

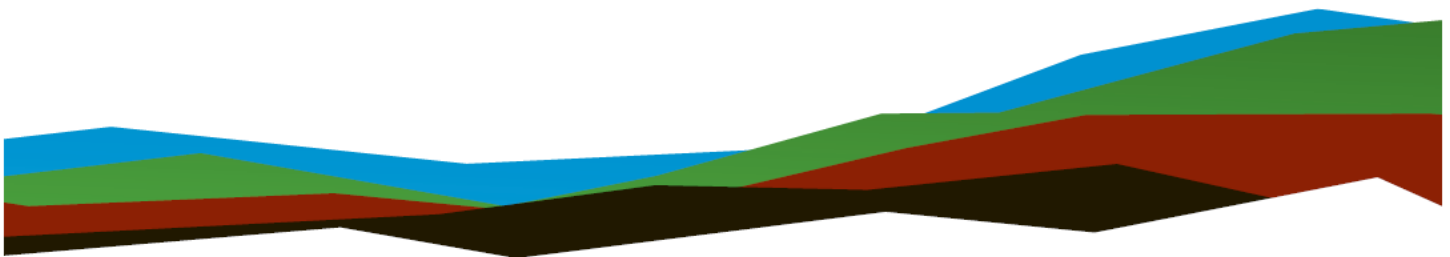
City of Austin Functional Assessment of Floodplain Health

Austin Loyola Tracts

July 26, 2024 | Report Number: Report No. 96247363

Prepared for:

Kimley-Horn and Associates Inc.
5301 Southwest Parkway, Building 2,
Suite 100
Austin, Texas 78735



Nationwide
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- Facilities
- Environmental
- Geotechnical
- Materials



July 26, 2024

Kimley-Horn and Associates Inc.
5301 Southwest Parkway, Building 2, Suite 100
Austin, Texas 78735

Attn: Allison Lehman
P (512) 646-2237
E Dwayne.shoppa@kimley-horn.com

RE: City of Austin Functional Assessment of Floodplain Health (FAFH)
Austin Loyola Tracts
NWC Loyola and Decker Lanes
Austin, Texas 78735

Terracon Project No. 96247363

Dear Ms. Lehman:

Terracon Consultants, Inc. (Terracon) is pleased to provide this City of Austin (COA) Functional Assessment of Floodplain Health (FAFH) report prepared for the above-referenced site.

Based on the proposed design plans, some modifications would impact the COA Fully Developed Floodplain and/or the COA Critical Water Quality Zone (CWQZ), as determined by the client and the COA Watershed Protection Department (WPD) staff.

Terracon established two Zone 1 transects and Zone 2 transects within the COA Fully Developed Floodplain area and/or CWQZ on the southern portion of the site. To accommodate the length of the area proposed for design impact within floodplain of the project area, transects 1 and 2 (T-1 and T-2) are approximately 100-meter transects with three 100-square meter sample plots (P1, P2, and P3). Transect 3 (T-3) is an approximately 75-meter transect with three 100-square meter sample plots (P1 and P2). Transect 4 (T-4) is an approximately 25-meter transect with one 100-square meter plot (P1). The Zone 1 transects were scored for vegetative buffer gap frequency, large woody debris, soil compaction, structural diversity, tree demography. The Zone 2 transects were scored for vegetative buffer

Functional Assessment of Floodplain Health



Austin Loyola Tracts ■ Austin, Travis County, Texas
July 26, 2024 ■ Terracon Project: 96247363

gap frequency, large woody debris, soil compaction, structural diversity, tree demography, wetland tree status, and riparian zone width.

Below is a summary table of transects' scores and assessed conditions:

Transect	Zone	Score	Assessed Condition
T-1	1	8	Fair
T-2	2	13	Fair
T-3	2	15	Fair
T-4	1	9	Fair

The attached *Exhibits 1.0 - 1.2* depict the approximate Zone 1 and Zone 2 transect locations, COA Fully Developed Floodplain, and four 100-meter plots. Also attached are the *FAFH Score Sheets* and *Site Photographs* for reference.

The results of our consulting services are solely the professional opinion of Terracon based on the site conditions documented and observed at the time of the field investigation. It should be noted that some site conditions are subject to various weather conditions (including precipitation) and other changes in the surrounding ecosystem. This report is intended to describe on-site conditions at the time of the investigation and Terracon is not liable for seasonal changes in on-site vegetation or hydrology. Additionally, Terracon's opinion is based on the most current regulations; therefore, changes in regulations may require a re-evaluation of the findings of this report. It is recommended that if this report is not to be submitted promptly to the COA, an updated report (based on an additional field assessment) be prepared.

We appreciate the opportunity to provide this report. If you have questions regarding the content of this report, please feel free to contact Bridgette Zapalac at 512-358-9935 or Bridgette.zapalac@terracon.com.

Sincerely,

Terracon

Bridgette Zapalac

Bridgette S. Zapalac

Senior Staff Scientist

Beth Valenzuela

Beth Valenzuela

Authorized Project Reviewer

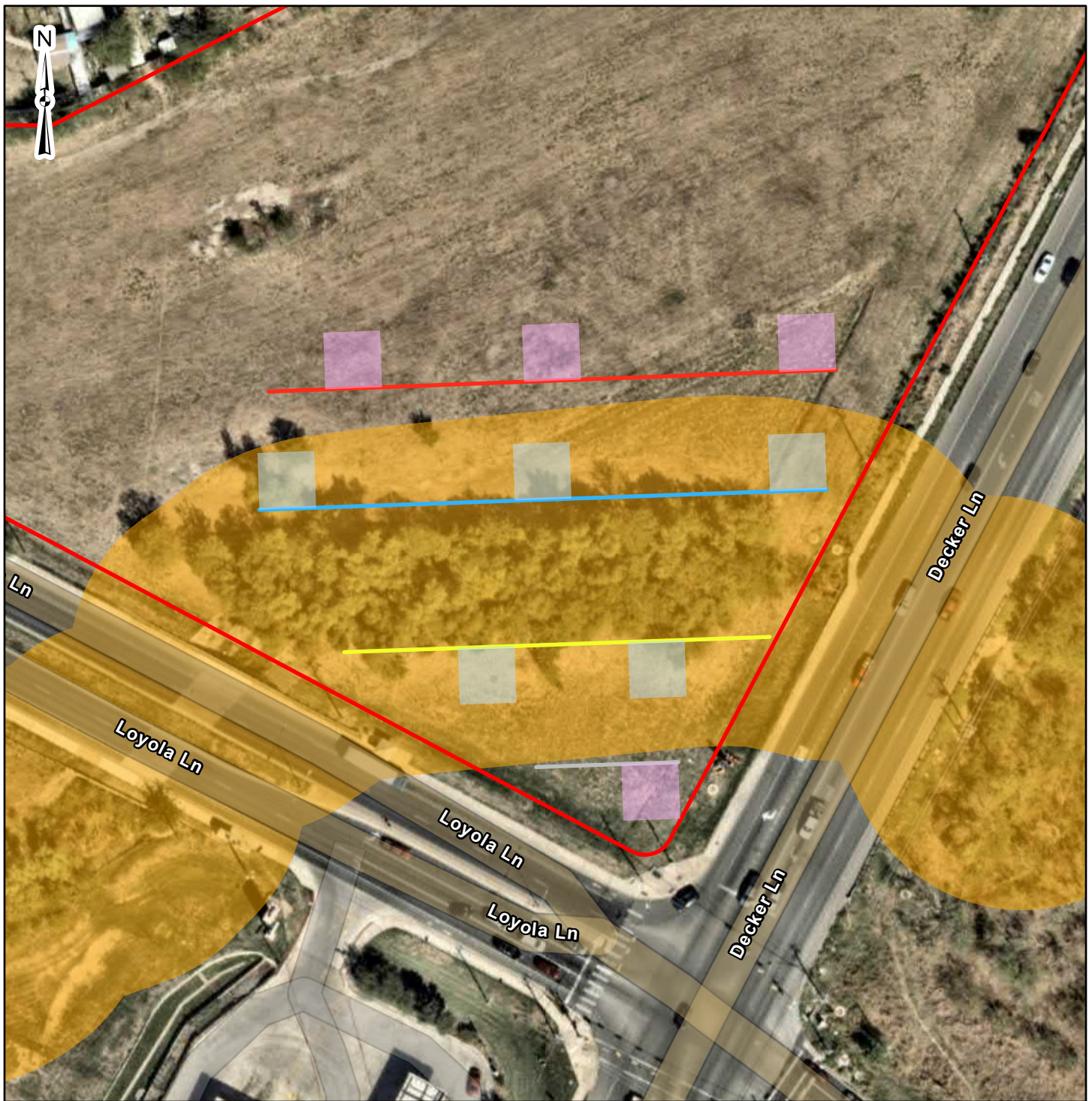
Attachments:

FAFH Exhibit 1.0

FAFH Score Sheets

Site Photography

Credentials



- Approximate Project Boundary
- Zone 1 Plots
- Zone 2 Plots
- Critical Water Quality Zone (CWQZ)

- Transects
- T1
 - T2
 - T3
 - T4

Feet
0 25 50 100

DATA SOURCES:
Esri Community Maps Contributors, Austin Community College, Baylor University, City of Austin, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, nearmap, Maxar, Microsoft

Project No.:	
96247363	
Date:	
Jul 2024	
Drawn By:	
RC	
Reviewed By:	
BZ	



5307 Industrial Oaks Blvd. - #160 Austin, TX 78735
PH. (512) 442-1122 terracon.com

FAFH Zone Plots

Austin Loyola Tracts

NWC Loyola and Decker Lanes, Austin,
Travis County, Texas

Exhibit

1.0

Scoring: Zone 1 – Floodplain Health

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 9:00-9:38

Transect Number: T1

Staff (if applicable): BZ, RK

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of area has visual gaps in vegetation	20% - 40% of area has visual gaps in vegetation	40 - 60% of area has visual gaps in vegetation	> 60% of area has visual gaps in vegetation	1
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	1
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 200 pounds per square inch	201 - 400 pounds per square inch	401 - 600 pounds per square inch	> 600 pounds per square inch	3
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	2
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	1

Zone 1 Score: 8

Assessed Condition (Circle One)

Excellent: 18 - 20

Good: 13 - 17

Fair: 8 - 12

Poor: 5 - 7

Field Sheet: Zone 1 – Floodplain Health

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 9:00-9:38

Transect Number: T1

Staff (if applicable): BZ, RK

Gap Frequency

Number of 1 meter gaps: 8

Percent of Transect: 80 %

Large Woody Debris

Number of Large Woody Debris Pieces: 0

Soil Compaction

Plot 1 (10 meters)	Plot 2 (45 meters)	Plot 3 (90 meters)
#1: <u>200</u> psi #2: <u>190</u> psi #3: <u>240</u> psi	#1: <u>380</u> psi #2: <u>400</u> psi #3: <u>320</u> psi	#1: <u>400</u> psi #2: <u>380</u> psi #3: <u>320</u> psi
Average for Plot 1: <u>210</u> psi	Average for Plot 2: <u>366.66</u> psi	Average for Plot 3: <u>366.66</u> psi

Average for All Sample Plots: _____ psi

Structural Diversity

Plot 1 (10 meters)	Plot 2 (45 meters)	Plot 3 (90 meters)
Canopy: <u>0</u> % Understory: <u>35</u> %	Canopy: <u>0</u> % Understory: <u>45</u> %	Canopy: <u>0</u> % Understory: <u>25</u> %

Average for All Sample Plots: Canopy: 0 % Understory: 35 %

Tree Demography

Plot 1 (10 meters)	Plot 2 (45 meters)	Plot 3 (90 meters)
Number of Age Classes: <u>0</u>	Number of Age Classes: <u>0</u>	Number of Age Classes: <u>0</u>

Average for All Sample Plots: 0

Scoring: Zone 2 – Critical Water Quality Zone

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 9:44-10:18

Transect Number: T2

Staff (if applicable): BZ, RK

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of riparian area has visual gaps in vegetation	20% - 40% of riparian area has visual gaps in vegetation	40 - 60% of riparian area has visual gaps in vegetation	> 60% of riparian area has visual gaps in vegetation	1
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	1
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 200 pounds per square inch	201 - 400 pounds per square inch	401 - 600 pounds per square inch	> 600 pounds per square inch	3
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	2
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	1
Wetland Tree Status <i>Percent of total trees that are defined as FAC+ or greater with respect to wetland status.</i>	> 65% of trees are FAC+ or greater	50 - 65% of trees are FAC+ or greater	25 - 49% of trees are FAC+ or greater	< 25% of trees are FAC+ or greater	3
Riparian Zone Width <i>A measure of the width of the undisturbed riparian zone.</i>	> 18 meters or > 75% of the CWQZ	12 - 18 meters or 50 - 75% of the CWQZ	6 - 12 meters or 25 - 49% of the CWQZ	< 6 meters or < 25% of the CWQZ	2

Zone 2 Score: 13

Assessed Condition (Circle One)

Excellent: 25 - 28

Good: 18 - 24

Fair: 11 - 17

Poor: 7 - 10

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24 Time: 9:44-10:18

Transect Number: T2

Staff (if applicable): BZ, RK

Gap Frequency

Number of 1 meter gaps: 6

Percent of Transect: 60 %

Large Woody Debris

Number of Large Woody Debris Pieces: 0

Soil Compaction

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
#1: <u>310</u> psi #2: <u>300</u> psi #3: <u>310</u> psi Average for Plot 1: <u>306.66</u> psi	#1: <u>310</u> psi #2: <u>300</u> psi #3: <u>300</u> psi Average for Plot 2: <u>303.33</u> psi	#1: <u>400</u> psi #2: <u>370</u> psi #3: <u>380</u> psi Average for Plot 3: <u>383.33</u> psi

Average for All Sample Plots: 331.1 psi

Structural Diversity

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Canopy: <u>40</u> % Understory: <u>50</u> %	Canopy: <u>10</u> % Understory: <u>20</u> %	Canopy: <u>5</u> % Understory: <u>15</u> %

Average for All Sample Plots: Canopy: 18.3 % Understory: 28.3 %

Tree Demography

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of Age Classes: <u>1</u>	Number of Age Classes: <u>1</u>	Number of Age Classes: <u>1</u>

Average for All Sample Plots: 1

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 9:44-10:18

Transect Number: T2

Staff (if applicable): BZ, RK

Wetland Tree Status

Plot 1 (5 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of FAC+ or Greater Trees: <u>1</u>	Number of FAC+ or Greater Trees: <u>1</u>	Number of FAC+ or Greater Trees: <u>0</u>
Total Number of Trees: <u>2</u>	Total Number of Trees: <u>1</u>	Total Number of Trees: <u>1</u>
Percent FAC+ or Greater: <u>50</u> %	Percent FAC+ or Greater: <u>100</u> %	Percent FAC+ or Greater: <u>0</u> %

Average for All Sample Plots: 50 %

Riparian Zone Width

Measurement 1 (5 meters)	Measurement 2 (50 meters)	Measurement 3 (95 meters)
Riparian Zone Width: <u>14</u> m	Riparian Zone Width: <u>8</u> m	Riparian Zone Width: <u>5</u> m

Average for All Measurements: 9 m

Scoring: Zone 2 – Critical Water Quality Zone

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 10:40-11:04

Transect Number: T-3

Staff (if applicable): BZ, RK

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of riparian area has visual gaps in vegetation	20% - 40% of riparian area has visual gaps in vegetation	40 - 60% of riparian area has visual gaps in vegetation	> 60% of riparian area has visual gaps in vegetation	2
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	1
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 200 pounds per square inch	201 - 400 pounds per square inch	401 - 600 pounds per square inch	> 600 pounds per square inch	3
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	3
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	1
Wetland Tree Status <i>Percent of total trees that are defined as FAC+ or greater with respect to wetland status.</i>	> 65% of trees are FAC+ or greater	50 - 65% of trees are FAC+ or greater	25 - 49% of trees are FAC+ or greater	< 25% of trees are FAC+ or greater	1
Riparian Zone Width <i>A measure of the width of the undisturbed riparian zone.</i>	> 18 meters or > 75% of the CWQZ	12 - 18 meters or 50 - 75% of the CWQZ	6 - 12 meters or 25 - 49% of the CWQZ	< 6 meters or < 25% of the CWQZ	4

Zone 2 Score: 15

Assessed Condition (Circle One)

Excellent: 25 - 28

Good: 18 - 24

Fair: 11 - 17

Poor: 7 - 10

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24 Time: 10:40-11:04

Transect Number: T-3

Staff (if applicable): BZ, RK

Gap Frequency

Number of 1 meter gaps: 6

Percent of Transect: 60 %

Large Woody Debris

Number of Large Woody Debris Pieces: 0

Soil Compaction

Plot 1 (20 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
#1: <u>350</u> psi #2: <u>370</u> psi #3: <u>360</u> psi Average for Plot 1: <u>360</u> psi	#1: <u>370</u> psi #2: <u>350</u> psi #3: <u>300</u> psi Average for Plot 2: <u>340</u> psi	#1: <u> </u> psi #2: <u> </u> psi #3: <u> </u> psi Average for Plot 3: <u> </u> psi

Average for All Sample Plots: 350 psi

Structural Diversity

Plot 1 (20 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Canopy: <u>0</u> % Understory: <u>45</u> %	Canopy: <u>5</u> % Understory: <u>45</u> %	Canopy: <u> </u> % Understory: <u> </u> %

Average for All Sample Plots: Canopy: 2.5 % Understory: 45 %

Tree Demography

Plot 1 (20 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of Age Classes: <u>0</u>	Number of Age Classes: <u>1</u>	Number of Age Classes: <u> </u>

Average for All Sample Plots: 1

Field Sheet: Zone 2 – Critical Water Quality Zone

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 10:40-11:04

Transect Number: T3

Staff (if applicable): BZ, RK

Wetland Tree Status

Plot 1 (20 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of FAC+ or Greater Trees: <u>0</u>	Number of FAC+ or Greater Trees: <u>0</u>	Number of FAC+ or Greater Trees: <u> </u>
Total Number of Trees: <u>0</u>	Total Number of Trees: <u>2</u>	Total Number of Trees: <u> </u>
Percent FAC+ or Greater: <u>0</u> %	Percent FAC+ or Greater: <u>0</u> %	Percent FAC+ or Greater: <u> </u> %

Average for All Sample Plots: 0 %

Riparian Zone Width

Measurement 1 (20 meters)	Measurement 2 (50 meters)	Measurement 3 (95 meters)
Riparian Zone Width: <u>17</u> m	Riparian Zone Width: <u>29</u> m	Riparian Zone Width: <u> </u> m

Average for All Measurements: 23 m

Scoring: Zone 1 – Floodplain Health

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 11:05-11:15

Transect Number: T4

Staff (if applicable): BZ, RK

Parameter	Excellent (4)	Good (3)	Fair (2)	Poor (1)	Score
Gap Frequency <i>A visual assessment of the number of gaps in vegetation.</i>	0 - 20% of area has visual gaps in vegetation	20% - 40% of area has visual gaps in vegetation	40 - 60% of area has visual gaps in vegetation	> 60% of area has visual gaps in vegetation	2
Large Woody Debris <i>An evaluation of the amount of large woody debris.</i>	7 or more pieces of large woody debris	5 - 6 pieces of large woody debris	3 - 4 pieces of large woody debris	2 or less pieces of large woody debris	1
Soil Compaction <i>An assessment of the bulk density of the soil.</i>	0 - 200 pounds per square inch	201 - 400 pounds per square inch	401 - 600 pounds per square inch	> 600 pounds per square inch	3
Structural Diversity <i>An evaluation of the canopy and understory vegetation.</i>	> 65% canopy; or > 50% canopy and > 50% understory	51 - 65% canopy; or 0 - 50% canopy and > 40% understory	31 - 50% canopy; or 0 - 30% canopy and > 30% understory	0 - 30% canopy; or 0 - 15% canopy and 0 - 30% understory	2
Tree Demography <i>An assessment of the age class distribution of all canopy tree species.</i>	Canopy tree species are present in all 4 age classes	Canopy tree species are present in 3 of 4 age classes	Canopy tree species are present in 2 of 4 age classes	Canopy tree species are present in only 1 age class or no trees	1

Zone 1 Score: 9

Assessed Condition (Circle One)

Excellent: 18 - 20

Good: 13 - 17

Fair: 8 - 12

Poor: 5 - 7

Field Sheet: Zone 1 – Floodplain Health

Site/Project Name: Austin Loyola Tracts

Date: 7/12/24

Time: 9:00-9:38

Transect Number: T4

Staff (if applicable): BZ, RK

Gap Frequency

Number of 1 meter gaps: 5

Percent of Transect: 50 %

Large Woody Debris

Number of Large Woody Debris Pieces: 0

Soil Compaction

Plot 1 (15 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
#1: <u>400</u> psi #2: <u>380</u> psi #3: <u>330</u> psi Average for Plot 1: <u>370</u> psi	#1: <u> </u> psi #2: <u> </u> psi #3: <u> </u> psi Average for Plot 2: <u> </u> psi	#1: <u> </u> psi #2: <u> </u> psi #3: <u> </u> psi Average for Plot 3: <u> </u> psi

Average for All Sample Plots: 370 psi

Structural Diversity

Plot 1 (15 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Canopy: <u>0</u> % Understory: <u>35</u> %	Canopy: <u> </u> % Understory: <u> </u> %	Canopy: <u> </u> % Understory: <u> </u> %

Average for All Sample Plots: Canopy: 0 % Understory: 35 %

Tree Demography

Plot 1 (15 meters)	Plot 2 (50 meters)	Plot 3 (95 meters)
Number of Age Classes: <u>0</u>	Number of Age Classes: <u> </u>	Number of Age Classes: <u> </u>

Average for All Sample Plots: 0



Photo 1 View of transect 1, plot 1, facing upstream



Photo 2 View of transect 1, plot 1, facing downstream



Photo 3 View of transect 1, plot 2, facing upstream



Photo 4 View of transect 1, plot 2, facing downstream



Photo 5 View of transect 1, plot 3, facing upstream



Photo 6 View of transect 1, plot 3, facing downstream



Photo 7 View of transect 2, plot 1, facing upstream



Photo 8 View of transect 2, plot 1, facing downstream



Photo 9 View of transect 2, plot 2, facing upstream



Photo 10 View of transect 2, plot 2, facing downstream



Photo 11 View of transect 2, plot 3, facing upstream



Photo 12 View of transect 2, plot 3, facing downstream



Photo 13 View of transect 3, plot 1, facing upstream



Photo 14 View of transect 3, plot 1, facing downstream



Photo 15 View of transect 3, plot 2, facing upstream



Photo 16 View of transect 3, plot 2, facing upstream



Photo 17 View of transect 4, plot 1, facing upstream



Photo 18 View of transect 4, plot 1, facing downstream

Bridgette Zapalac

Environmental Project Manager

Bridgette is a Senior Staff Scientist in Terracon's Austin, Texas office. Ms. Zapalac has experience with Phase I Environmental Site Assessments (ESA), City of Austin (COA) Environmental Resource Inventories (ERI), Threatened and Endangered (T&E) Species Habitat Assessments (HA), Migratory Bird Treaty Act (MBTA) Nesting Surveys, Preliminary Waters of the United States (WOTUS) delineations and has assisted with multiple species Presence/Absence (P/A) Surveys for various sites throughout Texas.

Ms. Zapalac also has experience in various types of desktop natural resource reviews/evaluations, regulatory work, permitting, and extensive environmental research.



PROJECT EXPERIENCE

DB Wood Road improvements Phase II – Georgetown, Texas
Project Manager for the Golden-Cheeked Warbler (GCWA) P/A Survey and assisted with the WOTUS delineation and T&E species HA conducted on an approximately 12,144-foot alignment, located near Georgetown, Texas. The purpose of the WOTUS delineation and T&E Species Assessment was to address Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, the Endangered Species Act (ESA) and provide an opinion as to whether proposed development within the study area is likely to impact species protected under the Texas Parks and Wildlife Code (TPWD Code), Bald and Golden Eagle Protection Act (BGEPA), and/or Migratory Bird Treaty Act (MBTA). The GCWA P/A survey was conducted to meet the USFWS requirements for GWCA during breeding season. Terracon's client was Kimley-Horn and Associates, LLC.

Project Completed: 2023

3303 Manor Road - Austin, Texas

Project Manager for the COA ERI, WOTUS delineation, and T&E Species Desktop Assessment conducted on three tracts of land totaling approximately 13.54-acres located in Austin, Texas. The purpose for the ERI was to oversee and conduct a site assessment to identify critical environmental features (CEFs) which include seeps, springs, wetlands, canyon rimrock, bluffs, and karst features. The purpose of the WOTUS delineation and T&E Species HA was to address Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, the ESA, and provide an opinion as to whether proposed development within the study area is likely to impact species protected under the TPW Code, BGEP, and MBTA. Terracon's client was Embrey Partners, LLC.

Project Completed: 2023

High Ridge Development – Cedar Park, Texas

Project Manager for the WOTUS delineation for an approximately 496-acre tract of land located in Cedar Park, Texas. The purpose for the WOTUS delineation was to address Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act compliance requirements as they may affect the tract of undeveloped land. Terracon's client was High Ridge Development III, LLC.

Project Completed: 2021

Greens Bayou Mid-Reach – Houston, Texas

Assisted with the Freshwater Mussel Reconnaissance Survey and Freshwater Mussel P/A Survey for an approximate 3.6-mile stretch of Greens Bayou located in Houston, Texas. The purpose for the reconnaissance survey was to characterize the existing site conditions and evaluate the presence of suitable freshwater mussel habitat within the proposed impact area of the stream. The P/A Survey was conducted to determine mussel presence of probable absence within suitable habitat to avoid incidental take of protected mussel

EDUCATION

Bachelor of Science,
Bioenvironmental Science,
Texas A&M University, 2018

WORK HISTORY

Terracon, Senior Staff
Scientist, July 2018-Present

TPWD Scientific Permit for
Research (SPR-0223-022):
freshwater mussel sub-
permittee
March 2023-Present

species in Texas. Terracon's client was Woolpert Engineering Inc.

Project Completed: 2023

Outpost Solar Project – Laredo, Texas

Project Manager for the MBTA Active Nest Surveys and assisted with a WOTUS delineation for an approximately 3,342.65-acre tract of undeveloped land located in Laredo, Texas. The purpose for the MBTA Nest Surveys was to assist in assist with compliance of the MBTA, to minimize the risk of incidental take of migratory birds due to the woody vegetation removal activities. The WOTUS delineation was conducted to address Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act compliance requirements as they may affect the undeveloped tract of land. Terracon's client was Primoris Renewable Energy, Inc.

Project Completed: 2023

Wimberly Tract – Wimberly, Texas

Project Manager for the Phase I ESA and assisted with a WOTUS delineation for an approximately 8.86-acre tract of undeveloped land located in Wimberly, Texas. The purpose for the WOTUS delineation was to address Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act compliance requirements as they may affect the tract of undeveloped land. Terracon's client was Foresite Group, Inc.

Project Completed: 2022

2222 Campus – Austin, Texas

Project Manager for the COA HA for an approximately 153-acre of partially undeveloped tract located in Austin, Texas. The purpose of the Habitat Assessment was to observe the study area for protected species and/or their suitable habitats and provide an opinion on if proposed development within the study area may affect species/habitat listed under the ESA, the TPWD Code, BGEPA, and/or MBTA. Terracon's client was Karlin Real Estate Group.

Project Completed: 2021

Republic Drive – Kyle, Texas

Project Manager for the Phase I ESA and assisted with a WOTUS delineation for an approximately 28.62-acre tract of undeveloped land located in Kyle, Texas. The purpose for the WOTUS delineation was to address Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act compliance requirements as they may affect the proposed tract of undeveloped land. Terracon's client was Endeavor Real Estate Group.

Project Completed: 2021

3303 Manor Road - Austin, Texas

Project Manager for the ERI conducted on an approximately 2.88 acre mostly undeveloped tract located in Austin, Texas. The purpose for the ERI was to oversee and conduct a site assessment to identify CEFs which include seeps, springs, wetlands, canyon rimrock, bluffs, and karst features. Terracon's client was Cumby Development.

Project Completed: 2021

Old San Antonio Road – Austin, Texas

Project Manager for Phase I Environmental Site Assessment (ESA) and Environmental Resource Inventory (ERI) conducted on an approximate 58.278-acre tract of undeveloped land. The purpose of the ESA was to identify recognized environmental conditions on the site. The purpose for the ERI was to identify critical environmental features (CEFs) (seeps, springs, wetlands, canyon rimrock, bluffs, karst features). Terracon's client was Stillwater Capital Investments.

Project Completed: 2020

S. Elizabeth Valenzuela

SENIOR ARCHITECTURAL HISTORIAN

PROFESSIONAL EXPERIENCE

Ms. Valenzuela is an architectural historian in Terracon's Austin, Texas office. She has 24 years of professional experience in the field of preservation and historic architecture. She has supervised and participated in historic resources surveys, building documentation, archival research, and historic context development projects throughout the United States. She has worked with municipal governments, and state and federal agencies to identify, document, and provide National Register of Historic Places (NRHP) eligibility assessments for commercial, residential, governmental, industrial, rural resources and cultural landscapes. These projects have involved archival research using primary and secondary source materials at local, state, and national repositories, and condition assessments and field documentation using standardized field survey forms and digital and 35mm photography.

Ms. Valenzuela earned a Master of Architecture degree from Texas Tech University and during her career has managed a broad range of cultural resource projects. These projects have included the identification and assessment of resources dating mostly from the early nineteenth century to the mid-twentieth century and have encompassed utilitarian structures, rural landscapes, vernacular and high-style residential, commercial, and institutional buildings. Ms. Valenzuela meets the *Secretary of Interior Standards for Professional Qualifications* in Architecture, Historic Architecture, and Architectural History.

SELECTED PROJECT EXPERIENCE

Historic Resources Survey Reports

Historic Resources Survey for the Langston University Horticulture Research and Extension Center – Langston, Logan County, Oklahoma

Project manager and architectural historian for a historic resources survey for Langston University, an 1890 Land Grant Institution, as they pursued funding from the US Department of Agriculture under the 1890 Facilities Grant Program for the construction of a horticulture facility. Conducted a reconnaissance-level historic resources survey of historic-age buildings and site features within the project area of potential effects (APE), located on an 80-acre tract of land owned by Langston University.

Historic Resources Survey for the Ivey–Moore House – San Marcos, Texas

Project manager and architectural historian for a historic resources survey in support of the obligations of the Code (Texas Natural Resource Code, Title 9, Chapter 191) and its implementing Rules of Practice and Procedure (Texas Administrative Code, Title 13, Chapter 26). Conducted a reconnaissance-level historic resources survey of the building and site features associated with the Ivey-Moore House, located on the Texas State University campus in the northwestern section of San Marcos, Hays County, Texas. *Accepted by Texas SHPO in June 2020.*

Historic Resources Survey Report of the West End School – Taylor, Williamson County, Texas

Project manager and architectural historian for a historic resources survey in support of the obligations of HUD and Williamson County (responsible entity) under Section 106 of the National Historic Preservation Act, 1966, as amended (NHPA). Conducted a reconnaissance-level historic resources survey of historic-age buildings and site features at the West End School, located on a 2.21-acre parcel located at 303 Ferguson Street in the western section of Taylor, Williamson County, Texas.

Historic Resources Survey for the City of San Marcos – San Marcos, Texas

As a subcontractor to Hicks & Company, participated in windshield and reconnaissance-level surveys to update three previous historic resources surveys and previously unevaluated commercial districts and residential neighborhoods.

EDUCATION

Master of Architecture, Texas Tech University, 1998

CERTIFICATIONS

Section 4(f) Training, National Preservation Institute, 2019

Section 106 Training, National Preservation Institute, 2007

TxDOT Pre-certification, Categories 2.15.1 and 2.15.2, 2004/2019

PROFESSIONAL ACTIVITIES

District 2 Commissioner and former Vice Chair, City of Austin Historic Landmark Commission, 2015-present

WORK HISTORY

Terracon Consultants, Inc.,
Senior Architectural Historian, 2018-Present

Valenzuela Preservation Studio, LLC
Principal/Preservation Specialist,
2010-2018

Hardy-Heck-Moore, Inc.,
Preservation Specialist/Project
Manager, 2003-2010

Volz & Associates, Inc., Architectural
Intern, 2000-2003

Parshall + Associates, Architectural
Intern, 1998-2000

PRESENTATIONS/PUBLISHED ARTICLES

"Community Connection with Rural Texas Landscapes: The Evolution of Social Encampments at the Turn-of-the-Nineteenth Century" presented at the *Southeast Chapter of the Society of Architectural Historians*, October 2020.

"Tear Down or Treasure: A Case for Historic Preservation," presented at the Rio Grande Valley American Institute of Architects annual convention, September 2017.

"Architecture of Survival: A Brief History of Building Techniques of the Big Bend Region" presented at the *Southeast Chapter of the Society of Architectural Historians*, November 1998.

** Work performed prior to joining Terracon.*

S. Elizabeth Valenzuela (continued)

The historic resources survey adhered to THC guidelines and was intended to support future planning and development initiatives by the City of San Marcos. Participated in field survey, archival research, and public outreach meetings. Accepted by THC in September 2019.

Historic Resources Survey and Survey Plan for the Gregg County Historical Commission – Gregg County, TX

As a subcontractor to Hicks & Company, participated in windshield and reconnaissance-level surveys as a case study for the Gregg County Survey Plan. The historic resources survey adhered to THC guidelines and was intended to support future planning initiatives by the Gregg County Historical Commission. Participated in field survey, archival research, and public outreach meetings. Served as primary author for the Gregg County Historic Resources Survey Plan. Document outlined goals for future survey efforts, defined survey project considerations, prioritized recommended future surveys, and provided recommended sources of funding for future surveys. Accepted by Gregg County Historical Commission in September 2018.

Historic Resources Survey for Acequia Plaza Development, San Antonio, Bexar County, Texas

Project director and report author for a reconnaissance-level historic resources survey for parcels impacted by a proposed development subject to THC consultation and coordination under *Section 106*. Completed inventory of previously designated historic properties, limited field survey, mapping, digital photography, NRHP eligibility assessment of the subject building and potential impacts analysis for identified resources.

Historic Property Eligibility Study – Fort Huachuca, Arizona

Project director and architectural historian for historic-age property evaluations for resources at Fort Huachuca in southeastern Arizona. Conducted reconnaissance-level historic resources survey of 21 identified resources; final report included a historic context for specific themes relevant to the historic-age resources, architectural descriptions and NRHP-eligibility recommendations under an expedited schedule. Accepted by Arizona SHPO in 2011.

National Register of Historic Places Nominations

Mitigative Documentation for Turpin Grain Elevator – Turpin, Oklahoma

Project Manager and architectural historian for the documentation of a 1925 wooden grain elevator, noteworthy for its association with the Light Grain & Milling Company, the Beaver, Mead, and Englewood Railroad, and as an example of innovation and mechanization of American agriculture. Conducted field survey and archival research, and served as primary author for the updated National Register nomination for the grain elevator. *Project completed January 2020.*

Update to National Register Nomination for the Central Avenue Historic District – Hot Springs, Arkansas

Project director and author for the NRHP nomination of the central commercial district for the health resort industry of Hot Springs, Arkansas. Completed archival research, fieldwork, digital photography and NRHP form preparation per NPS Standards. Accepted by the Arkansas SHPO in January 2019. Review to be completed by the Arkansas State Board of Review in April 2019 and forward to the National Park Service for listing in the NRHP.

National Register Nomination for the Eureka Springs Cemetery – Eureka Springs, Arkansas*

Project director and author for the NRHP nomination of a large, rural community burial ground located east of the main commercial center of Eureka Springs. Completed archival research, fieldwork, digital photography and NRHP form preparation per NPS Standards. Accepted by the Arkansas SHPO in January 2018 and by the Arkansas State Board of Review in April 2018. The Eureka Springs Cemetery was listed in the NRHP on June 6, 2018.

National Register Nomination for the Broadway Cemetery Historic District – Galveston, Texas*

Project director and primary author for the NRHP nomination for a large, urban burial ground centrally located within the city of Galveston, Texas. Responsibilities included contract administration, public outreach efforts, supervision and participation in archival research, fieldwork, digital and 35mm photography and NRHP form preparation, per NPS Standards. Accepted by NPS and listed in the NRHP on June 13, 2014.

Historic Preservation and Preservation Planning

Online Training for Disaster Preparedness in Historic Texas Cemeteries – Texas Gulf Coast

Project manager for the development of an online training package focused on disaster preparedness and response for historic cemeteries within a 41-county area damaged by Hurricane Harvey in 2017. The webinar series provides technical content related to pre- and post-disaster planning, safety, partnerships, funding, resource recording and treatment. The selection and presentation order of webinars is designed to offer comprehensive content from the pre- and post-disaster planning and response phases of cemetery maintenance, while individual webinars will function as stand-alone modules. Each webinar is supplemented by accompanying demonstration videos and handouts to provide additional information and tools. In addition to the technical webinar series, the Terracon team will host six virtual stakeholder meetings to collect their thoughts on the information presented in the first two webinars on disaster preparedness, share their experiences with community involvement, funding, and safety considerations for Texas cemeteries, and offer ideas for the final People's Choice webinar in the series. *Ongoing project.*