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January 9, 2020

Mr. Adam Zerrenner
Field Supervisor
United States Fish and Wildlife Service
10711 Burnet Road, Suite 200
Austin, Texas 78758

RE: Oak Hill Parkway Project
Travis County, Texas
(CSJs: 0113-08-060 and 0700-03-077)

Dear Mr. Zerrenner:

The Texas Department of Transportation (TxDOT) has prepared proposed design changes to the Oak Hill Parkway Project (OHP) since the last clarifications were provided to the U.S. Fish and Wildlife Service (Service) in December 2018. Those changes are included within Attachment 1 to this letter and are hereinafter referred to collectively as the “design changes.”

The Service’s concurrence letter of December 20, 2017 stated that no further consultation regarding endangered species would be required unless:

- 1) *The identified action is subsequently modified in a manner that causes an adverse effect on any listed species or designated critical habitat;*
- 2) *New information reveals the identified action may affect federally protected species or designated critical habitat in a manner or to an extent not previously considered;*
- 3) *A new species is listed or a critical habitat is designated under the Act that may be affected by the identified action;*
- 4) *Additional federally protected species are identified in the project area or,*
- 5) *The project is not completed within four years of the date of this consultation.*

As explained below, TxDOT has concluded that the design changes do not meet any of the above re-initiation triggers. TxDOT submits this letter (and attachments) to the Service so that the Service may review and consider the design changes and potential impacts to listed species.

Overview of Design Changes

TxDOT has carried out the environmental review of OHP in compliance with the National Environmental Policy Act. TxDOT approved the Final Environmental Impact Statement (EIS) and Record of Decision (ROD) in December 2018. Since then, TxDOT has made proposed design changes and accordingly must re-evaluate to determine whether, taking into consideration the design changes, the previous ROD remains valid. The purpose and need, and limits, of the OHP have not changed.

The design changes include:

- increase of 1.6 acres right-of-way to accommodate utility relocations
- minor changes in main lane and frontage road alignments within right-of-way
- numerous driveway and turn lane improvements to increase safety
- minor changes in alignments and widths of the shared use path within the right of way (changes made based on input from community and from City of Austin)
- changes to water quality pond depths and berm heights, and addition of one water quality pond
- lengthening and raising several bridge profiles to accommodate increased projected flows
- reduction in overall right-of-way to be acquired by acquiring drainage easements instead of fee-simple right-of-way
- changes in excavation amounts

Further, the design changes incorporate new rainfall data associated with the updated Atlas 14 hydrologic model released by the National Oceanic and Atmospheric Administration (NOAA) in September 2018. The model redefined the 100-year storm in Travis County (NOAA 2018). It projects an increase of three inches in precipitation during a 24-hr period when compared to previous estimates. Design changes to address increased rainfall include raised bridge and roadway profiles, increased culvert sizing, and changes to drainage features such as water quality ponds. The design no longer includes one of the two proposed upstream detention ponds, discussed in greater detail below.

The attachments to this letter further describe the design changes:

Attachment 1	Summary of design changes
Attachment 2	Revised schematic drawings
Attachment 3	<i>Oak Hill Parkway (US 290 / SH 71), CSJ 0113-08-060, CSJ 0700-03-077, Preliminary Water Quality Analysis and Design. November 2019</i>
Attachment 4	<i>Technical Memorandum, Atlas 14 Rainfall Updates, Oak Hill Parkway, November 1, 2019</i>
Attachment 5	<i>Geologic Assessment US 290 / SH 71 West from State Loop 1 (MoPac) to Ranch-to-Market (RM) 1826 and SH 71 to Silvermine Drive, Travis County, Texas, CSJ: 0113-08-060 and 0700-03-077 revised November 2019</i>

Commitment; Analysis of Specific Design Changes

The proposed design changes discussed in this letter will not change the commitments that TxDOT previously made to the Service. As part of TxDOT's informal consultation with the Service in 2017, TxDOT committed to "... a net reduction in the amount of TSS leaving the project area under the proposed condition, which represents a net improvement or net zero over current baseline conditions as a result of the proposed action." TxDOT later reaffirmed this commitment. During TxDOT's additional communications with the Service in December 2018, TxDOT reaffirmed the commitment and confirmed that "TxDOT will prepare a Water Pollution Abatement Plan demonstrating in detail

compliance with this commitment.” The commitment is in the documents that TxDOT is using to procure the design-build contractor.

TxDOT sets forth below an analysis that compares the effects of the design changes to the original effects analysis in *Biological Assessment U.S. Highway 290 (US 290) / State Highway (SH) 71 West from State Loop 1 (MoPac) to Ranch-to-Market (RM) 1826 and SH 71 to Silvermine Drive, Travis County, Texas* referred to as the 2017 BA, including impervious cover calculations, total suspended solids (TSS) calculations, excavation amounts, and other related information. Among other documents, the earlier consultation was supported by analyses in the original Preliminary Water Quality (WQ) Analysis and Design Report (KFA 2017) (Original WQ Report). The proposed design changes required new analyses, and so TxDOT prepared the updated *Oak Hill Parkway (US 290 / SH 71), CSJ 0113-08-060, CSJ 0700-03-077, Preliminary Water Quality Analysis and Design, November 2019* (KFA 2019) (Updated WQ Report, Attachment 3).

The Updated WQ Report shows the information that is the basis for TxDOT’s continued commitment. The report shows the current pollutant load removal achieved by the existing water quality control facilities, the requirements for pollutant load removal for OHP, and the recommendations for required improvements to ensure compliance with current water quality regulations.

A. Changes to Impervious Cover Acreages

Impervious cover calculations were presented and discussed in the 2017 USFWS consultation document. The Original WQ Report did not analyze the area east of Williamson Creek because at the time the proposed highway facilities east of Williamson Creek did not include major improvements or roadway widening. The calculations did not include the existing impervious cover (i.e., existing pavement, sidewalks, parking lots, etc.), from east of Parkwood Drive at US 290 to the OHP terminus at Loop 1 (approximately 1.8 miles). Later, the project was changed to include additional impervious cover east of Williamson Creek for widening pavement, and for adding retaining walls and water quality features. The Updated WQ Report includes analysis of this area east of Williamson Creek, both the analysis of existing conditions and the analysis of the proposed facilities. It also includes changes to comply with the directions of the Texas Commission on Environmental Quality (TCEQ) on how to calculate impervious cover for underpasses and overpasses, where one impervious surface crosses another. See page 13 of the Updated WQ Report (Attachment 3) for an explanation.

The differences in impervious cover calculations between the two reports are summarized in Table 1. The changes described above had an effect both in the calculation of existing impervious cover and in proposed impervious cover. The Updated WQ Report identified a 13.22-acre increase in impervious cover spread across the entire OHP length compared to the original report. Note that of the 13.22-acre increase in impervious, 8.51 acres of the increase is the result of counting proposed overlapping impervious cover from over/underpasses as directed by TCEQ.

Table 1: Summary of Impervious Cover Changes from 2017 to 2019 (KFA 2019)

	KFA (2017)	KFA (2019)	Difference
Total OHP Area (ac)	245.06	346.82	+101.76
Total Existing Impervious Cover (ac) ¹	74.90	133.53	+58.63
Total Proposed Impervious Cover (ac)	148.89	220.74	+71.85
Net increase in Impervious Cover (ac)	73.99	87.21	+13.22

1- Total Existing Impervious Cover does not include 5.05 acres of storage area impervious cover removed by TxDOT in 2013. See Updated WQ Report (Attachment 3) for additional details.

B. Changes to TSS Calculations

The Updated WQ Report calculated the removal of total suspended solids (TSS) for the existing and proposed scenarios. (See, Section 4 of the report). The proposed scenario includes the increased area and impervious cover discussed above. The OHP complies with the TCEQ requirement to remove 80 percent of the incremental increase in the annual mass loading of TSS. The proposed annual TSS load removed (164,863 lbs.) is greater than the TCEQ-required removal (128,116 lbs.). Further, the proposed annual TSS load discharged (81,571 lbs.) is less than the existing annual TSS load discharged (86,290 lbs.) which results in a net decrease of 4,719 lbs. in TSS discharged as a result of the OHP.

In TxDOT's email correspondence with the Service in November 2018, TxDOT provided a corrected calculation of TSS load, which showed a net increase in annual TSS loading. Since that time TxDOT has added more water quality protection measures to the design that result in the net decrease shown in the Updated WQ Report.

During the same email correspondence in November 2018, the Service inquired concerning discharges to Williamson Creek and Devil's Pen Creek. While in November 2018, TxDOT reported increases in TSS loading to Williamson Creek and Devil's Pen Creek watersheds, the Updated WQ Report shows a net decrease of an annual TSS load of 4,865 lbs. discharged to Devil's Pen Creek, and a net decrease of an annual TSS load of 3,121 lbs. discharged to Williamson Creek, as a result of the OHP.

Based on the net reduction in TSS loading compared with background levels of TSS generated within the surface and subsurface drainage basins associated with Austin Blind Salamander (ABS), critical habitat, and the distance from the OHP to ABS critical habitat, the revised OHP would not have a discernable impact on water quality that could measurably affect any of the ABS surface or subsurface critical habitat or the Barton Springs Salamander (BSS). This is consistent with the effect determination of the 2017 BA and subsequent Service concurrence.

C. Changes to Temporary and Permanent Stormwater Management

Since TxDOT's informal consultation with the Service in 2017, TxDOT has worked with the City of Austin Watershed Protection Department, and agreed to use the City's design parameters for design of temporary stormwater best management practices (BMPs) during construction, using sizing and

placement of measures for a two-year storm event. This is a more stringent standard than the TxDOT design guidelines for temporary BMPs.

Changes in permanent stormwater infrastructure resulting from increases in impervious covers as explained in the Updated WQ Report (Attachment 3) and Atlas 14 rainfall increases explained in detail in the *Technical Memorandum, Atlas 14 Rainfall Updates, Oak Hill Parkway, November 1, 2019* (Attachment 4) and summarized in Table 2.

Table 2: Changes to Permanent BMPs

Proposed BMP – Permanent Measures	2017 BA	January 2020 TxDOT letter
Detention Ponds	Two upstream stormwater detention ponds	One upstream stormwater detention pond
Water Quality Ponds	Multiple (between 15 to 17) water quality ponds depending on alternative	18 water quality ponds
Hazardous Materials Trap (HMT)	HMTs were being considered at the Williamson Creek crossing	Water Quality Ponds with HMT capability ²

2 - Standalone HMTs are not proposed. The water quality ponds will also have a spill containment capability; each pond will have a valve allowing it to function as a water quality pond and as a HMT.

The originally-proposed OHP included two upstream detention ponds (one pond along SH 71 and one pond along Old Bee Cave Road). The ponds were designed to reduce peak runoff discharges, thereby mitigating increases in runoff from the additional impervious cover proposed with the OHP and increases to base flood elevations due to OHP improvements in the floodplain. The hydrologic and hydraulic analysis at the time was based on 2008 Federal Emergency Management Agency models for Williamson Creek. However, TxDOT has changed the design to remove one of the two proposed upstream detention ponds as a result of incorporating the Atlas 14 data, see *Technical Memorandum, Atlas 14 Rainfall Updates, Oak Hill Parkway, November 1, 2019* (Attachment 4). TxDOT removed the SH 71 pond because it resulted in additional projected flooding (compared to existing conditions) along Williamson Creek downstream of the pond and upstream of the SH 71 crossing, through a heavily-developed area adjacent to the creek. The additional flooding, not present in the pre-Atlas 14 modeling, is the result of additional peak flows and a change in peak flow timing between the outfalls of the SH 71 pond and an existing, nearby detention pond owned by the City. The flows released from this existing pond would meet the flows released from the SH 71 pond approximately 1,000 feet downstream of the two ponds. The SH 71 pond would have delayed the peak flows leaving the pond by six minutes, compared to existing conditions. This subtle shift caused the peak flows from the SH 71 pond to coincide with the peak flows from the existing pond owned by the City, resulting in an overall increase in peak flows at the confluence of the two ponds. The increase in peak flows resulted in the additional projected flooding downstream of the ponds and upstream of the SH 71 crossing.

Multiple options, including outfall and dam reconfiguration to both the proposed SH 71 pond and the existing pond owned by the City, were considered to address the additional flooding projected by the Atlas 14 model. The only option that addressed the additional flooding without causing flood impacts in other areas was the removal of the SH 71 pond. Flood mitigation from the proposed Old Bee Cave

Road pond alone, and corresponding modifications to proposed roadways, bridges and channels, will avoid increases in peak flows and flooding impacts to off-site properties. TxDOT notes that the detention ponds were not included in the 2017 water quality BMPs designed to treat TSS within the proposed OHP area. The removal of the SH 71 pond had no impact on the TSS calculations.

Water quality pond elevations were analyzed using the Atlas 14 modeling, and the design of six water quality ponds near Williamson Creek was changed to accommodate information in *Technical Memorandum, Atlas 14 Rainfall Updates, Oak Hill Parkway, November 1, 2019* (Attachment 4) for the OHP. Each water quality pond was initially designed with berms higher than the water surface elevation for the 100-year storm event, as is required by TCEQ. Water quality pond floodplain analyses were performed for water quality ponds and as a result, design of six water quality ponds near Williamson Creek were changed because the berms of the ponds created adverse hydraulic impacts (see Updated WQ Report, Attachment 3, Section 4.5: Water Quality Pond Floodplain Analysis for additional information). TxDOT changed the design to lower the berms of the six ponds to avoid adverse hydraulic impacts. Lowering the berms below the 100-year storm event elevation will not affect the amount of stormwater treated by the ponds or TSS removal for designed storm events. We mention this because the Updated WQ Report does not include the six ponds in the TSS calculations to show compliance with the TCEQ requirements. The six ponds are not needed to achieve compliance with the TCEQ 80% TSS load removal requirement, and therefore, there is no need to seek a variance from TCEQ for berm height requirements. The six ponds are needed to achieve a net reduction in the amount of TSS leaving the project area. The Updated WQ Report includes the six ponds in the calculation to re-confirm TxDOT's commitment to a net reduction in the amount of TSS leaving the project area.

D. Changes to Excavation Volumes and Depths

TxDOT has also evaluated whether the proposed design changes would affect excavation volumes and depths presented in the 2017 BA. A comparison of these volumes and depths is presented in Table 3.

No additional geotechnical borings are anticipated. The proposed design changes add 20 bridge spans with three bents per column (i.e., 60 columns) which result in the increase of 99 cubic yards for the drilled shaft bridge foundations. Roadway excavation volumes were unchanged because profile changes were limited to raising the roadway profile for drainage effects resulting from the updated Atlas 2014 model. Other Atlas 14-related excavation changes include an increase of 4,900 cubic yards for storm drainage from the addition of 550 feet of culverts, and an increase in 28,488 cubic yards for water quality ponds. Approximately half of the proposed water quality ponds would have depths of 10 feet. The noise wall lengths were decreased which resulted in a decrease of 852 cubic yards of excavation for noise wall foundations.

As stated in Section 5.1 of the BA, potential direct effects to aquifer species and to the aquifer could result from OHP activities that directly impact the aquifer. This type of impact is most likely to occur during significant excavation in bedrock in the Recharge Zone. While the volume of excavation has increased, the depths of proposed excavation activities have not changed, and only 8,863 cubic yards of the 2,063,278 cubic yards total excavation volumes proposed in the design changes will occur in the Recharge Zone of the aquifer. It is unlikely that any of the increases in excavation amounts will adversely affect the aquifer or aquifer species. Additionally, TxDOT remains committed to implement void discovery protocols as described in the BA and concurrence letter.

Table 3. Proposed Excavation Volumes and Depths

Activity	Maximum Depth (ft.)	Total Excavation Volume 2017 BA and 2018 ROD (cy)	Proposed 2019 Total Excavation Volume (cy)	Change in Excavation Volume (cy)
Geotechnical Boreholes	80	661	661	No Change
Drilled Shaft Bridge Foundations	40	1,185	1,284	+99
Roadway Excavation	35	1,932,385	1,932,385	No Change
Storm Drainage	8	56,133	61,033	+4,900
Water Quality Ponds	10	38,472	66,960	+28,488
Noise Wall Foundations	20	1,807	955	-852
TOTAL		2,030,643	2,063,278	+32,635

E. Updated Natural Resources Evaluations

TxDOT performed additional biological evaluations in previously unevaluated areas after access was granted to parcels that were not included in the 2017 BA, and to address any change in resource impacts resulting from the proposed design modifications. Lists of threatened and endangered species maintained by the USFWS Information for Planning and Conservation (IPaC) system (USFWS 2019) and Texas Parks and Wildlife Department (TPWD) Rare, Threatened, and Endangered Species of Texas (RTEST) (TPWD 2019) were consulted to determine which species could occur in the OHP. No habitat for any federally listed ABS, BSS, or candidate species, including critical habitat, were identified during the 2019 site visits.

A revised *Geologic Assessment U.S. Highway 290 (US 290) / State Highway (SH) 71 West from State Loop 1 (MoPac) to Ranch-to-Market (RM) 1826 and SH 71 to Silvermine Drive, Travis County, Texas, CSJ: 0113-08-060 and 0700-03-077* was completed in November 2019 and is included as Attachment 5. TxDOT conducted the geologic assessment along with biological evaluations described above. No additional sensitive recharge features or features containing suitable karst invertebrate habitat were observed.

Summary

The proposed design changes will result in an increase of 13.22 acres of impervious cover. The revised TSS analysis confirms that the preliminary water quality controls for the OHP have been designed to ensure the annual TSS load (lbs.) proposed to be discharged is less than the existing annual TSS load (lbs.) discharged. This re-confirms TxDOT's commitment to a net reduction in TSS loading below current baseline conditions leaving the project area as a result of the OHP.

There will be an increase in the amount of material excavated for the OHP over the amount reported in the 2017 BA. The increase is primarily attributed to design changes in stormwater drainage (4,900 cy) and water quality ponds (28,488 cy). Because the total amount of excavation in the Recharge Zone (8,863 cubic yards) is 0.4% of the total 2,063,278 cubic yards total excavation volumes proposed in the 2019 design, and depths of these excavation activities in the Recharge Zone have not changed, it is unlikely that any of the increases in excavation amounts will adversely affect the aquifer or aquifer species.

TxDOT conducted geologic and biological evaluation for parcels to which it did not have access when the 2017 BA was submitted to the Service and to address any change in resource impacts resulting from the proposed design modifications. No additional sensitive recharge features or features containing suitable karst invertebrate habitat were observed and no federally-listed salamanders or their habitats were identified during the 2019 site visits.

Conclusion

The proposed design changes do not meet any of the re-initiation triggers:

- 1) None of the proposed design changes would cause an adverse effect on any listed species or designated critical habitat.
- 2) The proposed design changes will not result in effects beyond those previously considered and addressed in the 2017 BA and USFWS concurrence letter.
- 3) No new listed species or critical habitat has been designated in the OHP action area since the 2017 concurrence letter.
- 4) No additional federally protected species have been identified in the OHP area since the 2017 concurrence letter.
- 5) Four years have not elapsed.

Therefore, TxDOT concludes that there should be no change in the effect determinations for the BSS and ABS as presented in the 2017 concurrence letter. TxDOT requests that the Service re-affirm its concurrence with the effect determinations.

Please let me know if you have any additional questions or would like to discuss the proposed design changes in greater detail.

Sincerely,



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Section Director, Natural Resources Management
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CC: Charlotte Kucera – USFWS
Jon Geiselbrecht – TxDOT Austin District
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References

- K Friese + Associates, Inc. (KFA). 2017. Preliminary Water Quality Analysis and Design Report. Prepared for the Texas Department of Transportation (TxDOT) Austin District. March 16, 2017.
- K Friese + Associates, Inc. (KFA). 2019. Preliminary Water Quality Analysis and Design. Oak Hill Parkway (US 290 / SH 71) CSJ 0113-08-060 CSJ 0700-03-077. Prepared for the Texas Department of Transportation (TxDOT) Austin District. November 2019.
- Perica, S., Pavlovic, S., St. Laurent, M., Trypaluk, C., Unruh, D., Wilhite, O. 2018. NOAA Atlas 14 Volume 11 Version 2, Precipitation-Frequency Atlas of the United States, Texas. NOAA, National Weather Service, Silver Spring, MD.

Attachments

- 1 Summary of design changes
 - 2 Revised schematic drawings
 - 3 *Preliminary Water Quality Analysis and Design Report (KFA 2019)*
 - 4 *Technical Memorandum, Atlas 14 Rainfall Updates, Oak Hill Parkway, November 1, 2019*
 - 5 *Geologic Assessment U.S. Highway 290 (US 290) / State Highway (SH) 71 West from State Loop 1 (MoPac) to Ranch-to-Market (RM) 1826 and SH 71 to Silvermine Drive, Travis County, Texas, CSJ: 0113-08-060 and 0700-03-077 (revised November 2019)*
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