of the proposed ground-disturbing activity.

Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) concrete surface.

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Portions of the proposed roadway project have been preexisting. Other areas have been used for ranchland. Some areas have not been disturbed for various reasons to protect the critical habitat of the Houston Toad, an endangered species of amphibian.

Describe the current land use and conditions.

Portions of the proposed roadway project have been preexisting in neighborhoods and not used for anything due to severe forest fires in 2011 and 2012. All proposed construction areas are currently considered critical habitat for the Houston Toad. Some areas currently exhibit vast terrain variances including undulating hills, fallen and burned trees and other vegetation.

B. Structures

Are there any structures, buildings, or designed landscape features (park, cemetery, etc.) 45 years old or older within the project area or APE?

☐ Yes ☐ No

Is the project located within or adjacent to a district that is listed in or eligible for the National Register of Historic Places? Eligible districts may include locally designated districts or areas identified in historic resource surveys.

☐ Yes, name of district: _____ ☐ No ☐ Do not know

If the Texas Historic Sites Atlas (http://atlas.thc.state.tx.us) has been consulted, were previously identified architectural resources identified within the project area or APE?

☐ Yes ☐ No ☐ Did not consult Atlas

If the answer to any of the above questions is yes, use the space below or provide an attachment indentifying each structure, building, designed landscape feature, or district within the APE that is 45 years old or older. Include an actual or estimated date of construction and the location of each of the features.

Does the project involve the rehabilitation, alteration, removal, or demolition of any structure, building, designed landscape feature, or district that is 45 years old or older?

☐ Yes ☐ No

If yes, include information with the attachments for Part 5: Project Work Description and Part 8: Photographs.

8. Photographs

Attach clear, high-resolution color photographs that illustrate the project area and APE as defined in Section 6. Images from the internet are not acceptable due to low resolution. Photography should document the project area and properties within the APE, including clear views of any buildings or structures. Please number and label all photographs, and include a map or site plan labeled to show the location and direction of each view. Where applicable, include photographs of the surrounding area from the project site and streetscape images. Should your project entail the alteration of existing structures, please also provide photographs of the existing conditions of sites, buildings, and exterior and interior areas to be affected.

9. Consulting Parties/Public Notification (Section 106 only)

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- [x] **No Historic Properties Affected** based on 36 CFR 800.4(d)(1). Please provide the basis for this determination.
- [ ] **No Adverse Effect** on historic properties based on 36 CFR 800.5(b). Please explain why the criteria of adverse effect at 36 CFR 800.5(a)(1) were not found to be applicable for your project.
- [ ] **Adverse Effect** on historic properties based on 36 CFR 800.5(d)(2). Please explain why the criteria of adverse effect at 36 CFR 800.5(a)(1) were found to be applicable to your project. You may also wish to include an explanation of how these adverse effects might be avoided, minimized, or mitigated.

In the space below or as an attachment, please explain the effect of the project on historic properties.

Submit Completed Form and Attachments to:

Via mail:
Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
PO Box 12276
Austin, TX 78711

Via hand delivery or private express delivery:
Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
108 West 16th St.
Austin, TX 78701

Faxes and email are not acceptable.

For SHPO Use Only

NO HISTORIC PROPERTIES AFFECTED
PROJECT MAY PROCEED
by
for Mark Wolfe
State Historic Preservation Officer
Date 7/20/16
Track#

PROJECT NAME County of Bastrop - Street Improvements - Tahitian Village Subdivision Bastrop2016-1		
PROJECT ADDRESS Bastrop County: From: Riverside Drive To: Hwy 71	PROJECT CITY Bastrop	PROJECT ZIP CODE(S) 78602
PROJECT COUNTY OR COUNTIES Bastrop		

PROJECT CONTACT NAME Latrice Hertzler		TITLE Environmental Reviewer	ORGANIZATION Future Link Technologies, Inc.
ADDRESS 225 S Commons Ford Rd Suite 123	CITY Austin,	STATE TX	ZIP 78733
PHONE 512-443-4100		EMAIL lhertzler@future-link.biz	

ADDENDUM TO
REQUEST FOR SHPO CONSULTATION:
Projects Subject to Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas

County of Bastrop
Street Improvements – Tahitian Village Subdivision

Area 5. Project Work Description

Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) asphaltic concrete surface, and perform site work associated with construction.

Location:

Tahitian Village Subdivision, Bastrop County Texas

Alternatives:

1. Do nothing. Doing nothing was not selected as it does not preserve human health and the environment and will not help prevent area flooding during major precipitation events.
2. Moving the additional ingress/egress for Tahitian Village to several other locations was considered and was determined infeasible as using the other options did not provide a) the most direct route to Highway 71, b) offer an access to Highway 71 where a crossover occurs, or c) accessibility in case of emergency vehicle access.
3. The use of other road construction materials like cement was considered, however, this material is cost prohibitive and is not practicable for the particular area.

Area 6. Identification of Project Location and Area of Potential Effect (APE)

1) See Attachment 1 for Project Site Area Locations, Specific boundary Mapping and 7.5 minute USGS TOPO Mapping

2) Brief written description of the APE is as follows:
   Project Site Area – With location of Construction

Project: Street Improvements - Tahitian Village Subdivision

Location: Bastrop County, Texas

Street Improvements:	Location:	HUD Performance Measure:	Approximate Units:
Riverside Drive	From: Tahitian Drive To: South Highway 71	Linear Feet	10,560

Potential for direct and indirect effects that might result from the project?

A new ingress and egress route into and out of the Tahitian Village subdivision would ensure human health, safety and welfare in case of emergency events in the area where evacuation is inevitable, i.e., during future wildfire events, flood events, or other major acts of God.

New roadway at McAlister to Highway 71 and at Ulupau to Colovista will mean new construction including site excavation in undulating terrain.

A new road may negatively impact the Houston Toad critical habitat which is highly documented as being located at the project site. Currently a Section 7 consultation request is being developed to ensure consistency with USFWS regulatory requirements and to identify mitigation and/or avoidance and minimization tactics for prevent significant impact to the endangered species - Houston Toad.

A new road can introduce the possibility of further construction like new development in areas where significant preservation occurs by the County in regard to the Houston Toad. An easement is being acquired and roadway plans will exclude components that typically introduce opportunities for further development or other new construction to prevent the possibility of other new development in the area.

A new road can increase traffic in areas where the endangered species – Houston Toad – critical habitat occurs.

New bridges and rehabbed culverts can offer additional positive habitat impact for the Houston Toad.

Justification for the boundaries chosen for the APE?

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events.

Area 7. Identification of Historic Properties within the APE

According to the THC Atlas mapping and research, no historic properties are impacted by the project. Construction activities will include new and rehabbed roads to address insufficient ingress and egress routes into and out of the Tahitian Village subdivision. New roadway at McAlister to Highway 71 and at Ulupau to Colovista will mean new construction including site excavation in undulating terrain. No historic data is available reflecting the absence or presence of historical factors.

The Closest National Register District is approximately 1.3 miles from the proposed new road at Highway 71.

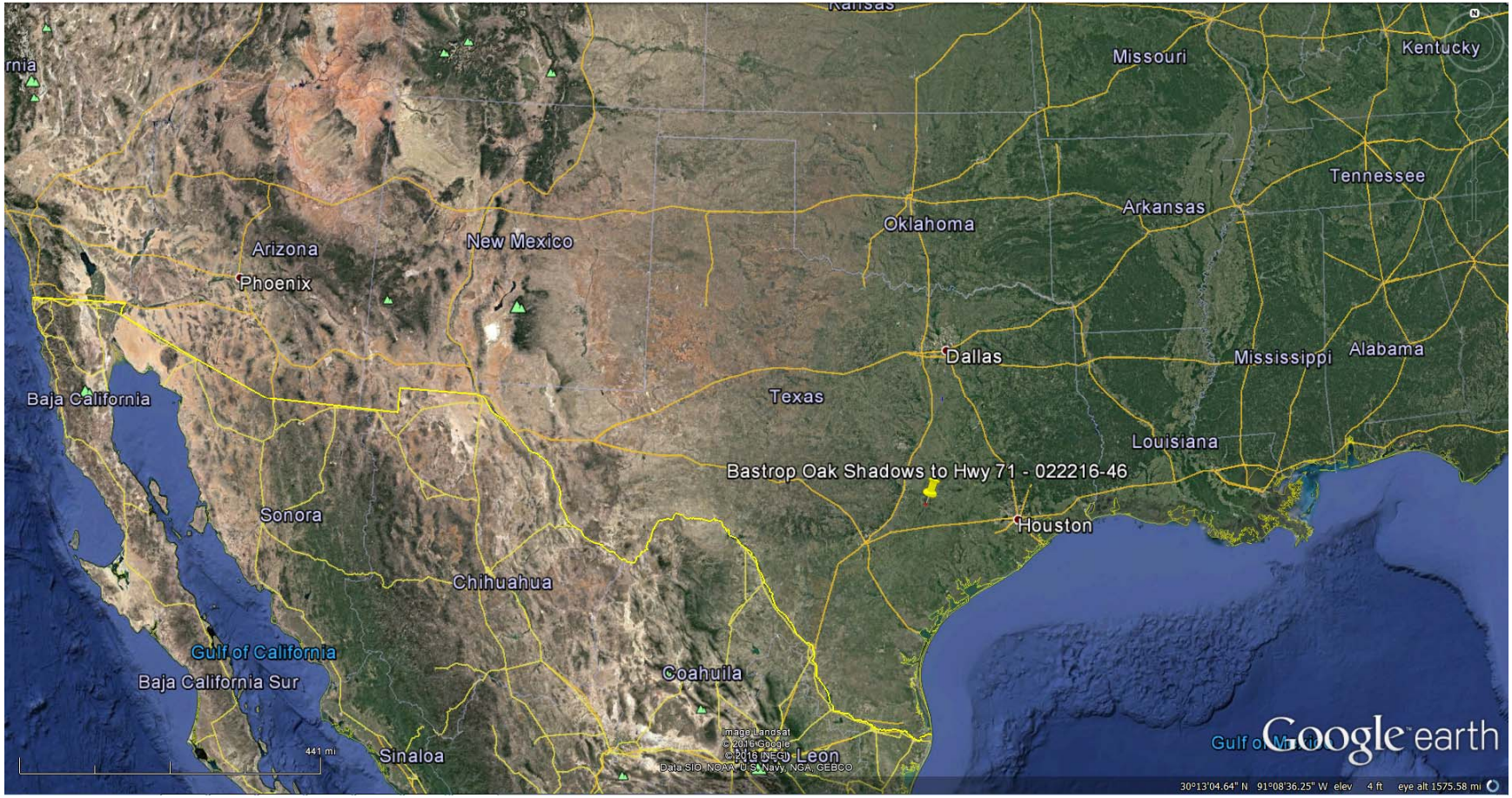
Area 8. Photographs
Site visit photos of Project Site Area - See Attachment 4.

Area 9. Consulting Parties/Public Notification (Section 106 only)
A standard public notice for the TCPD Grant Program will be conducted, the public comment period will include a 15-day period to notify City residences of expected work. Notification to US Fish & Wildlife will also be conducted through the Section 7 consultation process as critical habitat impact will occur. Mitigation, avoidance and minimization measures and best management practices will occur to adequately address activities within the Houston Toad critical habitat.

Attachment 1: General Location Mapping, Project Site Area Location Maps, USGS 7.5 Minute Quadrangle Map
Attachment 2: Historical Commission Database Results/Mapping
Attachment 3: Site Visit Pictures
Attachment 4: Flood Plain Mapping

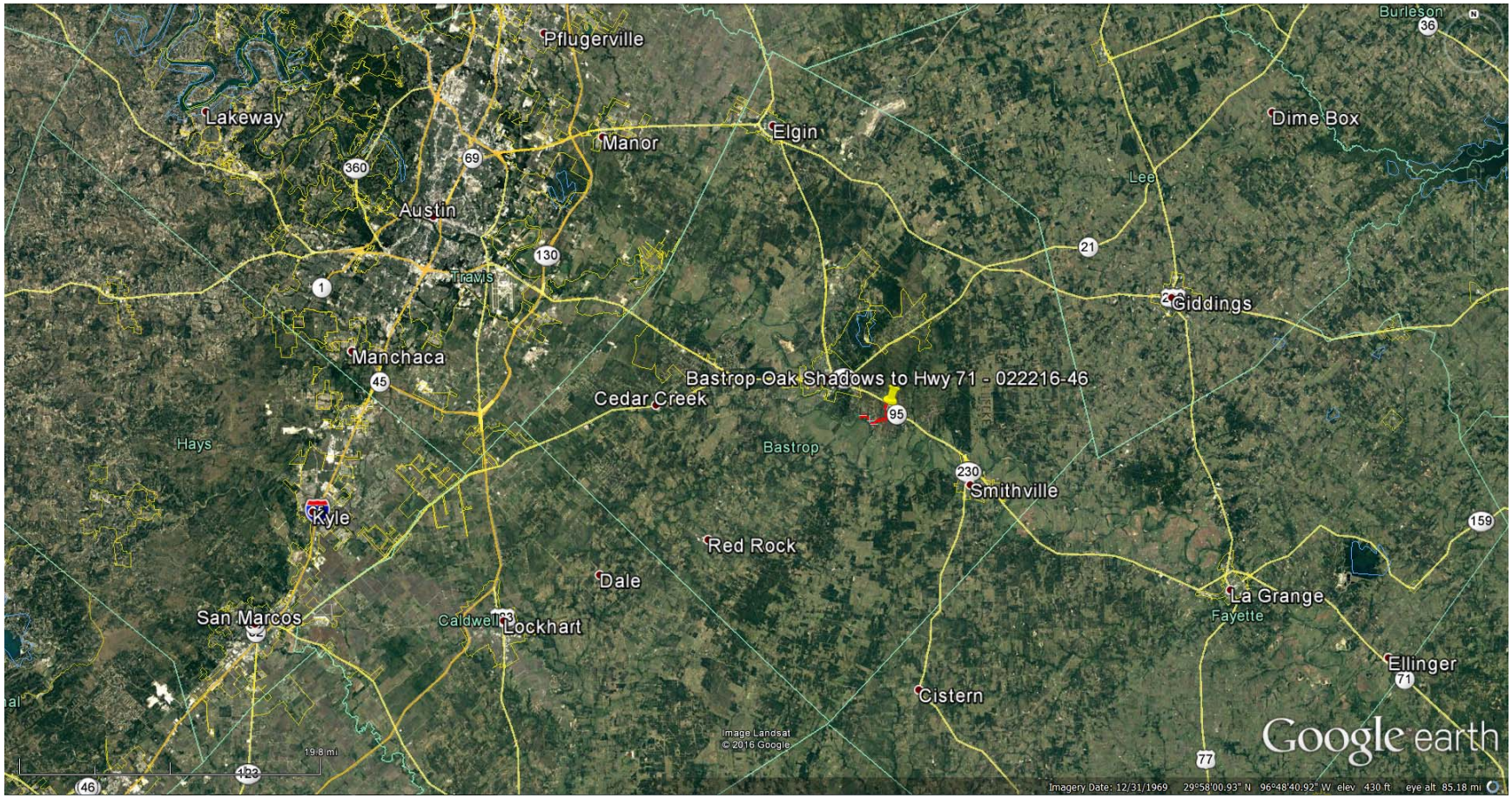
Attachment 1

General Location Mapping
Project Site Area Location Maps
USGS 7.5 Minute Quadrangle Map



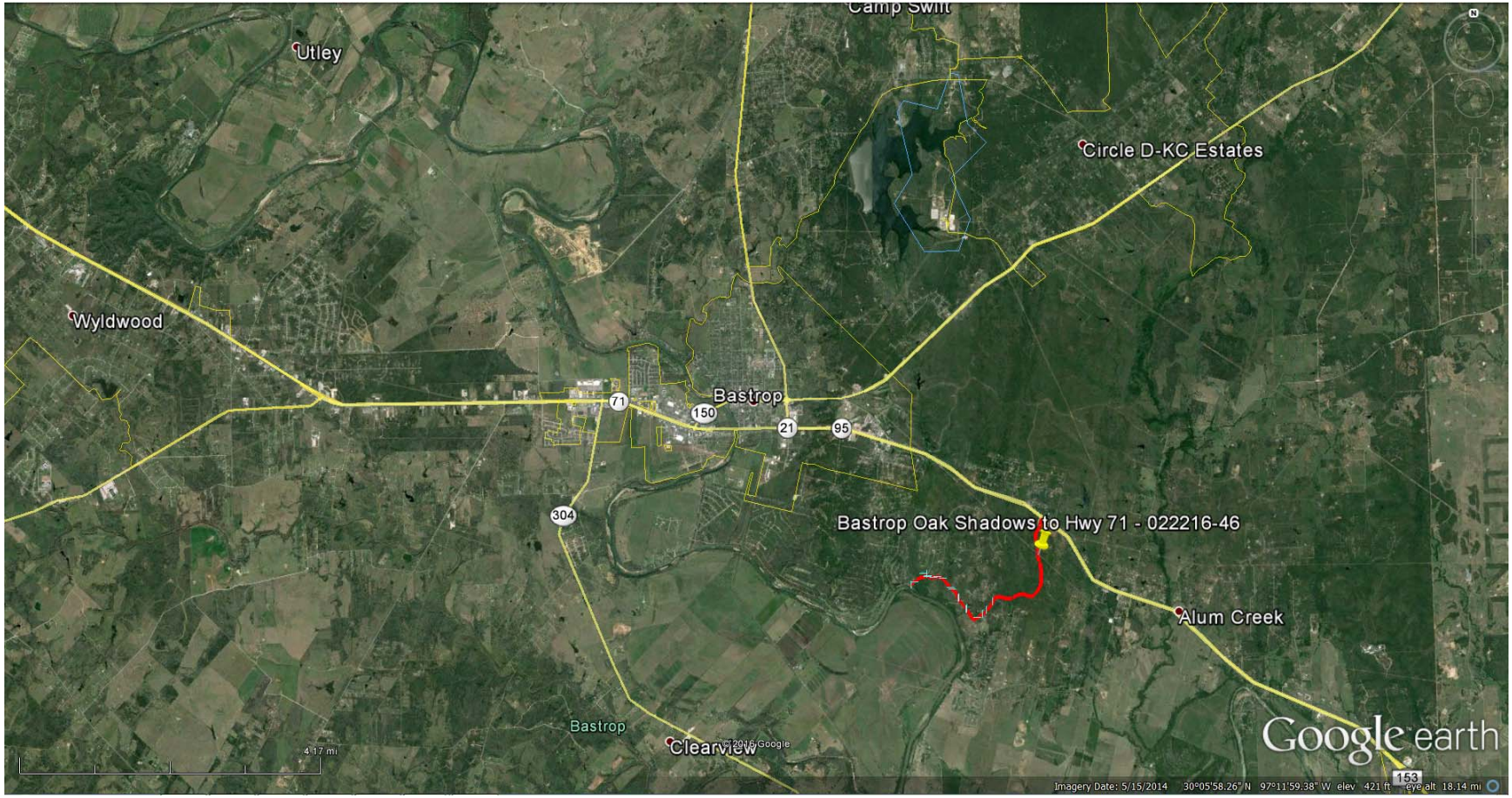
Bastrop Project located in Texas

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider



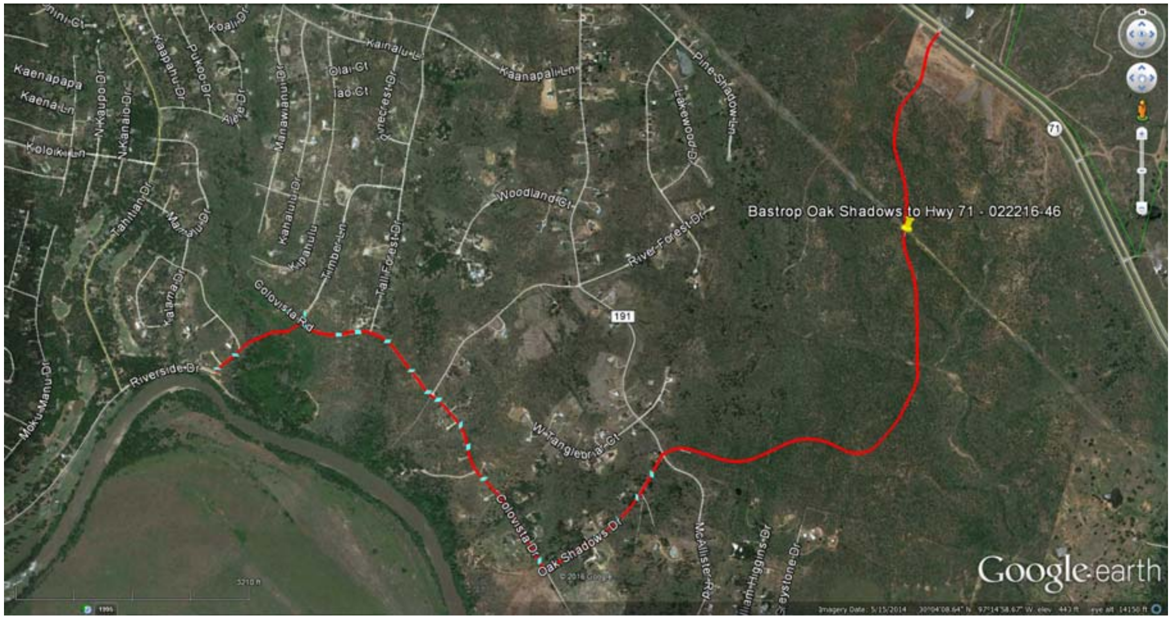
Bastrop County

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider

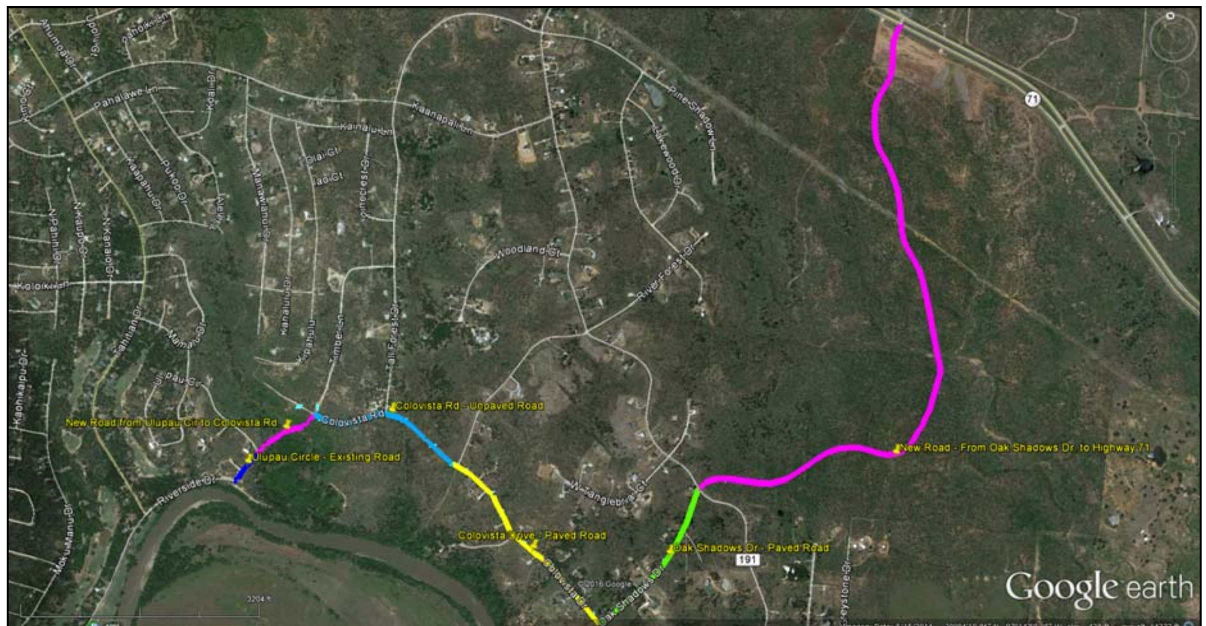


City of Bastrop Nearest City

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider

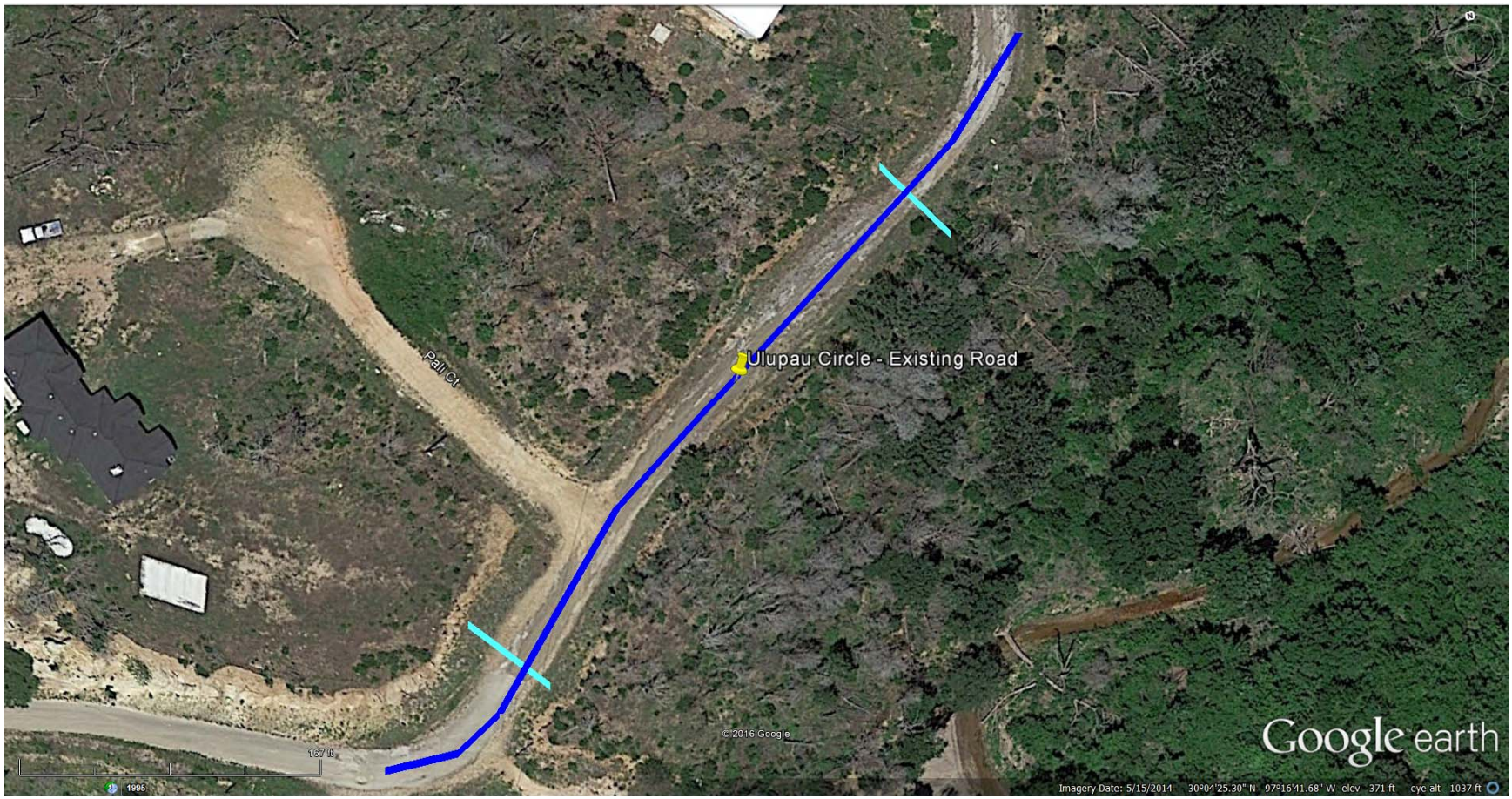


Entire Project Area (APE)



- Ulupau Circle - Paved Road Rehab
- New Road (From Ulupau to Colovista Rd)
- Colovista Road – Unpaved Road
- Colovista Drive – Paved Road
- Oak Shadows Drive – Paved Road
- New Road – From Oak Shadows Dr. to Highway 71

Client Name	Bastrop County	**Future Link Technologies**
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider



Ulupau Circle - Paved Road Rehab

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
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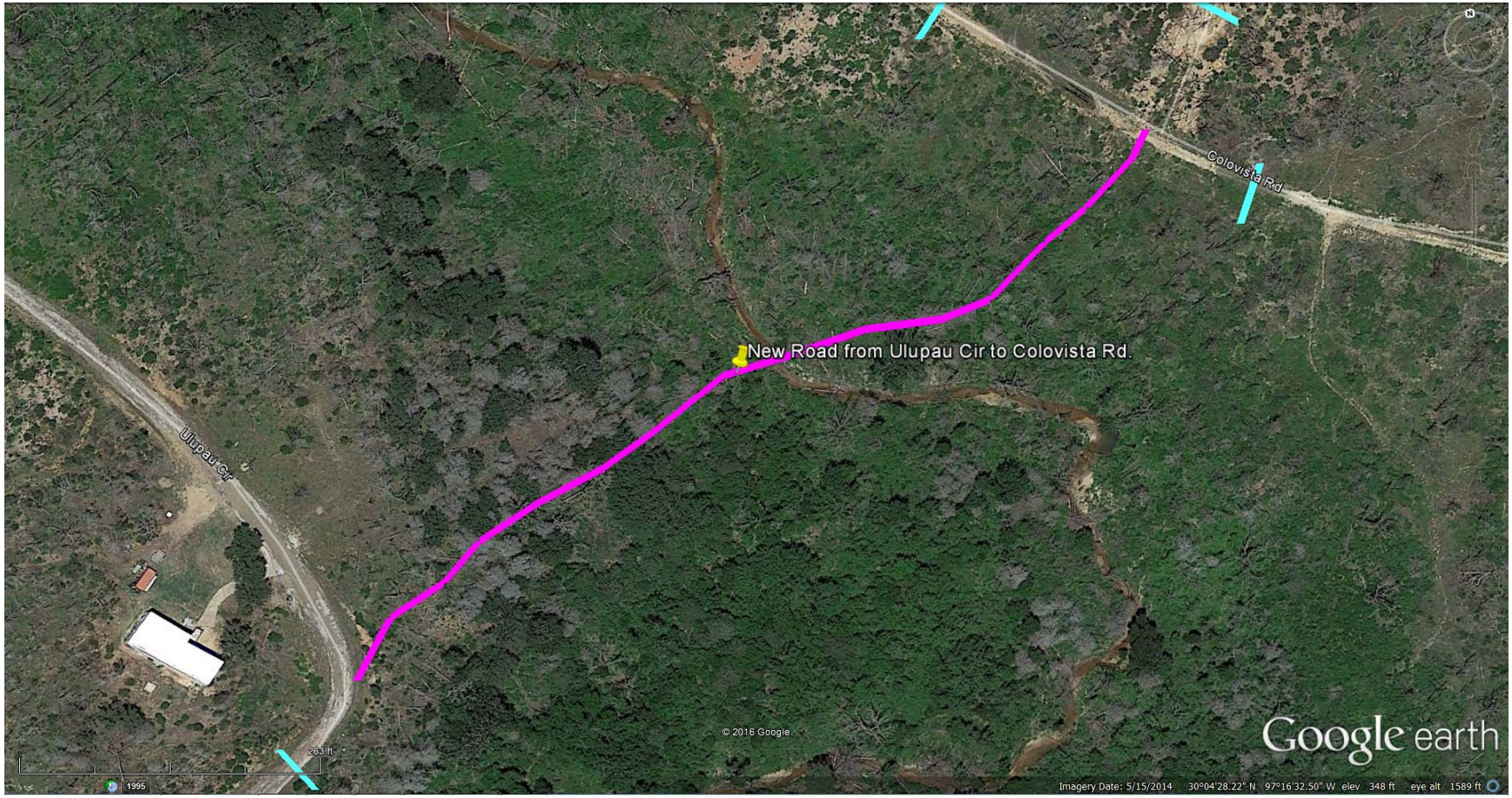
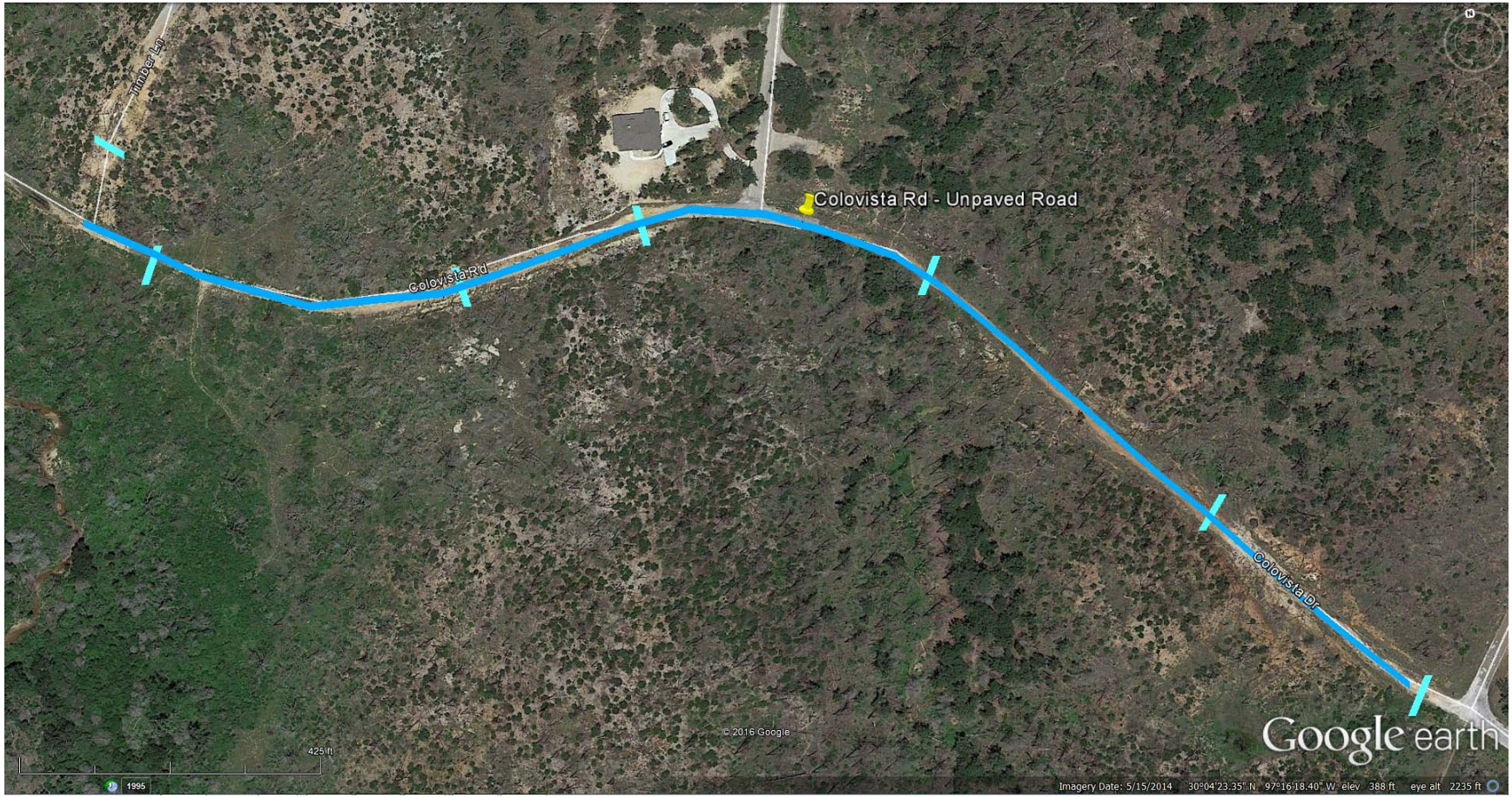


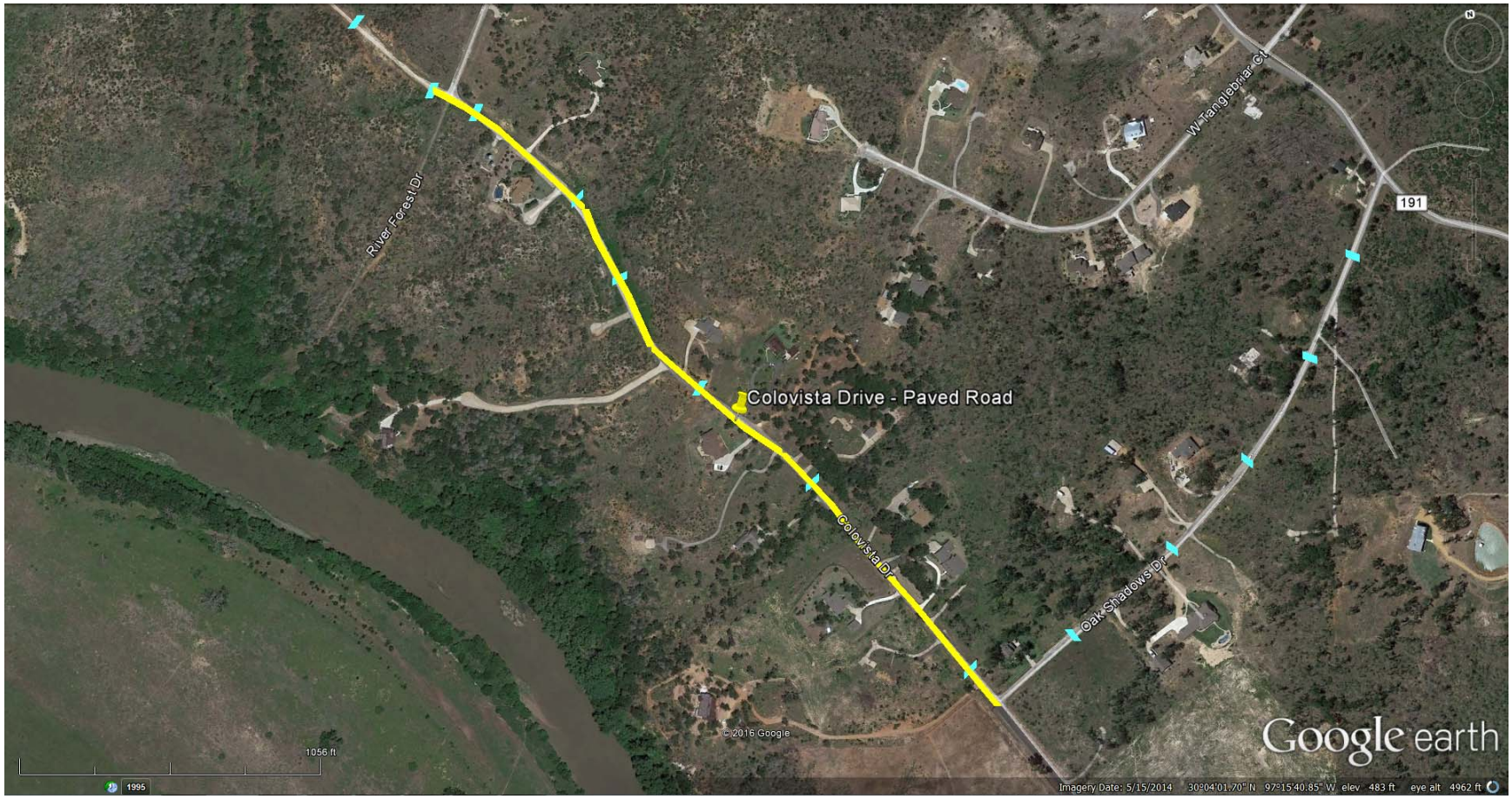
New Road (From Ulupau to Colovista Rd)

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider



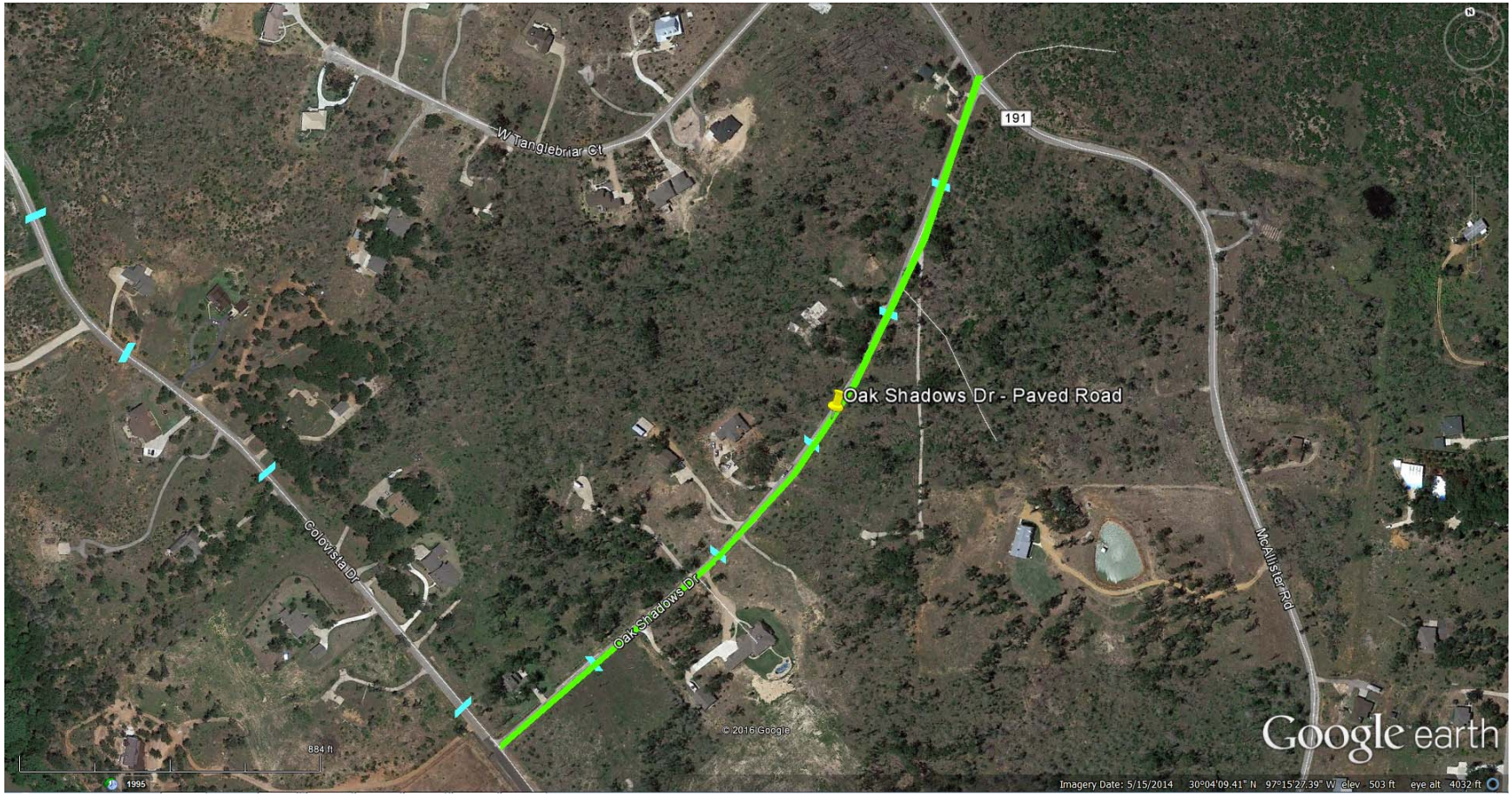
Colovista Road – Unpaved Road

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider



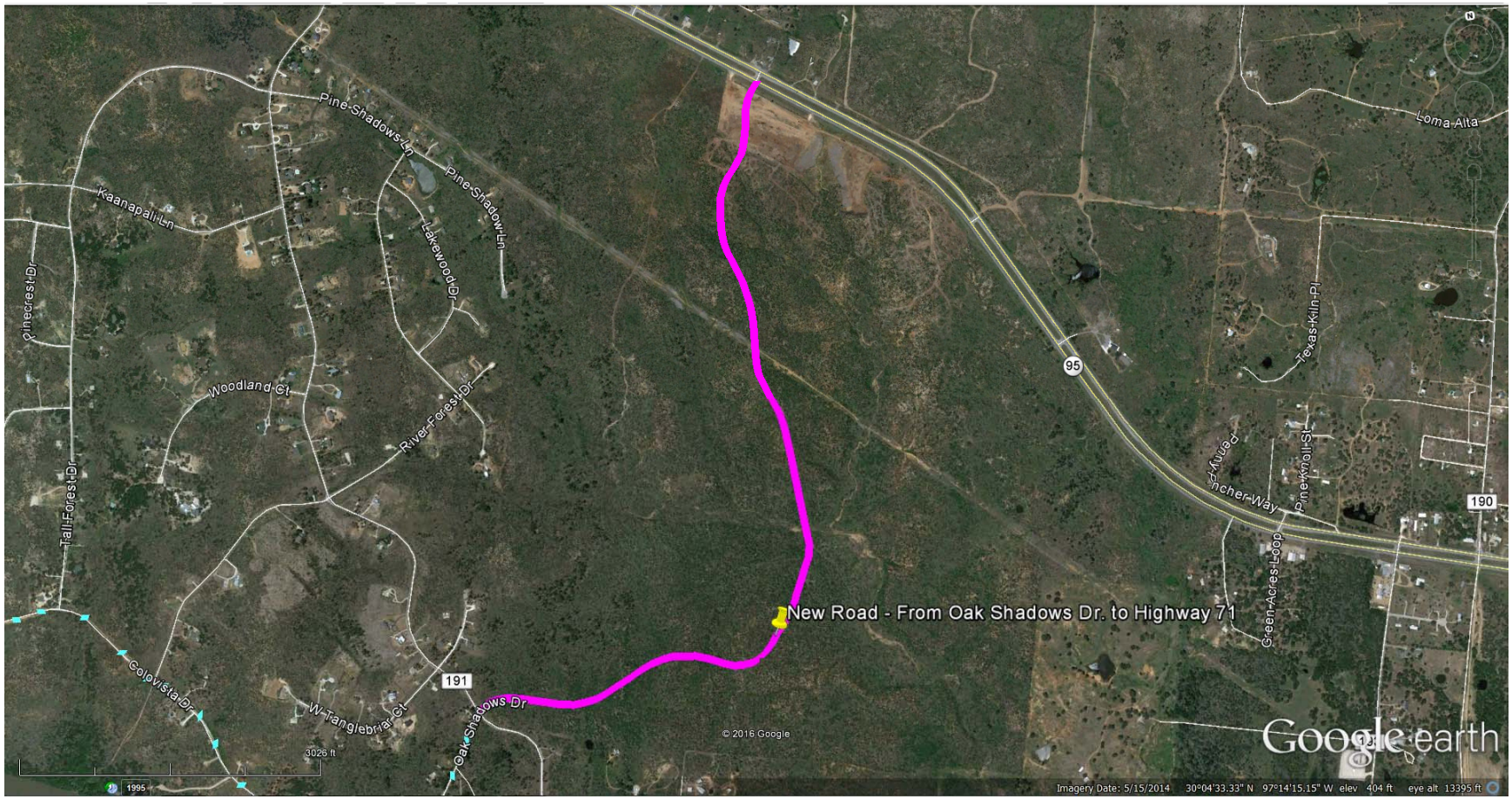
Colovista Drive – Paved Road

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider



Oak Shadows Drive – Paved Road

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider



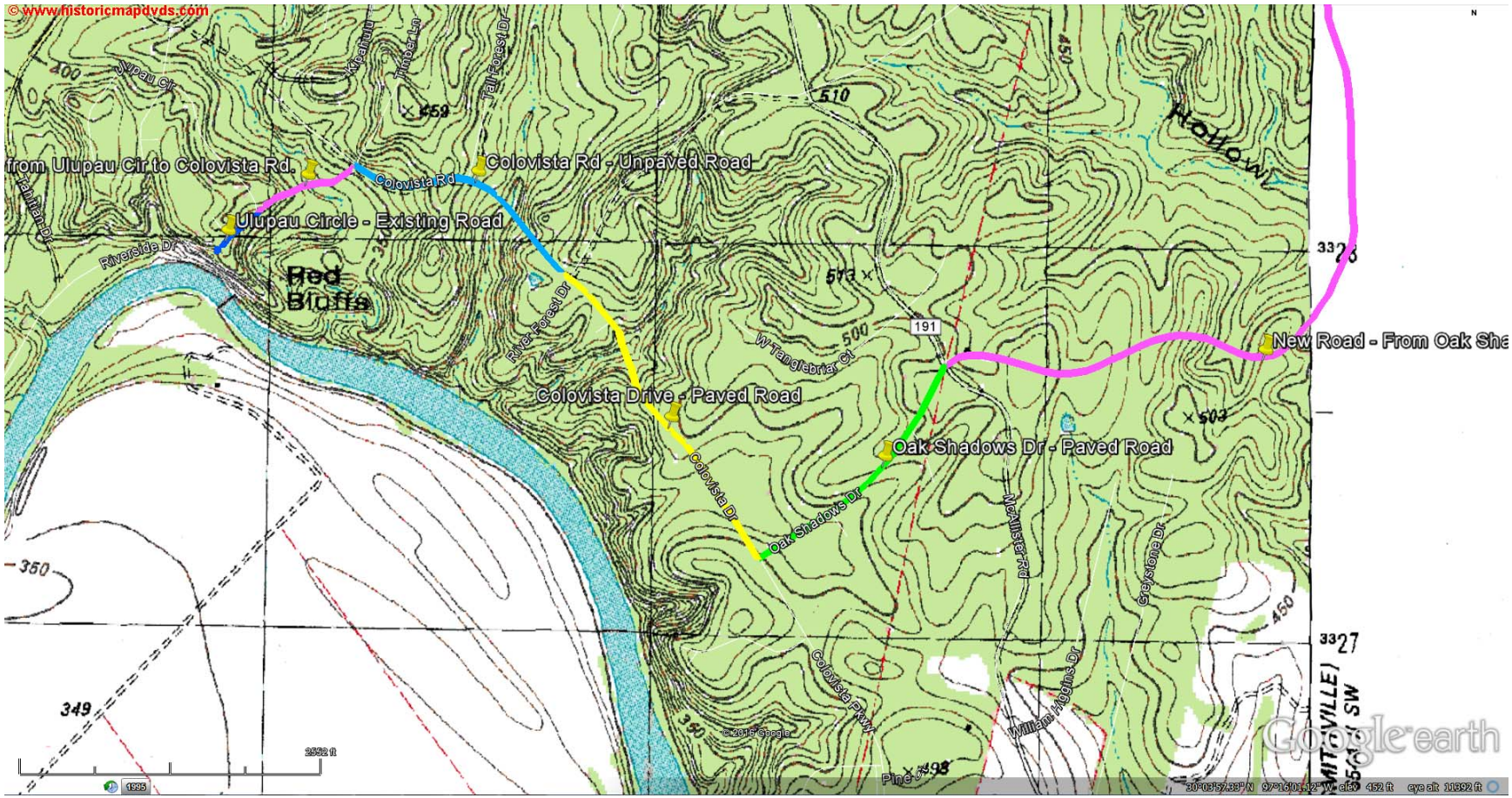
New Road – From Oak Shadows Dr. to Highway 71

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider

New Road From Oak Shadows to Highway 71

Zoomed

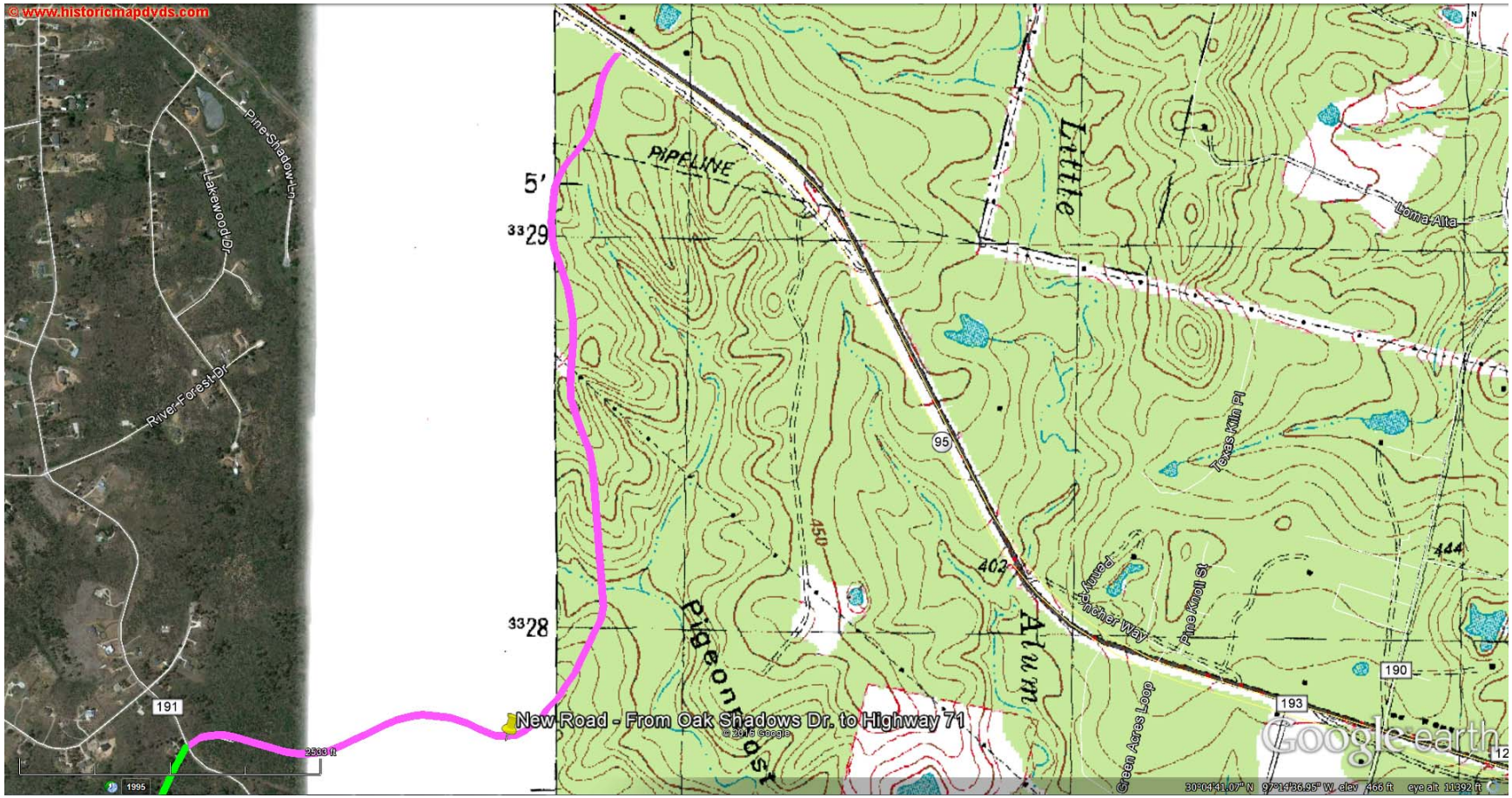
Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	General Location Maps	512-443-4100
Date	June 16	Environmental Service Provider



Bastrop Project located in Texas

	Ulupau Circle - Paved Road Rehab
	New Road (From Ulupau to Colovista Rd)
	Colovista Road – Unpaved Road
	Colovista Drive – Paved Road
	Oak Shadows Drive – Paved Road
	New Road – From Oak Shadows Dr. to Highway 71

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	USGS 7.5 Min Topography Map	512-443-4100
Date	June 16	Environmental Service Provider



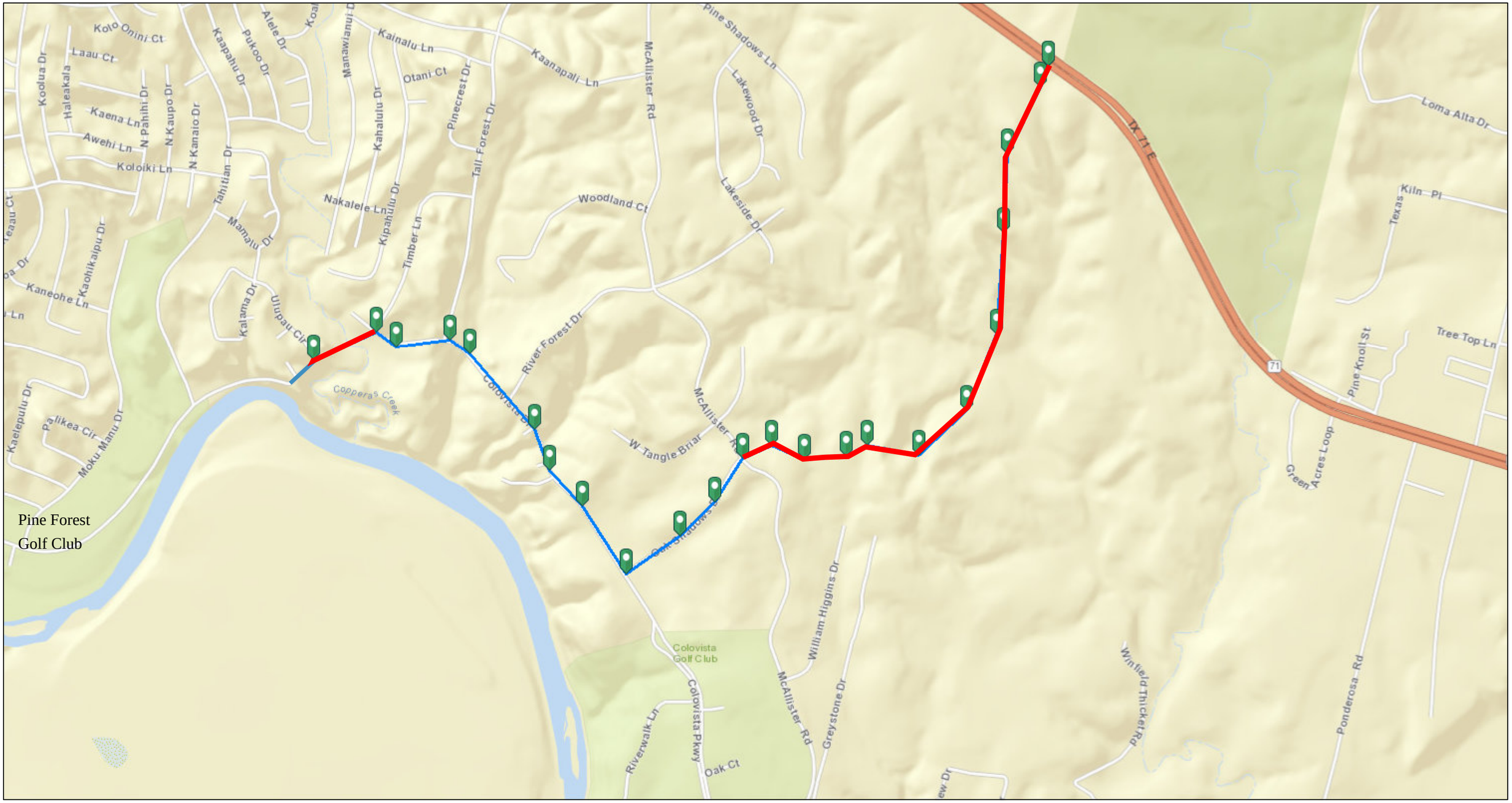
Ulupau Circle - Paved Road Rehab	
New Road (From Ulupau to Colovista Rd)	
Colovista Road – Unpaved Road	
Colovista Drive – Paved Road	
Oak Shadows Drive – Paved Road	
New Road – From Oak Shadows Dr. to Highway 71	

Client Name	Bastrop County	**Future Link Technologies**
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	USGS 7.5 Min Topography Map	512-443-4100
Date	June 16	Environmental Service Provider

Attachment 2

Historical Commission Database Results/Mapping

Texas Historic Sites Atlas



June 27, 2016

Legend

- Neighborhood Survey
- Museum
- Historical Marker
- National Register Property
- National Register District
- Cemetery
- County Courthouse
- Counties

County of Bastrop –
Tahitian Village Subdivision
Community Development and Revitalization
Bastrop2016-1

Future Link Technologies

Proposed Improved Road Alignment

Proposed New Road Alignment

1:18,056

0 0.225 0.45 0.9 mi

0 0.35 0.7 1.4 km

No historic features identified from THC Atlas.
Closest National Register District is approximately 1.3 miles from the proposed new road at Highway 71.

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Copyright 2010, Texas Historical Commission

THC provides this information with the understanding that it is not guaranteed to be accurate, correct or complete.
Texas Historical Commission ©

Attachment 3

Site Visit Pictures for Project Site Areas

Riverside Road at Ulupau

Riverside Road at Ulupau—looking east

Ulupau Road—looking north

Looking north at new road at Ulupau Rd

Area of Proposed intersection of Ulupau and New Road

New Road Facing north

New Road Facing north

New Road Facing north

Drainage on Ulupau

Colovista Rd—Unpaved Road out Looking east

Colovista Rd—Unpaved Road out Looking east

Colovista Rd—Unpaved Road out Looking south

Colovista Rd—Unpaved Rd at River Forest Looking west

Colovista Roadat Tall Forest Looking West

Colovista Roadat Tall Forest Looking West at closed road

Colovista Road— for rehab—looking east

Colovista Road— for rehab—looking east

Colovista Drive Paved Road looking Southeast

Oak Shadows Dr Paved Road looking North

Intersection of Oak Shadows Dr and McAlister—paved

New Road—From Oak Shadows Dr to Hwy 71—Looking East

New Road—From Oak Shadows Dr to Hwy 71—Looking East

New Road—From Oak Shadows Dr to Hwy 71—Fallen Trees

Comment 1

New Road— Vegetation—looking northeast

New Road— Vegetation—looking northeast

New Road—looking north

New Road—at Pigeon Hollow looking northwest

New Road—Pigion Hollow looking east

New Road— looking north

New Road— looking north at Utility easement

New Road pile of burned logs

New Road—Cleared Area

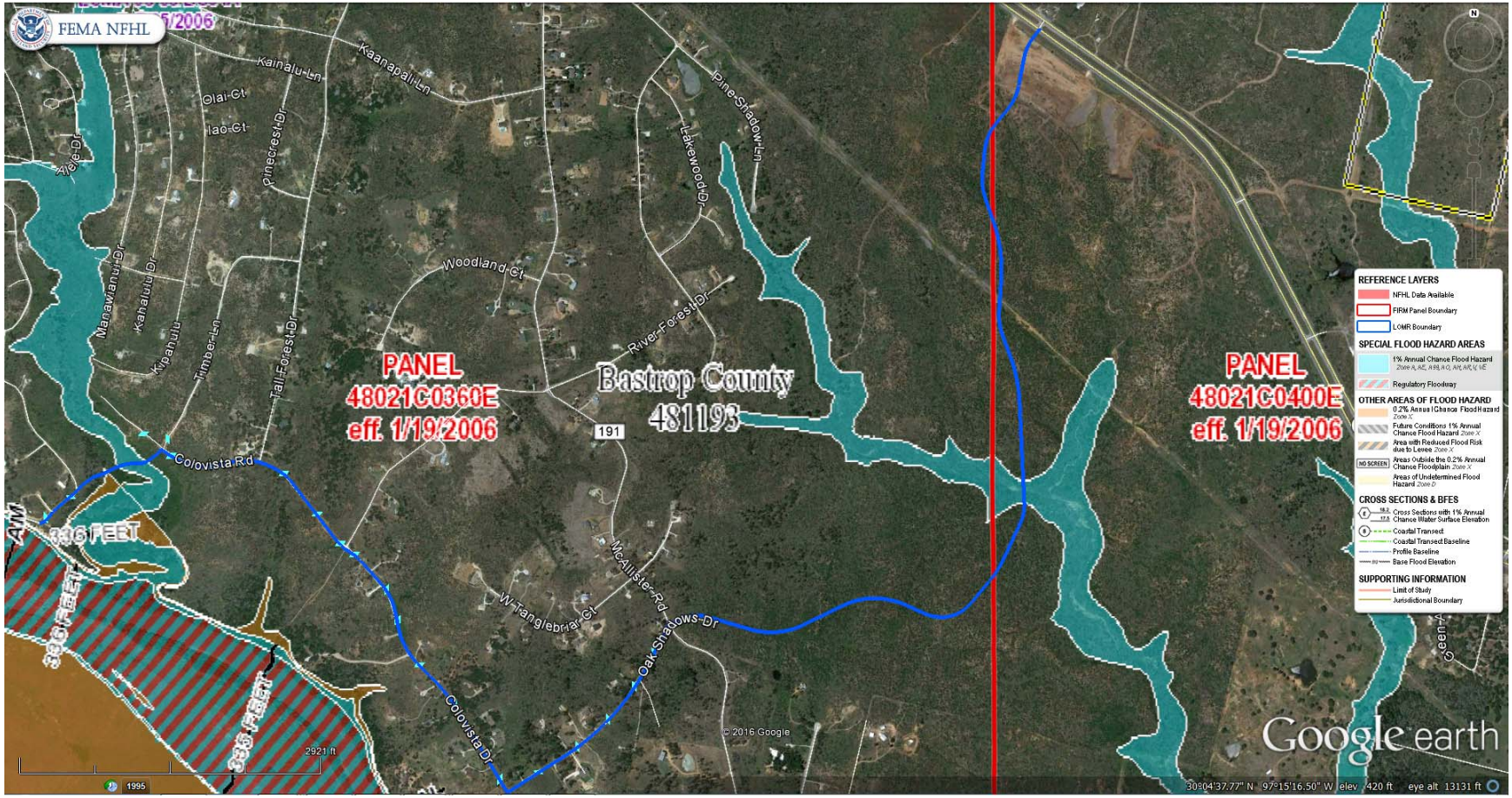
New Road—Approximately 1000 lf from Highway 71—looking north

New Road—Approximately 1000 lf from Highway 71—looking north

New Road—Approximately 500lf from Highway 71—looking north

Attachment 4

FEMA Flood Insurance Rate Map

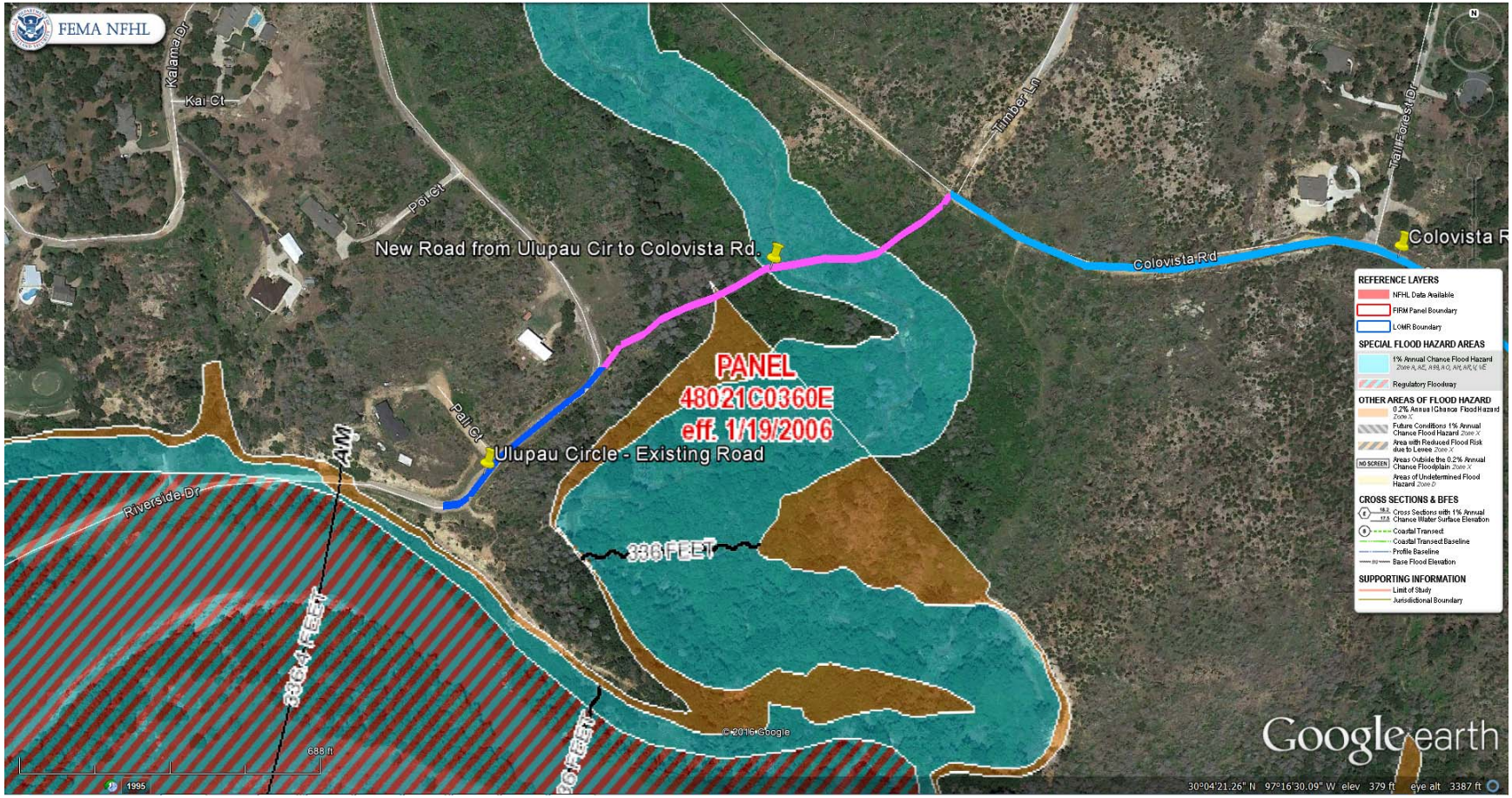


Bastrop Project located in Texas

Entire Project Area (APE)

Panel 48021C0360E
Panel 48021C0400E

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Federal Emergency Management Agency – FIRM Map	512-443-4100
Date	June 16	Environmental Service Provider



Approximately 270 lf located within the 100-year floodplain

FIRM Panel 48021C0360E

- Ulupau Circle - Paved Road Rehab
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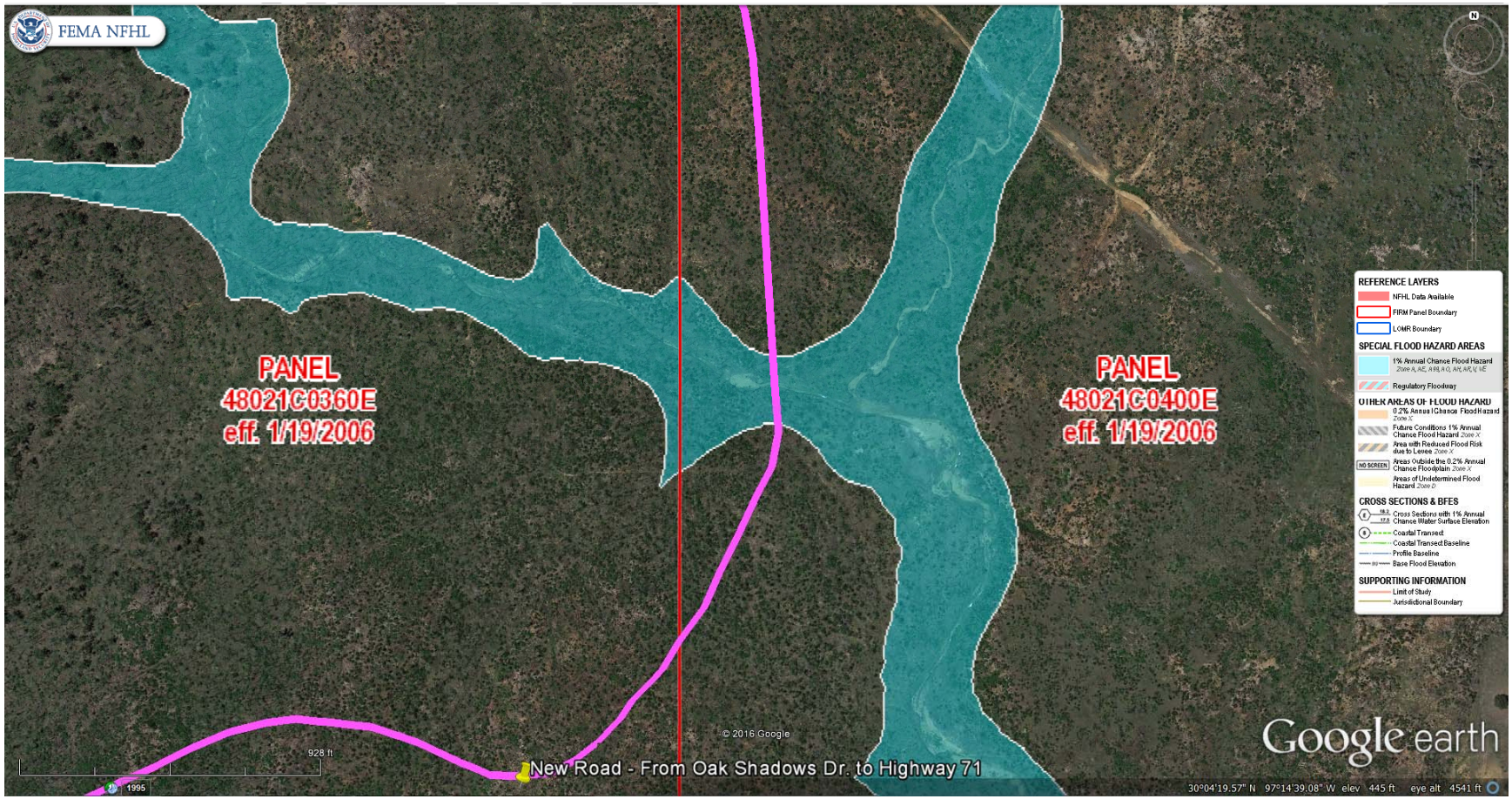

Approximately 216 lf located within the 100-year floodplain

FIRM Panel 48021C0400E

- Ulupau Circle - Paved Road Rehab
- New Road (From Ulupau to Colovista Rd)
- Colovista Road – Unpaved Road
- Colovista Drive – Paved Road
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- New Road – From Oak Shadows Dr. to Highway 71

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Federal Emergency Management Agency – FIRM Map	512-443-4100
Date	June 16	Environmental Service Provider

Latrice Hertzler

From: Martina Callahan <martinac@comanchenation.com>
Sent: Monday, July 02, 2018 11:52 AM
To: Latrice Hertzler
Subject: RE: Bastrop County Road Improvement Project in Tahitian Village Subdivision Work Order N. Bastrop 2016- 1/ EA
Attachments: RE Bastrop County Road Improvement Project in Tahitian Village Subdivision Work Order N. Bastrop 2016- 1 EA.docx

Dear Judge Pape and Staff,

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of "No Properties" have been identified. (IAW 36 CFR 800.4(d)(1)).

This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office. Please contact the Comanche Nation Tribal Historical Preservation Office at (580) 595-9618, if you require additional information on this project.

Best Regards,

Martina Callahan
Comanche Nation Tribal Historic Preservation Officer
6 SW D Ave., Suite C
Lawton, OK 73501
(580) 595-9618 Phone
(580) 595-9733 Fax
martinac@comanchenation.com

"To preserve historic and sacred landmarks of the Comanche Nation"

Medicine Bluff, Fort Sill, OK

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 9, 2018 3:44 PM
To: Martina Callahan <martinac@comanchenation.com>
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Importance: High

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

The County respectfully requests your consideration of review of this project under Section 106 of the National Historic Preservation Act and/or the Antiquities Code as well as applicable tribal historic preservation requirements.

For your convenience, please feel free to reply using this email address or of course you may reply directly to the County at the contract information provided in the attached documentation.

Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

TONKAWA TRIBE OF OKLAHOMA
NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (NAGPRA)
1 RUSH BUFFALO ROAD - PHONE (580) 628-2561 - FAX (580) 628-2279
TONKAWA, OKLAHOMA 74653
www.tonkawatribe.com

June 22, 2018

COUNTY OF BASTROP
Attn: Mr. Paul Pape, County Judge
804 Pecan Street
Bastrop, TX 78602

Re: Section 106 Consultation: HUD Street/Road Improvements **Tahitian Village Subdivision**, Bastrop, Bastrop County, Texas

Dear Honorable Judge Pape:

On behalf of President Russell L. Martin and the Tonkawa Tribe of Oklahoma (TTO) in regards to the *Section 106 Request for Consultation of constructing a new roadway from U.S. Department of Housing and Urban Development (HUD), in the Tahitian Village Subdivision of Bastrop; roadway construction approximately twenty-four feet (24 ft.) in width, including twelve inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and perform site work associated with construction at Riverside Drive – From: Tahitian Drive > To: South Highway 71 approximately ten thousand five hundred sixty linear feet (10,560 l.f.), due lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of the subdivision due to that of a sufficient access route for emergency services and an evacuation route for residents for past/future wildfires, TTO concurs with the Texas Historical Commission (THC), National Register of Historic Places (NRHP) the Area of Potential Effect (APE) the project will no negative impact to any/all historical places/sites; Bastrop, Bastrop County, Texas;* TTO submits the following:

The Tonkawa Tribe of Oklahoma has no specifically designated historical, religious and/or cultural significance in the Proposed Project Area; *however* if any human remains, funerary objects, or other evidence of historical or cultural significance is inadvertently discovered then the Tonkawa Tribe would certainly be interested in proper disposition thereof.

We appreciate the notification received from your office. The Tonkawa Tribe is willing to work with you and your representatives in any manner to uphold the provisions of NAGPRA to the extent of our capabilities as well as yours. *Great success on this project and for those it will serve.*

Respectfully,

Lauren J. Norman-Brown
NAGPRA Coordinator/Consultant/Cultural Clerk

lbrown@tonkawatribe.com

Paul Pape
Bastrop County Judge

May 10, 2018

President Terri Parton
Wichita and Affiliated Tribes
Wichita, Keechi, Waco & Tawakonie- Oklahoma
P.O. Box 729
Anadarko, OK 73005

E-mail: Terri.Parton@wichitatribe.com

RE: Consultation for the County of Bastrop
Street Improvements
Tahitian Village Subdivision
Work Order No.Bastrop2016-1/EA

Dear President Parton,

The County of Bastrop is considering funding the project listed above with federal funds from the U.S. Department of Housing and Urban Development (HUD). Under HUD regulation 24 CFR 58.4, the County of Bastrop has assumed HUD's environmental review responsibilities for the project, including tribal consultation related to historic properties. Historic properties include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

Bastrop County will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR Part 800. We would like to invite you to be a consulting party in this review to help identify historic properties in the project area that may have religious and cultural significance to your tribe, and if such properties exist, to help assess how the project might affect them. If the project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

To meet project timeframes, if you would like to be a consulting party on this project, can you please let us know of your interest within 30 days? If you have any initial concerns with impacts of the project on religious or cultural properties, can you please note them in your response?

The referenced project consists of the following description.

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events.

804 PECAN STREET • BASTROP, TX 78602 • 512/332-7201 • METRO 512/581-7101 • FAX 512/581-7103

Tahitian Village Subdivision: Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) course surface treatment asphaltic concrete surface, and perform site work associated with construction.

The proposed construction is described as:

Street:	Location:	HUD Performance Measure:	Approximate Units:
Riverside Drive	From: Tahitian Drive To: South Highway 71	Linear Feet	10,560

More information on the Section 106 review process is available at http://www.onecpd.info/environmental-review/historic-preservation/.

HUD's process for tribal consultation under Section 106 is described in a Notice available at https://www.onecpd.info/resource/2448/notice-cpd-12-006-tribal-consultation-under-24-cfr-part-58.

If you do not wish to consult on this project, can you please inform us? If you do wish to consult, can you please include in your reply the name and contact information for the tribe's principal representative in the consultation? Thank you very much. We value your assistance and look forward to consulting further if there are historic properties of religious and cultural significance to your tribe that may be affected by this project.

Sincerely,

Paul Pape

Paul Pape
County Judge

cc: Gary McAdams, THPO Email: gary.mcadams@wichitatribe.com

Enc: THC Map
General Project Location Mapping

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:57 PM
To: terri.parton@wichitatribe.com; gary.mcadams@wichitatribe.com
Cc: randi.fishbeck@co.bastrop.tx.us; 'Paul Pape'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Tribal Enclosure Bastrop County TV - SHPO.pdf; Wichita and Affliated Tribes.pdf

Importance: High

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

The County respectfully requests your consideration of review of this project under Section 106 of the National Historic Preservation Act and/or the Antiquities Code as well as applicable tribal historic preservation requirements.

For your convenience, please feel free to reply using this email address or of course you may reply directly to the County at the contract information provided in the attached documentation.

Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Paul Pape
Bastrop County Judge

May 10, 2018

President Russell Martin
Tonkawa Tribe of Indians of Oklahoma
1 Rush Buffalo Road
Tonkawa, OK 74653

E-mail: rmartin@tonkawatribe.com

RE: Consultation for the County of Bastrop
Street Improvements
Tahitian Village Subdivision
Work Order No.Bastrop2016-1/EA

Dear President Martin,

The County of Bastrop is considering funding the project listed above with federal funds from the U.S. Department of Housing and Urban Development (HUD). Under HUD regulation 24 CFR 58.4, the County of Bastrop has assumed HUD's environmental review responsibilities for the project, including tribal consultation related to historic properties. Historic properties include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

Bastrop County will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR Part 800. We would like to invite you to be a consulting party in this review to help identify historic properties in the project area that may have religious and cultural significance to your tribe, and if such properties exist, to help assess how the project might affect them. If the project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

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804 PECAN STREET • BASTROP, TX 78602 • 512/332-7201 • METRO 512/581-7101 • FAX 512/581-7103

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The proposed construction is described as:

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If you do not wish to consult on this project, can you please inform us? If you do wish to consult, can you please include in your reply the name and contact information for the tribe's principal representative in the consultation? Thank you very much. We value your assistance and look forward to consulting further if there are historic properties of religious and cultural significance to your tribe that may be affected by this project.

Sincerely,

Paul Pape
County Judge

cc: Lauren Norman-Brown, THPO Email: jbrown@tonkawatribe.com

Enc: THC Map
General Project Location Mapping

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:59 PM
To: 'rmartin@tonkawatribe.com'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Tribal Enclosure Bastrop County TV - SHPO.pdf; Tonkawa Tribe.pdf

Importance: High

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

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Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Paul Pape
Bastrop County Judge

May 10, 2018

David Sickey, Chairman
Coushatta Tribe of Louisiana
PO Box 818
Elton, LA 70532

E-mail: dsickey@coushatta.org

RE: Consultation for the County of Bastrop
Street Improvements
Tahitian Village Subdivision
Work Order No.Bastrop2016-1/EA

Dear Chairman Sickey,

The County of Bastrop is considering funding the project listed above with federal funds from the U.S. Department of Housing and Urban Development (HUD). Under HUD regulation 24 CFR 58.4, the County of Bastrop has assumed HUD's environmental review responsibilities for the project, including tribal consultation related to historic properties. Historic properties include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

Bastrop County will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR Part 800. We would like to invite you to be a consulting party in this review to help identify historic properties in the project area that may have religious and cultural significance to your tribe, and if such properties exist, to help assess how the project might affect them. If the project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

To meet project timeframes, if you would like to be a consulting party on this project, can you please let us know of your interest within 30 days? If you have any initial concerns with impacts of the project on religious or cultural properties, can you please note them in your response?

The referenced project consists of the following description.

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events.

Phase 1 – Tahitian Village Subdivision Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) course surface treatment asphaltic concrete surface, and perform site work associated with construction.

The proposed construction is described as:

Street:	Location:	HUD Performance Measure:	Approximate Units:
Riverside Drive	From: Tahitian Drive To: South Highway 71	Linear Feet	10,560

More information on the Section 106 review process is available at http://www.onecpd.info/environmental-review/historic-preservation/.

HUD's process for tribal consultation under Section 106 is described in a Notice available at https://www.onecpd.info/resource/2448/notice-cpd-12-006-tribal-consultation-under-24-cfr-part-58.

If you do not wish to consult on this project, can you please inform us? If you do wish to consult, can you please include in your reply the name and contact information for the tribe's principal representative in the consultation? Thank you very much. We value your assistance and look forward to consulting further if there are historic properties of religious and cultural significance to your tribe that may be affected by this project.

Sincerely,

Paul Pape

Paul Pape
County Judge

cc: Linda Langley, THPO Email: llangley@coushattatribela.org

Enc: THC Map
General Project Location Mapping

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:54 PM
To: 'dsickey@coushattatribela.org'; 'llangley@coushattatribela.org'
Cc: 'randi.fishbeck@co.bastrop.tx.us'; 'Paul Pape'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Tribal Enclosure Bastrop County TV - SHPO.pdf; Coushatta Tribe of Louisiana.pdf

Importance: High

Tracking:

Recipient	Read
'dsickey@coushattatribela.org'	
'llangley@coushattatribela.org'	
'randi.fishbeck@co.bastrop.tx.us'	
'Paul Pape'	
'Melanie Harmon'	Read: 5/9/2018 4:24 PM

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

The County respectfully requests your consideration of review of this project under Section 106 of the National Historic Preservation Act and/or the Antiquities Code as well as applicable tribal historic preservation requirements.

For your convenience, please feel free to reply using this email address or of course you may reply directly to the County at the contract information provided in the attached documentation.

Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Paul Pape
Bastrop County Judge

May 10, 2018

William Nelson, Chairman
Comanche Nation, Oklahoma
PO Box 908
Lawton, OK 73502

Email: Williamn@comanchenation.com

RE: Consultation for the County of Bastrop
Street Improvements
Tahitian Village Subdivision
Work Order No.Bastrop2016-1/EA

Dear Chairperson Nelson,

The County of Bastrop is considering funding the project listed above with federal funds from the U.S. Department of Housing and Urban Development (HUD). Under HUD regulation 24 CFR 58.4, the County of Bastrop has assumed HUD's environmental review responsibilities for the project, including tribal consultation related to historic properties. Historic properties include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

Bastrop County will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR Part 800. We would like to invite you to be a consulting party in this review to help identify historic properties in the project area that may have religious and cultural significance to your tribe, and if such properties exist, to help assess how the project might affect them. If the project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

To meet project timeframes, if you would like to be a consulting party on this project, can you please let us know of your interest within 30 days? If you have any initial concerns with impacts of the project on religious or cultural properties, can you please note them in your response?

The referenced project consists of the following description.

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events.

804 PECAN STREET • BASTROP, TX 78602 • 512/332-7201 • METRO 512/581-7101 • FAX 512/581-7103

Phase 1 – Tahitian Village Subdivision Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) course surface treatment asphaltic concrete surface, and perform site work associated with construction.
The proposed construction is described as:

Street:	Location:	HUD Performance Measure:	Approximate Units:
Riverside Drive	From: Tahitian Drive To: South Highway 71	Linear Feet	10,560

More information on the Section 106 review process is available at http://www.onecpd.info/environmental-review/historic-preservation/.

HUD's process for tribal consultation under Section 106 is described in a Notice available at https://www.onecpd.info/resource/2448/notice-cpd-12-006-tribal-consultation-under-24-cfr-part-58.

If you do not wish to consult on this project, can you please inform us? If you do wish to consult, can you please include in your reply the name and contact information for the tribe's principal representative in the consultation? Thank you very much. We value your assistance and look forward to consulting further if there are historic properties of religious and cultural significance to your tribe that may be affected by this project.

Sincerely,

Paul Pape
County Judge

Cc: Martina Callahan – Email: martinac@comanchenation.com

Enc: THC Map
General Project Location Mapping

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:44 PM
To: 'martinac@comanchenation.com'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Comanche Nation.pdf; Tribal Enclosure Bastrop County TV - SHPO.pdf

Importance: High

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

The County respectfully requests your consideration of review of this project under Section 106 of the National Historic Preservation Act and/or the Antiquities Code as well as applicable tribal historic preservation requirements.

For your convenience, please feel free to reply using this email address or of course you may reply directly to the County at the contract information provided in the attached documentation.

Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:40 PM
To: 'williamn@comanchenation.com'; 'martinac@comnchenation.com'
Cc: 'randi.fishbeck@co.bastrop.tx.us'; 'Paul Pape'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Comanche Nation.pdf; Tribal Enclosure Bastrop County TV - SHPO.pdf

Importance: High

Tracking:

Recipient	Read
'williamn@comanchenation.com'	
'martinac@comnchenation.com'	
'randi.fishbeck@co.bastrop.tx.us'	
'Paul Pape'	
'Melanie Harmon'	Read: 5/9/2018 3:59 PM

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

The County respectfully requests your consideration of review of this project under Section 106 of the National Historic Preservation Act and/or the Antiquities Code as well as applicable tribal historic preservation requirements.

For your convenience, please feel free to reply using this email address or of course you may reply directly to the County at the contract information provided in the attached documentation.

Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Paul Pape
Bastrop County Judge

May 10, 2018

Bob Komardley, Chairman
Apache Tribe of Oklahoma
P.O. Box 1330
Anadarko, OK 73005

E-mail: Bkomardley@outlook.com

RE: Consultation for the County of Bastrop
Street Improvements
Tahitian Village Subdivision
Work Order No.Bastrop2016-1/EA

Dear Chairman Guy,

The County of Bastrop is considering funding the project listed above with federal funds from the U.S. Department of Housing and Urban Development (HUD). Under HUD regulation 24 CFR 58.4, the County of Bastrop has assumed HUD's environmental review responsibilities for the project, including tribal consultation related to historic properties. Historic properties include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

Bastrop County will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR Part 800. We would like to invite you to be a consulting party in this review to help identify historic properties in the project area that may have religious and cultural significance to your tribe, and if such properties exist, to help assess how the project might affect them. If the project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

To meet project timeframes, if you would like to be a consulting party on this project, can you please let us know of your interest within 30 days? If you have any initial concerns with impacts of the project on religious or cultural properties, can you please note them in your response?

The referenced project consists of the following description.

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events.

804 PECAN STREET • BASTROP, TX 78602 • 512/332-7201 • METRO 512/581-7101 • FAX 512/581-7103

Phase 1 – Tahitian Village Subdivision Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) course surface treatment asphaltic concrete surface, and perform site work associated with construction.

The proposed construction is described as:

Street:	Location:	HUD Performance Measure:	Approximate Units:
Riverside Drive	From: Tahitian Drive To: South Highway 71	Linear Feet	10,560

More information on the Section 106 review process is available at http://www.onecpd.info/environmental-review/historic-preservation/.

HUD's process for tribal consultation under Section 106 is described in a Notice available at https://www.onecpd.info/resource/2448/notice-cpd-12-006-tribal-consultation-under-24-cfr-part-58.

If you do not wish to consult on this project, can you please inform us? If you do wish to consult, can you please include in your reply the name and contact information for the tribe's principal representative in the consultation? Thank you very much. We value your assistance and look forward to consulting further if there are historic properties of religious and cultural significance to your tribe that may be affected by this project.

Sincerely,

Paul Pape

Paul Pape
County Judge

cc: Bob Komardley, Chairman bkomardley@outlook.com

Enc: THC Map
General Project Location Mapping

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:51 PM
To: 'lguy93@hotmail.com'
Cc: 'randi.fishbeck@co.bastrop.tx.us'; 'Paul Pape'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Tribal Enclosure Bastrop County TV - SHPO.pdf; Apache Tribe.pdf

Importance: High

Tracking:

Recipient	Read
'lguy93@hotmail.com'	
'randi.fishbeck@co.bastrop.tx.us'	
'Paul Pape'	
'Melanie Harmon'	Read: 5/9/2018 4:24 PM

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

The County respectfully requests your consideration of review of this project under Section 106 of the National Historic Preservation Act and/or the Antiquities Code as well as applicable tribal historic preservation requirements.

For your convenience, please feel free to reply using this email address or of course you may reply directly to the County at the contract information provided in the attached documentation.

Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Paul Pape
Bastrop County Judge

May 10, 2018

Nita Battise – Chairperson
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, TX 77351

E-mail: tcnbattise@actribe.org

RE: Consultation for the County of Bastrop
Street Improvements
Tahitian Village Subdivision
Work Order No.Bastrop2016-1/EA

Dear Chairperson Battise,

The County of Bastrop is considering funding the project listed above with federal funds from the U.S. Department of Housing and Urban Development (HUD). Under HUD regulation 24 CFR 58.4, the County of Bastrop has assumed HUD's environmental review responsibilities for the project, including tribal consultation related to historic properties. Historic properties include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

Bastrop County will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR Part 800. We would like to invite you to be a consulting party in this review to help identify historic properties in the project area that may have religious and cultural significance to your tribe, and if such properties exist, to help assess how the project might affect them. If the project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

To meet project timeframes, if you would like to be a consulting party on this project, can you please let us know of your interest within 30 days? If you have any initial concerns with impacts of the project on religious or cultural properties, can you please note them in your response?

The referenced project consists of the following description.

As a result of the Texas Wildfires in 2011, the Tahitian Village subdivision did not have sufficient ingress and egress routes into and out of the subdivision. The lack of a sufficient ingress and egress route into and out of the area threatened the public health, safety, and welfare of this subdivision due to the lack of a sufficient access route for emergency services and a quick evacuation route for residents. The County is in need of a new ingress and egress route into and out of the Tahitian Village subdivision during future wildfire events.

804 PECAN STREET • BASTROP, TX 78602 • 512/332-7201 • METRO 512/581-7101 • FAX 512/581-7103

Phase 1 – Tahitian Village Subdivision Grantee shall construct a new roadway to approximately twenty-four feet (24 ft.) in width, including twelve-inches (12 in.) of flexible base layer, including shaping, grading and compacting of the sub-grade, and a two-inch (2 in.) course surface treatment asphaltic concrete surface, and perform site work associated with construction.
The proposed construction is described as:

Street:	Location:	HUD Performance Measure:	Approximate Units:
Riverside Drive	From: Tahitian Drive To: South Highway 71	Linear Feet	10,560

More information on the Section 106 review process is available at http://www.onecpd.info/environmental-review/historic-preservation/.

HUD's process for tribal consultation under Section 106 is described in a Notice available at https://www.onecpd.info/resource/2448/notice-cpd-12-006-tribal-consultation-under-24-cfr-part-58.

If you do not wish to consult on this project, can you please inform us? If you do wish to consult, can you please include in your reply the name and contact information for the tribe's principal representative in the consultation? Thank you very much. We value your assistance and look forward to consulting further if there are historic properties of religious and cultural significance to your tribe that may be affected by this project.

Sincerely,

Paul Pape

Paul Pape
County Judge

cc: Bryant Celestine, THPO Emal: Celestine.Bryant@actribe.org

Enc: THC Map
General Project Location Mapping

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:36 PM
To: tcnbattise@actribe.org; celestine.bryant@actribe.org
Cc: randi.fishbeck@co.bastrop.tx.us; 'Paul Pape'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Alabama-Coushatta Tribe.pdf; Tribal Enclosure Bastrop County TV - SHPO.pdf

Importance: High

Dear Sir/Madam:

Your tribal government contact information is identified as a potential interested party from the HUD Tribal Directory Assessment Tool (TDAT) for proposed construction activities within Bastrop Texas. Future Link Technologies, Inc. is working with Bastrop County to conduct a National Environmental Policy Act (NEPA) environmental assessment for a project described in the attached documents.

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For your convenience, please feel free to reply using this email address or of course you may reply directly to the County at the contract information provided in the attached documentation.

Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Paul Pape
Bastrop County Judge

May 10, 2018

President Russell Martin
Tonkawa Tribe of Indians of Oklahoma
1 Rush Buffalo Road
Tonkawa, OK 74653

E-mail: rmartin@tonkawatribe.com

RE: Consultation for the County of Bastrop
Street Improvements
Tahitian Village Subdivision
Work Order No.Bastrop2016-1/EA

Dear President Martin,

The County of Bastrop is considering funding the project listed above with federal funds from the U.S. Department of Housing and Urban Development (HUD). Under HUD regulation 24 CFR 58.4, the County of Bastrop has assumed HUD's environmental review responsibilities for the project, including tribal consultation related to historic properties. Historic properties include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

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804 PECAN STREET • BASTROP, TX 78602 • 512/332-7201 • METRO 512/581-7101 • FAX 512/581-7103

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Sincerely,

Paul Pape
County Judge

cc: Lauren Norman-Brown, THPO Email: jbrown@tonkawatribe.com

Enc: THC Map
General Project Location Mapping

Latrice Hertzler

From: Latrice Hertzler <lhertzler@future-link.biz>
Sent: Wednesday, May 09, 2018 3:48 PM
To: 'martin@tonkawatribe.com'; 'jbrown@tonkawatribe.com'
Cc: 'randi.fishbeck@co.bastrop.tx.us'; 'Paul Pape'
Subject: - Section 106 Tribal Consultation Request for Bastrop County Road Improvement Project
Attachments: Tribal Enclosure Bastrop County TV - SHPO.pdf; Tonkawa Tribe.pdf

Importance: High

Tracking:

Recipient	Read
'martin@tonkawatribe.com'	
'jbrown@tonkawatribe.com'	
'randi.fishbeck@co.bastrop.tx.us'	
'Paul Pape'	
'Melanie Harmon'	Read: 5/9/2018 4:02 PM

Dear Sir/Madam:

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Sincerely yours,

Latrice Hertzler, BAIS, MPA
Certified Environmental Reviewer for HUD Projects

Future Link Technologies, Inc.
Environmental & Technology Services & Consulting
P.O. Box 90696
Austin, TX 78709
512-443-4100 (Ofc)
512-791-6685 (cell)

Tribal Directory Assessment Information

Contact Information for Tribes with Interests in Bastrop County, Texas

	Tribal Name	County Name
7	Alabama-Coushatta Tribe of Texas	Bastrop

Contact Name	Title	Mailing Address	Work Phone	Fax Number	Cell Phone	Email Address	URL
Nita Battise	Chairperson	571 State Park Road 56 Livingston, TX 77351	(936) 563-1100	(936) 563-4170		tcnbattise@actribe.org	http://www.alabama-coushatta.com/
Bryant Celestine	THPO	571 State Park Road 56 Livingston, TX 77351	(936) 563-1181	(936) 563-4170		Celestine.Bryant@actribe.org	http://www.alabama-coushatta.com/

7	Apache Tribe of Oklahoma	Bastrop

Contact Name	Title	Mailing Address	Work Phone	Fax Number	Cell Phone	Email Address	URL
Lyman Guy	Chairman	PO Box 1330 Anadarko, OK 73005	(405) 247-9493	(405) 247-2763		lguy93@hotmail.com	http://www.apachetribe.org/

7	Comanche Nation, Oklahoma	Bastrop

Contact Name	Title	Mailing Address	Work Phone	Fax Number	Cell Phone	Email Address	URL
Martina Callahan	THPO	6 SW D Avenue Lawton, OK 73502	(580) 595-9618			martinac@comanchenation.com	www.comanchenation.com
William Nelson	Chairman	PO Box 908 Lawton, OK 73502	(580) 492-3251			williamn@comanchenation.com	www.comanchenation.com

7	Coushatta Tribe of Louisiana	Bastrop

Contact Name	Title	Mailing Address	Work Phone	Fax Number	Cell Phone	Email Address	URL
Linda Langley	THPO	PO Box 10 Elton, LA 70532	(337) 584-1560	(337) 584-1616		llangley@coushattatribela.org	http://www.coushatta.org
David Sickey	Chairman	PO Box 818 Elton, LA 70532	(337) 584-1401	(337) 584-1507		dsickey@coushatta.org	http://www.coushatta.org

7	Tonkawa Tribe of Indians of Oklahoma	Bastrop

Contact Name	Title	Mailing Address	Work Phone	Fax Number	Cell Phone	Email Address	URL
Lauren Norman-Brown	THPO	1 Rush Buffalo Road Tonkawa, OK 74653	(580) 628-2561	(580) 628-3378		jbrown@tonkawatribe.com	http://www.tonkawatribe.com/
Russell Martin	President	1 Rush Buffalo Road Tonkawa, OK 74653	(580) 628-2561	(580) 628-3378		rmartin@tonkawatribe.com	http://www.tonkawatribe.com/

%	Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie), Oklahoma	Bastrop

1 - 6 of 6 results « ‹ 1 › » 10

ATTACHMENT 12

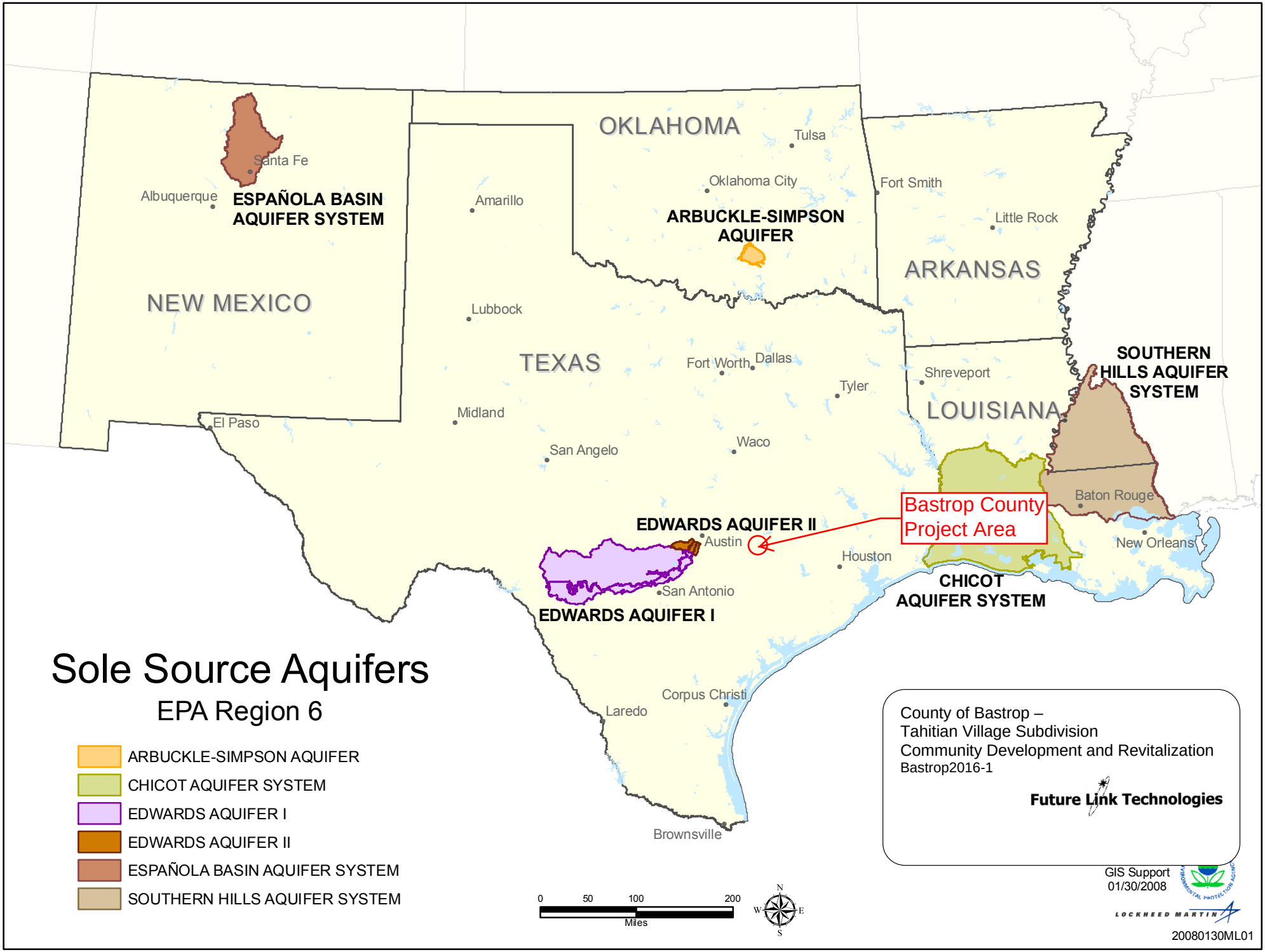
NOISE ABATEMENT & CONTROL

- Noise Ordinance if Available

ATTACHMENT 13

SOLE SOURCE AQUIFERS – SAFE DRINKING WATER

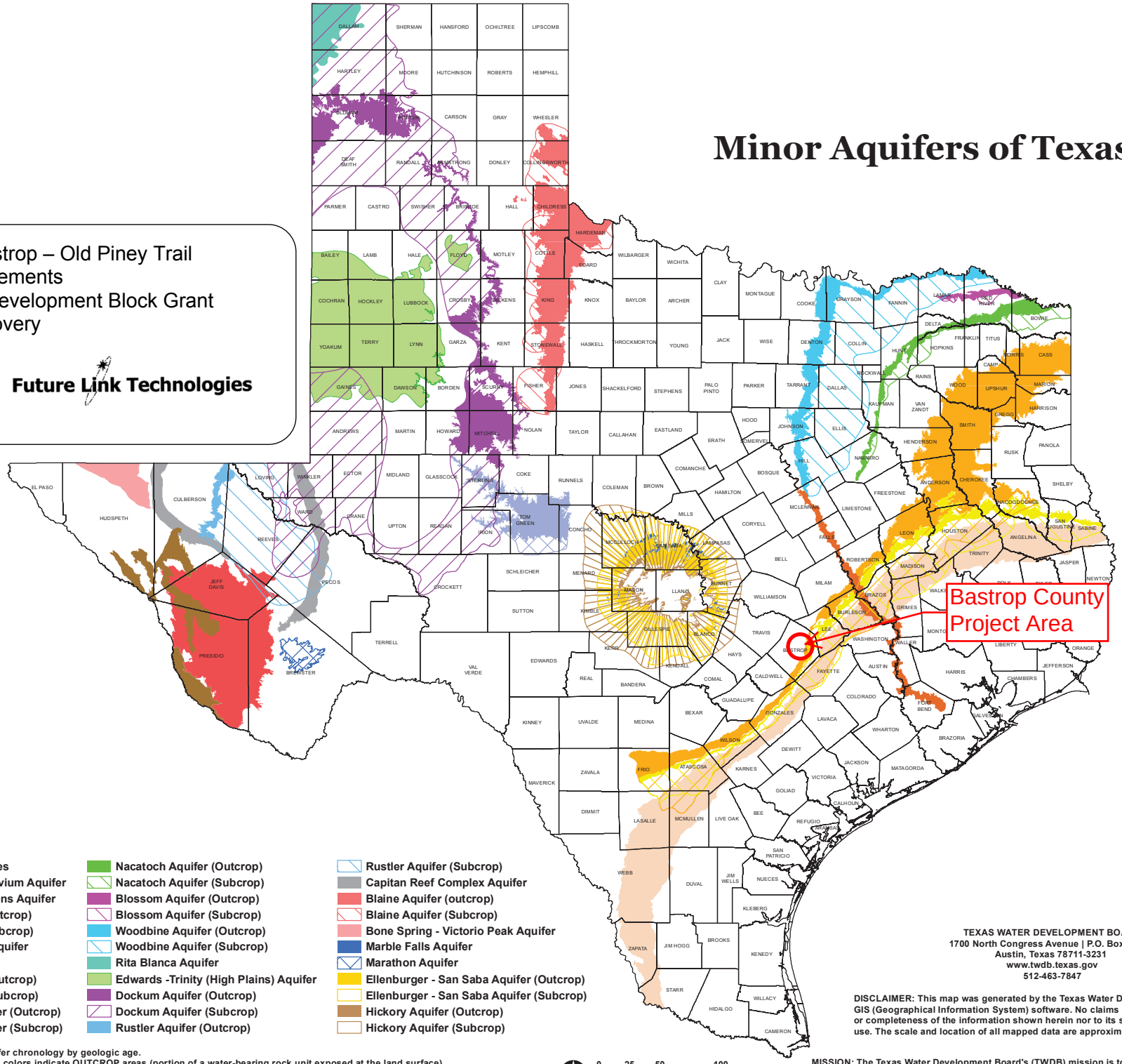
- NEPAssist/TWDB Major Aquifers of Texas Map
- NEPAssist/TWDB Minor Aquifers of Texas Map
- NEPAssist/Texas Sole Source Aquifer Map


Sole Source Aquifers
EPA Region 6
ARBUCKLE-SIMPSON AQUIFER
CHICOT AQUIFER SYSTEM
EDWARDS AQUIFER I
EDWARDS AQUIFER II
ESPAÑOLA BASIN AQUIFER SYSTEM
SOUTHERN HILLS AQUIFER SYSTEM
NEW MEXICO
OKLAHOMA
TEXAS
ARKANSAS
LOUISIANA
Santa Fe
Albuquerque
ESPAÑOLA BASIN AQUIFER SYSTEM
Amarillo
Tulsa
Oklahoma City
ARBUCKLE-SIMPSON AQUIFER
Fort Smith
Little Rock
Lubbock
Fort Worth
Dallas
Tyler
Shreveport
SOUTHERN HILLS AQUIFER SYSTEM
Midland
El Paso
San Angelo
Waco
Baton Rouge
Bastrop County Project Area
EDWARDS AQUIFER II
Austin
Houston
New Orleans
San Antonio
CHICOT AQUIFER SYSTEM
EDWARDS AQUIFER I
Corpus Christi
Laredo
Brownsville
0 50 100 200
Miles
N
W
E
S
County of Bastrop –
Tahitian Village Subdivision
Community Development and Revitalization
Bastrop2016-1
Future Link Technologies
GIS Support
01/30/2008
LOCKHEED MARTIN
20080130ML01

Minor Aquifers of Texas

County of Bastrop – Old Piney Trail
Street Improvements
Community Development Block Grant
Disaster Recovery
Bastrop2016-2

Future Link Technologies



- County Boundaries
- Brazos River Alluvium Aquifer
- West Texas Bolsons Aquifer
- Lipan Aquifer (Outcrop)
- Lipan Aquifer (Subcrop)
- Yegua Jackson Aquifer
- Igneous Aquifer
- Sparta Aquifer (Outcrop)
- Sparta Aquifer (Subcrop)
- Queen City Aquifer (Outcrop)
- Queen City Aquifer (Subcrop)
- Nacatoch Aquifer (Outcrop)
- Nacatoch Aquifer (Subcrop)
- Blossom Aquifer (Outcrop)
- Blossom Aquifer (Subcrop)
- Woodbine Aquifer (Outcrop)
- Woodbine Aquifer (Subcrop)
- Rita Blanca Aquifer
- Edwards -Trinity (High Plains) Aquifer
- Dockum Aquifer (Outcrop)
- Dockum Aquifer (Subcrop)
- Rustler Aquifer (Outcrop)
- Rustler Aquifer (Subcrop)
- Capitan Reef Complex Aquifer
- Blaine Aquifer (outcrop)
- Blaine Aquifer (Subcrop)
- Bone Spring - Victorio Peak Aquifer
- Marble Falls Aquifer
- Marathon Aquifer
- Ellenburger - San Saba Aquifer (Outcrop)
- Ellenburger - San Saba Aquifer (Subcrop)
- Hickory Aquifer (Outcrop)
- Hickory Aquifer (Subcrop)

- Aquifer chronology by geologic age.
- Solid colors indicate OUTCROP areas (portion of a water-bearing rock unit exposed at the land surface).
- Hatch colored lines indicate SUBCROP areas (portion of a water-bearing rock unit existing below other rock units).
- The Edwards-Trinity (High Plains) Aquifer and the Rita Blanca Aquifer are both entirely subsurface.

0 25 50 100
Miles

TEXAS WATER DEVELOPMENT BOARD
1700 North Congress Avenue | P.O. Box 13231
Austin, Texas 78711-3231
www.twdb.texas.gov
512-463-7847

DISCLAIMER: This map was generated by the Texas Water Development Board using GIS (Geographical Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Map date: JAN-2014

MISSION: The Texas Water Development Board's (TWDB) mission is to provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas.

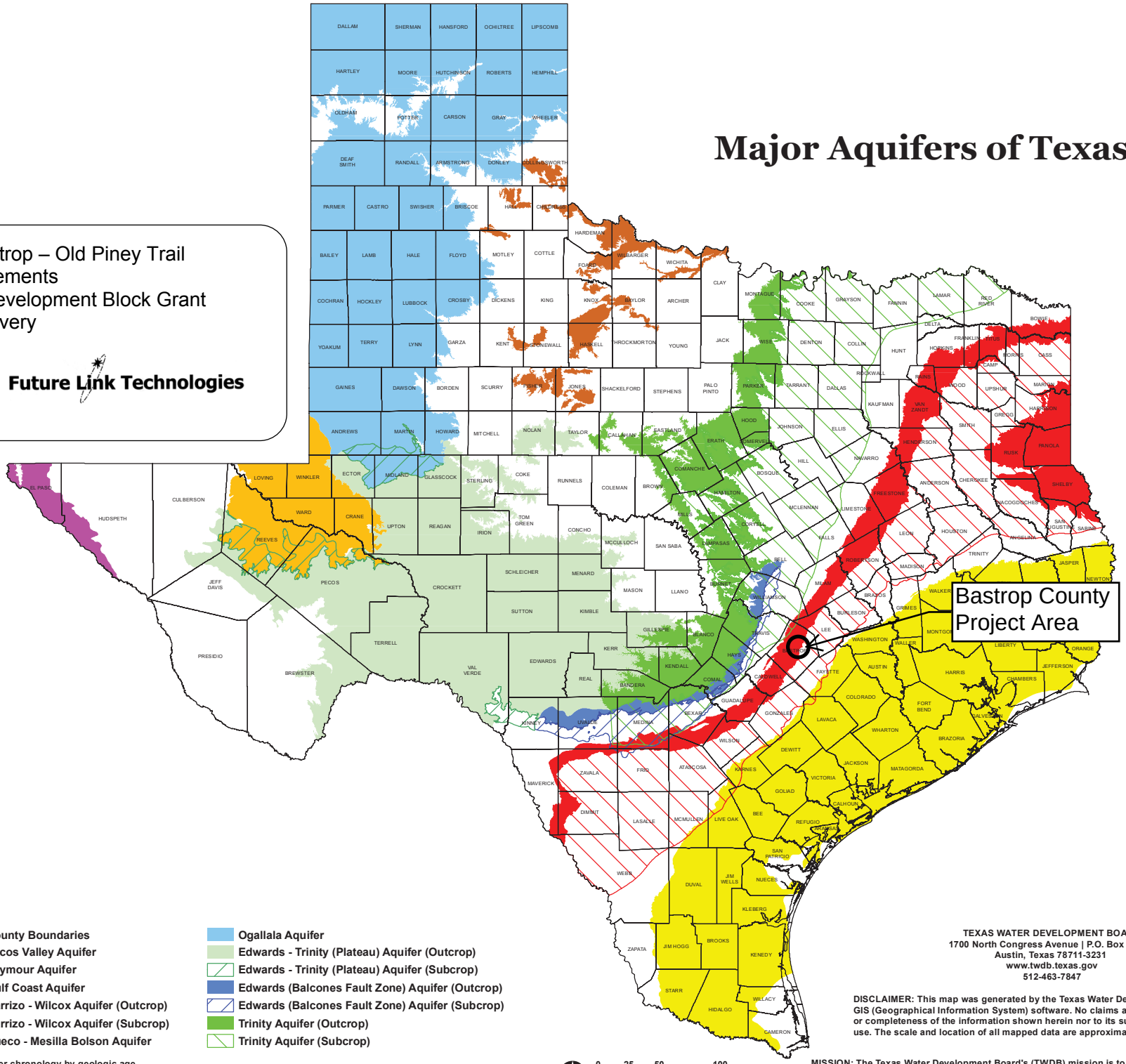
TNRIS

Texas Water Development Board

Major Aquifers of Texas

County of Bastrop – Old Piney Trail
Street Improvements
Community Development Block Grant
Disaster Recovery
Bastrop2016-2

Future Link Technologies



- County Boundaries
- Pecos Valley Aquifer
- Seymour Aquifer
- Gulf Coast Aquifer
- Carrizo - Wilcox Aquifer (Outcrop)
- Carrizo - Wilcox Aquifer (Subcrop)
- Hueco - Mesilla Bolson Aquifer
- Ogallala Aquifer
- Edwards - Trinity (Plateau) Aquifer (Outcrop)
- Edwards - Trinity (Plateau) Aquifer (Subcrop)
- Edwards (Balcones Fault Zone) Aquifer (Outcrop)
- Edwards (Balcones Fault Zone) Aquifer (Subcrop)
- Trinity Aquifer (Outcrop)
- Trinity Aquifer (Subcrop)

- Aquifer chronology by geologic age.
- Solid colors indicate OUTCROP areas (portion of a water-bearing rock unit exposed at the land surface).
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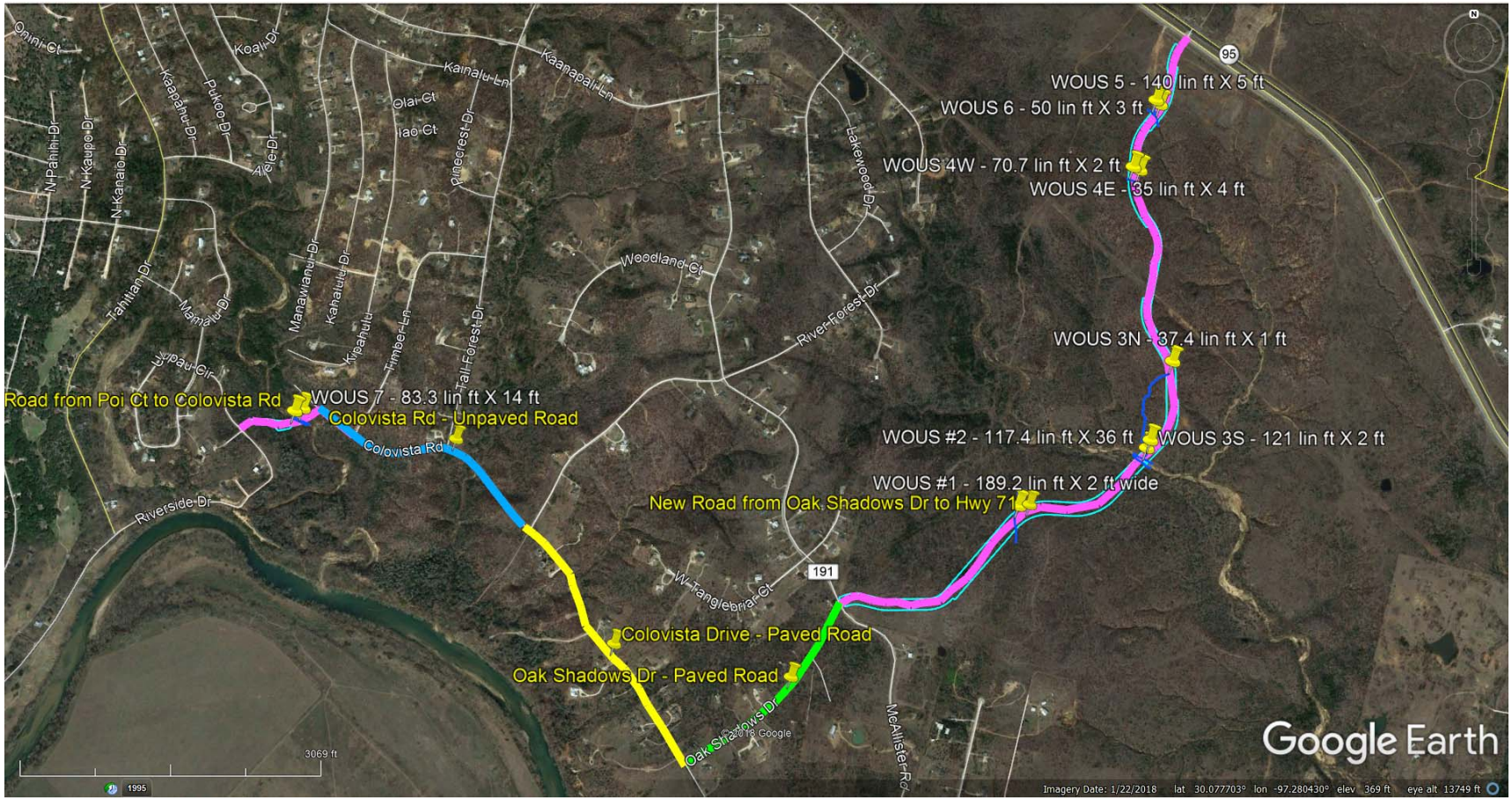
TNRIS

Texas Water Development Board

ATTACHMENT 14

WETLAND PROTECTION

- USFWS National Wetlands Inventory Map or NEPAssist Map
- USGS 7.5 Minute Topography Map



WOUS – WATERS OF THE UNITED STATES

New Road

Client Name	Bastrop County	Future Link Technologies
Contract #	P06722A-4	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	Wetland map reflecting delineation	512-443-4100
Date	May 18	Environmental Service Provider

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

December 11, 2018

Regulatory Division

SUBJECT: Project Number SWF-2018-00213, Tahitian Village Ingress/Egress

Ms. Carolyn Dill
County Engineer
County of Bastrop
211 Jackson St
Bastrop, Texas 78602

Dear Ms. Dill:

This letter is in regard to information received May 31, 2018, and subsequent submittals received September 10, 2018, and November 16, 2018, concerning a proposal by the County of Bastrop to construct a road, roadway improvements, culvert and bridge crossings located in Bastrop County, Texas. This project has been assigned Project Number SWF-2018-00213. 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 the description of the proposed work, and other information available to us, we have determined this project will involve activities subject to the requirements of Section 404.

We have reviewed this project under the pre-construction notification procedures of Nationwide Permit General Condition 32 (Federal Register, Vol. 82, No. 4, Friday, January 6, 2017). We have determined the discharge of dredged or fill materials into waters of the United States associated with this project appears to qualify for Nationwide Permit 14 for Linear Transportation Projects. To use this permit, the person responsible for the project must ensure the work is in compliance with the specifications and conditions listed on the enclosure. Additionally, all activities must comply with the water quality certification conditions of the Texas Commission on Environmental Quality (TCEQ) located at
http://www.swf.usace.army.mil/Portals/47/Users/053/21/821/NWP%202017%20Texas%20401cert.pdf.
Failure to comply with these specifications and conditions invalidates the authorization and may result in a violation.

Our verification for the construction of this activity under this nationwide permit is valid until March 18, 2022, unless prior to that date the nationwide permit is suspended, revoked, or modified such that the activity would no longer comply with the terms and conditions of the

nationwide permit on a regional or national basis. The USACE will issue a public notice announcing the changes when they occur. Furthermore, activities that have commenced, or are under contract to commence, in reliance on a nationwide permit will remain authorized provided the activity is completed within 12 months of the date of the nationwide permit's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d). Continued confirmation that an activity complies with the specifications and conditions, and any changes to the nationwide permit, is the responsibility of the permittee.

The USACE based this decision on a preliminary jurisdictional determination (PJD) that there are waters of the United States on the project site. A PJD is not appealable. At any time you have the right to request and obtain an Approved Jurisdictional Determination (AJD), which can be appealed. If it is your intent to request an AJD, do not begin work until one is obtained.

In our review of this project we also evaluated the potential effect of the USACE permit action on threatened and endangered species within our action area. In our evaluation, we have taken into account the direct and indirect effects of our permit action on these species, and the effects of other activities interrelated or interdependent with our action that would be added to the environmental baseline. The environmental baseline includes, among other things, the anticipated impact of the U.S. Fish and Wildlife Service's (USFWS) issuance of a permit under Section 7 of the Endangered Species Act (ESA) to the lead federal agency, the Department of Housing and Urban Development, for the incidental take of Houston toad (*Bufo houstonensis*) and/or its critical habitat. Based on our evaluation, we have determined that Department of the Army authorization of the proposed project under Section 404 of the Clean Water Act through Nationwide Permit 14 for Linear Transportation Projects would have no effect on threatened or endangered species beyond that of the environmental baseline.

The permittee must sign and submit to us the enclosed certification that the work, including any proposed mitigation, was completed in compliance with the nationwide permit. The permittee should submit the certification within 30 days of the completion of work.

This permit should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. It does not authorize any damage to private property, invasion of property rights, or any infringement of federal, state, or local laws or regulations.

Thank you for your interest in our nation's water resources. If you have any questions concerning our regulatory program, please refer to our website at http://www.swf.usace.army.mil/Missions/Regulatory or contact Mr. Jimmy Barrera at the address above or telephone (817) 886-1838.

Please help the regulatory program improve its service by completing the survey on the following website: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Sincerely,

for Stephen L Brooks
Chief, Regulatory Division

Enclosures

Copy Furnished (without enclosures):

Mr. C. Lee Sherrod
President
Horizon Environmental Services, Inc
1507 South IH 35
Austin, Texas 78741

September 5, 2018

Mr. James Barrera
Regulatory Archeologist | Project Manager
US Army Corps of Engineers, Fort Worth District
819 Taylor Street, Room 3A37
Fort Worth, Texas 76102

Re: Draft Report for Archeological Survey
Section 106 of National Historic Preservation Act and Antiquities Code of Texas

USACE Jurisdictional Areas within 50.0-acre Landing at Hutto Tract
Hutto, Williamson County, Texas

Texas Antiquities Permit No. 8516
Horizon Project No.: H173-170138

Dear Mr. Barrera:

Attached please find 1 hard copy and one electronic copy (in PDF format) of the draft report entitled *Intensive Cultural Resources Survey of USACE Jurisdictional Areas within the Proposed Tahitian Village Roadway Improvements Project, Bastrop, Bastrop County, Texas*, by Briana N. Smith and Jeffrey D. Owens, describing the results of an archeological survey conducted on behalf of Bastrop County.

Horizon Environmental Services, Inc. (Horizon) was selected by Future Link Technologies, Inc. (Future Link) on behalf of Bastrop County to conduct a cultural resources inventory survey and assessment for the proposed Tahitian Village Roadway Improvements Project in Bastrop, Bastrop County, Texas. The proposed undertaking would involve construction of two new segments of roadway located approximately 3.0 miles (4.8 kilometers) southeast of Bastrop between State Highway (SH) 71 and the Colorado River. These segments include (1) approximately 1.6 miles (2.6 kilometers) of new roadway that would extend the intersection of Oak Shadows Drive and County Road (CR) 191 (a.k.a. McAllister Road) northeastward to SH 71, and (2) approximately 0.7 mile (1.1 kilometers) of roadway improvements and proposed new roadway along Colovista Drive extending northwestward from the intersection of Colovista Drive and River Forest Drive. The latter segment includes approximately 0.5 mile (0.8 kilometer) of roadway improvements along an existing washed-out gravel segment of Colovista Drive plus approximately 0.2 mile (0.3 kilometer) of new roadway connecting the northwestern end of Colovista Drive southwestward to Ulupau Circle. Thus, the overall project area measures a total linear distance of 2.3 miles (3.7 kilometers) in length within a 100.0-foot- (30.5-meter-) wide right-of-way (ROW).

Based on consultation conducted with the US Army Corps of Engineers, Fort Worth District (USACE), and the Texas Historical Commission (THC), the cultural resources survey focused on

the portions of the overall ROW located adjacent to waterways crossing the proposed road ROWs that qualify for designation as "Waters of the US" (WOUS) under Section 404 of the Clean Water Act (CWA). For purposes of the cultural resources survey, survey activities were conducted at four locations within the overall ROW that collectively measure approximately 1.3 miles (2.1 kilometers) in length by 100.0 feet (30.5 meters) in width, covering an area of 16.2 acres (6.6 hectares). Seven jurisdictional crossings had been identified within these four locations. The proposed undertaking would involve construction of bridge-class culverts at each of these crossings, designated as Culverts A, C, D, G, H, K, and J.

The proposed undertaking would be sponsored by Bastrop County, a political subdivision of the state of Texas; as such, the project would fall under the regulatory jurisdiction of the Antiquities Code of Texas. In addition, the project area would traverse seven stream channels that qualify as WOUSs under Section 404 of the CWA that require permitting by the USACE. As such, those portions of the overall ROW that fall within the federal permit area would also fall under the regulatory jurisdiction of Section 106 of the National Historic Preservation Act (NHPA). As the proposed project represents a publicly sponsored undertaking, the project sponsor was required to provide the applicable federal agencies and the THC, which serves as the State Historic Preservation Office (SHPO) for the state of Texas, with an opportunity to review and comment on the project's potential to adversely affect historic properties listed on or considered eligible for listing on the National Register of Historic Places (NRHP) and for designation as State Antiquities Landmarks (SAL).

Horizon Project Archeologist Briana Nicole Smith, with the assistance of archeological field technicians Jacob Lyons and Foster Duncan and under the overall direction of Jeffrey D. Owens, Principal Investigator, performed an intensive cultural resources survey of the project area from August 6 to 8, 2018, to locate any cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologists traversed the archeological survey area on foot and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The vast majority of the project area had been burned during the 2011 Bastrop County Complex Fire. As a result, the vegetation is currently characterized by loblolly pine saplings, blackjack oak saplings, hackberry, various grasses, and fallen, charred pines. Visibility of the modern ground surface ranged from low (<30%) in more densely vegetated areas to high (100%) on eroded uplands. Natural chert cobbles and gravels were abundant on the surface throughout the project area, and much of it was thermally altered from the wildfire. Seven streams cross the proposed road ROWs, including Pigeonroost Hollow, Copperas Creek, and various small, unnamed tributaries.

In addition to pedestrian walkover and surface inspection, the Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 16 shovel tests per 1.0 mile (1.6 kilometers) for each 100.0-foot- (30.5-meter-) wide transect for linear surveys. As such, a minimum of 21 shovel tests would be required within the collective 1.3 miles (2.0 kilometers) of survey area to meet the TSMASS requirements. Horizon excavated a total of 75 shovel tests, thereby

exceeding the TSMASS for a linear survey of this size. Shovel testing revealed gravelly fine sandy loam overlying dense chert cobbles, sandstone, or clay at an average depth of 11.8 inches (30.0 centimeters) below surface on uplands, and loose, fine sand to an average depth of 39.4 inches (100.0 centimeters) below surface near stream channels.

Three newly recorded archeological sites were documented during the survey—41BP963, 41BP964, and 41BP965. Site 41BP963 consists of an aboriginal lithic procurement area, and sites 41BP964 and 41BP965 consist of aboriginal lithic scatters. Due to the lack of temporally diagnostic artifacts, the three aboriginal sites date to unspecified prehistoric periods. The sites were only assessed within the proposed road ROWs, and the boundaries of the sites may extend outside of the proposed ROWs. No intact cultural features, temporally diagnostic artifacts, or intact, subsurface archeological deposits were observed on any of the three sites, and the investigated portions of the sites retain little potential to contribute meaningfully to an understanding of the prehistoric past. The investigated portion of all three sites within the investigated ROW are recommended as non-contributing to the overall eligibility of the sites for designation as State Antiquities Landmarks (SAL) and for inclusion in the National Register of Historic Places (NRHP). No further investigations are warranted within the proposed ROW on these sites.

Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. In accordance with 36 CFR 800.4, Horizon has made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified that meet the criteria for designation as SALs according to 13 TAC 26 or for inclusion in the NRHP according to 36 CFR 60.4. Horizon recommends a finding of “no historic properties affected,” and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the Texas Historical Commission (THC) should be notified immediately.

Please do not hesitate me at (512) 328-2430 or jesse_owens@horizon-esi.com if you have any questions or need any additional information.

Sincerely,

Jeffrey D. Owens
Cultural Resources Director
Horizon Environmental Services, Inc.

U.S. Army Corps of Engineers (USACE)
Fort Worth District

Nationwide Permit (NWP) Pre-Construction Notification (PCN) Form

This form integrates requirements of the Nationwide Permit Program within the Fort Worth District, including General and Regional Conditions. Please consult instructions included at the end prior to completing this form.

Contents

- **Description of NWP 14**
- **Part I:** NWP Conditions and Requirements Checklist
  - General Conditions Checklist
  - NWP 14-Specific Requirements Checklist
  - Regional Conditions Checklist
- **Part II:** Project Information Form
- **Part III:** Project Impacts and Mitigation Form
- **Part IV:** Attachments Form
- **Instructions**

DESCRIPTION OF NWP 14 – LINEAR TRANSPORTATION PROJECTS

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States (U.S.). For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the U.S. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the U.S. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Part I: NWP Conditions and Requirements Checklist

To ensure compliance with the General Conditions (GC), in order for an authorization by a NWP to be valid, please answer the following questions:

1. Navigation (Applies to Section 10 waters [i.e. navigable waters of the U.S.], see instruction 4 for link to list):

a. Does the project cause more than a minimal adverse effect on navigation?

☐ Yes ☐ No ☒ N/A

b. Does the project require the installation and maintenance of any safety lights and signals prescribed by the U.S. Coast Guard on authorized facilities in navigable waters of the U.S.?
☐ Yes ☐ No ☒ N/A

c. Does the Applicant understand and agree that if future operations by the U.S. require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Applicant will be required, upon due notice from the USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S.; and no claim shall be made against the U.S. on account of any such removal or alteration?
☐ Yes ☐ No ☒ N/A

If you answered yes to question a. or b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

2. Aquatic Life Movements:

a. Does the project substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area? ☐ Yes ☒ No

b. Is the project's primary purpose to impound water? ☐ Yes ☒ No

c. Will culverts placed in streams be installed to maintain low flow conditions?
☒ Yes ☐ No ☐ N/A

If you answered yes to question a. or b. above, or if you answered no to question c. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

3. Spawning Areas:

a. Does the project avoid spawning areas during the spawning season to the maximum extent practicable? ☒ Yes ☐ No ☐ N/A

b. Does the project result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area?
☐ Yes ☒ No ☐ N/A

If you answered no to question a. above, or if you answered yes to question b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

4. Migratory Bird Breeding Areas:

a. Does the project avoid waters of the U.S. that serve as breeding areas for migratory birds to the maximum extent practicable? ☒ Yes ☐ No ☐ N/A

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

5. Shellfish Beds:

a. Does the project occur in areas of concentrated shellfish populations? ☐ Yes ☒ No

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

6. Suitable Material:

a. Does the project use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.)?
☐ Yes ☒ No

b. Is the material used for construction or discharged in a water of the U.S. free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act)? ☒ Yes ☐ No

If you answered yes to question a. above, or if you answered no to question b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

7. Water Supply Intakes:

a. Does the project occur in the proximity of a public water supply intake? ☐ Yes ☒ No

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

8. Adverse Effects From Impoundments:

a. Does the project create an impoundment of water? ☐ Yes ☒ No

b. If you answered yes to question a. above, are the adverse effects (to the aquatic system due to accelerating the passage of water, and/or restricting its flow) minimized to the maximum extent practicable? ☐ Yes ☐ No ☐ N/A

If you answered no to question b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

9. Management of Water Flows:

a. Does the project maintain the pre-construction course, condition, capacity, and location of open waters to the maximum extent practicable, for each activity, including stream channelization and storm water management activities? ☒ Yes ☐ No

b. Will the project be constructed to withstand expected high flows? ☒ Yes ☐ No

c. Will the project restrict or impede the passage of normal or high flows? ☐ Yes ☒ No

If you answered no to question a. or b. above, or if you answered yes to question c. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

10. Fills Within 100-Year Floodplains:

a. Does the project comply with applicable FEMA-approved state or local floodplain management requirements? ☒ Yes ☐ No ☐ N/A

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

11. Equipment:

a. Will heavy equipment working in wetlands or mudflats be placed on mats, or other measures be taken to minimize soil disturbance? ☒ Yes ☐ No ☐ N/A

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

12. Soil Erosion and Sediment Controls:

a. Will the project use appropriate soil erosion and sediment controls and maintain them in effective operating condition throughout construction? ☒ Yes ☐ No

b. Will all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, be permanently stabilized at the earliest practicable date? ☒ Yes ☐ No

c. Be aware that if work will be conducted within waters of the U.S., Applicants are encouraged to perform that work during periods of low-flow or no-flow.

If you answered no to question a. or b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

13. Removal of Temporary Fills:

a. Will temporary fills be removed in their entirety and the affected areas returned to pre-construction elevations? ☒ Yes ☐ No ☐ N/A

b. Will the affected areas be revegetated, as appropriate? ☒ Yes ☐ No ☐ N/A

If you answered no to question a. or b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

14. Proper Maintenance:

a. Will any authorized structure or fill be properly maintained, including maintenance to ensure public safety? ☒ Yes ☐ No

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

15. Wild and Scenic River:

There are no Wild and Scenic Rivers within the geographic boundaries of the Fort Worth District. Therefore, this GC does not apply.

16. Tribal Rights:

a. Will the project or its operation impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights? ☐ Yes ☒ No ☐ N/A

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

17. Endangered Species (see also Box 8 in Part III):

a. Is the project likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or will the project destroy or adversely modify the critical habitat of such species? ☐ Yes ☒ No

b. Might the project affect any listed species or designated critical habitat? ☒ Yes ☐ No

c. Is any listed species or designated critical habitat in the vicinity of the project?
☒ Yes ☐ No

d. If the project "may affect" a listed species or critical habitat, has Section 7 consultation addressing the effects of the proposed activity been completed?
☒ Yes ☐ No ☐ N/A

If you answered yes to question a. or b. or c. above, or if you answered no to question d. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

18. Historic Properties (see also Box 9 in Part III):

a. Does the project have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties?
☐ Yes ☒ No ☐ N/A

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

19. Designated Critical Resource Waters:

a. Will the project impact critical resource waters, which include NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment? ☐ Yes ☒ No

If you answered yes to question a. above, be aware that discharges of dredged or fill material into waters of the U.S. are not authorized by NWP 14 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

20. Mitigation (see also Box 10 in Part III):

a. Will the project include appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal? ☒ Yes ☐ No

If you answered no to question a. above, please include an explanation in Box 10 of why no mitigation would be necessary in order to be in compliance with this GC or be aware that the project would require an individual permit application.

21. Water Quality (see also Box 11 in Part III):

a. If in Texas, does the project comply with the conditions of the TCEQ water quality certification for NWP 14? ☒ Yes ☐ No ☐ N/A

b. If in "Indian Country," does the project comply with the conditions of the EPA water quality certification for NWPs? ☐ Yes ☐ No ☐ N/A

If you answered no to question a. or b. above, please be aware that the project would require an individual permit application.

22. Coastal Zone Management:
The Fort Worth District does not cover any Coastal Zone; therefore, this GC does not apply.

23. Regional and Case-By-Case Conditions:
See the Regional Conditions checklist below to ensure compliance with this GC.

24. Use of Multiple Nationwide Permits:

a. Does the project use more than one NWP for a single and complete project?
☐ Yes ☒ No

b. If you answered yes to question a. above, be aware that unless the project's acreage loss of waters of the U.S. authorized by the NWPs is below the acreage limit of the NWP with the highest specified acreage limit, no NWP can be issued and the project would require an individual permit application.

If you answered yes to question a. above, please explain how the project would be in compliance with this GC and what additional NWP number you intend to use:

25. Transfer of Nationwide Permit Verifications:

a. Does the Applicant agree that if he or she sells the property associated with the nationwide permit verification, the Applicant may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate USACE district office to validate the transfer?
☒ Yes ☐ No

26. Compliance Certification:

a. Does the Applicant agree that if he or she receives the NWP verification from the USACE, they must submit a signed certification regarding the completed work and any required mitigation (the certification form will be sent by the USACE with the NWP verification letter)?
☒ Yes ☐ No

27. Notification:

a. Reason for notification
- ☒ The loss of waters of the U.S. exceeds 1/10 acre.
- ☐ There is a discharge in a special aquatic site (e.g., wetlands).
- ☒ Potential endangered species.
- ☐ Potential historic properties.
- ☐ Discharge into pitcher plant bog or bald cypress-tupelo swamp.
- ☐ Discharge into the area of Caddo Lake within Texas that is designated as a "Wetland of International Importance" under the Ramsar Convention.
- ☐ Required by Louisiana Regional Conditions.
- ☐ Other:

b. Does the Applicant agree that he or she will not begin the project until either:
1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
2) Forty-five calendar days have passed from the district engineer's receipt of the complete PCN and the Applicant has not received written notice from the district or division engineer? However, if the Applicant was required to notify the USACE pursuant to general condition 17 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the USACE pursuant to general condition 18 that the activity may have the potential to

cause effects to historic properties, the Applicant cannot begin the activity until receiving written notification from the USACE that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act and/or Section 106 of the National Historic Preservation Act is completed. ☒ Yes ☐ No

c. Does the Applicant agree that if the district or division engineer notifies the Applicant in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the Applicant cannot begin the activity until an individual permit has been obtained?
☒ Yes ☐ No

28. Single and Complete Project:

a. Does the Applicant certify that the project is a “single and complete project” or that each crossing meets the description below for a “single and complete project”? ☒ Yes ☐ No

Single and complete project: The term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete project must have independent utility (see definition). For linear projects, a “single and complete project” is all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Independent utility: Defined as a test to determine what constitutes a single and complete project in the USACE regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

NWP 14-specific requirements checklist:

1. Does the project involve the construction, expansion, modification, or improvement of a linear transportation project? ☒ Yes ☐ No

If you answered no to question 1. above, be aware that the project would not be authorized by a NWP 14 and may require an individual permit application.

2. Does the project cause the loss of greater than 1/2-acre non-tidal waters of the U.S. at any crossing considered a single and complete project? ☐ Yes ☒ No

If you answered yes to question 2. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

3. If the project involves any stream channel modification, including bank stabilization, is it limited to the minimum necessary to construct or protect the linear transportation project, and are such modifications in the immediate vicinity of the project? ☒ Yes ☐ No ☐ N/A

If you answered no to question 3. above, be aware that the project would not be authorized by a NWP 14 and may require an individual permit application.

4. If the project involves non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars, would it use this NWP to authorize these features? ☐ Yes ☒ No

If you answered yes to question 4. above, be aware that the non-linear features of the project would not be authorized by a NWP 14 and may require an individual permit application.

5. Does each activity/crossing considered a single and complete project have independent utility? ☒ Yes ☐ No ☐ N/A

If you answered no to question 5. above, be aware that the project may require an individual permit application.

6. **a.** Will any temporary structures, fills, and work necessary to construct the project meet the criteria for maintaining flows, minimizing flooding, and withstanding high flows?
☒ Yes ☐ No ☐ N/A
b. Will temporary structures and fills be removed in their entirety, and the affected areas be returned to pre-construction elevations and revegetated, as appropriate?
☒ Yes ☐ No ☐ N/A

If you answered no to question 6a. or 6b. above, be aware that the project would not be authorized by a NWP 14 and may require an individual permit application.

REGIONAL CONDITIONS CHECKLIST

To ensure compliance with the Regional Conditions within the Fort Worth District, in the State of Texas, in order for an authorization by a NWP to be valid, please answer the following questions (for projects in Texas only):

1. Will the project include required compensatory mitigation at a minimum one-for-one ratio for all special aquatic sites that exceed 1/10 acre and require pre-construction notification, and for all losses to streams that exceed 300 linear feet and require pre-construction notification (unless the appropriate District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement)?
☒ Yes ☐ No ☐ N/A

If you answered no to question 1. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

2. Does the project involve a discharge into habitat types that are wetlands (typically referred to as pitcher plant bogs) that are characterized by an organic surface soil layer and include vegetation such as pitcher plants (*Sarracenia* sp.), sundews (*Drosera* sp.), and sphagnum moss (*Sphagnum* sp.) or wetlands (typically referred to as bald cypress-tupelo swamps) comprised predominantly of bald cypress trees (*Taxodium distichum*), and water tupelo (*Nyssa aquatica*), that are occasionally or regularly flooded by fresh water with common associates including red maple (*Acer rubrum*), swamp privet (*Forestiera acuminata*), green ash (*Fraxinus pennsylvanica*), water elm (*Planera aquatica*), lizard's tail (*Saururus cernuus*), water mermaid weed (*Proserpinaca* spp.), buttonbush (*Cephalanthus occidentalis*), and smartweed (*Polygonum* spp.)? ☐ Yes ☒ No

If you answered yes to question 2. above, notification of the District Engineer is required in accordance with NWP GC 27, and the USACE will coordinate with other resource agencies as specified in NWP GC 27(d).

3. Is the project in the area of Caddo Lake within Texas that is designated as a "Wetland of International Importance" under the Ramsar Convention? ☐ Yes ☒ No

If you answered yes to question 3. above, notification of the District Engineer is required in accordance with NWP GC 27, and the USACE will coordinate with other resource agencies as specified in NWP GC 27(d)

4. **a.** Is the project in an area of Dallas, Denton, or Tarrant counties that is within the study area of the "Final Regional Environmental Impact Statement (EIS), Trinity River and Tributaries" (May 1986)? ☐ Yes ☒ No
b. If Yes, Does the project meet the criteria and follow the guidelines specified in Section III of the Record of Decision for the Regional EIS, including the hydraulic impact requirements?
☐ Yes ☐ No ☒ N/A

If you answered no to question 4b. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

To ensure compliance with the Regional Conditions within the Fort Worth District, in the State of Louisiana, in order for an authorization by a NWP to be valid, please answer the following questions (for projects in Louisiana only):

1. Does the activity cause the permanent loss of greater than 1/2 acre of seasonally inundated cypress swamp and/or cypress-tupelo swamp? ☐ Yes ☐ No

If you answered yes to question 1. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

2. Does the activity cause the permanent loss of greater than 1/2 acre of pine savanna, pine flatwoods, and/or pitcher plant bogs? ☐ Yes ☐ No

If you answered yes to question 2. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

3. Has the activity been determined to have an adverse impact upon a federal or state designated rookery and/or bird sanctuary? ☐ Yes ☐ No

If you answered yes to question 3. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

4. Does the activity fell any existing den or candidate den trees within areas known to be occupied by the threatened Louisiana black bear? (Candidate den trees are defined as bald cypress and/or tupelo gum with visible cavities, having a minimum diameter-at-breast-height of 36 inches, and associated with rivers, lakes, streams, bayous, sloughs, or other waterbodies.) ☐ Yes ☐ No

If you answered yes to question 4. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

5. Does the project involve instream activities in the following waterways: Bayou Boeuf Tributaries in Rapides Parish: (Brown Creek, Mack Branch, Clear Creek, Little Brushy Creek, Loving Creek, Little Loving Creek, Long Branch, Bayou Clear, Castor Creek, Valentine Creek, and Little Bayou Clear), Amite River (LA Highway 37 at Grangeville to Port Vincent), Bogue Falaya River and Tributaries, Abita River and Tributaries, Bayou Chinchuba (between U.S. 190 and Louisiana Highway 59), West Pearl River, Bogue Chitto River and Tributaries, and Red River tributaries in Grant Parish (Black Creek, Swafford Creek, Cypress Creek, Beaver Creek, Cress Creek, Jordon Creek, Hudson Creek, Gray Creek, Moccosin Branch and James Branch)? ☐ Yes ☐ No

If you answered yes to question 5. above, notification of the District Engineer is required in accordance with NWP GC 27 due to the occurrence of threatened or endangered species.

6. To the best of the applicant's knowledge, is any excavated and/or fill material to be placed within wetlands free of contaminants? ☐ Yes ☐ No ☐ N/A

If you answered no to question 6. above, be aware that the project would not be authorized by a NWP 14 and would require an individual permit application.

7. Regional Condition 7 applies to work within the Louisiana Coastal Zone and/or the Outer Continental Shelf off Louisiana, and therefore does not apply in the USACE Fort Worth District. Work in these areas may require coordination with the USACE Galveston or New Orleans districts.

8. Does the activity adversely affect greater than 1/10 acre of wetlands, and/or adversely impact a designated Natural and Scenic River, a state or federal wildlife management area, and/or refuge?
☐ Yes ☐ No

If you answered yes to question 8. above, notification of the District Engineer is required in accordance with NWP GC 27.

9. For NWP 14, the Regional Conditions for Louisiana requires a PCN, as defined NWP GC 27, for all linear transportation crossings regardless of impact acreage. The U.S. Fish and Wildlife Service and National Marine Fisheries Service will be forwarded a copy of the PCN.

Additional Discussion:

Part II: Project Information

Box 1 Project Name: Tahitian Village Ingress/Egress		**Applicant Name** Carolyn Dill, P.E.	
Applicant Title County Engineer		**Applicant Company, Agency, etc.** County of Bastrop	
Mailing Address 211 Jackson St | Bastrop, TX 78602		Applicant's internal tracking number (if any)	
Work Phone with area code (512) 581-7180	Home Phone with area code	Fax #	E-mail Address carolyn.dill@co.bastrop.tx.us
Relationship of applicant to property: ☒ Owner ☐ Purchaser ☐ Lessee ☐ Other:			
Application is hereby made for verification that subject regulated activities associated with subject project qualify for authorization under a USACE nationwide permit or permits as described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the agency to which this application is made the right to enter the above-described location to inspect the proposed, in-progress, or completed work. I agree to start work only after all necessary permits have been received.			
Signature of applicant			Date (mm/dd/yyyy) May 15 2018

Box 2 Authorized Agent/Operator Name and Signature: ***(If an agent is acting for the applicant during the permit process)*** C. Lee Sherrod			
Agent/Operator Title President		**Agent/Operator Company, Agency, etc.** Horizon Environmental Services, Inc	
Mailing Address 1507 South IH 35, Austin, Texas 78741			
E-mail Address lee_sherrod@horizon-esi.com			
Work Phone with area code 512-328-2430	Home Phone with area code	Fax #	Cell Phone # 512-431-3562
I hereby authorize the above-named agent to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application. I understand that I am bound by the actions of my agent, and I understand that if a federal or state permit is issued, I, or my agent, must sign the permit.			
Signature of applicant			Date (mm/dd/yyyy) May 15 2018
I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete, and accurate.			
Signature of authorized agent			Date (mm/dd/yyyy) May 15 2018

Box 3 Name of property owner, if other than applicant: ☐ Multiple Current Owners ***(If multiple current property owners, check here and include a list as an attachment)***	
Owner Title	**Owner Company, Agency, etc.**

Mailing Address	
Work Phone with area code	Home Phone with area code

Box 4 Project location, including street address, city, county, state, and zip code where proposed activity will occur:
Nature of Activity (Description of project; include all features; see instructions)**:** Construct roadway improvements and extension with culvert crossings and bridge
Project Purpose (Description of the reason or purpose of the project; see instructions)**:** Provide additional ingress-egress for Tahitian Village to aid in emergency evacuations
Has a delineation of waters of the U.S., including wetlands, been completed? (see instructions) ☒ Yes, Attached ☐ No If a delineation has been completed, has it been verified in writing by the USACE? ☐ Yes, Date of approved or preliminary jurisdictional determination (mm/dd/yyyy): USACE Project: ☒ No
Are color photographs of the existing conditions available? ☒ Yes, Attached ☐ No Are aerial photographs available? ☒ Yes, Attached ☐ No
☒ **Multiple Single and Complete Crossings** ***(If multiple single and complete crossings, check here and complete the table in Attachment D)***
Waterbody(ies) (if known; otherwise enter "an unnamed tributary to")**:** unnamed tributaries Tributary(ies) to what known, downstream waterbody(ies): Colorado River
Latitude & longitude (Decimal Degrees): begin: 30.075494 -97.279375 end: 30.086204 -97.248669
USGS Quad map name(s): Bastrop and Smithville
Watershed(s) and other location descriptions, if known: Colorado, HUC # 12090301
Directions to the project location: From US 71 east of Bastrop, take McAllister Road south to Oak Shadow Drive

Part III: Project Impacts and Mitigation

Box 5 Reason(s) for Discharge into waters of the U.S.: Crossings for new and improved roadway sections
Type(s) of material being discharged and the amount of each type in cubic yards: fill and culverts - see table A attached
Total surface area (in acres) of wetlands or other waters of the U.S. to be filled: See Table A attached

Indicate the proposed impacts to **waters of the U.S.** in ACRES (for wetlands and impoundments) and LINEAR FEET (for rivers and streams), and identify the impact(s) as permanent and/or temporary for each waterbody type listed below. For projects with multiple single and complete crossings, the table below should indicate the cumulative totals of those single and complete crossings that require notification as outlined in Part I, GC question 27, and would not determine the threshold for whether a project qualifies for a NWP. The table below is intended as a tool to summarize impacts by resource type for planning compensatory mitigation and does not replace the summary table of single and complete crossings in Attachment D for those projects with multiple single and complete crossings.

	Permanent		**Temporary**	
Waterbody Type	**Acres**	**Linear feet**	**Acres**	**Linear feet**
Non-forested wetland				
Forested wetland				
Perennial stream				
Intermittent stream		Table A		
Ephemeral stream		Table A		
Impoundment				
Other:				
Total:				

Potential indirect and/or cumulative impacts of proposed discharge (if any):

Required drawings (see instructions):
Vicinity map: ☒ Attached
To-scale plan view drawing(s): ☒ Attached
To-scale elevation and/or cross section drawing(s): ☒ Attached

Is any portion of the work already complete? ☐ Yes ☒ No
If yes, describe the work:

Box 6 Authority: (see instructions)
Is Section 10 of the Rivers and Harbors Act for projects affecting navigable waters applicable?
☐ Yes ☒ No ***(see Fort Worth District Navigable Waters list)***

Is Section 404 of the Clean Water Act applicable? ☒ Yes ☐ No

Box 7 Larger Plan of Development:
Is the discharge of fill or dredged material for which Section 10/404 authorization is sought intended for a linear transportation project which is part of a larger plan of development?
☐ Yes ☒ No ***(If yes, please provide the information in the remainder of Box 7)***

Does the linear transportation project have independent utility in addition to the larger plan of development (e.g., major arterial, through connection, etc.)? ☒ Yes ☐ No
If yes, explain:
Road improvements are for additional ingress and egress for existing subdivisions south of SH 71

If discharge of fill or dredged material is part of development, name and proposed schedule for that larger development (start-up, duration, and completion dates): N/A
Location of larger development (If discharge of fill or dredged material is part of a plan of development, a map of suitable quality and detail for the entire project site should be included): N/A
Total area in acres of entire project area (including larger plan of development, where applicable):

Box 8 Federally Threatened or Endangered Species (see instructions) **Please list any federally-listed (or proposed) threatened or endangered species or critical habitat potentially affected by the project (use scientific names (i.e., genus species), if known):** Houston toad - Bufo houstonensis
Have surveys, using U.S. Fish and Wildlife Service (USFWS) protocols, been conducted? ☐ Yes, Report attached ☒ No (explain): Subject area has only had minimal survey efforts. See BA
If a federally-listed species would potentially be affected, please provide a description and a biological evaluation. ☒ Yes, Report attached ☐ Not attached
Has Section 7 consultation been initiated by another federal agency? ☒ Yes, Initiation letter attached ☐ No
Has Section 10 consultation been initiated for the proposed project? ☐ Yes, Initiation letter attached ☒ No
Has the USFWS issued a Biological Opinion? ☒ Yes, Report attached ☐ No If yes, list date Opinion was issued (mm/dd/yyyy): April 3, 2018

Box 9 Historic properties and cultural resources **Please list any historic properties listed (or eligible to be listed) on the National Register of Historic Places which the project has the potential to affect:** None
Has an archaeological records search been conducted? ☒ Yes, Report attached ☐ No (explain):
Are any cultural resources of any type known to exist on-site? ☐ Yes ☒ No
Has an archaeological pedestrian survey been conducted for the site? ☐ Yes, Report attached ☒ No (explain):
Has Section 106 or SHPO consultation been initiated by another federal or state agency? ☒ Yes, Initiation letter attached ☐ No
Has a Section 106 MOA been signed by another federal agency and the SHPO? ☒ Yes, Attached ☐ No If yes, list date MOA was signed (mm/dd/yyyy):

Box 10 Proposed Conceptual Mitigation Plan Summary (see instructions)
Measures taken to avoid and minimize impacts to waters of the U.S. (if any): Crossing widths minimized. Culverts oversized.

Applicant proposes combination of one or more of the following mitigation types:
☐ Mitigation Bank ☐ On-site ☐ Off-site (Number of sites:) ☒ None

Applicant proposes to purchase mitigation bank credits: ☐ Yes ☒ No
Mitigation Bank Name:
Number of Credits:

Indicate in ACRES (for wetlands and impoundments) and LINEAR FEET (for rivers and streams) the total quantity of waters of the U.S. proposed to be created, restored, enhanced, and/or preserved for purposes of providing compensatory mitigation. Indicate mitigation site type (on- or off-site) and number. Indicate waterbody type (non-forested wetland, forested wetland, perennial stream, intermittent stream, ephemeral stream, impoundment, other) or non-jurisdictional (uplands[1]).

Mitigation Site Type and Number	Waterbody Type	Created	Restored	Enhanced	Preserved
e.g., On-site 1	*Non-forested wetland*	*0.5 acre*			
e.g., Off-site 1	*Intermittent stream*		*500 LF*	*1000 LF*	
	Totals:				

[1] **For uplands, please indicate if designed as an upland buffer.**

Summary of Mitigation Work Plan (Describe the mitigation activities listed in the table above):
N/A

If no mitigation is proposed, provide a detailed explanation of why no mitigation would be necessary to ensure that adverse effects on the aquatic environment are minimal:
All crossings are below mitigation threshholds for WOUS impacts. The applicant will mitigate for Houston toad impacts - see BA/BO

Has a conceptual mitigation plan been prepared in accordance with the USACE regulations and guidelines?
☐ Yes, Attached ☒ No (explain): N/A

Mitigation site(s) latitude & longitude (Decimal Degrees):	USGS Quad map name(s):

Other location descriptions, if known:

Directions to the mitigation location(s):

Box 11 Water Quality Certification (see instructions)**:**

For Texas:

Does the project meet the conditions of the Texas Commission on Environmental Quality (TCEQ) Clean Water Act Section 401 certification for NWP 14? ☒ Yes ☐ No

Does the project include soil erosion control and sediment control Best Management Practices (BMPs)? ☒ Yes ☐ No

Does the project include BMPs for post-construction total suspended solids control?
☒ Yes ☐ No

For Louisiana:

LDEQ has issued water quality certification for NWP 14 without conditions.

For Tribal Lands ("Indian Country"):

Does the project meet the conditions of the EPA water quality certification for NWPs?
☐ Yes ☐ No

Box 12 List of other certifications or approvals/denials received from other federal, state, or local agencies for work described in this application:

Agency	Approval Type[2]	Identification No.	Date Applied	Date Approved	Date Denied
None					

[2] Would include but is not restricted to zoning, building, and floodplain permits

Part IV: Attachments

	Included
A. List of Property Owners	☐
B. Delineation of Waters of the U.S., Including Wetlands	☒
C. Color Photographs	☒
D. Summary Table of Single and Complete Crossings	☒
E. Required Drawings/Figures	☒
F. Threatened or Endangered Species Reports and/or Letters	☒
G. Historic Properties and Cultural Resources Reports and/or Letters	☒
H. Conceptual Mitigation Plan	☐
I. Other:	☐

End of Form

Attachment D: Summary Table of Single and Complete Crossings

Waterbody ID[1]	Latitude and Longitude (Decimal Degrees)	Resource Type[2]	Linear Feet in Project Area	Acres in Project Area	Impact Type[3]	Linear Feet of Impact	Acres of Impact	Cubic Yards of Material to be Discharged	PCN Required	Reason[4]
e.g., W-1	*32.755°N, 97.755°W*	*NFW*	*-*	*0.25*	*D/P*	*-*	*0.15*	*1210*	*Yes*	*A, B*
Stream 1	30.072960 -97.254313	IS	189.2	189.2	D/P	189.2	.009	14	Yes	C
Stream 2	30.074650 -97.250160	PS	117.4	117.4	D/P	117.4	.09	470	Yes	C
Stream 3S	30.074850 -97.250009	IS	121	121	D/P	121	.005	9	Yes	C
Stream 3N	30.077049 -97.249310	IS	37.4	37.4	D/P	37.4	.0008	1	Yes	C
Stream 4W	30.082416 -97.250313	IS	70.7	70.7	D/P	70.7	.003	5	Yes	C
Stream 4E	30.082503 -97.250495	IS	35	35	D/P	35	.003	5	Yes	C
Stream 5	30.084278 -97.249637	IS	140	140	D/P	140	.02	39	Yes	C
Stream 6	30.084398 -97.249749	IS	50	50	D/P	50	.003	8	Yes	C
Stream 7	30.075769 -97.277522	IS	83.3	83.3	D/P	83.3	.03	130	Yes	C

[1] Waterbody ID may be the name of a feature or an assigned label such as “W-1” for a wetland.

[2] Resource Types: NFW – Non-forested wetland, FW – Forested wetland, PS – Perennial Stream, IS – Intermittent Stream, ES – Ephemeral Stream, I – Impoundment

[3] Impact Types: D/P – Direct* and Permanent, D/T – Direct and Temporary, I/P – Indirect** and Permanent, I/T – Indirect and Temporary

* Direct impacts are here defined as those adverse affects caused by the proposed activity, such as discharge or excavation.

** Indirect impacts are here defined as those adverse affects caused subsequent to the proposed activity, such as flooding or effects of drainage on adjacent waters of the U.S.

[4] Reasons for PCN requirement:

A – The loss of waters of the U.S. exceeds 1/10 acre

B – There is a discharge in a special aquatic site (e.g., wetlands)
C – Potential endangered species
D – Potential historic properties
E – Discharge into pitcher plant bog or bald cypress-tupelo swamp
F – Discharge into the area of Caddo Lake within Texas that is designated as a “Wetland of International Importance” under the Ramsar Convention
G – Required by Louisiana Regional Conditions
H – Other

Instructions: [please do not include these pages when submitting form]

1) **Complete Part I of the form first to determine if the project meets the conditions and requirements of NWP 14, including the General and Regional Conditions as well as the notification requirements. Additional information on the general conditions is available at the following website:**

   http://www.swf.usace.army.mil/pubdata/environ/regulatory/permitting/gp.asp

2) **Boxes 1 to 3:** Provide contact information for the Applicant, Agent, Owner, etc.

3) **Box 4:**

   a. **Nature of Activity:** Describe the overall activity or project. Give appropriate dimensions of structures such as wingwalls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms. The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach a separate sheet marked "Box 4 Nature of Activity."

   b. **Proposed Project Purpose:** Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project.

   c. **Delineation of waters of the U.S.:**
   Waters of the U.S. are defined under 33 CFR part 328.3 (a) as:
   (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
   (2) All interstate waters including interstate wetlands;
   (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
      (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
      (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
      (iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
   (4) All impoundments of waters otherwise defined as waters of the U.S. under the definition;
   (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;
   (6) The territorial seas;
   (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

   In addition, 33 CFR part 328.3 (b) states: The term wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, the ordinary high water mark, as well as any adjacent wetlands, demarcate the limits of non-tidal waters of the U.S. Wetlands are identified and delineated using the methods and criteria established in the Corps *Wetlands Delineation Manual* (1987 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils, and wetland hydrology) as well as any applicable interim regional supplements.

d. **Multiple Single and Complete Crossings:** If the project includes multiple crossings which qualify as single and complete projects (see definitions in Part I question for General Condition 28), include information for each crossing in the summary table in Attachment D.

4) Box 5:

Required drawings (see examples in separate file): Submit one legible copy of all drawings (8 1/2 x 11-inch or 11 x 17-inch) with a 1-inch margin around the entire sheet. The title box shall contain the title of the proposed project, date, and sheet number.

i. **Vicinity map:** Cover an area large enough so the project can be easily located; include arrow marking the project area, identifiable landmarks (e.g., named waterbody, county, city), name or number of roads, north arrow, and scale.

ii. **Plan view:** Include features such as existing bank lines, ordinary high water mark line(s), average water depth around the activity, dimensions of the proposed project, dimensions of any structures immediately adjacent to the proposed activity, north arrow, and scale.

iii. **Elevation and/or cross-section views:** Include features such as water elevation as shown on plan view drawing, existing and proposed ground level, dimensions of the proposed project, dimensions of any structures immediately adjacent to the proposed activity, and scale.

5) Box 6: A list of navigable waters in the Fort Worth District can be found at the following website:

http://www.swf.usace.army.mil/pubdata/environ/regulatory/jurisdiction/navlist.pdf

Under Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. More information on regulated activities can be found at the following website:

http://www.swf.usace.army.mil/pubdata/environ/regulatory/regulatedactivities.asp

6) Box 8: Information on federally threatened or endangered species may be found on the U.S. Fish and Wildlife Service website and the Texas Parks and Wildlife Department website. Include an attachment if additional space is required for listing species or critical habitat potentially affected by the project.

http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

http://www.tpwd.state.tx.us/huntwild/wild/species/endang/index.phtml

http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species/

7) Box 10: When completing this box, be aware that the USACE will consider if the project has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. to the maximum extent practicable at the project site when determining appropriate and practicable mitigation necessary to ensure that adverse effects to the aquatic environment

are minimal. The USACE may also require compensatory mitigation at a minimum one-for-one ratio for losses of wetlands, streams, and open waters to ensure that the project results in minimal adverse effects on the aquatic environment. See the USACE Fort Worth District Regulatory Branch website for a mitigation plan template and requirements.

http://www.swf.usace.army.mil/pubdata/environ/regulatory/permitting/mitigation.asp

8) **Box 11:** Projects in Texas should meet the conditions of the Texas Commission on Environmental Quality (TCEQ) Clean Water Act Section 401 certification for NWP 14. The TCEQ conditions of Section 401 certification for NWP 14 as well as a description of Best Management Practices can be found at the following website:

http://www.tceq.state.tx.us/permitting/water_quality/wq_assessment/401certification/401certification_nationwide.html

Projects in Louisiana require water quality certification from the Louisiana Department of Environmental Quality (LDEQ). LDEQ has issued water quality certification for NWP 14 without conditions. Information about water quality certification from LDEQ can be found at the following website:

http://www.deq.louisiana.gov/portal/tabid/2268/Default.aspx

The Environmental Protection Agency (EPA) is the agency required to address water quality certification of the 2007 NWPs in "Indian Country" where a tribe has not received treatment in the same manner as a state for the Clean Water Act (CWA) Section 401 program. "Indian Country," as defined in 18 U.S.C. 1151, means: (1) all land within the limits of any Indian reservation under the jurisdiction of the U.S. government, not withstanding the issuance of any patent, and including rights-of-way running through the reservation; (2) all dependent Indian communities within the borders of the U.S. whether within the original or subsequently-acquired territory thereof, and whether within or without the limits of a state; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. At this time, no Indian tribes in Texas or Louisiana have CWA Section 401 authority.

The EPA has developed a list of conditions that must be met in order for water quality certification of NWPs in "Indian Country" lands. The list of "401 Certification Conditions of Nationwide Permits for Tribal Lands in Texas" can be found at the following website:

http://www.swg.usace.army.mil/reg/permitnw/NWP%202007%20Information/npw_regional%20conditions/2007NWPTXwqcEPA.pdf

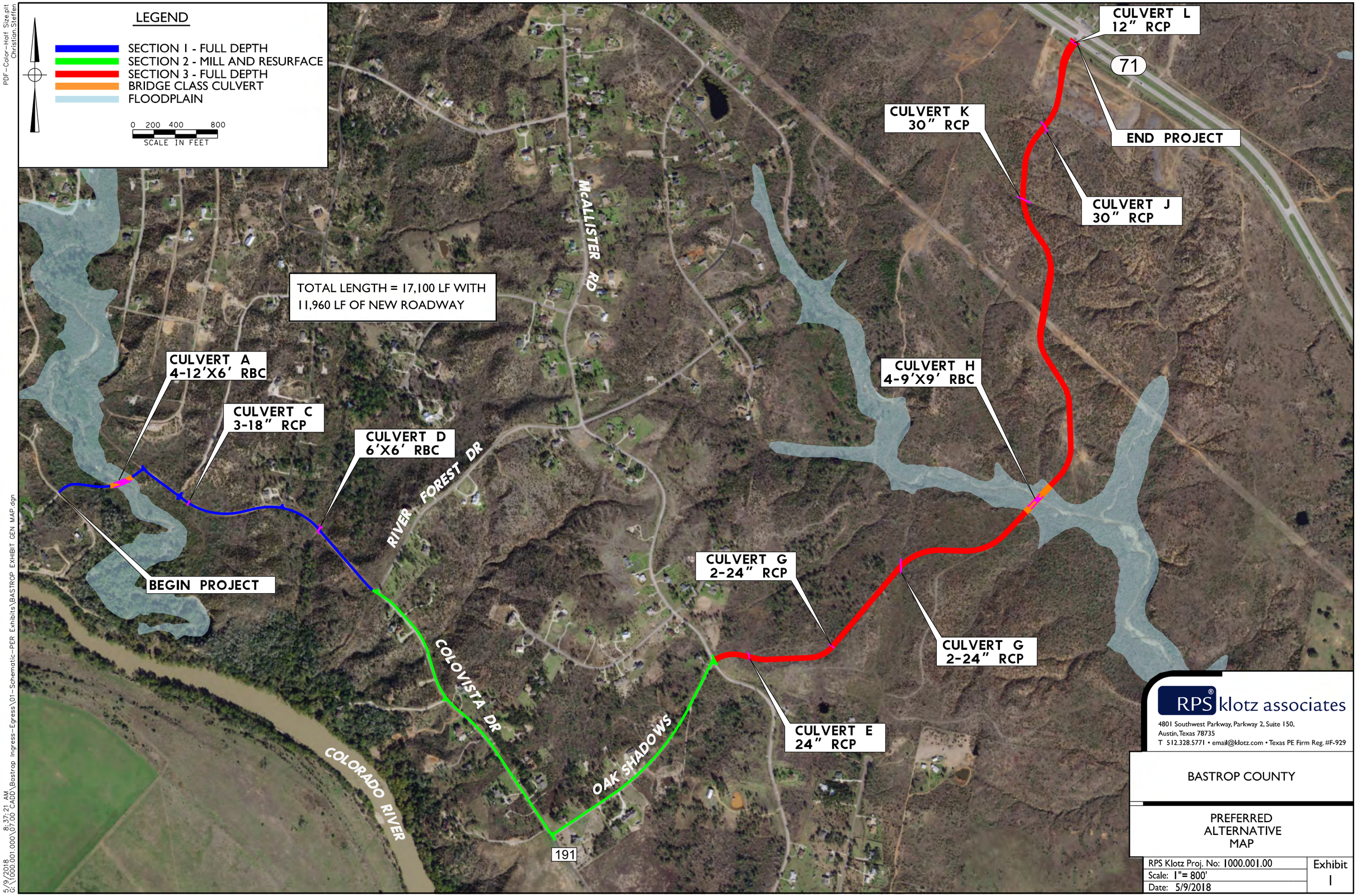
The list of "Water Quality Regional NWPs Conditions for 'Indian Country' Lands" in Louisiana can be found in Part III of the document at the following website:

http://www.mvn.usace.army.mil/ops/regulatory/2007%20NWP%20regional%20conditions%20-%20Louisiana.pdf

9) **Attachments:** Check the boxes in Part IV for those attachments that are included, and place a cover sheet or tab with each attachment behind the last page of the form. If Attachment D is not needed, discard this page, but if more room is necessary, include an additional table.

ATTACHMENT C

TYPICAL PROJECT PLAN DRAWINGS



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Austin, Texas 78735
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BASTROP COUNTY

PREFERRED
ALTERNATIVE
MAP

RPS Klotz Proj. No: 1000.001.00	Exhibit
Scale: 1"= 800'	1
Date: 5/9/2018	

PDF-Color-Half Size.plt
Christian.Steffen

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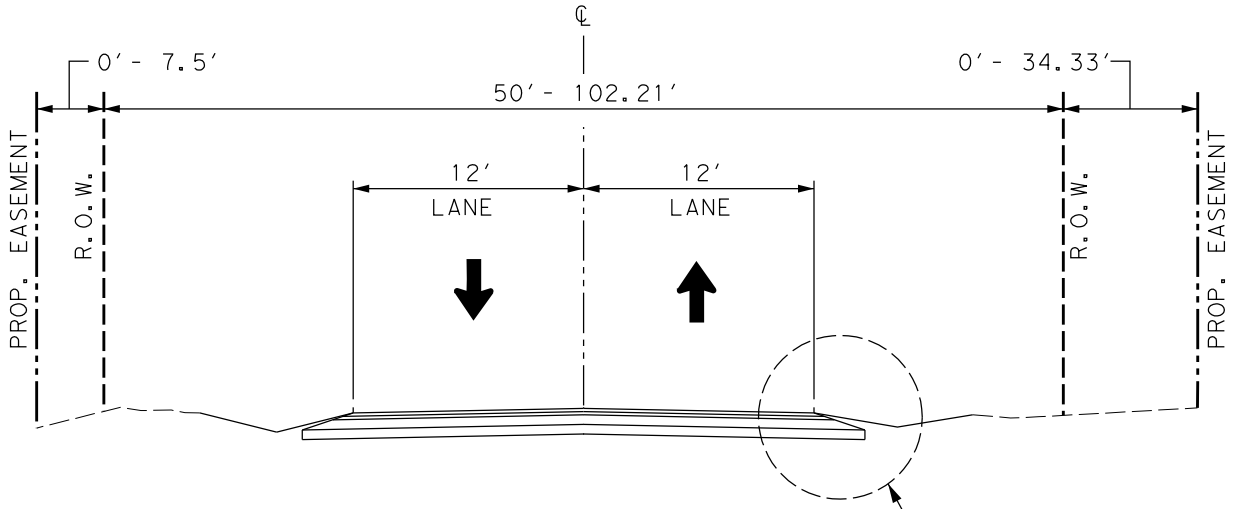

PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 1
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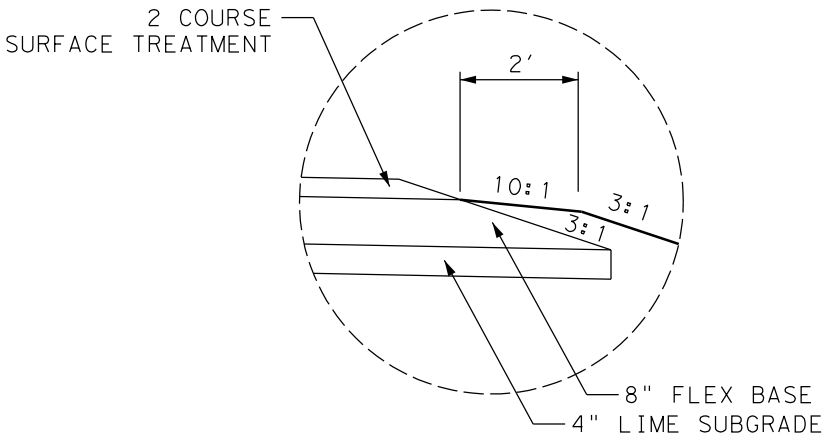

DETAIL A

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Austin, Texas 78735
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BASTROP COUNTY

SECTION 1
TYPICAL SECTION
POI CT.

RPS Klotz Proj. No: 1000.001.000	Exhibit
Scale: NTS	1
Date: 09/06/2017	

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philip.moseley
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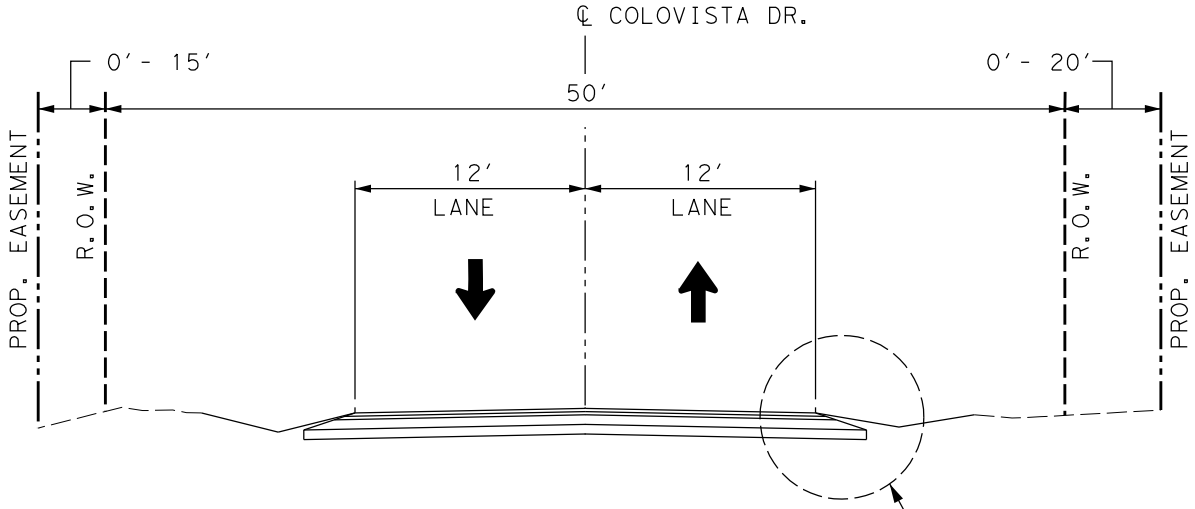
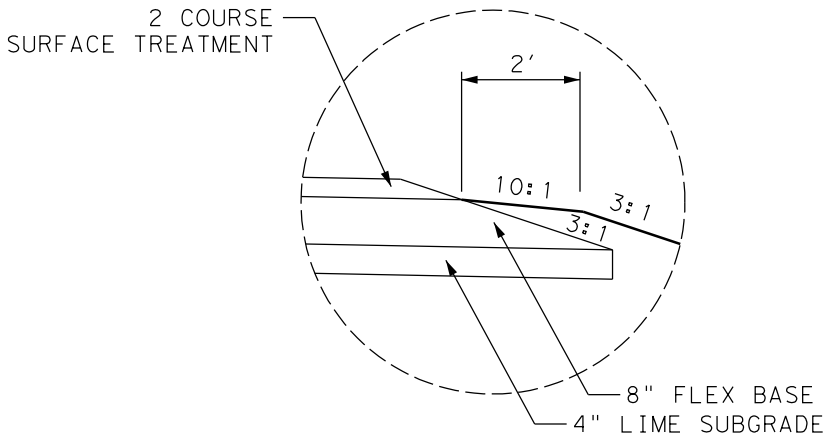


PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 1
(COLOVISTA DR.)



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BASTROP COUNTY

SECTION 2
TYPICAL SECTION
COLOVISTA DR.

RPS Klotz Proj. No: 1000.001.000	Exhibit 2
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Date: 09/06/2017	

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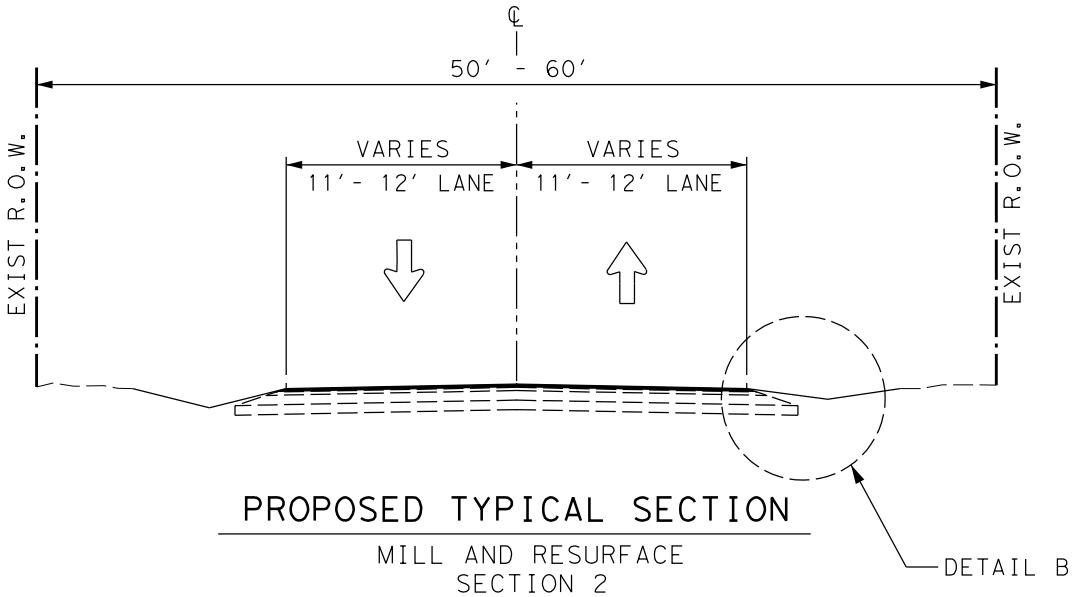

PROPOSED TYPICAL SECTION

MILL AND RESURFACE
SECTION 2
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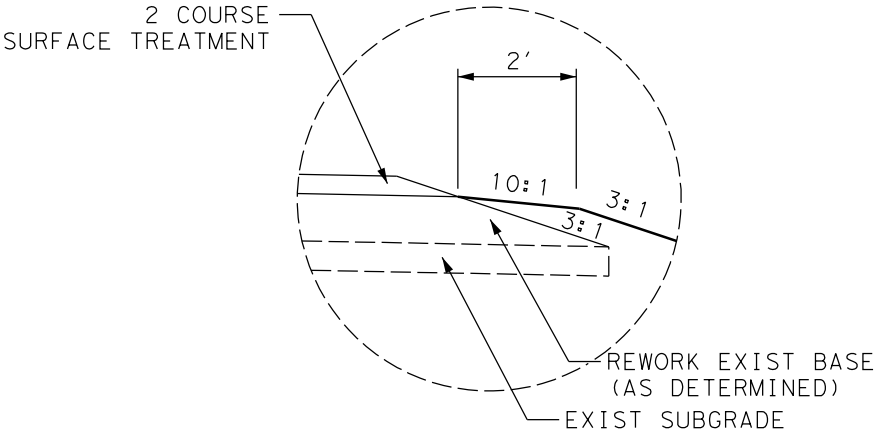

DETAIL B

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BASTROP COUNTY

SECTION 3
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 3
Scale: NTS	
Date: 09/06/2017	

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philip.moseley
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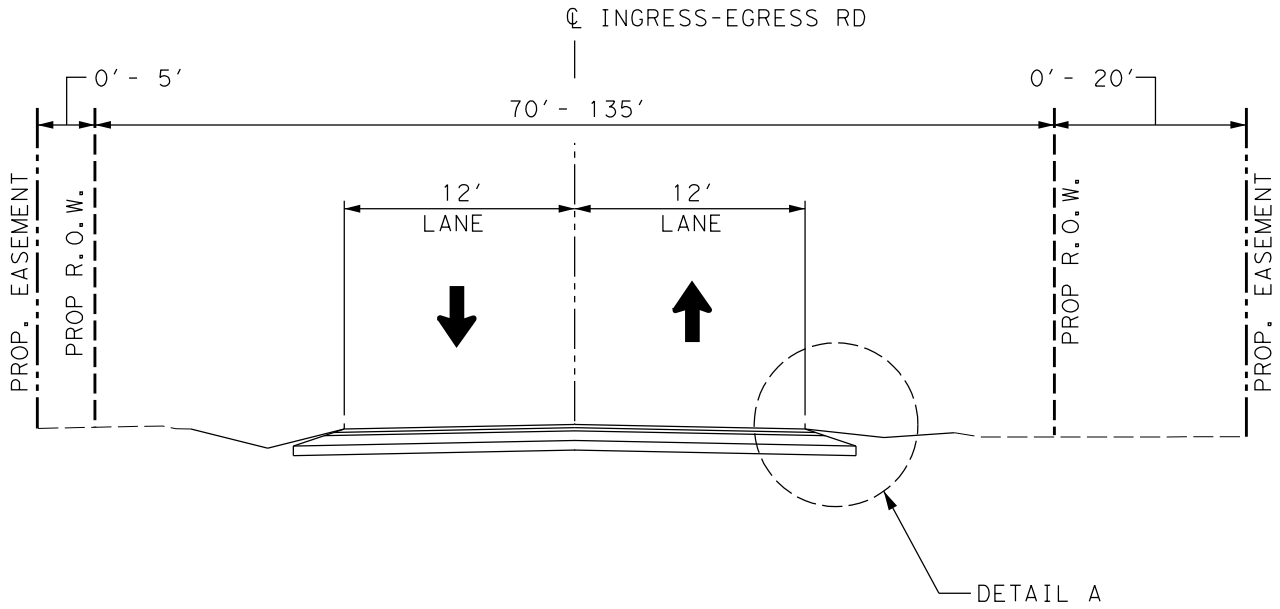

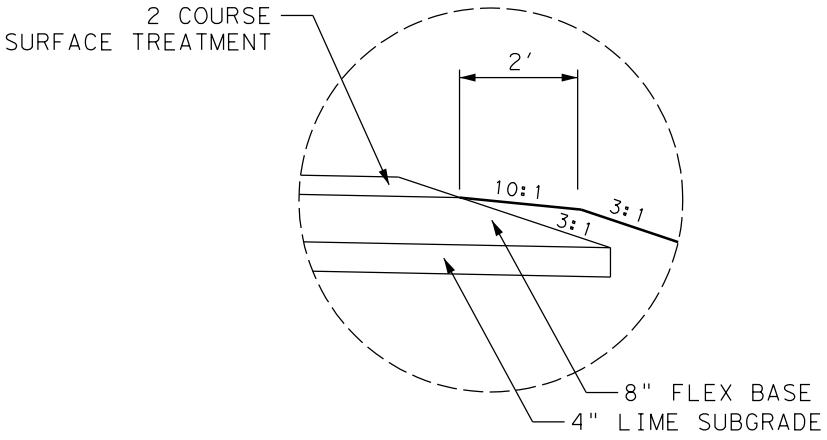

DETAIL A

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BASTROP COUNTY

SECTION 4
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 4
Scale: NTS	
Date: 09/06/2017	

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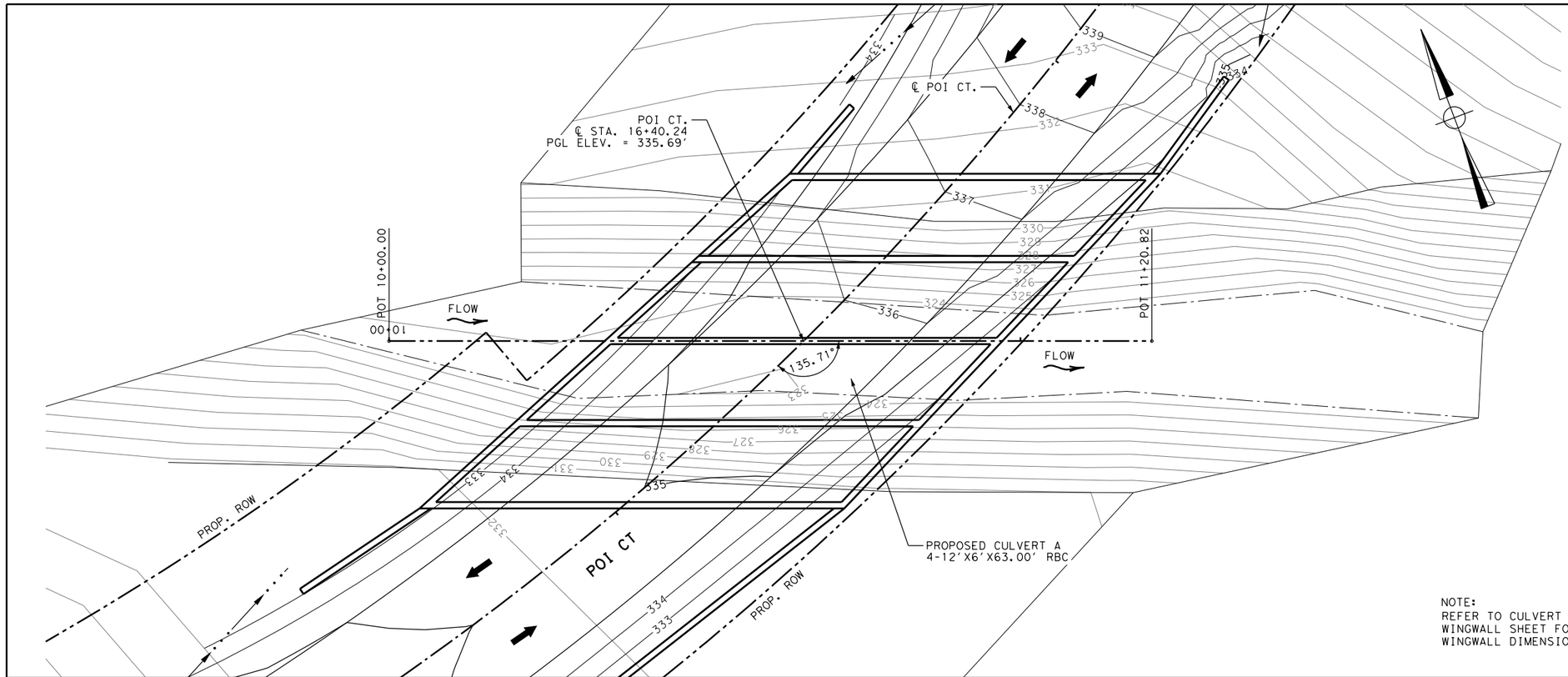

NOTE:
REFER TO CULVERT A
WINGWALL SHEET FOR
WINGWALL DIMENSIONS

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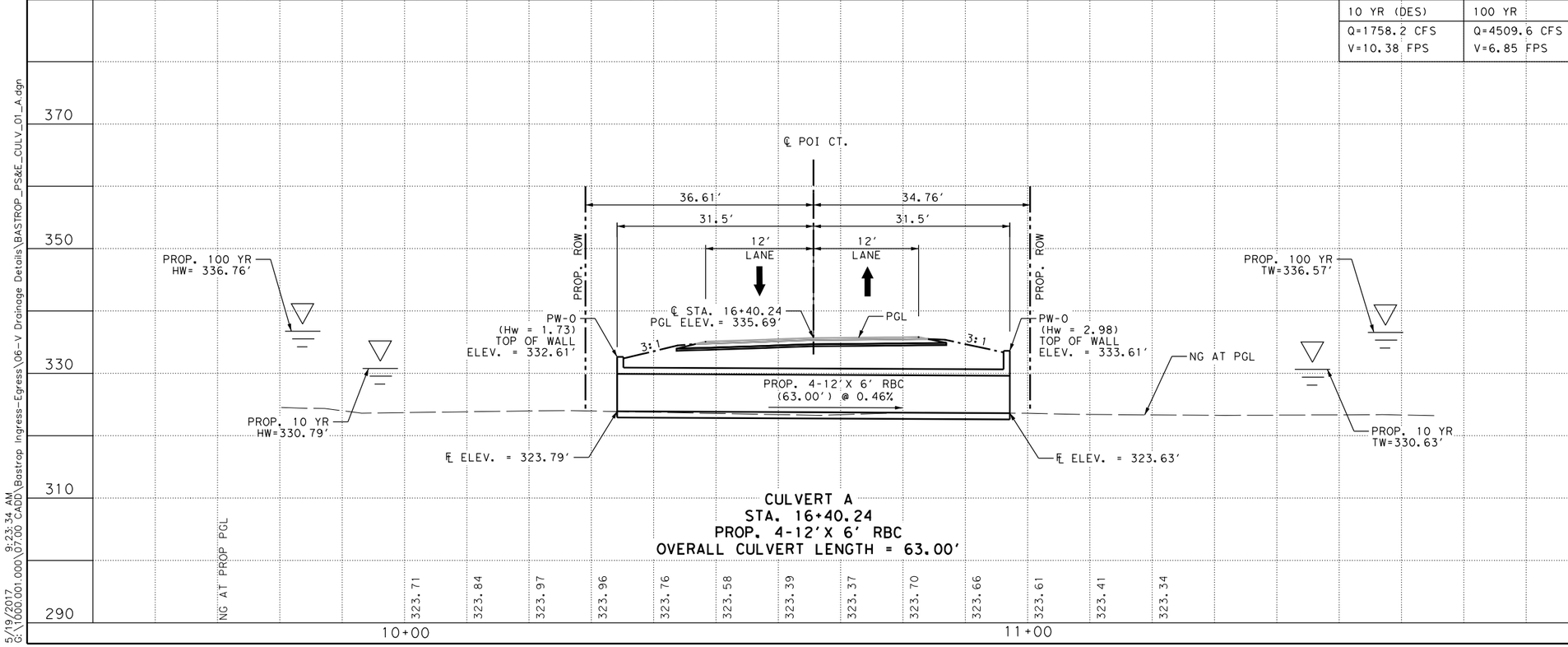
Q=1758.2 CFS	Q=4509.6 CFS
V=10.38 FPS	V=6.85 FPS



CULVERT A
STA. 16+40.24
PROP. 4-12'X 6' RBC
OVERALL CULVERT LENGTH = 63.00'

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Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 — PROPOSED CONTOUR
- 700 — EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES.

KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT A
PLAN AND PROFILE
POI CT.
STA. 16+40.24

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 109

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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V 0 10 20

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5/19/2017
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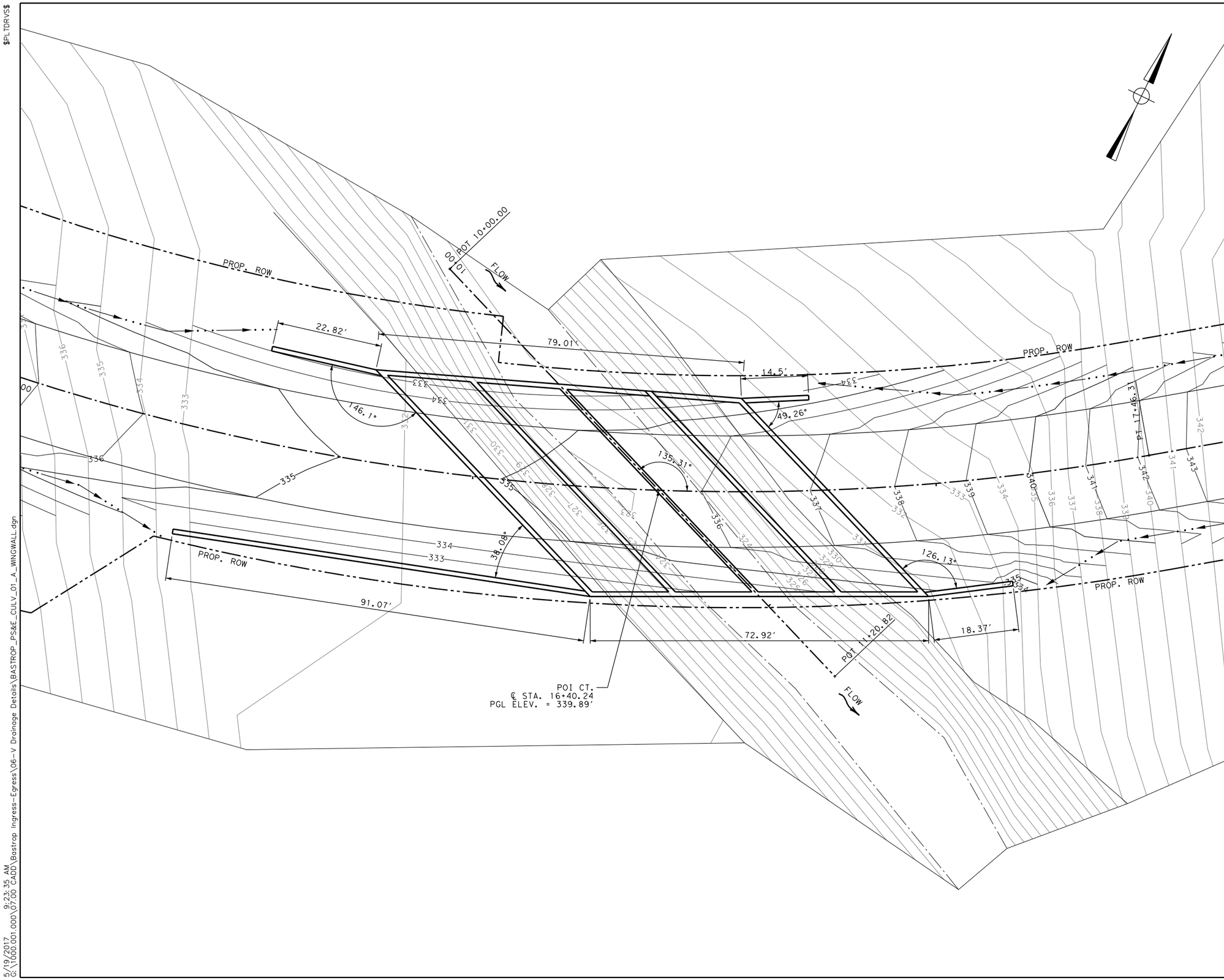

RPS klotz associates

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Austin, Texas 78735
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THE STATE OF TEXAS
COUNTY OF BASTROP

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT A
WINGWALL PLAN

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000	SHEET NO.
PROJECT_#	110

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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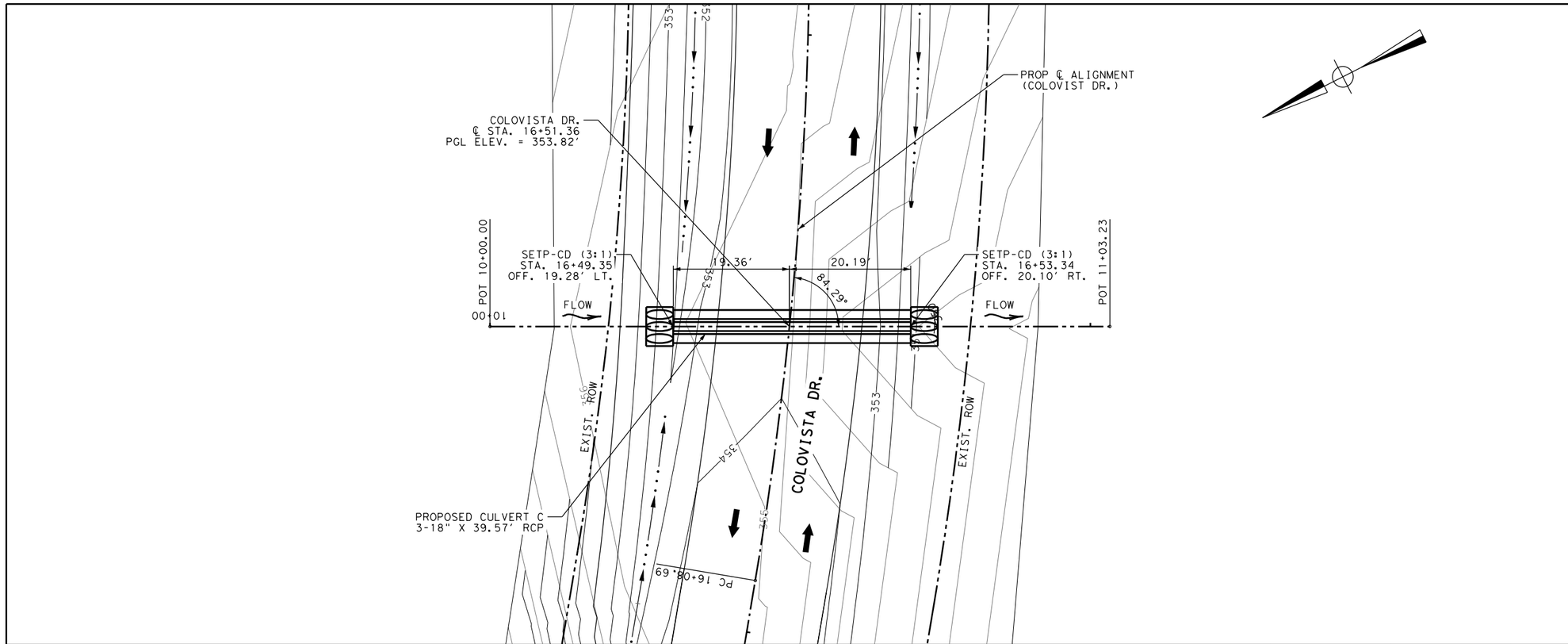
V 0 10 20



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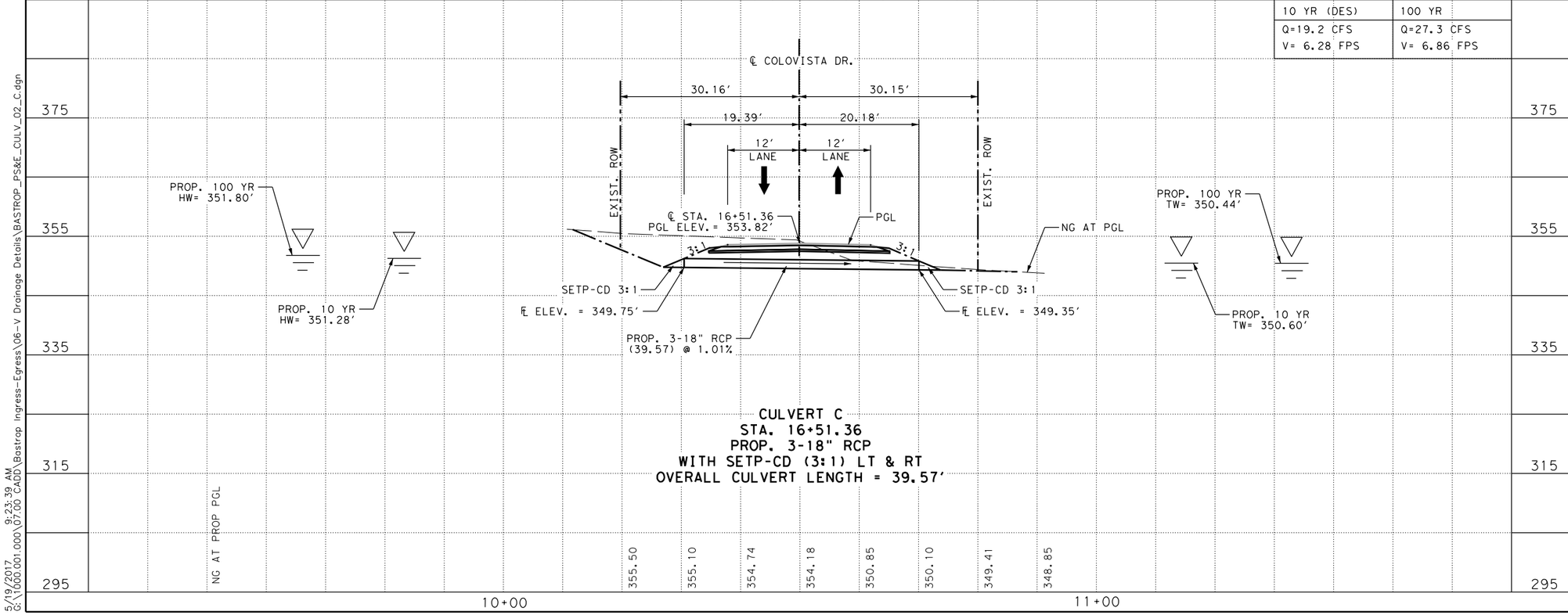
V= 6.28 FPS	V= 6.86 FPS



CULVERT C
STA. 16+51.36
PROP. 3-18" RCP
WITH SETP-CD (3:1) LT & RT
OVERALL CULVERT LENGTH = 39.57'

RPS klotz associates
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Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 — PROPOSED CONTOUR
- 700 — EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

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103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT C
PLAN AND PROFILE
COLOVISTA RD.
STA. 16+51.36

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 112

COUNTY OF BASTROP

Scale: H 0 10 20 / V 0 10 20
Date: 5/19/2017

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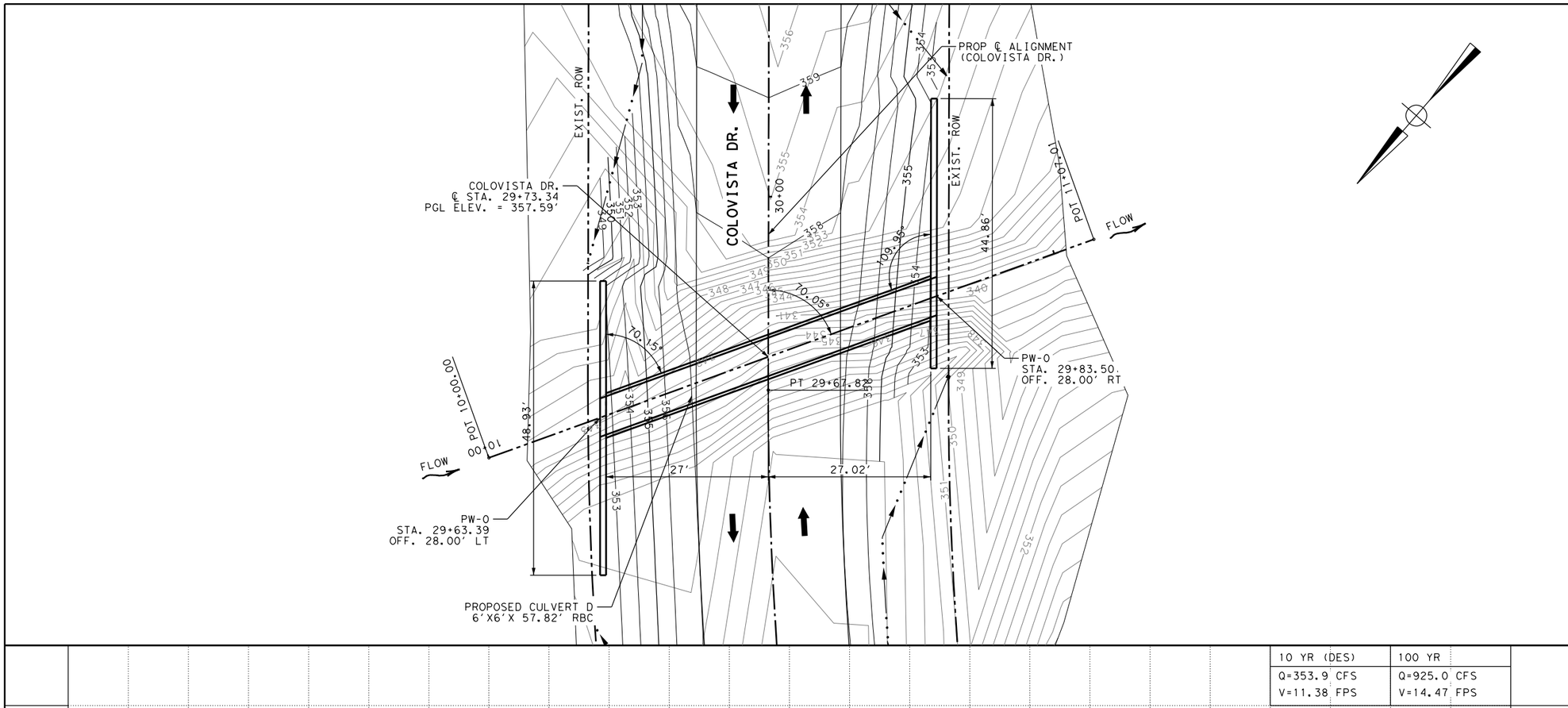

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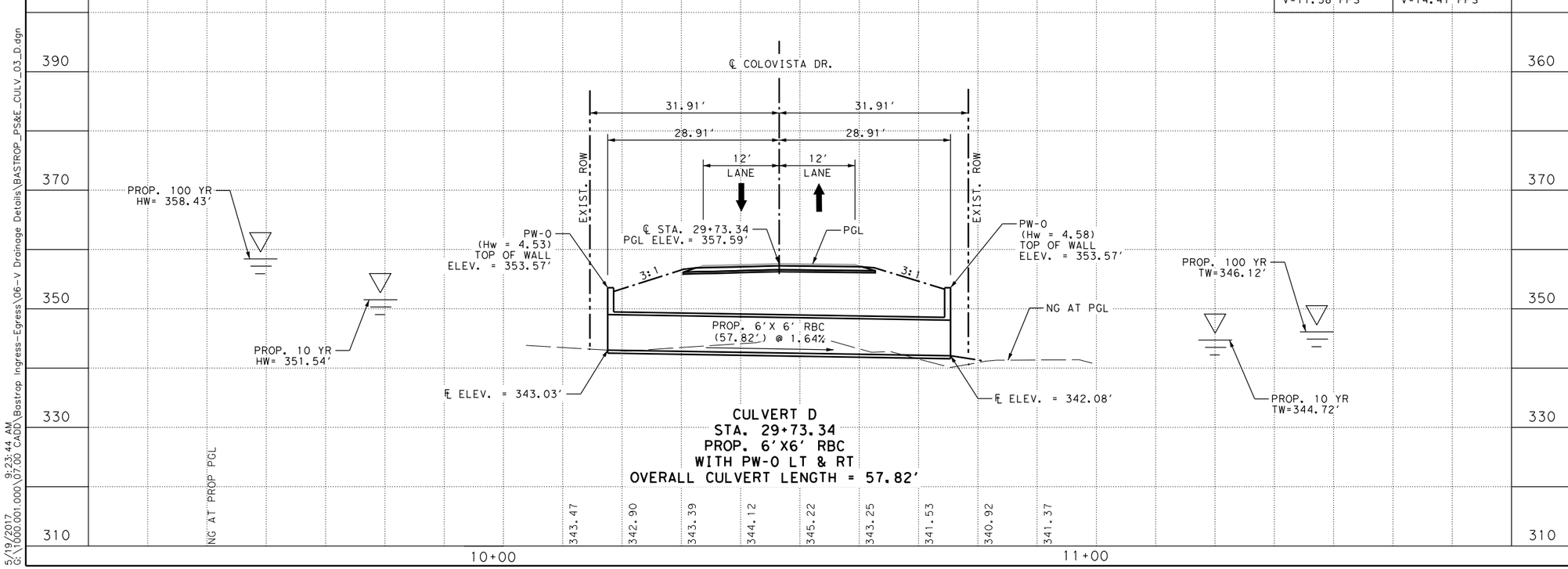
V=11.38 FPS	V=14.47 FPS



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Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

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103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT D
PLAN AND PROFILE
COLOVISTA RD.
STA. 29+73.34

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000 | SHEET NO. 114
PROJECT_#
COUNTY OF BASTROP
Scale:
Date: 5/19/2017

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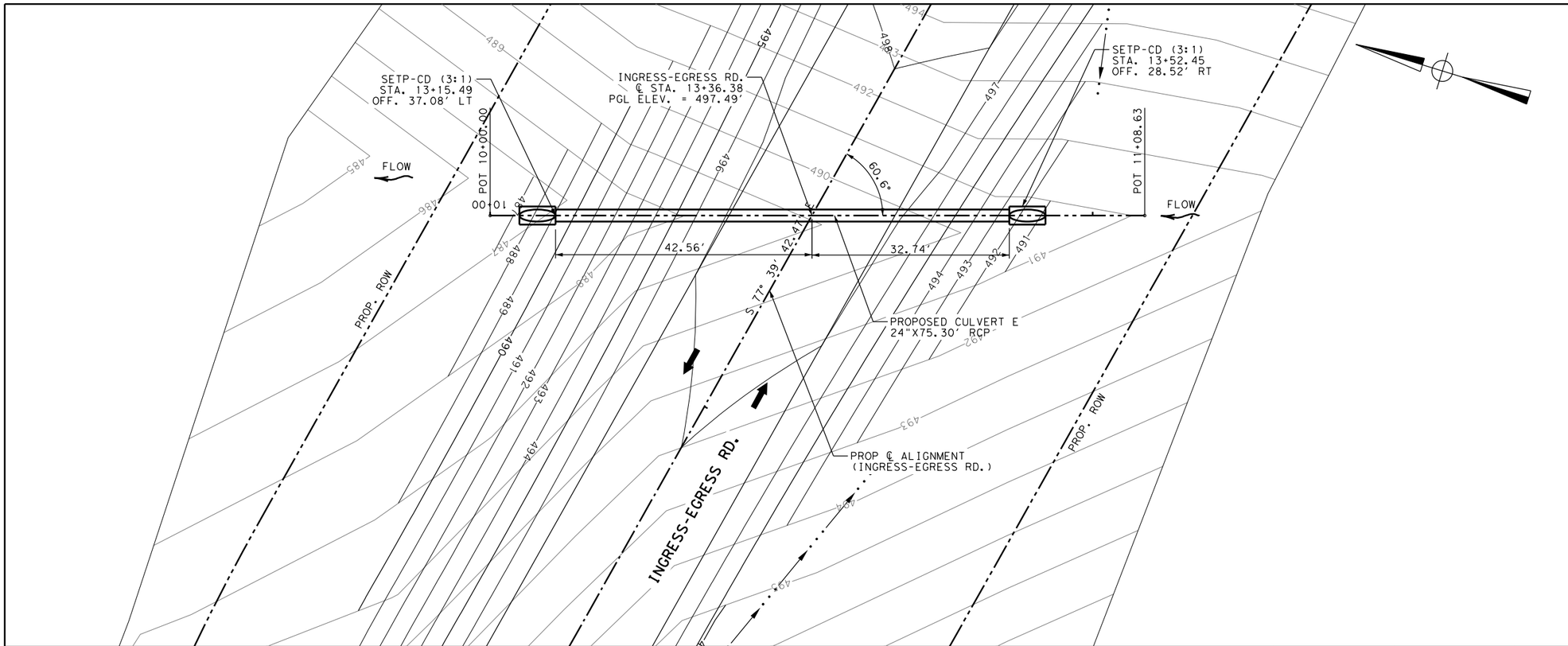

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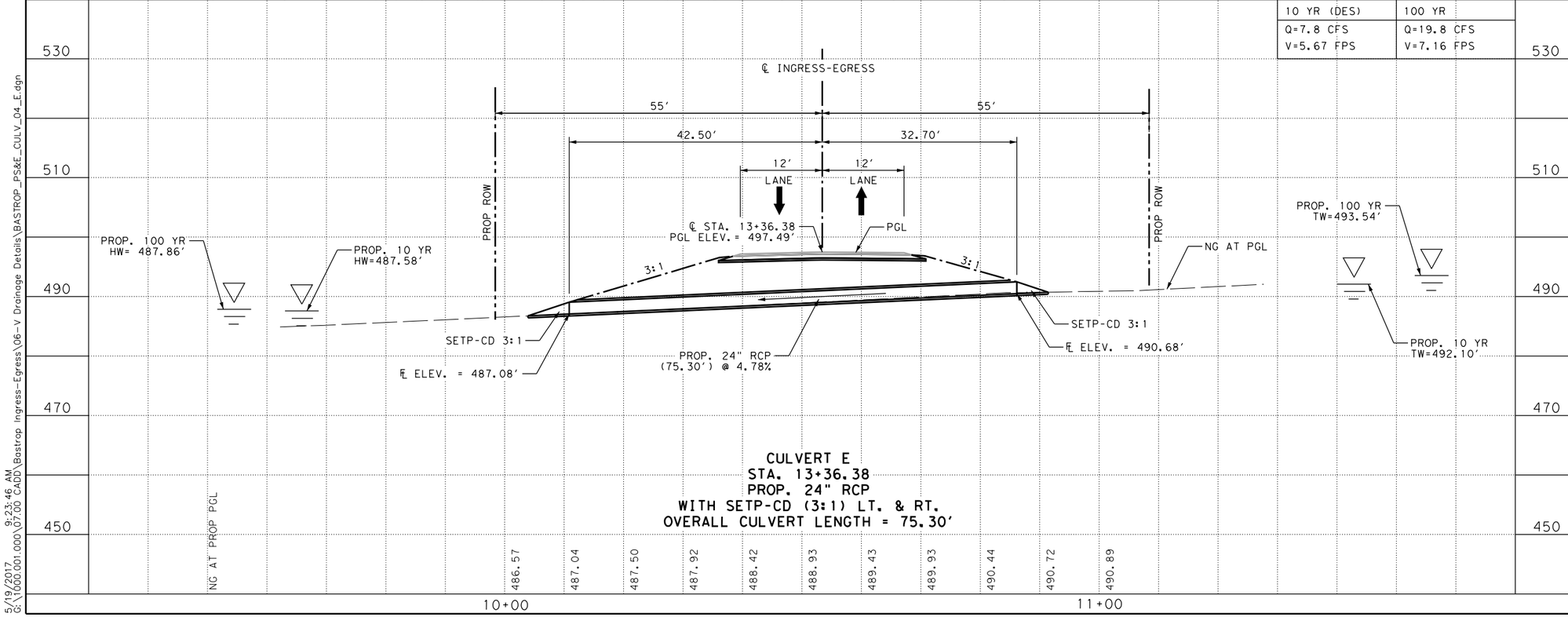
V=5.67 FPS	V=7.16 FPS



CULVERT E
STA. 13+36.38
PROP. 24" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 75.30'

RPS klotz associates
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Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES.

KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT E
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 13+36.38

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 116

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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V 0 10 20

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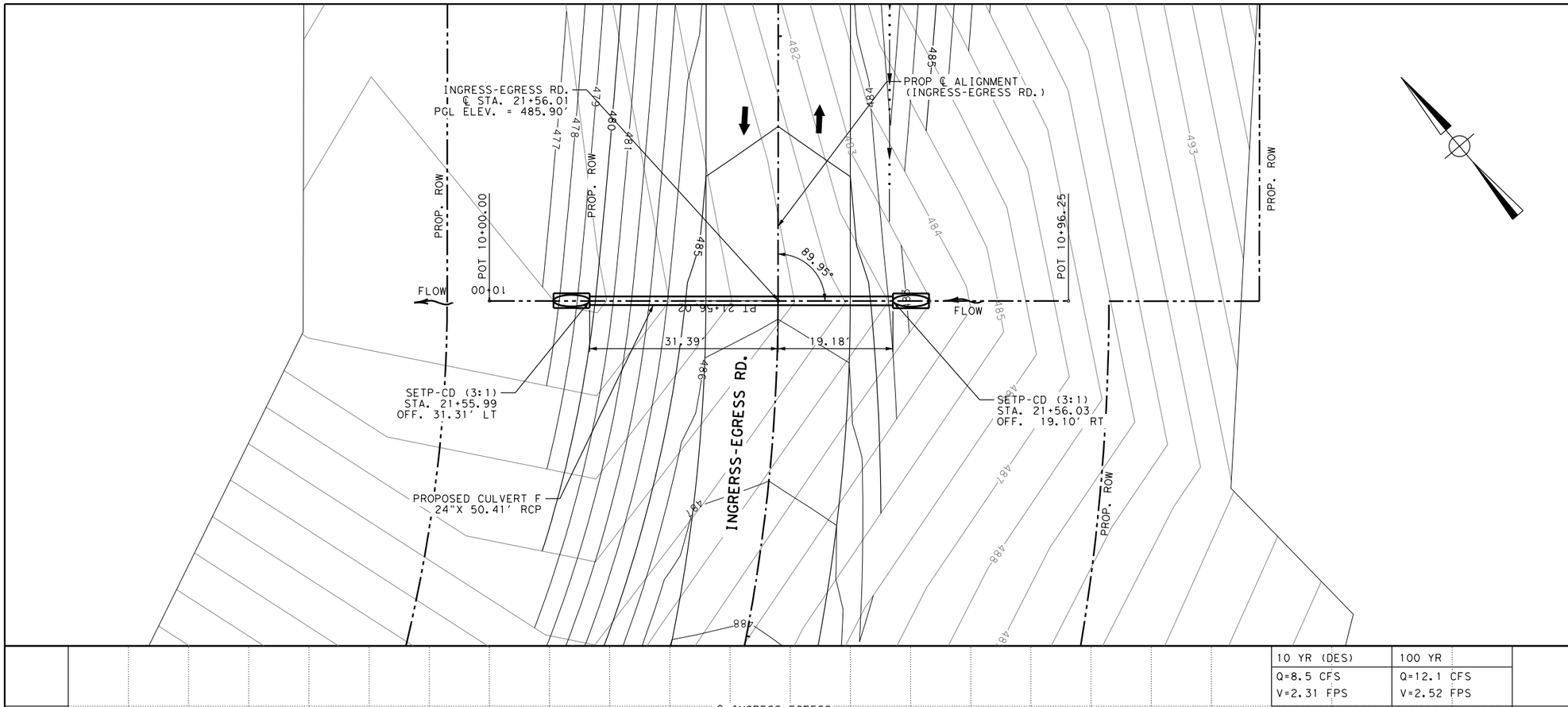

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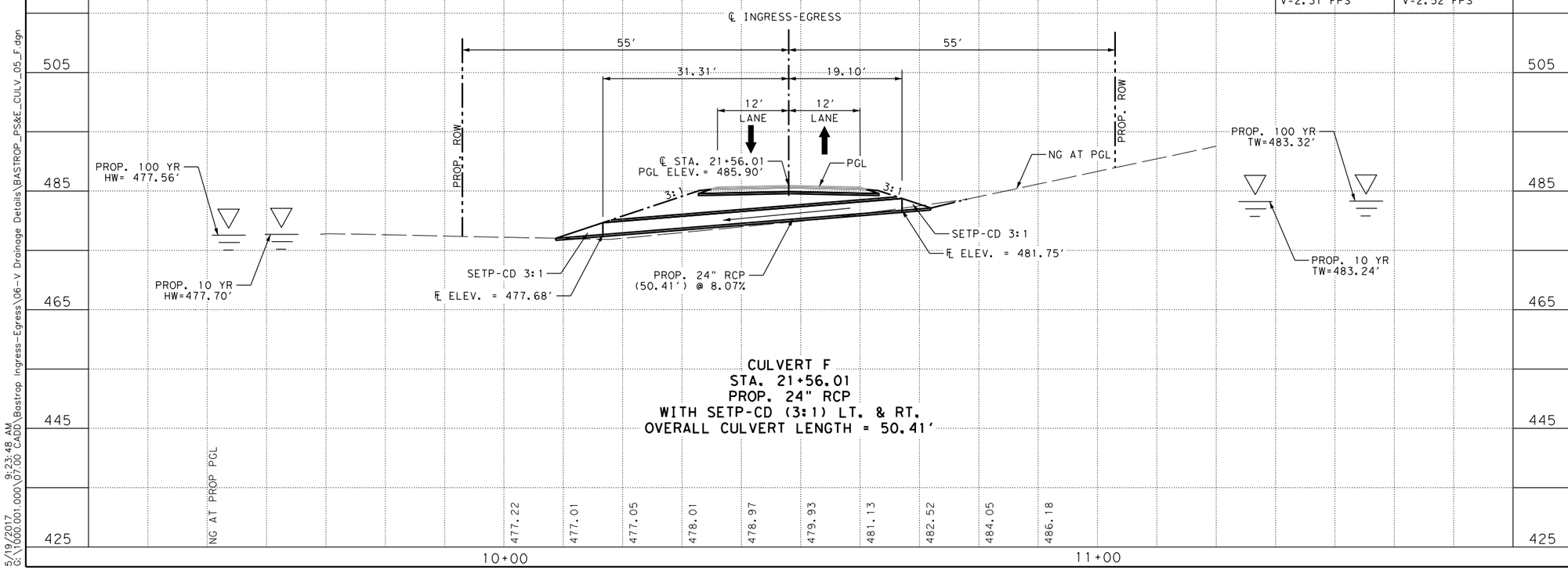

CULVERT F
STA. 21+56.01
PROP. 24" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 50.41'

RPS klotz associates
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Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES.

KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT F
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 21+56.01

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 118

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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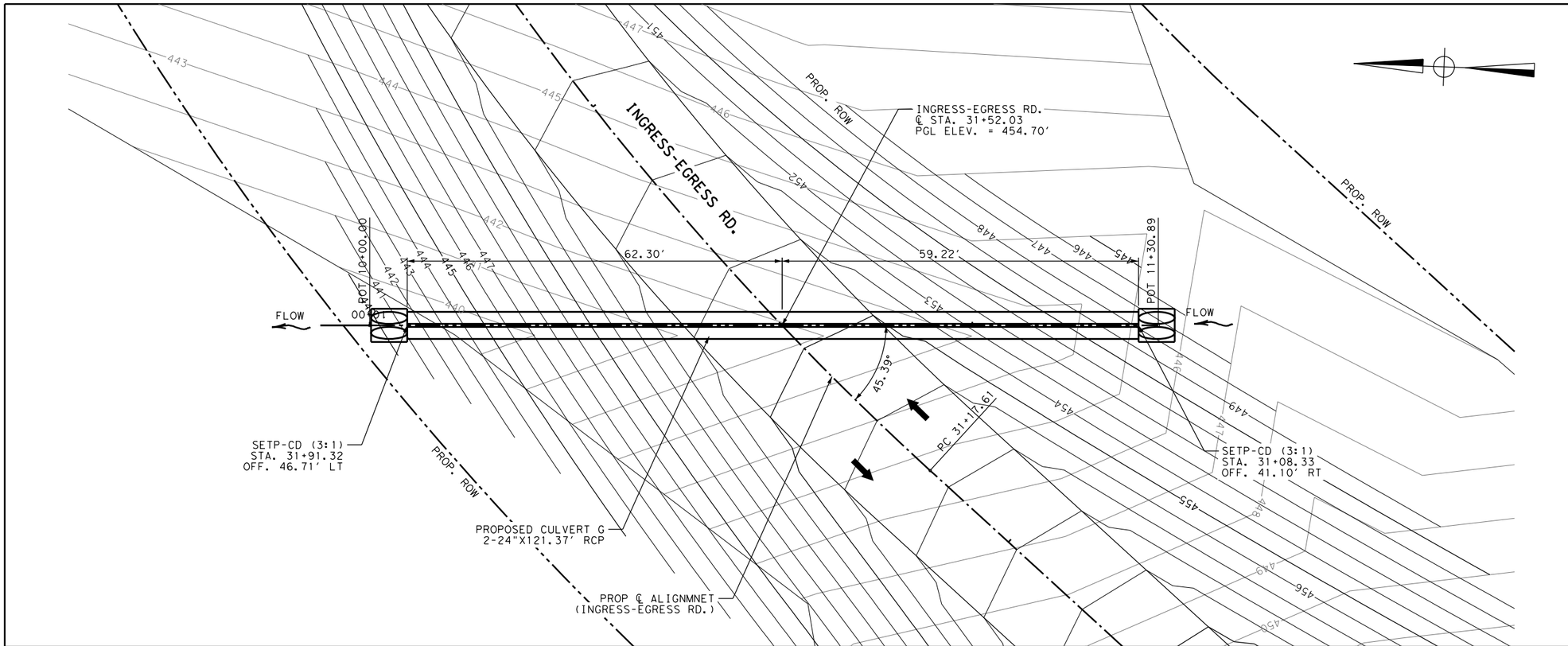

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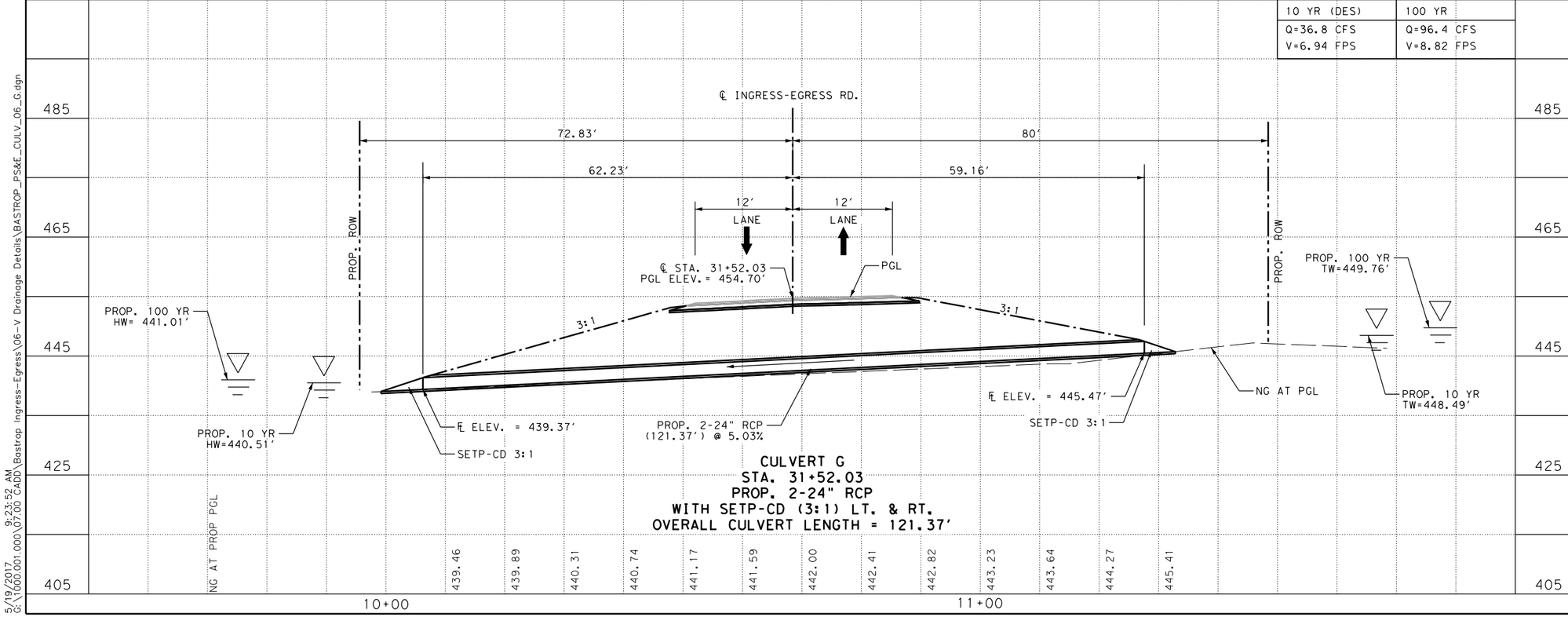
Q=36.8 CFS	Q=96.4 CFS
V=6.94 FPS	V=8.82 FPS



CULVERT G
STA. 31+52.03
PROP. 2-24" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 121.37'

RPS klotz associates
4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT G
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 31+52.03

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 120

COUNTY OF BASTROP

Scale:
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V 0 10 20

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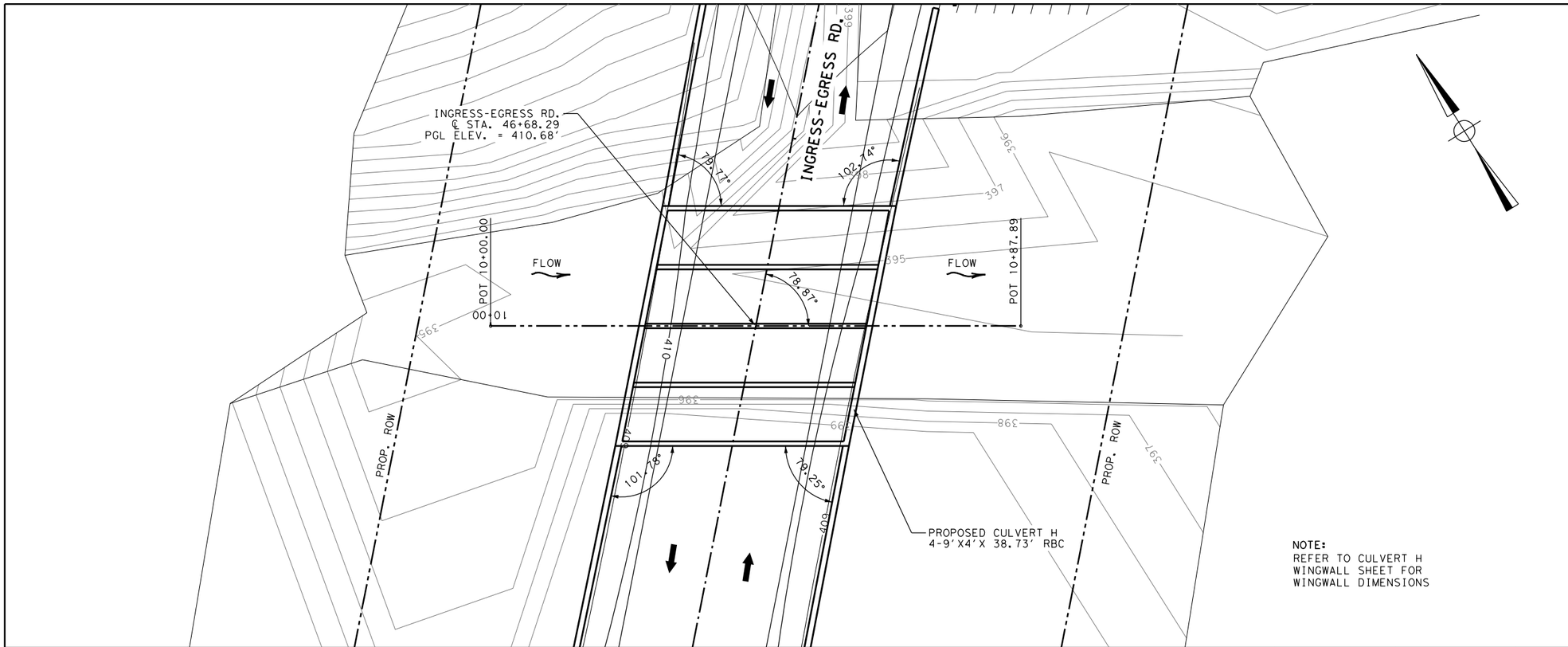

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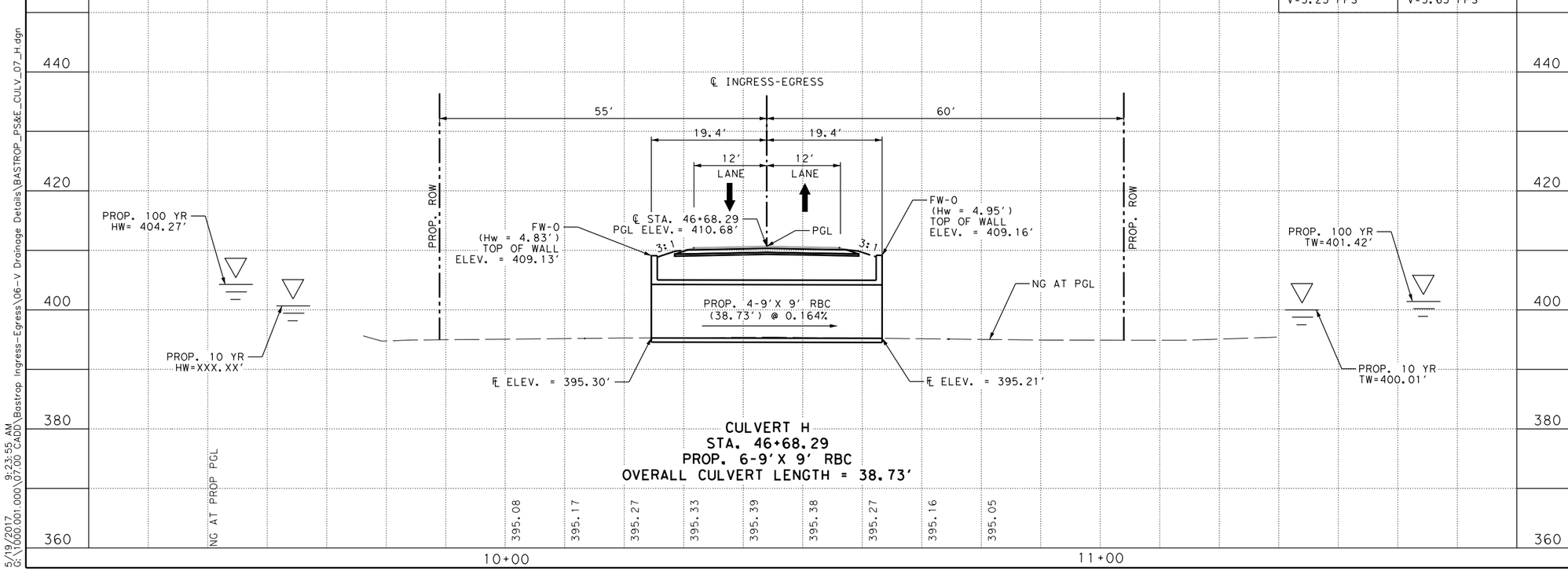
V=3.23 FPS	V=5.65 FPS



CULVERT H
STA. 46+68.29
PROP. 6-9'X 9' RBC
OVERALL CULVERT LENGTH = 38.73'

RPS klotz associates
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Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT H
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 46+68.29

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 122

COUNTY OF BASTROP

Scale:
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V 0 10 20

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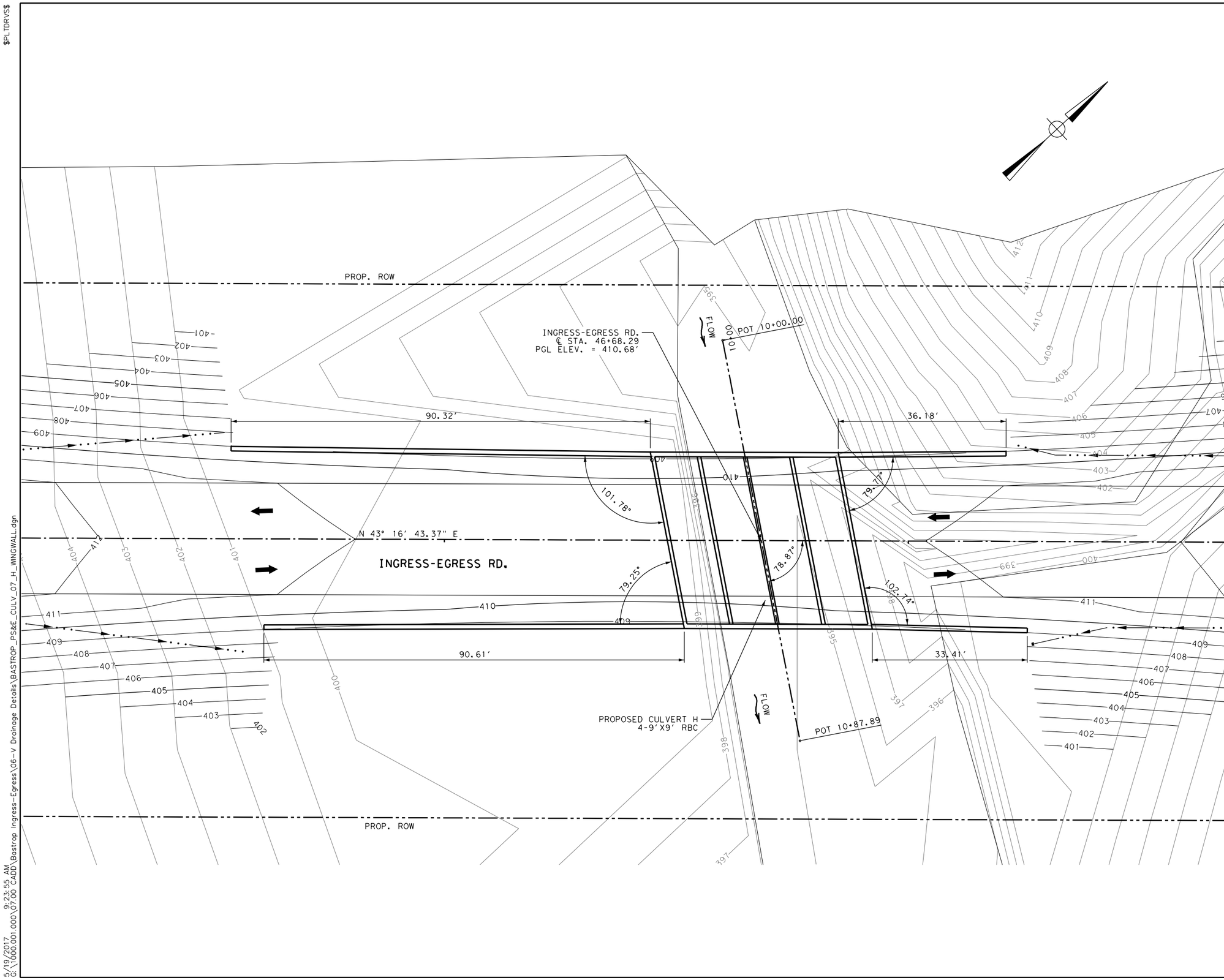

RPS klotz associates
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Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT H
WINGWALL PLAN

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000	SHEET NO.
PROJECT_#	123

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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V 0 10 20

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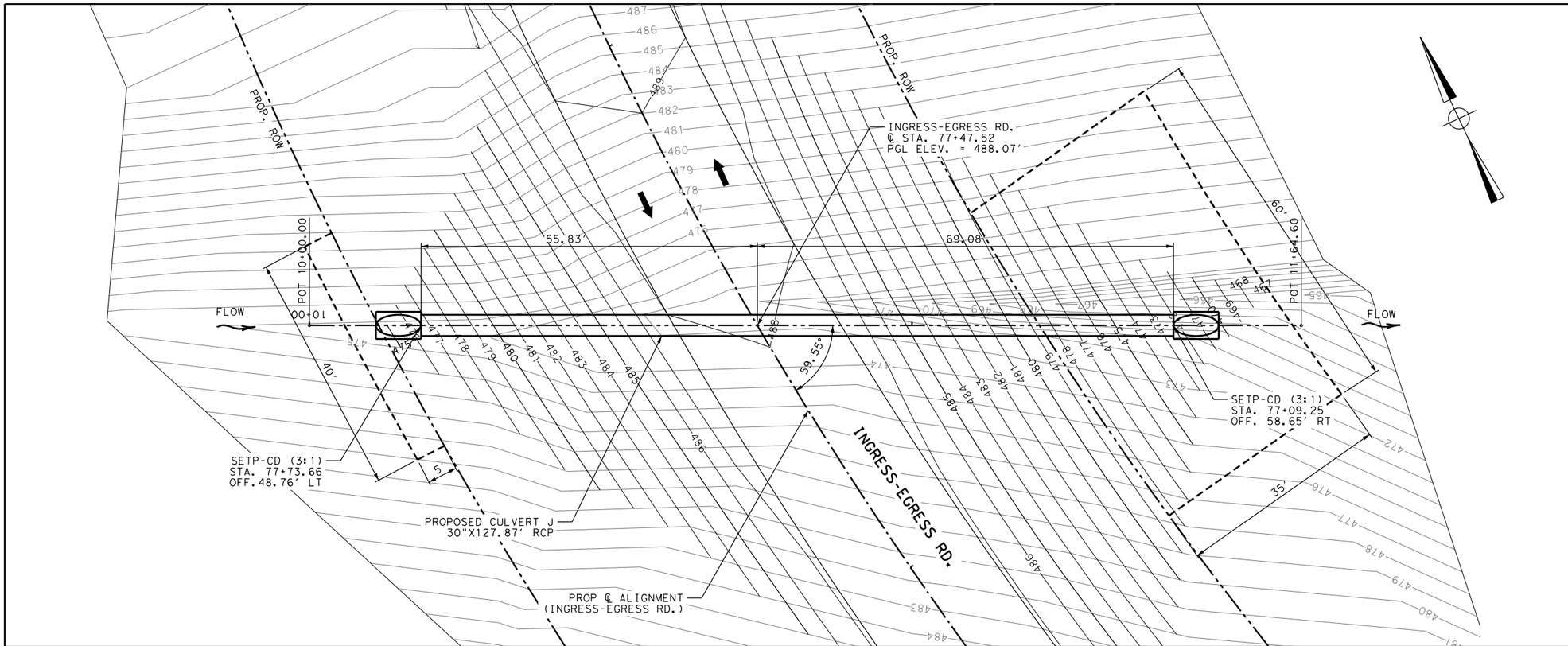

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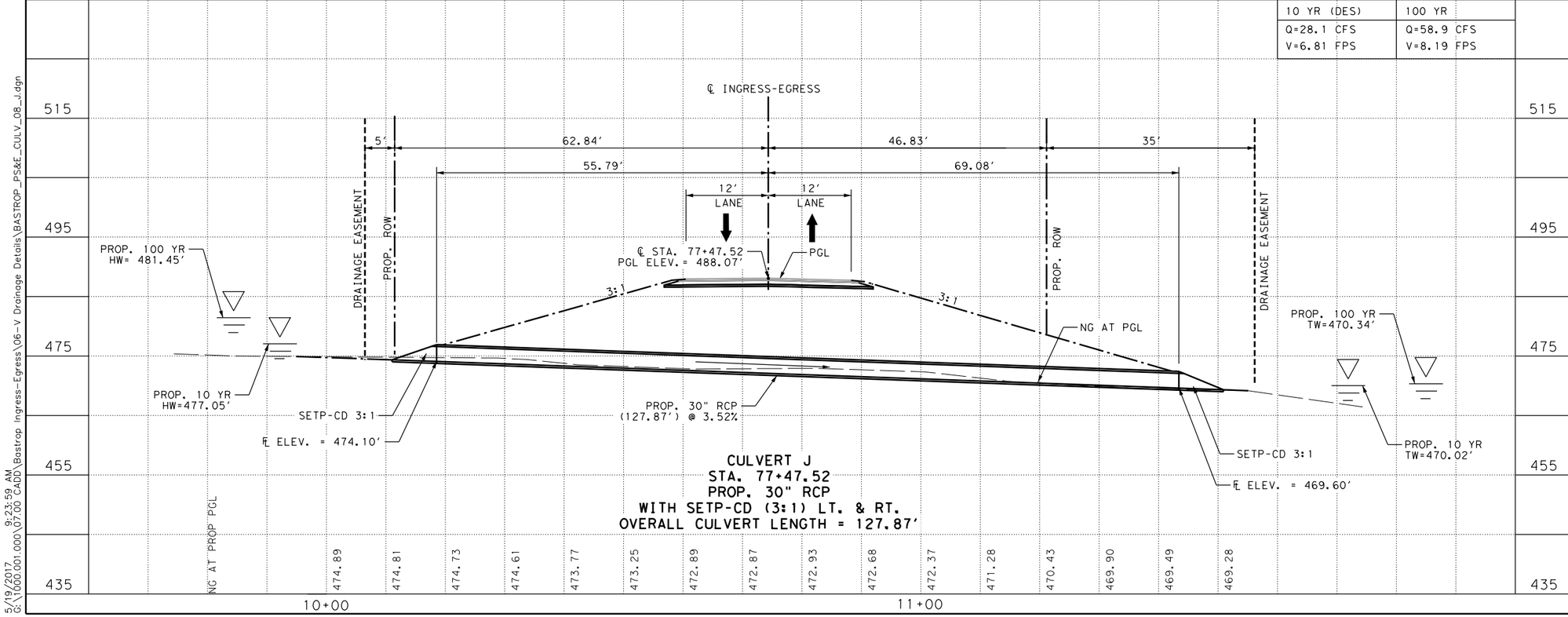
V=6.81 FPS	V=8.19 FPS



CULVERT J
STA. 77+47.52
PROP. 30" RCP
WITH SETP-CD (3:1) LT. & RT.
OVERALL CULVERT LENGTH = 127.87'

RPS klotz associates
4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT J
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 77+47.52

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 125

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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V 0 10 20

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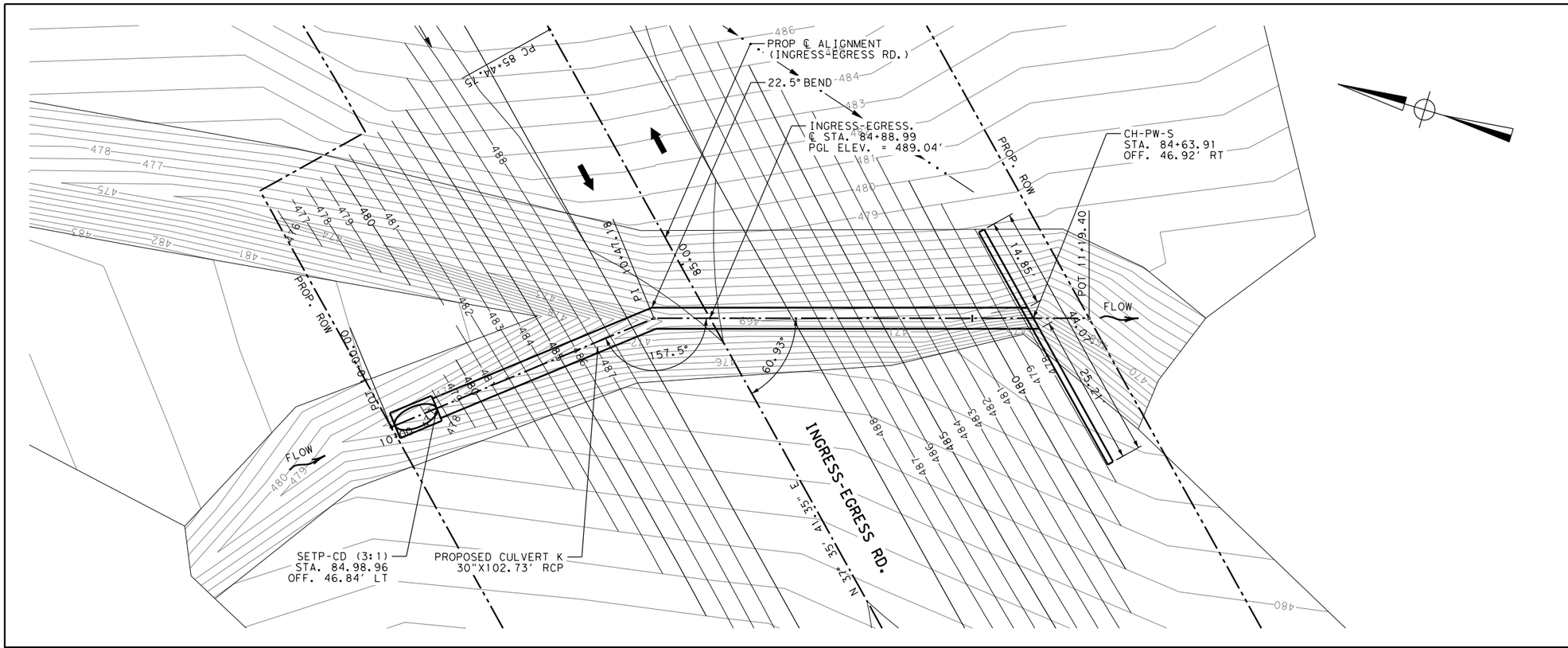

10 YR (DES)	100 YR
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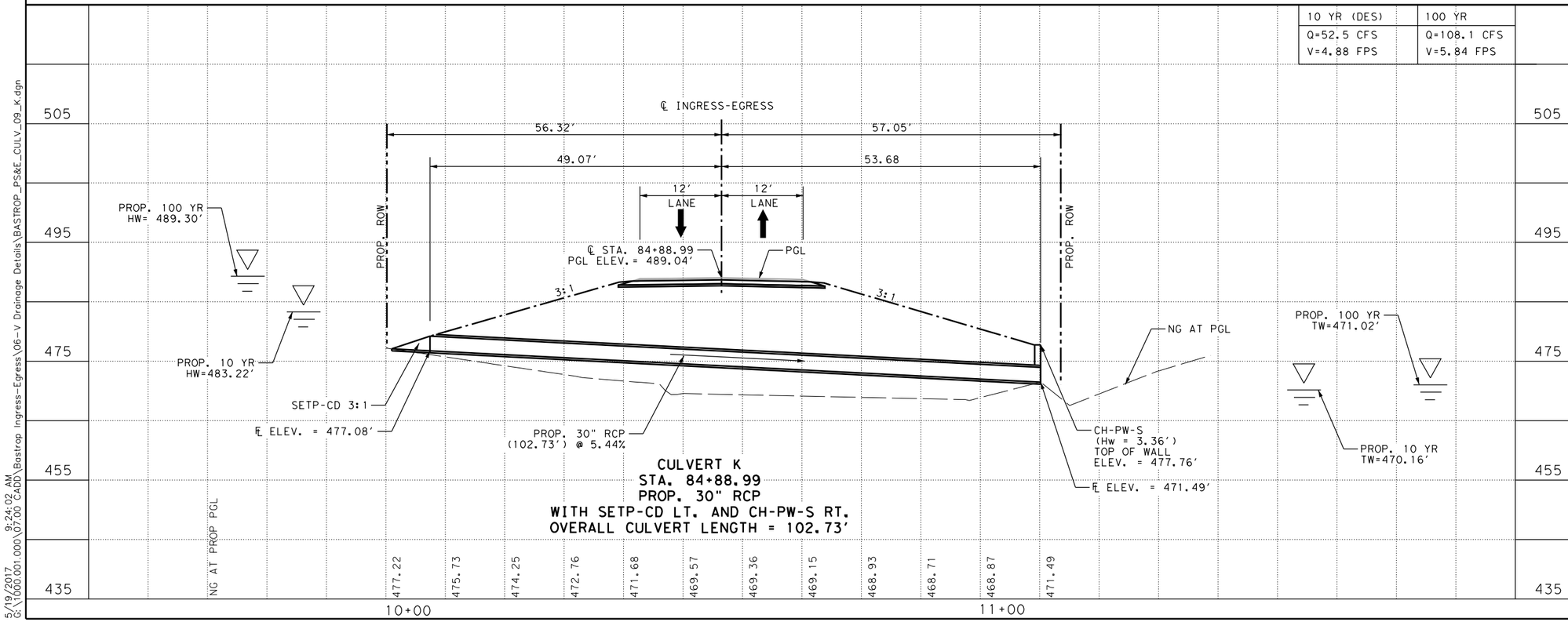
V=4.88 FPS	V=5.84 FPS



RPS klotz associates
4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
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LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

DOCUMENT IS FOR INTERIM REVIEW AND NOT INTENDED FOR CONSTRUCTION BIDDING, OR PERMIT PURPOSES.

KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT K
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 84+88.99

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 127

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

H 0 10 20
V 0 10 20

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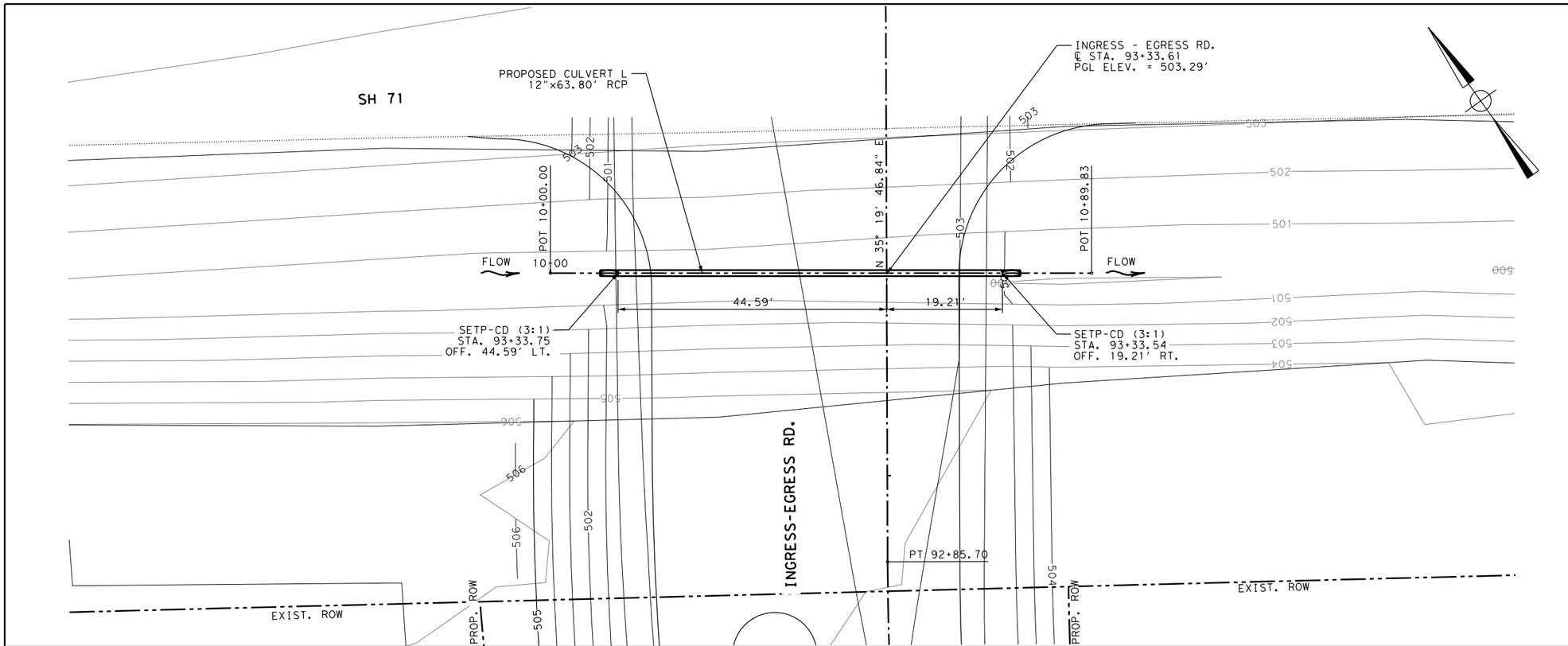

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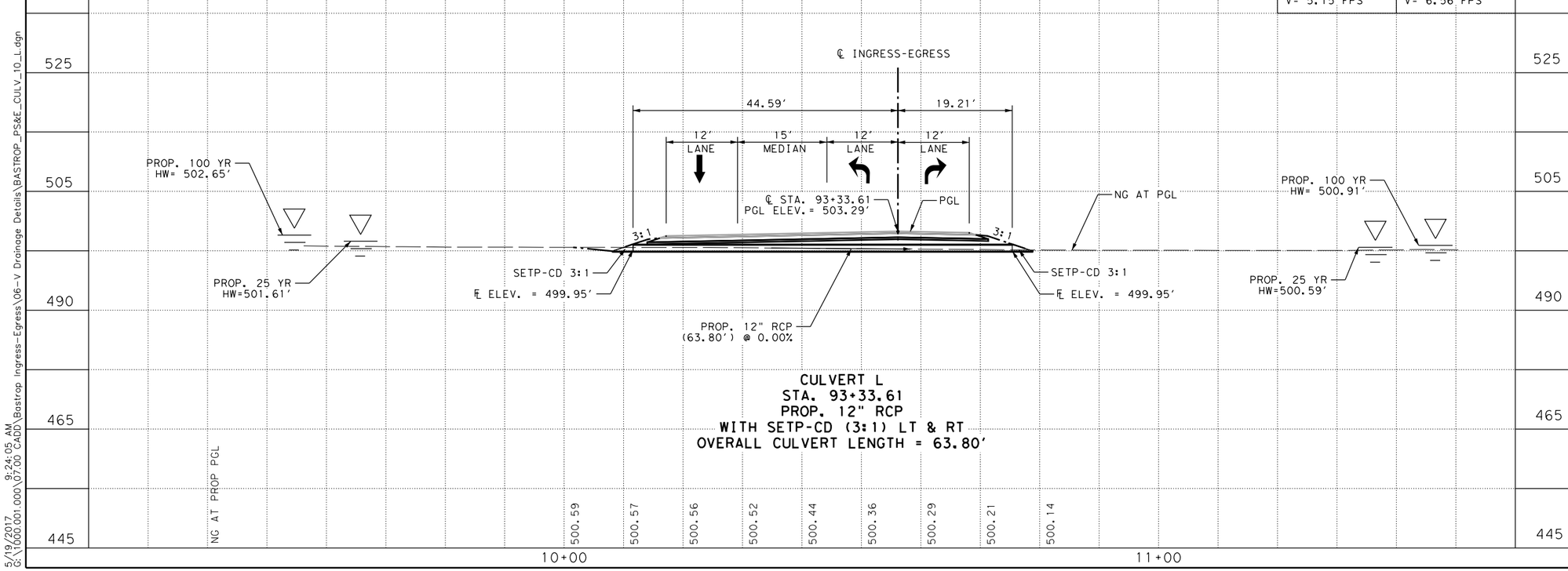
V= 5.15 FPS	V= 6.56 FPS



CULVERT L
STA. 93+33.61
PROP. 12" RCP
WITH SETP-CD (3:1) LT & RT
OVERALL CULVERT LENGTH = 63.80'

RPS klotz associates
4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

LEGEND

- DITCH CENTERLINE
- PROP R.O.W.
- EASEMENT
- 700 PROPOSED CONTOUR
- 700 EXIST. CONTOUR
- FLOW DIRECTION

REV	DESCRIPTION	BY	DATE

90 % SUBMITTAL

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KEVIN J. HOFFMAN, PE
103570
TEXAS SERIAL NO.
5/19/2017
DATE

COUNTY OF BASTROP
Ingress - Egress Rd.
CULVERT L
PLAN AND PROFILE
INGRESS - EGRESS RD.
STA. 93+33.61

SHEET 1 OF 1

RPS Klotz Proj. No: 1000.001.000
PROJECT_#
SHEET NO. 129

COUNTY OF BASTROP

Scale:
Date: 5/19/2017

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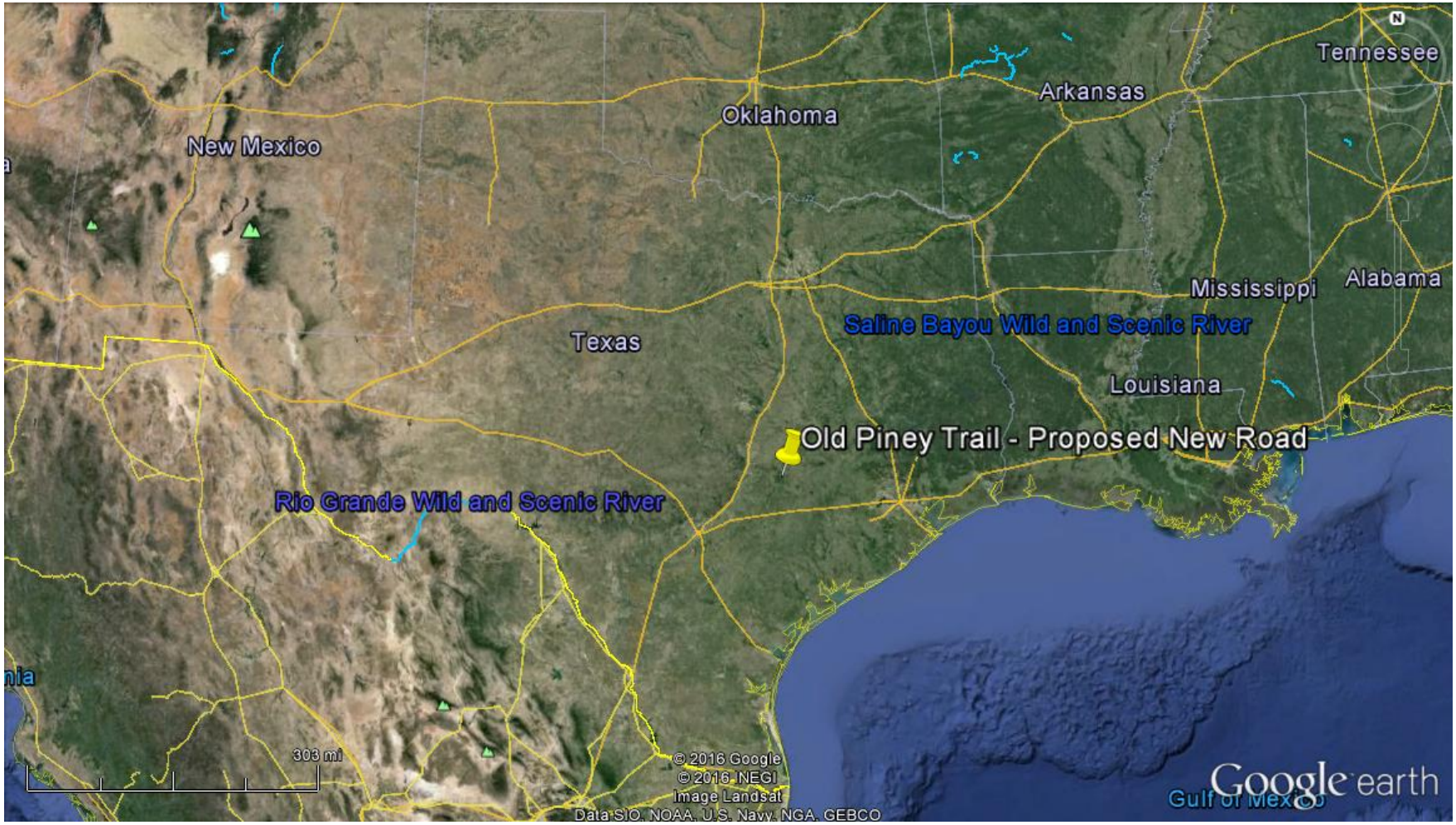
ATTACHMENT 15

WILD AND SCENIC RIVERS

- U.S. National Park Service Information
- NEPAssist or Google Earth Mapping of Wild & Scenic River



Bastrop County Old Piney Trail Project Area in proximity to Wild & Scenic Rivers

Saline Bayou River Wild & Scenic Portion - Approximately 284 Miles from Project Area
Rio Grande River Wild & Scenic Portion - Approximately 275 Miles from Project Area

Client Name	County of Bastrop – Old Piney Trail Street Improvements	**Future Link Technologies**
	Bastrop2016-2	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	USFWS Wild & Scenic Rivers (Rivers.gov)	512-443-4100
Date	April 16	Environmental Service Provider

ATTACHMENT 16

ENVIRONMENTAL JUSTICE

- NEPAssist/EPA Environmental Justice Data

Acquisition Parcel Information – east end

Owner: Lamesa Corporation
Parcel #s: 103417 and 103419

Client Name	Bastrop County	Future Link Technologies
Contract #	Bastrop 2016 – Tahitian Village	PO Box 90696 Austin, TX 78709
Map Information	County Parcel Information – CAPCOG – New ROW	512-443-4100
Date	December 18	Environmental Service Provider

Acquisition Parcel Information – west end

Owner: Colovista Estates
Parcel #: 39020

Owner: Copperas Creek Houston Toad Preserve – Chris Parachini contact
Parcel #: 97691

Client Name	Bastrop County	Future Link Technologies
Contract #	Bastrop 2016 – Tahitian Village	PO Box 90696 Austin, TX 78709
Map Information	County Parcel Information – CAPCOG – New ROW	512-443-4100
Date	December 18	Environmental Service Provider

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): 1-miles radius
Description: Tahitian Village Alignment

Summary of ACS Estimates	2012 - 2016
Population	1,713
Population Density (per sq. mile)	212
Minority Population	245
% Minority	14%
Households	646
Housing Units	703
Housing Units Built Before 1950	14
Per Capita Income	31,095
Land Area (sq. miles) (Source: SF1)	8.09
% Land Area	99%
Water Area (sq. miles) (Source: SF1)	0.07
% Water Area	1%

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	1,713	100%	621
Population Reporting One Race	1,713	100%	1,100
White	1,591	93%	594
Black	79	5%	323
American Indian	15	1%	56
Asian	17	1%	71
Pacific Islander	0	0%	13
Some Other Race	11	1%	43
Population Reporting Two or More Races	0	0%	17
Total Hispanic Population	122	7%	433
Total Non-Hispanic Population	1,592		
White Alone	1,469	86%	561
Black Alone	79	5%	323
American Indian Alone	15	1%	56
Non-Hispanic Asian Alone	17	1%	71
Pacific Islander Alone	0	0%	13
Other Race Alone	11	1%	43
Two or More Races Alone	0	0%	17
Population by Sex			
Male	906	53%	322
Female	807	47%	357
Population by Age			
Age 0-4	52	3%	123
Age 0-17	401	23%	256
Age 18+	1,312	77%	449
Age 65+	355	21%	216

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016 .

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): 1-miles radius
Description: Tahitian Village Alignment

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,252	100%	412
Less than 9th Grade	40	3%	145
9th - 12th Grade, No Diploma	22	2%	84
High School Graduate	299	24%	191
Some College, No Degree	470	38%	314
Associate Degree	103	8%	100
Bachelor's Degree or more	420	34%	185
Population Age 5+ Years by Ability to Speak English			
Total	1,662	100%	597
Speak only English	1,520	91%	516
Non-English at Home[1+2+3+4]	141	9%	242
[1]Speak English "very well"	107	6%	174
[2]Speak English "well"	30	2%	126
[3]Speak English "not well"	4	0%	31
[4]Speak English "not at all"	0	0%	13
[3+4]Speak English "less than well"	4	0%	31
[2+3+4]Speak English "less than very well"	34	2%	126
Linguistically Isolated Households*			
Total	0	0%	116
Speak Spanish	0	0%	115
Speak Other Indo-European Languages	0	0%	13
Speak Asian-Pacific Island Languages	0	0%	13
Speak Other Languages	0	0%	13
Households by Household Income			
Household Income Base	646	100%	231
< $15,000	25	4%	150
$15,000 - $25,000	55	9%	71
$25,000 - $50,000	85	13%	142
$50,000 - $75,000	155	24%	121
$75,000 +	326	51%	204
Occupied Housing Units by Tenure			
Total	646	100%	231
Owner Occupied	616	95%	211
Renter Occupied	30	5%	157
Employed Population Age 16+ Years			
Total	1,376	100%	467
In Labor Force	774	56%	403
Civilian Unemployed in Labor Force	26	2%	83
Not In Labor Force	602	44%	329

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified linear location
Ring (buffer): 1-miles radius
Description: Tahitian Village Alignment

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016.
*Population by Language Spoken at Home is available at the census tract summary level and up.

EJSCREEN Census 2010 Summary Report

Location: User-specified linear location
Ring (buffer): 1-miles radius
Description: Tahitian Village Alignment

Summary	Census 2010
Population	1,891
Population Density (per sq. mile)	234
Minority Population	365
% Minority	19%
Households	749
Housing Units	844
Land Area (sq. miles)	8.09
% Land Area	99%
Water Area (sq. miles)	0.07
% Water Area	1%

Population by Race	Number	Percent
Total	1,891	-------
Population Reporting One Race	1,851	98%
White	1,696	90%
Black	54	3%
American Indian	14	1%
Asian	16	1%
Pacific Islander	2	0%
Some Other Race	69	4%
Population Reporting Two or More Races	40	2%
Total Hispanic Population	263	14%
Total Non-Hispanic Population	1,628	86%
White Alone	1,526	81%
Black Alone	51	3%
American Indian Alone	6	0%
Non-Hispanic Asian Alone	15	1%
Pacific Islander Alone	2	0%
Other Race Alone	1	0%
Two or More Races Alone	27	1%

Population by Sex	Number	Percent
Male	942	50%
Female	949	50%

Population by Age	Number	Percent
Age 0-4	101	5%
Age 0-17	421	22%
Age 18+	1,470	78%
Age 65+	276	15%

Households by Tenure	Number	Percent
Total	749	
Owner Occupied	633	84%
Renter Occupied	116	16%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1.

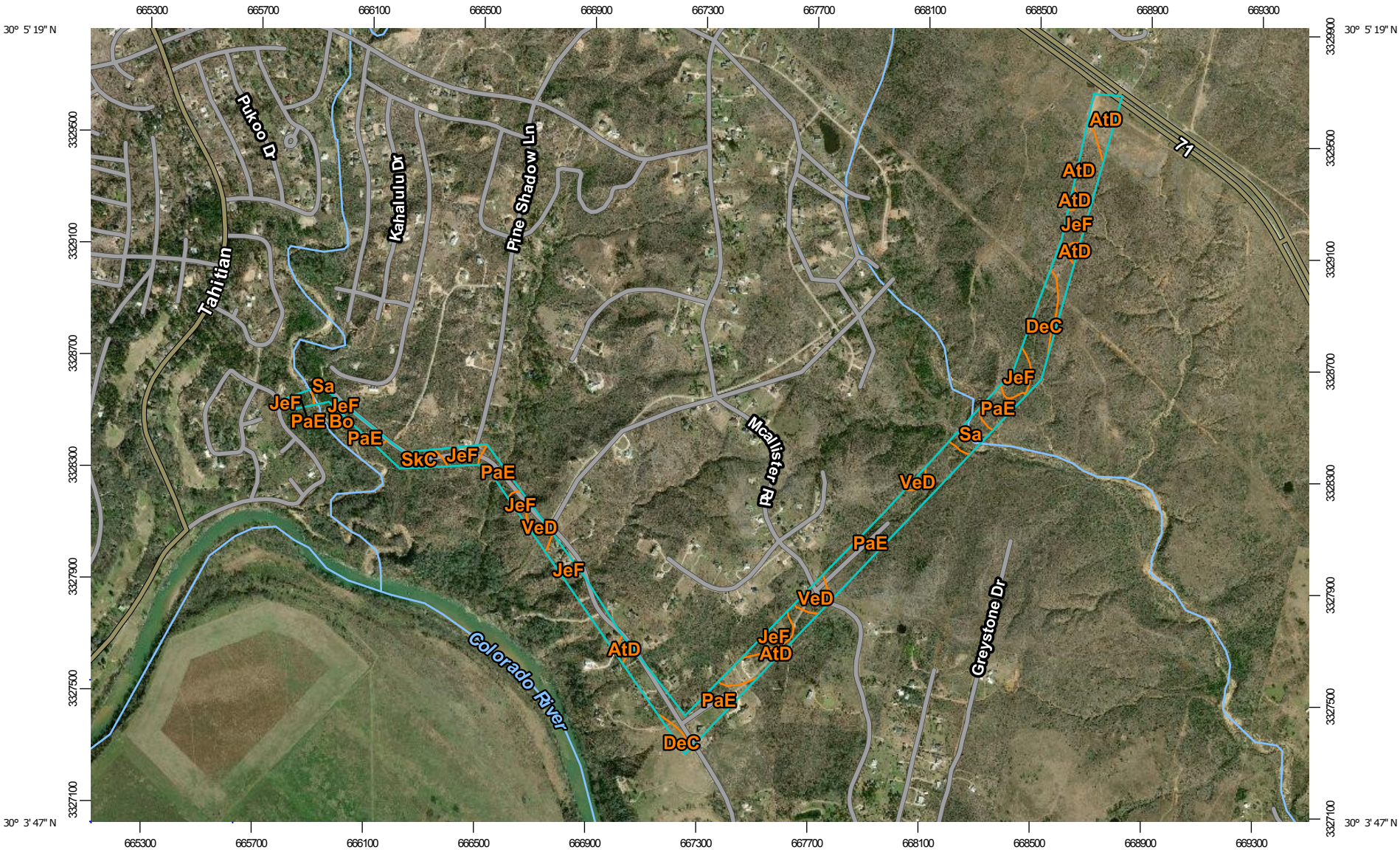
ENVIRONMENTAL ASSESSMENT FACTORS

ATTACHMENT 17

LAND DEVELOPMENT

- USDA Report for Slope and Erosion Information
- USDA Report for Soils/NEPAssist Soils

Soil Map—Bastrop County, Texas
(Bastrop Countty Tahitian Village Road)



Map Scale: 1:20,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

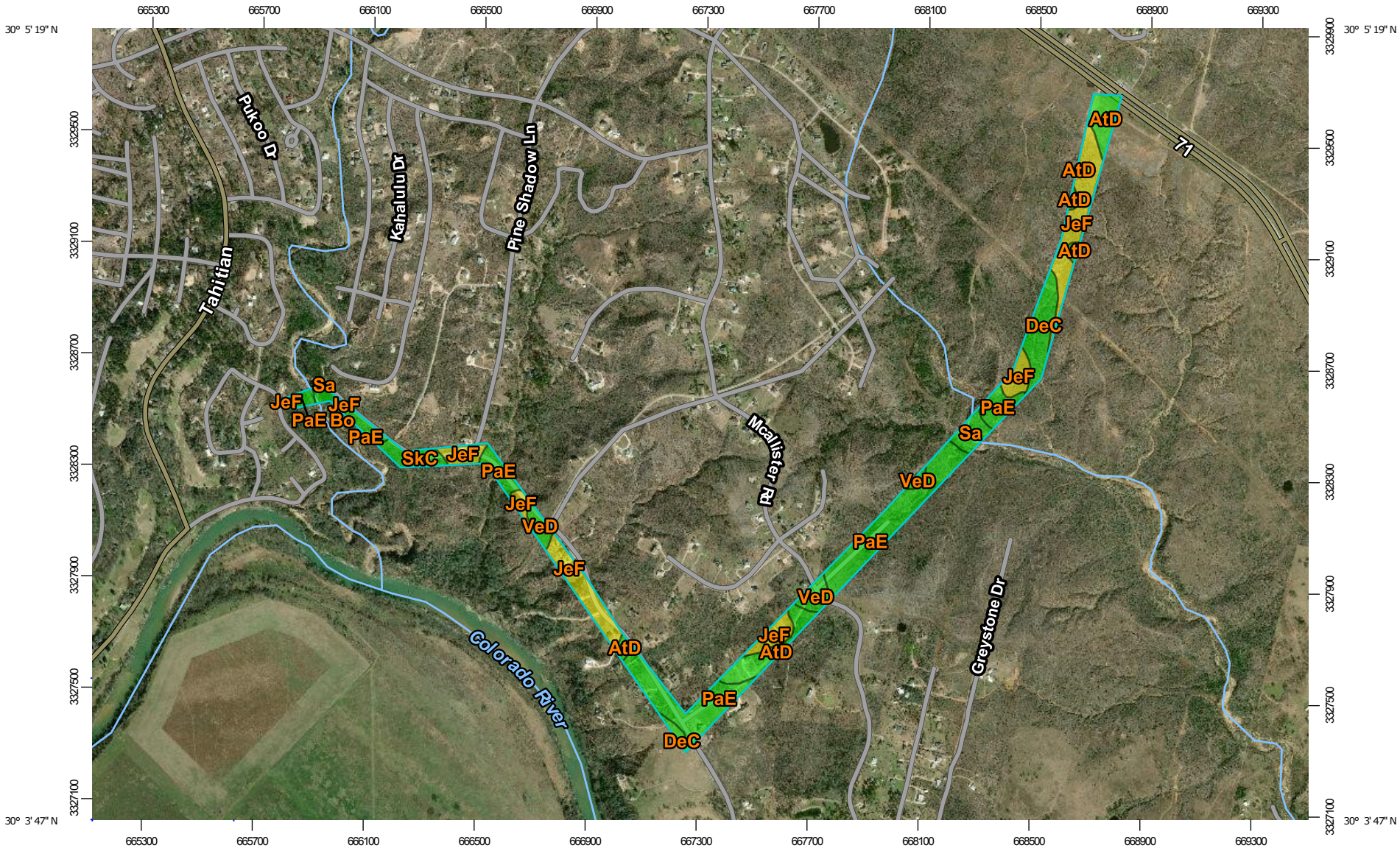
Date(s) aerial images were photographed: Jan 11, 2016—Nov 30, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AtD	Edge gravelly fine sandy loam, 3 to 8 percent slopes	11.2	12.4%
Bo	Bosque loam, 0 to 1 percent slopes, occasionally flooded	0.1	0.1%
DeC	Robco-Tanglewood complex, 1 to 5 percent slopes	7.7	8.5%
JeF	Jedd gravelly fine sandy loam, 5 to 20 percent slopes	26.0	28.8%
PaE	Padina fine sand, 1 to 12 percent slopes	33.0	36.6%
Sa	Sayers fine sandy loam, 0 to 1 percent slopes, occasionally flooded	4.1	4.5%
SkC	Silstid loamy fine sand, 1 to 5 percent slopes	3.3	3.7%
VeD	Vernia very gravelly loamy sand, 1 to 8 percent slopes	4.9	5.5%
Totals for Area of Interest		**90.2**	**100.0%**

T Factor—Bastrop County, Texas
(Bastrop Countty Tahitian Village Road)



Map Scale: 1:20,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

1

2

3

4

5

Not rated or not available

Soil Rating Lines

1

2

3

4

5

Not rated or not available

Soil Rating Points

1

2

3

4

5

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 11, 2016—Nov 30, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

T Factor

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
AtD	Edge gravelly fine sandy loam, 3 to 8 percent slopes	5	11.2	12.4%
Bo	Bosque loam, 0 to 1 percent slopes, occasionally flooded	5	0.1	0.1%
DeC	Robco-Tanglewood complex, 1 to 5 percent slopes	5	7.7	8.5%
JeF	Jedd gravelly fine sandy loam, 5 to 20 percent slopes	3	26.0	28.8%
PaE	Padina fine sand, 1 to 12 percent slopes	5	33.0	36.6%
Sa	Sayers fine sandy loam, 0 to 1 percent slopes, occasionally flooded	5	4.1	4.5%
SkC	Silstid loamy fine sand, 1 to 5 percent slopes	5	3.3	3.7%
VeD	Vernia very gravelly loamy sand, 1 to 8 percent slopes	5	4.9	5.5%
Totals for Area of Interest			**90.2**	**100.0%**

Description

The T factor is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Rating Options

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Bastrop County, Texas

AtD—Edge gravelly fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: f6c9
Elevation: 300 to 500 feet
Mean annual precipitation: 32 to 40 inches
Mean annual air temperature: 64 to 68 degrees F
Frost-free period: 240 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Edge and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edge

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from shale and siltstone in the wilcox formation of eocene age

Typical profile

H1 - 0 to 5 inches: gravelly fine sandy loam
H2 - 5 to 16 inches: sandy clay
H3 - 16 to 32 inches: sandy clay
H4 - 32 to 48 inches: sandy clay loam
H5 - 48 to 75 inches: loam
H6 - 75 to 80 inches: silt loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 15.0
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: Claypan Savannah (R087AY003TX)
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

Bo—Bosque loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: f67c
Elevation: 200 to 1,400 feet
Mean annual precipitation: 28 to 40 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 220 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Bosque and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bosque

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium of holocene age derived from mixed sources

Typical profile

H1 - 0 to 24 inches: loam
H2 - 24 to 58 inches: clay loam
H3 - 58 to 75 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B
Ecological site: Loamy Bottomland (R086AY012TX)
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

DeC—Robco-Tanglewood complex, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2wg9h
Elevation: 220 to 610 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 67 to 69 degrees F
Frost-free period: 252 to 275 days
Farmland classification: Farmland of statewide importance, if drained

Map Unit Composition

Robco and similar soils: 46 percent
Tanglewood and similar soils: 25 percent
Minor components: 29 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Robco

Setting

Landform: Ridges
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

Typical profile

A - 0 to 11 inches: loamy fine sand
E - 11 to 26 inches: loamy fine sand
Btg1 - 26 to 31 inches: sandy clay loam
Btg2 - 31 to 39 inches: sandy clay loam
Bt/C - 39 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: Sandy (R087AY006TX)
Hydric soil rating: No

Description of Tanglewood

Setting

Landform: Ridges
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

Typical profile

A - 0 to 5 inches: loamy fine sand
E - 5 to 23 inches: loamy fine sand
Btg1 - 23 to 33 inches: sandy clay loam
Btg2 - 33 to 68 inches: clay
Btg3 - 68 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 20 to 46 inches
Frequency of flooding: None
Frequency of ponding: None
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: Sandy (R087AY006TX)
Hydric soil rating: No

Minor Components

Rader

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread

Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Sandy Loam (R087AY005TX)
Hydric soil rating: No

Silstid

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Sandy (R087AY006TX)
Hydric soil rating: No

Tabor

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Sandy Loam (R087AY005TX)
Hydric soil rating: No

Edge

Percent of map unit: 5 percent
Landform: Ridges, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Claypan Savannah (R087AY003TX)
Hydric soil rating: No

Straber

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Sandy (R087AY006TX)
Hydric soil rating: No

Gasil

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Sandy Loam (R087AY005TX)
Hydric soil rating: No

Padina

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Deep Sand (R087AY007TX)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

JeF—Jedd gravelly fine sandy loam, 5 to 20 percent slopes

Map Unit Setting

National map unit symbol: f685
Elevation: 300 to 500 feet
Mean annual precipitation: 32 to 40 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 240 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Jedd and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jedd

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from sandstones in the reklaw, queen city, weches, sparta sand, and cook mountain formations of eocene age

Typical profile

H1 - 0 to 12 inches: gravelly fine sandy loam
H2 - 12 to 30 inches: clay
H3 - 30 to 80 inches: bedrock

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C

Ecological site: Sandstone Hill (R087AY002TX)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

JeF—Jedd gravelly fine sandy loam, 5 to 20 percent slopes

Map Unit Setting

National map unit symbol: f685
Elevation: 300 to 500 feet
Mean annual precipitation: 32 to 40 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 240 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Jedd and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jedd

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from sandstones in the reklaw, queen city, weches, sparta sand, and cook mountain formations of eocene age

Typical profile

H1 - 0 to 12 inches: gravelly fine sandy loam
H2 - 12 to 30 inches: clay
H3 - 30 to 80 inches: bedrock

Properties and qualities

Slope: 5 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C

Ecological site: Sandstone Hill (R087AY002TX)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

PaE—Padina fine sand, 1 to 12 percent slopes

Map Unit Setting

National map unit symbol: f6cb
Elevation: 250 to 700 feet
Mean annual precipitation: 35 to 42 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 240 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Padina and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Padina

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from eocene sandstones of the carrizo, queen city, simsboro, and sparta formations

Typical profile

H1 - 0 to 5 inches: fine sand
H2 - 5 to 52 inches: fine sand
H3 - 52 to 70 inches: sandy clay loam

Properties and qualities

Slope: 1 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A

Ecological site: Deep Sand (R087AY007TX)
Hydric soil rating: No

Minor Components

Unnamed
Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

Sa—Sayers fine sandy loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: f68k
Elevation: 250 to 700 feet
Mean annual precipitation: 28 to 37 inches
Mean annual air temperature: 66 to 72 degrees F
Frost-free period: 268 to 282 days
Farmland classification: Not prime farmland

Map Unit Composition

Sayers and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sayers

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy alluvium of holocene age derived from mixed sources

Typical profile

H1 - 0 to 10 inches: fine sandy loam
H2 - 10 to 60 inches: loamy fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Sandy Bottomland (R087AY010TX)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

SkC—Silstid loamy fine sand, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2wssy
Elevation: 180 to 690 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 242 to 276 days
Farmland classification: Not prime farmland

Map Unit Composition

Silstid and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Silstid

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy residuum weathered from sandstone and/or loamy residuum weathered from sandstone

Typical profile

A - 0 to 9 inches: loamy fine sand
E - 9 to 29 inches: loamy fine sand
Bt - 29 to 80 inches: sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Ecological site: Sandy (R087AY006TX)
Hydric soil rating: No

Minor Components

Padina

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Deep Sand (R087AY007TX)
Hydric soil rating: No

Robco

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Sandy (R087AY006TX)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

Bastrop County, Texas

VeD—Vernia very gravelly loamy sand, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: f68x
Elevation: 400 to 700 feet
Mean annual precipitation: 28 to 40 inches
Mean annual air temperature: 66 to 70 degrees F
Frost-free period: 260 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Vernia and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vernia

Setting

Landform: Stream terraces
Landform position (three-dimensional): Riser, tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy and gravelly alluvium of pleistocene age derived from mixed sources

Typical profile

H1 - 0 to 48 inches: very gravelly loamy sand
H2 - 48 to 62 inches: very gravelly sandy clay loam
H3 - 62 to 80 inches: very gravelly sandy clay loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: Gravelly (R087AY001TX)

Hydric soil rating: No

Data Source Information

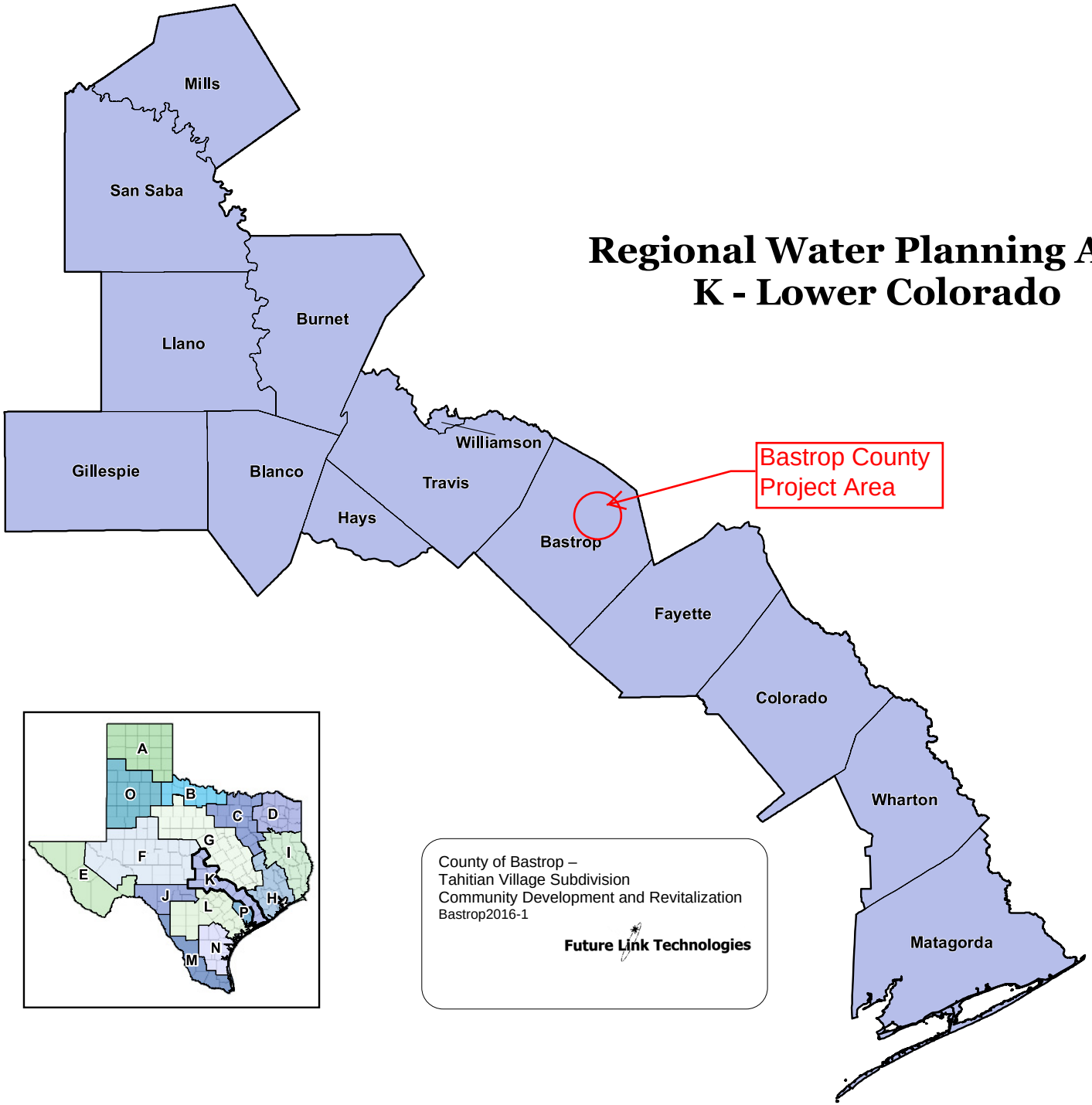
Soil Survey Area: Bastrop County, Texas
Survey Area Data: Version 16, Sep 14, 2018

ATTACHMENT 18

SOCIOECONOMIC INFORMATION

- Regional Water Planning Area Map

Regional Water Planning Area
K - Lower Colorado



County of Bastrop –
Tahitian Village Subdivision
Community Development and Revitalization
Bastrop2016-1

Future Link Technologies

DISCLAIMER: This map was generated by the Texas Water Development Board using GIS (Geographical Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Map date: JAN-2014

TEXAS WATER DEVELOPMENT BOARD
1700 North Congress Avenue | P.O. Box 13231
Austin, Texas 78711-3231
www.twdb.texas.gov

0 5 10 20
Miles

MISSION: The Texas Water Development Board's (TWDB) mission is to provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas.

Texas Water Development Board

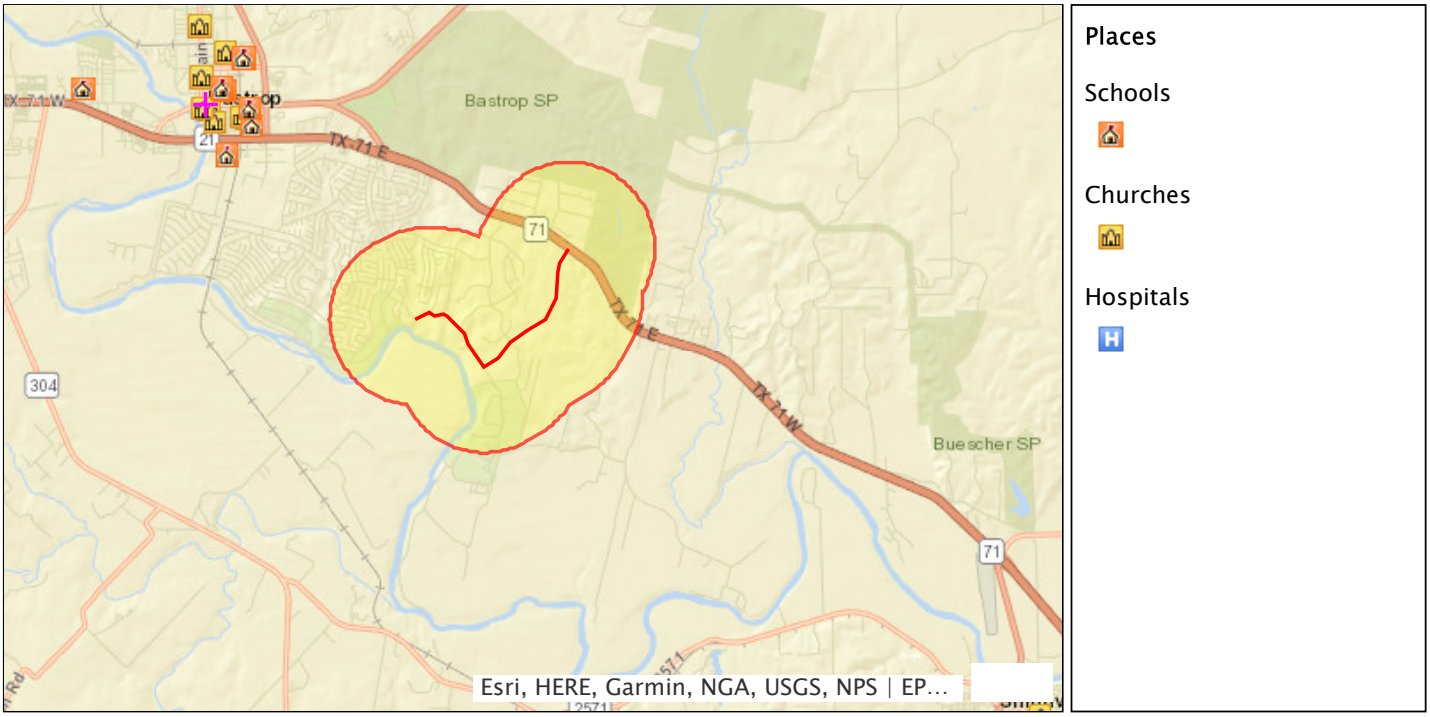
ATTACHMENT 19

COMMUNITY FACILITIES AND SERVICES

- NEPAssist or Google Earth Map of Social Places in Area
  - Hospitals
  - Schools
  - Churches
- Assisted Living Federation of America (ALFA) Map of Assisted Living Facilities in Proximity of Project
- Council of Government Correspondence

Tahitian Village Alignment

Map



Geographic coordinates:

LINE
(30.074319,-97.278374,30.075321,-97.275628,30.074727,-97.274469,30.074987,-97.272881,30.074839,-97.272280,30.071830,-97.268761,30.070085,-97.268161,30.066296,-97.264985,30.067671,-97.262410,30.070530,-97.259792,30.072387,-97.256
with buffer 1 mile

Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

National Report

Length of digitized line	2.94 mi
Within 1 mile of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Federal Land?	no
Within 1 mile of an impaired stream?	no
Within 1 mile of an impaired waterbody?	no
Within 1 mile of a waterbody?	yes

Within 1 mile of a stream?	yes
Within 1 mile of an NWI wetland?	click here ***May take several minutes***
Within 1 mile of a Brownfields site?	no
Within 1 mile of a Superfund site?	no
Within 1 mile of a Toxic Release Inventory (TRI) site?	no
Within 1 mile of a water discharger (NPDES)?	no
Within 1 mile of a hazardous waste (RCRA) facility?	yes
Within 1 mile of an air emission facility?	no
Within 1 mile of a school?	no
Within 1 mile of an airport?	no
Within 1 mile of a hospital?	no
Within 1 mile of a designated sole source aquifer?	no
Within 1 mile of a historic property on the National Register of Historic Places?	no
Within 1 mile of a Toxic Substances Control Act (TSCA) site?	no
Within 1 mile of a RADInfo site?	no

Save to Excel Save as PDF

Texas Report
Demographic Reports
USFWS IPaC Report

19.1 Solid waste Disposal/Recycling

- Map of Solid Waste Disposal Sites and Recycling Centers within .5 miles

STATE OF TEXAS WELL REPORT for Tracking #269788

Owner:	**Bastrop County Debris Management**	Owner Well #:	**No Data**
Address:	**104 Loop 150 W. Bastrop, TX 78602**	Grid #:	**58-63-1**
Well Location:	**1009 E. Hwy 71 Bastrop, TX 78602**	Latitude:	**30° 05' 08" N**
		Longitude:	**097° 14' 59" W**
Well County:	**Bastrop**	Elevation:	**538 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Industrial**

Drilling Start Date: **10/11/2011** Drilling End Date: **10/13/2011**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
9.875	**0**	**324**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
205	**324**	**Gravel**	**Gem Sand**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**4-Cement**
2	**10**	**10-Baroid H.P.**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **60**

Distance to Septic Field or other concentrated contamination (ft.): **n/a**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Tape Measure**

Surface Completion: **Surface Sleeve Installed**

Water Level: **150 ft.** below land surface on **2011-10-13** Measurement Method: **Unknown**

Packers: **Baroid Hole Plug w/Shale Cuttings @ 205'**

Type of Pump: **Submersible** Pump Depth (ft.): **220**

Well Tests: **Jetted** **Yield: 100+ GPM with 24 ft. drawdown after unspecified hours**

Water Quality:

Strata Depth (ft.)	Water Type
100	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Richter Well Drilling, Inc.**

P.O. Box 188
Flatonia, TX 78941

Driller Name: **Bryan K. Richter** License Number: **54606**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	**10**	**Gravel**
10	**12**	**Sand Rock**
12	**27**	**River Sand**
27	**36**	**White Clay w/Red Sand Rock**
36	**110**	**River Sand / White Clay & Rock**
110	**130**	**Lite Gray Clay w/Sand & Rock Streaks**
130	**170**	**Carrizo**
170	**200**	**Blue Gray Shale**
200	**227**	**Fine-Medium Gray Sand**
227	**285**	**Coarse Carrizo**
285	**310**	**Coarse Carrizo w/Lignite**
310	**324**	**Sandy Shale**

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.)
5" N SDR17 Blank +2 - 220
5" N SDR17 Slotted 220 - 320 .020
5" N SDR17 Point 320 - 324

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

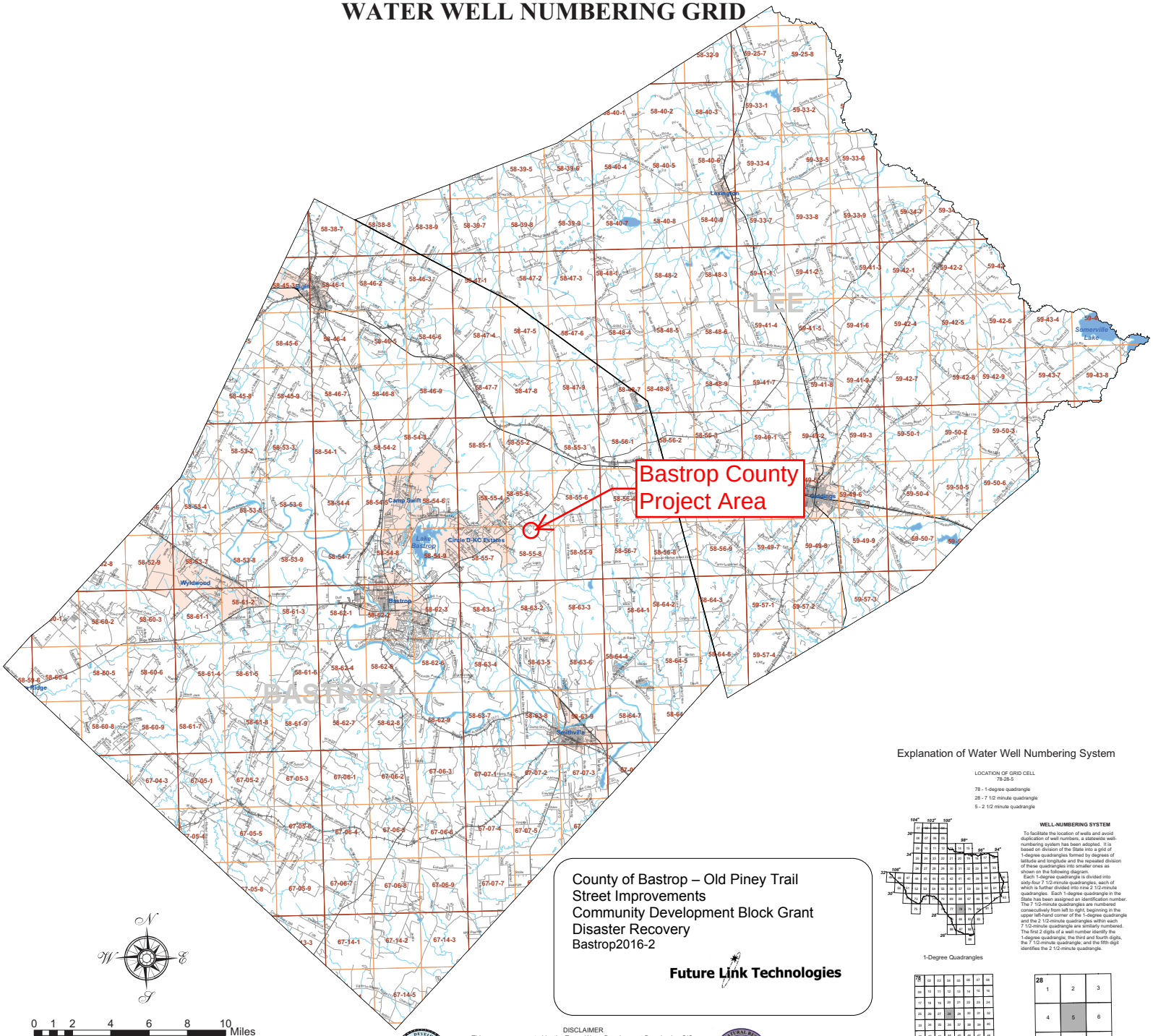
Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

19.3 Water Supply

- TWDB Well Numbering Grid
- TWDB WIID Map of Water Well Locations
- LCRA Watershed Map

BASTROP & LEE COUNTIES
WITH
WATER WELL NUMBERING GRID



County of Bastrop – Old Piney Trail
Street Improvements
Community Development Block Grant
Disaster Recovery
Bastrop2016-2

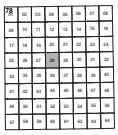
Future Link Technologies

Explanation of Water Well Numbering System

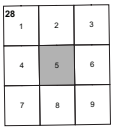
LOCATION OF GRID CELL
78-28-5

78 - 1-degree quadrangle
28 - 7 1/2 minute quadrangle
5 - 2 1/2 minute quadrangle

1-Degree Quadrangles



7 1/2 Minute Quadrangles



2 1/2 Minute Quadrangles

WELL-NUMBERING SYSTEM

To facilitate the location of wells and avoid duplication of well numbers, a statewide well-numbering system has been adopted. It is based on division of the State into a grid of 1-degree quadrangles formed by degrees of latitude and longitude and the repeated division of these quadrangles into smaller ones as shown on the following diagram.

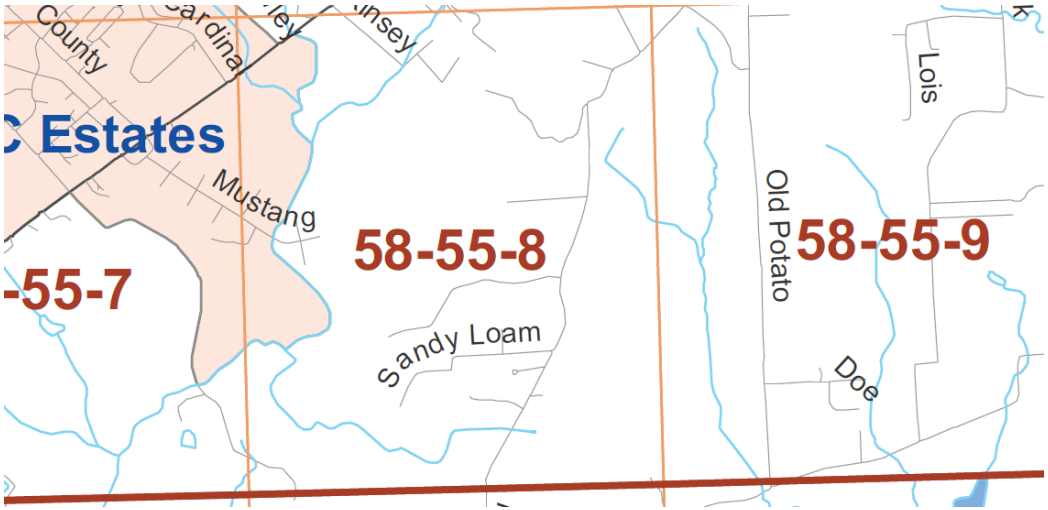
Each 1-degree quadrangle is divided into sixty-four 7 1/2-minute quadrangles, each of which is further divided into nine 2 1/2-minute quadrangles. Each 1-degree quadrangle in the State has been assigned an identification number. The 7 1/2-minute quadrangles are numbered consecutively from left to right, beginning in the upper left-hand corner of the 1-degree quadrangle and the 2 1/2-minute quadrangles within each 7 1/2-minute quadrangle are similarly numbered. The first 2 digits of a well number identify the 1-degree quadrangle; the third and fourth digits, the 7 1/2-minute quadrangle; and the fifth digit identifies the 2 1/2-minute quadrangle.

0 1 2 4 6 8 10 Miles

*All mapped data (except grid) is from TIGER 2000 Census data.
Map created by Mark Hayes, May 11, 2004
TWDB - GIS section

DISCLAIMER
This map was generated by the Texas Water Development Board using GIS (Geographical Information Systems) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Reproduction is not permitted without prior written permission from the Texas Natural Resorces Information Systems. To order more copies of this map, contact: TNRIS, 1700 N. Congress Av., Austin, TX 78711-3231. Phone: (512)-461-8337.

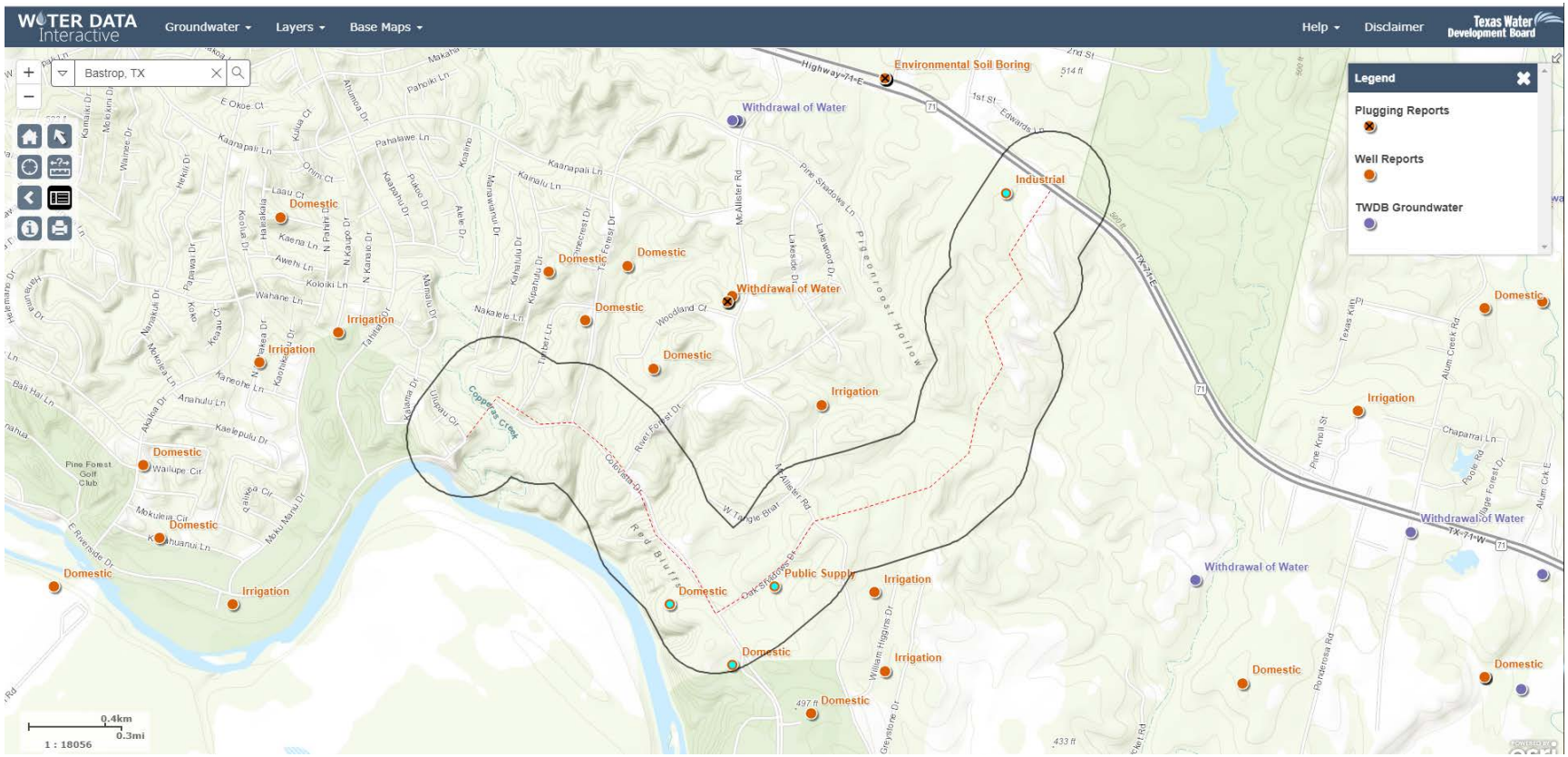
TWDB Water Well Numbering Grid Map Bastrop-Lee Enlarged View



Grid # 58-55-8

Old Piney Trail

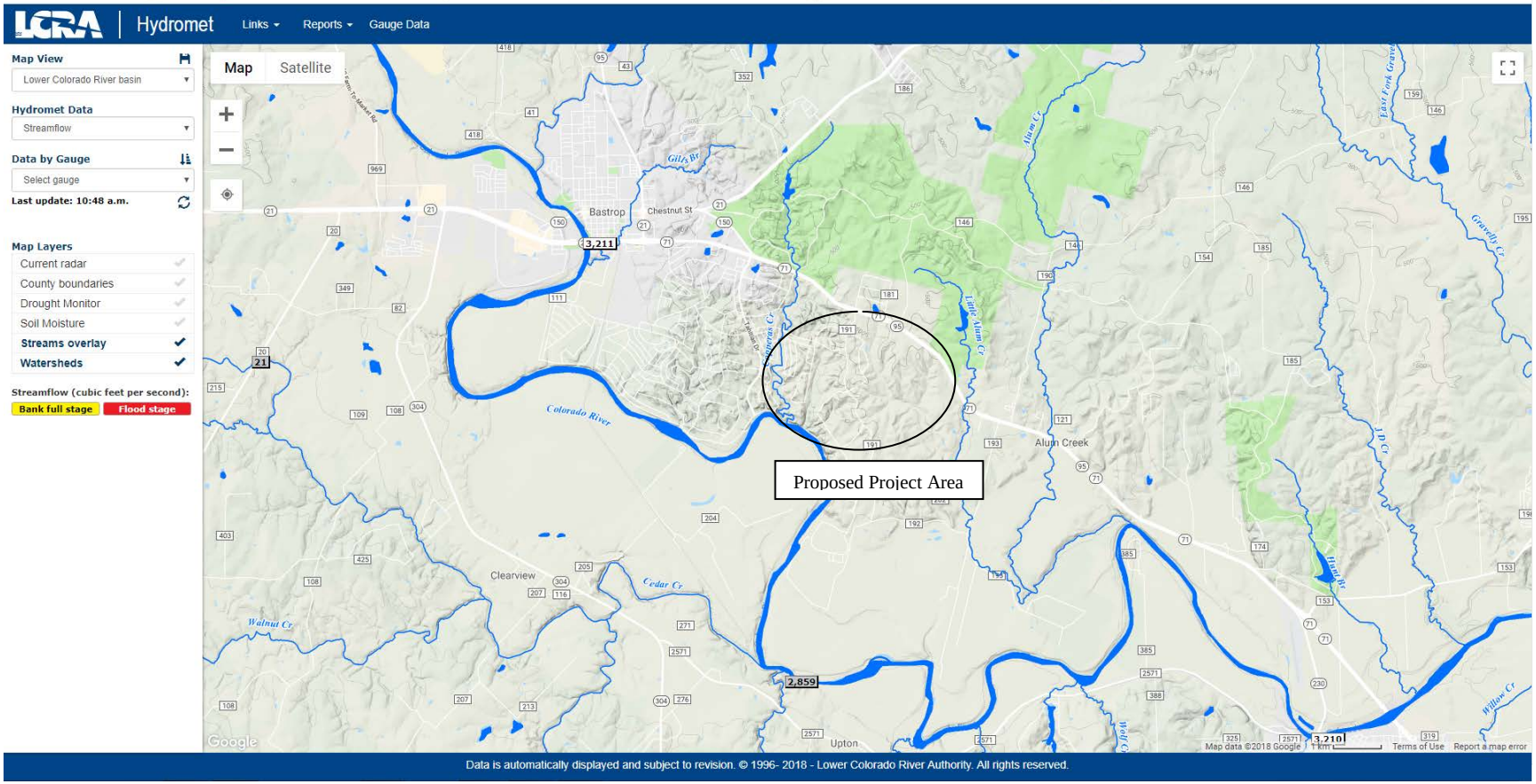
Client Name	County of Bastrop – Old Piney Trail Street Improvements	**Future Link Technologies**
	Bastrop2016-2	225 Commons Ford Rd, Suite 123 Austin, TX 78733
Map Information	TWDB Water Well Numbering Grid - Enlarged View	512-443-4100
Date	May 16	Environmental Service Provider



1000 ft Buffer – 4 wells within 1000 lf.

Well Report Tracking Number:	269788	35321	352081	302039
Well Type:	New Well	New Well	New Well	New well
Proposed Use:	Industrial	Public Supply	Domestic	Domestic
County:	Bastrop	Bastrop	Bastrop	Bastrop
Well Owner:	Bastrop County Debris Management	Bastrop Co MUC #1 Oak	PGI	Jim Haley
Well Street:	1009 E. Hwy 71	Shadows/Colovista Dr.		120 Colovista
Well City:	Bastrop	Bastrop	Bastrop	Bastrop
Well Zip Code:	78602			78602
Latitude (DD):	30.085556	30.0675	30.063889	30.06667
Longitude (DD):	-97.249722	-97.261945	-97.264167	-97.2675
Date of Well Completion:	Oct 13, 2011	October 29, 2003	December 4, 2014	Aug. 25, 2012
Borehole Depth (ft):	324	185	341	320
Injurious Water Quality:	no	no	no	no

Client Name	Bastrop County	Future Link Technologies
Contract #	Bastrop 2016-1	PO Box 90696, Austin, TX 78709
Map Information	TWDB Water Well Data	512-443-4100
Date	December 18	Environmental Service Provider



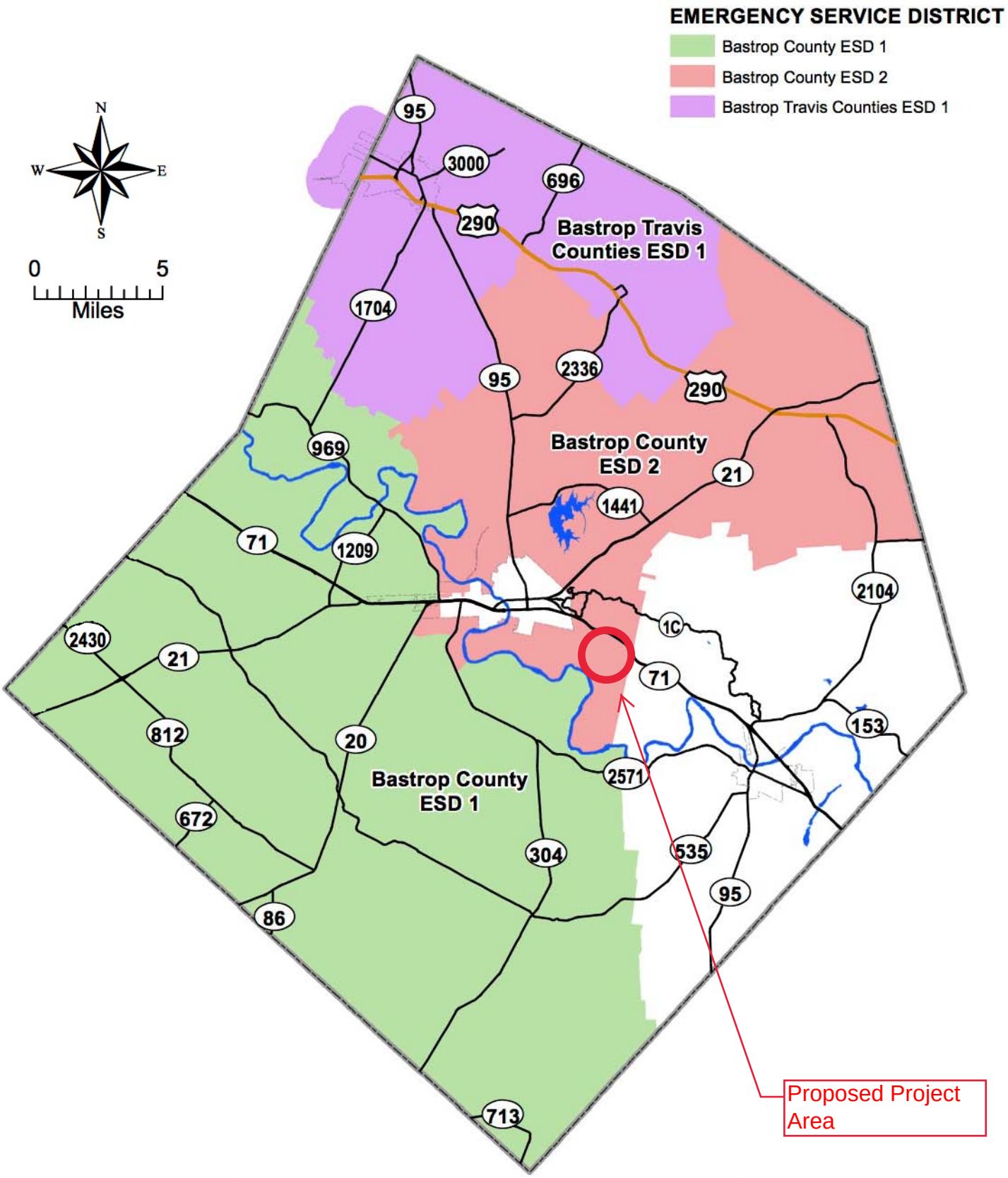
Colorado River – Project is located within the Colorado River Basin - Lower Basin

Client Name	Bastrop County	Future Link Technologies
Contract #	Street Improvements WO No. Bastrop 2016-1	PO Box 90696, Austin, TX 78709
Map Information	LCRA Hydromet	512-443-4100
Date	December 18	Environmental Service Provider

19.4 Public Safety

- Google Earth Map of Area – Area Public Safety Locations

EMERGENCY SERVICE DISTRICTS



BASTROP COUNTY TEXAS

Map Produced: 12/31/2014

Legend

County Line
City Limit
US Highway
State Highway
Colorado River
Lakes

Bastrop County provides this map "as is" and assumes no liability for its completeness or accuracy. Information shown on this map is derived from public records that are constantly undergoing change. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

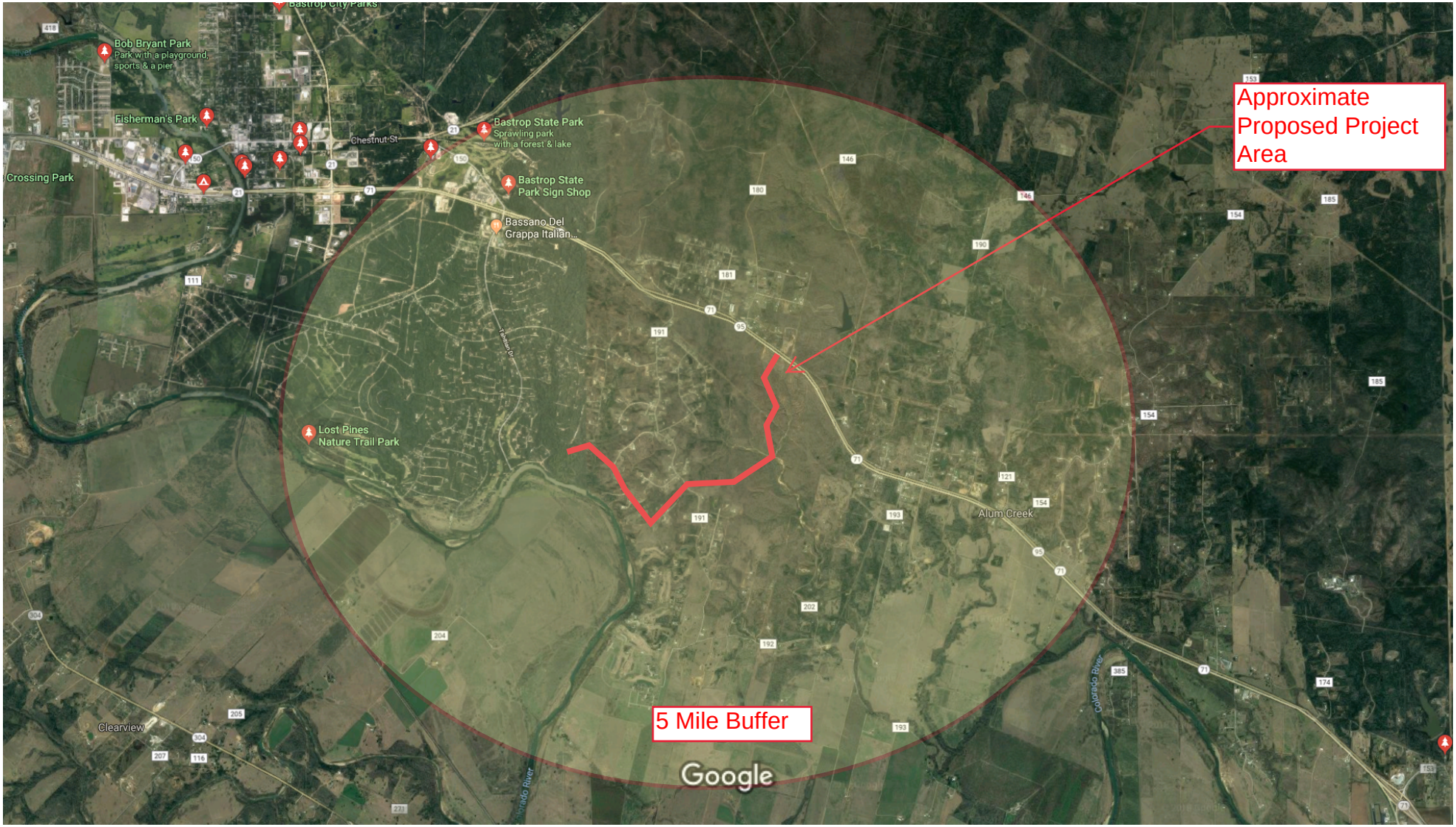
19.5 Recreational Open Spaces

- Parks in the Surrounding County

Google Maps

bastrop county parks,

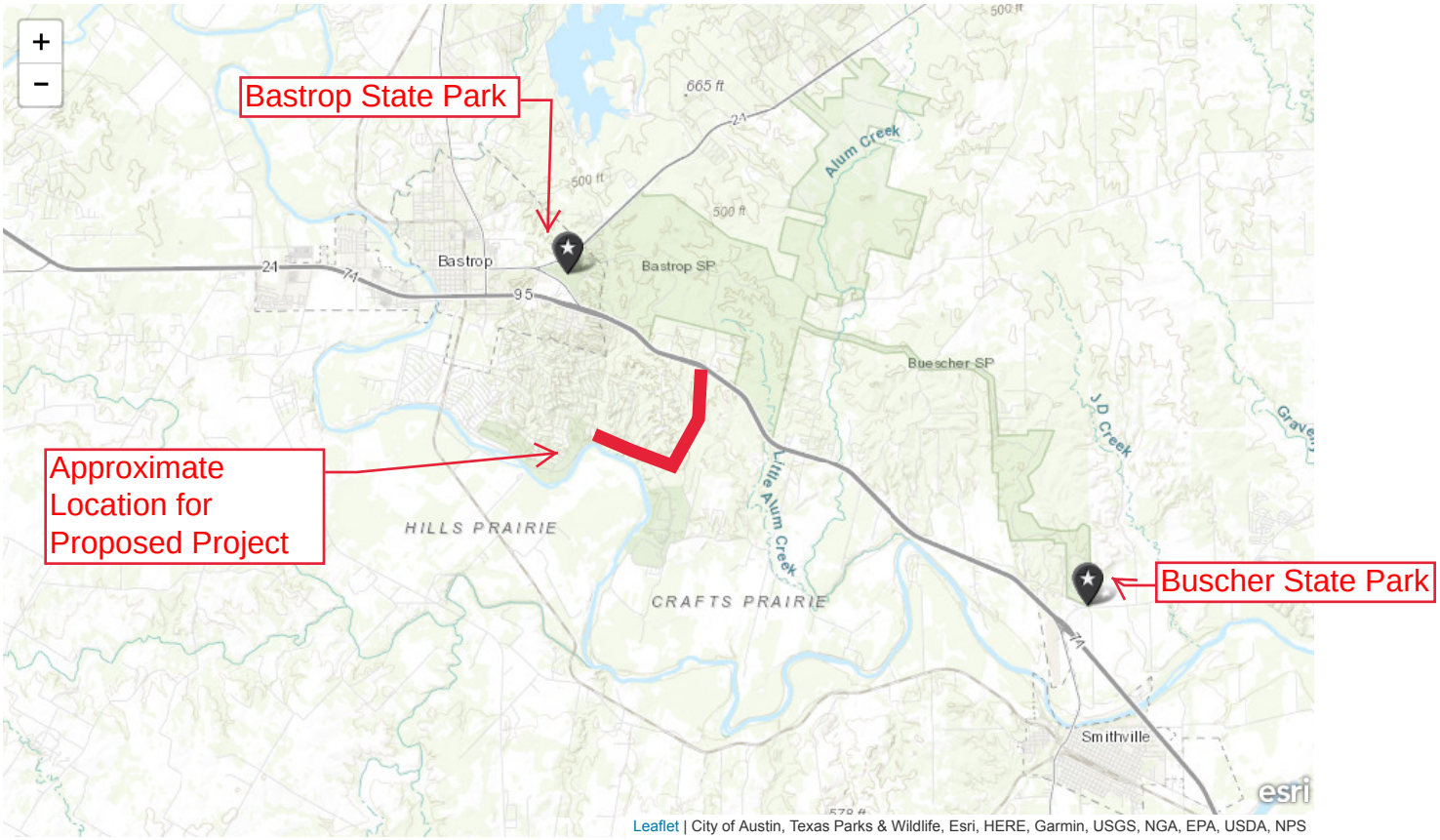
Parks within 5 miles of Project Area at Tahitian Village



Imagery ©2018 Google, Map data ©2018 Google 2000 ft

All Parks

View: All Parks | Abilene [https://tpwd.texas.gov/state-parks/nearby/abilene] | Austin [https://tpwd.texas.gov/state-parks/nearby/austin] | Dallas / Fort Worth [https://tpwd.texas.gov/state-parks/nearby/dfw] | El Paso [https://tpwd.texas.gov/state-parks/nearby/elpaso] | Houston [https://tpwd.texas.gov/state-parks/nearby/houston] | Lubbock [https://tpwd.texas.gov/state-parks/nearby/lubbock] | San Angelo [https://tpwd.texas.gov/state-parks/nearby/sanangelo] | San Antonio [https://tpwd.texas.gov/state-parks/nearby/sanantonio]



Abilene State Park [https://tpwd.texas.gov/state-parks/abilene]	(325) 572-3204	Tuscola	32.240731	-99.879069
Atlanta State Park [https://tpwd.texas.gov/state-parks/atlanta]	(903) 796-6476	Atlanta	33.231561	-94.267788
Balmorhea State Park [https://tpwd.texas.gov/state-parks/balmorhea]	(432) 375-2370	Toyahvale	30.944829	-103.785147
Barton Warnock Visitor Center [https://tpwd.texas.gov/state-parks/barton-warnock]	(432) 424-3327	Terlingua	29.269859	-103.755349
Bastrop State Park [https://tpwd.texas.gov/state-parks/bastrop]	(512) 321-2101	Bastrop	30.11412	-97.25987
Battleship Texas State Historic Site [https://tpwd.texas.gov/state-parks/battleship-texas]	(281) 479-2431	LaPorte	29.755968	-95.08974
Bentsen-Rio Grande Valley State Park [https://tpwd.texas.gov/state-parks/bentsen-rio-grande-valley]	(956) 584-9156	Mission	26.186987	-98.381888
Big Bend Ranch State Park [https://tpwd.texas.gov/state-parks/big-bend-ranch]	(432) 358-4444	Presidio	29.418054	-103.989751
Big Spring State Park [https://tpwd.texas.gov/state-parks/big-spring]	(432) 263-4931	Big Spring	32.229574	-101.48968
Blanco State Park [https://tpwd.texas.gov/state-parks/blanco]	(830) 833-4333	Blanco	30.096782	-98.43459
Bonham State Park [https://tpwd.texas.gov/state-parks/bonham]	(903) 583-5022	Bonham	33.544812	-96.145404
Brazos Bend State Park [https://tpwd.texas.gov/state-parks/brazos-bend]	(979) 553-5102	Needville	29.380798	-95.594658

Buescher State Park [https://tpwd.texas.gov/state-parks/buescher]	(512) 237-2241	Smithville	30.090088	-97.188874
Caddo Lake State Park [https://tpwd.texas.gov/state-parks/caddo-lake]	(903) 679-3351	Karnack	32.691647	-94.17923
Caprock Canyons State Park [https://tpwd.texas.gov/state-parks/caprock-canyons]	(806) 455-1492	Quitaque	34.439742	-101.051622
Caprock Canyons Trailway [https://tpwd.texas.gov/state-parks/caprock-canyons]	(806) 455-1492	Quitaque	34.43238	-100.875097
Cedar Hill State Park [https://tpwd.texas.gov/state-parks/cedar-hill]	(972) 291-3900	Cedar Hill	32.607341	-96.996281
Choke Canyon State Park - Calliham Unit [https://tpwd.texas.gov/state-parks/choke-canyon]	(361) 786-3868	Calliham	28.473589	-98.34845
Choke Canyon State Park - South Shore Unit [https://tpwd.texas.gov/state-parks/choke-canyon]	(361) 786-3868	Calliham	28.467641	-98.250059
Cleburne State Park [https://tpwd.texas.gov/state-parks/cleburne]	(817) 645-4215	Cleburne	32.266556	-97.55685
Colorado Bend State Park [https://tpwd.texas.gov/state-parks/colorado-bend]	(325) 628-3240	Bend	31.049131	-98.483592
Cooper Lake State Park - Doctors Creek Unit [https://tpwd.texas.gov/state-parks/cooper-lake]	(903) 395-3100	Cooper	33.345489	-95.668599
Cooper Lake State Park - South Sulphur Unit [https://tpwd.texas.gov/state-parks/cooper-lake]	(903) 945-5256	Sulphur Springs	33.28966	-95.652852
Copper Breaks State Park [https://tpwd.texas.gov/state-parks/copper-breaks]	(940) 839-4331	Quanah	34.107097	-99.748691
Daingerfield State Park [https://tpwd.texas.gov/state-parks/daingerfield]	(903) 645-2921	Daingerfield	33.010936	-94.693999
Davis Mountains State Park [https://tpwd.texas.gov/state-parks/davis-mountains]	(432) 426-3337	Fort Davis	30.599926	-103.925934
Devil's Sinkhole State Natural Area [https://tpwd.texas.gov/state-parks/devils-sinkhole]	(830) 683-2287	Rocksprings	30.037411	-100.113774
Devils River State Natural Area [https://tpwd.texas.gov/state-parks/devils-river]	(830) 395-2133	Del Rio	29.929326	-100.942938
Dinosaur Valley State Park [https://tpwd.texas.gov/state-parks/dinosaur-valley]	(254) 897-4588	Glen Rose	32.251511	-97.81219
Eisenhower State Park [https://tpwd.texas.gov/state-parks/eisenhower]	(903) 465-1956	Denison	33.814601	-96.60951
Enchanted Rock State Natural Area [https://tpwd.texas.gov/state-parks/enchanted-rock]	(830) 685-3636	Fredericksburg	30.505381	-98.819844
Estero Llano Grande State Park [https://tpwd.texas.gov/state-parks/estero-llano-grande]	(956) 565-3919	Weslaco	26.126411	-97.956518
Fairfield Lake State Park [https://tpwd.texas.gov/state-parks/fairfield-lake]	(903) 389-4514	Fairfield	31.761169	-96.070204
Falcon State Park [https://tpwd.texas.gov/state-parks/falcon]	(956) 848-5327	Falcon Heights	26.579705	-99.142373
Fanthorp Inn State Historic Site [https://tpwd.texas.gov/state-parks/fanthorp-inn]	(936) 873-2633	Anderson	30.483045	-95.983961
Fort Boggy State Park [https://tpwd.texas.gov/state-parks/fort-boggy]	(903) 344-1116	Centerville	31.189837	-95.98588
Fort Leaton State Historic Site [https://tpwd.texas.gov/state-parks/fort-leaton]	(432) 229-3613	Presidio	29.542525	-104.326809
Fort Parker State Park [https://tpwd.texas.gov/state-parks/fort-parker]	(254) 562-5751	Mexia	31.569973	-96.543936
Fort Richardson State Park & Historic Site / Lost Creek Reservoir State Trailway [https://tpwd.texas.gov/state-parks/fort-richardson]	(940) 567-3506	Jacksboro	33.20615	-98.156969
Franklin Mountains State Park [https://tpwd.texas.gov/state-parks/franklin-mountains]	(915) 566-6441	El Paso	31.905102	-106.498015
Galveston Island State Park [https://tpwd.texas.gov/state-parks/galveston-island]	(409) 737-1222	Galveston	29.190784	-94.95953
Garner State Park [https://tpwd.texas.gov/state-parks/garner]	(830) 232-6132	Concan	29.590745	-99.739754
Goliad State Park & Historic Site [https://tpwd.texas.gov/state-parks/goliad]	(361) 645-3405	Goliad	28.656494	-97.385362
Goose Island State Park [https://tpwd.texas.gov/state-parks/goose-island]	(361) 729-2858	Rockport	28.128064	-96.98838
Government Canyon State Natural Area [https://tpwd.texas.gov/state-parks/government-canyon]	(210) 688-9055	San Antonio	29.571323	-98.753246
Guadalupe River State Park [https://tpwd.texas.gov/state-parks/guadalupe-river]	(830) 438-2656	Spring Branch	29.876074	-98.504058
Hill Country State Natural Area [https://tpwd.texas.gov/state-parks/hill-country]	(830) 796-4413	Bandera	29.631061	-99.191801
Honey Creek State Natural Area [https://tpwd.texas.gov/state-parks/honey-creek]	(830) 438-2656	Spring Branch	29.855487	-98.49422

BOOK TEE TIMES SEND A GIFT

Contact Us/Find Us

Pine Forest Golf Club

635 East Riverside Drive
Bastrop, TX 78602
(512) 321-1181

General Manager & Head Pro:
Henry Miller
Email Address: sfcskateboards@yahoo.com

Owner:
David Buttross
Email Address: David@Buttross.com
Phone Number: (512) 970-8932
www.buttross.com

BOOK NOW

WARNING: If you are using a GPS device, please check to ensure that it turns you from Hwy 71 onto Tahitian Drive. If not, it is wrong!

From Austin/Bergstom Int. Airport

- Take Hwy 71 east for 24 miles
- Pass through Bastrop, cross the Colorado River and proceed across the new overpass at the Hwy. 95/Buckees exit
- Continue east for 1.3 miles and exit right at Tahitian Drive
- Go south for 2 miles to the corner of Riverside and Tahitian
- Turn right and go ½ mile – Clubhouse is on the left.

From Houston on I-10

- From I-10 head west to Columbus
- Take the TX-71 WEST exit, exit #695 toward LA GRANGE/AUSTIN, go 56 miles
- Turn left onto Tahitian Drive and go 2 miles to the corner of Riverside and Tahitian.
- Turn right and go ½ mile – Clubhouse is on the left.

[illegible]n on on Hwy 290 (or College Station via Hwy 21)

BOOK NOW

- Go west on Hwy 290

- Take Hwy 21 toward Austin
- At the Bastrop State Park turn left on Loop 150.
- Crossynder Hwy 71 and into Tahitian Village, go 2 miles south to the corner of Riverside and Tahitian.
- Turn right and go ½ mile – Clubhouse is on the left.

From San Antonio

- Take I-35 north to San Marcos. Exit 21 north.
- Go 40 miles on 21 north to Hwy 71
- Turn right (east) by Jack-In-The-Box and go 6 miles.
- Pass through Bastrop and proceed through the Hwy 21/95/71 Intersection (by Buckees)
- Continue east for 1.3 miles and exit right on Tahitian Drive
- Go south for 2 miles to the corner of Riverside and Tahitian.
- Turn right and go ½ mile – Clubhouse is on the left.

COURSE NEWS

an Austin real estate businessman in December 2017.
David has some big plans for improving the conditions of the course and the amenities. All the greens and fairways have been areified and fertilized.
After a hard winter the Bermuda grass is now finally starting to grow in. And with some help from Mother Nature, we will

BOOK NOW

WEATHER

Weather Bastrop

30.11°N 97.32°W 112m asl

Mon	Tue	Wed
12-17	12-18	12-19
70 °F	63 °F	69 °F
°F	43 °F	54 °F
2 mph	4 mph	4 mph

Pine Forest Golf Club | 636 Riverside Dr, Bastrop, TX 78602 | (512) 321-1181

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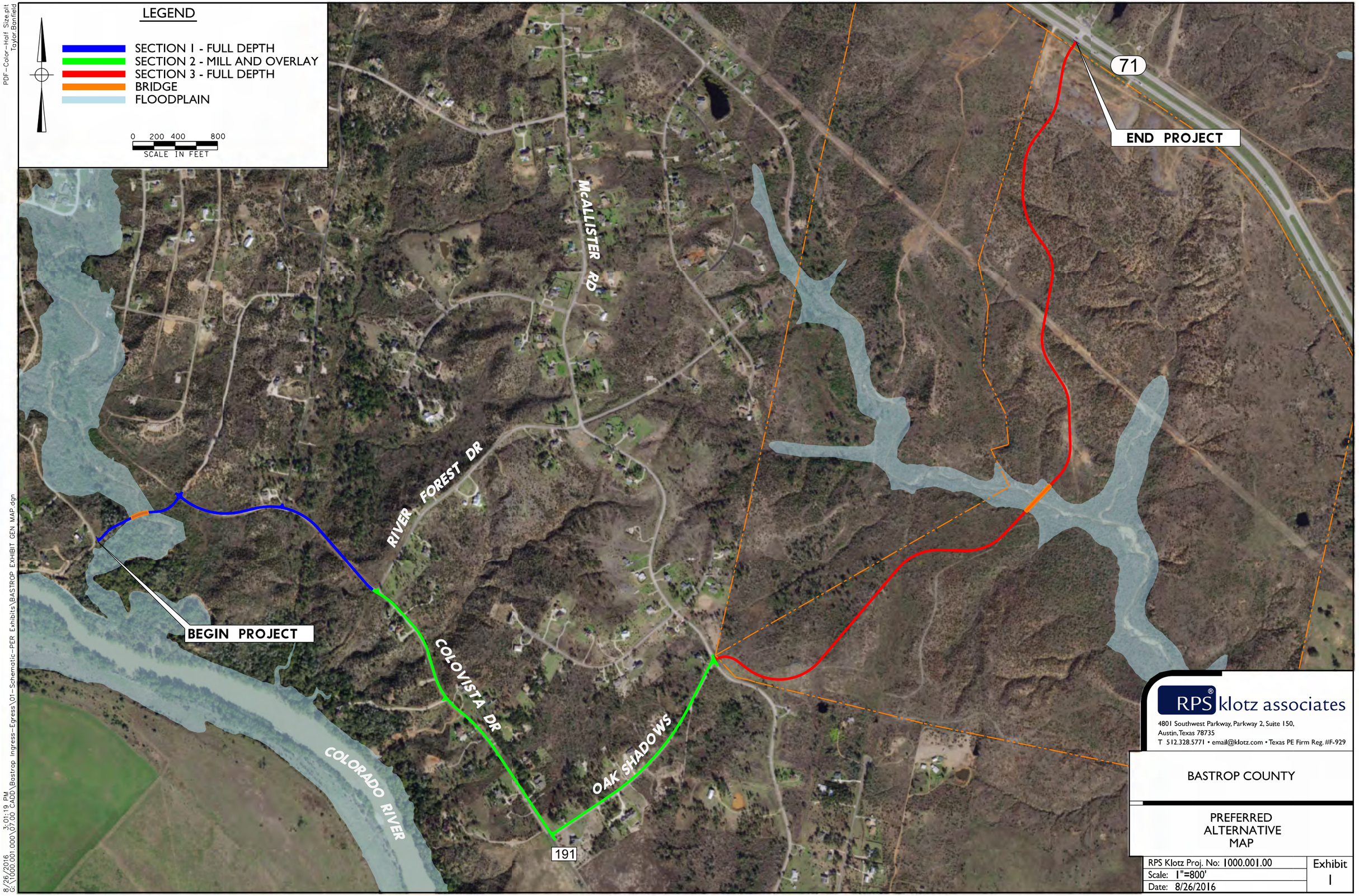
[4web_scripts id="7"]

BOOK NOW

19.6 Transportation and Accessibility (When Needed)



RPS klotz associates

4801 Southwest Parkway, Parkway 2, Suite 150,
Austin, Texas 78735
T 512.328.5771 • email@klotz.com • Texas PE Firm Reg. #F-929

BASTROP COUNTY

PREFERRED ALTERNATIVE MAP

RPS Klotz Proj. No: 1000.001.00	Exhibit 1
Scale: 1"=800'	
Date: 8/26/2016	

PDF-Color-Half Size.plt
Taylor Banfield

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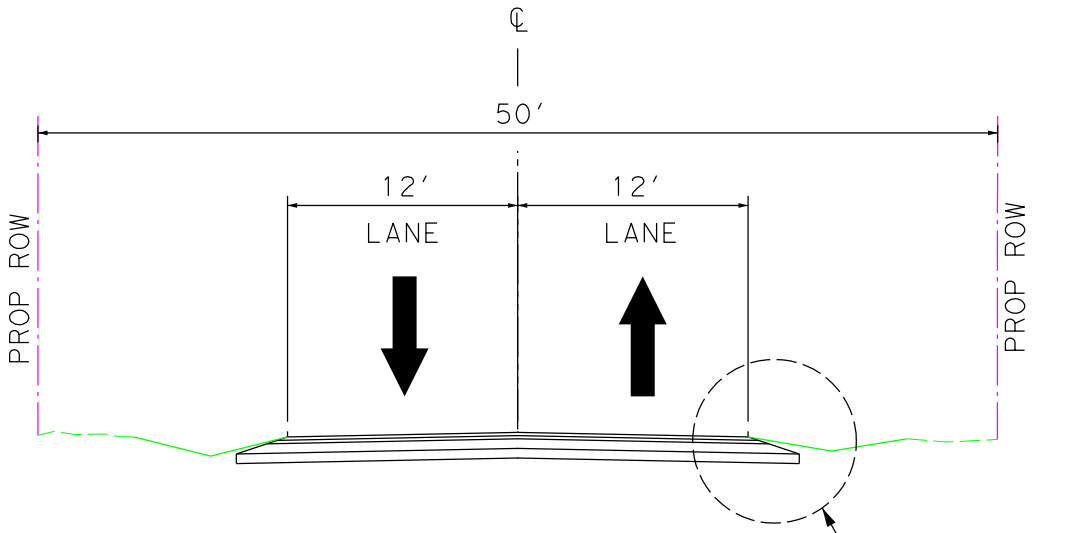
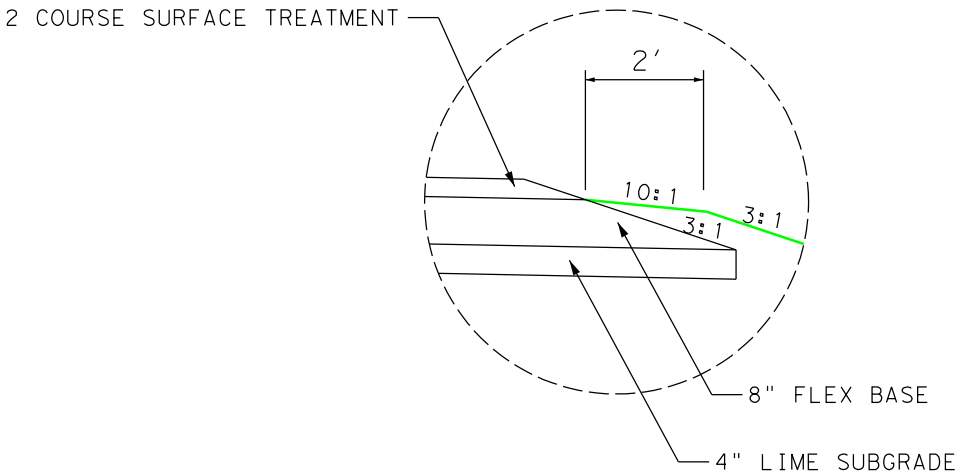
Taylor.Banfield



PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 1
(ULUPAU TO RIVER FOREST DR.)



DETAIL A

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BASTROP COUNTY

SECTION 1
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 1
Scale: NTS	
Date: 10/12/2016	

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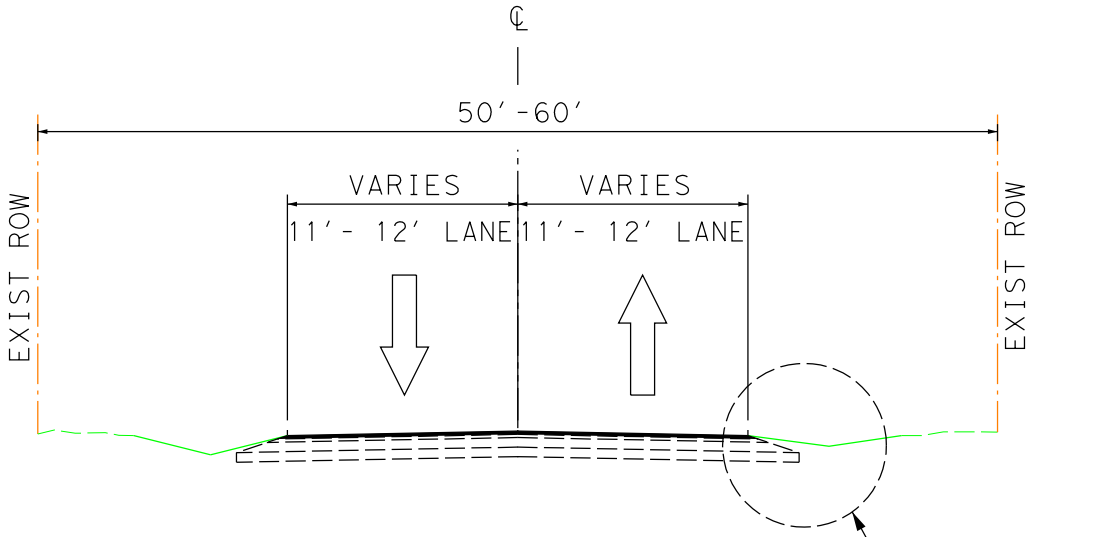
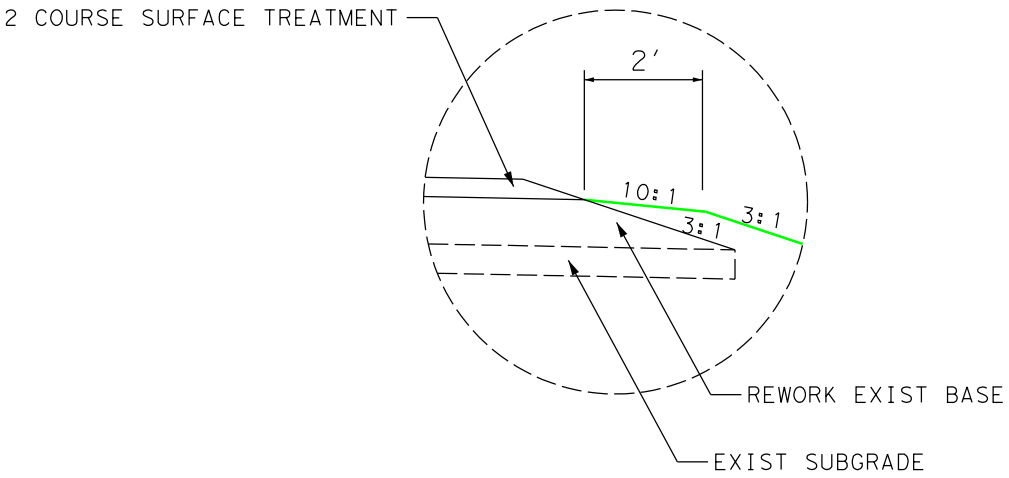


PROPOSED TYPICAL SECTION

MILL AND RESURFACE
SECTION 2
(RIVER FOREST DR. TO MCALLISTER RD.)



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BASTROP COUNTY

SECTION 2
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 2
Scale: NTS	
Date: 10/12/2016	

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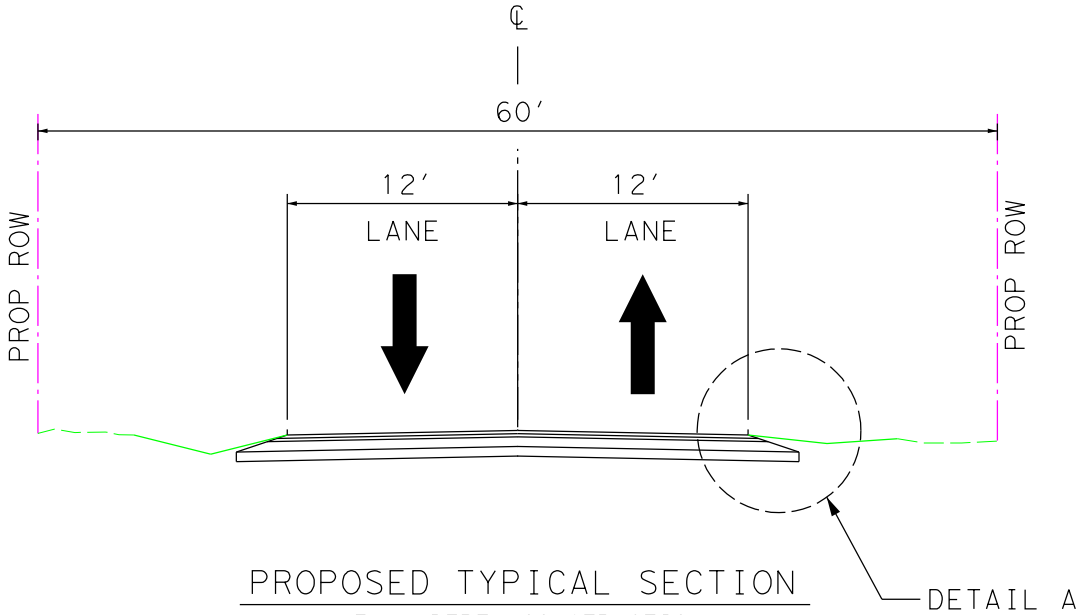
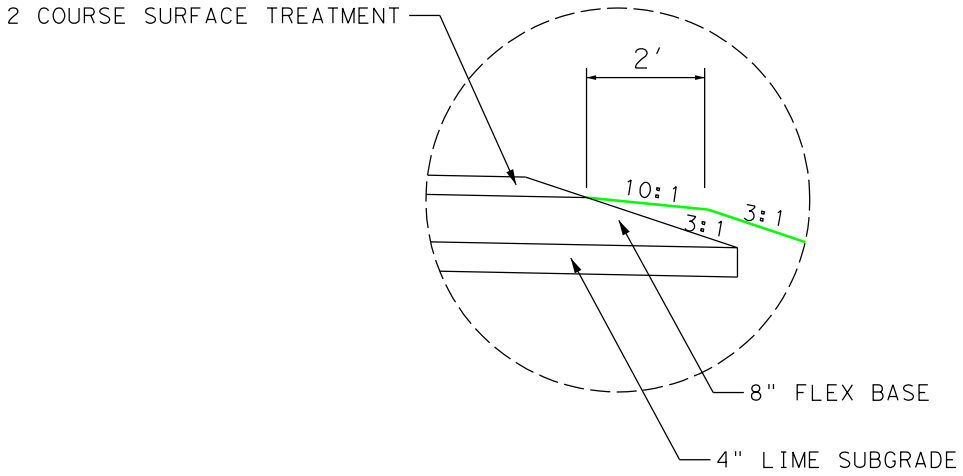


PROPOSED TYPICAL SECTION

FULL DEPTH CONSTRUCTION
SECTION 3
(MCALLISTER RD. TO SH 71)



DETAIL A

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BASTROP COUNTY

SECTION 3
TYPICAL SECTION

RPS Klotz Proj. No: 1000.001.000	Exhibit 3
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Date: 10/12/2016	

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ATTACHMENT 20

NATURAL FEATURES

Unique Natural Features/Water Resources

Vegetation, Wildlife

Prospective Buyers

THINKING OF PURCHASING PROPERTY IN TAHITIAN VILLAGE?

HERE ARE SOME IMPORTANT CONSIDERATIONS AND TIPS:

Are you considering purchasing property in Tahitian Village? If you are considering purchasing property through an internet seller or agent but do not plan to visit and inspect the property before buying, please consider the following before buying:

LANDSCAPE AND TERRAIN

Tahitian Village is a large, hilly subdivision. Some of the hills are very steep. When the subdivision was platted, the developer simply made an overlay of lot boundaries and streets, in some cases without regard to the actual topography of the land. As a result, some of the lots that appear on the subdivision's plat cannot be built upon, either because they are too steep or because it would be far too expensive to get utilities such as water and electricity to them. Unfortunately, some internet marketers of the lots either fail to disclose the true facts about these lots, or worse, actually misrepresent the condition or value of the lots. Tahitian Village requested the assistance of the Texas Real Estate Commission but to no avail. The best advice we can give is please do not buy any lots in Tahitian Village over the internet without inspecting the property before you buy.

TRANSFER FEES

Whenever a lot is sold or ownership of a lot is transferred to another party, Tahitian Village charges a "transfer fee" in order to cover the cost of certain services that must be provided, including a review of ownership records and the creation of new records to reflect the change in ownership. In addition, frequently, correspondence must be prepared to communicate to title companies and others information about the property, including whether there are any unpaid fees or charges. And, it is not unusual for purchasers or sellers or their agents to request copies of subdivision documents such as the deed restrictions and building guidelines. In order to cover these expenses, the Tahitian Village Property Owners' Association charges a **$100.00** transfer fee each time a lot sells, or ownership is transferred, in the subdivision. If a "Resale Certificate" is requested, the fee charged to the buyer is **$150.00 per transaction**. Please keep this in mind when you are negotiating for the purchase of property in Tahitian Village. If you intend to purchase your property through a title company, the title company will generally collect these fees at closing.

THE ARCHITECTURAL CONTROL COMMITTEE

All structures (including but not limited to fences, sheds and new homes) built in Tahitian Village require a permit from the Architectural Control Committee (ACC). For more information about the permitting process and the ACC go to "Building in Tahitian Village".

"Tahitian Village is a unique blend of country living in an urban environment."

— Mari McDonald, Former Association Manager

AREA INFO

- Bastrop County
- Utilities
  - Bastrop County Water Control and Improvement District #2
  - City of Bastrop
  - Bluebonnet Electric Cooperative
- List of Builders
- City of Bastrop
- City of Smithville
- Bastrop Chamber of Commerce
- County Commissioner Precinct 1
- Emergency Departments
  - Bastrop County Sheriff
  - Emergency Services District #2 (fire station)
  - City of Bastrop Police
  - Animal Control
- Pine Forest Golf Course (located in Tahitian Village)
- History of the Nature Preserve on Riverside Drive

VIRTUAL TOUR

CONTACT US!

Name *

First Name

Last Name

Email Address *

Subject *

Violation

Message *

SUBMIT

Search

TAHITIAN VILLAGE

Tahitian Village Property Owners Association

CURRENT PROPERTY OWNERS

PROSPECTIVE BUYERS

BUILDING IN TAHITIAN

Welcome to Tahitian Village, a residential community located in the heart of Bastrop County's famed Lost Pines forest, just a stone's throw from Buescher and Bastrop State Parks. Whether you are a property owner, a prospective buyer, or a builder, the Tahitian Village Property Owners Association is here to assist you.

*******If you would like to receive email blast about our community and our bi-montly news letter, please email us requesting to add you. See below to email us.***

TVPOA/TVACC Association Manager - Amanda Homesley

CONTACT US

Name *

First Name

Last Name

Email Address *

Subject *

Message *

SUBMIT

Search

ATTACHMENT 21

OTHER PROJECT INFORMATION

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Fort Worth Regional Office, Region VI
Office of Community Planning and Development
801 Cherry Street, Unit #45, Ste. 2500
Fort Worth, TX 76102
www.hud.gov

Charles Ardizzone, Field Supervisor
US Fish & Wildlife Service
Coastal Ecological Services Field Offices
17629 El Camino Real, Suite 211
Houston, TX 77058

OCT 18 2016

Dear Mr. Ardizzone:

SUBJECT: HUD Responsible Entity Consultation – Environmental Assessment for Old Piney Trail Extension Project

HUD is providing this communication in response to your letter to Bastrop County Judge the Honorable Paul Pape, dated October 14, 2016. The County had previously contacted your office to initiate consultation under Section 7 of the Endangered Species Act for the subject activity, which proposes to address safety issues with ingress/egress for residents living along Squirrel Run and Kinsey Road in Bastrop County, Texas, and includes the construction of a 50-foot wide right-of-way through 1,667 feet of mostly forested, undeveloped land.

In your letter, you state that HUD is the action agency for the proposed activity, and go on to state,

> "This response is provided in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.). While the Service understands funding for this Project arises from HUD and is distributed by the Texas General Land Office (GLO) to Bastrop County as the "responsible entity", the Service requests that HUD provide a certification letter to this office reaffirming Bastrop County as the non-federal representative (i.e., responsible entity). As described in the September 13, 2013 BA Bastrop County determined that the road construction may affect, and is likely to adversely affect, the federally endangered Houston toad *Bufo houstonensis*."

In response to this request, HUD wishes to clarify the Responsible Entity role under applicable statutes and regulations. Section 239 of the Department of Housing and Urban Development Appropriations Act, 2012 (Pub. L. 112–55, approved November 18, 2011) (Appropriations Act) makes available up to $400 million, to remain available until expended, in Community Development Block Grant (CDBG) funds to be distributed through the CDBG Disaster Recovery (CDBG-DR) program to assist with recovery from multiple disasters that occurred in 2011, including $25,055,749 to be used within Bastrop County for wildfire recovery. Except for provisions specifically waived, use of these funds is subject to the statutory and regulatory

requirements of the CDBG program, including the Housing and Community Development Act of 1974 (HCD Act), as amended (42 U.S.C. 5304(g)(1)), which states

> ...the Secretary, in lieu of the environmental protection procedures otherwise applicable, may under regulations provide for the release of funds for particular projects to recipients ... who assume all of the responsibilities for environmental review, decisionmaking, and action pursuant to [NEPA], and such other provisions of law as the regulations of the Secretary specify, that would apply to the Secretary were he to undertake such projects as Federal projects.

To implement this unique legislative authority, the Department has issued 24 CFR Part 58, "Environmental Review Procedures for Entities Assuming HUD Environmental Responsibilities." Specifically, Section 58.4, "Assumption Authority," states that

> Responsible Entities shall assume the responsibility for environmental review, decision-making, and action that would otherwise apply to HUD under NEPA and other provisions of law that further the purposes of NEPA, as specified in Sec. 58.5. Responsible entities that receive assistance directly from HUD assume these responsibilities by execution of a grant agreement with HUD and/or a legally binding document such as the certification contained on HUD Form 7015.15, certifying to the assumption of environmental responsibilities.

In accordance with the HCD Act and similar provisions in authorizing Congressional legislation for a number of other HUD programs, Section 58.5 specifies that the Endangered Species Act, particularly Section 7, is among the laws for which Responsible Entities assume HUD's federal agency review, decision-making, and action responsibility. Regarding agency consultation under these laws and authorities, 24 CFR 58.14 provides that, "A responsible entity shall consult with appropriate environmental agencies, State, Federal and non-Federal entities and the public in the preparation of an EIS, EA or other environmental reviews undertaken under the related laws and authorities cited in §58.5 and §58.6."

Under this framework, therefore, Bastrop County acts in HUD's place as the federal agency for purposes of consultation with the Services under ESA Section 7(a)(2) and implementing regulations at 50 CFR 402. This Congressionally granted agency decision-making responsibility is distinct from and broader than the role of a designated non-federal representative for consultation and preparation of a biological opinion under 50 CFR 402.08. The 402.08 designation is limited, and "ultimate responsibility for compliance with section 7 remains with the Federal agency." By contrast, HUD Responsible Entities bear full federal agency responsibility for compliance with NEPA, ESA, and related laws, and must designate a "Certifying Officer" to accept the jurisdiction of the Federal Courts over this role, according to 24 CFR 58.13.

Based on the foregoing, HUD is unable to provide the requested non-federal representative designation for Bastrop County. Such designation is unnecessary due to the existing assumption authority provided to the County by Congress through the above described laws and regulations.

The Services should also be aware of the oversight responsibilities of the State and HUD with respect to the County's Responsible Entity role. This oversight responsibility is described at 24 CFR 58.4(b)(2), 58.18, and 58.70-77, and includes accepting the Responsible Entity's certification that compliance with NEPA, ESA and related laws has been achieved and monitoring this compliance on an on-going basis. This oversight responsibility does not diminish the responsibility of the Responsible Entity (see 58.77(d)(2)). Should the Services disagree with the County's certification of compliance, however, the Services may object to the certification and to release of grant funds for the activity based on criteria at 24 CFR 58.75. As an interested agency, the Services shall receive notification from the County at such time as the County is submitting its certification of environmental compliance and Request for Release of Funds to the State of Texas General Land Office. The Services may also copy this office, which has oversight for GLO's role in accepting and monitoring the County's Responsible Entity certification.

HUD hopes that this information helps to clarify Bastrop County's role as Responsible Entity for purposes of Section 7 consultation in the subject activity. Please feel free to contact me at david.a.storms@hud.gov, (817) 978-5540, or Field Environmental Officer Zach Carter at (817) 978-5835 if you have any questions on this matter.

Sincerely,

David A. Storms
Regional Environmental Officer
HUD Region VI

Cc: Kelly Warner, Environmental Specialist, Texas General Land Office

enclosure

United States Department of the Interior

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

In Reply Refer To:
FWS/R2/CESFO/
02ETXX0-2016-
F-1251

October 14, 2016

The Honorable Paul Pape
Bastrop County Judge
804 Pecan Street
Bastrop, Texas 78602

Dear Judge Pape:

Thank you for your September 13, 2016 request to initiate formal consultation under section 7 of the Endangered Species Act (Act) for the Old Piney Trail Extension Project (Project). Previously, the U.S. Fish and Wildlife Service (Service), Bastrop County and Texas General Land Office (GLO) representatives held early project coordination meetings in October 2015 and February 2016 regarding the proposed project. The Project is proposed to address safety issues with ingress/egress for residents living along Squirrel Run and Kinsey Road in Bastrop County, Texas and includes the construction of a 50-foot wide right-of-way (ROW) through 1,667 feet of mostly forested, undeveloped land. The Department of Housing and Urban Development (HUD) is the action agency for the project under their Community Development and Revitalization (CDR) program. The Service's Coastal Ecological Services Field Office has received and reviewed a biological assessment (BA) accompanying your letter request and in accordance with section 7 of the Act, our implementing regulations at 50 CFR 402, and Service guidance. The activities contemplated for the Project are located entirely within Bastrop County, Texas.

This response is provided in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.). While the Service understands funding for this Project arises from HUD and is distributed by the Texas General Land Office (GLO) to Bastrop County as the "responsible entity", the Service requests that HUD provide a certification letter to this office reaffirming Bastrop County as the non-federal representative (i.e., responsible entity). As described in the September 13, 2013 BA, Bastrop County determined that the road construction may affect, and is likely to adversely affect, the federally endangered Houston toad *Bufo houstonensis*.

Upon our review of the BA, the Service requests the County address the following updates or deficiencies:

- The historic range of the Houston toad should now include Brazos County.

- It is possible, but not confirmed, that Grimes County may or may once have been occupied by the Houston toad. The Service suggests this information be incorporated as a category (e.g., "unconfirmed" or "suspected" or similar) on the range map.
- Survey results and abundance estimates through at least 2015 should be included in the documentation.
- Based on 2015-2016 experiments at the Attwater Prairie Chicken National Wildlife Refuge (APCNWR), the Service is aware that additional life history information is available that suggests that Houston toads can persist in restored native prairie landscapes for more than a year. We recommend this information be incorporated into the assessment.
- Please update the population dynamics section to include information from Robertson County in 2014.
- Please address the direct effects of the project for the period of construction (e.g., noise, lighting) and provide a detailed schedule (e.g., total days from mobilization to de-mobilization) and anticipated work hours (i.e., daylight only, start 1 hour after sunrise, stop 1 hour before sunset, etc.). As some effects (e.g., noise) are certain to occur beyond the limits of the right-of-way, the action area should reflect a science-based evaluation of such.
- Please address the potential indirect effects of the Project regarding the likelihood of induced development (i.e., additional residential development). The Service suggests documentation of the current number of parcels adjacent the proposed ROW to be acquired, the steps necessary to subdivide such, and how many homes will be serviced by the Project.
- For the proposed conservation measures for activities outside the breeding season, item 3 regarding notification, a monitor should be identified prior to commencement of construction and that information shared with the Service.
- For the proposed conservation measures regarding a weather-related stand down of construction activities, the stand down for precipitation should take place regardless of time of year. We have found that a 24 hour stand down is typically sufficient, provided the precipitation event and/or low pressure front passage has concluded.
- Regarding exclusion of the work area: This measure is a means to minimize potential take as Houston toads can be active on the surface in any month of the year. Given this project's location, exclusion of the work area should be employed regardless of the time of year for projects that include overnight work time frames and ground disturbance.
- Inspection and repair of silt fence barrier should be conducted daily.
- Regarding proposed mitigation, the 0.99 acres of "temporary" disturbance is located in occupied and/or dispersal habitat. While there is evidence that restored prairie is supportive of, at least, dispersal (see APC NWR information), the proposed maintenance by mowing reduces the value of such habitat. Similarly, we disagree that the disturbance to the habitat will be temporary. At a minimum, the restoration with native grasses should be anticipated to be a multi-year effort. Restoration with plantings of native trees should be anticipated to be a multi-decade effort.
- The assessment of cumulative effects includes a statement "The area of the proposed roadway impacts does not include…post-emergence dispersal habitat." We respectfully

disagree. The area is approximately 1.4 miles from a known dispersal event witnessed during the post-2011 Bastrop County Complex Fire Houston toad monitoring operations in the spring of 2012. Similar language appears elsewhere in the BA and should acknowledge the nature of the existing habitat (baseline) and its post-Project anticipated condition.

- The effects of the Project on designated critical habitat for the Houston toad should include a quantitative analysis of the Project's reduction of such habitat in support of the determination that the Project "is not likely to appreciably diminish the value of designated critical habitat".

The Service appreciates Bastrop County's incorporation of many of our early consultation recommendations and its ongoing conservation efforts for this species. If you need clarification of our comments, have questions, or need additional information, please contact staff biologist Jeff Hill at 281/286-8282 ext. 241.

Sincerely,

Charles Ardizzone
Field Supervisor