

CITY OF KYLE

Notice of Regular City Council Meeting



Kyle City Hall, 100 W. Center Street, Kyle, TX 78640
The public can watch remotely at: Spectrum 10;
<https://www.cityofkyle.com/kyletv/kyle-10-live>. One or more members of the governing body may participate in the meeting by videoconference pursuant to Section 551.127, Texas Government Code, provided that a quorum of the governing body will be present at Kyle City Hall.

Notice is hereby given that the governing body of the City of Kyle, Texas will meet at 7:00 PM on April 4, 2023, at Kyle City Hall, 100 W. Center Street, Kyle, TX 78640, for the purpose of discussing the following agenda.

Posted this 1st day of April, 2023, prior to 4:00 p.m.

I. Call Meeting to Order

II. Approval of Minutes

1. City Council Special Meeting Minutes - March 21, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*
2. City Council Meeting Minutes - March 21, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*
3. City Council Special Meeting Minutes - March 23, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*

III. Citizen Comment Period with City Council

The City Council welcomes comments from Citizens early in the agenda of regular meetings. Those wishing to speak are encouraged to sign in before the meeting begins. Speakers may be provided with an opportunity to speak during this time period on any agenda item or any other matter concerning city business, and they must observe the three-minute time limit.

IV. Agenda Order

4. Agenda Order per Rules of Council Sec. B1. ~ *Travis Mitchell, Mayor*

V. Appointments

5. Consideration of nomination for appointment to the Kyle Public Library Advisory Board to fill a vacancy - Seat 6. ~ *Colleen Tierney, Library Director*
 - Christina Thompson
6. Consideration and possible appointment of a city council member to the Combined Emergency Communications Center Executive Board. ~ *Jerry Hendrix, Interim City Manager*

VI. Presentation

7. Autism Awareness Month Proclamation. ~ *Michael Tobias, Mayor Pro Tem*
8. National Animal Control Officer Appreciation Week Proclamation. ~ *Miguel A. Zuniga PhD, Council Member*
9. Sexual Assault Awareness Month Proclamation. ~ *Daniela Parsley, Council Member*
10. Child Abuse Awareness Proclamation. ~ *Travis Mitchell, Mayor*
11. Proclamation recognizing Kyle Eagle Scouts Class of 2022. ~ *Daniela Parsley, Council Member*
12. Earth Month Awareness Proclamation. ~ *Miguel A. Zuniga PhD, Council Member*
13. Presentation of Master Schedule and Public Outreach Plan for the 2022 Road Bond Program. ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*
14. Update on various capital improvement projects, road projects, building program, and/or general operational activities where no action is required. ~ *Jerry Hendrix, Interim City Manager*
 - Pickleball Tournament
 - Earth Day Native Plant Give-Away
 - Earth Day Camp Out
 - Seasonal Staff Hiring Update
 - Autism Awareness Event
 - Food for Fines
 - Ribbon Cutting of Seed Library
 - Teen Job Fair
 - Comprehensive Master Plan Update
 - Economic Development Joint Workshop
 - City Hall Emergency Training
 - Team Kyle Update
15. CIP/Road Projects and Consent Agenda Presentation. ~ *Travis Mitchell, Mayor*

VII. Consent Agenda

16. Approve a Resolution by the City of Kyle, Texas suspending the April 10, 2023 effective date of the proposal by Texas Gas Service Company, A division of One Gas, Inc. to implement interim GRIP rate adjustments for gas utility investment in 2022 and requiring delivery of the resolution to the company and legal counsel. ~ *Kaela Sharp, City Planner*
17. Approve a Resolution establishing the date for a public hearing to be held on May 16, 2023, as required under Chapter 395 of the Texas Local Government Code, to consider, discuss, and review the update to the water and wastewater land use assumptions, water and wastewater capital improvements plan, and imposition of updated water and wastewater impact fee amounts. ~ *Leon Barba, P.E., City Engineer*
18. Authorize the Interim City Manager to execute The Public Highway At-Grade Crossing Agreement with UNION PACIFIC RAILROAD COMPANY and in an amount not to exceed \$36,000.00 estimated for project management and inspections for the Center Street and South Street quiet zone railroad crossings. ~ *Leon Barba, P.E., City Engineer*
19. Approve Amendment No. 5 to Task Order No. 6 to LJA ENGINEERING, INC., Austin, Texas, in the amount not to exceed \$3,039.20 increasing the total contract amount to \$233,735.00 for additional survey of temporary construction easements for the Anthem to Kohlers Crossing Waterline Connection Project. ~ *Leon Barba, P.E., City Engineer*
20. Authorize the Interim City Manager to execute Add Service Agreements with PGAL, Inc., in an amount not to exceed \$54,500.00 for additional design services for the Vybe Trail (\$30,000.00), Lift Station for Rainwater Harvesting (\$23,500.00), and Distributed Antenna System (\$1,000.00) in association with the City's Public Safety Center project. Funding will be provided from the remaining funds in PGAL's contract (\$24,500.00) and from the vybe trail funds (\$30,000.00) for this agenda item. ~ *Derek Bird, AGCM, City of Kyle Project Manager*
21. Authorize the Interim City Manager to accept a \$25,000.00 grant from the Burdine Johnson Foundation for the purpose of creating a community garden at Post Oak Park. ~ *Mariana Espinoza, Director of Parks & Recreation*
22. Authorize the Police Department to apply for a Strategic Traffic Enforcement Program (STEP) Click It Or Ticket (CIOT) grant in an amount no greater than \$5,000.00 from the Texas Department of Transportation and authorize an estimated 20% matching funding from the Police Department's approved operating budget for FY 2022-2023 in an amount not to exceed \$1,000 to fund the STEP Grant Program for two weeks beginning May 22, 2023 and ending June 4, 2023. ~ *Jeff Barnett, Chief of Police*
23. Authorize the Police Department to apply for a Strategic Traffic Enforcement Program (STEP) Operation Slow Down (OpSlow) grant in an amount no greater than \$5,000.00 from Texas Department of Transportation (TXDOT) and

authorize an estimated 20% matching funding from the Police Department's approved operating budget for FY 2022-2023 in an amount not to exceed \$1,000 to fund the STEP Grant Program for two weeks beginning July 14, 2023 and ending July 30, 2023. ~ *Jeff Barnett, Chief of Police*

24. Discuss and take action to pay Kazoo, Inc. DBA WorkTango an additional \$3,069.00 subscription fee to add 55 plus users to conduct Boards & Commissions engagement surveys as needed. ~ *Sandra Duran, Director of Human Resources*
25. Approve an agreement with and award a purchase order in the guaranteed minimum amount of \$18,000.00 to ALAMO ATTRACTIONS, INC., San Antonio, Texas for providing carnival rides, concessions and amusements for the Kyle Fair TexTravaganza. ~ *Mariana Espinoza, Director of Parks & Recreation*

VIII. Items Pulled from Consent Agenda

IX. Public Hearings

26. Public Hearing Regarding the Petition to Increase the Estimated Costs of the Improvements for Improvement Area #2 of the Southwest Kyle Public Improvement District No. 1. ~ *Stephanie Leibe, Norton Rose Fulbright, City's Bond Counsel*

X. Consider and Possible Action

27. Consideration and Approval of a Resolution of the City of Kyle, Texas, Approving an Amendment to the Southwest Kyle Public Improvement District No. 1 within the City of Kyle Pursuant to Chapter 372 of the Texas Local Government Code. ~ *Stephanie Leibe, Norton Rose Fulbright, City's Bond Counsel*
28. Approve Task Order No. 4 to PAPE-DAWSON ENGINEERS, INC., San Antonio, Texas in the amount not to exceed \$1,067,346.60 for engineering services and design of Old Stagecoach Road from Veterans Drive (RM 150) to Center Street (Off-System) and also Center Street (Off-System) from Old Stagecoach Road to Veterans Drive (RM 150). ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*
29. *(First Reading)* An Ordinance regulating traffic, authorizing and directing the installation and erection of stop signs for traffic control at the intersection of County Road 158 and Old Post Road; Spring Branch Drive and Spring Branch Loop/Fall Creek Drive; and Sanders and Kohler's Crossing in the city limits of Kyle. ~ *Leon Barba, P.E., City Engineer*
30. *(First Reading)* An Ordinance granting Acadian Ambulance Service of Texas, LLC, D/B/A Acadian Ambulance Service, a franchise to provide non-emergency and rollover emergency ambulance services within the boundaries of the City of Kyle, Texas; providing an agreement prescribing conditions, terms, and

regulations governing the operation of the non-emergency ambulance services; providing penalties for noncompliance with franchise. ~ *Kaela Sharp, City Planner*

- Public Hearing

31. Approve Change Order No. 1 in the amount of \$125,000.00 increasing the total contract amount awarded to OASIS WATER PLAYGROUNDS, Houston, TX, from \$500,000.00 to a total amount not to exceed \$625,000.00 and authorize execution of a contract in the total amount of \$625,000.00 for the design and construction of a 3,000 sq. ft. Splashpad and other associated structures and equipment as included in the proposal at the City's Gregg-Clarke Park. ~ *Mariana Espinoza, Director of Parks & Recreation*
32. Approve an agreement with and a purchase order to OASIS WATER PLAYGROUNDS, Houston, TX, in an amount not to exceed \$495,065.00 for the design and construction of a 2,300 sq. ft. Splashpad and other associated structures and equipment as included in the proposal at the City's Steeplechase Park. ~ *Mariana Espinoza, Director of Parks & Recreation*
33. Consider Approval of a Service Area Agreement between Crosswinds Municipal Utility District, the City of Kyle, and Texas Water Utilities, L.P., to transfer service area to City of Kyle to provide retail water utility services. ~ *Paige Saenz, City Attorney*
34. Discussion and possible action regarding a Request for Proposals for the preparation of the U.S. Department of Housing and Urban Development 2023-2024 Consolidated Plan as it relates to becoming a CDBG Entitlement City. ~ *Amber Schmeits, Assistant City Manager*
35. Discussion and possible action to amend the fire code section 503.2.1 and establish a new safe unobstructed width for public and private roads. ~ *Daniela Parsley, Council Member*
36. Discussion and possible action regarding the City of Kyle's future use of reclaimed water lines, including but not limited to review/discussion of past reports, future plans to incorporate lines into the city's infrastructure, including new development and possible direction to staff to obtain additional information. ~ *Yvonne Flores-Cale, Council Member*
37. Consideration and possible action to disannex or discontinue from being part of the city properties described in Ordinance No. 1010, consisting of approximately 62.47 acres of land, and to repeal Ordinance No. 1010. ~ *Paige Saenz, City Attorney*

XI. Executive Session

38. Pursuant to Chapter 551, Texas Government Code, the City Council reserves the right to convene into Executive Session(s) from time to time as deemed necessary

during this meeting. The City Council may convene into Executive Session pursuant to any lawful exception contained in Chapter 551 of the Texas Government Code including any or all of the following topics.

1. Pending or contemplated litigation, settlement agreement, or to seek the advice of the City Attorney and Attorneys concerning legal issues pursuant to Section 551.071, Texas Government Code, and Section 1.05, Texas Disciplinary Rules of Professional Conduct.
 - Cause No. 22-0873; the State of Texas, ex. rel. 1200 S. Old Stagecoach Road, LLC, v. City of Kyle, Texas; pending in the 207th Judicial District Court of Hays County, Texas, and Cause No. 19-1492; 1200 S. Old Stagecoach Road, LLC v. City of Kyle, Texas; pending in the 22nd Judicial District Court of Hays County, Texas
 - Water Services Area Agreement
 2. Possible purchase, exchange, lease, or value of real estate pursuant to Section 551.072 to deliberate the purchase of real property for public purpose.
 3. Personnel matters pursuant to Section 551.074.
 4. Convene into executive session pursuant to Section 551.087, Texas Government Code, to deliberate regarding the offer of economic incentives to one or more business prospects that the City seeks to have locate, stay, or expand in or near the City.
 - Project Provision
 - Project Lime Zest
 - Project DNA
39. Take action on items discussed in Executive Session.

XII. Adjourn

At any time during the City Council Meeting, the City Council may adjourn into an Executive Session, as needed, on any item listed on the agenda for which state law authorizes Executive Session to be held.

Under the Americans with Disabilities Act, an individual with a disability must have equal opportunity for effective communication and participation in public meetings. Kyle City Hall is wheelchair accessible. Individuals who require auxiliary aids, interpretive services, and/or other services for this meeting should submit a request at <https://www.cityofkyle.com/contact> or call (512)262-1010, 48 hours in advance of the meeting.



CITY OF KYLE, TEXAS

2023 0321 Special Minutes

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: City Council Special Meeting Minutes - March 21, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- 2023 0321 Special DRAFT

SPECIAL CITY COUNCIL MEETING MINUTES

The City Council of the City of Kyle, Texas met in Special Session on March 21, 2023 at Kyle City Hall with the following persons present:

Mayor Travis Mitchell
Mayor Pro Tem Michael Tobias
Council Member Bear Heiser
Council Member Yvonne Flores-Cale
Council Member Miguel Zuniga
Council Member Ashlee Bradshaw
Council Member Daniela Parsley
Jerry Hendrix, Interim City Manager
Amber Schmeits, Assistant City Manager
Paige Saenz, City Attorney
Rachel Sonnier, Communications Director
Grant Bowling, Video Production Specialist
Jennifer Kirkland, City Secretary
Leon Barba, City Engineer
Victoria Vargas, Economic Development Director
Marco Forti, IT Director
Will Atkinson, Planning Director
Kaela Sharp, City Planner
Debbie Guerra, Project Development Coordinator
Harper Wilder, Director of Public Works
Andrew Cable, Municipal Judge

I. Call Meeting to Order

Mayor Mitchell called the meeting to order at 6:01 p.m. Mayor Mitchell asked the city secretary to call roll.

Present were: Mayor Mitchell, Mayor Pro Tem Tobias, Council Member Heiser, Council Member Flores-Cale, Council Member Bradshaw, and Council Member Parsley. A quorum was present. Council Member Zuniga was absent. He arrived at 6:05 p.m. and entered into executive session.

II. Citizen Comment Period with City Council

Mayor Mitchell opened citizen comments at 6:02 p.m. With no one wishing to speak, Mayor Mitchell closed citizen comments at 6:02 p.m.

III. Executive Session

1. Pursuant to Chapter 551, Texas Government Code, the City Council reserves the right to convene into Executive Session(s) from time to time as deemed necessary during this meeting. The City Council may convene into Executive Session pursuant to any lawful exception contained in Chapter 551 of the Texas Government Code including any or all of the following topics.

1. Pending or contemplated litigation or to seek the advice of the City Attorney and Attorneys concerning legal issues pursuant to Section 551.071, Texas Government Code, and Section 1.05, Texas Disciplinary Rules of Professional Conduct.
2. Possible purchase, exchange, lease, or value of real estate pursuant to Section 551.072 to deliberate the purchase of real property for public purpose.
3. Personnel matters pursuant to Section 551.074.
4. Convene into executive session pursuant to Section 551.087, Texas Government Code, to deliberate regarding the offer of economic incentives to one or more business prospects that the City seeks to have locate, stay, or expand in or near the City.
 - Project Lion King

Council Member Bradshaw read into the record, “Pursuant to Chapter 551, Texas Government Code, the City of Kyle reserves the right to convene into Executive Session(s) from time to time as deemed necessary during this meeting. The City Council may convene into Executive Session pursuant to any lawful exception contained in Chapter 551 of the Texas Government Code including any or all of the following topics: Convene into executive session pursuant to Section 551.087, Texas Government Code, to deliberate regarding the offer of economic incentives to one or more business prospects that the City seeks to have locate, stay, or expand in or near the City - Project Lion King.”

The City Council convened into executive session at 6:03 p.m.

2. Take action on items discussed in Executive Session.

Mayor Mitchell called the meeting back to order at 6:28 p.m. Mayor Mitchell announced that no action took place in Executive Session and no action would be taken now.

IV. Adjourn

Mayor Mitchell moved to adjourn. Council Member Flores-Cale seconded the motion. No vote was held.

With no further business to discuss, the City Council adjourned at 6:28 p.m.

Travis Mitchell, Mayor

Attest:

Jennifer Kirkland, City Secretary



CITY OF KYLE, TEXAS

2023 0321 Regular Minutes

Meeting Date: 4/4/2023

Date time:7:00 PM

Subject/Recommendation: City Council Meeting Minutes - March 21, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

□ 2023 0321 DRAFT

REGULAR CITY COUNCIL MEETING MINUTES

The City Council of the City of Kyle, Texas met in Regular Session on March 21, 2023 at Kyle City Hall with the following persons present:

Mayor Travis Mitchell	Susan Reyna
Mayor Pro Tem Michael Tobias	Nelia Barrera
Council Member Bear Heiser	Joe Cantalupo
Council Member Yvonne Flores-Cale	Tino Robledo
Council Member Miguel Zuniga	
Council Member Ashlee Bradshaw	
Council Member Daniela Parsley	
Jerry Hendrix, Interim City Manager	
Amber Schmeits, Assistant City Manager	
Paige Saenz, City Attorney	
Rachel Sonnier, Communications Director	
Grant Bowling, Video Production Specialist	
Jennifer Kirkland, City Secretary	
Leon Barba, City Engineer	
Victoria Vargas, Economic Dev. Director	
Perwez Moheet, Finance Director	
Andy Alejandro, Finance Manager	
Sandra Duran, HR Director	
Marco Forti, IT Director	
Colleen Tierney, Library Director	
Mariana Espinoza, Parks & Rec Director	
Will Atkinson, Planning Director	
Kaela Sharp, City Planner	
Debbie Guerra, Project Development Coordinator	
Jeff Barnett, Chief of Police	
Pedro Hernandez, Assistant Chief of Police	
James Jones, Police Commander	
Jonathan Akers, Police Commander	
Joseph Swonke, Police Sergeant	
Keith Congdon, Police Sergeant	
Philip Cleary, Police Sergeant	
Matthew Michaelson, Police Sergeant	
Colby Bryant, Police Corporal	
Anthony Guzman, Police Corporal	
Tera Mayfield, Police Corporal	
Kelly Delagarza, Victims Services Coordinator	
Hannah-Bea Bickford, Victim Advocate	
Briana Geddes, Neighborhood Services Supervisor	

I. Call Meeting to Order

Mayor Mitchell called the meeting to order at 7:01 p.m. The Pledge of Allegiance was recited.

Mayor Mitchell asked the city secretary to call roll.

Present were: Mayor Mitchell, Mayor Pro Tem Tobias, Council Member Heiser, Council Member Flores-Cale, Council Member Zuniga, Council Member Bradshaw, and Council Member Parsley. A quorum was present.

III. Citizen Comment Period with City Council

Mayor Mitchell opened citizen comments at 7:02 p.m.

Chief Barnett was called to speak as registered. He introduced the members of the Kyle Police Department who were recently promoted and sworn into office this evening. Commanders James Jones, Jonathan Akers, Sergeants Joseph Swonke and Keith Congdon, Philip Cleary, Matthew Michaelson, Corporals Colby Bryant, Anthony Guzman, Tera Mayfield.

Susan Reyna was called to speak as registered, representing Preservation Associates. She spoke about Jericho Brown scheduled to be at the Katherine Anne Porter House on Friday, March 24th at 7:30 p.m.

With no one else wishing to speak, Mayor Mitchell closed citizen comments at 7:06 p.m.

II. Approval of Minutes

1. City Council Special Meeting Minutes - March 7, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*
2. City Council Meeting Minutes - March 7, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*

Mayor Mitchell brought forth the minutes for approval after Citizen Comments.

Mayor Pro Tem Tobias moved to approve the minutes of the March 7, 2023 Special Council Meeting and the minutes of the March 7, 2023 Council Meeting. Council Member Parsley seconded the motion. Motion carried 7-0.

IV. Agenda Order

3. Agenda Order per Rules of Council Sec. B1

No action was taken.

V. Presentation

4. Recognizing KASZ City Hall front desk volunteers. ~ *Michael Tobias, Mayor Pro Tem and Miguel Zuniga, Ph.D., Council Member*

Mayor Pro Tem Tobias and Council Member Zuniga recognized the KASZ volunteers. Certificates and a token of appreciation were presented. Ms. Nelia Barrera provided information about Mr. Don Crow having been 90 years old and serving as the first front desk KASZ volunteer. She thanked members of Team Kyle and Council. No action was taken.

5. Presentation and discussion of the Mueller development information tour. ~ *Daniela Parsley and Yvonne Flores-Cale, Council Members*

No action was taken.

6. Update on various capital improvement projects, road projects, building program, and/or general operational activities where no action is required. ~ *Jerry Hendrix, Interim City Manager*

- Wall That Heals
- Easter Egg-stravaganza
- Seed Swap Event
- Kyle Public Library Programs
- Overdrive is changing to Libby
- Comprehensive Master Plan Update
- Employee Survey
- TIRZ No. 2 Meeting
- Proposition F Special Meeting
- Budget Calendar
- Team Kyle Update

Mr. Hendrix, Ms. Espinoza, Ms. Tierney, Mr. Atkinson, and Ms. Duran presented the item.

7. CIP/Road Projects and Consent Agenda Presentation. ~ *Leon Barba, P.E., City Engineer*

Mr. Barba, Ms. Vargas, and Chief Barnett presented the item. No action was taken.

VI. Consent Agenda

Mayor Mitchell brought forward Item Nos. 8, 9, 10, 11, 12, 13, and 14 for consideration.

8. Approve a Resolution by the City of Kyle, Texas Suspending the May 1, 2023 Effective Date of the Proposal by CenterPoint Energy Resources Corp., D/B/A CenterPoint Energy Entex And CenterPoint Energy Texas Gas – South Texas Division, to Implement Interim Grip Rate Adjustments for Gas Utility Investment in 2022 and Requiring Delivery of this Resolution to the Company and Legal Counsel. ~ *Kaela Sharp, City Planner*
9. Approve Amendment No. 1 to Task Order No. 2 to COBB, FENDLEY & ASSOCIATES, INC., Austin, Texas, in the amount not exceed \$332,477.42, increasing the total contract amount not to exceed \$448,971.70 for 60%, 90%, and 100% design, bid, and construction phase services associated with the Waterleaf Subdivision Wastewater Line Upsize/Relocation Project. ~ *Leon Barba, P.E., City Engineer*
10. Authorize award and execution of a construction agreement with CEDAR HILLS CONSTRUCTION, LLC., Austin, Texas, the best value and lowest bidder, in an amount not to exceed \$484,742.50, which includes a ten (10) percent contingency to perform all work required for the construction of the Schlemmer & Porter Street Wastewater Improvements Phase 2 Project. ~ *Leon Barba, P.E., City Engineer*

11. Approve a Memorandum of Understanding between Rural Capital Area Workforce Development Board, Inc., Hays CISD and City of Kyle to work in partnership to implement the Teacher Externship Program. ~ *Victoria Vargas, Director of Economic Development*
12. Authorize the Chief of Police to apply for a 2-year Victims of Crime Liaison grant from the Texas Attorney General's Office in the amount of \$49,500 each year, totaling \$99,000 to provide continued funding for the Crime Victim Advocate staff position in the Police Department. ~ *Jeff Barnett, Chief of Police*
13. Approve a Resolution of the City Council of the City of Kyle, Texas, Authorizing the Acceptance of a Two Year Grant in the Amount of \$99,000 from the Office of the Attorney General, Victim Coordinator and Liaison Grant for the Purpose of Funding the Kyle Police Department's Victim Advocate I Full-Time Position for Fiscal Years 2024 – 2025; Agreeing and Assuring that in the Event of Loss or Misuse of Said Grant Funds, the City Will Return the Total Amount of Funds to the Office of the Attorney General; Authorizing the City Manager to Apply for, Accept, Reject, Alter or Terminate the Grant on Behalf of the City Council; Finding and Determining that the Meeting at Which this Resolution is Passed is Open to the Public as Required by Law; Providing for an Effective Date; And Making Such Other Findings and Provisions Related Hereto. ~ *Jeff Barnett, Chief of Police*
14. Consideration and possible action to approve joining the Texas Attorney General's global opioid settlement with Allergan, CVS, Walgreens, and Walmart and authority the City Manager to execute Settlement Participation Forms and any other documents required to participate in the settlement. ~ *Paige Saenz, City Attorney*

Council Member Flores-Cale moved to approve Consent Agenda Item Nos. 8, 9, 10, 11, 12, 13 and 14. Council Member Parsley seconded the motion. Motion carried 7-0.

VII. Items Pulled from Consent Agenda

VIII. Consider and Possible Action

15. Approve Task Order No. 2 to LOCKWOOD, ANDREWS & NEWNAM, INC., San Marcos, Texas in the amount not to exceed \$631,347.90 for engineering services and design of Windy Hill Road from IH 35 Northbound Frontage Road to Purple Martin Ave. ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*
16. Approve Task Order No. 2 to COBB, FENDLEY & ASSOCIATES, INC., San Marcos, Texas in the amount not to exceed \$2,794,679.68 for engineering services and design of the extension of Kyle Parkway from Lehman Road to Dacy Lane and the extension of Lehman Road from Bunton Creek Road to Dacy Lane. ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*
17. Approve Task Order No. 5 to PAPE-DAWSON ENGINEERS, INC., San Antonio, Texas in the amount not to exceed \$488,657.77 for engineering services and design of Center Street (On-System) from Veterans Drive to Main Street. ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*

18. Approve Supplemental Work Authorization No. 4 to Work Authorization No. 1 to K FRIESE AND ASSOCIATES, INC., Austin, Texas, increasing the contract amount authorized to date by \$1,270,130.38 for Work Authorization 1 for a total authorized contract amount not to exceed \$2,736,914.20 for project management services in support of the projects in the 2022 Road Bond Program. ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*

Mayor Mitchell brought forward Item Nos. 15-18 simultaneously. Mr. Cantalupo and Mr. Moheet presented the items.

Council Member Parsley moved to approve Item Nos. 15-18. Council Member Flores-Cale seconded the motion. Motion carried 7-0.

19. Acceptance of the City's Annual Comprehensive Financial Report (ACFR) and the Independent Auditor's Report for the fiscal year ended September 30, 2022. ~ *Andy Alejandro, City's Accounting Manager & Tino Robledo, CPA, Senior Director, RSM US, LLP, Certified Public Accountants*

Mr. Alejandro and Mr. Moheet presented the item. Mr. Tino Robledo, Audit Director, also provided information.

Council Member Bradshaw moved to approve Agenda Item No. 19. Council Member Flores-Cale seconded the motion. Motion carried 7-0.

20. Consider and possible action to approve the Proposed Development Agreement Related to Plum Creek Employment Zoning District Architectural Standards. ~ *Will Atkinson, Director of Planning*

21. (*Second Reading*) An ordinance amending Chapter 53 (Zoning) of the City of Kyle, Texas for the purpose of amending the Plum Creek Planned Unit Development, Employment District (Ch. 53, Exhibit A. - Plum Creek Planned Unit Development, Art. II., Part C.-PUD Districts: Regulations & Performance Standards, Section 9. - "EMP" Employment PUD District in Hays County, Texas. ~ *Will Atkinson, Director of Planning*

Planning and Zoning Commission voted 6-0 to recommend approval.

City Council voted 5-0 to approve on First Reading on 12/6/2022.

Item Nos. 20 and 21 were skipped for a discussion to take place in Executive Session.

22. Discussion and possible action regarding enhancing and amending the Kyle Style Guide/development ordinances to attract and encourage high quality developments within the city. ~ *Ashlee Bradshaw, Council Member*

Mr. Atkinson, Ms. Saenz, and Ms. Schmeits provided information on the item. No action was taken.

23. Discussion and possible action regarding the Kyle City Council retaining an employment attorney to include but not limited to the following work: employment discussions,

research, drafting and finalizing the contract of the future city manager. ~ *Yvonne Flores-Cale, Council Member*

Mr. Hendrix and Ms. Saenz provided information on this item.

Council Member Flores-Cale moved to direct staff to place an RFQ for an employment attorney with experience in City Management. Mayor Pro Tem Tobias seconded the motion.

Mayor Mitchell requested a roll call vote. Mayor Pro Tem Tobias voted aye; Council Member Flores-Cale voted aye; Council Member Bradshaw voted nay; Council Member Parsley voted aye; Mayor Mitchell voted nay; Council Member Zuniga voted nay; and Council Member Heiser voted aye. Motion carried 4-3.

24. Discussion and possible action to host the "First Annual City of Kyle Gingerbread House Contest". ~ *Daniela Parsley, Council Member*

Ms. Espinoza provided information on the item.

Mayor Mitchell moved to direct staff to proceed with the proposal to host the First Annual City of Kyle Gingerbread House Contest. Council Member Flores-Cale seconded the motion. Motion carried 7-0.

25. Discussion and possible action to amend the rules of council to require a co-sponsor (two council members) for Kyle City Council Agenda items, excluding proclamations. No council member will be allowed to have their name on more than FOUR agenda items per meeting. ~ *Bear Heiser and Daniela Parsley, Council Members*

Council Member Parsley moved to amend the rules of council to require a co-sponsor for two items that are discussion and possible action, no co-sponsor for proclamations or bringing items that have been denied, and you can have a single item, for a maximum of four items including presentation/proclamation. Council Member Zuniga seconded the motion.

Council Member Heiser moved to amend the motion to have two items without a co-sponsor and one item with a co-sponsor. Council Member Zuniga seconded the motion.

Mayor Mitchell requested a roll call vote on the motion to amend. Council Member Parsley voted aye; Council Member Zuniga voted aye; Mayor Pro Tem Tobias voted nay; Council Member Heiser voted aye; Council Member Bradshaw voted aye; Mayor Mitchell voted nay; and Council Member Flores-Cale voted aye. Motion carried 5-2.

Mayor Mitchell moved to amend the motion to exclude the mayor from this requirement. Council Member Parsley seconded the motion.

Council Member Bradshaw moved to call the question.

This is a non-debatable motion. Mayor Mitchell requested a roll call vote on calling the question. Council Member Bradshaw voted aye; Mayor Pro Tem Tobias voted aye; Mayor Mitchell voted aye; Council Member Flores-Cale voted nay; Council Member Zuniga voted aye; Council Member Heiser voted nay; and Council Member Parsley voted aye. Motion carried 5-2.

Mayor Mitchell requested a roll call vote on the motion to amend to exclude the Mayor from this requirement. Council Member Flores-Cale voted nay; Mayor Mitchell voted aye; Council Member Zuniga voted aye; Council Member Heiser voted aye; Mayor Pro Tem Tobias voted nay; Council Member Parsley voted aye; and Council Member Bradshaw voted aye. Motion carried 5-2.

Mayor Mitchell restated the original motion including the amendments.

Mayor Mitchell requested a roll call vote on the original motion as amended. Council Member Parsley voted aye; Council Member Heiser voted aye; Council Member Bradshaw voted aye; Mayor Mitchell voted aye; Council Member Flores-Cale voted nay; Council Member Zuniga voted aye; and Mayor Pro Tem Tobias voted nay. Motion carried 5-2.

IX. Executive Session

26. Pursuant to Chapter 551, Texas Government Code, the City Council reserves the right to convene into Executive Session(s) from time to time as deemed necessary during this meeting. The City Council may convene into Executive Session pursuant to any lawful exception contained in Chapter 551 of the Texas Government Code including any or all of the following topics.

1. Pending or contemplated litigation or to seek the advice of the City Attorney and Attorneys concerning legal issues pursuant to Section 551.071, Texas Government Code, and Section 1.05, Texas Disciplinary Rules of Professional Conduct.
2. Possible purchase, exchange, lease, or value of real estate pursuant to Section 551.072 to deliberate the purchase of real property for public purpose.
3. Personnel matters pursuant to Section 551.074.
4. Convene into executive session pursuant to Section 551.087, Texas Government Code, to deliberate regarding the offer of economic incentives to one or more business prospects that the City seeks to have locate, stay, or expand in or near the City.
 - Project Lion King

Mayor Mitchell read into the record, “Pursuant to Chapter 551, Texas Government Code, the City Council reserves the right to convene into Executive Session(s) from time to time as deemed necessary during this meeting. The City Council may convene into Executive Session pursuant to any lawful exception contained in Chapter 551 of the Texas Government Code including any or all of the following topics: Agenda Item Nos. 20 and 21.”

The City Council convened into executive session at 10:57 p.m. Council Member Flores-Cale recused herself from executive session.

27. Take action on items discussed in Executive Session.

Mayor Mitchell called the meeting back to order at 11:32 p.m. Mayor Mitchell announced that no action took place in Executive Session, but action would be taken now.

Mayor Mitchell moved to direct the City Attorney and City staff to proceed in negotiations with the relevant parties for the two agenda items that were discussed, as directed in executive session.

Mayor Pro Tem Tobias seconded the motion. Motion carried 5-0. Council Members Flores-Cale and Zuniga were absent for the vote.

X. Adjourn

Mayor Mitchell moved to adjourn. Mayor Pro Tem Tobias seconded the motion. No vote was held.

With no further business to discuss, the City Council adjourned at 11:33 p.m.

Travis Mitchell, Mayor

Attest:

Jennifer Kirkland, City Secretary

DRAFT



CITY OF KYLE, TEXAS

2023 0323 Special Minutes

Meeting Date: 4/4/2023

Date time:7:00 PM

Subject/Recommendation: City Council Special Meeting Minutes - March 23, 2023. ~ *Jennifer Kirkland, TRMC, City Secretary*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- 2023 0323 Special DRAFT

SPECIAL CITY COUNCIL MEETING MINUTES

The City Council of the City of Kyle, Texas met in Special Session on March 23, 2023 at Kyle City Hall with the following persons present:

Mayor Travis Mitchell
Council Member Bear Heiser
Council Member Yvonne Flores-Cale
Council Member Miguel Zuniga
Council Member Daniela Parsley
Jerry Hendrix, Interim City Manager
Amber Schmeits, Assistant City Manager
Paige Saenz, City Attorney
Grant Bowling, Video Production Specialist
Emily Hughes, Assistant City Secretary
Victoria Vargas, Economic Development Director
Perwez Moheet, Finance Director
Will Atkinson, Planning Director
Kaela Sharp, City Planner
Michelle Cohen, Hays County Commissioner
Debbie Ingalsbe, Hays County Commissioner

Mark McLiney
Stephanie Liebe
Jon Snyder

I. Call Meeting to Order

Mayor Mitchell called the meeting to order at 6:13 p.m. Mayor Mitchell asked the city secretary to call roll.

Present were: Mayor Mitchell, Council Member Heiser, Council Member Flores-Cale, Council Member Zuniga, and Council Member Parsley. A quorum was present. Mayor Pro Tem Tobias and Council Member Bradshaw were absent.

II. Citizen Comment Period with City Council

Mayor Mitchell opened citizen comments at 6:15 p.m. With no one wishing to speak, Mayor Mitchell closed citizen comments at 6:15 p.m.

III. Appointments

1. Appointment of Councilmembers to serve as City of Kyle TIRZ No. 2 Board of Directors.

Mayor Mitchell moved to approve the appointment of Councilmembers to serve as the City of Kyle TIRZ No. 2 Board of Directors. Council Member Flores-Cale seconded the motion. Motion carried 5-0.

2. Selection of a Chair for the TIRZ #2 Board.

Council Member Flores-Cale moved to nominate Commissioner Ingalsbe for the Chair of the TIRZ #2 Board. Council Member Parsley seconded the motion. Motion carried 5-0.

IV. Consider and Possible Action

3. Consideration and Approval of a Resolution Setting a Public Hearing under Sections 311.007 and 311.011 of the Texas Tax Code for Extending the Term of and Approving an Amendment to the Project and Financing Plan for Tax Increment Reinvestment Zone Number Two, City of Kyle; Authorizing the Issuance of Notice by the City Secretary of Kyle, Texas Regarding the Public Hearing.

Mayor Mitchell brought forward Item No. 3 for discussion. Mayor Mitchell moved to approve Item No. 3. Council Member Parsley seconded the motion. Motion carried 5-0.

V. Adjourn

Mayor Mitchell moved to adjourn. Council Member Flores-Cale seconded the motion. No vote was held.

With no further business to discuss, the City Council adjourned at 8:01 p.m.

Travis Mitchell, Mayor

Attest:

Jennifer Kirkland, City Secretary



CITY OF KYLE, TEXAS

Agenda Order

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Agenda Order per Rules of Council Sec. B1. ~ *Travis Mitchell, Mayor*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Library Board Appointments

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Consideration of nomination for appointment to the Kyle Public Library Advisory Board to fill a vacancy - Seat 6. ~ *Colleen Tierney, Library Director*

- Christina Thompson

Other Information: City staff recommends the approval of Christina Thompson to the Kyle Public Library Advisory Board to fill one current vacancy. The candidate was selected through an interview process that included the City of Kyle Assistant City Manager Amber Schmeits, Mayor Pro Tem Michael Tobias, and Library Director Colleen Tierney.

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

CECC Executive Board Appt

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Consideration and possible appointment of a city council member to the Combined Emergency Communications Center Executive Board. ~ *Jerry Hendrix, Interim City Manager*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Autism Awareness Month Proclamation

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Autism Awareness Month Proclamation. ~ *Michael Tobias, Mayor Pro Tem*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Animal Control Officer Proclamation

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: National Animal Control Officer Appreciation Week Proclamation. ~ *Miguel A. Zuniga PhD, Council Member*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Sexual Assault Awareness Month Proclamation

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Sexual Assault Awareness Month Proclamation. ~ *Daniela Parsley, Council Member*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Child Abuse Awareness Proclamation

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Child Abuse Awareness Proclamation. ~ *Travis Mitchell, Mayor*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Scouts Proclamations

Meeting Date: 4/4/2023

Date time:7:00 PM

Subject/Recommendation: Proclamation recognizing Kyle Eagle Scouts Class of 2022. ~ *Daniela Parsley, Council Member*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Earth Day Proclamation

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Earth Month Awareness Proclamation. ~ *Miguel A. Zuniga PhD, Council Member*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Presentation 2022 Road Bonds Master Schedule

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Presentation of Master Schedule and Public Outreach Plan for the 2022 Road Bond Program. ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

City Manager's Report

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Update on various capital improvement projects, road projects, building program, and/or general operational activities where no action is required. ~ *Jerry Hendrix, Interim City Manager*

- Pickleball Tournament
- Earth Day Native Plant Give-Away
- Earth Day Camp Out
- Seasonal Staff Hiring Update
- Autism Awareness Event
- Food for Fines
- Ribbon Cutting of Seed Library
- Teen Job Fair
- Comprehensive Master Plan Update
- Economic Development Joint Workshop
- City Hall Emergency Training
- Team Kyle Update

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

CIP/Road Projects Update

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: CIP/Road Projects and Consent Agenda Presentation. ~ *Travis Mitchell, Mayor*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Texas Gas GRIP 2023

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Approve a Resolution by the City of Kyle, Texas suspending the April 10, 2023 effective date of the proposal by Texas Gas Service Company, A division of One Gas, Inc. to implement interim GRIP rate adjustments for gas utility investment in 2022 and requiring delivery of the resolution to the company and legal counsel. ~ *Kaela Sharp, City Planner*

Other Information: On February 9, 2023, Texas Gas Service Company made an Interim Rate Adjustment or “GRIP” filing with the cities in its Central-Gulf Coast Service Area. In this filing, the Company has determined the net increase in capital invested in the CGSA from January 1, 2022 through December 31, 2022 to be \$104,175,258. The Interim Rate Adjustment necessary to recover this incremental investment is \$9,195,351 on a system-wide basis, of which \$8,305,074 is attributable to customers in the incorporated areas, and would increase the average residential bill by \$2.49 per month excluding taxes.

Commercial customers will see a rate increase of \$11.50 per month, increasing their current customer charge of \$72.44 per month to \$83.94 per month.

The increase is currently scheduled to go into effect for meter reads beginning on April 10, 2023.

Under the GRIP statute cities may not challenge the Company’s request. The only action cities may take is to suspend the effective date of the rate increase by 45 days. Cities have until April 10, 2023 to adopt a resolution suspending the date the rate increase would otherwise go into effect.

TGS has a very small customer base in Kyle with less than 500 residential customers, 25 commercial customer and one public authority.

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- 2023 Texas Gas Service Central-Gulf GRIP Suspension Resolution

RESOLUTION NO. _____

A RESOLUTION BY THE CITY OF KYLE, TEXAS SUSPENDING THE APRIL 10, 2023 EFFECTIVE DATE OF THE PROPOSAL BY TEXAS GAS SERVICE COMPANY, A DIVISION OF ONE GAS, INC. – CENTRAL-GULF SERVICE AREA, TO IMPLEMENT INTERIM GRIP RATE ADJUSTMENTS FOR GAS UTILITY INVESTMENT IN 2022 AND REQUIRING DELIVERY OF THIS RESOLUTION TO THE COMPANY AND LEGAL COUNSEL.

WHEREAS, the City of Kyle, Texas (“City”) is a gas utility customer of Texas Gas Service Company, a Division of ONE Gas, Inc. – Central-Gulf Service Area, (“TGS” or “the Company”) and a regulatory authority with an interest in the rates and charges of TGS; and

WHEREAS, TGS made filings with the City and the Railroad Commission of Texas (“Railroad Commission”) on February 9, 2023, proposing to implement interim rate adjustments (“GRIP Rate Increases”) pursuant to Texas Utilities Code § 104.301 on all customers served by TGS, effective April 10, 2023; and

WHEREAS, it is incumbent upon the City, as a regulatory authority, to examine the GRIP Rate Increases to determine its compliance with the Texas Utilities Code.

THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF KYLE, TEXAS, THAT:

1. The April 10, 2023 effective date of the GRIP Rate Increases proposed by TGS is hereby suspended for the maximum period allowed by Texas Utilities Code § 104.301(a) to permit adequate time to review the proposed increases, analyze all necessary information, and take appropriate action related to the proposed increases.

2. A copy of this Resolution shall be sent to TGS, care of Stephanie G. Houle at 1301 S. Mopac, Suite 400, Austin, Texas 78746, and to Thomas Brocato, legal counsel to the City, at Lloyd Gosselink, 816 Congress Ave., Suite 1900, Austin, Texas 78701.

Signed this _____ day of _____, 2023.

Travis Mitchell, MAYOR

ATTEST:

Jennifer Kirkland, City Secretary



CITY OF KYLE, TEXAS

Approve a Resolution Setting a Public Hearing Date for W&WW Impact Fee Update

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Approve a Resolution establishing the date for a public hearing to be held on May 16, 2023, as required under Chapter 395 of the Texas Local Government Code, to consider, discuss, and review the update to the water and wastewater land use assumptions, water and wastewater capital improvements plan, and imposition of updated water and wastewater impact fee amounts. ~ *Leon Barba, P.E., City Engineer*

Other Information: Under Chapter 395 of the Texas Local Government Code, a political subdivision such as the City of Kyle which has adopted a water and wastewater impact fee, is required to update such impact fee at least every five (5) years including the land use assumptions and the 10-year capital improvements plan used in the calculation of the water and wastewater impact fee .

Within sixty (60) days of the City's water and Wastewater Impact Fee Advisory Committee approving the updated land use assumptions and capital improvements plan used in the calculation of the updated water and wastewater impact fee, the City is required to adopt an order setting a public hearing to discuss and review the updated:

- Water and wastewater land use assumptions,
- 10-year capital improvements plan used in the calculation of the updated impact fee,
- Water and wastewater impact fee amounts, and
- Determine whether to amend the plan.

In public meetings held on March 16, 2023 and March 28, 2023, the City's Water and Wastewater Impact Fee Advisory Committee, appointed by the City Council, reviewed the updated water and wastewater land use assumptions and the 10-year water and wastewater capital improvements plan used in the calculation of the updated water and wastewater impact fee.

On March 28, 2023, the City's Water and Wastewater Impact Fee Advisory Committee unanimously passed a motion to approve the land use assumptions and capital improvements plan used in the calculation of the 2023 water and wastewater impact fee and to recommend to City Council to adopt the Water and Wastewater Impact Fee Report including the combined \$14,155 maximum water and wastewater impact fee per LUE (living unit equivalent). The updated impact fee breakdown is provided below:

- Water Impact Fee: \$7,984 per LUE
- Wastewater Impact Fee: \$6,171 per LUE
- Combined Total: \$14,155 per LUE

Budget Information:

ATTACHMENTS:

Description

- Resolution
- Public Notice

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF KYLE, TEXAS, ESTABLISHING THE DATE FOR A PUBLIC HEARING TO CONSIDER LAND USE ASSUMPTIONS, ADOPTION OF A CAPITAL IMPROVEMENTS PLAN, AND IMPOSITION OF WATER AND WASTEWATER IMPACT FEES; PROVIDING FOR THE POSTING AND PUBLICATION OF NOTICE FOR THE PUBLIC HEARING; MAKING FINDINGS OF FACT; AND PROVIDING FOR RELATED MATTERS.

Whereas, it is necessary and required for the City of Kyle, Texas to study, update, revise, and adopt land use assumptions, a capital improvements plan, and an updated Water and Wastewater Impact Fee Ordinance pursuant to the requirements under Chapter 395 of the Texas Local Government Code, and

Whereas, the City Council has appointed a Water and Wastewater Impact Fee Advisory Committee pursuant to the requirements of Chapter 395 of the Texas Local Government Code, to review, advise, recommend, and assist the City Council in considering and adopting the updated land use assumptions, the capital improvements plan, and imposition of the updated water and wastewater impact fees, and to perform all duties as required of such advisory committee under Chapter 395 of the Texas Local Government Code, and

Whereas, Chapter 395 of the Local Government Code requires that notice be given, posted, and published for a public hearing to be held on the consideration and adoption of land use assumptions, the capital improvements plan, and the imposition of the updated water and wastewater impact fees,

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF KYLE, HAYS COUNTY, TEXAS, THAT:

Section 1. Findings. The City Council of the City of Kyle finds that:

- A. A copy of the Water and Wastewater Impact Fee Report which includes the updated land use assumptions, capital improvements plan, and water and wastewater impact fees is attached and is on file and available for public inspection in the offices of the City Engineer.
- B. The City Council hereby orders a public hearing to be held to consider the updated land use assumptions, capital improvements plan, and imposition of the updated water and wastewater impact fees, and sets and establishes May 16, 2023, at 7:00 p.m., as the time and date of such public hearing which shall be held at the Kyle City Hall located at 100 West Center Street, Kyle, Texas.

- C. The City Engineer is hereby directed to cause notice of such public hearing to be given, posted, and published in compliance with Chapter 395 of the Local Government Code.
- D. The following recitals are hereby found to be true and correct and are hereby adopted by the City Council and made a part hereof for all purposes as findings of fact.

Section 2. Authorization. This Resolution of the City of Kyle, Texas, is hereby adopted in compliance with the requirements set forth in the Charter of the City of Kyle.

Section 3. Effective Date. This City Council Resolution of the City of Kyle, Texas shall take effect from and after the date of its passage as authorized by the Charter of the City of Kyle.

Section 4. Open Meetings. It is hereby officially found and determined that the meeting at which this Resolution is passed was open to the public as required and that public notice of the time, place, and purpose of the said meeting was given as required by the Open Meetings Act, Chapter 551, Local Government Code.

FINALLY PASSED AND APPROVED on this the 4th day of April 2023.

THE CITY OF KYLE, TEXAS

Travis Mitchell, Mayor

ATTEST:

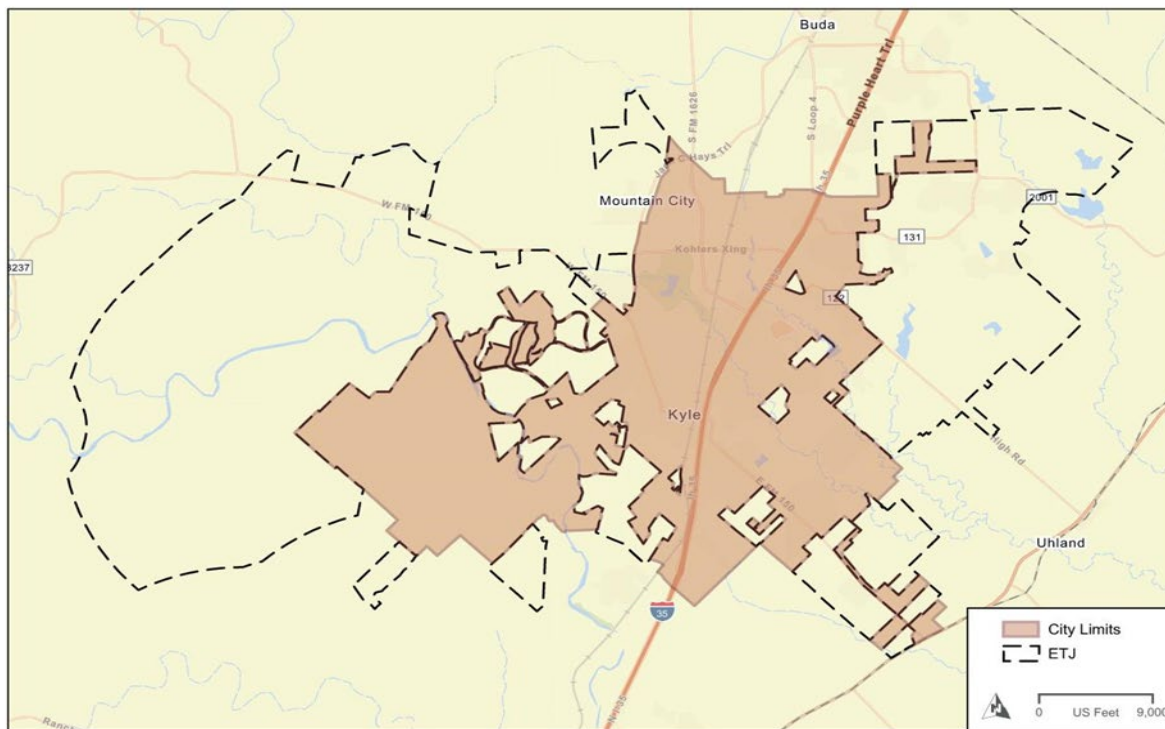
Jennifer Kirkland, City Secretary

“NOTICE OF PUBLIC HEARING ON AMENDMENT OF IMPACT FEES”

NOTICE IS HEREBY GIVEN that the City Council of the City of Kyle, Texas will hold a public hearing at the Kyle City Council Chambers, located at 100 West Center Street, Kyle, Texas on May 16, 2023 at 7:00 pm to consider the amendment of land use assumptions, a capital improvements plan, and imposition of an updated impact fee for new or expanded services from the Kyle water and/or wastewater utilities.

The potential impact fee application area will be within the City of Kyle ETJ boundary shown in the map below. Within this area, the revised impact fee may be levied in-full or in-part, depending on the service arrangement and in no way obligates the City to extend service beyond its incorporated area. The maximum amount of impact fee that can be charged per service unit is \$7,984 for water service citywide and \$6,171 for wastewater service citywide. *The exact amount of the impact fees to be levied, at or below the maximum, will be determined by the Kyle City Council subsequent to the Public Hearing.*

Any person has the right to appear at the hearing and present evidence for or against the proposed fee. Information on prospective growth, land uses, and capital improvements that were used to calculate the maximum fee amount is available from the City of Kyle Engineering Department offices, located at 100 West Center Street, Kyle, Texas, from 8 am to 5 pm weekdays.



PATH: \\SANPFS01G06_PROJECTS\06M_01\01\KYLE\01\01\01_C0K_IMPACT_FEE_UPDATE\02_WIP\MAP_DOCUMENT\IMPACT_FEE_UPDATE.APX - USER: KJAVALLA - DATE: 07/20/23



CITY OF KYLE, TEXAS

Union Pacific Agreements - Center & South St

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Authorize the Interim City Manager to execute The Public Highway At-Grade Crossing Agreement with UNION PACIFIC RAILROAD COMPANY and in an amount not to exceed \$36,000.00 estimated for project management and inspections for the Center Street and South Street quiet zone railroad crossings. ~ *Leon Barba, P.E., City Engineer*

Other Information: The fees and costs listed below are required upon entering this agreement with Union Pacific Railroad (UPRR) in order to construct the necessary improvements on their right of way. The improvements constructed are necessary for development of a Quiet Zone through the City of Kyle.

1. Center Street - \$3000.00 for granting City Authorization to work in Union Pacific Right of Way & construction \$15,000.00 estimated for project management and inspection during completion of the project.

2. South Street - \$3000.00 for granting City Authorization to work in Union Pacific Right of Way & construction \$15,000.00 estimated for project management and inspection during completion of the project.

The total estimated cost is \$36,000.00 fee for UPRR granting the right to the City to construct, maintain, repair and inspect the roadway through the crossing area.

Per the agreement, the City is responsible for the actual costs incurred determined when all of the improvements are made.

Legal Notes: N/A

Budget Information:

ATTACHMENTS:

Description

- ▣ Center Street Union Pacific Quiet Zone Agreement
- ▣ South Street Union Pacific Quiet Zone Agreement

PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT

East Center Street/TX 150
DOT 447650T
MP 200.88 – Austin Subdivision
Kyle, Hays County, Texas

THIS AGREEMENT ("Agreement") is made and entered into as of the ____ day of _____, 20____ ("Effective Date"), by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation, to be addressed at Real Estate Department, 1400 Douglas Street, Mail Stop 1690, Omaha, Nebraska 68179 ("Railroad") and **CITY OF KYLE**, a municipal corporation or political subdivision of the State of Texas to be addressed at 100 West Center Street, Kyle, Texas 78640 ("Political Body").

RECITALS:

Presently, the Political Body utilizes the Railroad's property for the existing at grade public road crossing over East Center Street/TX 150, DOT Number 447650T at Railroad's Milepost 200.88 on Railroad's Austin Subdivision at or near Kyle, Hays County, Texas.

The Political Body now desires to undertake as its project (the "Project") the reconstruction of the existing at grade public road crossing for the addition of medians. The road crossing, as reconstructed is hereinafter the "Roadway."

The Railroad right of way right utilized by the Political Body for the existing road crossing is sufficient to allow for the reconstruction of the Roadway. The area where the Roadway crosses a portion of the Railroad's property is hereinafter referred to as the "Crossing Area" as such area is generally shown on the Railroad's location print marked **Exhibit A** and the Political Body's type, size and location prints of the Project marked **Exhibit A-1**, with each exhibit being attached hereto and hereby made a part hereof.

The Railroad and the Political Body are entering into this Agreement to cover the above.

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between the parties hereto as follows:

Section 1. EXHIBIT B

The general terms and conditions marked **Exhibit B**, are attached hereto and hereby made a part hereof.

Section 2. RAILROAD GRANTS RIGHT

For and in consideration of the sum of **THREE THOUSAND DOLLARS (\$3,000.00)** to be paid by the Political Body to the Railroad upon the execution and delivery of this Agreement and in further consideration of the Political Body's agreement to perform and comply with the terms of this Agreement, the Railroad hereby grants to the Political Body the right to construct, maintain and repair the Roadway over and across the Crossing Area.

Section 3. DEFINITION OF CONTRACTOR

For purposes of this Agreement the term "Contractor" shall mean the contractor or contractors hired by the Political Body to perform any Project work on any portion of the Railroad's property and shall also include the Contractor's subcontractors and the Contractor's and subcontractor's respective employees, officers and agents, and others acting under its or their authority.

Section 4. CONTRACTOR'S RIGHT OF ENTRY AGREEMENT - INSURANCE

A. Prior to Contractor performing any work within the Crossing Area and any subsequent maintenance and repair work, the Political Body shall require the Contractor to:

- execute the Railroad's then current Contractor's Right of Entry Agreement
- obtain the then current insurance required in the Contractor's Right of Entry Agreement; and
- provide such insurance policies, certificates, binders and/or endorsements to the Railroad.

B. The Railroad's current Contractor's Right of Entry Agreement is marked **Exhibit D**, attached hereto and hereby made a part hereof. The Political Body confirms that it will inform its Contractor that it is required to execute such form of agreement and obtain the required insurance before commencing any work on any Railroad property. Under no circumstances will the Contractor be allowed on the Railroad's property without first executing the Railroad's Contractor's Right of Entry Agreement and obtaining the insurance set forth therein and also providing to the Railroad the insurance policies, binders, certificates and/or endorsements described therein.

C. All insurance correspondence, binders, policies, certificates and/or endorsements shall be sent to:

Manager - Contracts
Union Pacific Railroad Company
Real Estate Department
1400 Douglas Street, Mail Stop 1690
Omaha, NE 68179-1690
UP Project No. 0036755

D. If the Political Body's own employees will be performing any of the Project work, the Political Body may self-insure all or a portion of the insurance coverage subject to the Railroad's prior review and approval.

Section 5. FEDERAL AID POLICY GUIDE

If the Political Body will be receiving any federal funding for the Project, the current rules, regulations and provisions of the Federal Aid Policy Guide as contained in 23 CFR 140, Subpart I and 23 CFR 646, Subparts A and B are incorporated into this Agreement by reference.

Section 6. NO PROJECT EXPENSES TO BE BORNE BY RAILROAD

The Political Body agrees that no Project costs and expenses are to be borne by the Railroad. In addition, the Railroad is not required to contribute any funding for the Project.

Section 7. WORK TO BE PERFORMED BY RAILROAD; BILLING SENT TO POLITICAL BODY; POLITICAL BODY'S PAYMENT OF BILLS

A. The work to be performed by the Railroad, at the Political Body's sole cost and expense, is described in the Railroad's Material and Force Account Estimate dated February 7, 2023, marked **Exhibit C**, attached hereto and hereby made a part hereof (the "Estimate"). As set forth in the Estimate, the Railroad's estimated cost for the Railroad's work associated with the Project is Fifteen Thousand Dollars (\$15,000.00).

B. The Railroad, if it so elects, may recalculate and update the Estimate submitted to the Political Body in the event the Political Body does not commence construction on the portion of the Project located on the Railroad's property within six (6) months from the date of the Estimate.

C. The Political Body acknowledges that the Estimate may not include any estimate of flagging or other protective service costs that are to be paid by the Political Body or the Contractor in connection with flagging or other protective services provided by the Railroad in connection with the Project. All of such costs incurred by the Railroad are to be paid by the Political Body or the Contractor as determined by the Railroad and the Political Body. If it is determined that the Railroad will be billing the Contractor directly for such costs, the Political Body agrees that it will pay the Railroad for any flagging costs that have not been paid by any Contractor within thirty (30) days of the Contractor's

receipt of billing.

D. The Railroad shall send progressive billing to the Political Body during the Project and final billing to the Political Body within one hundred eighty (180) days after receiving written notice from the Political Body that all Project work affecting the Railroad's property has been completed.

E. The Political Body agrees to reimburse the Railroad within thirty (30) days of its receipt of billing from the Railroad for one hundred percent (100%) of all actual costs incurred by the Railroad in connection with the Project including, but not limited to, all actual costs of engineering review (including preliminary engineering review costs incurred by Railroad prior to the Effective Date of this Agreement), construction, inspection, flagging (unless flagging costs are to be billed directly to the Contractor), procurement of materials, equipment rental, manpower and deliveries to the job site and all direct and indirect overhead labor/construction costs including Railroad's standard additive rates.

Section 8. PLANS

A. The Political Body, at its expense, shall prepare, or cause to be prepared by others, the detailed plans and specifications for the Project and the Structure and submit such plans and specifications to the Railroad's Assistant Vice President Engineering-Design, or his authorized representative, for prior review and approval. The plans and specifications shall include all Roadway layout specifications, cross sections and elevations, associated drainage, and other appurtenances.

B. The final one hundred percent (100%) completed plans that are approved in writing by the Railroad's Assistant Vice President Engineering-Design, or his authorized representative, are hereinafter referred to as the "Plans". The Plans are hereby made a part of this Agreement by reference.

C. No changes in the Plans shall be made unless the Railroad has consented to such changes in writing.

D. The Railroad's review and approval of the Plans will in no way relieve the Political Body or the Contractor from their responsibilities, obligations and/or liabilities under this Agreement, and will be given with the understanding that the Railroad makes no representations or warranty as to the validity, accuracy, legal compliance or completeness of the Plans and that any reliance by the Political Body or Contractor on the Plans is at the risk of the Political Body and Contractor.

Section 9. NON-RAILROAD IMPROVEMENTS

A. Submittal of plans and specifications for protecting, encasing, reinforcing, relocation, replacing, removing and abandoning in place all non-railroad owned facilities (the "Non Railroad Facilities") affected by the Project including, without limitation, utilities,

fiber optics, pipelines, wirelines, communication lines and fences is required under Section 8. The Non Railroad Facilities plans and specifications shall comply with Railroad's standard specifications and requirements, including, without limitation, American Railway Engineering and Maintenance-of-Way Association ("AREMA") standards and guidelines. Railroad has no obligation to supply additional land for any Non Railroad Facilities and does not waive its right to assert preemption defenses, challenge the right-to-take, or pursue compensation in any condemnation action, regardless if the submitted Non Railroad Facilities plans and specifications comply with Railroad's standard specifications and requirements. Railroad has no obligation to permit any Non Railroad Facilities to be abandoned in place or relocated on Railroad's property.

B. Upon Railroad's approval of submitted Non Railroad Facilities plans and specifications, Railroad will attempt to incorporate them into new agreements or supplements of existing agreements with Non Railroad Facilities owners or operators. Railroad may use its standard terms and conditions, including, without limitation, its standard license fee and administrative charges when requiring supplements or new agreements for Non Railroad Facilities. Non Railroad Facilities work shall not commence before a supplement or new agreement has been fully executed by Railroad and the Non Railroad Facilities owner or operator, or before Railroad and Political Body mutually agree in writing to (i) deem the approved Non Railroad Facilities plans and specifications to be Plans pursuant to Section 8B, (ii) deem the Non Railroad Facilities part of the Structure, and (iii) supplement this Agreement with terms and conditions covering the Non Railroad Facilities.

Section 10. EFFECTIVE DATE; TERM; TERMINATION

A. This Agreement is effective as of the Effective Date first herein written and shall continue in full force and effect for as long as the Roadway remains on the Railroad's property.

B. The Railroad, if it so elects, may terminate this Agreement effective upon delivery of written notice to the Political Body in the event the Political Body does not commence construction on the portion of the Project located on the Railroad's property within twelve (12) months from the Effective Date.

C. If the Agreement is terminated as provided above, or for any other reason, the Political Body shall pay to the Railroad all actual costs incurred by the Railroad in connection with the Project up to the date of termination, including, without limitation, all actual costs incurred by the Railroad in connection with reviewing any preliminary or final Project Plans.

Section 11. CONDITIONS TO BE MET BEFORE POLITICAL BODY CAN COMMENCE WORK

Neither the Political Body nor the Contractor may commence any work within the Crossing Area or on any other Railroad property until:

- (i) The Railroad and Political Body have executed this Agreement.
- (ii) The Railroad has provided to the Political Body the Railroad's written approval of the Plans.
- (iii) Each Contractor has executed Railroad's Contractor's Right of Entry Agreement and has obtained and/or provided to the Railroad the insurance policies, certificates, binders, and/or endorsements required under the Contractor's Right of Entry Agreement.
- (iv) Each Contractor has given the advance notice(s) required under the Contractor's Right of Entry Agreement to the Railroad Representative named in the Contactor's Right of Entry Agreement.

Section 12. FUTURE PROJECTS

Future projects involving substantial maintenance, repair, reconstruction, renewal and/or demolition of the Roadway shall not commence until Railroad and Political Body agree on the plans for such future projects, cost allocations, right of entry terms and conditions and temporary construction rights, terms and conditions.

Section 13. ASSIGNMENT; SUCCESSORS AND ASSIGNS

A. Political Body shall not assign this Agreement without the prior written consent of Railroad.

B. Subject to the provisions of Paragraph A above, this Agreement shall inure to the benefit of and be binding upon the successors and assigns of Railroad and Political Body.

Section 14. SPECIAL PROVISIONS PERTAINING TO AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

If the Political Body will be receiving American Recovery and Reinvestment Act ("ARRA") funding for the Project, the Political Body agrees that it is responsible in performing and completing all ARRA reporting documents for the Project. The Political Body confirms and acknowledges that Section 1512 of the ARRA provisions applies only to a "recipient" receiving ARRA funding directing from the federal government and, therefore, (i) the ARRA reporting requirements are the responsibility of the Political Body and not of the Railroad, and (ii) the Political Body shall not delegate any ARRA reporting responsibilities to the Railroad. The Political Body also confirms and acknowledges that (i) the Railroad shall provide to the Political Body the Railroad's standard and customary billing for expenses incurred by the Railroad for the Project including the Railroad's standard and customary documentation to support such billing, and (ii) such standard and customary billing and documentation from the Railroad provides the information needed

by the Political Body to perform and complete the ARRA reporting documents. The Railroad confirms that the Political Body and the Federal Highway Administration shall have the right to audit the Railroad's billing and documentation for the Project as provided in Section 11 of **Exhibit B** of this Agreement.

Section 15. TERMINATION OF ORIGINAL AGREEMENT

Upon the completion of the Roadway, the original agreement either governing currently, or any agreement to be found in the future at the existing at-grade crossing, shall terminate and the terms and conditions of this Agreement shall govern the use, maintenance and repair of the Roadway.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the Effective Date first herein written.

UNION PACIFIC RAILROAD COMPANY
(Federal Tax ID #94-6001323)

By: _____
Printed Name: _____
Title: _____

CITY OF KYLE

By: _____
Printed Name: _____
Title: _____

**EXHIBIT A
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT**

Exhibit A will be a print showing the Crossing Area (see Recitals)

**EXHIBIT A-1
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT**

Exhibit A-1 will be the Political Body's type, size and location prints of the Project (see Recitals)

DATUM NOTE FOR CENTER STREET:

THIS PROJECT IS REFERENCED, FOR ALL BEARING AND COORDINATE BASIS, TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4202), NORTH AMERICAN DATUM OF 1983 (2011) EPOCH 2010.00.

COORDINATES SHOWN HEREON ARE GRID COORDINATES.

ALL ELEVATIONS SHOWN HEREON ARE NORTH AMERICAN VERTICAL DATUM (NAVD) 88 AND WERE DERIVED FROM GPS OBSERVATIONS.

UNITS: U.S. SURVEY FEET.

PROJECT CONTROL FOR CENTER STREET:

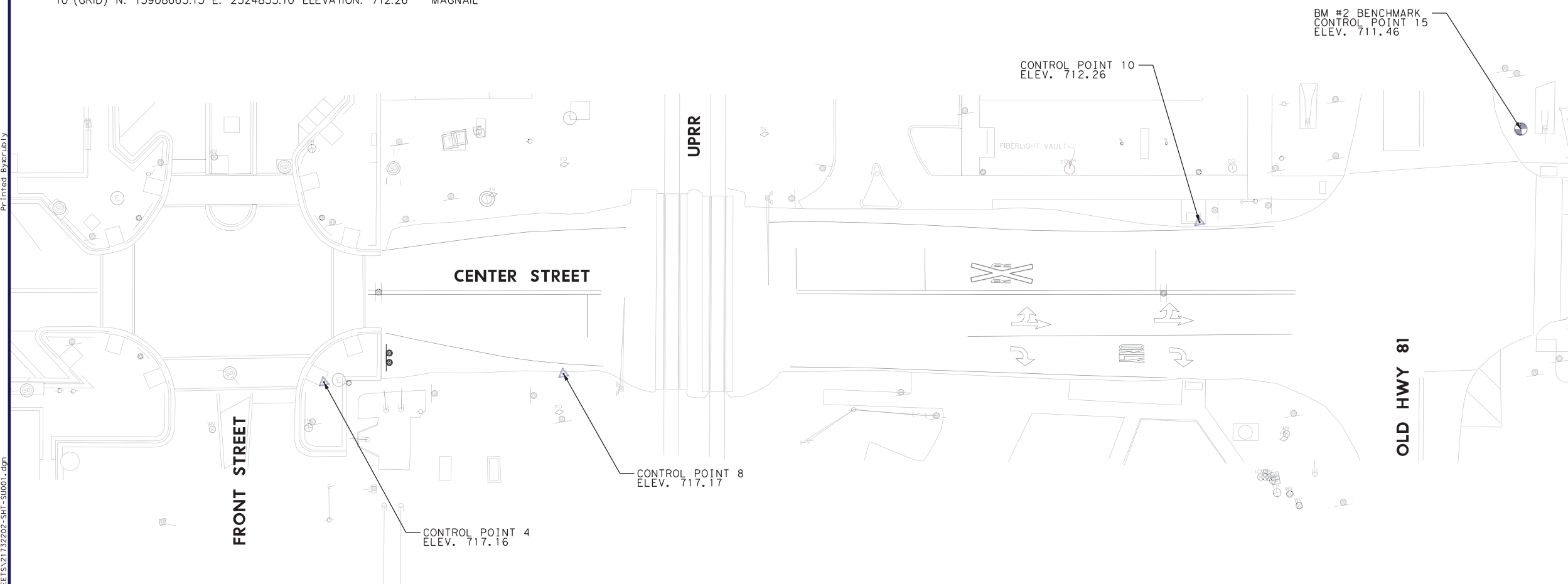
- 4 (GRID) N: 13908657.33 E: 2324559.61 ELEVATION: 717.16 MAGNAIL
- 7 (GRID) N: 13908688.98 E: 2324373.52 ELEVATION: 718.43 CHISEL MARK IN CONCRETE
- 8 (GRID) N: 13908647.86 E: 2324638.67 ELEVATION: 717.17 80D NAIL
- 9 (GRID) N: 13908766.70 E: 2324207.82 ELEVATION: 720.58 MAGNAIL
- 10 (GRID) N: 13908665.15 E: 2324855.10 ELEVATION: 712.26 MAGNAIL

NUMBER	DATE	REVISION	APPROVED



Printed By: Jubly


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SCALE: 1"=20'
 VERT: 1"=2'
 (FULL SIZE 22"x34")
ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER

LJA Engineering, Inc. 
 FRN-F-1386

LOCAL GOVERNMENT



STATE OF TEXAS



RAILROAD QUIET ZONE
SURVEY CONTROL PLAN
CENTER STREET

PROJECT BENCHMARK FOR CENTER STREET:

BM #2- 1/2" IRON ROD WITH CAP STAMPED "MCGRAY TRAV" SET IN THE GROUND LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF OLD HIGHWAY 81 AND CENTER STREET ±19 FEET NORTHWEST OF A POWER POLE LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF OLD HIGHWAY 81 AND CENTER STREET, AND ±20 FEET SOUTHEAST OF A NO PARKING SIGN LOCATED ON THE EAST RIGHT-OF-WAY OF OLD HIGHWAY 81.

- 15 (GRID) N: 13908679.24 E: 2324965.33 ELEVATION: 711.46

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	11 of 55

NUMBER	DATE	REVISION	APPROVED

SYMBOLS

RAILROAD

- RAILROAD CENTERLINE
- EXISTING RAILROAD FLASHING LIGHTS & GATE
- ⚡ PROPOSED RAILROAD FLASHING LIGHTS & GATE
- 📣 PROPOSED WAYSIDE HORN
- ▭ PROPOSED CONCRETE RAILROAD CROSSING AT SIDEWALK
- ⚡ PROPOSED RAILROAD FLASHING LIGHTS & GATE (BY OTHERS)
- ⚡ PROPOSED RAILROAD SIGNAL CANTILEVER (BY OTHERS)

ROADWAY

- ROADWAY CENTERLINE
- ▬ PROPOSED PAVEMENT
- ▬ PROPOSED GUARD RAIL
- ▬ PROPOSED GUARD RAIL (BY OTHERS)
- ⊙ EXISTING SIGN
- ⬇️ PROPOSED SIGN

TRAFFIC CONTROL

- ▭ EXISTING TRAFFIC CONTROL BOX
- ⊠ PROPOSED TRAFFIC CONTROL BOX (BY OTHERS)
- 📹 PROPOSED TRAFFIC CAMERA (BY OTHERS)
- ⚡ PROPOSED TRAFFIC SIGNAL MAST (BY OTHERS)

UTILITIES

- OE — EXISTING OVERHEAD ELECTRIC LINE
- ○ ○ ○ — EXISTING WATER LINE (CITY OF ROSENBERG G.I.S.)
- WM ----- EXISTING SANITARY SEWER LINE (CITY OF ROSENBERG G.I.S.)
- STM — EXISTING STORM DRAIN (CITY OF ROSENBERG G.I.S.)
- GL — EXISTING GAS LINE
- ▭ EXISTING ELECTRIC JUNCTION BOX
- ⊙ EXISTING ELECTRIC METER
- ⌋ EXISTING GUY ANCHOR
- ▭ EXISTING TELEPHONE PEDESTAL
- ⊙ EXISTING TELEPHONE MANHOLE
- ⊙ EXISTING POWER POLE
- ⊙ EXISTING STORM DRAIN MANHOLE
- ⊙ EXISTING SANITARY SEWER MANHOLE
- ⊗ EXISTING UTILITY VALVE
- ⊙ EXISTING GAS VALVE

MISCELLANEOUS

- ... PROPERTY LINE
- x-x-x- EXISTING FENCE
- ~~~~~ EXISTING VEGETATION LINE
- ✚ SURVEY CONTROL POINT
- 🌳 EXISTING TREE
- ▭ PROPOSED STORM DRAIN INLET (BY OTHERS)
- ▭ PROPOSED SIDEWALK DETECTABLE WARNING SURFACE (BY OTHERS)
- ▭ PROPOSED STORM DRAIN STRUCTURE (BY OTHERS)

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT



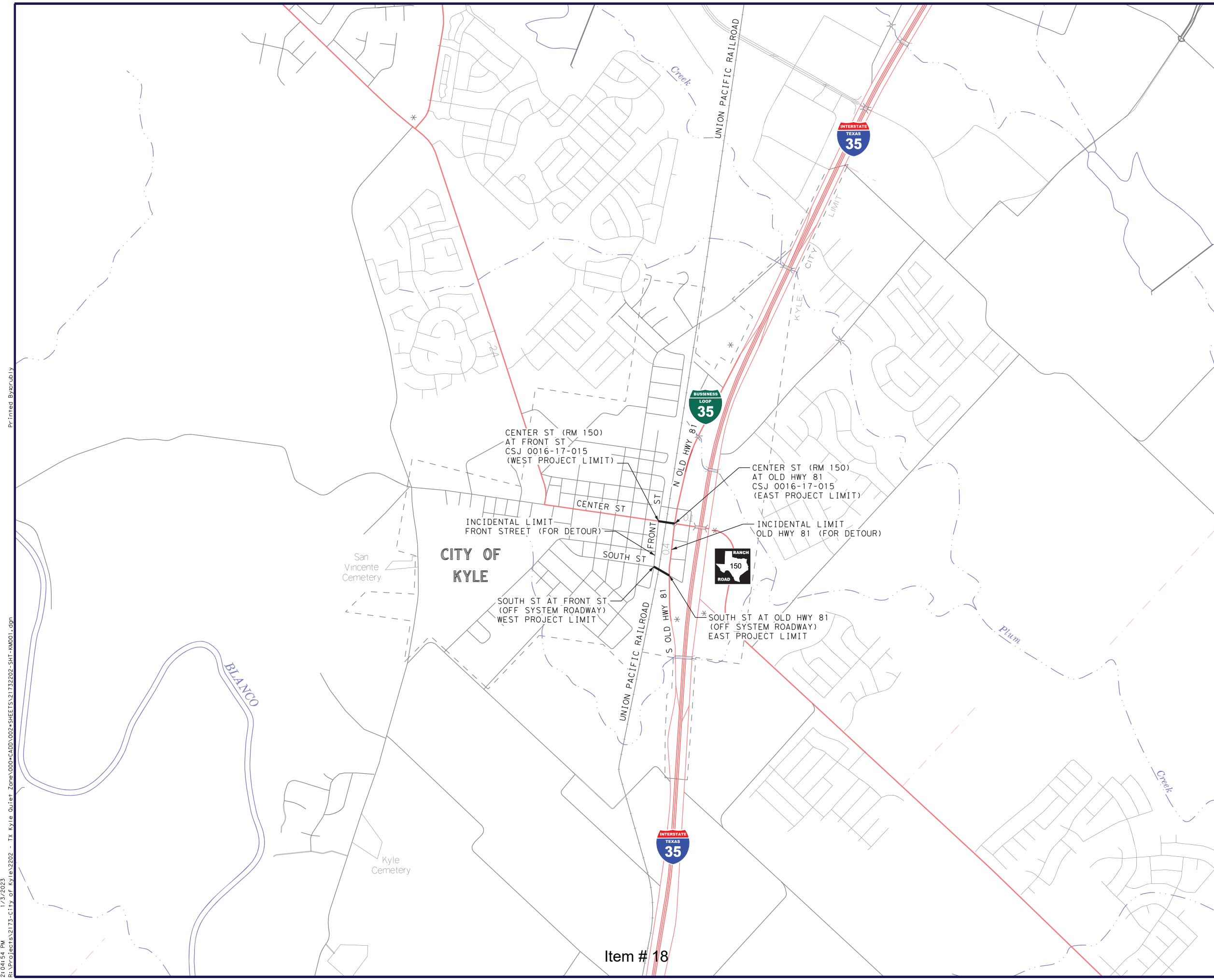
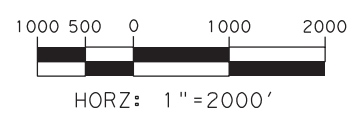
STATE OF TEXAS



RAILROAD QUIET ZONE
SYMBOLS

FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
14	TEXAS	CC 12-17-015			RM 150
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	2 of 55

NUMBER	DATE	REVISION	APPROVED



**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS



**RAILROAD QUIET ZONE
PROJECT LOCATION MAP**

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	3 of 55

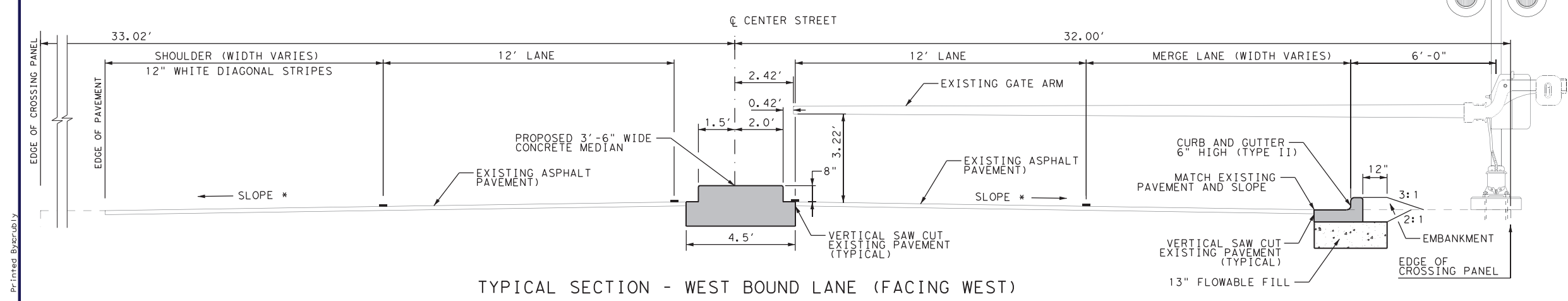
Item # 18

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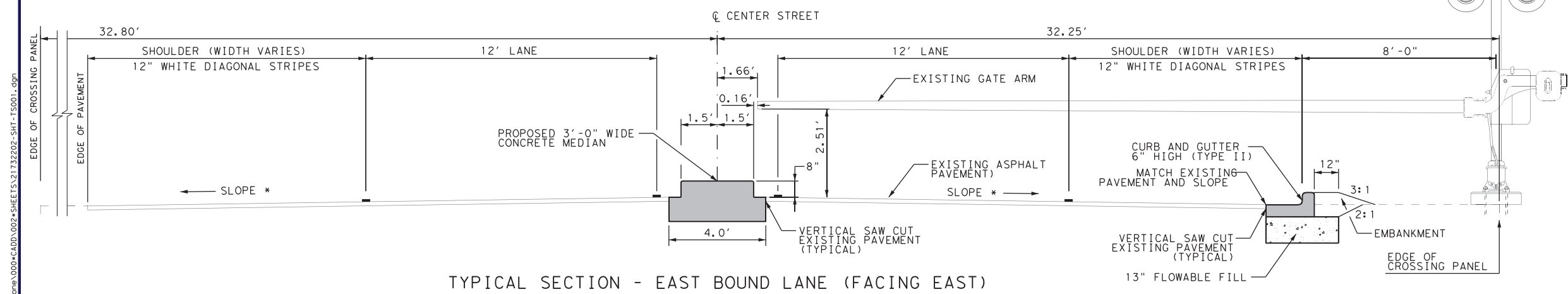
NUMBER	DATE	REVISION	APPROVED

- NOTES:
1. NO CONCRETE CAN BE INSTALLED WITHIN 24 INCHES OF RAILROAD CROSSING BOARDS
 2. NO RAISED MEDIAN OR CURB AND GUTTER WITHIN 10 FEET OF CENTERLINE OF TRACKS
 3. ALL FORMWORK MUST BE INSPECTED BY UPRR BEFORE CONCRETE POUR CAN TAKE PLACE



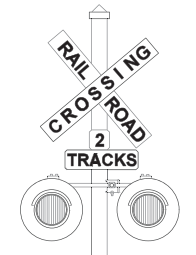
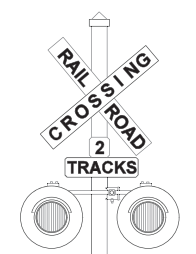
TYPICAL SECTION - WEST BOUND LANE (FACING WEST)

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE



TYPICAL SECTION - EAST BOUND LANE (FACING EAST)

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE



ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER

LJA Engineering, Inc. LJA
FRN-F-1386

LOCAL GOVERNMENT

STATE OF TEXAS

RAILROAD QUIET ZONE
TYPICAL SECTIONS
CENTER STREET

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	15 of 55

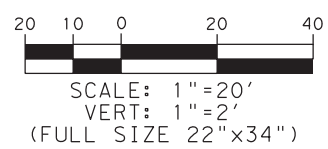
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NUMBER	DATE	REVISION	APPROVED

- NOTES:
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - EXISTING ROADWAY PROFILE NOT TO BE CHANGED

THIS PROJECT MEETS THE BASIC SAFETY REQUIREMENT OF THE 3R DESIGN CRITERIA. CROSS DRAINAGE CULVERTS, SIGN SUPPORTS, AND LUMINAIRE SUPPORTS WITHIN THE PROJECT LIMITS MEET CLEAR ZONE REQUIREMENTS OR HAVE BEEN TREATED OR UPGRADED TO STANDARD.



**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER

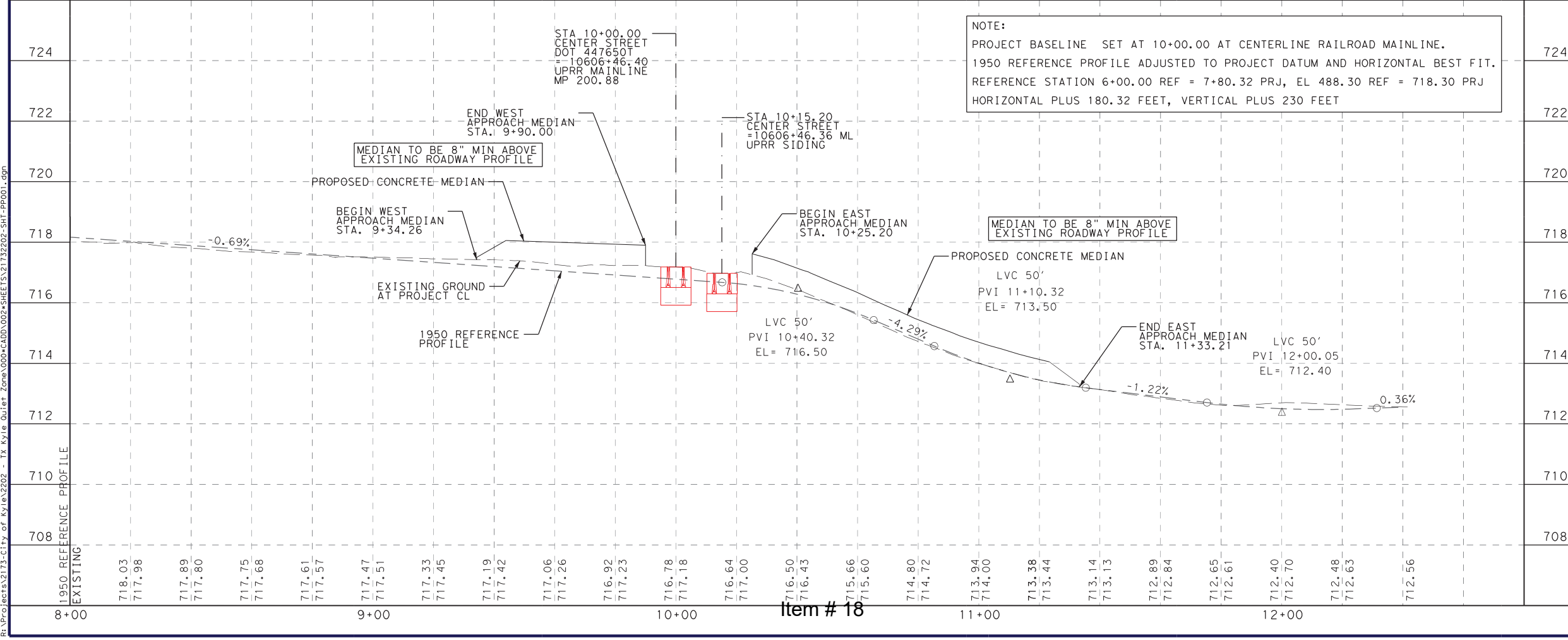
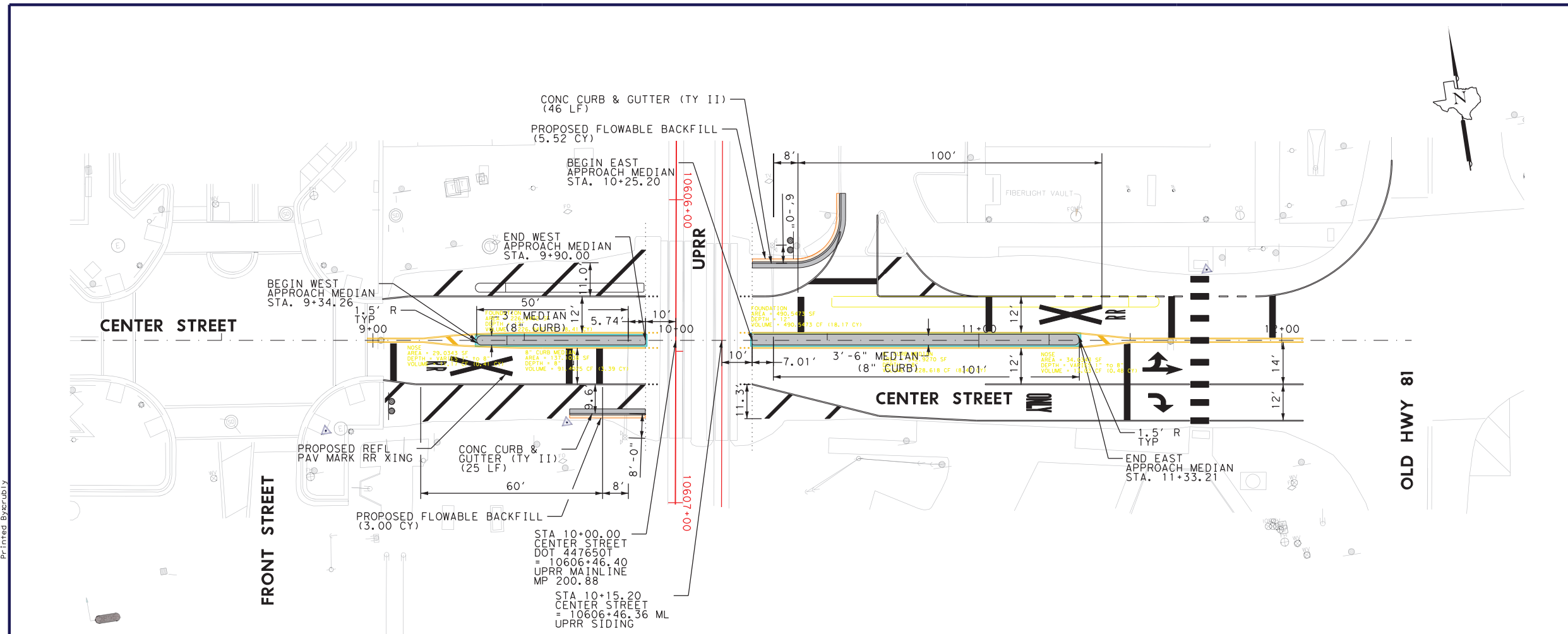
LJA Engineering, Inc.
FRN-F-1386

LOCAL GOVERNMENT

STATE OF TEXAS

**RAILROAD QUIET ZONE
PLAN AND PROFILE
CENTER STREET**

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
14	TEXAS	CC 12-17-015	RM 150		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	20 of 55



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Item # 18

NUMBER	DATE	REVISION	APPROVED

- LEGEND
- (A) REFL PAV MRK TY I (W) (RR XING)
 - (B) REFL PAV MRK TY I (W) (24") (SLD)
 - (C) REFL PAV MRK TY I (W) 4" (BRK)
 - (D) REFL PAV MRK TY I (Y) 4" SLD
 - (F) REFL PAV MRK TY I (Y) 12" SLD
 - (G) REFL PAV MRK TY I (W) 4" SLD
 - (H) REFL PAV MRK TY I (W) 12" SLD
 - (I) REFL PAV MRK TY II-A-A
 - (J) REFL PAV MRK TY II-C-R
 - (K) REFL PAV MRK TY I (W) (WORD)
 - (L) REFL PAV MRK TY I (W) (ARROW)
 - (M) REFL PAV MRK TY I (W) (DBL ARROW)



SCALE: 1"=20'
(FULL SIZE 22"x34")

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT

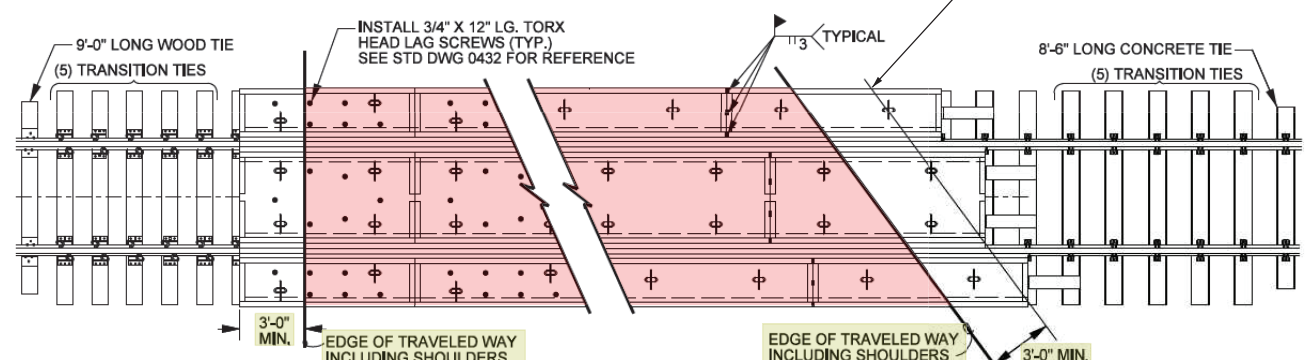
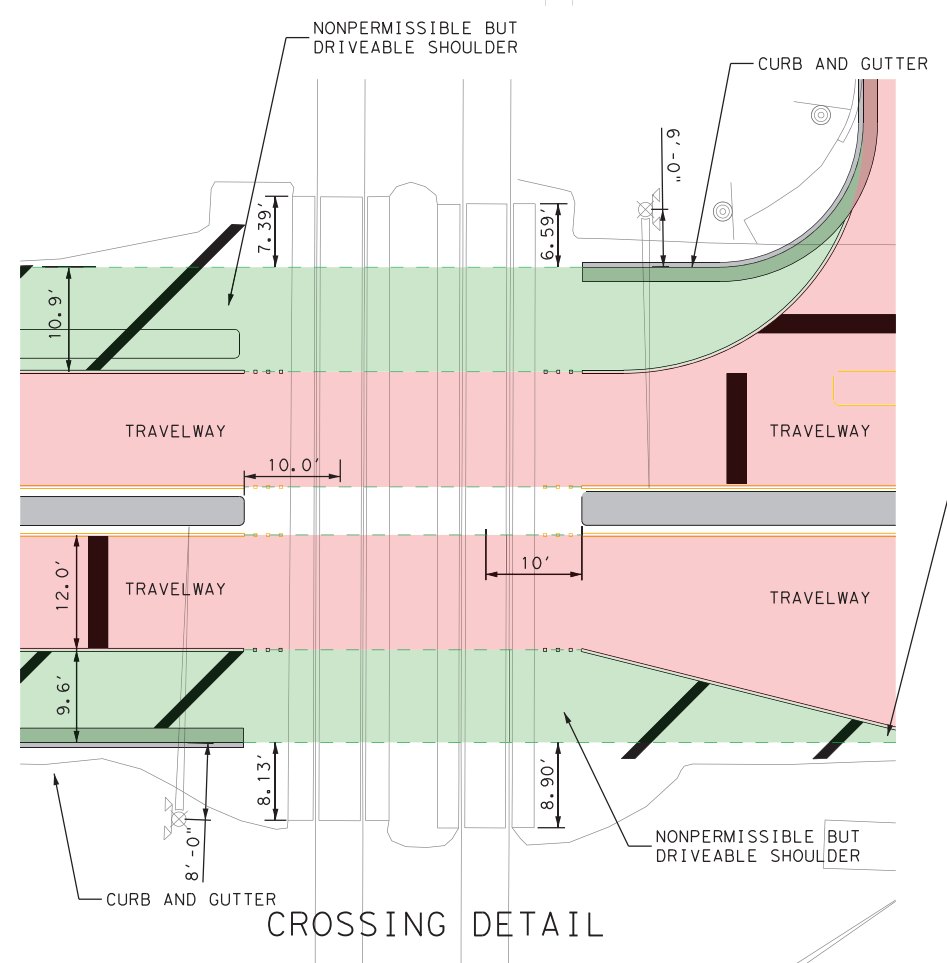
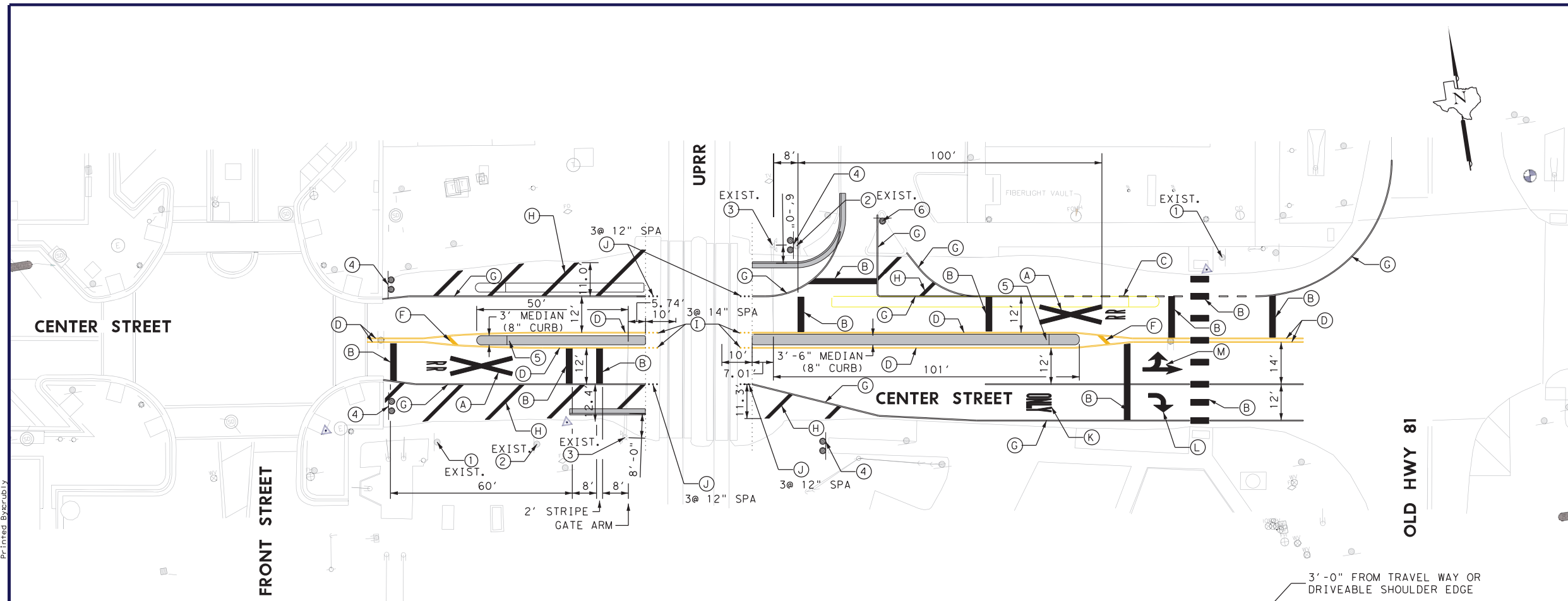


STATE OF TEXAS

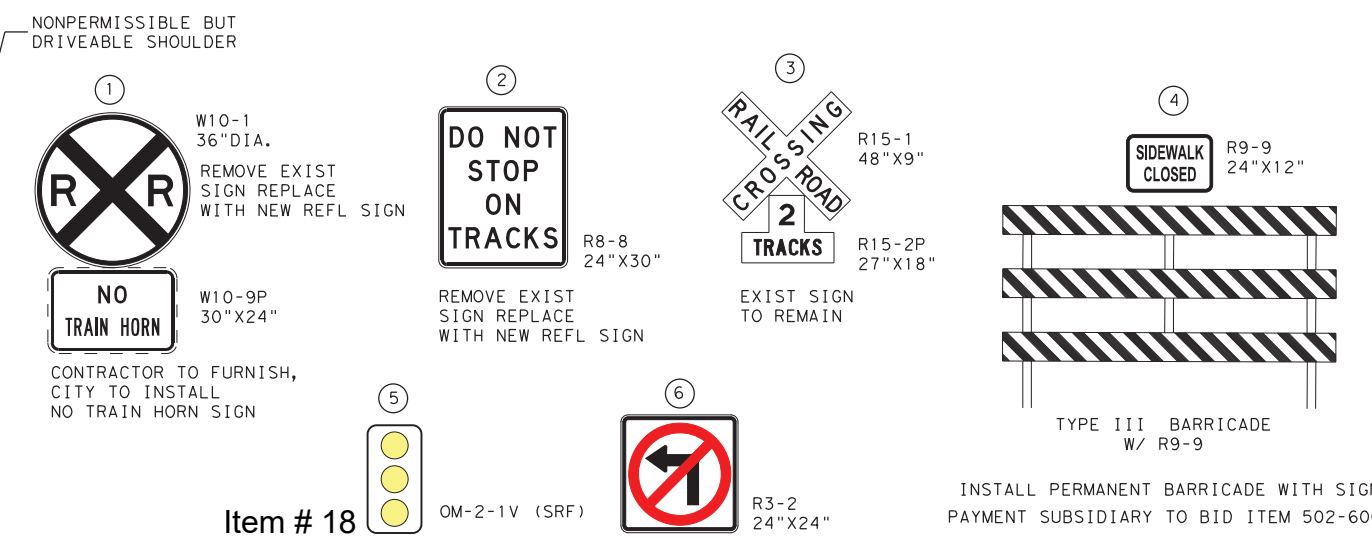


**RAILROAD QUIET ZONE
SIGNING AND PAVEMENT
MARKING PLAN
CENTER STREET**

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
14	TEXAS	CC 12-17-015	RM 150		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	22 of 55



PLAN VIEW OF PANEL WITH TIMBER TIES
PLAN VIEW OF PANEL & JOINT WELD LOCATION W/CONCRETE TIES
RAILROAD STANDARD

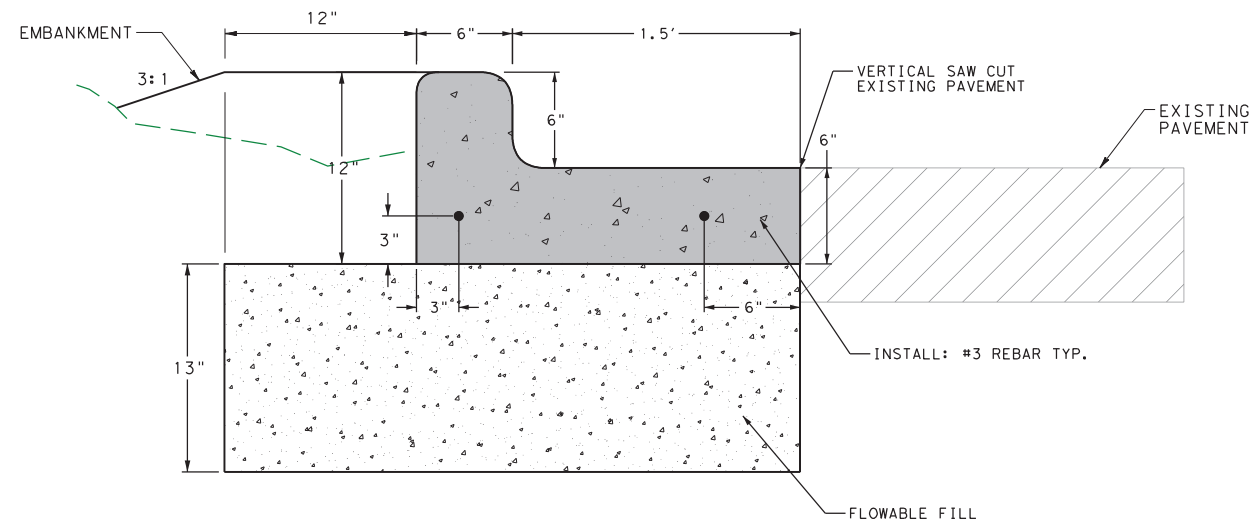


Item # 18

INSTALL PERMANENT BARRICADE WITH SIGN
PAYMENT SUBSIDIARY TO BID ITEM 502-6001

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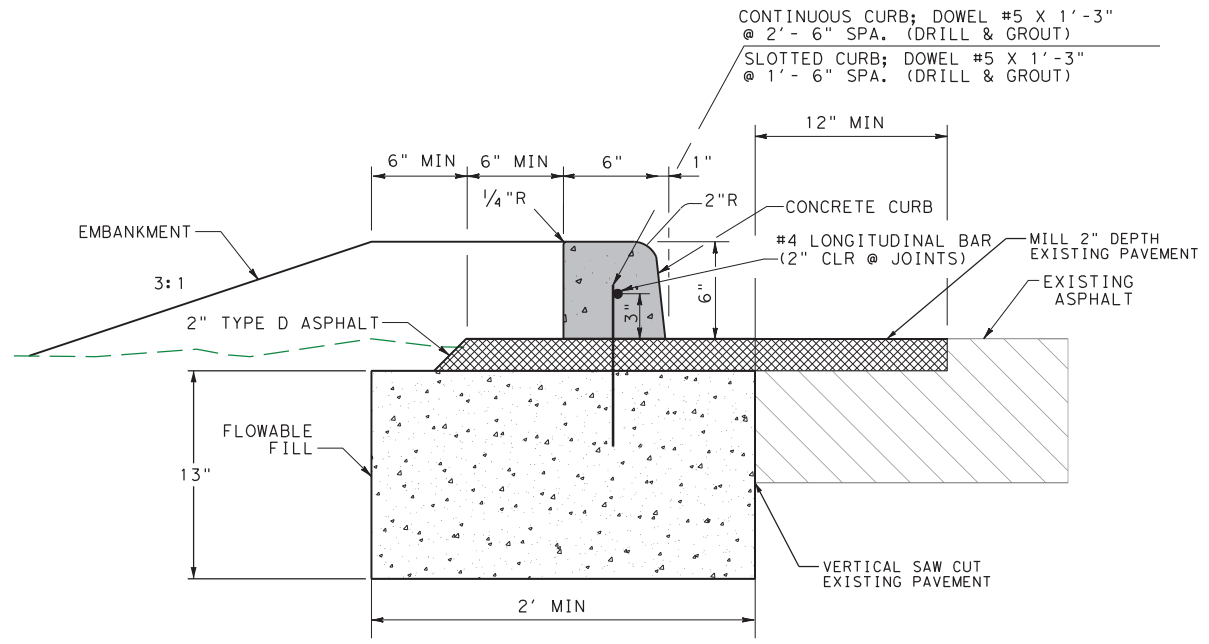
NUMBER	DATE	REVISION	APPROVED



SPILL OVER CURB - ON 13" FLOWABLE FILL
NOT TO SCALE

NOTE:

1. CONSTRUCTION CONTROL JOINTS AT 10'-0" SPACING ALONG LENGTH OF CURB.
2. REINFORCING STEEL SHALL BE #3 BARS, UNLESS OTHERWISE NOTED.
3. NO REBAR WILL BE ALLOWED IN CURB HEAD.
4. CONCRETE WILL BE 3000 PSI VIBRATED PLACE.
5. CONSTRUCTION EXPANSION JOINTS AT A MAXIMUM OF 40'-0" ALONG LENGTH OF CURB.
6. FLOW MIX CONCRETE (TXDOT ITEM 401-6002)



6" CURB - ON 2" TYPE D ASPHALT AND 13" FLOWABLE FILL
NOT TO SCALE

NOTE:

1. FLOW MIX CONCRETE (TXDOT ITEM 401-6002)
2. TY-D, D-GR TY-D PG76-22 SAC-B (EXEMPT) (TXDOT ITEM 3076 6003)

Item # 18

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS



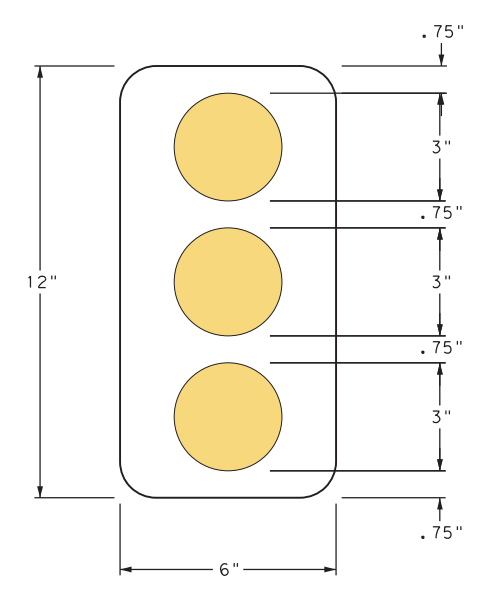
**RAILROAD QUIET ZONE
CONCRETE CURB
DETAILS**

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	24 of 55

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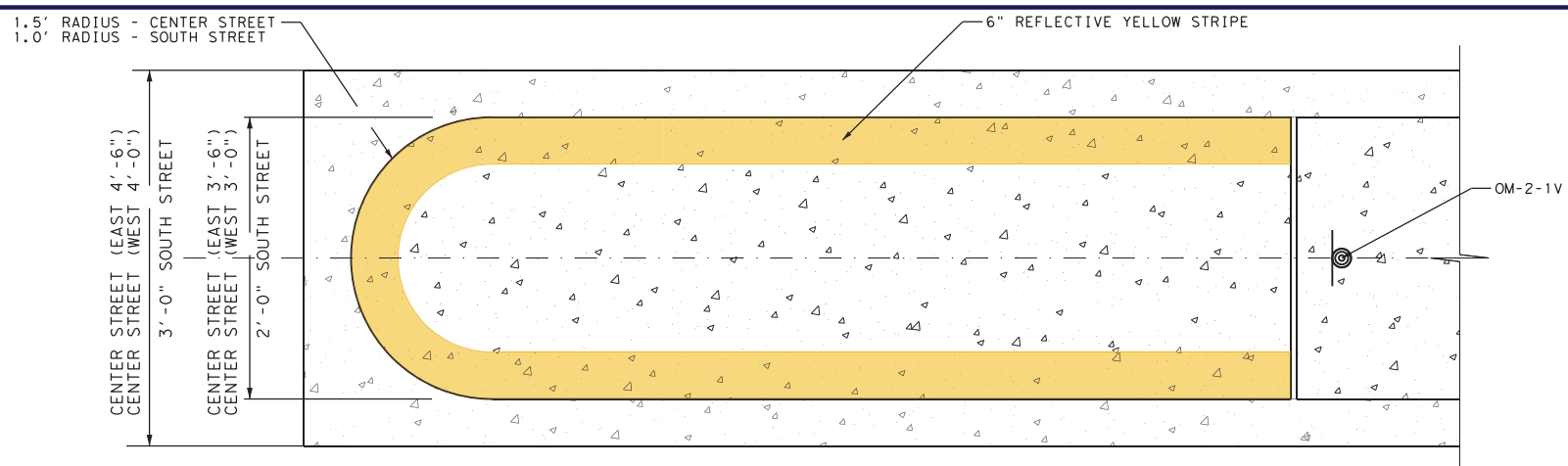
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NUMBER	DATE	REVISION	APPROVED



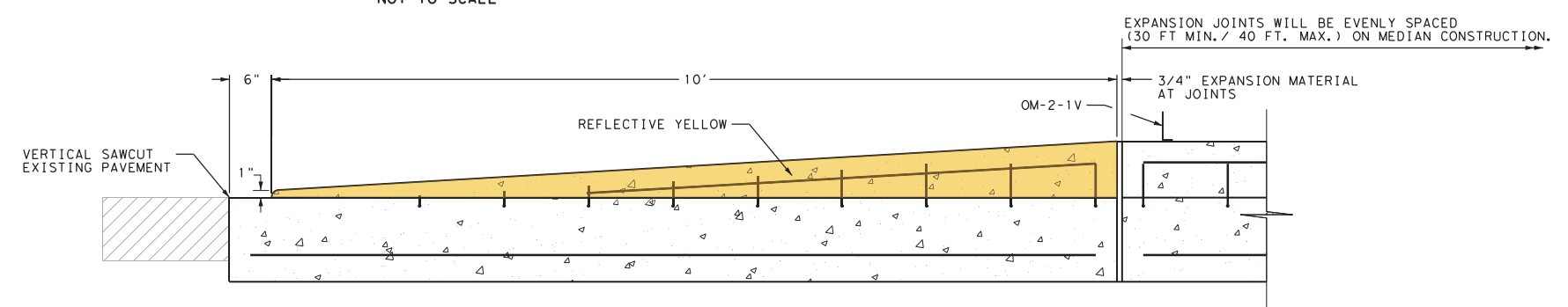
OBJECT MARKER 2-1V
NOT TO SCALE

- NOTE:
- SEE SHEET RCD(1)-16
 - INSTALL ALL OBJECT MARKERS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION

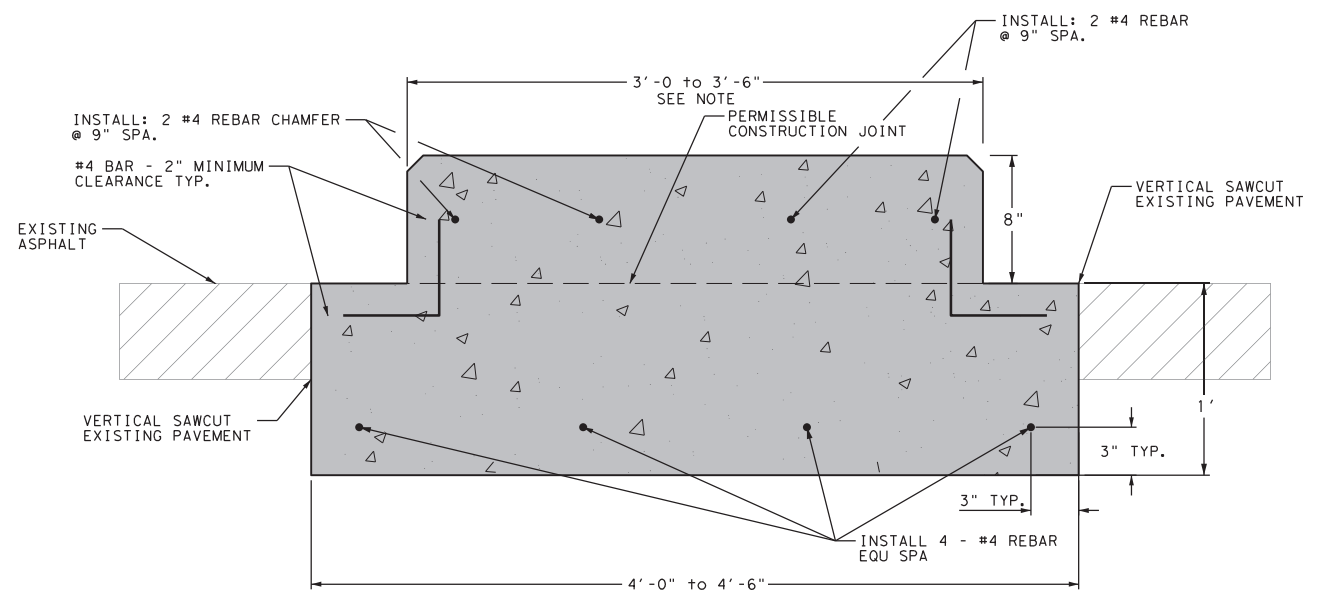


CONCRETE MEDIAN SLOPED NOSE - PLAN
NOT TO SCALE

- NOTES:
- CONCRETE MEDIAN SLOPE NOSE REFLECTIVE YELLOW PAINT SUBSIDIARY TO STRIPING ITEMS OF WORK

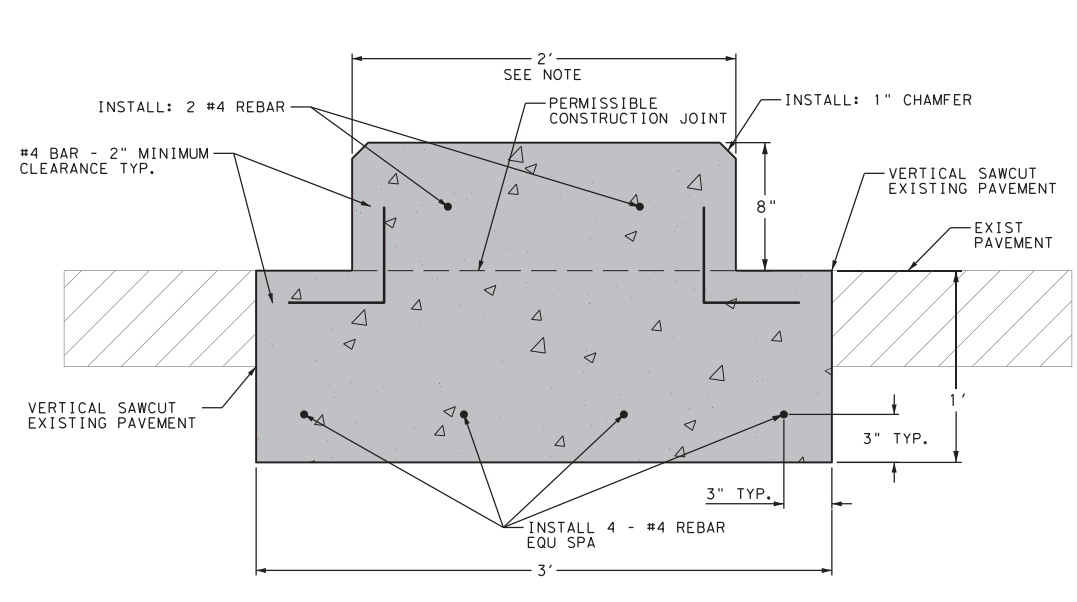


CONCRETE MEDIAN SLOPED NOSE - SECTION
NOT TO SCALE



3'-0" to 3'-6" CONCRETE MEDIAN - SECTION
NOT TO SCALE

- NOTE:
- MEDIAN SHOULD BE CAST IN PLACE
 - EXISTING PAVEMENT SLOPE AND THICKNESS OF PAVEMENT SHOULD BE FIELD VERIFY.
 - CENTER STREET MEDIAN 3'-0" WIDTH WEST OF RAILROAD
3'-6" MEDIAN EAST OF RAILROAD
 - FORMWORK SHALL NOT DAMAGE EXISTING PAVEMENT



2' MEDIAN CROSS SECTION (TYPICAL)
NOT TO SCALE

- NOTE:
- MEDIAN SHOULD BE CAST IN PLACE
 - EXISTING PAVEMENT SLOPE AND THICKNESS OF PAVEMENT SHOULD BE FIELD VERIFY.
 - SOUTH STREET MEDIAN 2'-0" WIDTH
 - FORMWORK SHALL NOT DAMAGE EXISTING PAVEMENT

ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER

LJA Engineering, Inc. LJA
FRN-F-1386

LOCAL GOVERNMENT

CITY OF KYLE
TEXAS

STATE OF TEXAS

Texas Department of Transportation

RAILROAD QUIET ZONE
CONCRETE MEDIAN
DETAILS

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
14	TEXAS	CC 12-17-015	RM 150		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	25 of 55

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NUMBER	DATE	REVISION	APPROVED

SEQUENCE OF CONSTRUCTION SUMMARY

PHASE 1 - CONSTRUCT TEMPORARY PAVEMENT AT THE NORTHEAST CORNER OF CENTER STREET AND FRONT STREET INTERSECTION, CONSTRUCT CURB AND GUTTER BOTH SIDES OF CENTER STREET

PHASE 2 - CONSTRUCT CENTER MEDIAN

PHASE 3 - CONSTRUCT PAVEMENT WIDENING AND CENTER MEDIAN, CONSTRUCT CURB

PHASE 4 - PERMANENT PAVEMENT MARKINGS

PHASE 1 - CENTER STREET

- * CONTRACTOR TO CONTACT ENVIRONMENTAL SERVICES (512-665-2212) TO SCHEDULE REMOVAL AND REPLACEMENT OF LIGHT POLE
- * PLACE ADVANCE WARNING SIGNAGE
- * INSTALL WORK ZONE CHANNELING DEVICES
- * CONSTRUCT TEMPORARY PAVEMENT AT THE NORTHEAST CORNER OF CENTER STREET AND FRONT STREET INTERSECTION
- * CONSTRUCT CURB AND GUTTER BOTH SIDES OF CENTER STREET

PHASE 2 - CENTER STREET

- * INSTALL DETOUR PER PLANS
- * PLACE ADVANCE WARNING SIGNAGE
- * CLOSE EASTBOUND CENTER STREET
- * INSTALL WORK ZONE CHANNELING DEVICES
- * REMOVE CONFLICTING EXISTING PAVEMENT
- * CONSTRUCT CENTER MEDIAN
- * REOPEN CENTER STREET

PHASE 3 - SOUTH STREET

- * INSTALL DETOUR PER PLANS
- * PLACE ADVANCE WARNING SIGNAGE
- * CLOSE SOUTH STREET
- * REMOVE CONFLICTING EXISTING PAVEMENT
- * CONSTRUCT PAVEMENT WIDENING
- * CONSTRUCT CENTER MEDIAN
- * CONSTRUCT CURBS

PHASE 4 - CENTER STREET AND SOUTH STREET

- * REMOVE TEMPORARY PAVEMENT (CENTER STREET)
- * REMOVE ALL REMAINING EXISTING STRIPING (CENTER STREET)
- * APPLY PERMANENT PAVEMENT MARKINGS
- * INSTALL NEW SIGNS AND POSTS
- * REPLACE EXISTING SIGNS AS SHOWN ON DRAWINGS (EXISTING POSTS TO REMAIN)
- * FINAL CLEAN UP

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS



**RAILROAD QUIET ZONE
TRAFFIC CONTROL PLAN
NARRATIVE**

FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
14	TEXAS	CC 12-17-015			RM 150
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	26 of 55

EXHIBIT B
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT

SECTION 1. CONDITIONS AND COVENANTS

A. The Railroad makes no covenant or warranty of title for quiet possession or against encumbrances. The Political Body shall not use or permit use of the Crossing Area for any purposes other than those described in this Agreement. Without limiting the foregoing, the Political Body shall not use or permit use of the Crossing Area for railroad purposes, or for gas, oil or gasoline pipe lines. Any lines constructed on the Railroad's property by or under authority of the Political Body for the purpose of conveying electric power or communications incidental to the Political Body's use of the property for highway purposes shall be constructed in accordance with specifications and requirements of the Railroad, and in such manner as not adversely to affect communication or signal lines of the Railroad or its licensees now or hereafter located upon said property. No nonparty shall be admitted by the Political Body to use or occupy any part of the Railroad's property without the Railroad's written consent. Nothing herein shall obligate the Railroad to give such consent.

B. The Railroad reserves the right to cross the Crossing Area with such railroad tracks as may be required for its convenience or purposes. In the event the Railroad shall place additional tracks upon the Crossing Area, the Political Body shall, at its sole cost and expense, modify the Roadway to conform with all tracks within the Crossing Area.

C. The right hereby granted is subject to any existing encumbrances and rights (whether public or private), recorded or unrecorded, and also to any renewals thereof. The Political Body shall not damage, destroy or interfere with the property or rights of nonparties in, upon or relating to the Railroad's property, unless the Political Body at its own expense settles with and obtains releases from such nonparties.

D. The Railroad reserves the right to use and to grant to others the right to use the Crossing Area for any purpose not inconsistent with the right hereby granted, including, but not by way of limitation, the right to construct, reconstruct, maintain, operate, repair, alter, renew and replace tracks, facilities and appurtenances on the property; and the right to cross the Crossing Area with all kinds of equipment.

E. So far as it lawfully may do so, the Political Body will assume, bear and pay all taxes and assessments of whatsoever nature or kind (whether general, local or special) levied or assessed upon or against the Crossing Area, excepting taxes levied upon and against the property as a component part of the Railroad's operating property.

F. If any property or rights other than the right hereby granted are necessary for the construction, maintenance and use of the Roadway and its appurtenances, or for the performance of any work in connection with the Project, the Political Body will acquire all such other property and rights at its own expense and without expense to the Railroad.

SECTION 2. CONSTRUCTION OF ROADWAY

A. The Political Body, at its expense, will apply for and obtain all public authority required by law, ordinance, rule or regulation for the Project, and will furnish the Railroad upon request with satisfactory evidence that such authority has been obtained.

B. Except as may be otherwise specifically provided herein, the Political Body, at its expense, will furnish all necessary labor, material and equipment, and shall construct and complete the Roadway and all appurtenances thereof. The appurtenances shall include, without limitation, all necessary and proper highway warning devices (except those installed by the Railroad within its right of way) and all necessary drainage facilities, guard rails or barriers, and right of way fences between the Roadway and the railroad tracks. Upon completion of the Project, the Political Body shall remove from the Railroad's property all temporary structures and false work, and will leave the Crossing Area in a condition satisfactory to the Railroad.

C. All construction work of the Political Body upon the Railroad's property (including, but not limited to, construction of the Roadway and all appurtenances and all related and incidental work) shall be performed and completed in a manner satisfactory to the Assistant Vice President Engineering-Design of the Railroad or his authorized representative and in compliance with the Plans, and other guidelines furnished by the Railroad.

D. All construction work of the Political Body shall be performed diligently and completed within a reasonable time. No part of the Project shall be suspended, discontinued or unduly delayed without the Railroad's written consent, and subject to such reasonable conditions as the Railroad may specify. It is understood that the Railroad's tracks at and in the vicinity of the work will be in constant or frequent use during progress of the work and that movement or stoppage of trains, engines or cars may cause delays in the work of the Political Body. The Political Body hereby assumes the risk of any such delays and agrees that no claims for damages on account of any delay shall be made against the Railroad by the State and/or the Contractor.

SECTION 3. INJURY AND DAMAGE TO PROPERTY

If the Political Body, in the performance of any work contemplated by this Agreement or by the failure to do or perform anything for which the Political Body is responsible under the provisions of this Agreement, shall injure, damage or destroy any property of the Railroad or of any other person lawfully occupying or using the property of the Railroad, such property shall be replaced or repaired by the Political Body at the

Political Body's own expense, or by the Railroad at the expense of the Political Body, and to the satisfaction of the Railroad's Assistant Vice President Engineering-Design.

SECTION 4. RAILROAD MAY USE CONTRACTORS TO PERFORM WORK

The Railroad may contract for the performance of any of its work by other than the Railroad forces. The Railroad shall notify the Political Body of the contract price within ninety (90) days after it is awarded. Unless the Railroad's work is to be performed on a fixed price basis, the Political Body shall reimburse the Railroad for the amount of the contract.

SECTION 5. MAINTENANCE AND REPAIRS

A. The Political Body shall, at its own sole expense, maintain, repair, and renew, or cause to be maintained, repaired and renewed, the entire Crossing Area and Roadway, except the portions between the track tie ends, which shall be maintained by the Railroad at the Political Body's expense.

B. If, in the future, the Political Body elects to have the surfacing material between the track tie ends, or between tracks if there is more than one railroad track across the Crossing Area, replaced with paving or some surfacing material other than timber planking, the Railroad, at the Political Body's expense, shall install such replacement surfacing, and in the future, to the extent repair or replacement of the surfacing is necessitated by repair or rehabilitation of the Railroad's tracks through the Crossing Area, the Political Body shall bear the expense of such repairs or replacement.

SECTION 6. CHANGES IN GRADE

If at any time the Railroad shall elect, or be required by competent authority to, raise or lower the grade of all or any portion of the track(s) located within the Crossing Area, the Political Body shall, at its own expense, conform the Roadway to conform with the change of grade of the trackage.

SECTION 7. REARRANGEMENT OF WARNING DEVICES

If the change or rearrangement of any warning device installed hereunder is necessitated for public or Railroad convenience or on account of improvements for either the Railroad, highway or both, the parties will apportion the expense incidental thereto between themselves by negotiation, agreement or by the order of a competent authority before the change or rearrangement is undertaken.

SECTION 8. SAFETY MEASURES; PROTECTION OF RAILROAD COMPANY OPERATIONS

It is understood and recognized that safety and continuity of the Railroad's operations and communications are of the utmost importance; and in order that the

same may be adequately safeguarded, protected and assured, and in order that accidents may be prevented and avoided, it is agreed with respect to all of said work of the Political Body that the work will be performed in a safe manner and in conformity with the following standards:

A. **Definitions.** All references in this Agreement to the Political Body shall also include the Contractor and their respective officers, agents and employees, and others acting under its or their authority; and all references in this Agreement to work of the Political Body shall include work both within and outside of the Railroad's property.

B. **Entry on to Railroad's Property by Political Body.** If the Political Body's employees need to enter Railroad's property in order to perform an inspection of the Roadway, minor maintenance or other activities, the Political Body shall first provide at least ten (10) working days advance notice to the Railroad Representative. With respect to such entry on to Railroad's property, the Political Body, to the extent permitted by law, agrees to release, defend and indemnify the Railroad from and against any loss, damage, injury, liability, claim, cost or expense incurred by any person including, without limitation, the Political Body's employees, or damage to any property or equipment (collectively the "Loss") that arises from the presence or activities of Political Body's employees on Railroad's property, except to the extent that any Loss is caused by the sole direct negligence of Railroad.

C. **Flagging.**

(i) If the Political Body's employees need to enter Railroad's property as provided in Paragraph B above, the Political Body agrees to notify the Railroad Representative at least thirty (30) working days in advance of proposed performance of any work by Political Body in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such thirty (30) day notice, the Railroad Representative will determine and inform Political Body whether a flagman need be present and whether Political Body needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Political Body for such expenses incurred by Railroad. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Political Body agrees that Political Body is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

(ii) The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for

vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Political Body shall pay on the basis of the new rates and charges.

(iii) Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Political Body may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Political Body must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Political Body will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional thirty (30) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

D. **Compliance With Laws.** The Political Body shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work. The Political Body shall use only such methods as are consistent with safety, both as concerns the Political Body, the Political Body's agents and employees, the officers, agents, employees and property of the Railroad and the public in general. The Political Body (without limiting the generality of the foregoing) shall comply with all applicable state and federal occupational safety and health acts and regulations. All Federal Railroad Administration regulations shall be followed when work is performed on the Railroad's premises. If any failure by the Political Body to comply with any such laws, regulations, and enactments, shall result in any fine, penalty, cost or charge being assessed, imposed or charged against the Railroad, the Political Body shall reimburse, and to the extent it may lawfully do so, indemnify the Railroad for any such fine, penalty, cost, or charge, including without limitation attorney's fees, court costs and expenses. The Political Body further agrees in the event of any such action, upon notice thereof being provided by the Railroad, to defend such action free of cost, charge, or expense to the Railroad.

E. **No Interference or Delays.** The Political Body shall not do, suffer or permit anything which will or may obstruct, endanger, interfere with, hinder or delay maintenance or operation of the Railroad's tracks or facilities, or any communication or signal lines, installations or any appurtenances thereof, or the operations of others lawfully occupying or using the Railroad's property or facilities.

F. **Supervision.** The Political Body, at its own expense, shall adequately police and supervise all work to be performed by the Political Body, and shall not inflict injury to persons or damage to property for the safety of whom or of which the Railroad may be responsible, or to property of the Railroad. The responsibility of the Political Body for safe conduct and adequate policing and supervision of the Project shall not be lessened or otherwise affected by the Railroad's approval of plans and specifications, or by the Railroad's collaboration in performance of any work, or by the presence at the work site of the Railroad's representatives, or by compliance by the Political Body with any requests or recommendations made by such representatives. If a representative of the Railroad is assigned to the Project, the Political Body will give due consideration to suggestions and recommendations made by such representative for the safety and protection of the Railroad's property and operations.

G. **Suspension of Work.** If at any time the Political Body's engineers or the Vice President-Engineering Services of the Railroad or their respective representatives shall be of the opinion that any work of the Political Body is being or is about to be done or prosecuted without due regard and precaution for safety and security, the Political Body shall immediately suspend the work until suitable, adequate and proper protective measures are adopted and provided.

H. **Removal of Debris.** The Political Body shall not cause, suffer or permit material or debris to be deposited or cast upon, or to slide or fall upon any property or facilities of the Railroad; and any such material and debris shall be promptly removed from the Railroad's property by the Political Body at the Political Body's own expense or by the Railroad at the expense of the Political Body. The Political Body shall not cause, suffer or permit any snow to be plowed or cast upon the Railroad's property during snow removal from the Crossing Area.

I. **Explosives.** The Political Body shall not discharge any explosives on or in the vicinity of the Railroad's property without the prior consent of the Railroad's Vice President-Engineering Services, which shall not be given if, in the sole discretion of the Railroad's Vice President-Engineering Services, such discharge would be dangerous or would interfere with the Railroad's property or facilities. For the purposes hereof, the "vicinity of the Railroad's property" shall be deemed to be any place on the Railroad's property or in such close proximity to the Railroad's property that the discharge of explosives could cause injury to the Railroad's employees or other persons, or cause damage to or interference with the facilities or operations on the Railroad's property. The Railroad reserves the right to impose such conditions, restrictions or limitations on the transportation, handling, storage, security and use of explosives as the Railroad, in the Railroad's sole discretion, may deem to be necessary, desirable or appropriate.

J. **Excavation.** The Political Body shall not excavate from existing slopes nor construct new slopes which are excessive and may create hazards of slides or falling rock, or impair or endanger the clearance between existing or new slopes and the tracks of the Railroad. The Political Body shall not do or cause to be done any work which will or may disturb the stability of any area or adversely affect the Railroad's tracks or facilities. The Political Body, at its own expense, shall install and maintain adequate shoring and cribbing for all excavation and/or trenching performed by the Political Body in connection with construction, maintenance or other work. The shoring and cribbing shall be constructed and maintained with materials and in a manner approved by the Railroad's Assistant Vice President Engineering - Design to withstand all stresses likely to be encountered, including any stresses resulting from vibrations caused by the Railroad's operations in the vicinity.

K. **Drainage.** The Political Body, at the Political Body's own expense, shall provide and maintain suitable facilities for draining the Roadway and its appurtenances, and shall not suffer or permit drainage water therefrom to flow or collect upon property of the Railroad. The Political Body, at the Political Body's own expense, shall provide adequate passageway for the waters of any streams, bodies of water and drainage facilities (either natural or artificial, and including water from the Railroad's culvert and drainage facilities), so that said waters may not, because of any facilities or work of the Political Body, be impeded, obstructed, diverted or caused to back up, overflow or damage the property of the Railroad or any part thereof, or property of others. The Political Body shall not obstruct or interfere with existing ditches or drainage facilities.

L. **Notice.** Before commencing any work, the Political Body shall provide the advance notice to the Railroad that is required under the Contractor's Right of Entry Agreement.

M. **Fiber Optic Cables.** Fiber optic cable systems may be buried on the Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Political Body shall visit up.com/CBUD to complete and submit the required form to determine if fiber optic cable is buried anywhere on Railroad's property to be used by the Political Body. If it is, Political Body will telephone the telecommunications company(ies) involved, arrange for a cable locator, and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the Railroad's premises.

SECTION 9. INTERIM WARNING DEVICES

If at anytime it is determined by a competent authority, by the Political Body, or by agreement between the parties, that new or improved train activated warning devices should be installed at the Crossing Area, the Political Body shall install adequate temporary warning devices or signs and impose appropriate vehicular control measures to protect the motoring public until the new or improved devices have been installed.

SECTION 10. OTHER RAILROADS

All protective and indemnifying provisions of this Agreement shall inure to the benefit of the Railroad and any other railroad company lawfully using the Railroad's property or facilities.

SECTION 11. BOOKS AND RECORDS

The books, papers, records and accounts of Railroad, so far as they relate to the items of expense for the materials to be provided by Railroad under this Project, or are associated with the work to be performed by Railroad under this Project, shall be open to inspection and audit at Railroad's offices in Omaha, Nebraska, during normal business hours by the agents and authorized representatives of Political Body for a period of three (3) years following the date of Railroad's last billing sent to Political Body.

SECTION 12. REMEDIES FOR BREACH OR NONUSE

A. If the Political Body shall fail, refuse or neglect to perform and abide by the terms of this Agreement, the Railroad, in addition to any other rights and remedies, may perform any work which in the judgment of the Railroad is necessary to place the Roadway and appurtenances in such condition as will not menace, endanger or interfere with the Railroad's facilities or operations or jeopardize the Railroad's employees; and the Political Body will reimburse the Railroad for the expenses thereof.

B. Nonuse by the Political Body of the Crossing Area for public highway purposes continuing at any time for a period of eighteen (18) months shall, at the option of the Railroad, work a termination of this Agreement and of all rights of the Political Body hereunder.

C. The Political Body will surrender peaceable possession of the Crossing Area and Roadway upon termination of this Agreement. Termination of this Agreement shall not affect any rights, obligations or liabilities of the parties, accrued or otherwise, which may have arisen prior to termination.

SECTION 13. MODIFICATION - ENTIRE AGREEMENT

No waiver, modification or amendment of this Agreement shall be of any force or effect unless made in writing, signed by the Political Body and the Railroad and specifying with particularity the nature and extent of such waiver, modification or amendment. Any waiver by the Railroad of any default by the Political Body shall not affect or impair any right arising from any subsequent default. This Agreement and Exhibits attached hereto and made a part hereof constitute the entire understanding between the Political Body and the Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work or any part thereof.

**EXHIBIT C
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT**

Exhibit C (if applicable) will be Railroad's Material and Force Account Estimate.

EXHIBIT C

**ESTIMATE OF FORCE ACCOUNT WORK
BY THE
UNION PACIFIC RAILROAD COMPANY**

DESCRIPTION OF WORK: Engineering and other related services for work to be performed within railroad property. This includes railroad flagging services, project and construction management during construction activities on railroad property. All necessary railroad services will be billed at actual cost.

DATE:
2/7/2023

LOCATION: Hays County <u>DOT: 447650T</u>	SUBDIVISION <u>Austin Sub</u>	STATE: <u>TX</u>
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DESCRIPTION	LABOR	MATERIAL	UP %0	Agency % 100	TOTAL
ENGINEERING					
Project Management	\$ 2,500	\$ -		\$ 2,500.00	\$ 2,500
Construction Submittals	\$ -	\$ -	\$ -	\$ -	\$ -
Construction Observation/Mgmt	\$ 10,000	\$ -	\$ -	\$ 10,000.00	\$ 10,000
Final Inspection	\$ 2,500	\$ -	\$ -	\$ 2,500.00	\$ 2,500
FLAGGING / INSPECTION SERVICES					
RATE (per day)	\$ 1,400				
Estimated # Days of Flagging	0	\$ -	\$ -	\$ -	\$ 0
TOTAL PROJECT:	\$ 15,000	\$ -	\$ -	\$ 15,000.00	\$15,000

TOTAL ESTIMATED COST: \$15,000

**THE ABOVE FIGURES ARE ESTIMATES ONLY AND SUBJECT TO FLUCTUATION.
IN THE EVENT OF AN INCREASE OR DECREASE IN THE COST OR QUANTITY OF
MATERIAL OR LABOR REQUIRED, THE RAILROAD WILL BILL FOR ACTUAL
COSTS AT THE CURRENT RATES EFFECTIVE THEREOF.**

Flagging may be performed by a third-party contractor. Any flagging performed by a third-party contractor will be billed at said third-party contractor rate not included in the above estimate. Alternatively, the Agency may enter into a separate agreement with third-party contractor and will be responsible for all actual costs incurred.

**EXHIBIT D
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT
CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT**

THIS AGREEMENT is made and entered into as of the _____ day of _____, 20____, by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation ("Railroad"); and _____, a _____ corporation ("Contractor").

RECITALS:

Contractor has been hired by _____ to perform work relating to _____ (the "Work") with all or a portion of such Work to be performed on property of Railroad in the vicinity of Railroad's Milepost _____ on Railroad's _____ [Subdivision or Branch] [at or near DOT No. _____] located at or near _____, in _____ County, State of _____, as such location is in the general location shown on the print marked **Exhibit A**, attached hereto and hereby made a part hereof, which Work is the subject of a contract dated _____ between Railroad and _____.

Railroad is willing to permit Contractor to perform the Work described above at the location described above subject to the terms and conditions contained in this agreement

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between Railroad and Contractor, as follows:

ARTICLE 1 - DEFINITION OF CONTRACTOR.

For purposes of this agreement, all references in this agreement to Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority. For purposes of clarity, Contractor agrees that any CIC (defined below) hired by Contractor is a subcontractor of Contractor and therefore included in the defined term Contractor pursuant to the foregoing sentence.

ARTICLE 2 - RIGHT GRANTED: PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of performing the Work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article 4.

ARTICLE 3 - TERMS AND CONDITIONS CONTAINED IN EXHIBITS B AND C.

The terms and conditions contained in **Exhibit B** and **Exhibit C**, attached hereto, are hereby made a part of this agreement.

ARTICLE 4 - ALL EXPENSES TO BE BORNE BY CONTRACTOR: RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any Work performed by Contractor (including without limitation any CIC), or any costs or expenses incurred by Railroad relating to this agreement.

B. Contractor shall coordinate all of its Work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

C. Contractor, at its own expense, shall adequately police and supervise all Work to be performed by Contractor and shall ensure that such Work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's Work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the Work, or by Railroad's collaboration in performance of any Work, or by the presence at the Work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

ARTICLE 5 - SCHEDULE OF WORK ON A MONTHLY BASIS.

The Contractor, at its expense, shall provide on a monthly basis a detailed schedule of Work to the Railroad Representative named in Article 4B above. The reports shall start at the execution of this agreement and continue until this agreement is terminated as provided in this agreement or until the Contractor has completed all Work on Railroad's property.

ARTICLE 6 - TERM: TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this agreement, and continue until _____, unless sooner terminated as herein provided, or at such time as Contractor has completed its Work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its Work on Railroad's property.

B. This agreement may be terminated by either party on ten (10) days written notice to the other party.

ARTICLE 7 - CERTIFICATE OF INSURANCE.

A. Before commencing any Work and throughout the entire term of this Agreement, Contractor, at its expense, shall procure and maintain in full force and effect the types and minimum limits of insurance specified in **Exhibit C** of this agreement and require each of its subcontractors to include the insurance endorsements as required under Section 12 of **Exhibit B** of this agreement.

B. Not more frequently than once every two (2) years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

C. Upon request of Railroad, Contractor shall provide to Railroad a certificate issued by its insurance

carrier evidencing the insurance coverage required under **Exhibit B**.

D. Contractor understands and accepts that the terms of this Article are wholly separate from and independent of the terms of any indemnity provisions contained in this Agreement.

E. Upon request of Railroad, insurance correspondence, binders, policies, certificates and endorsements shall be sent to:

Union Pacific Railroad Company

[Insert mailing address]

Attn: _____

Project No. 0036755

ARTICLE 8 - PRECONSTRUCTION MEETING.

If the Work to be performed by the Contractor will involve the Railroad providing any flagging protection (or if a CIC is approved to provide flagging protection pursuant to the terms set forth herein) and/or there is separate work to be performed by the Railroad, the Contractor confirms that no work shall commence until the Railroad and Contractor participate in a preconstruction meeting involving flagging procedures and coordination of work activities of the Contractor and the Railroad (and any CIC, as applicable.)

ARTICLE 9. DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the Work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

ARTICLE 10. ADMINISTRATIVE FEE.

Upon the execution and delivery of this agreement, Contractor shall pay to Railroad One Thousand Twenty Five Dollars (\$1,025.00) as reimbursement for clerical, administrative and handling expenses in connection with the processing of this agreement.

ARTICLE 11. CROSSINGS: COMPLIANCE WITH MUTCD AND FRA GUIDELINES.

A. No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

B. Any permanent or temporary changes, including temporary traffic control, to crossings must conform to the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable Federal Railroad Administration rules, regulations and guidelines, and must be reviewed by the Railroad prior to any changes being implemented. In the event the Railroad is found to be out of compliance with federal safety regulations due to the Contractor's modifications, negligence, or any other reason arising from the Contractor's presence on the Railroad's property, the Contractor agrees to assume liability for any civil penalties imposed upon the Railroad for such noncompliance.

ARTICLE 12.- EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored or used on Railroad's property without the prior written approval of Railroad.

IN WITNESS WHEREOF, the parties hereto have duly executed this agreement in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY

By: _____

Title: _____

(Name of Contractor)

By: _____

Name: _____

Title: _____

Phone: _____

E-Mail: _____

EXHIBIT A
TO
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Exhibit A will be a print showing the general location of the work site.

EXHIBIT B
TO
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Section 1. NOTICE OF COMMENCEMENT OF WORK - RAILROAD FLAGGING - PRIVATE FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least ten (10) working days in advance of Contractor commencing its Work and at least thirty (30) working days in advance of proposed performance of any Work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track.

B. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad approved flagman is provided to watch for trains. Upon receipt of such thirty (30)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures.

C. Contractor shall be permitted to hire a private contractor to perform flagging or other special protective or safety measures (such private contractor being commonly known in the railroad industry as a contractor-in-charge ("CIC")) in lieu of Railroad providing such services or in concert with Railroad providing such services, subject to prior written approval by Railroad, which approval shall be in Railroad's sole and absolute discretion. If Railroad agrees to permit Contractor to utilize a CIC pursuant to the preceding sentence, Contractor shall obtain Railroad's prior approval in writing for each of the following items, as determined in all respects in Railroad's sole and absolute discretion: (i) the identity of the third-party performing the role of CIC; (ii) the scope of the services to be performed for the project by the approved CIC; and (iii) any other terms and conditions governing such services to be provided by the CIC. If flagging or other special protective or safety measures are performed by an approved CIC, Contractor shall be solely responsible for (and shall timely pay such CIC for) its services. Railroad reserves the right to rescind any approval pursuant to this Section 1, Subsection C., in whole or in part, at any time, as determined in Railroad's sole and absolute discretion.

D. If any flagging or other special protective or safety measures are performed by employees of Railroad and/or any contractor of Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing.

E. If any flagging or other special protective or safety measures are performed by Railroad or a CIC, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this agreement.

F. The provisions set forth in this subsection are only applicable for Flagging Services performed by employees of Railroad: the rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with labor agreements and schedules in effect at the time the Work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the Work is performed. One and one-half times the current hourly rate is

paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges. If flagging is performed by Railroad, reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional thirty (30) days notice must then be given to Railroad if flagging services are needed again after such five-day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

B. The foregoing grant is also subject to all outstanding superior rights (whether recorded or unrecorded and including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least twenty-five (25) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the Work to be performed by Contractor caused by such railroad operations and Work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any Work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the Work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such Work performed. Contractor shall indemnify and hold harmless Railroad from and against any and all liens, claims, demands, costs or expenses of whatsoever nature in any way connected with or growing out of such Work done, labor performed, or materials furnished. If Contractor fails to promptly cause any lien to be released of record, Railroad may, at its election, discharge the lien or claim of lien at Contractor's expense.

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall visit www.up.com/CBUD to complete and submit the required form to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any Work until all such protection or relocation (if applicable) has been accomplished.

B. IN ADDITION TO OTHER INDEMNITY PROVISIONS IN THIS AGREEMENT, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD RAILROAD HARMLESS FROM AND AGAINST ALL COSTS, LIABILITY AND EXPENSE WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS AND EXPENSES) ARISING OUT OF ANY ACT OR OMISSION OF CONTRACTOR, ITS AGENTS AND/OR EMPLOYEES, THAT CAUSES OR CONTRIBUTES TO (1) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATIONS SYSTEM ON RAILROAD'S PROPERTY, AND/OR (2) ANY INJURY TO OR DEATH OF ANY PERSON EMPLOYED BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY, AND/OR ITS CONTRACTOR, AGENTS AND/OR EMPLOYEES, ON RAILROAD'S PROPERTY. CONTRACTOR SHALL NOT HAVE OR SEEK RECOURSE AGAINST RAILROAD FOR ANY CLAIM OR CAUSE OF ACTION FOR ALLEGED LOSS OF PROFITS OR REVENUE OR LOSS OF SERVICE OR OTHER CONSEQUENTIAL DAMAGE TO A TELECOMMUNICATION COMPANY USING RAILROAD'S PROPERTY OR A CUSTOMER OR USER OF SERVICES OF THE FIBER OPTIC CABLE ON RAILROAD'S PROPERTY.

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the Work covered by this agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the Work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of any Work on Railroad property performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the Work. Contractor shall, at a minimum, comply with Railroad's then current safety standards located at the below web address ("Railroad's Safety Standards") to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor

determines that any of Railroad's Safety Standards are contrary to good safety practices. Contractor shall furnish copies of Railroad's Safety Standards to each of its employees before they enter Railroad property.

http://www.up.com/cs/groups/public/@uprr/@suppliers/documents/up_pdf_natedocs/pdf_up_supplier_safety_req.pdf

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any Work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the Work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this agreement shall control if there are any inconsistencies between this agreement and the Safety Plan.

Section 8. INDEMNITY.

A. TO THE FULLEST EXTENT ALLOWED BY APPLICABLE LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS RAILROAD, ITS AFFILIATES, AND ITS AND THEIR OFFICERS, AGENTS AND EMPLOYEES (INDIVIDUALLY AN "INDEMNIFIED PARTY" OR COLLECTIVELY "INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LOSS, DAMAGE, INJURY, LIABILITY, CLAIM, DEMAND, COST OR EXPENSE (INCLUDING, WITHOUT LIMITATION, ATTORNEY'S, CONSULTANT'S AND EXPERT'S FEES, AND COURT COSTS), FINE OR PENALTY (COLLECTIVELY, "LOSS") INCURRED BY ANY PERSON (INCLUDING, WITHOUT LIMITATION, ANY INDEMNIFIED PARTY, CONTRACTOR, OR ANY EMPLOYEE OF CONTRACTOR OR OF ANY INDEMNIFIED PARTY) ARISING OUT OF OR IN ANY MANNER CONNECTED WITH (I) ANY WORK PERFORMED BY CONTRACTOR, OR (II) ANY ACT OR OMISSION OF CONTRACTOR, ITS OFFICERS, AGENTS OR EMPLOYEES, OR (III) ANY BREACH OF THIS AGREEMENT BY CONTRACTOR.

B. THE RIGHT TO INDEMNITY UNDER THIS SECTION 8 SHALL ACCRUE UPON OCCURRENCE OF THE EVENT GIVING RISE TO THE LOSS, AND SHALL APPLY REGARDLESS OF ANY NEGLIGENCE OR STRICT LIABILITY OF ANY INDEMNIFIED PARTY, EXCEPT WHERE THE LOSS IS CAUSED BY THE SOLE ACTIVE NEGLIGENCE OF AN INDEMNIFIED PARTY AS ESTABLISHED BY THE FINAL JUDGMENT OF A COURT OF COMPETENT JURISDICTION. THE SOLE ACTIVE NEGLIGENCE OF ANY INDEMNIFIED PARTY SHALL NOT BAR THE RECOVERY OF ANY OTHER INDEMNIFIED PARTY.

C. CONTRACTOR EXPRESSLY AND SPECIFICALLY ASSUMES POTENTIAL LIABILITY UNDER THIS SECTION 8 FOR CLAIMS OR ACTIONS BROUGHT BY CONTRACTOR'S OWN EMPLOYEES. CONTRACTOR WAIVES ANY IMMUNITY IT MAY HAVE UNDER WORKER'S COMPENSATION OR INDUSTRIAL INSURANCE ACTS TO INDEMNIFY THE INDEMNIFIED PARTIES UNDER THIS SECTION 8. CONTRACTOR ACKNOWLEDGES THAT THIS WAIVER WAS MUTUALLY NEGOTIATED BY THE PARTIES HERETO.

D. NO COURT OR JURY FINDINGS IN ANY EMPLOYEE'S SUIT PURSUANT TO ANY

WORKER'S COMPENSATION ACT OR THE FEDERAL EMPLOYERS' LIABILITY ACT AGAINST A PARTY TO THIS AGREEMENT MAY BE RELIED UPON OR USED BY CONTRACTOR IN ANY ATTEMPT TO ASSERT LIABILITY AGAINST ANY INDEMNIFIED PARTY.

E. THE PROVISIONS OF THIS SECTION 8 SHALL SURVIVE THE COMPLETION OF ANY WORK PERFORMED BY CONTRACTOR OR THE TERMINATION OR EXPIRATION OF THIS AGREEMENT. IN NO EVENT SHALL THIS SECTION 8 OR ANY OTHER PROVISION OF THIS AGREEMENT BE DEEMED TO LIMIT ANY LIABILITY CONTRACTOR MAY HAVE TO ANY INDEMNIFIED PARTY BY STATUTE OR UNDER COMMON LAW.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the Work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the Work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this agreement shall be effective unless made in writing and signed by Contractor and Railroad. This agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the Work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors. Before Contractor commences any Work, the Contractor shall, except to the extent prohibited by law; (1) require each of its subcontractors to include the Contractor as "Additional Insured" on the subcontractor's Commercial General Liability policy and Umbrella or Excess policies (if applicable) with respect to all liabilities arising out of the subcontractor's performance of Work on behalf of the Contractor by endorsing these policies with ISO Additional Insured Endorsements CG 20 10, and CG 20 37 (or substitute forms providing equivalent coverage; (2) require each of its subcontractors to endorse their Commercial General Liability Policy with "Contractual Liability Railroads" ISO Form CG 24 17 10 01 (or a substitute form providing equivalent coverage) for the job site; and (3) require each of its subcontractors to endorse their Business Automobile Policy with "Coverage For Certain Operations In Connection With Railroads" ISO Form CA 20 70 10 01 (or a substitute form providing equivalent coverage) for the job site.

EXHIBIT C
TO
CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT

Union Pacific Railroad Company
Insurance Requirements For
Contractor's Right of Entry Agreement

During the entire term of this Agreement and course of the Project, and until all Project Work on Railroad's property has been completed and all equipment and materials have been removed from Railroad's property and Railroad's property has been clean and restored to Railroad's satisfaction, Contractor shall, at its sole cost and expense, procure and maintain the following insurance coverage:

- A. Commercial General Liability insurance.** Commercial general liability (CGL) with a limit of not less than \$5,000,000 each occurrence and an aggregate limit of not less than \$10,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.
- Designated Construction Project(s) General Aggregate Limit ISO Form CG 25 03 03 97 (or a substitute form providing equivalent coverage) showing the project on the form schedule.

- B. Business Automobile Coverage insurance.** Business auto coverage written on ISO form CA 00 01 10 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less than \$5,000,000 for each accident and coverage must include liability arising out of any auto (including owned, hired and non-owned autos).

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement - Hazardous materials clean up (MCS-90) if required by law.

- C. Workers' Compensation and Employers' Liability insurance.** Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state where the Work is being performed.
- Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 disease policy limit \$500,000 each employee.

If Contractor is self-insured, evidence of state approval and excess workers compensation coverage must be provided. Coverage must include liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

- D. Railroad Protective Liability insurance.** Contractor must maintain "Railroad Protective Liability" (RPL) insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than \$2,000,000 per occurrence

and an aggregate of \$6,000,000. The definition of "JOB LOCATION" and "WORK" on the declaration page of the policy shall refer to this agreement and shall describe all WORK or OPERATIONS performed under this agreement. Contractor shall provide this agreement to Contractor's insurance agent(s) and/or broker(s) and Contractor shall instruct such agent(s) and/or broker(s) to procure the insurance coverage required by this agreement. A BINDER STATING THE POLICY IS IN PLACE MUST BE SUBMITTED TO RAILROAD BEFORE THE WORK MAY COMMENCE AND UNTIL THE ORIGINAL POLICY IS FORWARDED TO UNION PACIFIC RAILROAD.

- E. **Umbrella or Excess** insurance. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.
- F. **Pollution Liability** insurance. Pollution liability coverage must be included when the scope of the Work as defined in the agreement includes installation, temporary storage, or disposal of any "hazardous" material that is injurious in or upon land, the atmosphere, or any watercourses; or may cause bodily injury at any time.

If required, coverage may be provided in separate policy form or by endorsement to Contractors CGL or RPL. Any form coverage must be equivalent to that provided in ISO form CG 24 15 "Limited Pollution Liability Extension Endorsement" or CG 28 31 "Pollution Exclusion Amendment" with limits of at least \$5,000,000 per occurrence and an aggregate limit of \$10,000,000.

If the scope of Work as defined in this agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of \$1,000,000 per loss, and an annual aggregate of \$2,000,000.

Other Requirements

- G. All policy(ies) required above (except business automobile, worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 10, and CG 20 37 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall not be limited by Contractor's liability under the indemnity provisions of this agreement. BOTH CONTRACTOR AND RAILROAD EXPECT THAT UNION PACIFIC RAILROAD COMPANY WILL BE PROVIDED WITH THE BROADEST POSSIBLE COVERAGE AVAILABLE BY OPERATION OF LAW UNDER ISO ADDITIONAL INSURED FORMS CG 20 10 AND CG 20 37.
- H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless (a) insurance coverage may not lawfully be obtained for any punitive damages that may arise under this agreement, or (b) all punitive damages are prohibited by all states in which this agreement will be performed.
- I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees for damages covered by the workers compensation and employers liability or commercial umbrella or excess liability obtained by Contractor required in this agreement where prohibited by law. This waiver must be stated on the certificate of insurance.
- J. Prior to commencing the Work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this agreement.

- K.** All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state where the Work is being performed.

- L.** The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.

PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT

East South Street
DOT 447651A
MP 201.08 – Austin Subdivision
Kyle, Hays County, Texas

THIS AGREEMENT ("Agreement") is made and entered into as of the ____ day of _____, 20 ____ ("Effective Date"), by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation, to be addressed at Real Estate Department, 1400 Douglas Street, Mail Stop 1690, Omaha, Nebraska 68179 ("Railroad") and **CITY OF KYLE**, a municipal corporation or political subdivision of the State of Texas to be addressed at 100 West Center Street, Kyle, Texas 78640 ("Political Body").

RECITALS:

Presently, the Political Body utilizes the Railroad's property for the existing at grade public road crossing over East South Street, DOT Number 447651A at Railroad's Milepost 201.08 on Railroad's Austin Subdivision at or near Kyle, Hays County, Texas.

The Political Body now desires to undertake as its project (the "Project") the reconstruction of the existing at grade public road crossing for the addition of medians. The road crossing, as reconstructed is hereinafter the "Roadway."

The Railroad right of way right utilized by the Political Body for the existing road crossing is sufficient to allow for the reconstruction of the Roadway. The area where the Roadway crosses a portion of the Railroad's property is hereinafter referred to as the "Crossing Area" as such area is generally shown on the Railroad's location print marked **Exhibit A** and the Political Body's type, size and location prints of the Project marked **Exhibit A-1**, with each exhibit being attached hereto and hereby made a part hereof.

The Railroad and the Political Body are entering into this Agreement to cover the above.

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between the parties hereto as follows:

Section 1. EXHIBIT B

The general terms and conditions marked **Exhibit B**, are attached hereto and hereby made a part hereof.

Section 2. RAILROAD GRANTS RIGHT

For and in consideration of the sum of **THREE THOUSAND DOLLARS (\$3,000.00)** to be paid by the Political Body to the Railroad upon the execution and delivery of this Agreement and in further consideration of the Political Body's agreement to perform and comply with the terms of this Agreement, the Railroad hereby grants to the Political Body the right to construct, maintain and repair the Roadway over and across the Crossing Area.

Section 3. DEFINITION OF CONTRACTOR

For purposes of this Agreement the term "Contractor" shall mean the contractor or contractors hired by the Political Body to perform any Project work on any portion of the Railroad's property and shall also include the Contractor's subcontractors and the Contractor's and subcontractor's respective employees, officers and agents, and others acting under its or their authority.

Section 4. CONTRACTOR'S RIGHT OF ENTRY AGREEMENT - INSURANCE

A. Prior to Contractor performing any work within the Crossing Area and any subsequent maintenance and repair work, the Political Body shall require the Contractor to:

- execute the Railroad's then current Contractor's Right of Entry Agreement
- obtain the then current insurance required in the Contractor's Right of Entry Agreement; and
- provide such insurance policies, certificates, binders and/or endorsements to the Railroad.

B. The Railroad's current Contractor's Right of Entry Agreement is marked **Exhibit D**, attached hereto and hereby made a part hereof. The Political Body confirms that it will inform its Contractor that it is required to execute such form of agreement and obtain the required insurance before commencing any work on any Railroad property. Under no circumstances will the Contractor be allowed on the Railroad's property without first executing the Railroad's Contractor's Right of Entry Agreement and obtaining the insurance set forth therein and also providing to the Railroad the insurance policies, binders, certificates and/or endorsements described therein.

C. All insurance correspondence, binders, policies, certificates and/or endorsements shall be sent to:

Manager - Contracts
Union Pacific Railroad Company
Real Estate Department
1400 Douglas Street, Mail Stop 1690
Omaha, NE 68179-1690
UP Project No. 0752400

D. If the Political Body's own employees will be performing any of the Project work, the Political Body may self-insure all or a portion of the insurance coverage subject to the Railroad's prior review and approval.

Section 5. FEDERAL AID POLICY GUIDE

If the Political Body will be receiving any federal funding for the Project, the current rules, regulations and provisions of the Federal Aid Policy Guide as contained in 23 CFR 140, Subpart I and 23 CFR 646, Subparts A and B are incorporated into this Agreement by reference.

Section 6. NO PROJECT EXPENSES TO BE BORNE BY RAILROAD

The Political Body agrees that no Project costs and expenses are to be borne by the Railroad. In addition, the Railroad is not required to contribute any funding for the Project.

Section 7. WORK TO BE PERFORMED BY RAILROAD; BILLING SENT TO POLITICAL BODY; POLITICAL BODY'S PAYMENT OF BILLS

A. The work to be performed by the Railroad, at the Political Body's sole cost and expense, is described in the Railroad's Material and Force Account Estimate dated December 28, 2022, marked **Exhibit C**, attached hereto and hereby made a part hereof (the "Estimate"). As set forth in the Estimate, the Railroad's estimated cost for the Railroad's work associated with the Project is Fifteen Thousand Dollars (\$15,000.00).

B. The Railroad, if it so elects, may recalculate and update the Estimate submitted to the Political Body in the event the Political Body does not commence construction on the portion of the Project located on the Railroad's property within six (6) months from the date of the Estimate.

C. The Political Body acknowledges that the Estimate may not include any estimate of flagging or other protective service costs that are to be paid by the Political Body or the Contractor in connection with flagging or other protective services provided by the Railroad in connection with the Project. All of such costs incurred by the Railroad are to be paid by the Political Body or the Contractor as determined by the Railroad and the Political Body. If it is determined that the Railroad will be billing the Contractor directly for such costs, the Political Body agrees that it will pay the Railroad for any flagging costs that have not been paid by any Contractor within thirty (30) days of the Contractor's

receipt of billing.

D. The Railroad shall send progressive billing to the Political Body during the Project and final billing to the Political Body within one hundred eighty (180) days after receiving written notice from the Political Body that all Project work affecting the Railroad's property has been completed.

E. The Political Body agrees to reimburse the Railroad within thirty (30) days of its receipt of billing from the Railroad for one hundred percent (100%) of all actual costs incurred by the Railroad in connection with the Project including, but not limited to, all actual costs of engineering review (including preliminary engineering review costs incurred by Railroad prior to the Effective Date of this Agreement), construction, inspection, flagging (unless flagging costs are to be billed directly to the Contractor), procurement of materials, equipment rental, manpower and deliveries to the job site and all direct and indirect overhead labor/construction costs including Railroad's standard additive rates.

Section 8. PLANS

A. The Political Body, at its expense, shall prepare, or cause to be prepared by others, the detailed plans and specifications for the Project and the Structure and submit such plans and specifications to the Railroad's Assistant Vice President Engineering-Design, or his authorized representative, for prior review and approval. The plans and specifications shall include all Roadway layout specifications, cross sections and elevations, associated drainage, and other appurtenances.

B. The final one hundred percent (100%) completed plans that are approved in writing by the Railroad's Assistant Vice President Engineering-Design, or his authorized representative, are hereinafter referred to as the "Plans". The Plans are hereby made a part of this Agreement by reference.

C. No changes in the Plans shall be made unless the Railroad has consented to such changes in writing.

D. The Railroad's review and approval of the Plans will in no way relieve the Political Body or the Contractor from their responsibilities, obligations and/or liabilities under this Agreement, and will be given with the understanding that the Railroad makes no representations or warranty as to the validity, accuracy, legal compliance or completeness of the Plans and that any reliance by the Political Body or Contractor on the Plans is at the risk of the Political Body and Contractor.

Section 9. NON-RAILROAD IMPROVEMENTS

A. Submittal of plans and specifications for protecting, encasing, reinforcing, relocation, replacing, removing and abandoning in place all non-railroad owned facilities (the "Non Railroad Facilities") affected by the Project including, without limitation, utilities,

fiber optics, pipelines, wirelines, communication lines and fences is required under Section 8. The Non Railroad Facilities plans and specifications shall comply with Railroad's standard specifications and requirements, including, without limitation, American Railway Engineering and Maintenance-of-Way Association ("AREMA") standards and guidelines. Railroad has no obligation to supply additional land for any Non Railroad Facilities and does not waive its right to assert preemption defenses, challenge the right-to-take, or pursue compensation in any condemnation action, regardless if the submitted Non Railroad Facilities plans and specifications comply with Railroad's standard specifications and requirements. Railroad has no obligation to permit any Non Railroad Facilities to be abandoned in place or relocated on Railroad's property.

B. Upon Railroad's approval of submitted Non Railroad Facilities plans and specifications, Railroad will attempt to incorporate them into new agreements or supplements of existing agreements with Non Railroad Facilities owners or operators. Railroad may use its standard terms and conditions, including, without limitation, its standard license fee and administrative charges when requiring supplements or new agreements for Non Railroad Facilities. Non Railroad Facilities work shall not commence before a supplement or new agreement has been fully executed by Railroad and the Non Railroad Facilities owner or operator, or before Railroad and Political Body mutually agree in writing to (i) deem the approved Non Railroad Facilities plans and specifications to be Plans pursuant to Section 8B, (ii) deem the Non Railroad Facilities part of the Structure, and (iii) supplement this Agreement with terms and conditions covering the Non Railroad Facilities.

Section 10. EFFECTIVE DATE; TERM; TERMINATION

A. This Agreement is effective as of the Effective Date first herein written and shall continue in full force and effect for as long as the Roadway remains on the Railroad's property.

B. The Railroad, if it so elects, may terminate this Agreement effective upon delivery of written notice to the Political Body in the event the Political Body does not commence construction on the portion of the Project located on the Railroad's property within twelve (12) months from the Effective Date.

C. If the Agreement is terminated as provided above, or for any other reason, the Political Body shall pay to the Railroad all actual costs incurred by the Railroad in connection with the Project up to the date of termination, including, without limitation, all actual costs incurred by the Railroad in connection with reviewing any preliminary or final Project Plans.

Section 11. CONDITIONS TO BE MET BEFORE POLITICAL BODY CAN COMMENCE WORK

Neither the Political Body nor the Contractor may commence any work within the Crossing Area or on any other Railroad property until:

- (i) The Railroad and Political Body have executed this Agreement.
- (ii) The Railroad has provided to the Political Body the Railroad's written approval of the Plans.
- (iii) Each Contractor has executed Railroad's Contractor's Right of Entry Agreement and has obtained and/or provided to the Railroad the insurance policies, certificates, binders, and/or endorsements required under the Contractor's Right of Entry Agreement.
- (iv) Each Contractor has given the advance notice(s) required under the Contractor's Right of Entry Agreement to the Railroad Representative named in the Contractor's Right of Entry Agreement.

Section 12. FUTURE PROJECTS

Future projects involving substantial maintenance, repair, reconstruction, renewal and/or demolition of the Roadway shall not commence until Railroad and Political Body agree on the plans for such future projects, cost allocations, right of entry terms and conditions and temporary construction rights, terms and conditions.

Section 13. ASSIGNMENT; SUCCESSORS AND ASSIGNS

A. Political Body shall not assign this Agreement without the prior written consent of Railroad.

B. Subject to the provisions of Paragraph A above, this Agreement shall inure to the benefit of and be binding upon the successors and assigns of Railroad and Political Body.

Section 14. SPECIAL PROVISIONS PERTAINING TO AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

If the Political Body will be receiving American Recovery and Reinvestment Act ("ARRA") funding for the Project, the Political Body agrees that it is responsible in performing and completing all ARRA reporting documents for the Project. The Political Body confirms and acknowledges that Section 1512 of the ARRA provisions applies only to a "recipient" receiving ARRA funding directing from the federal government and, therefore, (i) the ARRA reporting requirements are the responsibility of the Political Body and not of the Railroad, and (ii) the Political Body shall not delegate any ARRA reporting responsibilities to the Railroad. The Political Body also confirms and acknowledges that (i) the Railroad shall provide to the Political Body the Railroad's standard and customary billing for expenses incurred by the Railroad for the Project including the Railroad's standard and customary documentation to support such billing, and (ii) such standard and customary billing and documentation from the Railroad provides the information needed

by the Political Body to perform and complete the ARRA reporting documents. The Railroad confirms that the Political Body and the Federal Highway Administration shall have the right to audit the Railroad's billing and documentation for the Project as provided in Section 11 of **Exhibit B** of this Agreement.

Section 15. TERMINATION OF ORIGINAL AGREEMENT

Upon the completion of the Roadway, the original agreement either governing currently, or any agreement to be found in the future at the existing at-grade crossing, shall terminate and the terms and conditions of this Agreement shall govern the use, maintenance and repair of the Roadway.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the Effective Date first herein written.

UNION PACIFIC RAILROAD COMPANY
(Federal Tax ID #94-6001323)

By: _____
Printed Name: _____
Title: _____

CITY OF KYLE


By: _____
Printed Name: _____
Title: _____

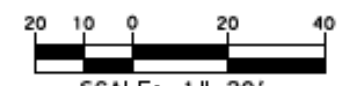
**EXHIBIT A
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT**

Exhibit A will be a print showing the Crossing Area (see Recitals)

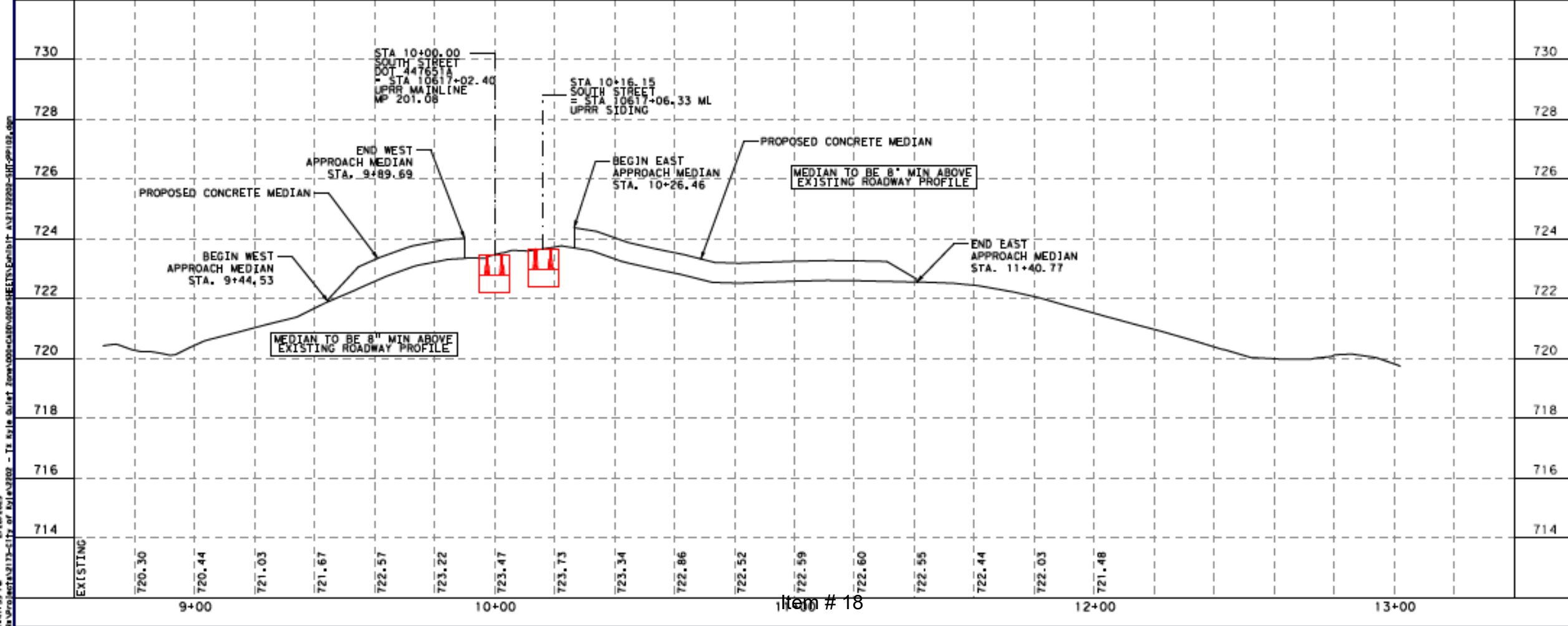
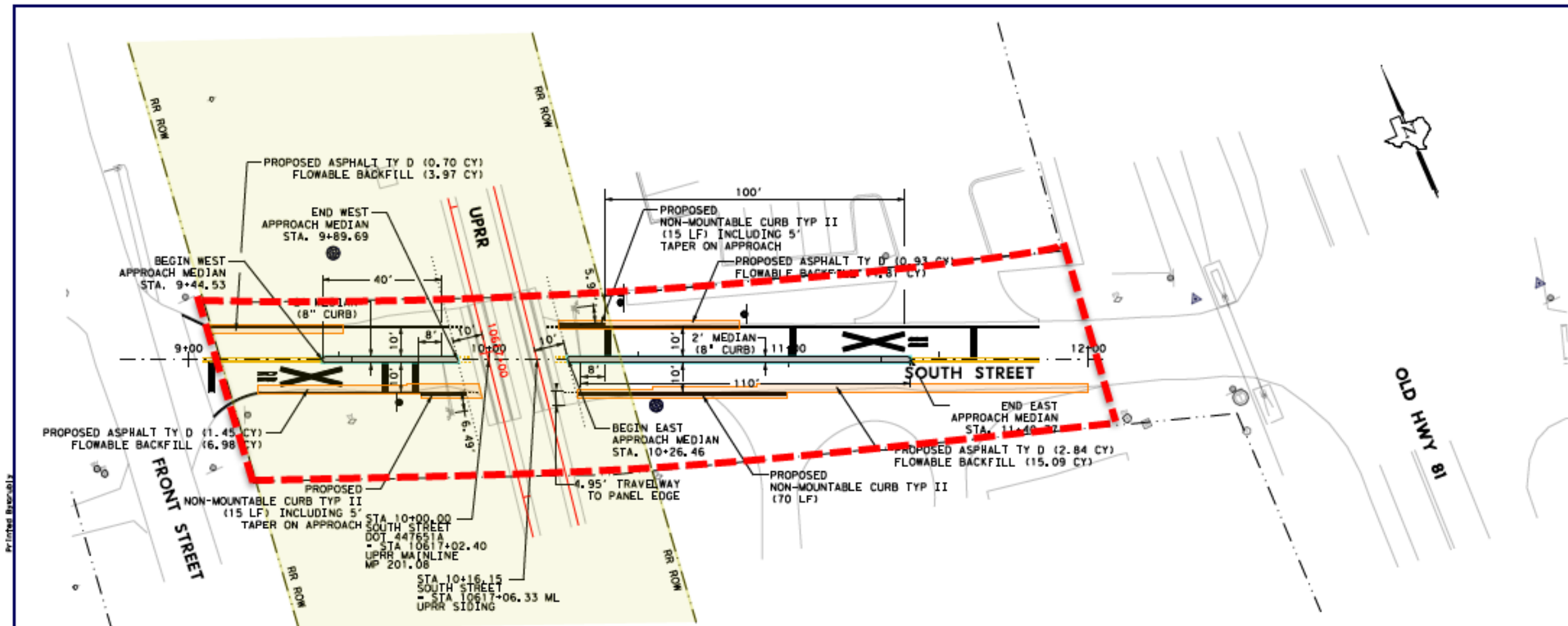
NUMBER	DATE	REVISION	APPROVED

- NOTES:
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - EXISTING ROADWAY PROFILE NOT TO BE CHANGED

 Crossing Area



ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER:
LJA Engineering, Inc.
PRN-F-1386



RAILROAD QUIET ZONE
PLAN AND PROFILE
SOUTH STREET

PROJECT NO.	STATE	PROJECT NO.	ROADWAY NO.		
14	TEXAS	CC 12-17-015	RM 150		
CITY	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	1 of 55

1/4/23 PM 2/28/2023
 as:\projects\2117-City of Kyle\2022 - TX Kyle Quiet Zone\000-CLD\000-FILES\DWG\2117-QZ-18.dwg

**EXHIBIT A-1
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT**

Exhibit A-1 will be the Political Body's type, size and location prints of the Project (see Recitals)

STATE OF TEXAS

CITY OF KYLE

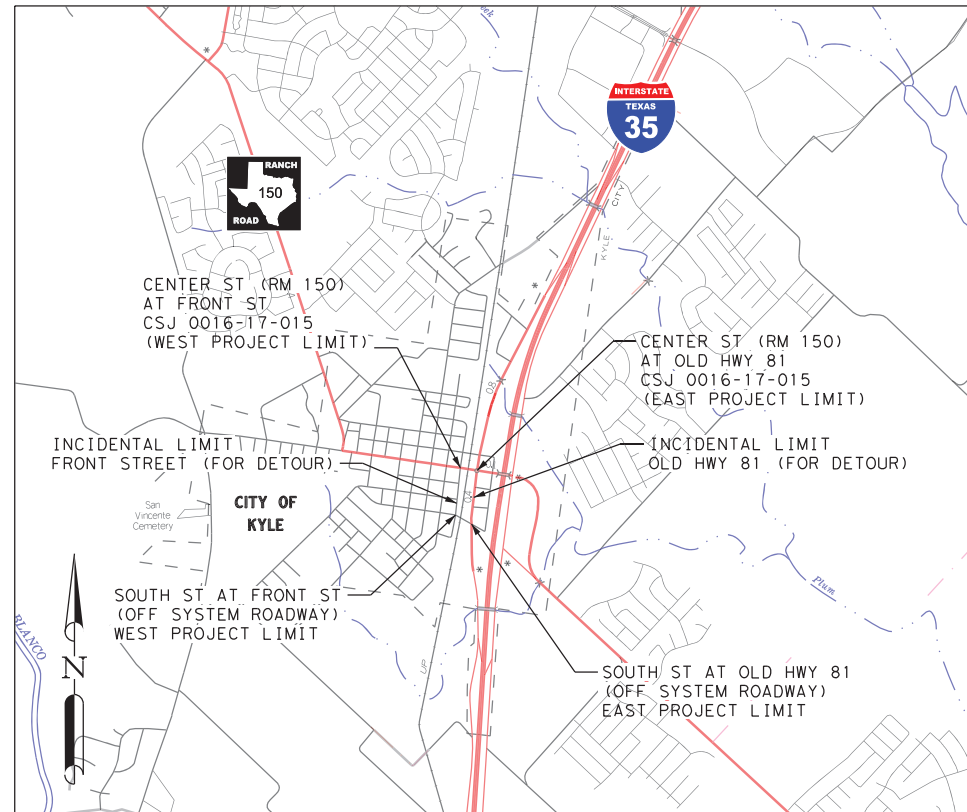
RAILROAD QUIET ZONE IMPROVEMENTS CENTER STREET AND SOUTH STREET

CSJ: 0016-17-015 PROJECT: CC 16-17-015

CONSTRUCTION OF RAISED MEDIAN, CURB AND GUTTER, AND STRIPING CENTER STREET (RM 150)
FROM FRONT STREET TO BUSINESS 81

AND CONSTRUCTION OF RAISED MEDIAN, RAISED CURB AND STRIPING ON
SOUTH STREET FROM FRONT STREET TO BUSINESS 81

TOTAL ROADWAY LENGTH = 393 FT, 0.074 MILES (CENTER STREET)
= 407 FT, 0.077 MILES (SOUTH STREET)
INCIDENTAL LIMITS = FRONT STREET 1,042 FT, 0.197 MILES
= BUSINESS 81 1,145 FT, 0.217 MILES



LOCATION MAP
SCALE: NTS

NO EQUATIONS
EXCEPTIONS:
RR CROSSING AT CENTER STREET
RR CROSSING AT SOUTH STREET

NUMBER	DATE	REVISION	APPROVED

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**

DESIGN SPEED

35 MPH

A. D. T.

2022: 17,767 AADT (CENTER STREET)
2042: 38,930 AADT (CENTER STREET)

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
GENERAL SHEETS	
1	TITLE SHEET
2	SYMBOLS
3	PROJECT LOCATION MAP
4-8	GENERAL CONSTRUCTION NOTES
9	SUMMARY OF QUANTITIES - CENTER STREET
10	SUMMARY OF QUANTITIES - SOUTH STREET
11	SURVEY CONTROL PLAN - CENTER STREET
12	SURVEY CONTROL PLAN - SOUTH STREET

ROAD SHEETS	
13	DEMOLITION PLAN - CENTER STREET
14	DEMOLITION PLAN - SOUTH STREET
15	TYPICAL SECTIONS - CENTER STREET
16-19	TYPICAL SECTIONS - SOUTH STREET
20	PLAN AND PROFILE - CENTER STREET
21	PLAN AND PROFILE - SOUTH STREET
22	SIGNING AND PAVEMENT MARKING PLAN - CENTER STREET
23	SIGNING AND PAVEMENT MARKING PLAN - SOUTH STREET
24	CONCRETE CURB DETAILS
25	CONCRETE MEDIAN DETAILS
26	TRAFFIC CONTROL PLAN - NARRATIVE
27	TRAFFIC CONTROL PLAN - PHASE 2 DETOUR PLAN
28	TRAFFIC CONTROL PLAN - PHASE 3 DETOUR PLAN
29	TRAFFIC CONTROL PLAN - PHASE 1 CENTER STREET
30	TRAFFIC CONTROL PLAN - PHASE 2 CENTER STREET
31	TRAFFIC CONTROL PLAN - PHASE 3 SOUTH STREET
32-43	BC (1-12) -21 BARRICADE AND CONSTRUCTION DETAILS
44	TCP (3-3)-14 TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/REMOVAL
45	SMD (GEN)-08 SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS
46-48	PM (1-3) -20 TYPICAL STANDARD PAVEMENT MARKING DETAILS
49	PM (4) -22 CROSSWALK PAVEMENT MARKINGS
50	EC (1)-16 TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING
50A	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)
50B	STORM WATER POLLUTION PREVENTION PLAN (SW3P)
50C	EROSION CONTROL PLAN - CENTER STREET
50D	EROSION CONTROL PLAN - SOUTH STREET

RAILROAD SHEETS	
51	RCD (1)-16 RAILROAD CROSSING DETAILS SIGNING, STRIPING, AND DEVICE PLACEMENT
52	RCD (2)-16 (MOD) RAILROAD CROSSING DETAILS SIGNING & STRIPING
53	RAILROAD SCOPE OF WORK - CENTER STREET
53A	RAILROAD SCOPE OF WORK - SOUTH STREET
54-55	RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

Note:
SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF
TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION
ITEMS LIST AND DATED AS FOLLOWS, SHALL GOVERN ON THIS
PROJECT: SPECIAL LABOR PROVISIONS FOR STATE PROJECTS
(000-008).

REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH THE LATEST
TXDOT BC STANDARDS AND THE TEXAS MANUAL ON UNIFORM
TRAFFIC CONTROL DEVICES.

ENGINEER WHO PREPARED THESE PLANS IS RESPONSIBLE FOR
THEIR ADEQUACY. IN APPROVING THESE PLANS, THE CITY OF
KYLE MUST RELY UPON THE ADEQUACY OF THE WORK OF THE
DESIGN ENGINEER.

THESE PLANS WERE PREPARED WITH THE DIRECTION AND INPUT
INFORMATION FROM THE CITY OF KYLE, TXDOT, AND UNION
PACIFIC RAILROAD. DESIGN WAS BASED ON SURVEY
INFORMATION PROVIDED BY THE CITY OF KYLE'S
SUBCONSULTANT.



Michael D. Mize

LJA Engineering, Inc.

FRN - F-1386

Item # 18

CITY COUNCIL

TRAVIS MITCHELL	MAYOR
DEX ELLISON	COUNCIL MEMBER DISTRICT 1
YVONNE FLORES-CALE	COUNCIL MEMBER DISTRICT 2
ROBERT RIZO (MAYOR PRO TEM)	COUNCIL MEMBER DISTRICT 3
ASHLEE BRADSHAW	COUNCIL MEMBER DISTRICT 4
DANIELA PARSLEY	COUNCIL MEMBER DISTRICT 5
MICHAEL TOBIAS	COUNCIL MEMBER DISTRICT 6

SUBMITTED FOR LETTING:

Michael D. Mize 09/23/2022
PROJECT MANAGER DATE

LJA ENGINEERING, INC.

APPROVED FOR CONSTRUCTION:

Ken Barba 10/20/22
CITY OF KYLE DATE
CITY ENGINEER



RECOMMENDED FOR LETTING: 9/12/2022

DocuSigned by:
[Signature]
9/12/2022 10:11:15 AM
AREA ENGINEER

RECOMMENDED FOR LETTING: 9/14/2022

DocuSigned by:
[Signature]
9/14/2022 10:11:15 AM
FOR DISTRICT DESIGN ENGINEER

APPROVED FOR LETTING: 9/14/2022

DocuSigned by:
[Signature]
9/14/2022 10:11:15 AM
DISTRICT DIRECTOR OF TRANSPORTATION
PLANNING AND DEVELOPMENT

NUMBER	DATE	REVISION	APPROVED

SYMBOLS

RAILROAD

- RAILROAD CENTERLINE
- EXISTING RAILROAD FLASHING LIGHTS & GATE
- ⚡ PROPOSED RAILROAD FLASHING LIGHTS & GATE
- 📣 PROPOSED WAYSIDE HORN
- ▭ PROPOSED CONCRETE RAILROAD CROSSING AT SIDEWALK
- ⚡ PROPOSED RAILROAD FLASHING LIGHTS & GATE (BY OTHERS)
- ⚡ PROPOSED RAILROAD SIGNAL CANTILEVER (BY OTHERS)

ROADWAY

- ROADWAY CENTERLINE
- ▬ PROPOSED PAVEMENT
- ▬ PROPOSED GUARD RAIL
- ▬ PROPOSED GUARD RAIL (BY OTHERS)
- ⊙ EXISTING SIGN
- ⬇️ PROPOSED SIGN

TRAFFIC CONTROL

- ▭ EXISTING TRAFFIC CONTROL BOX
- ⊠ PROPOSED TRAFFIC CONTROL BOX (BY OTHERS)
- 📹 PROPOSED TRAFFIC CAMERA (BY OTHERS)
- 🚦 PROPOSED TRAFFIC SIGNAL MAST (BY OTHERS)

UTILITIES

- OE — EXISTING OVERHEAD ELECTRIC LINE
- o o o — EXISTING WATER LINE (CITY OF ROSENBERG G.I.S.)
- WM ----- EXISTING SANITARY SEWER LINE (CITY OF ROSENBERG G.I.S.)
- STM — EXISTING STORM DRAIN (CITY OF ROSENBERG G.I.S.)
- GL — EXISTING GAS LINE
- ⊠ EXISTING ELECTRIC JUNCTION BOX
- ⊙ EXISTING ELECTRIC METER
- ⌋ EXISTING GUY ANCHOR
- ⊠ EXISTING TELEPHONE PEDESTAL
- ⊙ EXISTING TELEPHONE MANHOLE
- ⊙ EXISTING POWER POLE
- ⊙ EXISTING STORM DRAIN MANHOLE
- ⊙ EXISTING SANITARY SEWER MANHOLE
- ⊗ EXISTING UTILITY VALVE
- ⊙ EXISTING GAS VALVE

MISCELLANEOUS

- ... PROPERTY LINE
- x-x-x-x- EXISTING FENCE
- ~~~~~ EXISTING VEGETATION LINE
- ✚ SURVEY CONTROL POINT
- 🌳 EXISTING TREE
- ▭ PROPOSED STORM DRAIN INLET (BY OTHERS)
- ▭ PROPOSED SIDEWALK DETECTABLE WARNING SURFACE (BY OTHERS)
- ⊠ PROPOSED STORM DRAIN STRUCTURE (BY OTHERS)

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER

LJA Engineering, Inc.

FRN-F-1386

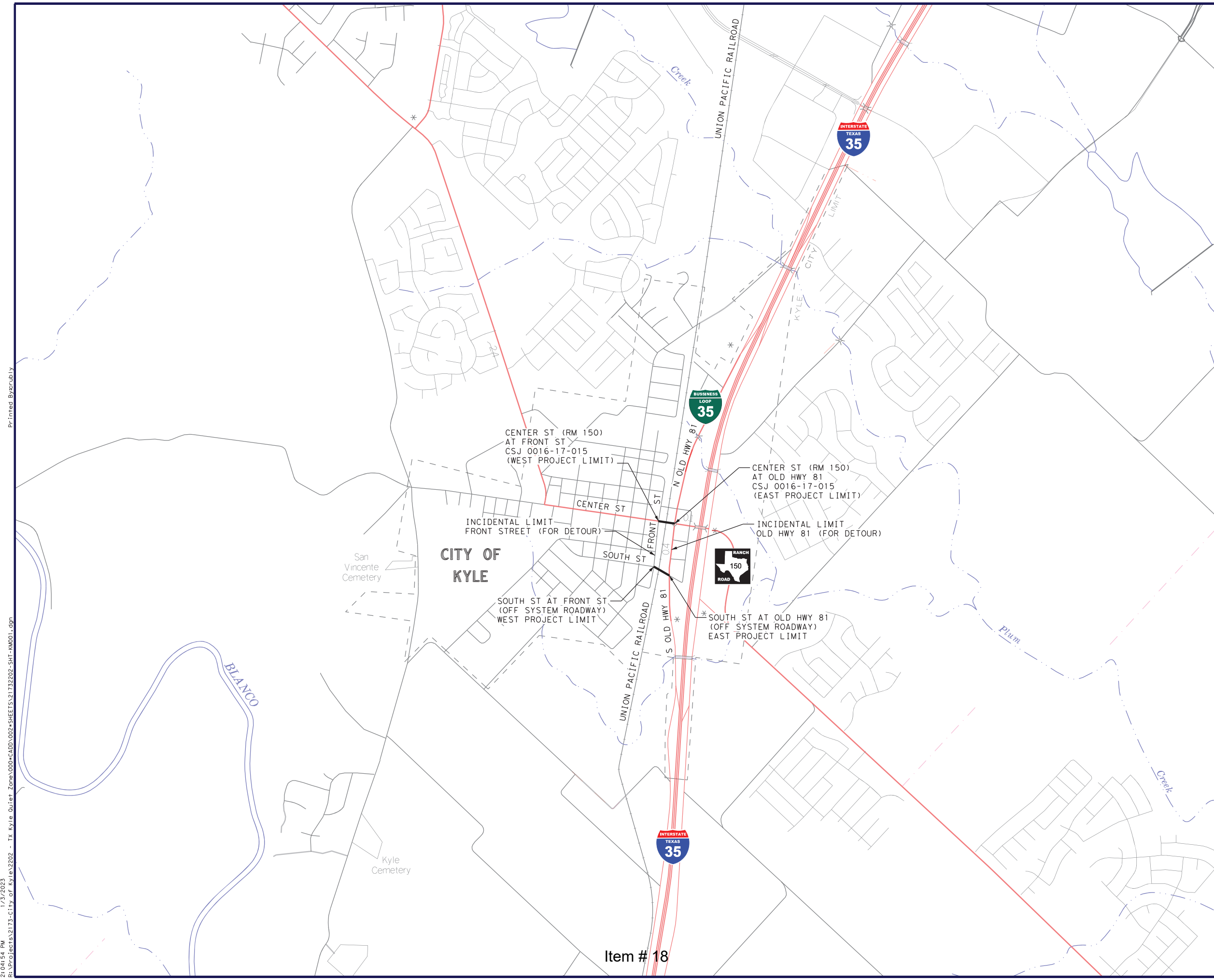
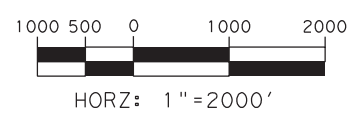
LOCAL GOVERNMENT

STATE OF TEXAS

RAILROAD QUIET ZONE SYMBOLS

FED. RD. DIV. NO.	STATE	PROJECT NO.			HIGHWAY NO.
14	TEXAS	CC 12-17-015			RM 150
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	2 of 55

NUMBER	DATE	REVISION	APPROVED



**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS



**RAILROAD QUIET ZONE
PROJECT LOCATION MAP**

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	3 of 55

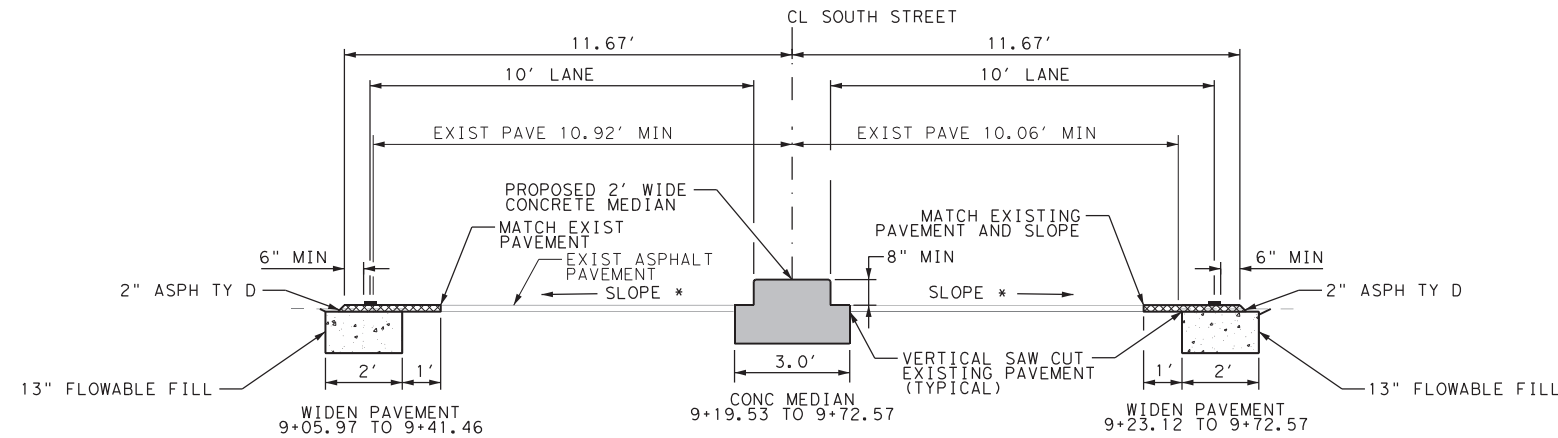
Item # 18

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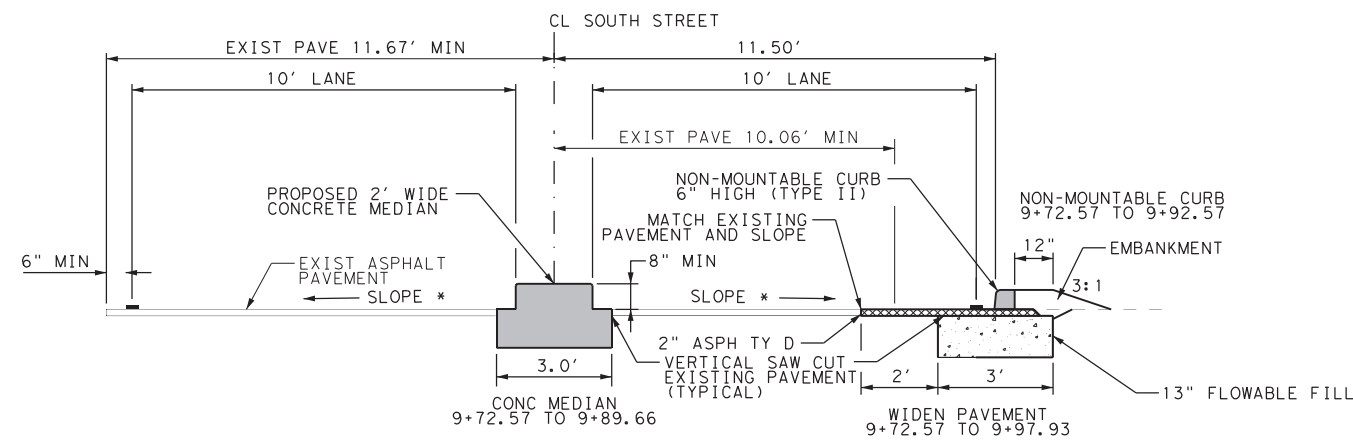
NUMBER	DATE	REVISION	APPROVED

- NOTES:
1. NO CONCRETE CAN BE INSTALLED WITHIN 24 INCHES OF RAILROAD CROSSING BOARDS
 2. NO RAISED MEDIAN OR CURB AND GUTTER WITHIN 10 FEET OF CENTERLINE OF TRACKS
 3. ALL FORMWORK MUST BE INSPECTED BY UPRR BEFORE CONCRETE POUR CAN TAKE PLACE



TYPICAL SECTION - SOUTH STREET
9+05.97 to 9+72.57

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE



TYPICAL SECTION - SOUTH STREET
9+72.57 to 9+97.93

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE

ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS

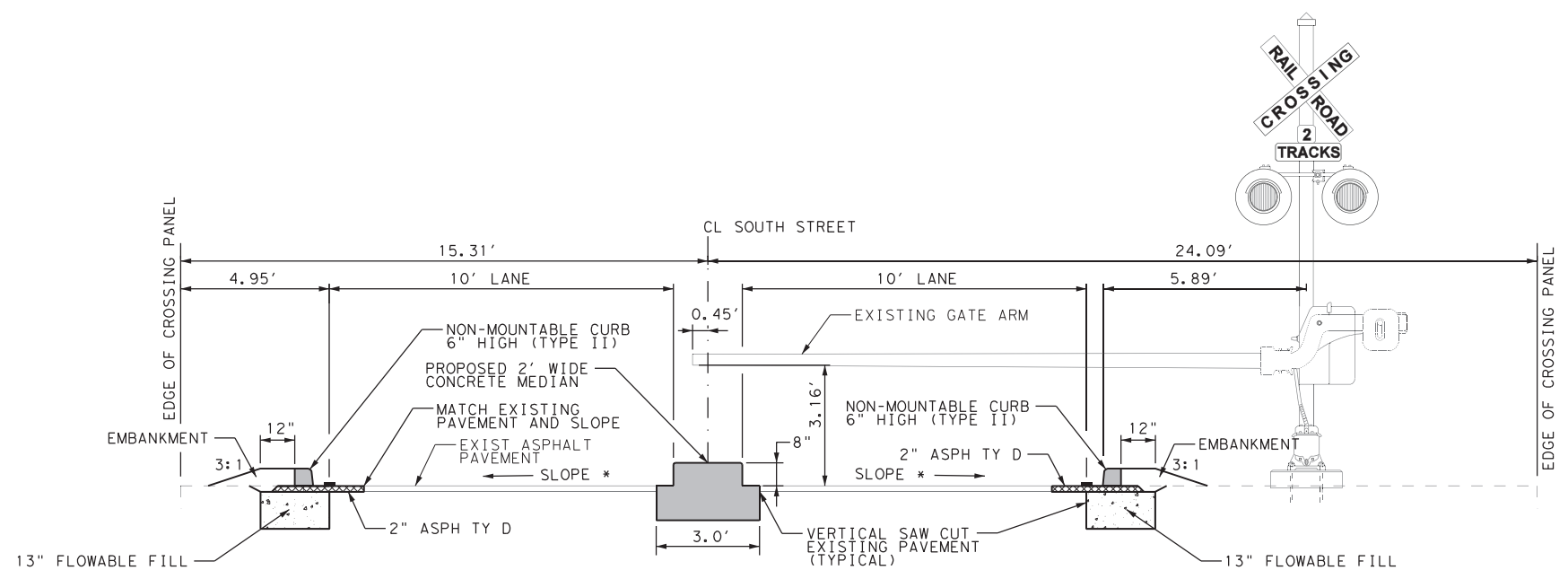


RAILROAD QUIET ZONE
TYPICAL SECTIONS
SOUTH STREET

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
14	TEXAS	CC 12-17-015	RM 150		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	16 of 55

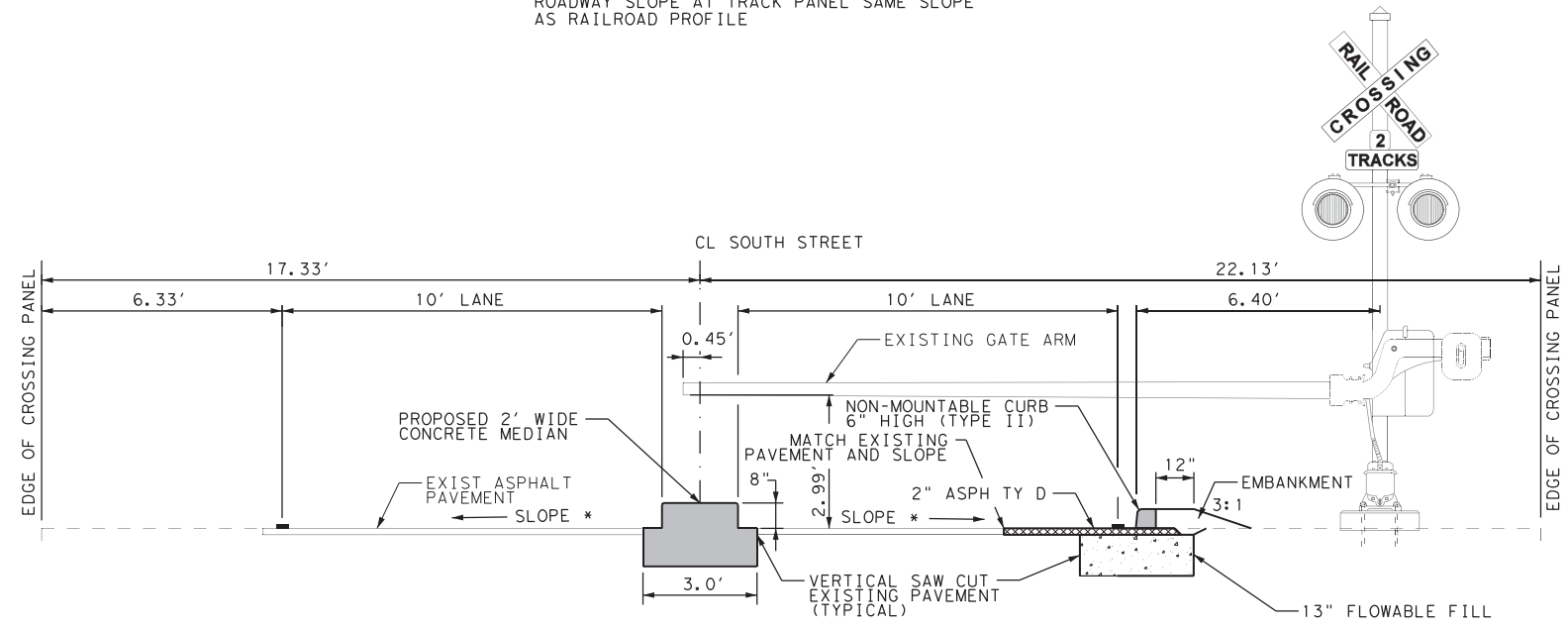
NUMBER	DATE	REVISION	APPROVED

- NOTES:
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 2. NO RAISED MEDIAN OR CURB AND GUTTER WITHIN 10 FEET OF CENTERLINE OF TRACKS
 3. ALL FORMWORK MUST BE INSPECTED BY UPRR BEFORE CONCRETE POUR CAN TAKE PLACE



TYPICAL SECTION - WEST BOUND LANE (FACING WEST)

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE



TYPICAL SECTION - EAST BOUND LANE (FACING EAST)

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE

ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER
LJA Engineering, Inc.
FRN-F-1386

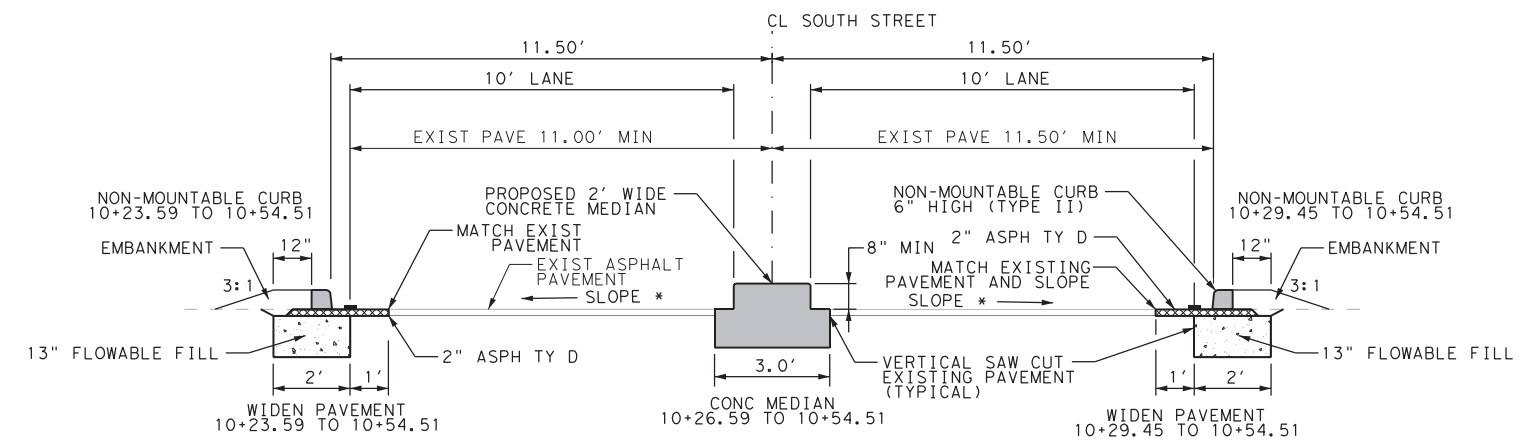


RAILROAD QUIET ZONE
TYPICAL SECTIONS
SOUTH STREET

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	17 of 55

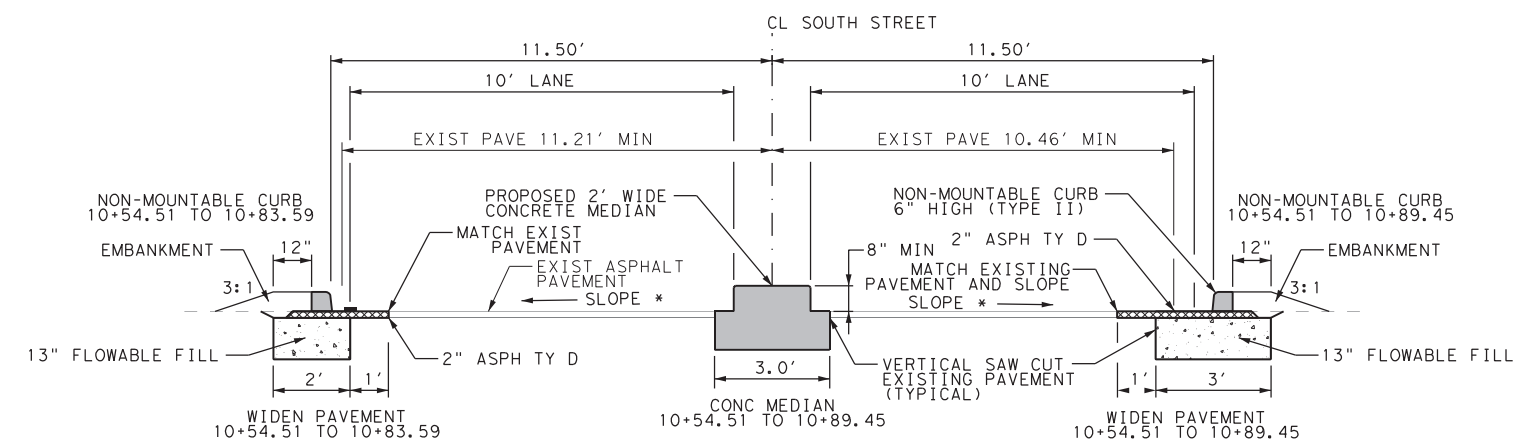
NUMBER	DATE	REVISION	APPROVED

- NOTES:
1. NO CONCRETE CAN BE INSTALLED WITHIN 24 INCHES OF RAILROAD CROSSING BOARDS
 2. NO RAISED MEDIAN OR CURB AND GUTTER WITHIN 10 FEET OF CENTERLINE OF TRACKS
 3. ALL FORMWORK MUST BE INSPECTED BY UPRR BEFORE CONCRETE POUR CAN TAKE PLACE



TYPICAL SECTION - SOUTH STREET
10+23.59 to 10+54.51

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE



TYPICAL SECTION - SOUTH STREET
10+54.51 to 10+89.45

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE

ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER

LJA Engineering, Inc. LJA
FRN-F-1386

LOCAL GOVERNMENT

STATE OF TEXAS

RAILROAD QUIET ZONE
TYPICAL SECTIONS
SOUTH STREET

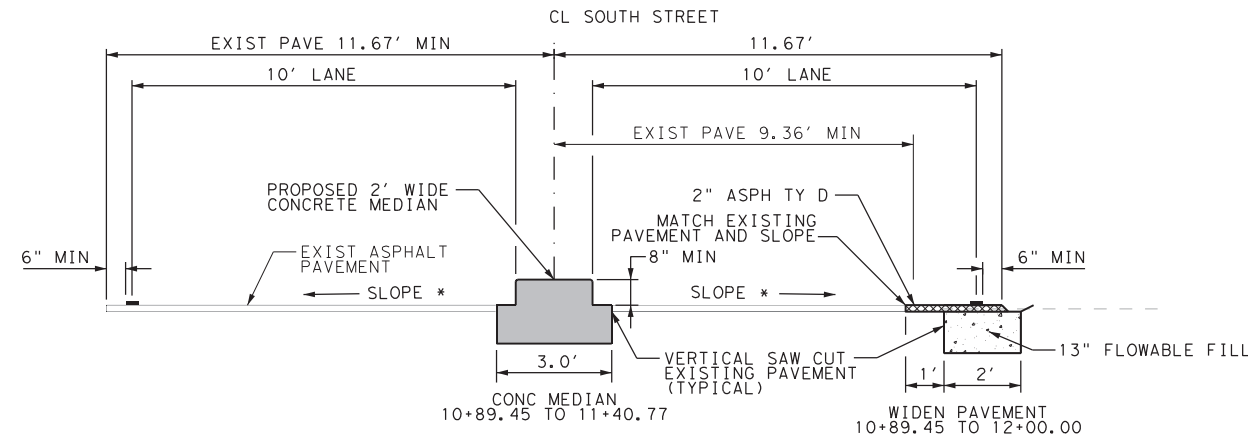
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14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	18 of 55

Printed By: july

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NUMBER	DATE	REVISION	APPROVED

- NOTES:
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 3. ALL FORMWORK MUST BE INSPECTED BY UPRR BEFORE CONCRETE POUR CAN TAKE PLACE



TYPICAL SECTION - SOUTH STREET
10+89.45 to 12+00.00

* SLOPE 1.50% USUAL, CONTRACTOR TO VERIFY AND MATCH EXISTING ROADWAY SLOPE, ROADWAY SLOPE AT TRACK PANEL SAME SLOPE AS RAILROAD PROFILE

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS

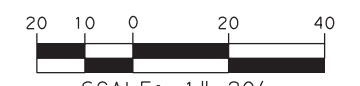
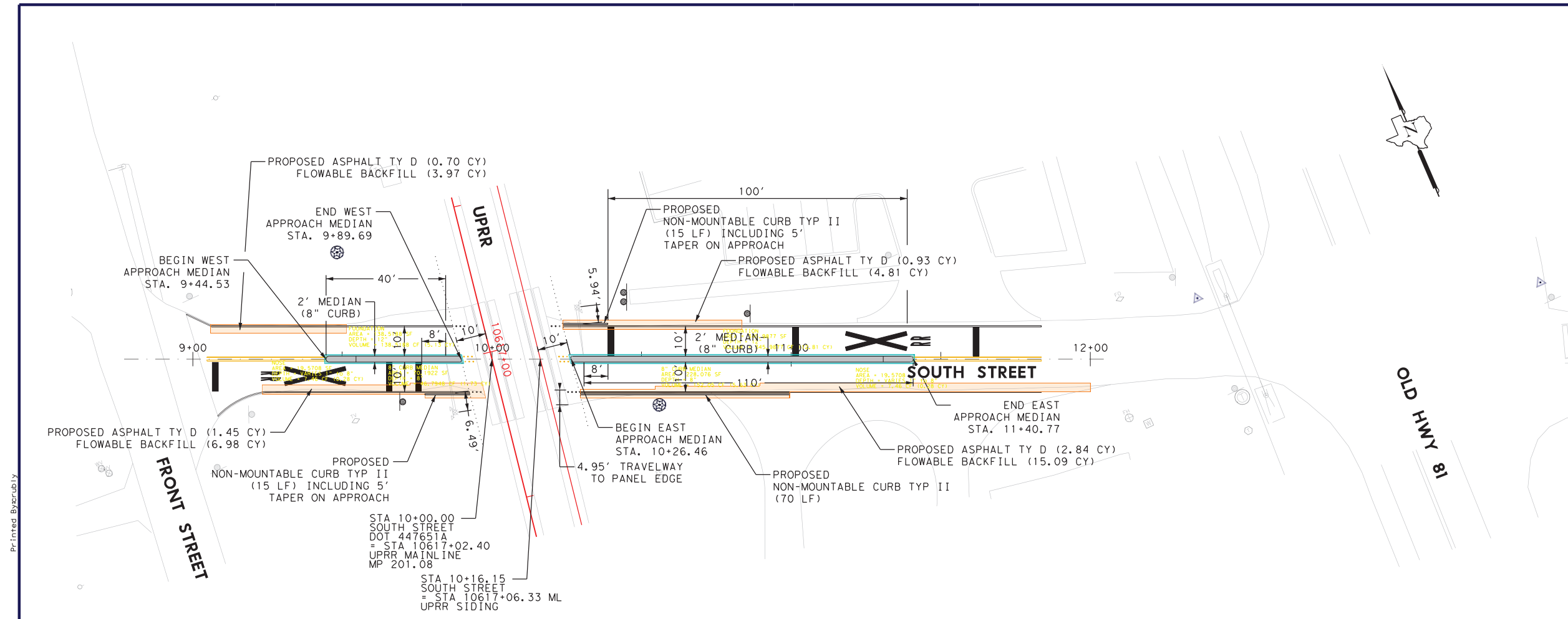


RAILROAD QUIET ZONE
TYPICAL SECTIONS
SOUTH STREET

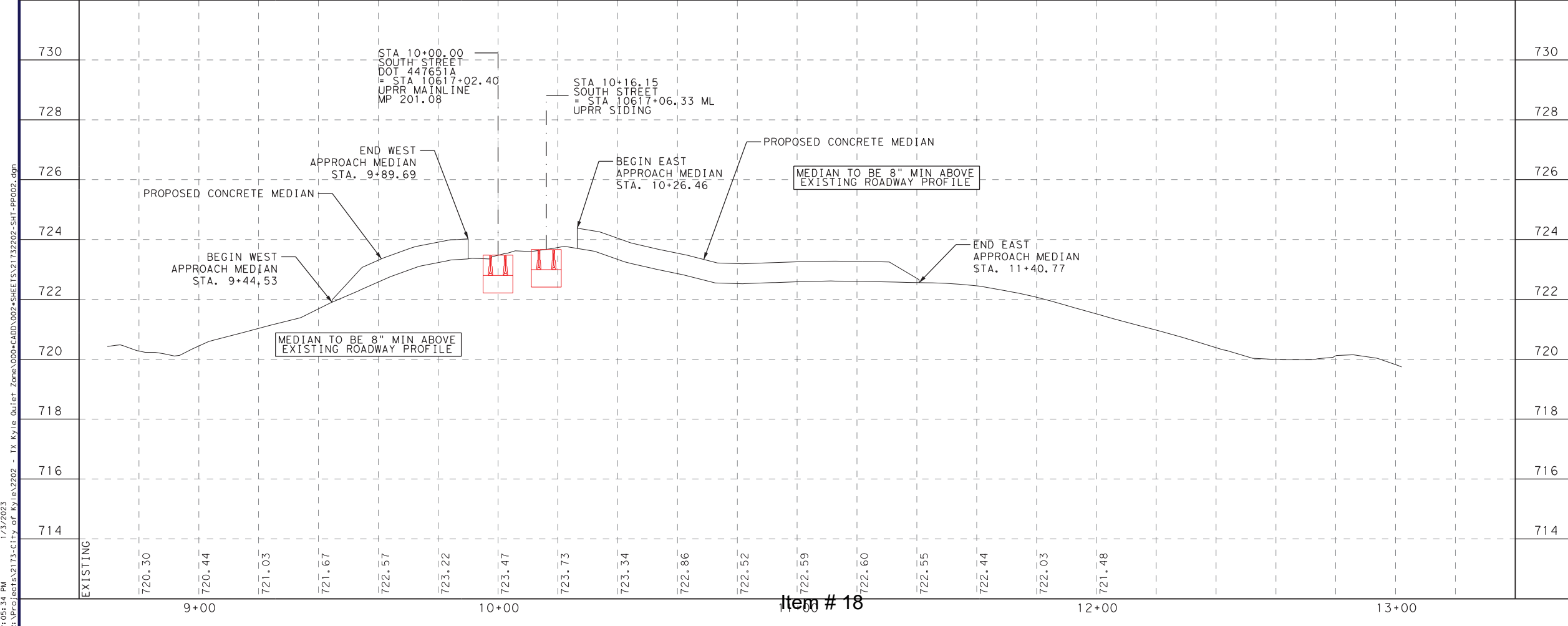
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14	TEXAS	CC 12-17-015			RM 150
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	19 of 55

NUMBER	DATE	REVISION	APPROVED

- NOTES:
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - EXISTING ROADWAY PROFILE NOT TO BE CHANGED



SCALE: 1"=20'
 VERT: 1"=2'
 (FULL SIZE 22"x34")
ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



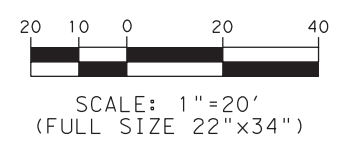
730	730																					
728	728																					
726	726	DESIGN ENGINEER																				
724	724																					
722	722	LOCAL GOVERNMENT																				
720	720																					
718	718	STATE OF TEXAS																				
716	716																					
714	714	RAILROAD QUIET ZONE PLAN AND PROFILE SOUTH STREET																				
<table border="1"> <tr> <th>FED. RD. DIV. NO.</th> <th>STATE</th> <th>PROJECT NO.</th> <th>HIGHWAY NO.</th> </tr> <tr> <td>14</td> <td>TEXAS</td> <td>CC 12-17-015</td> <td>RM 150</td> </tr> <tr> <th>STATE DISTRICT</th> <th>COUNTY</th> <th>CONTROL NO.</th> <th>SECTION NO.</th> <th>JOB NO.</th> <th>SHEET NO.</th> </tr> <tr> <td>AUSTIN</td> <td>HAYS</td> <td>0016</td> <td>17</td> <td>015</td> <td>21 of 55</td> </tr> </table>		FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.	14	TEXAS	CC 12-17-015	RM 150	STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.	AUSTIN	HAYS	0016	17	015	21 of 55	
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AUSTIN	HAYS	0016	17	015	21 of 55																	

Item # 18

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NUMBER	DATE	REVISION	APPROVED

- LEGEND
- (A) REFL PAV MRK TY I (W) (RR XING)
 - (B) REFL PAV MRK TY I (W) (24") (SLD)
 - (C) REFL PAV MRK TY I (W) 4" (BRK)
 - (D) REFL PAV MRK TY I (Y) 4" SLD
 - (F) REFL PAV MRK TY I (Y) 12" SLD
 - (G) REFL PAV MRK TY I (W) 4" SLD
 - (H) REFL PAV MRK TY I (W) 12" SLD
 - (I) REFL PAV MRK TY II-A-A
 - (J) REFL PAV MRK TY II-C-R
 - (K) REFL PAV MRK TY I (W) (WORD)
 - (L) REFL PAV MRK TY I (W) (ARROW)
 - (M) REFL PAV MRK TY I (W) (DBL ARROW)



**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT

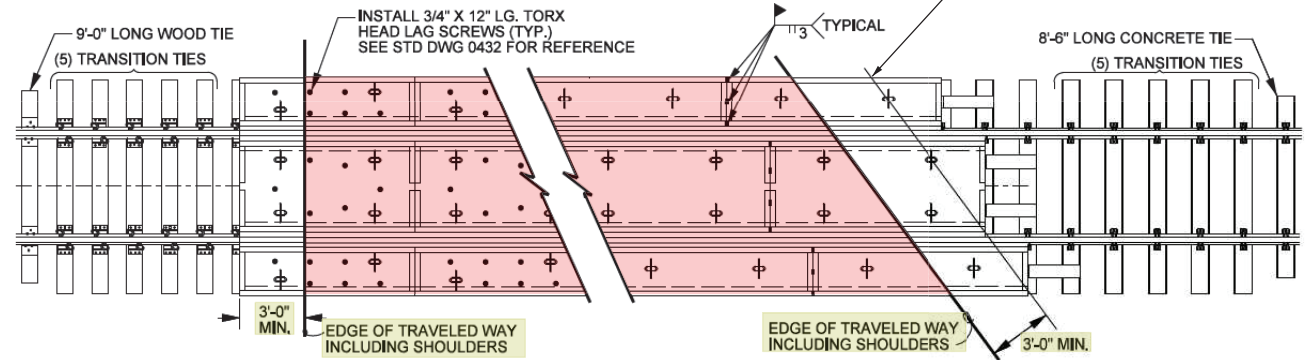
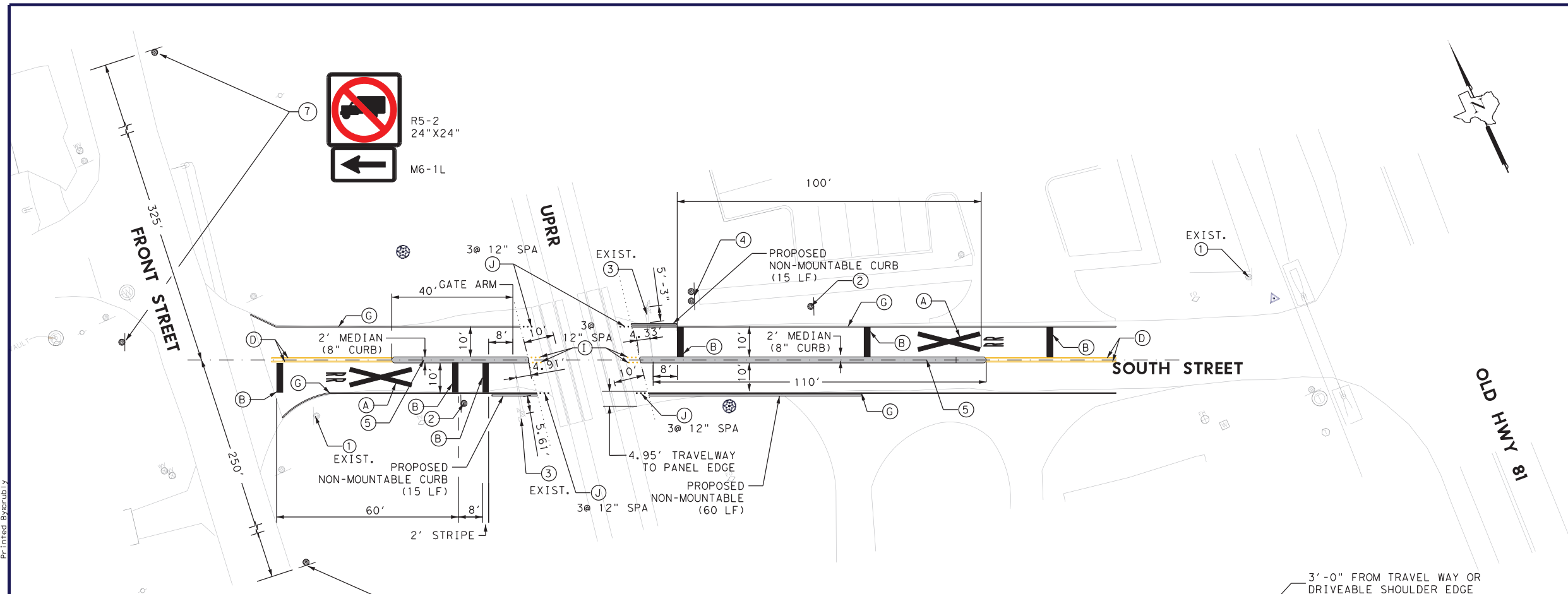


STATE OF TEXAS

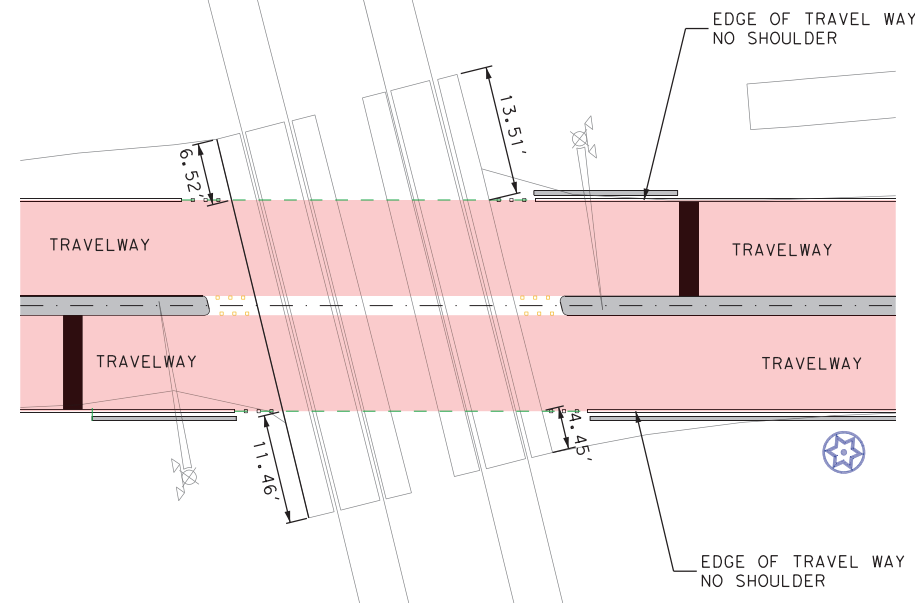


**RAILROAD QUIET ZONE
SIGNING AND PAVEMENT
MARKING PLAN
SOUTH STREET**

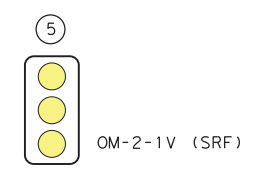
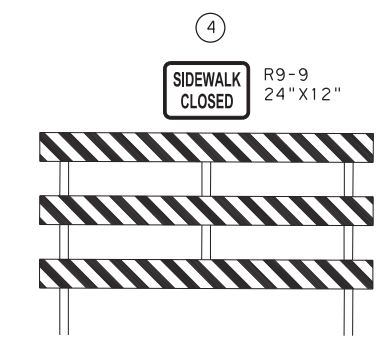
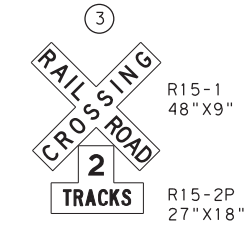
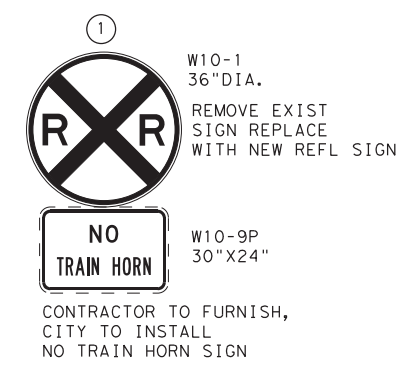
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14	TEXAS	CC 12-17-015	RM 150		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	23 of 55



PLAN VIEW OF PANEL WITH TIMBER TIES
PLAN VIEW OF PANEL & JOINT WELD LOCATION W/CONCRETE TIES
RAILROAD STANDARD



CROSSING DETAIL

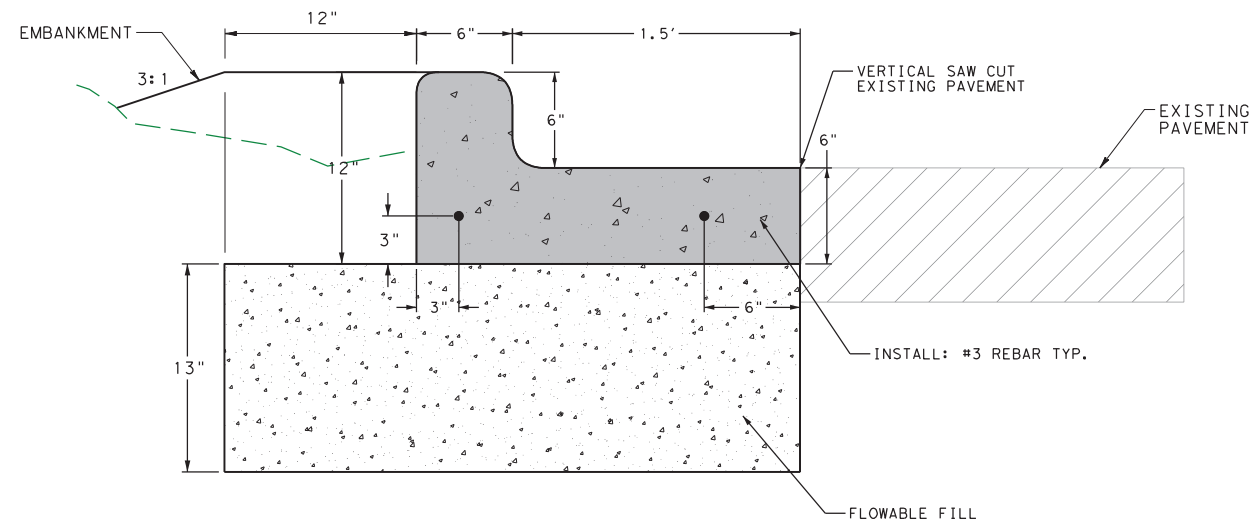


Item # 18

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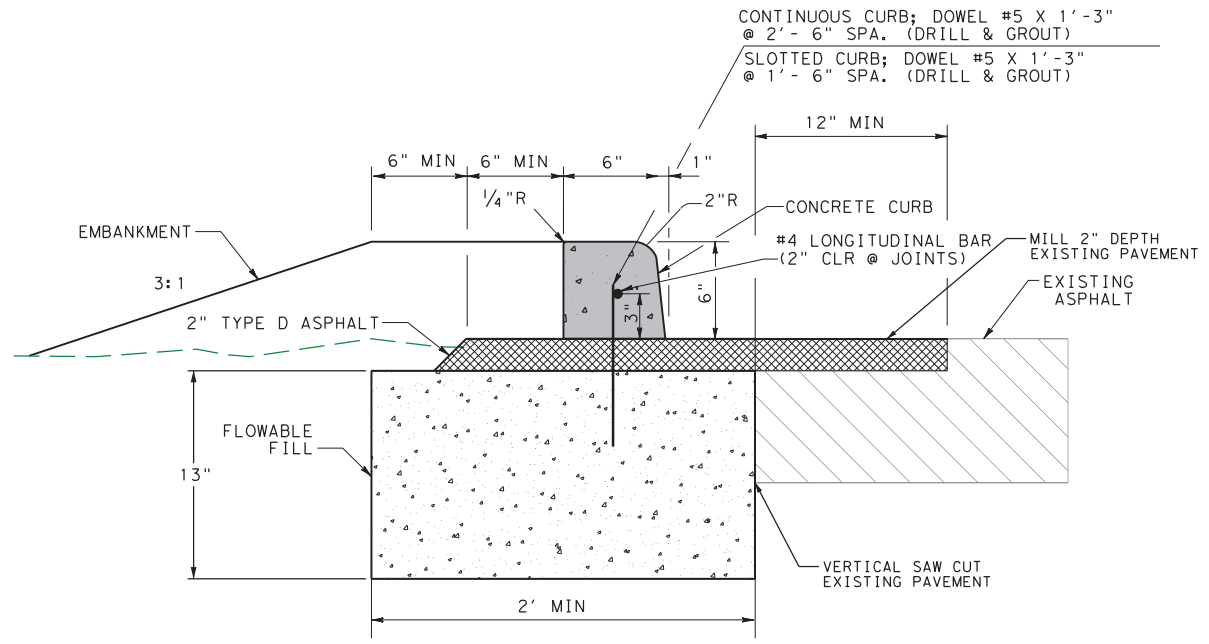
NUMBER	DATE	REVISION	APPROVED



SPILL OVER CURB - ON 13" FLOWABLE FILL
NOT TO SCALE

NOTE:

1. CONSTRUCTION CONTROL JOINTS AT 10'-0" SPACING ALONG LENGTH OF CURB.
2. REINFORCING STEEL SHALL BE #3 BARS, UNLESS OTHERWISE NOTED.
3. NO REBAR WILL BE ALLOWED IN CURB HEAD.
4. CONCRETE WILL BE 3000 PSI VIBRATED PLACE.
5. CONSTRUCTION EXPANSION JOINTS AT A MAXIMUM OF 40'-0" ALONG LENGTH OF CURB.
6. FLOW MIX CONCRETE (TXDOT ITEM 401-6002)



6" CURB - ON 2" TYPE D ASPHALT AND 13" FLOWABLE FILL
NOT TO SCALE

NOTE:

1. FLOW MIX CONCRETE (TXDOT ITEM 401-6002)
2. TY-D, D-GR TY-D PG76-22 SAC-B (EXEMPT) (TXDOT ITEM 3076 6003)

Item # 18

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER

LJA Engineering, Inc. 
FRN-F-1386

LOCAL GOVERNMENT



STATE OF TEXAS



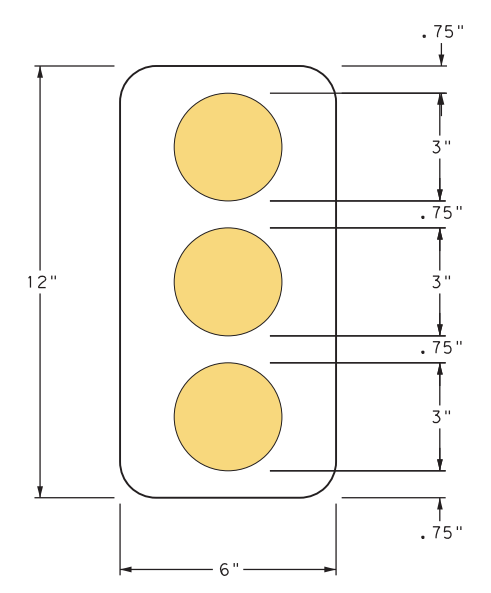
**RAILROAD QUIET ZONE
CONCRETE CURB
DETAILS**

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.	
14	TEXAS	CC 12-17-015		RM 150	
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	24 of 55

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NUMBER	DATE	REVISION	APPROVED

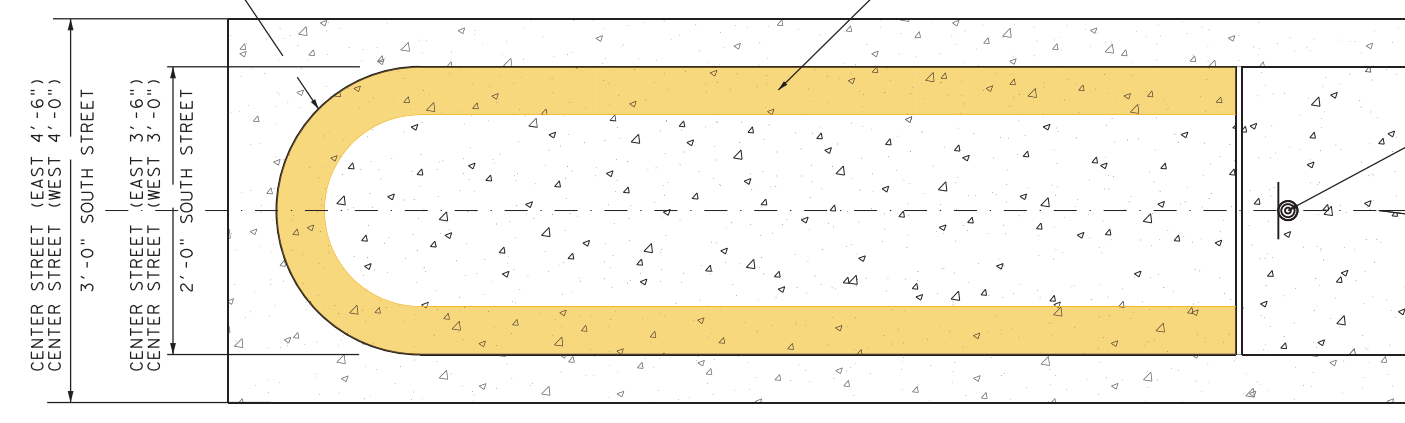


OBJECT MARKER 2-1V
NOT TO SCALE

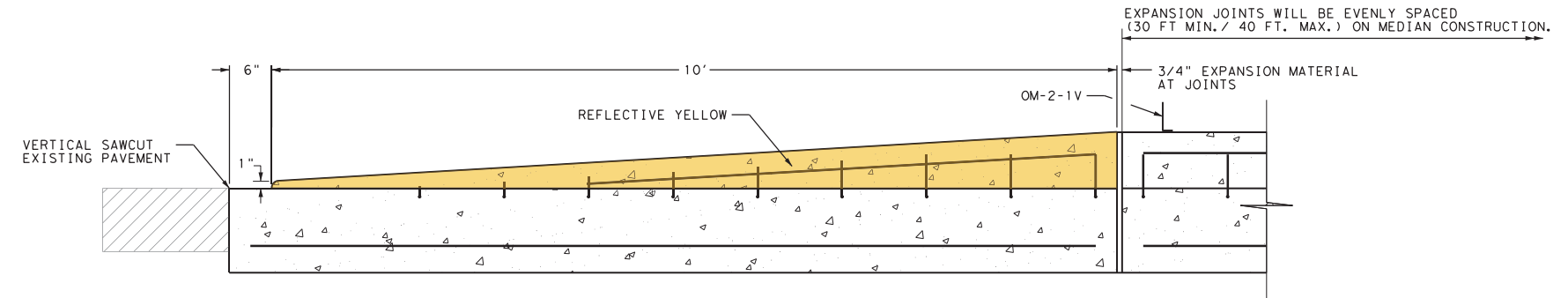
NOTE:

- SEE SHEET RCD(1)-16
- INSTALL ALL OBJECT MARKERS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION

1.5' RADIUS - CENTER STREET
1.0' RADIUS - SOUTH STREET



CONCRETE MEDIAN SLOPED NOSE - PLAN
NOT TO SCALE



CONCRETE MEDIAN SLOPED NOSE - SECTION
NOT TO SCALE

NOTES:

- CONCRETE MEDIAN SLOPE NOSE REFLECTIVE YELLOW PAINT SUBSIDIARY TO STRIPING ITEMS OF WORK

EXPANSION JOINTS WILL BE EVENLY SPACED (30 FT MIN. / 40 FT. MAX.) ON MEDIAN CONSTRUCTION.

ISSUE FOR CONSTRUCTION
JANUARY 03, 2023



DESIGN ENGINEER



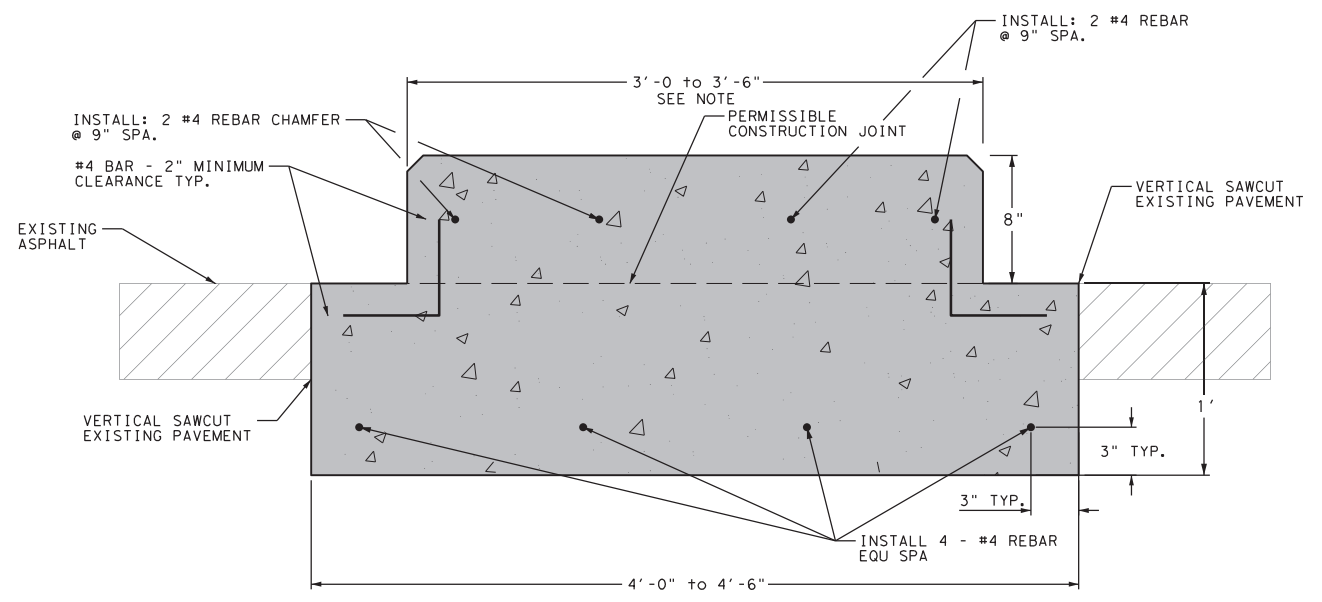
LOCAL GOVERNMENT



STATE OF TEXAS



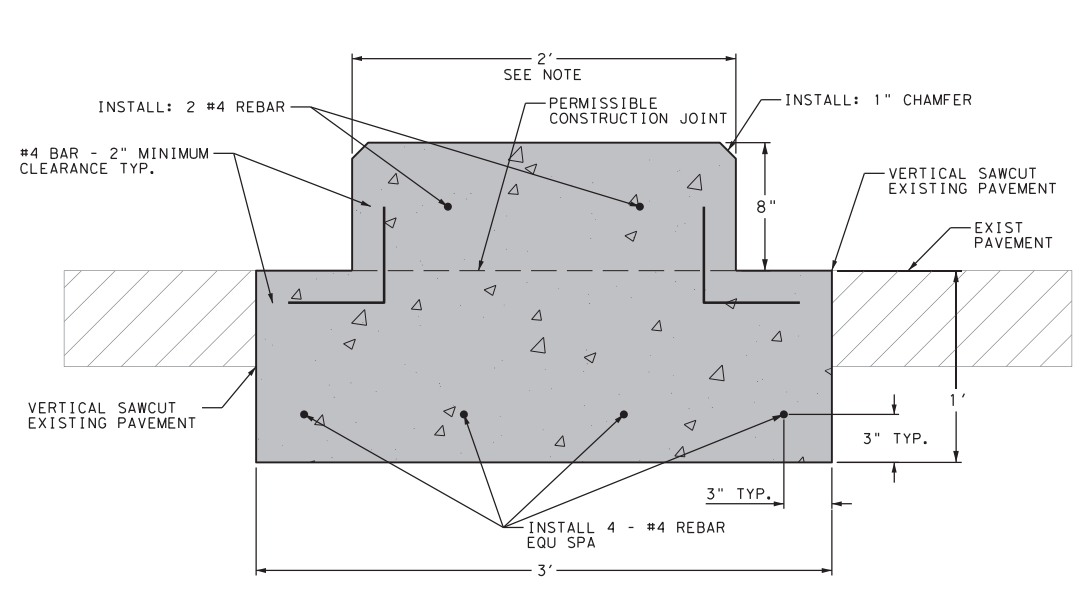
RAILROAD QUIET ZONE
CONCRETE MEDIAN
DETAILS



3'-0" to 3'-6" CONCRETE MEDIAN - SECTION
NOT TO SCALE

NOTE:

- MEDIAN SHOULD BE CAST IN PLACE
- EXISTING PAVEMENT SLOPE AND THICKNESS OF PAVEMENT SHOULD BE FIELD VERIFY.
- CENTER STREET MEDIAN 3'-0" WIDTH WEST OF RAILROAD 3'-6" MEDIAN EAST OF RAILROAD
- FORMWORK SHALL NOT DAMAGE EXISTING PAVEMENT



2' MEDIAN CROSS SECTION (TYPICAL)
NOT TO SCALE

NOTE:

- MEDIAN SHOULD BE CAST IN PLACE
- EXISTING PAVEMENT SLOPE AND THICKNESS OF PAVEMENT SHOULD BE FIELD VERIFY.
- SOUTH STREET MEDIAN 2'-0" WIDTH
- FORMWORK SHALL NOT DAMAGE EXISTING PAVEMENT

Item # 18

FED. RD. DIV. NO.	STATE	PROJECT NO.	HIGHWAY NO.		
14	TEXAS	CC 12-17-015	RM 150		
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
AUSTIN	HAYS	0016	17	015	25 of 55

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NUMBER	DATE	REVISION	APPROVED

SEQUENCE OF CONSTRUCTION SUMMARY

PHASE 1 - CONSTRUCT TEMPORARY PAVEMENT AT THE NORTHEAST CORNER OF CENTER STREET AND FRONT STREET INTERSECTION, CONSTRUCT CURB AND GUTTER BOTH SIDES OF CENTER STREET

PHASE 2 - CONSTRUCT CENTER MEDIAN

PHASE 3 - CONSTRUCT PAVEMENT WIDENING AND CENTER MEDIAN, CONSTRUCT CURB

PHASE 4 - PERMANENT PAVEMENT MARKINGS

PHASE 1 - CENTER STREET

- * CONTRACTOR TO CONTACT ENVIRONMENTAL SERVICES (512-665-2212) TO SCHEDULE REMOVAL AND REPLACEMENT OF LIGHT POLE
- * PLACE ADVANCE WARNING SIGNAGE
- * INSTALL WORK ZONE CHANNELING DEVICES
- * CONSTRUCT TEMPORARY PAVEMENT AT THE NORTHEAST CORNER OF CENTER STREET AND FRONT STREET INTERSECTION
- * CONSTRUCT CURB AND GUTTER BOTH SIDES OF CENTER STREET

PHASE 2 - CENTER STREET

- * INSTALL DETOUR PER PLANS
- * PLACE ADVANCE WARNING SIGNAGE
- * CLOSE EASTBOUND CENTER STREET
- * INSTALL WORK ZONE CHANNELING DEVICES
- * REMOVE CONFLICTING EXISTING PAVEMENT
- * CONSTRUCT CENTER MEDIAN
- * REOPEN CENTER STREET

PHASE 3 - SOUTH STREET

- * INSTALL DETOUR PER PLANS
- * PLACE ADVANCE WARNING SIGNAGE
- * CLOSE SOUTH STREET
- * REMOVE CONFLICTING EXISTING PAVEMENT
- * CONSTRUCT PAVEMENT WIDENING
- * CONSTRUCT CENTER MEDIAN
- * CONSTRUCT CURBS

PHASE 4 - CENTER STREET AND SOUTH STREET

- * REMOVE TEMPORARY PAVEMENT (CENTER STREET)
- * REMOVE ALL REMAINING EXISTING STRIPING (CENTER STREET)
- * APPLY PERMANENT PAVEMENT MARKINGS
- * INSTALL NEW SIGNS AND POSTS
- * REPLACE EXISTING SIGNS AS SHOWN ON DRAWINGS (EXISTING POSTS TO REMAIN)
- * FINAL CLEAN UP

**ISSUE FOR CONSTRUCTION
JANUARY 03, 2023**



DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS



**RAILROAD QUIET ZONE
TRAFFIC CONTROL PLAN
NARRATIVE**

FED. RD. DIV. NO.	STATE	PROJECT NO.		HIGHWAY NO.
14	TEXAS	CC 12-17-015		RM 150
STATE DISTRICT	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.
AUSTIN	HAYS	0016	17	015
				SHEET NO.
				26 of 55

EXHIBIT B
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT

SECTION 1. CONDITIONS AND COVENANTS

A. The Railroad makes no covenant or warranty of title for quiet possession or against encumbrances. The Political Body shall not use or permit use of the Crossing Area for any purposes other than those described in this Agreement. Without limiting the foregoing, the Political Body shall not use or permit use of the Crossing Area for railroad purposes, or for gas, oil or gasoline pipe lines. Any lines constructed on the Railroad's property by or under authority of the Political Body for the purpose of conveying electric power or communications incidental to the Political Body's use of the property for highway purposes shall be constructed in accordance with specifications and requirements of the Railroad, and in such manner as not adversely to affect communication or signal lines of the Railroad or its licensees now or hereafter located upon said property. No nonparty shall be admitted by the Political Body to use or occupy any part of the Railroad's property without the Railroad's written consent. Nothing herein shall obligate the Railroad to give such consent.

B. The Railroad reserves the right to cross the Crossing Area with such railroad tracks as may be required for its convenience or purposes. In the event the Railroad shall place additional tracks upon the Crossing Area, the Political Body shall, at its sole cost and expense, modify the Roadway to conform with all tracks within the Crossing Area.

C. The right hereby granted is subject to any existing encumbrances and rights (whether public or private), recorded or unrecorded, and also to any renewals thereof. The Political Body shall not damage, destroy or interfere with the property or rights of nonparties in, upon or relating to the Railroad's property, unless the Political Body at its own expense settles with and obtains releases from such nonparties.

D. The Railroad reserves the right to use and to grant to others the right to use the Crossing Area for any purpose not inconsistent with the right hereby granted, including, but not by way of limitation, the right to construct, reconstruct, maintain, operate, repair, alter, renew and replace tracks, facilities and appurtenances on the property; and the right to cross the Crossing Area with all kinds of equipment.

E. So far as it lawfully may do so, the Political Body will assume, bear and pay all taxes and assessments of whatsoever nature or kind (whether general, local or special) levied or assessed upon or against the Crossing Area, excepting taxes levied upon and against the property as a component part of the Railroad's operating property.

F. If any property or rights other than the right hereby granted are necessary for the construction, maintenance and use of the Roadway and its appurtenances, or for the performance of any work in connection with the Project, the Political Body will acquire all such other property and rights at its own expense and without expense to the Railroad.

SECTION 2. CONSTRUCTION OF ROADWAY

A. The Political Body, at its expense, will apply for and obtain all public authority required by law, ordinance, rule or regulation for the Project, and will furnish the Railroad upon request with satisfactory evidence that such authority has been obtained.

B. Except as may be otherwise specifically provided herein, the Political Body, at its expense, will furnish all necessary labor, material and equipment, and shall construct and complete the Roadway and all appurtenances thereof. The appurtenances shall include, without limitation, all necessary and proper highway warning devices (except those installed by the Railroad within its right of way) and all necessary drainage facilities, guard rails or barriers, and right of way fences between the Roadway and the railroad tracks. Upon completion of the Project, the Political Body shall remove from the Railroad's property all temporary structures and false work, and will leave the Crossing Area in a condition satisfactory to the Railroad.

C. All construction work of the Political Body upon the Railroad's property (including, but not limited to, construction of the Roadway and all appurtenances and all related and incidental work) shall be performed and completed in a manner satisfactory to the Assistant Vice President Engineering-Design of the Railroad or his authorized representative and in compliance with the Plans, and other guidelines furnished by the Railroad.

D. All construction work of the Political Body shall be performed diligently and completed within a reasonable time. No part of the Project shall be suspended, discontinued or unduly delayed without the Railroad's written consent, and subject to such reasonable conditions as the Railroad may specify. It is understood that the Railroad's tracks at and in the vicinity of the work will be in constant or frequent use during progress of the work and that movement or stoppage of trains, engines or cars may cause delays in the work of the Political Body. The Political Body hereby assumes the risk of any such delays and agrees that no claims for damages on account of any delay shall be made against the Railroad by the State and/or the Contractor.

SECTION 3. INJURY AND DAMAGE TO PROPERTY

If the Political Body, in the performance of any work contemplated by this Agreement or by the failure to do or perform anything for which the Political Body is responsible under the provisions of this Agreement, shall injure, damage or destroy any property of the Railroad or of any other person lawfully occupying or using the property of the Railroad, such property shall be replaced or repaired by the Political Body at the

Political Body's own expense, or by the Railroad at the expense of the Political Body, and to the satisfaction of the Railroad's Assistant Vice President Engineering-Design.

SECTION 4. RAILROAD MAY USE CONTRACTORS TO PERFORM WORK

The Railroad may contract for the performance of any of its work by other than the Railroad forces. The Railroad shall notify the Political Body of the contract price within ninety (90) days after it is awarded. Unless the Railroad's work is to be performed on a fixed price basis, the Political Body shall reimburse the Railroad for the amount of the contract.

SECTION 5. MAINTENANCE AND REPAIRS

A. The Political Body shall, at its own sole expense, maintain, repair, and renew, or cause to be maintained, repaired and renewed, the entire Crossing Area and Roadway, except the portions between the track tie ends, which shall be maintained by the Railroad at the Political Body's expense.

B. If, in the future, the Political Body elects to have the surfacing material between the track tie ends, or between tracks if there is more than one railroad track across the Crossing Area, replaced with paving or some surfacing material other than timber planking, the Railroad, at the Political Body's expense, shall install such replacement surfacing, and in the future, to the extent repair or replacement of the surfacing is necessitated by repair or rehabilitation of the Railroad's tracks through the Crossing Area, the Political Body shall bear the expense of such repairs or replacement.

SECTION 6. CHANGES IN GRADE

If at any time the Railroad shall elect, or be required by competent authority to, raise or lower the grade of all or any portion of the track(s) located within the Crossing Area, the Political Body shall, at its own expense, conform the Roadway to conform with the change of grade of the trackage.

SECTION 7. REARRANGEMENT OF WARNING DEVICES

If the change or rearrangement of any warning device installed hereunder is necessitated for public or Railroad convenience or on account of improvements for either the Railroad, highway or both, the parties will apportion the expense incidental thereto between themselves by negotiation, agreement or by the order of a competent authority before the change or rearrangement is undertaken.

SECTION 8. SAFETY MEASURES; PROTECTION OF RAILROAD COMPANY OPERATIONS

It is understood and recognized that safety and continuity of the Railroad's operations and communications are of the utmost importance; and in order that the

same may be adequately safeguarded, protected and assured, and in order that accidents may be prevented and avoided, it is agreed with respect to all of said work of the Political Body that the work will be performed in a safe manner and in conformity with the following standards:

A. **Definitions.** All references in this Agreement to the Political Body shall also include the Contractor and their respective officers, agents and employees, and others acting under its or their authority; and all references in this Agreement to work of the Political Body shall include work both within and outside of the Railroad's property.

B. **Entry on to Railroad's Property by Political Body.** If the Political Body's employees need to enter Railroad's property in order to perform an inspection of the Roadway, minor maintenance or other activities, the Political Body shall first provide at least ten (10) working days advance notice to the Railroad Representative. With respect to such entry on to Railroad's property, the Political Body, to the extent permitted by law, agrees to release, defend and indemnify the Railroad from and against any loss, damage, injury, liability, claim, cost or expense incurred by any person including, without limitation, the Political Body's employees, or damage to any property or equipment (collectively the "Loss") that arises from the presence or activities of Political Body's employees on Railroad's property, except to the extent that any Loss is caused by the sole direct negligence of Railroad.

C. **Flagging.**

(i) If the Political Body's employees need to enter Railroad's property as provided in Paragraph B above, the Political Body agrees to notify the Railroad Representative at least thirty (30) working days in advance of proposed performance of any work by Political Body in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such thirty (30) day notice, the Railroad Representative will determine and inform Political Body whether a flagman need be present and whether Political Body needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Political Body for such expenses incurred by Railroad. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Political Body agrees that Political Body is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

(ii) The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for

vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Political Body shall pay on the basis of the new rates and charges.

(iii) Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Political Body may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Political Body must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Political Body will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional thirty (30) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

D. **Compliance With Laws.** The Political Body shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work. The Political Body shall use only such methods as are consistent with safety, both as concerns the Political Body, the Political Body's agents and employees, the officers, agents, employees and property of the Railroad and the public in general. The Political Body (without limiting the generality of the foregoing) shall comply with all applicable state and federal occupational safety and health acts and regulations. All Federal Railroad Administration regulations shall be followed when work is performed on the Railroad's premises. If any failure by the Political Body to comply with any such laws, regulations, and enactments, shall result in any fine, penalty, cost or charge being assessed, imposed or charged against the Railroad, the Political Body shall reimburse, and to the extent it may lawfully do so, indemnify the Railroad for any such fine, penalty, cost, or charge, including without limitation attorney's fees, court costs and expenses. The Political Body further agrees in the event of any such action, upon notice thereof being provided by the Railroad, to defend such action free of cost, charge, or expense to the Railroad.

E. **No Interference or Delays.** The Political Body shall not do, suffer or permit anything which will or may obstruct, endanger, interfere with, hinder or delay maintenance or operation of the Railroad's tracks or facilities, or any communication or signal lines, installations or any appurtenances thereof, or the operations of others lawfully occupying or using the Railroad's property or facilities.

F. **Supervision.** The Political Body, at its own expense, shall adequately police and supervise all work to be performed by the Political Body, and shall not inflict injury to persons or damage to property for the safety of whom or of which the Railroad may be responsible, or to property of the Railroad. The responsibility of the Political Body for safe conduct and adequate policing and supervision of the Project shall not be lessened or otherwise affected by the Railroad's approval of plans and specifications, or by the Railroad's collaboration in performance of any work, or by the presence at the work site of the Railroad's representatives, or by compliance by the Political Body with any requests or recommendations made by such representatives. If a representative of the Railroad is assigned to the Project, the Political Body will give due consideration to suggestions and recommendations made by such representative for the safety and protection of the Railroad's property and operations.

G. **Suspension of Work.** If at any time the Political Body's engineers or the Vice President-Engineering Services of the Railroad or their respective representatives shall be of the opinion that any work of the Political Body is being or is about to be done or prosecuted without due regard and precaution for safety and security, the Political Body shall immediately suspend the work until suitable, adequate and proper protective measures are adopted and provided.

H. **Removal of Debris.** The Political Body shall not cause, suffer or permit material or debris to be deposited or cast upon, or to slide or fall upon any property or facilities of the Railroad; and any such material and debris shall be promptly removed from the Railroad's property by the Political Body at the Political Body's own expense or by the Railroad at the expense of the Political Body. The Political Body shall not cause, suffer or permit any snow to be plowed or cast upon the Railroad's property during snow removal from the Crossing Area.

I. **Explosives.** The Political Body shall not discharge any explosives on or in the vicinity of the Railroad's property without the prior consent of the Railroad's Vice President-Engineering Services, which shall not be given if, in the sole discretion of the Railroad's Vice President-Engineering Services, such discharge would be dangerous or would interfere with the Railroad's property or facilities. For the purposes hereof, the "vicinity of the Railroad's property" shall be deemed to be any place on the Railroad's property or in such close proximity to the Railroad's property that the discharge of explosives could cause injury to the Railroad's employees or other persons, or cause damage to or interference with the facilities or operations on the Railroad's property. The Railroad reserves the right to impose such conditions, restrictions or limitations on the transportation, handling, storage, security and use of explosives as the Railroad, in the Railroad's sole discretion, may deem to be necessary, desirable or appropriate.

J. **Excavation.** The Political Body shall not excavate from existing slopes nor construct new slopes which are excessive and may create hazards of slides or falling rock, or impair or endanger the clearance between existing or new slopes and the tracks of the Railroad. The Political Body shall not do or cause to be done any work which will or may disturb the stability of any area or adversely affect the Railroad's tracks or facilities. The Political Body, at its own expense, shall install and maintain adequate shoring and cribbing for all excavation and/or trenching performed by the Political Body in connection with construction, maintenance or other work. The shoring and cribbing shall be constructed and maintained with materials and in a manner approved by the Railroad's Assistant Vice President Engineering - Design to withstand all stresses likely to be encountered, including any stresses resulting from vibrations caused by the Railroad's operations in the vicinity.

K. **Drainage.** The Political Body, at the Political Body's own expense, shall provide and maintain suitable facilities for draining the Roadway and its appurtenances, and shall not suffer or permit drainage water therefrom to flow or collect upon property of the Railroad. The Political Body, at the Political Body's own expense, shall provide adequate passageway for the waters of any streams, bodies of water and drainage facilities (either natural or artificial, and including water from the Railroad's culvert and drainage facilities), so that said waters may not, because of any facilities or work of the Political Body, be impeded, obstructed, diverted or caused to back up, overflow or damage the property of the Railroad or any part thereof, or property of others. The Political Body shall not obstruct or interfere with existing ditches or drainage facilities.

L. **Notice.** Before commencing any work, the Political Body shall provide the advance notice to the Railroad that is required under the Contractor's Right of Entry Agreement.

M. **Fiber Optic Cables.** Fiber optic cable systems may be buried on the Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Political Body shall visit up.com/CBUD to complete and submit the required form to determine if fiber optic cable is buried anywhere on Railroad's property to be used by the Political Body. If it is, Political Body will telephone the telecommunications company(ies) involved, arrange for a cable locator, and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the Railroad's premises.

SECTION 9. INTERIM WARNING DEVICES

If at anytime it is determined by a competent authority, by the Political Body, or by agreement between the parties, that new or improved train activated warning devices should be installed at the Crossing Area, the Political Body shall install adequate temporary warning devices or signs and impose appropriate vehicular control measures to protect the motoring public until the new or improved devices have been installed.

SECTION 10. OTHER RAILROADS

All protective and indemnifying provisions of this Agreement shall inure to the benefit of the Railroad and any other railroad company lawfully using the Railroad's property or facilities.

SECTION 11. BOOKS AND RECORDS

The books, papers, records and accounts of Railroad, so far as they relate to the items of expense for the materials to be provided by Railroad under this Project, or are associated with the work to be performed by Railroad under this Project, shall be open to inspection and audit at Railroad's offices in Omaha, Nebraska, during normal business hours by the agents and authorized representatives of Political Body for a period of three (3) years following the date of Railroad's last billing sent to Political Body.

SECTION 12. REMEDIES FOR BREACH OR NONUSE

A. If the Political Body shall fail, refuse or neglect to perform and abide by the terms of this Agreement, the Railroad, in addition to any other rights and remedies, may perform any work which in the judgment of the Railroad is necessary to place the Roadway and appurtenances in such condition as will not menace, endanger or interfere with the Railroad's facilities or operations or jeopardize the Railroad's employees; and the Political Body will reimburse the Railroad for the expenses thereof.

B. Nonuse by the Political Body of the Crossing Area for public highway purposes continuing at any time for a period of eighteen (18) months shall, at the option of the Railroad, work a termination of this Agreement and of all rights of the Political Body hereunder.

C. The Political Body will surrender peaceable possession of the Crossing Area and Roadway upon termination of this Agreement. Termination of this Agreement shall not affect any rights, obligations or liabilities of the parties, accrued or otherwise, which may have arisen prior to termination.

SECTION 13. MODIFICATION - ENTIRE AGREEMENT

No waiver, modification or amendment of this Agreement shall be of any force or effect unless made in writing, signed by the Political Body and the Railroad and specifying with particularity the nature and extent of such waiver, modification or amendment. Any waiver by the Railroad of any default by the Political Body shall not affect or impair any right arising from any subsequent default. This Agreement and Exhibits attached hereto and made a part hereof constitute the entire understanding between the Political Body and the Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work or any part thereof.

**EXHIBIT C
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT**

Exhibit C (if applicable) will be Railroad's Material and Force Account Estimate.

EXHIBIT C

**ESTIMATE OF FORCE ACCOUNT WORK
BY THE
UNION PACIFIC RAILROAD COMPANY**

DESCRIPTION OF WORK: Engineering and other related services for work to be performed on railroad property. This includes railroad flagging services, project and construction management during construction activities on railroad property. All necessary railroad services will be billed at actual cost.

DATE:
12/28/2022

LOCATION:
Hays County
DOT: 447651A

SUBDIVISION
Austin Sub

STATE:
TX

DESCRIPTION	LABOR	MATERIAL	UP %0	Agency % 100	TOTAL
ENGINEERING					
Project Management	\$ 2,500	\$ -		\$ 2,500.00	\$ 2,500
Construction Submittals	\$ -	\$ -	\$ -	\$ -	\$ -
Construction Observation/Mgmt	\$ 10,000	\$ -	\$ -	\$ 10,000.00	\$ 10,000
Final Inspection	\$ 2,500	\$ -	\$ -	\$ 2,500.00	\$ 2,500
FLAGGING / INSPECTION SERVICES					
RATE (per day)	\$ 1,400				
Estimated # Days of Flagging	0	\$ -	\$ -	\$ -	\$ 0
TOTAL PROJECT:	\$ 15,000	\$ -	\$ -	\$ 15,000.00	\$15,000

TOTAL ESTIMATED COST: \$15,000

**THE ABOVE FIGURES ARE ESTIMATES ONLY AND SUBJECT TO FLUCTUATION.
IN THE EVENT OF AN INCREASE OR DECREASE IN THE COST OR QUANTITY OF
MATERIAL OR LABOR REQUIRED, THE RAILROAD WILL BILL FOR ACTUAL
COSTS AT THE CURRENT RATES EFFECTIVE THEREOF.**

Flagging may be performed by a third-party contractor. Any flagging performed by a third-party contractor will be billed at said third-party contractor rate not included in the above estimate. Alternatively, the Agency may enter into a separate agreement with third-party contractor and will be responsible for all actual costs incurred.

EXHIBIT D
TO
PUBLIC HIGHWAY AT-GRADE CROSSING AGREEMENT
CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT

THIS AGREEMENT is made and entered into as of the _____ day of _____, 20____, by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation ("Railroad"); and _____, a _____ corporation ("Contractor").

RECITALS:

Contractor has been hired by _____ to perform work relating to _____ (the "Work") with all or a portion of such Work to be performed on property of Railroad in the vicinity of Railroad's Milepost _____ on Railroad's _____ [Subdivision or Branch] [at or near DOT No. _____] located at or near _____, in _____ County, State of _____, as such location is in the general location shown on the print marked **Exhibit A**, attached hereto and hereby made a part hereof, which Work is the subject of a contract dated _____ between Railroad and _____.

Railroad is willing to permit Contractor to perform the Work described above at the location described above subject to the terms and conditions contained in this agreement

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between Railroad and Contractor, as follows:

ARTICLE 1 - DEFINITION OF CONTRACTOR.

For purposes of this agreement, all references in this agreement to Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority. For purposes of clarity, Contractor agrees that any CIC (defined below) hired by Contractor is a subcontractor of Contractor and therefore included in the defined term Contractor pursuant to the foregoing sentence.

ARTICLE 2 - RIGHT GRANTED: PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of performing the Work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article 4.

ARTICLE 3 - TERMS AND CONDITIONS CONTAINED IN EXHIBITS B AND C.

The terms and conditions contained in **Exhibit B** and **Exhibit C**, attached hereto, are hereby made a part of this agreement.

ARTICLE 4 - ALL EXPENSES TO BE BORNE BY CONTRACTOR: RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any Work performed by Contractor (including without limitation any CIC), or any costs or expenses incurred by Railroad relating to this agreement.

B. Contractor shall coordinate all of its Work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

C. Contractor, at its own expense, shall adequately police and supervise all Work to be performed by Contractor and shall ensure that such Work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's Work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the Work, or by Railroad's collaboration in performance of any Work, or by the presence at the Work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

ARTICLE 5 - SCHEDULE OF WORK ON A MONTHLY BASIS.

The Contractor, at its expense, shall provide on a monthly basis a detailed schedule of Work to the Railroad Representative named in Article 4B above. The reports shall start at the execution of this agreement and continue until this agreement is terminated as provided in this agreement or until the Contractor has completed all Work on Railroad's property.

ARTICLE 6 - TERM: TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this agreement, and continue until _____, unless sooner terminated as herein provided, or at such time as Contractor has completed its Work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its Work on Railroad's property.

B. This agreement may be terminated by either party on ten (10) days written notice to the other party.

ARTICLE 7 - CERTIFICATE OF INSURANCE.

A. Before commencing any Work and throughout the entire term of this Agreement, Contractor, at its expense, shall procure and maintain in full force and effect the types and minimum limits of insurance specified in **Exhibit C** of this agreement and require each of its subcontractors to include the insurance endorsements as required under Section 12 of **Exhibit B** of this agreement.

B. Not more frequently than once every two (2) years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

C. Upon request of Railroad, Contractor shall provide to Railroad a certificate issued by its insurance

carrier evidencing the insurance coverage required under **Exhibit B**.

D. Contractor understands and accepts that the terms of this Article are wholly separate from and independent of the terms of any indemnity provisions contained in this Agreement.

E. Upon request of Railroad, insurance correspondence, binders, policies, certificates and endorsements shall be sent to:

Union Pacific Railroad Company

[Insert mailing address]

Attn: _____

Project No. 0752400

ARTICLE 8 - PRECONSTRUCTION MEETING.

If the Work to be performed by the Contractor will involve the Railroad providing any flagging protection (or if a CIC is approved to provide flagging protection pursuant to the terms set forth herein) and/or there is separate work to be performed by the Railroad, the Contractor confirms that no work shall commence until the Railroad and Contractor participate in a preconstruction meeting involving flagging procedures and coordination of work activities of the Contractor and the Railroad (and any CIC, as applicable.)

ARTICLE 9. DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the Work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

ARTICLE 10. ADMINISTRATIVE FEE.

Upon the execution and delivery of this agreement, Contractor shall pay to Railroad One Thousand Twenty Five Dollars (\$1,025.00) as reimbursement for clerical, administrative and handling expenses in connection with the processing of this agreement.

ARTICLE 11. CROSSINGS: COMPLIANCE WITH MUTCD AND FRA GUIDELINES.

A. No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

B. Any permanent or temporary changes, including temporary traffic control, to crossings must conform to the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable Federal Railroad Administration rules, regulations and guidelines, and must be reviewed by the Railroad prior to any changes being implemented. In the event the Railroad is found to be out of compliance with federal safety regulations due to the Contractor's modifications, negligence, or any other reason arising from the Contractor's presence on the Railroad's property, the Contractor agrees to assume liability for any civil penalties imposed upon the Railroad for such noncompliance.

ARTICLE 12.- EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored or used on Railroad's property without the prior written approval of Railroad.

IN WITNESS WHEREOF, the parties hereto have duly executed this agreement in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY

By: _____

Title: _____

(Name of Contractor)

By: _____

Name: _____

Title: _____

Phone: _____


E-Mail: _____

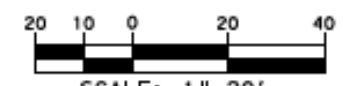
EXHIBIT A
TO
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Exhibit A will be a print showing the general location of the work site.

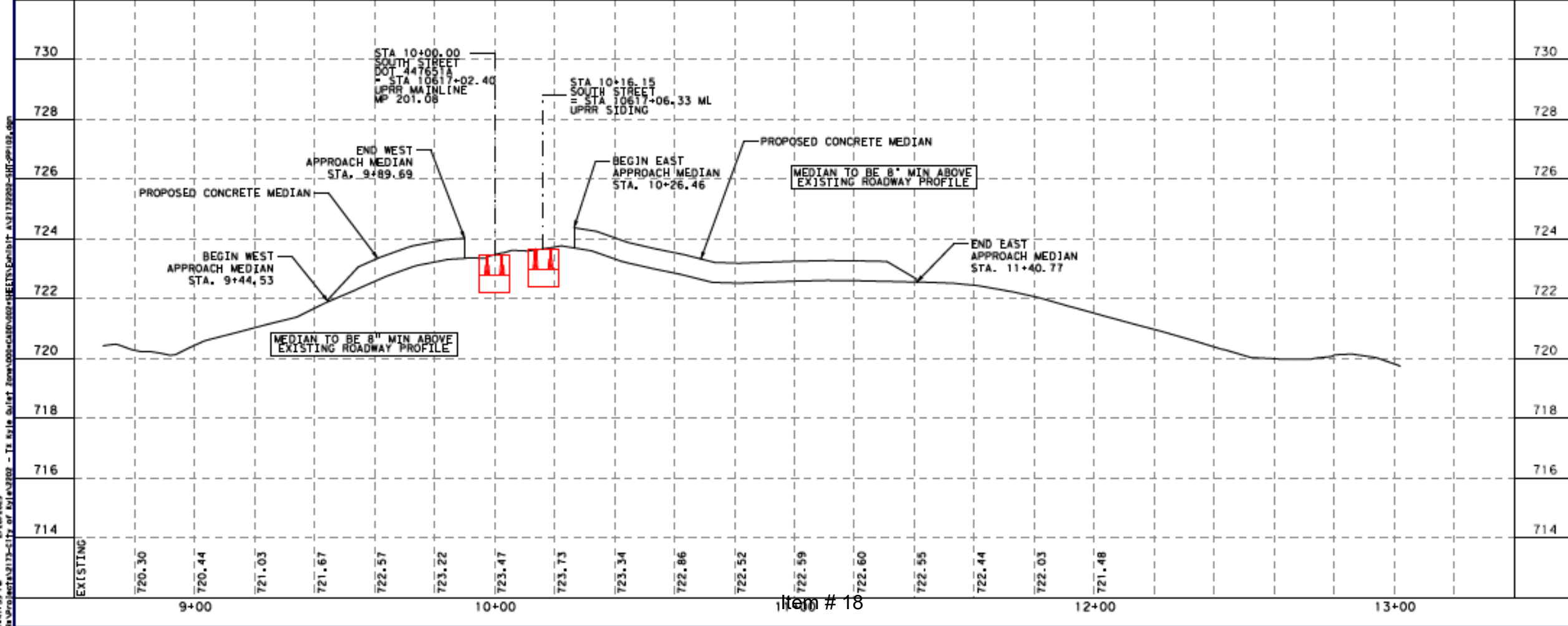
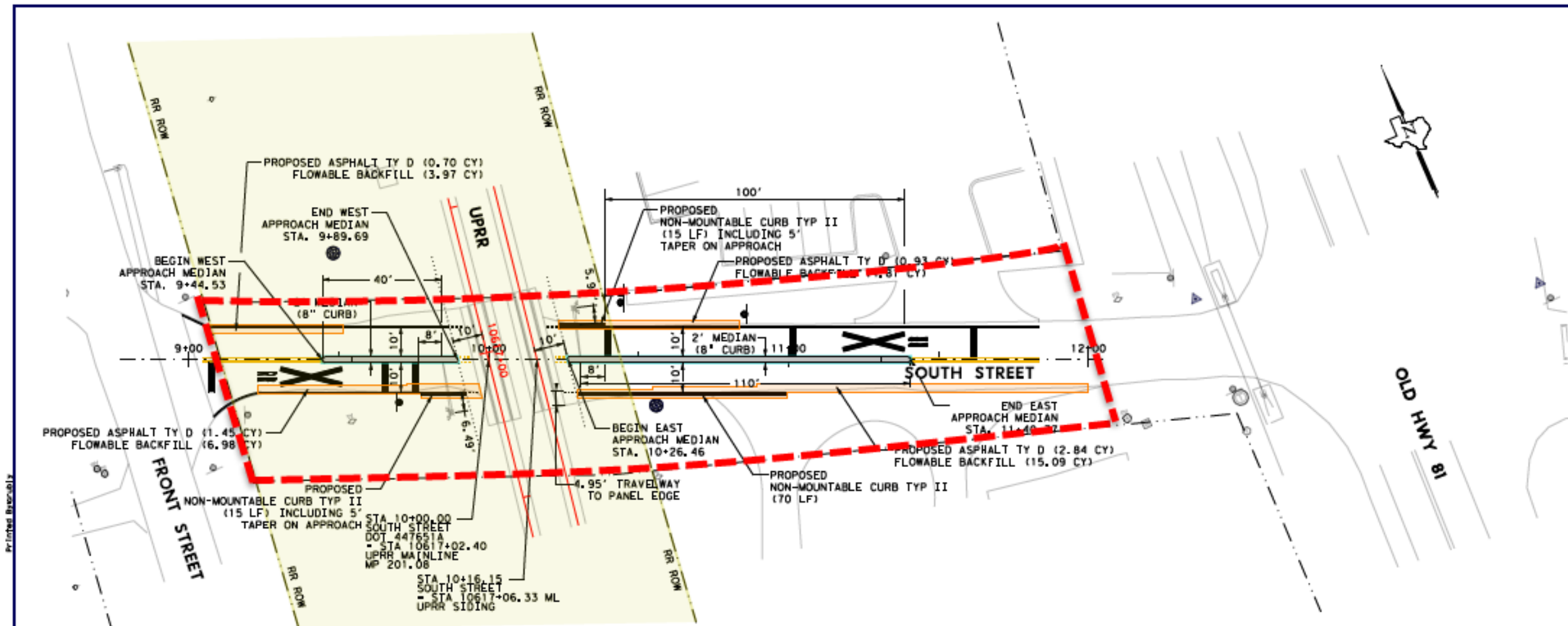
NUMBER	DATE	REVISION	APPROVED


- NOTES:
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 - EXISTING ROADWAY PROFILE NOT TO BE CHANGED

 Crossing Area




ISSUE FOR CONSTRUCTION
JANUARY 03, 2023






DESIGN ENGINEER



LOCAL GOVERNMENT



STATE OF TEXAS



**RAILROAD QUIET ZONE
PLAN AND PROFILE
SOUTH STREET**

PROJECT NO.	STATE	PROJECT NO.	ROADWAY NO.
14	TEXAS	CC 12-17-015	RM 150
CITY	COUNTY	CONTROL NO.	SECTION NO.
AUSTIN	HAYS	0016	17
		JOB NO.	SHEET NO.
		015	1 of 55

1/4/23 PM 2/16/2023
 as:\projects\1215-City of Kyle\2022 - TX Kyle Quiet Zone\000-CLD\000-FILES\DWG\1215-QZ-18.dwg

EXHIBIT B
TO
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Section 1. NOTICE OF COMMENCEMENT OF WORK - RAILROAD FLAGGING - PRIVATE FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least ten (10) working days in advance of Contractor commencing its Work and at least thirty (30) working days in advance of proposed performance of any Work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track.

B. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad approved flagman is provided to watch for trains. Upon receipt of such thirty (30)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures.

C. Contractor shall be permitted to hire a private contractor to perform flagging or other special protective or safety measures (such private contractor being commonly known in the railroad industry as a contractor-in-charge ("CIC")) in lieu of Railroad providing such services or in concert with Railroad providing such services, subject to prior written approval by Railroad, which approval shall be in Railroad's sole and absolute discretion. If Railroad agrees to permit Contractor to utilize a CIC pursuant to the preceding sentence, Contractor shall obtain Railroad's prior approval in writing for each of the following items, as determined in all respects in Railroad's sole and absolute discretion: (i) the identity of the third-party performing the role of CIC; (ii) the scope of the services to be performed for the project by the approved CIC; and (iii) any other terms and conditions governing such services to be provided by the CIC. If flagging or other special protective or safety measures are performed by an approved CIC, Contractor shall be solely responsible for (and shall timely pay such CIC for) its services. Railroad reserves the right to rescind any approval pursuant to this Section 1, Subsection C., in whole or in part, at any time, as determined in Railroad's sole and absolute discretion.

D. If any flagging or other special protective or safety measures are performed by employees of Railroad and/or any contractor of Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing.

E. If any flagging or other special protective or safety measures are performed by Railroad or a CIC, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this agreement.

F. The provisions set forth in this subsection are only applicable for Flagging Services performed by employees of Railroad: the rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with labor agreements and schedules in effect at the time the Work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the Work is performed. One and one-half times the current hourly rate is

paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges. If flagging is performed by Railroad, reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional thirty (30) days notice must then be given to Railroad if flagging services are needed again after such five-day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

B. The foregoing grant is also subject to all outstanding superior rights (whether recorded or unrecorded and including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least twenty-five (25) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the Work to be performed by Contractor caused by such railroad operations and Work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any Work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the Work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such Work performed. Contractor shall indemnify and hold harmless Railroad from and against any and all liens, claims, demands, costs or expenses of whatsoever nature in any way connected with or growing out of such Work done, labor performed, or materials furnished. If Contractor fails to promptly cause any lien to be released of record, Railroad may, at its election, discharge the lien or claim of lien at Contractor's expense.

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall visit www.up.com/CBUD to complete and submit the required form to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any Work until all such protection or relocation (if applicable) has been accomplished.

B. IN ADDITION TO OTHER INDEMNITY PROVISIONS IN THIS AGREEMENT, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD RAILROAD HARMLESS FROM AND AGAINST ALL COSTS, LIABILITY AND EXPENSE WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS AND EXPENSES) ARISING OUT OF ANY ACT OR OMISSION OF CONTRACTOR, ITS AGENTS AND/OR EMPLOYEES, THAT CAUSES OR CONTRIBUTES TO (1) ANY DAMAGE TO OR DESTRUCTION OF ANY TELECOMMUNICATIONS SYSTEM ON RAILROAD'S PROPERTY, AND/OR (2) ANY INJURY TO OR DEATH OF ANY PERSON EMPLOYED BY OR ON BEHALF OF ANY TELECOMMUNICATIONS COMPANY, AND/OR ITS CONTRACTOR, AGENTS AND/OR EMPLOYEES, ON RAILROAD'S PROPERTY. CONTRACTOR SHALL NOT HAVE OR SEEK RECOURSE AGAINST RAILROAD FOR ANY CLAIM OR CAUSE OF ACTION FOR ALLEGED LOSS OF PROFITS OR REVENUE OR LOSS OF SERVICE OR OTHER CONSEQUENTIAL DAMAGE TO A TELECOMMUNICATION COMPANY USING RAILROAD'S PROPERTY OR A CUSTOMER OR USER OF SERVICES OF THE FIBER OPTIC CABLE ON RAILROAD'S PROPERTY.

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the Work covered by this agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the Work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of any Work on Railroad property performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the Work. Contractor shall, at a minimum, comply with Railroad's then current safety standards located at the below web address ("Railroad's Safety Standards") to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor

determines that any of Railroad's Safety Standards are contrary to good safety practices. Contractor shall furnish copies of Railroad's Safety Standards to each of its employees before they enter Railroad property.

http://www.up.com/cs/groups/public/@uprr/@suppliers/documents/up_pdf_natedocs/pdf_up_supplier_safety_req.pdf

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any Work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the Work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this agreement shall control if there are any inconsistencies between this agreement and the Safety Plan.

Section 8. INDEMNITY.

A. TO THE FULLEST EXTENT ALLOWED BY APPLICABLE LAW, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS RAILROAD, ITS AFFILIATES, AND ITS AND THEIR OFFICERS, AGENTS AND EMPLOYEES (INDIVIDUALLY AN "INDEMNIFIED PARTY" OR COLLECTIVELY "INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL LOSS, DAMAGE, INJURY, LIABILITY, CLAIM, DEMAND, COST OR EXPENSE (INCLUDING, WITHOUT LIMITATION, ATTORNEY'S, CONSULTANT'S AND EXPERT'S FEES, AND COURT COSTS), FINE OR PENALTY (COLLECTIVELY, "LOSS") INCURRED BY ANY PERSON (INCLUDING, WITHOUT LIMITATION, ANY INDEMNIFIED PARTY, CONTRACTOR, OR ANY EMPLOYEE OF CONTRACTOR OR OF ANY INDEMNIFIED PARTY) ARISING OUT OF OR IN ANY MANNER CONNECTED WITH (I) ANY WORK PERFORMED BY CONTRACTOR, OR (II) ANY ACT OR OMISSION OF CONTRACTOR, ITS OFFICERS, AGENTS OR EMPLOYEES, OR (III) ANY BREACH OF THIS AGREEMENT BY CONTRACTOR.

B. THE RIGHT TO INDEMNITY UNDER THIS SECTION 8 SHALL ACCRUE UPON OCCURRENCE OF THE EVENT GIVING RISE TO THE LOSS, AND SHALL APPLY REGARDLESS OF ANY NEGLIGENCE OR STRICT LIABILITY OF ANY INDEMNIFIED PARTY, EXCEPT WHERE THE LOSS IS CAUSED BY THE SOLE ACTIVE NEGLIGENCE OF AN INDEMNIFIED PARTY AS ESTABLISHED BY THE FINAL JUDGMENT OF A COURT OF COMPETENT JURISDICTION. THE SOLE ACTIVE NEGLIGENCE OF ANY INDEMNIFIED PARTY SHALL NOT BAR THE RECOVERY OF ANY OTHER INDEMNIFIED PARTY.

C. CONTRACTOR EXPRESSLY AND SPECIFICALLY ASSUMES POTENTIAL LIABILITY UNDER THIS SECTION 8 FOR CLAIMS OR ACTIONS BROUGHT BY CONTRACTOR'S OWN EMPLOYEES. CONTRACTOR WAIVES ANY IMMUNITY IT MAY HAVE UNDER WORKER'S COMPENSATION OR INDUSTRIAL INSURANCE ACTS TO INDEMNIFY THE INDEMNIFIED PARTIES UNDER THIS SECTION 8. CONTRACTOR ACKNOWLEDGES THAT THIS WAIVER WAS MUTUALLY NEGOTIATED BY THE PARTIES HERETO.

D. NO COURT OR JURY FINDINGS IN ANY EMPLOYEE'S SUIT PURSUANT TO ANY

WORKER'S COMPENSATION ACT OR THE FEDERAL EMPLOYERS' LIABILITY ACT AGAINST A PARTY TO THIS AGREEMENT MAY BE RELIED UPON OR USED BY CONTRACTOR IN ANY ATTEMPT TO ASSERT LIABILITY AGAINST ANY INDEMNIFIED PARTY.

E. THE PROVISIONS OF THIS SECTION 8 SHALL SURVIVE THE COMPLETION OF ANY WORK PERFORMED BY CONTRACTOR OR THE TERMINATION OR EXPIRATION OF THIS AGREEMENT. IN NO EVENT SHALL THIS SECTION 8 OR ANY OTHER PROVISION OF THIS AGREEMENT BE DEEMED TO LIMIT ANY LIABILITY CONTRACTOR MAY HAVE TO ANY INDEMNIFIED PARTY BY STATUTE OR UNDER COMMON LAW.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the Work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the Work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this agreement shall be effective unless made in writing and signed by Contractor and Railroad. This agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the Work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors. Before Contractor commences any Work, the Contractor shall, except to the extent prohibited by law; (1) require each of its subcontractors to include the Contractor as "Additional Insured" on the subcontractor's Commercial General Liability policy and Umbrella or Excess policies (if applicable) with respect to all liabilities arising out of the subcontractor's performance of Work on behalf of the Contractor by endorsing these policies with ISO Additional Insured Endorsements CG 20 10, and CG 20 37 (or substitute forms providing equivalent coverage; (2) require each of its subcontractors to endorse their Commercial General Liability Policy with "Contractual Liability Railroads" ISO Form CG 24 17 10 01 (or a substitute form providing equivalent coverage) for the job site; and (3) require each of its subcontractors to endorse their Business Automobile Policy with "Coverage For Certain Operations In Connection With Railroads" ISO Form CA 20 70 10 01 (or a substitute form providing equivalent coverage) for the job site.

EXHIBIT C
TO
CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT

Union Pacific Railroad Company
Insurance Requirements For
Contractor's Right of Entry Agreement

During the entire term of this Agreement and course of the Project, and until all Project Work on Railroad's property has been completed and all equipment and materials have been removed from Railroad's property and Railroad's property has been clean and restored to Railroad's satisfaction, Contractor shall, at its sole cost and expense, procure and maintain the following insurance coverage:

- A. Commercial General Liability insurance.** Commercial general liability (CGL) with a limit of not less than \$5,000,000 each occurrence and an aggregate limit of not less than \$10,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.
- Designated Construction Project(s) General Aggregate Limit ISO Form CG 25 03 03 97 (or a substitute form providing equivalent coverage) showing the project on the form schedule.

- B. Business Automobile Coverage insurance.** Business auto coverage written on ISO form CA 00 01 10 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less \$5,000,000 for each accident and coverage must include liability arising out of any auto (including owned, hired and non-owned autos).

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement - Hazardous materials clean up (MCS-90) if required by law.

- C. Workers' Compensation and Employers' Liability insurance.** Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state where the Work is being performed.
- Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 disease policy limit \$500,000 each employee.

If Contractor is self-insured, evidence of state approval and excess workers compensation coverage must be provided. Coverage must include liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

- D. Railroad Protective Liability insurance.** Contractor must maintain "Railroad Protective Liability" (RPL) insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than \$2,000,000 per occurrence

and an aggregate of \$6,000,000. The definition of "JOB LOCATION" and "WORK" on the declaration page of the policy shall refer to this agreement and shall describe all WORK or OPERATIONS performed under this agreement. Contractor shall provide this agreement to Contractor's insurance agent(s) and/or broker(s) and Contractor shall instruct such agent(s) and/or broker(s) to procure the insurance coverage required by this agreement. A BINDER STATING THE POLICY IS IN PLACE MUST BE SUBMITTED TO RAILROAD BEFORE THE WORK MAY COMMENCE AND UNTIL THE ORIGINAL POLICY IS FORWARDED TO UNION PACIFIC RAILROAD.

- E. **Umbrella or Excess** insurance. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.
- F. **Pollution Liability** insurance. Pollution liability coverage must be included when the scope of the Work as defined in the agreement includes installation, temporary storage, or disposal of any "hazardous" material that is injurious in or upon land, the atmosphere, or any watercourses; or may cause bodily injury at any time.

If required, coverage may be provided in separate policy form or by endorsement to Contractors CGL or RPL. Any form coverage must be equivalent to that provided in ISO form CG 24 15 "Limited Pollution Liability Extension Endorsement" or CG 28 31 "Pollution Exclusion Amendment" with limits of at least \$5,000,000 per occurrence and an aggregate limit of \$10,000,000.

If the scope of Work as defined in this agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of \$1,000,000 per loss, and an annual aggregate of \$2,000,000.

Other Requirements

- G. All policy(ies) required above (except business automobile, worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 10, and CG 20 37 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall not be limited by Contractor's liability under the indemnity provisions of this agreement. BOTH CONTRACTOR AND RAILROAD EXPECT THAT UNION PACIFIC RAILROAD COMPANY WILL BE PROVIDED WITH THE BROADEST POSSIBLE COVERAGE AVAILABLE BY OPERATION OF LAW UNDER ISO ADDITIONAL INSURED FORMS CG 20 10 AND CG 20 37.
- H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless (a) insurance coverage may not lawfully be obtained for any punitive damages that may arise under this agreement, or (b) all punitive damages are prohibited by all states in which this agreement will be performed.
- I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees for damages covered by the workers compensation and employers liability or commercial umbrella or excess liability obtained by Contractor required in this agreement where prohibited by law. This waiver must be stated on the certificate of insurance.
- J. Prior to commencing the Work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this agreement.

- K.** All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state where the Work is being performed.

- L.** The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.



CITY OF KYLE, TEXAS

Amendment 5 To Task Order No. 6 - LJA Engineering Anthem Waterline Project

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Approve Amendment No. 5 to Task Order No. 6 to LJA ENGINEERING, INC., Austin, Texas, in the amount not to exceed \$3,039.20 increasing the total contract amount to \$233,735.00 for additional survey of temporary construction easements for the Anthem to Kohlers Crossing Waterline Connection Project. ~ *Leon Barba, P.E., City Engineer*

Other Information: This is an amendment to the LJA Engineering contract for the Anthem waterline project that connects the Anthem subdivision to the Plum Creek Phase 2 subdivision. This amendment is needed to provide temporary construction easements along the waterline project. This amendment includes the survey of the temporary easements along with the metes and bounds for each easement.

Legal Notes: N/A

Budget Information:

ATTACHMENTS:

Description

- Anthem Waterline Project Amendment No. 5
- Anthem Waterline Project Alignment

Amendment 5 To Task Order No. 6

1. Background Data:

- a. Effective Date of Task Order: 03-21-2023

- b. Owner: City of Kyle

- c. Engineer: LJA Engineering, Inc.

- d. Specific Project: Metes and bounds for temporary construction easements.

2. Description of Modifications

- a. This amendment to Task Order 6 is to provide temporary construction easements along the waterline project. See exhibits for all additional services.

- b. See attached Supplemental Fee Schedule

3. Task Order Summary (Reference only)

- a. Original Task Order amount: \$[76,339.00]
- b. Net change for prior amendments: \$[230,695.89]
- c. This amendment amount: \$[3,039.20]
- d. Adjusted Task Order amount: \$[233,735.00]


Owner and Engineer hereby agree to modify the above-referenced Task Order as set forth in this Amendment. All provisions of the Agreement and Task Order not modified by this or previous Amendments remain in effect. The Effective Date of this Amendment is 03/21/23.

OWNER:

By: _____

Title: _____

Date
Signed: _____

ENGINEER: 
By: _____

Title: Vice President

Date
Signed: 03/21/2023

Anthem to Kohler Crossing Waterline Connection Project

Exhibit A

Engineer's Services for Anthem to Kohler Crossing Waterline Connection Project

Modifications:

The Engineer will perform the following items listed below, as described:

TASK 1 – PROJECT MANAGEMENT AND COMMUNICATION

The Engineer will perform:

1. Invoicing, Contract Document Coordination, Progress Reports
 - Supplemental Task Order creation
2. Management of Subconsultants
 - LJA Survey (Surveying)

SUBCONSULTANTS

LJA Survey (Surveying) – See attached scope

SURVEYING BUDGET & WORK REQUEST

LJA Engineering, Inc.

Project Name: City of Kyle -Uptown WL Change Order No.3	LJA Surv Job No.: LJAS001-2173-2003
LJA Eng Proj Mgr: Stuart Cowell, PE	LJA Eng Job No.: 2173-2003
LJA Surv Proj Mgr: Chad Castellow	LJA Eng Client:

Description of WORK Requested:

Produce four (4) temporary easement exhibits for the City of Kyle WL project. Each exhibit will include a metes and bounds description along with accompanying sketch on 8.5"x11" pdf signed and sealed by Texas RPLS.

OUTPUT Requested: (double click boxes below and select checked to check mark them)

<input type="checkbox"/> ASCII File	<input type="checkbox"/> 2d Design File	<input type="checkbox"/> 3d Design File	<input checked="" type="checkbox"/> Exhibit
<input type="checkbox"/> Point Dump	<input type="checkbox"/> Show Elevations	<input type="checkbox"/> Contours	<input checked="" type="checkbox"/> Survey
<input type="checkbox"/> Copy of Field Notes	<input checked="" type="checkbox"/> Legal Description	<input type="checkbox"/> Earthwork Quantity	<input type="checkbox"/> R.O.W. Map
<input type="checkbox"/> Coordinate With Project Designer:			
<input type="checkbox"/> Additional Instruction:			
<input type="checkbox"/> Directory/Seed File:			

Proposal Amount: \$2,400	Proposal Date: 03/14/2023
<input checked="" type="checkbox"/> Lump Sum	Proposal Provided By: C. Castellow
<input type="checkbox"/> Hourly	Proposal Approved By:
<input type="checkbox"/> Other	Approval Date:



















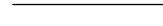






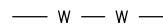
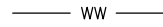
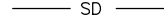

LJA Surv Phase #: 202

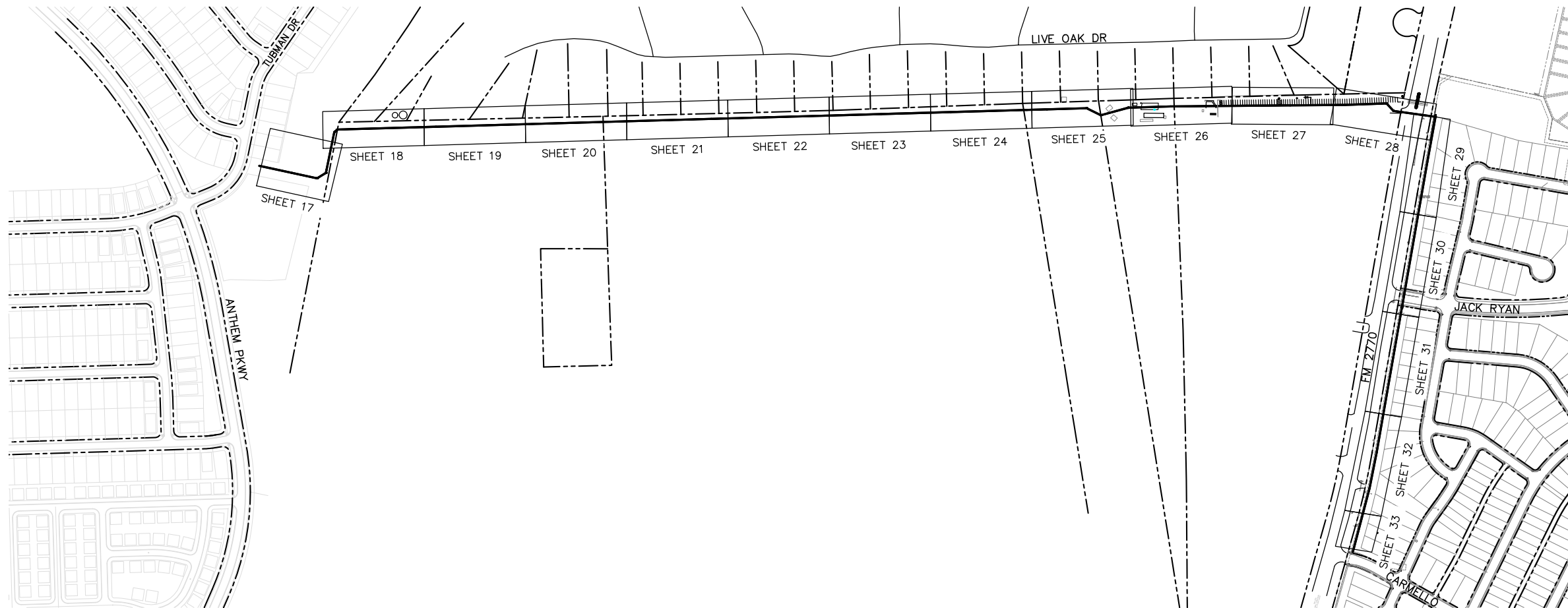
Phase Name: Temporary Easement Exhibits

Exhibit C: Supplemental 05 to Task Order #6 Anthem to Kohler Crossing Waterline Connection Project











TASK DESCRIPTION	Principal	Senior PM/ Engineer	Project Manager	QA/QC Manager	Project Engineer	Engineer in Training	Administrative Assistant	Total Labor Hrs & Costs	
	223.25 HOURS	211.50 HOURS	188.00 HOURS	199.75 HOURS	176.25 HOURS	145.70 HOURS	75.20 HOURS	HOURS	
TASK 1 – PROJECT MANAGEMENT AND COMMUNICATION									
1.2	Invoicing, Contract Document Coordination, Progress Reports								
1.2.1	Supplemental Creation		1.0				1.0	2.0	
1.4	Management of Subconsultants								
1.4.4	LJA Survey		2.0					2.0	
TASK 1 SUB TOTAL HOURS		0.0	0.0	3.0	0.0	0.0	0.0	1.0	4.0
TASK 1 SUB TOTAL FEE		\$0	\$0	\$564	\$0	\$0	\$0	\$75.20	\$639.20
TOTAL Project Tasks									
TOTAL HOURS		0.0	0.0	3.0	0.0	0.0	0.0	1.0	4.0
TOTAL FEE		\$0	\$0	\$564	\$0	\$0	\$0	\$75.20	\$639.20
Subconsultants									
	LJA Survey (LJAS)								\$2,400.00
Project Totals									
	LJA ODC								\$0.00
	PROJECT TOTAL								\$3,039.20

EXISTING SYMBOLOGY LEGEND

-  EXIST FIRE HYDRANT
-  EXIST WATER VALVE
-  EXIST WATER METER
-  EXIST WATERLINE AIR VENT
-  EXIST AIR RELEASE VALVE
-  EXIST CLEANOUT
-  EXIST WASTEWATER MANHOLE
-  EXIST STORM DRAIN MANHOLE
-  EXIST GAS METER
-  EXIST GAS VALVE
-  EXIST TELECOM PEDESTAL
-  EXIST TELCO JUNCTION BOX
-  EXIST ELECTRIC JUNCTION BOX
-  EXIST ELECTRIC PULL BOX
-  EXIST ROAD SIGN
-  EXIST UTILITY POLE WITH RISER
-  EXIST UTILITY POLE
-  EXIST UTILITY POLE GUY ANCHOR
-  EXIST ROADWAY
-  EXIST EASEMENT
-  EXIST FENCE LINE
-  EXIST OH ELECTRIC
-  EXIST OH TELECOM
-  EXIST UG TELECOM
-  EXIST UG ELECTRIC
-  EXIST GAS LINE
-  EXIST WATER LINE
-  EXIST WASTEWATER LINE
-  EXIST STORM DRAIN LINE



PROPOSED UTILITIES LEGEND

-  PROPOSED GATE VALVE
-  PROPOSED WATER METER
-  PROPOSED FIRE HYDRANT
-  PROPOSED REDUCER
-  PROPOSED CARV
-  PROPOSED STEEL ENCASEMENT
-  PROPOSED DRAIN VALVE
-  PROPOSED DI TEE
-  PROPOSED DI BEND
-  PROPOSED WL

LOCATION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR.



REVISIONS			
NO.	DESCRIPTION	BY	DATE

DATE: 11/6/2022
 DESIGNED BY: LJA
 DRAWN BY: LJA
 CHECKED BY: SC
 APPROVED BY: SC

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF STUART COWELL, P.E. 126674. ON 11/11/22. IT IS NOT TO BE USED FOR BIDDING, CONSTRUCTION OR PERMIT PURPOSES.



ANTHEM TO PLUM CREEK WATERLINE

LJA Engineering, Inc.
 2700 LA FRONTERA BLVD. Phone 512.767.7300
 SUITE 150 Fax 512.439.4716
 ROUND ROCK, TEXAS 78735 FRN-F-1386

PROJECT LAYOUT

JOB NUMBER: 2173-2003
 SCALE: HORIZONTAL: 1"=40' VERTICAL: 1"=10'
 SHEET NO. 4
 OF 35 SHEETS

11/06/2022 11/6/2022 I:\2173\2003 Anthem to Kohler Crossing Waterline Connection\CADD\SHEETS\COVER_NOTES_ENV_PAVCUTS_LAYOUT_DETAILS.dwg scowell



CITY OF KYLE, TEXAS

PSC - Add Service Agreements

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Authorize the Interim City Manager to execute Add Service Agreements with PGAL, Inc., in an amount not to exceed \$54,500.00 for additional design services for the Vybe Trail (\$30,000.00), Lift Station for Rainwater Harvesting (\$23,500.00), and Distributed Antenna System (\$1,000.00) in association with the City's Public Safety Center project. Funding will be provided from the remaining funds in PGAL's contract (\$24,500.00) and from the vybe trail funds (\$30,000.00) for this agenda item. ~ *Derek Bird, AGCM, City of Kyle Project Manager*

Other Information:

Legal Notes:

Budget Information: Funding in the amount of \$54,500.00 is available in the approved Fiscal Year 2022-2023 Capital Improvements Spending Plan for the Public Safety Center project as follows:

- \$30,000.00 for Vybe Trails (General Fund) 1110-67721-573130
- \$23,500.00 for Lift Station Rain Harvesting System (2020 GO Bonds) 1951-67720-573170
- \$1,000.00 for Distributed Antenna System (2020 GO Bonds) 1951-67720-573170

ATTACHMENTS:

Description

- ☐ PGAL ADD SERVICES_ Council Memo
- ☐ DocuSign_Kyle_PD_Add_Service_Garza_Vybe_Signed
- ☐ Kyle_PD_Add_Service_DBR_DAS
- ☐ Kyle_PD_Add_Service_Garza_Lift_Station_Signed

April 4, 2023 Kyle City Council Meeting

AGENDA ITEM:

Consider and possible action to authorize the Interim City Manager to execute Add Service Agreements with PGAL for additional design of the Vybe Trail, Lift Station, and Distributed Antenna System, in the amount of \$54,500.

BACKGROUND INFORMATION:

Due to the City Requirement of the Vybe Trail, PGAL had to engineer and design this trail to connect with neighboring properties and add this Trail along the property. Services included were engineering, civil, and geotechnical. Additional design services were also required based upon the need to add a distributed antenna into the building and lift station for storm water.

BUDGET IMPACT:

These additional services will be funded with previously authorized funds by council for the construction of the Vybe trail and remaining funds from the reimbursable line item within PGAL's contract. There are no additional funds being requested or budget impacts with these add services.

ARCHITECTURE
ENGINEERING
INTERIORS
PLANNING



August 2, 2022

Jerry Hendrix
Assistant City Manager
City of Kyle

Re: Add Service Fee Proposal for City of Kyle New Police Headquarters
Vybe Trail Design

Jerry,

PGAL is submitting this Add Service Fee Proposal to provide additional engineering services for the following task as requested by the City:

VYBE TRAIL DESIGN

The City of Kyle has requested that the Vybe Trail design be included as part of the Public Safety Center project in its planned location across the site. The original civil design did include sidewalk along the east edge of the property; the design will be updated/modified based on the design guidelines of the Vybe Trail.

COMPENSATION

TASK	FIRM	FEE
Vybe Trail Civil Engineering	GarzaEMC	\$25,500
Vybe Trail Architectural Coordination	PGAL	\$ 4,500

GarzaEMC's more detail proposal for their civil engineering scope is attached.

CONCLUSION

Thank you for the opportunity to continue to serve the City of Kyle. Please don't hesitate to call should you have any questions regarding this proposal; my direct office phone is 512-634-5100.

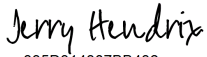
Sincerely,

PGAL

Cris Ruebush, AIA, LEED AP
Principal

ALEXANDRIA
ATLANTA
AUSTIN
BOCA RATON
CHICAGO
DALLAS/FORT WORTH
HOBOKEN
HOUSTON
LAS VEGAS
LOS ANGELES
SALT LAKE CITY
SAN DIEGO

Approved and Accepted by:

DocuSigned by:
 8/4/2022
333D314367BB432...

Name

Date

Acting City Manager, City of Kyle

Title



CHANGE ORDER AUTHORIZATION

Consultant: GarzaEMC, LLC. Date: 04-26-2022
 9442 Capital of Texas Highway North
 Austin, Texas 78735 GEMC Project #: R010282400017
 Ph: (512) 298-3284 Fx: (512) 298-2592
 Email: JFarias@GarzaEMC.com Change Order#: 2

Client: *Cris Ruebush, AIA*
 PGAL
 2222 Western Trails Boulevard, Suite 300
 Austin, TX 78745
 Ph: 512-236-1005
 Email: cruebush@pgal.com

Project Name (on PSA): City of Kyle New Police Headquarters
 Project Location: Kohler's Crossing, Kyle Texas

Change Order Name: VYBE Trail Improvements

In accordance with the original Professional Services Agreement dated, April 11, 2020 the Additional Services as detailed below are hereby authorized:

Pre the City's directive, a VYBE Trail will be added along the east side of the City of Kyle PSC. Below are the services associated with this scope:

I. GarzaEMC, LLC. agrees to perform the following additional service(s):

A. VYBE Trail Coordination and Concept Planning

1. We will coordinate with City of Kyle Planning Office to establish and finalize the route of the VYBE Trail.
2. We will coordinate with City of Kyle Trail Consultant for locations of light fixture and electric conduit.
3. We will prepare preliminary profiles and cross sections to identify and coordinate crossing conflicts.
4. We will coordinate with City of Kyle Planning Office to resolve crossing conflicts.

Garza, EMC
 9442 Capital of Texas Highway North
 Plaza One, Suite 340
 Austin, Texas 78759
 o: 512.298.3284
 f: 512.298.2592
 www.garzaemc.com
 TBPE No. F-14629



5. We will coordinate with the General Contractor and Architecture to provide cost estimates for the VYBE Trail options.

B. VYBE Trail Improvements (Construction Documents)

1. We will prepare additional Engineering Construction Documents for the VYBE Trail to included in the approved Kyle Public Safety Center plan set. The design section and length of the VYBE Trail will be defined in the Typical Section and Project Layout Plan Sheet. These documents will also include plan/profile, details, and other required items for review and approval.
2. We will prepare additional existing conditions / demolition plan. The plan will be based on the survey provided to us. The demolition plan will note existing improvements to remain and to be removed.
3. We will prepare an Erosion and Sedimentation Control Plan, which meets the current City of Kyle design criteria.
4. We will prepare additional utility plan for the VYBE Trail duct bank based on the City of Kyle design criteria.
5. We will coordinate with City of Kyle staff to address comments.

C. Site Plan Correction

Per our correspondence with the City of Kyle Planning Office, the VYBE Trail Improvements adjacent to our site will permitted via a Site Plan Correction. Below is a detailed description of the proposed services related to the Site Plan Correction.

1. We will meet with the applicable City review staff to discuss and review the proposed correction prior to submittal.
2. We will prepare a Site Plan Correction application and engineer's summary letter as required by the City of Kyle.
3. We will submit the Site Plan Correction to the City of Kyle for review and approval.
4. We will coordinate with the City of Kyle review staff in order to pursue approval of the Site Plan Correction.
5. We will obtain City of Kyle approval plan and provide them to you and the contractor.

D. Assumptions

In preparing this Change Order, we have made the following assumptions:

1. It is assumed that no floodplain study will be required.



- 2. It is assumed that no City/FEMA floodplain permitting
- 3. It is assumed that no wet utilities will be required.
- 4. It is assumed trail improvements will be allowed to be permitted via a Site Plan Correction.
- 5. It is assumed structural engineer will design retaining walls, concrete ramps, and handrails, if required.
- 6. It is assumed that no landscape improvements will be required.
- 7. It is assumed that no easements will be required.

II. CLIENT agrees to compensate GarzaEMC, LLC. for such additional services in accordance with the terms of the initial agreement for additional amount(s) stated below

<p>A. VYBE Trail Coordination and Concept Planning 1-4</p>	<p>Lump Sum \$ 4,500</p>
<p>B. VYBE Trail Improvements 1-11</p>	<p>Lump Sum \$ 10,500</p>
<p>C. Site Plan Correction 1-5</p>	<p>Hourly \$ 10,500</p>
	Subtotal \$ 25,500

III. All other terms and conditions of the original Agreement shall remain in full force and effect.

By signing below, the parties agree and affirm that each has reviewed and understands the provisions set out above and that each party shall be bound by each and all of said provisions. A copy of this agreement shall serve and may be relied upon as an original.

PGAL

By: Cris Ruebush
DocuSigned by:

Signature: 
07A18D341A1F4A1...

Title: Design Principal, PGAL

Date Signed: 8/4/2022

GarzaEMC, LLC.

By: Trung (Tommy) Pho, P.E.

Signature: 

Title: Project Manager

Date Signed: April 26, 2022



May 10, 2022

Scott Sellers
City Manager
City of Kyle

Re: Add Service Fee Proposal for City of Kyle New Police Headquarters
DAS System Design

Scott,

PGAL is submitting this Add Service Fee Proposal to provide additional engineering services for the following task as requested by the City:

DAS SYSTEM DESIGN: DBR Engineering

DBR design of a Distributed Antenna System (DAS) with revisions to Technology, Electrical, and Mechanical drawings. FEE: \$1,000.

COMPENSATION

TASK	FIRM	FEE
DAS System Design	DBR	\$1,000

PROPOSED USE OF UNUSED ALLOWANCE FUNDS

The original design contract contained line item allowances for potentially needed services that did not need to be used as the design developed. This totals \$92,505.

UNSPENT ALLOWANCE FUNDS TRACKER:

Unspent Allowance Funds	\$ 92,505	
Add Service I	\$ 82,170	Already approved
Add Service – DAS System	\$1,000	This add service request
Allowance Funds Remaining:	\$9,335	

- ALEXANDRIA
- ATLANTA
- AUSTIN
- BOCA RATON
- CHICAGO
- DALLAS/FORT WORTH
- HOBOKEN
- HOUSTON
- LAS VEGAS
- LOS ANGELES
- SALT LAKE CITY
- SAN DIEGO

CONCLUSION

Thank you for the opportunity to continue to serve the City of Kyle. Please don't hesitate to call should you have any questions regarding this proposal; my direct office phone is 512-634-5100.

Sincerely,
PGAL



Cris Ruebush, AIA, LEED AP
Principal

Approved and Accepted by:



5/10/22

Name

Date

City Manager

Title



9990 Richmond Avenue
South Building, Suite 300
Houston, TX 77042
v 713.914.088

Extra Services

DATE
4/18/2022

PROJECT NUMBER:
200142.000

PROJECT NAME:
City of Kyle Public Safety - DAS System

CLIENT:
PGAL

CLIENT CONTACT:
Charles Meyer

Contract Fee:
 Fixed Fee \$1,000.00

Expenses:
 Included in Fee

The charges for extra services as indicated on this document are based on our understanding of the work described herein. If our understanding of the scope of work is not accurate, please advise immediately. All work shall be performed in accordance with our original contract for this project.

Description of Extra Services:

- Addition of a DAS system to building.
- Revisions of Technology, Electrical and Mechanical Systems to support DAS.

Reason for Extra Services:
Owner requested

Authorized (DBR) By:  **4/18/2022**
Insert DBR PM Name **Date**

Approved (Client) By: _____ **Date**
Please sign, date and return to DBR.

ARCHITECTURE
ENGINEERING
INTERIORS
PLANNING



August 31, 2022

Jerry Hendrix
Assistant City Manager
City of Kyle

Re: Add Service Fee Proposal for City of Kyle New Police Headquarters
Lift Station for Rainwater Harvesting

Jerry,

PGAL is submitting this Add Service Fee Proposal to provide additional engineering services for the following task:

LIFT STATION FOR RAINWATER HARVESTING

After coordinating with the Water Tank vender/installed, the Rainwater Harvesting Tank needs a lift station to get the roof storm water to the tank. GarzaEMC will provide the engineering and civil drawing revision to add/integrate the lift station.

COMPENSATION

TASK	FIRM	FEE
Vybe Trail Civil Engineering	GarzaEMC	\$22,000
Consultant Coordination/Managent	PGAL	\$ 1,500
	TOTAL	\$23,500

GarzaEMC's more detail proposal for their civil engineering scope is attached.

CONCLUSION

Thank you for the opportunity to continue to serve the City of Kyle. Please don't hesitate to call should you have any questions regarding this proposal; my direct office phone is 512-634-5100.

Sincerely,

PGAL

Cris Ruebush, AIA, LEED AP

Principal

ALEXANDRIA
ATLANTA
AUSTIN
BOCA RATON
CHICAGO
DALLAS/FORT WORTH
HOBOKEN
HOUSTON
LAS VEGAS
LOS ANGELES
SALT LAKE CITY
SAN DIEGO

Approved and Accepted by:

DocuSigned by:
Jerry Hendrix 8/31/2022
333D3143078B452...
Jerry Hendrix
Name **Date**

Acting City Manager
Title



CHANGE ORDER AUTHORIZATION

Consultant: GarzaEMC, LLC. Date: 08-22-2022
9442 Capital of Texas Highway North
Austin, Texas 78735 GEMC Project #: R010282400017
Ph: (512) 298-3284 Fx: (512) 298-2592
Email: TPho@GarzaEMC.com Change Order#: 3

Client: *Cris Ruebush, AIA*
PGAL
2222 Western Trails Boulevard, Suite 300
Austin, TX 78745
Ph: 512-236-1005
Email: cruebush@pgal.com

Project Name (on PSA): City of Kyle New Police Headquarters
Project Location: Kohler's Crossing, Kyle Texas

Change Order Name: Lift Station Improvements

In accordance with the original Professional Services Agreement dated, April 11, 2020 the Additional Services as detailed below are hereby authorized:

Pre directive, a Lift Station will be added to serve the proposed Rainwater Harvesting. Below are the services associated with this scope:

I. GarzaEMC, LLC. agrees to perform the following additional service(s):

A. Lift Station Coordination and Concept Planning

1. We will coordinate with MEP to establish and finalize the connection of the Lift Station and downspout.
2. We will coordinate with MEP to establish the incoming flowrate to the Lift Station.
3. We will design the Lift Station Wet Well per established incoming flowrate to the Lift Station.
4. We will select a pump for the Lift Station.
5. We will coordinate with MEP to select a Control Panel for the Lift Station.

Garza, EMC
9442 Capital of Texas Highway North
Plaza One, Suite 340
Austin, Texas 78759
o: 512.298.3284
f: 512.298.2592
www.garzaemc.com
TBPE No. F-14629



6. We will select the Wet Well for the Lift Station.

B. Lift Station Improvements (Construction Documents)

1. We will prepare Engineering Construction Documents for the Lift Station Improvements. The design of the Lift Station will be defined in the Lift Station Layout Plan Sheets and Details. These documents will also include plan/profile sheets and other required items for review and approval.

C. Site Plan Correction

Per our correspondence with the City of Kyle Planning Office, the Lift Station Improvements will be permitted via a Site Plan Correction. Below is a detailed description of the proposed services related to the Site Plan Correction.

1. We will meet with the applicable City review staff to discuss and review the proposed correction prior to submittal.
2. We will prepare a Site Plan Correction application and engineer's summary letter as required by the City of Kyle.
3. We will submit the Site Plan Correction to the City of Kyle for review and approval.
4. We will coordinate with the City of Kyle review staff in order to pursue approval of the Site Plan Correction.
5. We will obtain City of Kyle approval plan and provide them to you and the contractor.

D. Assumptions

In preparing this Change Order, we have made the following assumptions:

1. It is assumed structural engineer will design wet well base and collar ring.
2. It is assumed that no landscape improvements will be required.
3. It is assumed MEP will design control panel and power.
4. It is assumed that the Lift Station is a single pump system.
5. It is assumed that the Lift Station overflow to storm sewer.
6. It is assumed that the Rainwater Harvesting tank is provided by others.



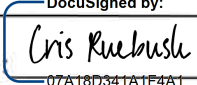
II. CLIENT agrees to compensate GarzaEMC, LLC. for such additional services in accordance with the terms of the initial agreement for additional amount(s) stated below

- A. Lift Station Improvement Coordination and Concept Planning**
1-6 Lump Sum \$ 3,500
 - B. Lift Station Improvements**
Lump Sum \$ 8,000
 - C. Site Plan Correction**
1-6 Lump Sum \$ 10,500
- Subtotal \$ 22,000**


III. All other terms and conditions of the original Agreement shall remain in full force and effect.

By signing below, the parties agree and affirm that each has reviewed and understands the provisions set out above and that each party shall be bound by each and all of said provisions. A copy of this agreement shall serve and may be relied upon as an original.

PGAL

By: Cris Ruebush
DocuSigned by:
 Signature: 
07A18D341A1F4A1...
 Title: Design Principal
 Date Signed: 8/31/2022

GarzaEMC, LLC.

By: Trung (Tommy) Pho, P.E.
 Signature: 
 Title: Project Manager
 Date Signed: August 22, 2022



CITY OF KYLE, TEXAS

Authorization for Acceptance of a \$25,000.00 Community Gardens Grant From the Burdine Johnson Foundation

Meeting Date: 4/4/2023
Date time:7:00 PM

Subject/Recommendation: Authorize the Interim City Manager to accept a \$25,000.00 grant from the Burdine Johnson Foundation for the purpose of creating a community garden at Post Oak Park. ~ *Mariana Espinoza, Director of Parks & Recreation*

Other Information: The Parks and Recreation Department staff and Park Board worked together to apply for the Burdine Johnson Foundation grant to assist in the development of the community garden at Post Oak Park. This grant does not include any city matching funds. As PARD presented in the application, the final design of the Post Oak Community Garden will aim to have 35 garden plots, restrooms, covered tables, parking and other amenities. The overall estimated budget for the community garden at Post Oak is \$157,000.

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- Award Letter

BURDINE JOHNSON
FOUNDATION

William T. Johnson
Robert C. Giberson
Katherine A. Johnson
Trustees

(512) 312-1336
Fax (512) 295-4773

March 10, 2023

Ms. Mariana Espinoza
City of Kyle
700 Lehman Road
Kyle, TX 78640

Dear Ms. Espinoza:

The Trustees of The Burdine Johnson Foundation are pleased to send the City of Kyle (Parks and Recreation Department) the enclosed check in the amount of \$25,000.00. These funds, as stated in your grant submission dated January 25, 2023, will assist in creating the first Community Garden in Kyle, which will be coordinated by a dedicated committee. In addition, it will include 35 garden plots, restrooms, covered tables, parking, and other amenities.

The City of Kyle, by accepting and negotiating this check, agrees to use these donated funds as stated above. In order to comply with IRS regulations, please send us an acknowledgment of this contribution for our records.

Sincerely,



William T. Johnson
Executive Director/Trustee

ltg

cc – WTJ
cc – RCG
cc – KAJ



CITY OF KYLE, TEXAS

TXDOT STEP Grant

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Authorize the Police Department to apply for a Strategic Traffic Enforcement Program (STEP) Click It Or Ticket (CIOT) grant in an amount no greater than \$5,000.00 from the Texas Department of Transportation and authorize an estimated 20% matching funding from the Police Department's approved operating budget for FY 2022-2023 in an amount not to exceed \$1,000 to fund the STEP Grant Program for two weeks beginning May 22, 2023 and ending June 4, 2023. ~ *Jeff Barnett, Chief of Police*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- Request to Apply for Grant
- CIOT 2022 Performance Summary



KYLE POLICE

111 North Front Street, Kyle, TX 78640

Non-Emergency: 512-268-3232

Admin: 512-268-0859

Fax: 512-268-2330

Date: March 13, 2023

To: Jeff Barnett, Chief of Police

CC: Pedro Hernandez, Asst. Chief; Tim Griffith, Commander

From: Tracy Vrana, Sergeant Traffic Enforcement Division

Re: **Request to Authorize Police Chief to Apply for TXDOT STEP CIOT Grant 2023**

Texas' Selective Traffic Enforcement Program (STEP) is a federally funded law enforcement grant program run by TXDOT. STEP enforcement is focused on reducing crashes, crash-related injuries and deaths across Texas. Per TXDOT's (KA) crash data analysis, certain areas of the City of Kyle require focused traffic enforcement to reduce the number of these injuries. TXDOT has determined that the Kyle PD is eligible for a STEP-CIOT (Click It Or Ticket) grant for 2023 to support this effort.

After careful review, the Kyle Police Traffic Enforcement Division is seeking approval to authorize the Chief of Police to apply for a federally funded STEP grant to increase traffic enforcement for an ultimate goal of reducing injury and death resulting from automobile crashes. This is a STEP grant focused on traffic enforcement for vehicle passenger restraint systems for designated zones which are, per TXDOT's KA data, determined to be hotspots for serious crashes involving those not wearing seatbelts or other restraints. Our goal is that we can reduce the number of those motorists killed or seriously injured on our roadways.

Subject/Recommendation:

Authorize the Police Chief to apply for a STEP enforcement grant in an amount no greater than \$5,000.00 from TXDOT and authorize matched funding from the Police Department's approved operating budget for FY 2022-2023 in an amount not to exceed \$1,000 to fund a STEP Grant Program for an enforcement period beginning May 22, 2023, through June 4, 2023.

Other Information:

This grant is funded at an estimated 80% from TXDOT with a required estimated 20% City match. The total estimated amount of \$5,000.00 (\$4,000 TXDOT funds, \$1,000 City funds) will be used to fund an estimated 50 hours of traffic enforcement at an average overtime rate of \$66.00 per hour based on individual officer salaries. The Kyle Police Department will fund an estimated 20% match using fringe benefits for a total amount not to exceed the \$1,000.00 amount. Funding for the fringe match will be pulled from the police department's operating budget.

Sgt. T. Vrana

Traffic Enforcement Division



512-268-3232



512-268-2330

111 North Front Street, Kyle, TX 78640

FY21-22 STEP GRANTS ACTIVE SUMMARY (CMV, COMPREHENSIVE & CIOT)

Grant Name	STEP Click It or Ticket
Enforcement Period	May 23, 2022 – June 5, 2022
Total Grant Funding Amount Awarded	\$3,600
Kyle PD 20% Total Match Obligation	\$720
Enforcement Hours Awarded by TXDOT	51
This Reporting Period	May 23, 2022 – June 5, 2022
Enforcement Hours Completed	43
Required Minimum # of Traffic Stops this Period	107.5
Total Number of Traffic Stops this Period	144
Required Minimum Stops Per Hour (SPH)	2.5
Traffic SPH this Period	3.4
Citations Issued this Period	87
Warnings Issued this Period	100
Arrests this Period	0

Sgt. T. Vrana



CITY OF KYLE, TEXAS

STEP Operation Slow Down Grant

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Authorize the Police Department to apply for a Strategic Traffic Enforcement Program (STEP) Operation Slow Down (OpSlow) grant in an amount no greater than \$5,000.00 from Texas Department of Transportation (TXDOT) and authorize an estimated 20% matching funding from the Police Department's approved operating budget for FY 2022-2023 in an amount not to exceed \$1,000 to fund the STEP Grant Program for two weeks beginning July 14, 2023 and ending July 30, 2023. ~ *Jeff Barnett, Chief of Police*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- Request to Apply for Operation Slow Down Grant



KYLE POLICE

111 North Front Street, Kyle, TX 78640

Non-Emergency: 512-268-3232

Admin: 512-268-0859

Fax: 512-268-2330

Date: March 13, 2023

To: Jeff Barnett, Chief of Police

CC: Pedro Hernandez, Asst. Chief; Tim Griffith, Commander

From: Tracy Vrana, Sergeant Traffic Enforcement Division

Re: **Request to Authorize Police Chief to Apply: TXDOT STEP OPSLOW Grant 2023**

Texas' Selective Traffic Enforcement Program (STEP) is a federally funded law enforcement grant program regulated by TXDOT. STEP enforcement is focused on reducing crashes, crash-related injuries and deaths across Texas. Per TXDOT's (KA) crash data analysis, certain areas of the City of Kyle require focused traffic enforcement to reduce the number of these injuries. TXDOT has determined that the Kyle PD is eligible for an OPSLOW (Operation Slow Down) grant for 2023 to support this effort.

After careful review, the Kyle Police Traffic Enforcement Division is seeking approval to authorize the Chief of Police to apply for a federally funded STEP grant to increase traffic enforcement in areas where major crash rates are the highest. This is a STEP grant designed for law enforcement to focus on speeding and other dangerous violations. The goal is to save lives and reduce injuries resulting from motor vehicle crashes.

Subject/Recommendation:

Authorize the Police Chief to apply for a STEP enforcement grant in an amount no greater than \$5,000.00 from TXDOT and authorize matched funding from the Police Department's approved operating budget for FY 2022-2023 in an amount not to exceed \$1,000 to fund a STEP Grant Program for an enforcement period beginning July 14, 2023, through July 30, 2023.

Other Information:

This grant is funded at an estimated 80% from TXDOT with a required estimated 20% City match. The total estimated amount of \$5,000.00 (\$4,000 TXDOT funds, \$1,000 City funds) will be used to fund an estimated 50 hours of traffic enforcement at an average overtime rate of \$66.00 per hour based on individual officer salaries. The Kyle Police Department will fund an estimated 20% match using fringe benefits for a total amount not to exceed the \$1,000.00 amount. Funding for the fringe match will be pulled from the police department's operating budget.

Sgt. T. Vrana

Traffic Enforcement Division



512-268-3232



512-268-2330

111 North Front Street, Kyle, TX 78640



CITY OF KYLE, TEXAS

WorkTango Boards & Commissions Survey

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Discuss and take action to pay Kazoo, Inc. DBA WorkTango an additional \$3,069.00 subscription fee to add 55 plus users to conduct Boards & Commissions engagement surveys as needed. ~ *Sandra Duran, Director of Human Resources*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Approve Agreement With ALAMO
Attractions to Provide Carnival,
Concessions, & Amusements at
Kyle Fair TexTravaganza
Guaranteed Minimum Amount
\$18,000.00

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Approve an agreement with and award a purchase order in the guaranteed minimum amount of \$18,000.00 to ALAMO ATTRACTIONS, INC., San Antonio, Texas for providing carnival rides, concessions and amusements for the Kyle Fair TexTravaganza. ~ *Mariana Espinoza, Director of Parks & Recreation*

Other Information: Staff completed the RFP process. No bids were received. Staff met onsite with three carnival companies. Staff recommends approval of Alamo Attractions, Inc. for the 2023 Kyle Fair TexTravaganza carnival rides, concessions and amusements.

Legal Notes:

Budget Information: Funding in the amount of \$18,000.00 is available from the Hotel Occupancy Tax Fund in the approved budget for Fiscal Year 2022-2023 for Special Events as follows:

- 1100-11400-521440 (Hotel Occupancy Tax Fund)

ATTACHMENTS:

Description

- ☐ 2023 Carnival Contract



ALAMO ATTRACTIONS, INC.

226 WILLOWBLUFF DR

SAN ANTONIO, TX

78216-1685

PHONE: 210-414-5881

[E-MAIL:ALAMOATTRACTIONS@GMAIL.COM](mailto:ALAMOATTRACTIONS@GMAIL.COM)

WEBSITE: WWW.ALAMOATTRACTIONS.LNC.COM

INVOICE # 0001COK2023

PAYABLE TO ALAMO ATTRACTIONS, INC. THE AMOUNT OF \$18,000.00 FOR SERVICES RENDERED AT EVENT FROM MAY 19/2023 THROUGH MAY 21/2023 IN CITY OF KYLE, TEXAS.

\$9,000.00 DUE IMMEDIATELY UPON EXECUTION OF AGREEMENT

AND

\$9,000.00 BALANCE DUE ON OR BEFORE MAY 19/2023.

THANK YOU FOR YOUR BUSINESS!

AGREEMENT

HAYS COUNTY

STATE OF TEXAS

THIS AGREEMENT IS MADE AND ENTERED ALAMO ATTRACTIONS, INC. HEREINAFTER REFERRED TO AS ALAMO, AND CITY OF KYLE - PARKS AND RECREATION DEPARTMENT, HEREINAFTER REFERRED TO AS CITY.

I. **PURPOSE**

THIS AGREEMENT IS ENTERED FOR THE PURPOSE OF ALAMO PROVIDING 12 TO 15 AMUSEMENT CARNIVAL RIDES AND AMUSEMENT GAMES AND FOODS DURING THE EVENT ON THE PREMISES OF LAKE KYLE PARK LOCATED AT 700 LEHMAN RD IN KYLE, TEXAS ON THE FOLLOWING DATES AND TIMES (1) FRIDAY, MAY 19/2023 --- 4:00 PM UNTIL CLOSING (2) SATURDAY, MAY 20/2023 --- OPENING UNTIL CLOSING (3) SUNDAY, MAY 21/2023 --- OPENING UNTIL 8:00 PM.

TENTATIVE LIST OF RIDES ARE AS FOLLOWS AND SUBJECT TO CHANGE:

- 1) MUSICAL CHAIRS
- 2) SAUCERS
- 3) KIDDIE SWINGS
- 4) MINDWINDER
- 5) BALLISTIC
- 6) RECKLESS
- 7) MINI-HIMALAYA
- 8) BERRIES
- 9) DRAGON WAGON
- 10) SIZZLER
- 11) PIRATE'S REVENGE
- 12) WINDJAMMER

II. ALAMO OBLIGATIONS

ALAMO WILL FURNISH AMUSEMENT CARNIVAL RIDES,AMUSEMENT GAMES,FOODS,AND POWER TO RUN THE EQUIPMENT PROVIDED BY ALAMO,AND HEREBY AGREES THAT,TO WIT:

1. ALL RIDES WILL BE CLEAN,WELL LIT AND SAFE.
2. ALL AMUSEMENT GAMES AND FOOD BOOTH(S) WILL BE OF A HIGH NATURE,CLEAN AND WELL LIT.
3. ALL EMPLOYEES WILL BE NEAT AND CLEAN.
4. ALL EMPLOYEES WILL ADHERE TO ALL ALAMO RULES.
5. EMPLOYEES WILL CLEAN IMMEDIATE AREA AROUND ALAMO CARNIVAL RIDES AND AMUSEMENT GAMES AND FOOD BOOTH(S) NIGHTLY AND AFTER EVENT.
6. ALAMO WILL FURNISH ALL MIDWAY LIABILITY INSURANCE FOR EVENT IN AN AMOUNT OF \$1,000,000.00 (ONE MILLION DOLLARS).

III. PAYMENT

IN CONSIDERATION FOR OPERATING THE CARNIVAL DURING THE EVENT,CITY AGREES TO PAY ALAMO \$18,000.00 (EIGHTEEN THOUSAND DOLLARS).

CITY GUARANTEES PAYMENT OF \$18,000.00 (EIGHTEEN THOUSAND DOLLARS) EVEN IF EVENT HAS TO BE CANCELED BECAUSE OF FIRE,RIOT,WAR,FORCES OF NATURE,ACTS OF GOD,INCLEMENT WEATHER OR OTHER PUBLIC CALAMITIES.

THIS GUARANTEED PAYMENT PROVIDED BY CITY TO ALAMO WILL BE DERIVED FROM THE FOLLOWING:

ALAMO WILL PAY \$25.00 (TWENTY FIVE DOLLARS) TO CITY FOR EACH GAME CONCESSION

ALAMO WILL PAY \$50.00 (FIFTY DOLLARS) TO CITY FOR EACH FOOD BOOTH ALAMO WILL SELL RIDE

COUPONS AND/OR WRISTBANDS FOR AMUSEMENT RIDES

IF ABOVE DOLLAR AMOUNT EXCEEDS \$18,000.00 (EIGHTEEN THOUSAND DOLLARS) THEN ALAMO WILL RE-IMBURSE CITY 25% (TWENTY FIVE PERCENT) OF EXCEEDED DOLLAR AMOUNT.

IV. LOCATION

CITY WILL PROVIDE A SUITABLE LOCATION FOR THE AMUSEMENT CARNIVAL RIDES AND AMUSEMENT GAMES AND FOOD BOOTH(S).

CITY WILL PROVIDE REQUIRED PERMITS AND PERMIT FEES ASSOCIATED WITH THIS EVENT, EXCEPT THAT ALAMO WILL OBTAIN NECESSARY PERMITS FOR THEIR FOOD BOOTH(S).

CITY WILL PROVIDE SECURITY, PORTABLE TOILETS, DUMPSTER(S).

V. CITY OBLIGATIONS

BOTH ALAMO AND CITY AGREE TO THE FOLLOWING:

1. THE PROMOTION OF THE EVENT WILL BE THE SOLE RESPONSIBILITY OF CITY.
2. ALAMO WILL NOT BE RESPONSIBLE FOR SOD REPLACEMENT, OR GROUNDS IMPROVEMENT, FOR DAMAGE INFLICTED BY AMUSEMENT RIDES PLACEMENT.
3. CITY WILL BE RESPONSIBLE FOR SUBMITTING SALES TAX, IF APPLICABLE, TO THE GOVERNMENT FOR THEIR PROCEEDS FOR THIS EVENT.

VI. GENERAL

INDEMNITY. TO THE FULLEST EXTENT PERMITTED BY LAW, ALAMO SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS THE CITY, AND ITS AGENTS, EMPLOYEES AND REPRESENTATIVES, FROM AND AGAINST ANY AND ALL CLAIMS, CAUSES OF ACTION, DAMAGES, LOSSES AND EXPENSES OF ANY NATURE WHATSOEVER, INCLUDING, WITHOUT LIMITATION, COURT COSTS, ATTORNEYS' FEES AND RELATED LEGAL EXPENSES, ARISING OUT OF OR RESULTING FROM ANY MATERIAL DEFECTS IN THE RIDES, THE WORK, OR ANY NEGLIGENCE IN THE PERFORMANCE OF THE WORK HEREUNDER OR OCCURRING IN CONNECTION THEREWITH.

CHOICE OF LAW; VENUE. THIS CONTRACT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS. VENUE FOR A DISPUTE ARISING FROM THIS CONTRACT SHALL BE IN HAYS COUNTY, TEXAS. NOTHING HEREIN SHALL CONSTITUTE A WAIVER OF THE CITY'S SOVEREIGN IMMUNITY OR THE CONSTITUTIONALLY, STATUTORY, OR COMMON LAW RIGHTS,

MEDIATION. IN THE EVENT OF A DISPUTE ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT BEFORE EITHER PARTY MAY INITIATE ANY LEGAL ACTION, ALAMO AND CITY MUST ATTEMPT TO RESOLVE THIS DISPUTE THROUGH MEDIATION OR MUTUALLY AGREE IN WRITING THAT MEDIATION HAS NO POSSIBILITY OF SUCCESS.

ON-SITE SAFETY. ALAMO SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PERFORMANCE OF ITS OBLIGATIONS PURSUANT TO THIS AGREEMENT. ALAMO SHALL TAKE REASONABLE PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE REASONABLE PROTECTION TO PREVENT DAMAGE, INJURY OR LOSS TO, ANY PERSON OR PROPERTY.

THIS AGREEMENT IS HEREBY EXECUTED IN MULTIPLE COPIES ON THE _____ DAY OF _____, 2023

CITY OF KYLE-PARKS AND RECREATION DEPARTMENT:

SIGNATURE AND PRINTED NAME AND TITLE

ALAMO ATTRACTIONS, INC.:

SIGNATURE OF SARMA DENTON/ PRESIDENT



CITY OF KYLE, TEXAS

Southwest Kyle PID No. 1 -- Public Hearing for Increased Costs

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Public Hearing Regarding the Petition to Increase the Estimated Costs of the Improvements for Improvement Area #2 of the Southwest Kyle Public Improvement District No. 1. ~ *Stephanie Leibe, Norton Rose Fulbright, City's Bond Counsel*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- ☐ 2023 0404 Notice of Public Hearing

NOTICE OF PUBLIC HEARING

CITY OF KYLE, TEXAS

**NOTICE OF PUBLIC HEARING REGARDING THE
PETITION TO INCREASE THE ESTIMATED COSTS OF THE IMPROVEMENTS
FOR IMPROVEMENT AREA #2 OF THE SOUTHWEST KYLE PUBLIC
IMPROVEMENT DISTRICT NO. 1**

Pursuant to Section 372.009(c) and (d) of the Texas Local Government Code, as amended (the “Act”), notice is hereby given that the City Council of the City of Kyle, Texas (“City”), will hold a public hearing to accept public comments and discuss the petition (the “Petition”), filed by (i) Paramount Park, Ltd., a Texas limited partnership, (ii) Poco Loco Group, LLC, a Texas limited liability company; and (iii) Opal Point at Kyle LLC, a Texas limited liability company (collectively, the “Petitioner”), requesting that the City increase the estimated costs of the Public Improvements (as defined below) related to Improvement Area #2 of the Southwest Kyle Public Improvement District No. 1 (the “District”) which Improvement Area #2 includes approximately 85.335 acres of land within the District owned by the Petitioner and further described herein (the “Improvement Area #2”).

Time and Place of the Hearing. The public hearing will start at or after 7:00 p.m. on April 4, 2023 to be held at Kyle City Hall City Council Chambers, 100 W. Center Street, Kyle, Texas 78640.

General Nature of the Proposed Public Improvements. The general nature of the proposed services and public improvements to be designed, acquired, improved or constructed within Improvement Area #2 of the District include, without limitation: (i) acquisition, construction and improvement of wastewater or drainage facilities and improvements; (ii) acquiring, constructing, improving, widening, narrowing, closing or rerouting streets, roadways or their rights-of-way, including revegetation and enhancements; (iii) acquisition, construction, and improvement of mass transportation improvements, including silent railway crossings; (iv) acquisition, construction, and improvement of park improvements, including parking areas; (v) acquisition, construction, and improvement of entryway improvements and related landscape enhancements; (vi) acquisition, by purchase or otherwise, of real property or contract rights in connection with each authorized improvement; and (vii) payment of expenses incurred in the establishment, administration and operation of the District and the costs of issuance, reserve funds or credit enhancement of any bonds issued by or on behalf of the District, if necessary (collectively, the “Public Improvements”); all of which shall promote the interests of the City and confer a special benefit on Improvement Area #2 of the District.

Estimated Cost and Terms of the Proposed Construction of the Public Improvements. The original estimated costs of the proposed construction of the public improvements pursuant to Resolution No. 1083 was approximately \$5,000,000. \$3,300,000 in assessments have previously been levied for costs of public improvements for the District, and thus \$1,700,000 in estimated costs remain available for costs of Public Improvements for Improvement Area #2. The estimated costs of the proposed construction of the Public Improvements will increase by \$3,700,000

pursuant to the Petition such that the estimates costs of the Public Improvements will be approximately \$5,400,000 (including issuance and other financing costs). The increase in estimated costs of the proposed public improvements are allocable solely to Improvement Area #2 (hereinafter defined) within the District.

Proposed District Boundaries. The District includes approximately 171.154 acres of land as set forth in Resolution No. 1083 (the “Creation Resolution”) approved by the City Council of the City. Improvement Area #2 includes approximately 85.335 acres of land within the District, generally located south of Opal Lane, north of Roland Lane, and west of Union Pacific Railroad, located within the corporate limits of the City, and as more particularly described by a metes and bounds description available at Kyle City Hall located at 100 W. Center Street, Kyle, Texas 78640 and available for public inspection during regular business hours.

Method of Assessment. An assessment methodology will be prepared that will address: (i) how the costs of the Public Improvements financed with the assessments are assessed against the property in Improvement Area #2 of the District, (ii) the assessments to be collected each year, and (iii) reduction of the assessments for costs savings (pursuant to the annual review of the service plan for the District). Additionally, a report will be prepared showing the special benefits accruing to property in Improvement Area #2 of the District and how the costs of the Public Improvements are assessed to property on the basis of the special benefits. The result will be that equal shares of the costs will be imposed on property similarly benefited.

The assessment methodology will result in each parcel paying its fair share of the costs of the Public Improvements provided with the assessments based on the special benefits received by the property from the Public Improvements and property equally situated paying equal shares of the costs of the Public Improvements.

Proposed Apportionment of Cost between the District and the City. Authorization of the increase in estimated costs for Improvement Area #2 and amendment of the Creation Resolution will not obligate the City to provide any funds to finance the Public Improvements. The estimated costs of the Public Improvements shall be apportioned between the District and City such that all of the costs of the Public Improvements for Improvement Area #2 are paid from assessments levied on the property within Improvement Area #2 of the District and from other funds available to the District.

During the public hearing, any interested person may speak for or against the increased estimated costs of Improvement Area #2 of the District and the advisability of the improvements to be made for the benefit of the property within Improvement Area #2 of the District.



CITY OF KYLE, TEXAS

SW Kyle PID No. 1 Resolution Approving Amendment

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Consideration and Approval of a Resolution of the City of Kyle, Texas, Approving an Amendment to the Southwest Kyle Public Improvement District No. 1 within the City of Kyle Pursuant to Chapter 372 of the Texas Local Government Code. ~ *Stephanie Leibe, Norton Rose Fulbright, City's Bond Counsel*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- ☐ Resolution Amending Creation Resolution

CITY OF KYLE

RESOLUTION NO. _____

RESOLUTION OF THE CITY OF KYLE, TEXAS, APPROVING AN AMENDMENT TO THE SOUTHWEST KYLE PUBLIC IMPROVEMENT DISTRICT NO. 1 WITHIN THE CITY OF KYLE PURSUANT TO CHAPTER 372 OF THE TEXAS LOCAL GOVERNMENT CODE

WHEREAS, on October 17, 2017, the City Secretary (the “City Secretary”) of the City of Kyle, Texas (the “City”) received a petition (the “Petition”) requesting creation of a public improvement district (the “District”) under Chapter 372 of the Texas Local Government Code (the “Act”), from the record owners of taxable real property representing more than 50% of the appraised value of the real property liable for assessment (as determined by the most recent certified appraisal roll for Hays County) in the District and the record owners of taxable real property that constitute more than 50% of all of the area of all taxable real property that is liable for assessment under the proposal; and

WHEREAS, on November 4, 2017, the City Council of the City (the “City Council”) authorized the formation of the District known as Southwest Kyle Public Improvement District No. 1 pursuant to Resolution No. 1083 (the “Creation Resolution”) in accordance with the PID Act; and

WHEREAS, following the adoption of the Creation Resolution, the City Secretary caused the Creation Resolution to be published in the Hays Free Press in accordance with the Act; and

WHEREAS, on or about February 28, 2023, the City Secretary received that certain “Petition to Increase the Estimated Costs of the Improvements for Improvement Area #2 of the Southwest Kyle Public Improvement District No. 1” (the “Amended Petition”) requesting an amendment to the Creation Resolution to increase the estimated costs of the Public Improvements (hereinafter defined) by \$3,700,000 such that the estimated costs of Public Improvements for Improvement Area #2 (hereinafter defined) will be approximately \$5,400,000 (including issuance and other financing costs); and

WHEREAS, the Amended Petition was received from the record owners of taxable real property representing more than 50% of the appraised value of the real property liable for assessment (as determined by the most recent certified appraisal roll for Hays County) in Improvement Area #2 (hereinafter defined) of the District and the record owners of taxable real property that constitute more than 50% of all of the area of all taxable real property that is liable for assessment in Improvement Area #2 under the proposal; and

WHEREAS, the Amended Petition has been examined, verified, found to meet the requirements of Section 372.005(b) of the Act, and found to be sufficient for consideration by the City Council; and

WHEREAS, the boundaries of the District are described in Exhibit A attached hereto and have not changed since the creation of the District, said area for the District being within the

corporate limits of the City; and

WHEREAS, the boundaries of Improvement Area #2 include approximately 85.335 acres of land located within the District as further described in Exhibit B attached hereto (“Improvement Area #2”); and

WHEREAS, after providing notice for the amendment requested by the Amended Petition in the same manner as required for the creation of the District by the Act, the City Council conducted a public hearing on the advisability of the improvements and services described in the Amended Petition; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF KYLE, TEXAS:

SECTION 1: The findings set forth in the recitals of this Resolution are hereby found to be true and correct.

SECTION 2: The Amended Petition submitted to the City was filed with the City Secretary and complies with the Act.

SECTION 3. Pursuant to the requirements of the Act, the City Council, after considering the Amended Petition and the evidence and testimony presented at the public hearing, hereby finds and declares:

- (a) Confirmation of the Advisability of the Proposed Public Improvements. The advisability and creation of the District to provide the public improvements described in the Amended Petition and this Resolution is hereby confirmed. The public improvements will promote the interests of the City and will confer a special benefit on Improvement Area #2 of the District.
- (b) General Nature of the Public Improvements. The general nature of the proposed services and public improvements to be designed, acquired, improved or constructed within Improvement Area #2 of the District are the same type as the services and public improvements included in the Creation Resolution, are of the nature of services and public improvements described in Section 372.003 of the Act, as amended, and are advisable and desirable services and improvements for Improvement Area #2 of the District and are: (i) acquisition, construction and improvement of wastewater or drainage facilities and improvements; (ii) acquiring, constructing, improving, widening, narrowing, closing or rerouting streets, roadways or their rights-of-way, including revegetation and enhancements; (iii) acquisition, construction, and improvement of mass transportation improvements, including silent railway crossings; (iv) acquisition, construction, and improvement of park improvements, including parking areas; (v) acquisition, construction, and improvement of entryway improvements and related landscape enhancements; (vi) acquisition, by purchase or otherwise, of real property or contract rights in connection with each authorized improvement; and (vii) payment of expenses incurred in the establishment, administration and operation of the District and the costs of issuance, reserve funds or credit enhancement of any bonds issued by or on behalf of the District, if necessary

(the public improvements set forth in subparagraphs (i) through (vii) being referred to collectively herein as the “Public Improvements”); all of which promote the interests of the City.

- (c) Estimated Cost of the Public Improvements. The original estimated costs of the proposed construction of the Public Improvements pursuant to the Creation Resolution was approximately \$5,000,000. \$3,300,000 in assessments have previously been levied for costs of the Public Improvements for the District, and thus \$1,700,000 in estimated costs remain available for Improvement Area #2 under the Creation Resolution. The Creation Resolution is hereby amended to increase the estimated costs of the proposed construction of the Public Improvements by \$3,700,000 such that the estimated costs of Public Improvements for Improvement Area #2 will be \$5,400,000 (including issuance and other financing costs). The increase in estimated costs of the proposed Public Improvements are allocable solely to Improvement Area #2 within the District.
- (d) Boundaries. The boundaries of the District have not changed since the District’s creation and are set forth in Exhibit A attached hereto. Improvement Area #2 includes approximately 85.335 acres of land located within the District as set forth in Exhibit B attached hereto, and Improvement Area #2 was included within the Property (as defined in the Creation Resolution).
- (e) Proposed Method of Assessment. An assessment methodology will be prepared that will address: (i) how the costs of the Public Improvements financed with the assessments are assessed against the property in Improvement Area #2 of the District, (ii) the assessments to be collected each year, and (iii) reduction of the assessments for costs savings (pursuant to the annual review of the service plan for the District). Additionally, a report will be prepared showing the special benefits accruing to property in Improvement Area #2 of the District and how the costs of the Public Improvements are assessed to property on the basis of the special benefits. The result will be that equal shares of the costs will be imposed on property similarly benefited.

The assessment methodology will result in each parcel paying its fair share of the costs of the Public Improvements provided with the assessments based on the special benefits received by the property from the Public Improvements and property equally situated paying equal shares of the costs of the Public Improvements.

- (f) Apportionment of Cost between the City and the District. Authorization of the increase in estimated costs for Improvement Area #2 and the amendment to the Creation Resolution for the District will not obligate the City to provide any funds to finance the proposed Public Improvements. The estimated costs of the Public Improvements for Improvement Area #2 shall be apportioned between the District and the City such that all of the costs of the Public Improvements for Improvement Area #2 are paid from assessments levied on the property within Improvement Area #2 of the District and from other funds available to the District.
- (g) Management of the District. The District is managed by the City. Currently, the City

contracts with a third-party administrator, who, from time to time, advises the City regarding certain operations of the District.

(h) Advisory Body. The District is managed without the creation of an advisory body. The City Council reserves the right to appoint an advisory body in the future.

SECTION 4. The District is hereby amended as requested in the Amended Petition in accordance with the findings as to the advisability of the Public Improvements contained in this Resolution.

SECTION 5. The City Council hereby authorizes and directs the City Secretary, on or before April 11, 2023, in accordance with the Act, to file a copy of this Resolution amending the District with the county clerk of each county in which all or part of the District is located.

SECTION 6. This Resolution shall take effect immediately from and after its passage and it is accordingly so resolved.

[Signature page to follow]

**PASSED & APPROVED by the CITY COUNCIL of the CITY OF KYLE on
APRIL 4, 2023 on vote of ___AYES; ___NAYS; ___ABSTENTIONS.**

Travis Mitchell, Mayor

ATTEST:

Jennifer Kirkland, City Secretary, TRMC
City of Kyle, Texas

[CITY SEAL]

EXHIBIT A
DISTRICT BOUNDARIES

171.154 AC. (7,455,474 SQ. FT.)

DESCRIPTION OF 171.154 ACRES (7,455,474 SQ. FT.) OF LAND SITUATED IN HAYS COUNTY, TEXAS, OUT OF THE Z. HINTON SURVEY NO. 12, ABS. 220 AND THE JAMES W. WILLIAMS SURVEY NO. 11, ABS. 473, BEING ALL OF THAT CERTAIN 99.99 ACRE TRACT OF LAND, SAVE AND EXCEPT 10 ACRES, DESCRIBED IN A DEED OF RECORD TO WYATT A. DRISKELL, ET UX, IN VOLUME 749, PAGE 306, RECORDED SEPTEMBER 6, 1988 IN THE REAL PROPERTY RECORDS OF HAYS COUNTY, TEXAS, ALL OF THAT CERTAIN 10.0 ACRE TRACT OF LAND DESCRIBED IN A DEED OF RECORD TO WYATT A. DRISKELL, ET UX, IN VOLUME 372, PAGE 204, RECORDED MARCH 12, 1982 IN THE DEED RECORDS OF HAYS COUNTY, TEXAS AND ALL OF THAT CERTAIN 71.24 ACRE TRACT OF LAND DESCRIBED IN A DEED OF RECORD TO WYATT A. DRISKELL IN VOLUME 665, PAGE 409, RECORDED APRIL 8, 1987 IN THE REAL PROPERTY RECORDS OF HAYS COUNTY, TEXAS; SAID 171.154 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 1/2" iron rod found in the northeasterly margin of Roland Lane (County Road 137) (R.O.W varies) at the most southerly corner of that certain 49.62 acre tract of land described in a deed of record to Ky-Tex Properties, Ltd., in Volume 285, Page 458, recorded June 23, 1976 in the Deed Records of Hays County, Texas, for the most westerly corner of said 99.99 Acre Tract and the herein described tract;

THENCE with the southeasterly line of said 49.62 Acre Tract, same being the northwesterly line of said 99.99 Acre Tract, the following two (2) courses:

1. N43°08'11"E, a distance of 462.20 feet to a cotton spindle set;
2. N42°43'17"E, a distance of 651.47 feet to a 60d nail with Protech Shiner found in fence post at the most northerly corner of said 99.99 Acre Tract, same being the most westerly corner of said 71.24 Acre Tract;

THENCE N43°15'30"E, continuing with the southeasterly line of said 49.62 Acre Tract, same being the northwesterly line of said 71.24 Acre Tract, a distance of 1070.30 feet to a 60d nail with Protech Shiner found in fence post in the southwesterly margin of Opal Lane (County Road 138) (R.O.W varies), for the most northerly corner of said 71.24 Acre Tract and the herein described tract;

THENCE with the southwesterly Margin of said Opal Lane, same being the northeasterly line of said 71.24 Acre Tract, the following four (4) courses:

1. S46°17'13"E, a distance of 2175.36 feet to a 1/2" iron rod found;

2. N43°47'56"E, a distance of 5.78 feet to an iron rod with G&R cap set;
3. S44°18'04"E, a distance of 30.81 feet to an iron rod with G&R cap set;
4. S45°19'04"E, a distance of 178.61 feet to a 1/2" iron rod found in the curving northwesterly line of I.G. & N. Railroad, of a curve to the right, for the most easterly corner of said 71.24 Acre Tract and the herein described tract;

THENCE with the northwesterly line of I.G. & N. Railroad, same being in part the southeasterly line of said 71.24 Acre Tract and in part the southeasterly line of said 99.99 Acre Tract, the following two (2) courses:

1. Along said curve to the right, having a radius of 2840.80 feet, an arc length of 1413.57 feet and a chord which bears S03°11'20"E, a distance of 1399.04 feet to an iron rod with G&R cap set at the end of said curve;
2. S11°20'06"W, a distance of 1431.04 feet to a railroad tie post found in the northeasterly margin of said Roland Lane, for the most southerly corner of said 99.99 Acre Tract and the herein described tract;

THENCE with the northeasterly margin of said Roland Lane, same being the southwesterly line of said 99.99 Acre Tract, the following three (3) courses:

1. N46°43'35"W, a distance of 1462.10 feet to an iron rod with G&R cap set;
2. N46°31'58"W, a distance of 1481.80 feet to a cotton spindle set;
3. N46°27'09"W, a distance of 1204.37 feet to the **POINT OF BEGINNING**, containing an area of 171.154 Acres (7,455,474 Sq. Ft.) of land, more or less.

EXHIBIT B
IMPROVEMENT AREA #2 BOUNDARIES



PARAMOUNT PARK, LTD.
Z. HINTON SURVEY NO. 12 AND JAMES W. WILLIAMS SURVEY NO. 11
85.335 ACRES

DESCRIPTION OF 85.335 ACRES OF LAND SITUATED IN HAYS COUNTY, TEXAS, OUT OF THE Z. HINTON SURVEY NO. 12, ABS. 220 AND THE JAMES W. WILLIAMS SURVEY NO. 11, ABS. 473, BEING A PORTION OF THAT CERTAIN 99.99 ACRE TRACT OF LAND, SAVE AND EXCEPT 10 ACRES, DESCRIBED IN A DEED OF RECORD TO WYATT A. DRISKELL, ET UX, IN VOLUME 749, PAGE 306, RECORDED SEPTEMBER 6, 1988 IN THE REAL PROPERTY RECORDS OF HAYS COUNTY, TEXAS, A PORTION OF THAT CERTAIN 10.0 ACRE TRACT OF LAND DESCRIBED IN A DEED OF RECORD TO WYATT A. DRISKELL, ET UX, IN VOLUME 372, PAGE 204, RECORDED MARCH 12, 1982 IN THE DEED RECORDS OF HAYS COUNTY, TEXAS AND A PORTION OF THAT CERTAIN 71.24 ACRE TRACT OF LAND DESCRIBED IN A DEED OF RECORD TO WYATT A. DRISKELL IN VOLUME 665, PAGE 409, RECORDED APRIL 8, 1987 IN THE REAL PROPERTY RECORDS OF HAYS COUNTY, TEXAS; SAID 85.335 ACRE TRACT BEING A PORTION OF THAT CERTAIN 170.876 ACRE TRACT OF LAND DESCRIBED IN A DEED OF RECORD TO PARAMOUNT PARK, LTD. IN DOCUMENT NO. 18013402, RECORDED APRIL 18, 2018 IN THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a railroad tie fence post at the intersection of the northeasterly margin of Roland Lane (County Road 137) (R.O.W varies) and the northwesterly line of I.G. & N. Railroad, for the most southerly corner of said 99.99 Acre Tract and the herein described tract;

THENCE with the northeasterly margin of said Roland Lane, same being the southwesterly line of said 99.99 Acre Tract, the following three (3) courses:

1. N46°43'35"W, a distance of 1462.10 feet to an iron rod with G&R cap set;
2. N46°31'58"W, a distance of 1481.80 feet to a cotton spindle set;
3. N46°27'09"W, a distance of 362.70 feet to an iron rod with G&R cap set for the most westerly corner of the herein described tract;

THENCE leaving the northeasterly margin of said Roland Lane and the southwesterly line of said 99.99 Acre Tract and continuing over and across said 99.99 Acre Tract, said 10.0 Acre Tract and said 71.24 Acre Tract the following thirty-four (34) courses:

1. N62°56'19"E, a distance of 153.38 feet to an iron rod with G&R cap set;
2. N46°27'09"W, a distance of 50.66 feet to an iron rod with G&R cap set;
3. N43°32'51"E, a distance of 44.98 feet to an iron rod with G&R cap set;
4. N62°52'34"E, a distance of 101.19 feet to an iron rod with G&R cap set;
5. N66°33'36"E, a distance of 58.90 feet to an iron rod with G&R cap set;
6. N58°21'42"E, a distance of 434.28 feet to an iron rod with G&R cap set at the point of curvature of a curve to the right;

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Page 1 of 3



7. Along said curve to the right, having a radius of 850.00 feet, an arc length of 99.01 feet and a chord which bears S26°19'58"E, a distance of 98.95 feet to an iron rod with G&R cap set at the point of reverse curvature of a curve to the left;
8. Along said curve to the left, having a radius of 1130.00 feet, an arc length of 568.48 feet and a chord which bears S37°24'28"E, a distance of 562.50 feet to an iron rod with G&R cap set;
9. N29°23'38"E, a distance of 121.60 feet to an iron rod with G&R cap set at the point of curvature of a curve to the left;
10. Along said curve to the left, having a radius of 1010.00 feet, an arc length of 205.87 feet and a chord which bears S56°36'20"E, a distance of 205.52 feet to an iron rod with G&R cap set;
11. N29°15'25"E, a distance of 24.75 feet to an iron rod with G&R cap set;
12. S60°44'35"E, a distance of 145.00 feet to an iron rod with G&R cap set;
13. S29°15'25"W, a distance of 61.82 feet to an iron rod with G&R cap set;
14. S60°44'35"E, a distance of 170.00 feet to an iron rod with G&R cap set;
15. N29°15'25"E, a distance of 4.41 feet to an iron rod with G&R cap set;
16. S60°44'35"E, a distance of 110.00 feet to an iron rod with G&R cap set;
17. N29°15'25"E, a distance of 4.30 feet to an iron rod with G&R cap set at the point of curvature of a curve to the right;
18. Along said curve to the right, having a radius of 685.00 feet, an arc length of 312.38 feet and a chord which bears S60°04'07"E, a distance of 309.68 feet to an iron rod with G&R cap set;
19. S46°38'12"E, a distance of 100.82 feet to an iron rod with G&R cap set;
20. N33°45'25"E, a distance of 424.77 feet to an iron rod with G&R cap set;
21. N83°44'50"W, a distance of 103.05 feet to an iron rod with G&R cap set;
22. N59°32'46"W, a distance of 443.10 feet to an iron rod with G&R cap set at the point of curvature of a curve to the right;
23. Along said curve to the right, having a radius of 500.00 feet, an arc length of 12.31 feet and a chord which bears N43°00'28"E, a distance of 12.31 feet to an iron rod with G&R cap set;
24. N43°42'47"E, a distance of 128.39 feet to an iron rod with G&R cap set;
25. N46°44'30"W, a distance of 159.81 feet to an iron rod with G&R cap set at the point of curvature of a curve to the right;
26. Along said curve to the right, having a radius of 25.00 feet, an arc length of 39.47 feet and a chord which bears N01°30'52"W, a distance of 35.50 feet to an iron rod with G&R cap set;
27. N43°42'47"E, a distance of 487.17 feet to an iron rod with G&R cap set;

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Page 2 of 3



28. N46°25'09"W, a distance of 112.96 feet to an iron rod with G&R cap set;
29. N60°50'53"E, a distance of 10.99 feet to an iron rod with G&R cap set at the point of curvature of a curve to the left;
30. Along said curve to the left, having a radius of 50.00 feet, an arc length of 14.95 feet and a chord which bears N52°16'51"E, a distance of 14.90 feet to an iron rod with G&R cap set;
31. N43°42'47"E, a distance of 195.48 feet to an iron rod with G&R cap set at the point of curvature of a curve to the left;
32. Along said curve to the left, having a radius of 50.00 feet, an arc length of 16.78 feet and a chord which bears N34°05'54"E, a distance of 16.70 feet to an iron rod with G&R cap set;
33. N24°29'01"E, a distance of 47.63 feet to an iron rod with G&R cap set;
34. S46°17'13"E, a distance of 694.64 feet to an iron rod with G&R cap set in the curving northwesterly line to the right of said I.G. & N. Railroad and the southeasterly line of said 71.24 Acre Tract, for the northeasterly corner of the herein described tract;

THENCE with the northwesterly line of I.G. & N. Railroad, same being in part the southeasterly line of said 71.24 Acre Tract and in part the southeasterly line of said 99.99 Acre Tract, the following two (2) courses:

1. Along said curve to the right, having a radius of 2840.80 feet, an arc length of 1315.52 feet and a chord which bears S02°12'00"E, a distance of 1303.80 feet to an iron rod with G&R cap set at the end of said curve;
2. S11°20'06"W, a distance of 1431.04 feet to the **POINT OF BEGINNING**, containing an area of 85.335 Acres of land, more or less.


Phillip L. McLaughlin 01-09-23
Registered Professional Land Surveyor
State of Texas No. 5300



Bearings are based on the Texas Coordinate System, NAD 83, South Central Zone.
G&R Surveying Project No. 15324 Attachments: None

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Page 3 of 3

CITY OF KYLE, TEXAS



Approve Task Order No. 4 - PAPE-DAWSON ENGINEERS, INC for Old Stagecoach Road from Veterans Drive (RM 150) to Center Street (Off-System) and Also Include Center Street (Off-System) From Old Stagecoach Road to Veterans Drive (RM150) \$1,067,346.60

Meeting Date: 4/4/2023
Date time:7:00 PM

Subject/Recommendation: Approve Task Order No. 4 to PAPE-DAWSON ENGINEERS, INC., San Antonio, Texas in the amount not to exceed \$1,067,346.60 for engineering services and design of Old Stagecoach Road from Veterans Drive (RM 150) to Center Street (Off-System) and also Center Street (Off-System) from Old Stagecoach Road to Veterans Drive (RM 150). ~ *Joe Cantalupo, K Friese & Associates, City's 2022 Road Bond Program Manager*

Other Information: The work to be performed by the Engineer shall consist of providing preliminary engineering services for the development of a final design schematic. These services may include, but are not limited to, preparing a design schematic based on the preferred alternative from the Task Order No. 2 Preliminary Engineering Report, environmental documents/studies in support of the schematic work, public involvement support, permit procurement, data collection analysis, mitigation and remediation, monitoring, drainage, conceptual traffic control, traffic studies including roundabout vs traffic signal studies, traffic signal warrants, 3-D modeling, surveying and mapping, subsurface utility engineering (SUE), environmental clearance, utility coordination, storm drain design, bridge design, and cross sections.

Legal Notes: N/A

Budget Information: Funding in the amount of \$1,067,346.60 is available from the 2022 Road Bond Fund in the approved Capital Improvement Spending Plan for Fiscal Year 2022-2023 as follows:

- 1952-68822-573130 = \$1,067,346.60 (2022 Road Bond Fund)

ATTACHMENTS:

Description

- ☐ Kyle Bond_Task Order No. 4_PD_Partially_Executed

TASK ORDER NO. 4

This Task Order is issued pursuant to that Professional Services Agreement (Agreement) between the City of KYLE, Texas (Owner) and Pape-Dawson Engineers, Inc. (Professional) effective September 23, 2020 and constitutes authorization by Owner for Professional to proceed with the following described construction and engineering design services.

Construction and Engineering Design Services

A. PROJECT DESCRIPTION

The scope of the Agreement is to provide professional construction and engineering design services (Services) for the Owner based on the scope of services listed below in Item B. Professional services may include performing preliminary engineering and planning; generating plans, specifications and estimates; researching, analyzing, and providing technical recommendations; providing construction phase services; and providing general consulting services in the areas identified herein.

B. SCOPE OF SERVICES AND DELIVERABLES

Pursuant to the Agreement, this Task Order authorizes Professional to perform the Services shown in Attachment A.

C. BASIS OF COMPENSATION

The total compensation for the Services shall be based on the hourly rates as defined in Compensation Table provided on pages 3 and 4 of this document, and on the corresponding rates and hours in the Fee Estimate attached as Attachment B. Attachment B shall use the template provided by the Owner. Owner will make payments to Professional for performing the Services described on a monthly billing basis in accordance with monthly statements submitted by the Professional and approved by Owner. Final payment shall be due upon completion of the Services described.

D. TIME FOR COMPLETION

Professional will work expeditiously to complete the Services described herein by June 2024.

Pape-Dawson Engineers, Inc. shall begin work as soon as authorized in this Task Order No. 4.

APPROVED:

CITY OF KYLE, TEXAS

By _____

Title: _____

Attest _____

Date _____

ACCEPTED:

PAPE-DAWSON ENGINEERS, INC.

By Shauna L. Weaver

Title Sr. Vice President

Attest Carla Lee

Date 3/28/23

COMPENSATION

Compensation for the services provided pursuant to the Professional Services Agreement between the City of Kyle and Pape-Dawson Engineers, Inc. executed the 23rd day of September, 2020 will be paid on a lump sum basis and calculated based on the amounts reflected below.

Pape-Dawson Engineers

Professional Staff	Hourly Bill Rate
GIS Analyst	\$210
GIS Technician	\$120
Historian	\$213
Archaeologist III	\$99
Archaeologist I/II	\$123
Archaeologist – Principal Investigator	\$161
Biologist - Senior	\$195
Biologist III	\$140
Project Env Scientist	\$170
Sr. Env Scientist	\$300
Survey Crew (3 person)	\$255
Survey Crew (4 person)	\$310
S.I.T. / Survey Technician	\$165
Project Surveyor	\$250
Survey Manager	\$320
Administrative Assistant	\$130
E.I.T / Designer	\$150
Project Engineer	\$200
Project Manager	\$280
Vice President	\$375

Raba Kistner

Professional Staff	Hourly Bill Rate
Admin	\$70
Engr. Tech.	\$100
Sr. Engr. Tech.	\$110
EIT	\$135
Engineer	\$165
Senior Engineer	\$185
Project Manager	\$195
Principal	\$220

Rios Group

Professional Staff	Hourly Bill Rate
Admin	\$92
CAD Operator	\$117
Sr. CAD Operator	\$142
Designer	\$142
Sr. Designer	\$157
Engineer in Training	\$127
Project Engineer	\$161
PM	\$225
Sr. PM	\$290
Principal	\$318

ATTACHMENT A
TASK ORDER NO. 4 (SCHEMATIC PHASE)

SERVICES TO BE PROVIDED BY THE ENGINEER

Pape-Dawson Engineers, Inc. (Engineer) will provide staff to support the City of KYLE (Owner) with general construction and engineering support services. The Owner also includes the City's General Engineering Consultant (GEC), K Friese & Associates, Inc., which the Owner has secured to act on its behalf as an Owner's Representative. The Engineer is required to coordinate with the GEC for completion of this work. Specific tasks may include, but are not limited to, the following:

The work to be performed by the Engineer shall consist of providing preliminary engineering services for the development of a final design schematic. These services may include, but are not limited to, preparing a design schematic based on the preferred alternative from the Task Order No. 2 Preliminary Engineering Report, environmental documents/studies in support of the schematic work, public involvement support, permit procurement, data collection analysis, mitigation and remediation, monitoring, drainage, conceptual traffic control, traffic studies including roundabout vs traffic signal studies, traffic signal warrants, 3-D modeling, surveying and mapping, subsurface utility engineering (SUE), environmental clearance, utility coordination, storm drain design, bridge design, and cross sections.

The Engineer shall complete the services to be provided by the Engineer according to the milestone work schedule established in the task order. The Engineer shall submit a written progress report to the Owner monthly indicating the actual work accomplished during the month, scheduled work to be accomplished for the month, and the estimated work to be accomplished for the coming month. The progress report will use a bar chart diagram to indicate the percentage complete of each task shown on the previous report and the percentage complete of each task. The Engineer is required to meet with the designated Owner project manager and environmental coordinator bi-weekly for progress tracking purposes unless prior agreement is made with Owner not to hold a scheduled meeting. The Engineer shall submit minutes of the meeting, summarizing the events of the meeting within seven calendar days after each meeting.

The Engineer shall prepare a project work schedule. The work schedule must incorporate an allocation of time for stage reviews of the design schematic, survey, ROW Mapping, and the environmental documents by Owner personnel. The Engineer shall present the work schedule to the Owner for review and acceptance and provide assistance in interpreting the proposed work schedule.

GENERAL REQUIREMENTS

1.1. Design Criteria.

Design Criteria. The Engineer shall prepare all work in accordance with the latest version of applicable Owner's procedures, specifications, manuals, guidelines, standard drawings, and standard specifications or previously approved special provisions and special specifications, which include:

- Kyle Connected 2040 Transportation Master Plan (2015)
- Kyle Transportation Master Plan Update (2021)
- The Vybe Kyle: Trail-Oriented Development (2021)

- Kyle Drainage Master Plan (2018)
- City of Kyle Roundabout Ordinance #1162 (2021)
- City of Kyle standard detail sheets and general construction notes
- Texas Department of Transportation (TxDOT) PS&E Preparation Manual
- TxDOT Roadway Design Manual
- Texas Manual on Uniform Traffic Control Devices (TMUTCD)
- Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (latest Edition)
- Other Owner approved manuals
- TxDOT ROW Acquisition Manual
- TxDOT Utilities Manual
- Texas Transportation Administrative Code – Utility Accommodation
- City of Austin Utility Criteria Manual
- City of Kyle utility standards
- Texas Commission on Environmental Quality (TCEQ)
- City of Austin Drainage Criteria Manual
- City of Austin Environmental Criteria Manual

When design criteria are not identified in Owner’s manuals or TxDOT criteria, or if conflicting guidance is found, the Engineer shall notify the Owner and refer to City of Austin policies and the American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Street (latest Edition).

The Engineer shall use applicable standards and guidance to tailor the Design Summary Report (DSR) template (provided by the City) to their project. The Engineer shall obtain approval from the City on all information contained in the DSR prior to schematic development.

The Engineer shall identify, prepare exhibits and complete all necessary forms for each Design Exception and Waiver required within project limits prior to the 50% project completion. The Engineer shall submit each exception and waiver to the Owner for coordination and processing of approvals. If subsequent changes require additional exceptions, the Engineer shall notify the Owner in writing as soon as possible after identification of each condition that may warrant a design exception or waiver.

The Engineer shall prepare a design time schedule and an estimated construction contract time schedule, using the latest version of MS Project, Primavera, or any Owner approved programs. The schedules shall indicate tasks, subtasks, critical dates, milestones, deliverables and review requirements in a format that depicts the interdependence of the various items. The Engineer shall provide assistance to Owner’s personnel in interpreting the schedules. The Engineer shall schedule milestone submittals at 50%, 90% and final project completion phases unless directed by Owner otherwise. The Engineer shall advise the Owner in writing if the Engineer is not able to meet the scheduled milestone review date.

Once the schematic has been completed and accepted by the Owner, the Engineer shall deliver all electronic files to the Owner within 30 calendar days of Owner’s written request.

Milestone submittals shall include, but shall not be limited to, the following to be considered complete:

1. 50%

- Design Summary Report (DSR)
- Draft Schematic of preferred alternative using border file provided by the Owner for the Kyle 2022 Road Bond Program
- Cross Sections on 11X17 sheets
- Draft Drainage Report
- Draft Traffic Study (or Studies) including roundabout and/or traffic signal studies/warrants
- Draft Traffic Control Layout
- Draft Geotechnical Report
- Draft Environmental Documents
- Construction Cost Estimate
- ROW Cost Estimate
- Utility Conflict Matrix
- Utility Relocation Cost Estimate including compensable and non-compensable subtotals

2. 90%

- All 50% items with review comments addressed
- Comment resolution matrix
- Draft ROW Acquisition Documents
- Final versions of 50% items

3. Final

- All 90% items with review comments addressed
- Comment resolution matrix
- Final signed and sealed versions of 90% items

Submittals shall be provided electronically to the Owner using the Procore platform.

1.2. Right-of-Entry. The Engineer shall notify the Owner and secure permission to enter private property to perform any surveying, environmental, engineering, or geotechnical activities needed off Owner right-of-way. In pursuance of the Owner's policy with the general public, the Engineer shall not commit acts which would result in damages to private property, and the Engineer shall make every effort to comply with the wishes and address the concerns of affected private property owners. The Engineer shall contact each property owner prior to any entry onto the owner's property and shall request concurrence from the Owner prior to each entry.

1.3. Progress Reporting and Invoicing. The Engineer shall invoice according to Function Code breakdowns shown in Exhibit "A" of the Professional Services Agreement and Attachment "B" - Fee Schedule, of the Task Order. The Engineer shall submit each invoice in a format acceptable to the Owner.

The Engineer shall complete the services according to the milestone work schedule established in the task order. With each invoice the Engineer shall submit a monthly written progress report to the Owner's Project Manager regardless of whether the Engineer is invoicing for that month. Requirements for progress reports are included in Sections 145.2.b. and 145.2.c. of this scope of

services.

The Engineer is required to meet with the designated Owner project manager or environmental coordinator bi-weekly for progress tracking purposes unless prior written agreement is made with Owner not to hold a meeting in any given month. The Engineer shall submit minutes of the meeting summarizing the events of the meeting within five (5) business days after each meeting.

The Engineer shall prepare a project work schedule, using the latest version of Microsoft Project or Primavera software or another scheduling program approved by the Owner in writing. Requirements for schedules are included in Section 145.2.b. of this scope of services.

Condition precedents to final payment by the Owner are the Owner's receipt of all electronic files and confirmation by the Owner's Project Manager that (1) the electronic files can be opened and are usable by the Owner utilizing the Owner-owned version of the intended software, and (2) all of the Owner's review comments have been addressed.

The Engineer shall prepare a letter of transmittal to accompany each document submittal to the Owner. At a minimum, the letter of transmittal must include the project name, project limits, Owner's contract number, and Owner's task order number.

1.4. Traffic Control. The Engineer shall provide all planning, labor, and equipment to develop and to execute each Traffic Control Plan (TCP) needed by the Engineer to perform services under each task order. The Engineer shall comply with the requirements of the most recent edition of the TMUTCD. The Engineer shall submit a copy of each TCP to the Owner for approval prior commencing any work on any Owner roadway. The Engineer shall provide all signs, flags, and safety equipment needed to execute the approved TCP. The Engineer shall notify the Owner in writing five (5) days (in advance of executing each TCP requiring a lane closure and shall have received written concurrence from the Owner prior to beginning the lane closure. The Engineer's field crew shall always possess a copy of the approved TCP on the job site and shall make the TCP available to the Owner for inspection upon request. The Engineer shall assign charges for any required traffic control to the applicable function code. The Owner requires Public Notice of lane and Road closure 7 days in advance of closure through use of message boards, provided by owner, thus notice to Owner would need to be about 10 days prior of closure.

1.5. State-Controlled Waters. The placement of a new structure or modification of an existing structure(s) within State-Controlled waters will require confirmation that said structure(s) lie within the General Land Office (GLO) state owned land and whether the crossing is tidally influenced or not. Consequently, the Engineer shall request, as early in the design process as possible, that the State determine whether the proposed improvements are found within the tidal GLO, is a submerged GLO property or a non-tidal GLO property. The Owner may request assistance from the Engineer to prepare an exhibit demonstrating the location of the proposed improvements on the GLO State Owned Map for the project location.

1.6. Coordination. The Engineer shall coordinate issues and communications with Owner's internal departments through the Owner's Project Manager. The Owner will communicate the resolution of issues and provide the Engineer direction through the Owner's Project Manager.

Where applicable, the Engineer shall notify the Owner and coordinate with adjacent engineers and surveyors on all controls at project interfaces. The Engineer shall document the coordination effort, and each engineer must provide written concurrence regarding the agreed project controls and

interfaces. In the event the Engineer and the other adjacent engineers are unable to agree, the Engineer shall meet jointly with the Owner and each adjacent engineer to resolve disagreements. If the engineers are unable to resolve an issue with the Owner as mediator, the Owner may decide the issue and the decision will be final.

The Engineer shall prepare each exhibit necessary for approval by each railroad, utility, and other governmental or regulatory agency in compliance with the applicable format and guidelines required by each entity and as approved by the Owner. The Engineer shall notify the Owner in writing prior to beginning any work on any outside agency's exhibit.

1.7. Level of Effort. For each task order, the Engineer shall base the level of effort at each phase on the prior work developed in earlier phases without unnecessary repetition or re-study. As directed by the Owner, the Engineer shall provide written justification regarding whether or not additional or repeated level of effort of earlier completed work is warranted, or if additional detail will be better addressed at a later stage in the project development.

1.8. Quality Assurance (QA) and Quality Control (QC). The Engineer shall provide peer review at all levels. For each deliverable, the Engineer shall have some evidence of their internal review and mark-up of that deliverable as preparation for submittal. A milestone submittal is not considered complete unless the required milestone documents and associated internal red-line mark-ups are submitted. The Owner's Project Manager may require the Engineer to submit the Engineer's internal mark-up (red-lines) or comments developed as part the Engineer's quality control step. When internal mark-ups are requested by the Owner in advance, the Owner, at its sole discretion, may reject the actual deliverable should the Engineer fail to provide the evidence of quality control. The Engineer shall clearly label each document submitted for quality assurance as an internal mark-up document.

The Engineer shall perform QA and QC on all survey procedures, field surveys, data, and products prior to delivery to the Owner. If, at any time, during the course of reviewing a survey submittal it becomes apparent to the Owner that the submittal contains errors, omissions, or inconsistencies, the Owner may cease its review and immediately return the submittal to the Engineer for appropriate action by the Engineer. A submittal returned to the Engineer for this reason is not a submittal for purposes of the submission schedule.

1.11. Organization of Design Project Folder and Files (Electronic Project Files). The Engineer shall organize the electronic project files in accordance with the Owner's File Management System (FMS) format. The Engineer shall maintain the project files in the Owner's file structure.

1.12. Personal Protective Equipment (PPE). The Engineer shall, and shall require its subcontractors to, (1) provide personal protective equipment (PPE) to their personnel, (2) provide business vehicles for their personnel, and (3) require their personnel to use PPE and drive only business vehicles while performing work on or near roadways. The PPE must meet all (1) current standards set by the Occupational Safety and Health Administration (OSHA) and (2) TxDOT requirements (e.g., safety glasses, Type 3 (TY 3) pants for night work). Each business vehicle must be clearly marked with the Engineer's business name, or the name of the appropriate subcontractor, such that the name can be identified from a distance.

1.13. Data Classification. Unless otherwise clearly labeled or otherwise specifically excepted through a provision of this contract or its attachments, all data provided to or generated by the Engineer under this contract is considered public data for the purposes of applying the Owner's data

security standards. The Engineer shall manage all data and work products according to the terms of the contract.

TASK DESCRIPTIONS AND FUNCTION CODES

The Engineer shall categorize each task performed to correspond with the Function Codes (FC) and Task Descriptions.

FUNCTION CODE 102(110) – FEASIBILITY STUDIES

ROUTE AND DESIGN STUDIES

The Engineer shall collect, review, and evaluate data described below. The Engineer shall notify the Owner in writing whenever the Engineer finds disagreement with the information or documents provided.

The Engineer shall finalize an alignment and proposed roadway schematic layout that includes projected traffic volumes, when available, and existing and proposed typical sections. The Engineer shall furnish Microsoft Office, and AutoCAD computer generated media containing the roadway schematic layout to the Owner. All supporting attachments and exhibits must accompany the schematic layout. All AutoCAD computer generated files containing the roadway design schematic must be fully compatible with the software used by the Owner without further modification or conversion. The Engineer shall be required to convert files to AutoCAD if requested by the Owner.

The Engineer shall obtain, review, and evaluate available existing traffic data and produce twenty-year projected traffic data for use in the preparation of the schematic design layout. The data must be utilized in accordance with the requirements for schematic development and consistent with the policies of the Owner.

The Engineer shall prepare preliminary drawings to identify any potential impacts and constraints within the project corridor, including impacts to the natural, cultural, and human environment. The potential impacts and constraints identified must include all existing and proposed utilities (both public and private), structures, burial grounds, neighborhood communities, historical landmarks, and undeveloped areas. Any potential utility conflicts and structural impediments must be identified as such. The Engineer shall propose alternative alignments that avoid or minimize displacements and damages and prepare any additional attachments or exhibits required to illustrate a preferred alternative alignment. The Engineer shall assist the Owner with agency meetings during the development of the schematic design as requested by the Owner. If requested by the Owner, the Engineer shall assist the Owner with stakeholder meetings, public meetings, and a public hearing.

An itemization of the schematic design and engineering work activity to be performed under this contract is detailed below. The Engineer shall prepare all designs in accordance with the latest version of:

- A. Kyle Connected 2040 Transportation Master Plan (2015)
- B. Kyle Transportation Master Plan Update (2021)
- C. The Vybe Kyle: Trail-Oriented Development (2021)
- D. Kyle Drainage Master Plan (2018)
- E. City of Kyle Roundabout Ordinance #1162 (2021)

- F. City of Kyle standard detail sheets and general construction notes
- G. Texas Department of Transportation (TxDOT) PS&E Preparation Manual
- H. TxDOT Roadway Design Manual
- I. Texas Manual on Uniform Traffic Control Devices (TMUTCD)
- J. Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (latest Edition)
- K. Other Owner approved manuals and guides.

When design criteria are not identified in Owner manuals or TxDOT criteria, or when conflicts are found, the Engineer shall notify the Owner and refer to City of Austin policies and the American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Street, (latest Edition).

The design schematic horizontal layout must adhere to a design scale of 1 inch = 100 foot (or 1 inch = 200 foot, when directed by the Owner.) The Engineer shall develop the schematic layout, exhibits, and attachments in English units. All Microsoft Office, AutoCAD, Keyhole Markup Language (KML), Keyhole Markup Language Zipped (KMZ), and AutoCAD computer graphic files furnished to the Owner must be uploaded to the Owner's file management system in their native format, which must be fully compatible with the programs currently used by the Owner. Schematics must follow TxDOT and Federal Highway Administration (FHWA) standards. The schematic must follow TxDOT's computer-aided design and drafting (CADD) standards. The Engineer shall submit the schematic as an original document, accompanied with an original AutoCAD formatted graphics file. Final copies of the schematic design must be signed and sealed by a professional engineer licensed in the State of Texas.

110.1. Schematic Design Work Outline:

A. Develop Base Maps

The Engineer shall finalize the schematic for the preferred alternative from Task Order No. 2. The Engineer shall develop the base maps to be used for the analysis and proposed schematic layout from existing construction and right of way (ROW) plans as available. The Engineer shall re-establish the existing centerline horizontal alignments for all roadways, identify existing ROW and easements, property owners, and the approximate location of major utilities based on a Subsurface Utility Engineering (SUE) in the preparation of base maps.

B. Planimetrics and Aerial Mapping

The Engineer shall obtain planimetrics, digital terrain modeling (DTM), and aerial photographs from the Owner, if available.

C. Analyze Existing Conditions

Using collected data and base maps, the Engineer shall develop an overall analysis of the existing conditions to develop the schematic design. The written analysis must include the following:

- 1. ROW and easement determination
- 2. Horizontal alignment

3. Vertical alignment
4. Pavement cross slopes and pavement type
5. Geotechnical testing
6. Intersection design and analysis
7. Sight distance
8. Large guide signs and roadside signing
9. Level of service
10. Safety (i.e., crash data)
11. Locations of critical constraints
12. Drainage
13. Traffic control and construction phasing sequence

D. Schematic

The Engineer shall identify, analyze, and minimize potential adverse operational impacts, crash impacts, ROW impacts, environmental impacts, major utility conflicts, structural impediments, or exceptions to the Owner, State and FHWA design criteria. Schematics will be developed to the 50%, 90%, and 100% level of completion.

E. Deliverable Schematic

The Engineer shall evaluate and document the following in the analysis of the design:

1. Efficient use of the allocated ROW
2. Control of access (COA) and driveway locations
3. Roadway and intersection geometry
4. Cross sections
5. Bicycle and pedestrian design
6. Drainage and hydraulic design
7. Stopping sight distance
8. Level of service
9. Safety
10. Traffic and signal operations
11. Construction, ROW, easement, and utility costs
12. Construction sequencing
13. Traffic control during construction
14. Roadside safety appurtenances
15. Large guide signage
16. Environmental mitigation (e.g., noise walls, storm water best management practices (BMPs))
17. Bridge layouts and clearance
18. Railroads (if applicable)
19. Roundabout Analysis
20. Accommodation of ultimate corridor configuration.
21. Accommodation of future cross street expansion as described in local thoroughfare plan (if applicable)
22. Avoidance of utility lines (if feasible)

23. Impact of construction delays from utility relocations

F. Project Management and Coordination

1. The Engineer shall direct and coordinate the various elements and activities associated with developing the design schematic.
2. The Engineer shall prepare the detailed graphic project work schedule indicating tasks, critical dates, milestones, deliverables, and Owner review requirements. The project work schedule must depict the order of the various tasks, milestones, and deliverables. The Engineer shall review the schedule monthly and provide updates regarding its progress on the schedule to the Owner.
3. The Engineer shall submit written monthly progress reports to the Owner.
4. The Engineer shall provide ongoing quality assurance and quality control to ensure completeness of product and compliance with the Owner procedures.

G. Data Collection and Field Reconnaissance

The Engineer shall collect, review, and evaluate data described below. The Engineer shall notify the Owner in writing whenever the Engineer finds disagreement with the information or documents:

1. Data, if available, from the Owner, including “as-built plans”, existing schematics, right-of-way maps, Subsurface Utility Engineering (SUE) mapping, existing cross sections, existing planimetric mapping, environmental documents, existing channel and drainage easement data, existing traffic counts, accident data, Bridge Inspection records, identified endangered species, identified hazardous material sites, current unit bid price information, current special provisions, special specifications, and standard drawings.
2. Documents for existing and proposed development along proposed route from local municipalities and local ordinances related to project development.
3. Utility plans and documents from appropriate municipalities and agencies.
4. Flood plain information and studies from the Federal Emergency Management Agency (FEMA), the United States Army Corps of Engineers (USACE), local municipalities, and other governmental agencies.
5. Conduct field reconnaissance and collect data including a photographic record of notable existing features.

The Engineer shall conduct field reconnaissance and collect data as necessary to complete the schematic design. Data must include the following information. Items 1 through 5 must be obtained from the Owner, if available. Items 6 through 13 must be obtained from other agencies as required.

1. Local major thoroughfare plan
2. Plat research for adjacent properties (if available)
3. Available corridor major investment studies
4. Design data from record drawings of existing and proposed facilities
5. Previously prepared drainage studies

6. Public and private utility information (It is necessary for the Engineer's Surveyor to locate public and private utilities, even if the City has permits)
7. Existing and future design year traffic data
8. Historical crash data
9. Roadway inventory information, including the number of lanes, speed limits, pavement widths and rating, bridge widths and ratings, and ROW widths
10. Aerial photos, planimetric mapping, and DTM
11. Environmental data
12. Adopted land use maps and plans (if available)
13. Federal Emergency Management Agency (FEMA) flood boundary maps and flood insurance studies and models

H. Roadway Design Criteria

The Engineer shall develop the roadway design criteria based on the City of Kyle Transportation Master Plan Update (2021), TxDOT Roadway Design Manual and AASHTO Policy on Geometric Design of Highways and Streets guidelines. The design criteria must include the following roadway design elements: design speed, lane and shoulder widths, pavement structure and slopes, horizontal curvatures, horizontal and vertical clearances, range of vertical profile grades, and side slopes. If there is a discrepancy between the two sources, the Roadway Design Manual will govern unless otherwise directed by the Owner.

The Engineer shall prepare and submit preliminary design criteria to the Owner for review and approval and shall attend an initial kick-off meeting to establish and agree on fundamental aspects, basic features, concepts, and design criteria. This meeting will be coordinated with any adjacent roadway projects to ensure continuity with the design of the adjacent roadway projects.

110.2. Schematic Design – General Tasks

A. ROW Property Base Map

The Engineer shall obtain information on existing ROW, easements, and property information from as-built plans, ROW maps, and tax records. The Engineer shall prepare a base map depicting the information.

B. Typical Sections

The Engineer shall develop both existing and proposed typical sections that depict the number and type of lanes, shoulders, median width, curb offsets, cross slope, border width, clear zone widths, and ROW limits.

C. Environmental Constraints

The Engineer shall evaluate and document impacts to environmentally sensitive sites (as identified by the Engineer and verified by the Owner) during the schematic design process. Environmentally sensitive sites include natural, cultural, and the human environment. Examples are historic and archeological resources, burial grounds, wetlands, endangered

species, rare habitats, wildlife corridors, wildlife crossings, parks and nature preserves, geologic features, undeveloped areas, and significant trees.

D. Drainage

The City of Kyle adopted the City of Austin DCM and ECM per the City of Kyle Code of Ordinances 41-134(a)(7). Distinctions from these codes are provided in the City of Kyle Drainage Design Criteria available on the City of Kyle website.

Engineer shall evaluate and refine design to make the proposed project compatible with anticipated drainage projects identified in the City of Kyle Drainage Master Plan.

The Engineer shall use data from as-built plans and FEMA maps to locate drainage outfalls and to determine existing storm sewer and culvert sizes, design flows, and water surface elevations for use in the design of roadway geometry.

All hydrologic studies shall be based on Atlas 14 rainfall. City of Kyle Drainage Criteria Table 5 of Attachment 1- COK for Intensity Duration Frequency (IDF) curve coefficients shall be used to replace City of Austin DCM Table 2-2A (zone 1), IDF curve coefficients.

The Engineer shall conduct a preliminary drainage study to determine and evaluate the adequacy of the ROW needed to accommodate the proposed roadway and drainage system. The drainage study must (1) identify the impacts to abutting properties and the 100-year floodplain due to proposed highway improvements; (2) identify the water surface elevations for the 2, 10, 25, 50, and 100-year storm events; (3) identify and locate outfalls; (4) provide drainage outfall descriptions; (5) provide overall drainage area map, sub-drainage area map, and storm water detention facilities; and provide a drainage study report identifying the results of the study. The drainage report, which must be signed and sealed by a professional engineer licensed in Texas, must include applicable hydrologic and hydraulic models (e.g., HEC-1 and HEC-2, HEC-RAS, HEC-HMS). The Engineer shall prepare a final drainage study in accordance with one or more of the following: City of Kyle Drainage Criteria, and any other specific guidance provided by the Owner. If requested by the Owner, the Engineer shall evaluate the adequacy of the existing drainage structures; otherwise, the Engineer shall not evaluate the adequacy of the existing drainage structures.

Water Quality: shall be provided in accordance with City of Kyle Code 41-134(a)(7). This water quality shall be designed in accordance with the latest version of the Texas Commission on Environmental Quality – Edwards Aquifer Technical Guidance Manual (TCEQ RG-348).

The Engineer shall design water quality Best Management Practices (BMP) in accordance with the latest editions of RG-348 – Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices (July 2005); RG-348 Addendum Sheet (July 2012), or latest edition. As part of this work, the Engineer shall perform the following:

1. BMP analysis: The Engineer shall locate all BMPs previously permitted under the TCEQ Edwards Aquifer rules that might be impacted by the project. The Engineer shall determine the amount of total suspended solids (TSS) being treated under these permitted BMPs.
2. TSS load calculations: The Engineer shall develop TSS load calculations to determine the TSS amount required to be treated under the Edwards Aquifer rules. This calculation is based on the increase in the amount of impervious cover within the project area. The Engineer will determine 80% of the increase in TSS load resulting from the development on the project.
3. TSS removal determination: The Engineer shall utilize the TCEQ calculation spreadsheet to determine the total amount of TSS removal required for the project.
4. Design coordination and water quality report: After the 50% submittal, the Engineer shall meet with the Owner to discuss the TSS removal required for the project and delineate the design approach for the water quality BMPs. As geometry allows, the Engineer shall first maximize treatment via features in the roadway section (vegetative filter strips and grassy swales). For all other permanent BMP treatment options, the Engineer shall coordinate with the Owner for preferred treatment options and determine any necessary drainage easements required for the water quality BMP. The Engineer shall identify and document BMPs in the schematic water quality report. The Engineer shall submit a draft schematic water quality report with the 50% submittal, and a final schematic water quality report with the 90% and Final submittal. The Engineer shall provide cost estimates for the BMPs and necessary drainage easements.

E. ROW Requirements

The Engineer shall determine the ROW requirements based on the proposed alignment, typical sections, design cross sections, access control, terrain, construction requirements, drainage, clear zone, maintenance, intelligent transportation system (ITS), and environmental constraints and mitigation requirements.

F. Design Exceptions

The Engineer shall identify design exceptions and waivers. The Engineer shall determine the necessity for each design exception or waiver for approval. If the Engineer determines a design exception is required, this service can be provided through a supplemental work authorization.

G. Traffic Data and Projections

The Engineer shall obtain the base year traffic data from available traffic data available or new counts and develop the opening-year, design-year (opening year +20) and pavement design year (opening year + 30) travel forecasts, and related traffic analysis. The developed traffic projections must be utilized for design and environmental analysis. The Engineer shall develop traffic forecasts for the mainlanes, cross streets, and intersections for no-build and build alternatives. These projections must include graphic representations of the anticipated daily movements along the corridor (suitable for inclusion in the design schematic and environmental document) and the traffic analysis for highway design table. The Engineer shall prepare a traffic projections methodology memo, based on the information provided in the

traffic analysis package. The Engineer shall review the proposed methodology with the Owner and refine it based on these discussions. The Engineer shall submit the traffic volumes developed by the Engineer to the Owner for review and approval. The Engineer shall revise the traffic volumes based on the Owner's comments.

H. Traffic and Operational Analysis

The Engineer shall develop and analyze traffic data (including percent trucks, design hourly volume, and directional distribution), existing roadway features (including ramp locations, weaving sections, number of lanes, offset to obstructions, lane widths, frontage road operations, and intersection operation and geometry), traffic flow patterns, and transit and traffic operations. The Engineer shall conduct capacity analysis studies for designated locations and sections of roadway and make recommendations for improving traffic flow.

The Engineer shall use the HCM to analyze and make appropriate recommendations. The analysis must be done for existing/base year, opening year, design year (opening+20 year), and interim year (if needed) for existing and future conditions. Results of this analysis must be incorporated into the schematic design. The Engineer shall develop and submit to Owner a traffic and operational analysis report summarizing all analysis performed. If microsimulation is used, the Engineer shall develop and calibrate an existing condition traffic model. The calibration memo must be included in the traffic analysis report. The analysis must be performed using the latest versions of TxDOT-approved software (e.g. Synchro, SIDRA). The following intersections will be included in the traffic analysis for the corridor.

- Center Street and Veterans Drive
- Center Street and Ranger Road
- Center Street and Old Stagecoach Road/Pump House/Cypress
- Old Stagecoach Road and Spice Bush Lane
- Old Stagecoach Road and Cypress Forest
- Old Stagecoach Road and Cypress Forest/Condalia
- Old Stagecoach Road and Three Forks
- Old Stagecoach Road and Muscadine Drive
- Old Stagecoach Road and Six Creeks Boulevard
- Old Stagecoach Road and FM 150/Jack C Hays Trail
- Veterans and Wetzel

I. Safety Analysis

The Engineer shall review and analyze historical crash data for latest 3 to 5 full calendar years (i.e., January 1 to December 31, inclusive) (years 2018-2022) with respect to crash characteristics such as severity, crash types, frequency, rates, patterns, clusters, and their relationship to crash contributing factors. The purpose of the historical crash analyses is to determine safety performance of the existing conditions to understand any safety issues within the study area.

Predictive, or quantitative safety analysis, involves using HSM-based methods that use safety performance functions (SPFs) and crash modification factors (CMFs) to estimate anticipated

change in crashes from existing condition to the proposed design. The predictive safety analysis must be done for no-build and build conditions for design year. The purpose of the predictive safety analysis is to compare the safety performance of the no-build and build alternatives to help determine the preferred alternative and to determine the countermeasures, if necessary, to improve safety.

Predictive safety analysis must be performed using HSM based tools including HSS, TxDOT Two Lane and/or Multilane Safety Spreadsheets, FMWA Spice Tool, or other tools acceptable to the Owner. The Engineer shall develop and submit to the Owner a safety analysis report summarizing all analysis performed.

J. Bicycle and Pedestrian Accommodations

The Engineer shall comply with City of Kyle design criteria and planned improvements for bicycle and pedestrian accommodations, including the 2015 and 2021 Transportation Master Plans and The Vybe Kyle: Trail Oriented Development, and the United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations. The inclusion of bicycle and pedestrian facilities must be evaluated when the project is scoped.

110.4. Geometric Design Schematics

The Engineer shall develop geometric design schematics based on the conceptual schematics developed in Task Order No. 1, after the basic layout, lane arrangement, and anticipated ROW and easement impacts depicted on the conceptual schematics are approved. The Engineer shall use AutoCAD tools in performing this task. The geometric design schematics must include both a plan view and profile view.

A. The geometric schematic plan view must contain the following design elements:

1. AutoCAD calculated roadway alignments for mainlanes, general purpose lanes, ramps, direct connectors, bridges, HOV lanes, managed lanes, express lanes, collector distributor roads, frontage roads and cross streets at major intersections and grade separations
2. Horizontal curve data shown in tabular format
3. Pavement edges, curb lines, sidewalks for all roadway improvements
4. Typical sections of existing and proposed roadways
5. Proposed retaining walls and sound walls
6. Proposed cross-drainage structures with outfall flow arrows and significant drainage features or waterways identified
7. Existing utilities and proposed utilities
8. Existing property lines and respective property ownership information
9. Existing ROW and easements
10. Proposed ROW and easements adequate for preparation of ROW maps
11. Existing and projected traffic volumes
12. Lane lines, shoulder lines, and direction of traffic flow arrows indicating the number of lanes on all roadways

B. The geometric schematic profile view must contain the following design elements:

1. Calculated profile grade and vertical curve data including “K” values for all curves and sight distance values for crest vertical curves on the mainlanes
2. Existing ground line profiles along the mainlanes
3. Anticipated cross-drainage structures with approximate inlet and outfall elevations
4. Proposed ditch grading (special grading), if it does not follow the typical section.
5. Approximate locations of existing and proposed major utility crossings
6. The calculated profile grade for frontage roads, connectors, ramps and cross streets will be shown on separate Supplemental Profile rolls

110.5. Cross-Sections

The Engineer shall use a AutoCAD model to generate preliminary cross-sections at 50 feet intervals (unless otherwise directed by the Owner) and at culvert locations in conjunction with the geometric schematic. The Engineer shall determine earthwork volumes for use in the cost estimate. The Engineer shall prepare 11inch x17inch or roll plots of the cross-sections.

110.6. Retaining Walls

The Engineer shall prepare preliminary retaining wall concepts to be shown on schematics, typical sections, and cross sections.

- A. The Engineer shall determine if any additional walls are required and verify the need for and length of the retaining wall as shown on the ultimate schematic.
- B. The Engineer shall compute and tabulate retaining wall quantities for preliminary design milestone plans submittal.

110.7. Renderings and Traffic Simulation

The Engineer shall not develop 3D exhibits or visualizations. If required, this can be added through supplemental work authorization.

110.8. Preliminary Construction Sequence

The Engineer shall evaluate and document the requirements for construction staging and traffic control throughout the development of schematic design to ensure that the proposed design can be constructed. The Engineer shall prepare preliminary construction sequence roll plats in conjunction with the geometric design schematic depicting the phasing and traffic detours anticipated to safely convey traffic. The roll plats must demonstrate that adequate horizontal and vertical alignments are maintained, sufficient lane widths and shoulder widths or barrier offsets are feasible, and construction zones are adequate for constructability of all proposed features. Proposed construction detours must ensure that adequate superelevation is provided. The layouts must indicate how existing pedestrian and bicycle facilities are accommodated for each phase.

110.12. Agency Coordination and Public Involvement

- A. The Engineer shall assist the Owner in conducting up to four (4) meetings with property owners, stakeholders, and various agencies to discuss and review the schematic design. The Engineer shall document and respond to issues related to the schematic design.
- B. The Engineer shall prepare up to four (4) exhibits and meeting materials to support stakeholder coordination and public outreach efforts.

110.13. Schematic Design Project Deliverables

In conjunction with the performance of the services included under Function Code 110 of this exhibit, the Engineer shall provide the following draft and final documents and associated electronic files as applicable:

- A. Draft and final copies of the agreed upon design criteria
- B. Draft and final copies of the traffic and operational analysis report and safety analysis report
- C. Draft copies of the preliminary drainage study
- D. Draft and final copies of the geometric schematic layouts on 11-inch x 17- inch cut sheets or rolls, as requested by the Owner
- E. Draft and final copies of the conceptual design schematics roll plots
- F. Draft and final copies of the geometric schematic layouts (1 inch = 100 feet)
- G. Draft and final copies of the design schematic profile rolls
- H. Draft and final copies of the design schematic cross-sections on 11-inch x 17-inch cut sheets or roll plot format, as requested by the Owner
- I. Copy of the preliminary cross-sections in a roll plot format or 11-inch x 17-inch format, as requested by the Owner
- J. Electronic 3D model copy of the preliminary cross-sections created using AutoCAD software
- K. Preliminary drainage study
- L. Electronic submittal of the hydrologic and hydraulic model digital files from the drainage study
- M. Copies of the preliminary construction sequence layouts in a roll plot or 11-inch x 17-inch format, as requested by the Owner
- N. Copies of the preliminary construction sequence typical sections in 11-inch x 17-inch format
- O. Electronic files shall be uploaded to the Owner's Procore file management system
- P. Traffic data schematics
- Q. Traffic projections methodology memo
- R. Average daily corridor traffic projections report
- S. Line schematics with traffic data shown
- T. Documentation of public involvement activities
- U. Utility plan – electronic file in latest version of AutoCAD fully compatible with AutoCAD civil design system
- V. Identified design exception
- W. Draft hydraulic report for review and comment EE. Culvert hydraulic data sheets and preliminary culvert layouts
- X. Electronic copy of the entire drainage report in PDF format, and computer files of hydrologic and hydraulic modeling with appropriate labeling of location, and submittal date
- Y. Retaining wall layouts (On schematic, typical sections, and cross sections)
- Z. Geotechnical report
- AA. Cost estimates for each milestone submittal
- BB. KMZ or KML file of conceptual design schematic created from applicable DWGfiles for reviewing in Google Earth
- CC. Final schematic 3D model created using AutoCAD software
- DD. Draft and final copies of traffic analysis report

110.14. Preliminary Cost Estimates. The Engineer shall develop a preliminary cost estimate using the Average Low Bid Unit Price. The Engineer shall estimate the total project cost including preliminary engineering, final engineering, right-of-way (ROW) acquisition, environmental compliance and mitigation, construction, utility relocation, and construction engineering inspection (CEI).

110.16. Geotechnical Borings and Investigations. The Engineer shall determine the location of proposed soil borings for bridge design, embankment settlement analysis, retaining walls, slope stability and along storm drain alignment in accordance with the latest edition of TxDOT's Geotechnical Manual. The Owner will review and provide comments for a boring layout submitted by the Engineer showing the general location and depths of the proposed borings. Once the Engineer receives the Owner review comments they shall perform soil borings (field work), soil testing and prepare the boring logs in accordance with the latest edition of the State's Geotechnical Manual and State District's procedures and design guidelines.

- A. The Engineer shall perform all geotechnical work in accordance with the latest version of TxDOT's Geotechnical Manual. All testing shall be performed in accordance with the latest version of TxDOT's Manual of Test Procedures. American Society for Testing Materials (ASTM) test procedures can be used only in the absence of Owner and TxDOT procedures. All soil classification shall be done in accordance with the Unified Soil Classification System.
- B. If applicable, the Engineer shall perform soil borings, rock coring, coring for pavement removal items, piezometric readings, testing and analysis to include slope stability analysis, settlement analysis, and foundation design recommendations for retaining walls, overhead sign structures, along proposed storm sewer alignments, bridges, embankments, and any temporary soil retaining systems. Engineers shall call 811 and the City of Kyle Public Works Department (512-262-3024) for utility information prior to digging. Traffic control is required for any work that is performed for geotechnical borings and investigations within the right-of-way limits.
- C. The Engineer shall provide a signed, sealed and dated geotechnical report which contains, but is not limited to, soil boring locations, boring logs, laboratory test results, generalized subsurface conditions, ground water conditions, piezometer data, analyses and recommendations for settlement and slope stability of the earthen embankments, skin friction tables and design capacity curves including skin friction and point bearing. The skin friction tables, and design capacity curves must be present for piling and drilled shaft foundation.
- D. If applicable, the Engineer shall perform scour analysis to include Grain Size distribution curves with D50 value.
- E. The Engineer shall sign, seal and date soil boring sheets to be used in the PS&E package. The preparation of soil boring sheets must be in accordance with Owner and TxDOT standards.
- F. Foundation Studies: The Engineer shall coordinate with the Owner to determine the location of soil borings to be drilled along the retaining wall alignments. The soil borings shall extend a minimum of 35 feet below the footing elevation or deeper as soil conditions warrant. Spacing of soil borings shall not exceed 500 feet. The Engineer shall provide a boring layout for the Owner's review and comment.
- G. The Engineer shall incorporate soil boring data sheets prepared, signed, sealed, and dated by the Geotechnical Engineer. The soil boring sheets shall be in accordance with WINCORE software as can be found on the Texas Department of Transportation (TxDOT) website.

FUNCTION CODE 120(120) – SOCIAL/ECON/ENVIRON STUDIES

SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT

120.1. Environmental Documentation Standards

Each environmental service provided by the Engineer must have a deliverable. Deliverables must summarize the methods used for the environmental services and the results achieved. The summary of results must be sufficiently detailed to provide satisfactory basis for thorough review by the Owner and (where applicable) other agencies with regulatory oversight.

120.2.

120.5. Environmental Technical Analyses and Documentation

For projects located on land owned by a political subdivision or agency of the state, compliance with the Antiquities Code of Texas (ACT) (Texas Natural Resource Code, Title 9, Chapter 191) and accompanying Rules of Practice and Procedure (Texas Administrative Code, Title 13, Chapter 26) as implemented by the Texas Historical Commission (THC) is required. For projects anticipating federal funding or permitting, compliance with Section 106 of the National Historic Preservation Act (NHPA) (16 United States Code 470) and its implementing regulations (36 Code of Federal Regulations 800) as overseen by the THC and lead federal agency is required. As the proposed project area is owned by the City of Kyle, a political subdivision of the state of Texas, the following scope of work is intended to provide compliance with the ACT. In addition, projects with the potential to impact human remains and/or graves, must comply with the Texas Health and Safety Code (Chapters 711 to 715) and Texas Code of Criminal Procedure ([TCCP] Chapter 49 Subchapter A Article 49). This scope includes the following deliverables:

A. ARCHAEOLOGICAL PERMIT ACQUISITION (TASK 239)

Prior to project construction and initiating fieldwork, Pape-Dawson archaeologists to obtain an Antiquities Permit from the THC in compliance with the ACT. This permit to include a research design detailing the project approach and proposed archaeological methods. Data gathered from a cultural resources background study to be included in the research design accompanying the permit application. Background study to include a literature and records review to determine if the proposed project area was previously investigated for cultural resources and to identify any cultural resources recorded within a review area not to exceed a 1-kilometer (0.6-mile) radius from the proposed project area. The background study to include data from the THC online Historic and Archaeological Sites Atlas to identify previously recorded archaeological sites, National Register of Historic Places (NRHP)-listed properties and districts, State Antiquities Landmarks (SALs), Official Texas Historical Markers (OTHMs), Recorded Texas Historic Landmarks (RTHLs), National Park Service (NPS) Historic Trails, and cemeteries within the review area. In addition, Pape-Dawson cultural resources staff to examine soil, geological, and environmental data, as well as recent and historic-age maps and aerial photographs available online, including Sanborn Fire Insurance Maps and Stoner Aerial System Maps (as applicable).

B. ARCHAEOLOGICAL RESOURCES SURVEY (TASK 240)

Should the THC require that Pape-Dawson archaeologists conduct an intensive archaeological survey of the approximately 12.5-acre project area, the results of a cursory review for scoping purposes only suggests that archaeological deposits, if present, would be located near the surface or shallowly buried at depths reachable by shovel test excavations.

1. Survey – Shovel Testing (up to 2 days)

Pape-Dawson archaeologists to perform a pedestrian survey of the project area supplemented by systematic shovel testing. Archaeologists to observe the ground surface along evenly spaced transects and erosional exposures along drainage features for cultural materials, archaeological features, and historic structures. Subsurface investigations to be performed in locations with the potential to contain buried cultural materials and/or archaeological features. Archaeologists to excavate a maximum of 34 shovel tests. Shovel tests to be approximately 30 centimeters in diameter, and to be excavated to sterile substrate, bedrock, water table, compaction, or to a maximum of 80 centimeters below the ground surface. Excavated shovel tests to follow the Council of Texas Archeologists' 2020 (CTA) survey standards and guidelines; however, shovel testing may be precluded by soil conditions, natural features, or disturbances. Soils to be screened through 1/4" hardware mesh unless otherwise dominated by clay. Clay soils to be finely divided and hand sorted. Shovel tests to be described, mapped using a submeter accurate GPS, and backfilled upon completion with excavated spoil and compacted by hand; no additional compaction or fill to be necessary.

If archaeological sites are found on the property, site boundaries are to be defined to the extent possible within the project area according to appropriate delineation techniques. Surficial and shallowly buried sites require a minimum of nine shovel tests, for delineation unless precluded by project limits or extent of landforms per CTA standards. Newly identified and/or revisited sites to be recorded on TexSite forms and filed with the Texas Archeological Research Laboratory (TARL) in accordance with CTA guidelines.

Diagnostic artifacts (for example projectile points or glass bottles) to be collected. A representative sample of non-diagnostic artifacts (for example lithic debitage or window glass shards) observed during the survey to be photographed and documented in the field but are not intended to be collected. At the discretion of the Principal Investigator, nondiagnostic artifacts may be collected during the survey.

Notes:

- i. Project Area not to exceed the 12.5 acres.
- ii. If proposed project limits change after the initiation of the investigation, additional services may be required.
- iii. Right-of-entry to be obtained prior to field investigation.
- iv. Assumes one continuous field mobilization with unfettered project area access. If more than one field mobilization is required due to denial of right-of-entry, additional services may be required.
- v. Field costs are based on estimated maximum total of two (2) business days of survey for a crew of two; if additional investigation is required, additional services may be necessary.
- vi. Assumes a 10-hour day for field investigations.

- vii. Archival research may be necessary if historic archaeological sites and/or historic-age resources are located within the project area. Archival research to be negotiated under a separate scope and fee.
 - viii. Assumes one (1) archaeological site to be recorded or revisited that does not exceed 0.75 acre in size. If more than one (1) site or a site greater than 0.75 acre in area is encountered, additional services may be necessary.
 - ix. Assumes that none of the project area has been previously inventoried in compliance with current CTA standards.
 - x. A maximum of five (5) archaeological features to be observed and documented in the field. If more than five (5) archaeological features are encountered, additional services may be necessary.
 - xi. Feature documentation to consist of standard excavation and documentation techniques (GPS mapping, photography, measurements, and description). If features are determined to be potentially significant, additional documentation (TDS, LiDAR, and/or 3D modeling) may be required and additional services may be necessary.
 - xii. If significant cultural deposits, features, or foundations are encountered, additional services related to consultation and coordination with regulatory agencies may be necessary.
 - xiii. If a potentially significant archaeological site is located during survey that cannot be preserved and buffered, any required archaeological testing and/or data recovery (hand-excavated units and/or column samples) would be covered under an additional services request.
 - xiv. Human burials or other physical manifestations of graves are NOT likely to be encountered during the field work. If found, additional regulatory requirements and fees may apply if the area cannot be avoided and buffered.
 - xv. No special analyses (e.g. flotation, macrobotanical analysis, and radiocarbon dating) to be conducted as part of this work. If artifacts encountered that require special analyses, additional services may be necessary.
 - xvi. Additional services required by the client or regulatory agency which may arise, and are not outlined above, to be compensated for on an hourly basis or negotiated to a lump sum fee.
2. Report
- Following the completion of fieldwork and analysis, Pape-Dawson to produce a report per the CTA guidelines. This field data, along with soils and geology for the project area, and background literature review to be included in the report. The report to also detail the methods and results of the field efforts and include maps showing the location of recorded archaeological site and/or historic-age structure(s). In addition, the report to include eligibility assessments of significance if archaeological sites are present within the project area. Pape-Dawson to produce the required number of reports and distribute them to the appropriate regulatory agency(s) for review and approval. One round of agency comments to be addressed, if necessary.
3. Artifact Analysis and Curation
- Collected artifacts to be washed in water and air-dried on drying racks or dry-brushed prior to analysis. Archaeologists to review and categorize the artifacts according to class and material type and include results in the report. Analysis costs are estimates only;

actual costs vary according to the number of artifacts recovered and the amount of paperwork generated. Select collected materials and field-generated paperwork to be prepared in accordance with THC requirements for State Held-in-Trust collections and submitted to the Center for Archeological Research at the University of Texas at San Antonio upon acceptance of the final report pursuant to requirements in the permit.

Notes:

- i. A maximum of 20 artifacts to be collected for laboratory analysis. If more than 20 artifacts are collected, additional services may be necessary.
- ii. A maximum of 50 artifacts to be observed and documented in the field without collection. If more than 50 artifacts are encountered, additional services may be necessary.

C. COUNTY ROAD COMPLIANCE (TASK 392)

1. Jurisdictional Waters Delineation (TASK 233)

Pape-Dawson Engineers to conduct a jurisdictional waters delineation on the subject property, following guidelines from the US Army Corps of Engineers (USACE), including the 1987 Wetland Delineation Manual. A report is to be prepared with a map of areas that would potentially be under the jurisdiction of the USACE according to the most recent guidance, data forms, soils, vegetation, and hydrology analysis. A summary of impacts, if known, to jurisdictional waters as defined in the Federal Wetland Regulations 33 Code of Federal Regulations (CFR) Part 328 and the Clean Water Act as was done prior to the 2015 rule, including the Supreme Court decision in *Rapanos v. United States*, 547 U.S. 715 (EPA & USACE 2008), which requires application of the “significant nexus” standard by the USACE and Environmental Protection Agency joint guidance on jurisdictional determinations is also to be provided.

2. Endangered Species Assessments (TASK 232)

- A US Fish and Wildlife Service (USFWS) permitted biologist familiar with the habitat requirements for species listed by the USFWS as having the potential to occur on the subject property to make a reconnaissance site visit.
- Based on the site visit and aerial photography, the likelihood of occurrence of species on the property is to be assessed. A report to be prepared describing endangered species assessment methodology and characteristics of the property that support the conclusions of habitat potential. The report to include a map-delineating area that may be suitable for the listed species.

D. ENVIRONMENTAL PROJECT MANAGEMENT (TASK 291)

This item represents an allowance for time not specifically required for design purposes:

- Preparation of exhibits for marketing, permitting, etc. as requested.

- Coordinate project team to meet schedule and deliverables.
- Attend project coordination meetings.

120.7. Public Involvement. Based upon the issues (as determined by the Owner), additional public involvement may be required. If required, public involvement may include: i) small group meetings with local officials; ii) stakeholder meetings; The Engineer shall use the following methods for the exchange of information.

1. Small Group and Stakeholder Meetings - The meetings shall be attended by the Engineer, at the request of the Owner, to informally discuss the project. Requests for such meetings will be coordinated prior to establishing a meeting date and time. This proposal assumes two (2) public meetings.

120.8. Environmental Permits Issues and Commitments (EPIC) Sheets. The Engineer shall complete the latest version of the EPIC sheets per information provided by the State. These sheets must be signed, sealed and dated by the Engineer as indicated in signature block.

120.9. Cut and Fill Exhibits. If the information is available, the Engineer shall prepare cut and fill exhibits for delineated wetland.

FUNCTION CODE 130(130) – RIGHT-OF-WAY (ROW) DATA

For Function Codes 130 and 150, the term Surveyor means the firm (prime provider or subprovider) that is providing the surveying services shown in this scope.

The Engineer shall ensure that the following general standards for survey work are followed for Function Codes 130 and 150:

All surveys must meet or exceed all applicable requirements and standards provided by:(1) Professional Land Surveying Practices Act, and (2) General Rules of Procedures and Practices promulgated by the Texas Board of Professional Engineers and Land Surveyors (TBPELS), The Surveyor shall perform all work in an organized and professional manner. All surveys are subject to the approval of the Owner.

Unless otherwise directed by the Owner, the Surveyor shall use (1) the North American Datum of 1983 (NAD83), Texas Coordinate System of 1983 (State Plane Coordinates) applicable to the zone or zones in which the work is performed, with values in U.S. survey feet, as the basis for all horizontal coordinates derived and (2) the datum adjustment shall be NA2011, EPOC 2010.00. The coordinate datum and adjustment shall be stated on all deliverables.

Project or surface coordinates must be calculated by applying a combined adjustment factor (CAF) to State Plane Coordinate values. If provided by the Owner, the Surveyor shall use a project specific CAF. The CAF used shall be stated on all deliverables.

Elevations must be based on the North American Vertical Datum 88 (NAVD88), unless otherwise specified by the Owner. Specified Geoid used for the project.

The Owner may authorize the Surveyor to use an Unmanned Aircraft System (UAS) to perform services under this contract. The use of UAS is regulated by the Federal Aviation Administration (FAA). All UAS operators must comply with Federal Aviation Administration (FAA) regulations.

The survey data must be fully compatible with the Owner's computer system and with programs in use by the Owner at the time of the submission, without further modification or conversion. The current programs used are Microsoft Word, and AutoCAD

The Surveyor shall perform quality control/quality assurance on all procedures, field surveys, right-of-way surveys, data, and products prior to delivery to the Owner. If, at any time, during the course of reviewing a submittal of any item it becomes apparent to the Owner that the submittal contains a substantial number of errors, omissions, and inconsistencies, the Owner may cease its review and return the submittal to the Surveyor immediately for appropriate corrective action. A submittal returned to the Surveyor for this reason is not a submittal for purposes of the submission schedule and is not a reason for additional compensation.

130.1. RIGHT-OF-WAY SURVEYS (15.1.1)

Right-of-Way Surveys includes the performance of surveys to establish land boundaries, preparation of parcel descriptions and parcel plats, and the preparation of right-of-way (ROW) maps.

The Surveyor shall prepare:

- A. mapping documents suitable for the use in the acquisition of real property and the issuance of a title policy;
- B. DEFINITIONS

In this attachment, the following definitions shall apply:

1. Abstract Map means a scale drawing prepared from record documents depicting proposed ROW lines, existing ROW lines, easement lines, and private property lines with relevant grantee names, recording data, and recording dates.
2. Closure/Area Calculation Sheet means a computer-generated print-out of the area and the perimeter bearings, distances, curve data, and coordinates of an individual parcel of land to be acquired, including the degree of angular and distance mis-closure for each individual parcel.
3. Owner means the current title holder of record as determined by the Real Property Records.
4. Parent Tract means a unit or contiguous units of land under single ownership, comprising a single marketable tract of land consistent with the principle of highest and best use. A parent tract may be described by a single instrument or several instruments. A single parent tract cannot be severed by a public ROW easement, or separate ownership which destroys unity of use.
5. Parent Tract Inset means a small map to an appropriate scale, of the parent tract perimeter placed upon the ROW map in the proximity of the respective parcel. Parent tract insets are used in cases where the parent tract cannot be shown to the same scale as the ROW map. Since parent tract insets are used to identify the limits and location of

- parent tracts, they must include public ROW, utility easements and fee strips, and identifiable water courses which bound the parent tract.
6. Point of Beginning or POB means a corner of the parcel of land to be acquired, located on the proposed ROW line and being the beginning terminus of the first course of the written property description or plat.
 7. Point of Commencing or POC means a monumented property corner identifiable in the real property records that is located outside the proposed ROW corridor. For title purposes, the POC must be a monumented back corner of the parent tract. In the event a monumented back corner of the parent tract cannot be recovered, the nearest identifiable monumented property corner located outside the proposed ROW corridor may be used.
 8. Preliminary ROW Layout means a scaled drawing depicting proposed ROW lines, existing ROW lines, proposed pavement, access denial lines, the proposed centerline alignment, private property lines, easement lines, visible improvements, visible utilities, and the station and offset from the centerline alignment to each point of curvature (PC), point of tangency (PT), and angle point in the proposed ROW lines and to each PC, PT, and the angle point in the existing ROW lines in areas of no proposed acquisition.
 9. Property Description means a document prepared as an exhibit for the conveyance of a property interest and issuance of a title policy, reflecting the results of a boundary survey, and signed and sealed by a registered professional land surveyor (RPLS), attached to an acquisition deed as Exhibit A, and consisting of the following two parts:
 - a. Written metes and bounds description delineating the area and the boundary and describing the location of an individual parcel of land unique to all other parcels of land.
 - b. Parcel plat, which is an ANSI A-size (8.5" x 11") scaled drawing depicting the information recited in the metes and bounds description in 10 a. above, which represents the parcel(s) of land to be acquired.
 10. ROW Maps means a series of 24" x 36" scaled drawings depicting the results of relevant elements of records research, field work, analysis, computation, and mapping required to determine title, delineate areas and boundaries, and locate and describe utilities and improvements to the extent necessary to appraise the value and negotiate the acquisition of individual parcels of private land for a proposed ROW project.

C. PROCEDURE

All standards, procedures, and equipment used by the Surveyor must be such that, at a minimum, the results of the survey is in compliance with the precision and accuracy requirements set forth by the Texas Board of professional Engineers and Land Surveyors (TBPELS) rules.

1. Abstract Map

The Surveyor shall prepare an Abstract Map sufficient to determine the following:

- a. All interests of public record held in the land to be acquired.
- b. The total record holdings to be acquired from an owner contiguous to a land.

- c. All interests in land held in common to be acquired (shopping mall parking lots, subdivision reserves, etc.)
- d. All improvements proposed by other agencies that might have a bearing on project development.
- e. All called monuments, bearings, and distances in recorded information.

2. ROW Map

The Surveyor shall field locate items such as: property corners, existing ROW markers, improvements, and visible utilities. The Surveyor shall verify and update the planimetric file as directed by the Owner.

Using the Owner's standard title, index, and plan sheets, the Surveyor shall prepare a ROW map for each proposed ROW project. A ROW map must include a title sheet, an index sheet, a survey control index sheet, a horizontal control data sheet, and sufficient plan sheets to cover the proposed project. If requested by the Owner, the Engineer shall prepare additional sheets.

Per the TBPELS and the State, ROW maps need not be signed and sealed by a RPLS.

Plan sheets must include the following:

- a. Proposed ROW lines. Proposed ROW lines must be labeled with appropriate bearings, distances, and curve data. Curve data must include the radius, delta angle, arc length, and long chord bearing and distance.
- b. Existing ROW lines. Existing ROW lines must be labeled with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired. Curve data must include the radius, delta angle, arc length, and long chord bearing and distance.
- c. Proposed project baseline alignment. The proposed project baseline alignment must be labeled with appropriate bearings, distances, and curve data. Curve data must include the station of the curve, point of intersection (PI), radius, delta angle, arc length, tangent length, long chord bearing and distance, and the northing (N) and easting (E) coordinates of the curve PI. All alignment PCs, and PTs.
- d. Proposed paving lines. Proposed paving lines combined with relevant existing paving lines must be shown to the extent necessary to compile a complete picture of proposed traffic movements. Proposed paving on the final map submitted to the Owner must be shaded with a dot pattern or highlighted by some other means acceptable to the Owner.
- e. Private property lines. Private property lines must be delineated with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired. Curve data must include the radius, delta angle, arc length, and long chord bearing and distance.
- f. League lines and survey lines. League lines and survey lines must be shown and identified by name and abstract number.
- g. County lines and city limit lines. County lines and city limit lines must be located and identified by name.

- h. North arrow. A north arrow must be shown on each sheet, in the upper right corner of the sheet.
- i. Monuments. Monumentation must be shown with a description of material and size and if the monument is found or set.
- j. PC, PT, and angle points. Station and offset must be shown for each PC, PT, and angle point in the proposed ROW lines. Stations and offsets must be shown with respect to the proposed centerline alignment.
- k. Intersecting and adjoining public ROW. Intersecting and adjoining public ROW must be shown and identified by name, ROW width, and recording data.
- l. Railroads. Railroads must be shown and identified by name, ROW width, and recording data.
- m. Utility corridors. Utility corridors must be identified as to easement or fee.
- n. Easements and fee strips. Easements and fee strips must be shown and identified by width, owner, and recording data.
- o. Set-back lines. Set-back lines (e.g., building lines) must be shown and identified.
- p. Improvements. Visible improvements located within the proposed ROW corridor or within if possible of a proposed ROW line must be shown and identified.
- q. Structures
 - i. Structures must be identified as commercial or residential, by number of stories, and as to construction material type (e.g., brick, wood frame).
 - ii. Structures that are severed by a proposed ROW line must be dimensioned to the extent necessary to completely delineate the severed parts.
 - iii. Parking areas, billboards, and other on-premise signs that are severed by a proposed ROW line must be dimensioned to the extent necessary to delineate that portion of the parking area, billboard, or sign that is located within the proposed ROW corridor.
 - iv. For a structure outside of, but within ten feet of, the proposed ROW line, the distance of the structure to the proposed line must be shown. If the location of the structure is determined using a TxDOT supplied planimetric map, any structure within three feet of the proposed ROW line must be verified by field survey.
- r. Utilities. Visible utilities located within the proposed ROW corridor or within 50 feet of a proposed ROW line must be shown and identified if possible.
- s. Points of commencing and points of beginning. POCs and POBs must be shown and labeled. POBs must be shown with their respective N and E surface coordinates. As an exception, a POC will not be required in the case of a total taking without a remainder.
- t. Parcels. Each parcel of land to be acquired must be identified by a parcel number, which must appear in the ownership tabulation and on the ROW map in the proximity of the respective parcel. If the Surveyor is unfamiliar with the criteria used by the Owner to assign parcel numbers, the Surveyor shall seek the assistance of the Owner at the time the Abstract Map is complete.
- u. Ownership tabulation. An ownership tabulation must be shown that includes the parcel number, existing area of the parent tract, lots and blocks constituting the parent tract when applicable, owner's name, type of conveyance, film code, county clerk's file number, taking area, and remaining area of the parent tract

located left or right of the centerline alignment or both. The Surveyor shall provide several blank lines in the tabulation block to facilitate future map additions.

- v. Parent tract inset. A parent tract inset must be shown for each parent tract that cannot be shown to scale on the ROW map. When parent tract insets are used, the point of commencing with the appropriate bearing and distance to the point of beginning may be shown on the parent tract inset.
- w. Data sources. A note must be included on the title sheet and each map sheet stating the source of bearings, coordinates, and datum used. The note must also include the National Geodetic Survey (NGS) or other basis monument(s) name or identification number, Texas Coordinate System Zone information, epoch information, grid or surface values and the combined adjustment factor or surface adjustment factor.
- x. Notes. Appropriate notes must be included on the title sheet and each map sheet stating the following:
 - i. Month (or months) and year of the abstracting upon which the map is based.
 - ii. Month (or months) and year the field surveys were conducted upon which the map is based.
 - iii. Month and year the map was completed by the Surveyor.

3. Property Descriptions

The Surveyor shall prepare a Property Description for each parcel (or tract for surplus property) consisting of two parts: (1) a metes and bounds description of the property and (2) a parcel plat. Each part of a Property Description must be signed and sealed by a RPLS.

- a. Metes and bounds description
The Surveyor shall prepare a metes and bounds description for each parcel of land to be acquired. Metes and bounds descriptions must be submitted in Microsoft Word format and must include the following information:
 - i. State, county, and original land grant survey within which the proposed parcel of land to be acquired is located.
 - ii. Reference to unrecorded and recorded subdivisions by name, lot, block, and recording data to the extent applicable.
 - iii. Reference by name to the grantor and grantee, date and recording data of the most current instrument(s) of conveyance describing the parent tract.

The Surveyor shall use the execution date when citing deed references. The Surveyor shall use the recording or filing dates, making clear which date is being used if the execution date is not explicit on the face of the document.

- iv. A POC.
- v. A POB with the N and E surface coordinates.

- vi. A series of courses proceeding in a clockwise direction, describing the perimeter of the parcel of land to be acquired, and labeled with appropriate bearings, distances, and curve data.
- vii. Curve data must include the radius, delta angle, arc length, and long chord bearing and distance.
- viii. Each course must be identified either as a proposed ROW line, an existing ROW line, or a property line of the parent tract. Each property line of the parent tract must be described with an appropriate adjoiner call.
- ix. A description of all monumentation set or found, which must include size and material.
- x. A reference to the source of bearings, coordinates, and datum used.

b. Parcel plat

The Surveyor shall prepare a parcel plat for each parcel of land to be acquired using the Owner's standard format. Parcel plats must include each and every item of information 1) written in the metes and bounds description and 2) shown on the ROW map (if requested by the Owner) for the individual parcel.

D. ADHERENCE TO STANDARDS

For purposes of clarity, consistency, and ease of understanding, the Owner as an acquiring agency of private property for public use, has adopted TxDOT's standards and formats for a ROW map to facilitate the processes of negotiation, appraisal, relocation assistance, and condemnation. The Surveyor shall adhere to these standards and formats to every extent possible.

E. GENERAL SPECIFICATIONS

The following general specifications for 1) description, 2) plat, and 3) ROW mapping apply:

1. Completed ROW maps must be submitted to the Owner in both AutoCAD Design File (DWG) and Adobe Portable Document Format (PDF) format. The maps must have a layout that will produce a D-size final print with a 0.5-inch border.
2. Parcel plats must be submitted to the Owner on A-size bond paper with a 0.5-inch border. Match lines must be used where more than one sheet is required.
3. ROW maps must be drawn to a scale of 1 inch = 50 feet. Scales other than 1 inch = 50 feet may be used with prior approval by the Owner.
4. The minimum lettering size for ROW maps is 0.1 inches at print scale.
5. Parcel plats must be drawn to a scale of 1 inch = 50 feet. Scales other than 1 inch = 50 feet may be used with prior approval by the Owner. In the case of large parcels which are difficult to fit on a single A-size sheet, the Surveyor shall use multiple A-size sheets with match lines.
6. The minimum size lettering for a parcel plat is 0.3 inches at print scale.
7. Property Descriptions shall be submitted on A-size bond paper.

F. GENERAL REQUIREMENTS

The Surveyor shall adhere to the following general requirements:

1. Copies of instruments of record submitted to the Owner must be indexed by parcel number.
2. Coordinates appearing on ROW maps, on parcel plats, and in written property descriptions must be surface coordinates based on the Texas State Plane Coordinate System. The appropriate combined adjustment factors (sea level factor multiplied by the scale factor) for each zone of the coordinate system, which have been developed by TxDOT, must be noted.
To obtain surface coordinates, the Surveyor shall multiply grid coordinates by the appropriate combined adjustment factor for each zone, as provided by the owner.
3. Line and curve tables may be used when necessary.
4. The number of centerline alignment stations shown on a single plan sheet shall be limited to allow approximately four inches between match lines and sheet borders for future details and notes.
5. A minimum four-inch by four-inch space must be reserved at the bottom right corner of each map sheet for future revision notes.
6. The Surveyor shall set a 5/8-inch rebar with a cap (or other appropriate monument) on the proposed ROW line.

When new ROW lines intersect boundary lines of properties creating new boundary corners in the new ROW line, the Surveyor shall place a 5/8- inch rebar with a cap

7. Separate DWG Files for Each Map Sheet

The Surveyor shall provide one DWG file for each map sheet. Each file must be spatially registered to the project coordinate system.

The sheet file naming convention is "Highway Name Sheet Number. dwg(e.g., ROAD_S01.dwg).

8. Naming convention for the Master Design File or Master ROW Files and Map Sheet.

The recommended naming prefix for design files is MDF (for master design file). Therefore, the prefix must be different for the ROW files because the location of the existing and proposed ROW in the design files from the schematic will change to some degree after an on-the- ground survey is made for a ROW map. Therefore, the prefix might be MRF for master ROW file.

The Surveyor shall provide the corrected Master ROW Files to the design engineer to be used in the final plans, specifications, and estimate (PS&E) so that all features of construction and the relocation of utilities will be correctly placed in relation to the highway ROW and the ROW of cross streets or roadways.

The master ROW file naming convention is: "MRF ROW Logical Name.dwg", with examples as follows:

MRF212104065_Schematic90.dwg (for schematic layout 90% submittal)

MRF212104065_Schematic100.dwg (for schematic layout 100% submittal)

MRF212104065_SchemApprov.dwg (for City projects on State ROW)
MRF212104065_PSEDesign.dwg (for final PS&E design)
MRF212104065_ExROW.dwg (for existing ROW determined by RPLS)
MRF212104065_PropROW.dwg (for proposed ROW of final design)
MRF212104065_DeedPlot.dwg (for deed record) MRF212104065_Planimetric.dwg
(for aerial mapping topography) MRF212104065_ROWTopo.dwg (for
improvements data collection) MRF212104065_DesignTopo.dwg (for design level
data collection topography)
MRF212104065_ExUtil.dwg (for existing utilities)

All sheet files with a plan view must have the MRF referenced to allow more than one sheet file to be worked on at the same time.

9. File Structure of Master and Reference DWG Files

If possible, the file structure should not contain subfolders.

10. Lines Weights, Line Styles, Colors, Text Size, Text Fonts, Scale, and Annotations

Legibility is the primary concern when choosing the scale, line weights and text size. Sheets must be legible at full scale sheet size (i.e., D-size drawing) and when reduced to half scale sheet size (B-size drawing size). It is not sufficient that originals or first-generation plots are legible, reproductions (copies) must retain legibility.

The normal scales for a full-sized sheet (i.e., D-size) is 1 inch = 50 feet (urban) and 1 inch = 100 feet (rural). For a half-sized sheet (i.e., B-size) the scale is 1 inch = 100 feet (urban) and 1 inch = 200 feet (rural).

G. ROW MAPPING TASKS TO BE COMPLETED

The Surveyor shall perform the following tasks:

1. Abstracting

The Surveyor shall obtain copies of all existing ownership documents for the parent tracts along with all subdivision plats and recorded documents defining existing easements (as referenced in the title commitment, to be provided by client) within, along or intersecting the existing ROW, and prepare an Abstract Map.

2. Field Surveys

The Surveyor shall locate and set additional horizontal and vertical control points, as necessary, at the maximum spacing distance of 1,500 feet; field locate property corners, existing ROW markers, improvements, and visible utilities; verify and update the planimetric file; and as directed by the Owner, perform the following:

- a. Obtain right-of-entry to survey on private property and prepare a spreadsheet of the information.

- b. Locate existing horizontal and vertical control and verify the control information, locate property corners, and update the planimetric information with any missing visible improvements or visible utilities.

The Surveyor shall base all field work and calculations on the current controls and datum provided by the Owner.

3. Property Description

- a. The Surveyor shall prepare a Property Description(s) for each parcel or tract in the form of a preliminary and a final deliverable(s). Each part of a Property Description shall be signed and sealed by an RPLS. The Surveyor shall prepare preliminary Property Description(s)- for review by the Owner.

Metes and bounds descriptions

The Surveyor shall prepare a metes and bounds description for each parcel of land to be acquired.

Parcel plats

The Surveyor shall prepare a parcel plat for each parcel of land to be acquired.

Parcel plats must include all items of information shown on the ROW map that concerns the individual parcel.

- b. The Surveyor shall prepare final deliverables.

The Surveyor shall set appropriate monuments on the proposed ROW lines at intersecting property lines, and at all points of curvature (PC), points of tangency (PT), angle points, intersecting ROW lines of side streets.

The Surveyor shall set appropriate monuments on the existing ROW lines in areas of no acquisition at all PCs, PTs, angle points.

The Surveyor shall set appropriate monuments at intersecting property lines with the new ROW lines.

The Surveyor shall prepare final, signed, sealed, and dated Property Descriptions.

4. ROW Map

The Surveyor shall prepare a ROW map for the specific work location.

The Surveyor shall provide the following:

- a. The Surveyor shall prepare a preliminary ROW map for review purposes.
- b. The Surveyor shall prepare an initial ROW map for review purposes
- c. The Surveyor shall prepare a final ROW map.

5. The Surveyor shall prepare a ROW project cover sheet. The ROW project cover sheet must contain the highway, project limits, county, length of project, equations and exceptions, begin and end project information, datum statement.

The Surveyor shall conduct a QA/QC review and prepare a check list for each task performed.

H. ROW MAPPING DELIVERABLES

The Surveyor shall provide the following:

1. Scanned copies of the ownership documents and one D-size paper copy of the Abstract Map and the associated AutoCAD graphics files for review purposes.

2. Field Survey Data

- a. A spreadsheet of the property owners and right-of-entry information.
- b. Control data sheets

3. Property Description Submittals

- a. Preliminary Property Description Submittals

One paper copy of the preliminary Property Description(s) for review purposes marked "Preliminary – Not to be used for recording purposes", and an electronic copy of each Property Description in PDF format.

- b. Final Property Description Submittals

Two paper sets of the final Property Description(s) showing the metes and bounds descriptions and parcel plats, signed and sealed by a RPLS, and the associated electronic files in PDF and Word formats.

4. ROW Map Submittals

- a. Preliminary ROW Map Submittals

Two 24x36 paper copies and one 11"x17" half-scale paper copy of the preliminary ROW map with the note "Preliminary – Not to be used for recording purposes", and the associated AutoCAD graphics files.

- b. Initial ROW Map Submittals

One 24x36 paper copy of the initial ROW map with the note "Preliminary – Not to be used for recording purposes".

- c. Final R.O.W. Map Submittals

Two 24x36 paper copies and one 11x17 half-scale paper copy of the final ROW map.

- d. PDFs of the final ROW map.

5. Two ANSI A-size (8.5" x 11") paper copies of the ROW project cover sheet and the associated Word document file.

6. QA/QC

Documentation stating that the appropriate monuments were set on the proposed ROW lines at intersecting property lines, PC's, PT's, angle points, ROW lines of side streets.

130.4. ROW Hearing Services

A. ROW Hearing Services

The Engineer shall prepare color exhibits for eminent domain hearing cases (assume 8 exhibits). The exhibits must depict the subject property boundaries and the proposed ROW acquisition shown on an aerial map background. The exhibits must also show the pavement edges, drainage or other structures, and driveways.

The Engineer shall prepare for the eminent domain hearings by reviewing the approved design schematic and associated reports, cross-sections, ROW maps, and pertinent plan sheets provided by others, including those showing roadway, bridge, grading, drainage, signals, signs, intelligent transportation systems (ITS), illumination, traffic control plan and other elements or data.

The Engineer shall attend by teleconference pre-hearings (assume 8 meetings) for eminent domain proceedings. The Engineer shall also attend, in person, pre-hearings (assume 8 meetings) for eminent domain proceedings near the project location.

Deliverables include all services and documents stated in this section.

B. Expert Witness Services

The Engineer shall attend and provide expert witness services for eminent domain hearings (assume 8 hearings) at the TxDOT Area Office near the project location. Assume that hearings, on average, last no longer than four hours.

The Engineer shall prepare for and provide expert testimony in eminent domain trial cases (assume 2 trials) at the county courthouse near the project location. Preparation includes the developing color exhibits, reviewing material, and providing depositions.

Assume that depositions, on average, last no longer than four hours and that trial cases, on average, last no longer than two days.

Deliverables include all services and documents stated in this section.

130.5. Utility Engineering Investigation

Utility engineering investigation includes utility investigations subsurface and above ground prepared in accordance with ASCE/CI Standard 38-02 [(<http://www.fhwa.dot.gov/programadmin/asce.cfm>)] and Utility Quality Levels.

A. Utility Quality Levels (QL)

Utility Quality Levels are defined in cumulative order (least to greatest) as follows:

1. Quality Level D - Quality level value assigned to a utility segment or utility feature after a review and compilation of data sources such as existing records, oral recollections, One-Call markings, and data repositories.
2. Quality Level C - Quality level value assigned to a utility segment or utility feature after surveying aboveground (i.e., visible) utility features and using professional judgement to correlate the surveyed locations of these features with those from existing utility records.
3. Quality Level B - Designate: Quality level value assigned to a utility segment or subsurface utility feature whose existence and position is based upon appropriate surface geophysical methods combined with professional judgment and whose location is tied to the project survey datum. Horizontal accuracy of Designated Utilities is 18" (including survey tolerances) unless otherwise indicated for a specific segment of the deliverable. Quality Level B incorporates quality levels C and D information. A composite plot is created.
4. Quality Level A – Quality level value assigned to a portion (x, y, and z geometry) of a point of a subsurface utility feature that is directly exposed, measured, and whose location and dimensions are tied to the project survey datum. Other measurable, observable, and judged utility attributes are also recorded (per District Best Practices). The utility location must be tied to the project survey datum with an accuracy of 0.1 feet (30-mm) vertical and to 0.2 feet (60-mm) horizontal. As test holes may be requested up front or during the project, test holes done prior to completion of QL D, C, or B deliverables must be symbolized on the QL B deliverable with a call out indicating test holes number. This is in addition to and not in lieu of the test hole.

I. Utility Investigations Methodology

1. Utility Investigation Quality Level D The Engineer shall:
 - a. Perform records research from all available resources. Sources include, but are not limited to: Texas811, Railroad Commission of Texas (Texas RRC), verbal recollection, as-built information from plans, plats, permits and any other applicable information provided by the utility owners or other stakeholders.
 - b. Document utility owners and contact information.
 - c. Create a utility drawing of information gathered.
2. Utility Investigation Quality Level C

The Engineer shall:

- a. In combination with existing Quality Level D information, utilize surveyed above-ground utility features and professional judgement to upgrade Quality Level D information to Quality Level C. For those utilities unable to be upgraded, retain as Quality Level D.

- b. Storm and sanitary sewer information must be gathered from Level D and upgraded to Level C as possible, unless otherwise directed by the Owner.
- c. Create composite utility drawing of information gathered.

3. Designate (Quality Level B)

Designate means to indicate the horizontal location of underground utilities by the application and interpretation of appropriate non-destructive surface geophysical techniques and reference to established survey control. Designating (Quality Level B) services are inclusive of Quality Levels C and D.

The Utility Engineer must:

- a. As requested by the Owner, compile "as-built" information from plans, plats and other location data as provided by the utility owners.
- b. Coordinate with utility owner when utility owner's policy is to designate their own facilities at no cost for preliminary survey purposes. The Engineer shall examine utility owner's work to ensure accuracy and completeness.
- c. Designate, record, and mark the horizontal location of the existing utility facilities using non-destructive surface geophysical techniques.
- d. Using both active and passive scans to attempt to locate any additional utilities, including unrecorded and abandoned storm and sanitary sewer facilities, at the direction of the Owner, utilities maybe investigated using additional methods such as rodding that would then classify them as Quality Level B. A non-water based pink paint or pink pin flags must be used on all surface markings of underground utilities.
- e. Correlate utility owner records with designating data and resolve discrepancies using professional judgment. The Utility Engineer must prepare and deliver to Owner a color-coded composite utility facility plan with utility owner names, quality levels, line sizes and subsurface utility locate (test hole) locations. The Utility Engineer and Owner acknowledge that the line sizes of designated utility facilities detailed on the deliverable will be from the best available records and that an actual line size is normally determined from a test hole vacuum excavation. A note must be placed on the designate deliverable only that states "lines sizes are from best available records". All above-ground utility feature locations must be included in the deliverable to the Owner. This information must be provided in the latest version of AutoCAD civil design system used by the Owner. The electronic file will be uploaded to the Owner's Procore file management system, as required by the Owner. When requested by the Owner, the designated utility information must be overlaid on the Owner's design plans.
- f. Determine and inform the Owner of the approximate electronic utility depths at critical locations as determined by the Owner. The limits of this additional information should be determined prior to the commencement of work. This depth indication is understood by both the Engineer and the Owner to be approximate only and is not intended to be used preparing the right of way and construction plans.

- g. Provide a monthly summary, with weekly updates, of work completed and in process with adequate detail to verify compliance with agreed work schedule.
- h. Provide documentation to show that permits have been closed out as required.
- i. Clearly identify all utilities that were discovered from Quality Levels C and D investigation but cannot be depicted in Quality Level B standards. These utilities must have a unique line style and symbology in the designate (Quality Level B) deliverable.
- j. Comply with all applicable TxDOT policy and procedural manuals.

4. Subsurface Utility Locate (Test Hole) Service (Quality Level A)

Locate is the process used to obtain precise horizontal and vertical position, material type, condition, size, and other data that may be obtainable about the utility facility and its surrounding environment through exposure by non-destructive excavation techniques that ensures the integrity of the utility facility. Subsurface Utility Locate (Test Hole) Services (Quality Level A) are inclusive of Quality Levels B, C, and D.

The Utility Engineer must:

- a. Review requested test hole locations and advise the Owner in the development of an appropriate locate (test hole) work plan relative to the existing utility infrastructure and proposed highway design elements.
- b. Coordinate with utility owner inspectors as may be required by law or utility owner policy.
- c. Place Texas 811 ticket 48 hours prior to excavation.
- d. Neatly cut and remove existing pavement material, such that the cut does not exceed 0.10 square meters (1.076 square feet) unless unusual circumstances exist.
- e. Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:
 - i. Elevation of top of utility tied to the datum of the furnished plan.
 - ii. Minimum of two benchmarks utilized. Elevations must be within an accuracy of 15mm (.591 inches) of utilized benchmarks.
 - iii. Elevation of existing grade over utility at test hole location.
 - iv. Horizontal location referenced to project coordinate datum.
 - v. Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems.
 - vi. Utility facility material(s).
 - vii. Utility facility condition.
 - viii. Pavement thickness and type.
 - ix. Coating/wrapping information and condition.
 - x. Unusual circumstances or field conditions.
- f. Excavate test holes in such a manner as to prevent any damage to wrappings, coatings, cathodic protection or other protective coverings and features. Water excavation can only be utilized with written approval from the Owner.
- g. Be financially responsible for any damage to the utility during the locating process. In the event of damage, the Utility Engineer must stop work, notify the

appropriate utility facility owner, the Owner and appropriate regulatory agencies. The regulatory agencies include: The Texas Railroad Commission and the Texas Commission on Environmental Quality. The Utility Engineer must not resume work until the utility facility owner has determined the corrective action to be taken. The Utility Engineer must be liable for all costs involved in the repair or replacement of the utility facility.

- h. Back fill all excavations with appropriate material, compact backfill by appropriate mechanical means, and restore pavement and surface material. The Engineer is responsible for the integrity of the backfill and surface restoration for a period of three years.
 - i. Furnish and install a permanent above-ground marker (as specified by the Owner), directly above center line of the utility facility.
 - j. Provide complete restoration of work site and landscape to equal or better condition than before excavation. If a work site and landscape is not appropriately restored, the Utility Engineer must return to correct the condition at no extra charge to the Owner.
 - k. Plot utility location position information to scale and provide a comprehensive utility plan signed and sealed by the responsible Engineer. This information must be provided in the latest version of AutoCAD and be fully compatible with the AutoCAD civil design system used by the Owner. The electronic file will be uploaded to the Owner's Procore file management system as requested. When requested by the Owner, the locate information must be overlaid on the Owner's design plans.
 - l. Return plans, profiles, and test hole data sheets to the Owner. If requested, conduct a review of the findings with the Owner.
 - m. Close-out permits as required.
5. Quality Level B and Level A Subsurface Utility Investigation is limited to areas identified during preparation of Task 2 Preliminary Engineering Report

130.6. Utility Adjustment Coordination. (18.3.1)

Utility Adjustment Coordination shall include utility coordination meetings with individual utility companies, communication and coordination with utilities, limited to one meeting with each affected utility to inform them of the conflict and provide notice of required relocations. Utility adjustment coordination shall not include preparation of utility agreement assemblies including utility agreements, joint use agreements, and advanced funding agreements.

The Engineer is responsible for designating and providing the services of the following individuals or entities:

- 1. Utility Coordinator: individual or entity performing Utility-related Services that are not required to be performed by a licensed engineer under Texas law.
- 2. Utility Engineer: individual or entity performing Utility-related Services that are required to be performed by a licensed engineer under Texas law.

A. Utility Coordination

The Utility Coordinator shall perform utility coordination and liaison activities with involved utility owners, their consultants, and the Owner to achieve timely project notifications, formal coordination meetings, conflict analysis and resolution.

- a. The Utility Coordinator shall coordinate all activities with the Owner, or their designee, to facilitate the orderly progress and timely completion of the project schematic phase. The Utility Coordinator shall be responsible for the following:
 - i. Initial Project Meeting. Attend an initial meeting with the utility owners to ensure familiarity with existing conditions, project requirements, anticipated conflicts, anticipated relocations, and prepare a written report of the meeting.
 - ii. The Utility Coordinator shall provide initial project notification letters to all affected utility companies, owners, and other concerned parties.
 - iii. The Utility Coordinator shall advise utility companies and owners of the general characteristics of the Project and provide an illustration of the project footprint for mark-up of the utility facility locations that occupy the project area.

FUNCTION CODE 145(145, 164) – MANAGING CONTRACTED/DONATED PE

CONTRACT MANAGEMENT AND ADMINISTRATION

145.1. Contract Management and Administration

The Engineer shall:

- A. Act as an agent for the Owner when specified in a task order.
- B. Produce a complete and acceptable deliverable for each environmental service performed for environmental documentation.
- C. Incorporate environmental data into the project schematic.
- D. Notify the Owner of its schedule, in advance, for all field activities.
- E. Notify the Owner as soon as practical, by phone and in writing, if performance of environmental services discloses the presence or likely presence of significant impacts (in accordance with 40 Code of Federal Regulations (CFR) 1500-1508). Inform the Owner of the basis for concluding there are significant impacts and the basis for concluding that the impacts might require mitigation.
- F. Notify the Owner as soon as practical, by phone and in writing, if performance of environmental services results in identification of impacts or a level of controversy that might elevate the transportation activity's status from a categorical exclusion or environmental assessment. The Owner will reassess the appropriate level of documentation.

145.2. Project Management and Administration

The Engineer, in association with the Owner's Project Manager shall be responsible for directing and coordinating all activities associated with the project to comply with Owner policies and procedures, and to deliver that work on time.

Project Management and Coordination. The Engineer shall coordinate all subconsultant activity to include quality of and consistency of plans and administration of the invoices and monthly progress reports. The Engineer shall coordinate with necessary local entities.

The Engineer shall:

- Prepare monthly written progress reports for each project.
 - Develop and maintain a detailed project schedule to track project conformance to Exhibit C, Work Schedule, for each task order. The schedule submittals shall be electronic format unless otherwise specified by the Owner.
 - Meet on a scheduled basis with the Owner to review project progress.
 - Prepare, distribute, and file both written and electronic correspondence.
 - Prepare and distribute meeting minutes.
 - Document phone calls and conference calls as required during the project to coordinate the work for various team members.
 - Provide QC/QA documentation for all submittals, including the subconsultants.
- a. **Perform Project Management tasks.** All firms participating in Kyle 2022 Road Bond Projects, either as a Prime Contractor or Subcontractor, must fully utilize Procore construction management software for full project implementation, as directed by the Owner. The Owner will provide Procore access to all firms. The Engineer shall:
- i. Meet on a scheduled basis with Owner to review Project progress. The Engineer will provide meeting summaries within five (5) working days of the meeting to all attendees.
 - ii. Conduct internal meetings with the consultant design team on a monthly basis or as needed for the duration of the Project.
 - iii. Provide Contract Administration
 - iv. Provide Project Management
 - v. Attend a kick-off meeting with the Owner.
 - vi. Attend and direct 50%, 90%, and 100% design review meetings.
 - vii. Update Project design schedule on a monthly basis
 - viii. Prepare monthly invoice and monthly progress report including monthly updates to design schedule
- b. **Baseline Schedule.** Develop and submit for approval a Critical Path Method (CPM) baseline schedule within fourteen (14) calendar days of the Notice to Proceed. Schedule shall be in MS Project or Primavera P6. Modifications to the approved schedule will require approval by the Owner.
- i. Submit both pdf and native (.mpp or .xer) copies of the files.
 - ii. Include all planned work activities and sequences, major milestones, and show Contract completion
 - iii. Include activities that are the responsibility of the Owner, and estimate the duration for these activities. This time will not count against the Contract time, but is important to track as the critical path may run through them.
 - iv. Ensure that the activities are broken out to a level of detail that clearly explains the tasks associated with delivering the work product.

- v. Provide activity durations in whole calendar days.
- vi. Provide a legend for all abbreviations, run date, data date, project start date, and project completion date in the title block of each submittal.
- vii. Begin the project schedule on the Notice to Proceed date.
- viii. Show a predecessor and successor for each activity with the appropriate activity relationships.
- ix. Ensure that all work sequences are logical and can be explained to the Owner if questions arise for clarification or understanding.
- x. Do not use activities exceeding 28 calendar days, unless agreed upon with the Owner.

c. Progress Schedule

- i. Project schedule updates shall be submitted as part of all invoice approval packages. Invoices submitted without schedule updates will be incomplete and will not be processed until schedule update is submitted.
- ii. Submit both the pdf and electronic copy of the project schedule running through the end of each month, due no later than tenth (10th) calendar day of the following month, as it will become a record of the progress achieved on the project.
- iii. Once established, the original duration and actual dates of all activities must remain unchanged.
- iv. Revisions to the schedule may be made, but must be listed in a monthly update narrative in the Progress Report with the purpose of explaining the purpose of the revision and description of the impact on the project schedule's critical path and project completion date.
- v. Monthly Progress Reports should include:
 - 1. Completed and planned work
 - 2. Budget status
 - 3. Schedule status
 - 4. Actual start dates for activities started
 - 5. Actual finish dates for activities completed
 - 6. The percentage of work completed and remaining duration for each activity started, but not yet completed
 - 7. Current delays and plans showing how they will be rectified
 - 8. Potential delays and plans to rectify
 - 9. Tracking schedule (pdf & mpp/xer)

d. Plan Development and Review Process

- i. Engineer may not be compensated for any services performed without a written Notice-to-Proceed.
- ii. Each deliverable must be submitted for review and approval by the Owner.
- iii. The review process will take place electronically using a Bluebeam session to consolidate comments.
- iv. Each submittal shall include a cover letter from the Engineer stating who from the design team performed a Quality Assurance/Quality Control ("QA/QC") check. The QA/QC certification letter must be co-signed by the QA/QC reviewer and the Project

- Manager. The QA/QC reviewer may not be one of the design team members.
- v. Each submittal shall include a revisions log from the Engineer (exported from Bluebeam) that tracks each comment received during previous phases of work. For each comment, the log shall provide the original comment, the status, how it has been implemented into the plans, and approval by the Owner.
 - vi. Unless otherwise specified by Owner, allow two (2) weeks for the Owner to review and provide written comments and/or approval for each submittal. When comments are received by the Engineer, the Engineer shall schedule a Comment Resolution Meeting with Owner in order to review the comments and clarify understanding of them prior to making design changes. If the Owner requires a resubmittal, submit electronically in Procore for the Owner to review and provide written comments and/or approval.

FUNCTION CODE 160(150) – ROADWAY DESIGN

150.1. DESIGN SURVEY

A. DEFINITIONS

1. Design Survey (15.2.1)

A design survey gathers data in support of transportation systems design. A design survey includes the research, field work, analysis, computation, and documentation necessary to provide detailed topographic (3- dimensional) mapping of a project site (e.g., locating existing ROW, surveying cross-sections or developing data to create cross-sections and digital terrain models, horizontal and vertical location of utilities and improvements, collecting details of bridges and other structures, review of ROW maps, establishing control points).

J. TECHNICAL REQUIREMENTS FOR DESIGN SURVEYS

- 1. Design surveys must be performed under the supervision of a RPLS currently registered with the TBPELS.
- 2. All control must meet the of accuracy requirements of TSPS Manual of Practice.

The Surveyor shall comply with the standards of accuracy for control traverses provided in the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

- 3. Short traverse procedures used to determine horizontal and vertical locations must meet the following criteria:
 - a. Short traverses must begin and end on horizontal and vertical ground control as described above.
 - b. Required horizontal accuracy (unless otherwise stated):
 - i. Bridges and other roadway structures: less than 0.1 feet.
 - ii. Utilities and improvements: less than 0.2 feet.

- iii. Cross-sections and profiles: less than 1 foot.
- iv. Bore holes: less than 3 feet.
- c. Required vertical accuracy:
 - i. Bridges and other roadway structures: less than 0.02 feet.
 - ii. Utilities and improvements: less than 0.1 feet.
 - iii. Cross-sections and profiles: less than 0.2 feet.
 - iv. Bore holes: less than 0.5 feet.

K. DATA REQUIREMENTS FOR DESIGN SURVEYS

- 1. Planimetric DWG files must be fully compatible with AutoCAD graphics.
- 2. Digital terrain models (DTMs) must be fully compatible with AutoCAD. All DTM must be fully edited to provide a complete digital terrain model with all necessary break lines.

150.2. FIELD SURVEY (15.2.1)

A. TASKS TO BE COMPLETED

Design Surveys

If requested by the Owner, the Surveyor shall perform one or more Design Surveys. Design Survey tasks include the following:

- 1. Collect data to create cross-sections and DTMs.
- 2. Locate existing utilities.
- 3. Locate existing improvements.
- 4. Provide details of existing bridge structures, including bridge limits, bents, columns, retaining walls, and natural ground elevations.
- 5. Locate details of existing drainage features including culverts, manholes, retention and detention ponds, flowlines, and associated features.
- 6. Locate all waters of the United States (WOTUS), including wetlands if marked by others.
- 7. Review existing ROW maps and locate the existing ROW.
 - a. Review existing ROW maps
The Surveyor shall review ROW maps prepared by others for completeness using the current schematic and the checklist provided by the TxDOT district.
 - b. Locate existing ROW
The Surveyor shall resurvey the existing ROW where it is necessary to update or redefine ROW lines. All standard surveying procedures must be adhered to including record research, recovering existing monuments, and replacing monuments as appropriate. The Surveyor shall prepare an abstract map, preliminary map, final map. The final map must also include a monument table showing the property monuments that were found and set and certified by the Surveyor. The Surveyor shall prepare maps either in standard map sheets format or roll map format as requested by the Owner.
- 8. Locate boreholes.
- 9. Perform hydrographic surveys, according to details requested by the Owner

10. Verify the condition and usefulness of existing control points including verification of the values. Establish additional control as needed.
11. Update existing control information and prepare new survey control data sheets, as directed by the Owner to be included in the construction plan set as described below:
 - a. a. The Surveyor shall prepare, sign, seal, and date a survey control index sheet and horizontal and vertical control sheet(s) to be inserted into the plan set.
 - b. b. The survey control index sheet provides an overview of the primary project control and must include:
 - i. An unscaled vicinity map showing the general location of the project in relation to nearby towns or other significant cultural features.
 - ii. A scaled project map showing the extents of the project and the location of the primary control points. The map must show street networks, selected street names, control point identification, and significant cultural features necessary to provide a general location of the primary control.
 - iii. A table containing the primary control point values including the point number, northing, easting, elevation, stationing, and stationing offset values.
 - iv. Map annotation including a graphic scale bar, north arrow, and standard title block. The title block shall contain a section for the OWNER, city, and highway name. The title block shall also contain a section for a Texas registered engineer to sign, seal and date the sheet to include the following statement, "The survey control information has been accepted and incorporated into this PS&E." The required format of the survey control index sheet can be downloaded from the TxDOT website.
 - v. In the title block under the heading "Notes", identification of the horizontal and vertical datum on which the primary control is based with the date of the current adjustment, the surface adjustment factor used, and unit of measure. The Surveyor shall include a note stating that the coordinates re State Plane and a notation specifying either grid or surface adjusted coordinates.
 - c. The Surveyor shall prepare horizontal and vertical control sheets providing detailed information about the construction, location, and monumentation of the primary control, which must include:
 - i. An unscaled location map for each primary control point showing the location of the monument in relation to physical features located in the vicinity. The location map must include a north arrow, the monument designation, the monument northing, easting, and elevation.
 - ii. Directly below the location map a text description of the monument including size, material and construction followed by a description of the location of the monument starting with the county and state followed by a description suitable to locate the monument on the ground.
 - iii. Map annotation including a graphic scale bar, north arrow, and a standard title block. The title block must contain a section for the Owner, city, and highway name and contain a section for a Texas registered engineer to sign, seal and date the sheet to include the following statement, "The survey control information has been accepted and incorporated into this

PS&E.” The required format of the survey control index sheet can be downloaded from the TxDOT website.

- iv. In the title block under the heading “Notes”, identification of the horizontal and vertical datum on which the primary control is based with the date of the current adjustment, the surface adjustment factor used, and unit of measure. The Surveyor shall include a note stating that the coordinates are either grid or surface adjusted coordinates.

150.4. DELIVERABLES FOR DESIGN SURVEYS

The Surveyor shall prepare and submit the deliverables as specified in individual task orders for design surveys and construction surveys. The deliverables might be any combination of the following:

- A. Digital terrain models (DTM) and the triangular irregular network (TIN) files in a format acceptable by the Owner.
- B. Maps, plans, or sketches prepared by the Surveyor showing the results of field surveys.

150.11. HORIZONTAL AND VERTICAL CONTROL (15.3.5)

This includes the establishment of horizontal and vertical control for survey projects.

A. OVERVIEW OF HORIZONTAL AND VERTICAL CONTROL

A horizontal control survey is performed for the purpose of placing geographic coordinates of latitude and longitude on permanent monuments for referencing lower levels of surveys. A projection is used to place the coordinates on a plane of northing and easting values for simplified measurements. Scale and elevation factors are applied to make the distance measurements applicable to the exact location on the working surface and the type of projection chosen is an “equal angle” type.

A vertical control survey is performed for accurately determining the orthometric height (elevation) of permanent monuments to be used as benchmarks for lower quality leveling. Spirit leveling is the usual method of carrying elevations across country from “sea level” tidal gauges. However, Global Positioning System (GPS) can be used indirectly but with less accuracy. Height measurements from the ellipsoid (as opposed to the “sea level” geoid) can be determined very accurately with GPS and only GPS. Trigonometric leveling, with a total station, is not acceptable for vertical control work.

L. DEFINITIONS

- 1. BM means benchmark, which is a relatively permanent object whose elevation above or below an adopted datum is known.
- 2. CORS means continuously operating reference station, which is a network of the highest quality horizontal stations, forming the National Spatial Reference System (NSRS).

3. Control Survey means a survey providing positions (horizontal or vertical) of points to which supplemental surveys are adjusted.
4. Datum means a mathematical model of the earth designed to fit part or all of the geoid.
5. Datum Point Rod or Deep Rod Monument means a monument driven to refusal by a power driver, used for major project control.
6. GPS means the Global Positioning System, which is based on a constellation of 24 satellites orbiting the earth at a very high altitude.
7. Horizontal Control Survey means placing geographic coordinates of latitude and longitude on permanent monuments.
8. Level 1 survey means RFP, CORS or major control densification.
9. Level 2 Survey means primary project control.
10. Level 3 Survey means secondary project control.
11. NGS – National Geodetic Survey
12. Type II Monument means a disk driven onto a length of 5/8-inch rebar with the hole filled flush with concrete.
13. Vertical Control Surveys means a survey performed for accurately determining the orthometric height (elevation) of permanent monuments to be used as benchmarks for lower quality leveling.

M. PROCEDURE FOR HORIZONTAL AND VERTICAL CONTROL

1. The Surveyor shall establish horizontal and vertical control points, including offsite points. The Surveyor shall prepare signed survey control data sheets, a survey control index sheet, and a composite layout of the horizontal and vertical controls, and as directed by the Owner.
2. The Surveyor shall update existing control information and prepare new survey control data sheets, as directed by the Owner, to be included in the construction plan set as described in Item 150.11, D.

N. TECHNICAL REQUIREMENTS FOR HORIZONTAL AND VERTICAL CONTROL

The Surveyor shall adhere to the following technical requirements.

1. Horizontal and vertical controls must be performed under the supervision of a RPLS currently registered with the TBPELS.
2. Horizontal ground control used for design surveys and construction surveys, furnished to the Surveyor by the Owner, or based on acceptable methods conducted by the Surveyor, must meet the standards of accuracy required by the Owner.
The Surveyor shall comply with the standards of accuracy for horizontal control traverses, as described in the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.
3. Vertical ground control used for design surveys and construction surveys, furnished to the Surveyor by the Owner or based on acceptable methods conducted by the Surveyor, must meet the standards of accuracy required by the Owner.
The Surveyor shall comply with the standards of accuracy for vertical control traverses, as described in the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

4. Control Points

The Surveyor shall install survey control points for a horizontal and vertical control survey that are reasonably permanent and substantial. The monuments shall be easily identified and afforded reasonable protection against damage and or destruction.

5. Side shots or short traverse procedures for total stations used to determine horizontal and vertical locations must meet the following criteria:
- a. Short traverses and instrument setups for side shots must begin and end on horizontal and vertical ground control as described above.
 - b. Standards, procedures, and equipment (e.g., GPS Equipment, LiDAR, Total Stations) used must be such that horizontal locations relative to the control can be reported within the specification to allow the engineer to accurately create the design to the following limits:
 - i. Bridges and other roadway structures: less than 0.02 feet.
 - ii. Utilities and improvements: less than 0.2 feet.
 - iii. Cross-sections and profiles: less than 0.2 feet.
 - iv. Bore holes: less than 0.5 feet.
 - c. Standards, procedures, and equipment (e.g., GPS Equipment, LiDAR, Total Stations) used must be such that vertical locations relative to the control may be reported to within 0.02 feet.
6. The Surveyor shall update existing control information and prepare new survey control data sheets, as directed by the Owner, to be included in the construction plan set as described below:
- a. The Surveyor shall prepare, sign, seal, and date a survey control index sheet and horizontal and vertical control sheets to be inserted into the plan set.
 - b. The Surveyor shall prepare a survey control index sheet that provides an overview of the primary project control and must include:
 - i. An unscaled vicinity map showing the general location of the project in relation to nearby towns or other significant cultural features.
 - ii. A scaled project map showing the extents of the project and the location of the primary control points. The map must show street networks, selected street names, control point identification, and significant culture features necessary to provide a general location of the primary control.
 - iii. A table containing the primary control point values including the point number, northing, easting, elevation, stationing, and stationing offset values.
 - iv. Map annotation including a graphic scale bar, north arrow, and standard TxDOT title block. The title block must contain a section for the district name, city, and highway name. The title block must also contain a section for a Texas registered engineer to sign, seal, and date the sheet to include the following statement, "The survey control information has been accepted and incorporated into this PS&E".
The Surveyor shall download the required format of the survey control index sheet from the TxDOT website.
 - v. In the title block under the heading "Notes", identification of the horizontal and vertical datum on which the primary control is based with the date of the current adjustment, the surface adjustment factor used,

and unit of measure. The surveyor shall include a note stating that the coordinates are State Plane and a notation specifying either grid or surface adjusted coordinates.

O. DATA REQUIREMENTS

The Surveyor shall perform post processing of field data, which will be reviewed by the Owner. Data processed by standard calculators, computers, and other business hardware and software normally maintained and used by the Surveyor will be considered acceptable.

P. TASKS TO BE COMPLETED

The Surveyor shall perform the following tasks:

1. The Surveyor shall establish horizontal and vertical control points, including offsite points. The Surveyor shall prepare signed survey control data sheets, a survey control index sheet, and a composite layout of the horizontal and vertical controls, or as directed by the Owner.

Q. DELIVERABLES

The Surveyor shall provide the following:

1. A B-size plot and AutoCAD graphics files of the index map showing an overall view of the project and the relationship of the primary monuments and control points established for the project, signed and sealed by a registered professional land surveyor (RPLS), or as directed by the Owner.
2. One A-size data sheet for each control point which shall include, but need not be limited to, a location sketch, a physical description of the point, surface coordinates, the elevation, and the datum used.
3. Graphics files and scanned images of the control data sheets uploaded to Owner's file management system.
4. A written statement describing the datum used, signed and sealed by a RPLS, along with copies of all relevant NGS and TxDOT data sheets.

FUNCTION CODE 160(160) – ROADWAY DESIGN

ROADWAY DESIGN CONTROLS

160.10. Pavement Design

Pavement design reports prepared by Arias and Associates to be provided by Owner for Center Street and Old Stagecoach Rd. This project scope includes a Pavement Design Report for the limits of Six Creeks Blvd between Old Stagecoach Rd and FM 150.

The Engineer shall prepare pavement designs for this project in accordance with the latest edition of TxDOT's Pavement Manual. Proposed pavement designs include permanent pavement, interim condition transition pavement, and temporary detour pavement. The latest edition of TxDOT's Pavement Manual may be accessed at <http://www.txdot.gov/business/resources.html>.

The Engineer shall submit a signed and sealed pavement design report to the Owner. The pavement design report must be reviewed and approved by the Owner prior to its implementation. The pavement design report must document assumptions and design considerations. The pavement design report must include the following:

- Cover sheet with roadway name, geographical limits, and signatures of persons involved in the preparation and approval
- Existing and proposed typical sections
- Soils map of the project area with a brief description of each type of soil located within the project area
- Design input values and output
- Conclusion consisting of recommended pavement design or designs based on the data, analyses, and procedures included in the report.
- Pavement design details specified for each location that includes structural layer materials, general specifications, and layer thicknesses
- Relevant pavement evaluation data (structural and functional) and condition information on adjacent roads
- Site conditions that might influence the design and performance of pavements
- Relevant geotechnical data and drainage requirements including boring logs, laboratory soil test results, active or passive drainage system design, ground penetrating radar (GPR) data, falling weight deflectometer (FWD) data, dynamic cone penetrometer (DCP) data, pavement coring and report log (up to 5-foot depth), and soil classifications with Atterberg limits
- Results of the field explorations and testing of pavement sections
- Recommended pavement rehabilitation methods and designs for new pavements
- Design criteria used in determining pavement designs, including traffic loads, pavement material characterization, environmental conditions, and pavement design life
- Design summary from the program used to design (e.g., FPS 21, DARWin, TxCRCP - ME, MODULUS 6.1)
- Life-cycle cost analysis, as required by TxDOT's Pavement Manual, including the periods for resurfacing, reconstruction, and other rehabilitation measures and what these activities are likely to entail
 - Traffic control plans required for subsurface geotechnical and pavement investigations
- Other considerations used in developing the pavement designs, including sub grade preparations and stabilization procedures

FUNCTION CODE 160(162) - ROADWAY DESIGN

FUNCTION CODE 160(163) - ROADWAY DESIGN

MISCELLANEOUS (ROADWAY)

The Engineer shall provide the following services:

163.1. Utility Engineering

Utility Engineering includes the identification of utility conflicts, coordination, compliance with the UAR, and resolution of utility conflicts. The Engineer shall coordinate all activities with the Owner to facilitate the orderly progress and timely completion of the project schematic design phase.

A. Coordination of Engineering Activities

1. Utility Layout:

The Utility Engineer must maintain a utility layout in the current approved version of AutoCAD Civil Design system used by the Owner. This layout must include all existing utilities which are to remain in place or be abandoned, and all adjusted utilities. This layout must be utilized to monitor the necessity of relocation and evaluate alternatives. The Utility Engineer must utilize the layout of existing utilities as prepared, if available, and make a determination of the following:

- a. Facilities in conflict with the proposed project that are to be relocated.
- b. Facilities to be removed or abandoned in place.
- c. Facilities that are going to be moved underground.
- d. Facilities to remain in service and in place because of roadway design adjustments and meeting the current TAC.
- e. If there are additional facilities, not shown in the SUE documents, which require relocation, the Engineer shall coordinate this information with the Owner immediately upon discovery.

R. Review of Utility's Proposed Alignments

1. Evaluate relocation alignments: The Utility Engineer must evaluate relocation alignments in the adjustment of utilities balancing the needs of both the Owner and the Utility.
2. Review estimates: The Utility Engineer must review the utility adjustment estimates for reasonableness of cost.

S. The Engineer shall not provide services under this contract that are for the sole benefit of a party or parties other than the Owner. The Engineer shall not invoice the Owner for any such services.

E. Utility Engineering VFP-

End Result: Fully reviewed and approved engineering plans (done by utility owners) of constructible utility accommodations.

The Utility Engineer must:

1. Identify potential conflicts using the AMA process, the design, and SUE.
 - a. Avoid – work with designers to avoid conflicts.
 - b. Minimize – Cost analyzed of safe available options to minimize cost and project delay.

2. Document all activities.
3. Track all ROW acquisitions to assist with scheduling accommodations.
4. Review documentation and justifications for Utility Exceptions.

T. Deliverables:

The Engineer shall submit the following deliverables to the Owner:

1. Identification of utility conflicts.
2. Composite DWG file showing all utilities with abandoned, removed, and added utilities.
3. Documentation showing review of engineering plans created by utility owners to ensure compliance with UAR, Buy America, etc.
4. Scheduling of accommodation to minimize issues (downtime, etc.) while maximizing the use of resources (e.g., Traffic Control) in a manner consistent with overall project timelines.
5. Documentation showing that exceptions were reviewed for viability.

**ATTACHMENT B
FEE SCHEDULE
Method of Payment:
LUMP SUM AND UNIT COSTS**

PROJECT NAME: Center Street & Old Stagecoach Rd (Off-system)

PROJECT LIMITS: Center Street from Veterans to Old Stagecoach Rd, Old Stagecoach Rd to FM 150

TASK DESCRIPTION	Prime	Raba Kistner	RIOS Group	TOTAL COSTS BY FC
FEASIBILITY STUDIES (FC 102 (110))	\$ 464,941.00	\$ -	\$ -	\$ 464,941.00
SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT (FC 120 (120))	\$ 55,974.00	\$ -	\$ -	\$ 55,974.00
RIGHT-OF-WAY DATA (FC 130 (130))	\$ 279,145.00	\$ -	\$ -	\$ 279,145.00
MANAGING CONTRACTED/DONATED PE (FC 145 (145,164))	\$ 63,475.00	\$ -	\$ -	\$ 63,475.00
DESIGN SURVEY (FC 160 (150))	\$ 72,465.00	\$ -	\$ -	\$ 72,465.00
ROADWAY DESIGN CONTROLS (FC 160(160))		\$ 14,900.00	\$ -	\$ 14,900.00
MISCELLANEOUS ROADWAY (FC 160 (163))	\$ 31,445.00	\$ -	\$ -	\$ 31,445.00
SUBTOTAL LABOR EXPENSES	\$ 967,445.00	\$ 14,900.00	\$ -	\$ 982,345.00
DIRECT EXPENSES (FC 130,FC 150.5, FC 164)	\$ 8,341.60	\$ 2,800.00	\$ 15,150.00	\$ 26,291.60
UNIT COST EXPENSES (FC 130, FC 164)	\$ -	\$ 9,810.00	\$ 48,900.00	\$ 58,710.00
TOTAL	\$ 975,786.60	\$ 27,510.00	\$ 64,050.00	\$ 1,067,346.60
	91.4%	2.6%	6.0%	100%
SUMMARY				
TOTAL LABOR COSTS FOR PRIME PROVIDER	\$ 967,445.00			\$ 967,445.00
NON-SALARY (OTHER DIRECT EXPENSES) FOR PRIME PROVIDER	\$ 8,341.60			\$ 8,341.60
SUBCONTRACTS (includes labor costs, direct expenses and unit cost)	\$ 91,560.00			\$ 91,560.00
GRAND TOTAL				\$ 1,067,346.60

Prime

PROJECT NAME: Center Street & Old Stagecoach Rd (Off-system)

PROJECT LIMITS: Center Street from Veterans to Old Stagecoach Rd, Old Stagecoach Rd to FM 150

TASKS	SHTS	Vice President	Project Manager	Project Engineer	E.I.T. / Designer	Administrative Assistant	Survey Manager	Project Surveyor	S.I.T. / Survey Technician	Survey Crew (4 person)	Survey Crew (3 person)	Sr. Env Scientist	Project Env Scientist	Biologist III	Biologist - Senior	Archeologist-Principal Investigator	Archaeologist I/II	Archaeologist III	Historian	GIS Technician	GIS Analyst	TOTAL HOURS	TOTAL COST
		\$375.00	\$280.00	\$200.00	\$150.00	\$130.00	\$320.00	\$250.00	\$165.00	\$310.00	\$255.00	\$300.00	\$170.00	\$140.00	\$195.00	\$161.00	\$123.00	\$99.00	\$213.00	\$120.00	\$210.00		
Develop proposed utility profiles				2	16																	18	\$ 2,800.00
Develop proposed side street profile geometry				2	8																	10	\$ 1,600.00
110.5 Cross-Sections																							\$ -
Develop existing terrain model using surveyed roadway and ditch topographical information				1	2																	3	\$ 500.00
Develop proposed roadway templates using AutoCAD				4	8																	12	\$ 2,000.00
Develop proposed roadway corridors and 3D geometry using AutoCAD			2	8	8																	18	\$ 3,360.00
Develop proposed ditch corridors and 3D geometry using AutoCAD			1	4	8																	13	\$ 2,280.00
Develop proposed intersection 3D geometry using AutoCAD			1	2	8																	11	\$ 1,880.00
Develop proposed side street and driveway 3D geometry using AutoCAD			1	2	4																	7	\$ 1,280.00
Develop cross section layouts with annotated centerlines, roadway elements, slopes, and ditch geometry				2	8																	10	\$ 1,600.00
Add cross culvert and utility linework to cross sections				1	4																	5	\$ 800.00
Calculate earthwork quantities using average end area method				2	4																	6	\$ 1,000.00
110.6 Retaining Walls																							\$ -
Determine if retaining walls are required and develop 2D and 3D geometrics as needed				1	1																	2	\$ 350.00
				4	8																	12	\$ 2,000.00
110.7 Renderings and Traffic Simulation																							\$ -
																							\$ -
																							\$ -
110.8 Preliminary Construction Sequence																							\$ -
Develop TCP roll plots			1	2	8																	11	\$ 1,880.00
Develop TCP geometry for temp widening and constructed roadway/drainage elements by phase			2	8	16																	26	\$ 4,560.00
Develop pedestrian and bike routes during construction including detours and/or temp facilities			1	4	8																	13	\$ 2,280.00
Develop TCP temp striping by phase			2	8	24																	34	\$ 5,760.00
Develop TCP typical sections				2	8																	10	\$ 1,600.00
110.12 Agency Coordination and Public Involvement																							\$ -
Assist in meetings with property owners, stakeholders, and various agencies (4 total meetings)		4	8	8																		20	\$ 5,340.00
Document and respond to design issues		1	8	8																		17	\$ 4,215.00
Prepare exhibits and meeting materials (4 total exhibits)			4	8	8																	20	\$ 3,920.00
110.14 Preliminary Cost Estimates																							\$ -
Develop quantities for all proposed design elements			2	8	16	40																66	\$ 12,190.00
QA/QC quantity takeoffs			2	8	16	30																56	\$ 10,690.00
Develop preliminary cost estimate			2	4	16	10																32	\$ 6,570.00
Develop ROW acquisition cost estimate				4	8	40																52	\$ 8,720.00
SUBTOTAL		69	274	721	1,359	16						14		8		16					36	2,513	\$ 464,941.00
FC 120 (120) Social, Economic and Environmental Studies and Public Involvement																							
Archaeological Permit Acquisition			2													4	8	16				30	\$ 3,772.00
Archaeological Resources Survey			2													24	64	64				154	\$ 18,632.00
Environmental Public Involvement (2 employees prepare and attend 2 meetings)												8			16					10		58	\$ 10,080.00
Jurisdictional Waters Delineation			4									8	20	40	20							92	\$ 16,420.00
Endangered Species Assessments			4									4		20	10							38	\$ 7,070.00
SUBTOTAL			12									20	20	84	46	28	72	80			10	372	\$ 55,974.00
FC 130 (130) Right-of-Way Data																							
130.1 Right-Of-Ways Survey																							
H. Row Mapping																							\$ -
1. ABSTRACTING (113 adjacent parcels)			3				4	48	160													215	\$ 40,520.00
2. Field Surveys			3				4	48	60	120												235	\$ 61,220.00
3. Property Descriptions (20 exhibits)			3				4	72	120													199	\$ 39,920.00
4. ROW Map			3				4	72	90	30											4	203	\$ 45,110.00
130.4 ROW Hearing Services																							\$ -
A. ROW Hearings (8 total)																							\$ -
Develop color exhibits			4		8																	12	\$ 2,320.00
Prepare for hearing			8																			8	\$ 2,240.00
Attend virtual pre-hearing			8																			8	\$ 2,240.00
Attend in-person pre-hearing (1 hours each + 2 hours commuting)			24																		4	28	\$ 7,560.00
B. Expert Witness Services (8 hearings total)																							\$ -
Attend and provide expert witness for eminent domain hearings (4 hours each + 2 hours commuting)		48																				48	\$ 18,000.00
Prepare for testimony at courthouse			8																			8	\$ 2,240.00
C. Expert Witness Services (2 Trial Cases)																							\$ -
Prepare for, attend and provide expert witness for eminent domain trial cases (16 hours / trial)		32																				32	\$ 12,000.00
130.6 Utility Adjustment Coordination																							\$ -
A. Utility Coordination																							\$ -
i. Work Plan			2	4	16																	22	\$ 3,760.00
ii. Orientation			2	2	4																	8	\$ 1,560.00
iii. Initial Project meeting and On-site investigation			2	10	12	12																36	\$ 7,750.00
iv. External Communication			4	8	12	21																45	\$ 9,290.00
v. Internal Communication				6	24	24																54	\$ 10,080.00
vi. Milestone meetings (3 Total)			3	3	6	12																24	\$ 4,965.00
vii. Individual Utility Meetings (4 Total)			6	4	8	16																34	\$ 7,370.00
viii. Contact List				2	4																	6	\$ 1,000.00

Prime

PROJECT NAME: Center Street & Old Stagecoach Rd (Off-system)

PROJECT LIMITS: Center Street from Veterans to Old Stagecoach Rd, Old Stagecoach Rd to FM 150

TASKS	SHTS	Vice President	Project Manager	Project Engineer	E.I.T. / Designer	Administrative Assistant	Survey Manager	Project Surveyor	S.I.T. / Survey Technician	Survey Crew (4 person)	Survey Crew (3 person)	Sr. Env Scientist	Project Env Scientist	Biologist III	Biologist - Senior	Archeologist-Principal Investigator	Archaeologist I/II	Archaeologist III	Historian	GIS Technician	GIS Analyst	TOTAL HOURS	TOTAL COST
		\$375.00	\$280.00	\$200.00	\$150.00	\$130.00	\$320.00	\$250.00	\$165.00	\$310.00	\$255.00	\$300.00	\$170.00	\$140.00	\$195.00	\$161.00	\$123.00	\$99.00	\$213.00	\$120.00	\$210.00		
SUBTOTAL		95	99	70	117		16	240	430	150											8	1,225	\$ 279,145.00
FC 145 (145,164) Managing Contracted/Donated PE																							
145.2 Project Management and Administration																							\$ -
Prepare monthly progress reports		4	16			8																28	\$ 7,020.00
Develop and maintain project schedule			16	8																		24	\$ 6,080.00
Meet weekly with City PM (0.5 hrs/week for 8 months)		8	16																			24	\$ 7,480.00
Complete QAQC for 50%, 90%, and Final submittals		6	24	32		12						6										80	\$ 18,730.00
Conduct monthly internal design meetings		4	8	8			8					8										36	\$ 10,300.00
Attend kickoff meeting																							\$ -
Attend 50%, 90%, and final design review meetings		3	6	6								6										21	\$ 5,805.00
Prepare monthly invoices		4	16			16																36	\$ 8,060.00
																							\$ -
SUBTOTAL		29	102	54		36	8					20										249	\$ 63,475.00
FC 160 (150) Design Survey																							
1. Field Survey (For areas not previously surveyed)								2	8		100											110	\$ 27,320.00
2. Re-fresh Field Survey (For areas previously surveyed)								4	8		64											76	\$ 18,640.00
3. Deliverables for Design Survey		1				1		4	100													106	\$ 18,005.00
4. Horizontal and Vertical Control								4	30		10											44	\$ 8,500.00
SUBTOTAL		1				1		14	146		174											336	\$ 72,465.00
FC 160 (163) Miscellaneous Roadway																							
163.1 Utility Engineering																							\$ -
A. Utility Layout																							\$ -
1 Utility Layout (Roll Plot)		1	2	16	24																	43	\$ 7,735.00
2 Utility Conflict Matrix		1	4	20	40																	65	\$ 11,495.00
B. Review of Utility's Proposed Alignments																							\$ -
1 Evaluate Relocation Alignments			4	8	24																	36	\$ 6,320.00
2 Review Cost Estimates		1	4	10	16																	31	\$ 5,895.00
SUBTOTAL		3	14	54	104																	175	\$ 31,445.00
LABOR TOTALS		197	501	899	1580	53	24	254	576	150	174	54	20	92	46	44	72	80		46	8	4,870	\$ 967,445.00
		4.0%	10.3%	18.5%	32.4%	1.1%	0.5%	5.2%	11.8%	3.1%	3.6%	1.1%	0.4%	1.9%	0.9%	0.9%	1.5%	1.6%		0.9%	0.2%		

OTHER DIRECT EXPENSES	# OF UNITS	COST/UNIT	UNIT	
Mileage (105 miles round trip, 2 trips for 1 meeting, 1 hearing, and field surveys)	1,785	\$0.56	mile	\$ 999.60
Lodging/Hotel (2 employees for X trips for 1 meeting, 1 hearing, and field surveys)	4	\$141.00	day/person	\$ 564.00
Meals (2 employees for X trips for 1 meeting, 1 hearing, and field surveys)	4	\$50.00	day/person	\$ 200.00
Turning Movement Counts (4-hour per intersection)	11	\$100.00	4-hr/intersections	\$ 1,100.00
24-Hour Tube Counts	3	\$300.00	24-hours/location	\$ 900.00
Subconsultant Markup (RIOS Group)	1	\$3,202.50		\$ 3,202.50
Subconsultant Markup (Raba Kistner)	1	\$1,375.50		\$ 1,375.50
SUBTOTAL DIRECT EXPENSES (FC 164)				\$ 8,341.60

UNIT COST EXPENSES	# OF UNITS	COST/UNIT	UNIT	
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
SUBTOTAL UNIT COST EXPENSES (FC 164)				\$ -

SUMMARY	
TOTAL COSTS FOR PRIME PROVIDER	\$ 967,445.00
NON-SALARY (OTHER DIRECT EXPENSES) FOR PRIME PROVIDER	\$ 8,341.60
NON-SALARY (UNIT COST EXPENSES) FOR PRIME PROVIDER	\$ -
SUBCONTRACTS (Includes labor costs, direct expenses, and unit costs)	\$ 91,560.00
GRAND TOTAL	\$ 1,067,346.60

Raba Kistner

PROJECT NAME:
 PROJECT LIMITS:

TASKS	SHTS	PRINCIPAL	PROJECT MANAGER	SENIOR ENGINEER	ENGINEER	EIT	SR. ENGR. TECH.	ENGR. TECH.	ADMIN	Category	Category	Category	Category	TOTAL HOURS	TOTAL COST
		\$ 220.00	\$195.00	\$185.00	\$165.00	\$135.00	\$110.00	\$100.00	\$70.00	Rate (\$)	Rate (\$)	Rate (\$)	Rate (\$)		
FC 160 (160) Roadway Design Controls															
160.10 Pavement Design															
PROJECT KICK OFF		1	1		1	1	1		1					6	\$ 895.00
BORING LAYOUT & DRILLING INSTRUCTION			1			4	4							9	\$ 1,175.00
STAKE BORINGS							6							6	\$ 660.00
UTILITIES CLEARANCE							4							4	\$ 440.00
FIELD LOGGING								12						12	\$ 1,200.00
DYNAMIC CONE PENETROMETER (DCP) TESTING								4						4	\$ 400.00
LABORATORY ASSIGNMENT					1	2								3	\$ 435.00
SOIL BORING LOGS					1	6								7	\$ 975.00
SITE PLAN					1	2	2							5	\$ 655.00
PAVEMENT DESIGN ANALYSIS			2		4	12								18	\$ 2,670.00
DRAFT GEOTECHNICAL REPORT PREPARATION		2	4		6	12			2					26	\$ 3,970.00
GEOTECHNICAL REPORT REVIEW & FINALIZATION		1	1		2	4			2					10	\$ 1,425.00
SUBTOTAL		4	9		16	43	17	16	5					110	\$ 14,900.00

OTHER DIRECT EXPENSES	# OF UNITS	COST/UNIT	UNIT	
Traffic Control Services, Arrow Boards and Attenuator Truck (Medium Project)	1	\$ 2,800.00		\$ 2,800.00
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -

Raba Kistner

PROJECT NAME:
 PROJECT LIMITS:

TASKS	SHTS	PRINCIPAL	PROJECT MANAGER	SENIOR ENGINEER	ENGINEER	EIT	SR. ENGR. TECH.	ENGR. TECH.	ADMIN	Category	Category	Category	Category	TOTAL HOURS	TOTAL COST
		\$ 220.00	\$195.00	\$185.00	\$165.00	\$135.00	\$110.00	\$100.00	\$70.00	Rate (\$)	Rate (\$)	Rate (\$)	Rate (\$)		
SUBTOTAL DIRECT EXPENSES (FC 164)															\$ 2,800.00

UNIT COST EXPENSES	# OF UNITS	COST/UNIT	UNIT		
SUBSURFACE EXPLORATION PROGRAM (6 BORINGS TO 15 FT EACH)					
Mobilization of Drill Rig	1	\$ 650.00	EACH		\$ -
3" Thin-Wall Continuous Sampling or Intermittent Sampling in Granular Soils	60	\$ 19.50	FT		\$ 1,170.00
NX Core Drilling	30	\$ 35.00	FT		\$ 1,050.00
In-Place Pavement Core (6-in. diameter)	6	\$ 100.00	EACH		\$ 600.00
Bentonite Backfill	90	\$ 4.00	FT		\$ 360.00
Pavement Surface Patch	6	\$ 40.00	EACH		\$ 240.00
Driller Cleanup	6	\$ 230.00	HR		\$ 1,380.00
					\$ -
LABORATORY TESTING PROGRAM					
Atterberg Limits	12	\$ 105.00	EACH		\$ 1,260.00
Moisture Content	36	\$ 15.00	EACH		\$ 540.00
Sieve Analysis (passing No. 4, 40, 200)	12	\$ 95.00	EACH		\$ 1,140.00
Sulfate Testing	6	\$ 100.00	EACH		\$ 600.00
Lime Series (Tex-121-E Part III)	2	\$ 410.00	EACH		\$ 820.00
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
					\$ -
SUBTOTAL UNIT COST EXPENSES (FC 164)					\$ 9,810.00

SUMMARY	
TOTAL COSTS FOR SUBCONSULTANT 1	\$ 14,900.00
NON-SALARY (OTHER DIRECT EXPENSES) FOR SUBCONSULTANT 1	\$ 2,800.00
NON-SALARY (UNIT COST EXPENSES) FOR SUBCONSULTANT 1	\$ 9,810.00
GRAND TOTAL	\$ 27,510.00

The RIOS Group

PROJECT NAME: Center Street & Old Stagecoach Rd (Off-system)
 PROJECT LIMITS:

TASKS	SHTS	Principal	Sr. PM	PM	Project Engineer	Engineer in Training	Sr. Designer	Designer	Sr. CAD Operator	CAD Operator	Admin	Category	Category	TOTAL HOURS	TOTAL COST	
		\$318.00	\$290.00	\$225.00	\$161.00	\$127.00	\$157.00	\$142.00	\$142.00	\$117.00	\$92.00	Rate (\$)	Rate (\$)			
OTHER DIRECT EXPENSES		# OF UNITS	COST/UNIT	UNIT												
FC 130.5 Utility Engineering Investigation																
		3	\$350.00	Each												\$ -
		1	\$600.00	LS												\$ 1,050.00
		5	\$700.00	Day												\$ 600.00
		2	\$1,500.00	Day												\$ 3,500.00
		1	\$7,000.000	LS												\$ 3,000.00
																\$ 7,000.00
																\$ -
																\$ -
SUBTOTAL DIRECT EXPENSES (FC 130)																\$ 15,150.00
UNIT COST EXPENSES		# OF UNITS	COST/UNIT	UNIT												
FC 130.5 Utility Engineering Investigation																
																\$ -
																\$ -
																\$ -
		13	\$850.00	Each												\$ 11,050.00
		13	\$1,150.00	Each												\$ 14,950.00
		2	\$1,450.00	Each												\$ 2,900.00
			\$2,300.00	Each												\$ -
			\$350.00	Each												\$ -
																\$ -
		7	\$1,250.00	Day												\$ 8,750.00
		3	\$2,500.00	Day												\$ 7,500.00
		3	\$1,250.00	Day												\$ 3,750.00
																\$ -
																\$ -
SUBTOTAL UNIT COST EXPENSES (FC 130)																\$ 48,900.00

SUMMARY

TOTAL COSTS FOR SUBCONSULTANT 1	\$ -
NON-SALARY (OTHER DIRECT EXPENSES) FOR SUBCONSULTANT 1	\$ 15,150.00
NON-SALARY (UNIT COST EXPENSES) FOR SUBCONSULTANT 1	\$ 48,900.00
GRAND TOTAL	\$ 64,050.00

ASSUMPTIONS

- 1 Topographical or other Planimetric CADD Drawings will be provided as a background to put the SUE Drawings on.
- 2 TRG will obtain required City permits
- 3 Work will be not require pavement coring
- 4 Work to be Done - SUE QL-B.Designation, QL-A Test Holes



CITY OF KYLE, TEXAS

Installation of Multi-way STOP signs at County Road 158/Old Post Road, Spring Branch Drive/Spring Branch Loop/Fall Creek Drive, and Sanders/Kohler's Crossing

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: *(First Reading)* An Ordinance regulating traffic, authorizing and directing the installation and erection of stop signs for traffic control at the intersection of County Road 158 and Old Post Road; Spring Branch Drive and Spring Branch Loop/Fall Creek Drive; and Sanders and Kohler's Crossing in the city limits of Kyle. ~ *Leon Barba, P.E., City Engineer*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- Ordinance
- Memo- County Road 158/Old Post Road
- Memo-Spring Branch Drive/Spring Branch Loop
- Memo- Sanders/Kohler's Crossing
- Street Map- County Road 158/Old Post Road
- Street Map- Spring Branch Drive/Loop
- Street Map- Sanders/Kohlers Crossing

ORDINANCE NO. _____

AN ORDINANCE REGULATING TRAFFIC, AUTHORIZING AND DIRECTING THE INSTALLATION AND ERECTION OF STOP SIGNS FOR TRAFFIC CONTROL AT THE INTERSECTIONS OF COUNTY ROAD 158 AND OLD POST ROAD, SPRING BRANCH DRIVE AND SPRING BRANCH LOOP/FALL CREEK DRIVE, SANDERS AND KOHLERS CROSSING IN THE CITY LIMITS OF KYLE; REPEALING ANY ORDINANCE OR RESOLUTION IN CONFLICT; PROVIDING A SEVERABILITY CLAUSE; DECLARING A PENALTY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the regulation of traffic, motor vehicles and conveyances upon all public streets, roadway and right-of-ways within the City limits of the City of Kyle (the “City”) is essential and necessary to protect the traveling public and to preserve and protect the public safety of the City; and

WHEREAS, the: City Engineer, Director of Public Works, Chief of Police and City Council have reviewed the situation and issues that are the subject matter of this Ordinance; and

WHEREAS, the City Council of the City find that the safety and welfare of the citizens of the City requires that stop signs be provided at such points within the City;

NOW THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF KYLE, TEXAS:

SECTION 1: Findings. The recitals are hereby found to be true and correct and are hereby incorporated as part of this Ordinance.

SECTION 2: That all vehicles proceeding along the following streets shall come to a full stop immediately before reaching the intersections hereinafter set forth;

- AT THE INTERSECTION OF COUNTY ROAD 158 AND OLD POST ROAD
- AT THE INTERSECTION OF SPRING BRANCH DRIVE AND SPRING BRANCH LOOP/FALL CREEK DRIVE
- AT THE INTERSECTION OF SANDERS AND KOHLERS CROSSING

SECTION 3: That at each place designated in Section 2 of this ordinance, for vehicles to stop in proceeding along the street, there shall be placed a sign, either in the surface of the street or at the side thereof, directing traffic to stop at such point, and no provisions of this ordinance for which signs are required shall be enforceable against an alleged violator, if at the time and place of the alleged violation the sign herein required is not in proper position and sufficiently legible to be seen by an ordinarily observant person.

SECTION 4: That it shall be unlawful for the operator of any vehicle to disobey the instructions of the stop sign placed in accordance with the provisions of this ordinance.

SECTION 5: That it shall be unlawful for any person to willfully deface, injure, move, remove, obstruct or interfere with any stop sign under the provisions of this ordinance.

SECTION 6: Any person violating any provisions of this Ordinance shall be subject to the penalty provided in Section 1-14 of the Code of Ordinances.

SECTION 7. Conflicting Ordinances or Resolutions. All resolutions or ordinances or parts thereof conflicting or inconsistent with the provisions of this ordinance as adopted and amended herein, are hereby REPEALED to the extent of such conflict. In the event of a conflict or inconsistency between this ordinance and any other resolution, code or ordinance of the City, or parts thereof, the terms and provisions of this ordinance shall govern.

SECTION 8. Severability. If any section, subsection, sentence, clause, phrase, or word of this ordinance is declared unconstitutional or invalid for any purpose, the remainder of this ordinance shall not be affected thereby and to this end the provisions of this ordinance are declared to be severable.

SECTION 9. Effective Date. This ordinance shall be effective from and after its approval and passage in accordance with the Texas Local Government Code and the city charter.

PASSED AND APPROVED on first reading this ___ day of _____, 2023
FINALLY PASSED AND APPROVED on this ___ day of _____, 2023.

THE CITY OF KYLE, TEXAS

Travis Mitchell, Mayor

ATTEST:

Jennifer Kirkland, City Secretary



CITY OF KYLE

100 W. Center St.
Office (512) 262-3958

Kyle, Texas 78640
Fax (512) 262-3915

MEMORANDUM

TO: Jerry Hendrix, Interim City Manager

FROM: Spencer Keane, PE, Traffic Engineer SK

DATE: February 24, 2023

SUBJECT: Multi-way Stop Investigation – County Road 158 and Old Post Road

County Road 158 runs in a generally southeast direction starting at Interstate Highway 35 Frontage Road and ending at Yarrington Road. Old Post Road is stop controlled at its intersection with County Road 158.

Staff from the Engineering Department visited the subject intersection to observe the existing conditions. Limited intersection sight distance exists due to vegetation and a fence along County Road 158.

Based on staff observation, Option Item C in section 2B.07 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) is met. It is my engineering judgment that the installation of a multi-way stop control is appropriate at the intersection of County Road 158 and Old Post Road.

Please let me know if you need any additional information.

Xc: Harper Wilder, Director of Public Works
Jeff Barnett, Chief of Police
Leon Barba, City Engineer



CITY OF KYLE

100 W. Center St.
Office (512) 262-3958

Kyle, Texas 78640
Fax (512) 262-3915

MEMORANDUM

TO: Jerry Hendrix, Interim City Manager

FROM: Spencer Keane, PE, Traffic Engineer *SK*

DATE: March 21, 2023

SUBJECT: Multi-way Stop Investigation –
Spring Branch Drive and Spring Branch Loop/Fall Creek Drive

Spring Branch Drive runs in a generally north direction starting at Burleson Street and ending at Scrutchins Road. Spring Branch Loop/Fall Creek Drive is stop controlled at its intersection with Spring Branch Drive.

Staff from the Engineering Department visited the subject intersection to observe the existing conditions. Limited intersection sight distance exists due to vegetation and vehicles in driveways along Spring Branch Drive.

Based on staff observation, Option Item C in section 2B.07 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) is met. It is my engineering judgment that the installation of a multi-way stop control is appropriate at the intersection of Spring Branch Drive and Spring Branch Loop/Fall Creek Drive.

Please let me know if you need any additional information.

Xc: Harper Wilder, Director of Public Works
Jeff Barnett, Chief of Police
Leon Barba, City Engineer



CITY OF KYLE

100 W. Center St.
Office (512) 262-3958

Kyle, Texas 78640
Fax (512) 262-3915

MEMORANDUM

TO: Jerry Hendrix, Interim City Manager

FROM: Spencer Keane, PE, Traffic Engineer SK

DATE: March 21, 2023

SUBJECT: Multi-way Stop Investigation –Sanders and Kohlers Crossing

Sanders runs in a generally north/south direction starting at Fairway and ending at Jack Ryan. Kohlers Crossing runs east/west starting at FM 2770 and ending at Interstate Highway 35. Sanders is stop controlled at its intersection with Kohlers Crossing.

Based on the Preliminary Engineering Report created by CP&Y, 2 traffic signal warrants presented in the Texas Manual on Uniform Traffic Control Devices (TMUTCD) are met for the subject intersection based on existing conditions.

Guidance Item A in section 2B.07 of the TMUTCD, “Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.” is met. It is my engineering judgment that the installation of a multi-way stop control is appropriate at the intersection of Sanders and Kohlers Crossing.

Please let me know if you need any additional information.

Xc: Harper Wilder, Director of Public Works
Jeff Barnett, Chief of Police
Leon Barba, City Engineer

Purple

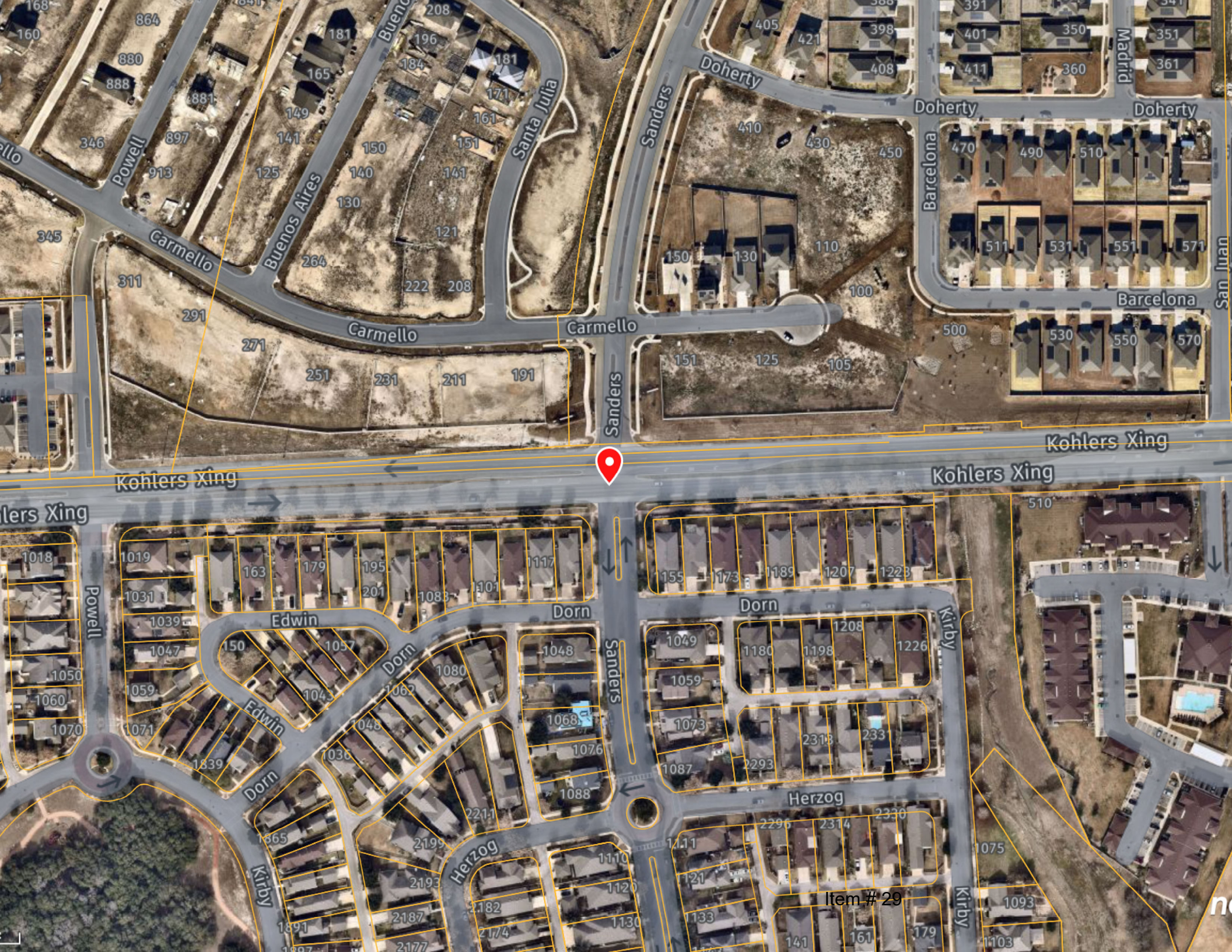


Item # 29

no



Item # 29



Item # 29



CITY OF KYLE, TEXAS

(First Reading) Acadian Ambulance Franchise

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: *(First Reading)* An Ordinance granting Acadian Ambulance Service of Texas, LLC, D/B/A Acadian Ambulance Service, a franchise to provide non-emergency and rollover emergency ambulance services within the boundaries of the City of Kyle, Texas; providing an agreement prescribing conditions, terms, and regulations governing the operation of the non-emergency ambulance services; providing penalties for noncompliance with franchise. ~ *Kaela Sharp, City Planner*

- Public Hearing

Other Information: The current franchise agreement for Acadian Ambulance Services was approved on second reading on January 19th, 2021, and included a term of two years with an option to renew for an additional two years with council approval.

The attached ordinance will codify Council's approval of a two-year extension. This ordinance is required to have a second reading per the City's Charter Sec. 11.02.
https://library.municode.com/tx/kyle/codes/code_of_ordinances?nodeId=PTICH_ARTXIPUUTFRCO_S11.02FR

The term of two years and franchise fee of 3.5% in the existing franchise is also renewed in the attached ordinance.

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- Acadia.Franchise.Renewal Ordinance
- UCR - Texas 2023[96]
- 1130, Acadian Ambulance Franchise
- Notice of Public Hearing Acadian Franchise Agreement

ORDINANCE NO. ____

AN ORDINANCE APPROVING A TWO-YEAR RENEWAL AND EXTENSION TO THE FRANCHISE GRANTED TO ACADIAN AMBULANCE SERVICE OF TEXAS, LLC, D/B/A ACADIAN AMBULANCE SERVICE, TO PROVIDE NON-EMERGENCY AND ROLLOVER EMERGENCY AMBULANCE SERVICES WITHIN THE BOUNDARIES OF THE CITY OF KYLE, TEXAS; APPROVING RATES AND CHARGES FOR PATIENTS OR CUSTOMERS; PROVIDING AN OPEN MEETINGS ACT CLAUSE; ESTABLISHING AN EFFECTIVE DATE; AND MAKING SUCH OTHER FINDINGS AND PROVISIONS RELATED HERETO.

WHEREAS, the City of Kyle, Texas, a home rule municipality (the “City”), and Acadian Ambulance Service of Texas, LLC, dba Acadian Ambulance Service (“Acadian”) are parties to a franchise agreement authorizing the provision of non-emergency and rollover emergency ambulance services within the City granted by Ordinance No. 1130 adopted on January 19, 2021 (the “Franchise Agreement”)

WHEREAS, the Franchise Agreement has a term of two years and may be renewed for an additional two years upon the written request of Acadian;

WHEREAS, Acadian has requested that the Franchise Agreement be renewed for an additional two-year period and the City desires to approve the renewal;

WHEREAS, Acadian has requested that the City approve new rates and charges for patients or customers as required by the Franchise Agreement; and

WHEREAS, pursuant to Section 11.02 of the City Charter, the City held a public hearing on the proposed renewal of the Franchise Agreement after publishing notice at least ten (10) days’ before the public hearing;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF KYLE, TEXAS, THAT:

Section 1. Renewal Approved. The Franchise Agreement is hereby renewed and approved for an additional two-year period. The term of the renewal period shall begin on January 19, 2023, and remain in full force and effect for a period of two years, subject to earlier termination as provided in the Franchise Agreement.

Section 2. Rates and Charges to Patients or Customers. Section 16 of the Franchise Agreement is hereby amended in its entirety to approve new rates and charges to patients or

customers, and to read as follows and as set forth in Exhibit A. The new rates and charges shall be effective upon the date of adoption of this Ordinance.

Section 16
Rates and Charges to Patients or Customers

1. Acadian shall comply with the schedule of rates that Acadian has attached to this Agreement as EXHIBIT “A” and which is incorporated herein by reference. Acadian may amend the schedule of rates only upon the adoption of an ordinance approving said amendment.
2. On non-emergency calls, or calls where a person requires transportation to a non-emergency facility, collection for service (payment) may, at the option of Acadian, be made before the ambulance begins the trip.

Section 2. Open Meetings. It is hereby officially found and determined that the meeting at which this ordinance was passed was held after a public hearing on the subject of this Franchise Agreement, and said meeting was open to the public, and public notice of the time, place and purpose of said meeting was given, as required by the Open Meetings Act, Chapter 551, Texas Government Code.

Section 3. Effective Date. This Ordinance shall be in full force and take effect from and after the date of its final passage and publication as required by law.

PASSED AND APPROVED ON FIRST READING on the 4th day of April, 20__.

PASSED AND FINALLY APPROVED ON SECOND READING on the ____ day of _____, 2023

CITY OF KYLE, TEXAS

Travis Mitchell, Mayor

ATTEST:

Jennifer Kirkland, City Secretary

ACADIAN AMBULANCE SERVICE OF TEXAS, LLC, D/B/A ACADIAN AMBULANCE SERVICE hereby accepts the renewal of the Franchise Agreement.

Name: _____
Title: _____

EXHIBIT "A"
Acadian Ambulance Service of Texas Pricing Catalog
Usual and Customary Rates

**Acadian Ambulance Service of Texas
Pricing Catalog
Usual and Customary Rates**

	2023	
	Rates	Effective date
<u>Base Rates</u>		
ALS2 Emergency	\$ 2,317.00	January 1, 2023
ALS1 Emergency	1,702.00	January 1, 2023
ALS1 Non-Emergency	1,653.00	January 1, 2023
BLS Emergency	1,702.00	January 1, 2023
BLS Non-Emergency	1,127.00	January 1, 2023
Specialty Care Base	3,535.00	January 1, 2023
<u>Mileage</u>		
Mileage	\$ 35.93	January 1, 2023

ORDINANCE NO. 1130

AN ORDINANCE GRANTING ACADIAN AMBULANCE SERVICE OF TEXAS, LLC, D/B/A ACADIAN AMBULANCE SERVICE, A FRANCHISE TO PROVIDE NON-EMERGENCY AND ROLLOVER EMERGENCY AMBULANCE SERVICES WITHIN THE BOUNDARIES OF THE CITY OF KYLE, TEXAS; PROVIDING AN AGREEMENT PRESCRIBING CONDITIONS, TERMS, AND REGULATIONS GOVERNING THE OPERATION OF THE NON-EMERGENCY AMBULANCE SERVICES; PROVIDING PENALTIES FOR NONCOMPLIANCE WITH FRANCHISE; PROVIDING FOR CODIFICATION; PROVIDING FOR SEVERABILITY; PROVIDING FOR PUBLIC NOTICE PURSUANT TO THE OPEN MEETINGS ACT; ESTABLISHING AN EFFECTIVE DATE; AND MAKING SUCH OTHER FINDINGS AND PROVISIONS RELATED HERETO.

RECITALS

WHEREAS, Article XI of the City’s charter gives the City council the power to grant by ordinance a non-exclusive franchise of all providers of public services, including ambulance services, for an effective period not to exceed ten (10) years; and,

WHEREAS, except as specifically authorized and provided otherwise by state law, the City’s charter mandates that no provider of ambulance services shall provide any service within the City requiring the use or occupancy of any street, public right-of-way, or property without the City council’s determination to grant a franchise or permit the use of such City facilities; and,

WHEREAS, the City’s charter provides that all grants of franchise as authorized in the charter shall be subject to the right of the city council to impose regulations and restrictions on the franchise as enumerated in Sec. 11.06 of the charter as may be deemed desirable or conducive to the health, safety, welfare and accommodation of the public; and,

WHEREAS, this ordinance shall be passed only on two readings held after a public hearing for which ten (10) days’ notice is given; and,

WHEREAS, Acadian Ambulance Service of Texas, LLC, D/B/A Acadian Ambulance Service (“Acadian”), has requested and desires to be granted a franchise from the City of Kyle for the purpose of providing non-emergency and roll-over emergency ambulance services originating or terminating within the boundaries of the City of Kyle or outside the boundaries of Kyle with a destination within the City of Kyle;

NOW THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF KYLE, TEXAS, THAT:

Section 1. Findings. The above foregoing recitals are hereby found to be true and correct and are incorporated herein as findings of fact.

Section 2. Franchise granted; scope and purpose. A non-exclusive franchise is hereby granted vis-à-vis this ordinance to Acadian Ambulance Service of Texas, LLC d/b/a Acadian Ambulance Service (“Acadian”) to operate Non-Emergency and Emergency Rollover Ambulance Services as described herein originating within the service area of Acadian that is located in the City limits and extraterritorial jurisdiction of the City of Kyle, Texas (hereinafter the “City”) or origination outside of the City limits and extraterritorial jurisdiction of the City of Kyle, Texas with a destination within such area. Acadian may use and occupy the City’s streets, avenues, alleys and any and all public property belonging to or under the control of the City for the purpose of operating its Non-Emergency Ambulance Services as described herein.

Section 3. Franchise recognized as a contract. In accordance with Article XI of the City’s charter, the franchise being granted by this ordinance is recognized as a contract (“Agreement”) between the City and Acadian, and the contractual rights as contained herein shall not be impaired by the provisions of Article XI. The terms and conditions set forth in the Agreement, which is attached hereto as EXHIBIT “A” and incorporated herein by reference, shall govern and regulate the operation by Acadian of its Non-Emergency Ambulance Services as described herein.

Section 4. Codification. This ordinance shall be codified in the City of Kyle Code of Ordinances at Appendix B, FRANCHISES.

Section 5. Conflict. Any and all ordinances, and parts thereof, that are in conflict herewith are hereby repealed to the extent of the conflict only.

Section 6. Severability. If any section, subsection, sentence, clause, phrase, or other portion of this ordinance is, for any reason, declared invalid, in whole or in part, by any court, agency, commission, legislative body, or other authority of competent jurisdiction, such portion will be deemed a separate, distinct, and independent portion. Such declaration will not affect the validity of the remaining portions hereof, which other portions will continue in full force and effect. In the event of a subsequent change in applicable law so that the provision which had been held invalid is no longer invalid, said provision will thereupon return to full force and effect without further action by the City and will thereafter be binding on Acadian and the City.

Section 7. Open Meetings. It is hereby officially found and determined that the meeting at which this ordinance is passed was open to the public as required and that public notice of the time, place, and purpose of said meeting was given as required by the Open Meetings Act, Ch. 551, Local Gov’t Code.

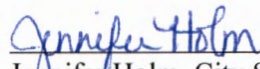
Section 8. Effective Date. This Ordinance shall be in full force and take effect from and after the date of its final passage and publication as required by law.

PASSED AND APPROVED on First Reading the 5th day of January, 2021.

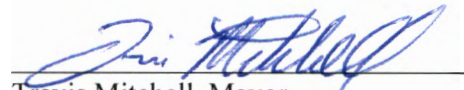
PASSED AND ADOPTED on Second Reading the 19th day of January, 2021.

ATTEST:

The City of Kyle, Texas



Jennifer Holm, City Secretary



Travis Mitchell, Mayor

EXHIBIT "A"

**ACADIAN AMBULANCE SERVICE OF TEXAS, LLC, DBA ACADIAN AMBULANCE
SERVICE
FRANCHISE AGREEMENT**

THIS AGREEMENT is made and entered into by and between the CITY OF KYLE, TEXAS, a home rule city and political subdivision of the State of Texas ("City") and ACADIAN COMPANIES DBA ACADIAN AMBULANCE SERVICE ("Acadian").

RECITALS

WHEREAS, Acadian agrees to provide Non-Emergency and roll-over emergency Ambulance Services in the City pursuant to this Agreement; warrants that it holds all required permits for the required services; has all the necessary emergency vehicle permits issued by the State of Texas; and employs emergency medical technicians who are duly licensed by the Health District to perform Non-Emergency Ambulance Services; and

WHEREAS, the City hereby finds and determines that Acadian is able to own and operate suitable certified equipment and employ qualified, licensed personnel in connection with its Ambulance Services as defined herein; and,

WHEREAS, the City's charter incorporates that an agreement be entered into between the City and a franchisee;

NOW THEREFORE, the City of Kyle and Acadian mutually agree as follows:

Section 1
Definitions

The following definitions shall apply in the interpretation and enforcement of this Agreement and in compliance with the ordinance:

Ambulance. Any privately or publicly owned motor vehicle that is specially designed, constructed, or modified and equipped; and is intended to be used for and is maintained or operated, for the transportation, on the streets or highways of this state; of persons who are sick, injured, wounded, or otherwise incapacitated or helpless.

Non-Emergency Ambulance Operator. A person with personnel and equipment in the business of transporting patients not in need of immediate medical treatment between various locations.

Non-Emergency Ambulance Operator Franchise. A franchise granted to a person with personnel trained at the Emergency Medical Technician (EMT) level and certified by NCOEMS. This franchise is to transport patients between health care facilities and other locations in non-emergent situations within Hays County. The use of warning lights and

audible warning devices is prohibited during vehicle operation except for the following:

- 1) transporting a patient who during the transport becomes critical or otherwise unstable to the closest most appropriate facility with an emergency room capable of treating the patient; or,
- 2) while stopped on a public roadway to render aid to motorists and/or pedestrians involved in a traffic or other incident that has potential to cause injury while waiting for emergency responders to arrive.

Non-Emergency Ambulance Services. The operation of an ambulance for any purpose other than transporting emergency patients.

Operator. An individual in actual physical control of an ambulance which is in motion or which has the engine running.

Patient. Individual receiving services under this Agreement and in compliance with the ordinance.

Person. Any individual, firm, partnership, association, corporation or organization of any kind, including any governmental agency other than the United States.

Rollover emergency. A situation in which the primary provider of 911 Services is unable to timely respond to an emergency and the dispatch requests a response by a secondary provider.

Section 2

Contents of Application to Provide Non-Emergency Services

1. Representations; warranties; revocation of franchise. In making this grant of non-exclusive franchise, the City has relied upon information provided by Acadian to the City, and the City's expectations of the operations and performance of any and all franchisees. Acadian agrees that all statements, representations and warranties provided to the City are true and correct to the best of Acadian's knowledge at the time of submission; and further agrees that the City's grant of franchise may be revoked upon discovery of any material misstatement of fact contained therein.

2. Application. Acadian shall complete an application if required by the City to operate within the City and its extraterritorial jurisdiction. An application shall contain the following:

- a. The name and address of the provider or franchisee of the ambulance services for which a franchise is being granted;
- b. the trade and all other names, if any, under which the applicant does business, along with a certified copy of an assumed name certificate stating such name or names or articles of incorporation stating such name or names;

- c. a complete resume of the training and experience of the applicant in the transportation and care of patients;
- d. a description in the manner in which the public will be able to obtain assistance and how the non-emergency vehicles will be dispatched; and
- e. a description of the non-emergency ambulance applicant's capability to provide regular transportation services in the City.

Section 4
Term of Agreement

This Agreement will remain in full force and effect for a period of two (2) years, commencing on the effective date the ordinance is passed on second reading by the Kyle city council. The City shall have the sole option to renew this franchise for an additional two (2) years upon the written request of Acadian.

Section 5
Service Area

Acadian may provide in all areas originating or terminating within the City limits and extraterritorial jurisdiction Non-Emergency Ambulance Service that is not dispatched or required to be dispatched in accordance with 9-1-1-Dispatched Ambulance Service.

Section 6
Disclosure of Patient Information

Acadian as a franchisee agrees that any unauthorized disclosure of specific patient-related information to the public is forbidden. If Acadian as a franchisee is determined to have disclosed specific patient related information to the public without the permission of the patient or authorized patient representative, the City may terminate this agreement and forfeit Acadian's franchise status.

Section 7
Minimum Standards for Non-Emergency Ambulance Franchisees

The City shall be the enforcing agency for the terms contained in this Agreement and may take the following actions:

1. inspect the premises, vehicles, equipment, and personnel of Acadian to assure compliance to this Agreement and perform any other inspections as deemed necessary by law or for the benefit of the public safety, health or welfare;
2. recommend to the city council the temporary or permanent suspension of a franchise in the event of non-compliance with the terms of this Agreement;

3. receive complaints from the public, other enforcing agencies, and others regarding any infractions allegedly committed by Acadian, and review or otherwise investigate any complaints, and recommend corrective action after Acadian has had a responsible time to respond to said allegations;
4. maintain all records of compliance with this Agreement and other applicable State and County regulations;
5. require Acadian to restore at its expense all public or private property to a condition equal to or better than that before being damaged or destroyed by Acadian.

Section 8
Violations; Penalties

The city council shall have the power and authority to review this franchise Agreement at anytime and to assess a penalty against Acadian for its failure to comply with the franchise Agreement, this charter, the ordinances of the City or the laws of the state. If in the opinion of the city council the requirements of the franchise Agreement, charter, ordinances or state law are not being complied with, the city council shall so notify Acadian in writing stating the provisions Acadian has failed to comply with and setting a time for a hearing and deadline for correction of the noncompliance. The city council may assess and enforce a reasonable penalty based upon the facts, issues and circumstances determined at the hearing if noncompliance is found. If Acadian does not correct the noncompliance within a reasonable time established by the city council for correction, the city council may impose penalties, place Acadian on probation, suspend the franchise or repeal or cancel the franchise. Penalties may be imposed and fines collected by the City as follows:

1. First offense: probation, suspension, or termination of the franchise, including up to a fine not to exceed five hundred dollars (\$500.00) levied against Acadian, for which Acadian is responsible to pay or otherwise said franchise may be terminated by the city council.
2. Second offense: probation, suspension, or termination of the franchise, including up to a fine not to exceed one thousand dollars (\$1,000.00) if within one (1) year of the first offense, levied against Acadian, for which Acadian is responsible to pay or otherwise said franchise may be terminated by the city council.
3. Third offense: probation, suspension, or termination of the franchise, including up to a fine not to exceed two thousand dollars (\$2,000.00) if within one (1) year of the second offense, levied against Acadian, for which Acadian is responsible to pay or otherwise said franchise may be terminated by the city council.
4. Fourth and subsequent offenses: If within one (1) year of the third offense, City staff shall recommend to the city council permanent termination of the franchise, upon which city council may accept or deny staff recommendation, or at its discretion, the city council

may impose suspension, probation, or termination of the franchise and this Agreement.

Section 9

Default

Exclusive of the penalties set forth hereinabove, Acadian shall be declared to be in default of this Agreement at the discretion of the city council if Acadian violates or contravenes in any of the terms or conditions of the Ordinance or this Agreement. The city council may terminate the franchise if Acadian is found to be in default.

Section 10

Majority vote

Acadian may be liable for fines or other penalties set forth in this Agreement, including termination of its franchise, or found to be in default, only upon a finding by majority vote of the city council.

Section 11

State Permits and City Franchise Requirements

Acadian, either as owner, agent, or otherwise, shall furnish, operate, conduct, maintain, advertise, or otherwise be engaged in or profess to be engaged in the non-emergency transportation of patients within the City unless and until Acadian holds a valid permit for each ambulance used in such ambulance service operation and has a valid franchise for the operation of such service by the City pursuant to this Agreement.

Section 12

Exemptions from Franchise Requirements

No franchise shall be required for:

1. any entity rendering assistance to Acadian in the case of a disaster, major catastrophe, mutual aid, or emergency when the services franchised by the City are insufficient or unable to cope, and assistance has been requested by the City;
2. any entity other than the franchisee operated from a location or headquarters outside of the City limits, but transporting to facilities located within the City limits, or transporting patients within the City limits to locations outside of the City limits;
3. ambulances owned and operated by an agency of the United States Government;
4. vehicles owned and operated by EMS providers chartered by the State of Texas as corporations to operate in the City limits to provide emergency

medical services, or municipal EMS providers; or,

5. any entity other than franchisee providing emergency transportation services within the meaning of this ordinance that provides trauma transportation services in connection with a state-certified trauma transportation program.

Section 13
Franchise Fees to City

Acadian shall, during the life of said franchise, pay to the City, to the attention of the City's director of finance, three and one-half percent (3.5%) of the total amount billed to and collected from patients or customers for the non-emergency ambulance service fees and any other income derived from the operation of the non-emergency ambulance service within the City limits, which said remittance shall be made monthly on or before the tenth (10th) day of each calendar month. The compensation provided for in this Section shall be in lieu of any other fees or charges imposed by any other ordinance now or hereinafter in force during the life hereof, but shall not release Acadian from the payment of ad valorem taxes levied or to be levied on local property it owns. The purpose of the franchise fee is to fund the City monitoring Acadian's operations and for the cost of administrative staff, vehicle inspections, and wear and tear upon the City's roadways.

Section 14
Quarterly Reports

It shall be the duty of Acadian to file with the City's director of finance a sworn statement for each calendar quarter, which said statement shall report the total amount billed and collected for non-emergency ambulance service within the City limits for the preceding three (3) months, which statement shall be filed within ten (10) days following the end of the third month. Acadian herein shall be required to adequately maintain a system of bookkeeping, which books shall be subject to reasonable audits by the City in executive session and such skilled person or persons as the City may designate so as to enable the City to periodically check the accuracy of the accounts kept and to compute fairly and accurately the percentage of the amounts privately billed that may be due to the City from Acadian.

Section 15
Cessation of Activity upon Termination of Franchise

1. Upon cancellation, suspension, or termination of Acadian's franchise, by actions taken by either the city council or Acadian, Acadian shall immediately cease operations that are granted under the franchise.
2. Upon revocation, suspension, or termination of a driver's license or attendant's certification or Emergency Medical Technician certificate, such attendant shall cease to drive an ambulance, perform service, or attend an ambulance under the direction or authority of Acadian.

3. Acadian shall not permit any individual whose license or credentials are invalid to drive an ambulance or provide medical care in conjunction with the ambulance operator.

Section 16
Rates and Charges to Patients or Customers

1. Acadian shall comply with the schedule of rates that Acadian has attached to this Agreement as EXHIBIT “B” and which is incorporated herein by reference. Acadian may amend the schedule of rates only upon the adoption of an ordinance approving said amendment.
2. On non-emergency calls, or calls where a person requires transportation to a non-emergency facility, collection for service (payment) may, at the option of Acadian, be made before the ambulance begins the trip.

Section 17
Insurance

Prior to providing any Ambulance Services in the City limits, Acadian will provide proof of insurance coverage in the types, forms and amounts required by state law and this Agreement. Failure to maintain such insurance through the term of this Agreement will be cause for termination of the franchise granted herein. Acadian shall be required to obtain and maintain in effect throughout the term of this Agreement a public liability insurance policy in an amount of not less than \$1,000,000. A copy of the insurance policy shall be filed with the City’s finance director within 10 days of the grant of the franchise. Acadian shall not operate its service during any periods for which insurance lapses for any reason.

Section 18
Nondiscrimination

No individual shall be denied or subjected to discrimination in the receipt of services for activities made possible by or resulting from this Agreement on the grounds of race, color, religion, gender, sexual orientation, national origin, disability, age or marital status. Material violation of this provision shall be considered a default of this Agreement.

Section 19
Records, Reports

Acadian shall maintain the following records:

1. record of dispatch showing time call for transport was received, time ambulance dispatched, time arrived on scene, time arrived at destination, time in service, and time returned to base;
2. a trip record that shall be so designed as to provide the patient or customer with

- a copy of it and that may serve as a receipt for any charges paid;
3. maintenance of a daily report log for the purpose of identifying all individuals transported in any given day;
 4. daily driver and attendant checklist and inspection report which shall list contents and description of operations for each vehicle, signed by the individual verifying vehicle operations and equipment; and,
 5. if private records are kept, including operational, vehicular maintenance, driver/attendant training certifications, insurance certifications, traffic compliance, accident records, financial, tax and related records, shall be open at any reasonable time for inspection and audit by the city manager or designee, or any professionally trained accountant/auditor; but Acadian may deem and mark certain materials as proprietary and confidential or protected by state or federal law, which may still be viewed by the city manager, designee or accountant/auditor representing the City but not disclosed to the general public unless a Texas Attorney General Ruling or court of competent jurisdiction so orders such a public release.

Section 20
Transfer and Assignment

This non-exclusive franchise Agreement and the rights, privileges, permissions, and authorities granted herein are personal to Acadian and cannot be sold, transferred, leased, assigned, or otherwise disposed without prior written approval from the City.

Section 21
Private Ambulance Services Personnel

Attendants and drivers employed by Acadian shall be:

1. at least eighteen (18) years of age;
2. a citizen of the United States;
3. licensed by the State of Texas to operate the vehicle occupied; and,
4. certified as having obtained any legally required training as may be required by any regulatory bodies having jurisdiction over the provision of private ambulance services to the general public.

Section 22
Indemnification

As a condition of the grant of this Agreement, and in consideration thereof, Acadian shall

defend, indemnify, and hold the City harmless against all claims for damages to persons, individuals or property by reason of its franchise operations, or any way arising out of performance under this Agreement, directly, or indirectly, when or to the extent injury is caused, or alleged to have been caused, wholly or in part, by any act, omission, negligence, or misconduct of Acadian or any of its contractors, subcontractors, officers, agents, or employees, or by any person for whose act, omission, negligence, or misconduct, Acadian is by law responsible. This provision is not intended to create liability for the benefit of third parties but is solely for the benefit of Acadian and the City. In the event any claim is made against the City that falls under this indemnity provision, the City shall promptly but no later than five (5) business days, provide Acadian with the a copy of the claim with a written notice that such is deemed to fall under this provision. Acadian shall then take over the defense of the claim with attorneys of its and/or its insurer's choosing. Acadian shall indemnify and hold the City harmless of and from any such liability, including any court costs, expenses, and reasonable attorney fees incurred by the City in defense thereof and incurred at any stage. Upon commencement of any suit, proceeding at law or in equity against the City relating to or covering any matter covered by this indemnity, wherein Acadian has agreed by accepting this Agreement to indemnify and hold the City harmless, or to pay said settlement, final judgment, and costs, as the case may be, the City shall provide Acadian immediate written notice of such suit or proceeding, whereupon Acadian shall provide a defense to any such suit or suits, including any appellate proceedings brought in connection therewith, and pay as aforesaid, any settlement, costs or judgments that may be rendered against the City by reason of such damage suit.

Section 23

Compliance with Laws and Regulations

During the term of this Agreement, the City and Acadian agree they will comply with all applicable state, federal and local laws and regulations. Failure to comply on the part of Acadian may be grounds for the imposition of penalties or sanctions, including up to termination of this Agreement. Failure to comply of the part of the City may be grounds for Acadian to terminate this Agreement without prior consent or approval by the City.

Section 24

No Waiver; Cumulative Remedies

Acadian will not be excused from complying with any of the terms of conditions of this Agreement because of failure of the City, on one or more occasions, to insist upon or to seek compliance with any such terms or conditions, or because of any failure on the part of the City or Acadian to exercise, or delay in exercising, any right or remedy hereunder, nor will any single or partial exercise of any right or remedy preclude any other right or remedy. Acadian agrees that the City will have the specific rights and remedies set forth herein. These rights and remedies are in addition to any and all other rights or remedies now or hereafter available to the City, and will not be deemed waived by the exercise of any other right or remedy. The rights and remedies provided in this Agreement and in the Ambulance Service Ordinance are cumulative and not exclusive of any remedies provided by law, and nothing contained in this Agreement will impair any of the rights or remedies of the City under applicable law. The exercise of any such right or remedy by the City will not release Acadian from its obligations or any liability under this

Agreement, except as expressly provided for in this Agreement or as necessary to avoid duplicative recovery from or payments by Acadian. Neither the provision of performance security, nor the receipt of any damages recovered by the City thereunder, will be construed to excuse faithful performance by Acadian or limit the liability of Acadian for damages, either to the full amount of the posted security or otherwise.

Section 25
Administration

The city manager or designee will administer or direct the administration of this Agreement.

Section 26
Notices

Any notice, request, or demand which may be or is required to be given under this Agreement will be delivered in person at the address stated below or may be deposited with the United States Postal Service, certified or registered mail, postage prepaid, to the party and address stated below:

FRANCHISEE:

Acadian Ambulance Service of Texas, LLC
D/B/A Acadian Ambulance Service
ATTN: Mr. Richard Zuschlag, CEO & Chairman of the Board
P. O. Box 98000
Lafayette, LA 70509-8000

CITY OF KYLE, TEXAS (“CITY”):

City of Kyle
ATTN: City Manager
100 W. Center Street
Kyle, TX 78640
Fax: (512) 262-3987

Section 27
Governing Law

This Agreement will be deemed to be executed in the City of Kyle in the State of Texas, and will be governed in all respects, including validity, interpretation and effect, and construed in accordance with the laws of the State of Texas, as applicable to contracts entered into, and to be performed entirely with this State.

Section 28
Modification or Amendment

This Agreement may not be modified, amended, or changed in any way unless such modification, amendment or change is approved by the city council, and the terms and conditions thereof expressed in a written document, signed by both parties.

Section 29
Entire Agreement

The preparation, execution, and delivery of this Agreement by the parties have been induced by no representations, statements, warranties or agreements other than those expressed herein. This Agreement embodies the entire understanding by and between the City and Acadian. There are no further or other agreements or understandings, written or oral, in effect between the City and Acadian relating to the subject matter of this Agreement unless such agreements or understandings are expressly referred to and incorporated herein.

Section 30
Corporate Authority

The undersigned warrant that each has the requisite corporate authority to execute this Agreement and bind each party to the terms of this Agreement.

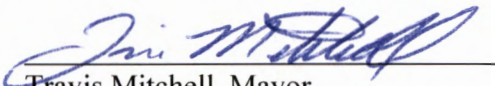
Section 31
Severability

If any section, subsection, sentence, clause, phrase, or other portion of this Agreement is, for any reason, declared invalid, in whole or in part, by any court, agency, commission, legislative body, or other authority of competent jurisdiction, such portion will be deemed a separate, distinct, and independent portion. Such declaration will not affect the validity of the remaining portions hereof, which other portions will continue in full force and effect. In the event of a subsequent change in applicable law so that the provision which had been held invalid is no longer invalid, said provision will thereupon return to full force and effect without further action by the City and will thereafter be binding on Acadian and the City.

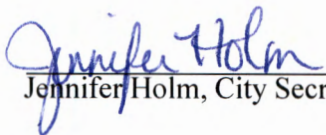
Section 32
Effective Date

This Agreement shall be in full force and take effect from and after the date of the final passage or the ordinance in which the Agreement is incorporated and upon the signing and attesting of said Agreement as witnessed below.

THE CITY OF KYLE, TEXAS

By: 
Travis Mitchell, Mayor

ATTEST:


Jennifer Holm, City Secretary

ACADIAN COMPANIES
D/B/A ACADIAN AMBULANCE SERVICE ("FRANCHISEE")

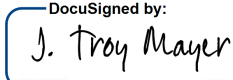
By: 
FD5923D66E714C3...
James Mayer
Title: Regional Vice President

EXHIBIT “B”
ACADIAN SCHEDULE OF RATES
(SEE ATTACHED)

ACADIAN AMBULANCE SERVICE, INC.
PRICING CATALOG

<u>Description</u>	Texas	
	2021 Rates	
	<u>Amount</u>	<u>Effective Dates</u>
<u>Transports</u>		
ALS2 Emergency	\$ 1,804.00	January 1, 2021
ALS1 Emergency	1,321.00	January 1, 2021
ALS1 Non-Emergency	1,283.00	January 1, 2021
BLS Emergency	1,321.00	January 1, 2021
BLS Non-Emergency	868.00	January 1, 2021
Specialty Care Base	2,763.00	January 1, 2021
Ambulance Response, treatment without transport	287.00	January 1, 2021
<u>Mileage</u>		
Mileage - 0 - 50 miles	\$ 26.49 per mile	January 1, 2021
51 - 100 miles	26.49	January 1, 2021
101 and over	26.49	January 1, 2021
<u>Ancillaries</u>		
Airvo device	\$ 1,260.00	January 1, 2021
Airway Mgmt-Disposable Supplies	92.00	January 1, 2021
Bariatric Stretcher	374.00	January 1, 2021
BiPAP	1,260.00	January 1, 2021
Burn Sheet	67.00	January 1, 2021
Capnometer	131.00	January 1, 2021
C-Collar	92.00	January 1, 2021
CPAP devise with Manometer	340.00	January 1, 2021
Disaster Bag	425.00	January 1, 2021
Disposable BVM	171.00	January 1, 2021
Disposable Splint	29.00	January 1, 2021
Disposable Supplies/Environ. Protection	112.00	January 1, 2021
EKG Monitor	211.00	January 1, 2021
EKG Monitor-Disposable Supplies	29.00	January 1, 2021
EKG Monitor Pace Pads	261.00	January 1, 2021
EKG 12 Lead	211.00	January 1, 2021
Endotracheal Intubation	112.00	January 1, 2021
Extra Ambulance Attendant	309.00	January 1, 2021
Extra Unit Assistance Fee	309.00	January 1, 2021
EZ-IO Intraosseous Infusion - disposable needle	514.00	January 1, 2021
Glucose	29.00	January 1, 2021
IV Set Up/Disposables	112.00	January 1, 2021
IVAC Pump	211.00	January 1, 2021
King-LTD	81.00	January 1, 2021
Out of Service Area	211.00	January 1, 2021
Oxygen Mask/Set Up	206.00	January 1, 2021
O.B. Kit	131.00	January 1, 2021
Poison Antidote Kit	105.00	January 1, 2021
Pulse Oximeter	131.00	January 1, 2021
SAM Pelvic Sling II	92.00	January 1, 2021
Sterile Water	42.00	January 1, 2021

ACADIAN AMBULANCE SERVICE, INC.
PRICING CATALOG

Texas		
2021 Rates		
<u>Description</u>	<u>Amount</u>	<u>Effective Dates</u>
Suction Equipment	29.00	January 1, 2021
Throplex Chest Drainage System	311.00	January 1, 2021
Ventilator	1,260.00	January 1, 2021
Visidex Strip / Regeant Strip	29.00	January 1, 2021
 <u>Medication</u> 		
Adenocard 12 mg	\$ 92.00	January 1, 2021
Amidate 2mg/ ml 20cc vial	58.00	January 1, 2021
Amiodarone	62.00	January 1, 2021
Aspirin	9.00	January 1, 2021
Atropine Sulfate	62.00	January 1, 2021
Benadryl	62.00	January 1, 2021
Calcium Chloride	62.00	January 1, 2021
Calcium Glocontc, 10%	41.00	January 1, 2021
Cardene 20mg (Nicardipine)	323.00	January 1, 2021
D5W 1,000 CC	92.00	January 1, 2021
Dextrose	70.00	January 1, 2021
Diltiazem	64.00	January 1, 2021
Dobutamine	30.00	January 1, 2021
Dopamine	92.00	January 1, 2021
Epinephrine	62.00	January 1, 2021
Epinephrine 30mg	92.00	January 1, 2021
Famotidine	9.00	January 1, 2021
Fentanyl	64.00	January 1, 2021
Glucagon	311.00	January 1, 2021
Heparin	9.00	January 1, 2021
Ipratropium Bromide	62.00	January 1, 2021
Ketamine Hcl, 10mg/ ml 20 ml vial	92.00	January 1, 2021
Labetalol	92.00	January 1, 2021
Lasix	9.00	January 1, 2021
Levetiracetam	9.00	January 1, 2021
Lidocaine	62.00	January 1, 2021
Lidocaine, 20%	70.00	January 1, 2021
Magnesium Sulfate	62.00	January 1, 2021
Mannitol, 20%	18.00	January 1, 2021
Metoprolol	62.00	January 1, 2021
Morphine Sulfate	13.00	January 1, 2021
Narcan, 2mg	146.00	January 1, 2021
Nitro Tab	9.00	January 1, 2021
Nitroglycerin Injection	92.00	January 1, 2021
Nitrol Ointment	62.00	January 1, 2021
Nitropress	62.00	January 1, 2021
Norepinephrine	66.00	January 1, 2021
Normal Saline 1,000 cc	92.00	January 1, 2021
Ondansetron	64.00	January 1, 2021
Oxymetazoline	66.00	January 1, 2021
Pitocin	9.00	January 1, 2021

ACADIAN AMBULANCE SERVICE, INC.
PRICING CATALOG

Description

Potassium Chloride
 Propofol, 1g
 Albuterol (Nebulizer always used)
 Ringers Lactate 1,000 cc
 Sodium Bicarbs, 8.4%
 Sodium Bicarbs, 4.2%
 Solu-Cortef
 Solu-Medrol 1 gram
 Succinylcholine 20 mg
 Tranexamic Acid
 Vecuronium
 Versed, 5mg/ ml 1 ml vial
 Zemuron 10 mg/ ml 10ml vial

Texas	
2021 Rates	
<u>Amount</u>	<u>Effective Dates</u>
18.00	January 1, 2021
53.00	January 1, 2021
62.00	January 1, 2021
112.00	January 1, 2021
70.00	January 1, 2021
41.00	January 1, 2021
110.00	January 1, 2021
92.00	January 1, 2021
9.00	January 1, 2021
98.00	January 1, 2021
66.00	January 1, 2021
47.00	January 1, 2021
92.00	January 1, 2021

**Public Notice
Notice of Public Hearing
Franchise Agreement**

NOTICE IS HEREBY GIVEN TO ALL INTERESTED PERSONS, THAT:

The City of Kyle will hold a public hearing at the regularly scheduled meeting of the Kyle City Council on Tuesday, April 4, 2023, regarding an Ordinance granting an extension to the franchise granted by Ordinance No. 838 and amended by Ordinance No. 1026 and 1130 to Acadian Ambulance Service of Texas, LLC, D/B/A, containing various terms and conditions with regard to the extension of the franchise; to provide non-emergency and rollover ambulance services within the boundaries of the City of Kyle, Texas.

This is planned as an in person meeting taking place at <https://www.cityofkyle.com/kyletv/kyle-10-live> and at Kyle City Hall, 100 W. Center Street, Kyle, TX 78640. Please check the agenda for the proper location.

The public hearing schedule is as follows:

The public hearing will be held by the Kyle City Council on Tuesday, April 4, 2023 at 7:00 P.M.



CITY OF KYLE, TEXAS

Approve Change Order No. 1 to
Increase Contract Amount for
Design & Construction of
Splashpad At Gregg-Clarke Park by
\$125,000.00 to \$625,000.00

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Approve Change Order No. 1 in the amount of \$125,000.00 increasing the total contract amount awarded to OASIS WATER PLAYGROUNDS, Houston, TX, from \$500,000.00 to a total amount not to exceed \$625,000.00 and authorize execution of a contract in the total amount of \$625,000.00 for the design and construction of a 3,000 sq. ft. Splashpad and other associated structures and equipment as included in the proposal at the City's Gregg-Clarke Park. ~ *Mariana Espinoza, Director of Parks & Recreation*

Other Information: Oasis Waterplaygrounds held public engagement sessions and received online feedback from the community. The proposed splash pad is 3,000 sq ft.

Legal Notes:

Budget Information: On December 20, 2022, the City Council approved the award of a Purchase Order to OASIS WATERPLAYGROUNDS, INC., in an amount not to exceed \$500,000.00 for the design and construction of a Splashpad and other associated structures and equipment as included in the proposal at the City's Gregg-Clarke Park.

Fifty percent (50%) of the funding required for Change Order No. 1 in the amount of \$62,500.00 is available from the 2020 General Obligation Bond Fund as authorized by the voters for improvements to the City's Gregg-Clarke Park.

The remaining fifty percent (50%) or \$62,500.00 will be provided by the Hays County as part of an Interlocal Agreement executed between the two entities. The City of Kyle has entered into an Interlocal Agreement (ILA) with the Hays County whereby the County will provide 50 percent (50%) or \$62,500.00 in matching funding for this Change Order.

It should be noted that in accordance with the terms of the ILA (attached), the County will not provide matching funds to the City in advance. The City is required per the ILA to submit draw requests for matching funds after expenditures are incurred by the City for this project. All such draw requests for reimbursement of expenditures incurred by the City are subject to Hays County's review and approval.

ATTACHMENTS:

Description

- ☐ ILA - Hays County for Matching Funds
- ☐ Gregg_Clarke_Park_Splashpad_Agreement (1)

**INTERLOCAL AGREEMENT BETWEEN THE CITY OF KYLE, TEXAS AND
HAYS COUNTY, TEXAS FOR THE IMPROVEMENT OF PARK
FACILITIES AT SITES OWNED BY THE CITY OF KYLE, TEXAS**

This Agreement is made and entered into by Hays County, a political subdivision of the State of Texas ("County") and the City of Kyle, Texas ("City") under the authority of Chapter 791, of the Texas Government Code.

For and in consideration of the mutual agreements herein exchanged, County and City hereby contract as follows:

I. Purpose and Legal Authority.

- 1.1 The purpose of this Agreement is to provide for the design, bidding, and construction of various park improvements on multiple properties used for park and/or conservation purposes owned by the City. The Properties are all located within the corporate limits or the Extra Territorial Jurisdiction of the City of Kyle in Hays County. Improvements for each of the Projects are described in Exhibits "A" and "B" attached hereto and incorporated herein by reference and collectively referred in this Agreement as "the Projects", and individually known as Project #1: Sportsplex Park Improvements, Project #2: Plum Creek Trail Improvements, Project #3: Gregg-Clarke Park Improvements. As more specifically provided herein, the County is providing Bond Funds and the City will provide Matching Funds for improvement of the Projects. City and County, as units of local government, are authorized by §791.011 of the Texas Government Code to contract with each other to perform certain governmental functions and services. As defined in §791.003 of the Texas Government Code, such governmental functions and services include parks and recreation.
- 1.2 The County's obligations under this Agreement include the funding of some of the improvements upon the Projects, which will enhance their utility as a public parks and/or trail and conservation areas, from the proceeds of bonds issued with the approval of the voters of Hays County, Texas at an election held on November 3, 2020 (the "Bond Funds"), authorizing

the issuance of general obligation bonds in the amount of \$75,000,000.00 for parks, trails, recreation, and related projects.

1.3 All of the duties and obligations of the County and the City under this Agreement shall be performed from lawfully available current revenues.

1.4 This Agreement has been approved by the Hays County Commissioner's Court and the Kyle City Council as required by §791.011 of the Texas Government Code.

II. Term of Agreement.

2.1 This Agreement is made for a term beginning on the 19th day of July 2022 and shall remain in effect until the Projects have been completed, or until terminated by either Party under the terms of this Agreement.

III. City's Duties - General

3.1 City staff shall prepare bid documents and construction contract(s) (whether one or more, the "Construction Contract"), and shall award competitively bid contract(s) for construction and improvement of the Projects.

3.2 In consideration of County's obligations under this Agreement, City shall:

a. Provide \$10,000,000.00 USD, which shall represent funds that match County's contribution of funds under this Agreement ("Matching Funds"). Said Matching Funds, approved by the voters of Kyle, Texas on the November 3, 2020 ballot for improvement of the parks and open space projects described herein, are further described in Section 4.4 of this Agreement.

b. in any Construction Contract executed for improvement of the Projects, require payment and performance bonds, insurance, and all other terms and conditions that the City normally includes in a public park construction contract and in accordance with all applicable federal and state laws and city ordinances;

c. in any Construction Contract executed for improvement of the Projects, provide that, regardless of the sources of funds to be paid to the Contractor, the funds that are paid

to Contractor from the proceeds of the County's bond sale, which shall be paid in lump sum to City and which are authorized by the voters of Hays County, Texas, shall not exceed County's total contribution of Bond Funds for the particular Project on which Contractor is working, as cited in Exhibit "A".

IV. City's Duties - Construction Phase of the Project.

- 4.1 The City shall monitor any Contractor's compliance with all terms and conditions of the Construction Contract. City staff shall notify Contractor, in writing of any deficiencies or defaults.
- 4.2 The City shall inspect the work done by any Contractor to verify the delivery of materials and completion of work as represented in each payment draw.
- 4.3 City staff shall review and approve payment draw requests and supporting documentation.
- 4.4 City hereby represents that County's grant of funds cited in Section 3.2(c) shall be matched by an equivalent amount of funding generated from the \$10,000,000 in general obligation bonds for the planning, designing, constructing, improving and equipping of, and acquisition of real property for, parks approved at the November 3, 2020 municipal bond election, and such other sources determined appropriate by the City (the "Matching Funds").

V. County's Rights and Duties.

- 5.1 County shall appoint a Program Manager to process and monitor the distribution of funds to City. Distribution of funds shall be performed in a series of draws, utilizing the Draw Request form attached hereto as Exhibit "C" and incorporated herein, for all purposes. Draw Requests shall be fulfilled after administrative approval of the request by the County's Program Manager and staff, with consideration given to the match provided by the City, as well as the intended uses of funding identified in the Draw Request.
- 5.2 County, or its designated Program Manager, shall, upon ten (10) days' written notice to City, have a right to inspect all receipts, invoices, proofs of purchase, and records of expenditures related to the Projects.

VI. Conditions Precedent.

6.1 This Agreement shall become effective and binding on the City and the County upon approval by the Hays County Commissioners Court and the Kyle City Council.

6.2 **Public Dedication of Park Improvements.** The City hereby presents evidence to the County that a) the Properties associated with all Projects are or will be burdened with a public dedication, or its equivalent, that runs with the land and grants a right of access to the public, with reasonable limitations on the time, place, and manner of the public's use ("Public Dedication").

VII. Amendments.

7.1 This Agreement can be amended only by written approval of the Hays County Commissioners Court and the Kyle City Council.

VIII. Representations.

8.1 City and County each make the following representations to each other as inducements to enter into this Agreement:

- a. That it has the legal authority to enter into this Agreement for the purposes stated herein and to perform the obligations it has undertaken hereunder;
- b. That the meetings at which this Agreement and any amendments were approved were held in accordance with the Texas Open Meetings Act, Chapter 551, Texas Government Code;
- c. That it has been represented by legal counsel and has had legal counsel available to it for consultation prior to entering into this Agreement;
- d. That the officer who signed this Agreement has the legal authority to sign documents on its behalf;
- e. That before this Agreement was approved, its governing body had already identified and its staff had already segregated sufficient lawfully available current funds for performance of all of its obligations under this Agreement even if such performance

extends beyond the fiscal year in which this Agreement was approved and executed.

IX. Severability.

- 9.1 If any clause, sentence, paragraph or article of this Agreement is determined by a court of competent jurisdiction to be invalid, illegal, or unenforceable in any respect, such determination shall not be deemed to impair, invalidate, or nullify the remainder of this Agreement if the Agreement can be given effect without the invalid portion. To this extent, the provisions of this Agreement are declared to be severable.

X. Entire Agreement.

- 10.1 This Agreement contains the entire agreement between the parties respecting the subject matter hereof, and supersedes all prior understandings and agreements between the parties regarding such matters. This Agreement may not be modified or amended except by written agreement duly executed by City and County and approved in the manner provided in Section VII above.

XI. Interpretation

- 11.1 The parties acknowledge and confirm that this Agreement has been entered into pursuant to the authority granted under the Interlocal Cooperation Act, which is codified as Chapter 791 of the Texas Government Code. All terms and provisions hereof are to be construed and interpreted consistently with that Act. This Agreement shall not be more strictly construed against either City or County.

XII. Applicable Law and Venue

- 12.1 This Agreement shall be construed in accordance with the laws of the State of Texas. All obligations hereunder are performable in Hays County, Texas, and venue for any action arising hereunder shall be in Hays County, Texas.

XIII. Miscellaneous

- 13.1 If County determines that funds provided under this Agreement were not used for the purposes indicated and approved in the City's Draw Request(s), the County shall have a right to terminate this Agreement and seek reimbursement of the misspent funds. Termination shall be achieved

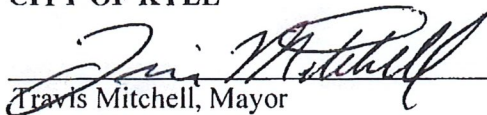
after the County provides thirty (30) days' written notice to the City, offering the City an opportunity to cure its default status. If the City is able to cure its default status during the thirty (30) day term after notice, then the County shall withdraw its termination notice. Otherwise, termination shall become effective at the conclusion of the thirty (30) day term.

13.2 The Parties agree that the funds paid by County under this Agreement shall not be utilized to fund in-house City operations or labor, shall not be utilized to pay for soft costs associated with any of the Projects named in this Agreement, and shall not be utilized to fund equipment that is anticipated to depreciate fully within twenty (20) years. County funds shall be utilized to secure real property interests and/or to implement capital improvements associated with the Projects identified herein.

13.3 The City agrees that any entrance signage, building signage, or advertising associated with the Projects identified herein shall include reference to Hays County as a contributor to the Projects. This section shall not pertain to directional signage or other signage posted to facilitate the functions of the Project. The County hereby gives permission to the City to utilize the Hays County Seal as a means of fulfilling its obligations under this Section. On or about the Effective Date of this Agreement, the County shall provide the City with electronic files of its Seal for fulfillment of this Section.

EXECUTED and **EFFECTIVE** on the last date signed by the duly authorized officials, below.

CITY OF KYLE


Travis Mitchell, Mayor


7/19/2022
Date

ATTEST:


City Secretary

7/19/2022
Date

COUNTY


Judge Ruben Becerra, County Judge

20 July 2022
Date


County Clerk

7-20-2022
Date



**Exhibit A
The Projects**

PROJECT#1: SPORTSPLEX PARK IMPROVEMENTS

Hays County's total contribution to the Sportsplex Park Improvements shall not exceed \$7,000,000.00, excluding any funds granted by Hays County previous to this Agreement, unless City is able to complete one of the other Projects under this Agreement for less than the budgeted amount of Bond Funds for that Project, in which case, if approved by the County's Program Manager and the Hays County Auditor, the remaining funds from that Project may be applied to cost overruns associated with any other Project named herein. The following is a sample breakdown of the improvements and amenities to be purchased from Bond Funds for the Sportsplex Park Improvements.

Park Elements:

- 1 Mile of Multi-Purpose Trail**
- Picnic Areas**
- Covered Pavilion**
- Outdoor Public Restrooms**
- Inclusive Playground**
- Skateboard Park**
- Competition Soccer Field Complex**
- Sand Volleyball Courts**
- Basketball Courts**
- Outdoor Amphitheatre**
- Fitness/Strength Equipment**
- Recreation/Practice Fields**
- Landscaping including trees/revegetation**
- Parking**
- Environmental Interpretation**

TOTAL-+-+-+ \$7,000,000 (Bonds Funds and Matching Funds)

NOTE: All work to be designed and constructed to meet City of Kyle codes & standards.

PROJECT #2: PLUM CREEK TRAIL IMPROVEMENTS

Hays County's total contribution to the Plum Creek Trail Improvements shall not exceed \$2,000,000.00, excluding any funds granted by Hays County previous to this Agreement, unless City is able to complete one of the other Projects under this Agreement for less than the budgeted amount of Bond Funds for that Project, in which case, if approved by the County's Program Manager and the Hays County Auditor, the remaining funds from that Project may be applied to cost overruns associated with any other Project named herein. The following is a breakdown of the improvements and amenities to be purchased from Bond Funds for the Plum Creek Trail Improvements.

Park Elements

- 7 Miles of Multi-Purpose Concrete Trail**
- Shaded "rest stops" along the trail**
- Outdoor Public Restrooms**
- Interactive Kiosks**
- Trail Machinery**
- Parking Access**
- Interpretive Signage**
- Exercise Equipment**
- Emergency Call Stations**

TOTAL-+-+--+ \$2,000,000.00 (Bonds Funds and Matching Funds)

NOTE: All work to be designed and constructed to meet City of Kyle codes & standards.

PROJECT #3: GREGG-CLARKE PARK IMPROVEMENTS

Hays County's total contribution to the Gregg-Clarke Park Improvements shall not exceed \$1,000,000.00, excluding any funds granted by Hays County previous to this Agreement, unless City is able to complete one of the other Projects under this Agreement for less than the budgeted amount of Bond Funds for that Project, in which case, if approved by the County's Program Manager and the Hays County Auditor, the remaining funds from that Project may be applied to cost overruns associated with any other Project named herein. The following is a breakdown of the improvements and amenities to be purchased from Bond Funds for the Gregg-Clarke Park Improvements.

Park Elements:

- Bathrooms**
- Concessions**
- Interior Park Road**
- Landscaping and Irrigating**
- Leveling & Grading**
- Spectator Improvements**
- Skateboard Park**
- Ash Pavilion**
- Playground Improvements**
- Lighting Improvements**
- Sod Repair**
- Basketball/Tennis Court Repair**

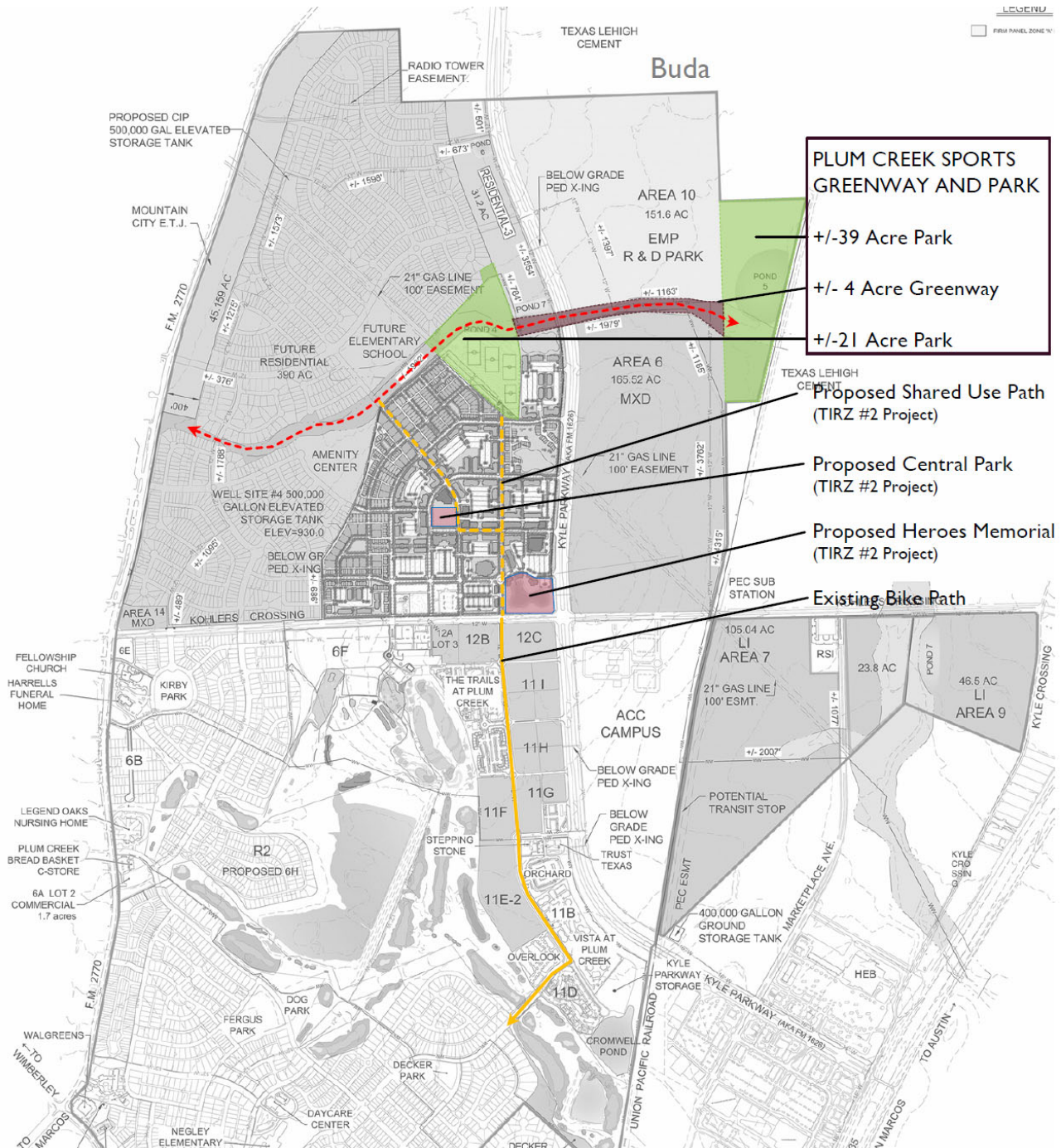
TOTAL -+-+-+---+---+---+ \$1,000,000.00 (Bonds Funds and Matching Funds)

NOTE: All work to be designed and constructed to meet City of Kyle codes & standards.

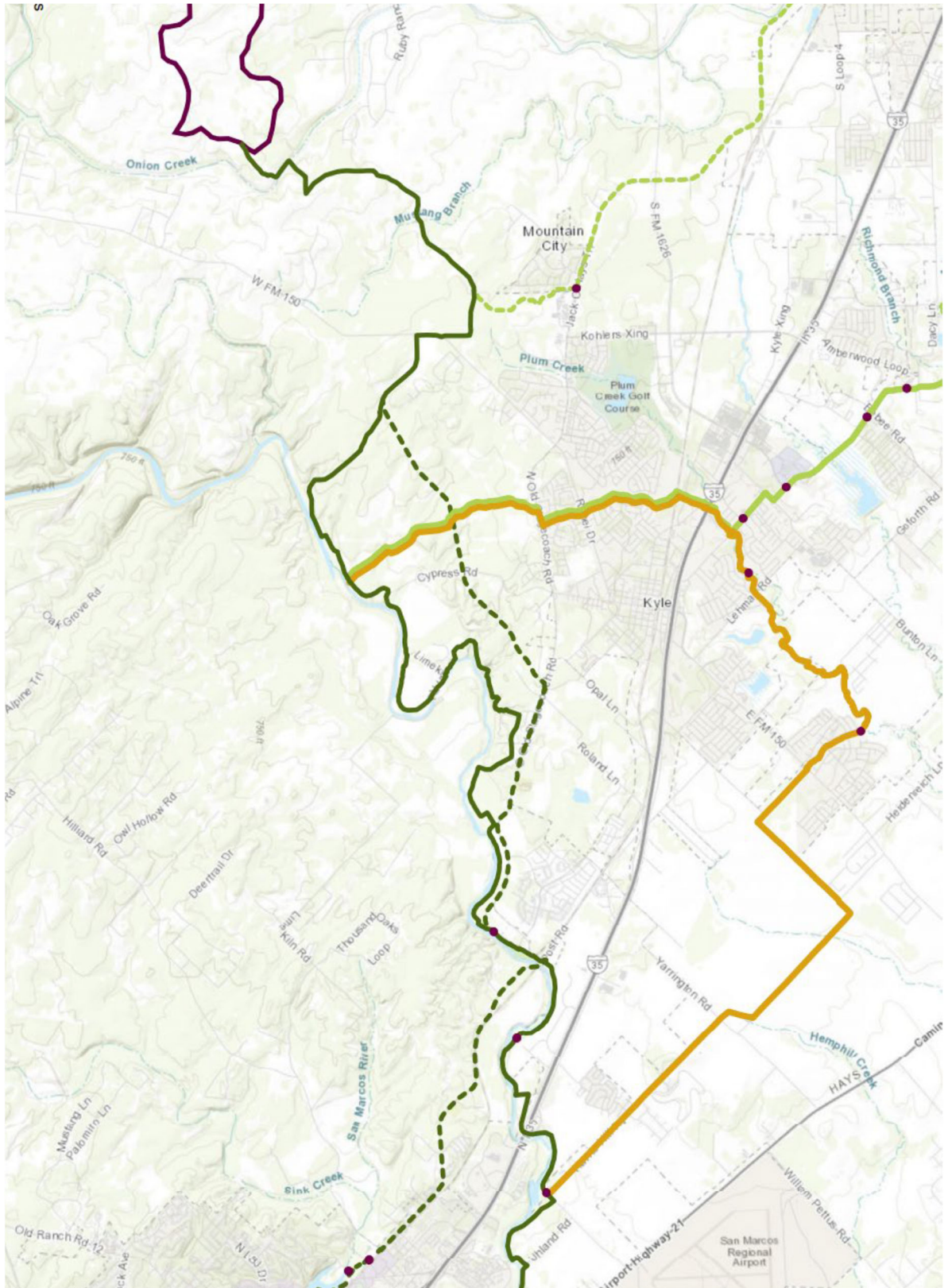
Exhibit B Project Site Plans

Site Plans may be changed during design and construction of the projects. However, if such changes cause any Project to become substantially different than the Project contemplated on the Effective Date, City shall request and receive written approval of County prior to the implementation of those changes. Site Plans for each of the Park Projects that are the subject of this Agreement are as follows.

PROJECT #1: SPORTSPLEX PARK IMPROVEMENTS - SITE MAP



PROJECT #2: PLUM CREEK TRAIL IMPROVEMENTS - SITE MAP



PROJECT #3: GREGG-CLARKE PARK IMPROVEMENTS-SITE MAP



Exhibit C
Draw Request Form

Hays Park Bond 2020 – Funding Draw Request

Project Name: _____ Date of Request: _____

Sponsor Name: _____ Contact Person: _____

Sponsor Address: _____ Federal Tax ID: _____

City, State, Zip: _____ Phone Number: _____

Request Number	Total Funding Amount	Funds for:
	(Round all numbers to the nearest dollar)	<input type="checkbox"/> Land \$ _____
1. Total Project Amount \$ _____		<input type="checkbox"/> Soft Costs \$ _____
2. 10% Retainage - \$ _____		<input type="checkbox"/> Construction \$ _____
3. Project Amt minus 10% retainage = _____ (Line 1 minus Line 2)		<input type="checkbox"/> Other \$ _____
4. Subtract total amount of current draw - \$ _____		Explanation: _____
5. Available balance = \$ _____ (Line 1 minus Line 2)		
6. Subtract amount of current draw - \$ _____		
7. Balance after payment = \$ _____		
Is this your FINAL Draw? <input type="checkbox"/> YES <input type="checkbox"/> NO (if yes, continue to line 8)		
8. IF this is your FINAL DRAW include 10% retainage + \$ _____ (Line 2)		
9. Total requested amount = \$ _____ (Line 6 plus Line 8)		

NOTE: The final request must be accompanied by documentation suitable to determine project completion (CO, Deed Recordation, etc).

Documentation required for the payment request includes:

1. Contractor/Consultant Payment Request
2. Progress Report w/ updated schedule
3. Documentation for Acquisition, to include deed and closing documents.
4. Documentation for soft costs to include invoices that show an itemization of the work completed.

The Sponsor certifies that this project request is for eligible expended costs in accordance with the HTF Program and that proper documentation has been included to support this request.

Sponsor Signature Title Date

Program Manager Approval

Signature Title Date

Hays County Staff Approval

Signature Title Date



Enclosed please find a copy of the contract for The City of Kyle Splashpad

Please print 3 copies and please complete the following:

- 1) Initial pages
- 2) Kindly fill out page 1.
- 3) Sign and seal page 7.
- 4) Initial the cover pages of Schedules "A" and "B".
- 5) Sign and initial each page of the Construction schedule (Appendix A)
- 6) Sign and initial each page of the Invoice (Appendix B)
- 7) Scan and return (3) copies + deposit payment either by mail or by courier to:

Oasis Waterplaygrounds Inc

2100 West Loop S, Suite 800, Houston, Tx 77027

AGREEMENT BETWEEN CLIENT AND CONTRACTOR
for use when a stipulated price forms the basis of payment and to
be used only with the General Conditions of the Stipulated Price Contract.

THIS AGREEMENT made in triplicate this day of.....April 4.....AD 2023.

BY AND BETWEEN:

City of Kyle

(Hereinafter called "the Owner") of the first part

Oasis Waterplaygrounds Inc

(Hereinafter called "the Contractor") of the second part

WITNESSES: that the parties agree as follows:

ARTICLE 1-A THE WORK

(a) perform the Work required by the Contract Documents for:

City of Kyle

which have been signed by the parties

(b) do and fulfill everything indicated by this agreement, and

(c) commence the Work by the 18th day of April, 2023 and attain
Substantial Performance of the Work, by the 22 day of
December, 2023.

ARTICLE A-2 CONTRACT DOCUMENTS

The following is a list of the Contract documents referred to in Article 1-A of the Agreement:

- Appendix A – “Construction Schedule”. This document details timelines and deliverables for the project.
- Appendix B – “Invoice Gregg Clarke Park Splashpad” list of all products and construction with associated prices for the project agreed to by both parties.
- Appendix C – “Warranty and standards policy Oasis Waterplaygrounds Inc”. Warranty documents for products and services provided by Oasis Waterplaygrounds Inc.

ARTICLE A-3 CONTRACT PRICE

- (a) The quantities shown in the Schedule of Contract Stipulated Prices are lump sum. The Contract Price shall be the final sum of the products of the actual quantities that are incorporated in, or made necessary by the Work, as confirmed by count and measurement, and the appropriate Contract Stipulated Prices, together with any adjustments that are made in accordance with the provisions of the Contract Documents.
- (b) The Contract Price shall be the sum of the products of the quantities and the appropriate Contract Stipulated Price in the Schedule,
- (c) Schedule of Contract Stipulated Prices. *
- (d) Contractor will confirm completion of the work performed at the end of each phase described in Attachment A “Projected Timeline” and will identify any predicted non-compliance with future phases as described in Attachment A.

<u>Item</u>	<u>Spec. No.</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Contract Price</u>	<u>Total Price</u>
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See: Appendix B – “Invoice Gregg Clarke Park Splashpad”

Continues.....

(e) Schedule of Contract Stipulated Prices* continued.....

<u>Item</u>	<u>Spec. No.</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Contract Price</u>	<u>Total Price</u>
-------------	------------------	--------------------	-----------------	-------------	-----------------------	--------------------

Contract Price (Tax Exempt) USD \$625,000.00 _____

ARTICLE A-4 - PAYMENT

- (a) The Owner shall pay the Contractor in USD funds for the performance of the Contract, the amounts being determined by the actual measured quantities of the individual work items contained in the Schedule of Contract Stipulated Prices in Article A-3(c) of this Agreement and measured in accordance with methods of measurement given in the specifications.
- (b) In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payment shall be made to the Contractor in accordance with the provisions of GC - INSURANCE.
- (c) Contractor shall invoice owner for the following amounts at the indicated times. For invoices (3) and (4) below, the invoice must confirm the completion of the required work. Within 30 days of receipt of the invoice, Owner will either pay the invoiced amount or provide contractor with a written response disputing the necessary performance.
 - (1) a 25% deposit to produce the equipment to be utilized on the aforementioned splashpad. To be paid upon contract signature/ratification
 - (2) 25% will be required to the contractor on the first day of construction.
 - (3) 25% will be required to the contractor on feature installation
 - (4) Balance of the contract to be due on completion & prior to handover and training.
- (d) Interest at the rate of six percent (6%) per annum shall apply to any amounts starting 31 days after the receipt of undisputed invoice amount or an award issued by arbitration or court proceeding. Such interest shall be calculated and added to any unpaid amounts monthly.

ARTICLE-5- RIGHTS AND OBLIGATIONS

- (a) The duties and obligations Imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.
- (b) No action or failure to act by the Owner or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICE

Communications in writing between parties shall be considered to have been received by the addressee on the state of delivery if delivered by hand to the individual or to a member of the firm or to an officer of the corporation for whom that are intended or if sent by post, to have been delivered within five (5)working days of the state of mailing, dispatch when addressed as follows:

The owner at 700 Lehman Rd Kyle, TX 78640

street and number and zip code

The contractor at 2100 West Loop S, Suite 800, Houston, Tx 77027

street and number and zip code

ARTICLE A- 7 LANGUAGE OF THE CONTRACT

This Contract represents the entire agreement between the Parties as to its subject matter and shall be governed by and construed in accordance with the laws of the State of Texas, without regard to conflict of law provisions. Venue for a dispute arising from this Contract shall be in Hays County, Texas. Nothing herein shall constitute a waiver of either Party's sovereign immunity or the constitutionally, statutory, or common law rights, privileges, immunities or defenses of the Parties.

ARTICLE A-8 GENERAL CONDITIONS

9-a INDEPENDENT CONTRACTOR. It is understood and agreed that the relationship of Contractor to the City shall be that of an independent contractor. Nothing contained herein shall be deemed or construed to (a) make Contractor the agent, servant or employee of the City, or (b) create any partnership, joint venture or other association between the City and Contractor. Contractor shall not have the right to bind the City to any obligations whatsoever, and this agreement shall not be construed to make the City liable to any person or party for debts or claims of any character accruing to them against Contractor.

9-b ON-SITE SAFETY. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of its obligations pursuant to this agreement. Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to, (a) employees and other persons who may be affected thereby, (b) the work and all materials and equipment to be incorporated therein, and (c) all other property at the work site or adjacent thereto, such as trees, shrubs, walkways, pavement, driveways, streets and utilities not designated for removal, relocation or replacement during the course of construction. Contractor shall erect and maintain, as may be dictated by the conditions surrounding the performance of the Work, reasonable safeguards for the safety and protection of all persons and property.

9-c INDEMNITY. To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless The City, and its agents, employees and representatives, from and against any and all claims, causes of action, damages, losses and expenses of any nature whatsoever, including, without limitation, court costs, attorneys' fees and related legal expenses, arising out of or resulting from any material defects in the work or any negligence in the performance of the work hereunder or occurring in connection therewith.

9-d BREACH. Each party hereto retains all of legal rights and remedies available to it by law so long as written notice of breach has been provided to the other party with a ten-day opportunity to cure the offending defect in performance. No waiver by either party of any of its rights or remedies hereunder shall be considered a waiver of any other or subsequent right or remedy, and no delay or omission in the exercise or enforcement of any rights or remedies shall ever be construed as a waiver of any right or remedy

ARTICLE A-9 CERTIFICATIONS

a. The Contractor certifies that it does not and will not boycott Israel during the term of this Contract. The Contractor further certifies that it does not and will not refuse to deal with, terminate business activities with, or otherwise take any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory. This does not include actions made for ordinary business purposes.

b. The Contractor certifies that it does not and will not during the term of this Contract have dealings related to critical infrastructure with companies or entities that are owned or controlled by citizens, governments, companies, or entities of the following nations: China, Iran, North Korea, Russia, or other country designated under Section 113.002 of the Texas Business and Commerce Code.

c. The Contractor certifies that it does not and will not boycott firearms or ammunition manufacturers or firearms trade associations during the term of this Contract. The Contractor further certifies that it does not and will not refuse to deal with, terminate business activities with, or otherwise take any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with firearms or ammunition manufacturers or firearm trade associations. This does not include actions made for ordinary business purposes.

d. The Contractor certifies that it does not and will not boycott energy companies during the term of this Contract. The Contractor further certifies that it does not and will not refuse to deal with, terminate business activities with, or otherwise take any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with energy companies. This does not include actions made for ordinary business purposes.

e. The Contractor certifies that it is not listed in the prohibited vendors list authorized by Executive Order No. 13224, "Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism", published by the United States Department of the Treasury, Office of Foreign Assets Control.

ARTICLE A-10 SUCCESSION

The General Conditions described in A-3 of this agreement, and all other aforesaid Contract Documents, are all to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall ensure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.

In witness whereof the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

SIGNED, SEALED AND DELIVERED
in the presence of:

OWNER

CONTRACTOR

Travis Mitchell, Mayor

Name and Title

Signature

Signature

Name and Title

Signature

Name and Title

Witness

Witness

Jennifer Kirkland, City Secretary
Name and Title

Name and Title

(NB.) Where any legal jurisdiction, local practice or client requirements calls for proof of authority to execute this document, proof of such authority in the form of a certified copy of a resolution naming the person or persons in question as authorized to sign the Agreement for and on behalf of the Corporation or Partnership, should be attached.



Project Timeline

Materials - Lead time required for production of features: 8-10 weeks

Project: City of Kyle Gregg-Clarke Park Splashpad

Estimated start date: 1 week after completion of feature production

Splashpad Features and Size

- 1 Water Tower - 304L stainless
- 1 Train – 304L stainless
- 1 Cactus – 304L stainless
- 1 Rainwall - 304L stainless
- 3 Custom Hoops - 304L stainless
- 2 Cannons – 304L stainless
- 1 (3) Dumping Buckets – 304L stainless
- 6 Single Stream Jets – 304L stainless
- 2 Donuts – 304L stainless
- 4 Fan Tail – 304L stainless
- 4 Weave Jet – 304L stainless
- 1 activator + sensor - 304L stainless
- 3000 sq feet pad
- Control panel & manifold
- Utility building
- Recirculation system + buried tank
- Changing room building
- 5 canopies
- Concrete Walkway
- Picnic Tables (5)
- Benches (4)
- Garbage Bins (3)

Deliverables Timeline: Construction

- Phase 1 - Week 1 & 2
 - Excavation for plumbing lines
 - Installation of tank + connections
 - Drainage lines + connections to tank
 - Connection to water (min required pressure 40PSI)

- All measurements and levels for features taken
- Phase 2 - Week 2-4
 - Installation of water lines for features
 - Base for utility building
 - Building utility building
 - Installation of utilities in building
 - Testing of tank + drainage lines
 - Installation of water lines for features
- Phase 3 Week 4-6
 - Feature bases poured
 - Testing of feature lines (pressure testing)
 - Features Installed
 - Form for pad built and measurements made
 - Rebar + compaction
 - Concrete pour
- Phase 4 Week 6-8
 - Spray deck applied
 - Canopy Installation
 - Testing and troubleshooting
 - Final testing and touch up
 - Training of staff on system
 - Site cleanup and grading
 - Removal of all construction equipment and supplies

Oasis Waterplaygrounds Inc

2100 West Loop S Ste 800
 Houston, TX 77027 US
 +1 7133706601

**INVOICE**

BILL TO
 City of Kyle
 100 W. Center Street
 Kyle, Texas 78640 USA

SHIP TO
 City of Kyle
 100 W. Center Street
 Kyle, Texas 78640 USA

INVOICE 1112
DATE 03/30/2023
TERMS Net 30
DUE DATE 04/29/2023

DATE	ACTIVITY	DESCRIPTION	QTY	RATE	AMOUNT
03/30/2023	Water Tower	Custom water tower - City of Kyle replica Stainless 304L - UV powder coated	1	32,000.00	32,000.00T
03/30/2023	Train	Stainless 304L - UV powder coated	1	18,500.00	18,500.00T
03/30/2023	Cactus	Stainless 304L - UV powder coated	1	8,600.00	8,600.00T
03/30/2023	Rainwall	Stainless 304L - UV powder coated	1	7,900.00	7,900.00T
03/30/2023	Water Hoop	Custom - Longhorn style hoop Stainless 304L - UV powder coated	3	6,700.00	20,100.00T
03/30/2023	Water Cannons	Stainless 304L - UV powder coated	2	7,200.00	14,400.00T
03/30/2023	Dumping Buckets (3)	Stainless 304L - UV powder coated	1	8,600.00	8,600.00T
03/30/2023	Single Stream Jet	Stainless 304L - Inground	6	275.00	1,650.00T
03/30/2023	Donut	Stainless 304L - Inground	2	1,390.00	2,780.00T
03/30/2023	Fan tail Jet	Stainless 304L - Inground	4	995.00	3,980.00T
03/30/2023	Weave Jet	Stainless 304L - Inground	4	1,575.00	6,300.00T
03/30/2023	Activator	Stainless 304L - UV powder coated with capacitive sensor + lights	1	6,950.00	6,950.00T
03/30/2023	Manifold	Stainless 304L - 20 output with water hammer and pressure gauge - heavy gauge steel, with 20 PGA solenoids	1	15,500.00	15,500.00T
03/30/2023	Control Panel	Control panel w/ touchscreen, programmable and customizable functionality for sequential timing and activation	1	21,500.00	21,500.00T
03/30/2023	Buried Tank	Norwesco underground water holding tank - 2700 gallon capacity or equivalent	1	25,000.00	25,000.00T
03/30/2023	Utility Room	Utility building to house all equipment for features and recirculation with dedicated chemical room, ventilation	1	42,500.00	42,500.00T
03/30/2023	Recirculation Equipment	All recirculation equipment: feature	1	39,000.00	39,000.00T

Payment Details
 Bank of America
 Bank/Sort Code: 111000025
 Account Number: 488072580992
 Page 1 of 2

pump, filtration pump, sand filter, levlor,
chemical controller, UV system,
chemical holding tanks

03/30/2023	Labor + Materials	All materials required for installation of utility room, splashpad, including rebar and concrete	1	146,500.00	146,500.00T
03/30/2023	Spraydeck	3 color spraydeck non-slip surfacing with custom rail design	1	42,500.00	42,500.00T
03/30/2023	Engineering Drawings	Stamped + sealed drawings and as built final drawings included	1	6,750.00	6,750.00T
03/30/2023	Final Setup & Training	2 full days of staff training and 1 year on call support	1	1,750.00	1,750.00T
03/30/2023	Toddler River Zone	Custom toddler zone with wading area and river	1	18,500.00	18,500.00T
03/30/2023	benches	4 benches - stainless 304L - powder coated	4	1,900.00	7,600.00T
03/30/2023	Canopy	8X8 (64 sq ft) shading structure powder coated with UV resistant material	3	10,725.00	32,175.00T
03/30/2023	Canopy	10X20 (200 sq feet) shading structure: powder coated with UV resistant shading material	2	19,500.00	39,000.00T
03/30/2023	Changing Room Building	Changing room building with bench and baby changing station/windows/lights and ventilation	1	84,500.00	84,500.00T
03/30/2023	picnic tables	stainless 304L - powder coated with installation	5	2,575.00	12,875.00T
03/30/2023	Garbage Bin	garbage bin - stainless 304L - powder coated	3	695.00	2,085.00T
03/30/2023	Concrete Walkway	concrete walkway to splashpad	1	32,500.00	32,500.00T
03/30/2023	Discount	Preferred client discount	1	-80,745.00	-80,745.00T

All information contained within these documents are proprietary and confidential and only intended for the entity to whom it is addressed. Any dissemination or sharing of this information is a violation of Oasis Waterplaygrounds Inc proprietary information. Disclosing, copying, distributing or any other action that is done without the written approval and consent of Oasis Waterplaygrounds Inc is prohibited and punishable by law.

SUBTOTAL	621,250.00
TAX	0.00
SHIPPING	3,750.00
TOTAL	625,000.00
BALANCE DUE	USD 625,000.00

Payment Details
Bank of America
Bank/Sort Code: 111000025
Account Number: 488072580992
Page 2 of 2

Item # 31



WARRANTY AND STANDARDS POLICY

OASIS Waterplaygrounds Inc is dedicated to delivering the highest quality aquatic playground equipment and fountain equipment. Our team of engineers and designers are committed to innovation and maintaining the highest standards and practices in manufacturing. We meet and exceed requirements for playgrounds safety in ADA, CDA as well as ASTM and CSA manufacturing.

Oasis Waterplaygrounds Inc hereby warrants that, subject to the conditions and limitations below, the product(s) supplied will be free from defect in material and workmanship. This warranty covers all component parts of the product.

25 years	Stainless Steel components
5 years	Stainless Steel hardware and fasteners
15 years	Steel nozzles
5 years	Brass nozzles and components
5 years	HDPE Tanks and components
5 years	Fiberglass Equipment Vaults
5 years	Electrical and/or chemical controllers
2 years	Powder Coated UV protected paint
2 years	Toe Guards
2 years	Actuated Valves
1 year	Recirculation Pumps/Filtration/Fittings (Manufacturer warranties apply)
1 year	Valves, gauges and electrical components

Claims limited to the repair or replacement of defective materials under this warranty must be made in writing and be received by Oasis Waterplaygrounds within the warranty period and within 45 (forty-five) days of the date Owner knew or should have known of the defect. Oasis Waterplaygrounds shall pay for the removal, shipping & reinstallation of any products manufactured by Oasis Waterplaygrounds Inc. For any items manufactured by other manufacturers, any defective items will not be the responsibility of Oasis Waterplaygrounds Inc and will be handled directly by the respective manufacturer(s) warranty and claims department(s). Oasis Waterplaygrounds Inc will not bear any responsibility for removal/replacement of these items.

This warranty is in lieu of all other equipment warranties express or implied.



CITY OF KYLE, TEXAS

Authorization to Award Contract for Design & Construction of Splashpad At Steeplechase Park \$495,065.00

Meeting Date: 4/4/2023
Date time:7:00 PM

Subject/Recommendation: Approve an agreement with and a purchase order to OASIS WATER PLAYGROUNDS, Houston, TX, in an amount not to exceed \$495,065.00 for the design and construction of a 2,300 sq. ft. Splashpad and other associated structures and equipment as included in the proposal at the City's Steeplechase Park. ~ *Mariana Espinoza, Director of Parks & Recreation*

Other Information: Park staff completed the RFP process for a Splash pad at Steeplechase Park. Four bids were obtained. Staff recommends the approval of Oasis Waterplaygrounds for the new 2300 sq ft Splash pad at Steeplechase Park.

Legal Notes:

Budget Information: Funding in the amount of \$495,065.00 is available in the amended approved Capital Improvements Spending Plan for Fiscal Year 2022-2023.

On February 7, 2023, the City Council approved an Ordinance for Budget Amendment No. 2 on second reading amending the approved budget for Fiscal Year 2022-2023 by reprogramming \$500,000.00 from the New Northeast Park capital improvement project (CIP #48) to provide funding for the design and construction of a new water splash pad and other associated improvements and equipment at the City's Steeplechase Park.

ATTACHMENTS:

Description

- Steeplchase_Splashpad_Contract
- Bid Results



Enclosed please find a copy of the contract for The City of Kyle Steeplechase Splashpad

Please print 3 copies and please complete the following:

- 1) Initial pages
- 2) Kindly fill out page 1.
- 3) Sign and seal page 7.
- 4} Initial the cover pages of Schedules "A" and "B".
- 5) Sign and initial each page of the Construction schedule (Appendix A)
- 6) Sign and initial each page of the Invoice (Appendix B)
- 7) Scan and return (3) copies + deposit payment either by mail or by courier to:

Oasis Waterplaygrounds Inc

2100 West Loop S, Suite 800, Houston, Tx 77027

AGREEMENT BETWEEN CLIENT AND CONTRACTOR
for use when a stipulated price forms the basis of payment and to
be used only with the General Conditions of the Stipulated Price Contract.

THIS AGREEMENT made in triplicate this ...4.. day of.....April.....AD 2023.

BY AND BETWEEN:

City of Kyle

(Hereinafter called "the Owner") of the first part

Oasis Waterplaygrounds Inc

(Hereinafter called "the Contractor") of the second part

WITNESSES: that the parties agree as follows:

ARTICLE 1-A THE WORK

(a) perform the Work required by the Contract Documents for:
City of Kyle **(STEEPLECHASE PARK SPLASHPAD)**

which have been signed by the parties

(b) do and fulfill everything indicated by this agreement, and

(c) commence the Work by the 18th day of April, 2023 and attain
Substantial Performance of the Work, by the 22 day of
December, 2023.

ARTICLE A-2 CONTRACT DOCUMENTS

The following is a list of the Contract documents referred to in Article 1-A of the Agreement:

- Appendix A – “Construction Schedule”. This document details timelines and deliverables for the project.
- Appendix B – “Invoice Steeplechase Park Splashpad ” list of all products and construction with associated prices for the project agreed to by both parties.
- Appendix C – “Warranty and standards policy Oasis Waterplaygrounds Inc”. Warranty documents for products and services provided by Oasis Waterplaygrounds Inc.

ARTICLE A-3 CONTRACT PRICE

- (a) The quantities shown in the Schedule of Contract Stipulated Prices are lump sum. The Contract Price shall be the final sum of the products of the actual quantities that are incorporated in, or made necessary by the Work, as confirmed by count and measurement, and the appropriate Contract Stipulated Prices, together with any adjustments that are made in accordance with the provisions of the Contract Documents.
- (b) The Contract Price shall be the sum of the products of the quantities and the appropriate Contract Stipulated Price in the Schedule,
- (c) Schedule of Contract Stipulated Prices. *
- (d) Contractor will confirm completion of the work performed at the end of each phase described in Attachment A “Projected Timeline” and will identify any predicted non-compliance with future phases as described in Attachment A.

<u>Item</u>	<u>Spec. No.</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Contract Price</u>	<u>Total Price</u>
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*See: Appendix B – “Invoice Steeplechase Park
Splashpad”*

Continues.....

(e) Schedule of Contract Stipulated Prices* continued.....

<u>Item</u>	<u>Spec. No.</u>	<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Contract Price</u>	<u>Total Price</u>
-------------	------------------	--------------------	-----------------	-------------	-----------------------	--------------------

Contract Price (Tax Exempt) USD \$495,065.00

ARTICLE A-4 - PAYMENT

- (a) The Owner shall pay the Contractor in USD funds for the performance of the Contract, the amounts being determined by the actual measured quantities of the individual work items contained in the Schedule of Contract Stipulated Prices in Article A-3(c) of this Agreement and measured in accordance with methods of measurement given in the specifications.
- (b) In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payment shall be made to the Contractor in accordance with the provisions of GC - INSURANCE.
- (c) Contractor shall invoice owner for the following amounts at the indicated times. For invoices (3) and (4) below, the invoice must confirm the completion of the required work. Within 30 days of receipt of the invoice, Owner will either pay the invoiced amount or provide contractor with a written response disputing the necessary performance.
 - (1) a 25% deposit to produce the equipment to be utilized on the aforementioned splashpad. To be paid upon contract signature/ratification
 - (2) 25% will be required to the contractor on the first day of construction.
 - (3) 25% will be required to the contractor on feature installation
 - (4) Balance of the contract to be due on completion & prior to handover and training.
- (d) Interest at the rate of six percent (6%) per annum shall apply to any amounts starting 31 days after the receipt of undisputed invoice amount or an award issued by arbitration or court proceeding. Such interest shall be calculated and added to any unpaid amounts monthly.

ARTICLE-5- RIGHTS AND OBLIGATIONS

- (a) The duties and obligations Imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.
- (b) No action or failure to act by the Owner or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICE

Communications in writing between parties shall be considered to have been received by the addressee on the state of delivery if delivered by hand to the individual or to a member of the firm or to an officer of the corporation for whom that are intended or if sent by post, to have been delivered within five (5)working days of the state of mailing, dispatch when addressed as follows:

The owner at 700 Lehman Rd Kyle, TX 78640

street and number and zip code

The contractor at 2100 West Loop S, Suite 800, Houston, Tx 77027

street and number and zip code

ARTICLE A-7 LANGUAGE OF THE CONTRACT

This Contract represents the entire agreement between the Parties as to its subject matter and shall be governed by and construed in accordance with the laws of the State of Texas, without regard to conflict of law provisions. Venue for a dispute arising from this Contract shall be in Hays County, Texas. Nothing herein shall constitute a waiver of either Party's sovereign immunity or the constitutionally, statutory, or common law rights, privileges, immunities or defenses of the Parties.

ARTICLE A-8 GENERAL CONDITIONS

9-a INDEPENDENT CONTRACTOR. It is understood and agreed that the relationship of Contractor to the City shall be that of an independent contractor. Nothing contained herein shall be deemed or construed to (a) make Contractor the agent, servant or employee of the City, or (b) create any partnership, joint venture or other association between the City and Contractor. Contractor shall not have the right to bind the City to any obligations whatsoever, and this agreement shall not be construed to make the City liable to any person or party for debts or claims of any character accruing to them against Contractor.

9-b ON-SITE SAFETY. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of its obligations pursuant to this agreement. Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to, (a) employees and other persons who may be affected thereby, (b) the work and all materials and equipment to be incorporated therein, and (c) all other property at the work site or adjacent thereto, such as trees, shrubs, walkways, pavement, driveways, streets and utilities not designated for removal, relocation or replacement during the course of construction. Contractor shall erect and maintain, as may be dictated by the conditions surrounding the performance of the Work, reasonable safeguards for the safety and protection of all persons and property.

9-c INDEMNITY. To the fullest extent permitted by law, Contractor shall defend, indemnify and hold harmless The City, and its agents, employees and representatives, from and against any and all claims, causes of action, damages, losses and expenses of any nature whatsoever, including, without limitation, court costs, attorneys' fees and related legal expenses, arising out of or resulting from any material defects in the work or any negligence in the performance of the work hereunder or occurring in connection therewith.

9-d BREACH. Each party hereto retains all of legal rights and remedies available to it by law so long as written notice of breach has been provided to the other party with a ten-day opportunity to cure the offending defect in performance. No waiver by either party of any of its rights or remedies hereunder shall be considered a waiver of any other or subsequent right or remedy, and no delay or omission in the exercise or enforcement of any rights or remedies shall ever be construed as a waiver of any right or remedy

ARTICLE A-9 CERTIFICATIONS

a. The Contractor certifies that it does not and will not boycott Israel during the term of this Contract. The Contractor further certifies that it does not and will not refuse to deal with, terminate business activities with, or otherwise take any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory. This does not include actions made for ordinary business purposes.

b. The Contractor certifies that it does not and will not during the term of this Contract have dealings related to critical infrastructure with companies or entities that are owned or controlled by citizens, governments, companies, or entities of the following nations: China, Iran, North Korea, Russia, or other country designated under Section 113.002 of the Texas Business and Commerce Code.

c. The Contractor certifies that it does not and will not boycott firearms or ammunition manufacturers or firearms trade associations during the term of this Contract. The Contractor further certifies that it does not and will not refuse to deal with, terminate business activities with, or otherwise take any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with firearms or ammunition manufacturers or firearm trade associations. This does not include actions made for ordinary business purposes.

d. The Contractor certifies that it does not and will not boycott energy companies during the term of this Contract. The Contractor further certifies that it does not and will not refuse to deal with, terminate business activities with, or otherwise take any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with energy companies. This does not include actions made for ordinary business purposes.

e. The Contractor certifies that it is not listed in the prohibited vendors list authorized by Executive Order No. 13224, "Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism", published by the United States Department of the Treasury, Office of Foreign Assets Control.

ARTICLE A-10 SUCCESSION

The General Conditions described in A-3 of this agreement, and all other aforesaid Contract Documents, are all to be read into and form part of this Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall ensure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.

In witness whereof the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

SIGNED, SEALED AND DELIVERED
in the presence of:

OWNER

CONTRACTOR

Travis Mitchell, Mayor

Name and Title

Signature

Name and Title

Signature

Name and Title

Witness

Witness

Jennifer Kirkland, City Secretary
Name and Title

Name and Title

(NB.) Where any legal jurisdiction, local practice or client requirements calls for proof of authority to execute this document, proof of such authority in the form of a certified copy of a resolution naming the person or persons In question as authorized to sign the Agreement for and on behalf of the Corporation or Partnership, should be attached.



Project Timeline

Materials - Lead time required for production of features: 8-10 weeks

Project: City of Kyle Steeplechase Park Splashpad

Estimated start date: 1 week after completion of feature production

Splashpad Features and Size

- 1 Giant Dumping Bucket - 304L stainless
- 1 Two Headed Sunflower – 304L stainless
- 1 Three Hoop Set (custom) – 304L stainless
- 2 Mushroom Shower - 304L stainless
- 2 Water cannons- 304L stainless
- 4 Cattails – 304L stainless
- 2 Toadstools – 304L stainless
- 8 Fan Tail Jets – 304L stainless
- 2 Donuts – 304L stainless
- 2 Water Tunnel – 304L stainless
- 3 Weave Jet – 304L stainless
- 1 activator + sensor - 304L stainless
- 2300 sq feet pad
- Control panel & manifold
- Utility building
- Recirculation system + buried tank
- 3 canopies
- Picnic Tables (6)
- Benches (4)

Deliverables Timeline: Construction

- Phase 1 - Week 1 & 2
 - Excavation for plumbing lines
 - Installation of tank + connections
 - Drainage lines + connections to tank
 - Connection to water (min required pressure 40PSI)
 - All measurements and levels for features taken
- Phase 2 - Week 2-4
 - Installation of water lines for features
 - Base for utility building

- Installation of buried tank
- Building utility building
- Installation of utilities in building
- Testing of tank + drainage lines
- Installation of water lines for features
- Phase 3 Week 4-6
 - Feature bases poured
 - Testing of feature lines (pressure testing)
 - Features Installed
 - Form for pad built and measurements made
 - Rebar + compaction
 - Concrete pour
- Phase 4 Week 6-8
 - Spray deck applied
 - Canopy Installation
 - Testing and troubleshooting
 - Final testing and touch up
 - Training of staff on system
 - Site cleanup and grading
 - Removal of all construction equipment and supplies

Oasis Waterplaygrounds Inc

2100 West Loop S Ste 800
 Houston, TX 77027 US
 +1 7133706601

**INVOICE STEEPLECHASE PARK SPLASH PAD**

BILL TO
 City of Kyle
 100 W. Center Street
 Kyle, Texas 78640 USA

SHIP TO
 City of Kyle
 100 W. Center Street
 Kyle, Texas 78640 USA

INVOICE 1108
DATE 03/21/2023
TERMS Net 30
DUE DATE 04/20/2023

DATE	ACTIVITY	DESCRIPTION	QTY	RATE	AMOUNT
02/27/2023	Giant Dumping Bucket	Stainless 304L - UV powder coated	1	26,500.00	26,500.00T
02/27/2023	2 Headed Sunflower	Stainless 304L - UV powder coated	1	9,800.00	9,800.00T
02/27/2023	3 Hoop Set	Stainless 304L - UV powder coated - custom ranch symbols	1	21,000.00	21,000.00T
02/27/2023	Mushroom Shower	Stainless 304L - UV powder coated	2	4,200.00	8,400.00T
02/27/2023	Water Cannons	Stainless 304L - UV powder coated	2	7,200.00	14,400.00T
02/27/2023	Cattails	Stainless 304L - UV powder coated	4	3,100.00	12,400.00T
02/27/2023	Toadstool	Stainless 304L - UV powder coated - custom pie design airbrushed	2	3,800.00	7,600.00T
02/27/2023	Activator	Stainless 304L - UV powder coated - lighted capacitive sensor	1	6,950.00	6,950.00T
02/27/2023	Fan tail Jet	Stainless 304L	8	995.00	7,960.00T
02/27/2023	Donut	Stainless 304L	2	1,390.00	2,780.00T
02/27/2023	Water Tunnel	Stainless 304L	2	1,250.00	2,500.00T
02/27/2023	Weave Jet	Stainless 304L	3	1,575.00	4,725.00T
02/27/2023	Manifold	Stainless 304L - pressure gauge + water hammer arrestor + PGA solenoids	1	12,000.00	12,000.00T
02/27/2023	Buried Tank	Norwesco 1750 or equivalent with installed bulkheads	1	17,500.00	17,500.00T
02/27/2023	Control Panel	Control panel with customizable sequencing, date/time. 10" touchscreen	1	17,500.00	17,500.00T
02/27/2023	Utility Room	Utility Building for housing of equipment	1	42,500.00	42,500.00T
02/27/2023	Recirculation Equipment	all recirculation equipment: pump(s), chemical controller, UV, sand filter, levlor, chemical holding tanks	1	39,000.00	39,000.00T
02/27/2023	Labor + Materials	All materials required for installation of	1	138,500.00	138,500.00T

Payment Details
 Bank of America
 Bank/Sort Code: 111000025
 Account Number: 488072580992
 Page 1 of 2

utility room, splashpad, including rebar and concrete

02/27/2023	Spraydeck	3 color spraydeck non-slip surfacing	1	26,500.00	26,500.00T
02/27/2023	Engineering Drawings	Stamped + sealed drawings and as built final drawings included	1	6,750.00	6,750.00T
02/27/2023	Final Setup & Training	2 full days of staff training and 1 year on call support	1	1,750.00	1,750.00T
02/27/2023	Canopy	10X15 Canopy with UV resistant shading	3	15,000.00	45,000.00T
02/27/2023	picnic tables	picnic tables - stainless with rubber coating	6	2,575.00	15,450.00T
02/27/2023	benches	benches - stainless with rubber coating	4	1,900.00	7,600.00T

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SUBTOTAL	495,065.00
TAX	0.00
TOTAL	495,065.00

BALANCE DUE **USD 495,065.00**



WARRANTY AND STANDARDS POLICY

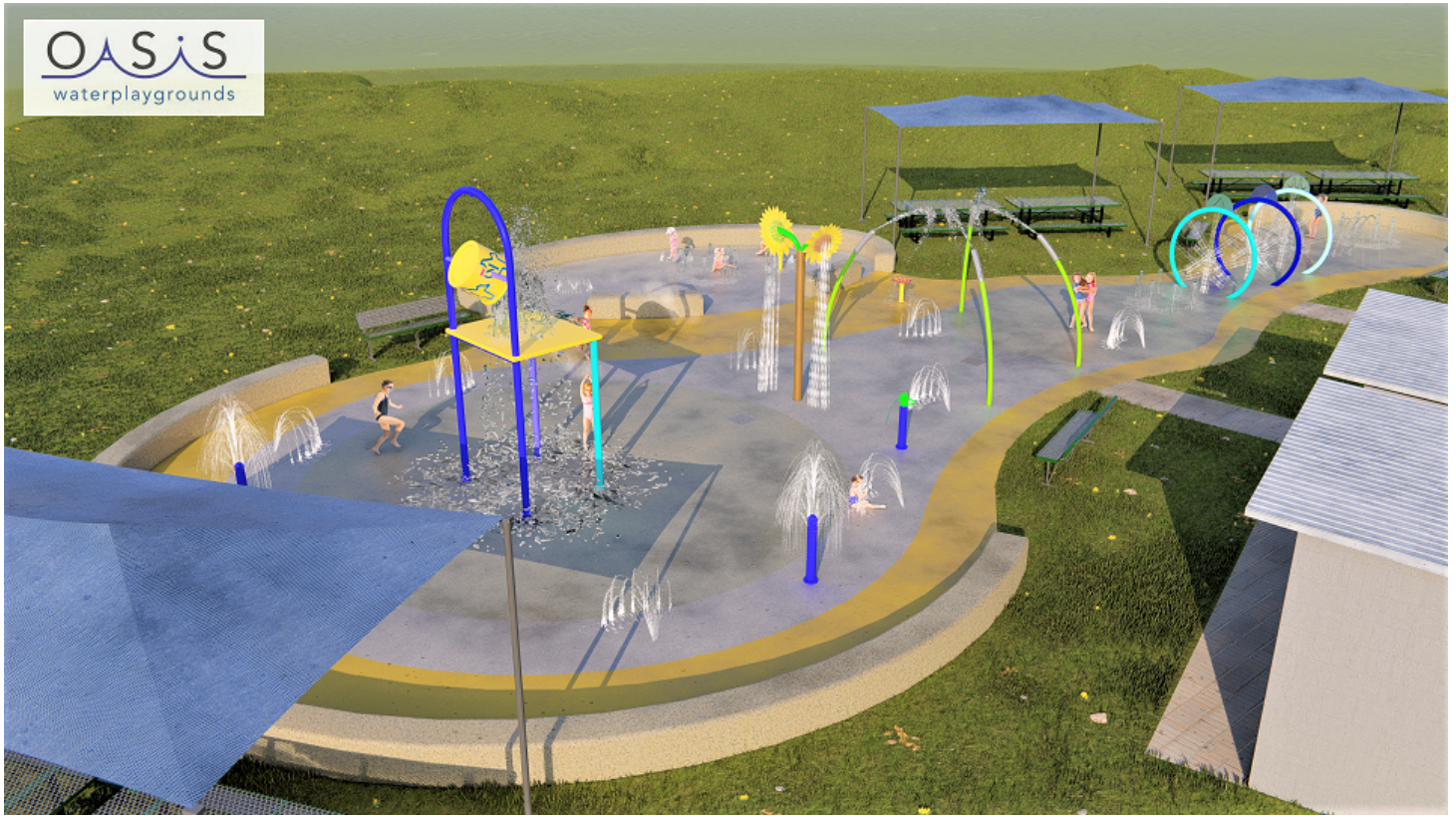
OASIS Waterplaygrounds Inc is dedicated to delivering the highest quality aquatic playground equipment and fountain equipment. Our team of engineers and designers are committed to innovation and maintaining the highest standards and practices in manufacturing. We meet and exceed requirements for playgrounds safety in ADA, CDA as well as ASTM and CSA manufacturing.

Oasis Waterplaygrounds Inc hereby warrants that, subject to the conditions and limitations below, the product(s) supplied will be free from defect in material and workmanship. This warranty covers all component parts of the product.

25 years	Stainless Steel components
5 years	Stainless Steel hardware and fasteners
15 years	Steel nozzles
5 years	Brass nozzles and components
5 years	HDPE Tanks and components
5 years	Fiberglass Equipment Vaults
5 years	Electrical and/or chemical controllers
2 years	Powder Coated UV protected paint
2 years	Toe Guards
2 years	Actuated Valves
1 year	Recirculation Pumps/Filtration/Fittings (Manufacturer warranties apply)
1 year	Valves, gauges and electrical components

Claims limited to the repair or replacement of defective materials under this warranty must be made in writing and be received by Oasis Waterplaygrounds within the warranty period and within 45 (forty-five) days of the date Owner knew or should have known of the defect. Oasis Waterplaygrounds shall pay for the removal, shipping & reinstallation of any products manufactured by Oasis Waterplaygrounds Inc. For any items manufactured by other manufacturers, any defective items will not be the responsibility of Oasis Waterplaygrounds Inc and will be handled directly by the respective manufacturer(s) warranty and claims department(s). Oasis Waterplaygrounds Inc will not bear any responsibility for removal/replacement of these items.

This warranty is in lieu of all other equipment warranties express or implied.





BIDS RECEIVED

City of Kyle Parks and Recreation Department

Steeplechase Splashpad

RFP-2023-15-PARD

	Kraftsman	Seaspray,LLC	Water Splash	Oasis Waterplaygrounds
Item Description	8	9	10	10
Deposit	NA	yes	yes	yes
Virtual/On-Site Visit	10	10	10	10
Copy of Insurance	10	10	1	10
Company Narrative	9	8	10	10
Design	8	7	9	9
Construction	10	6	10	10
References	10	10	9	10
	65.33	60.33	57	68

Totals				
Option 1	499,729.86	348,898.00	469,045.60	495,065.00
Option 2				\$478,045

The overall price is TBD pending the playground pieces that are chosen. The above quotes are estimates.



CITY OF KYLE, TEXAS

City of Kyle, Crosswinds, Texas
Water Utilities Service Area
Agreement re TWU/Monarch CCN

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Consider Approval of a Service Area Agreement between Crosswinds Municipal Utility District, the City of Kyle, and Texas Water Utilities, L.P., to transfer service area to City of Kyle to provide retail water utility services. ~ *Paige Saenz, City Attorney*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- ☐ CMUD - Service Area Agreement

SERVICE AREA AGREEMENT

This Service Area Agreement (the "Agreement") is executed pursuant to Texas Water Code § 13.248 by and between Crosswinds Municipal Utility District ("Crosswinds"), the City of Kyle ("Kyle"), and Texas Water Utilities, L.P. ("TWU") (collectively the "Parties" or individually a "Party").

RECITALS

WHEREAS, Crosswinds is a Municipal Utility District with district boundaries in Hays County Texas and is located in whole or in part in the extraterritorial jurisdiction of the City of Kyle, Texas;

WHEREAS, TWU is a retail public utility and operates water Certificate of Convenience and Necessity ("CCN") No. 12983 in Hays County, Texas;

WHEREAS, Kyle is a Home Rule municipality located in Hays County, Texas, owning a retail public water utility operating under water CCN No. 11024 in Hays County;

WHEREAS, EB Windy Hill, L.P. submitted a petition to the Texas Commission on Environmental Quality ("TCEQ") to decertify an approximate 445.11 acre tract from TWU's CCN No. 12983 on January 8, 2013.¹ The petition was submitted under section 13.254(a-5) of the Texas Water Code (TWC). The petition was accepted for filing by the TCEQ on January 24, 2013. The petition was granted by order of the TCEQ Executive Director on February 13, 2013. The Petition requested that along with other property, the 20.901 acres shown as Exhibit A (hereafter the "Property") be removed from TWU's CCN.

WHEREAS, the Parties agree and acknowledge that TWU has been compensated for the CCN decertification of the approximate 445.11 acre tract, and that such compensation was fair and adequate.

WHEREAS, as a result of a technical error made in 2013 on the official CCN map now maintained by the Public Utility Commission of Texas ("PUC"), approximately 20.901 acres of the approximately 445.11 acre tract remains in the TWU service area (the "Property");

WHEREAS, the Parties are all in agreement that the Property should not be in CCN No. 12983;

WHEREAS, the Property is within the district boundaries of Crosswinds and Crosswinds desires to have the property served with water service from Kyle;

WHEREAS, Kyle is willing to provide water service to the Property;

WHEREAS, TWU desires to transfer the Property to Kyle CCN No. 11024;

¹ The name of TWU at the time of the requested CCN decertification was Monarch Utilities I L.P.

WHEREAS, Kyle desires to accept such Property into its service area under CCN 11024;

WHEREAS, TWU consents, pursuant to the terms of this Agreement, to allowing Kyle to provide retail water utility service to the Property;

WHEREAS, pursuant to Texas Water Code § 13.248, contracts between retail public utilities designating areas to be served, when approved by the PUC, are valid and enforceable and are incorporated into the appropriate CCNs;

WHEREAS, the Parties mutually desire to enter into this Agreement setting forth the terms and conditions pursuant to which they will designate areas and customers to be served and to request the PUC to incorporate such designations into the CCNs held by Kyle and TWU;

NOW, THEREFORE, in consideration of the promises, mutual agreements, and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Crosswinds, Kyle, and TWU hereby contract and agree as follows:

AGREEMENT

I.

TERMS

1.01 The above recitals are true and correct and are incorporated into this Agreement for all purposes.

1.02 Term. This agreement shall be effective as of the date so approved by the PUC and shall remain valid and enforceable unless and until superseded by a subsequent written agreement.

1.03 Property Subject to the Agreement. The Property subject to this Agreement is the property shown on Exhibit A.

1.04 Designation of Water Utility Service Area. TWU agrees to transfer the Property to Kyle for Kyle to provide retail water utility service. Crosswinds consents and agrees to allow Kyle to provide retail water utility service to the Property.

1.05 No Compensation. TWU does not require any further compensation for Kyle providing retail water utility service to the Property.

1.06 Application to Amend CCN. Crosswinds may file, or cause to be filed, an application with the PUC to amend CCN No. 12983 such that the Property be removed from CCN No. 12983 and be added to CCN No. 11024. TWU will not oppose such amendment and will execute, at Crosswinds sole cost and expense, any reasonable consents that might be required to affect such amendment.

1.07 Alternative Administrative Approach. If the PUC denies the § 13.248 Application for any reason, the Parties shall work in good faith to implement a reasonable alternative administrative

and lawful approach providing Kyle with the necessary authority to provide retail water service to the Property.

1.08 Retail Service. TWU hereby consents to the City providing retail water service to the Property beginning on the effective date of this Agreement and during the pendency of the § 13.248 Application to the extent authorized pursuant to the Texas Water Code and the PUC's substantive rules.

1.09 Execution of Additional Documents. The Parties agree that they will each work in good faith to effectuate the purpose of this Agreement and will execute any documents and file any documents needed to effectuate the purpose of this Agreement.

1.10 Attorney's Fees. Crosswinds hereby agrees to cover reasonable and documented attorneys' fees of TWU up to \$1,000.00 with respect to the subject matter of this Agreement, including but not limited to any outside counsel representation of TWU reasonably necessary in the § 13.248 Application.

1.11 The Parties agree that upon PUC approval of the application to transfer the Property from TWU to Kyle, TWU shall have no further obligation to provide retail water service to the Property.

II. GENERAL PROVISIONS

2.01 No agreements other than this Agreement now exist between the Parties concerning the subject matter of this Agreement.

2.02 This Agreement shall be binding on the Parties and shall be binding on and inure to the benefit of the successors and assigns of the respective Parties to this Agreement.

2.03 This Agreement is the entire agreement between the Parties hereto with respect to the subject matter hereof. No modifications of this Agreement shall be of any force or effect, whatsoever, except as by subsequent modification in writing signed by the Parties.

2.04 The provisions of this Agreement shall be governed by and construed and entered in accordance with the substantive laws of the State of Texas and the substantive rules of the Public Utility Commission. Any action at law or in equity brought to enforce any provision of this Agreement shall be brought in a court of competent jurisdiction with venue in Hays County, Texas.

2.05 The individuals executing this Agreement on behalf of the respective parties below represent that all necessary and appropriate action has been taken to authorize the individual who is executing this Agreement to do so for and on behalf of the party for which his or her signature appears, that there are no other parties or entities required to execute this Agreement in order for the same to be an authorized and binding agreement on the party for whom the individual is signing, and that each individual affixing his or her signature is authorized to do so, and such authorization is valid and effective on the date hereof. If the authority of the individual executing this Agreement is subsequently challenged, the party for which the individual was acting shall take all steps necessary to ratify the authority of the individual.

2.06 Except as specifically set forth in this Agreement, the provisions of this Agreement are severable, and if any word, phrase, clause, sentence, paragraph, section, or other part of this Agreement or the application thereof to any person or circumstances is ever held by any court of competent jurisdiction to be invalid or unconstitutional for any reason, the remainder of this Agreement and the application of such word, phrase, clause, sentence, paragraph, section, or other part of this Agreement to other persons or circumstances will not be affected thereby and this Agreement will be construed as if such invalid or unconstitutional portion had never been contained herein.

2.07 All notices which the Parties may be required, or may desire, to serve on the other shall be in writing and shall be served by personal delivery or by depositing the same with the U. S. Postal Service, first-class or certified mail, postage prepaid, return receipt required, and addressed to the respective party at the addresses set forth below. All notices shall be deemed received within five (5) business days of sending.

City:

City of Kyle
Attn: Jerry Hendrix
Interim City Manager
100 W. Center St
Kyle, Texas 78640

with a copy to:

The Knight Law Firm, LLP
Attn: Paige Saenz
223 West Anderson Lane, Suite A-105
Austin, Texas 78752

TWU:

Texas Water Utilities, L.P.
Attn: George Freitag
12535 Reed Road
Sugar Land, Texas 77478

Crosswinds:

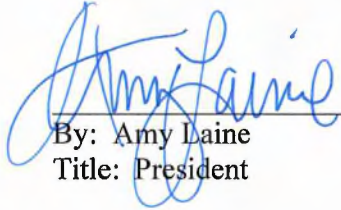
Crosswinds Municipal Utility District
Attn: Kimberly Studdard
401 Congress Avenue, Suite 2100
Austin, Texas 78701

2.08 This Agreement may be executed in counterparts, each to be considered an original and be effective upon execution by all parties.

(Signatures on the following page)

AGREED, effective the _____ day of _____ 2023:

CROSSWINDS MUNICIPAL UTILITY DISTRICT


By: Amy Laine
Title: President

DATE: March 27, 2023

TEXAS WATER UTILITIES, L.P.

By: Jeffrey L. McIntyre
Title: President

DATE: _____

CITY OF KYLE, TEXAS

By: Jerry Hendrix
Title: Interim City Manager

DATE: _____

EXHIBIT "A"
DESCRIPTION OF PROPERTY

(attached hereto)

METES AND BOUNDS

BEING 20.901 ACRES OF LAND SITUATED IN THE JESSE B. EAVES SURVEY NUMBER 5, ABSTRACT NUMBER 166, HAYS COUNTY, TEXAS, BEING COMPRISED OF A PORTION OF A CALLED 23.500 ACRE TRACT OF LAND (TRACT 10) AND ALL OF A CALLED 2.732 ACRE TRACT OF LAND (TRACT 9) CONVEYED TO CF CSLK XWIND LLC BY DEED RECORDED IN INSTRUMENT NUMBER 21069744, OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS, AND CORRECTED IN INSTRUMENT NUMBER 22008979, OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS, ALL OF A CALLED 4.81 ACRE TRACT OF LAND CONVEYED TO PEDERNALES ELECTRIC COOPERATIVE, INC. BY DEED RECORDED IN INSTRUMENT NUMBER 16021101, OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS, A PORTION OF LOT 1, BLOCK A, A PORTION OF LOT 1, BLOCK B, A PORTION OF CROSSWINDS PARKWAY (80' R.O.W), AND A PORTION OF THE 0.647 ACRE RIGHT-OF-WAY DEDICATION OF WINDY HILL ROAD (R.O.W. VARIES), CROSSWINDS PHASE ONE, A SUBDIVISION RECORDED IN INSTRUMENT NUMBER 17001539, OFFICIAL PUBLIC RECORDS, HAYS COUNTY, TEXAS, SAID 20.901 ACRE TRACT OF LAND BEING MORE FULLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING, at a 1/2 inch iron rod found at the southeast corner of said 23.500 acre tract of land, being at the westernmost corner of a called 4.4 acre tract of land conveyed to LCRA Transmission Services Corporation by deed recorded in Instrument Number 19014637, Official Public Records, Hays County, Texas, same being on the north line of Lot 15, Block I, said Crosswinds Phase One, for the southeast corner and **POINT OF BEGINNING** of the herein described tract,

THENCE, over and across said 23.500 acre tract, said Crosswinds Parkway, said Lot 1, Block B, and said 0.647 acre right-of-way dedication the following six (6) courses and distances, numbered 1 through 6,

- 1) N46°40'13"W, a distance of 247.29 feet to a calculated point for corner,
- 2) S88°09'24"W, a distance of 1182.73 feet to a calculated point for the southwest corner of the herein described tract of land,
- 3) N12°09'22"E, a distance of 30.91 feet to a calculated point for corner,
- 4) N13°35'04"E, a distance of 126.15 feet to a calculated point for corner, being at the beginning of a curve to the left,
- 5) Along said curve to the left, having a radius of 530.00 feet, an arc length of 146.93 feet, and a chord that bears N05°38'33"E, a distance of 146.46 feet to a calculated point for corner, and
- 6) N02°17'58"W, a distance of 217.01 feet to a calculated point on the north line of said 0.647 acre right-of-way dedication, being on the south original line of said Windy Hill Road, for the northwest corner of the herein described tract of land,

THENCE, with the north line of said 0.647 acre right-of-way dedication, and the original south line of said Windy Hill Road, the following four (4) courses and distances, numbered 1 through 4,

- 1) N88°09'24"E, a distance of 751.00 feet to a calculated point for corner, being at the beginning of a curve to the right,
- 2) Along said curve to the right, having a radius of 11419.16 feet, an arc length of 769.78 feet, and a chord that bears S89°22'51"E, a distance of 769.64 feet to a calculated point for corner, being at the beginning of a curve to the left,
- 3) Along said curve to the left, having a radius of 1036.68 feet, an arc length of 354.90 feet, and a chord that bears N82°44'29"E, a distance of 353.17 feet to a calculated point for corner, and
- 4) N88°06'40"E, a distance of 124.98 feet to a calculated point on the northwest line of a called 5.0024 acre tract of land conveyed to Christopher and Nichole Phares by deed recorded in Instrument Number 18009370, Official Public Records, Hays County, Texas, for the northeast corner of the herein described tract of land,

THENCE, S43°29'55"W, with the northwest line of said 5.0024 acre tract, the northwest line of said 4.4 acre tract of land, the southeast line of said 4.81 acre tract of land, and the southeast line of said 23.500 acre tract of land, a distance of 981.04 feet to the **POINT OF BEGINNING** and containing 20.901 acres of land, as shown on the attached sketch.

Surveyed by:  11/16/2022
AARON V. THOMASON R.P.L.S. NO. 6214
Carlson, Brigance and Doering, Inc.
Reg. # 10024900
5501 West William Cannon
Austin, TX 78749
Ph: 512-280-5160
aaron@cbdeng.com



BEARING BASIS: TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204)

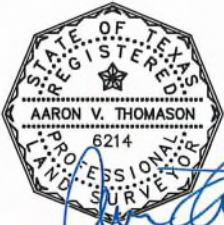
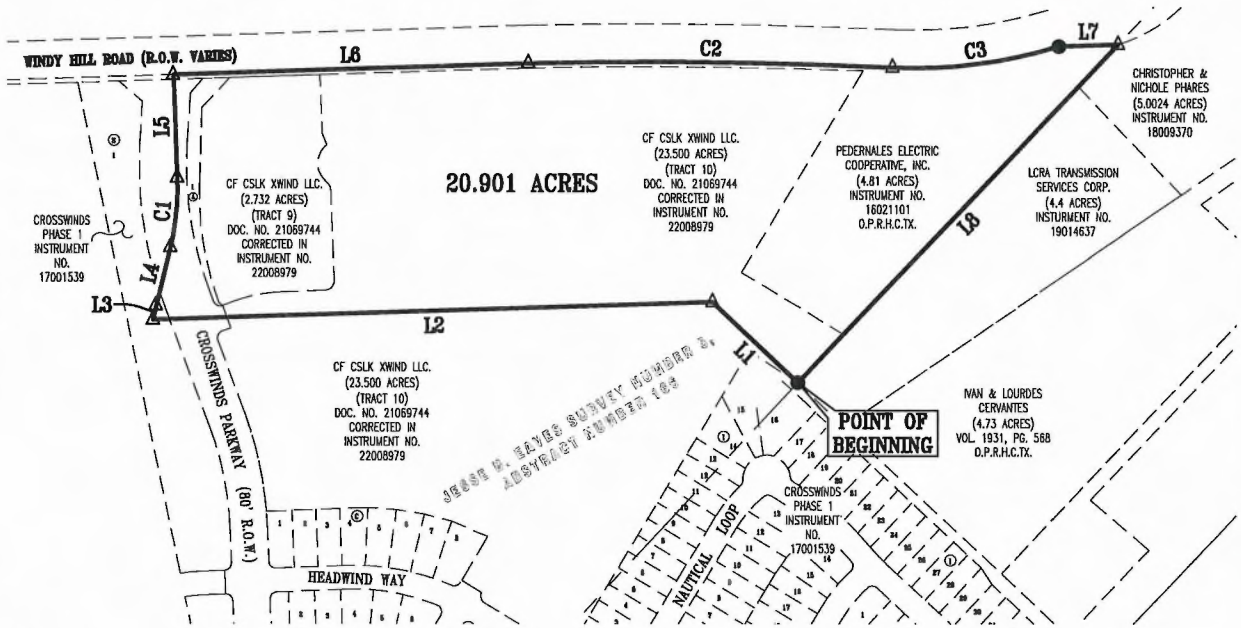
SKETCH TO ACCOMPANY FIELD NOTES



SCALE: 1" = 300'

LEGEND

- 1/2" IRON ROD FOUND
- ▲ CALCULATED POINT



[Signature]
11/16/2022

Line Table		
Line #	Length	Direction
L1	247.29	N46°40'13"W
L2	1182.73	S88°09'24"W
L3	30.91	N12°09'22"E
L4	126.15	N13°35'04"E
L5	217.01	N02°17'58"W
L6	751.00	N88°09'24"E
L7	124.98	N88°06'40"E
L8	981.04	S43°29'55"W

Curve Table						
Curve #	Length	Radius	Chord Direction	Chord Length	Tangent	DELTA
C1	146.93	530.00	N05°38'33"E	146.46	73.94	15°53'02"
C2	769.78	11419.16	S89°22'51"E	769.64	385.04	3°51'45"
C3	354.90	1036.68	N82°44'29"E	353.17	179.20	19°36'53"

BEARING BASIS: TEXAS COORDINATE SYSTEM, CENTRAL ZONE (4203), NAD83

Carlson, Brigrance & Doering, Inc.
 I (RAI) ID #13791 REG. # 10024900
 Civil Engineering Surveying
 3501 West William Cannon Austin, Texas 78749
 Phone No. (512) 280-5160 Fax No. (512) 280-5165

J: \Autocad 2004 Land Projects\4871\survey\M&B - 20.901 ACRES - MONARCH CCN

CITY OF KYLE, TEXAS



Discussion and possible action regarding a Request for Proposals for the preparation of the U.S. Department of Housing and Urban Development 2023-2024 Consolidated Plan as it relates to becoming a CDBG Entitlement City.

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Discussion and possible action regarding a Request for Proposals for the preparation of the U.S. Department of Housing and Urban Development 2023-2024 Consolidated Plan as it relates to becoming a CDBG Entitlement City. ~ *Amber Schmeits, Assistant City Manager*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Amend Fire Code

Meeting Date: 4/4/2023

Date time:7:00 PM

Subject/Recommendation: Discussion and possible action to amend the fire code section 503.2.1 and establish a new safe unobstructed width for public and private roads. ~ *Daniela Parsley, Council Member*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Reclaimed Water Lines

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Discussion and possible action regarding the City of Kyle's future use of reclaimed water lines, including but not limited to review/discussion of past reports, future plans to incorporate lines into the city's infrastructure, including new development and possible direction to staff to obtain additional information. ~ *Yvonne Flores-Cale, Council Member*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

- ☐ Kyle Direct Water Reuse Feasibility Study

Kyle Direct Water Reuse Feasibility Study

Final Report

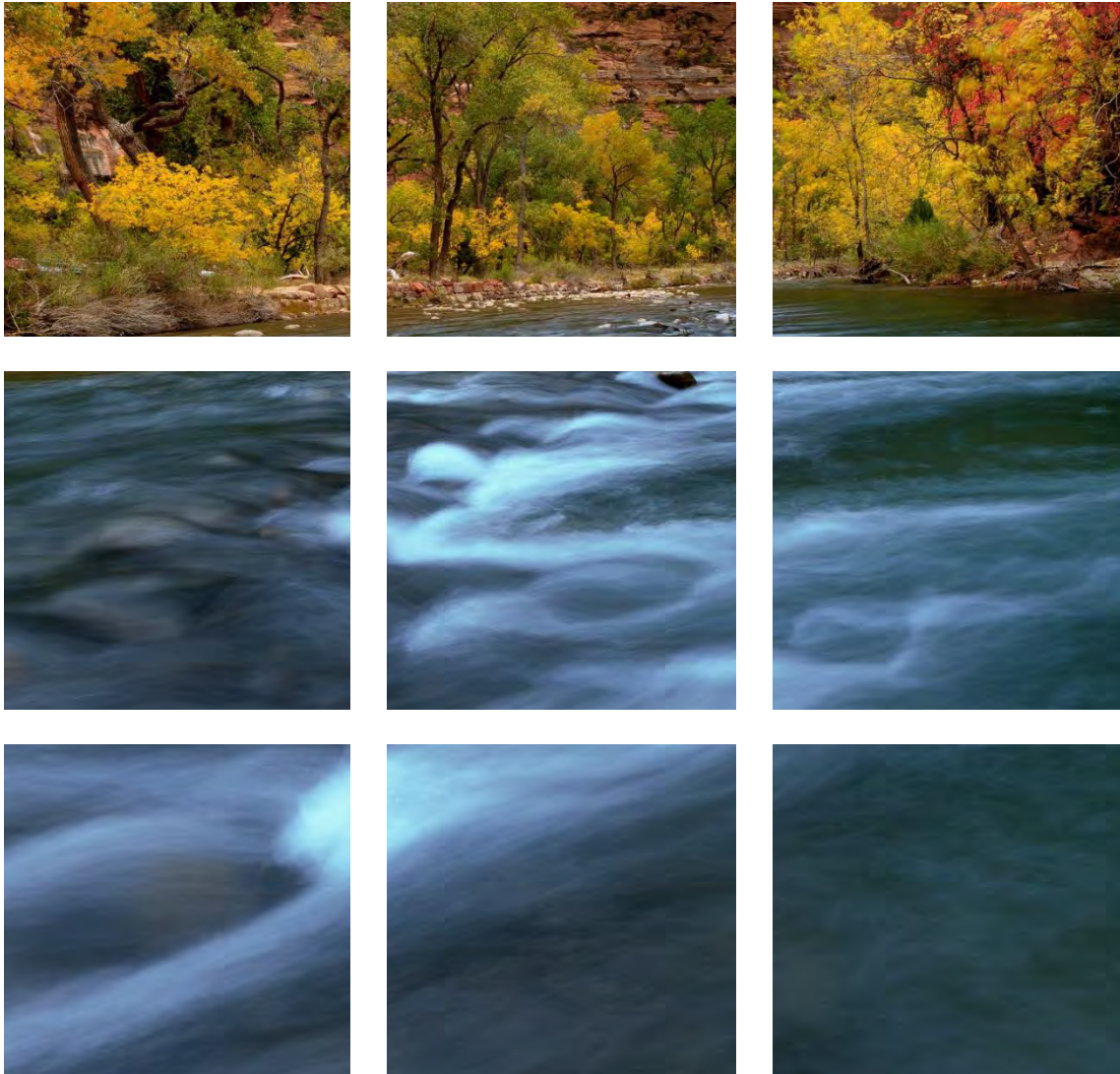


TWDB Regional Facility Planning Grant
(Project Contract No. 114-831-1256)

December 7, 2012

Kyle Direct Water Reuse Feasibility Study

Final Report



TWDB Regional Facility Planning Grant
(Project Contract No. 114-831-1256)

December 7, 2012

Kyle Direct Water Reuse Feasibility Study

Final Report

Prepared by:



2777 N. Stemmons Freeway, Suite 1102
Dallas, Texas 75207

T: (214) 951-0807
F: (214) 951-0906

Firm Registration F-293



A handwritten signature in blue ink that reads "Stephen M. Jenkins" with the date "12/07/12" written below it.

December 7, 2012

Acknowledgements

This project was funded by the U.S. Bureau of Reclamation's Title XVI Water Reclamation and Reuse Program and by the Texas Water Development Board Regional Facilities Planning Grant Program.



Project Participants

This project was made possible through the participation and continued involvement of the following agencies:



City of Kyle Direct Water Reuse Feasibility Study

Table of Contents

1	Executive Summary	1
1.1	Reclaimed Water Demand	1
1.2	Population Growth and Treated Wastewater Availability	1
1.3	Reclaimed Water Project Benefits	2
1.4	Reclaimed Water Costs	3
1.5	Recommended Reclaimed Water Implementation Plan	4
2	Introduction	7
2.1	Background	7
2.2	Project Scope	8
2.3	Study Area	8
3	Population.....	11
3.1	City of Kyle Comprehensive Plan	11
3.2	Kyle Economic Development	11
3.3	South Central Texas Regional Water Plan – Region L.....	12
3.4	Study Area Population	13
4	Water Supply, Water Demand, and Treated Wastewater Availability.....	15
4.1	Regional Current and Projected Water Supplies	15
4.2	Local Current and Projected Water Supplies.....	16
4.3	Current and Projected Water Demands.....	17
4.4	Costs of Water.....	19
4.5	Assessment of Needs for Water Reuse	21
5	Potential Reclaimed Water Users and Demands	23
5.1	Park Irrigation	23
5.2	Hays Consolidated Independent School District	25
5.3	Plum Creek Planned Unit Development (PUD)	26
5.4	Right-of-Way (ROW) Irrigation	26
5.5	Commercial Development	27
5.6	Potential Reclaimed Water Demand.....	29
5.7	Consultation with Potential Reclaimed Water Customers.....	31
5.8	Water and Wastewater Agency Jurisdiction	31
5.9	Wastewater Treatment Plant	32
5.10	Projected Wastewater Treatment Facilities	38
6	Description of Alternatives	41
6.1	Alternative 1 – Existing System (Private Ownership).....	41
6.2	Alternative 1A – Existing System (Wastewater Utility).....	42
6.3	Alternative 2 – Reclaimed Water Production Facilities (RWPF).....	42
6.4	Alternative 3 – Potable Water Use.....	44
6.5	Alternative 4 – WWTP Effluent	45
6.6	Reclaimed Water Storage	52
7	Economic Analysis.....	57

7.1	Project Cost Summary	57
7.2	Cost Comparison of Alternatives.....	59
7.3	General Economic Conditions and Strategic Concerns.....	60
7.4	Overview of Economic Benefits.....	60
7.5	Benefits Not Considered.....	63
7.6	Methodology.....	63
7.7	Calculating the Annual Costs of the Baseline Alternative.....	63
7.8	Calculating the Cost of the Reuse Alternative.....	65
7.9	Calculating the Present Value of the Baseline Scenario.....	66
7.10	Calculating the Present Value of the Reuse Alternative.....	66
7.11	Comparison of Baseline Scenario and Reuse Alternative	67
7.12	Recommended Alternative.....	67
8	Environmental Considerations	69
8.1	Environmental Features of the Study Area.....	69
8.2	Potential Impact of Direct Reuse at Kyle WWTP on Watershed Water Quality	72
9	Legal and Institutional Considerations.....	97
9.1	Regulatory Considerations.....	97
9.2	Reclaimed Water System Operations	99
9.3	Water Rights Considerations	100
9.4	Interagency Cooperation.....	102
10	Reclaimed Water Utility Implementation Plan	103
10.1	Summary of Funding Opportunities	103
10.2	Project Implementation Considerations.....	107
10.3	Administrative Framework.....	111
10.4	Project Funding Strategy.....	112
10.5	Non-Potable Water Customer Contract	116
10.6	Implementation Steps.....	116
10.7	Research Needs	119
10.8	Recommendations.....	120
11	References	123
12	Appendices	127
	Appendix A: Acknowledgements	129
	Appendix C: Data Inventory.....	133
	Appendix D: Reclaimed Water Demand	135
	Appendix E: Estimated Project Costs.....	137
	Appendix F: System Expansion Estimated Costs.....	139
	Appendix G: Service Area Estimated Costs	141
	Appendix N: Public Involvement	209
	Appendix O: Report Comments and Responses.....	221
	Appendix P: Title XVI Feasibility Study Report Crosswalk.....	235

List of Figures

Figure 1-1: Recommended reclaimed water system.....	6
Figure 2-1: Project study area.....	10
Figure 3-1: Comprehensive plan population projections.....	11
Figure 3-2: City of Kyle population projections.....	12

Figure 4-1: Region L projected water supplies and demand 2010 – 2060.	15
Figure 4-2: Region L 2060 water management strategies.	16
Figure 4-3: Kyle annual water demand.....	18
Figure 5-1: Potential reclaimed water users.....	24
Figure 5-2: Kyle water and sewer CCNs.	32
Figure 5-3: Kyle wastewater treatment plant.....	33
Figure 5-4: Existing reclaimed water system.....	34
Figure 5-5: Existing reclaimed water wet well.	35
Figure 5-6: Projected wastewater flows.....	36
Figure 5-7: Effluent mean monthly BOD concentration.	37
Figure 5-8: Effluent mean monthly TSS concentration.....	37
Figure 5-9: Effluent mean monthly NH3 concentration.	38
Figure 6-1: Phase 1 reclaimed water system.....	47
Figure 6-2: Phase 2 reclaimed water system.....	49
Figure 6-3: Reclaimed water service areas.	50
Figure 6-4: Plum Creek Site 1 dam elevations.	55
Figure 8-1: Groundwater regulatory boundaries.....	70
Figure 8-2 : Nutrient and bacteria concerns in the Plum Creek Watershed.....	73
Figure 8-3: Monthly inflow distribution to Kyle WWTP as % of total annual flow.....	77
Figure 8-4: Monthly mean TSS concentration (mg/L) in Kyle WWTP effluent.....	78
Figure 8-5: Monthly mean NH3 concentration (mg/L) in Kyle WWTP effluent.....	78
Figure 8-6: Monthly mean BOD concentration (mg/L) in Kyle WWTP effluent.	79
Figure 8-7: Projected annual average WWTP inflow and irrigation demands for 2015 to 2035.	79
Figure 8-8: Projected monthly irrigation demand expressed as percentage of total annual irrigation demand for 2015 to 2035.	80
Figure 8-9: Projected mean monthly flow and nutrient loads for 2015 to 2019 under direct reuse and no reuse conditions.....	83
Figure 8-10: Projected mean monthly flow and nutrient loads for 2020 to 2024 under direct reuse and no reuse conditions.	85
Figure 8-11: Projected mean monthly flow and nutrient loads for 2025 to 2029 under direct reuse and no reuse conditions.	88
Figure 8-12: Projected mean monthly flow and nutrient loads for 2030 to 2034 under direct reuse and no reuse conditions.	90
Figure 8-13: Projected mean monthly flow and nutrient loads for 2035 and after under direct reuse and no reuse conditions.	92
Figure 10-1: Project implementation schedule.	118
Figure 10-2: Recommended reclaimed water infrastructure.	122

List of Tables

Table 1-1: Reclaimed water demand.	2
Table 1-2: Projected water supply costs (2015 – 2040).....	4
Table 1-3: Reclaimed water infrastructure costs.	4
Table 1-4: Projected reclaimed water unit cost.....	5
Table 3-1: Comparison of population projections.	13
Table 4-1: Current and projected water supplies.	17

Table 4-2: Projected water supplies and demand (from Region L Water Plan, 2011).	17
Table 4-3: Adjusted water demand projection.	18
Table 4-4: Projected water demand as a percentage of current water sources.	19
Table 4-5: Water source costs (2011).	20
Table 4-6: Average water supply cost.	20
Table 4-7: Average water supply cost during drought conditions.	20
Table 5-1: Park inventory.	23
Table 5-2: Future park acreage.	25
Table 5-3: School property irrigation.	25
Table 5-4: Plum Creek PUD.	26
Table 5-5: ROW irrigation.	26
Table 5-6: Future commercial acreage.	27
Table 5-7: Potential reclaimed water irrigation use locations.	28
Table 5-8: Irrigation summary.	29
Table 5-9: 2011 Potable water use.	30
Table 5-10: Reclaimed water demand (2035).	30
Table 5-11: Treated effluent flow volume (mgd).	35
Table 5-12: Projected dry weather (DW) and average wastewater flow.	36
Table 6-1: Service area reclaimed water demands (2035).	51
Table 6-2: Net storage change (peak month).	56
Table 7-1: Potable Water Alternative Costs	58
Table 7-2: Summary of annual costs (2015 - 2020).	58
Table 7-3: Service area cost summary (2035).	59
Table 7-4: Summary of annual costs.	59
Table 7-5: Alternative costs summary (2035).	60
Table 7-6: Average cost of nutrient removal, BNR system, baseline alternative.	64
Table 7-7: Estimated nutrient removal, effluent reuse alternative.	65
Table 8-1: List of data from Discharge Monitoring Records for 2006 to 2008.	75
Table 8-2: List of data from Discharge Monitoring Records for 2009 to 2011.	76
Table 8-3: Summary of project mean monthly flows and nutrient loads for 2015 to 2019 under no reuse and reuse conditions.	84
Table 8-4: Summary of project mean monthly flows and nutrient loads for 2020 to 2024 under no reuse and reuse conditions.	86
Table 8-5: Summary of project mean monthly flows and nutrient loads for 2025 to 2029 under no reuse and reuse conditions.	89
Table 8-6: Summary of project mean monthly flows and nutrient loads for 2030 to 2034 under no reuse and reuse conditions.	91
Table 8-7: Summary of project mean monthly flows and nutrient loads for 2035 and after under no reuse and reuse conditions.	93
Table 8-8: Kyle WWTP Discharge to Plum Creek.	96
Table 10-1: Existing water utility volumetric rates.	114
Table 10-2: Reclaimed water cost recovery.	114
Table 10-3: Proposed funding plan annual costs.	115
Table 10-4: Summary of reclaimed water infrastructure costs.	120

1 Executive Summary

The City of Kyle (Kyle), as the study sponsor, engaged the participation of the Barton Springs/Edwards Aquifer Conservation District (BSEACD), the Plum Creek Watershed Partnership, Guadalupe-Blanco River Authority (GBRA), and the Texas State Soil and Water Conservation Board (TSSWCB), in conducting the City of Kyle Direct Water Reuse Feasibility Study (Study). The Study was made possible through funding by the Texas Water Development Board (TWDB) and the U.S. Department of Interior Bureau of Reclamation (Reclamation).

The purpose of this study is to evaluate the feasibility of developing reclaimed water for various public and private sector uses within the city and its utility service area during a twenty year planning period (2015-2035). The project scope includes tasks intended to provide a review of available data, identify potential reclaimed water users, develop conceptual treatment and transmission plans, evaluate costs, benefits, and environmental considerations, and to identify necessary steps for implementation. The Direct Water Reuse Feasibility Study includes the projected water demands for irrigation and potable water replacement and a recommended plan for a system that will meet the projected demands using reclaimed water.

1.1 Reclaimed Water Demand

The primary uses for reclaimed water in Kyle are for the irrigation of public and private parks, and public rights-of-way (ROW). Additionally, potential reclaimed water irrigation demands for future single-family development and for existing and future commercial development were also identified. The current use of potable water for ROW irrigation along Kyle Parkway and cooling makeup water for Seton Medical Center Hays can potentially be replaced with reclaimed water. As shown in Table 1-1, the total projected annual reclaimed water demand could exceed 430 million gallons for all identified uses by the year 2035.

While there are various new potential uses and users of reclaimed water considered in this study, reclaimed water has been in use in Kyle for over fourteen years. The owners of Plum Creek Golf Course have operated a reclaimed water system for golf course irrigation since 1998. This privately owned and operated system has pumping and transmission capacity that is suitable for the peak demand of the golf course with little surplus capacity. Even though the existing system is located across and near city parks, private ownership and limited capacity all but precludes the addition of users to the existing system. The system requires frequent maintenance in order to avoid service interruptions caused by clogged pumps. Expanding the availability and use of reclaimed water will require replacement of the existing system and operation as a public utility in conjunction with the water and wastewater utilities for financial efficiency.

1.2 Population Growth and Treated Wastewater Availability

Population projections developed for this study using the 2011 Region L Water Plan projections and the 2010 Census data indicate that the city's population can be expected to exceed 51,000 by the year 2035. The Kyle wastewater treatment plant (WWTP) presently discharges approximately 800 million gallons of treated effluent annually. Average wastewater flows are

Table 1-1: Reclaimed water demand.

Potential Reclaimed Water Use Location	Peak Reclaimed Water Demand (gpd)	Annual Reclaimed Water Demand (MG)
Cooling Makeup Water	51,061	11.33
Public Park Acreage	194,332	28.25
ROW Acreage	154,014	22.39
Private/HOA Park Acreage	379,496	55.17
Golf Course	752,397	109.39
Commercial Property	1,287,158	134.97
Single-Family Property	232,506	33.80
Schools	90,455	13.15
Future Parkland	161,089	23.42
TOTAL	3,302,507	431.88

projected to exceed 4 mgd by 2035, providing a firm source for reclaimed water that can keep pace with an increasing demand.

State regulations require that reclaimed water meet one of two sets of water quality parameters based on the location of the intended use. The more stringent water quality requirements for Type I are intended for reclaimed water use in locations where there is a high probability of public contact, such as athletic fields and school landscaping. The parameters for Type II reclaimed water were developed for applications where public access is controlled. Effluent water quality from the Kyle WWTP will not meet Type I quality standards without additional treatment. To reduce capital and operations costs, additional treatment can be provided to treat only the effluent volume that is intended to supply the reclaimed water system.

1.3 Reclaimed Water Project Benefits

Several benefits associated with developing a reclaimed water project are evaluated and discussed in Chapter 7. These include diversification of water supply sources, enhanced recreational opportunities, long-term sustainability of parks, reducing potable water demand, and reduced nutrient load in the Plum Creek watershed. Three of the key benefits are summarized below.

Enhanced recreational opportunities

The city’s parks are presently maintained without supplemental irrigation of landscaping, playgrounds, or athletic fields. The prospect of developing reclaimed water for irrigation of city parks highlights a significant paradox in the economics of operating and maintaining city parks. Kyle’s tremendous growth is due, in large part, to a reputation as a highly desirable and family oriented community in a rapidly growing region. Part of maintaining that desirability will be the city’s ability to ensure that its infrastructure, particularly parks, is developed and maintained at levels of service that meet the needs and expectations of current and future residents. In its

simplest form, this park irrigation dilemma presents the city with the choices of leaving the parks without irrigation, irrigating with potable water, or irrigating parks with reclaimed water.

At first glance, the option of leaving parks without irrigation appears to be the lowest cost alternative, but it does not address the loss of some uses during drought periods and a limited ability to restore overused areas or to boost community appeal. The alternative of irrigating parks using potable water will increase the level of service and costs during normal rainfall years, but will essentially become the no-irrigation alternative during drought periods when outdoor water use is restricted. This alternative also increases the city's overall demand for new water supplies that are developed at higher costs.

Reducing potable water demand

One way of minimizing the city's increasing costs of developing new water sources is to reduce the demand for potable water whenever possible. The total volume of potable water consumed for the irrigation of Kyle Parkway ROW and for irrigation and cooling makeup water for Seton Medical Center Hays exceeded 21 MG during year 2011. This volume represents as much as 1% of the city's projected HCPUA supply in 2018.

Nutrient reduction in the Plum Creek watershed

The potential impact of reducing the discharge of effluent from the WWTP on the Plum Creek watershed is discussed in Section 8.3 of the report. Reducing the volume of effluent discharged to Plum Creek during the summer months has the effect of reducing the discharge of nutrients to the watershed. In terms of ammonia (NH₃) removal, water reuse would remove over 3,800 pounds of ammonia per year in 2015, increasing to over 12,400 pounds per year in 2035.

1.4 Reclaimed Water Costs

As previously described, there are a number of benefits that can be attributed to the development of a reclaimed water system. Many of these are indirect benefits that are difficult to quantify in terms of cost, savings, or economic value. Table 1-2 summarizes the city's average cost for potable water from all sources during the 2015 – 2035 planning period and compares that cost to the cost of reclaimed water. Based on full utilization of the projected demands in the years beyond 2035, the cost of reclaimed water is estimated to be approximately \$767.45 per AF compared to the average cost of \$596.52 per AF for potable water. Following the end of debt service payments for the projected 2015 and 2025 debt issues for the reclaimed water system, the projected costs would decline to \$288.32 per AF by the year 2040.

However, the cost of adding reclaimed water in the future should be compared with the marginal cost of water, that is, the change in potable water costs that results from the addition of one additional unit. In this case, the marginal cost of water in Kyle will be the cost of adding water from the Hays-Caldwell Public Utility Agency (HCPUA) at approximately \$1,204 per AF instead of the average potable water cost of \$596.52 per AF. Irrigation of new development after the HCPUA supply is available, for example, would be priced at \$767.45 per AF for reclaimed water or \$1,204 per AF for potable water in the year 2035.

Table 1-2: Projected water supply costs (2015 – 2040).

Year	Potable Water Demand (AF)	Average Potable Water Cost (\$/AF)	Reclaimed Water Demand (AF)	Reclaimed Water Cost (\$/AF)
2015	5,911.30	\$ 374.03	354.9	\$ 267.53
2020	6,936.67	\$ 436.09	660.5	1,059.59
2025	7,596.75	\$ 506.38	978.4	1,108.29
2030	8,256.86	\$ 565.43	1,158.1	926.42
2035	8,652.81	\$ 596.52	1,325.4	767.45

1.5 Recommended Reclaimed Water Implementation Plan

The recommended plan for implementation of a reclaimed water system includes phased construction of a central supply system and expansion into six service areas. Phasing of the system development is recommended to optimize system expansion based on actual reclaimed water demand. The recommended implementation plan includes:

Phase 1:

- Supplemental treatment of wastewater effluent to achieve Type I reclaimed water quality.
- Install a new reclaimed water pumping station at the Kyle WWTP.

Phase 2:

- Construction of transmission mains to storage at the Plum Creek Site 1 impoundment.
- Installation of a non-potable water pumping station at Site 1.

As demand increases, the first two phases would be followed by:

- Installation of transmission mains to each of remaining service areas.

The proposed project elements are summarized in Table 1-3 and shown in Figure 1-1.

Table 1-3: Reclaimed water infrastructure costs.

Project	Annual Demand (MG)	Capital Costs
Phase 1	115.63	\$ 843,750
Phase 2	201.39	4,506,250
Plum Creek	278.58	375,000
Southeast	41.69	683,750
Northeast	29.58	417,500
West	19.60	1,385,000
N Comm	34.78	1,821,250
S Comm	27.65	1,032,500
TOTAL	431.88	\$11,065,000

1.5.1 Recommended Administrative Actions

In addition to the construction of infrastructure to treat, store, and transmit reclaimed water, implementation of a reclaimed water project will require certain regulatory authorizations and the development of city policies and procedures as summarized below:

- Negotiate commitments from potential reclaimed water users.
- Amend the city’s TPDES discharge permit to allow storage of reclaimed water at Site 1.
- Obtain a water rights permit amendment for Site 1 for a change of use from recreational/livestock to municipal and for the volume of water associated with this new use.
- Implement ordinances and incentives to encourage the development of reclaimed water for irrigation in new developments.
- Develop reclaimed water rates that encourage conversion of cooling towers.

1.5.2 Recommended Funding Strategies

The estimated unit cost for reclaimed water will vary over time according to annual debt service and water sales. Debt service costs can be minimized by combining local funding with federal and state funding opportunities. Interest rates for loans guaranteed by the State of Texas through existing TWDB funding programs should be compared with rates available to the city on the open market, but grant funding through the Title XVI program administered by the Bureau of Reclamation would have the greatest impact on the total project cost by funding up to 25% of the project. The potential impact of grant funding on the cost of reclaimed water is shown in Table 1-4.

Table 1-4: Projected reclaimed water unit cost.

Year	Annual Demand (MG)	Projected Unit Cost – Local Funding (\$/AF)	Projected Unit Cost – 25% Grant Funding (\$/AF)
2015	115.63	267.53	213.89
2020	218.88	1,059.59	832.92
2025	322.47	1,108.29	692.72
2030	379.20	926.42	582.95
2035	431.88	767.45	480.11

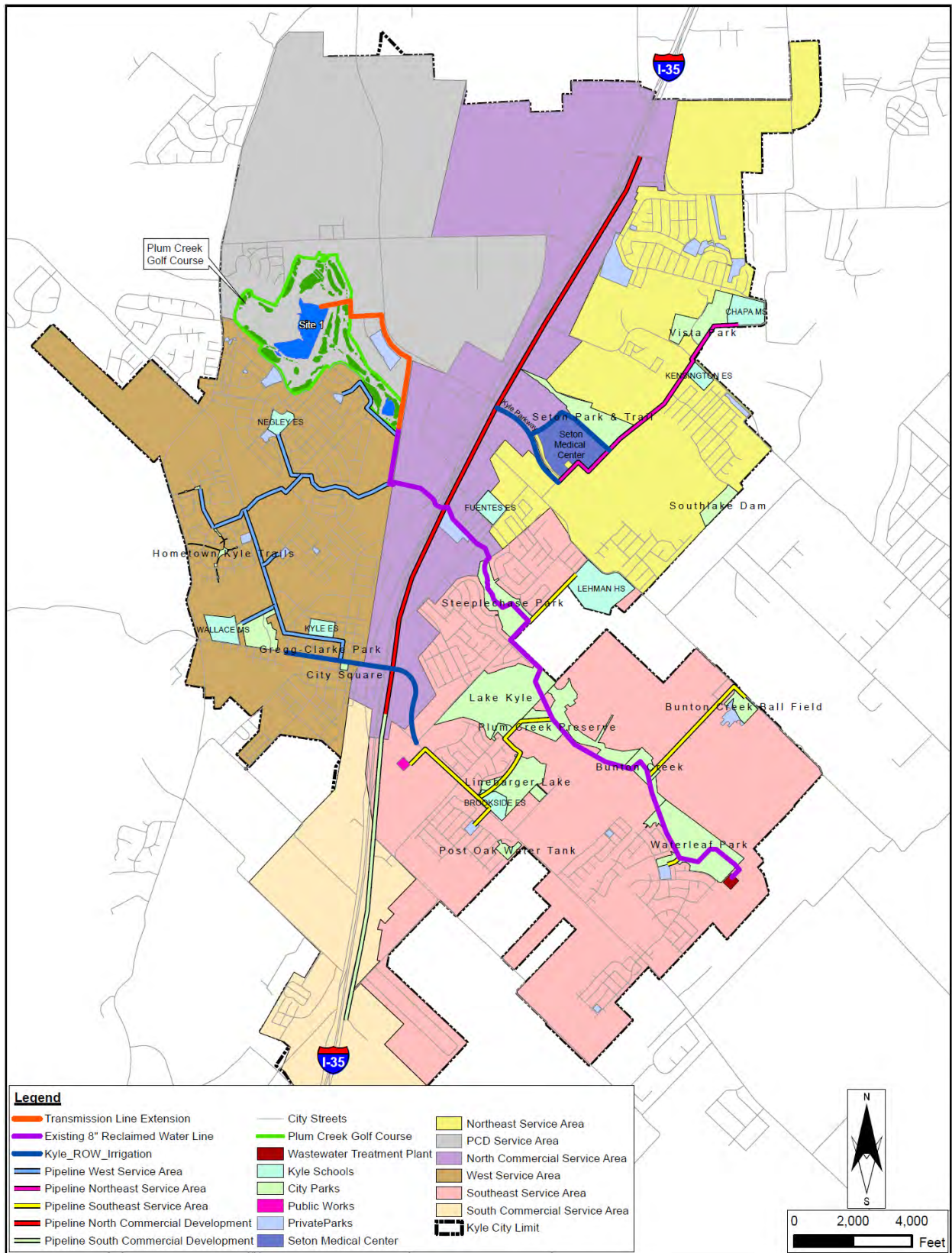


Figure 1-1: Recommended reclaimed water system.

2 Introduction

The City of Kyle has partnered with the Barton Springs/Edwards Aquifer Conservation District (BSEACD), the Plum Creek Watershed Partnership, Guadalupe-Blanco River Authority (GBRA), and the Texas State Soil and Water Conservation Board (TSSWCB) to complete the City of Kyle Direct Water Reuse Feasibility Study (Study). The Study was made possible through funding by the Texas Water Development Board (TWDB) and the U.S. Department of Interior Bureau of Reclamation (Reclamation).

2.1 Background

The City of Kyle has experienced tremendous growth in population during the past twenty years. Growing from a town of just over 2,225 people in 1990 to a city of 28,016 in the 2010 Census, the city has aggressively pursued water supply strategies to meet current and future needs for water at the same time it develops the infrastructure to serve the community's businesses and residents, and to meet the recreational needs of its citizens. Development of these new water supplies involves transporting water from increasingly distant and more expensive sources.

The city is also keenly aware of the importance of improving and maintaining water quality in the region. While the increased volume of treated wastewater that results from growth is but one of the sources of nutrients in the Plum Creek watershed, the city is a key participant and supporter of the watershed protection planning effort carried out through the Plum Creek Watershed Partnership. The city has undertaken this feasibility study to determine if developing a reclaimed water utility system can provide a cost-effective strategy for meeting a part of the current and future needs of the city and whether water reuse has the potential of minimizing the discharge of nutrients to the Plum Creek watershed.

As it has grown, the city has actively developed water supply alternatives. Before 1999, Kyle's water supply consisted of wells in the Edwards Aquifer. But with growth, the city added wells in the Barton Springs portion of the Edwards Aquifer, regional surface water through a contract with the Guadalupe-Blanco River Authority (GBRA) and, more recently, has joined in the Hays – Caldwell Public Utility Agency (HCPUA) to access groundwater in the Carrizo-Wilcox formation in Gonzales County.

Direct reuse of wastewater effluent in Kyle began in the city with development of the Plum Creek Golf Course in 1998. The reclaimed water system was designed and built by the developer of the golf course and operation of the system remained the property and responsibility of the golf course operator even as ownership of the course changed. Recognizing reclaimed water as a resource and that future water sources will be increasingly more costly, the City of Kyle has initiated this study of the feasibility of expanding the system to meet a broader range of needs throughout the community.

2.2 Project Scope

The purpose of this planning study is to evaluate the feasibility of developing reclaimed water for various public and private sector uses within the city and its utility service area during a twenty year period (2015-2035). The project scope included tasks intended to provide a review of available data, identify potential reclaimed water users, develop conceptual treatment and transmission plans, evaluate costs, benefits, and environmental considerations, and to identify necessary steps for implementation:

- Collect existing data and develop geospatial data for Geographical Information Systems (GIS) mapping, population projections, and the locations and acreages of potential reclaimed water delivery points were gathered as part of the study. Descriptions of the data sources are summarized in Appendix C.
- Develop the potential reclaimed water demand.
- Evaluate the impact of reclaimed water demands on watershed water quality.
- Develop a conceptual plan for supplementary treatment, storage, and transmission.
- Characterize potential environmental considerations for the use of reclaimed water.
- Perform cost and benefit analysis for the conceptual plan.
- Develop an implementation strategy for expansion of the reclaimed water system that includes recommended steps and phases.

The objectives of the project were achieved by meeting with city staff, representatives of Momark Development, Seton Medical Center Hays, and Hays Consolidated Independent School District; evaluating existing and future reclaimed water needs; and assessing the costs and benefits of various alternatives for reclaimed water storage and delivery.

2.2.1 Public Involvement

Three public meetings were conducted to solicit public input regarding the study with notices of the meetings posted on the city's web site. The first meeting was a conducted as a part of a joint meeting of the city's standing Parks and Recreation Committee and the Planning and Zoning Commission on October 21, 2011. The second public meeting was conducted as part of the March 18, 2012 meeting of the city's Public Works and Service Committee. The final public meeting was conducted as part of the regular agenda for the City Council on August 7, 2012. Documentation of the public meetings is contained in Appendix N.

The draft final report was made available for public review and comment between July 7 and August 7, 2012 with a notice posted in the local newspaper. Review comments received and responses to those comments are presented in Appendix O.

2.3 Study Area

The study area, shown in Figure 2-1, includes the area incorporated as the City of Kyle in Hays County, Texas. As a home rule city, areas outside the City of Kyle, but within its extraterritorial

jurisdiction (ETJ), could be annexed into the city in the future and will likely receive Kyle water and sewer utility service. In addition to the city's home rule authority under the Texas Constitution, there are overlapping jurisdictions of entities involved in the regulation of groundwater and surface water within the study area. These agencies and their general regulatory authority for water resources include:

- *Barton Springs Edward Aquifer Conservation District* – (BSEACD) is a groundwater conservation district charged by the Texas Legislature to preserve, conserve, and protect the aquifers and groundwater resources within its jurisdiction, which includes parts of four Central Texas counties. It is governed by a Board of five elected directors.
- *Edwards Aquifer Authority* – (EAA) is a regulatory agency charged with managing, conserving, preserving, protecting, and increasing the recharge of the Edwards Aquifer in an eight-county region. The Authority has a board of directors with 15 elected members from the eight-county region and two non-voting appointed members.
- *Plum Creek Conservation District* – (PCCD) is a special law district created by the Texas Legislature with authority to monitor, maintain and improve a system of 28 flood control structures and underground water resources in parts of Hays and Caldwell Counties. PCCD is governed by six directors appointed by the county commissioners' courts.

The study area includes the private homeowner association (HOA) parks as well as the city's public park system, the Plum Creek Golf Course, Plum Creek Planned Unit Development (PUD), Seton Medical Center Hays and irrigated public rights-of-way.

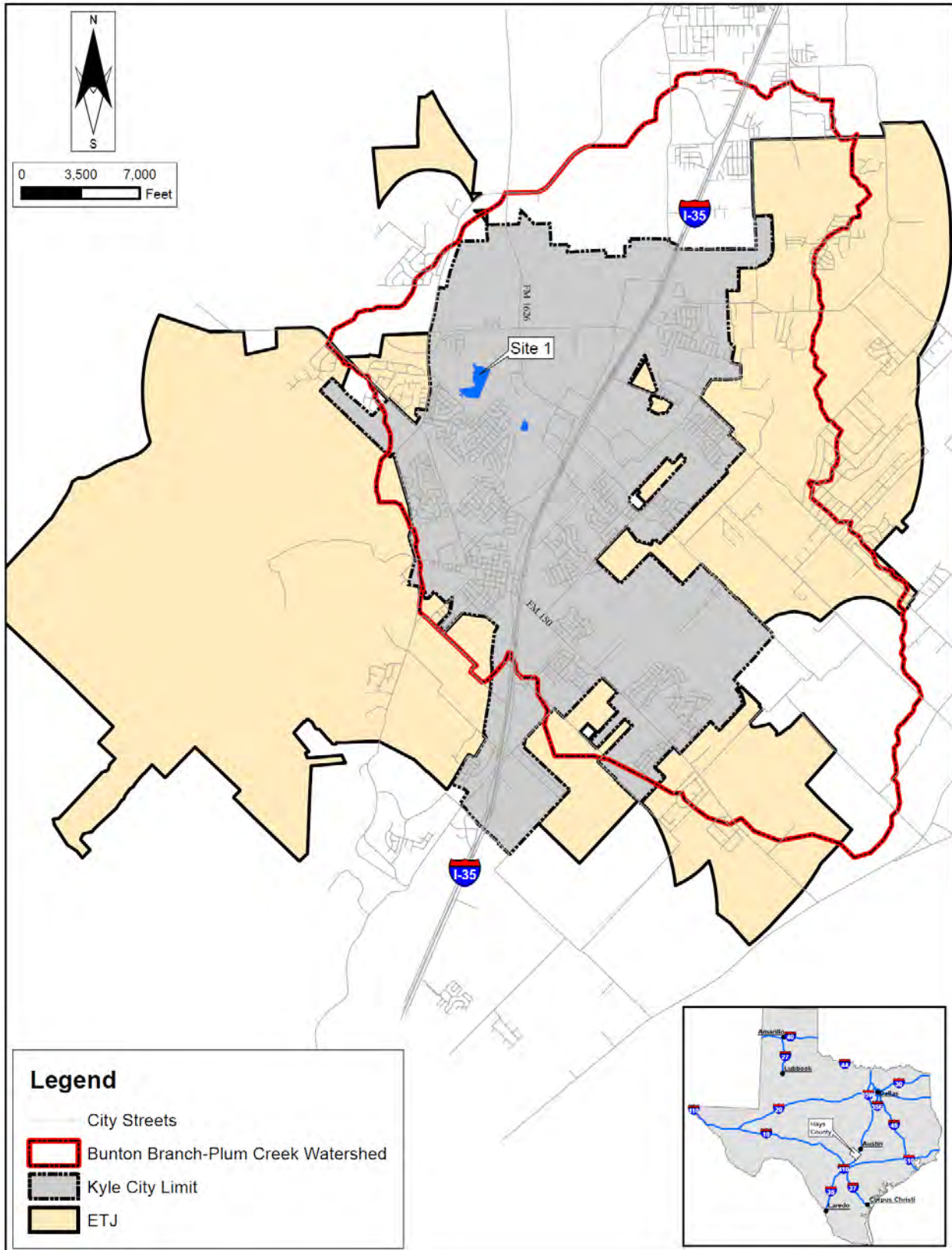


Figure 2-1: Project study area.

3 Population

The City of Kyle has experienced significant growth during the past twenty years. Between the 1990 and 2000 Census, the city more than doubled its population from 2,225 to 5,314. Growth in the next decade was even more dramatic with an increase of over 420% to a 2010 Census population of 28,016. To project the population of the city through the year 2030, three sources of population data were considered.

3.1 City of Kyle Comprehensive Plan

The City of Kyle completed an updated Comprehensive Plan in June 2010, prior to the results of the 2010 Census. Projected populations were developed using a composite analogy method to produce three growth rates through the year 2040 (Figure 3-1). The lowest projected rate of growth was that developed using the state demographer’s rate of growth for Hays County and applied to the estimated population of the city. In the medium growth rate scenario, growth rates for the counties along IH-35 between South Austin and South San Antonio were averaged and a weighted premium applied to the Hays County growth rate to account for the influence of IH-35 on Kyle’s prospective growth. The fastest rate of growth anticipated aggressive development plans for Kyle and for Hays County.

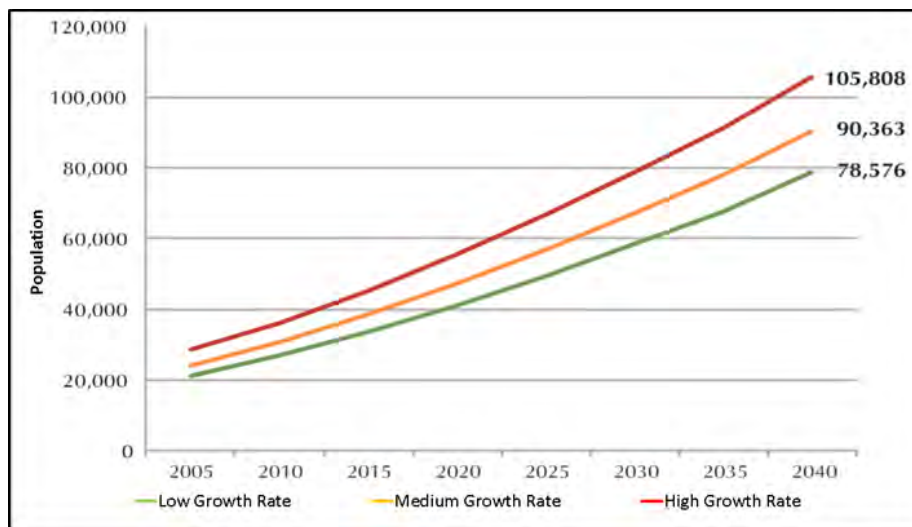


Figure 3-1: Comprehensive plan population projections (from Kyle Comprehensive Plan, 2010).

3.2 Kyle Economic Development

The city’s economic development department contracts with a firm that provides demographic and development data to commercial developers. In a demographic report prepared June 2010, SitesUSA provided forecasts for the 2015 and 2020 population for the City of Kyle using proportional block groups. This report projected a 2015 population of 42,594 and 2020 population of 60,225.

3.3 South Central Texas Regional Water Plan – Region L

The final source for population projections was the data prepared for the Region L Water Plan. Under Texas Senate Bill 1, the TWDB is responsible for developing a state water plan. The state water plan is a compilation of plans developed by the sixteen regional planning groups. The City of Kyle is located in the South Central Texas Regional Planning group (Region L). Under the guidance of the TWDB, the Region L Planning Group developed population projections using Census Bureau data, including birth, death and migration rates, and input from the various cities in Region L.

The 2011 Region L Water Plan was completed in September 2010, prior to publication of the results of the 2010 Census. The projected 2010 population for the City of Kyle presented in the 2011 Region L Water Plan was 21,457. This number was more than 6,500 persons lower than the 2010 Census population of 28,016. Figure 2 provides an illustration of how applying 2010 Census value to the rates of growth used in the 2011 Region L Water Plan might affect those population projections.

The Region L projected rates of growth drop off sharply in 2020. Following the dramatic 420% growth rate experienced by the City of Kyle between the 2000 and 2010 Census, the Region L projections anticipated a growth rate of just over 45% between 2010 and 2020. Subsequent rates of growth dropped off sharply after 2020.

Recognizing that the city has added approximately 200 single-family units during the recent recession, an alternative projection of population growth was developed that anticipates the rates of growth for the decades following 2020 will decrease, but not to the extent expected in the Region L projections. A comparison of the three projections is shown in Figure 3-2.

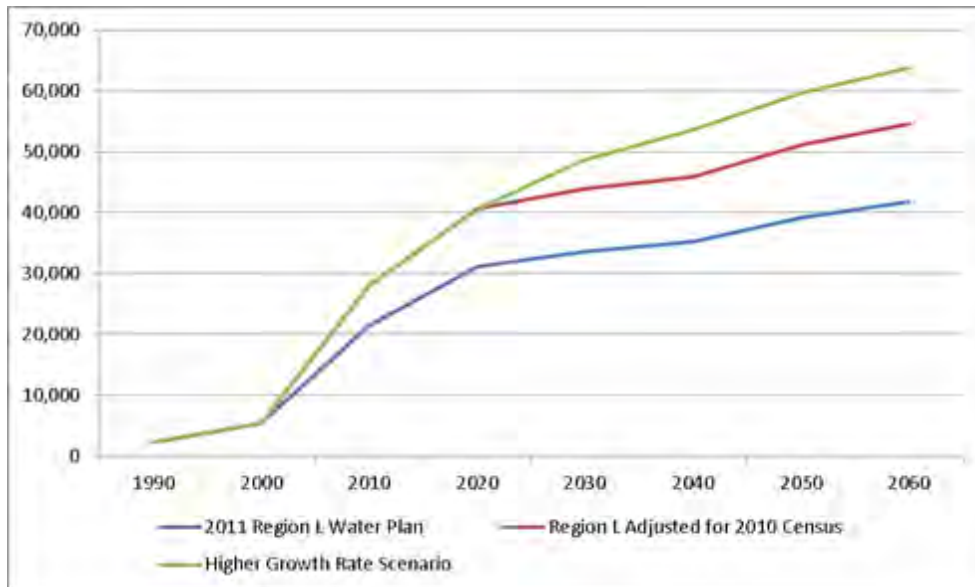


Figure 3-2: City of Kyle population projections.

3.4 Study Area Population

The projected population of the service area is of particular relevance to this study since the rate of population growth directly influences the increase in drought period reclaimed water availability. The feasibility of a reclaimed water supply system depends on the volume of treated effluent keeping pace with increases in demand. Table 3-1 presents a comparison of the three population projections. Considering a planning period of twenty years beginning in 2015, using the higher growth rates projections for the year 2035 based on the Comp Plan or the economic development department could result in an accelerated program for development of a reclaimed water system. A more moderate rate of growth will extend the projected period in which facilities could be developed.

A conservative approach of projecting wastewater flow rates using the TWDB population projections adjusted for the 2010 Census is used in this study.

Table 3-1: Comparison of population projections.

Year	TWDB	TWDB (adjusted)	Comp Plan	Eco. Dev.	TWDB Higher Growth Rate Scenario
2015	26,292	34,329	--	42,594	34,328
2020	31,126	40,641	48,500	60,225	40,641
2025	32,370	42,265	--	--	44,705
2030	33,613	43,888	68,000	--	48,769
2035	34,408	44,926	--	--	51,207

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4 Water Supply, Water Demand, and Treated Wastewater Availability

4.1 Regional Current and Projected Water Supplies

The 2011 Region L Water Plan describes the region's water supply as having limited surface water resources as a result of the presences of five major and three minor aquifers that have formed the primary water supplies. Of the primary aquifers in the region, the City of Kyle is located nearest the Edwards, Trinity, and Carrizo-Wilcox Aquifers. Surface water supply for the Kyle area is the U.S. Army Corps of Engineers owned Canyon Lake reservoir located on the Guadalupe River in Comal County.

With projections of water demand for the South Central Texas region to exceed all water sources during drought conditions (Figure 4-1), the Region L Planning Group identified a group of water

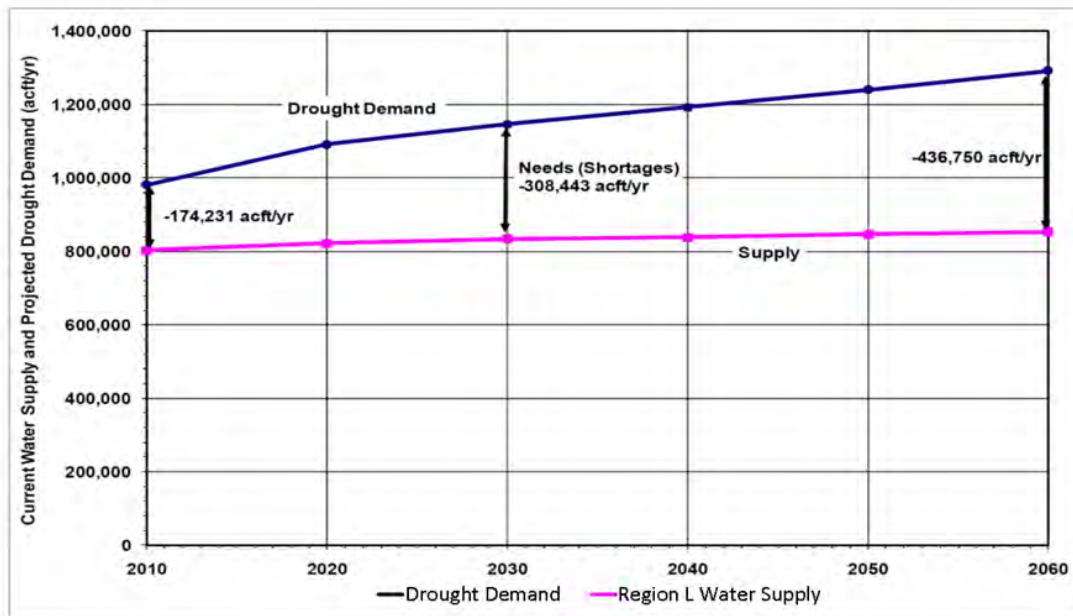


Figure 4-1: Region L projected water supplies and demand 2010 – 2060 (from 2011 Region L Water Plan).

management strategies for closing the increasing gap between water supplies and demand. New supplies to meet the projected 2060 water demands of the region include water reuse to provide as much as 6% of the supply (Figure 4-2).

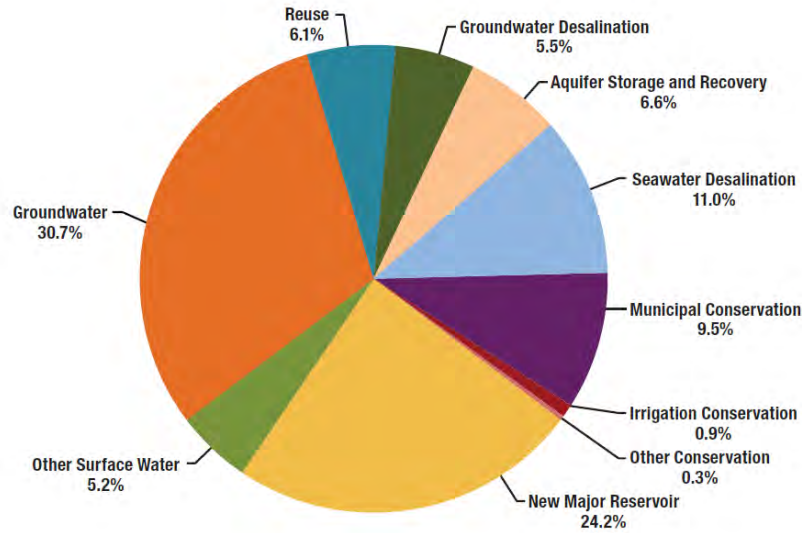


Figure 4-2: Region L 2060 water management strategies (from Fig. L.4, Water for Texas: Summary of the 2011 Regional Water Plans).

Water reuse is characterized by the Region L Water Plan as a water management strategy that will capture more attention by water users as other water supplies experience increasing pressures of demand and development costs. The Region L Water Plan review of water reuse is, for the most part, focused on existing large scale water reuse projects. But implementation of water reuse as an alternative water supply beyond the existing projects enhances the region’s ability to meet future water demand.

4.2 Local Current and Projected Water Supplies

The City of Kyle is a rapidly growing community in a region historically supplied by the Edwards Aquifer. The Edwards Aquifer underlies parts of nine counties in South Central Texas, including much of Hays County located west of Kyle. In 2000, the Edwards Aquifer supplied approximately 44 percent of the total water used in the South Central Texas Region (2011, Region L Water Plan). Increasing water supply demands on the Edwards Aquifer and the recurring drought cycles has been a primary driver for communities, including Kyle, to develop alternative water sources. As with most cities in the South Central Texas region, water supplies in the region are typically high quality, but limited supply. A system of safeguards is in place to monitor and preserve the water quality in both the Edwards Aquifer and the Barton Springs portion of the Edwards Aquifer.

In an effort to reduce reliance on the Edwards Aquifer and to diversify the city’s water supplies, Kyle initiated a series of contracts with GBRA beginning in 1999 to purchase treated surface water. Water from the Guadalupe River is pumped to the San Marcos Surface Water Treatment Plant for treatment and then pumped north to Kyle and other water purveyors by GBRA. Kyle is also a participant in the Hays Caldwell Public Utility Agency, a utility consortium formed to

purchase and pump up to 10 mgd of water from the Carrizo-Wilcox Aquifer by 2018, and increasing the supply to 30 mgd by 2032.

The current and projected water supplies for Kyle are detailed in Table 4-1. This accounting includes the current use of reclaimed water by the Plum Creek Golf Course and an emergency supply contract with the City of San Marcos. Water supplied by BSEACD is presented as the historical use volume (506 AF) to which the city is contracted to receive annually, and 568 AF of conditional use water. The conditional use supply is an interruptible supply that can be curtailed or halted during drought periods.

Table 4-1: Current and projected water supplies.

Water Source	Maximum Capacity	
	AF	gallons
Edwards Aquifer	432	140,767,200
BSEACD (Historical Limit)	506	164,880,100
BSEACD (Conditional Use)	568	185,082,800
GBRA	5,533	1,802,928,050
Reuse	336	109,388,816
City of San Marcos ¹	560	182,476,000
HCPUA 2018 ²	4,481	1,459,995,519
HCPUA 2032 ²	5,601	1,824,994,399

¹ Emergency Interconnect
² projected, Region L 2011

4.3 Current and Projected Water Demands

As shown in Table 4-2 below, the 2011 Region L Water Plan projected that water demand in Kyle would increase to the point of exceeding demand between the years 2010 and 2020. However, as previously discussed, the results of the 2010 Census differ from the population

Table 4-2: Projected water supplies and demand (from Region L Water Plan, 2011).

	2000	2010	2020	2030	2040	2050	2060
Population							
Region L 2011 Water Plan	5,314	21,457	31,126	33,613	35,203	39,197	41,850
Water Supply (AF)							
Edwards	243	243	243	243	243	243	243
Edwards (Barton Springs)	304	304	304	304	304	304	304
Canyon Lake (GBRA)	589	2,957	2,957	2,957	2,957	2,957	2,957
TOTAL	1,136	3,504	3,504	3,504	3,504	3,504	3,504
Water Demand (AF)	702	2,740	3,940	4,217	4,377	4,874	5,203
Surplus/(Shortage)	434	764	(436)	(713)	(873)	(1,370)	(1,699)

projected in the 2011 Region L Water Plan. Applying the actual 2010 Census population and adjusted projections for the years 2020 through 2060 produce a higher projected water demand. This higher demand, along with the projected supply from the HCPUA indicates that Kyle could experience greater water supply shortages during drought conditions earlier than that shown in the water plan. Table 4-3 presents the predicted impact of higher demand of including the HCPUA supplies in the projections developed for the water plan.

Table 4-3: Adjusted water demand projection.

	2000	2010	2020	2030	2040	2050	2060
Population							
Adjusted for 2010 Census	5,314	28,016	40,641	48,769	53,646	59,735	63,779
Water Supply (AF)							
Edwards	243	243	243	243	243	243	243
Edwards (Barton Springs)	304	304	304	304	304	304	304
Canyon Lake (GBRA)	589	2,957	2,957	2,957	2,957	2,957	2,957
HCPUA	0	0	4,481	4,481	10,082	10,082	10,082
TOTAL	1,136	3,504	7,985	7,985	13,586	13,586	13,586
Water Demand (AF)							
	702	3,578	5,144	6,118	6,670	7,428	7,929
Surplus/(Shortage)							
	434	(74)	2,841	1,867	6,916	6,158	5,657

Kyle’s water demand is directly influenced by significant population growth and climate. Between 2007 and 2011 when the city experienced an 8% annual increase in water demand, rainfall ranged from above average in 2007 to approximately 50% of average in 2008 and again in 2011 (Figure 4-3).

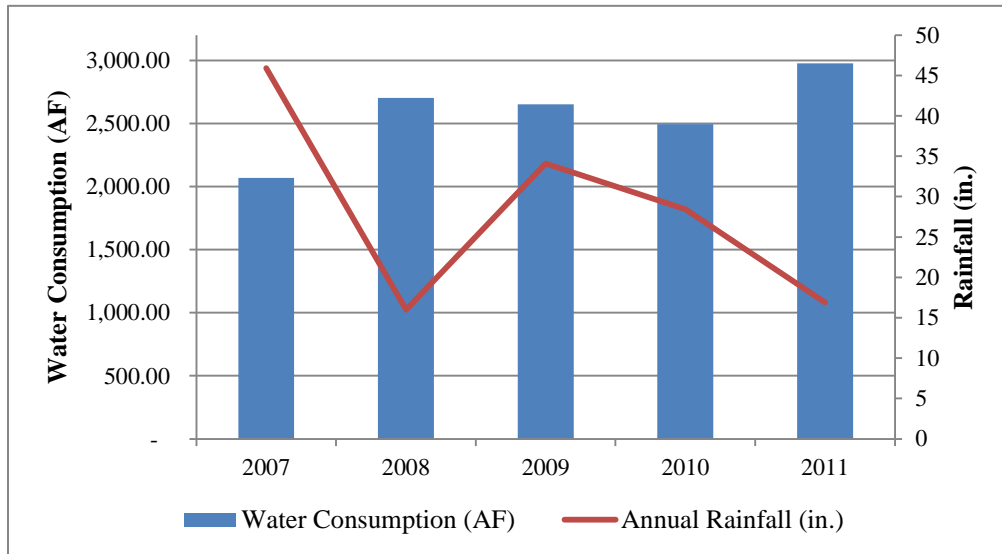


Figure 4-3: Kyle annual water demand.

A comparison of the city’s projected water demand with its water sources is presented in Table 4-4. Projected demands through the year 2015 will require approximately 80% of the available supplies under normal conditions, but could exceed 86% in drought conditions when conditional use water from BSEACD is not available. The effect of the HCPUA supply availability in 2018 is shown in the year 2020 in Table 4-4 when the percentage decreases to approximately 61% of sources.

Table 4-4: Projected water demand as a percentage of current water sources.

Year	Population	Water Demand (mgd)	Water Sources (mgd)	Water Demand (% of Sources)	Water Demand During Drought Conditions (% of Sources)
2015	34,328	5.28	6.58	80.2%	86.8%
2020	40,641	6.19	10.58	58.5%	61.5%
2025	44,705	6.78	10.58	64.1%	67.3%
2030	48,769	7.37	10.58	69.6%	73.2%
2035	51,207	7.72	15.58	49.6%	51.2%

4.4 Costs of Water

Each new source of water comes at a price that is the result of the costs of developing new and more distant sources of water. The data in Table 4-5 illustrates how the costs of development, treatment, and transportation drive the unit cost of water in Kyle. Water from the Edwards Aquifer, being both nearby and requiring only disinfection and pumping, is the lowest cost supply. The price of the city’s BSEACD supply reflects both the short distance and low treatment costs of the Edwards Aquifer supply, but also includes marginal costs associated with limited supply in an area of increasing demand and environmental concerns. The costs presented in Table 4-5 are the city’s costs for water and not the retail price.

The cost of surface water supplied by GBRA includes the cost of acquiring the water supply, treatment, and pumping over a distance of almost 25 miles before reaching the City of Kyle system. The projected cost of acquiring, developing, and pumping water from the Carrizo-Wilcox Aquifer through participation in the HCPUA triples the city’s cost of the GBRA supply. But recognizing that the other sources are closed to further increases in volume, the city, through HCPUA, is developing a potable water source that will allow the city to continue to grow beyond the 20 year planning horizon of this study.

Table 4-5: Water source costs (2011).

Water Source	\$/AF
Edwards Aquifer	116.00
BSEACD (Historical Limit)	156.40
BSEACD (Conditional Use)	231.35
GBRA	418.58
City of San Marcos	958.00
HCPUA ¹	1,245.00
¹ Projected cost	

By using the lower cost supplies first, the city is able to minimize the average cost of water (Table 4-6). During drought conditions when the conditional use water through BSEACD is unavailable, the average cost increases by as much as 5% in the year 2015, but more significantly when the more costly HCPUA supply is available after 2018 (Table 4-7).

Table 4-6: Average water supply cost.

Year	Water Demand (AF)	Edwards Aquifer (AF)	BSEACD (Historical Limit) (AF)	BSEACD (Conditional Use) (AF)	GBRA (AF)	HCPUA (AF)	Total Cost	Average Cost (\$/AF)
2015	5,911.30	432	506	568	4,405.30	0.00	\$ 2,104,629	\$ 356.03
2020	6,936.67	432	506	568	5,430.67	0.00	\$ 2,533,827	\$ 365.28
2025	7,596.75	432	506	568	5,533.00	557.75	\$ 3,271,059	\$ 430.59
2030	8,256.86	432	506	568	5,533.00	1,217.86	\$ 4,092,899	\$ 495.70
2035	8,652.81	432	506	568	5,533.00	1,613.81	\$ 4,585,858	\$ 529.98

Table 4-7: Average water supply cost during drought conditions.

Year	Water Demand (AF)	Edwards Aquifer (AF)	BSEACD (Historical Limit) (AF)	BSEACD (Conditional Use) (AF)	GBRA (AF)	HCPUA (AF)	Total Cost	Average Cost (\$/AF)
2015	5,911.30	432	506	0	4,973.30	0.00	\$ 2,210,976	\$ 374.03
2020	6,936.67	432	506	0	5,533.00	465.67	\$ 3,025,012	\$ 436.09
2025	7,596.75	432	506	0	5,533.00	1,125.75	\$ 3,846,812	\$ 506.38
2030	8,256.86	432	506	0	5,533.00	1,785.86	\$ 4,668,653	\$ 565.43
2035	8,652.81	432	506	0	5,533.00	2,181.81	\$ 5,161,611	\$ 596.52

4.5 Assessment of Needs for Water Reuse

Reclaimed water has the potential for replacing up to 64 AF of potable water used for the irrigation of Kyle Parkway, Seton Medical Center Hays irrigation, and cooling water makeup at Seton Medical Center Hays. However, the greatest need for reclaimed water in Kyle is for the enhancement of the quality of life for a growing population by increasing the capacity of local parks. Without irrigation, Kyle's parks are susceptible to damage from use and over-use and from recurring drought. During the drought conditions of 2011, for example, athletic fields were closed due to large cracks caused by excessive shrinkage and drying of the clay soils common in much of the city. As a reliable, drought-proof source of water, reclaimed water has the potential of providing a cost effective enhancement of recreational opportunities to Kyle's citizens without increasing the city's need for more costly water supplies.

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5 Potential Reclaimed Water Users and Demands

Presently, the only reclaimed water user in Kyle is the Plum Creek Golf Course through a system that is owned and operated by the Plum Creek PUD developer. An expanded availability of reclaimed water in Kyle could provide water for irrigation of landscaping that is presently not irrigated and could also replace the use of potable water for irrigation and for cooling. Existing and potential customer sites that appear suitable for reclaimed water use were identified and are shown in Figure 5-1. The potential reclaimed water demands are summarized in the following sections.

5.1 Park Irrigation

Since public and private parks are presently not irrigated, the primary benefit of extending reclaimed water service to these facilities would be to improve playing surfaces and increase the capacity for park activities resulting from population growth. An evaluation of the potential irrigation demand began with an inventory of public and private parks acreage. The area of each park that could reasonably be expected to be irrigated was developed through discussions with city staff and measurement of existing athletic field and playground areas using GIS. The inventory of existing public and private park acreage is presented in Table 5-1.

Table 5-1: Park inventory.

Potential Reclaimed Water Use Location	User Category	Total Area (ac.)	Irrigated Area (ac.)
City Square	Public Park	1.44	1.21
Gregg-Clarke Park	Public Park	29.30	7.32
Waterleaf Park	Public Park	92.03	22.08
Lake Kyle	Public Park	118.28	13.54
Hometown Kyle Trails	Public Park	4.59	0.69
Steeplechase Park	Public Park	43.91	2.82
Bunton Creek Ball Field	Public Park	13.03	3.16
Decker Park	Private Park	1.83	1.83
HOA Park South	Private Park	1.19	1.19
McNaughton Park	Private Park	0.65	0.65
Hometown Kyle Trails Park	Private Park	2.41	2.41
Silverado	Private Park	0.70	0.70
Waterleaf HOA Park	Private Park	1.00	1.00
TOTAL		310.35	58.60

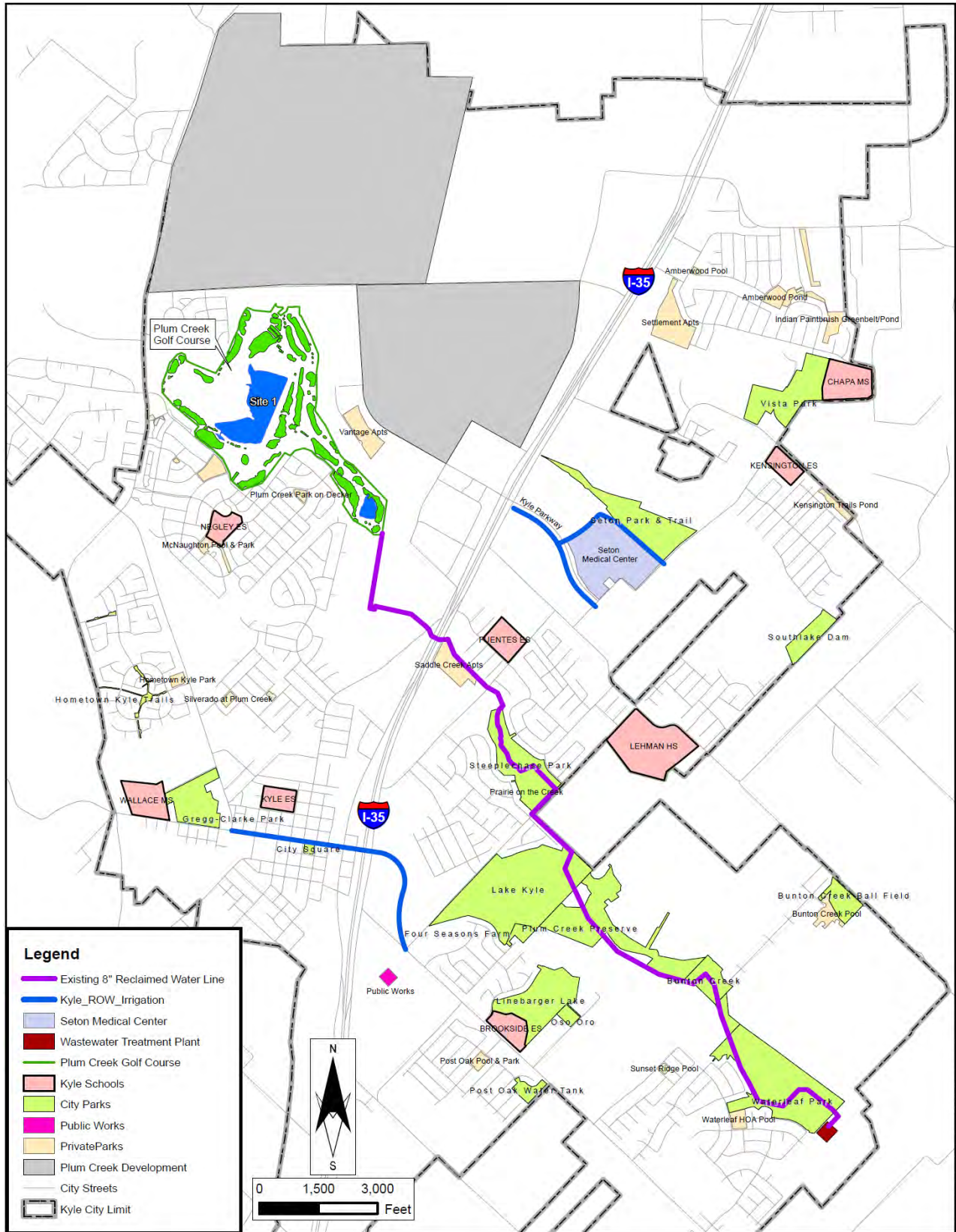


Figure 5-1: Potential reclaimed water users.

5.1.1 Future Parklands

The development of both public and private park acreage is estimated according to population growth. Using the city’s July 2006 Master Parks Plan, the rate of park growth was projected to increase at a rate of 5.25 acres per 1,000 population. Park acreage includes both public and private or HOA parks (Table 5-2). A total of 140.6 acres of public and private parks are projected for 2035 with a total irrigated area of 42.2 acres.

Table 5-2: Future park acreage.

Year	Total Park Acreage	Increase (ac.)
2012	438.6	--
2015	482.8	51.9
2020	515.9	33.1
2025	537.3	21.3
2030	558.6	21.3
2035	571.4	12.8

5.2 Hays Consolidated Independent School District

The Hays Consolidated Independent School District (HCISD) operates eight schools within the city limits of Kyle. The area of each school was evaluated for playground, practice field, and athletic field areas. Since most HCISD schools are not presently irrigated, reclaimed water irrigation would require, not only extension of the water supply to each campus, but also construction of irrigation systems by the district. The inventory of HCISD schools shows that approximately 24 acres of the district’s 159 acres could be irrigated using reclaimed water (Table 5-3).

Table 5-3: School property irrigation.

Potential Reclaimed Water Use Location	User Category	Total Area (ac.)	Irrigated Area (ac.)
Lehman HS	School	53.57	11.28
Chapa MS	School	24.73	3.74
Wallace MS	School	20.11	2.37
Fuentes ES	School	15.00	3.05
Brookside ES	School	13.95	0.66
Kyle ES	School	10.80	0.65
Negley ES	School	10.74	0.84
Kensington ES	School	10.47	1.09
TOTAL		159.37	23.69

5.3 Plum Creek Planned Unit Development (PUD)

The Plum Creek PUD contains over 1,198 acres of undeveloped land. Development plans for the PUD include single-family, commercial (including multi-family), greenbelts, parks, and street rights-of-way. The total area of each type of land use and projected areas of impervious cover were estimated by the engineer for the PUD (Rhames, 2011). In addition to the undeveloped acreage, the Plum Creek PUD also includes the Plum Creek Golf Course. The total acreage of undeveloped property is presented in Table 5-4, along with the Plum Creek Golf Course.

Table 5-4: Plum Creek PUD.

Potential Reclaimed Water Use Location	User Category	Total Area (ac.)	Irrigated Area (ac.)
Plum Creek Golf Course	Golf Course	308.84	197.01
Plum Creek Dev. ROW	Right-of-Way	36.20	36.20
Plum Creek Dev. Parks	Private Park	36.90	35.10
Plum Creek Comm. Dev.	Commercial	756.00	154.10
Plum Creek SF Dev.	Single-Family	253.50	76.08
Plum Creek Greenbelts	Private Park	83.60	79.42
TOTAL		1,475.04	577.91

5.4 Right-of-Way (ROW) Irrigation

Landscaping along Kyle Parkway and Seton Parkway is presently irrigated by the city using potable water. Additional ROW along an extension of Center Street and within the Plum Creek PUD is expected to be developed to a community entry-way standard that will include irrigation of medians and parkway areas. The total area of ROW that is included for potential reclaimed water irrigation includes the existing area irrigated along Kyle Parkway and Seton Parkway and the proposed area associated with the extension and redevelopment of Center Street east of IH 35.

Table 5-5: ROW irrigation.

Potential Reclaimed Water Use Location	User Category	Total Area (ac.)	Irrigated Area (ac.)
Kyle Pkwy ROW	Right-of-Way	6.05	5.75
Center St. Streetscape	Right-of-Way	5.62	5.62
TOTAL		11.67	11.37

5.5 Commercial Development

Undeveloped areas within the city’s commercial zoning districts were measured using GIS. An impervious area percentage of 85% was applied to the commercial zoning along IH 35 to calculate a total area of landscaping that can be irrigated using reclaimed water (Table 5-6). A total of 112.4 acres of the irrigated area are included in the projected 2035 irrigation demand.

Table 5-6: Future commercial acreage.

Potential Reclaimed Water Use Location	Total Area (ac.)	Irrigated Area (ac.)
Future Comm. IH 35 N	1044	62.64
Future Comm. IH 35 S	830	49.80

The inventory revealed a total of 4,032 acres of existing and future areas that could be reclaimed water users for irrigation in Kyle. Adjustments for factors such as impervious cover and non-irrigated landscaping produce an estimated 834 acres that would contribute to the reclaimed water demand (Table 5-7).

Table 5-7: Potential reclaimed water irrigation use locations.

Potential Reclaimed Water Use Location	User Category	Total Area (ac.)	Irrigated Area (ac.)
City Square	Public Park	1.44	1.21
Gregg-Clarke Park	Public Park	29.30	7.32
Waterleaf Park	Public Park	92.03	22.08
Lake Kyle	Public Park	118.28	13.54
Hometown Kyle Trails	Public Park	4.59	0.69
Steeplechase Park	Public Park	43.91	2.82
Bunton Creek Ball Field	Public Park	13.03	3.16
Kyle Pkwy ROW	Right-of-Way	6.05	5.75
Seton Medical Center	Commercial	59.45	5.50
Seton Medical Center (cooling)	Commercial	--	--
Plum Creek Golf Course	Golf Course	308.84	197.01
Plum Creek Dev. ROW	Right-of-Way	36.20	36.20
Plum Creek Dev. Parks	Private Park	36.90	35.10
Plum Creek Comm. Dev.	Commercial	756.00	154.10
Plum Creek SF Dev.	Single-Family	253.50	76.08
Plum Creek Greenbelts	Private Park	83.60	79.42
Lehman HS	School	53.57	11.28
Chapa MS	School	24.73	3.74
Wallace MS	School	20.11	2.37
Fuentes ES	School	15.00	3.05
Brookside ES	School	13.95	0.66
Kyle ES	School	10.80	0.65
Negley ES	School	10.74	0.84
Kensington ES	School	10.47	1.09
Decker Park	Private Park	1.83	1.83
HOA Park South	Private Park	1.19	1.19
McNaughton Park	Private Park	0.65	0.65
Vantage Apts.	Commercial	1.85	1.85
Hometown Kyle Trails Park	Private Park	2.41	2.41
Silverado	Private Park	0.70	gated
Waterleaf HOA Park	Private Park	1.00	1.00
Center St. Streetscape	Right-of-Way	5.62	5.62
Future Comm. IH 35 N	Commercial	1044	62.64
Future Comm. IH 35 S	Commercial	830	49.80
Future Parkland	Parks (all)	140.6	42.18
TOTAL		4,032.30	833.53

This inventory is summarized in Table 5-8.

Table 5-8: Irrigation summary.

Potential Reclaimed Water Use Location	Total Area (ac.)	Irrigated Area (ac.)
Public Park Acreage	302.58	50.82
ROW Acreage	47.87	47.57
Private/HOA Park Acreage	128.27	122.29
Golf Course	308.84	197.01
Commercial Property	2,691.30	273.89
Single-Family Property	253.50	76.08
Schools	159.37	23.69
Future Parkland	140.56	42.18
TOTAL Acreage	4,032.30	833.53

5.6 Potential Reclaimed Water Demand

The market for reclaimed water in Kyle is primarily providing water for irrigation and cooling. The market for irrigation is comprised of existing potable water uses that can be offset with reclaimed water, residential and commercial properties that will be developed to rely on potable water if reclaimed water is not available, and public parks that may continue without irrigation or could come to rely on potable water in the future. The market for reclaimed water as an offset for potable water used for cooling is currently limited to the Seton Medical Center Hays.

Reclaimed water demands were developed using the GIS data for each potential location and rainfall and evaporation rates for the region. These rates were compared with consumption of reclaimed water by the Plum Creek Golf Course and with potable water meter records for Kyle Parkway and Seton Medical Center Hays.

5.6.1 Potable Water Replacement

In addition to the continued use of reclaimed water for irrigation of the Plum Creek Golf Course, there are two categories of potential reclaimed water uses – potable water replacement and new landscape irrigation. Three existing high volume uses of potable water for which reclaimed water could be substituted located near the golf course supply pipeline are irrigation of Kyle Parkway ROW, Seton Medical Center Hays landscape irrigation, and Seton Medical Center Hays cooling tower makeup water. Seton Medical Center Hays and Kyle Parkway were completed in 2009. Water consumption for 2011 represents the first full year of operation after vegetation is fully established and operations of the medical center are normalized. Seton also operates a cooling tower for environmental cooling of the medical center. This system uses potable water to provide makeup water for the facility’s cooling tower. Potable water used for makeup water for the Medical Center cooling system totaled 11.3 MG in 2011.

The 2011 consumption of these three potential reclaimed water users (Table 5-9) reveals that an annual volume of approximately 21 million gallons could be replaced with reclaimed water. However, without replacing the existing 8-in. diameter reclaimed water transmission main, only a portion of the irrigation demand for Kyle Parkway and Seton Medical Center can be replaced with reclaimed water without affecting service to the Plum Creek Golf Course.

Table 5-9: 2011 Potable water use.

Location	Consumption (MG)
Kyle Parkway ROW	6.2
Seton Medical Center Irrigation	3.7
Seton Medical Center Cooling	11.3
TOTAL	21.2

5.6.2 Reclaimed Water Demand

Monthly irrigation water demands were developed for each potential location using an average evapotranspiration rate and assuming that vegetation would be maintained to exhibit a higher quality even during periods of low rainfall. The reclaimed water demands presented in Appendix D are summarized in Table 5-10.

Table 5-10: Reclaimed water demand (2035).

Potential Reclaimed Water Use Location	Total Area (ac.)	Irrigated Area (ac.)	Peak Reclaimed Water Demand (gpd)	Annual Reclaimed Water Demand (MG)	Annual Reclaimed Water Demand (AF)
Cooling Makeup Water	--	--	51,061	11.33	34.78
Public Park Acreage	302.58	50.82	194,332	28.25	86.71
ROW Acreage	47.87	47.57	154,014	22.39	68.72
Private/HOA Park Acreage	128.27	122.29	379,496	55.17	169.32
Golf Course	308.84	197.01	752,397	109.39	335.70
Comm. Property	2,691.30	273.89	1,287,158	134.97	414.20
SF Property	253.50	76.08	232,506	33.80	103.74
Schools	159.37	23.69	90,455	13.15	40.36
Future Parkland	140.56	42.18	161,089	23.42	71.87
TOTAL	4,032.30	833.53	3,302,507	431.88	1,325.40

5.7 Consultation with Potential Reclaimed Water Customers

Representatives of potential reclaimed water customers were contacted to assess the market potential for reclaimed water. The drought-proof nature of reclaimed water is an important consideration for potential customers, as are the customer's capital costs for replacing potable water.

Plum Creek PUD, MoMark Development

Terry Mitchell, President

The developer of Plum Creek PUD's interest in a supply of reclaimed water is to enhance amenities within the remaining acreage of the PUD. These include irrigation of public rights-of-way, commercial property irrigation, and a potential dual water system for single family property irrigation. The developer is also interested in ensuring that the Plum Creek Golf Course has access to a drought-proof and economical supply of water for irrigation.

Hays Consolidated Independent School District

Carter Scherff, Assistant Superintendent & Rod Walls, Facilities Director.

Few schools in Kyle have irrigation systems for playgrounds and athletic fields. One or more bond issues would be required for Hays CISD to obtain the financing for construction of irrigation systems.

Seton Medical Center Hays

Rudy Qunitinilla, Chief Engineer

Seton Medical Center uses potable water for both landscape irrigation and for cooling system makeup water. Reclaimed water pricing would be an important factor in a decision to convert both systems to reclaimed water, particularly for the cooling system. Chemical analyses of the reclaimed water to verify compatibility with the cooling system should be conducted prior to the conversion.

5.8 Water and Wastewater Agency Jurisdiction

The City of Kyle provides water and wastewater service under Certificates of Convenience and Necessity (CCN) issued by the Texas Commission on Environmental Quality (TCEQ) (Figure 5-2). As a home rule city and under the city's CCN, the City of Kyle maintains jurisdictional authority for water and sewer services within the CCN subject only to the regulation of public water and sewer systems by the TCEQ.

There are also areas within the city in which water service is provided under a CCN issued to Monarch Utilities, an investor-owned utility. The city's water CCN (No. 11024) and sewer CCN (No. 20410) are shown in Figure 5-2. None of the potential reclaimed water customers are located outside the city's water or sewer certificated area. There are presently no state regulations affecting the city's authority to extend reclaimed water service to customers regardless of location.

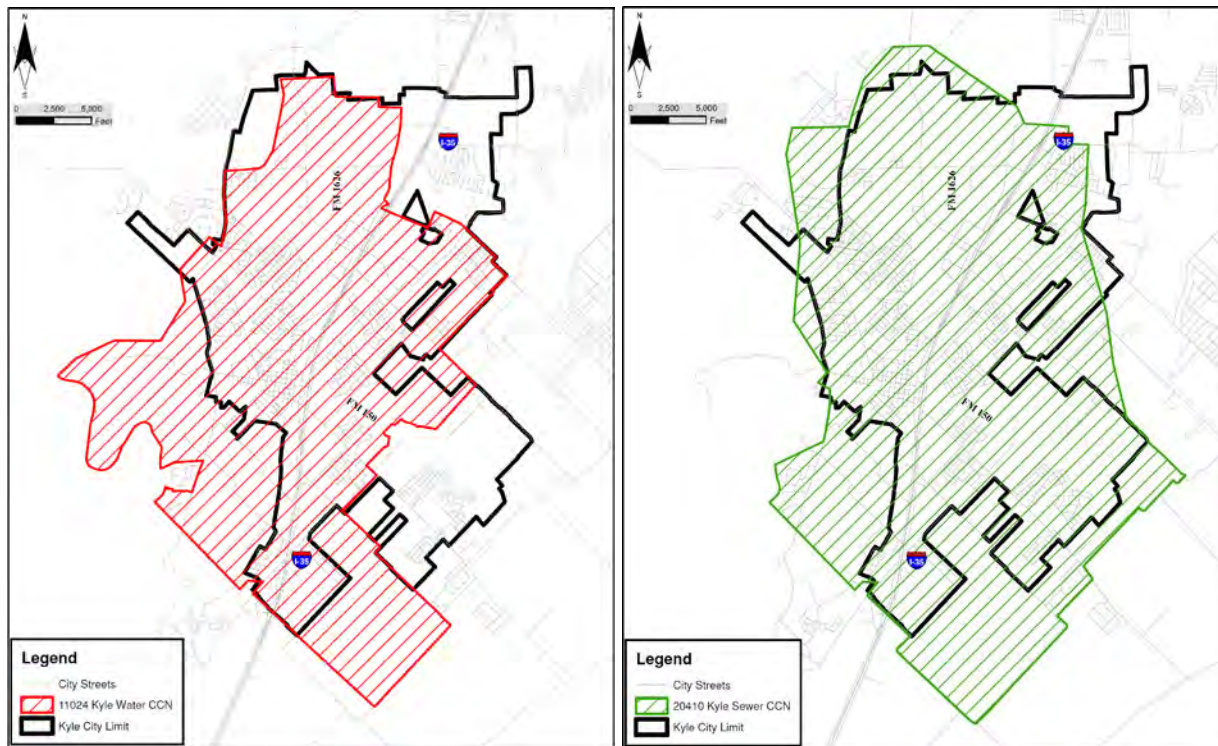


Figure 5-2: Kyle water and sewer CCNs.

5.9 Wastewater Treatment Plant

The Kyle WWTP is a 3 mgd plant arranged in two parallel concentric circular package units that use fine bubble diffusers, dissolved oxygen control systems, clarifiers, two digesters, a mechanical bar screen, and chlorination with dechlorination facilities. The plant is permitted to discharge effluent with 10 mg/L BOD, 15 mg/L TSS, and 3 mg/L ammonia nitrogen. Daily flows for the Kyle WWTP average approximately 1.8 mgd, but have peaked as high as 8.0 mgd in January 2007. The existing reclaimed water pump station is located at the southeastern corner of the WWTP as shown in Figure 5-3. The next phase of development for the Kyle WWTP is to add an additional 1.5 mgd unit when wastewater flows reach 90% of the current plant capacity. There are no current plans to change the treatment process or to alter the existing discharge permit parameters.

5.9.1 Existing Reclaimed Water System

The existing reclaimed water system was built in 1998 by the developer of what is now the Plum Creek Golf Course (PCGC). The system included approximately 11,000 LF of 8-in. diameter pipeline and pump station located at the WWTP. The city's WWTP at that time was located at FM 150 near Lehman Road near what is now the public works building. In 2001, approximately 5,300 LF of the original pipeline was abandoned and a new reclaimed water pump station and about 13,650 LF of new 8-in. pipeline was built when the FM 150 WWTP was abandoned and the new WWTP was built at the New Bridge Street location. The current system configuration

includes approximately 23,600 LF of 8-in. pipeline, a duplex pump station with dual 40 HP pumps (Figure 5-4).



Figure 5-3: Kyle wastewater treatment plant.

The entire reclaimed water system continues under the ownership and operation by the owner of the Plum Creek Golf Course. Recurring accumulation of solids in the wet well (Figure 5-5), combined with limited accessibility for maintenance, prompted the current owner of the system to initiate rehabilitation of the pump station during the fourth quarter of 2011. The proposed rehabilitation included the addition of coarse and fine screens to eliminate pump clogging and improved accessibility for routine cleaning and maintenance of the pumps and wet well.

This system is designed to meet the peak irrigation demand of the golf course of 756,000 gpd with one pump in operation. The costs of operation include pumping costs, but more important are the costs of removing the existing pumps for cleaning and debris removal. An evaluation of the system indicates that the pressure rating of the PVC pipe would be exceeded if both pumps are operated simultaneously. Even with this limitation, a small amount of additional capacity exists in the system.

Reclaimed water supplied by the existing system meets the state regulatory criteria for Type II reclaimed water. The regulations and characteristics of Type I and Type II reclaimed water are summarized in Sections 9.1.2 and 9.1.3 of this report.

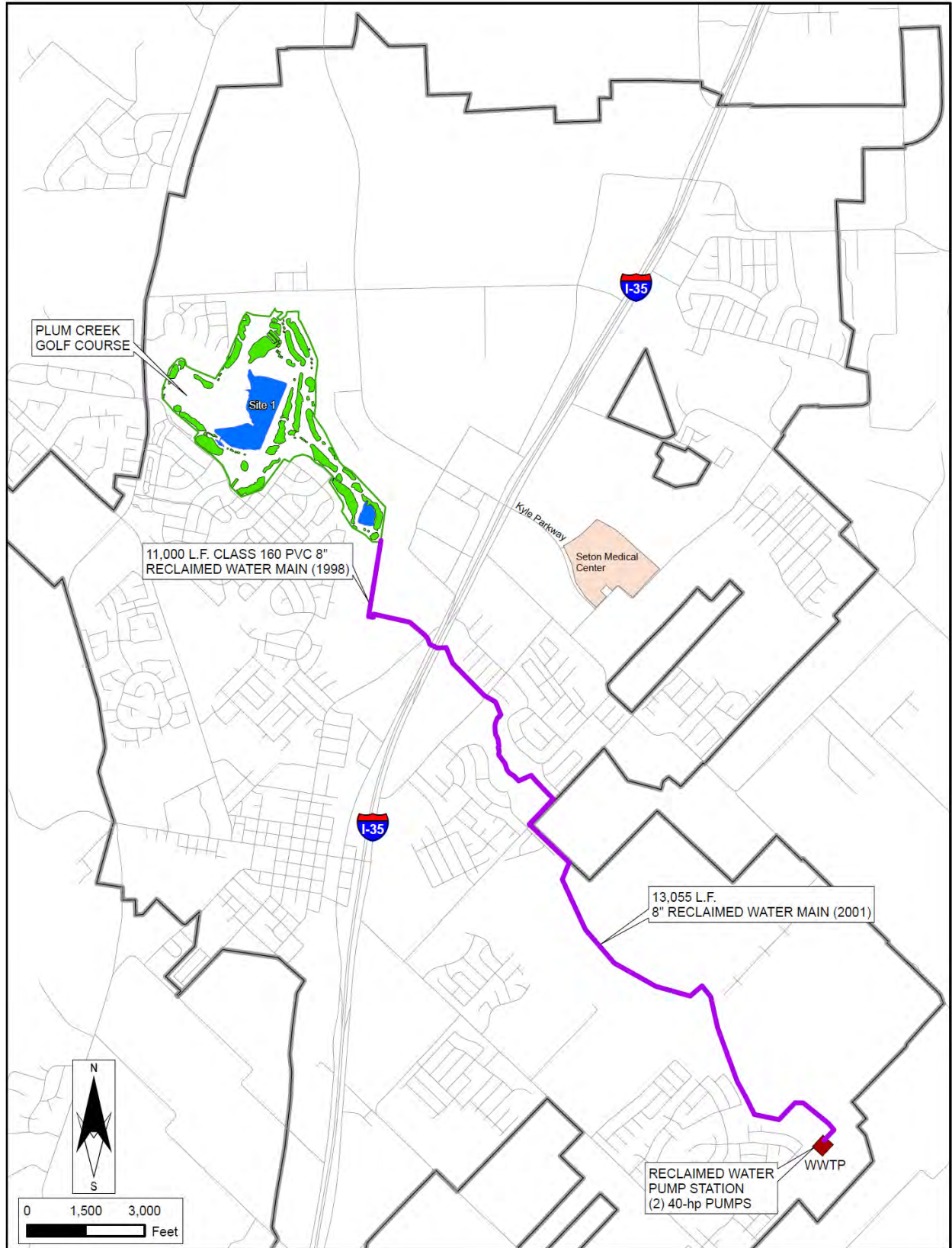


Figure 5-4: Existing reclaimed water system.



Figure 5-5: Existing reclaimed water wet well (photo by Terry Mitchell, 2011).

5.9.2 Effluent Volume

Wastewater flow volume can vary significantly in response to local rainfall and the condition of the collection system. Six years of flow data for the Kyle wastewater system were reviewed to determine an approximate per capita wastewater flow for both average and dry weather conditions (Table 5-11).

Dry weather flows were particularly evident in the Kyle flow data for 2008 and 2011 when the area experienced approximately fifty percent of normal rainfall. Average and above average rainfall amounts occurred in the rest of the six year period between 2006 and 2011.

Table 5-11: Treated effluent flow volume (mgd).

MONTH	2007	2008	2009	2010	2011
January	3.143	1.808	1.690	2.857	1.635
February	1.990	1.683	1.777	3.227	1.611
March	2.575	1.888	1.725	2.268	1.524
April	2.353	1.779	1.708	2.277	1.566
May	2.051	1.717	1.714	2.159	1.603
June	2.118	1.572	1.732	2.286	1.541
July	2.109	1.576	1.509	2.093	1.537
August	2.173	1.701	1.645	2.025	1.567
September	2.192	1.663	1.809	2.485	1.556
October	2.190	1.617	3.195	1.962	1.525
November	2.218	1.645	2.537	1.957	1.589
December	1.849	1.718	2.002	1.633	1.965
Avg. (dry weather)		1.7	1.7	1.9	1.6
Avg.	2.2	1.7	1.9	2.3	1.6

Both conditions were considered relevant in the evaluation of effluent availability. Dry weather flows provided a basis for estimating the lower limit of reclaimed water availability during drought conditions while average wastewater flows provide the basis for projecting reclaimed water supply during normal conditions. Both daily dry-weather and average daily wastewater flows were used to calculate per capita flows. These per capita flow values applied to the projected populations for the planning period provided the daily dry weather (DW) and Average flows shown in Table 5-12.

Table 5-12: Projected dry weather (DW) and average wastewater flow.

Year	Population	DW flow (mgd)	Avg. Flow (mgd)
2015	34,328	1.96	2.78
2020	40,641	2.32	3.29
2025	44,705	2.56	3.62
2030	48,769	2.79	3.95
2035	51,207	2.93	4.15

As a source of water supply, reclaimed water produced by the Kyle wastewater treatment plant will increase in volume at the rate of population growth. Figure 5-6 presents the increase in wastewater effluent for both dry weather and average flow conditions through 2060.

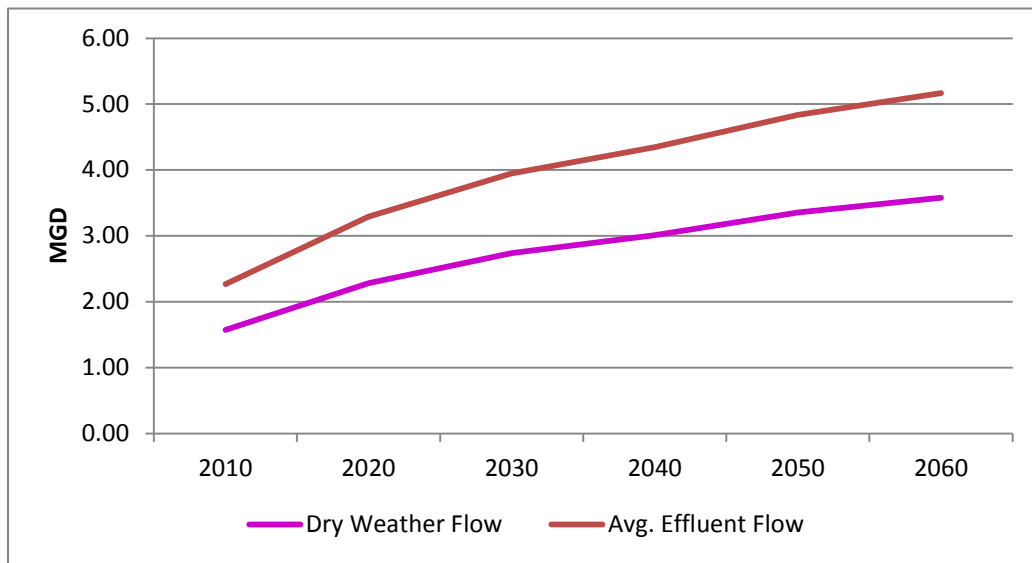


Figure 5-6: Projected wastewater flows.

5.9.3 Effluent Quality

Mean monthly effluent quality for the years 2006 through 2011 are presented in Figure 5-7 through Figure 5-9. The monthly mean biochemical oxygen demand (BOD) concentration illustrates how effluent from the Kyle WWTP is consistently within the permit limit of 10 mg/l.

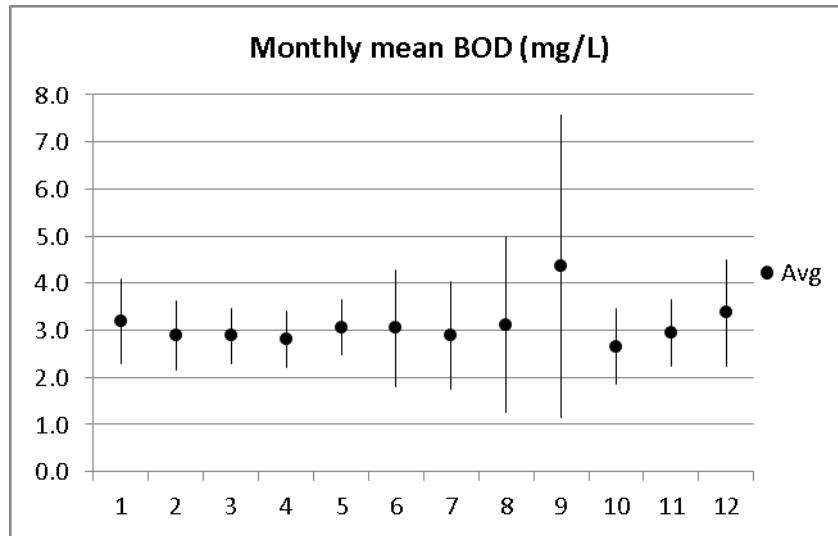


Figure 5-7: Effluent mean monthly BOD concentration.

The data revealed that the Kyle WWTP has had some variation in meeting the effluent total suspended solids (TSS) limit of 15 mg/l during 2006. However, since that year, the plant has consistently met the permit limit.

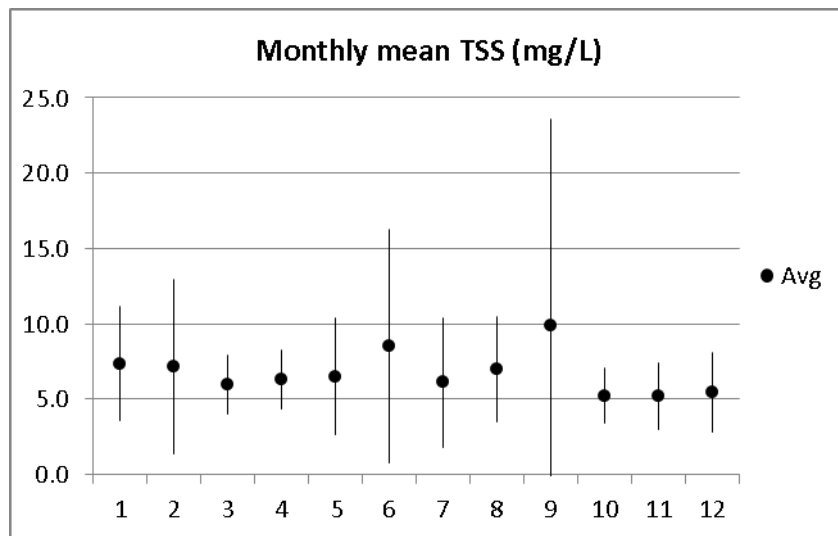


Figure 5-8: Effluent mean monthly TSS concentration.

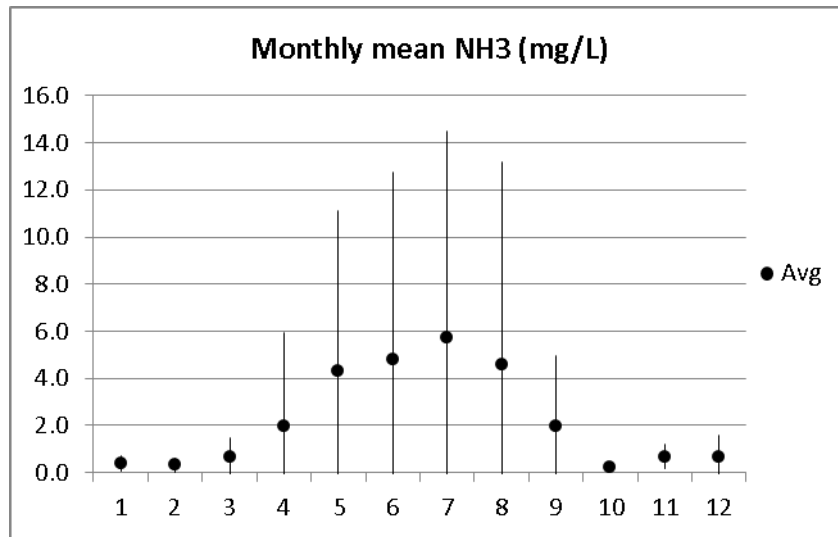


Figure 5-9: Effluent mean monthly NH3 concentration.

These data indicate that the existing wastewater treatment process is capable of consistently producing effluent that meets the parameters for Type II reclaimed water.

While the quality parameters of BOD, turbidity, and bacteria are prescribed by state regulation to ensure suitability for human contact with reclaimed water, the suitability of the water to be used for irrigation as it relates to potential effects on the irrigated plants is also considered. Most important of these quality criteria is salinity. Salinity is determined by measuring the total dissolved solids (TDS) in mg/l or the electrical conductivity of the water. Conductivity data would be obtained by effluent testing as part of the implementation of a reclaimed water system.

5.10 Projected Wastewater Treatment Facilities

With the accumulation of solids in the existing reclaimed water wet well and the potential use of reclaimed water in areas of possible public exposure, additional treatment facilities that would enable that portion of the effluent intended for reuse to meet Type I quality parameters are warranted.

Further reduction of suspended solids and turbidity with additional filtration of the effluent is central to achieving virus removal and inactivation and preparing the reclaimed water for effective disinfection prior to distribution. Tertiary treatment of the entire volume of WWTP effluent is not a practical alternative as only a portion of the effluent is needed for supplying a reclaimed water system. The additional capital and O&M costs associated with tertiary treatment of all effluent would further increase the cost of the reclaimed water.

Two treatment technologies were considered to provide additional BOD and turbidity removal. Membrane bioreactor (MBR) and rotating disk filtration systems were considered for the

supplemental treatment of wastewater effluent. Supplemental treatment or effluent polishing units draw effluent from the chlorine contact chamber for supplemental treatment.

MBR and rotating disk filtration treatment systems are capable of producing high quality reclaimed water. An MBR treatment unit is characterized by a relatively simple and efficient operation. In the MBR treatment process, wastewater effluent would be pumped from the chlorine contact chamber to the MBR unit for filtration. MBR treatment relies on a low pressure microporous membrane that is used to separate solids and liquid in wastewater. Construction includes addition of a reactor tank in which the MBR unit is submerged and pumps to move effluent to the MBR and from the MBR to the bulk storage tank. Additional disinfection is provided as reclaimed water is pumped from the MBR to a bulk storage tank.

Capital costs for MBR construction are higher than conventional treatment processes and higher than the costs of rotating disk filtration. MBR units are not without operational considerations in that membranes can be clogged with grease or solids. However, placing the MBR unit at the end of the treatment process minimizes most of the operational considerations, leaving higher capital costs as the primary determining factor for effluent polishing.

Like MBR units, rotating disk filters can be easily integrated into the existing wastewater treatment plants without changing the current treatment processes for discharge permit compliance or requiring extensive construction on the WWTP site. The system considered for this application is a surface filtration system that consists of continuously rotating disk filters made of woven stainless steel mesh. Solids are removed during a backwash cycle and discharged from the filter back to the WWTP headworks. The addition of rotating disk filters was included in this analysis as providing the required quality of reclaimed water at the lowest capital and operating costs.

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6 Description of Alternatives

Alternatives were considered that could establish a system that can be expanded to serve various sectors of the city and to serve existing and future reclaimed water users. A secondary objective for the alternatives is to ensure an adequate supply of reclaimed water with a minimal impact on existing and future land uses. The reclaimed water system alternatives considered do not involve major modifications to the city's existing wastewater treatment plant, but rather afford flexibility in the design of future expansions of the plant to provide Type I reclaimed water quality as a result of the treatment process or by additional treatment of only the volume of effluent required for supplying the reclaimed water system.

Alternatives for the production and delivery of reclaimed water are guided by three project elements: source of supply, storage, and transmission (piping and pumping). The reclaimed water sources are limited to either construction of reclaimed water production facilities (RWPF) or effluent from the existing WWTP. Storage alternatives considered included use of the Natural Resources Conservation Service (NRCS) structure referred to as Plum Creek Site 1 and construction of a ground storage reservoir.

The alternatives considered include:

- Alternative 1- Existing System (Private Ownership): Continued private ownership and operation of the reclaimed water system with no action by the City of Kyle.
- Alternative 1A – Existing System (Wastewater Utility): Transfer of the existing system to the City of Kyle and operation by the city's wastewater utility.
- Alternative 2 – Reclaimed Water Production Facilities (RWPF): Construction of Reclaimed Water Production Facilities (RWPF) to draw raw wastewater from the collection system for onsite treatment.
- Alternative 3 – Potable Water Use: The consumption of potable water for the each of the potential uses identified in Section 5.
- Alternative 4 – WWTP Effluent: Phased construction of a reclaimed water system that includes additional treatment of effluent from the Kyle WWTP and transmission of reclaimed water to multiple service areas within the city.

6.1 Alternative 1 – Existing System (Private Ownership)

Under this alternative, the existing reclaimed water system would remain under private ownership and operation with service dedicated for irrigation of the Plum Creek Golf Course. Type II reclaimed water is presently provided to the Plum Creek Golf Course through a system that was designed and built by the golf course developer using reclaimed water drawn directly from the WWTP outfall. Operation of the golf course reclaimed water system has highlighted certain limitations of the existing reclaimed water system that would need to be addressed with development of a reclaimed water utility. Continuing with a privately owned and operated system limits the use of reclaimed water to a single user.

While this alternative incurs no costs to the city, it is not without certain risks to the City of Kyle. Much of the city's growth in the near term is projected to occur within the Plum Creek PUD. With the marketability of commercial and residential property in the Plum Creek PUD linked to the long-term viability of the Plum Creek Golf Course, it is reasonable to conclude that the City of Kyle's capacity for maintaining the infrastructure built to serve the PUD likewise benefits to some degree from a community amenity such as the golf course. Continuation of private ownership and operation of the existing reclaimed water system hinges almost entirely on the capacity of the golf course owner to maintain and replace the pumping system and transmission piping.

6.2 Alternative 1A – Existing System (Wastewater Utility)

Under this alternative, the ownership and operation of the existing reclaimed water system would be transferred from the Plum Creek Golf Course (PCGC) to the City of Kyle. With establishment of a utility rate structure, the city would assume responsibility for maintenance and operation of the system. However, the limited amount of capacity in the system would not be available for other uses, *e.g.* Kyle Parkway irrigation or Seton Medical Center Hays cooling makeup water, without adding treatment to achieve Type I reclaimed water quality and reconfiguring the pump station to eliminate issues with pump clogging. As a Type II reclaimed water utility, the system would serve only the Plum Creek Golf Course. The additional treatment, pumping, and pipeline and related costs required to make use of the available system capacity and provide Type I reclaimed water for Kyle Parkway irrigation or to Seton Medical Center Hays is discussed in detail in Section 6.5.1 as Phase 1 under Alternative 4.

Assigning terms for any transfer of ownership of the existing system would be highly speculative at this time, given the fact that the current owner could obtain benefits such as increased system reliability and expanded opportunities for reclaimed water service within the Plum Creek PUD and the latitude for negotiation that exists between the owner and the city at this time. Therefore, acquisition costs are not assigned to this alternative.

6.3 Alternative 2 – Reclaimed Water Production Facilities (RWPF)

RWPF technology offers certain advantages in locating treatment facilities near the point of use in order to eliminate the need for construction of large scale reclaimed water pumping and transmission facilities. Location and space requirements are but two necessary considerations for RWPF technology. Requirements for buffers from buildings and the space required for the RWPF units are significant aspects of the technology, but so is the need for access to an adequate supply of wastewater. Additionally, and perhaps more importantly, is the consideration of RWPF technology is its potential impact of the technology on the city's wastewater collection and treatment systems.

6.3.1 RWPF Technology

A representative list of system capacity and treatment technologies were evaluated for cost and suitability for location in parks. Three processes were considered as viable RWPF alternatives. These were:

- Sequencing Batch Reactor (SBR)
- Membrane Biological Reactors (MBR)
- Continuous Backwash Upflow Media (CBUM)

Sequencing Batch Reactor

Sequencing batch reactors (SBR) consist of two tanks with a common inlet. Wastewater is drawn into one tank for aeration while the other tank is decanting. A variation of the SBR technology allows influent flow to continue into a basin during the settle and decant phases or at any time during the operating cycle. This design variation allows the inflow to be continuously aerated, settled, and decanted for a controlled time period, enhancing the flow capacity of the treatment system and reducing the system footprint.

Membrane Biological Reactor

MBR technology includes both self-contained flat sheet membrane panels that are submerged in a tank and hollow fiber membranes. Advantages of hollow fiber membranes over the flat sheet membranes are higher packing density and better clean-in-place chemical circulation resulting in reduced footprint and maintenance downtime.

Some manufacturers provide an anoxic basin and aeration basin prior to the membrane basin or aeration and membrane basins combined into a single basin. Membranes require periodic maintenance including clean-in-place and external cleaning.

Continuous Backwash Upflow Media

CBUM technology is a modular approach to treating wastewater that relies on polymer conditioned sand media filtration along a suspended media process. Solids are separated from the liquid stream in the preliminary separator and compacted using a screw conveyor. The liquid stream then passes through the first stage filtration tank, which contains a polymer conditioned sand media removing finer solids. The effluent first stage filtration tank flows under gravity to the bio tank. Dissolved organic matter is treated in the bio tank and another filtration follows the biological treatment. In this second stage filtration tank, excess and dead microorganisms and remaining fine solids are trapped in the polymer conditioned sand media. The effluent of second stage filtration tank is either stored in a tank for disinfection or additional treatment as required.

RWPF Technology Considerations

While RWPF technology offers certain advantages to a centralized reclaimed water system, distinct aspects of RWPF technology would require additional analysis before such systems could be considered for as a truly viable alternative for producing reclaimed water. Specific local factors that would require additional analysis include:

- Wastewater interceptor flow rates: The potential viability of RWPF technology is specific to each potential reclaimed water user. An initial question of whether the interceptor nearest each user would provide sufficient water to meet the peak day demand, solids deposition in the sewer is an operational concern that would require diurnal flow monitoring during summer months to verify minimum flow velocities for resuspension of solids.

- On-site storage of reclaimed water: Using RWPF technology, the ability to meet peak day demands would require construction of multiple reclaimed water storage facilities near points of use or installation of multiple pumping stations to transport reclaimed water to storage at Site 1. The loss of usable acreage within local parks and decentralization of pumping and storage could represent substantial added costs over a centralized system.
- Space requirement and aesthetic considerations: In an area such as an established park, adding a RWPF and related storage can affect the space available for other uses. Adding these facilities may also require landscape architectural design to integrate the facilities with the surroundings.
- Concentration of solids: The return of solids to the wastewater interceptor has the potential of increasing the influent strength at the POTW. While this alternative would not necessarily create a need for expansion of the existing WWTP, the treatment process would need to be analyzed in light of a higher influent BOD and TSS loads.
- RWPF Costs: The construction of a decentralized reclaimed water system substitutes the capital cost of centralized pumping, storage and transmission with multiple treatment units.

RWPFs would be sized for the peak day capacity. The RWPF are typically highly compact facilities designed to treat base loads with minimal peaking factors and little or no redundant equipment, which can help minimize capital costs.

RWPF units are compact wastewater treatment facilities that provide onsite production of reclaimed water. In addition to the challenge of identifying locations along the wastewater collection system where wastewater flows are sufficient to meet the peak demands for reclaimed water, the collection system flows must have sufficient velocity to accommodate return flows of concentrated solids. This concentration of solids also has the potential of affecting the wastewater treatment process since the process is designed for a specific influent concentration of BOD and TSS. Since comprehensive flow monitoring and modeling of the Kyle wastewater collection system that could provide data needed for the identification of potential RWPF sites has not been undertaken at this time, insufficient information exists for consideration of the RWPF alternative.

6.4 Alternative 3 – Potable Water Use

As discussed in Section 4, the City of Kyle has developed multiple water supply sources for potable water. Without the development of reclaimed water, the city's potable water supplies would provide the single alternative for the demands identified in Section 5. Addition of the various demands to the potable water distribution system will require additions to transmission, storage, pumping, and distribution to be included in future modeling and planning. The development of the projected demands would coincide with the city's development of the HCPUA water supply.

6.5 Alternative 4 – WWTP Effluent

Based on the wastewater treatment data presented in Section 5.9, effluent from the Kyle WWTP appears to provide a reliable source for reclaimed water in quantities that will meet the projected demands for all of the potential uses identified in Section 5. Under this alternative, the existing private reclaimed water system would be transferred to the city to allow for staged expansion of both the system and customer base. Initial development of a single-pipe system for transmission of reclaimed water to storage and for distribution to users minimizes construction costs and allows for expansion of the system as demand increases. The primary treatment, transmission, storage facilities would be developed in two phases with uses along the primary route between the Kyle WWTP and the golf course served first. In addition to the two phase development of the initial reclaimed water system, six service areas are defined for extension of service as warranted by demand.

6.5.1 System Development Phases and Service Areas

A phased approach of developing a conceptual reclaimed water treatment and transmission system and the identification of potential service areas is presented in this section. Reclaimed water for the conceptual system is obtained from the effluent stream of the Kyle WWTP. The existing WWTP would not be expanded, nor would the treatment process be modified as part of this alternative. Additional treatment to obtain Type I reclaimed water quality would be obtained by the addition of rotating disk filters and additional disinfection for only the volume of effluent diverted for the supply of reclaimed water.

Phased Development

Recognizing that the existing system has limited capacity for meeting the projected demands for reclaimed water, development of increased system capacity is accomplished in two phases. Components of the reclaimed water system can be phased over time to minimize capital and operating costs and to allow prospective users to develop site specific infrastructure. These phases are defined for key components of the reclaimed water system beginning with the existing golf course system.

Phase 1

The existing 525 gpm pumps are designed to meet the golf course peak demand. However, the existing 8-in. pipeline can accommodate flows up to 770 gpm without exceeding the Class 160 PVC pressure rating. In order to take advantage of the remaining pipeline capacity of 245 gpm, at least one existing pump would be replaced. The delivery of reclaimed water from the additional capacity of the existing pipeline could not take advantage of the storage now used for irrigation of the PCGC, but instead require that the additional delivery point(s) be irrigated in a relatively short period of time. Assuming a 3-hour period of irrigation, the 245 gpm of remaining pipeline capacity would serve an irrigated area of approximately 11 acres in addition to the PCGC.

The construction of facilities under Phase 1 is intended to take advantage of the unused capacity of the existing system to meet the irrigation demand for Kyle Parkway ROW irrigation and Seton Medical Center irrigation (Figure 6-1). By adding an 8-in. diameter pipeline extension to Kyle

Parkway and Seton Medical Center, potable water consumption can be decreased by approximately 10 MG per year. While most of the irrigation demand for Kyle Parkway and Seton can be met, the peak month demands of both Kyle Parkway and Seton cannot be met without exceeding the capacity of the existing system. By recognizing that the peak month irrigation of Kyle Parkway and Seton irrigation would be limited to 95% of projected demand, the extension of reclaimed water and implementation of conservation measures during that peak month would allow both areas to be maintained without potable water.

Equipment for the supplemental treatment needed to achieve Type I quality for reclaimed water would also be added as part of Phase 1 to ensure that reclaimed water that meets the Type I water quality parameters is delivered for irrigation of public spaces. The proposed reclaimed water project would include the addition of tertiary treatment in the form of rotating disk filters and disinfection. However, as proposed, the reclaimed water project would not reduce, postpone, or eliminate future expansion or replacement of the existing WWTP. Detailed preliminary opinions of probable project costs for Phase 1 are presented in Appendix F.

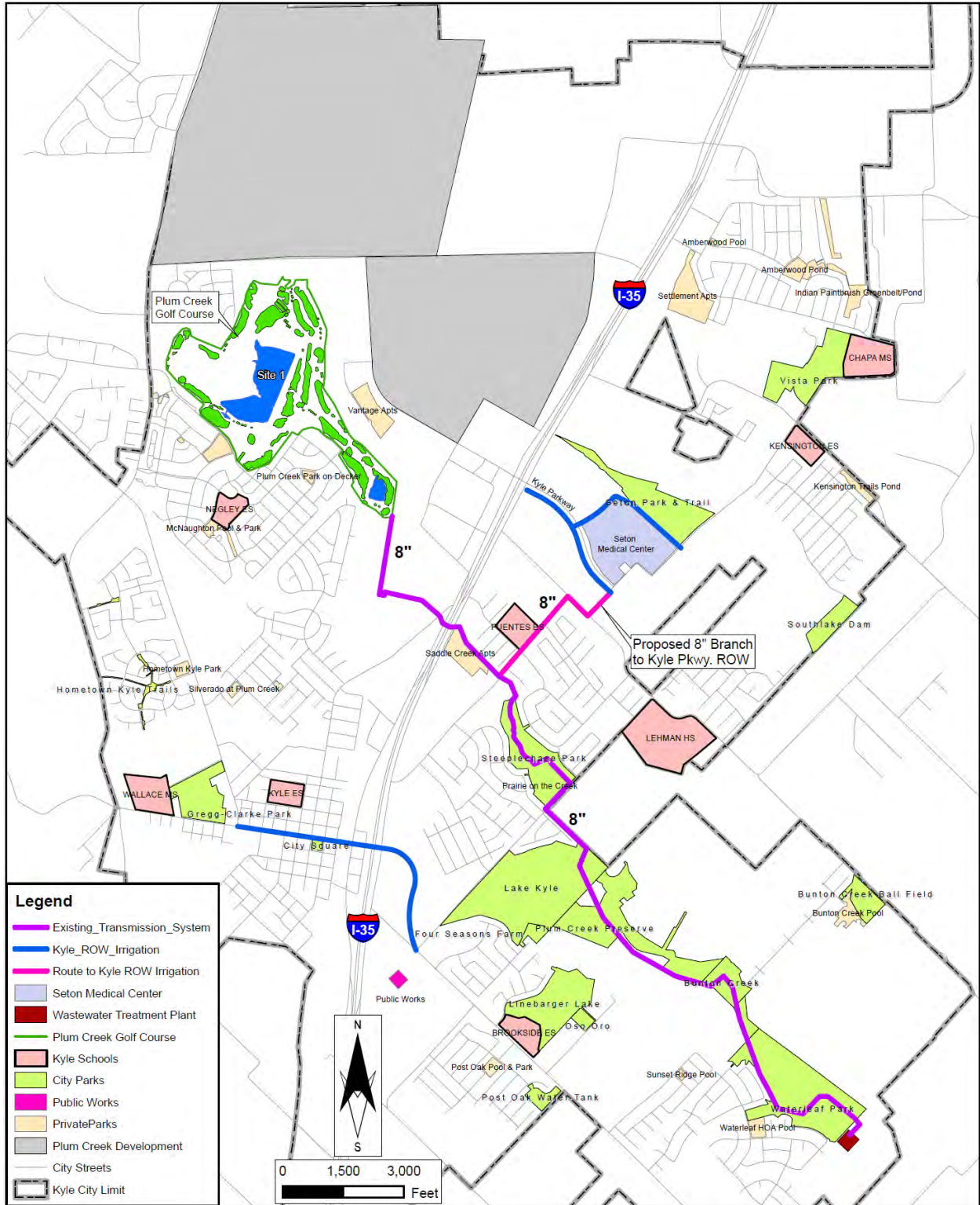


Figure 6-1: Phase 1 reclaimed water system.

Phase 2

Beyond the addition of Kyle Parkway and Seton landscape irrigation discussed as Phase 1, the addition of any new demand or delivery point for the reclaimed water system will require an increase in the capacity of the transmission system, pumping, and storage. For the purposes of this study, replacement of the existing 8-in. transmission pipeline is recommended rather than construction of a parallel pipeline since a parallel pipeline increases overall maintenance costs and requires valuable easement space.

New delivery points and reclaimed water users can come in the form of private users (e.g. irrigation of commercial or single family property in the Plum Creek PUD and HOA parks, or cooling system makeup water for Seton Medical Center) or public users (city parks and schools). Extensions beyond the Phase 2 system are considered for new service areas, allowing the demand in those areas to drive construction of reclaimed water distribution mains.

The alternatives for storage include use of the NRCS impoundment at Plum Creek Site 1 and construction of a ground storage tank in an area near Kohlers Crossing, north of the PCGC and Plum Creek Site 1. The addition of ground storage would add approximately \$2.6 million to the estimated project costs.

Computer modeling of the reclaimed water system using an elevated storage option was developed, but with the cost of elevated storage tank construction triple the cost of ground storage construction, elevated storage is not included as part of this study.

The addition of system capacity and storage included in Phase 2 are shown in Figure 6-2. A 14-in. diameter transmission pipeline is extended to the PCGC along a route parallel to the existing 8-in. pipeline, with 18-in. and 24-in. pipe extended to storage at Site 1. Distribution pumps for withdrawing water from storage are added along with additional pumping capacity at the Kyle WWTP. With the completion of Phase 2, the basic infrastructure to meet the projected water demands is in place. Detailed preliminary opinions of probable project costs for Phase 2 are presented in Appendix F.

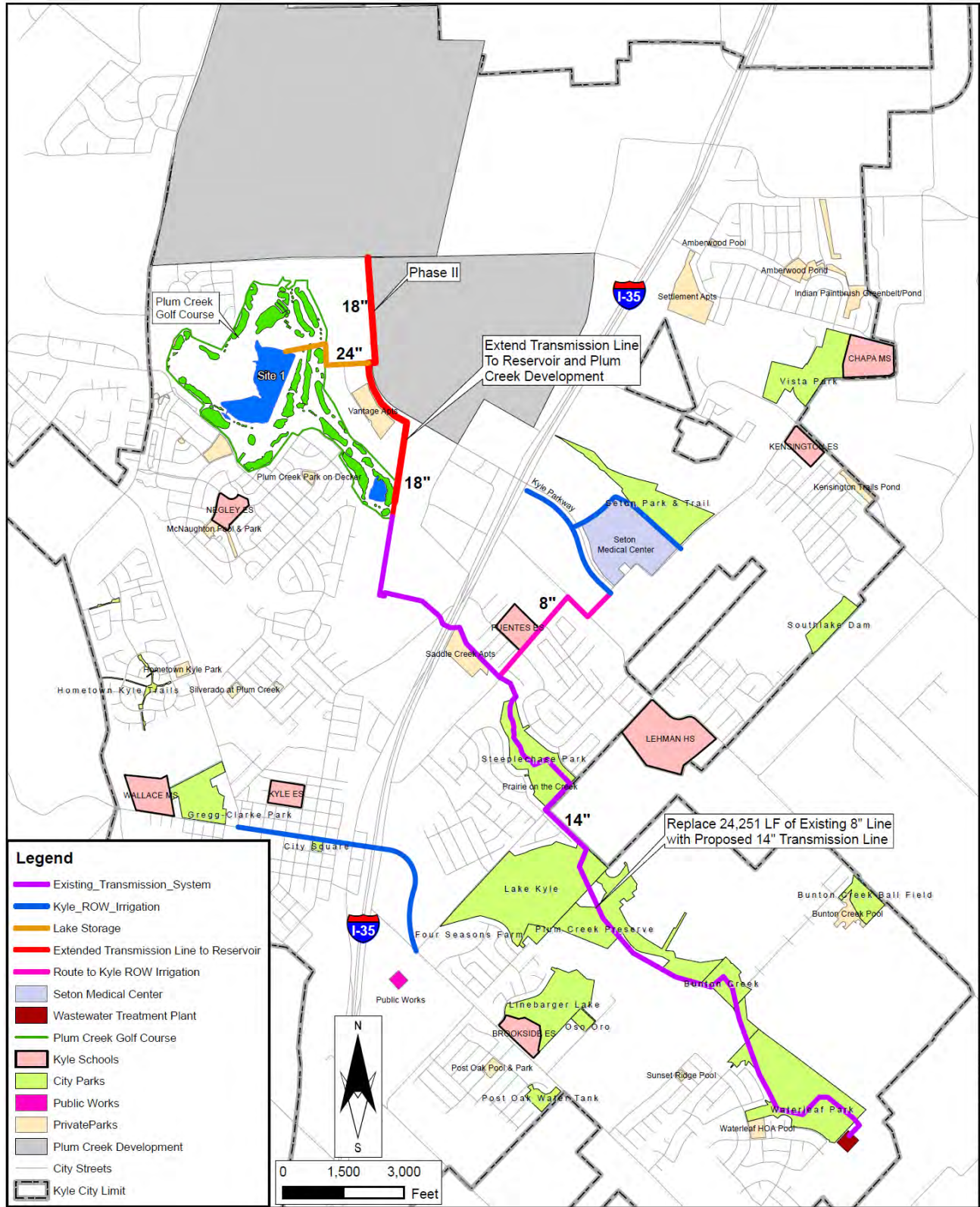


Figure 6-2: Phase 2 reclaimed water system.

Recommended Reclaimed Water Service Areas

Following the construction of the Phase 2 infrastructure, the reclaimed water utility system can be expanded to meet demands in various areas of the city. The six service areas delineated in Figure 6-3 illustrate a sequence for expansion of the reclaimed water utility. The projected reclaimed water demands for each service area are shown in Table 6-1. Detailed preliminary opinions of probable project costs for each service area are presented in Appendix G.

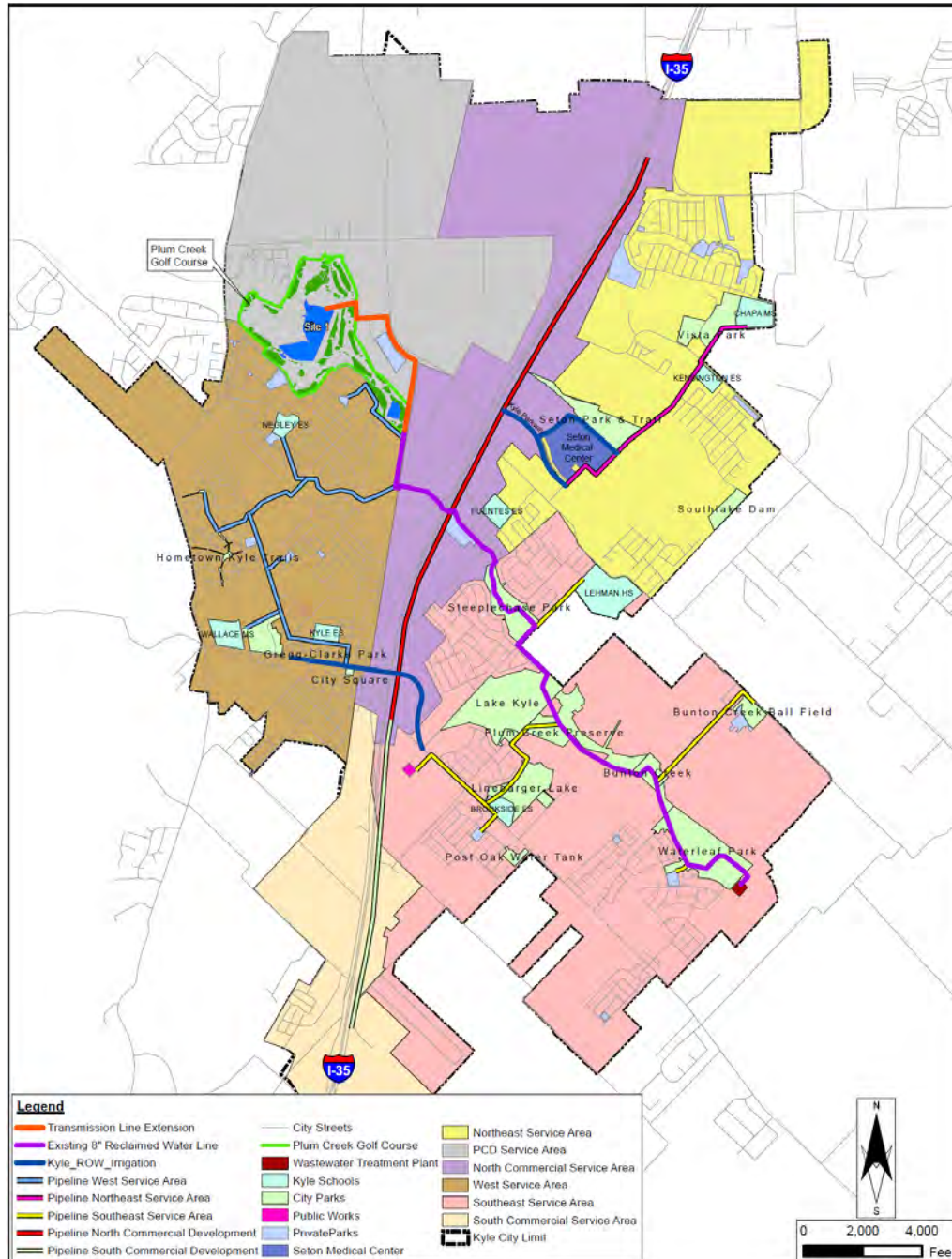


Figure 6-3: Reclaimed water service areas.

Table 6-1: Service area reclaimed water demands (2035).

Service Area	Annual Demand (MG)
Plum Creek	278.58
Southeast	41.69
Northeast	29.58
West	34.78
N Comm	19.60
S Comm	27.65
TOTAL	431.89

Plum Creek Service Area

The projected reclaimed water demands for the Plum Creek PUD include commercial landscape irrigation, irrigation of medians and rights of way, parks, and a dual water system for irrigation of single family development landscaping. Development of the PUD is projected to take place at an annual rate of approximately four percent per year between 2015 and 2035.

Southeast Service Area

Public and private parks are the potential reclaimed water users in the Southeast Service Area. Most potential uses are located along the reclaimed water transmission main, minimizing the capital costs for main extensions. The Southeast Service Area includes:

- Waterleaf Park
- Waterleaf HOA Park
- Lake Kyle
- Steeplechase Park
- Bunton Creek Ball Field
- Brookside ES
- Lehman HS
- Post Oak HOA Park

Northeast Service Area

The reclaimed water demand for the Northeast Service Area has the greatest potential for substituting reclaimed water for potable water. The service area includes:

- Seton Medical Center
- Kyle Parkway
- Chapa Middle School

- Fuentes Elementary School
- Kensington Elementary School

Presently, landscape irrigation for Kyle Parkway and Seton Medical Center are supplied by the potable water system. The reclaimed water demand for the Northeast Service Area also anticipates that Seton Medical Center’s cooling system makeup water could be switched from potable to reclaimed water, along with the facility’s landscape irrigation.

West Service Area

The West Service Area is comprised of potential reclaimed water uses that are considerably smaller than the other areas.

- City Square
- Gregg-Clarke Park
- Hometown Kyle Trails
- Hometown Kyle Trails
- Decker Park
- McNaughton Park
- Vantage Apts.
- Hometown Kyle Trails Park
- Silverado
- Center St. Streetscape
- Wallace MS
- Kyle ES
- Negley ES

Future Commercial Service Areas

The commercially zoned property along IH 35 was divided into two reclaimed water service areas – the North Commercial Service Area and the South Commercial Service Area. The rate at which reclaimed water demand could develop for commercial landscape irrigation in these areas is assumed to be at a rate of about two percent per year for the twenty year planning period.

6.6 Reclaimed Water Storage

Storage of reclaimed water allows for the balancing of the supply of treated effluent with the reclaimed water demand and also allows transmission pipeline diameters to be minimized. During periods of peak demand in summer, reclaimed water can be produced continuously during a 24-hour period and pumped to storage. Storage for the existing system is a small pond located on the golf course property.

But as reclaimed water demands increase and the transmission system is expanded to more delivery points, storage requirements will increase to match the peak day demand volume. For the built-out reclaimed water utility system, storage would allow irrigation of the Plum Creek Golf Course and the other delivery points to take place during a six hour period at night without risking over-drafting the wastewater effluent when plant flows are at their lowest.

6.6.1 Storage Volume

The current system operates with only a storage pond located at the Plum Creek Golf Course. But as additional demands are added to the system, direct pumping and the golf course pond will not be sufficient to meet increased demand. The conceptual system configuration used in this study includes 200,000 gallons of off-peak effluent storage at the Kyle WWTP and storage near the point of highest projected demand. Storage at the Kyle WWTP allows off-peak flows during the nighttime irrigation period to be collected and pumped to the system storage.

Two alternatives for reclaimed water storage were considered. The tank storage option included a 2.6 MG welded steel tank located north of Kohlers Crossing and north of the Plum Creek Golf Course. The second alternative is use of the NRCS impoundment at Plum Creek Site 1.

6.6.2 Storage Alternatives

The two general types of reclaimed water storage are storage structures and ponds. Structured storage is typically steel or concrete tanks that provide flexibility in the location of storage, maintain water quality and essentially eliminate evaporative losses. Structured storage also requires a minimal land area compared to storage ponds. Structured storage includes both ground storage tanks and elevated storage tanks.

Ground storage tanks can be built using welded or bolted steel plates or reinforced concrete. Steel tanks typically have the lowest capital cost, but have continuing maintenance costs of recoating to prevent deterioration of the steel plates and members. Reinforced concrete tanks can provide a viable alternative to steel when long term maintenance is considered. Unlike steel tanks, concrete tanks can be designed to be placed above ground or underground. As an underground storage reservoir for reclaimed water, a concrete tank can provide efficient storage, minimal maintenance and discreet placement in parks or high traffic areas, but at a higher construction cost. Concrete tanks can be completely buried with up to two feet of soil covering the top to allow planting of grass and shrubs, or the top of the tank can be incorporated into the landscaping. The exposed roofs of buried concrete tanks have been used as basketball courts and have been designed with additional reinforcement to allow parking.

Elevated storage tanks are designed to supply pressurized reclaimed water even when supply pumps are not in operation. Elevated storage tanks rely on hydrostatic pressure produced by maintaining a volume of water above the highest delivery point. These tanks serve the same purpose of ground storage tank in that the stored volume of water provides a reserve during times of peak usage. Elevated storage tanks can reduce the costs of pumping, but have significantly higher capital costs than ground storage tanks.

Ponds provide the lowest unit cost of construction of reclaimed water storage but may include potential negative factors, such as evaporative losses and degradation of water quality over time. While studies have demonstrated that the quality of effluent stored in open ponds will diminish over time due to bacterial regrowth and contamination by local wildlife (Higgins, 2009), the potential savings in capital costs and creation of aquatic habitat were considered as strong positive factors in evaluating an existing lake located at the Plum Creek Golf Course.

Plum Creek Site 1

Plum Creek Site 1 is one of approximately 18 dams constructed in the Plum Creek watershed by NRCS and local sponsors. NRCS watershed dams are developed for the purposes of reducing flood damages to bridges, agricultural lands, and erosion control. Most watershed projects were planned and the dams built when the surrounding properties were rural in nature. As in many other areas of the state, the conversion of property in Kyle from agricultural to urban land use in has marked a significant change in the area. As a result of downstream urbanization, many dams originally constructed as low hazard are now, or will be, classified as high hazard dams. High hazard category dams are usually those in or near urban areas where failure would be expected to cause loss of human life, extensive damage to agricultural, industrial or commercial facilities, important public utilities (including the design purpose of the facility), main highways or railroads. As a result of downstream urbanization, this dam is classified as a high hazard structure.

The annual operation and maintenance of dams is the responsibility of the project sponsors. In the Plum Creek watershed, dams are sponsored by the Plum Creek Conservation District (PCCD). NRCS recently evaluated the as-built and current condition data for Plum Creek Site 1 (Appendix I). Analysis of this memorandum indicates that the structure may be suitable for reclaimed water storage without compromising its principal function of flood protection.

Storage Capacity

In evaluating the use of Plum Creek Site 1 for storage of reclaimed water, only the principal spillway storage volume was considered. The principal spillway storage is the volume below the principal spillway that remains in the reservoir and is primarily subject to evaporation. The elevations for the Site 1 dam are shown in Figure 6-4.

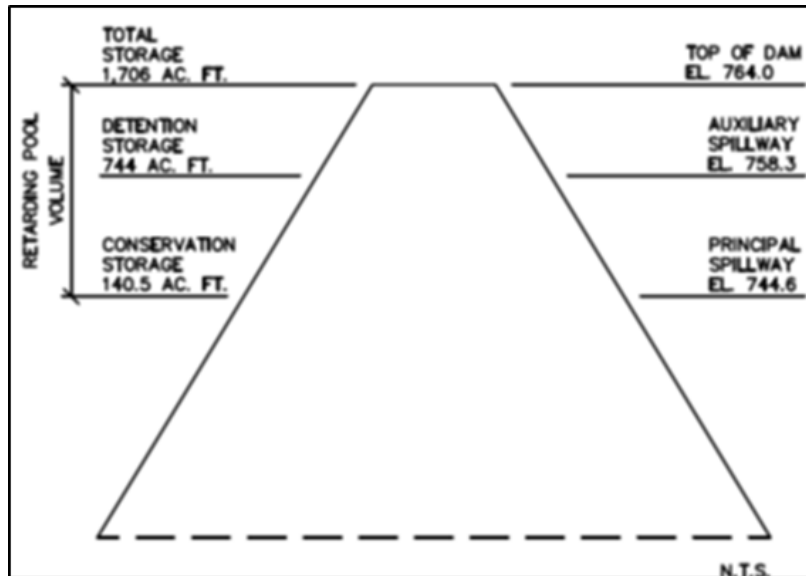


Figure 6-4: Plum Creek Site 1 dam elevations.

According to the NRCS information, Plum Creek Site 1 was built in 1965 to manage a drainage area of 1,300 acres. The current condition data presented by the NRCS reveals the actual drainage area served by the dam to be 1,185 acres. The data also show the principal spillway storage of Site 1 to be 140.5 ac. ft. (45.8 MG), or approximately 50% greater than the capacity of the original design. Principal spillway storage can also be considered as conservation storage, which is water that is impounded for consumptive uses such as municipal, industrial and irrigation and nonconsumptive uses such as recreation and fish and wildlife. The flood control function of the dam is in the retarding pool – that portion of the reservoir allotted to the temporary impoundment of floodwater with its upper limit being the elevation of the crest of the auxiliary spillway.

Assuming the peak water demand reaches 2.9 mgd (2035), Site 1 storage will provide approximately 16 days of storage. As shown in Table 6-2, the storage volume in Site 1 would begin to be drawn down during the peak month in drought conditions as the peak demand reaches 65 MG (2.12 mgd). Should demand begin to exceed the volume of reclaimed water produced by the Kyle WWTP, then additional storage in the form of off-peak storage at the WWTP could be added to the system to capture the effluent produced during the hours of midnight through 6 AM. It is during this six hour period that the system functions as a distribution system and effluent could be stored to be pumped to Site 1 during the next day.

Water stored in the reservoir is designated for recreational use without authorization for withdrawal (Appendix I). Withdrawal of water stored in the reservoir will require a water rights permit for municipal uses, such as irrigation. In addition to permitting of water rights to withdraw water from the reservoir, the discharge of reclaimed water to Site 1 would be regulated by TCEQ as an outfall of the city’s WWTP and will require an amendment of the city’s TPDES permit for a second outfall.

Table 6-2: Net storage change (peak month).

Year	WWTP Effluent (mgd)	Lake Storage (days)	Off-Peak Vol. (MG)	Lake Evaporation (MG)	Reclaimed Water Demand (MG)	Storage Vol. Change (MG)	Lake Vol. End of Peak Month (MG)
2015	61.07	54	9.39	7.13	24.66	19.89	45.78
2020	72.23	45	11.16	7.13	42.11	11.83	45.78
2025	79.36	22	12.31	7.13	65.67	-5.75	40.04
2030	86.8	18	13.33	7.13	79.63	-13.29	32.49
2035	91.14	16	14.26	7.13	91.25	-21.50	24.28

For the purposes of this study, it is assumed that the storage of reclaimed water in the Site 1 reservoir would be maintained at or below the level of principal spillway storage to avoid affecting the detention storage capacity of the structure and as well as avoiding any routine release of water from the reservoir. In this analysis, an operation strategy would provide that pumping of reclaimed water to Site 1 would cease when the water level reaches a specified elevation at or below the principal spillway crest and the discharge of effluent returns to the city’s primary outfall at the WWTP.

6.6.3 WWTP Off-Peak Storage

The rate of flow through a wastewater treatment plant varies, not only with each day, but during the day. In the conceptual system for the Kyle reclaimed water system, costs are minimized by using the transmission system for both transporting reclaimed water to storage and for distributing water to users during a 6-hour irrigation period. Comparing the projected WWTP flow volume with the future reclaimed water demands, lake storage volume, and evaporative losses from lake storage, it was determined that the volume of storage in Site 1 would provide an adequate volume in most years. However, as demand increases, storage volume during the peak month will be drawn down significantly.

Off-peak volume is WWTP effluent that is discharged during the 6-hour period when the system is operating as a distribution system and is not adding reclaimed water to the storage at Site 1. In the future, an off-peak storage facility could be located at the Kyle WWTP to allow the WWTP flow during the nighttime irrigation period to be temporarily stored and pumped to lake storage during the next 18 hours to minimize the lake drawdown.

7 Economic Analysis

7.1 Project Cost Summary

Preliminary opinions of probable project costs were developed using cost data provided by equipment suppliers for rotating disk filters and pumps, and recent project bid tabulations for utility construction. Current 2012 year costs are used for all phases of construction. Sizes of pumps and transmission and distribution piping were developed through a computer model of the proposed system using H₂OMap Water[®] software.

7.1.1 Alternative 1

Due to the private ownership and operation of the existing reclaimed water system, the costs for Alternative 1 are not available.

7.1.2 Alternative 1A

As previously discussed, there are two options for the development of Alternative 1A – operation by the city’s wastewater utility. The first option would be to operate the system to continue serving a single customer (Plum Creek Golf Course) while the second option would be to invest in upgrading the pumping system, increasing water quality to Type I reclaimed water, and extending service to Kyle Parkway or Seton Medical Center Hays. The first option would not incur capital costs. The second option of expanding the existing system and level of reclaimed water treatment is considered as Alternative 1A for the purposes of this analysis. This alternative has the advantage of being the least cost alternative that provides a reclaimed water substitution for approximately 5 MG/yr. of potable water. The costs for Alternative 1A are those developed as Phase 1 (Table 7-1) to increase the use of reclaimed water using capital elements common to both Alternative 1A and Alternative 4.

7.1.3 Alternative 2

As previously discussed, flow data for the wastewater collection system is required in order to identify potential RWPF locations. Since that data is not available, costs for Alternative 2 cannot be developed at this time.

7.1.4 Alternative 3

Only two alternatives will meet the full 2035 demand. Without development of an expanded reclaimed water system, only potable water would be available to meet the 2035 demand using the city’s potable water utility and the potable water supplies discussed in Section 4. Costs associated with the increased storage, pumping, transmission, and distribution capacity for the projected demands were developed and are presented in Table 7-1. The water supply for Alternative 3 includes the city’s existing supplies (Edwards Aquifer and surface water from GBRA) and the future Carrizo-Wilcox supply from HCPUA. Water supply costs are the average of all existing supplies through the year 2020 and HCPUA costs from 2020 through 2035.

Table 7-1: Potable Water Alternative Costs

Year	Annual Demand (MG)	Capital Costs	Debt Service	Power Costs	O&M Costs	Treatment Costs	Water Supply Costs	\$/AF	\$/kgal
2015	115.63	\$1,217,013	\$ 96,380	\$12,064	\$ 12,170	\$ 5,435	\$ 126,346	\$ 711	\$ 2.18
2020	215.22	8,629,074	779,760	26,327	98,461	10,115	822,288	2,630	8.07
2025	318.81	6,113,913	1,263,950	43,729	159,600	14,984	1,218,086	2,760	8.47
2030	377.37	0	1,263,950	52,389	159,600	17,736	1,441,838	2,535	7.78
2035	431.88	0	1,167,570	61,220	159,600	20,298	1,650,112	2,308	7.08

Notes:

- O&M costs are projected using 1% of the capital costs.
- Treatment costs include disinfection.
- Debt service is calculated using 5% interest over 20 yrs.

7.1.5 Alternative 4

The capital cost of a reclaimed water system varies according to the peak irrigation demand and the geographic distribution of the supply system. With a projected 2035 reclaimed water demand of 431.88 MG per year, the Kyle reclaimed water system would serve areas located along the central transmission pipeline and in areas that are relatively distant from the core of the system. The relatively high costs of serving low demand areas, such as the West Service Area, is balanced with the low capital cost and high demand of areas such as Plum Creek PUD and the Southeast Service Area. Probable costs for the complete system are detailed in Appendix E, with the costs for Phases 1 and 2 in Appendix F and each service area detailed in Appendix G. The summary of probable costs for the reclaimed water system is presented in the following tables. Table 7-2 includes the annual costs of developing the initial system in Phase 1 and Phase 2. In Table 7-3, the probable costs are presented by service area for projected year 2035 demands. These data demonstrate the differences in capital cost and demand between the service areas previously discussed. A projection of annual costs presented in Table 7-4 demonstrates how the unit cost of reclaimed water decreases with increasing demand.

Table 7-2: Summary of annual costs (2015 - 2020).

Phase	Annual Demand (MG)	Capital Costs	Debt Service	Power Costs	O&M Costs	Treatment Costs	\$/AF	\$/kgal
Phase 1	115.63	\$ 843,750	\$ 67,705	\$ 12,064	\$ 8,438	\$ 6,731	\$ 267.53	\$ 0.77
Phase 2	205.05	4,506,250	356,870	57,455	45,063	\$ 11,723	762.26	2.34

Notes:

- O&M costs are projected using 1% of the capital costs.
- Treatment costs include tertiary treatment and disinfection.
- Debt service is calculated using 5% interest over 20 yrs.

Table 7-3: Service area cost summary (2035).

Service Area	Annual Demand (MG)	Capital Costs	Debt Service	Power Costs	O&M Costs	Treatment Costs	\$/AF	\$/kgal
Plum Creek	278.58	\$ 375,000	\$ 29,700	\$ 41,840	3,750	\$ 16,217	\$ 107.03	\$ 0.33
Southeast	41.69	683,750	54,150	4,163	6,838	2,427	711.56	2.18
Northeast	29.58	417,500	33,060	3,061	4,175	1,722	623.64	1.91
West	19.60	1,385,000	109,680	2,384	13,850	1,141	2,845.63	8.73
N Comm	34.78	1,821,250	144,230	4,885	18,213	2,025	1,586.61	4.87
S Comm	27.65	1,032,500	81,770	3,590	10,325	1,610	1,146.54	3.52
TOTAL	431.88	\$11,065,000	\$ 876,280	\$ 59,924	\$ 110,650	\$ 25,141	\$ 808.80	\$ 2.48

Notes:

- O&M costs are projected using 1% of the capital costs.
- Treatment costs include tertiary treatment and disinfection.
- Debt service is calculated using 5% interest over 20 yrs.

Table 7-4: Summary of annual costs.

Year	Annual Demand (MG)	Capital Costs	Debt Service	Power Costs	O&M Costs	Treatment Costs	\$/AF	\$/kgal
2015	115.63	\$ 843,750	\$ 67,705	\$ 12,064	\$ 8,438	\$ 6,731	\$267.53	\$ 0.77
2020	215.22	5,982,500	547,756	26,327	68,263	12,528	1,059.59	3.25
2025	318.81	4,238,750	887,884	43,729	110,650	18,558	1,108.29	3.40
2030	377.37	0	887,884	52,389	110,650	21,967	926.42	2.84
2035	431.88	0	820,180	61,220	110,650	25,141	767.45	2.36

Notes:

- O&M costs are projected using 1% of the capital costs.
- Treatment costs include tertiary treatment and disinfection.
- Debt service is calculated using 5% interest over 20 yrs.

7.2 Cost Comparison of Alternatives

Alternative 4 represents the recommended alternative that will provide a drought-proof water source for the potential uses and for potable water offset for meeting the 2035 demand using reclaimed water. Alternative 4 also has the flexibility to extend service as demand develops in the various service areas defined in this study. Capital costs for Alternative 4 are detailed in Appendix E, with Alternative 4 System Expansion Costs presented in Appendix F and Service Area Estimated Costs presented in Appendix G.

The projected costs for water supplies to meet the 2035 demand are summarized in Table 7-5.

Table 7-5: Alternative costs summary (2035).

Item	Alternative 1	Alternative 1A	Alternative 2	Alternative 3	Alternative 4
Capital Cost ¹	0	\$843,750	--	\$15,960,000	\$11,065,000
Annual Volume (MG)	109.4	115.6	--	431.88	431.88
Potable Water Offset (MG/Y)	0	5.0	--	0	21.2
Unit Cost (\$/kgal)	Undefined ²	\$0.76	--	\$7.08	\$2.36

¹ Cost to City of Kyle for system fully developed to meet 2035 demand.

² Costs of private ownership and operation are not available.

7.3 General Economic Conditions and Strategic Concerns

The City of Kyle’s taxable assessed value has increased by 50% to a total of \$1.39 billion in the four year period of 2007 through 2011. According to a bond rating by Standard & Poor’s (2011), the City of Kyle’s A+ bond rating is influenced by the city’s access to the deep economic and employment base of the Austin area; its ability to maintain a strong financial position; and strong income levels. At the time of that rating, the city was planning to spend a portion of the city’s general fund balance in 2011 in part, to fund an increase in the operating costs for parks.

The 2010 Comprehensive Plan notes the position of Kyle relative to the I-35 corridor between Austin and San Marcos, and the expected population growth along this corridor and within Hays County. The population and economic analysis chapter in this plan also cautions about “below average economic diversity” and perhaps most critically, the beginnings of a “bifurcation in employment in lower paying retail and manufacturing or distributional jobs generated by I-35 versus the higher skill and paid jobs generated by the anchor cities in health care, business services, and information.” (Kyle Comprehensive Plan, 2010, p. 18).

Thus, the attraction of higher skill and paid jobs is a strategic imperative for Kyle. Referencing the same ESRI source information as the Comprehensive Plan (Tapestry Segmentation, ESRI, <http://www.esri.com/library/brochures/pdfs/tapestry-segmentation.pdf>), then a broad target group for planning purposes is described as the LifeMode group L2: Upscale Avenues. This group is likely to prefer outdoor recreation opportunities (ESRI, p.14), and therefore is more likely to place value in communities which offer stable and improved recreational facilities.

7.4 Overview of Economic Benefits

There are a number of benefits related to the use of reclaimed water which may accrue to different entities and stakeholders in the community that can be either difficult to quantify or may only be described qualitatively. These benefits accrue directly and indirectly to the City of Kyle, the environment, and to the region. In many cases, since these benefits extend across political boundaries they are also difficult to quantify in financial terms (Raucher, 2006).

7.4.1 Social Benefits

Improved community aesthetics and quality of life

Both the public and private parks in Kyle incorporate a variety of plants and grasses to provide shade, visual enjoyment and playing surfaces. Much of the area of larger, community and regional parks are maintained in close to natural conditions with little or no irrigation. However, supplemental irrigation of areas within those parks, such as picnic areas, playgrounds, and athletic fields, can provide an improved capacity for accommodating the increased and heavier uses associated with more visitors and activities.

Supports community values associated with recreation

Summer recreational programs provide opportunities for a healthy lifestyle. The drought-proof nature of reclaimed water provides a source of water for ensuring plant maintenance and for providing increased recreational opportunities that enhance the local quality of life, particularly during the summer months when activities peak and potable water conservation measures are in effect.

Local control

The development of water sources in Central Texas typically requires participation in a regional effort. This is evidenced by the development of surface water as a source by GBRA and the current development of the Carrizo-Wilcox Aquifer supply through the HCPUA. But developing a reclaimed water utility can be seen as development of a local water supply that is not subject to allocation by multiple jurisdictions. Both the development and use of reclaimed water would, subject to current state regulations, be at the direction of the Kyle City Council in response to the will of the local community.

7.4.2 Environmental Benefits

Reduction in nutrient load in the Plum Creek Watershed

While the proposed project will not affect the concentration of nutrients in the wastewater treatment plant effluent, direct water reuse will, as discussed in Section 8.3, reduce the nutrient load to the Plum Creek watershed. As shown in Table 7-2, water reuse could remove almost 2 tons of nitrogen during the initial years of the project and up to 6 tons of nitrogen as the project reaches its maximum reclaimed water demand. Nutrients remaining in reclaimed water following treatment may also decrease the amount of fertilizer needed for plant maintenance.

Storm water quality improvement

Maintenance of turf grasses, shrubs and trees in public and private parks provide a vegetative buffer along the along creeks and tributaries that filters storm water runoff to improve water quality. Maintaining vegetation in areas adjacent to the watercourse reduces both the sediment load and contaminants in urban runoff.

7.4.3 Financial Benefits

Deferral of additional potable system capacity

As the city's population grows and the utility system ages, the design of water main replacements will consider historical demand and records of low pressure and system repair. Shifting park irrigation to reclaimed water will remove significant historical and future demands in the area of the parks irrigated with reclaimed water and preserve potable water system capacity for future population growth.

A similar benefit is gained in the capacity and maintenance of potable water storage. While capacity in existing storage tanks is gained for population growth by shifting park irrigation to reclaimed water, storage tanks are added for reclaimed water. However, maintenance costs for these structures is lower than for potable water tanks as the coating systems and maintenance are not required to meet drinking water standards.

Reduced potable water demand

A key benefit from developing a reclaimed water system for park irrigation is to eliminate a current and future potable demand. Replacing potable water for park irrigation with reclaimed water results in a savings of potable water for the demands associated with population growth. Replacing this demand will also reduce demand on the Edwards Aquifer during the summer months, providing an incremental reduction in the cost of developing additional water supplies.

Long-term sustainability of parklands

Developing parks is a significant investment by the current generation to ensure that the city's parks meet the needs of the present without compromising the ability of future generations to meet their own needs. Preserving vegetation in the parks provides both an inviting developed environment for people and a means of preventing damage due to erosion of surfaces worn by increasing use.

Increased tax base through increased property value

A survey conducted as part of a study of the economic impact of parks and recreation programs on local communities suggests that buyers are willing to pay a premium for property located near a public park (Perryman, 2006). A reasonable extension of that conclusion could be that the level of maintenance of parks during summer months could have a similar positive effect on adjacent properties by providing an area of sustained vegetation during recurring drought periods.

Evaluation of the economic feasibility of the project was limited to those direct benefits that are directly quantifiable. As discussed in greater detail in the following sections and noted appendices, this economic analysis considers reduced potable water demand, the avoided costs of HCPUA water, and the reduced nutrient load into Plum Creek as key components.

7.5 Benefits Not Considered

The remaining direct benefits and all of the indirect benefits generally accrue to the community in a manner that would require a more detailed economic analysis of the entire community beyond the addition of water reuse. For example, in an overview of how to conduct economic impact analyses of park and recreation services, Crompton (2010) focused on the multiplier effect special events and tournaments have on the local economy as a result of local investment in park and recreation services. In another study (Perryman Group, 2006), it was suggested that local park and recreation programs are an enrichment of the quality of life for existing residents as well as an enhancement in economic development focused on knowledge-based industries and on attracting retirees. While Perryman references a survey in which half of respondents would be willing to pay 10% more for a home located near a park, there are no studies that consider the potential effects of the overall quality of parks has on property values or desirability. Additional work, beyond the scope of this study, would be required to quantify such impacts.

7.6 Methodology

A present value analysis was conducted to determine the relative expense of developing reclaimed water for irrigation compared to the baseline alternative of continued potable water irrigation and cooling use. The decision to irrigate and provide cooling water has been selected as the baseline alternative versus a “no irrigation/no cooling” alternative because the latter is not consistent with the adopted Comprehensive Plan and does not contribute to the stability and continued protection of public park and open space improvements.

An alternative is preferable in a present value analysis when its present value is lower in absolute terms relative to other alternatives. The analysis forecasts the costs of each alternative over a 20-year horizon, and assumes a discount rate of 4.000%. The analysis horizon of 20 years has been selected because it corresponds to the maximum period of debt service that the community might assume. The discount rate of 4.000% was utilized in this analysis, following the guidance of the U.S. Water Resources Council:

(http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/cntsc/?&cid=nrcs143_009685).

7.7 Calculating the Annual Costs of the Baseline Alternative

The baseline alternative is defined as the cost of meeting the demands described in Section 5.6 with water from the potable water sources identified in Section 4.2 in each year of the analysis horizon to maintain the health and integrity of the respective areas being served and meet state-mandated effluent permit limits for receiving waters. The baseline scenario includes a supply cost component, projected costs of expanding the potable water system and an equivalent nutrient removal cost.

7.7.1 Annual Supply Costs

The costs to supply reclaimed water is a function of the average water supply cost projections presented in Table 4-6 and discussed in Section 4.4 of this report. Utilizing the average cost is

assumed to be conservative relative to utilizing drought condition supply costs, which are projected to be higher (ref. Table 4-7).

The figures in Table 4-6 are shown in five-year increments based on known or projected pricing changes unique to the specific water resource. For the purposes of the present value analysis, these costs are assumed to be uniform for each of the years within the five year period, and were not interpolated for those interim years.

7.7.2 Equivalent Nutrient Removal Benefit and Cost

Section 8.3 of this report describes in detail the significant benefit of effluent reuse in achieving nutrient reduction. Therefore, in order to compare the baseline scenario on equal footing with the primary alternative – the reuse scenario – the costs to achieve an equivalent nutrient reduction must be incorporated into the present value analysis. Capital investment and additional operations and maintenance costs, associated with the development of Biological Nutrient Removal (BNR) processes, are assumed in this scenario in order to provide the same quantity (pounds removed) of nutrient reduction as the effluent reuse scenario. These assumptions are described in the following tables:

Table 7-6: Average cost of nutrient removal, BNR system, baseline alternative.

Year	BNR						
	ADF (mgd)	BNR Capacity (mgd)	Capital Cost	Annual O&M Costs	Debt Service	NH3 Removal (lb./yr.)	\$/lb NH3 Removed
2015	2.78	2.78	\$4,865,000	\$194,600	\$385,280	7,752	\$74.80
2020	3.29	3.78	1,750,000	230,300	523,870	9,174	82.20
2025	3.62		0	253,400	523,870	10,095	77.00
2030	3.95	4.78	1,750,000	276,500	662,460	11,015	85.24
2035	4.15		0	290,500	662,460	11,573	82.35

Notes: - BNR used only during summer months.
- NH3 removal to meet current permit limit.
- Costs of BNR do not anticipate changes in surface water quality stds. or permit limits.
- Capital increments of 1 mgd @ \$1.75M/mgd

Table 7-7: Estimated nutrient removal, effluent reuse alternative.

Year	Reuse					
	ADF (mgd)	Capital Cost	Annual O&M Costs	Debt Service	NH3 Removal (lb./yr.)	\$/lb NH3 Removed
2015	2.78	\$843,750	\$27,233	\$67,705	3,826	\$24.82
2020	3.29	5,982,500	107,118	547,756	6,525	100.36
2025	3.62	4,238,750	172,937	887,884	9,043	117.30
2030	3.95	0	185,006	887,884	11,157	96.16
2035	4.15	0	197,011	820,180	12,458	81.65

Thus, in years 2015-2019, to provide an equivalent level of nutrient removal compared to the reuse alternative, the baseline (continued potable supply) alternative must add BNR capacity, capable of removing 3,826 pounds per year, at a cost of \$74.80 per pound. The calculation is performed for each year of the analysis, through 2035, and entered into the present value calculation (Section 7.8 below).

7.8 Calculating the Cost of the Reuse Alternative

The reuse alternative and its associated costs are described fully in Sections 6.3 through 6.5. There are five components to this alternative’s cost calculation: the cost of other sources, debt service costs, power, operations and maintenance, and treatment.

7.8.1 Cost of other Sources

As the reuse alternative is intended to be used in conjunction with existing water sources, the existing water sources are considered as part of the cost structure, though the quantity required to meet required demand is reduced as a result of the availability of this alternative. These existing water sources include the Edwards Aquifer, BSEACD Historical Limit and Conditional Use, additional contracted supply through GBRA, and the HCPUA, as discussed in Sections 4.2, 4.3, and 4.4 of this report. The figures in Table 4-6 are shown in five-year increments based on known or projected pricing changes unique to the specific water resource. For the purposes of the present value analysis, these costs are assumed to be uniform for each of the years within the five year period, and were not interpolated for those interim years.

7.8.2 Debt Service Costs

The reuse alternative assumes the issuance of debt to fund capital components of the alternative. Consultations with the City of Kyle’s financial advisor and bond counsel yielded the safest assumptions for factoring in the cost of debt service and the resulting schedule is incorporated into the present value analysis. The detail of the debt service provided as Appendix K illustrates financing of the reclaimed water system detailed in Table 7-4 through three bond issues in Series 2015, Series 2020, and Series 2025.

7.8.3 Recurring Annual Costs

The cost of power, operations and maintenance, and treatment are described in detail in Appendix H – Projected System O&M Costs.

7.9 Calculating the Present Value of the Baseline Scenario

In order to compare the costs of the baseline scenario to the alternative scenario, each scenario being comprised of differing series of costs accruing over the life of the project, a present value approach is employed. This approach applies the principle of discounting to the stream of flows, converting them to a single present value. The present value “accounts for the absolute size and the timing of a proposed action” (Mikesell, 1995 p.231). The basic equation for computing net present value is as follows in Equation 1:

Equation 1

$$PV = \sum_t^T \frac{C_t}{(1+r)^t}; \text{ where } T = \text{the life of the project and } r = \text{the discount rate.}$$

Substituting the assumptions for this analysis:

Equation 2

$$PV_{Baseline} = \sum_t^{20} \frac{C_{TotalExistingSupplies} + C_{EquivNutrient\ Removal}}{(1+.0500)^t}$$

This equation yields a present value of \$61,416,672 in absolute terms. The detail of the annual costs is provided in Appendix L.

7.10 Calculating the Present Value of the Reuse Alternative

The reuse alternative’s present value can be calculated using the following equation, derived from Equation 3:

Equation 3

$$PV_{Reuse} = \sum_t^{20} \frac{C_{TotalOtherSources} + C_{DebtService} + C_{Power} + C_{O\&M} + C_{Treatment}}{(1+.0500)^t}$$

This equation yields a present value of \$49,570,406 in absolute terms. The detail of the annual costs is provided in Appendix L.

7.11 Comparison of Baseline Scenario and Reuse Alternative

Comparing the results of the present value analysis for each scenario, the reuse alternative is the more cost-effective alternative:

$$PV_{Reuse} = \$49,570,406 < PV_{Baseline} = \$61,416,672$$

In summary, if the projected annual costs of each alternative, over twenty years, were compared and “brought back to the current year” through discounting, the reuse alternative for irrigation and cooling would be preferable to continued and expanded use of potable water supply.

7.12 Recommended Alternative

The use of reclaimed water from the Kyle WWTP (Alternative 4) is the recommended project for providing a water supply for the potential uses defined in Section 5. Based on the analysis described in the preceding sections, implementation of Alternative 4 will address the following:

- i. While the proposed reclaimed water project will not postpone or eliminate the need for development of the HCPUA as a water supply, it will reduce the demand on future water supplies by creating a substitute for potable water for Kyle Parkway irrigation, Seton Medical Center Hays irrigation and cooling makeup water. This substitution for potable water will shift the existing demand of approximately 21 MG/yr. (Table 5-9) from potable water supplies to reclaimed water. The proposed reclaimed water project will also allow the various irrigation uses, such as city parks, to introduce irrigation without increasing demand on potable water supplies. A projected 42.2 MG/yr. of future irrigation demands for single-family irrigation could likewise be moved from the HCPUA demand to reclaimed water.
- ii. Since the city’s existing rights to the Edwards Aquifer are limited, existing withdrawals from the Edwards Aquifer will not increase or decrease as a result of the proposed project.
- iii. Under the city’s contract with GBRA for supply and treatment of water stored in the U.S. Corps of Engineers project at Canyon Lake, water remains in the reservoir until demands increase requiring withdrawal and treatment. By substituting reclaimed water for potable water and avoiding an increase in potable demand for the potential uses of reclaimed water, the proposed project has the potential to delay withdrawals from Canyon Lake.
- iv. By providing disk filters and disinfection for only the volume of reclaimed water that is required, the proposed project does not require changes in the treatment process or capacity of the city’s WWTP.

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8 Environmental Considerations

A review of available environmental information was performed to assess potential significant impacts on endangered or threatened species, public health and safety, natural resources, and regulated waters of the U.S. The review does not include a detailed survey or detailed investigation of environmental features or of cultural resources. A more detailed investigation would be conducted at the time actual facility locations are determined.

8.1 Environmental Features of the Study Area

The primary environmental features within the study area include the floodplains of Plum Creek and its tributaries. All of the potential reclaimed water use locations are located outside of the Edwards Aquifer Recharge Zone boundary (Figure 8-1).

8.1.1 Floodplain

The location and extent of floodplains were considered for the purposes of locating potential reclaimed water pumping and storage facilities. Using the base flood elevations (BFE) and flood insurance rate maps (FIRM) provided by Federal Emergency Management Agency (FEMA) under the National Flood Insurance Program, potential locations for pumps or storage were identified as being outside the regulatory floodplain.

8.1.2 Endangered or Threatened Species

The Texas Parks and Wildlife Department (TPWD) Rare, Threatened, and Endangered Species database contains county level information about the habitat of species of special concern in the State of Texas. A review of the TPWD database for Hays County reveals that the habitats for federally listed threatened and endangered species of fish and amphibians in Hays County are primarily large perennial rivers and streams and not in intermittent creeks. During the project design phase, a survey of areas affected by the proposed project will be conducted to determine if habitats for any listed species exist within the project area and, if any are identified, for the project to be designed to avoid impacting those areas. Once completed and in service, the use of reclaimed water for irrigation of developed property and for cooling will not create a potential for significantly impacting endangered or threatened species or the habitat of those species.

Since the proposed reclaimed water irrigation is restricted to the transition zone of the Edwards Aquifer, the use of reclaimed water for in Kyle will not affect endangered or threatened species of the aquifer. Aquatic species habitat that may exist downstream of Kyle in the Plum Creek watershed will not be affected by reclaimed water irrigation that could be introduced into watershed by rainfall induced runoff since runoff will be diluted and moved downstream with the increased flow resulting from stormwater. An onsite assessment of potential habitat for listed species would be conducted as part of the design process.

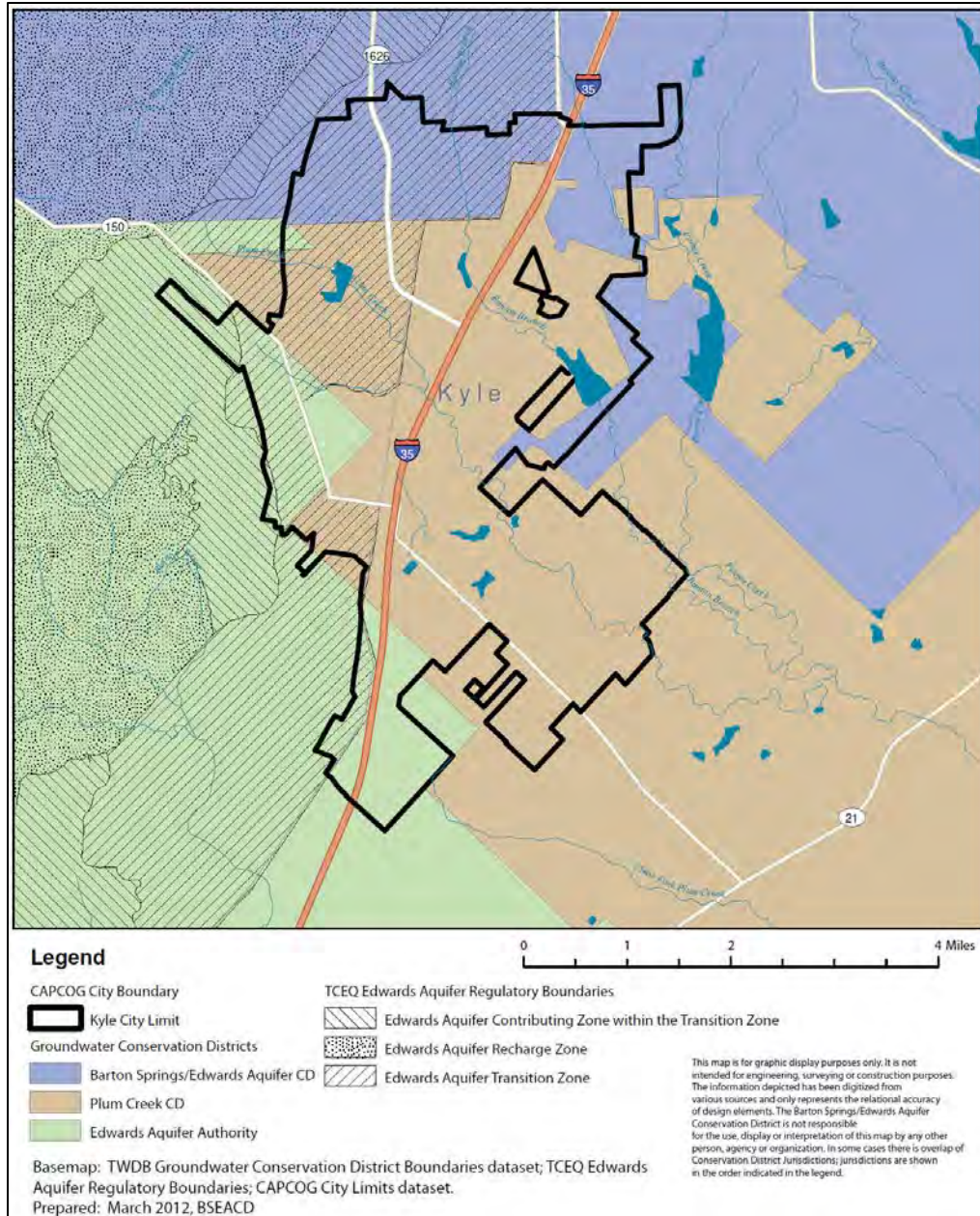


Figure 8-1: Groundwater regulatory boundaries.

8.1.3 Archeological and Cultural Resources

Construction of the project must adhere to various state and federal regulations intended to ensure that historic and prehistoric resources are identified along the project route or will be identified through a reconnaissance. Since construction of the proposed project would take place in existing and future public rights-of-way and on developed property, it is unlikely that the project will have a significant impact on a site, structure, or object that is listed in or eligible for listing in the National Registry of Historic Places, affects a historic or cultural resource or

traditional and sacred sites, or the loss or destruction of a significant scientific, cultural, or historic resources. While the proposed project should not impact historic properties or prehistoric sites, the city will, during the design phase, coordinate the project design with the State Historic Preservation Officer or secure the services of a qualified archeologist to ensure that the requirements of the Archeological and Historic Preservation Act of 1974; National Historic Preservation Act of 1966; and the Texas Antiquities Code are addressed prior to construction. Once completed and in service, the use of reclaimed water for irrigation of developed property and for cooling will not create a potential for significantly impacting cultural resources.

8.1.4 Edwards Aquifer Transition Zone

The transition zone of the Edwards Aquifer is described as a thin strip of land south and southeast of the recharge zone from San Antonio to Austin where limestone that overlies the Edwards formation are faulted and fractured and has caves and sinkholes. The boundary between the recharge and transition zones transects the northwestern portion of Kyle just outside of the study area. The transition zone was established to regulate petroleum storage tanks. Since the proposed project will be located entirely outside of the Edwards Aquifer recharge zone and will be designed and operated to meet all regulations that apply to the transition zone, the proposed project will not create a potential for significantly impacting Edwards Aquifer.

8.1.5 Wetlands and Waters of the U.S.

Wetlands are defined for regulatory purposes under the Clean Water Act as [EPA Regulations listed at 40 CFR 230.3(t)]:

"...those areas that are inundated or saturated by surface or groundwater 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."

A preliminary review of the USFWS National Wetlands Inventory (NWI) revealed that scanned wetlands mapping exists for approximately half of the City of Kyle and the study area. No data is presently included in the NWI for the southern half of the project area. Possible wetland areas are shown in the NWI along creeks and near the NRCS impoundments in the city. A detailed delineation of wetland areas in the project area will be conducted during the final design of a reclaimed water system. Utility crossings must comply with the terms of Nationwide Permit 12 (NWP-12) relating to activities required for the construction, maintenance, and repair of utility lines and associated facilities in waters of the United States. The design of the project will ensure that waters of the U.S. and wetland areas are avoided both during construction and operation of the proposed project.

8.1.6 Public Health and Safety

Existing regulations regarding the use of reclaimed water and, during the construction phase, construction safety requirements of the State of Texas and City of Kyle will ensure that

safeguards are in place to ensure that the health and safety of the public is protected. Project construction would increase vehicular and truck traffic in the project area. Short-term air emissions and increase in noise levels would occur in and around the construction corridors. Construction activities would involve use of hazardous materials during construction; however implementation of best management practices (BMPs) related to fueling, vehicle washing and handling, use, and storage of chemicals would minimize any risk to either workers or the public. Project implementation would incrementally increase the use of chemicals used for disinfection of wastewater. All treatment chemicals would be handled and stored in compliance with federal, state and local requirements.

8.1.7 Natural Resources

Natural resources are materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain. The construction and operation of a reclaimed water utility for irrigation of public and private properties and for cooling will not significantly impact the natural resources of the project area.

8.2 Potential Impact of Direct Reuse at Kyle WWTP on Watershed Water Quality

8.2.1 Overview

The Plum Creek Watershed Protection Plan (WPP) noted the presence of nutrient concerns (namely, nitrate-nitrogen) along the entire main stem of Plum Creek (Figure 8-2). Although creek sections with phosphorus concerns were present, they were located further below the immediate downstream area of the Kyle Wastewater Treatment Plant (Kyle WWTP) outfall. Thus the phosphorus levels may be related to effluent from multiple dischargers in the watershed. Presently, the Kyle WWTP does not have phosphorus limits in its discharge permit. Current permitted levels at the Kyle WWTP (based on the most recent discharge monitoring records (DMRs)) are as follows: annual average flow < 3 mgd, BOD < 10 mg/L, TSS < 15 mg/L and NH₃ < 3 mg/L which correspond to current permitted loads of BOD < 250 lb/d, TSS < 375 lb/d, and NH₃ < 75 lb/d. As part of its operations, the Kyle WWTP reports measurements of discharge, ammonia (NH₃), total suspended solids (TSS) and biochemical oxygen demand (BOD) on a monthly basis.

In its recommended management measures, the WPP proposed that all wastewater treatment facilities in the Plum Creek watershed work towards the voluntary treatment levels of BOD < 5 mg/L, TSS < 5 mg/L, NH₃ < 2 mg/L and TP < 1 mg/L. In particular, for the Kyle WWTP, the WPP proposed a permitted flow of 4.5 mgd which translates to proposed permitted loads of BOD < 187 lb/d, TSS < 187 lb/d, NH₃ < 75 lb/d and TP < 37 lb/d. These loads are calculated by multiplying the proposed permitted flow with proposed permitted concentrations. Implementing the WPP proposed limits would result in reduction of 25% in permitted BOD loads, 50% reduction in permitted TSS loads, and no net reduction in permitted NH₃ loads (due to increase permitted discharge) over current permit levels.

The direct, non-potable reuse of the Kyle WWTP effluent is a potential method for reducing nutrient loads discharged into Plum Creek. It involves diverting part of the wastewater effluent to satisfy irrigation demands in the upper Plum Creek watershed. This study seeks to quantify the impact brought about by direct reuse on the watershed water quality for the projected period of 2015 to 2035.

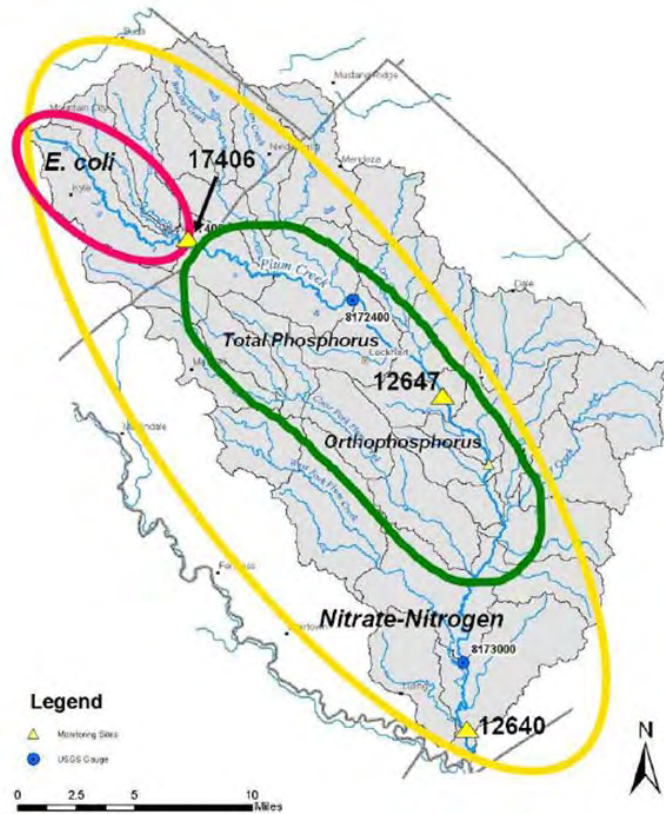


Figure 8-2 : Nutrient and bacteria concerns in the Plum Creek Watershed (From Figure 2.12 of the Plum Creek Watershed Protection Plan).

The Soil and Water Assessment Tool (SWAT) is a basin-scale model that simulates daily flows and events in the watershed. This tool allows prediction of management impacts on water volume and loads of nutrients, bacteria, and other pollutants over long periods of time. Because the application of the SWAT model originally used to develop the WPP is beyond the scope of this study, the capability to mechanistically predict the impact of reducing effluent on nutrient concentrations downstream has been limited in this study. Nonetheless, this study focused on comparing the proposed permitted loads in the WPP – which are based on the WPP’s SWAT modeling – with the projected effluent loads from Kyle WWTP under direct reuse and no reuse conditions. To do this, the Kyle WWTP effluent loads at 5-yr intervals from 2015 to 2035 were calculated based on projected changes in population size, wastewater inflow, irrigated areas and irrigation demands for the Kyle area. Calculated loads were then compared against proposed permitted loads to evaluate the effectiveness of direct reuse in meeting future water quality goals in the watershed.

A key limitation of this study is that although it addresses load reductions for the sake of meeting the WPP proposed goals, the evaluation is based on nutrient loads instead of concentrations. The main reason is because direct reuse is primarily a mechanism for reducing loads. Subsequent reduction in downstream concentrations can only occur if a significant background flow is available to dilute the discharge. Unfortunately, according to the WPP, the northern, upstream section of Plum Creek is intermittent throughout most of its history with little background flow (whether from baseflow or upstream runoff) to dilute the Kyle WWTP effluent. Presently, summer flows in the section are known to be dominated by treatment plant discharge. Because of this, even though the proposed load requirements may be met by direct water reuse, implementing direct reuse may not be as effective in reducing downstream concentrations. A more thorough investigation, however, using surface runoff simulation results from the SWAT model, is recommended to confirm this.

8.2.2 Approach

Sources of data

The following sources of data were utilized to project the effluent nutrient loads at the Kyle WWTP 5-yr intervals from 2015 to 2035,

1. DMRs (Discharge Monitoring Reports) from Jan 2006 to Dec 2011. The reports obtained from the Kyle WWTP operated by Aqua Texas and contained the following information:
 - a. Average monthly discharge rates. These were used to calculate typical average monthly flows for each calendar month as a percentage of the total annual flow. When performing nutrient load projections, the percentages were utilized to distribute the projected annual flows among the 12 calendar months.
 - b. Concentration measurements for BOD, TSS and NH₃ monitored on a monthly basis. These were used to compute average concentrations and standard deviations for each calendar month to calculate projected nutrient loads.
2. Projections in wastewater inflow: The wastewater inflow projections were computed using population projections for Kyle (Chapter 3), and per capita usage of water which were derived from historical data (Chapter 4). The projections were computed for each 5-year interval beginning in 2015 and ending in 2035. Inflows were provided on an annual average basis.
3. Projections in irrigation demands: The irrigation demand projections were generated by using future projections of the irrigated area that will be supplied by treatment effluent. The projections were computed for each 5-year interval beginning in 2015 and ending in 2035. Inflows were provided on monthly basis (Chapter 5).

Summary of data

The monitoring data obtained from the discharge monitoring records of the Kyle WWTP are provided in Table 8-1 (2006 to 2008) and Table 8-2 (2009 to 2011). The average daily flow, TSS, NH₃ and carbonaceous biochemical oxygen demand (CBOD) concentrations as well as the percentage of total annual flow for each month are displayed in the tables.

Table 8-1: List of data from Discharge Monitoring Records for 2006 to 2008.

Month	Year	ADF (mgd)	TSS (mg/l)	NH3 (mg/l)	CBOD (mg/l)	% of total annual flow
1	2006	1.065	12.87	0.39	3.87	7%
2	2006	1.064	18.37	0.33	4.00	7%
3	2006	1.165	8.20	2.26	3.30	7%
4	2006	1.233	6.00	10.10	2.25	8%
5	2006	1.084	8.20	16.32	4.20	7%
6	2006	1.210	23.25	20.58	5.50	8%
7	2006	1.222	13.38	22.93	4.75	8%
8	2006	1.310	12.40	22.01	6.80	8%
9	2006	1.667	37.50	7.93	9.87	10%
10	2006	1.750	7.63	0.31	2.38	11%
11	2006	1.445	9.00	1.28	4.00	9%
12	2006	1.716	9.25	2.43	3.88	11%
1	2007	3.143	10.30	0.31	2.60	12%
2	2007	1.991	5.25	0.14	2.38	7%
3	2007	2.575	3.75	0.30	2.75	10%
4	2007	2.354	9.00	0.70	3.87	9%
5	2007	2.052			3.13	8%
6	2007	2.118	6.50	0.39	2.25	8%
7	2007	3.193	6.75	0.18	2.00	12%
8	2007	2.072	6.00	0.47	2.50	8%
9	2007	1.892	7.63	0.55	4.25	7%
10	2007	1.732	3.70	0.19	4.00	6%
11	2007	1.785	3.55	1.23	3.11	7%
12	2007	1.849	3.38	0.38	4.25	7%
1	2008	1.808	6.13	1.00	4.50	9%
2	2008	1.684	3.44	0.85	2.44	8%
3	2008	1.888	5.57	0.77	2.43	9%
4	2008	1.779	4.00	0.40	2.75	9%
5	2008	1.717	2.00	1.75	2.63	8%
6	2008	1.573	2.57	2.07	2.60	8%
7	2008	1.576	2.00	2.07	2.33	8%
8	2008	1.702	2.38	0.61	2.13	8%
9	2008	1.663	1.56	1.37	2.00	8%
10	2008	1.617	7.00	0.46	2.30	8%
11	2008	1.645	4.28	0.82		8%
12	2008	1.718	3.00	0.82	2.11	8%

Table 8-2: List of data from Discharge Monitoring Records for 2009 to 2011.

Month	Year	ADF (mgd)	TSS (mg/l)	NH3 (mg/l)	CBOD (mg/l)	% of total annual flow
1	2009	1.720	3.00	0.42	3.42	7%
2	2009	1.777	3.75	0.31	2.27	7%
3	2009	1.726	4.25	0.23	2.33	7%
4	2009	2.057	4.33	0.14	3.00	9%
5	2009	1.799	3.09	2.96	2.89	7%
6	2009	1.732	2.66	5.27	2.61	7%
7	2009	1.509	3.10	6.67	2.27	6%
8	2009	1.645	4.50	2.78	2.30	7%
9	2009	1.809	2.60	1.79		8%
10	2009	3.195	3.13	0.11	1.90	13%
11	2009	2.537	2.80	0.49	2.20	11%
12	2009	2.513	3.27	0.13	2.93	10%
1	2010	2.8567	3.9	0.193	2.222	11%
2	2010	3.2276	3.75	0.0662	2.58	12%
3	2010	2.2676	5.7	0.14	2.6	8%
4	2010	2.1682	6.75	0.25	2.75	8%
5	2010	2.1587	11.3	0.137	2.875	8%
6	2010	2.2855	5.7	0.15	2.2	8%
7	2010	2.0939	3.285	0.128	2.142	8%
8	2010	2.0254	8.33	1.45	1.777	7%
9	2010	2.431	4.111	0.1	3.444	9%
10	2010	1.9624	4.5	0.1	3.25	7%
11	2010	1.9565	5.77	0.133	2.44	7%
12	2010	1.6331	6.888	0.177	2.222	6%
1	2011	1.6353	8	0.1	2.5	9%
2	2011	1.6112	8.25	0.162	3.625	8%
3	2011	1.524	8.5	0.36	3.875	8%
4	2011	1.5661	7.875	0.287	2.25	8%
5	2011	1.603	8	0.488	2.666	8%
6	2011	1.541	10.444	0.222	3.111	8%
7	2011	1.537	8.125	2.464	3.875	8%
8	2011	1.567	8.4	0.2	3.2	8%
9	2011	1.556	5.75	0.1	2.25	8%
10	2011	1.521	5.5	0.125	2.125	8%
11	2011	1.5891	6	0.14	3	8%
12	2011	1.9651	7	0.112	4.875	10%

Inflows

Using the data from Table 8-1 and Table 8-2, the average inflows for each calendar month (calculated as percentage of the total annual inflow) were computed and shown in Figure 8-3 below. Average flow percentages are denoted by black dots while the +/-1 standard deviation interval around the mean is denoted by the bars.

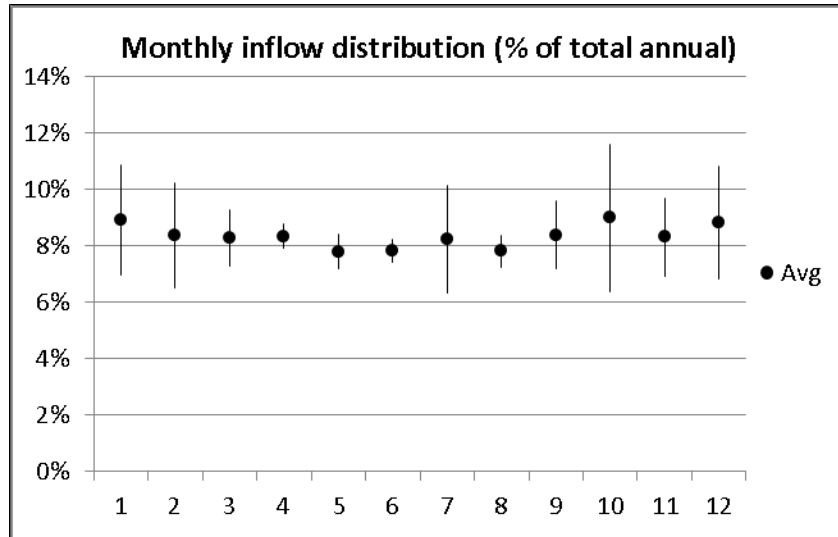


Figure 8-3: Monthly inflow distribution to Kyle WWTP as % of total annual flow.

The graph shows that the wetter months, October to April, tend to have a higher share of the annual inflow than May to September (drier months). The computed average flow percentages will be used in subsequent analyses as “distribution factors” to allocate the projected total annual WWTP inflows to each calendar month for each 5-year scenario.

Nutrients

Using the data from Table 8-1 and Table 8-2, the average TSS, NH₃ and BOD concentrations for each calendar month as well the associated standard deviations were calculated and shown in Figure 8-4, Figure 8-5, and Figure 8-6 below. Average flows are denoted by black dots while the +/-1 standard deviation interval are denoted by the bars.

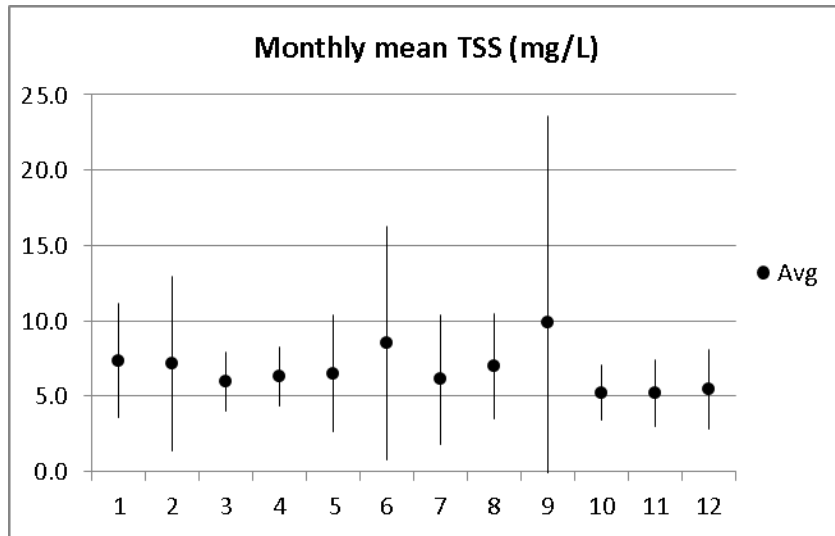


Figure 8-4: Monthly mean TSS concentration (mg/L) in Kyle WWTP effluent.

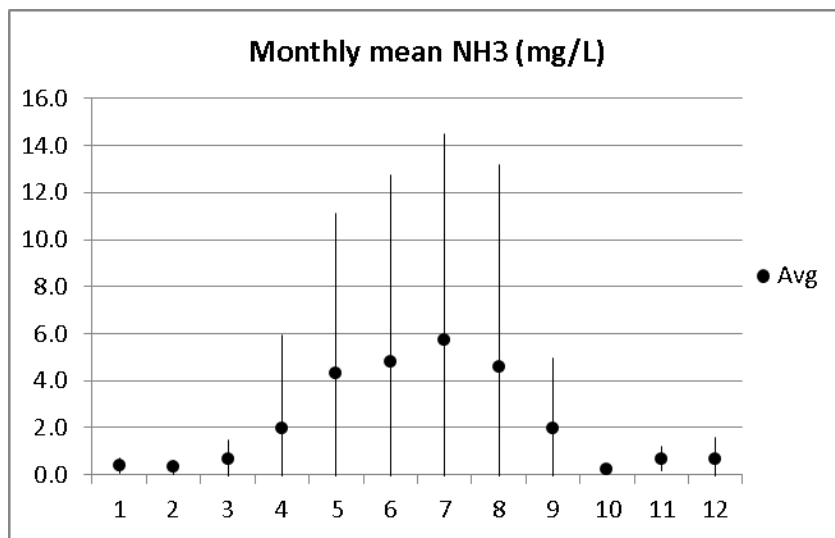


Figure 8-5: Monthly mean NH3 concentration (mg/L) in Kyle WWTP effluent.

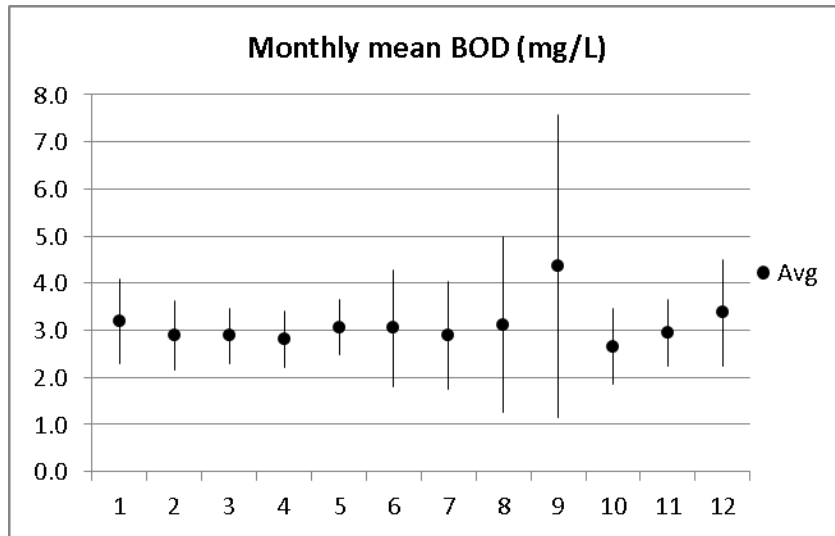


Figure 8-6: Monthly mean BOD concentration (mg/L) in Kyle WWTP effluent.

Projected annual average WWTP inflow and irrigation demand

The projected annual treatment plant inflow and irrigation demands computed by the study team are shown in Figure 8-7 for 2015 to 2035. Each of the 5-year intervals between 2015 and 2035 is considered a scenario for calculating projected nutrient loads. Both the projected WWTP inflows and irrigation demands exhibit steady increases with time.

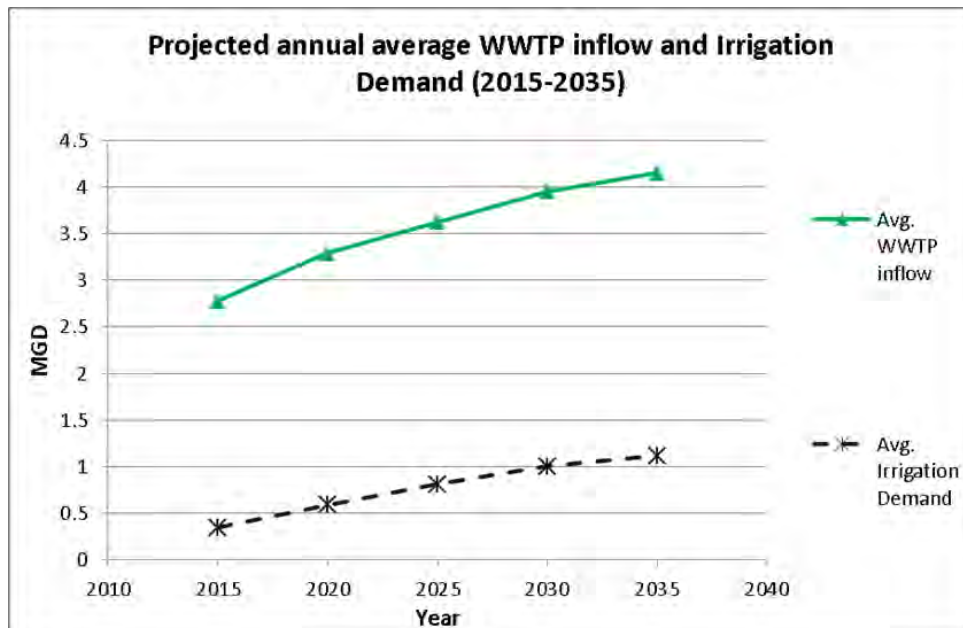


Figure 8-7: Projected annual average WWTP inflow and irrigation demands for 2015 to 2035.

Projected monthly irrigation demand

The projected irrigation demands were computed by the study team on a monthly basis for each 5-year interval scenario for the period 2015 to 2035. Figure 8-8 shows typical monthly irrigation demands expressed as a percentage of the total annual irrigation demand for a given scenario.

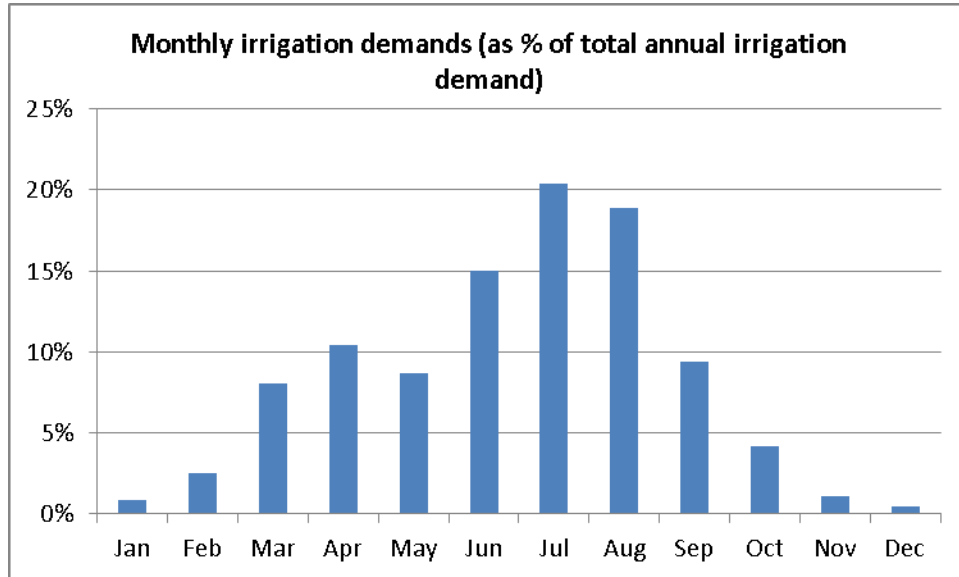


Figure 8-8: Projected monthly irrigation demand expressed as percentage of total annual irrigation demand for 2015 to 2035.

Calculation of projected monthly WWTP discharges and nutrient loads

Within each 5-year scenario, the mean inflows, WWTP discharge and nutrient loads were computed for each calendar month under two conditions:

1. no effluent reuse; and,
2. with effluent reuse.

Resulting loads were then plotted against permitted flows and loads to evaluate the effectiveness of direct reuse in meeting the WPP proposed limits.

Monthly WWTP discharges

For no effluent reuse, the projected WWTP discharge for a given month is calculated as follows:

$$Q_{\text{month, scenario, no reuse}} = Q_{\text{WWTP inflow, scenario}} \times DF_{\text{month}} \times 12$$

Where:

$Q_{\text{month, scenario, no reuse}}$ = Projected WWTP discharge for given month and scenario (no reuse) (mgd)

$Q_{WWTP\ inflow,\ scenario}$ = Projected annual average WWTP inflow for scenario (mgd) (see Figure 8-7).

DF_{month} = distribution factor for given month (as % of total annual flow) calculated in Figure 8-3.

With effluent reuse, the projected WWTP discharge for a given month is calculated by subtracting the irrigation demand for the given month and scenario from the projected monthly WWTP discharge (under no reuse conditions):

$$Q_{month,\ scenario,\ with\ reuse} = Q_{month,\ scenario,\ no\ reuse} - Q_{Irrigation\ demand,\ month,\ scenario}$$

Where:

$Q_{month,\ scenario,\ with\ reuse}$ = Projected monthly WWTP discharge for given month and scenario (with reuse)(mgd)

$Q_{month,\ scenario,\ no\ reuse}$ = Projected monthly WWTP discharge for given month and scenario (no reuse) (mgd)

$Q_{Irrigation\ demand,\ month,\ scenario}$ = Projected monthly irrigation demand for given month and scenario (mgd) calculated by study team.

Monthly WWTP nutrient loads

The projected effluent loads for a given month, nutrient (e.g. NH₃), scenario and condition are calculated by multiplying the WWTP discharge by the average concentration for a given month:

$$L_{month,\ nutrient,\ scenario} = Q_{month,\ scenario,\ condition} * C_{nutrient,\ month} * 8.34$$

where

$L_{month,\ nutrient,\ scenario}$ = Projected mean effluent load for a given month, nutrient and scenario (lb/d)

$Q_{month,\ scenario}$ = Projected WWTP discharge for given month, scenario (mgd)

$C_{nutrient,\ month}$ = Average concentration for a given month (mg/L).

8.34 = Conversion factor to lb/d

The standard deviation of the load is calculated from the standard deviations of flow and concentration as follows:

$$\sigma_{L_{month,nutrient}} = \left(\sqrt{\left(\frac{\sigma_{Q_{month,scenario}}}{Q_{month,scenario}} \right)^2 + \left(\frac{\sigma_{C_{nutrient,month}}}{C_{nutrient,month}} \right)^2} \right) L_{month,nutrient}$$

Where:

$\sigma_{L_{month,nutrient}}$	= Standard deviation of projected effluent load for a given month, nutrient and scenario (lb/d)
$L_{month, nutrient,scenario}$ (lb/d)	= Projected mean effluent load for a given month, nutrient and scenario
$\sigma_{Q_{month,scenario}}$	= Standard deviation projected WWTP discharge for given month, scenario (mgd)
$Q_{month,scenario}$	= Projected WWTP discharge for given month, scenario (mgd)
$\sigma_{C_{nutrient,month}}$	= Standard deviation of concentration for a given month and nutrient (mg/L)
$C_{nutrient, month}$	= average concentration for a given month and nutrient (mg/L).

8.2.3 Results

Projected nutrient loads for 2015 to 2019 (i.e. “2015 scenario”), 2020 to 2024 (i.e. “2020 scenario”), 2025 to 2029 (i.e. “2025 scenario”), 2030 to 2034 (i.e. “2030 scenario”), and 2035 and beyond (i.e. “2035 scenario”) were computed and shown in the following figures in this section. In each figure, the left column contains a series of figures that show the mean monthly effluent loads if no direct reuse is applied (“no reuse”). The right column contains a series of figures that show the monthly effluent loads if direct reuse is applied (“with reuse”). Current permitted loads are shown as a black solid line while WPP proposed permitted loads are shown as a black dashed line for comparison.

At the end of each figure is a table that summarizes the average, minimum and maximum mean monthly effluent loads under “no reuse” and “with reuse” condition. It also counts the number of months out of the year where the WPP proposed limits are not met under each condition.

2015 scenario

Figure 8-9 shows the projected mean monthly flow and nutrient loads for 2015 to 2019 under direct reuse (“with reuse”) and no reuse (“no reuse”) conditions. Table 8-3 provides a summary of the mean monthly flows and loads and compares with the WPP proposed nutrient load limits.

Figure 8-9: Projected mean monthly flow and nutrient loads for 2015 to 2019 under direct reuse and no reuse conditions.

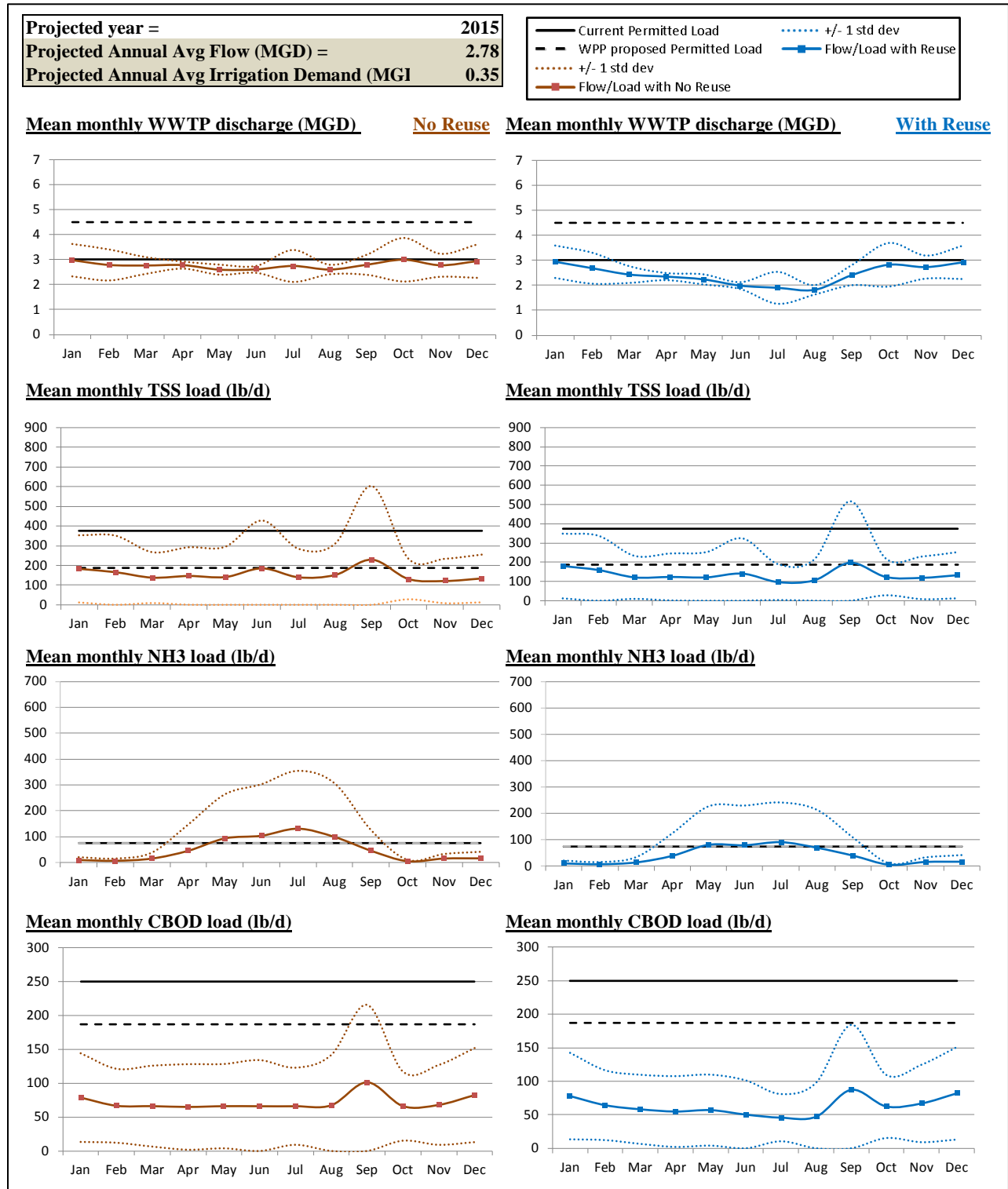


Table 8-3: Summary of project mean monthly flows and nutrient loads for 2015 to 2019 under no reuse and reuse conditions.

	No Reuse				With Reuse			
	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)
AVERAGE Monthly Mean	2.78	155	49	72	2.43	135	39	63
MAX Monthly Mean	3.00	229	131	101	2.94	197	91	87
MIN Monthly Mean	2.60	121	5	65	1.82	96	5	46
WPP proposed permitted load	4.50	187	75	187	4.50	187	75	187
# Months/yr exceeding WPP proposed load	0 mo./yr	1 mo./yr	4 mo./yr	0 mo./yr	0 mo./yr	1 mo./yr	3 mo./yr	0 mo./yr

Observations from 2015 scenario

The projected annual average mean flow is 2.78 mgd and the annual average irrigation demand is 0.35 mgd for 2015 conditions. Without reuse, TSS loads are likely to exceed the WPP proposed loads for about one month out of each year while NH3 loads are likely to exceed four months out of each year. With reuse, TSS loads is likely to exceed the WPP proposed loads one month out of a year while NH3 loads are likely to exceed three months out of a year. Exceedences in NH3 loads under “with reuse” conditions are expected in the summer (May to August) where high average concentrations of ammonia are expected. Neither CBOD loads nor discharge rates are expected to exceed WPP proposed limits for either “with reuse” and “no reuse” conditions for 2015. Because of the relatively low direct reuse rates in this scenario, the resulting load reductions have not yet made significant impact in helping the Kyle WWTP meet the WPP proposed loads.

2020 scenario

Figure 8-10 shows the projected mean monthly flow and nutrient loads for 2020 to 2024 under direct reuse and no reuse conditions. Table 8-4 provides a summary of the mean monthly flows and loads and compares with the WPP proposed nutrient load limits.

Figure 8-10: Projected mean monthly flow and nutrient loads for 2020 to 2024 under direct reuse and no reuse conditions.

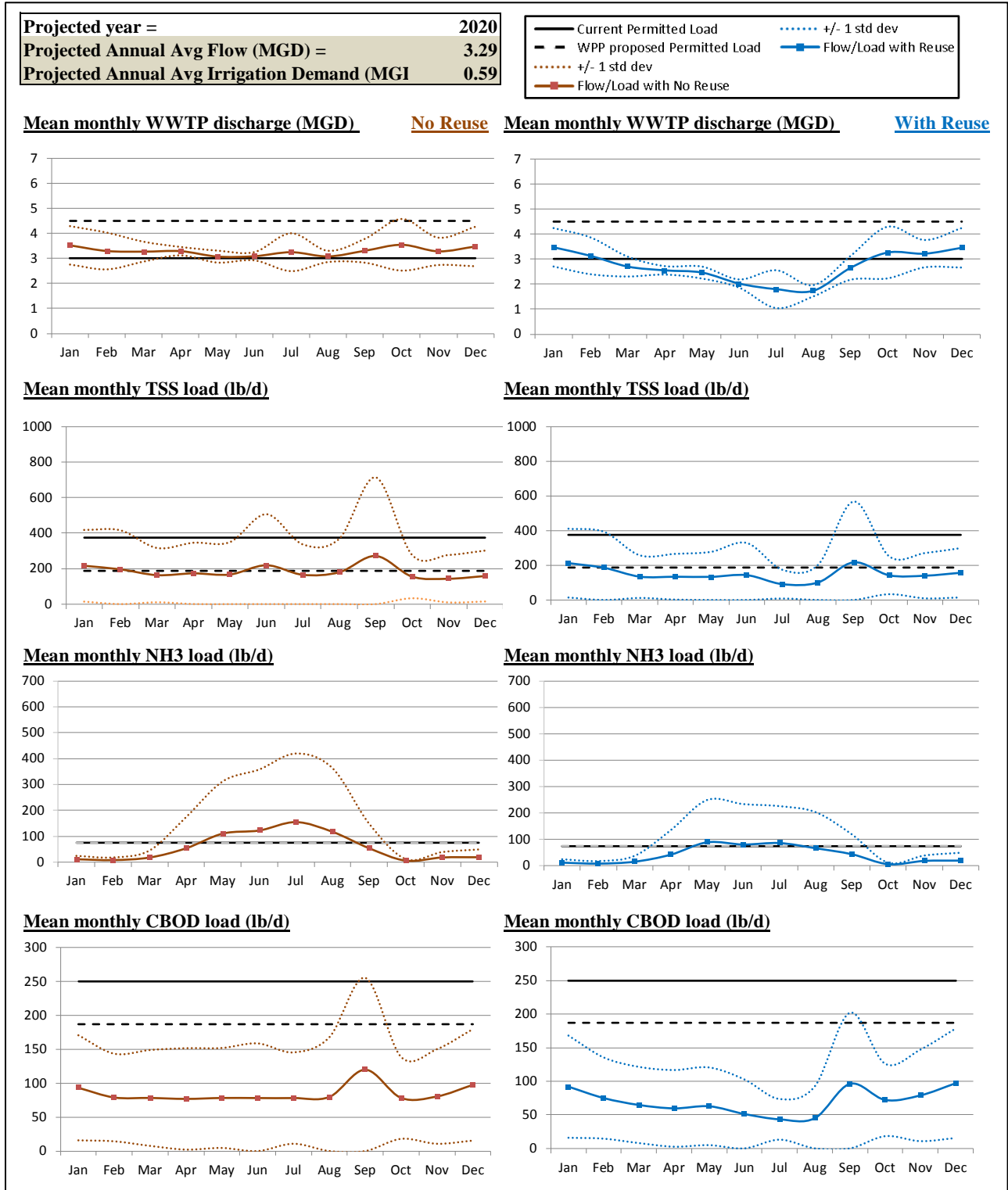


Table 8-4: Summary of project mean monthly flows and nutrient loads for 2020 to 2024 under no reuse and reuse conditions.

	No Reuse				With Reuse			
	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)
AVERAGE Monthly Mean	3.29	184	58	85	2.70	149	40	70
MAX Monthly Mean	3.54	271	155	120	3.47	217	89	97
MIN Monthly Mean	3.07	143	6	77	1.74	91	6	43
WPP proposed permitted load	4.50	187	75	187	4.50	187	75	187
# Months/yr exceeding WPP proposed load	0 mo/yr	4 mo/yr	4 mo/yr	0 mo/yr	0 mo/yr	2 mo/yr	3 mo/yr	0 mo/yr

Observations from 2020 scenario

The projected annual average mean flow is 3.29 mgd and the annual average irrigation demand is 0.59 mgd for 2020 conditions. Without reuse, TSS loads are expected to exceed the WPP proposed loads four months out of a year while NH3 loads are expected to exceed four months out of a year. With reuse, TSS loads are likely to exceed the WPP proposed loads two months out of a year while NH3 loads are likely to exceed three months out of a year. Exceedences in NH3 loads under “with reuse” conditions are more probable in the summer (May to August) where high average concentrations of ammonia are known to occur. Although the number of exceedences for NH3 is the same for both “with reuse” and “no reuse” conditions, the difference in magnitude of the NH3 loads is now significant. The average monthly mean NH3 load for “no reuse” is 58 lbs/d while that for “with reuse” is 40 lb/d - which represents a load reduction of 30%.

Even with direct reuse, exceedences in TSS loads can occur in January when inflows are high but irrigation demands are low, or in September when high average TSS concentrations are known to occur. Neither CBOD loads nor discharge rates are likely to exceed WPP proposed limits for both “with reuse” and “no reuse” conditions for 2020.

2025 scenario

Figure 8-11 shows the projected mean monthly flow and nutrient loads for 2025 to 2029 under direct reuse and no reuse conditions. Table 8-5 provides a summary of the mean monthly flows and loads and compares with the WPP proposed nutrient load limits.

Figure 8-11: Projected mean monthly flow and nutrient loads for 2025 to 2029 under direct reuse and no reuse conditions.

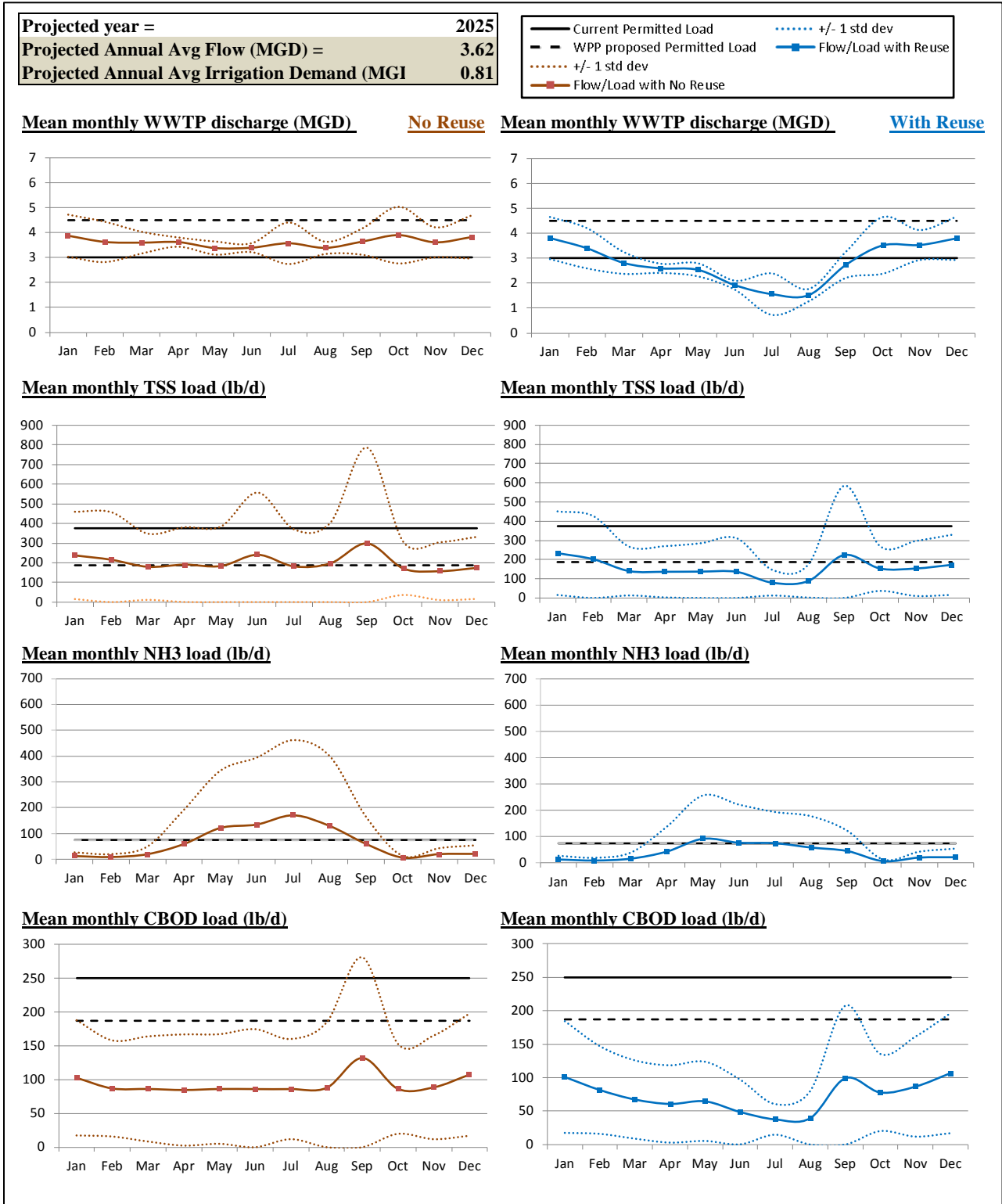


Table 8-5: Summary of project mean monthly flows and nutrient loads for 2025 to 2029 under no reuse and reuse conditions.

	No Reuse				With Reuse			
	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)
AVERAGE Monthly Mean	3.62	202	64	93	2.81	155	39	73
MAX Monthly Mean	3.90	298	171	132	3.81	233	91	107
MIN Monthly Mean	3.38	157	7	85	1.52	79	6	38
WPP proposed permitted load	4.50	187	75	187	4.50	187	75	187
# Months/yr exceeding WPP proposed load	0 mo/yr	6 mo/yr	4 mo/yr	0 mo/yr	0 mo/yr	3 mo/yr	2 mo/yr	0 mo/yr

Observations from 2025 scenario

The projected annual average mean flow is 3.62 mgd and the annual average irrigation demand is 0.81 mgd for 2025 conditions. Without reuse, TSS loads are likely to exceed the WPP proposed loads six months out of a year while NH3 loads are likelihood to exceed four months out of a year. On the other hand, with reuse, TSS loads are expected to exceed the WPP proposed loads three months out of a year while NH3 loads are expected to exceed two months out of a year. Even with direct reuse, exceedences in NH3 loads can still happen in the early summer (May and June) where high average concentrations of ammonia are known to occur. Exceedences in TSS loads under “with reuse” conditions can happen in January and February when inflows are high but irrigation demands or low, or in September when high average TSS concentrations are expected. Neither CBOD loads nor discharge rates are likely to exceed WPP proposed limits for either “with reuse” and “no reuse” conditions for 2025.

2030 scenario

Figure 8-12 shows the projected mean monthly flow and nutrient loads for 2030 to 2034 under direct reuse and no reuse conditions. Table 8-6 provides a summary of the mean monthly flows and loads and compares with the WPP proposed nutrient load limits.

Figure 8-12: Projected mean monthly flow and nutrient loads for 2030 to 2034 under direct reuse and no reuse conditions.

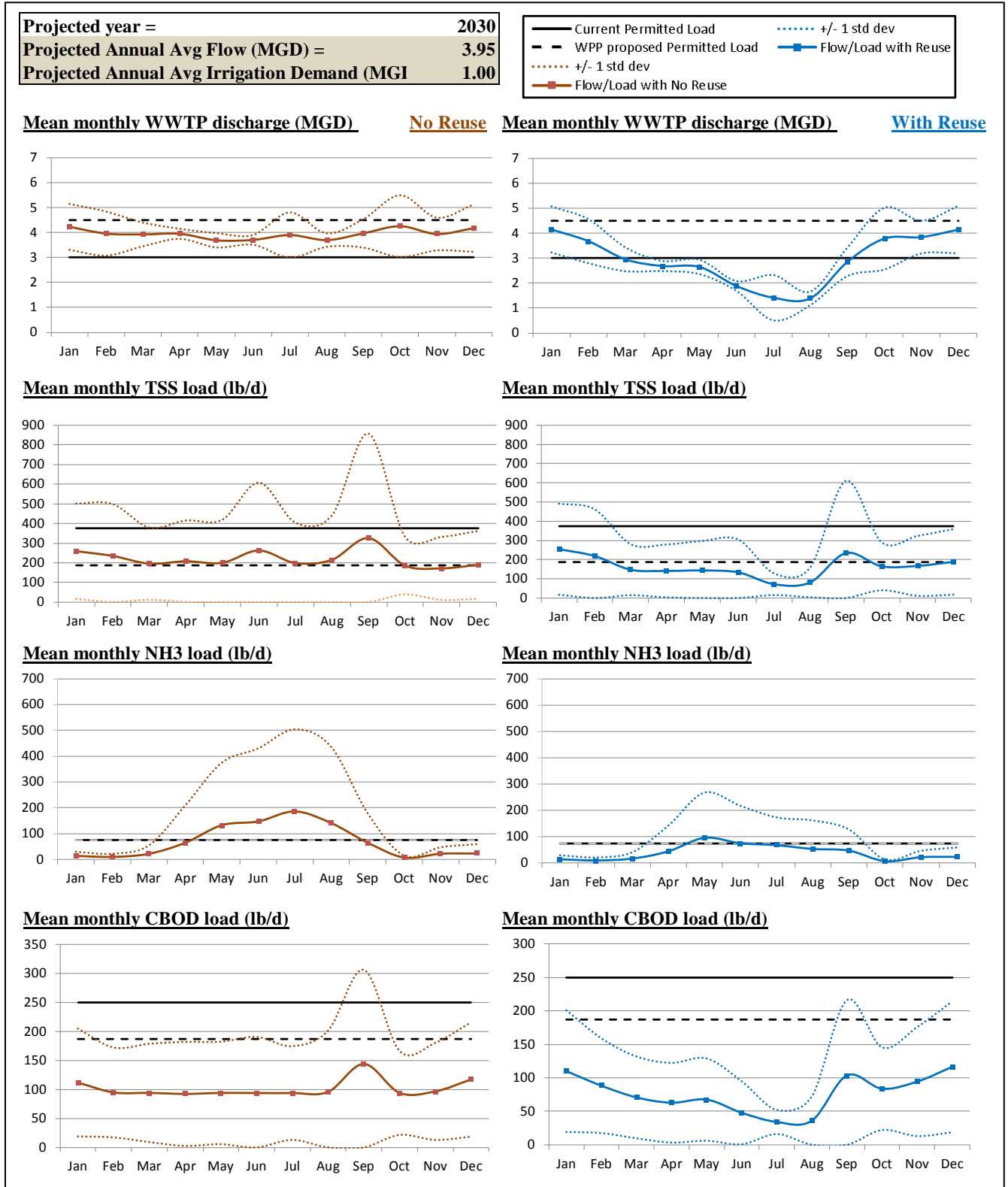


Table 8-6: Summary of project mean monthly flows and nutrient loads for 2030 to 2034 under no reuse and reuse conditions.

	No Reuse				With Reuse			
	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)
AVERAGE Monthly Mean	3.95	220	70	102	2.95	162	39	76
MAX Monthly Mean	4.26	325	186	144	4.15	254	95	116
MIN Monthly Mean	3.69	172	8	92	1.39	72	7	34
WPP proposed permitted load	4.50	187	75	187	4.50	187	75	187
# Months/yr exceeding WPP proposed load	0 mo/yr	10 mo/yr	4 mo/yr	0 mo/yr	0 mo/yr	4 mo/yr	2 mo/yr	0 mo/yr

Observations from 2030 conditions

The projected annual average mean flow is 3.95 mgd and the annual average irrigation demand is 1.00 mgd for 2030 conditions. Without reuse, TSS loads are likely to exceed the WPP proposed loads nine months out of a year while NH3 loads are likely to exceed five months out of a year. On the other hand, with reuse, TSS loads are likely to exceed the WPP proposed loads four months out of a year while NH3 loads are likely to exceed three months out of a year. Exceedences in NH3 loads under “with reuse” conditions are more probable in the early summer (May and June) where high average concentrations of ammonia are known to occur. Exceedences in TSS loads under “with reuse” conditions can occur in December, January and February when inflows are high but irrigation demands are low, or in September when high average TSS concentrations are known to occur. Neither CBOD loads nor discharge rates are likely to exceed WPP proposed limits for both “with reuse” and “no reuse” conditions for 2030.

2035 scenario

Figure 8-13 shows the projected mean monthly flow and nutrient loads for 2035 and after under direct reuse and no reuse conditions. Table 8-7 provides a summary of the mean monthly flows and loads and a comparison with the WPP proposed nutrient load limits.

Figure 8-13: Projected mean monthly flow and nutrient loads for 2035 and after under direct reuse and no reuse conditions.

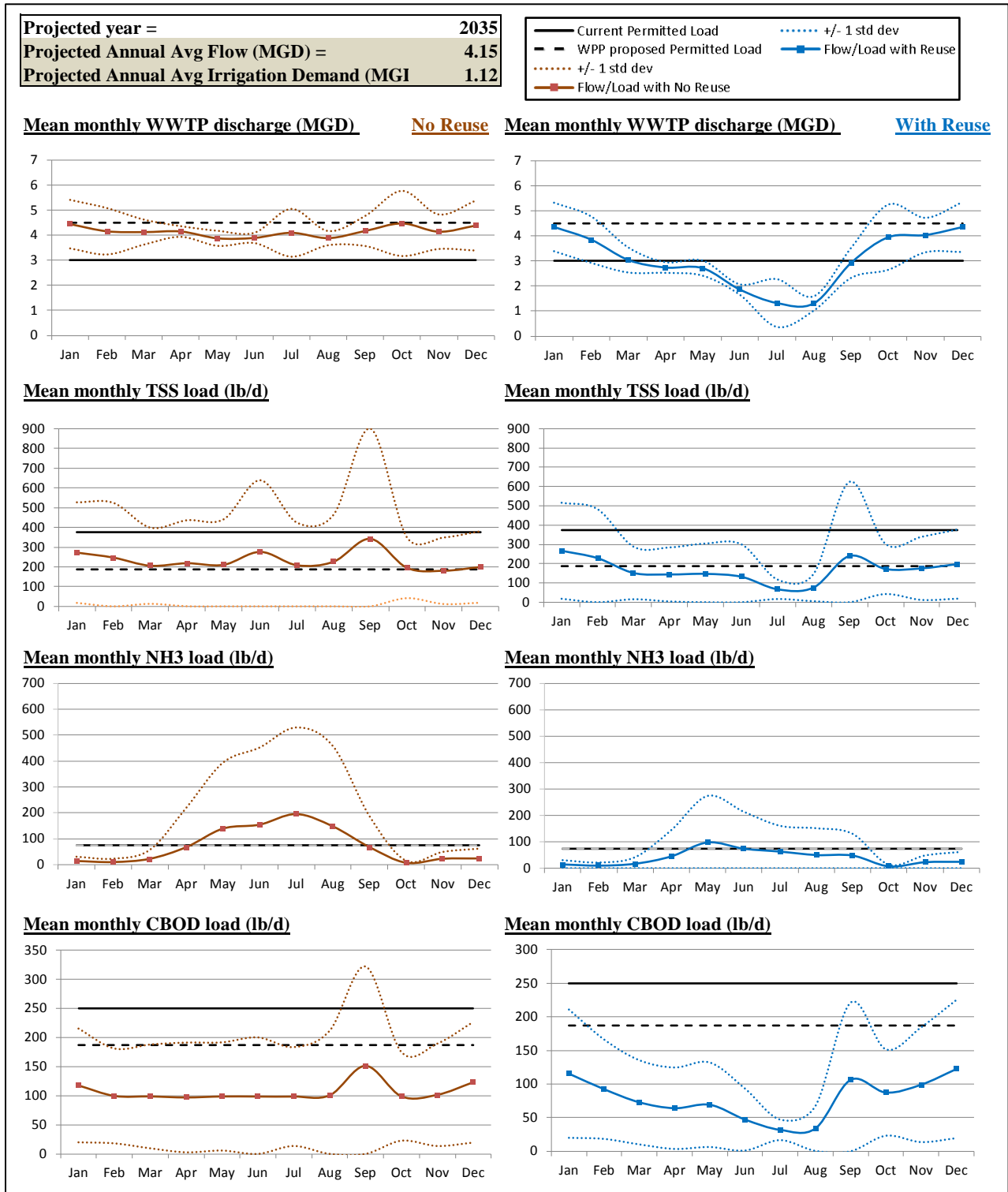


Table 8-7: Summary of project mean monthly flows and nutrient loads for 2035 and after under no reuse and reuse conditions.

	No Reuse				With Reuse			
	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)	Flow (mgd)	TSS load (lb/d)	NH3 load (lb/d)	CBOD load (lb/d)
AVERAGE Monthly Mean	4.15	232	73	107	3.04	167	39	78
MAX Monthly Mean	4.47	342	196	151	4.36	267	98	122
MIN Monthly Mean	3.88	180	8	97	1.31	67	7	32
WPP proposed permitted load	4.50	187	75	187	4.50	187	75	187
# Months/yr exceeding WPP proposed load	0 mth/yr	11 mth/yr	4 mth/yr	0 mth/yr	0 mth/yr	4 mth/yr	1 mth/yr	0 mth/yr

Observations from 2035 conditions

The projected annual average mean flow is 4.15 mgd and the annual average irrigation demand is 1.12 mgd for 2035 conditions. Without reuse, TSS loads are expected to exceed eleven months out of a year, and NH3 loads are expected to exceed four months out of a year. On the other hand, with reuse, TSS loads are expected to exceed the WPP proposed loads four months out of a year while NH3 loads are expected to exceed one month out of a year. The decline in exceedences in NH3 loads under “with reuse” conditions from 2030 to 2035 is due to the increased reuse rates. Exceedences in TSS loads under “with reuse” conditions can occur in December, January and February when inflows are high but irrigation demands are low, or in September when high average TSS concentrations are known to occur. CBOD loads are not likely to exceed WPP proposed limits for either “with reuse” and “no reuse” conditions for 2035.

8.2.4 Discussion

Observed trends in the nutrient load projections

Based on comparison of the projected nutrient loads with the WPP’s proposed load limits, NH3 and TSS effluent loads are more likely to cause concerns than CBOD and discharge from an exceedence stand point. High NH3 effluent loads are expected during the summer months because of the high average concentration of effluent NH3 that have been observed historically. There were two episodes between 2006 and 2011 where NH3 levels in the Kyle WWTP effluent were unusually high. The first episode was from April to Sept, 2006 when NH3 concentrations

averaged 18 mg/L. The second episode was from May to August, 2009 when concentrations averaged at 4.4 mg/L. These observations have the effect of raising the estimated NH₃ concentrations during the summer months. Fortunately, because irrigation demands are higher during the summer than other months, direct reuse is effective in reducing the high summer NH₃ loads. It is observed that as irrigation demands increase with each successive 5-year scenario, the number of months per year that are likely to exceed the WPP proposed NH₃ load limits decreases. To illustrate: in 2015, the expected number of months with NH₃ load exceedences is 3 months/year with direct reuse. In 2035, this number declines to 1 month/year.

Among the new effluent standards proposed by the WPP, TSS may be the most stringent. This is because the average TSS concentrations are presently around 6.7 mg/L in the Kyle WWTP effluent – which is already above the proposed TSS concentration limit of 5 mg/L. The current permitted TSS concentration limit is 15 mg/L. Satisfying the new WPP limits will be challenging in the wet winter months (Dec to Feb) when irrigation demands are low and direct reuse will be less effective.

Current CBOD effluent concentrations from the Kyle WWTP are very low (averaging about 3.1 mg/L) and are unlikely to cause exceedences when permitted limits are changed from current levels of 15 mg/L to the WPP proposed level of 5 mg/L.

The impact of reuse of Kyle WWTP effluent on watershed water quality was evaluated by calculating future nutrient loads discharged into Plum Creek under two conditions: 1) with direct reuse and 2) no reuse. Future loads were computed based on historical nutrient measurements, projected changes in wastewater inflow, and projected changes in irrigation demands around the Kyle for each 5-year interval from 2015 to 2035. The resultant loads under the two conditions were then compared against WPP proposed permitted loads (which are based on the WPP SWAT watershed modeling) to evaluate the effectiveness of direct reuse in meeting future watershed water quality goals.

Based on the projections, NH₃ and TSS effluent loads are most likely to cause concerns under the WPP's proposed nutrient load limits from an exceedence standpoint. High NH₃ effluent loads are expected during the summer months due to the high historical concentrations of observed effluent NH₃ concentrations. Fortunately, because irrigation demands are higher during the summer, direct reuse can be effective in reducing the magnitude of NH₃ loads, and as such can be effective in limiting potential exceedences of WPP proposed limits.

The WPP's proposed TSS limit may be the most stringent among the various proposed limits. This is because even though the current average TSS concentration in the effluent (6.7 mg/L) is much lower than the current permit limit of 15 mg/L, it is higher than the proposed limit (5 mg/L). It was observed that direct reuse can help reduce TSS loads in the summer but may not be effective during the wet winter months (Dec to Feb) when irrigation demands are low.

As mentioned earlier in this report, the key limitation of this study is that it primarily addresses how load reductions proposed by the WPP may be achieved with direct reuse. But load reductions will affect concentrations in the streams in the watershed only if a significant background flow is available to dilute the WWTP discharge. However, since according to the WPP, the northern, upstream section of Plum Creek is intermittent with little background flow

(whether from baseflow or upstream runoff), direct reuse alone may not affect downstream concentrations. Additional investigation using surface runoff simulation results from the Plum Creek WPP SWAT model is recommended for confirmation.

8.2.5 Potential Environmental Effects of the Project

The previous sections describe how potential environmental risks to the aquatic environment of the Site 1 impoundment will be analyzed as part of the process of obtaining an amendment to the city's TPDES discharge permit and how the reduction of WWTP effluent resulting from developing a water reuse system will reduce the nutrient load in the Plum Creek watershed.

The planning level of analysis conducted in this study did not reveal potentially significant environmental effects or risks associated with the project. The potentially significant environmental features of the area, including wetlands and habitat for protected species, will be identified through field surveys during the project design phase in order for the project to be designed to avoid adversely impacting those features.

Potentially significant impacts on public health and safety related to construction will be addressed during the project design with the inclusion of traffic control and worker and public safety plans as part of the construction plans. The project design will also include development of a construction site storm water pollution prevention plan (SWPPP) to minimize the impacts of construction phase erosion on local waterways.

Other potential environmental effects of the project are discussed in the following sections:

In-stream Flow Reduction

The rapid population growth in Kyle has significantly increased the sustained flow of the upper reaches of Plum Creek. Plum Creek is an intermittent stream in which the base flow has been artificially augmented by the increase in the city's wastewater effluent. The city's discharge of treated effluent should not be confused with the condition in many effluent-dominated streams in Texas where treated effluent is a return flow of water diverted within the watershed of the receiving stream.

Instead, the city's effluent creates an artificial base flow in Plum Creek from a potable water supply of groundwater pumping and the importation of surface water from Canyon Lake. In addition to reducing the volume of nutrients discharged to the watershed, diversion of effluent to supply a reclaimed water system could reduce the volume of effluent discharged to Plum Creek. Considering the 2010 Kyle WWTP discharge to Plum Creek as a basis for comparison, a comparison of the projected wastewater discharge and reclaimed water demands indicate that the reclaimed water project would not reduce the instream flow of Plum Creek.

Table 8-8: Kyle WWTP Discharge to Plum Creek

Year	WW Effluent (AF)	Reclaimed Water (AF)	Net Discharge to Plum Creek (AF)	% of 2010 Discharge
2010	2,542.7		2,542.7	100.0%
2015	3,114.0	354.9	2,759.1	108.5%
2020	3,685.3	660.5	3,024.8	119.0%
2025	4,054.9	978.4	3,076.5	121.0%
2030	4,424.6	1,158.1	3,266.5	128.5%
2035	4,648.6	1,325.4	3,323.2	130.7%

Environmental Compliance Measures

Specific environmental regulation compliance measures will be completed during the design and construction phases of the recommended project. These include an environmental information document for state loans, an archeological assessment of the project route, identification of potential habitats for threatened, rare, or endangered species along the project route and a delineation of wetlands and waters of the U.S. However, no studies or detailed assessments have been initiated prior to, or as a result of this feasibility study.

Effects on Regional Water Supply and Water Quality

As discussed in Section 8.2.4, the proposed project has the potential of reducing the total volume of nutrients discharged to Plum Creek. Any effect of the proposed reclaimed water project on water quality in the Guadalupe River watershed would be part of a cumulative effort to reduce nutrient loads. In terms of hydrology, water quality, and hazardous materials impacts, implementation of best management practices (BMPs) would minimize any potential impacts to receiving waters and groundwater. Typical BMPs include scheduling or limiting activities to certain times of the year based on hydrologic considerations, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction in good condition.

The proposed project would provide a reclaimed water supply to municipal, residential, and commercial uses in the study area. The reclaimed water would increase the reliability of supplies for landscape irrigation and industrial cooling. As a reliable alternative water supply, reclaimed water would reduce some of the concerns that surround the potential of future drought conditions. During times of drought, or as area population increases, use of reclaimed water for landscape irrigation would help reduce demand on existing potable water supplies and save that potable water for municipal users.

9 Legal and Institutional Considerations

9.1 Regulatory Considerations

The use of reclaimed water is regulated by the TCEQ under Title 30 of the Texas Administrative Code, 30 TAC §210 (Chapter 210). The regulations provide for the quality criteria, design, and operational requirements for the beneficial use of reclaimed water. The use of reclaimed water requires notification and approval of the TCEQ under Chapter 210, with specific responsibilities assigned to the reclaimed water producer, the reclaimed water provider, and the reclaimed water user. The specific responsibilities of each party as designated by the Chapter 210 regulations are summarized in the following points.

The responsibilities of the reclaimed water producer include ensuring that the quality of the reclaimed water that leaves the treatment process meets the minimum quality prescribed by state regulations, and for sampling, analyzing, and reporting the quality of reclaimed water produced.

The reclaimed water provider is responsible for the delivery of reclaimed water to the user that meets the minimum quality prescribed by state regulations and for maintaining records of the volume and quality of reclaimed water delivered to the user. The reclaimed water provider must notify the TCEQ of proposed direct reuse and obtain written approval to provide reclaimed water. Minimum notification requirements include a detailed description of the intended use, a clear indication of the means for regulatory compliance, evidence of the provider's authority to terminate noncompliant reclaimed water use by contract or other binding agreement, an operation and maintenance plan, and a description of the reclaimed water quality.

The reclaimed water user is responsible for the proper use of reclaimed water.

9.1.1 Record Keeping

The reclaimed water provider is responsible for maintaining records associated with the delivery, use, and quality of reclaimed water. The reclaimed water provider must maintain records of notifications to TCEQ of reclaimed water projects, copies of contracts with each user, volumes of reclaimed water delivered, and analyses of reclaimed water quality. The reclaimed water provider must submit monthly reports to TCEQ the volume of reclaimed water delivered to a user or provider and the quality of water delivered.

With the existing reclaimed water system owned and operated by Plum Creek Golf Course (PCGC), the City of Kyle is the reclaimed water producer and PCGC is both the provider and user.

9.1.2 Type I Reclaimed Water Use

The Chapter 210 rules regulate the quality, place and manner of use of effluent from wastewater treatment facilities to protect public health by minimizing risks of infection and disease transmission. Depending on the potential for human contact, Texas regulations provide for two

types of reclaimed water. Type I reclaimed water can be used where human contact with the reclaimed water is likely. The potential uses for Type I reclaimed water include (30 TAC §210.32):

- Residential irrigation, including landscape irrigation at individual homes.
- Urban uses, including irrigation of public parks, golf courses with unrestricted public access, school yards, or athletic fields.
- Use of reclaimed water for fire protection, either in internal sprinkler systems or external fire hydrants.
- Irrigation of food crops where the applied reclaimed water may have direct contact with the edible part of the crop, unless the food crop undergoes a pasteurization process.
- Irrigation of pastures for milking animals.
- Maintenance of impoundments or natural water bodies where recreational activities, such as wading or fishing, are anticipated even though the water body was not specifically designed for such a use.
- Toilet or urinal flush water.
- Other similar activities where there is the potential for unintentional human exposure.

9.1.3 Type II Reclaimed Water Use

Type II reclaimed water can be used where human contact with the reclaimed water is unlikely. The potential uses for Type II reclaimed water include (30 TAC §210.32):

- Irrigation of sod farms, silviculture, limited access highway rights of way, and other areas where human access is restricted or unlikely to occur. The restriction of access to areas under irrigation with reclaimed water could include the following:
 - The irrigation site is considered to be remote.
 - The irrigation site is bordered by walls or fences and access to the site is controlled by the owner/operator of the irrigation site.
 - The irrigation site is not used by the public during the times when irrigation operations are in progress. Such sites may include golf courses, cemeteries, and landscaped areas surrounding commercial or industrial complexes. The "syrringing" or "wetting" of greens and tees on golf courses shall be allowable under Type II so long as the "syrringing" is done with hand-held hoses as opposed to automatic irrigation equipment. The public need not be excluded from areas where irrigation is not taking place. For example, irrigation of golf course fairways at night would not prohibit the use of clubhouse or other facilities located a sufficient distance from the irrigation.
- The irrigation site is restricted from public access by local ordinance or law with specific standards to achieve such a purpose.

- Irrigation of food crops where the reclaimed water is not likely to have direct contact with the edible part of the crop, or where the food crop undergoes pasteurization prior to distribution for consumption.
- Irrigation of animal feed crops other than pasture for milking animals.
- Maintenance of impoundments or natural water bodies where direct human contact is not likely.
- Soil compaction or dust control in construction areas where application procedures minimize aerosol drift to public areas.
- Cooling tower makeup water. Use for cooling towers which produce significant aerosols adjacent to public access areas may have special requirements.
- Irrigation or other non-potable uses of reclaimed water at a wastewater treatment facility.
- Type I reclaimed water may be utilized for any of the Type II uses identified above.

9.1.4 Reclaimed Water Quality Standards

The following summarizes the quality parameters contained in 30 TAC §210.33.

	Type I (30-day average)	Type II (30-day average)
BOD5 or CBOD5	5 mg/l	20 mg/l
Turbidity	3 NTU	15 mg/l
Fecal Coliform	20 CFU/100 ml*	200 CFU/100 ml*
Fecal Coliform (not to exceed)	100 CFU/100 ml**	800 CFU/100 ml**
	* geometric mean	** single grab sample

9.2 Reclaimed Water System Operations

The design and operation of a reclaimed water system is regulated through Design Criteria for Wastewater System (30 TAC§217) and Use of Reclaimed Water (30 TAC §210). The design, construction and operation of a reclaimed water conveyance system is addressed through 30 TAC§217.51. Design criteria for reclaimed water systems (§217.69) requires signs and color coding of pipes and appurtenances to indicate the presence of non-potable water and requires a minimum separation distance of 4.0 feet from potable water pipes. Pipe for non-potable systems are required to have a minimum pressure rating of 150 psi.

Purple pipe is required for all reclaimed water piping as an element of the city’s cross-connection control program. Chapter 210 regulations require that hose bibs, faucets, and exposed piping (interior and outside) used for reclaimed water must be painted purple and labeled as non-potable. However, it is typically not necessary to replace buried piping that will be converted from potable to non-potable water provided all visible features, such as irrigation heads, and valve boxes, are changed to purple (Centeno, 2012).

Runoff of reclaimed water to waters of the state is to be prevented by the reclaimed water user (30 TAC §210.24), primarily by avoiding excessive irrigation and avoiding storage in ponds directly influenced by storm water runoff. Applying reclaimed water at the proper rate for the

existing soil and atmospheric conditions is the principal means of avoiding runoff from irrigated sites. Maintenance of the irrigation system to correct sprinkler head and controller malfunctions is also an essential part of avoiding runoff from irrigated sites.

9.2.1 Non-Potable Water

The proposed storage of reclaimed water in the Plum Creek Site 1 impoundment is feasible under current regulations, but would require applications to amend certain permitted conditions and uses. Under current regulations (30 TAC§210.22e), ponds for storage of reclaimed water must be located to prevent discharges to waters of the state by diverting runoff away from the pond. Otherwise, the discharge must be permitted through an amendment of the TPDES permit. Amendment of the city's TPDES permit may be considered a major amendment and could require biomonitoring as part of the application process to identify potential changes in receiving water quality.

For any water to be withdrawn from Plum Creek Site 1 and used for irrigation, the use must be changed from recreational use to municipal use through application to the TCEQ. Under current regulations, storing reclaimed water in Plum Creek Site 1 will change the designation of the water from reclaimed water to raw water.

9.3 Water Rights Considerations

As the population of the state and nation grows, wastewater effluent makes up an increasing percentage of the water in streams and rivers. Some estimates suggest that as much as sixty percent of the water that is distributed through a municipal water system for use as potable water is returned to Texas' streams and rivers as wastewater effluent (TWCA, 2004). These return flows can become part of the water to be appropriated from the watercourse or otherwise considered to be an important part of maintaining the aquatic environment. To appreciate the relationship between water reuse and water rights requires a review of some certain aspects of water law in Texas. It is important to note that once water is returned to a watercourse, it is considered waters of the state and subject to appropriation by the state.

The regulatory definition of reuse is (30 TAC §297.1) is *the authorized use for one or more beneficial purposes of use of water that remains unconsumed after the water is used for the original purpose of use and before that water is either disposed of or discharged or otherwise allowed to flow into a watercourse, lake, or other body of state-owned water*. Reuse projects are defined in terms of either indirect or direct reuse. Direct reuse is known as "flange-to-flange" reuse in that treated effluent is drawn from the plant before it is discharged to a watercourse. Indirect reuse is when treated effluent is captured downstream from the point at which it was discharged to a watercourse. The diversion and indirect reuse of return flows utilizing from surface water sources is considered to be a new appropriation of state water. The indirect reuse of return flows that are the product of groundwater has not been considered to be a new appropriation.

The fundamental difference between direct and indirect water reuse in Texas is that direct reuse does not involve retrieving effluent from a stream or waterway, and thus avoids a new state

surface water permitting process. Indirect reuse, on the other hand, does involve a permitting process that may consider the potential negative impacts on downstream water rights holders whose water rights may be based on an assumed reliability or continuation of return flows. Direct reuse, however, involves diversion of effluent for beneficial reuse without being released to a stream or waterway. The Texas Water Code provides the basis for utilities to reuse water without additional water rights permitting until that water is discharged from the wastewater treatment plants:

Except as specifically provided otherwise in the water right, water appropriated under a permit, certified filing, or certificate of adjudication may, prior to its release into a watercourse or stream, be beneficially used and reused by the holder of a permit, certified filing, or certificate of adjudication for the purposes and locations of use provided in the permit, certified filing, or certificate of adjudication. Once water has been diverted under a permit, certified filing, or certificate of adjudication and then returned to a watercourse or stream, however, it is considered surplus water and therefore subject to reservation for instream uses or beneficial inflows or to appropriation by others unless expressly provided otherwise in the permit, certified filing, or certificate of adjudication. [Texas Water Code 30 §11.046(c)]

But if the underlying water right contains limitations on the return of unused water, the reuse of water, either by direct or indirect reuse, can be limited (30 TAC§297.45(a)).

9.3.1 Return Flows and Environmental Flows

Return flows are the portion of diverted waters of the state that are not consumed and are returned to a watercourse. Historically, the regulation of return flows has been limited to water quality standards established by the state. But since the passage of Senate Bill 1, the role of return flows in the aquatic environment of a watershed has become a consideration in the indirect reuse permitting process. Presently, since no surface water permitting process is required for direct reuse projects, environmental flows are not a regulatory consideration in defining direct reuse projects. However, the passage of Senate Bill 3 has established processes for each river basin in Texas to develop environmental flow standards specifying flow requirements to maintain a sound ecological environment at various locations within the river basins, as well as estuarine flow requirements for Texas' coastal estuarine systems. Such standards have been developed and adopted for the Sabine, Neches, Trinity, San Jacinto, Colorado, Lavaca, Guadalupe, and San Antonio river basins, and are in the process of being developed elsewhere.

The development of such environmental flow standards has largely been based on statistical analyses of historic hydrologic data in the component watersheds comprising these river basins. Depending upon the watershed and the process employed by the stakeholders and their scientific experts, the historic period of streamflow analyzed may be from conditions in the early 1900's through recent hydrologic streamflow conditions. It is important to recognize that these historic flows include varying levels of historic return flows. As such, the specified environmental flow criteria within the standard may include an implicit assumption of some level of return flows. Thus, the adopted environmental flow criteria may potentially impact the availability and reliability of indirect reuse water in a particular watershed.

9.4 Interagency Cooperation

A summary of the groundwater regulations in the Kyle area was prepared by the BSEACD staff (Appendix M). This technical memorandum provides an overview of and discussion of requirements and their potential to affect the implementation of the project.

Through the enabling legislation (SB 289, 55th Texas Legislature), the Plum Creek Conservation District (PCCD) was created by the Texas Legislature in 1957 for managing flood control in Hays and Caldwell Counties. PCCD is responsible for the operation, maintenance, and management of the NRCS dam for Plum Creek Site 1. Flood control dams built within the boundaries of the district with funding from the NRCS are maintained by PCCD using a \$0.02 tax levy on property within the district. The purpose and status of this feasibility study was presented to the PCCD board of directors on May 15, 2012. While the PCCD is not granted jurisdiction over water impounded at Site 1, its cooperation is needed by the city for development of a management plan that will allow for adjustment of the storage level to accommodate maintenance of the dam.

The water rights to the impoundment were acquired by the Plum Creek HOA, Inc. in December 2004 under Water Right No. 5839 (Appendix I). Storage of reclaimed water at the Site 1 impoundment begins with addressing any of the PCCD and NRCS regarding operation and maintenance of the dam. Any discharge of reclaimed water to the impoundment under an amendment to the city's TPDES discharge permit will provide a constant level for the impoundment at or below the elevation for conservation storage. Access to water stored in the impoundment for irrigation or any other municipal use will require that the water right to the impoundment be obtained by the city and amended to allow the stored water to be used for municipal uses.

10 Reclaimed Water Utility Implementation Plan

The objective of this study is to evaluate the feasibility of implementing a reclaimed water utility for public and private uses. Development of an expanded reclaimed water system will involve the development of viable alternatives for capital funding, implementation of appropriate policies and procedures and adoption or modification of existing ordinances. The development of a reclaimed water utility will build on the experience of the Plum Creek Golf Course system, but will necessarily develop an organization and process needed to establish the management, operation, maintenance, and capacity for expanding the system to become a reclaimed water utility.

A formal commitment by the City of Kyle to pay for the construction and operation of a reclaimed water system cannot be made without adoption of a plan for financing and construction is incorporated into the city's capital improvements plan. A firm plan for funding the construction costs has not yet been developed by the city, but a complete, detailed financial capability analysis will be provided to Reclamation and TWDB prior in advance of securing federal or state participation in the proposed project.

This section presents a summary of potential funding opportunities for developing a reclaimed water utility, and a discussion of the administrative issues to be addressed as part of reclaimed water implementation. Implementation of the reclaimed water utility can occur in phases to take advantage of the full capacity of the existing system and to allow time for the ownership and operation of the system to transition from a single user to a multiple user system. The actual scope and timing of each phase will depend on development of irrigation facilities to use the reclaimed water and the availability of funding for construction of the necessary infrastructure.

10.1 Summary of Funding Opportunities

The terms "financial" and "economic" analysis are often used interchangeably when discussing project implementation. However, the terms describe very different aspects of project implementation in that a project can be economically viable, but due to lack of funds, financially infeasible. Economic analysis refers to the evaluation on a societal level of costs and benefits of a project. When benefits equal or exceed costs for a project, the project is deemed economically viable. To be financially viable, a project must have the funds necessary for implementation including construction, operation and maintenance (O&M), and recurring costs.

This summary of funding opportunities is intended to address the financial viability of a reclaimed water system by identifying and describing funding sources that can assist in funding the implementation of the project. It should be noted that timing is a significant factor when seeking multiple funding sources. Funding sources may not have available funds or the application dates may occur before a project has the necessary information available to submit an application.

This section summarizes the major funding sources with potential for application in implementing recycled water projects. The local, state, and federal government funding mechanisms for reclaimed water projects are summarized below.

Project funding mechanisms for capital projects typically involve:

- Cash (collected as user fees or general revenue)
- Bonds and Certificates of Obligation
- State Revolving Fund (Loans)
- Grants

These types of funding mechanisms are also applicable to reclaimed water projects. A brief description of these types of funding mechanisms is provided below.

Cash: Cash includes revenues from operations and ad valorem taxes plus interest income minus operating expenses and debt service charges. The sources of revenues could include utility service charges and property taxes.

Bonds and Certificates of Obligation: There are two types of bonds available to support reclaimed water projects. Revenue bonds are those funded by the service fees and charges paid by the Kyle utility customers. General obligation bonds that are guaranteed by the property taxing authority of the city are another common debt instrument. Under Chapter 271 of the Local Government Code, cities are authorized to issue certificates of obligation (CO) that are guaranteed by the taxing authority of the city.

Loans: Loans are available from a variety of sources including the state Clean Water Revolving Fund (CWSRF) and the Water Infrastructure Fund (WIF). SRF loans are administered by the Texas Water Development Board and are intended to fund a variety of projects. SRF programs can offer low interest loans, as well as refinancing of existing debt under certain conditions.

Grants: Grants are typically money from governmental agencies for specific projects and require no repayment.

10.1.1 Potential State Funding Mechanisms

The following sections describe specific state programs that may be available for implementing a reclaimed water system.

Texas Water Development Board (TWDB)

Clean Water State Revolving Fund

The Clean Water State Revolving Fund provides loans at below-market interest rates and principal forgiveness for planning, designing, and constructing wastewater infrastructure.

Eligible applicants are wastewater treatment management agencies, including cities, commissions, counties, and river authorities that have authority to dispose of sewage.

The Clean Water State Revolving Fund presently offers fixed rate loans at subsidized interest rates. The maximum repayment period for a loan is 30 years from the completion of project construction. A cost-recovery loan origination fee of 1.85 percent is imposed to cover administrative costs of operating the Clean Water State Revolving Fund. Applicants have the option to finance the origination fee in their loan. Individual entities will be limited to funding in an amount not to exceed 15 percent of the total funds available.

Prospective loan applicants submit project information to TWDB that describes their existing wastewater facilities, facility needs, the nature of the project being considered, and project cost estimates. This information is used to rate each proposed project and place prospective projects in priority order on the project priority list in the Intended Use Plan. A fundable projects list is established, and available funds are distributed in accordance with the funding order specified in the Intended Use Plan. All applicants on the fundable projects list will be notified and invited to submit complete applications within three months of the date of the invitation letter. All applicants are encouraged to schedule a preapplication conference that will guide them through the Clean Water State Revolving Fund application process. The fundable projects list is revised as projects decline or funding becomes available. Invitations are then sent to the next eligible applicant on the list.

Water Infrastructure Fund (WIF)

Projects must be specifically recommended water management strategies in the most recent TWDB approved regional water plan or approved State Water Plan. A semi-annual priority rating process applies. Loans for planning, design, and construction can be funded through the WIF. All loans through the WIF are offered at a subsidized interest rate that was most recently 100 basis points below the TWDB's cost of funds. Repayment periods are a maximum of 20 years.

State Loan Program Texas Water Development Fund II (DFund)

The DFund can be used for planning, acquisition and construction of water related infrastructure, including water supply, wastewater treatment, stormwater and nonpoint source pollution control, flood control, reservoir construction, storage acquisition, and agricultural water conservation projects, and municipal solid waste facilities. This is essentially a pure state loan program that does not receive Federal subsidies, and is the more streamlined of the agency programs. The interest rate on a Texas Water Development Fund loan varies depending on market conditions. Currently, the lending rate scales are set 0.35 percent above the TWDB's borrowing cost.

Edwards Aquifer Authority (EAA)

Conservation Grants

The Authority's Groundwater Conservation Grant Program, introduced in 2009, is an annual program to improve water use efficiency across the region. Through this program, municipal Edwards Aquifer permit holders can apply to the Authority for grant funding to cover up to half the projected costs of qualified conservation programs and Best Management Practices (BMPs)

that result in savings of Edwards groundwater. Funding has been limited to about \$300,000 per year.

U.S. Bureau of Reclamation (Reclamation)

Reclamation Wastewater and Groundwater Study and Facilities (Title XVI)

Reclamation provides funding for both the planning and construction of water recycling projects. Planning funds may be made available for either appraisal or feasibility level study efforts. Currently, Reclamation funds for water recycling and reuse are appropriated under the authority of the Reclamation Wastewater and Groundwater Study and Facilities Act of 1992 (Title XVI of Public Law 102-575 as amended). Reclamation funding for Title XVI is subject to the availability of congressionally appropriated funds. Generally, Title XVI authorizes the Federal government to fund up to 25 percent of the capital cost of authorized water recycling projects, up to a maximum of \$20 million per project.

Federal construction funds are provided only for projects specifically authorized by Congress pursuant to the various sections of Title XVI. Reclamation makes funding recommendations on construction of authorized projects in the President's annual budget request to Congress. Projects not yet authorized for construction require specific congressional authorization before Congress can appropriate funds through the Title XVI program.

Before Congress will authorize a project that meets the definition in Title XVI, the following prerequisites must be met:

- A feasibility report that complies with the provision of Title XVI must be completed by Reclamation or the non-Federal project sponsor.
- The Secretary of Interior has determined that the non-Federal project sponsor is financially capable of funding its share of the project costs.
- Project compliance with the National Environmental Policy Act and other environmental laws.
- The Secretary of Interior has approved a cost-sharing agreement with the non-Federal project sponsor that commits the non-Federal project sponsor to funding its proportionate share of the project construction costs on an annual basis.

Reclamation does not make recommendations to Congress on Title XVI project authorizations. Project sponsors must work with their local Congressional delegation to receive project authorization. When and if a project is authorized, project sponsors will be eligible to receive competitive grants under the WaterSMART program, contingent upon appropriations. Project sponsors should coordinate with their local Reclamation office to find out about the status of program funding.

Depending on the number of funding requests, a delay of several years may be expected due to the Congressional pace and schedule. Continuation of funding from one fiscal year to the next may also be an issue as it is at the discretion of Congress. Also, due to limited budgets, not all projects may receive a full 25 percent federal participation. In accordance with Title XVI and other federal laws, priority will be given by Reclamation to projects that:

- reduce, postpone, or eliminate development of new or expanded water supplies;
- reduce or eliminate the use of existing diversions from natural watercourses;
- reduce the demand on existing federal water supply facilities;
- improve surface or groundwater quality, or the quality of effluent discharges, except where the purpose is to meet surface discharge requirements;
- help fulfill Reclamation's legal and contractual water supply obligations;
- serve the federal environmental interests in restoring and enhancing habitats and providing water for federally threatened and endangered species;
- promote and apply a regional or watershed perspective;
- serve a small, rural, or economically disadvantaged community; and
- provide significant economic benefits.

10.2 Project Implementation Considerations

This section discusses the actions necessary to develop and implement a reclaimed water utility. The successful implementation of a reclaimed water utility in Kyle can be measured in terms of:

- Expansion of the reclaimed water customer base
- Public support
- Political support
- Enhancement of public and private parks
- Reduced growth in demand for surface water or water from the HCPUA
- Positive return on investment

The interdependence of these criteria is such that the failure of a reclaimed water project in any one area could negatively impact the successful implementation of a project. In characterizing the successful implementation of a reclaimed water project, it could be said that a reclaimed water project should have:

1. A growing demand for reclaimed water service within the limits of the transmission and distribution system.

2. Public and political acceptance and support of the importance of irrigation for public and private recreational facilities and public rights-of-way, the planned reclaimed water facilities, water quality parameters, and irrigation procedures.
3. Public acceptance of the capability of the City of Kyle to successfully build and operate the project.
4. A well-defined project purpose of enhancing the city's parklands during cycles of normal weather patterns and drought cycles, minimizing potable water use, and reducing the nutrient load into the Plum Creek watershed.
5. Success in obtaining capital funding for construction.
6. Long-term project performance that meets or exceeds expectations.

10.2.1 Reclaimed Water System Ownership, Management, and Operation

The following sections describe recommended administrative actions that are necessary for the implementation of the proposed reclaimed water project.

System Ownership

Since the golf course is a significant user of reclaimed water, it will be a key customer of a publicly owned system. A change in ownership of the reclaimed water system would establish the underlying value of the public benefit afforded customers of both the city and the Plum Creek Golf Course as a benefit to taxpayers by providing improved recreational facilities and as a water resource management strategy. Using a typical municipal utility arrangement, extensions of the reclaimed water system would be accomplished through capital improvements and developer installed infrastructure that is dedicated to the city for maintenance.

Wastewater Treatment Plant Monitoring Program

With the current design and loading conditions, effluent from the Kyle WWTP can be used only as Type II reclaimed water in areas where public contact is unlikely. A continuing problem with the buildup of solids and trash in the reclaimed water wet well should be addressed, possibly through improved influent screening and wet well recirculation. Additional water quality monitoring of the Kyle WWTP effluent and Plum Creek Site 1 impoundment water quality will provide the background data for an application to TCEQ to amend the city's TPDES discharge permit to allow discharge of effluent to the impoundment.

Chapter 210 Reclaimed Water Use Notification

The city is presently authorized under Chapter 210 to deliver Type II reclaimed water to the Plum Creek Golf Course at the city's wastewater treatment plant. State regulations (30 TAC §210) require notification and approval by the TCEQ for the use of reclaimed water. The Chapter 210 regulations assign specific responsibilities to the reclaimed water producer, the reclaimed water provider, and the reclaimed water user. The specific responsibilities of each party as designated by the Chapter 210 regulations are summarized in the following points.

- The responsibilities of the reclaimed water producer include ensuring that the quality of the reclaimed water that leaves the treatment processes meets the minimum quality prescribed by state regulations, and for sampling, analyzing, and reporting the quality of reclaimed water produced.
- The reclaimed water provider is responsible for the delivery of reclaimed water to the user that meets the minimum quality prescribed by state regulations and for maintaining records of the volume and quality of reclaimed water delivered to the user.
- The reclaimed water user is responsible for the proper use of reclaimed water.

Use of Plum Creek Site 1 for storage involves changes in regulatory requirements between the Kyle WWTP and the end user. Chapter 210 regulations apply to the movement of reclaimed water from the WWTP to the point that it is discharged to the reservoir. With a discharge to waters of the state at the reservoir that would be permitted through an amendment to the city's TPDES discharge permit, the water would no longer be regulated under Chapter 210. Barring changes to state regulations between this study and actual implementation, water withdrawn from the reservoir is then simply be non-potable water instead of reclaimed water.

10.2.2 Water Rights Permitting - Plum Creek Site 1

The storage of non-potable water in the Plum Creek Site 1 impoundment depends on successfully converting the impoundment from domestic and livestock use to municipal use. All water below the conservation pool level would become available for municipal uses, including irrigation. Water rights to the impoundment (Water Right No. 5839) were acquired by Plum Creek HOA, Inc. in December 2004. Amendment of the existing water right would begin with the submittal of an *Application to Amend Water Right* (TCEQ Form 10201). The application would include a description of the source, a water budget that includes water added and withdrawn from the impoundment and evaporative losses.

Securing a permit to use water stored at Plum Creek Site 1 would require that the existing water right owned by Plum Creek HOA (WR No. 5839) be amended for the volume of reclaimed water to be stored as well as a change from recreational and livestock to municipal use. Reclaimed water would be stored at Site 1 and used for irrigation. Runoff from the watershed would be allowed to pass through the Site 1 reservoir and be discharged through the principal spillway. While this concept demonstrates that downstream water rights holders would not be adversely affected by the granting of water rights for irrigation using Site 1, the water rights permitting process will afford an opportunity for all downstream water rights holders to participate in the permitting process and to potentially object to TCEQ granting irrigation water rights in the use of Site 1.

10.2.3 TPDES Discharge Permit

In addition to amending the water rights to the Plum Creek Site 1 impoundment, the city's wastewater discharge permit must be amended to allow an effluent discharge at a location other than the existing outfall location on Plum Creek. The amended permit will specify both the effluent quality and maximum quantity that can be discharged to Plum Creek Site 1.

The city's existing discharge permit (TPDES No. TX 0119466) authorizes the city to discharge wastewater from the WWTP at a single specific location defined in the permit. Storage of reclaimed water at Site 1 would require permitting of an alternate outfall location. The process for obtaining a major permit amendment is outlined in the following list:

1. Contact TCEQ staff well in advance of submitting an application for a major amendment to an existing permit.

This is not a requirement, but is highly recommended for major changes to existing permitted facilities. Staff will assist in defining the specific type of permit needed as well as the specific information needed for the permit application package.

2. Determine if the water body receiving the discharge is on the Texas Clean Water Act Section 303(d) List.

The Texas Water Quality Inventory and 303(d) List describe the status of the state's waters on historical surface and groundwater quality data and identify water bodies that are not meeting standards set for their use (the List).

3. Complete and submit a permit application package (one original and three copies) at least 330 days before the proposed discharge begins or as soon as possible for new or amended discharges.

The following forms and reports are needed to complete the permit application package:

- a. Domestic Administrative Report

The report should include the applicable sections, checklist, and the appropriate signatures. The appropriate permit application fees are also required.

- b. Domestic Technical Report

The technical report should include applicable sections and worksheets.

- c. Core Data Form

This form presents basic information about the owner, the operator and the site.

Upon receipt of the application, TCEQ will conduct an administrative and technical review.

1. Administrative Review

TCEQ staff will verify that the application is complete and the administrative portion of the application includes the appropriate information. If not, a Notice of Deficiency letter will be issued describing the information is needed by a certain date. If deficiencies are not addressed within the specified time, the application may be returned.

The Notice of Receipt of Application and Intent to Obtain Permit or NORI is the first notice to be published by the applicant. It is published only after the application is declared administratively complete.

2. Technical Review

The technical aspects of the application will be reviewed and evaluated. If the application is declared technically complete, TCEQ staff will proceed with preparing a draft permit, technical summary or fact sheet for the application and public notice. The Notice of Application and Preliminary Decision or NAPD is the second notice to be published by the applicant, but only after technical review of the application is complete and TCEQ staff has made a preliminary decision to issue the draft permit.

3. Comments from the Applicant

As the applicant, the city will be given an opportunity to review and provide comments on the draft permit. Certain permits are sent to EPA for their review and approval after comments from the applicant are resolved. The draft permit is then filed with the TCEQ Office of the Chief Clerk and instructions on the second public notice are mailed to the applicant.

The applicant must publish notice in a local and widely distributed newspaper and make a copy of the application and draft permit available in a public place. The public notice informs the public that the TCEQ has prepared a draft wastewater permit and provides instructions for commenting on the application. The public may provide comments or request a public meeting or request a public hearing on the application.

4. Public Comments

Comments on the application and draft permit are considered by the TCEQ and may, upon request, conduct a public meeting. The TCEQ staff will prepare a Response to Comments that addresses all of the public comments received during the comment period on the application and draft permit. The application may also be referred by the Commission for a public hearing if requested by affected parties.

5. Final Action on the Application

The commission or TCEQ may issue the draft permit or revise the draft permit based on public comments or recommendations from the public hearing.

10.3 Administrative Framework

Implementing the proposed project will involve the development of certain policies or amendment of ordinances in order to provide the administrative framework for a project. It will also require a clear definition of, not only the ownership of the system, but also the responsibilities for management of the system development, construction and operation.

10.3.1 Policies and Procedures

Developing a reclaimed water or non-potable water utility requires a number of policies and procedures be implemented by the city to ensure the integrity of the system and to protect the city's potable water system. These policies and procedures should provide guidance for the installation, operation and maintenance of both city-owned facilities and customer facilities. The following list provides several of the policies and procedures that may be developed as part of the project implementation.

- Reclaimed water system design specifications.
- Cross-connection control requirements.
- Site inspection authority
- Enforcement policies
- Cost recovery policies and pricing structure.
- Reclaimed water system standard operating procedures.
- System record keeping and reporting procedures.
- Non-potable Water User Manual
- Emergency procedures plan.
- Park irrigation standard operating procedures.

Certain aspects of a reclaimed water utility may necessitate modification of existing ordinances or adoption of new ordinances. These may include:

- Establish a rate and fee ordinance for reclaimed or non-potable water.
- Adoption of non-potable water requirements as part of the city's plumbing code, including requirements for dual water distribution systems within a defined reclaimed water service area.
- Adoption of non-potable irrigation requirements as part of the city's water conservation ordinance.
- Requirements for the use of non-potable water for irrigation within specific zoning codes within a defined reclaimed water service area.

10.4 Project Funding Strategy

A major public infrastructure project such as this will impact both water and wastewater rates for all customers. As discussed in Section 10.1, there are several loans and grants available to supplement the city's commitment of capital for construction of a reclaimed water utility system, but receipt of financial assistance is by no means assured.

The city's funding for the design and construction of the reclaimed water project would be in the form of debt service for revenue bonds issued for the city's water and wastewater utility. The recovery of debt service and operating expenses should through a combination of reclaimed water rates and fees and, in recognition of the benefits to all utility customers, funding through the water and wastewater utilities.

10.4.1 Reclaimed Water Pricing

A “cost of service” methodology is the typical standard for setting utility rates. Cost of service rates are those charged to customers that includes the full system operation and maintenance costs, as well as recovery of the capital cost and debt service. Rates are charged to different customer classes on the basis of how their use of the service drives system costs.

However, there are certain aspects of developing reclaimed water rates that makes the process considerably different from that of typical utility rate designs. Most utilities that provide reclaimed water utility service do so as part of a broader public purpose of minimizing demands on limited or higher cost potable supplies and enhancing the aesthetic appeal of the community. The benefits to water and wastewater customers realized through the development of the reclaimed water system are described in Section 7.4. A standard cost of service rate making approach will produce reclaimed water rates that are much higher than those for potable water due in large part to the small number of customers who can make use of reclaimed water.

The rate-making process for reclaimed water is also different from potable water in that potable water is a readily available substitute for reclaimed water. With a choice of equal commodities, the logical consumer response is for a consumer to use that which has the lowest price (Casey, 2006). While rate-making for potable water is generally a process for determining the full cost associated with providing service and allocating those costs to the various customer classes, most utilities providing reclaimed water service have established rates that are designed to encourage reclaimed water use (AWWA, 2008).

In their 2008 survey of reclaimed water rates, the American Water Works Association (AWWA) reported that most utilities were recovering less than 25 percent of the annual operating costs for reclaimed water utilities through rates. The primary reason that utilities employ reclaimed water rates that allocate significant costs associated with developing reclaimed water back to the water and wastewater utility rates is to maintain an economic incentive for using reclaimed water. If reclaimed water is priced at its full cost, the fact that the cost will likely be higher than that for potable water would all but eliminate the incentive to develop reclaimed water as a water source for uses that do not need potable water quality.

The fact that potable water for specific uses can be restricted during times of high water demand or drought is generally insufficient justification to price reclaimed water at or above the price of potable water. The impacts of such restrictions are viewed as temporary and the impacts are absorbed by the users. While water users can absorb short-term impacts of water restrictions, utilities must consider reclaimed water as just one element of water source planning.

In determining what revenue sources besides reclaimed water rates can be employed to fund the development of reclaimed water, it is important to define the benefits and policy issues to be considered in developing reclaimed water pricing (AWWA, 2008).

As a supplement to potable water, reclaimed water can provide a drought-resistant water source that can benefit future water utility customers by reducing water demand attributable to irrigation. This has the effect of extending the city’s supplies from GBRA and, eventually, from the HCPUA and, to some extent, preserving the utility’s surface water capacity. Future

customers could be expected to share in the cost of developing a reclaimed water system as part of the overall cost of securing water sources for the future potable water demand.

10.4.2 Reclaimed Water Rate Design

The key considerations in developing rates for reclaimed water are:

1. What are the overall goals and objectives of developing a reclaimed water system?
2. What is the desired level of cost recovery?

Like the definition of the goals and objectives for a reclaimed water utility, the appropriate level of cost recovery for reclaimed water is a policy decision that would be addressed by the city council. Utilities have established reclaimed water rates that are, on average, between 50 percent and 100 percent of the potable water rate (AWWA, 2008). The current potable water rates are presented in Table 10-1.

Table 10-1: Existing water utility volumetric rates.

Customer Class	\$ per kgal
Commercial	5.51
Irrigation	6.44
Multifamily	5.51
Single-Family Residential	
0 to 4,000	3.06
4,001 to 8,000	3.82
8,001 to 12,000	4.59
12,001 to 16,000	5.34
16,001 to 20,000	6.11
20,001 to 30,000	6.88
30,001 to 50,000	7.64
50,001 +	9.17

Table 10-2 presents projected cost recovery using a percentage of the current potable water rate for commercial customers assuming that the rate for reclaimed water would be established as a percentage of the current commercial rate.

Table 10-2: Reclaimed water cost recovery.

Year	Projected Volume (MG)	Annual Reclaimed Water System Costs (Debt Service + O&M)	Revenue based on % of current irrigation rate	
			30%	50%
2015	115.63	\$94,053	\$ 372,344	\$ 558,515
2020	218.88	646,634	704,794	1,057,191
2025	322.47	1,048,128	1,038,358	1,557,537
2030	379.20	1,060,091	1,221,028	1,831,542
2035	442.84	1,072,627	1,425,957	2,138,936

10.4.3 Proposed Project Funding Plan

As part of the city’s fiscal year FY 2011-2012 budget, the city implemented a 3-year rate plan for the water and wastewater utilities. Under this rate plan, water rates were increased by 30% in FY 2011-2012 and will be increased 20% in each of the following fiscal years. Wastewater rates were increased 25% in the first year and will see a 20% increase in the second year and 10% in the third. These increases were necessary to restore the city’s utility fund to a positive net operating income following a period of operating expenses exceeding water and sewer utility revenues. The city’s current capital improvements program (CIP) includes a total of \$7.6 million in capital projects to be funded from both long term debt and development fees and grants. Recognizing that the net debt burden for Kyle citizens is relatively high (Standard & Poor’s, 2011), it is important to consider that the impact of adding an \$11.06 million reclaimed water project to the CIP can be eased through securing federal funding through Title XVI and, potentially, securing TWDB loans if the cost of money is cheaper than that available by city debt issues.

Funding for the design and construction of the reclaimed water project can be phased over a period of years using city issued debt in the form of certificates of obligation or revenue bonds, or can be financed as a single project using a combination of federal grants, state loans, and city issued debt. A plan proposed for the Kyle reclaimed water project assumes that the city would be successful in securing Title XVI grant funding in an amount of 25% of the project cost and that the remaining 75% of the project cost could be funded through the Water Infrastructure Fund (WIF) administered by the TWDB, provided that the 2011 Region L Regional Water Plan and State Water Plan are amended to include water reuse as a recommended water management strategy for the City of Kyle and the TWDB online Infrastructure Finance Report Survey is completed for the project.

Designed, funded and constructed as a single project, the total project cost of \$11,065,000 would be distributed as shown in Table 10-3. Comparison of the unit costs for reclaimed water (Table 7-4) illustrates the potential benefit of Title XVI grant funding to the overall cost of reclaimed water.

Table 10-3: Proposed funding plan annual costs.

Year	Annual Demand (MG)	Title XVI Grant	TWDB WIF Financing	Debt Service	Power Costs	O&M Costs	Treatment Costs	\$/AF	\$/kgal
2015	115.63	\$ 210,938	\$ 632,813	\$ 50,115	\$12,064	\$ 8,438	\$ 6,731	\$217.96	\$ 0.61
2020	218.88	1,495,625	4,486,875	405,450	26,327	68,263	12,741	814.85	2.50
2025	322.47	1,059,688	3,179,063	657,210	43,723	110,650	18,772	857.43	2.63
2030	379.20			657,210	52,383	110,650	22,074	723.81	2.22
2035	442.84			657,210	61,214	110,650	25,779	629.01	1.93
Max.	601.73			\$614,415	\$81,638	\$110,650	\$ 35,028	\$376.93	\$ 1.40

10.5 Non-Potable Water Customer Contract

Reclaimed water utility service may be provided under the terms of a standard contract for service that addresses, at a minimum, the following provisions:

- Definition of the customer's and city's responsibilities.
- Description of the uses and areas of application of non-potable water.
- Prohibited uses of non-potable water.
- Quantities of non-potable water, unit of measurement, and method of billing.
- Pressure requirements.
- Fees for establishing service.
- Fees for use of non-potable water.
- Compliance with city rules, regulations, policies, and procedures related to the use of non-potable water.
- City's right to inspect plumbing and irrigation systems.
- City's right to limit hours of non-potable water use.
- Enforcement provisions.
- Suspension and termination of service.
- Obligations of the city.
- Procedures for contract modification.
- Remedies upon default.
- Backflow device inspection.
- Non-potable water quality.

10.6 Implementation Steps

Implementation of a reclaimed water system should proceed in a logical, step-by-step approach, beginning with a public and political consensus on the need for the project and the framework in which the project would be developed. The initial steps toward implementation should include:

1. Initiate meetings through youth sports leagues, HOAs, and civic associations to disseminate information regarding the purpose of the reclaimed water utility and the project costs.
2. Define how the ownership and operations of a reclaimed water system will be structured.
3. Negotiate commitments for reclaimed water from potential users.
4. Initiate amendment of the city's TPDES discharge permit and acquisition of municipal water rights to store water at Site 1.

5. Prepare draft revisions to the municipal code of ordinances to define the purpose and regulations regarding the use of reclaimed water in Kyle. Actual amendment of the city code, if required, could be concurrent with the completion of construction of the project.
6. Once the framework for development of the project is established, the actual project development could begin with incorporating the project into the city's CIP.
7. Public outreach should continue throughout the implementation process with the following key elements:
 - a. Involve the public throughout the project implementation with opportunities for comment. Managing expectations becomes more than answering whether the project is on budget and on schedule, it is also important to provide a clear reminder that the primary purpose of the project is to irrigate parklands for the benefit of the community and not to market reclaimed water to consumers or industry. As the HCPUA supply is added to the city's water sources, the implementation of a reclaimed water utility becomes a visible part of the city's overall strategy for water management and community development.
 - b. Public concerns that arise should be addressed with complete candor using all available scientific and regulatory information.
 - c. Public outreach information should address the fundamental relationships between developing and maintaining parks and public amenities and water conservation.

10.6.1 Reclaimed Water System Implementation

As previously described, implementation of the reclaimed water system can be phased and scaled for demand in the various service areas in the city. The proposed schedule presented in Figure 10-1 includes development of the system for the Plum Creek, Southeast, and Northeast service areas as part of Phase 2 since each of these service areas are located adjacent to the primary transmission system.

Figure 10-1: Project implementation schedule.



The following summarizes the schedule for implementing the reclaimed water project:

2012 - 2013

1. Conduct a review of the Feasibility Study with the City Council.
2. Disseminate public information and conduct public meetings on the findings of the feasibility study.
3. City staff to develop a draft framework for implementing a reclaimed water utility.
4. Outline revisions to the municipal code of ordinances.
5. Negotiate commitments for reclaimed water use with public and private sector users.
6. Negotiate terms for acquisition the existing water rights permit and begin the process to amend the water rights permit for Site 1 to change the use from recreational/livestock to municipal and to change the volume of water associated with the proposed storage or reclaimed water.
7. Perform testing of wastewater effluent (conductivity, nitrogen, and phosphorus) to provide data for development of park irrigation standard operating procedures.
8. Initiate water quality modeling required for amending the city’s TPDES permit.
9. Begin development of a project funding plan, including debt issuance schedule and application for state or federal grants and/or loans.
10. Incorporate the reclaimed water system project and park irrigation systems into the city’s CIP.

2013 - 2014

1. Disseminate public information regarding project schedule.
2. Develop amendments to city ordinance and SOPs for reclaimed water.
3. Initiate a request to amend the Region L Regional Water Plan and State Water Plan to include water reuse as a recommended water management strategy for the City of Kyle.
4. Complete project funding plan. Establish schedule for debt issuance and applications for state or federal grants and/or loans.
5. Complete negotiations for reclaimed water user commitments in the Plum Creek, Southeast, and Northeast service areas.
6. Complete Phase 1 design for Kyle Parkway irrigation and reclaimed water treatment.
7. Finalize acquisition or amendment of Water Rights Permit.
8. Obtain amendment to TPDES discharge permit.
9. Obtain TxDOT and railroad permits for pipeline crossings.
10. Obtain authorizations required under 30 TAC §210.

2014 - 2015

1. Install rotating disk filtration and disinfection at WWTP.
2. Install 8-in. distribution main to Kyle Parkway.
3. Install park irrigation systems.

2015 - 2016

1. Begin preliminary design of reclaimed water system Phase 2 (14-in. transmission main).
2. Begin negotiations for reclaimed water user commitments in the West, N. Commercial, and S. Commercial service areas.

2016 -2020

1. Complete design of reclaimed water system Phase 2.
2. Construct Phase 2 – storage and distribution pumping.

2021

1. Begin preliminary design of service area extensions.

10.7 Research Needs

The proposed project is developed to rely on conventional technologies for the treatment, pumping, and transmission of reclaimed water. By using proven technologies, the city can avoid the added time and expense of basic research. There are no basic research needs for the project.

10.8 Recommendations

This study has defined a reclaimed water project that can be implemented to provide non-potable water for public and private sector uses in the City of Kyle. The feasibility study has defined a sequence for the phased development of a reclaimed water utility that would provide an alternative water source for irrigation and for commercial cooling. The recommendations below summarize the recommended capital improvements and policies and procedures for a reclaimed water utility.

10.8.1 Recommended Capital Improvements

The capital improvements described as Alternative 4 beginning in Section 6.5 include:

- A rotating disk filter unit to provide supplemental treatment to achieve Type I reclaimed water quality;
- A new reclaimed water pumping station at the Kyle WWTP;
- Transmission mains to storage at the Site 1 impoundment;
- A nonpotable water pumping station at Site 1; and
- Transmission mains to each of six service areas.

The major elements of the proposed project are summarized in Table 10-4 and shown in Figure 10-2. Phasing of the system development is recommended as a way to optimize system expansion based on actual reclaimed water demand.

Table 10-4: Summary of reclaimed water infrastructure costs.

Project	Annual Demand (MG)	Capital Costs
Phase 1	115.63	\$ 843,750
Phase 2	205.05	4,506,250
Plum Creek	278.58	375,000
Southeast	46.74	683,750
Northeast	33.16	417,500
N Commercial	34.78	1,821,250
West	21.92	1,385,000
S Commercial	27.65	1,032,500
TOTAL	442.84	\$11,065,000

In addition to the construction of infrastructure to treat, store, and transmit reclaimed water, implementation of a reclaimed water project will require certain regulatory authorizations and the development of city policies and procedures.

10.8.2 Recommended Administrative Actions

- Obtain commitments from potential reclaimed water users.
- Amend the city's TPDES discharge permit to allow storage of reclaimed water at Site 1.
- Negotiate terms for acquisition the existing water rights permit and begin the process to amend the water rights permit for Site 1 to change the use from recreational/livestock to municipal and to change the volume of water associated with the proposed storage or reclaimed water.
- Amend the city's Chapter 210 notification to include additional users and uses.
- Develop reclaimed water and non-potable water system design specifications.
- Develop a comprehensive backflow prevention program.
- Amend city ordinances and policies (as needed), including cross-connection control, cost recovery, and system standard operating procedures.
- Develop a Non-potable Water Customer contract.

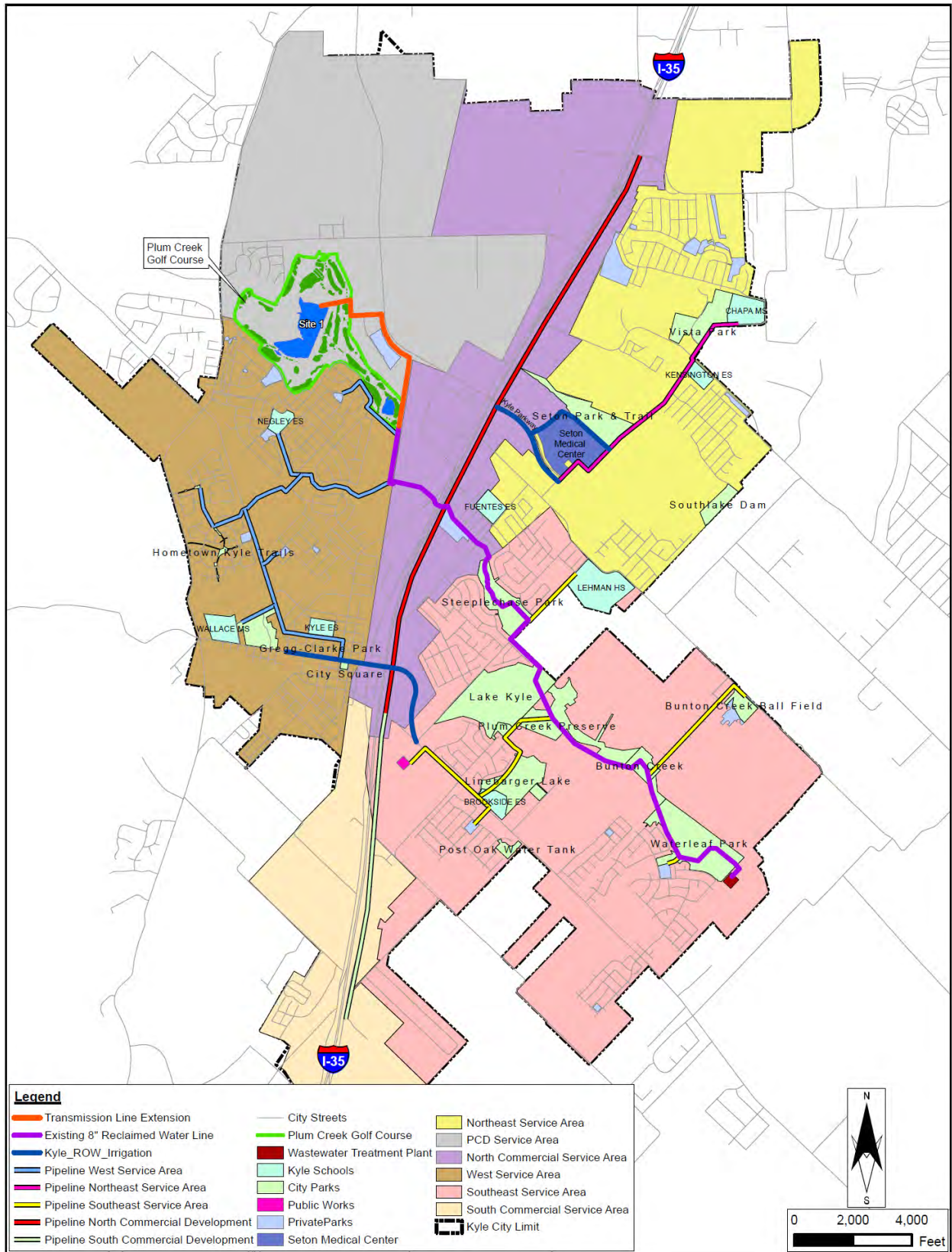


Figure 10-2: Recommended reclaimed water infrastructure.

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12 Appendices

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Appendix B: Abbreviations, Acronyms and Conversions

AF, ac-ft	Acre-Feet	(1 acre-foot = 325,851 gallons)
AWWA.....	American Water Works Association	
BFE.....	Base Flood Elevation	
BOD ₅	Biochemical Oxygen Demand	
BSEACD.....	Barton Springs/Edwards Aquifer Conservation District	
CBOD ₅	Carbonaceous Biochemical Oxygen Demand	
CFU.....	Colony Forming Units	
CIP	Capital Improvements Plan	
City	City of Kyle	
COD	Chemical Oxygen Demand	
EAA.....	Edwards Aquifer Authority	
EARZ.....	Edwards Aquifer Recharge Zone	
ET.....	Evapotranspiration	
FEMA.....	Federal Emergency Management Agency	
GBRA.....	Guadalupe-Blanco River Authority	
gpm.....	Gallons per Minute	
HCPUA.....	Hays – Caldwell Public Utility Agency	
HP	Horsepower	
IH.....	Interstate Highway	
in	Inches	
kgal	Thousand Gallons	
kwh.....	Kilowatt Hours	
LF.....	Linear Feet	
mgd.....	Million Gallons per Day	
mg/l	Milligrams per Liter	
ml	Milliliter	
NPDES.....	National Pollutant Discharge Elimination System	
NRCS.....	Natural Resources Conservation Service	
NTU.....	Nephelometric Turbidity Units	
NWI.....	National Wetlands Inventory	
O&M.....	Operations and Maintenance	
PCCD.....	Plum Creek Conservation District	
POTW.....	Publicly Owned Treatment Works	
PUD.....	Planned Unit Development	
Region L.....	South Central Texas Regional Water Planning Group	
RWPF.....	Reclaimed Water Production Facility	
SCTRWPG.....	South Central Texas Regional Water Planning Group	
TAC	Texas Administrative Code	
TCEQ.....	Texas Commission on Environmental Quality	
TPDES	Texas Pollutant Discharge Elimination System	
TPWD.....	Texas Parks & Wildlife Department	
TWCA.....	Texas Water Conservation Association	
TWDB.....	Texas Water Development Board	
TSS	Total Suspended Solids	
TxDOT.....	Texas Department of Transportation	

USACE..... U.S. Army Corps of Engineers
USFWS..... U.S. Fish and Wildlife Service
WWTP..... Wastewater Treatment Plant

Appendix C: Data Inventory

City of Kyle

The City of Kyle Planning Department provided GIS layers for mapping including: street centerlines; street rights-of-way; contours; water and wastewater utility mains; city limits; city ETJ boundary; parcels; floodplain; park locations and areas; park trails; impervious cover in parks; private park locations and areas.

The City of Kyle Public Works Department provided records of the city's water demand; and Discharge Monitoring Reports (DMR) for the Kyle WWTP for the years 2006 through 2011.

Plum Creek Conservation District (PCCD)

PCCD provided GIS layers for the district boundaries; record drawings and data for the Plum Creek Site 1 dam.

Momark Development

Momark Development provided GIS layers for the Plum Creek Development and the Plum Creek Golf Course; record drawings of the existing reclaimed water transmission main; and engineering calculations of projected reclaimed water demand for the Plum Creek Development.

Austin Community College (ACC)

ACC provided a copy of the preliminary campus master plan for the Hays campus of ACC.

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Appendix D: Reclaimed Water Demand

	Reclaimed Water Delivery Point	Total Area (ac.)	Added Area (ac.)					Irrigation Demand (gallons per month)												
			2015	2020	2025	2030	2035	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Demand (gal)
			<i>Plum Creek Service Area</i>																	
	Plum Creek Golf Course	308.84	197.01					599,160	2,225,451	9,072,993	11,426,836	9,672,153	16,476,899	23,324,441	21,612,555	9,971,733	4,194,120	684,754	128,391	109,389,487
	Plum Creek Dev. ROW	36.20		7.24	7.24	7.24	7.24	88,075	327,136	1,333,708	1,679,718	1,421,783	2,422,065	3,428,637	3,176,994	1,465,821	616,526	100,657	18,873	16,079,994
	Plum Creek Dev. Parks	36.90		7.02	7.02	7.02	7.02	85,399	317,195	1,293,181	1,628,677	1,378,580	2,348,466	3,324,452	3,080,456	1,421,279	597,791	97,599	18,300	15,591,375
	Plum Creek Comm. Dev.	756.00		30.82	30.82	30.82	30.82	374,927	1,392,587	5,677,471	7,150,400	6,052,399	10,310,502	14,595,386	13,524,165	6,239,862	2,624,491	428,488	80,342	68,451,023
	Plum Creek SF Dev.	253.50		15.22	15.22	15.22	15.22	185,104	687,528	2,802,998	3,530,191	2,988,102	5,090,350	7,205,821	6,676,953	3,080,654	1,295,726	211,547	39,665	33,794,639
	Plum Creek Greenbelts	83.60		15.88	15.88	15.88	15.88	193,230	717,711	2,926,053	3,685,171	3,119,283	5,313,823	7,522,165	6,970,079	3,215,898	1,352,609	220,834	41,406	35,278,262
	<i>Service Area Total</i>		<i>197.01</i>	<i>76.18</i>	<i>76.18</i>	<i>76.18</i>	<i>76.18</i>	<i>1,525,895</i>	<i>5,667,609</i>	<i>23,106,406</i>	<i>29,100,992</i>	<i>24,632,301</i>	<i>41,962,105</i>	<i>59,400,902</i>	<i>55,041,203</i>	<i>25,395,248</i>	<i>10,681,263</i>	<i>1,743,880</i>	<i>326,977</i>	<i>278,584,780</i>
<i>Northeast Service Area</i>																				
	Kyle Pkwy ROW	6.05	5.75					17,480	64,925	264,692	333,362	282,172	480,691	680,459	630,517	290,912	122,358	19,977	3,746	3,191,290
	Seton Medical Center Hays		5.50					16,727	62,129	253,294	319,007	270,021	459,992	651,157	603,366	278,385	117,089	19,117	3,584	3,053,866
	Seton MC - Cooling Tower	--						458,375	535,485	794,659	940,311	991,718	1,313,009	1,582,893	1,492,932	1,143,796	946,737	646,866	486,220	11,333,000
	Chapa MS	24.73			3.74			11,387	42,295	172,432	217,166	183,819	313,142	443,279	410,745	189,512	79,709	13,014	2,440	2,078,939
	Fuentes ES	15.00			3.05			9,274	34,446	140,435	176,868	149,709	255,035	361,023	334,526	154,346	64,918	10,599	1,987	1,693,165
	Kensington ES	10.47			1.09			3,309	12,291	50,110	63,111	53,419	91,002	128,821	119,366	55,074	23,164	3,782	709	604,159
	<i>Service Area Total</i>		<i>11.25</i>	<i>0.00</i>	<i>7.88</i>	<i>0.00</i>	<i>0.00</i>	<i>516,552</i>	<i>751,570</i>	<i>1,675,622</i>	<i>2,049,826</i>	<i>1,930,857</i>	<i>2,912,870</i>	<i>3,847,632</i>	<i>3,591,452</i>	<i>2,112,024</i>	<i>1,353,975</i>	<i>713,353</i>	<i>498,687</i>	<i>21,954,420</i>
<i>Southeast Service Area</i>																				
	Waterleaf Park	92.03		22.08				67,163	249,462	1,017,037	1,280,891	1,084,200	1,846,978	2,614,553	2,422,660	1,117,782	470,140	76,758	14,392	12,262,015
	Waterleaf HOA Park	1.00		1.00				3,036	11,277	45,976	57,904	49,012	83,495	118,194	109,519	50,531	21,253	3,470	651	554,318
	Lake Kyle	118.28		13.54				41,182	152,960	623,606	785,391	664,788	1,132,492	1,603,138	1,485,477	685,578	288,271	47,065	8,825	7,518,572
	Steeplechase Park	43.91		2.82				8,577	31,856	129,874	163,568	138,451	235,856	333,875	309,370	142,739	60,036	9,802	1,838	1,565,841
	Bunton Creek Ball Field	13.03		3.16				9,612	35,702	145,555	183,317	155,168	264,334	374,187	346,724	159,974	67,285	10,985	2,060	1,754,903
	Brookside ES	13.95			0.66			1,993	7,403	30,183	38,013	32,176	54,813	77,592	71,898	33,173	13,952	2,278	427	363,901
	Lehman HS	53.57			11.28			34,319	127,469	519,681	654,504	554,000	943,760	1,335,972	1,237,919	571,159	240,230	39,221	7,354	6,265,588
	Post Oak HOA Park	1.19		1.19				3,620	13,447	54,823	69,046	58,444	99,561	140,937	130,593	60,254	25,343	4,138	776	660,983
	<i>Service Area Total</i>		<i>0.00</i>	<i>20.71</i>	<i>11.94</i>	<i>0.00</i>	<i>0.00</i>	<i>169,501</i>	<i>629,577</i>	<i>2,566,736</i>	<i>3,232,635</i>	<i>2,736,238</i>	<i>4,661,290</i>	<i>6,598,449</i>	<i>6,114,159</i>	<i>2,820,988</i>	<i>1,186,510</i>	<i>193,716</i>	<i>36,322</i>	<i>30,946,122</i>
<i>West Service Area</i>																				
	City Square	1.44			1.21			3,667	13,621	55,532	69,939	59,199	100,848	142,759	132,281	61,033	25,670	4,191	786	669,525
	Gregg-Clarke Park	29.30			7.32			22,265	82,698	337,154	424,624	359,419	612,285	866,741	803,127	370,552	155,854	25,446	4,771	4,064,935
	Hometown Kyle Trails	3.82			0.69			2,098	7,794	31,777	40,021	33,875	57,708	81,691	75,695	34,925	14,689	2,398	450	383,121
	Hometown Kyle Trails	0.77			0.06			190	704	2,870	3,615	3,060	5,213	7,379	6,838	3,155	1,327	217	41	34,608
	Decker Park	1.83			1.83			5,566	20,672	84,278	106,142	89,843	153,052	216,658	200,756	92,626	38,959	6,361	1,193	1,016,105
	McNaughton Park	0.65			0.65			1,977	7,343	29,938	37,705	31,915	54,368	76,963	71,314	32,903	13,839	2,259	424	360,950
	Vantage Apts.	1.85			1.85			5,638	20,939	85,368	107,515	91,006	155,032	219,460	203,353	93,824	39,463	6,443	1,208	1,029,249
	Hometown Kyle Trails Park	2.41			2.41			7,330	27,227	111,002	139,800	118,332	201,584	285,359	264,415	121,997	51,312	8,378	1,571	1,338,307
	Silverado	0.70			0.70			2,116	7,858	32,038	40,349	34,153	58,182	82,361	76,316	35,211	14,810	2,418	453	386,265
	Center St. Streetscape	5.62			5.62			17,092	63,484	258,820	325,967	275,912	470,028	665,364	616,530	284,458	119,643	19,534	3,663	3,120,496
	Wallace MS	20.11			2.37			7,205	26,761	109,102	137,407	116,307	198,134	280,475	259,890	119,910	50,343	8,234	1,544	1,315,402
	Kyle ES	10.80			0.65			1,987	7,380	30,087	37,892	32,074	54,639	77,346	71,669	33,067	13,908	2,271	426	362,745
	Negley ES	10.74			0.84			2,559	9,505	38,751	48,805	41,310	70,374	99,620	92,308	42,590	17,913	2,925	548	467,209
	<i>Service Area Total</i>		<i>0.00</i>	<i>0.00</i>	<i>3.86</i>	<i>0.00</i>	<i>0.00</i>	<i>79,689</i>	<i>295,987</i>	<i>1,206,718</i>	<i>1,519,781</i>	<i>1,286,407</i>	<i>2,191,445</i>	<i>3,102,175</i>	<i>2,874,492</i>	<i>1,326,251</i>	<i>557,822</i>	<i>91,073</i>	<i>17,076</i>	<i>14,548,916</i>
	<i>subtotal</i>		<i>208.26</i>	<i>96.89</i>	<i>99.87</i>	<i>76.18</i>	<i>76.18</i>	<i>2,291,637</i>	<i>7,344,743</i>	<i>28,555,482</i>	<i>35,903,234</i>	<i>30,585,802</i>	<i>51,727,710</i>	<i>72,949,159</i>	<i>67,621,306</i>	<i>31,654,511</i>	<i>13,779,570</i>	<i>2,742,022</i>	<i>879,062</i>	<i>346,034,238</i>
	Future Comm. Along I35 N	1044			31.32	15.66	15.66	190,505	707,590	2,884,789	3,633,201	3,075,294	5,238,886	7,416,085	6,871,785	3,170,547	1,333,535	217,720	40,822	34,780,760
	Future Comm. Along I35 S	830			24.90	12.45	12.45	151,455	562,547	2,293,463	2,888,465	2,444,918	4,165,015	5,895,930	5,463,201	2,520,645	1,060,186	173,092	32,455	27,651,370
	Future Park Development	140.6		14.06	14.06	7.03	7.03	128,281	476,471	1,942,535	2,446,495	2,070,816	3,527,717	4,993,782	4,627,266	2,134,956	897,964	146,606	27,489	23,420,378
	TOTAL		208.26	110.95	170.15	111.32	111.32	2,761,877	9,091,351	35,676,269	44,871,395	38,176,830	64,659,328	91,254,955	84,583,558	39,480,659	17,071,255	3,279,440	979,828	431,886,745

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Appendix E: Estimated Project Costs

Preliminary Opinion of Probable Project Cost					
Complete System					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Treatment (Rotating Disk Filter)	1	LS	300,000	\$ 300,000
2	Concrete Pad for Filter Equipment	10	SY	40	400
3	Valves and Piping (From Chambers to Filter, From Filter to Wet Well)	1	LS	10,000	10,000
4	Electrical and Controls	1	LS	20,000	20,000
5	Chlorinator Equipment	1	LS	10,000	10,000
6	Chlorinator Equipment Shelter	1	LS	3,000	3,000
7	Pumps (8hp, 800gpm;30 TDH - Horiz. End Suction, Pump from Filter to Storage)	3	EA	10,500	31,500
8	Pumps (125hp - Horiz. End Suction, @ WWTP)	3	EA	54,350	163,050
9	Pumps (200hp - Horiz. End Suction, @ Lake)	4	EA	65,000	260,000
10	Enclosed Pump Structures (@ WWTP & Lake)	1,800	SF	73	131,400
11	Above Ground Welded Steel Tank (@ WWTP)	100,000	GAL	1.13	112,500
12	PIPE, 2" DIA. (PVC C-900)	1,389	LF	10	13,890
13	PIPE, 4" DIA. (PVC C-900)	8,713	LF	20	174,260
14	PIPE, 6" DIA. (PVC C-900)	26,638	LF	30	799,140
15	PIPE, 8" DIA. (PVC C-900)	7,443	LF	40	297,720
16	PIPE, 10" DIA. (PVC C-900)	11,052	LF	50	552,617
17	PIPE, 12" DIA. (PVC C-900)	18,786	LF	60	1,127,164
18	PIPE, 14" DIA. (PVC C-905)	35,330	LF	70	2,473,073
19	PIPE, 18" DIA. (PVC C-905)	6,751	LF	90	607,590
20	PIPE, 24" DIA. (PVC C-905)	2,583	LF	120	309,960
21	Highway Bore with Steel Casing	600	LF	65	39,000
22	Railroad Bore with Steel Casing	600	LF	65	39,000
23	Concrete thrust blocks	6.75	CY	60	405
24	Trench Safety	118,685	LF	1.00	118,685
25	Erosion & Sediment control	118,685	LF	1.00	118,685
26	Traffic control plan	1	LS	24,000	24,000
27	Gate/Blocking valves	42	EA	1,500	63,000
28	Comb. Air/Vac Valves & Vault	1	EA	6,000	6,000
29	Comb. Rate of Flow & Pressure Reducing Valve	4	EA	10,000	40,000
30	Master Meter	2	EA	2,000	4,000
31	Fittings	10.78	TN	4,000	43,120
32	Pump Intake Screening (@ Lake)	1	LS	23,000	23,000
33	Mobilization/bonds/insurance	1	LS	791,616	791,616
Subtotal					\$8,708,000
Engineering & Survey @ 10%					\$870,800
Permitting					\$180,000
Contingency @ 15%					\$1,306,200
TOTAL					\$11,065,000

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Appendix F: System Expansion Estimated Costs

Phase 1					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	Treatment (Rotating Disk Filter)	1	LS	300,000	\$ 300,000
2	Concrete Pad for Filter Equipment	10	SY	40	400
3	Valves and Piping (From Chambers to Filter, From Filter to Wet Well)	1	LS	10,000	10,000
4	Electrical and Controls	1	LS	20,000	20,000
5	Chlorinator Equipment	1	LS	10,000	10,000
6	Cover for Chlorinator Equipment	1	LS	3,000	3,000
7	PIPE, 8" DIA. (PVC C-900)	4,115	LF	40.00	164,600
8	Concrete thrust blocks	0.2	CY	60.00	12
9	Trench Safety	4,115	LF	1.00	4,115
10	Erosion & Sediment control	4,115	LF	1.00	4,115
11	Traffic control plan	1	LS	2,000.00	2,000
12	Gate/Throttling valves	3	EA	1,500.00	4,500
13	Master Meter	1	EA	2,000.00	2,000
14	Fittings	0.3	TN	4,000.00	1,280
15	Mobilization/bonds/insurance	1	LS	52,602	52,602
Subtotal					\$579,000
Engineering & Survey @ 10%					\$57,900
Permitting					\$120,000
Contingency @ 15%					\$86,850
TOTAL					\$843,750

Phase 2					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	PIPE, 14" DIA. (PVC C-905)	24,351	LF	70	1,704,570
2	PIPE, 18" DIA. (PVC C-905)	3,981	LF	90	358,290
3	PIPE, 24" DIA. (PVC C-905)	2,583	LF	120	309,960
4	Pumps (8hp, 800gpm;30 TDH - Horiz. End Suction, Pump from Filter to Storage)	3	EA	10,500	31,500
5	Pumps (125hp - Horiz. End Suction, @ WWTP)	3	EA	54,350	163,050
6	Pumps (200hp - Horiz. End Suction, @ Lake)	4	EA	65,000	260,000
7	Enclosed Pump Structures (@ WWTP & Lake)	1,800	SF	73	131,400
8	Above Ground Welded Steel Tank (@ WWTP)	100,000	GAL	1.13	112,500
9	Highway Bore with Steel Casing	300	LF	65	19,500
10	Railroad Bore with Steel Casing	300	LF	65	19,500
11	Concrete thrust blocks	2	CY	60	120
12	Trench Safety	30,915	LF	1.00	30,915
13	Erosion & Sediment control	30,915	LF	1.00	30,915
14	Traffic control plan	1	LS	5,000	5,000
15	Gate/Blocking valves	2	EA	1,500	3,000
16	Comb. Air/Vac Valves & Vault	1	EA	6,000	6,000
17	Comb. Rate of Flow & Pressure Reducing Valve	1	EA	10,000	10,000
18	Master Meter	1	EA	2,000	2,000
19	Fittings	3.2	TN	4,000	12,800
20	Pump Intake Screening (@ Lake)	1	LS	23,000	23,000
21	Mobilization/bonds/insurance	1	LS	323,402	323,402
Subtotal					\$3,557,000
Engineering & Survey @ 10%					\$355,700
Permitting					\$60,000
Contingency @ 15%					\$533,550
TOTAL					\$4,506,250

Appendix G: Service Area Estimated Costs

Plum Creek Service Area					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	PIPE, 18" DIA. (PVC C-905)	2,770	LF	90	\$ 249,300
2	Concrete thrust blocks	0.5	CY	60	30
3	Trench Safety	2,770	LF	1.00	2,770
4	Erosion & Sediment control	2,770	LF	1.00	2,770
5	Traffic control plan	1	LS	2,000	2,000
6	Gate/Blocking valves	2	EA	1,500	3,000
7	Comb. Rate of Flow & Pressure Reducing Valve	1	EA	10,000	10,000
8	Fittings	0.8	TN	4,000	3,200
9	Mobilization/bonds/insurance	1	LS	27,307	27,307
Subtotal					\$300,000
Engineering & Survey @ 10%					\$30,000
Contingency @ 15%					\$45,000
TOTAL					\$375,000

Southeast Service Area					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	PIPE, 4" DIA. (PVC C-900)	4,580	LF	20	91,600
2	PIPE, 6" DIA. (PVC C-900)	11,990	LF	30	359,700
3	Concrete thrust blocks	0.5	CY	60	30
4	Trench Safety	16,570	LF	1.00	16,570
5	Erosion & Sediment control	16,570	LF	1.00	16,570
6	Traffic control plan	1	LS	2,000	2,000
7	Gate/Blocking valves	5	EA	1,500	7,500
8	Fittings	0.8	TN	4,000	3,200
9	Mobilization/bonds/insurance	1	LS	49,717	49,717
Subtotal					\$547,000
Engineering & Survey @ 10%					\$54,700
Contingency @ 15%					\$82,050
TOTAL					\$683,750

Northeast Service Area					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	PIPE, 6" DIA. (PVC C-900)	8,931	LF	30	267,930
2	Concrete thrust blocks	0.5	CY	60	30
3	Trench Safety	8,931	LF	1.00	8,931
4	Erosion & Sediment control	8,931	LF	1.00	8,931
5	Traffic control plan	1	LS	2,000	2,000
6	Gate/Blocking valves	2	EA	1,500	3,000
7	Comb. Rate of Flow & Pressure Reducing Valve	1	EA	10,000	10,000
8	Fittings	0.8	TN	4,000	3,200
9	Mobilization/bonds/insurance	1	LS	30,402	30,402
Subtotal					\$334,000
Engineering & Survey @ 10%					\$33,400
Contingency @ 15%					\$50,100
TOTAL					\$417,500

North Commercial Development Area					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	PIPE, 10" DIA. (PVC C-900)	7,646	LF	50	382,317
2	PIPE, 12" DIA. (PVC C-900)	5,988	LF	60	359,267
3	PIPE, 14" DIA. (PVC C-905)	7,354	LF	70	514,774
4	Concrete thrust blocks	1	CY	60	60
5	Trench Safety	20,988	LF	1.00	20,988
6	Erosion & Sediment control	20,988	LF	1.00	20,988
7	Traffic control plan	1	LS	5,000	5,000
8	Gate/Blocking valves	10	EA	1,500	15,000
9	Fittings	1.6	TN	4,000	6,400
10	Mobilization/bonds/insurance	1	LS	132,479	132,479
Subtotal					\$1,457,000
Engineering & Survey @ 10%					\$145,700
Contingency @ 15%					\$218,550
TOTAL					\$1,821,250

West Service Area					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	PIPE, 2" DIA. (PVC C-900)	1,389	LF	10	13,890
2	PIPE, 4" DIA. (PVC C-900)	4,133	LF	20	82,660
3	PIPE, 6" DIA. (PVC C-900)	5,717	LF	30	171,510
4	PIPE, 8" DIA. (PVC C-900)	3,328	LF	40	133,120
5	PIPE, 10" DIA. (PVC C-900)	3,406	LF	50	170,300
6	PIPE, 12" DIA. (PVC C-900)	5,959	LF	60	357,540
7	Concrete thrust blocks	1.05	CY	60	63
8	Trench Safety	23,932	LF	1.00	23,932
9	Erosion & Sediment control	23,932	LF	1.00	23,932
10	Traffic control plan	1	LS	2,000	2,000
11	Gate/Blocking valves	8	EA	1,500	12,000
12	Comb. Rate of Flow & Pressure Reducing Valve	1	EA	10,000	10,000
13	Fittings	1.68	TN	4,000	6,720
14	Mobilization/bonds/insurance	1	LS	100,767	100,767
Subtotal					\$1,108,000
Engineering & Survey @ 10%					\$110,800
Contingency @ 15%					\$166,200
TOTAL					\$1,385,000

South Commercial Development Area					
Item No.	Description	Est. Quantity	Unit	Unit Price	Total Cost
1	PIPE, 12" DIA. (PVC C-900)	6,839	LF	60	410,356
2	PIPE, 14" DIA. (PVC C-905)	3,625	LF	70	253,730
3	Concrete thrust blocks	1	CY	60	60
4	Trench Safety	10,464	LF	1.00	10,464
5	Erosion & Sediment control	10,464	LF	1.00	10,464
6	Traffic control plan	1	LS	5,000	5,000
	Highway Bore with Steel Casing	300	LF	65	19,500
	Railroad Bore with Steel Casing	300	LF	65	19,500
7	Gate/Blocking valves	10	EA	1,500	15,000
8	Fittings	1.6	TN	4,000	6,400
9	Mobilization/bonds/insurance	1	LS	75,047	75,047
Subtotal					\$826,000
Engineering & Survey @ 10%					\$82,600
Contingency @ 15%					\$123,900
TOTAL					\$1,032,500

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Appendix H: Projected System O&M Costs

Appendix H1: Phase 1 Expansion

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phase 1 (2015) - Existing 40 HP (525 gpm)												
Monthly Demand	633,363	2,352,490	9,590,921	12,079,132	10,224,284	17,417,474	23,436,000	22,846,298	10,540,965	4,433,539	723,843	135,721
Daily Demand	20,431	84,018	309,385	402,638	329,816	580,582	756,000	736,977	351,366	143,017	24,128	4,378
Time of Pumping (hrs)	0.65	2.67	9.82	12.78	10.47	18.43	24.00	23.40	11.15	4.54	0.77	0.14
kwh	19	79	291	378	310	546	710	693	330	134	23	4
Cost/Day (10¢/kwh)	\$1.92	\$7.89	\$29.07	\$37.84	\$30.99	\$54.56	\$71.04	\$69.25	\$33.02	\$13.44	\$2.27	\$0.41
Cost/Month	\$59.52	\$236.85	\$901.24	\$1,135.05	\$960.76	\$1,636.69	\$2,202.24	\$2,146.83	\$990.52	\$416.61	\$68.02	\$12.75

Appendix H2: Phase 2 Expansion

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phase 2 (2020) - Lake Pump Station - 3X200hp (2900gpm)												
Irrigation Demand (gpd)	49,014	159,879	543,946	705,883	584,531	1,016,417	1,383,514	1,282,817	606,551	270,137	61,984	23,019
Total Pumping Rate (gpm)	8700	8700	8700	8700	8700	8700	8700	8700	8700	8700	8700	8700
Time of Pumping (hrs)	0.09	0.31	1.04	1.35	1.12	1.95	2.65	2.46	1.16	0.52	0.12	0.04
kwh	42	136	463	600	497	865	1177	1091	516	230	53	20
Cost/Day (10¢/kwh)	\$4.17	\$13.60	\$46.27	\$60.04	\$49.72	\$86.45	\$117.68	\$109.11	\$51.59	\$22.98	\$5.27	\$1.96
Cost/Month	\$129.24	\$421.57	\$1,434.27	\$1,801.22	\$1,541.28	\$2,593.62	\$3,648.02	\$3,382.51	\$1,547.75	\$712.29	\$158.17	\$60.70
Phase 2 (2020) - WWTP Pump Station - 2X125hp (1190gpm)												
Irrigation Demand (gpd)	49,014	159,879	543,946	705,883	584,531	1,016,417	1,383,514	1,282,817	606,551	270,137	61,984	23,019
Total Pumping Rate (gpm)	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Time of Pumping (hrs)	0.34	1.12	3.81	4.94	4.09	7.12	9.69	8.98	4.25	1.89	0.43	0.16
kwh	63	207	705	914	757	1317	1792	1662	786	350	80	30
Cost/Day (10¢/kwh)	\$6.35	\$20.71	\$70.47	\$91.45	\$75.73	\$131.68	\$179.24	\$166.19	\$78.58	\$35.00	\$8.03	\$2.98
Cost/Month	\$196.85	\$642.09	\$2,184.55	\$2,743.45	\$2,347.54	\$3,950.36	\$5,556.34	\$5,151.93	\$2,357.39	\$1,084.90	\$240.90	\$92.45

Appendix H3: Plum Creek Service Area

	Distance (ft)	Diameter (in)	"C" Factor	Static Head (ft)								
Pipe Segment	2,770	18	120	35								
Irrigation Demand (gpd)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	49,222	202,415	745,368	970,033	794,590	1,398,737	1,916,158	1,775,523	846,508	344,557	58,129	10,548
Lake Pump Station												
Total Pumping Rate (gpm)	137	562	2070	2695	2207	3885	5323	4932	2351	957	161	100
Time of Pumping (hrs)	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	1.76
Head Loss (ft/100)	0.001	0.014	0.159	0.259	0.179	0.509	0.911	0.791	0.201	0.038	0.001	0.001
Friction (ft)	0.0	0.4	4.4	7.2	5.0	14.1	25.2	21.9	5.6	1.1	0.0	0.0
Total Dynamic Head	35.0	35.4	39.4	42.2	40.0	49.1	60.2	56.9	40.6	36.1	35.0	35.0
horse power required	1.61	6.70	27.47	38.25	29.69	64.23	107.95	94.51	32.12	11.62	1.90	1.18
kwh	7	30	122	170	132	285	479	420	143	52	8	2
Cost/Day (10¢/kwh)	\$0.72	\$2.98	\$12.19	\$16.98	\$13.18	\$28.52	\$47.93	\$41.96	\$14.26	\$5.16	\$0.85	\$0.15
Cost/Month	\$22.20	\$92.23	\$378.04	\$509.51	\$408.66	\$855.51	\$1,485.77	\$1,300.86	\$427.80	\$159.93	\$25.37	\$4.75
WWTP Pump Station - 2X125hp (1190gpm)												
Total Pumping Rate (gpm)	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Time of Pumping (hrs)	0.34	1.42	5.22	6.79	5.56	9.80	13.42	12.43	5.93	2.41	0.41	0.07
kwh	64	262	966	1257	1029	1812	2482	2300	1097	446	75	14
Cost/Day (10¢/kwh)	\$6.38	\$26.22	\$96.56	\$125.67	\$102.94	\$181.21	\$248.24	\$230.02	\$109.67	\$44.64	\$7.53	\$1.37
Cost/Month	\$197.68	\$812.92	\$2,993.48	\$3,770.09	\$3,191.16	\$5,436.27	\$7,695.49	\$7,130.69	\$3,290.00	\$1,383.78	\$225.92	\$42.36

Appendix H4: Southeast Service Area

Irrigation Demand (gallons per day)												
Delivery Point	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Waterleaf Park	2,167	8,909	32,808	42,696	34,974	61,566	84,340	78,150	37,259	15,166	2,559	464
Waterleaf HOA Park	98	403	1,483	1,930	1,581	2,783	3,813	3,533	1,684	686	116	21
Lake Kyle	1,328	5,463	20,116	26,180	21,445	37,750	51,714	47,919	22,846	9,299	1,569	285
Steeplechase Park	277	1,138	4,189	5,452	4,466	7,862	10,770	9,980	4,758	1,937	327	59
Bunton Cr. Ball Field	310	1,275	4,695	6,111	5,005	8,811	12,071	11,185	5,332	2,170	366	66
Brookside ES	64	264	974	1,267	1,038	1,827	2,503	2,319	1,106	450	76	14
Lehman HS	1,107	4,552	16,764	21,817	17,871	31,459	43,096	39,933	19,039	7,749	1,307	237
Post Oak HOA Park	117	480	1,768	2,302	1,885	3,319	4,546	4,213	2,008	818	138	25
Total	5,468	22,485	82,798	107,754	88,266	155,376	212,853	197,231	94,033	38,275	6,457	1,172

Delivery Point	Selected Peak Day Demand (gpm)	Pipe Segment	Distance (ft)	Diameter (in)	"C" Factor	Static Head (ft)
Brookside ES	42	7	530	6	120	5
Post Oak Park	76	8	774	4	120	0
Bunton Cr. Ball Field	101	3	4768	6	120	-15
Lehman HS	120	10	2310	6	120	10
WaterLeaf HOA Park	64	34	405	4	120	15
Waterleaf Park	234	2	4203	14	120	15
Lake Kyle	144					
Steeplechase Park	179					

Lake Pump Station												
Segment 5 (Brookside + Post Oak Park)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	181	745	2,742	3,569	2,923	5,146	7,049	6,532	3,114	1,268	214	39
Total Pumping Rate (gpm)	118	118	118	118	118	118	118	118	118	118	118	118
Time of Pumping (hrs)	0.03	0.11	0.39	0.50	0.41	0.73	1.00	0.92	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
Friction (ft)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Total Dynamic Head	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0	53.0
horse power required	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
kwh	0	0	1	1	1	1	2	1	1	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.02	\$0.06	\$0.08	\$0.06	\$0.11	\$0.16	\$0.14	\$0.07	\$0.03	\$0.00	\$0.00
Cost/Month	\$0.12	\$0.51	\$1.87	\$2.35	\$1.99	\$3.39	\$4.81	\$4.45	\$2.05	\$0.86	\$0.14	\$0.03

Lake Pump Station												
Segment 7 (Brookside + Post Oak Park)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	181	745	2,742	3,569	2,923	5,146	7,049	6,532	3,114	1,268	214	39
Total Pumping Rate (gpm)	118	118	118	118	118	118	118	118	118	118	118	118
Time of Pumping (hrs)	0.03	0.11	0.39	0.50	0.41	0.73	1.00	0.92	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
Friction (ft)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total Dynamic Head	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
horse power required	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.01	\$0.01	\$0.01	\$0.01	\$0.02	\$0.02	\$0.01	\$0.00	\$0.00	\$0.00
Cost/Month	\$0.01	\$0.06	\$0.21	\$0.26	\$0.22	\$0.38	\$0.53	\$0.49	\$0.23	\$0.10	\$0.02	\$0.00

Lake Pump Station												
Segment 8 (Post Oak Park)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	117	480	1,768	2,302	1,885	3,319	4,546	4,213	2,008	818	138	25
Total Pumping Rate (gpm)	76	76	76	76	76	76	76	76	76	76	76	76
Time of Pumping (hrs)	0.03	0.11	0.39	0.50	0.41	0.73	1.00	0.92	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533
Friction (ft)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Total Dynamic Head	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
horse power required	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.01	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00
Cost/Month	\$0.01	\$0.03	\$0.09	\$0.12	\$0.10	\$0.17	\$0.24	\$0.22	\$0.10	\$0.04	\$0.01	\$0.00

Lake Pump Station												
Segment 10 (Lehman HS)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	1,107	4,552	16,764	21,817	17,871	31,459	43,096	39,933	19,039	7,749	1,307	237
Total Pumping Rate (gpm)	120	120	120	120	120	120	120	120	120	120	120	120
Time of Pumping (hrs)	0.15	0.63	2.33	3.03	2.48	4.37	5.99	5.55	2.64	1.08	0.18	0.03
Head Loss (ft/100)	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172
Friction (ft)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Dynamic Head	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
horse power required	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
kwh	0	0	1	1	1	2	3	2	1	0	0	0
Cost/Day (10¢/kwh)	\$0.01	\$0.03	\$0.10	\$0.13	\$0.10	\$0.18	\$0.25	\$0.23	\$0.11	\$0.04	\$0.01	\$0.00
Cost/Month	\$0.20	\$0.82	\$3.02	\$3.80	\$3.22	\$5.48	\$7.76	\$7.19	\$3.32	\$1.39	\$0.23	\$0.04

Lake Pump Station												
Segment 3 (Bunton Creek Ball Field)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	310	1,275	4,695	6,111	5,005	8,811	12,071	11,185	5,332	2,170	366	66
Total Pumping Rate (gpm)	101	101	101	101	101	101	101	101	101	101	101	101
Time of Pumping (hrs)	0.05	0.21	0.77	1.01	0.83	1.45	1.99	1.85	0.88	0.36	0.06	0.01
Head Loss (ft/100)	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Friction (ft)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Total Dynamic Head	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0
horse power required	-0.31	-0.31	-0.31	-0.31	-0.31	-0.31	-0.31	-0.31	-0.31	-0.31	-0.31	-0.31
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	-\$0.02	-\$0.02	-\$0.02	-\$0.03	-\$0.05	-\$0.04	-\$0.02	-\$0.01	\$0.00	\$0.00
Cost/Month	-\$0.04	-\$0.15	-\$0.55	-\$0.69	-\$0.58	-\$0.99	-\$1.40	-\$1.30	-\$0.60	-\$0.25	-\$0.04	-\$0.01
Lake Pump Station												
Segment 2 (Waterleaf Park)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	2,167	8,909	32,808	42,696	34,974	61,566	84,340	78,150	37,259	15,166	2,559	464
Total Pumping Rate (gpm)	234	234	234	234	234	234	234	234	234	234	234	234
Time of Pumping (hrs)	0.15	0.63	2.34	3.04	2.49	4.39	6.01	5.57	2.65	1.08	0.18	0.03
Head Loss (ft/100)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Friction (ft)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total Dynamic Head	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
horse power required	1.21	1.21		1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
kwh	0	1	2	3	2	4	5	5	2	1	0	0
Cost/Day (10¢/kwh)	\$0.01	\$0.06	\$0.21	\$0.27	\$0.22	\$0.39	\$0.54	\$0.50	\$0.24	\$0.10	\$0.02	\$0.00
Cost/Month	\$0.43	\$1.77	\$6.50	\$8.19	\$6.93	\$11.81	\$16.72	\$15.50	\$7.15	\$3.01	\$0.49	\$0.09

Lake Pump Station												
Segment 34 (Waterleaf HOA Park)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	98	403	1,483	1,930	1,581	2,783	3,813	3,533	1,684	686	116	21
Total Pumping Rate (gpm)	64	64	64	64	64	64	64	64	64	64	64	64
Time of Pumping (hrs)	0.03	0.11	0.39	0.51	0.41	0.73	1.00	0.93	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.383	0.383	0.383	0.383	0.383	0.383	0.383	0.383	0.383	0.383	0.383	0.383
Friction (ft)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total Dynamic Head	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
horse power required	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.01	\$0.01	\$0.01	\$0.02	\$0.03	\$0.02	\$0.01	\$0.00	\$0.00	\$0.00
Cost/Month	\$0.02	\$0.09	\$0.32	\$0.40	\$0.34	\$0.57	\$0.81	\$0.75	\$0.35	\$0.15	\$0.02	\$0.00

Northeast Service Area - WWTP Pump Station - 2X125hp (1190gpm)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	5,468	22,485	82,798	107,754	88,266	155,376	212,853	197,231	94,033	38,275	6,457	1,172
Total Pumping Rate (gpm)	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Time of Pumping (hrs)	0.04	0.16	0.58	0.75	0.62	1.09	1.49	1.38	0.66	0.27	0.05	0.01
kwh	7	29	107	140	114	201	276	256	122	50	8	2
Cost/Day (10¢/kwh)	\$0.71	\$2.91	\$10.73	\$13.96	\$11.43	\$20.13	\$27.58	\$25.55	\$12.18	\$4.96	\$0.84	\$0.15
Cost/Month	\$21.96	\$90.30	\$332.53	\$418.79	\$354.48	\$603.88	\$854.84	\$792.10	\$365.46	\$153.71	\$25.10	\$4.71

Appendix H5: Northeast Service Area

Irrigation Demand (gallons per month)												
Delivery Point	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Kyle Pkwy ROW	17,480	64,925	264,692	333,362	282,172	480,691	680,459	630,517	290,912	122,358	19,977	3,746
Seton Medical Ctr	16,727	62,129	253,294	319,007	270,021	459,992	651,157	603,366	278,385	117,089	19,117	3,584
Seton MC - Cooling	458,375	535,485	794,659	940,311	991,718	1,313,009	1,582,893	1,492,932	1,143,796	946,737	646,866	486,220
Chapa MS	11,387	42,295	172,432	217,166	183,819	313,142	443,279	410,745	189,512	79,709	13,014	2,440
Fuentes ES	9,274	34,446	140,435	176,868	149,709	255,035	361,023	334,526	154,346	64,918	10,599	1,987
Kensington ES	3,309	12,291	50,110	63,111	53,419	91,002	128,821	119,366	55,074	23,164	3,782	709
Total	516,552	751,570	1,675,622	2,049,826	1,930,857	2,912,870	3,847,632	3,591,452	2,112,024	1,353,975	713,353	498,687
Irrigation Demand (gpd)												
Delivery Point	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Kyle Pkwy ROW	564	2,319	8,538	11,112	9,102	16,023	21,950	20,339	9,697	3,947	666	121
Seton Medical Ctr	540	2,219	8,171	10,634	8,710	15,333	21,005	19,463	9,279	3,777	637	116
Seton MC - Cooling	14,786	19,124	25,634	31,344	31,991	43,767	51,061	48,159	38,127	30,540	21,562	15,685
Chapa MS	367	1,511	5,562	7,239	5,930	10,438	14,299	13,250	6,317	2,571	434	79
Fuentes ES	299	1,230	4,530	5,896	4,829	8,501	11,646	10,791	5,145	2,094	353	64
Kensington ES	107	439	1,616	2,104	1,723	3,033	4,156	3,851	1,836	747	126	23
Total	16,663	26,842	54,052	68,328	62,286	97,096	124,117	115,853	70,401	43,677	23,778	16,087
Delivery Point	Selected Peak Day Demand (gpm)	Pipe Segment	Distance (ft)	Diameter (in)	"C" Factor	Static Head (ft)						
Kyle Pkwy ROW	122	14	2890	8	120	30						
Seton Medical Ctr	100	14	2890	8	120	30						
Seton MC - Cooling	50											
Chapa MS	119	16	2410	6	120	-25						
Fuentes ES	194	13	1225	8	120	25						
Kensington ES	69	15	6250	6	120	-5						

Lake Pump Station												
Segment 16 (Chapa MS)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	367	1,511	5,562	7,239	5,930	10,438	14,299	13,250	6,317	2,571	434	79
Total Pumping Rate (gpm)	119	119	119	119	119	119	119	119	119	119	119	119
Time of Pumping (hrs)	0.05	0.21	0.78	1.01	0.83	1.46	2.00	1.86	0.88	0.36	0.06	0.01
Head Loss (ft/100)	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
Friction (ft)	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Total Dynamic Head	-20.9	-20.9	-20.9	-20.9	-20.9	-20.9	-20.9	-20.9	-20.9	-20.9	-20.9	-20.9
horse power required	-0.84	-0.84	-0.84	-0.84	-0.84	-0.84	-0.84	-0.84	-0.84	-0.84	-0.84	-0.84
kwh	0	0	0	-1	-1	-1	-1	-1	-1	0	0	0
Cost/Day (10¢/kwh)	\$0.00	-\$0.01	-\$0.05	-\$0.06	-\$0.05	-\$0.09	-\$0.12	-\$0.12	-\$0.05	-\$0.02	\$0.00	\$0.00
Cost/Month	-\$0.10	-\$0.41	-\$1.50	-\$1.89	-\$1.60	-\$2.72	-\$3.85	-\$3.57	-\$1.65	-\$0.69	-\$0.11	- \$0.02
Lake Pump Station												
Segment 13 (Fuentes+Hosp. Irr. + Kens. ES. + Chapa MS)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	1,313	5,399	19,880	25,872	21,193	37,306	51,106	47,355	22,577	9,190	1,550	281
Total Pumping Rate (gpm)	482	482	482	482	482	482	482	482	482	482	482	482
Time of Pumping (hrs)	0.05	0.19	0.69	0.89	0.73	1.29	1.77	1.64	0.78	0.32	0.05	0.01
Head Loss (ft/100)	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556	0.556
Friction (ft)	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Total Dynamic Head	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8
horse power required	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16
kwh	0	1	3	3	3	5	7	6	3	1	0	0
Cost/Day (10¢/kwh)	\$0.02	\$0.07	\$0.26	\$0.34	\$0.28	\$0.49	\$0.68	\$0.63	\$0.30	\$0.12	\$0.02	\$0.00
Cost/Month	\$0.54	\$2.21	\$8.14	\$10.25	\$8.68	\$14.78	\$20.93	\$19.39	\$8.95	\$3.76	\$0.61	\$0.12

Lake Pump Station												
Segment 14 (Hosp. Irr. + Kens. ES. + Chapa MS)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	1,014	4,168	15,350	19,976	16,363	28,805	39,460	36,564	17,432	7,096	1,197	217
Total Pumping Rate (gpm)	288	288	288	288	288	288	288	288	288	288	288	288
Time of Pumping (hrs)	0.06	0.24	0.89	1.16	0.95	1.67	2.28	2.12	1.01	0.41	0.07	0.01
Head Loss (ft/100)	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214
Friction (ft)	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Total Dynamic Head	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2
horse power required	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51
kwh	0	1	2	3	2	4	6	5	3	1	0	0
Cost/Day (10¢/kwh)	\$0.02	\$0.06	\$0.23	\$0.30	\$0.25	\$0.43	\$0.59	\$0.55	\$0.26	\$0.11	\$0.02	\$0.00
Cost/Month	\$0.47	\$1.94	\$7.15	\$9.01	\$7.62	\$12.99	\$18.39	\$17.04	\$7.86	\$3.31	\$0.54	\$0.10
Lake Pump Station												
Segment 15 (Kens. ES. + Chapa MS)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	474	1,949	7,179	9,343	7,653	13,471	18,455	17,100	8,153	3,318	560	102
Total Pumping Rate (gpm)	188	188	188	188	188	188	188	188	188	188	188	188
Time of Pumping (hrs)	0.04	0.17	0.64	0.83	0.68	1.19	1.64	1.52	0.72	0.29	0.05	0.01
Head Loss (ft/100)	0.395	0.395	0.395	0.395	0.395	0.395	0.395	0.395	0.395	0.395	0.395	0.395
Friction (ft)	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
Total Dynamic Head	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7
horse power required	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
kwh	0	0	1	1	1	1	2	1	1	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.02	\$0.06	\$0.08	\$0.06	\$0.11	\$0.15	\$0.14	\$0.07	\$0.03	\$0.00	\$0.00
Cost/Month	\$0.12	\$0.49	\$1.82	\$2.29	\$1.94	\$3.31	\$4.68	\$4.34	\$2.00	\$0.84	\$0.14	\$0.03
WWTP Pump Station - 2X125hp (1190gpm)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	16,663	26,842	54,052	68,328	62,286	97,096	124,117	115,853	70,401	43,677	23,778	16,087
Total Pumping Rate (gpm)	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Time of Pumping (hrs)	0.12	0.19	0.38	0.48	0.44	0.68	0.87	0.81	0.49	0.31	0.17	0.11
kwh	22	35	70	89	81	126	161	150	91	57	31	21
Cost/Day (10¢/kwh)	\$2.16	\$3.48	\$7.00	\$8.85	\$8.07	\$12.58	\$16.08	\$15.01	\$9.12	\$5.66	\$3.08	\$2.08
Cost/Month	\$66.92	\$107.80	\$217.08	\$265.56	\$250.15	\$377.37	\$498.47	\$465.28	\$273.62	\$175.41	\$92.42	\$64.61

Appendix H6: North Commercial Service Area

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
gallons per month	190,505	707,590	2,884,789	3,633,201	3,075,294	5,238,886	7,416,085	6,871,785	3,170,547	1,333,535	217,720	40,822
gpd	6,145	25,271	93,058	121,107	99,203	174,630	239,229	221,670	105,685	43,017	7,257	1,317
Daily Demand at All 6 Delivery Points (gpd)	1,024	4,212	15,510	20,184	16,534	29,105	39,871	36,945	17,614	7,170	1,210	219
Peak Demand Rate for 6 Hours Irrigation (gpm)							111					
Pipe Segment												
	Demand Rate (gpm)	Distance (ft)	Diameter (in)	"C" Factor	Static Head (ft)							
North of Main Branch 1	111	2,642	12	120	14							
North of Main Branch 2	111	3,346	12	120	14							
North of Main Branch 3	111	4,054	10	120	14							
North of Main Branch 4	111	3,593	10	120	14							
South of Main Branch 1	111	2,396	14	120	0							
South of Main Branch	111	4,958	14	120	0							

Lake Pump Station												
Segment 1 North of Main Branch	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	4,097	16,847	62,038	80,738	66,135	116,420	159,486	147,780	70,457	28,678	4,838	878
Total Pumping Rate (gpm)	444	444	444	444	444	444	444	444	444	444	444	444
Time of Pumping (hrs)	0.15	0.63	2.33	3.03	2.48	4.37	5.99	5.55	2.64	1.08	0.18	0.03
Head Loss (ft/100)	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066
Friction (ft)	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Total Dynamic Head	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
horse power required	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32
kwh	0	1	4	5	4	7	10	10	5	2	0	0
Cost/Day (10¢/kwh)	\$0.03	\$0.11	\$0.40	\$0.52	\$0.43	\$0.75	\$1.03	\$0.95	\$0.45	\$0.18	\$0.03	\$0.01
Cost/Month	\$0.82	\$3.36	\$12.38	\$15.59	\$13.20	\$22.48	\$31.82	\$29.49	\$13.61	\$5.72	\$0.93	\$0.18
Lake Pump Station												
Segment 2 North of Main Branch	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	3,073	12,636	46,529	60,553	49,602	87,315	119,614	110,835	52,842	21,509	3,629	658
Total Pumping Rate (gpm)	333	333	333	333	333	333	333	333	333	333	333	333
Time of Pumping (hrs)	0.15	0.63	2.33	3.03	2.48	4.37	5.99	5.55	2.64	1.08	0.18	0.03
Head Loss (ft/100)	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
Friction (ft)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total Dynamic Head	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1	15.1
horse power required	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69
kwh	0	1	3	4	3	5	7	7	3	1	0	0
Cost/Day (10¢/kwh)	\$0.02	\$0.08	\$0.29	\$0.38	\$0.31	\$0.55	\$0.75	\$0.69	\$0.33	\$0.13	\$0.02	\$0.00
Cost/Month	\$0.60	\$2.45	\$9.02	\$11.36	\$9.61	\$16.37	\$23.18	\$21.48	\$9.91	\$4.17	\$0.68	\$0.13
Lake Pump Station												
Segment 3 North of Main Branch	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	2,048	8,424	31,019	40,369	33,068	58,210	79,743	73,890	35,228	14,339	2,419	439
Total Pumping Rate (gpm)	222	222	222	222	222	222	222	222	222	222	222	222
Time of Pumping (hrs)	0.15	0.63	2.33	3.03	2.48	4.37	5.99	5.55	2.64	1.08	0.18	0.03
Head Loss (ft/100)	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045

Friction (ft)	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Total Dynamic Head	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
horse power required	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
kwh	0	1	2	3	2	4	5	5	2	1	0	0
Cost/Day (10¢/kwh)	\$0.01	\$0.05	\$0.20	\$0.26	\$0.21	\$0.38	\$0.52	\$0.48	\$0.23	\$0.09	\$0.02	\$0.00
Cost/Month	\$0.41	\$1.69	\$6.21	\$7.83	\$6.62	\$11.28	\$15.97	\$14.80	\$6.83	\$2.87	\$0.47	\$0.09

Lake Pump Station												
Segment 4 North of Main Branch	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	1,024	4,212	15,510	20,184	16,534	29,105	39,871	36,945	17,614	7,170	1,210	219
Total Pumping Rate (gpm)	111	111	111	111	111	111	111	111	111	111	111	111
Time of Pumping (hrs)	0.15	0.63	2.33	3.03	2.48	4.37	5.99	5.55	2.64	1.08	0.18	0.03
Head Loss (ft/100)	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
Friction (ft)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total Dynamic Head	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
horse power required	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
kwh	0	0	1	1	1	2	2	2	1	0	0	0
Cost/Day (10¢/kwh)	\$0.01	\$0.02	\$0.09	\$0.12	\$0.10	\$0.17	\$0.24	\$0.22	\$0.10	\$0.04	\$0.01	\$0.00
Cost/Month	\$0.19	\$0.77	\$2.83	\$3.57	\$3.02	\$5.15	\$7.29	\$6.75	\$3.11	\$1.31	\$0.21	\$0.04
Lake Pump Station												
Segment 5 South of Main Branch	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	2,048	8,424	31,019	40,369	33,068	58,210	79,743	73,890	35,228	14,339	2,419	439
Total Pumping Rate (gpm)	222	222	222	222	222	222	222	222	222	222	222	222
Time of Pumping (hrs)	0.15	0.63	2.33	3.03	2.48	4.37	5.99	5.55	2.64	1.08	0.18	0.03
Head Loss (ft/100)	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Friction (ft)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total Dynamic Head	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
horse power required	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.01	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00
Cost/Month	\$0.01	\$0.02	\$0.08	\$0.10	\$0.09	\$0.15	\$0.21	\$0.20	\$0.09	\$0.04	\$0.01	\$0.00

Lake Pump Station												
Segment 6 South of Main Branch	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	1,024	4,212	15,510	20,184	16,534	29,105	39,871	36,945	17,614	7,170	1,210	219
Total Pumping Rate (gpm)	111	111	111	111	111	111	111	111	111	111	111	111
Time of Pumping (hrs)	0.15	0.63	2.33	3.03	2.48	4.37	5.99	5.55	2.64	1.08	0.18	0.03
Head Loss (ft/100)	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Friction (ft)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Dynamic Head	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
horse power required	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Cost/Month	\$0.00	\$0.01	\$0.02	\$0.03	\$0.03	\$0.04	\$0.06	\$0.06	\$0.03	\$0.01	\$0.00	\$0.00
Northeast Service Area - WWTP Pump Station - 2X125hp (1190gpm)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	6,145	25,271	93,058	121,107	99,203	174,630	239,229	221,670	105,685	43,017	7,257	1,317
Total Pumping Rate (gpm)	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Time of Pumping (hrs)	0.04	0.18	0.65	0.85	0.69	1.22	1.68	1.55	0.74	0.30	0.05	0.01
kwh	8	33	121	157	129	226	310	287	137	56	9	2
Cost/Day (10¢/kwh)	\$0.80	\$3.27	\$12.06	\$15.69	\$12.85	\$22.62	\$30.99	\$28.72	\$13.69	\$5.57	\$0.94	\$0.17
Cost/Month	\$24.68	\$101.49	\$373.73	\$470.69	\$398.41	\$678.71	\$960.77	\$890.25	\$410.75	\$172.76	\$28.21	\$5.29

Appendix H7: West Service Area

West Service Area												
Irrigation Demand (gallons per month)												
Delivery Point	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
City Square	3,667	13,621	55,532	69,939	59,199	100,848	142,759	132,281	61,033	25,670	4,191	786
Gregg-Clarke Park	22,265	82,698	337,154	424,624	359,419	612,285	866,741	803,127	370,552	155,854	25,446	4,771
Hometown Kyle Trails	1,916	7,117	29,014	36,541	30,930	52,690	74,587	69,113	31,888	13,412	2,190	411
Hometown Kyle Trails	190	704	2,870	3,615	3,060	5,213	7,379	6,838	3,155	1,327	217	41
Decker Park	5,546	20,600	83,985	105,774	89,531	152,520	215,905	200,059	92,304	38,823	6,339	1,188
McNaughton Park	1,977	7,343	29,938	37,705	31,915	54,368	76,963	71,314	32,903	13,839	2,259	424
Vantage Apts.	5,638	20,939	85,368	107,515	91,006	155,032	219,460	203,353	93,824	39,463	6,443	1,208
Hometown Kyle Trails Park	7,330	27,227	111,002	139,800	118,332	201,584	285,359	264,415	121,997	51,312	8,378	1,571
Silverado	2,116	7,858	32,038	40,349	34,153	58,182	82,361	76,316	35,211	14,810	2,418	453
Center St. Streetscape	17,092	63,484	258,820	325,967	275,912	470,028	665,364	616,530	284,458	119,643	19,534	3,663
Wallace MS	7,205	26,761	109,102	137,407	116,307	198,134	280,475	259,890	119,910	50,434	8,234	1,544
Kyle ES	1,987	7,380	30,087	37,892	32,074	54,639	77,346	71,669	33,067	13,908	2,271	426
Negley ES	2,559	9,505	38,751	48,805	41,310	70,374	99,620	92,308	42,590	17,913	2,925	548
Total	79,487	295,238	1,203,662	1,515,933	1,283,149	2,185,895	3,094,319	2,867,213	1,322,892	556,410	90,842	17,033
Irrigation Demand (gallons per day)												
Delivery Point	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
City Square	118	486	1,791	2,331	1,910	3,362	4,605	4,267	2,034	828	140	25
Gregg-Clarke Park	718	2,954	10,876	14,154	11,594	20,409	27,959	25,907	12,352	5,028	848	154
Hometown Kyle Trails	62	254	936	1,218	998	1,756	2,406	2,229	1,063	433	73	13
Hometown Kyle Trails	6	25	93	121	99	174	238	221	105	43	7	1
Decker Park	179	736	2,709	3,526	2,888	5,084	6,965	6,454	3,077	1,252	211	38
McNaughton Park	64	262	966	1,257	1,030	1,812	2,483	2,300	1,097	446	75	14
Vantage Apts.	182	748	2,754	3,584	2,936	5,168	7,079	6,560	3,127	1,273	215	39
Hometown Kyle Trails Park	236	972	3,581	4,660	3,817	6,719	9,205	8,530	4,067	1,655	279	51
Silverado	68	281	1,033	1,345	1,102	1,939	2,657	2,462	1,174	478	81	15
Center St. Streetscape	551	2,267	8,349	10,866	8,900	15,668	21,463	19,888	9,482	3,859	651	118
Wallace MS	232	956	3,519	4,580	3,752	6,604	9,048	8,384	3,997	1,627	274	50

Kyle ES	64	264	971	1,263	1,035	1,821	2,495	2,312	1,102	449	76	14
Negley ES	83	339	1,250	1,627	1,333	2,346	3,214	2,978	1,420	578	97	18
Total	2,564	10,544	38,828	50,531	41,392	72,863	99,817	92,491	44,096	17,949	3,028	549

Delivery Point	Selected Peak Day Demand (gpm)	Pipe Segment	Distance (ft)	Diameter (in)	"C" Factor	Static Head (ft)						
Negley ES	54	19	2198	4	120	30						
Kyle ES	42	26	2039	8	120	-25						
Wallace MS	151	25	1102	6	120	25						
Hometown Kyle Trails 1	40	21	1262	4	120	25						
Hometown Kyle Trails 2	4	22	1390	2	120	5						
Hometown Kyle Trails Park	153	23	3406	10	120	15						
City Square	77	27	1678	6	120	-15						
Center St. Streetscape	119	27	1678	6	120	-15						
Decker Park	116	29	3179	6	120	30						
Gregg-Clarke Park	116	24	1063	8	120	-5						
Silverado Park	44	23	3406	10	120	15						
McNaughton Park	41	19	2198	4	120	30						
Vantage Apts.	118	31	3837	18		-40						

Lake Pump Station

Segment 18 (All Delivery Points Except Decker & Vantage)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	2,203	9,061	33,365	43,421	35,568	62,611	85,773	79,477	37,892	15,423	2,602	472
Total Pumping Rate (gpm)	842	842	842	842	842	842	842	842	842	842	842	842
Time of Pumping (hrs)	0.04	0.18	0.66	0.86	0.70	1.24	1.70	1.57	0.75	0.31	0.05	0.01
Head Loss (ft/100)	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217	0.217

Friction (ft)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Total Dynamic Head	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5
horse power required	10.62	10.62	10.62	10.62	10.62	10.62	10.62	10.62	10.62	10.62	10.62	10.62
kwh	0	1	5	7	6	10	13	12	6	2	0	0
Cost/Day (10¢/kwh)	\$0.03	\$0.14	\$0.52	\$0.68	\$0.55	\$0.97	\$1.33	\$1.24	\$0.59	\$0.24	\$0.04	\$0.01
Cost/Month	\$1.06	\$4.37	\$16.10	\$20.27	\$17.16	\$29.23	\$41.38	\$38.34	\$17.69	\$7.44	\$1.21	\$0.23
Lake Pump Station												
Segment 19 (McNaughton+Negley)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	146	602	2,216	2,884	2,362	4,158	5,696	5,278	2,516	1,024	173	31
Total Pumping Rate (gpm)	95	95	95	95	95	95	95	95	95	95	95	95
Time of Pumping (hrs)	0.03	0.11	0.39	0.50	0.41	0.73	1.00	0.92	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.811	0.811	0.811	0.811	0.811	0.811	0.811	0.811	0.811	0.811	0.811	0.811
Friction (ft)	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
Total Dynamic Head	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
horse power required	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
kwh	0	0	0	1	0	1	1	1	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.01	\$0.04	\$0.06	\$0.05	\$0.08	\$0.11	\$0.10	\$0.05	\$0.02	\$0.00	\$0.00
Cost/Month	\$0.09	\$0.37	\$1.36	\$1.72	\$1.45	\$2.48	\$3.51	\$3.25	\$1.50	\$0.63	\$0.10	\$0.02
Lake Pump Station												
Segment 29 (Decker Park)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	179	736	2,709	3,526	2,888	5,084	6,965	6,454	3,077	1,252	211	38
Total Pumping Rate (gpm)	116	116	116	116	116	116	116	116	116	116	116	116
Time of Pumping (hrs)	0.03	0.11	0.39	0.51	0.41	0.73	1.00	0.93	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162	0.162
Friction (ft)	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Total Dynamic Head	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1
horse power required	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37	1.37
kwh	0	0	0	1	0	1	1	1	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.01	\$0.04	\$0.05	\$0.04	\$0.07	\$0.10	\$0.09	\$0.04	\$0.02	\$0.00	\$0.00

Cost/Month	\$0.08	\$0.33	\$1.23	\$1.54	\$1.31	\$2.23	\$3.15	\$2.92	\$1.35	\$0.57	\$0.09	\$0.02
Lake Pump Station												
Segment 20 (All Deliveries Except Decker, Vantage, Negley, McNaughton)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	2,057	8,459	31,149	40,538	33,206	58,453	80,076	74,199	35,376	14,399	2,429	441
Total Pumping Rate (gpm)	747	747	747	747	747	747	747	747	747	747	747	747
Time of Pumping (hrs)	0.05	0.19	0.70	0.90	0.74	1.30	1.79	1.66	0.79	0.32	0.05	0.01
Head Loss (ft/100)	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173
Friction (ft)	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Total Dynamic Head	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3
horse power required	6.11	6.11	6.11	6.11	6.11	6.11	6.11	6.11	6.11	6.11	6.11	6.11
kwh	0	1	3	4	3	6	8	7	4	1	0	0
Cost/Day (10¢/kwh)	\$0.02	\$0.09	\$0.31	\$0.41	\$0.34	\$0.59	\$0.81	\$0.75	\$0.36	\$0.15	\$0.02	\$0.00
Cost/Month	\$0.64	\$2.65	\$9.74	\$12.27	\$10.39	\$17.70	\$25.05	\$23.21	\$10.71	\$4.50	\$0.74	\$0.14
Lake Pump Station												
Segment 21 (Hometown Kyle Trails 1,2)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	68	279	1,029	1,339	1,096	1,930	2,644	2,450	1,168	475	80	15
Total Pumping Rate (gpm)	44	44	44	44	44	44	44	44	44	44	44	44
Time of Pumping (hrs)	0.03	0.11	0.39	0.51	0.42	0.73	1.00	0.93	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.194	0.194	0.194	0.194	0.194	0.194	0.194	0.194	0.194	0.194	0.194	0.194
Friction (ft)	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Total Dynamic Head	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4	27.4
horse power required	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.01	\$0.02	\$0.01	\$0.02	\$0.03	\$0.03	\$0.01	\$0.01	\$0.00	\$0.00
Cost/Month	\$0.02	\$0.10	\$0.36	\$0.46	\$0.39	\$0.66	\$0.93	\$0.87	\$0.40	\$0.17	\$0.03	\$0.01
Lake Pump Station												

Segment 22 (Hometown Kyle Trails 2)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	6	25	93	121	99	174	238	221	105	43	7	1
Total Pumping Rate (gpm)	4	4	4	4	4	4	4	4	4	4	4	4
Time of Pumping (hrs)	0.03	0.10	0.39	0.50	0.41	0.72	0.99	0.92	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067
Friction (ft)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total Dynamic Head	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
horse power required	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Cost/Month	\$0.00	\$0.00	\$0.01	\$0.01	\$0.01	\$0.01	\$0.02	\$0.02	\$0.01	\$0.00	\$0.00	\$0.00
Lake Pump Station												
Segment 23 (Kyle Trails Park, Kyle ES, Wallace MS, City Square, Center St., Gregg-Clarke, Silverado)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	1,989	8,180	30,120	39,199	32,110	56,523	77,432	71,749	34,208	13,924	2,349	426
Total Pumping Rate (gpm)	703	703	703	703	703	703	703	703	703	703	703	703
Time of Pumping (hrs)	0.05	0.19	0.71	0.93	0.76	1.34	1.84	1.70	0.81	0.33	0.06	0.01
Head Loss (ft/100)	0.377	0.377	0.377	0.377	0.377	0.377	0.377	0.377	0.377	0.377	0.377	0.377
Friction (ft)	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Total Dynamic Head	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
horse power required	6.58	6.58	6.58	6.58	6.58	6.58	6.58	6.58	6.58	6.58	6.58	6.58
kwh	0	1	3	5	4	7	9	8	4	2	0	0
Cost/Day (10¢/kwh)	\$0.02	\$0.09	\$0.35	\$0.45	\$0.37	\$0.65	\$0.89	\$0.83	\$0.40	\$0.16	\$0.03	\$0.00
Cost/Month	\$0.71	\$2.93	\$10.79	\$13.59	\$11.50	\$19.59	\$27.74	\$25.70	\$11.86	\$4.99	\$0.81	\$0.15
Lake Pump Station												

Segment 24 (Gregg-Clarke, Wallace MS)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	951	3,909	14,395	18,734	15,346	27,014	37,007	34,291	16,349	6,654	1,123	204
Total Pumping Rate (gpm)	267	267	267	267	267	267	267	267	267	267	267	267
Time of Pumping (hrs)	0.06	0.24	0.90	1.17	0.96	1.69	2.31	2.14	1.02	0.42	0.07	0.01
Head Loss (ft/100)	0.186	0.186	0.186	0.186	0.186	0.186	0.186	0.186	0.186	0.186	0.186	0.186
Friction (ft)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total Dynamic Head	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
horse power required	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27	-0.27
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	-\$0.02	-\$0.02	-\$0.02	-\$0.03	-\$0.05	-\$0.04	-\$0.02	-\$0.01	\$0.00	\$0.00
Cost/Month	-\$0.04	-\$0.15	-\$0.56	-\$0.70	-\$0.60	-\$1.02	-\$1.44	-\$1.33	-\$0.61	-\$0.26	-\$0.04	-\$0.01
Lake Pump Station												
Segment 25 (Wallace MS)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	232	956	3,519	4,580	3,752	6,604	9,048	8,384	3,997	1,627	274	50
Total Pumping Rate (gpm)	151	151	151	151	151	151	151	151	151	151	151	151
Time of Pumping (hrs)	0.03	0.11	0.39	0.51	0.41	0.73	1.00	0.93	0.44	0.18	0.03	0.01
Head Loss (ft/100)	0.264	0.264	0.264	0.264	0.264	0.264	0.264	0.264	0.264	0.264	0.264	0.264
Friction (ft)	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Total Dynamic Head	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9
horse power required	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42
kwh	0	0	0	1	0	1	1	1	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.01	\$0.04	\$0.05	\$0.04	\$0.08	\$0.10	\$0.10	\$0.05	\$0.02	\$0.00	\$0.00
Cost/Month	\$0.08	\$0.34	\$1.26	\$1.59	\$1.35	\$2.30	\$3.25	\$3.01	\$1.39	\$0.58	\$0.10	\$0.02
Lake Pump Station												
Segment 26 (Kyle ES, City Square, Center St.)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	734	3,017	11,111	14,460	11,845	20,850	28,563	26,467	12,619	5,136	867	157
Total Pumping Rate	238	238	238	238	238	238	238	238	238	238	238	238

(gpm)												
Time of Pumping (hrs)	0.05	0.21	0.78	1.01	0.83	1.46	2.00	1.85	0.88	0.36	0.06	0.01
Head Loss (ft/100)	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151
Friction (ft)	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Total Dynamic Head	-21.9	-21.9	-21.9	-21.9	-21.9	-21.9	-21.9	-21.9	-21.9	-21.9	-21.9	-21.9
horse power required	-1.76	-1.76	-1.76	-1.76	-1.76	-1.76	-1.76	-1.76	-1.76	-1.76	-1.76	-1.76
kwh	0	0	-1	-1	-1	-2	-3	-2	-1	0	0	0
Cost/Day (10¢/kwh)	-\$0.01	-\$0.03	-\$0.10	-\$0.13	-\$0.11	-\$0.19	-\$0.26	-\$0.24	-\$0.11	-\$0.05	-\$0.01	\$0.00
Cost/Month	-\$0.21	-\$0.85	-\$3.14	-\$3.95	-\$3.34	-\$5.70	-\$8.06	-\$7.47	-\$3.45	-\$1.45	-\$0.24	-\$0.04
Lake Pump Station												
Segment 27 (City Square, Center St.)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	670	2,754	10,140	13,197	10,810	19,029	26,068	24,155	11,516	4,688	791	143
Total Pumping Rate (gpm)	196	196	196	196	196	196	196	196	196	196	196	196
Time of Pumping (hrs)	0.06	0.23	0.86	1.12	0.92	1.62	2.22	2.05	0.98	0.40	0.07	0.01
Head Loss (ft/100)	0.427	0.427	0.427	0.427	0.427	0.427	0.427	0.427	0.427	0.427	0.427	0.427
Friction (ft)	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Total Dynamic Head	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8	-7.8
horse power required	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52	-0.52
kwh	0	0	0	0	0	-1	-1	-1	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	-\$0.01	-\$0.03	-\$0.04	-\$0.04	-\$0.06	-\$0.08	-\$0.08	-\$0.04	-\$0.02	\$0.00	\$0.00
Cost/Month	-\$0.07	-\$0.28	-\$1.02	-\$1.29	-\$1.09	-\$1.86	-\$2.63	-\$2.44	-\$1.12	-\$0.47	-\$0.08	-\$0.01
WWTP Pump Station - 2X125hp (1190gpm)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	2,564	10,544	38,828	50,531	41,392	72,863	99,817	92,491	44,096	17,949	3,028	549
Total Pumping Rate (gpm)	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Time of Pumping (hrs)	0.02	0.07	0.27	0.35	0.29	0.51	0.70	0.65	0.31	0.13	0.02	0.00
kwh	3	14	50	65	54	94	129	120	57	23	4	1
Cost/Day (10¢/kwh)	\$0.33	\$1.37	\$5.03	\$6.55	\$5.36	\$9.44	\$12.93	\$11.98	\$5.71	\$2.33	\$0.39	\$0.07
Cost/Month	\$10.30	\$42.35	\$155.94	\$196.39	\$166.23	\$283.19	\$400.87	\$371.45	\$171.38	\$72.08	\$11.77	\$2.21

Appendix H8: South Commercial Service Area

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gallons per month)	151,455	562,547	2,293,463	2,888,465	2,444,918	4,165,015	5,895,930	5,463,201	2,520,645	1,060,186	173,092	32,455
gpd	4,886	20,091	73,983	96,282	78,868	138,834	190,191	176,232	84,022	34,200	5,770	1,047
Daily Demand at All 6 Delivery Points (gpd)	814	3,348	12,330	16,047	13,145	23,139	31,699	29,372	14,004	5,700	962	174
Peak Demand Rate for 6 Hours Irrigation (gpm)							88					
Pipe Segment		Demand Rate (gpm)	Distance (ft)	Diameter (in)	"C" Factor	Static Head (ft)						
South Branch 1		100	3,625	14	120	-1						
South Branch 2		100	2,599	12	120	-1						
South Branch 3		100	2,244	12	120	-1						
South Branch 4		100	1,996	12	120	-1						

Lake Pump Station												
Segment 1 - South Branch 1	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	4,886	20,091	73,983	96,282	78,868	138,834	190,191	176,232	84,022	34,200	5,770	1,047
Total Pumping Rate (gpm)	400	400	400	400	400	400	400	400	400	400	400	400
Time of Pumping (hrs)	0.20	0.84	3.08	4.01	3.29	5.78	7.92	7.34	3.50	1.42	0.24	0.04
Head Loss (ft/100)	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026
Friction (ft)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total Dynamic Head	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
horse power required	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	-\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Cost/Month	\$0.00	-\$0.02	-\$0.06	-\$0.08	-\$0.07	-\$0.11	-\$0.16	-\$0.15	-\$0.07	-\$0.03	\$0.00	\$0.00
Lake Pump Station												
Segment 2 - South Branch 2	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	3,664	15,068	55,487	72,212	59,151	104,125	142,643	132,174	63,016	25,650	4,327	785
Total Pumping Rate (gpm)	300	300	300	300	300	300	300	300	300	300	300	300
Time of Pumping (hrs)	0.20	0.84	3.08	4.01	3.29	5.78	7.92	7.34	3.50	1.42	0.24	0.04
Head Loss (ft/100)	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032
Friction (ft)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Total Dynamic Head	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
horse power required	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	-\$0.01	-\$0.01	-\$0.01	\$0.00	\$0.00	\$0.00	\$0.00
Cost/Month	-\$0.01	-\$0.03	-\$0.12	-\$0.15	-\$0.13	-\$0.22	-\$0.30	-\$0.28	-\$0.13	-\$0.05	-\$0.01	\$0.00

Segment 3 - South Branch 3	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	2,443	10,045	36,991	48,141	39,434	69,417	95,096	88,116	42,011	17,100	2,885	523
Total Pumping Rate (gpm)	200	200	200	200	200	200	200	200	200	200	200	200
Time of Pumping (hrs)	0.20	0.84	3.08	4.01	3.29	5.78	7.92	7.34	3.50	1.42	0.24	0.04
Head Loss (ft/100)	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Friction (ft)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Dynamic Head	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
horse power required	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	-\$0.01	-\$0.01	-\$0.01	-\$0.02	-\$0.03	-\$0.02	-\$0.01	\$0.00	\$0.00	\$0.00
Cost/Month	-\$0.02	-\$0.09	-\$0.31	-\$0.40	-\$0.33	-\$0.57	-\$0.81	-\$0.75	-\$0.35	-\$0.15	-\$0.02	\$0.00
Lake Pump Station												
Segment 4 - South Branch 4	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	1,221	5,023	18,496	24,071	19,717	34,708	47,548	44,058	21,005	8,550	1,442	262
Total Pumping Rate (gpm)	100	100	100	100	100	100	100	100	100	100	100	100
Time of Pumping (hrs)	0.20	0.84	3.08	4.01	3.29	5.78	7.92	7.34	3.50	1.42	0.24	0.04
Head Loss (ft/100)	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Friction (ft)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Dynamic Head	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9
horse power required	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
kwh	0	0	0	0	0	0	0	0	0	0	0	0
Cost/Day (10¢/kwh)	\$0.00	\$0.00	-\$0.01	-\$0.01	-\$0.01	-\$0.01	-\$0.02	-\$0.02	-\$0.01	\$0.00	\$0.00	\$0.00
Cost/Month	-\$0.01	-\$0.06	-\$0.22	-\$0.27	-\$0.23	-\$0.40	-\$0.56	-\$0.52	-\$0.24	-\$0.10	-\$0.02	\$0.00
Northeast Service Area - WWTP Pump Station - 2X125hp (1190gpm)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Irrigation Demand (gpd)	4,886	20,091	73,983	96,282	78,868	138,834	190,191	176,232	84,022	34,200	5,770	1,047
Total Pumping Rate (gpm)	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380	2380
Time of Pumping (hrs)	0.03	0.14	0.52	0.67	0.55	0.97	1.33	1.23	0.59	0.24	0.04	0.01
kwh	6	26	96	125	102	180	246	228	109	44	7	1
Cost/Day (10¢/kwh)	\$0.63	\$2.60	\$9.58	\$12.47	\$10.22	\$17.99	\$24.64	\$22.83	\$10.89	\$4.43	\$0.75	\$0.14
Cost/Month	\$19.62	\$80.69	\$297.12	\$374.21	\$316.74	\$539.59	\$763.83	\$707.77	\$326.55	\$137.35	\$22.42	\$4.20

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Appendix I – Plum Creek Site 1 Conditions

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Natural Resources Conservation Service
 101 South Main Street
 Temple, Texas 76501

Subject: PDM - Plum Creek Site 1 Hazard Classification

Date: September 14, 2010

To: John Mueller, State Conservation Engineer

File Code: 390-15

During the rehabilitation planning of Plum Creek Site 1, it was determined that the structure meets federal and state "high" hazard criteria.

The table below lists the conditions shown in as-built plans compared to the current conditions. Current condition SITES routings were made with the orifice plate removed.

Plum Creek Site 1	As-built plans	Current condition
CN AMC II	81	74
Drainage Area (acres)	1,300	1,185
Hazard Classification	Significant	High
Principal Spillway Crest (elevation, feet)	744.6	744.6
Principal Spillway Pipe (diameter, inches)	24	24
Principal Spillway Storage (ac ft)	94	140.5
Auxiliary Spillway Frequency (% chance of occurrence)	1.27	< 0.2
Auxiliary Spillway Crest (elevation, feet)	758.3	758.3
Routed 100 year AS Crest (elevation, feet)		755.2
Detention Storage (ac ft)	876	744
Top of Dam (elevation, feet)	764.2	764.0
Total Storage TOD (ac ft)	1,706	1,706

Updated current watershed hydrologic conditions were used to develop alternatives presented in this report. It is recommended that the remaining orifice plate be removed (current condition shown above) after the Samson Road improvement construction is completed downstream of the dam. The Water Resources Staff has terminated planning on this structure, and recommends that TCEQ be informed of the findings.

Steve Bednarz
 ASTC Water Resources

cc: Brian Wenberg, Assistant State Conservation Engineer, NRCS, Temple
 Isidro Morales, DC, NRCS, Lockhart
 Johnnie Halliburton, General Manager, Plum Creek Conservation District

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Appendix J – Water Use Permit No. 5839

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



WATER USE PERMIT

APPLICATION NO. 5839

PERMIT NO. 5839

TYPE §11.121

Permittee: Plum Creek Homeowner's Association, Inc.

Address: 12335 Hymeadow Drive Suite 300 Austin, TX 78750

Filed: May 12, 2004

Granted: **DEC 29 2004**

Purpose: Recreation

County: Hays

Watercourse: Plum Creek, tributary of the San Marcos River, tributary of the Guadalupe River

Watershed: Guadalupe River Basin

WHEREAS, Plum Creek Homeowners Association, Applicant, seeks authorization to maintain an existing Soil Conservation Service (SCS) dam and reservoir for in-place recreational purposes on Plum Creek, tributary of the San Marcos River, tributary of the Guadalupe River, Guadalupe River Basin; and

WHEREAS, the reservoir has a capacity of 180 acre-feet of water and a surface area of 39.34 acres and is located approximately 10.1 miles north from San Marcos and 2.2 miles north from Kyle, Texas, Hays County; and

WHEREAS, the dam is located in the Henry Loller Survey 19, Abstract 290, with station 22+40 on the centerline of the dam being N 23.5217°W, 1,713.30 feet from the northeast corner of the Loller Survey, also being at Latitude 30.0194°N, Longitude 97.8790°W; and

WHEREAS, Plum Creek Conservation District is the local sponsor for the SCS dam and has provided a letter of consent of this application dated May 4, 2004; and

WHEREAS, Plum Creek Development Partners, Ltd., Mountain City Golf Co., L.L.C., and Plum Creek Homeowner's Association, Inc. own the land inundated by the reservoir and ownership is evidenced by an Amended and Ratified Easement Agreement dated August 17, 2004; and

WHEREAS, the Texas Commission on Environmental Quality finds that jurisdiction over the application is established; and

WHEREAS, the Executive Director recommends that special conditions be included in the permit for the protection of instream uses; and

WHEREAS, no person protested the granting of this application; and

WHEREAS, this permit, if issued, will be subject to the administrative requirements of the South Texas Watermaster office; and

WHEREAS, the Commission has complied with the requirements of the Texas Commission on Environmental Quality in issuing this permit;

NOW, THEREFORE, Water Use Permit No. 5839 is issued to the Plum Creek Homeowners Association, Inc. subject to the following terms and conditions:

1. IMPOUNDMENT

Permittee is authorized to utilize an existing Soil Conservation Service (SCS) dam and reservoir for in-place recreational purposes on Plum Creek, tributary of the San Marcos River, tributary of the Guadalupe River, Guadalupe River Basin. The reservoir has a capacity of 180 acre-feet of water and a surface area of 39.34 acres and is located approximately 10.1 miles north from San Marcos and 2.2 miles north from Kyle, in Hays County. The dam is located in the Henry Loller Survey 19, Abstract 290 with station 22+40 on the centerline of the dam being N 23.5217°W, 1,713.30 feet from the northeast corner of the Loller Survey, also being at Latitude 30.0194°N, Longitude 97.8790°W.

2. USE

Permittee is authorized to use the reservoir for in-place recreational purposes with no right of diversion.

3. TIME PRIORITY

The time priority of this right is May 12, 2004.

4. SPECIAL CONDITIONS

A. Permittee shall submit to the Executive Director of the TCEQ verification that areas along the upstream margin of the reservoir are to be preserved and managed to promote fish and wildlife habitat in perpetuity.

B. Permittee shall maintain suitable outlets in good working condition in the aforesaid dam to allow the passage of flows in Plum Creek when the reservoir elevation is higher than 744.6 feet above mean sea level.

This permit is issued subject to all superior and senior water rights in the Guadalupe River Basin.

Permittee agrees to be bound by the terms, conditions, and provisions contained herein and such agreement is a condition precedent to the granting of this permit.

All other matters requested in the application which are not specifically granted by this permit are denied.

This permit is issued subject to the Rules of the Texas Commission on Environmental Quality and to the right of continuing supervision of State water resources exercised by the Commission.

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY



For the Commission

Date issued:

DEC 29 2004

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Appendix K – Debt Service Detail

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Year	Series 2015 Payment	Series 2020 Payment	Series 2025 Payment	TOTAL
2015	\$67,704.68			\$67,704.68
2016	\$67,704.68			\$67,704.68
2017	\$67,704.68			\$67,704.68
2018	\$67,704.68			\$67,704.68
2019	\$67,704.68			\$67,704.68
2020	\$67,704.68	\$480,051.28		\$547,755.96
2021	\$67,704.68	\$480,051.28		\$547,755.96
2022	\$67,704.68	\$480,051.28		\$547,755.96
2023	\$67,704.68	\$480,051.28		\$547,755.96
2024	\$67,704.68	\$480,051.28		\$547,755.96
2025	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2026	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2027	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2028	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2029	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2030	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2031	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2032	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2033	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2034	\$67,704.68	\$480,051.28	\$340,128.27	\$887,884.23
2035		\$480,051.28	\$340,128.27	\$820,179.54
2036		\$480,051.28	\$340,128.27	\$820,179.54
2037		\$480,051.28	\$340,128.27	\$820,179.54
2038		\$480,051.28	\$340,128.27	\$820,179.54
2039		\$480,051.28	\$340,128.27	\$820,179.54
2040			\$340,128.27	\$340,128.27
2041			\$340,128.27	\$340,128.27
2042			\$340,128.27	\$340,128.27
2043			\$340,128.27	\$340,128.27
2044			\$340,128.27	\$340,128.27
2045				\$0.00

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Appendix L – Present Value Analysis

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**City of Kyle
Direct Water Reuse Feasibility Study**

Reuse Alternative								Baseline (Potable) Alternative									
Year	Total Other Sources	Reuse Debt Service	Reuse Power	Reuse O&M	Reuse Treatment	Total Annual Reuse Costs	Total Water Supply Cost	Year	Total Other Supplies	Potable Water Debt Service	Potable Water Power	Potable Water O&M	Potable Water Treatment	Total Annual Potable Costs	Equivalent Nutrient Removal Benefit	Total Water Supply Cost	
2015	\$ (2,104,628)	(\$50,779)	(\$12,064)	(\$7,238)	(\$6,731)	(\$76,812)	(\$2,181,439)	2015	(\$2,104,628)	\$ (96,380)	\$ (12,064)	\$ (12,170)	\$ (5,435)	(\$2,230,676)	\$ (286,155)	(\$2,516,831)	
2016	\$ (2,104,628)	(\$50,779)	(\$12,064)	(\$7,238)	(\$6,731)	(\$76,812)	(\$2,181,439)	2016	(\$2,104,628)	\$ (96,380)	\$ (12,064)	\$ (12,170)	\$ (5,435)	(\$2,230,676)	\$ (286,155)	(\$2,516,831)	
2017	\$ (2,104,628)	(\$50,779)	(\$12,064)	(\$7,238)	(\$6,731)	(\$76,812)	(\$2,181,439)	2017	(\$2,104,628)	\$ (96,380)	\$ (12,064)	\$ (12,170)	\$ (5,435)	(\$2,230,676)	\$ (286,155)	(\$2,516,831)	
2018	\$ (2,104,628)	(\$50,779)	(\$12,064)	(\$7,238)	(\$6,731)	(\$76,812)	(\$2,181,439)	2018	(\$2,104,628)	\$ (96,380)	\$ (12,064)	\$ (12,170)	\$ (5,435)	(\$2,230,676)	\$ (286,155)	(\$2,516,831)	
2019	\$ (2,104,628)	(\$50,779)	(\$12,064)	(\$7,238)	(\$6,731)	(\$76,812)	(\$2,181,439)	2019	(\$2,104,628)	\$ (96,380)	\$ (12,064)	\$ (12,170)	\$ (5,435)	(\$2,230,676)	\$ (286,155)	(\$2,516,831)	
2020	\$ (2,533,827)	(\$410,817)	(\$26,327)	(\$67,063)	(\$12,741)	(\$516,948)	(\$3,050,775)	2020	(\$2,533,827)	\$ (779,760)	\$ (26,327)	\$ (98,461)	\$ (10,115)	(\$3,448,490)	\$ (536,385)	(\$3,984,875)	
2021	\$ (2,533,827)	(\$410,817)	(\$26,327)	(\$67,063)	(\$12,741)	(\$516,948)	(\$3,050,775)	2021	(\$2,533,827)	\$ (779,760)	\$ (26,327)	\$ (98,461)	\$ (10,115)	(\$3,448,490)	\$ (536,385)	(\$3,984,875)	
2022	\$ (2,533,827)	(\$410,817)	(\$26,327)	(\$67,063)	(\$12,741)	(\$516,948)	(\$3,050,775)	2022	(\$2,533,827)	\$ (779,760)	\$ (26,327)	\$ (98,461)	\$ (10,115)	(\$3,448,490)	\$ (536,385)	(\$3,984,875)	
2023	\$ (2,533,827)	(\$410,817)	(\$26,327)	(\$67,063)	(\$12,741)	(\$516,948)	(\$3,050,775)	2023	(\$2,533,827)	\$ (779,760)	\$ (26,327)	\$ (98,461)	\$ (10,115)	(\$3,448,490)	\$ (536,385)	(\$3,984,875)	
2024	\$ (2,533,827)	(\$410,817)	(\$26,327)	(\$67,063)	(\$12,741)	(\$516,948)	(\$3,050,775)	2024	(\$2,533,827)	\$ (779,760)	\$ (26,327)	\$ (98,461)	\$ (10,115)	(\$3,448,490)	\$ (536,385)	(\$3,984,875)	
2025	\$ (3,271,059)	(\$495,849)	(\$43,723)	(\$109,450)	(\$18,772)	(\$667,794)	(\$3,938,853)	2025	(\$3,271,059)	\$ (1,263,950)	\$ (43,729)	\$ (159,600)	\$ (14,984)	(\$4,753,322)	\$ (696,319)	(\$5,449,641)	
2026	\$ (3,271,059)	(\$495,849)	(\$43,723)	(\$109,450)	(\$18,772)	(\$667,794)	(\$3,938,853)	2026	(\$3,271,059)	\$ (1,263,950)	\$ (43,729)	\$ (159,600)	\$ (14,984)	(\$4,753,322)	\$ (696,319)	(\$5,449,641)	
2027	\$ (3,271,059)	(\$495,849)	(\$43,723)	(\$109,450)	(\$18,772)	(\$667,794)	(\$3,938,853)	2027	(\$3,271,059)	\$ (1,263,950)	\$ (43,729)	\$ (159,600)	\$ (14,984)	(\$4,753,322)	\$ (696,319)	(\$5,449,641)	
2028	\$ (3,271,059)	(\$495,849)	(\$43,723)	(\$109,450)	(\$18,772)	(\$667,794)	(\$3,938,853)	2028	(\$3,271,059)	\$ (1,263,950)	\$ (43,729)	\$ (159,600)	\$ (14,984)	(\$4,753,322)	\$ (696,319)	(\$5,449,641)	
2029	\$ (3,271,059)	(\$495,849)	(\$43,723)	(\$109,450)	(\$18,772)	(\$667,794)	(\$3,938,853)	2029	(\$3,271,059)	\$ (1,263,950)	\$ (43,729)	\$ (159,600)	\$ (14,984)	(\$4,753,322)	\$ (696,319)	(\$5,449,641)	
2030	\$ (4,092,896)	(\$495,849)	(\$52,383)	(\$109,450)	(\$22,074)	(\$679,756)	(\$4,772,652)	2030	(\$4,092,896)	\$ (1,263,950)	\$ (52,389)	\$ (159,600)	\$ (17,736)	(\$5,586,572)	\$ (951,092)	(\$6,537,663)	
2031	\$ (4,092,896)	(\$495,849)	(\$52,383)	(\$109,450)	(\$22,074)	(\$679,756)	(\$4,772,652)	2031	(\$4,092,896)	\$ (1,263,950)	\$ (52,389)	\$ (159,600)	\$ (17,736)	(\$5,586,572)	\$ (951,092)	(\$6,537,663)	
2032	\$ (4,092,896)	(\$495,849)	(\$52,383)	(\$109,450)	(\$22,074)	(\$679,756)	(\$4,772,652)	2032	(\$4,092,896)	\$ (1,263,950)	\$ (52,389)	\$ (159,600)	\$ (17,736)	(\$5,586,572)	\$ (951,092)	(\$6,537,663)	
2033	\$ (4,092,896)	(\$495,849)	(\$52,383)	(\$109,450)	(\$22,074)	(\$679,756)	(\$4,772,652)	2033	(\$4,092,896)	\$ (1,263,950)	\$ (52,389)	\$ (159,600)	\$ (17,736)	(\$5,586,572)	\$ (951,092)	(\$6,537,663)	
2034	\$ (4,092,896)	(\$495,849)	(\$52,383)	(\$109,450)	(\$22,074)	(\$679,756)	(\$4,772,652)	2034	(\$4,092,896)	\$ (1,263,950)	\$ (52,389)	\$ (159,600)	\$ (17,736)	(\$5,586,572)	\$ (951,092)	(\$6,537,663)	
2035	\$ (4,585,854)	(\$495,849)	(\$61,214)	(\$109,450)	(\$25,779)	(\$692,292)	(\$5,278,146)	2035	(\$4,585,854)	\$ (1,167,570)	\$ (61,220)	\$ (159,600)	\$ (20,298)	(\$5,994,542)	\$ (1,025,849)	(\$7,020,392)	
																(\$46,834,390)	(\$61,416,672)

Discount Rate 0.0400
 (FY 2012 Plan Formulation Rate For Federal Water Projects, updated 10/2011)
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/cntsc/?&cid=nrcs143_009685

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Appendix M – BSEACD Technical Memorandum

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**Barton Springs
Edwards Aquifer**
CONSERVATION DISTRICT

Technical Memorandum

A Review of the Regulatory Framework and Hydrogeotechnical Constraints Affecting Kyle Water Re-use Feasibility Related to Groundwater Resources

Prepared for:

**The City of Kyle
and
RPS Espey Consultants, Inc.**

Prepared by:

Barton Springs/Edwards Aquifer Conservation District

June 22, 2012

Technical Memorandum

A Review of the Regulatory Framework and Hydrogeotechnical Constraints Affecting Kyle Water Re-use Feasibility Related to Groundwater Resources

1.0 Background, Purpose, and Approach

The Barton Springs/Edwards Aquifer Conservation District (BSEACD) serves portions of southeastern Travis, northeastern Hays, and northwestern Caldwell Counties, including a portion of the City of Kyle (City.) The City uses groundwater from the Barton Springs segment of the Edwards Aquifer under permits from the BSEACD for part of its water supply. Firm yield supplies of this aquifer are fully developed, and in fact currently authorized withdrawals from the aquifer during extreme drought would exceed the ability of the aquifer to achieve its desired future condition. Accordingly, provision of alternative sources of water for current uses of the water during extreme drought is highly desirable.

The BSEACD enthusiastically supported the City's application for facility planning grant funding to assess the feasibility of re-using treated effluent for irrigation of City public lands and thereby potentially conserving high-quality Edwards Aquifer water for higher-value and less discretionary uses, such as drinking water. One measure of this support was offering to provide in-kind technical services to assess constraints imposed by groundwater quantity and quality on the feasibility of the conceptual plans for the reclaimed water project. Working along with the City's staff and its engineering consulting team, led by RPS Espey Consultants, Inc. (Espey), the BSEACD staff assessed the prospective project elements from the standpoint of a groundwater regulatory authority, specifically examining hydrogeotechnical and groundwater-related regulatory and institutional constraints imposed on and by the conceptual project plans. This technical memorandum contains the results, findings, and conclusions of this assessment by the BSEACD in fulfillment of its pledge of in-kind technical services in support of the facility planning grant project.

This report reflects the BSEACD staff's over-arching perspective on all such projects. In particular, as a regulatory agency itself and one that interfaces routinely with other regulatory agencies, the BSEACD does not equate "permit-ability" *necessarily* with "acceptability"; regulations and agency decision-making are a public balancing of politics, precedents, science and engineering, public good, and environmental impact. At best, the lack of regulatory authorities applicable to a project or a project's compliance with applicable regulations may be just a first-order approximation of its environmental goodness and acceptability. Further, a project that is currently able to be permitted might still be subject to low-probability but high-consequence events that could have deleterious

impacts. It is important for any feasibility study to assess the likelihood and significance of such extraordinary circumstances and how they might be mitigated or avoided, while also maintaining a sense of proportion about those matters.

This report is subdivided into two major sections, corresponding to the two assessment tasks that the BSEACD and Espey agreed would form the scope of the BSEACD's evaluation. In each section, the project design as currently conceived is first examined for elements affecting feasibility, and then additional constraints or concerns that would or could arise from possible future extension of the project into other, more sensitive areas are briefly characterized; it should be emphasized that this latter assessment is for some speculative, possible future configuration for the project that is not currently proposed or contemplated, but which could be facilitated by the existence of the project as currently planned. A final section provides an overall summary of the BSEACD's findings and conclusions regarding the feasibility of the water re-use project, primarily from a groundwater perspective, along with some recommendations for consideration by the City.

2.0 Legal, Regulatory and Institutional Issues Affecting Feasibility of Using Reclaimed Water

The objective of this assessment area is to identify any legal or institutional requirements or barriers to implementing the proposed project that are presented by the groundwater institutional framework. The first subsection summarizes the Edwards Aquifer Authority (EAA) regulations and land-use authorities that apply and don't apply to the conceptual plan for effluent re-use, and assesses any regulatory constraints or issues that may be presented and how they may be mitigated. A second subsection addresses any groundwater rights or regulatory issues potentially resulting from the implementation of the proposed project.

2.1 Constraints Imposed By EAA Regulations and Land Use Authorities

The proposed project involves storage, transmission, and application of highly treated effluent to irrigation areas within the jurisdictional area of the EAA. The project area as currently proposed is immediately adjacent to but does not extend into the BSEACD's jurisdictional area; so EAA's rules and regulations, not BSEACD's are applicable to the project. The EAA's primary purpose is to manage, enhance, and protect the San Antonio pool of the Edwards Aquifer System in central and southwest Texas. To this end, the Authority has been directed by the Texas Legislature through the Edwards Aquifer Authority Act (Act) to achieve certain management goals. The pertinent directives of the Act related to water quality protection include:¹

- protect the water quality of the Aquifer;
- protect the water quality of the surface streams to which the Aquifer provides streamflow;
- recognize the extent of the hydrogeologic connection and interaction between surface water and groundwater;
- protect aquatic and wildlife habitat; and
- protect species that are designated as threatened or endangered under state or federal law;

The means to achieve these directives include certain authorities to regulate land use that may affect water quality that are unique to the EAA and generally unavailable to other more conventional Chapter 36 Groundwater Conservation Districts (GCDs).² These additional land use authorities also apply in a water quality buffer zone which extends an additional five miles up gradient of the EAA's jurisdictional boundaries (Figure 1).

¹ EAA Groundwater Management Plan, approved January 5, 2011

² Texas Water Code Chapter 36 – Groundwater Conservation BSEACDs

2.1.1 Existing EAA Land Use Authorities

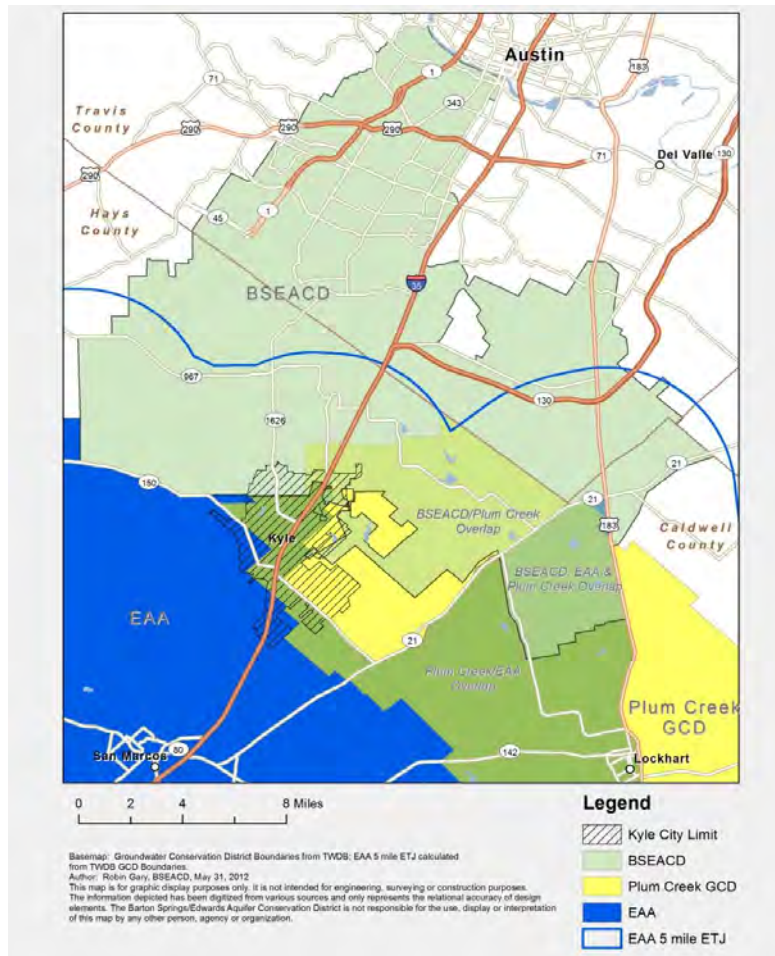


Figure 1. Map of GCD jurisdictional boundaries in project area. EAA boundaries include the 5-mile extended water quality buffer.

The following is a summary of the land use authorities currently available to the EAA that affect or potentially affect the re-use project.

EAA Rule 713, Subchapter E:

Under this rule, the EAA regulates certain activities having the potential to pollute the Edwards Aquifer and hydrologically connected surface streams. The activities addressed are those related to the response to unauthorized discharges in violation of a permit issued by the Texas Commission on Environmental Quality (TCEQ, or Commission) under Texas Water Code § 26.121 (code prohibiting unauthorized discharges of waste), and discharges or spills of oil, petroleum products, used oil, hazardous substances, industrial solid waste or other substances on the recharge zone and contributing zone of the Aquifer. Activities

include notification of spills of reportable quantities and required actions to abate or contain certain spills and discharges.

This rule should have no appreciable effect on the proposed project provided that reclaimed-water storage, transmission lines, irrigation areas, and other related facilities and infrastructure remain down gradient of the recharge zone and of the contributing area of the transition zone, as currently proposed. The BSEACD only notes herein and has not made an assessment of the efficacy of how good engineering practices in designing and constructing the facilities would preclude problems in normal operation; the location down gradient of the Edwards recharge zone likely mitigates any residual regulatory concern. Any facilities, particularly any areas irrigated with reclaimed water that may be planned in the future to be extended into or up gradient of the recharge zone may require compliance with this chapter in the event there is a line break or an unauthorized discharge in violation of a Texas Pollutant Discharge Elimination System (TPDES) permit, a Texas Land Application Permit (TLAP), or a Chapter 210 Re-use Authorization.

EAA Rule 713, Subchapter F:

Under this rule, the EAA regulates the storage of certain substances and hazardous materials on the recharge zone and the contributing zone of the EAA. Facilities in these environmentally sensitive areas are required to register with the Authority if they store an aggregate quantity exceeding 1,000 gallons or 10,000 pounds of regulated substances in containers 55-gallons or less in size.

In addition to the registration requirement, regulated facilities are required to have secondary containment for regulated substances and to prepare a Spill Prevention and Response Plan (SPRP).

This rule should have no appreciable effect on the proposed project provided that reclaimed water storage, transmission lines, irrigation areas, and other related facilities and infrastructure remain down gradient of the recharge zone as currently proposed. The converse also applies: if the project were to extend into the recharge or contributing zone, Rule 713 would be of regulatory emphasis. However, the conceptual plan for the proposed project does not identify use of any such substances that are regulated under this rule.

EAA Rule 713, Subchapter G:

Under this rule, the EAA regulates aboveground storage tanks (ASTs) and underground storage tanks (USTs) located in, above, or on the Edwards Aquifer recharge zone.

The rule states that, on or after October 18, 2002, no person may install or have installed an AST or UST system for the purpose of storing or otherwise containing regulated substances. Storage tanks in existence prior to October 18, 2002, must be registered with the EAA.

Since the proposed project does not identify the required use of any such facilities or substances that are regulated under this Rule, it should have no appreciable effect on the proposed project.

2.1.2 Use of Reclaimed Water on the Recharge Zone

EAA's rules have a general prohibition that states, "a person may not pollute or contribute to pollution of the Aquifer" (EAA Rule §711.232). Although this general provision could arguably be invoked to address illicit discharges or unauthorized wastewater permitted discharges, there is no explicit prohibition or formal policy directly addressing the use of reclaimed water over the recharge zone. That said, the EAA has taken a general position in opposition to the practice as indicated in their comments concerning new developments and facility planning efforts. For example, the EAA indicated their position in response to the proposed use of reclaimed water on a golf course associated with the Paso Robles Planned Community where they stated "'...staff believes the use of reclaimed water on the recharge zone is not in the best interest of aquifer water quality.'" Similarly, the EAA stated in a letter providing support the City of New Braunfels's Regional Water Facility Planning Grant Application their concerns about the potential effects of use of reclaimed water on city parklands near endangered and threatened aquatic species habitat. The EAA has also gone so far as to get approval of conceptual rules that would prohibit the use of reclaimed water of the recharge zone. These rules, however, were not included in the pending rule package to allow further discussion and vetting.

Given the potential for future regulations or prohibitions and the uncertainty associated with the potential risks involved, all project phases should avoid the end use of reclaimed water or construction of any reclaimed water facilities up-gradient or over the recharge zone until such time that these risks are better understood and can be prevented and/or mitigated with proper system design and operation.

2.2 Groundwater Rights and Regulatory Issues

Implementation of the reclaimed water project as conceptually planned will not likely have a direct effect on groundwater rights. However, importantly there may be opportunities for indirect benefits to the Edwards Aquifer, particularly where City demand that is currently provided by Edwards Aquifer pumping can be replaced or reduced by reclaimed water.

This project benefit could be more firmly realized when aquifer demand that is replaced by reclaimed water can be institutionalized through commitments to additional curtailments in pumpage during extreme drought conditions. The BSEACD is currently working with those of its permittees holding historical production permits, including the City, to foster arrangements to achieve additional extreme drought pumping curtailment in order to ensure preservation of the Desired Future Condition (DFC) established for the freshwater

Barton Springs segment of the Edwards Aquifer.³ The City is encouraged to participate with the BSEACD in this endeavor to preserve this groundwater resource for as long as possible during drought.

2.2.1 Groundwater Planning and Coordination

The following subsections assess potential issues associated with the pertinent agencies, regional water planning groups, and other projects

South Central Texas Regional Water Planning Group (Region L)

A cursory review of the current Region L water plan indicates that the prospective reclaimed water project is not specified in the regional plan. The diverted discharges will have the effect of reducing demand currently supplied by other sources as well as reducing supplies identified by downstream demands dependent on continued discharges. Both the potential reductions in demand and supply should be accounted for in the Region L plans or at the very least, should be brought to their attention. Amending the Region L plan in the next planning cycle to include the project would be recommended, not only to be able to account for the diversions but also to be eligible for additional funding from Texas Water Development Board if needed.

Groundwater Management Area 10

The receiving area of the reclaimed water project would be primarily located in the central subdivision of Groundwater Management Area (GMA) 10 (Figure 2). However, the reuse could affect demands that are currently being served in part by pumpage of the Edwards Aquifer in the northern subdivision of GMA 10 (the Barton Springs segment).

The City of Kyle, for example, is permitted by the BSEACD for 165,000,000 gallons/year of firm-yield historical pumpage. As mentioned, there may be an opportunity for this new, re-use water supply to allow for further reductions in extreme drought pumpage by the City. This will facilitate compliance with maintaining the DFC in the northern subdivision of GMA 10, and is an important potential benefit of the project.

The BSEACD has committed in its management plan to “diversify water supplies available to users in the BSEACD and thereby allow for appropriate pumpage curtailments, especially during extreme drought.”⁴ The development of reclaimed water for the appropriate non-potable use in an appropriate area is consistent with this goal, particularly if such new supplies have the potential to reduce demand on the Edwards Aquifer.

³ The BSEACD, representing the northern subdivision of GMA 10, has established a Desired Future Condition (DFC) that preserves a minimum of 6.5 cfs of springflow at Barton Springs during a recurrence of the Drought of Record.

⁴ BSEACD Management Plan (approved September 15, 2008). Objective 3-1, p. 41.

Plum Creek Conservation District (PCCD)

The proposed reuse project facilities and irrigation areas are primarily located within the PCCD's and EAA's jurisdiction including the extended water quality buffer area (Figure 1). Although the PCCD does not have the explicit land use authorities of the EAA and does not regulate the use of the Edwards Aquifer in its jurisdictional area, the project should be mindful of PCCD's Rule 2 related to waste and pollution. These rules generally relate to wastewater use but also address potential pollution pathways created by inadequately protected abandoned wells, namely through its abandoned wells regulation. The existence of abandoned wells in the vicinity of the irrigation areas is at least conceptually within the regulatory sphere of PCCD.

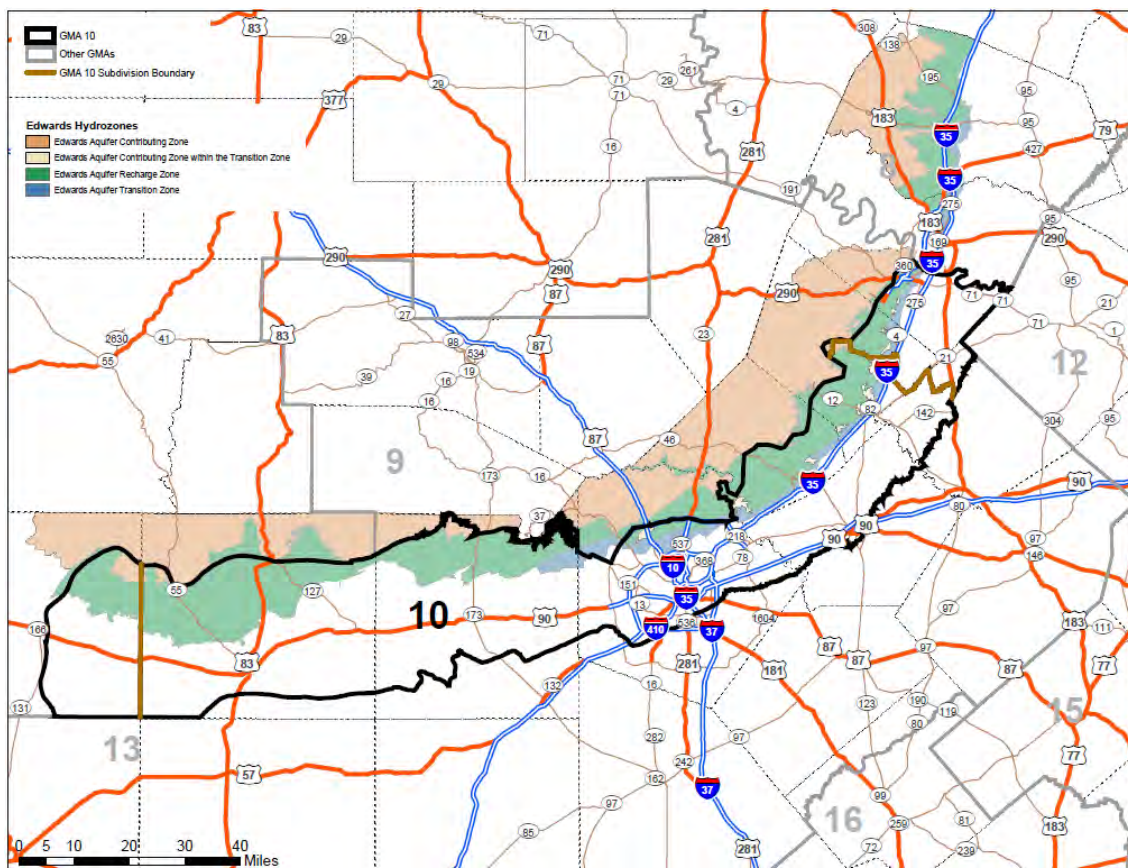


Figure 2. Map of GMA 10 and the three subdivisions. Note that the BSEACD and PCCD are the only GCDs located within the Northern Subdivision, and only BSEACD regulates the Edwards Aquifer therein.

The reclaimed water project should include a thorough inventory of all wells in the vicinity of the project, which may require a compilation of existing data, walking surveys, and analysis of areal imagery to include any potential abandoned wells. Using the inventory, abandoned wells should be plugged and facilities and equipment should be located at safe distances from existing wells within both the PCCD and EAA.

Plum Creek Watershed Partnership: The evaluation of the proposed project, which is based on re-use of treated effluent that is currently being directly discharged to Plum Creek, currently includes a review of the “potential impact of direct reuse on watershed water *quality*,” which is presumed to be positive. It also should include a review of potential water *quantity* effects, as the reduced flow during natural low flow conditions may have an adverse effect on the hydrologic flow regime that has been established with the wastewater discharges, affect alluvial groundwater systems dependent on recharge from losing streams, create impacts on the downstream water rights holders, and impact environmental flow needs. BSEACD focused its evaluations on the groundwater resources in the immediate project area and has not made such assessments of these largely downstream effects, but it trusts that the project team is working with the Plum Creek Watershed Partnership to evaluate these aspects as they relate to project feasibility and acceptance.

2.2.2 Multi-Jurisdictional or Interagency Agreements and Coordination

It is understood that the City and its project managers have involved other relevant political jurisdictions and agencies in identifying and exploring ways of accommodating potential regulatory issues. The BSEACD is one of those. The project team is well advised to keep those jurisdictions apprised of the project as it evolves through updates and informative meetings, and once the project design is firmed up to request a regulatory assessment to ensure that all anticipated issues are addressed.

The proposed project also has potential to provide benefits that might positively affect the management objectives of the BSEACD in the groundwater arena and the Plum Creek Watershed Partnership in the surface water arena. These benefits should be spotlighted by engaging both groups to identify these benefits as key objectives of the project. For example, these could include a greater-than-required curtailment in groundwater pumpage during extreme groundwater drought conditions, or meeting a stipulated reduction in nutrient loading to the surface streams. Further, interlocal agreements could be executed to institutionalize these shared goals and objectives.

3.0 Hydrogeotechnical Review of Reclaimed-Water Delivery and Irrigation System

This portion of the assessment was conducted to determine if any of the proposed irrigation areas receiving reclaimed water by the City of Kyle or any upset conditions in the reclaimed-water delivery systems would likely have any impact on the Edwards Aquifer or other aquifers in the area. TCEQ's Edwards rules prohibit certain activities within the Edwards recharge zone and require some limitations on activities that can take place in areas adjacent to the recharge zone that might contribute flow to the recharge zone. None of these prohibitions or limitations are germane to the project as proposed.

3.1 Methods

This portion of the assessment was primarily based on existing mapping in the area; no field work, e.g., to define the existence of any discrete recharge features, was warranted in this evaluation. Various maps were combined in GIS to determine the positions of the proposed effluent distribution lines and areas proposed for irrigation by reclaimed water relative to the TCEQ Edwards boundaries. The following maps were used:

- Map of proposed effluent distribution system prepared by Espey Consultants
- Map of TCEQ Chapter 213⁵ boundaries
- USGS topographic quadrangles: Mountain City and San Marcos North
- Maps and databases of water well locations from TWDB, EAA, and BSEACD

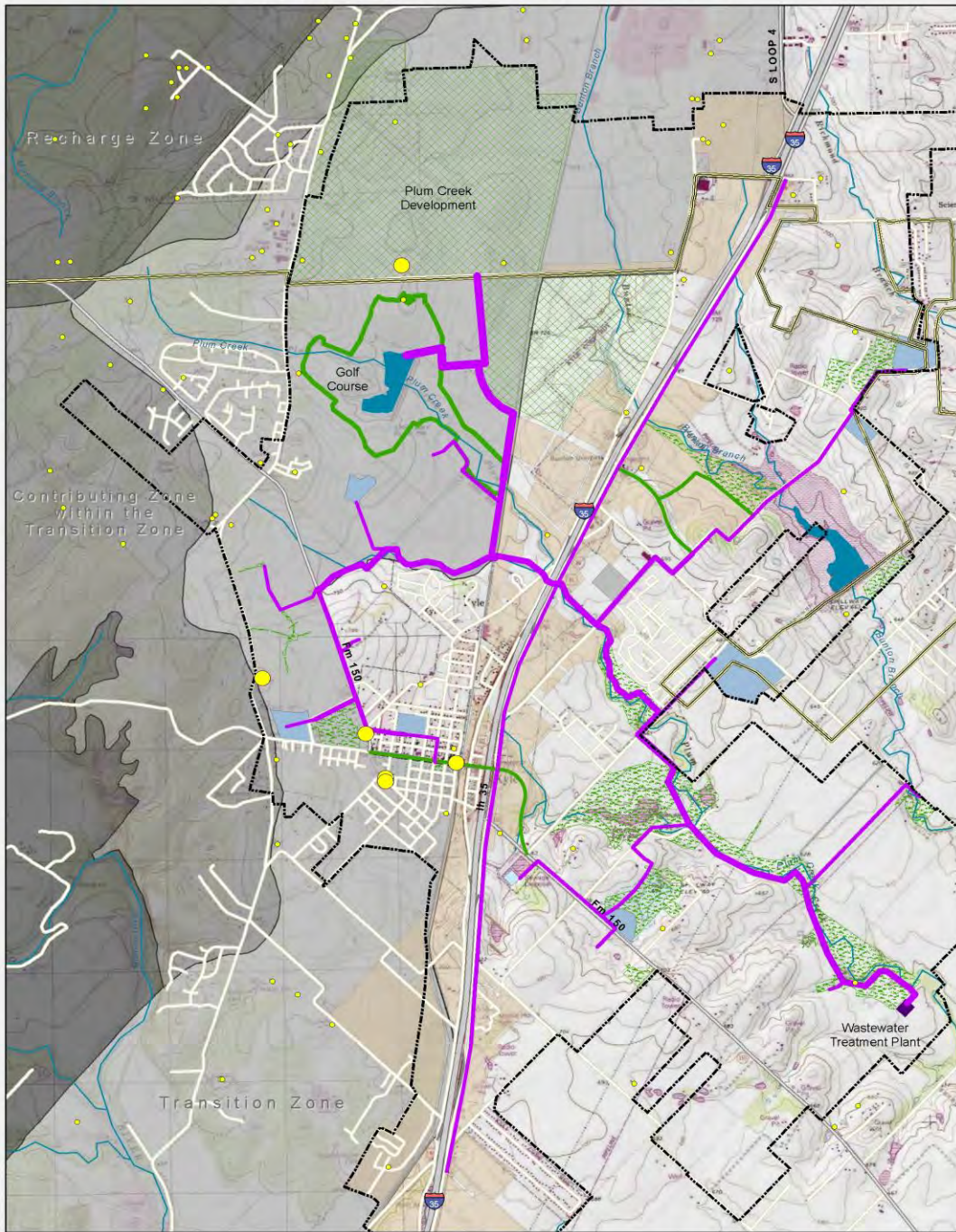
This information was compiled into a single map, which is a major output of this assessment (Figure 3, and under separate cover). Detailed geologic maps of the area were reviewed for consistency, but geology is not included in the figure to preserve clarity.

3.2 Definitions of Hydrologic Zones in the Edwards Rules

The "Edwards Rules", as presented in 30 TAC Chapter 213 administered by TCEQ, describe four zones that relate to the Edwards Aquifer (shown at a regional scale in Figure 4.) The zones, depicted relative to the proposed project elements in Figure 3, are recharge, contributing, transition, and 'contributing within the transition' zones. The transition zone is the most relevant to the issue of irrigating areas with reclaimed water in the City; however, because of the proximity of the contributing within the transition zone to the proposed irrigation areas, this zone will also be discussed in this report. The italicized text following each heading below is taken directly from TCEQ Chapter 213, Subchapters A and B.

⁵ Texas Commission on Environmental Quality, 30 TAC Chapter 213 Edwards Rules.

City of Kyle Water Reuse Infrastructure



Legend

● City of Kyle Wells	8inch lines	Commercial Zoning	TCEQ Regulatory Boundaries
○ Wells (not plugged or abandoned)	6inch lines	Kyle Schools	Edwards Aquifer Recharge Zone
24inch lines	4inch lines	City Parks	Edwards Aquifer Contributing Zone within the Transition Zone
18inch lines	2inch lines	Plum Creek Development	Edwards Aquifer Transition Zone
14inch lines	Kyle ROW Irrigation	BSEACD Boundary	
12inch lines	Golf Course Outline	Kyle City Limit	
10inch lines			

0 0.5 1 2 Miles

Basedata: Kyle Reuse Infrastructure datasets from Espey; Edwards Aquifer Regulatory Boundaries from TCEQ. Author: Robin Gary, BSEACD, May 31, 2012. This map is for graphic display purposes only. It is not intended for engineering, surveying or construction purposes. The information depicted has been digitized from various sources and only represents the relational accuracy of design elements. The Barton Springs/Edwards Aquifer Conservation District is not responsible for the use, display or interpretation of this map by any other person, agency or organization.

Figure 3. Project elements in relation to various features and jurisdictional boundaries.

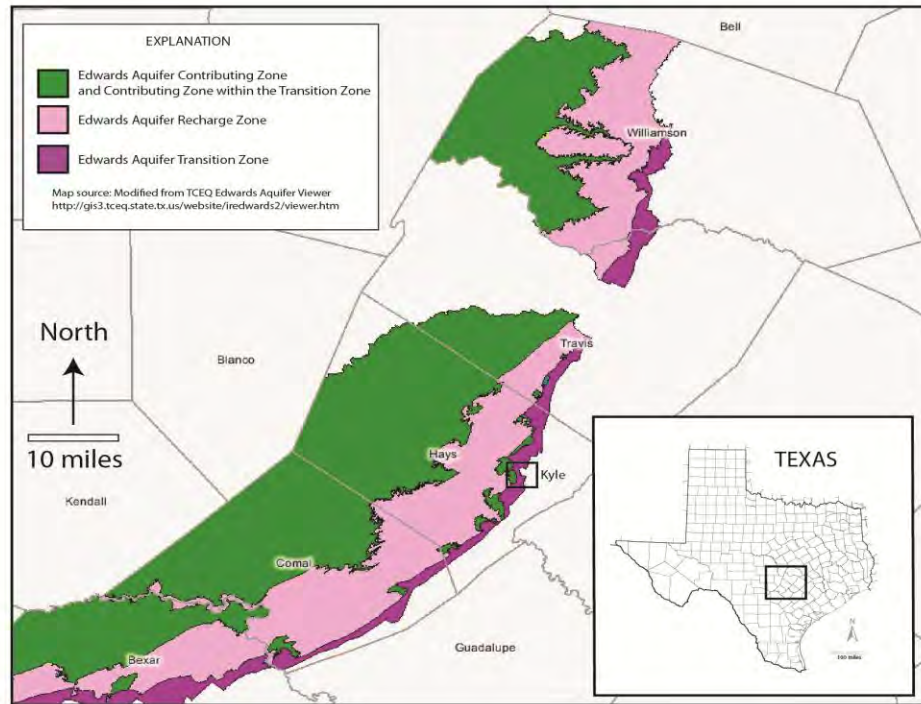


Figure 4. Boundaries of TCEQ's Edwards Aquifer Zones.

Recharge Zone (TCEQ § 213.3 (27))

Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the agency's central office and in the appropriate regional office.

Contributing Zone (TCEQ § 213.22 (2))

The area or watershed where runoff from precipitation flows down-gradient to the recharge zone of the Edwards Aquifer. The contributing zone is illustrated on Contributing Zone (Southern Part) for the Edwards Aquifer and Contributing Zone (Northern Part) for the Edwards Aquifer. The contributing

zone is located upstream (upgradient) and generally north and northwest of the recharge zone.

Contributing Zone within the Transition Zone (TCEQ § 213.22 (3))

The area or watershed where runoff from precipitation flows down-gradient to the recharge zone of the Edwards Aquifer. The contributing zone within the transition zone is depicted in detail on the official recharge and transition zones maps of the agency as provided for in §213.3 of this title (relating to Definitions). The contributing zone within the transition zone is located generally south and east of the recharge zone and includes specifically those areas where stratigraphic units not included in the Edwards Aquifer crop out at topographically higher elevations and drain to stream courses where stratigraphic units of the Edwards Aquifer crop out and are mapped as recharge zone.

Transition Zone (TCEQ § 213.3 (36))

That area where geologic formations crop out in proximity to and south and southeast of the recharge zone and where faults, fractures, and other geologic features present a possible avenue for recharge of surface water to the Edwards Aquifer, including portions of the Del Rio Clay, Buda Limestone, Eagle Ford Group, Austin Chalk, Pecan Gap Chalk, and Anacacho Limestone. The transition zone is identified as that area designated as such on official maps located in the agency's central office and in the appropriate regional office.

3.3 Results

Compliance with Edwards Rules

A comparison between the locations of the proposed effluent distribution lines and proposed areas for irrigation indicates that all of these areas are within the Edwards transition zone (Figure 3), as described above. The westernmost areas of proposed irrigation areas are about 300 ft from the 'contributing within the transition zone.' There are no prohibitions in the Edwards rules (TCEQ Chapter 213) against such discharges in the Edwards transition zone. TAC §210.4(d) provides that reclaimed water can be used for irrigation on the recharge zone provided the plans are approved by TCEQ. However, such approval by TCEQ or compliance with its rules should not be interpreted as warranting environmentally soundness or protection of all water resources under any and all conditions. However, for purposes of this feasibility study, the salient aspect of the hydrogeologic setting is that the project area as currently designed is not on the recharge zone.

Potential for Recharge to Edwards Aquifer and Local Aquifers

Geologic units exposed at the surface in the vicinity of the Kyle project area are the Eagle Ford Group, Austin Chalk, and Taylor Group. The Eagle Ford and Taylor consist largely of shale and clay, are very impermeable, and are not likely sources of groundwater for even small supply wells. The Austin Chalk that is exposed at the surface over much of the area west of IH-35 is generally of low permeability, but it is capable of yielding small amounts of groundwater to wells. A review of available well location data for this area has not indicated the presence of any wells that obtain water from the Austin Chalk. However, well databases are typically incomplete and there is a potential for Austin Chalk wells, especially small domestic use wells, in the areas proposed for the reclaimed-water distribution lines and irrigation with reclaimed water. A field reconnaissance should be conducted prior to construction of the distribution system to look for any wells in the vicinity of the distribution lines and irrigation areas that might obtain water from the Austin Chalk. Any such wells should be inspected for any openings that could allow entry of reclaimed water into the well bore. A properly operating irrigation system is unlikely to contribute any significant amount of reclaimed water to the Austin Chalk, however, leaking pipes or malfunctioning sprinkler heads could discharge enough reclaimed water in a small area to provide recharge to the Austin Chalk.

The transition zone is considered in the Edwards rules because of the potential for transport of contaminants from the surface through the confining units to the Edwards Aquifer by way of faults. However, faults in the vicinity of Kyle are not known to be capable of transmitting any significant amount of surface water into the subsurface. The proper design and operation of the reclaimed-water irrigation systems should preclude that water from moving below the root zone of the soils. The main reclaimed-water storage pond in the Plum Creek Golf Course is lined, so the additional head provided by impounding that water is not likely to create substantial infiltration into the underlying strata, provided the integrity of the pond construction is maintained.

Improperly constructed and deteriorated wells can also present pathways for contaminants at the surface to reach an aquifer. The only wells identified by this assessment that are near any proposed distribution lines are the City's public water supply wells along FM 150 in downtown Kyle, regulated by EAA. The wells and the distribution lines are physically separated under normal operating conditions, but in the event of some upset condition that resulted in loss of reclaimed water to the local environment, the wells and their water supply could be adversely affected. These wells should be inspected prior to activation of the re-use system for any openings at the well heads that could allow for movement of contaminants into the wells; consideration should be given to providing a larger buffer around those wells as a mitigation measure. A well in the Edwards that provides water to the Plum Creek Golf Course is located close to areas that could be irrigated with reclaimed water. The exact locations and configurations of irrigated areas should be delineated to ensure that reclaimed water is not able to enter this well.

3.4 Potential Future Modifications to the Proposed System

As currently proposed the distribution lines and irrigated areas all fall within the Edwards transition zone. This is the major mitigation factor that eliminates concern about the adverse impact of the proposed project on the groundwater resources. If any changes are made that would extend the lines and irrigated areas to the west, it is possible that discharge of reclaimed water could occur in the contributing within the transition zone, or in the recharge zone if the lines were extended even farther to the west. For example, the currently proposed distribution line that extends to Wallace Middle School comes within about 300 ft of the boundary between the transition zone and the contributing within the transition zone. Even though the Edwards rules do not prohibit discharge of reclaimed water into the contributing within the transition zone, the BSEACD and EAA have concerns about reclaimed water recharging the Edwards Aquifer, and any reclaimed water flowing at the surface in the contributing within the transition zone has the potential to reach the recharge zone where it would be likely to enter the subsurface and recharge the Edwards Aquifer. If the discharge is such that it is only irrigating vegetated areas without any runoff, there is only a small chance that some amount of discharged water would reach the recharge zone. However, a malfunctioning system could contribute significant amounts of reclaimed water to the Edwards Aquifer.

At a minimum, if such a system modification were proposed in the future, field surveys to characterize any discrete recharge features at or near the down-gradient boundary of the recharge zone should be conducted, and coordination with EAA specific to such plans should also be undertaken. This suggestion is made without regard to whether irrigation with reclaimed water is allowable by TCEQ or not, or the conditions under which TCEQ might assert one or the other of those outcomes. In BSEACD's senior staff's view, an abundance of caution is warranted in such a circumstance, and BSEACD would recommend that any extensions of the effluent distribution and especially irrigation systems should avoid the more sensitive recharge zone and 'contributing within the transition' zone, to avoid both possibly real and likely perceived concerns. "Feasibility", especially by a political subdivision like the City of Kyle, should encompass more dimensions than just what is "allowed" or "accepted."

4.0 Findings and Conclusions

The assessment by the staff of the Barton Springs/Edwards Aquifer Conservation District indicates that, as currently conceived and proposed, the water re-use project by the City of Kyle should not encounter or be accompanied by adverse impacts on the local or regional groundwater resources. Conversely, there exist both the likely benefits of a desired overall reduction in the waste contaminant loadings to Plum Creek downstream of the project area, and the potential benefit of reducing the demand on the Barton Springs segment of the Edwards Aquifer during extreme drought conditions by substituting reclaimed water for some part of the demand for irrigation water. The assessment did not attempt to quantify those positive impacts. The conclusions drawn by BSEACD are largely based on the location of all the project elements on the much less sensitive transition zone and the absence of certain pathways to affect important regional and local aquifer systems.

BSEACD staff believes that the project would benefit from the following recommendations and suggestions:

1. Future modifications to the reclaimed-water distribution and irrigation systems should not extend into the contributing within the transition zone without a more complete assessment of risks, and must not extend into the recharge zone, regardless of its status regarding compliance with the Edwards Rules.
2. The City should work with the BSEACD to implement an arrangement to achieve additional extreme drought pumping curtailments of its Historical Use Production Permit in order to increase and assure the project's propounded potential benefit of reducing pumping on the Barton Springs aquifer and thereby preserving of the Desired Future Condition (DFC) established for the freshwater Barton Springs segment of the Edwards Aquifer, in exchange for some valuable policy consideration.
3. The City should ensure the project is included in the next revision of the Region L Water Plan to account for its benefits in regional and state water planning and to make the project eligible for additional attractive funding by the Texas Water Development Board.
4. Before the project is implemented, the City should make a thorough compilation of existing data, walking surveys, and analysis of areal imagery to identify any potential abandoned wells, and ensure that abandoned wells are properly plugged (and newly discovered existing wells are avoided.)

5. After the project details are finalized and before the project is approved, the City should continue to engage the various regulatory entities in identifying and assessing their potential regulatory issues with the project.
6. As part of the process in finalizing the project, the City should highlight the project's shared benefits between the City and both BSEACD and the Plum Creek Watershed Partnership, and identify those benefits as key objectives of the project; the City should then consider entering into interlocal agreements or MOUs with one or both of those entities for the purpose of achieving those benefits with more certainty.
7. The City should conduct a field reconnaissance prior to construction of the reclaimed-water distribution system to assess wells in the vicinity of the distribution lines and irrigation areas that obtain water from the Austin Chalk, and to inspect and repair any such wells for openings that could allow entry of reclaimed water into the well bore.
8. The City should also inspect the EAA public water supply wells and the well that provides water to the Plum Creek Golf Course, which are relatively close to the project's major distribution lines, for any openings at the well heads that could allow for movement of contaminants into the wells, and/or also consider providing a larger buffer in the routing of the effluent lines around those wells.

Appendix N: Public Involvement

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CITY OF KYLE

PLANNING & ZONING COMMISSION JOINT WORK SESSION WITH THE PARKS AND RECREATION COMMITTEE



KYLE CITY HALL
100 W. Center Street

Notice is hereby given that the Planning and Zoning Commission and the Parks and Recreation Committee of the City of Kyle, Texas will meet at 6:30 PM on October 25, 2011, at Kyle City Hall 100 W Center St for the purpose of a work session.

Posted this the 21st day of October prior to 6:30 PM.

- I. Call Meeting To Order**
- II. Joint Discussion between the Planning and Zoning Commission and the Parks and Recreation Committee regarding the Regional Water/Wastewater Facility Planning Grant City of Kyle Water Reuse Feasibility Study.**
- III. Citizen Comment Period With the Planning and Zoning Commission and the Parks and Recreation Committee.**

*Per Texas Attorney General Opinion No. JC-0169; Open Meeting & Agenda Requirements, Dated January 24, 2000: The permissible responses to a general member communication at the meeting are limited by 551.042, as follows: "SEC.551.042. Inquiry Made at Meeting. (a) If, at a meeting of a government body, a member of the public or of the governmental body inquires about a subject for which notice has not been given as required by the subchapter, the notice provisions of this subchapter, do not apply to:(1) a statement of specific factual information given in response to the inquiry; or (2) a recitation of existing policy in response to the inquiry. (b) Any deliberation of or decision about the subject of the inquiry shall be limited to a proposal to place the subject on the agenda for a subsequent meeting.

Kyle issues, from kickball to water reuse

Posted By [Free Press Contributor](#) On October 19, 2011 @ 3:43 pm In [Hays County, Kyle, Kyle Parks & Recreation, Neighbors](#) | [No Comments](#)

Kyle Parks & Recreation by **KERRY URBANOWICZ**

The very popular pastime of Adult Kickball in Kyle is back. The 2012 season starts with the challenging "Winter League." The winter league plays in extreme conditions and welcomes all the extreme players, however, the team registration deadline in this Friday, October 21. All team forms and fees must be turned in to the Kyle Parks and Recreation office before the deadline.

Kickball coaches and players have their organizational meeting on Wednesday, October 26 and games start on November 3. Women's games will be played on Thursday nights and co-ed games will be played on Friday nights. The season goes right through the winter with the end of season tournament in late February.

You are invited to attend a public meeting on Tuesday, October 25, at 6:30 p.m. at Kyle City Hall. The city of Kyle is serving as the local sponsor for a regional water and wastewater study to determine the feasibility of direct water reuse in the community. This study is focused on the viability of water reuse as a means of implementing regional water supply alternatives in the South Central Texas region. The study is funded by the city of Kyle and the Texas Water Development Board. In this first of three public meetings, an overview of the scope and methodology of the study will be presented. Interested parties are encouraged to attend to provide comment or input regarding issues important for consideration by the study group.

Do you have bicycle riders in the family? If so, mark your calendar for Saturday, November 5. The 4th annual Family Fun Ride will be held at City Square Park and all ages are invited. On-site registration and check-in begins at 8:30 a.m. in the Historic Kyle City Hall. The event starts at 9 a.m. and includes a safety clinic and bike rodeo. The Family Fun Ride will have two courses with one of them being 3.5 miles, great for the entire family and the other being a fun 10 miles. Take advantage of the early bird discount by registering before 5 p.m. on October 28!

For more details and information on Adult Kickball League or the Family Fun Ride, including registration forms, fees and general questions, please contact the Kyle Parks and Recreation office at 512-262-3939, email at parcs@cityofkyle.com, visit the website at www.kylepard.com or stop by the Parks and Recreation office located in Kyle City Hall.

Other Upcoming Events:

November 30: Santa's Arrival, School Choirs and Tree Lighting, City Square Park

December 5: Pool Passes go on sale for 2012 Season (stocking stuffers)

January 1: Polar Bear Splash at Kyle Pool

Read more:

- [Ready for some football?](#) ^[1] 08/24/2011
- [Kickin' it up in Kyle: Competition culminates in Gregg-Clarke Park Sunday](#) ^[2] 02/3/2010
- [Get to know your candidates](#) ^[3] 02/3/2010
- [Market days and more...](#) ^[4] 02/3/2010
- [New sports complex opens in Kyle](#) ^[5] 06/22/2011

Article printed from The Hays Free Press: <http://haysfreepress.com>

URL to article: <http://haysfreepress.com/archives/33565>

URLs in this post:

[1] Ready for some football?: <http://haysfreepress.com/archives/22831>

[2] Kickin' it up in Kyle: Competition culminates in Gregg-Clarke Park Sunday:
<http://haysfreepress.com/archives/2086>

[3] Get to know your candidates: <http://haysfreepress.com/archives/2213>

[4] Market days and more...: <http://haysfreepress.com/archives/2256>

[5] New sports complex opens in Kyle: <http://haysfreepress.com/archives/20634>

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CITY OF KYLE

Notice of Public Works & Public Service Committee Meeting

Notice is hereby given that the Public Works & Public Service Committee, as placed into service to foster citizen input, by the governing body of the City of Kyle, Texas will meet at 7:00 p.m. on Wednesday, March 21, 2012, at the Kyle Public Works Building, 520 East RR 150, in Kyle, Texas, for the purpose of discussing the following agenda.

Posted this the 18th day of March 2012 prior to 7:00 p.m.

AGENDA

- I. Roll Call
- II. Public Comment: 3 minute limit each person
- III. Committee changes in operation to include an election ~ *David Wilson*
- IV. Discuss City Visioning Forum, March 24, 2012 at 9:00 am in the Ernest Kimbro Bldg at Kyle Elementary ~ *David Wilson*
- V. Discussion of a potential water reuse policy ~ *Harper Wilder and Steve Widacki*
- VI. Discussion and input for a water conservation grant to help homeowners use less water ~ *David Wilson and Harper Wilder*
- VII. Major projects visioned for the next 5 years ~ *David Wilson, Harper Wilder, and Steve Widacki*
- VIII. Committee member items to discuss
- IX. ADJOURN

(Committee posts this Open Meetings Act notice although no policy making action can be taken by this citizen advisory committee.)

*Per Texas Attorney General Opinion No. JC-0169; Open Meeting & Agenda Requirements, Dated January 24, 2000: The permissible responses to a general member communication at the meeting are limited by 551.042, as follows: "SEC.551.042. Inquiry Made at Meeting. (a) If, at a meeting of a government body, a member of the public or of the governmental body inquires about a subject for which notice has not been given as required by the subchapter, the notice provisions of this subchapter, do not apply to: (1) a statement of specific factual information given in response to the inquiry; or (2) a recitation of existing policy in response to the inquiry. (b) Any deliberation of or decision about the subject of the inquiry shall be limited to a proposal to place the subject on the agenda for a subsequent meeting.



Sign in Sheet
City of Kyle
Water Reuse Feasibility Study
 March 21, 2012

Name	Address	Email
Raquel Dai	22150E Kyle, TX	rgarcia@cityofkyle.com
Steven Widacki		swidacki@cityofkyle.com
ALAN McPherson	1227 Fairway Kyle	amcpherson@earthlink.net
MARK SCHULTZ	402 WEST NORTH KYLE, TX	schultzfm@msn.com
Connie Townsend	TWDB 1700 N. Congress Austin, TX	Connie.townsend@twdb.texas.gov
Johnie Halliburton	1101 W. SAN ANTONIO ST. Lockhart, TX. 78644	johnie@pccd.org
DAVID WILSON	P.O. Box 576 Kyle, TX 78640	davidw576@epsho.net
TAD WALTERS	1000 SWEET Gum DR	MWALTERS@ESD4.ORG
Debbie Magni	GBRA 933 E. Court Seguin	dmagin@gbra.org
ROD WALLS	HAYS CISD 21003 IH 35 KYLE TX	WALLSR@HAYSCISD.NE
Paula Alvarez	P.O. Box 1083 Kyle	

Public Notices, continued from page 3D

A Cashier's Check, Certified Check or acceptable BIDDER'S Bond, payable to Hays Creek Development, Inc. In an amount not less than five percent (5%) of the Bid must accompany each bid as a guarantee that, if awarded the Contract, the BIDDER will enter into a contract and execute bonds within ten (10) days of award of the Contract. Performance and Payment Bonds shall also be executed on the forms furnished by the OWNER and shall specifically provide for "Labor and Materials Payment". Each bond shall be issued in an amount of one hundred percent (100%) of contract value by a solvent Surety company, authorized to do business in the State of Texas and acceptable to the OWNER.

The OWNER reserves the right to reject any and all bids to waive any and all technicalities and formalities in bidding. The OWNER reserves the right to determine which bids are most advantageous to the OWNER and the DISTRICT, and to award the Contract on this basis. No bid may be withdrawn for a period of forty-five (45) days after opening of the bids. If a submitted bid is withdrawn within said period, bid guaranty shall become the property of the OWNER, not as penalty, but as liquidated damages, or OWNER may pursue any other action allowed by law. A mandatory pre-bid conference will be held on Tuesday, July 17, 2012 at 2:00 p.m. at the offices of Texas Engineering Solutions at 5000 West Caves Rd, Suite 206, Austin, Texas 78748. Prospective bidders are encouraged to visit the site.

TEXAS EDUCATION AGENCY DIVISION OF CAREERS AND TECHNICAL EDUCATION PUBLIC NOTIFICATION OF NONDISCRIMINATION IN PROGRAMS AND VOCATIONAL EDUCATION PROGRAMS DE NO DISCRIMINACION EN PROGRAMAS DE CARRERAS Y TECNOLOGIA

1. El distrito escolar de Hays ofrece programas vocacionales en agricultura, manejo de negocios, tecnología de automóviles, electrónicos, tecnología de ciencias de salud, educación de mercadotecnia, justicia criminal, la educación familiar y comunitaria. La admisión a estos programas se basa en interés, aptitud, edad apropiada y espacio en el salón de clase.

2. Es norma del distrito escolar de Hays de no discriminar por motivos de raza, color, origen nacional, sexo o impedimento, en sus programas, servicios o actividades vocacionales, tal como lo requieren el Título VI de la Ley de Derechos Civiles de 1964, según enmienda, el Título IX de las Enmiendas en la Educación, de 1972, y la Sección 504 de la Ley de Rehabilitación de 1973, según enmienda.

3. Es norma del distrito escolar de Hays de no discriminar por motivos de raza, color, origen nacional, sexo, impedimento o edad, en sus procedimientos de empleo, tal como lo requieren el Título VI de la Ley de Derechos Civiles de 1964, según enmienda; el Título IX de las Enmiendas en la Educación, de 1972, la ley de Discriminación por Edad, de 1975, según enmienda, y la Sección 504 de la Ley de Rehabilitación de 1973, según enmienda.

4. El distrito escolar de Hays tomará las medidas necesarias para asegurar que la falta de habilidad en el uso del inglés no sea un obstáculo para la admisión y participación en todos los programas educativos y vocacionales.

5. Para información sobre sus derechos o procedimientos para quejas, comuníquese con la Coordinadora del Título IX, Carolyn Hill, en 21003 IH 35 Kyle, Texas 78640, al número de teléfono: 512/268-2141 y/o la Coordinadora de la Sección 504, Sara Thurman, en 4820 Jack C Hays Trail, Buda, Texas 78610, al número de teléfono, 512/268-2141.

TEXAS EDUCATION AGENCY DIVISION OF CAREERS AND TECHNICAL EDUCATION PUBLIC NOTIFICATION OF NONDISCRIMINATION IN CAREER AND TECHNICAL EDUCATION PROGRAMS

Hays CISD offers career and technical education programs in agriculture, business, auto technology, electronics, health science technology, marketing education, family and consumer science, criminal justice, and technology education. Admission to

these programs is based on interest and aptitude, age appropriate, and class space available.

It is the policy of Hays CISD not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended.

It is the policy of Hays CISD not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended.

Hays CISD will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs.

For information about your rights or grievance procedures, contact the Title IX Coordinator, Carolyn Hill, at 21003 IH 35, Kyle, Texas 78640, 512-268-2141 and/or the Section 504 Coordinator, Sara Thurman, at 4820 Jack C. Hays Trail, Buda, Texas 78610, 512-268-2141.

PUBLIC NOTICE HAYS COUNTY INVITATION FOR BIDS

Hays County will be accepting sealed Bids for FM 1628, Bid No. 2012-804

Sealed Bids will be received by Hays County, Purchasing Office, 712 South Stagecoach Trail, Suite 1071, San Marcos, TX 78666 until 2:00 p.m. local time on Tuesday, July 17, 2012 at which time and place the bids will be publicly opened and read.

A non-mandatory Pre-Bid Conference will be held on Friday, June 29, 2012 at 2:00 p.m. at the Hays County Purchasing Office, 712 South Stagecoach Trail, Suite 1071, San Marcos, TX 78666.

To submit Proposals for this Contract, prospective bidder shall, on Tuesday, July 17, 2012, meet the following requirements: (1) be qualified via "Full Participation" or "Bidder's Questionnaire" by the Texas Department of Transportation (TxDOT) for bidding on State projects or within the 90 day grace period for the preparation of a new qualification statement, or have submitted the Bidder's Questionnaire or the Confidential Questionnaire and have it on file with TxDOT at least 10 days before the date proposals are to be opened; (2) be registered with the State of Texas; and (3) provide suitable evidence of prior experience for similar work and be able to provide written documentation of successfully completed similar contracts.

Plans, Specifications, and Bidding documents for pre-qualified bidders and interested non-bidders may be secured from CivCast's website (www.civcastusa.com) beginning Monday, June 25, 2012. To receive the official Bid Form, contact Cindy Malorka at 512-393-2273 or cindym@ccv.hays.tx.us.

Bid security in the amount not less than five percent (5%) of the total amount of the bid, issued by an acceptable surety company or in the form of a cashier's check, must accompany each bid as a guarantee that the successful bidder will enter into a proper contract and execute bonds and guaranties within ten (10) days after the date contract documents are received by the awarded contractor. Performance and Payment Bonds will be required as stated in the bidding documents.

Hays County is an Affirmative Action/Equal Opportunity Employer.

Any bid may be withdrawn prior to the above scheduled time for the opening of the bids or authorized postponement thereof. Any bid received after the time and date specified shall not be accepted.

Issued by order of the Hays County Commission on Court on Tuesday, May 22, 2012.

Bert Cobb, M.D., County Judge.

PUBLIC NOTICE

The City of Umland will hold a public hearing at 8:00 p.m. on Thursday, July 12, 2012 at the Umland City Hall located at 15 N. Old Spanish Trail, Umland, Texas in regard to the submission of an application to the Department of Agriculture/Office of Rural Affairs for a Texas Community Development Block Grant Program (TX-CDBG) grant. The purpose of this meeting is to allow citizens an opportunity to discuss the citizen participation plan, the development of local housing and community development needs, the amount of TX-CDBG funding available, all eligible TX-CDBG activities, and the use of past TX-CDBG funds. The City encourages citizens to participate in

the development of this TX-CDBG application and to make their views known at this public hearing. Citizens unable to attend this meeting may submit their views and proposals to Russell Schultz, Mayor, at the Umland City Hall. Persons with disabilities that wish to attend this meeting should contact City Hall to arrange for assistance. Individuals who require auxiliary aids or services for this meeting should contact City Hall at least two days before the meeting so that appropriate arrangements can be made.

For further information, contact Russell Schultz, Mayor, at 512-398-7399.

Russell Schultz Mayor

Public Notice: Notice of Public Hearing NOTICE IS HEREBY GIVEN TO ALL INTERESTED PERSONS, THAT:

The City of Kyle shall hold a public hearing on a request by First Baptist Church of Kyle to rezone approximately 0.23 acres from "R1" Single Family Residential 1 to "CBD-2" Central Business District 2 on property located at 110 N. Nance, in Hays County, Texas.

The Planning and Zoning Commission may recommend and the City Council may consider assigning any zoning restrictive and is also consistent with the Comprehensive Plan.

A public hearing will be held by the Planning and Zoning Commission on Tuesday, July 24, 2012 at 6:30 p.m.

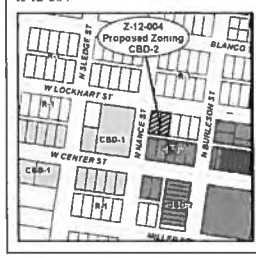
A public hearing will be held by the Kyle City Council on Tuesday, August 7, 2012, at 7:00 p.m.

Council action and second reading may be considered at the meeting to follow the public hearing (August 21, 2012).

Kyle City Hall Council Chambers 100 W Center St., Kyle, Texas

Owner: First Baptist Church of Kyle Agent: Tim C. Pappas, R.P.L.S. Phone: (512) 578-8629

Publication Date July 4, 2012 Z-12-004



Public Notice: Notice of Public Hearing NOTICE IS HEREBY GIVEN TO ALL INTERESTED PERSONS, THAT:

The City of Kyle shall hold a public hearing on a request by PGI Investment, L.L.C. to assign original zoning to approximately 37.37 acres from "AG" Agriculture to "RS" Retail Service District and to assign original zoning to approximately 10.37 acres from "AG" Agriculture to "RV" Recreational Vehicle Park District on property located at 24800 S. IH-35, in Hays County, Texas.

The Planning and Zoning Commission may recommend and the City Council may consider assigning any zoning restrictive and is also consistent with the Comprehensive Plan.

A public hearing will be held by the Planning and Zoning Commission on Tuesday, July 24, 2012 at 6:30 p.m.

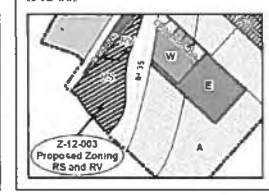
A public hearing will be held by the Kyle City Council on Tuesday, August 7, 2012, at 7:00 p.m.

Council action and second reading may be considered at the meeting to follow the public hearing (August 21, 2012)

Kyle City Hall Council Chambers 100 W Center St., Kyle, Texas

Owner: PGI Investments Agent: Hugo Elizondo Jr., PE. Cuatro Consultants Phone: (512) 312-5040

Publication Date July 4, 2012 Z-12-003



Public Notice: Notice of Public Hearing NOTICE IS HEREBY GIVEN TO ALL INTERESTED PERSONS, THAT:

The City of Kyle shall hold a public meeting relating to the City of Kyle's Direct Water Reuse Feasibility Study. This will be the third required public meeting for the TWDB Facility Planning Grant Program for the City of Kyle's Regional Reuse Feasibility Study. The study was completed on June 30, 2012 and the purpose of this meeting is to obtain public comment on the Draft Final Report. This draft report is available for public viewing at the City of Kyle Public Library. The public comment period is from July 7, 2012 to August 7, 2012. Comments can be received orally/written at the public meeting, as well as be email to rgancia@cityofkyle.com or by U.S. mail at P.O. Box 40, Kyle, Texas 78640 anytime during the public comment period.

The public meeting will be held by the Kyle City Council on Tuesday August 7, 2012 at 7:00 p.m.

Kyle City Hall, Council Chambers 100 W. Center St., Kyle, Texas

Public Notice: Notice of Public Hearing City of Kyle City Code Amendment NOTICE IS HEREBY GIVEN TO ALL INTERESTED PERSONS, THAT:

The City Council and Planning and Zoning Commission of the City of Kyle, Texas, will hold public hearings in the City Council Chambers at 100 W. Center Street, Kyle, Texas, for the purpose of receiving testimony, comments, and written evidence from the public on the following:

Amendment to Plum Creek PUD Article II Section I- Part D (f) Exception to height regulations to allow a maximum height of 80 feet for all civic structures.

The public hearing schedule is as follows: July 24, 2012 Planning and Zoning Public Hearing at 6:30 p.m.

August 7th, 2012 City Council Public Hearing 7 p.m.

Council action and second reading may be considered at the meeting to follow the public hearing (August 21, 2012).

Public Notice: Notice of Public Hearing NOTICE IS HEREBY GIVEN TO ALL INTERESTED PERSONS, THAT:

The City of Kyle shall hold a public hearing on a request by KCW Interest 3 LLC and FHC Consolidated to rezone approximately 3.846 acres from "R-3-1" Multi-Family Residential 1 to "R-1-1" Residential Townhome, on property located 110 Creekside Trail, in Hays County, Texas.

The Planning and Zoning Commission may recommend and the City Council may consider assigning any zoning restrictive and is also consistent with the Comprehensive Plan.

A public hearing will be held by the Planning and Zoning Commission on Tuesday, July 24, 2012 at 6:30 p.m.

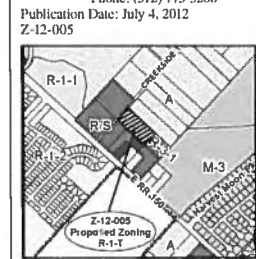
A public hearing will be held by the Kyle City Council on Tuesday, August 7, 2012, at 7:00 p.m.

Council action and second reading may be considered at the meeting to follow the public hearing (August 21, 2012).

Kyle City Hall Council Chambers 100 W Center St., Kyle, Texas

Owner: KCW Interest 3 L.L.C. And FHC Consolidated Agent: Gary Whited Phone: (512) 773-3208

Publication Date: July 4, 2012 Z-12-005



Public Notice: Notice of Public Hearing NOTICE IS HEREBY GIVEN TO ALL INTERESTED PERSONS, THAT:

The City of Kyle shall hold a public hearing on a request by John and Sammie Tritico on behalf of Liquid Waste Solutions, L.L.C. to rezone approximately 6.29 acres from "RS" Retail Services to "CM" Construction Manufacturing District on property located at 2270 and 2788 S. Loop 4, in Hays County, Texas.

The Planning and Zoning Commission may recommend and the City Council may consider assigning any zoning restrictive and is also consistent with the Comprehensive Plan.

A public hearing will be held by the Planning and Zoning Commission on Tuesday, July 24, 2012 at 6:30 p.m.

A public hearing will be held by the Kyle City Council on Tuesday, August 7, 2012, at 7:00 p.m.

Council action and second reading may be considered at the meeting to follow the public hearing (August 21, 2012).

Kyle City Hall Council Chambers 100 W Center St., Kyle, Texas

Owner: John and Sammie Tritico Liquid Waste Solutions, L.L.C. Phone: (512) 529-8816

Publication Date: July 4, 2012 Z-12-001



Health Care

Continued from pg. 4D

fully implemented state-run exchange would trump those of a federal one.

"We have the ability to solve problems and craft solutions that take into consideration our uniqueness as a state," Coleman said. But he said he is glad the state will be required to opt into some kind of exchange "whether or not somebody like Rick Perry said no."

There has not been much public discussion about how the state would go about creating an exchange, Sanaie said. But, she said she "has confidence" state officials have begun examining potential strategies. State health officials have said they've been working behind the

scenes to make sure Texas wasn't left in a lurch if federal health reform was upheld — and that instituting an exchange wouldn't be too taxing.

The Medicaid expansion if implemented is targeted at poor adults — those who can't afford to buy insurance through the exchange. In a press release, Texas Hospital Association President Dan Stultz said the Medicaid expansion is essential to financially support the Affordable Care Act. "Without the Medicaid expansion, many will remain uninsured, shifting costs to the insured and increasing uncompensated care to health care providers," he said.

In addition to their decisions about the Medicaid expansion and the health insurance exchange, Texas Republicans face another question — whether to file more litigation. Abbott said he will work with Congress to attempt to have the law repealed, and that the state will explore "all possible avenues" to further litigation against "ObamaCare." But he said it is hard to tell what aspects of the law that litigation might target.

"We don't want to do ready, fire, aim," Abbott said. "Let's look at it — analyze it — before we start discussing what further legal action could be lodged."

[Agenda](#)[Minutes](#)[Close](#)

CITY OF KYLE



Notice of Regular City Council Meeting

KYLE CITY HALL
100 W. Center Street

Notice is hereby given that the governing body of the City of Kyle, Texas will meet at 7:00 PM on 8/7/2012, at Kyle City Hall, 100 West Center Street, Kyle, Texas for the purpose of discussing the following agenda.

Posted this 2nd day of August, 2012 prior to 7:00 p.m.

I. Call Meeting To Order

II. Approval of Minutes

1. City Council Regular Meeting - July 17, 2012 ~ *Amelia Sanchez, City Secretary*

 [Attachments](#)

III. Citizen Comment Period With City Council

The City Council welcomes comments from Citizens early in the agenda of regular meetings. Those wishing to speak must sign in before the meeting begins at the Kyle City Hall. Speakers may be provided with an opportunity to speak during this time period, and they must observe the three-minute time limit.

IV. Presentation

2. Recognition of Employee of the Month for the Month of July ~ *Lanny Lambert, City Manager*

- *Joshua Moreno and Nikki Ladet*

 [Attachments](#)

3. Recognition and Special Thanks to Gary Job Corps ~ *Jeff Barnett, Chief of Police*

 [Attachments](#)

4. Recognition of Accomplishments by the 2012 Kyle Kuda Swim Team ~ *Kerry Urbanowicz, Director of Parks and Recreation*

 [Attachments](#)

5. Presentation of Draft Final Report of the City of Kyle Direct Water Reuse Feasibility Study ~ *Stephen Jenkins, Espey Consultants*

 [Attachments](#)

6. Presentation of Water Conservation Plan and Rebates ~ *James Earp, Assistant City Manager*

 [Attachments](#)

7. Report on Water Tank Inspections ~ *Jason Biemer, Utility Coordinator, Public Works*

 [Attachments](#)

8. Presentation of Kyle Chamber of Commerce Quarterly Report for Reporting Period April 2012 through June 2012 ~ *Ray Hernandez, Executive Director of Kyle Area Chamber of Commerce & Visitor's Bureau*

 [Attachments](#)

V. Appointments

9. Consideration of Nomination(s) for Appointment to the Kyle Depot Board ~ *Diane Hervol, Mayor Pro Tem*

- *Ed Winn*

 [Attachments](#)

10. Consideration of Nomination(s) for Appointment to the Library Board ~ *Lucy Johnson, Mayor*

- *Charlotte Towles*

 [Attachments](#)

VI. Consent Agenda

11. Hometown Kyle Phase 4A - Final Plat (FP-12-004)
Owner: RH of Texas, LP
8.948 acres; 40 Single Family Lots
Located off of Chapparo Drive
Agent: Steven Ihnen, P.E., GICE, Inc.
~ *Sofia Nelson, Director of Planning*

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Appendix O: Report Comments and Responses

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Initial Review – City of Kyle Direct Water Reuse Study Feasibility Report Submittal

The following items are major deficiencies that need to be addressed in order for Reclamation to begin its formal review process:

General Comments

1. Section 4.B.4.a of the Directives and Standards (D&S) requires a description of the non-Federal funding condition or the reasonably foreseeable future actions that the City would take if the Title XVI project is not implemented (i.e., non-Title XVI alternative). This report provides combinations of supply options that could be implemented under different scenarios, but it remains unclear as to which specific potable water supply(s) the proposed Title XVI project is meant to postpone or eliminate. The appropriate location for this discussion appears to be in Section 6.4, Alternative 3 – Potable Water Use, but no such discussion exists. On Page 61, the report mentions the incremental reduction in the cost of developing the Edwards Aquifer (3rd paragraph), but it also mentions avoided costs HCPUA (6th paragraph). The report should clarify whether one or both of these alternatives is meant to serve as the non-Federal funding condition.
2. For the non-Title XVI alternative(s) identified above, Section 4.B.4.c of the D&S requires a description of benefits to be gained, total project cost, life cycle cost, and corresponding cost of water produced, expressed in cost per million gallons or acre-foot. The purpose of this requirement is to allow a direct cost comparison to be made among alternatives, pursuant to Section 4.B.5.b. The costs must be developed for a non-Title XVI alternative that would satisfy the same demand as the proposed Title XVI project. This draft report provides costs in Section 4.4, but it is unclear how those costs were developed and on what level of service they were based. The draft report also shows a unit cost of \$1.83 per 1,000 gallons in Section 7.2, but does not provide supporting documentation for what or how this cost is based. For the non-Title XVI alternative(s), please provide a description of the benefits to be gained, the total project cost, and life cycle cost. The costs must be likely and realistic, and they must be developed with the same standards with respect to interest rates and period of analysis as those developed for the Title XVI alternative. Note: according to 4.B.5.b of the D&S, the cost of the Title XVI alternative does not need to be the least expensive in order to justify its implementation.
3. Pursuant to Section 4.B.4.d of the D&S, please provide a brief description of references, design data, and assumptions to support cost estimates for both the Title XVI and non-Title XVI alternatives.
4. Section 4.B.6 of the D&S requires justification of why the proposed Title XVI project is the selected alternative in terms of meeting four criteria (i-iv). The draft report appears to address “i” and “ii” through its discussion of offsetting either HCPUA or Edwards Aquifer supplies, respectively, but it remains unclear as to how the proposed Title XVI project would address criteria “iii” and “iv”. Please explain.
5. The report provides projections based on two different planning windows, 2035 and 2040. This results in substantive inconsistencies with regards to population projections, recycled water demands, project scope/type of service provided, cost analyses, etc. Please define only one planning window and address all requirements of the D&S in terms thereof.

Page-Specific Comments

6. Crosswalk Table. The current structure of the crosswalk table is difficult to follow and makes cross referencing the D&S sections with report page numbers difficult. Please consider adding grid lines or make other revisions as necessary.
7. Crosswalk Table. The crosswalk table contains erroneous D&S/Report Section/Page number correlations. For example, Section 4.a is correlated to Section 10.4.3 and Page 115 of the report, and this information is contained in neither place. Rather, this section should be correlated to Page 44, which is supposed to describe the non-Title XVI alternative (i.e., Alternative 3). Furthermore, Section 4.d is correlated to Section 6 and Pages 41-56; instead, it should be correlated to Pages 58, 59, and Appendices. To facilitate the formal agency review, we recommend correcting any inaccuracies throughout the crosswalk table.
8. Crosswalk Table. It is not acceptable to indicate a D&S requirement such as Research Needs as “N/A.” Please address all requirements of the D&S. If (for example) research needs are not needed, then briefly state such in the body of the report.
9. Section 5.6. Table 5-10 does not appear to include “Future Parks,” as provided in Table 5-2. Please clarify which recycled demand calculation is correct.
10. Section 5.6. Please provide a description of the cooling makeup water use projection and how this calculation was made.
11. Section 6; General. The list and descriptions of alternatives provided in the section overview (i.e., Alternatives 1, 1A, 2, and 3) is not consistent with the list provided in each of the subsections (i.e., Alternative 1, 1A, 2, 3, and 4). Please correct.
12. Section 7; General. The cost per 1,000 gallons of the proposed Title XVI project is not consistent across Table 7-2 (\$2.42), 7-3 (\$2.43), and 7-4 (\$1.74), partly due to inconsistent volumes of reclaimed water provided (i.e., 442.84 versus 601.73). Consistent with General Comment No. 2, please provide only one unit cost and be consistent in its use and application.
13. Section 7.2; General. Consistent with General Comment No. 2, please provide a cost comparison of the non Title XVI alternative(s) that would satisfy the same demand as the proposed Title XVI alternative. The alternatives used for comparison must be likely and realistic and developed with the same standards with respect to interest rates and period of analysis.
14. Section 8 excludes a description of potential environmental impacts to specific resources required in the D&S, namely public health or safety, historic properties, and natural resources. On the latter resource, a brief discussion should be included on the potential impacts to fish and wildlife habitat, including potential effects caused by a reduction in in-stream flows from Plum Creek.

15. Appendix O; Report Comments and Responses; Page 187. This appendix is blank and is not referenced in the body of the report. Please provide a discussion of the extent to which the public was involved in the feasibility study and a summary of comments received, if any.

Attachment I

City of Kyle

Direct Water Reuse Feasibility Study

TWDB Contract No. 1148311256

Draft Report Review Comments

1. Page 113, second paragraph: Please clarify that the current 2011 Region L Regional Water Plan (RWP) and the 2012 State Water Plan (SWP) do not have “reuse” as a recommended water management strategy for the City of Kyle and therefore an amendment to these plans would be required in order for this project to be eligible for funding from the Water Infrastructure Finance Program. Another requirement to be eligible for this funding is to complete the TWDB online Infrastructure Finance Report Survey. Please contact Ms. Wendy Barron at wendy.barron@twdb.texas.gov for information specific to your entity for this process.
2. Page 102, fourth paragraph *Loans*: The current terms of the SRF and state loans do not offer zero percent interest, guarantee of repayment, or bond insurance. Please revise as necessary.
3. Page 102, last paragraph: Please clarify that although the rules provide for fixed or variable rate loans, the TWDB only offers fixed rate loans under this program.
4. Page 5, first bullet: ‘Obtain water rights ~~for the storage of reclaimed water~~ at Site 1’. Please clarify that what is actually needed is a water rights permit amendment regarding change of *use* from recreation/livestock to municipal and the associated water volume for this new use (as described in section 10.2.2); same clarification needed on pages 116 and 118.
5. Pages 25, 28, and 29: There appears to be a discrepancy (153.4 acres vs. 140.56 acres) between the future park area in Table 5-2 and the irrigation summary in Table 5-7 and 5-8. Please reconcile and revise report as appropriate.
6. Pages 29 and 30: There appears to be a discrepancy (1,030.29 acres vs. 960.01 acres) between the irrigated area summary in Table 5-8 and the total irrigated area in Table 5-10 (and executive summary Table 1-1). Please reconcile and revise report as appropriate.
7. Page 32, section 5.9: Please consider including a brief explanation of the characteristics and applications of Type I and Type II reclaimed water in this section or a reference to the detailed information included in Section 9.
8. Page 42, Section 6.2: Please clarify whether there are purchase costs for the existing system attributed to changing the ownership of the existing reclaimed system.
9. Page 42, Section 6.3: Please clarify whether or not the existing wastewater treatment plant would need to increase its capacity as a result of this alternative.
10. Page 58, Table 7-4: Alternative 1A is to transfer the existing system to the City of Kyle and will be operated and maintained by the city's wastewater utility. However, the capital cost shown in Table 7-4 is \$843,750 which seems to be the project costs of Phase I. Please clarify and provide costs of changing the ownership of the existing system, if applicable, per comment 16 above.
11. Page 63, Section 7.8: Please revise first sentence - the considered alternatives are described by Sections 6.1 through 6.5, not only by Sections 6.3 and 6.4. Also, please note that the costs are not fully described for each alternative by Sections 6.1 through 6.5.
12. Page 64, Section 7.8.3: Please note that Appendix E is a table to show the opinion of probable project costs, instead of power, operation and maintenance, and treatment costs. Please also clarify which alternative Appendix E refers to.

13. Page 65, Section 7.10: Appendix K shows that the debt service is 30 years. Please clarify why 20 years was used in calculating Present Values.
14. Page 71, first full paragraph: Please define and/or describe the SWAT model referred to this paragraph.
15. Page 99, Section 9.3.1 content on “Return and Environmental Flows” is very confusing. Please consider re-writing this paragraph to provide more clarity.
16. It appears that many of the report appendix references need to be updated. Please reconcile and revise where appropriate. Examples include: page 53, paragraph 4 reference to Appendix H should be Appendix I; page 57 reference to Appendix F should be Appendix G for each service area, however, the ‘complete system’ probable costs appears to be missing from Appendix G; and, page 65 references to Appendix K should be Appendix L.
17. Please consider the following suggestions to enhance clarity/understanding for some of the report figures:
 - a. Figure 1-1 (& 10-2): The following items are missing from the figure legend: independent transmission lines for Plum Creek, NE service area, SE service area, West service area, and location of Site 1 impoundment. Also appears to be a typographical error in legend for the proposed transmission line per ‘Phases 2-3’; there is no Phase 3 currently identified in this study.
 - b. Figures 3-1 and 4-1 are difficult to read and Fig.3-1 is missing a legend. Please provide all graphs in a format consistent with those presented in Section 5 (Figure 5-6).
18. Please consider adding text in the report to summarize the three public meetings that were held as part of Task 1 to discuss the study with the public and solicit their input, with a reference to Appendix N which contains copies of all of the notices, sign-in sheets, and meeting materials.
19. Please define all acronyms the first time they are used. For example, HCPUA is used first on page 3 and defined on page 7; AWWA on page 111; and, ‘TWCA’ and ‘AWWA’ are missing from Appendix B.
20. Please correct all spelling and typographical errors in the report. For example, top of p. 70 first sentence should refer to biochemical (instead of biological) oxygen demand.

Review Comments and Responses on the Draft Final Report

The following are the responses to comments received from Reclamation prior to initiation of its formal review process:

1. Section 4.B.4.a of the Directives and Standards (D&S) requires a description of the non-Federal funding condition or the reasonably foreseeable future actions that the City would take if the Title XVI project is not implemented (i.e., non-Title XVI alternative). This report provides combinations of supply options that could be implemented under different scenarios, but it remains unclear as to which specific potable water supply(s) the proposed Title XVI project is meant to postpone or eliminate. The appropriate location for this discussion appears to be in Section 6.4, Alternative 3 – Potable Water Use, but no such discussion exists. On Page 61, the report mentions the incremental reduction in the cost of developing the Edwards Aquifer (3rd paragraph), but it also mentions avoided costs HCPUA (6th paragraph). The report should clarify whether one or both of these alternatives is meant to serve as the non-Federal funding condition.
 - A. *A clarification that Alternative 3 – Potable Water Use is the only non-federal alternative that can meet the full projected demands has been included in Section 7.1.4.*
2. For the non-Title XVI alternative(s) identified above, Section 4.B.4.c of the D&S requires a description of benefits to be gained, total project cost, life cycle cost, and corresponding cost of water produced, expressed in cost per million gallons or acre-foot. The purpose of this requirement is to allow a direct cost comparison to be made among alternatives, pursuant to Section 4.B.5.b. The costs must be developed for a non-Title XVI alternative that would satisfy the same demand as the proposed Title XVI project. This draft report provides costs in Section 4.4, but it is unclear how those costs were developed and on what level of service they were based. The draft report also shows a unit cost of \$1.83 per 1,000 gallons in Section 7.2, but does not provide supporting documentation for what or how this cost is based. For the non-Title XVI alternative(s), please provide a description of the benefits to be gained, the total project cost, and life cycle cost. The costs must be likely and realistic, and they must be developed with the same standards with respect to interest rates and period of analysis as those developed for the Title XVI alternative. Note: according to 4.B.5.b of the D&S, the cost of the Title XVI alternative does not need to be the least expensive in order to justify its implementation.
 - A. *The non-Title XVI alternative costs are now detailed in Section 7.1. Costs for Alternative 3 (the non-Title XVI alternative that capable of meeting the demands developed in Section 5) are presented in Section 7.1.4.*
3. Pursuant to Section 4.B.4.d of the D&S, please provide a brief description of references, design data, and assumptions to support cost estimates for both the Title XVI and non-Title XVI alternatives.
 - A. *The references, design data, and assumptions are summarized in Section 7.1.*
4. Section 4.B.6 of the D&S requires justification of why the proposed Title XVI project is the selected alternative in terms of meeting four criteria (i-iv). The draft report appears to address "i" and "ii" through its discussion of offsetting either HCPUA or Edwards

Aquifer supplies, respectively, but it remains unclear as to how the proposed Title XVI project would address criteria "iii" and "iv". Please explain.

A. Section 7.12 has been added to present the required justification.

5. The report provides projections based on two different planning windows, 2035 and 2040. This results in substantive inconsistencies with regards to population projections, recycled water demands, project scope/type of service provided, cost analyses, etc. Please define only one planning window and address all requirements of the D&S in terms thereof.

A. The report has been clarified to define the planning period as 2015-2035 with references to 2040 used to illustrate the extent to which project unit costs decrease at the end of debt payments.

6. Crosswalk Table. The current structure of the crosswalk table is difficult to follow and makes cross referencing the D&S sections with report page numbers difficult. Please consider adding grid lines or make other revisions as necessary.

A. The crosswalk table has been updated to include report page numbers and grid lines.

7. Crosswalk Table. The crosswalk table contains erroneous D&S/Report Section/Page number correlations. For example, Section 4.a is correlated to Section 10.4.3 and Page 115 of the report, and this information is contained in neither place. Rather, this section should be correlated to Page 44, which is supposed to describe the non-Title XVI alternative (i.e., Alternative 3). Furthermore, Section 4.d is correlated to Section 6 and Pages 41-56; instead, it should be correlated to Pages 58, 59, and Appendices. To facilitate the formal agency review, we recommend correcting any inaccuracies throughout the crosswalk table.

A. The crosswalk table has been updated.

8. Crosswalk Table. It is not acceptable to indicate a D&S requirement such as Research Needs as "N/A." Please address all requirements of the D&S. If (for example) research needs are not needed, then briefly state such in the body of the report.

A. Section 10.7 Research Needs has been added to the report.

9. Section 5.6. Table 5-10 does not appear to include "Future Parks," as provided in Table 5-2. Please clarify which recycled demand calculation is correct.

A. Tables 1-1 and 5-10 have been revised to include future park acreage for both public and private parks in the year 2035.

10. Section 5.6. Please provide a description of the cooling makeup water use projection and how this calculation was made.

A. A clarification has been added to Section 5.6 that describes that the medical center uses a cooling tower for environmental cooling and that the system presently uses potable water to make up for evaporative losses in the system. The volume presented was the potable water demand for 2011.

11. Section 6; General. The list and descriptions of alternatives provided in the section overview (i.e., Alternatives 1, 1A, 2, and 3) is not consistent with the list provided in each of the subsections (i.e., Alternative 1, 1A, 2, 3, and 4). Please correct.
 - A. *The list of four alternatives in Section 6 is addressed in Sections 6.1, 6.2, 6.3, and 6.4.*

12. Section 7; General. The cost per 1,000 gallons of the proposed Title XVI project is not consistent across Table 7-2 (\$2.42), 7-3 (\$2.43), and 7-4 (\$1.74), partly due to inconsistent volumes of reclaimed water provided (i.e., 442.84 versus 601.73). Consistent with General Comment No. 2, please provide only one unit cost and be consistent in its use and application.
 - A. *The reclaimed water demand volume and unit costs in the tables in Section 7 have been corrected.*

13. Section 7.2; General. Consistent with General Comment No. 2, please provide a cost comparison of the non-Title XVI alternative(s) that would satisfy the same demand as the proposed Title XVI alternative. The alternatives used for comparison must be likely and realistic and developed with the same standards with respect to interest rates and period of analysis.
 - A. *The costs for the non-Title XVI alternatives are presented in Sections 7.1.1 through 7.1.4. Clarification of the cost comparison in Section 7.2 has been provided.*

14. Section 8 excludes a description of potential environmental impacts to specific resources required in the D&S, namely public health or safety, historic properties, and natural resources. On the latter resource, a brief discussion should be included on the potential impacts to fish and wildlife habitat, including potential effects caused by a reduction in in-stream flows from Plum Creek.
 - A. *Potential environmental impacts have been included in Sections 8.1.2, 8.1.3, 8.1.5, 8.1.6, 8.1.7 and 8.2.5.*

15. Appendix O; Report Comments and Responses; Page 187. This appendix is blank and is not referenced in the body of the report. Please provide a discussion of the extent to which the public was involved in the feasibility study and a summary of comments received, if any.
 - A. *This discussion is included in Section 2.2.1 Public Involvement and has been added to the final report with a summary of comments in the referenced appendices.*

The following are the responses to comments from the TWDB on the June 2012 Draft Final Report.

1. Page 113, second paragraph: Please clarify that the current 2011 Region L Regional Water Plan (RWP) and the 2012 State Water Plan (SWP) do not have "reuse" as a recommended water management strategy for the City of Kyle and therefore an amendment to these plans would be required in order for this project to be eligible for funding from the Water Infrastructure Finance Program. Another requirement to be eligible for this funding is to complete the TWDB online Infrastructure Finance Report Survey.
 - A. *The text on pg. 113 has been modified to clarify that funding from the WIF will require an amendment of the Region L and State Water Plans, as well as completing the Infrastructure Finance Report Survey.*
2. Page 102, fourth paragraph *Loans*: The current terms of the SRF and state loans do not offer zero percent interest, guarantee of repayment, or bond insurance. Please revise as necessary.
 - A. *The paragraph has been modified as recommended.*
3. Page 102, last paragraph: Please clarify that although the rules provide for fixed or variable rate loans, the TWDB only offers fixed rate loans under this program.
 - A. *The text has been modified to clarify that it is fixed rate loans that are available.*
4. Page 5, first bullet: 'Obtain water rights ~~for the storage of reclaimed water~~ at Site 1. Please clarify that what is actually needed is a water rights permit amendment regarding change of use from recreation/livestock to municipal and the associated water volume for this new use (as described in section 10.2.2); same clarification needed on pages 116 and 118.
 - A. *The text has been modified to reflect the need to amend an existing water rights permit for a change of use and volume.*
5. Pages 25, 28, and 29: There appears to be a discrepancy (153.4 acres vs. 140.56 acres) between the future park area in Table 5-2 and the irrigation summary in Table 5-7 and 5-8. Please reconcile and revise report as appropriate.
 - A. *As shown in Table 5-7 and 5-8, the total of public and private parkland in the year 2035 is 571.4 ac. Table 5-2 has been corrected to reconcile the future park acreage for both public and private parks in the year 2035 to be 571.4 ac.*
6. Pages 29 and 30: There appears to be a discrepancy (1,030.29 acres vs. 960.01 acres) between the irrigated area summary in Table 5-8 and the total irrigated area in Table 5-10 (and executive summary Table 1-1). Please reconcile and revise report as appropriate.
 - A. *Tables 1-1 and 5-10 have been revised to include future park acreage for both public and private parks in the year 2035.*

7. Page 32, section 5.9: Please consider including a brief explanation of the characteristics and applications of Type I and Type II reclaimed water in this section or a reference to the detailed information included in Section 9.
 - A. *The principal differences between Type I and Type II reclaimed water parameters are first summarized in Section 1.2, but a reference to Sections 9.1.2 and 9.1.3 has been added to the description of the existing reclaimed water system infrastructure in Section 5.9.1.*

8. Page 42, Section 6.2: Please clarify whether there are purchase costs for the existing system attributed to changing the ownership of the existing reclaimed system.
 - A. *The text has been updated to clarify that the terms of a transfer are completely negotiable at this time and that a purchase price has not been assigned as part of this study.*

9. Page 42, Section 6.3: Please clarify whether or not the existing wastewater treatment plant would need to increase its capacity as a result of this alternative.
 - A. *This section has been modified to clarify that the RWPFs would not necessarily create the need to expand the existing WWTP, but that the treatment process would need to be evaluated in light of the potential increase in influent concentrations of BOD and TSS.*

10. Page 58, Table 7-4: Alternative I A is to transfer the existing system to the City of Kyle and will be operated and maintained by the city's wastewater utility. However, the capital cost shown in Table 7-4 is \$843,750 which seems to be the project costs of Phase I. Please clarify and provide costs of changing the ownership of the existing system, if applicable, per comment 16 above.
 - A. *Thank you for the comment. Clarification that costs associated with Alternative 1A are those necessary to produce Type I reclaimed water quality and to make use of the available capacity in the existing system has been added to Section 6.2.*

11. Page 63, Section 7.8: Please revise first sentence - the considered alternatives are described by Sections 6.1 through 6.5, not only by Sections 6.3 and 6.4. Also, please note that the costs are not fully described for each alternative by Sections 6.1 through 6.5.
 - A. *The clarification has been added to Section 7.8 along with clarification that there are no direct costs to the city for Alternative 1; that costs for Alternative 1A are incurred if the intent is to increase water quality to Type I and make use of the available system capacity; that no costs can be developed for Alternative 2 with the available data; and that the costs associated with Alternative 3 are the average cost of potable water supplies plus O&M and depreciation as represented in the city's retail water rate.*

12. Page 64, Section 7.8.3: Please note that Appendix E is a table to show the opinion of probable project costs, instead of power, operation and maintenance, and treatment costs. Please also clarify which alternative Appendix E refers to.
- A. *Section 7.8.3 has been clarified to reference Appendix H. References to Appendices E, F, and G for Alternative 4 have been added to Section 7.2.*
13. Page 65, Section 7.10: Appendix K shows that the debt service is 30 years. Please clarify why 20 years was used in calculating Present Values.
- A. *The debt service detail presented in Appendix K illustrates potential project funding using three separate debt issuances in 2015, 2020, and 2025 – each with a 20 year term. A clarification of the three debt issues is presented in Section 7.8.2.*
14. Page 71, first full paragraph: Please define and/or describe the SWAT model referred to this paragraph.
- A. *The text has been modified to include a definition of the SWAT model used in the development of the WPP.*
15. Page 99, Section 9.3.1 content on "Return and Environmental Flows" is very confusing. Please consider re-writing this paragraph to provide more clarity.
- A. *Section 9.3.1 has been revised.*
16. It appears that many of the report appendix references need to be updated. Please reconcile and revise where appropriate. Examples include: page 53, paragraph 4 reference to Appendix H should be Appendix I; page 57 reference to Appendix F should be Appendix G for each service area, however, the 'complete system' probable costs appears to be missing from Appendix G; and, page 65 references to Appendix K should be Appendix L.
- A. *Appendix G has been updated to include the cost of the complete project. References to the appendices have been updated.*
17. Please consider the following suggestions to enhance clarity/understanding for some of the report figures:
- a. Figure 1-1 (& 10-2): The following items are missing from the figure legend: independent transmission lines for Plum Creek, NE service area, SE service area, West service area, and location of Site 1 impoundment. Also appears to be a typographical error in legend for the proposed transmission line per 'Phases 2-3'; there is no Phase 3 currently identified in this study.
- A. *Figures 1-1 and 10-2 have been revised.*
- b. Figures 3-1 and 4-1 are difficult to read and Fig.3-1 is missing a legend. Please provide all graphs in a format consistent with those presented in Section 5 (Figure 5-6).
- A. *Figures 3-1 and 4-1 have been enlarged to improve legibility and revised to include a legend.*

18. Please consider adding text in the report to summarize the three public meetings that were held as part of Task 1 to discuss the study with the public and solicit their input, with a reference to Appendix N which contains copies of all of the notices, sign-in sheets, and meeting materials.

A. Section 2.2.1 Public Involvement has been added to the final report.

19. Please define all acronyms the first time they are used. For example, HCPUA is used first on page 3 and defined on page 7; AWWA on page III; and, 'TWCA' and 'AWWA' are missing from Appendix B

A. The final report has been edited to define acronyms and to add additional acronyms to Appendix B.

20. Please correct all spelling and typographical errors in the report. For example, top of p. 70 first sentence should refer to biochemical (instead of biological) oxygen demand.

A. Corrections have been made.

The following are the responses/revisions to TWDB comments on the December 2012 Final Report.

21. Table 5-2 indicates that the total “future parks” area decreased from the draft 140.6 acres to final 132.8 acres. However, Ch.5 text and subsequent tables 5-7, 5-8, & 5-10 are still utilizing the draft 140.6-ac number in calculations.

A. Table 4-4 on pg. 19 shows the 2015 population as 34,328. Using 5.25 acres/1,000 population, the 2015 acreage is an increase of 51.9 acres instead of 44.2. Table 5-2 is revised for the 2015 acreage of 51.9 for a total acreage of 140.6.

22. Table 5-6 lists commercial irrigated acres for IH35 N & S are listed as 156.6ac & 1245ac, respectively; however, these values are different in Table 5-7 (62.64ac & 49.8ac) & in tables 5-8 & 5-10 Commercial total irrigated is 273.89ac rather than 442.55ac.

A. The text preceding Table 5-6 and the irrigated area column of Table 5-6 have been corrected to include the 2035 irrigated acreage. Table 5-8 provides the total acreage for ALL commercial property (see User Category column, Table 5-7). Table 5-8 and Table 5-10 are correct showing 273.89 acres of irrigated area for Commercial Property. The Peak and Annual Reclaimed Water Demand columns in Table 5-10 are correct.

23. TWDB Comment #1 regarding the requirement to amend the 2011 Region L Water Plan & the 2012 State Water Plan was addressed on page 115 of the final plan. However, it was not added as a bulleted task item in the reclaimed water project’s implementation schedule (suggest before bullet 3 of “2013-2014” on page 119). The City would need to be the entity to initiate the request to amend the Region L RWP & the SWP for inclusion of this project as a recommended WMS for Kyle

A. Revision has been made as suggested.

Appendix P: Title XVI Feasibility Study Report Crosswalk

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Title XVI Feasibility Study
Report Review Crosswalk (WTR-11-01)

Title XVI Feasibility Study Report Contents		Location in Report	
		Section	Page
1	Introductory information		
	a identification of non-federal project sponsors	1	1
	b description of the study area & project area map	2.3	8-10
	c definition of study area in terms of site-specific project area & any reclaimed water distribution systems	5 2.1 & 5.9.1	23-29 7 & 32-34
2	Statement of problems & needs		
	a description of the problem & need for reuse	2.1	7
	b description of current & projected water supplies & potential sources of additional water other than reuse	4.2	16-17
	c description of current & projected water demands	4.3	17-19
	d description of any water quality concerns for current and projected water supply	4.2	16
	e description of current & projected wastewater options other than reuse	5.9	32
3	Water Reclamation & Reuse Opportunities		
	a Description of all uses for reclaimed water or categories	5	23-30
	b description of water market available to utilize reclaimed water including:	5.6	29
	i identification of potential users, expected uses, peak use, on-site conversion costs, desire to use reclaimed water	5.6.2	30
	ii description of any consultation with potential customers	5.7	31
	iii description of the market assessment procedures	5.7	31
	c discussion of considerations which may prevent implementing a reuse project. Identify methods or community incentives	10.4.1	114-115
	d identification of all W & WW agencies that have jurisdiction in the potential service area or over sources of reclaimed water	5.8	31
	e description of potential sources of water to be reclaimed	5.9	32
	f description & location of the source water facilities, including capabilities, existing flows, treatment processes, design criteria, plans for future facilities	5.9, 5.10	32-39
	g description of the current water reuse taking place	5.9.1	32-34
	h summary of water reclamation technology currently used & opportunities for development of improved technologies	5.10	38-39
4	Description of alternatives		
	a description of the non-federal funding condition. Reasonably foreseeable future actions city would take if federal funding were not provided for the project.	7.1.4	57-58
	b Statement of objectives all alternatives are designed to meet	6	41
	c description of other water supply alternatives considered to accomplish objectives addressed by the project.	4.2, 6	16; 41-56
	d description of the proposed project including detailed project costs; annual O&M	7.1; 7.1.5; Appendices E, F, G, & H	57, 58
	e description of waste-stream discharge treatment & disposal water quality requirements for the project	5.10	38
	f description of at least 2 alternative measures, or technologies available for water reclamation.	6	41-47

Title XVI Feasibility Study
Report Review Crosswalk (WTR-11-01)

Title XVI Feasibility Study Report Contents		Location in Report	
		Section	Page
5	Economic Analysis		
a	description of conditions that exist in the area & provide projections of the future with, and without the project.	7.3	60
b	cost comparison of alternatives that would satisfy the same demand as reuse	7.2	59
c	costs of the alternative most likely to be implemented in the absence of reuse	7.1.4	57
d	qualitative benefits	7.4	60-62
6	Selection of the proposed Title XVI Project		
a	provide an analysis of whether the proposed project will address the following:		
i	reduction, postponement, or elimination of development of new water supplies	7.12	67
ii	reduction or elimination of the use of existing diversions	7.12	67
iii	reduction of demand on existing federal water supplies	7.12	67
iv	reduction, postponement, or elimination of new or expanded WW facilities	7.12	67
7	Environmental consideration and potential effects		
a	Address the following:		
i	discuss potential significant impacts on endangered species	8.1.2	69
	public health and safety	8.1.6	72
	natural resources	8.1.7	72
	cultural resources	8.1.3	70
	regulated waters of the U.S.	8.1.5	71
ii	discuss potential environmental effects or risks	8.2.5	96
iii	describe status of federal, state, local environmental compliance measures	8.2.5	96
iv	any other information assessing measures needed for NEPA compliance	8.2.5	96
v	discuss how the project will affect water supply and quality	8.2.5	97
vi	discuss extent to which public was involved in the study & comments received.	2.2.1; Appendices N & O	8
vii	describe potential effects project may have on historic properties	8.1.3	70
8	Legal & Institutional Requirements		
a	analysis of potential water rights issues	9.3	102
b	discuss legal & institutional requirements	9	99-102
c	discuss need for multi-jurisdictional or interagency agreements	9.4	103
d	discuss permitting procedures required for implementation	10.2.1 - 10.2.3	110-113
e	discuss any unresolved issues	10.2.1 - 10.2.2	110-111
f	identify current & projected WW permit requirements	10.2.3	111-113
g	describe rights to WW discharges resulting from implementation	9.3	102-103
9	Financial Capability of Sponsor		
a	proposed schedule for project implementation	10.6.1	119-121
b	willingness of sponsor to pay for its share	10.4	114-118
c	plan for funding project & O&M	10.4	114-118
d	Description of sources of funding	10.4.3	116
10	Research needs		
a	describe whether proposed project includes research needs	10.7	121

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CITY OF KYLE, TEXAS

Disannex - Ord. 1010

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Consideration and possible action to disannex or discontinue from being part of the city properties described in Ordinance No. 1010, consisting of approximately 62.47 acres of land, and to repeal Ordinance No. 1010. ~ *Paige Saenz, City Attorney*

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Executive Session - Convene

Meeting Date: 4/4/2023

Date time: 7:00 PM

Subject/Recommendation: Pursuant to Chapter 551, Texas Government Code, the City Council reserves the right to convene into Executive Session(s) from time to time as deemed necessary during this meeting. The City Council may convene into Executive Session pursuant to any lawful exception contained in Chapter 551 of the Texas Government Code including any or all of the following topics.

1. Pending or contemplated litigation, settlement agreement, or to seek the advice of the City Attorney and Attorneys concerning legal issues pursuant to Section 551.071, Texas Government Code, and Section 1.05, Texas Disciplinary Rules of Professional Conduct.
 - Cause No. 22-0873; the State of Texas, ex. rel. 1200 S. Old Stagecoach Road, LLC, v. City of Kyle, Texas; pending in the 207th Judicial District Court of Hays County, Texas, and Cause No. 19-1492; 1200 S. Old Stagecoach Road, LLC v. City of Kyle, Texas; pending in the 22nd Judicial District Court of Hays County, Texas
 - Water Services Area Agreement
2. Possible purchase, exchange, lease, or value of real estate pursuant to Section 551.072 to deliberate the purchase of real property for public purpose.
3. Personnel matters pursuant to Section 551.074.
4. Convene into executive session pursuant to Section 551.087, Texas Government Code, to deliberate regarding the offer of economic incentives to one or more business prospects that the City seeks to have locate, stay, or expand in or near the City.
 - Project Provision
 - Project Lime Zest
 - Project DNA

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available



CITY OF KYLE, TEXAS

Reconvene

Meeting Date: 4/4/2023
Date time: 7:00 PM

Subject/Recommendation: Take action on items discussed in Executive Session.

Other Information:

Legal Notes:

Budget Information:

ATTACHMENTS:

Description

No Attachments Available