A G E N D A

A regular meeting of the Mayor and City Council of the City of Waxahachie, Texas to be held in the Council Chamber at City Hall, 401 S. Rogers on ***Monday, December 7, 2020 at 7:00 p.m.***

Council Members: David Hill, Mayor, Council Member Place 1
Mary Lou Shipley, Mayor Pro Tem
Chuck Beatty, Council Member
Doug Barnes, Council Member Place 2
Melissa Olson, Council Member Place 3

1. Call to Order

2. Invocation

3. Pledge of Allegiance and Texas Pledge of Allegiance

4. ***Public Comments:*** Persons may address the City Council on any issues. This is the appropriate time for citizens to address the Council on any concern whether on this agenda or not. In accordance with the State of Texas Open Meetings Act, the Council may not comment or deliberate such statements during this period, except as authorized by Section 551.042, Texas Government Code.

5. ***Consent Agenda***

   All matters listed under Item 5, Consent Agenda, are considered to be routine by the City Council and will be enacted by one motion. There will not be separate discussion of these items. Approval of the Consent Agenda authorizes the Mayor/City Manager to execute all matters necessary to implement each item. Any item may be removed from the Consent Agenda for separate discussion and consideration by any member of the City Council.

   a. Minutes of the City Council meeting of November 16, 2020
   b. Minutes of the City Council briefing of November 16, 2020
   c. Mobile Home License Renewals for 2021
   d. Taxi Cab License Renewal for 2021
   e. Change Order # 3 to the 2020 Asphalt Street Rehabilitation contract with Reynolds Asphalt and Construction that will add two additional sites to the contract
   f. Budget adjustment from Waxahachie Police Department
   g. Receive Fiscal Year 2020 4th Quarter Financial Report

6. ***Public Hearing*** on the amendment of land use assumptions and capital improvement plans for roads, water and wastewater, and the imposition of an impact fee

7. ***Consider*** proposed Ordinance updating 1) the City's Land Use Assumptions, 2) Waste, Wastewater, and Roadway Impact Fee Capital Improvement Plans, and 3) establishing revised assessment and collection schedules for Water, Wastewater, and Roadway Impact Fees

8. ***Convene*** into Executive Session for consultation with attorney regarding pending or contemplated litigation as permitted under Section 551.071, Texas Government Code and for deliberation regarding real property as permitted under Section 551.072, Texas Government Code

9. ***Reconvene*** and take any necessary action

10. Comments by Mayor, City Council, City Attorney and City Manager

11. Adjourn

The City Council reserves the right to go into Executive Session on any posted item. This meeting location is wheelchair-accessible. Parking for mobility-impaired persons is available. Any request for sign interpretive services must be made forty-eight hours ahead of the meeting. To make arrangements, call the City Secretary at 469-309-4005 or (TDD) 1-800-RELAY TX

(5a)

City Council
November 16, 2020

A regular meeting of the Mayor and City Council of the City of Waxahachie, Texas was held in the Council Chamber at City Hall, 401 S. Rogers on Monday, November 16, 2020 at 7:00 p.m.

Council Members Present:	David Hill, Mayor, Council Member Place 1 Mary Lou Shipley, Mayor Pro Tem Chuck Beatty, Council Member Doug Barnes, Council Member Place 2 Melissa Olson, Council Member Place 3
Others Present:	Michael Scott, City Manager Albert Lawrence, Assistant City Manager Tommy Ludwig, Assistant City Manager Robert Brown, City Attorney Lori Cartwright, City Secretary

1. Call to Order

Mayor David Hill called the meeting to order.

2. Invocation
3. Pledge of Allegiance and Texas Pledge of Allegiance

City Manager Michael Scott gave the invocation and led the Pledge of Allegiance and the Texas Pledge of Allegiance.

4. Public Comments

Ms. Ginger Cole, 207 Rock Springs Court, Waxahachie, encouraged the city to install solar panels on the new city annex building and electric plug-ins for vehicles.

Mr. Ira Tenpenny, 109 Rosa Street, Waxahachie, expressed concern with alcohol being served at Show Biz Cinemas.

5. Accept Ms. Tiffany Duran's Certificate of Withdrawal of the Runoff Election for Council Member Place 2

Action:
Council Member Chuck Beatty moved to accept Ms. Tiffany Duran's Certificate of Withdrawal of the Runoff Election for Council Member Place 2. Mayor Pro Tem Mary Lou Shipley seconded. All Ayes.

6. Consider proposed Ordinance canceling the Runoff Election for Council Member Place 2

ORDINANCE NO. 3230

AN ORDINANCE OF THE CITY OF WAXAHACHIE, TEXAS, CANCELLING A RUNOFF ELECTION SET TO BE HELD ON TUESDAY, DECEMBER 8, 2020, FOR THE

PURPOSE OF ELECTING AN AT-LARGE COUNCIL MEMBER FOR PLACE 2; DECLARING AN EMERGENCY; AND PROVIDING AN EFFECTIVE DATE.

Action:
*Mayor Pro Tem Mary Lou Shipley moved to approve Ordinance No. 3230. Council Member Melissa Olson seconded, **All Ayes.***

7. Administer Oath of Office to Council Member Place 2

City Secretary Lori Cartwright administered the Oath of Office to Council Member Doug Barnes.

8. Organization of City Council

Action:
*Council Member Chuck Beatty nominated David Hill as Mayor of the City of Waxahachie. Mayor Pro Tem Mary Lou Shipley seconded, **All Ayes.***

Action:
*Council Member Doug Barnes nominated Mary Lou Shipley as Mayor Pro Tem of the City of Waxahachie. Council Member Chuck Beatty seconded, **All Ayes.***

9. Consent Agenda

a. Minutes of the City Council meeting of November 2, 2020
b. Minutes of the City Council briefing of November 2, 2020
c. Minutes of the special City Council meeting of November 12, 2020
d. Interlocal Agreement with Ellis County for maintenance of roads, bridges, waterways and ditches
e. Consider Waxahachie Community Development Corporation Expenditure and Award of Bid to Sports Fields, Inc. for Waxahachie Sports Complex Synthetic Turf Improvements
f. Authorize Agreement with TimeClock Plus for new Time Clock System
g. Event application for SAGU's Annual 5K Turkey Trot Fundraiser to be held November 19, 2020
h. Event application for Gingerbread Trail Car Show to be held June 5, 2021
i. Event application for Cars in the Park Car Show to be held July 17, 2021
j. Event application for Waxahachie Fun Run Car Show to be held August 21, 2021

Action:
*Mayor Pro Tem Mary Lou Shipley moved to approve items a. through j. on the Consent Agenda. Council Member Doug Barnes seconded, **All Ayes.***

10. Present Proclamation proclaiming November 21, 2020 as "Testicular Cancer Awareness Day"

Mayor Hill read a proclamation proclaiming November 21, 2020 as "Testicular Cancer Awareness Day" and presented it to Police Chief Wade Goolsby.

11. Public Hearing on a request by Carolyn J Haman for Voluntary Annexation on approximately 150.5+/- acres located NW of 2374 W Highway 287 Bypass (Property ID 185971 and 185886) - Owner: CAROLYN J HAMAN (ANX-DNX-145-2020)

Mayor Hill opened the Public Hearing and announced the applicant requested to continue ANX-DNX-145-2020 to the City Council meeting of December 21, 2020.

12. Consider proposed Ordinance adopting ANX-DNX-145-2020

Action:
Mayor Pro Tem Mary Lou Shipley moved to continue the Public Hearing on a request by Carolyn J Haman for Voluntary Annexation on approximately 150.5+/- acres located NW of 2374 W Highway 287 Bypass (Property ID 185971 and 185886) - Owner: CAROLYN J HAMAN (ANX-DNX-145-2020) to the City Council meeting of December 21, 2020. Council Member Chuck Beatty seconded, ***All Ayes.***

13. Public Hearing on a request by Phillip Fisher, Macatee Engineering LLC, for a Zoning Change from a Future Development and General Retail zoning district to Planned Development-Mixed-Use Residential, located W of 2374 W Highway 287 Bypass (Property IDs 185971, 185972, 185886, 185978) - Owner: CAROLYN J HAMAN (ZDC-72-2020)

Mayor Hill opened the Public Hearing and announced the applicant requested to continue ZDC-72-2020 to the City Council meeting of December 21, 2020.

14. Consider proposed Ordinance approving ZDC-72-2020

Action:
Council Member Doug Barnes moved to continue the Public Hearing on a request by Phillip Fisher, Macatee Engineering LLC, for a Zoning Change from a Future Development and General Retail zoning district to Planned Development-Mixed-Use Residential, located W of 2374 W Highway 287 Bypass (Property IDs 185971, 185972, 185886, 185978) - Owner: CAROLYN J HAMAN (ZDC-72-2020) to the City Council meeting of December 21, 2020. Council Member Chuck Beatty seconded, ***All Ayes.***

15. Consider Development Agreement for ZDC-72-2020

Action:
None

16. Public Hearing on a request by Kimberly Caldwell for a Specific Use Permit (SUP) for Family Home use within a Planned Development-Single Family Residential-2 zoning district located at 137 Valley Ranch Drive (Property ID 232345) - Owner: KIMBERLY CALDWELL and RICHARD & CELESTE GRAY (ZDC-140-2020)

Mayor Hill opened the Public Hearing.

Director of Planning Shon Brooks reported the Specific Use Permit will bring the applicant in compliance with the zoning requirement and recommended approval.

Council Member Melissa Olson completed a Conflict of Interest Affidavit and sustained from participating.

There being no others to speak for or against ZDC-140-2020, Mayor Hill closed the Public Hearing.

17. Consider proposed Ordinance approving ZDC-140-2020

ORDINANCE NO. 3231

AN ORDINANCE AUTHORIZING A SPECIFIC USE PERMIT (SUP) TO PERMIT A FAMILY HOME USE WITHIN A PLANNED DEVELOPMENT-SINGLE FAMILY-2 (PD-SF2) ZONING DISTRICT, LOCATED AT 137 VALLEY RANCH DRIVE, PROPERTY ID 232345, IN THE CITY OF WAXAHACHIE, ELLIS COUNTY, TEXAS, AND ORDERING THE CHANGING OF THE ZONING MAP THEREOF IN ACCORDANCE WITH SAID CHANGE.

Action:
Mayor Pro Tem Mary Lou Shipley moved to approve Ordinance No. 3231. Council Member Chuck Beatty seconded. The vote was as follows:

Ayes:	*David Hill* *Mary Lou Shipley* *Chuck Beatty* *Doug Barnes*
Abstained:	*Melissa Olson*

The motion carried.

18. Public Hearing on a request by Anthony Hopkins, Waxahachie Golf Club, for a Specific Use Permit (SUP) for Private Country Club use within a Single Family Residential-1 zoning district located at 1920 W Highway 287 Business (Property ID 179581) - Owner: VARGAS SUMMIT II LLC (ZDC-142-2020)

Mayor Hill opened the Public Hearing.

Mr. Brooks reported the Specific Use Permit will bring the applicant in compliance with the zoning requirement and recommended approval.

There being no others to speak for or against ZDC-142-2020, Mayor Hill closed the Public Hearing.

19. Consider proposed Ordinance approving ZDC-142-2020

ORDINANCE NO. 3232

AN ORDINANCE AUTHORIZING A SPECIFIC USE PERMIT (SUP) TO PERMIT A PRIVATE COUNTRY CLUB (WITH ALCOHOL SALES) USE WITHIN A SINGLE FAMILY-1 (SF1) ZONING DISTRICT, LOCATED AT 1920 W HIGHWAY 287 BUSINESS, BEING PROPERTY ID 179581, BEING ABSTRACT 41 OF THE J. BARKER SURVEY, AND ABSTRACT 845 OF THE J.E. PRINCE SURVEY, IN THE CITY OF WAXAHACHIE, ELLIS COUNTY, TEXAS, AND ORDERING THE CHANGING OF THE ZONING MAP THEREOF IN ACCORDANCE WITH SAID CHANGE.

Action:
*Council Member Doug Barnes moved to approve Ordinance No. 3232. Council Member Chuck Beatty seconded, **All Ayes**.*

20. Public Hearing on a request by Christopher Anderson, JC's, for a Specific Use Permit (SUP) for Convenience Store use within a General Retail zoning district located at 211 Ennis Street, Suite A (being a portion of Property ID 171493) - Owner: DAVID TERRY JR (ZDC-135-2020)

Mayor Hill opened the Public Hearing.

Mr. Brooks reported the applicant is requesting approval to allow a convenience store within an existing retail building. He recommended approval subject to a minimum of 3 parking spaces be provided for the convenience store use on the site.

There being no others to speak for or against ZDC-135-2020, Mayor Hill closed the Public Hearing.

21. Consider proposed Ordinance approving ZDC-135-2020

ORDINANCE NO. 3233

AN ORDINANCE AUTHORIZING A SPECIFIC USE PERMIT (SUP) TO PERMIT A CONVENIENCE STORE USE WITHIN A GENERAL RETAIL (GR) ZONING DISTRICT, LOCATED AT 211 ENNIS STREET, BEING PROPERTY ID 171493, BEING LOT 5B, BLOCK 227 OF THE TOWN ADDITION, IN THE CITY OF WAXAHACHIE, ELLIS COUNTY, TEXAS, AND ORDERING THE CHANGING OF THE ZONING MAP THEREOF IN ACCORDANCE WITH SAID CHANGE.

Action:
*Council Member Chuck Beatty moved to approve Ordinance No. 3233 per staff comments. Mayor Pro Tem Mary Lou seconded, **All Ayes**.*

22. Public Hearing on a request by Akhila Gondi, Triangle Engineering LLC, for a Specific Use Permit (SUP) for Auto Parts and Accessory Sales use within a Planned Development-General Retail zoning district located S of 2980 N Highway 77 (being a portion of Property ID 189379) - Owner: CRYSTAL S SHRIDHARANI (ZDC-137-2020)

Mayor Hill opened the Public Hearing.

Mr. Brooks reported the request meets the zoning requirements and recommended approval.

There being no others to speak for or against ZDC-137-2020, Mayor Hill closed the Public Hearing.

23. Consider proposed Ordinance approving ZDC-137-2020

ORDINANCE NO. 3234

AN ORDINANCE AUTHORIZING A SPECIFIC USE PERMIT (SUP) TO PERMIT AN AUTO PARTS AND ACCESSORY SALES USE WITHIN A PLANNED DEVELOPMENT-GENERAL RETAIL (PD-GR) ZONING DISTRICT, PROPERTY ID 189379, BEING ABSTRACT 848 OF THE A S PRUITT SURVEY, IN THE CITY OF WAXAHACHIE, ELLIS COUNTY, TEXAS, AND ORDERING THE CHANGING OF THE ZONING MAP THEREOF IN ACCORDANCE WITH SAID CHANGE.

Action:
*Council Member Chuck Beatty moved to approve Ordinance No. 3234. Mayor Pro Tem Mary Lou Shipley seconded, **All Ayes.***

24. Consider Development Agreement for ZDC-137-2020

Action:
*Council Member Chuck Beatty moved to approve a Development Agreement for ZDC-137-2020. Council Member Melissa Olson seconded, **All Ayes.***

25. Public Hearing on a request by Keri Illauer for a Specific Use Permit (SUP) for Accessory Building +700 SF use within a Single Family Residential-2 zoning district located at 103 Poplar Street (Property ID 176750) - Owner: KERI GODDARD (ZDC-147-2020)

Mayor Hill opened the Public Hearing.

Mr. Brooks reported the applicant is proposing a new pool house and structure addition to the residence. He stated staff has concerns with the height of the roof pitch. Staff recommended approval per staff comments and city council discussion of the roof pitch with the applicant.

Ms. Keri Illauer-Goddard, 103 Poplar St., Waxahachie, reviewed the proposed roof pitch noting the roof pitch will allow a two story for office use.

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There being no others to speak for or against ZDC-147-2020, Mayor Hill closed the Public Hearing.

26. Consider proposed Ordinance approving ZDC-147-2020

ORDINANCE NO. 3235

AN ORDINANCE AUTHORIZING A SPECIFIC USE PERMIT (SUP) TO PERMIT A +700SF ACCESSORY STRUCTURE USE WITHIN A SINGLE FAMILY-2 (SF2) ZONING DISTRICT, LOCATED AT 103 POPLAR STREET, BEING PROPERTY ID 176750, BEING LOT 4B & 5B, BLOCK 15 OF WEST END-REV, IN THE CITY OF WAXAHACHIE, ELLIS COUNTY, TEXAS, AND ORDERING THE CHANGING OF THE ZONING MAP THEREOF IN ACCORDANCE WITH SAID CHANGE.

Action:
*Council Member Chuck Beatty moved to approve Ordinance No. 3235. Council Member Doug Barnes seconded, **All Ayes.***

27. Consider Development Agreement for ZDC-147-2020

Action:
*Council Member Chuck Beatty moved to approve a Development Agreement for ZDC-147-2020. Mayor Pro Tem Mary Lou Shipley seconded, **All Ayes.***

28. Continue Public Hearing on a request by Paula Justice, Secure More Storage, for a Zoning Change from a Light Industrial-2 and Single-Family Residential-2 zoning district to Planned Development-Light Industrial-2, located at 602 Cantrell Street (Property ID 189795) - Owner: SECURE MORE STORAGE CORP (ZDC-130-2020)

Mayor Hill announced the applicant withdrew ZDC-130-2020.

29. Consider proposed Ordinance approving ZDC-130-2020

Action:
None

30. Public Hearing on a request by Jeri Thomas, Thomas & Burns, for a Replat of Lot 43, Ferris Second Addition, to create Lots 43A and 43B, Ferris Second Addition, 0.425 acres (Property ID 173386) – Owner: JERI A THOMAS (SUB-131-2020)

Mayor Hill opened the Public Hearing.

Mr. Brooks reported the applicant is requesting a hardship waiver be granted by city council to allow for the establishment of Lot 43B and allow the proposed lot from Cow Alley without establishing direct access to Ferris Avenue. He reviewed staff concerns noting an access easement has not been provided, which would allow access to the proposed Lot 43B from Ferris Avenue.

He explained typically an access from the public ROW is needed and would be required for this lot. Staff recommended disapproval.

There being no others to speak for or against SUB-131-2020, Mayor Hill closed the Public Hearing.

31. Consider approval of SUB-131-2020

Action:
Council Member Melissa Olson moved to approve a request by Jeri Thomas, Thomas & Burns, for a Replat of Lot 43, Ferris Second Addition, to create Lots 43A and 43B, Ferris Second Addition, 0.425 acres (Property ID 173386) – Owner: JERI A THOMAS (SUB-131-2020). Council Member Chuck Beatty seconded. The vote was as follows:

Ayes:	*David Hill* *Mary Lou Shipley* *Chuck Beatty* *Melissa Olson*
Noes:	*Doug Barnes*

The motion carried.

32. Public Hearing on a request by applicant Nutrenare-AG, Inc., owner of property located at 4740 N. Interstate 35E, Waxahachie, Texas for a tax abatement agreement in support of an expansion of business operations including, but not limited to, a new building with improvements estimated at $5,100,000 and the establishment of Tax Reinvestment Zone #30 at 4740 N. Interstate 35, Waxahachie, Texas

Mayor Hill opened the Public Hearing.

Mr. Warran Ketteman, Senior Economic Development Director, reported the expansion will add an additional 12 new employees and increase their local payroll by approximately $1,200,000. On September 30, 2020 the Economic Development Commission met and unanimously approved a tax abatement for the improvements, both real and personal, at "50% abatement for 5 years". Estimated total taxes received and abated by the City of Waxahachie over the five years are $77,651 received and $77,651 abated.

There being no others to speak for or against a request from Nutrenare-AG, Inc., Mayor Hill closed the Public Hearing.

33. Consider proposed Ordinance designating a certain area within the taxing jurisdiction of the City of Waxahachie to be known as Reinvestment Zone #30; establishing the boundaries thereof; and providing for an effective date

ORDINANCE NO. 3236

AN ORDINANCE DESIGNATING A CERTAIN AREA IN THE CITY OF WAXAHACHIE AS "TAX ABATEMENT REINVESTMENT ZONE #30, CITY OF WAXAHACHIE, TEXAS"; PROVIDING THE EFFECTIVE AND EXPIRATION DATES FOR THE ZONE AND A MECHANISM FOR RENEWAL OF THE ZONE; AND CONTAINING OTHER MATTERS RELATED TO THE ZONE.

Action:
Council Member Doug Barnes moved to approve Ordinance No. 3236. Mayor Pro Tem Mary Lou Shipley seconded. The vote was as follows:

Ayes:	*David Hill* *Mary Lou Shipley* *Chuck Beatty* *Doug Barnes*
Noes:	*Melissa Olson*

The motion carried.

34. Consider proposed Resolution approving Tax Abatement Agreement for Nutrenare-AG, Inc. in support of expansion of business operations at 4740 N. Interstate 35, Waxahachie, Texas.

RESOLUTION NO. 1297

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WAXAHACHIE, TEXAS, APPROVING THE TERMS AND CONDITIONS OF AN AGREEMENT BY AND BETWEEN THE CITY OF WAXAHACHIE, TEXAS AND NUTRENARE-AG; AND AUTHORIZING ITS EXECUTION BY THE CITY MANAGER, OR IN HIS ABSENCE THE ASSISTANT CITY MANAGER; AND PROVIDING AN EFFECTIVE DATE.

Action:
Council Member Chuck Beatty moved to approve Resolution No. 1297. Mayor Pro Tem Mary Lou Shipley seconded. The vote was as follows:

Ayes:	*David Hill* *Mary Lou Shipley* *Chuck Beatty* *Doug Barnes*
Noes:	*Melissa Olson*

The motion carried.

35. Public Hearing on a request by applicant Timco Logistics Systems, Inc. and Myti Properties, LLC, owner of property located at 197 Ovilla Road, Waxahachie, Texas for a tax abatement agreement in support of an expansion of business operations including, but not limited to, a new building with improvements estimated at $6,950,000 and the establishment of Tax Reinvestment Zone #31 at 197 Ovilla Road, Waxahachie, Texas

Mayor Hill opened the Public Hearing.

Mr. Ketteman reported Timco Logistics expansion will add an additional 15 employees and relocate another 18 employees and increase their local payroll by approximately $2,780,000. On September 30, 2020 the Economic Development Commission met and unanimously approved a tax abatement for the real property improvements at "50% for 5 years". Estimated total taxes received and abated by the City of Waxahachie over the five years are: $119,355 received, $119,355 abated.

There being no others to speak for or against a request from Timco Logistics Systems, Inc., Mayor Hill closed the Public Hearing.

36. Consider proposed Ordinance designating a certain area within the taxing jurisdiction of the City of Waxahachie to be known as Reinvestment Zone #31; establishing the boundaries thereof; and providing for an effective date

ORDINANCE NO. 3237

AN ORDINANCE DESIGNATING A CERTAIN AREA IN THE CITY OF WAXAHACHIE AS "TAX ABATEMENT REINVESTMENT ZONE #31, CITY OF WAXAHACHIE, TEXAS"; PROVIDING THE EFFECTIVE AND EXPIRATION DATES FOR THE ZONE AND A MECHANISM FOR RENEWAL OF THE ZONE; AND CONTAINING OTHER MATTERS RELATED TO THE ZONE.

Action:
Council Member Chuck Beatty moved to approve Ordinance No. 3237. Mayor Pro Tem Mary Lou Shipley seconded. The vote was as follows:

Ayes:	*David Hill* *Mary Lou Shipley* *Chuck Beatty* *Doug Barnes*
Noes:	*Melissa Olson*

The motion carried.

37. Consider proposed Resolution approving Tax Abatement Agreement for Timco Logistics Systems, Inc. and Myti Properties, LLC in support of expansion of business operations at 197 Ovilla Road, Waxahachie, Texas.

RESOLUTION NO. 1298

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WAXAHACHIE, TEXAS, APPROVING THE TERMS AND CONDITIONS OF AN AGREEMENT BY AND BETWEEN THE CITY OF WAXAHACHIE, TEXAS, MYTI PROPERTIES, LLC, AND TIMCO LOGISTICS, INC.; AUTHORIZING ITS EXECUTION BY THE CITY MANAGER, OR IN HIS ABSENCE THE ASSISTANT CITY MANAGER; AND PROVIDING AN EFFECTIVE DATE.

Action:
Council Member Chuck Beatty moved to approve Resolution No. 1298. Mayor Pro Tem Mary Lou Shipley seconded. The vote was as follows:

Ayes:	*David Hill* *Mary Lou Shipley* *Chuck Beatty* *Doug Barnes*
Noes:	*Melissa Olson*

The motion carried.

38. Public Hearing on a request by applicant Kinro Texas, Inc., owner of property located at 101 Mushroom Road, Waxahachie, Texas for a tax abatement agreement in support of an expansion of business operations including, but not limited to, a new building with improvements estimated at $18,000,000 and the establishment of Tax Reinvestment Zone #32 at 101 Mushroom Road, Waxahachie, Texas

Mayor Hill opened the Public Hearing.

Mr. Ketteman reported the expansion will add an additional 151 employees and increase their local payroll by approximately $6,000,000. On September 30, 2020 the Economic Development Commission met and unanimously approved a tax abatement for the improvements, both real and personal, at "60% for 7 years". Estimated total taxes received and abated by the City of Waxahachie over the seven years are: $286,372 received, $429,558 abated.

There being no others to speak for or against a request from Kinro Texas, Inc., Mayor Hill closed the Public Hearing.

39. Consider proposed Ordinance designating a certain area within the taxing jurisdiction of the City of Waxahachie to be known as Reinvestment Zone #32; establishing the boundaries thereof; and providing for an effective date

ORDINANCE NO. 3238

AN ORDINANCE DESIGNATING A CERTAIN AREA IN THE CITY OF WAXAHACHIE AS "TAX ABATEMENT REINVESTMENT ZONE #32, CITY OF

WAXAHACHIE, TEXAS"; PROVIDING THE EFFECTIVE AND EXPIRATION DATES FOR THE ZONE AND A MECHANISM FOR RENEWAL OF THE ZONE; AND CONTAINING OTHER MATTERS RELATED TO THE ZONE.

Action:
Council Member Doug Barnes moved to approve Ordinance No. 3238. Mayor Pro Tem Mary Lou Shipley seconded, All Ayes.

40. Consider proposed Resolution approving Tax Abatement Agreement for Kinro Texas, Inc. in support of expansion of business operations at 101 Mushroom Road, Waxahachie, Texas

RESOLUTION NO. 1299

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WAXAHACHIE, TEXAS, APPROVING THE TERMS AND CONDITIONS OF AN AGREEMENT BY AND BETWEEN THE CITY OF WAXAHACHIE, TEXAS AND KINRO TEXAS, INC.; AND AUTHORIZING ITS EXECUTION BY THE CITY MANAGER, OR IN HIS ABSENCE THE ASSISTANT CITY MANAGER; AND PROVIDING AN EFFECTIVE DATE.

Action:
Council Member Chuck Beatty moved to approve Resolution No. 1299. Mayor Pro Tem Mary Lou Shipley seconded, All Ayes.

41. Consider Interlocal Agreement with the Southern Regional Response Group/Special Response Team

Action:
Mayor Pro Tem Mary Lou Shipley moved to approve an Interlocal Agreement with the Southern Regional Response Group/Special Response Team. Council Member Melissa Olson seconded, All Ayes.

42. Consider Professional Services Agreements for Architectural Services and Project Management Services for the City Hall Annex project

Mr. Scott reviewed the services for the City Hall Annex project noting the Professional Services Agreements for Architectural Services and Project Management Services is budgeted in the 2020-2021 budget. He requested authorization for City Manager to engage Architexas for phase II architectural services in the amount of $1,215,000 and the Vidaurri Management Group for project management services in the amount of $390,000 for the City Hall Annex project. Both not to exceed the budgeted amount of $1,686,645. The budgeted amount also provides for printing, contingency, as well as other miscellaneous expenses that may be incurred.

Action:
Council Member Chuck Beatty moved to approve Professional Services Agreements for Architectural Services and Project Management Services for the City Hall Annex project. Mayor Pro Tem Mary Lou Shipley seconded, All Ayes.

43. Comments by Mayor, City Council, City Attorney and City Manager

Assistant City Managers Albert Lawrence and Tommy Ludwig welcomed Council Member Doug Barnes noting his heart is in the best interest of Waxahachie and he will do a great job.

Council Member Doug Barnes stated he intends to continue to provide quality of life for the citizens. He commended the three industries approved in the community noting they are truly an asset to our community. He stated we have a balanced community and it is a great place to live and work.

Council Member Chuck Beatty welcomed Mr. Barnes and noted he is looking forward to the downtown project.

City Manager Michael Scott thanked City Council for their support on the agenda items tonight. He congratulated Council Member Doug Barnes as the new member of City Council and congratulated Mayor David Hill and Mayor Pro Tem Mary Lou Shipley on their re-appointment as Mayor and Mayor Pro Tem.

Mayor Pro Tem Mary Lou Shipley congratulated Mr. Barnes noting she has always found him very knowledgeable and he has the interest of the citizens at heart. She stated she is excited about the City Hall Annex noting it will be a beautiful addition to downtown and improve working conditions for the employees.

Council Member Melissa Olson, City Attorney Robert Brown and City Secretary Lori Cartwright congratulated Mr. Barnes.

Ms. Amy Borders, Director of Communications and Marketing, congratulated Mr. Barnes and announced Good Morning Texas will air Tuesday morning promoting Waxahachie.

Mayor David Hill noted several good projects are going on around the city. He asked everyone to continue to be cautious of the Covid-19 virus as the numbers are increasing.

44. Adjourn

There being no further business, the meeting adjourned at 7:46 p.m.

Respectfully submitted,

Lori Cartwright
City Secretary

City Council
November 16, 2020

A briefing session of the Mayor and City Council of the City of Waxahachie, Texas was held in the City Council Conference Room at City Hall, 401 S. Rogers, Waxahachie, Texas, on Monday, November 16, 2020 at 6:00 p.m.

Council Members Present:	David Hill, Mayor, Council Member Place 1 Mary Lou Shipley, Mayor Pro Tem Chuck Beatty, Councilmember Melissa Olson, Council Member Place 3
Others Present:	Michael Scott, City Manager Albert Lawrence, Assistant City Manager Tommy Ludwig, Assistant City Manager Robert Brown, City Attorney Lori Cartwright, City Secretary

1. Call to Order

Mayor David Hill called the meeting to order.

2. Conduct a briefing to discuss items for the 7:00 p.m. regular meeting

City Manager Michael Scott reviewed the city council agenda and explained the Ordinance cancelling the runoff election. He stated City Council will organize at this meeting.

Staff reviewed the following Consent Agenda Items:

d. Interlocal Agreement with Ellis County for maintenance of roads, bridges, waterways and ditches – Mr. Scott stated this is a yearly agreement with Ellis County.

e. Consider Waxahachie Community Development Corporation Expenditure and Award of Bid to Sports Fields, Inc. for Waxahachie Sports Complex Synthetic Turf Improvements – Assistant Director Sports Complex James Villarreal reported the improvements will be on three (3) fields and the bid is for two alternatives for $483,960 plus up to a 10% contingency to account for unforeseen costs.

f. Authorize Agreement with TimeClock Plus for new Time Clock System – Finance Director Chad Tustison reported the system automates the time process and keeps it in one system for more efficient tracking.

Director of Planning Shon Brooks reviewed the following cases:

- ANX-DNX-145-2020 – The applicant requested to continue ANX-DNX-145-2020 to the City Council meeting of December 21, 2020.

- ZDC-72-2020 – The applicant requested to continue ZDC-72-2020 to the City Council meeting of December 21, 2020.

- ZDC-140-2020 – The applicant is requesting approval to allow an existing Family Home (child daycare at a single-family residence) use.

- ZDC-142-2020 – The applicant is requesting approval for a Specific Use Permit to allow the operation of a Private Country Club use with the sale of alcohol.

- ZDC-135-2020 – The applicant is requesting approval to allow a convenience store within an existing retail building.

- ZDC-137-2020 – The applicant is requesting approval to allow an Auto Parts and Accessory Sales store on one (1) acre.

- ZDC-147-2020 – The applicant is requesting to construct an accessory structure in the rear of a single-family zoned property. Mr. Brooks presented a rendering of the proposed structure noting staff has concerns with the roof pitch. He stated the applicant will be in attendance at the city council meeting to discuss the purpose of the roof pitch.

- SUB-130-2020 – The applicant withdrew.

- SUB-131-2020 – The applicant is requesting a replat to divide Lot 43, Ferris Second Addition into Lot 43A and 43B with Lot 43A fronting Ferris Avenue and Lot 43B consisting of the shop in the backyard. The applicant is also requesting that a petition of hardship waiver be granted to allow for the establishment of Lot 43B and allow the proposed lot from Cow Alley without establishing direct access to Ferris Avenue.

Assistant City Manager Albert Lawrence explained the required procedures for Tax Abatements noting Abatements have Public Hearings for the reinvestment zone, adopted by an Ordinance and the Tax Abatement is adopted by Resolution. He reported the following have gone through all the required steps for consideration and the Economic Development Corporation recommended approval.

Senior Economic Development Director Warren Ketteman reviewed the following:

- A request by applicant Nutrenare-AG, Inc., owner of property located at 4740 N. Interstate 35E, Waxahachie, Texas for a tax abatement agreement in support of an expansion of business operations including, but not limited to, a new building with improvements estimated at $5,100,000 and the establishment of Tax Reinvestment Zone #30 at 4740 N. Interstate 35, Waxahachie, Texas

- A request by applicant Timco Logistics Systems, Inc. and Myti Properties, LLC, owner of property located at 197 Ovilla Road, Waxahachie, Texas for a tax abatement agreement in support of an expansion of business operations including, but not limited to, a new building with improvements estimated at $6,950,000 and the establishment of Tax Reinvestment Zone #31 at 197 Ovilla Road, Waxahachie, Texas

- A request by applicant Kinro Texas, Inc., owner of property located at 101 Mushroom Road, Waxahachie, Texas for a tax abatement agreement in support of an expansion of business operations including, but not limited to, a new building with improvements estimated at $18,000,000 and the establishment of Tax Reinvestment Zone #32 at 101 Mushroom Road, Waxahachie, Texas

Police Chief Wade Goolsby reported a Professional Services Agreement with the Southern Regional Response Group/Special Response Team allows the Waxahachie Police Department to be part of a multi-agency tactical team providing services to surrounding cities. He stated joining the team enhances the police department to respond to critical situations with a fully staffed and functional tactical team.

City Manager Michael Scott reported last year, Council authorized funds for phase I architectural services for the conversion of 406 and 410 S. Rogers into a City Hall Annex to house the Development Services departments. The Architexas professional services agreement will provide for the development of construction documents to be bid while the Vidaurri Management Group agreement will provide for oversight in project organization, planning, schedule management, design, bidding and negotiation, and construction and closeout. He reviewed the Fiscal Impact: $1,686,645 has been allocated within the FY20-21 budget for both professional services agreements.

3. Adjourn

There being no further business, the meeting adjourned at 6:46 p.m.

Respectfully submitted,

Lori Cartwright
City Secretary

(5C)

Memorandum

To: Honorable Mayor and City Council

From: Lori Cartwright, City Secretary

Thru: Michael Scott, City Manager

Date: December 7, 2020

Re: Mobile Home License Renewal

Please consider the following Mobile Home License Renewals for January 1, 2021 - December 31, 2021:

MOBILE HOME PARK	NO. OF LOTS
Grand Avenue Mobile Home M.H.C. 312 N. Grand Avenue Waxahachie, Texas 75165	32
Vista Hills Mobile Home Ranch 2900 South IH-35E Waxahachie, Texas 75165	275
Pine Meadows Estates 3450 South Interstate Highway 35E Waxahachie, Texas 75165	180

(5d)

Memorandum

To: Honorable Mayor and City Council

From: Lori Cartwright, City Secretary

Thru: Michael Scott, City Manager

Date: December 7, 2020

Re: Taxi Cab License

Please consider the following company for a Taxicab License for January 1, 2021-December 31, 2021:

Silver Bullet Taxi

(5e)

Memorandum

To: Honorable Mayor and City Council

From: Tommy Ludwig, Assistant City Manager

Thru: Michael Scott, City Manager

Date: December 4, 2020

Re: Change Order #3 – 2020 Asphalt Street Rehabilitation

On Monday December 07, 2020, a change order will appear before the City Council for the 2020 Asphalt Street Rehabilitation project in the amount of $86,612.00.

Reynolds Asphalt began work on the current street rehabilitation project in October which includes rehabilitation of 8 streets. This change order will add pavement rehabilitation of two additional locations to the contract, the 300 block of Boze Street and the 1700 block of E. Highland Road. Change Orders #1 provided for the removal and replacement of existing curb and gutter sections on Indian Trace Lane, Kiowa Lane and Buffalo Creek Drive that did not drain properly. Change order #2 provided for the removal of concrete found in the subgrade on McKenzie Street.

The original contract amount was $543,313.00. City Council authorized funding for the original contract amount plus an additional $30,000 project contingency from the Public Works Department 2020 street rehabilitation program operations budget. Change orders #1 and #2 increased the contract amount $36,330.00 and $2,835.00 respectively. These two change orders were processed administratively with funding available from the 2020 street rehabilitation program operations budget. Change order #3, in the amount of $86,612.00, will increase the total contact amount to $669,090.00. Funding for this additional scope of work will utilize the remaining $18,252.00 from the 2020 street rehabilitation program in the operations budget. The additional funding of $64,360.00 is available through the Capital budget.

I am available at your convenience should you need any additional information.

Tommy Ludwig

(5f)

Memorandum

To: Honorable Mayor and City Council

From: Wade G. Goolsby, Chief of Police

Thru: Michael Scott, City Manager

Date: November 30, 2020

Re: Budget Adjustment

The purpose of this memo is to request a budget amendment that will allow the police department to recuperate procured insurance reimbursement funds used to repair a police vehicle. One of our police Patrol units was damaged while being used to perform law enforcement duties. We paid for the repairs out of our vehicle maintenance account, but the budget for the entire year is $17,000.00 and the repair of this vehicle was approximately $15,208.00. The purpose of this memo is to request the replacement of the funds spent out of the vehicle maintenance account for these repairs with the insurance reimbursements that were deposited in the Miscellaneous Revenue Insurance Reimbursement Revenue Account.

The City has already received insurance reimbursement funds from TML and they were posted to the Miscellaneous Revenue Insurance Reimbursement Revenue Account (100-49653). The City received a total of $15,207.59 to repair the unit.

(5f)

I am requesting that the $15,208.00 be transferred to Account 100-210-54340 Maintenance, Purchased – Vehicle, resulting in a budget increase of the same amount. The funds will help offset the expense and ensure that funds are available for the remainder of the budget year.

Memorandum

To: Honorable Mayor and City Council

From: Chad Tustison, Finance Director

Thru: Michael Scott, City Manager

Date: December 2, 2020

Re: Fiscal Year 2020 4th Quarter Financial Report

I am pleased to present the 4th Quarter Financial Report for fiscal year 2020, covering the period of October 2019 through September 2020. This report highlights the General Fund, Water and Wastewater funds, Waxahachie Community Development Corporation (WCDC) Fund, Hotel/Motel Fund and the Tax Increment Refinance Zone (TIRZ) Fund. This report compares actual revenue collections and expenses incurred during the year to the approved budget.

Although we do not anticipate any major changes in these figures, please note that this report is preliminary and may change as we go through the year-end close-out process and annual audit. The audit is anticipated to be completed and presented to the City Council in March 2021. Overall, the City's financial position is positive for all funds, especially considering the unprecedented impacts of COVID-19 on national and local economies.

General Fund

- The City's General Fund accounts for activities commonly associated with municipal government such as police and fire protection, parks and recreation, routine street maintenance, and library services. This fund is

supported by property tax, sales tax, user fees, permits and other miscellaneous revenues. Overall, revenues have performed better than anticipated and expenses are within budget.

- **Revenues** for the fourth quarter (12 months) total $45.2 million. This is an increase of $2.9 million, or 6.8%, over the same period last year. Total revenue collected at the end September 2020 comes in over the revised budget by $1.0 million, or 2.3%.

- Property tax collections account for approximately 40% of the City's revenue. The majority of collections occur earlier in the fiscal year between December and February as property tax payments become due. Through the 4th quarter, property taxes in the City's General Fund amount to $18.0M and are in line with budget projections.

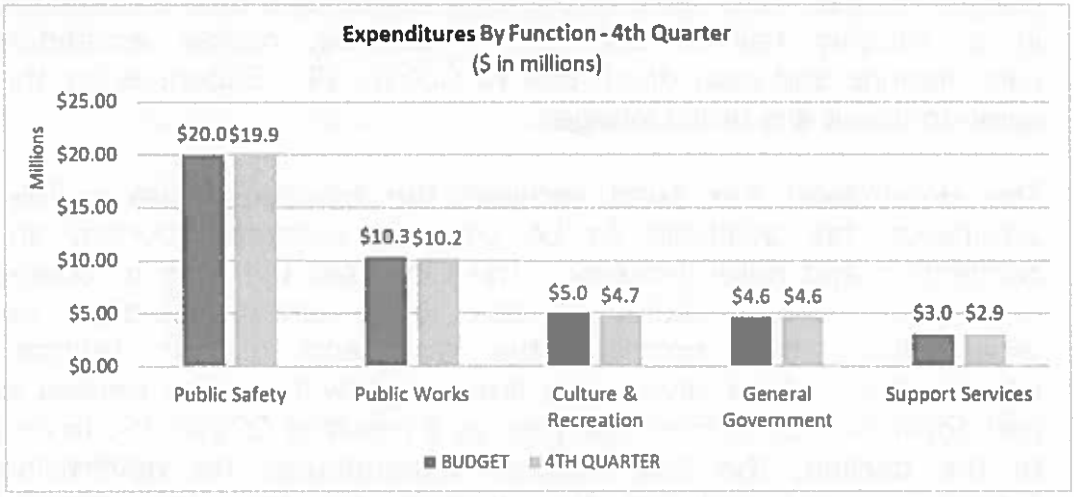
- Sales tax is the second largest revenue source, accounting for over 30% of the City's General Fund. Of the 8.25 cents for every dollar of taxable sales, the state of Texas collects 6.25 cents, while 1.5 cents goes to the City's General Fund, and ½ cent goes to the WCDC fund.

  This year proved particularly challenging in gauging the potential negative impact of COVID-19 on City finances, specifically for sales tax. The unprecedented conditions brought about a high level of uncertainty. In March, April, and May we saw some leveling out of sales tax collections as a result of the decline in economic activity. As we went into the summer budget season, we revised the budget down by 1% to account for potential sales tax decline for the remaining four months of the fiscal year. Since that time, we have seen much stronger sales tax growth than anticipated. The following chart shows the actual sales tax collections by month compared to the revised budget.

Through the 4th quarter, collections in the General Fund total $15.1 million and represent an increase of 9% over the prior year. Compared to the revised budget, sales tax collections are up $950,000, or 7%. While we will close the year with better than anticipated sales tax revenue, it's important to note that the duration and depth of any impact is still playing out locally and nationally and may impact us in the future.

- Other major revenue sources include Franchise Fees, Licenses and Permits, Charges for Service, Miscellaneous revenue and Transfers In. Franchise fees are slightly below budget. In the areas of licenses and charges for service, we saw increased building permits and inspection fees above the revised budget, although there is some drop off from the prior year.

- **Expenditures** in the General Fund for the fourth quarter (12 months) total $42.3 million and are in line with the FY 2020 Revised Budget. The following chart compares the budget for each City function to the actual expenditures through the 4th quarter.



- In the area of Culture and Recreation, the City realized savings in utilities and other operating expenses related to the temporary closing of the Senior Center, Optimist Pool, and other City facilities as a result of COVID-19.

- In the area of Public Works, there is a savings of approximately $2.2 million in annual street maintenance and improvements. However, as part of the year-end close-out process, this savings will be transferred

out of the General Fund budget to the Streets Capital Projects Fund. That transfer of savings to the project fund is reflected in the Public Works category.

Other Funds

- The water and wastewater funds account for all revenues and expenditures associated with the operation and maintenance of the City's water distribution and wastewater treatment activities. For the water and wastewater funds, revenue is slightly higher than anticipated for residential water collections. Expenses are slightly lower than budget for both funds.

- The WCDC fund accounts for revenues and expenses associated with the Waxahachie Community Development Corporation in operating the Civic Center and Sports Complex, promoting economic development, and implementing quality of life improvements throughout the community. This fund is mainly funded by ½ cent sales tax and user fees. Similar to the General Fund, sales tax are up nearly 7%, or $317K, over the revised budget. User fees for the Civic Center and Sports Complex came in at roughly half of last year's revenue, mainly attributable to cancellations and slow-down due to COVID-19. Expenses for the fund came in about 4% under budget.

- The Hotel/Motel Tax Fund receives the proceeds from a 7% hotel occupancy tax available to be used to promote tourism and the convention and hotel industry. The City uses the fund to operate the Convention and Visitor's Bureau and various smaller non-city organizations that promote the arts and historic tourism and preservation. Hotel revenue is down slightly from the revised budget and down over 30% from last year as a result of COVID-19. In response to the decline, the City reduced expenditures for advertising and marketing, and reduced the budget for the arts organization, proportional to the anticipated reduction in hotel revenue.

CITY OF WAXAHACHIE
QUARTERLY FINANCIAL REPORT

FISCAL YEAR 2020 ~ 4TH QUARTER

(Oct 1, 2019-Sept 30, 2020)

GENERAL FUND SUMMMARY

	4TH QUARTER FY 2019	BUDGET FY 2020	4TH QUARTER FY 2020	*ACTUAL AS % OF BUDGET*
REVENUES				
Property Tax	$15,873,398	$17,999,700	$18,013,575	*100%*
Sales Tax	13,885,907	14,190,000	15,141,348	*107%*
Franchise Fees	4,468,898	4,459,000	4,294,194	*96%*
Licenses & Permits	1,855,153	1,285,388	1,500,491	*117%*
Charges for Service	1,492,812	1,368,725	1,520,408	*111%*
Miscellaneous	1,427,848	1,263,585	1,202,733	*95%*
Transfers In	3,288,174	3,580,750	3,488,043	*97%*
Total Revenues	**$42,292,191**	**$44,147,148**	**$45,160,792**	***102%***
EXPENDITURES BY FUNCTION				
Public Safety	$18,584,215	$19,971,711	$19,893,383	*100%*
Public Works [1]	8,329,972	10,317,910	10,176,277	*99%*
Culture & Recreation	5,065,236	4,974,208	4,720,391	*95%*
General Government	5,044,614	4,611,714	4,602,453	*100%*
Support Services	2,593,256	2,961,140	2,949,755	*100%*
Total Expenditures	**$39,617,293**	**$42,836,683**	**$42,342,260**	***99%***
Revenues less expenses	*2,674,898*	*1,310,465*	*2,818,533*	

[1] Savings for annual street maintenance is transferred out to the Streets Capital Fund at year-end and is reflected in 4th Quarter actuals

** Quarterly actual figures are preliminary and unaudited and may change based on timing of payments and the year-end close-out process*

CITY OF WAXAHACHIE
QUARTERLY FINANCIAL REPORT
FISCAL YEAR 2020 - 4TH QUARTER
(Oct 1, 2019-Sept 30, 2020)

OTHER FUNDS SUMMARY

	ACTUAL FY 2019	BUDGET FY 2020	ACTUAL FY 2020	ACTUAL AS % OF BUDGET
WATER FUND				
Revenues	$15,760,394	$14,586,340	$14,857,118	102%
Expenses	13,274,606	13,832,636	13,702,539	99%
WASTE WATER FUND				
Revenues	$8,593,980	$10,433,495	$10,445,102	100%
Expenses	8,329,328	11,242,249	11,071,525	98%
WAXAHACHIE COMMUNITY DEVELOPMENT FUND (WCDC)				
Revenues	$5,516,271	$5,281,702	$5,559,678	105%
Expenses	5,945,357	5,847,626	5,650,542	97%
HOTEL / MOTEL FUND				
Revenues	$859,150	$615,600	$592,354	96%
Expenses	821,824	747,179	743,209	99%
TAX INCREMENT FINANCE ZONE FUND (TIRZ 1)				
Revenues	$441,462		$487,158	-
Expenses	422,718		574,966	-

* Quarterly actual figures are preliminary and unaudited and may change based on timing of payments and the year-end close-out process

(Let 7)

Memorandum

To: Honorable Mayor and City Council

From: Tommy Ludwig, Assistant City Manager

Thru: Michael Scott, City Manager

Date: December 5, 2020

Re: 2020 Impact Fee Update

On Monday December 7, 2020 an ordinance 1) updating the City's land use assumptions; 2) updating the water, wastewater, and roadway capital improvement plans; 3) establishing the maximum assessment rate for water, wastewater, and roadway impact fees; and 4) establishing the collection rate for water, wastewater, and roadway impact fees will appear before City Council for consideration.

As a reminder, the statuary impact fee update was initiated by staff in November 2019. Since that time, staff and the City's consultants met with the Impact Fee Capital Improvement Advisory Committee (IFCIAC) regarding updated land use assumptions, capital improvement plans, and/or the associated impact fee calculations a total of four times. The IFCIAC ultimately voted unanimously to recommend the City Council approve staff's recommendations associated with the overall impact fee update, with their formal recommendation letter appearing before City Council on November 2, 2020.

For your reference, below is the recommended collection rate for the impact fee program:

(6+7)

Service Area	Recommended Credited Collection Rate (per service unit)
1	$925.00
2	$1,014.00
3	$1,102.00
4	$1,193.00
5	$1,144.00
6	$923.00
7	$1,420.00
WATER	Recommended Credited Collection Rate (per service unit)
	$2,216.00
WASTEWATER	Recommended Credited Collection Rate (per service unit)
	$2,321.00

I am available at your convenience should you need additional information.

Tommy Ludwig

CITY OF WAXAHACHIE, TEXAS

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF WAXAHACHIE, TEXAS, ADOPTING UPDATED LAND USE ASSUMPTIONS, CAPITAL IMPROVEMENTS PLANS AND ASSOCIATED BOUNDARIES; AND APPROVING REVISED ASSESSMENT AND COLLECTION SCHEDULES FOR WATER, WASTEWATER, AND ROADWAY IMPACT FEES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICTS; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Chapter 395, Tex. Loc. Gov't Code, provides procedures for adopting and updating land use assumptions, capital improvements plans, and impact fees; and

WHEREAS, the City Council for the City of Waxahachie, Texas, adopted land use assumptions, capital improvements plans and impact fees for water and wastewater facilities in accordance with statutory procedures and established provisions for administering its impact fee program through Ordinance No. 2092, adopted August 20, 2001; and

WHEREAS, the City Council for the City of Waxahachie, Texas, adopted land use assumptions, a capital improvement plan and impact fees for roadway facilities in accordance with statutory procedures and established provisions for administering its impact fee program through Ordinance No. 2494, adopted November 17, 2008; and

WHEREAS, the City Council last approved updated land use assumptions and capital improvements plans for water and wastewater facilities by Ordinance No. 2830, adopted November 2, 2015; and

WHEREAS, the City last updated its Water and Wastewater Schedule 1 and 2 rates for collecting impact fees by Ordinance No. 2830, adopted November 2, 2015; and

WHEREAS, the City Council last approved updated land use assumptions and capital improvements plans for roadway facilities by Ordinance No. 2830, adopted November 2, 2015; and

WHEREAS, the City last updated its Roadway Schedule 1 and 2 rates for collecting impact fees by Ordinance No. 2830, adopted November 2, 2015; and

WHEREAS, the City of Waxahachie has appointed an Impact Fee Capital Improvements Advisory Committee to advise the City Council concerning amendments to and adoption of the land use assumptions, impact fee capital improvements plans, and impact fees for water, wastewater, and roadway facilities; and

WHEREAS, the City has retained consultants to prepare and/or update land use assumptions, capital improvements plans, and impact fees for water, wastewater, and roadway facilities; and

WHEREAS, the capital improvements plans and impact fees for water, wastewater, and roadway facilities were prepared by a qualified professional engineer; and

WHEREAS, notice has been published, public hearing held, and the written recommendations of the Impact Fee Capital Improvements Advisory Committee received concerning revised land use assumptions, impact fee capital improvements plans, and the assessment of impact fees for water, wastewater, and roadway facilities; and

WHEREAS, the City Council finds that it is in the best interest of the citizens of the City to adopt updated land use assumptions, capital improvements plans, and impact fees for water, wastewater and roadway facilities; and

WHEREAS, the City Council finds that in all things the City has complied with Chapter 395 of the Texas Local Government Code in the notice, adoption, promulgation, and methodology necessary to adopt impact fees; and

WHEREAS, this ordinance is intended to and satisfies the statutory requirements for adoption of land use assumptions, capital improvements plans and impact fees; and

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF WAXAHACHIE, TEXAS THAT:

Section 1. Land Use Assumptions. The land use assumptions for the City of Waxahachie hereby are updated for water, wastewater, and roadway facilities, as provided in Exhibit A of this amendatory ordinance, which is attached hereto and incorporated herein by reference as if fully set forth.

Section 2. Capital Improvements Plans. The water, wastewater, and roadway capital improvements plans, and associated service area maps and land use equivalency tables, are hereby updated, as provided in Exhibit B for water and wastewater and Exhibit C for roadway, which are attached hereto and incorporated herein by reference as if fully set forth.

Section 3. Schedule One. Schedule 1 for water, wastewater, and roadway facilities is hereby updated, setting forth the maximum assessment rate per service unit to be assessed against new development for water, wastewater and roadway facilities, which schedule is attached hereto as Exhibit D, and is incorporated herein by reference as if fully set forth.

Section 4. Schedule Two. Schedule 2 for water, wastewater, and roadway facilities is hereby updated, setting forth the maximum collection rate per service unit to be charged against new development for water, wastewater, and roadway facilities, which schedule is attached hereto as Exhibit E, and is incorporated herein by reference as if fully set forth. City Council may increase or decrease the maximum collection rate for water, wastewater, and roadway facilities, but in no

event may the maximum collection rate be set higher than the maximum assessment rate for water, wastewater, and roadway facilities.

Section 5. Provisions Cumulative; Conflicts. This ordinance shall be and is hereby declared to be cumulative of all other ordinances of the City of Waxahachie, and this ordinance shall not operate to repeal or affect any of such other ordinances except insofar as the provisions thereof might be inconsistent or in conflict with the provisions of this ordinance, in which event such conflicting provisions, if any in such other ordinance or ordinances are hereby superseded.

Section 6. Severability. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such holding shall not affect the validity of any other section, sentence, clause or phrase of this ordinance the remaining portions of this ordinance.

Section 7. Effective Date. This ordinance shall become effective thirty (30) days after approval.

CITY OF WAXAHACHIE, TEXAS:

EXECUTED by the City of Waxahachie on this the 7th day of December, 2020.

By: _____

David Hill, Mayor

ATTEST:

_____

Lori Cartwright, City Secretary

Exhibit A
Land Use Assumptions

FREESE AND NICHOLS

Innovative approaches
Practical results
Outstanding service

TECHNICAL REPORT

Land Use Assumptions for Impact Fees Final Report

City of Waxahachie, Texas

May 27, 2020

Table of Contents

1. PURPOSE

Chapter 395 of the Texas Local Government Code prescribes the process by which cities in Texas must formulate development impact fees. The initial process is the establishment of land use assumptions. These land use assumptions, which also include population and employment projections, will become the basis for the preparation of impact fee capital improvement plans for water, wastewater, and roadway facilities.

To assist the City of Waxahachie in determining the need and timing of capital improvements to serve future development, a reasonable estimation of future growth is required. The purpose of this report is to formulate growth and development projections based upon assumptions pertaining to the type, location, quantity and timing of various future land uses within the community, and to establish and document the methodology used for preparing the growth and land use assumptions.

Land Use Assumptions Report Elements

This report contains the following components:

I. **Methodology** – Explanation of the general methodology used to prepare the land use assumptions.

II. **Data Collection Zones & Service Area Maps** (**Figures 1, 2** and **3**) – Explanation of data collection zones (traffic survey zones), and division of the City into impact fee service areas for roadway, water, and wastewater facilities.

III. **Base Year Data** – Information on population, employment, and land use for Waxahachie as of 2020 for each capital facility service area.

IV. **Ten-Year Growth Assumptions** – Population and employment growth assumptions for ten years by impact fee service area.

V. **Ultimate Population Projection** – Projections that reflect a completely developed condition based upon the City's ultimate "build-out" scenario.

VI. **Summary** – Brief synopsis of the land use assumptions report.

2. METHODOLOGY

Based on the growth assumptions and the capital improvements needed to support growth, it is possible to develop an impact fee structure that fairly allocates improvement costs to growth areas in relation to their impact on the entire infrastructure system. The database and projections in this report have been formulated using reasonable and generally accepted planning principles.

These land use assumptions and future growth projections take into consideration several factors influencing development patterns, including the following:

- The character, type, density, and quantity of existing development
- Existing zoning patterns
- Anticipated future land use (as shown on the City's Future Land Use Plan)
- Availability of land for future expansion
- Current and historical growth trends within the City
- Building permit activity trends
- Employment and population absorption rates
- Physical holding capacity of the City
- Known or anticipated development projects

Following is the general methodology used for the preparation of this report:

1. Update impact fee service areas as necessary for roadway, water, and wastewater facilities (see 3. Data Collection Zones & Service Area Maps).
2. Collect/determine benchmark data on population, employment, and land use as of 2020 (see 4. Base Year Data).
3. Project population and employment growth for ten years by impact fee service area (see 5. Ten-Year Growth Assumptions).
4. Project the ultimate population for a fully developed City (see 6. Ultimate Population Projection).

More detailed discussion for each of the above is contained within the respective sections.

3. DATA COLLECTION ZONES & SERVICE AREA MAPS

Data Collection Zones

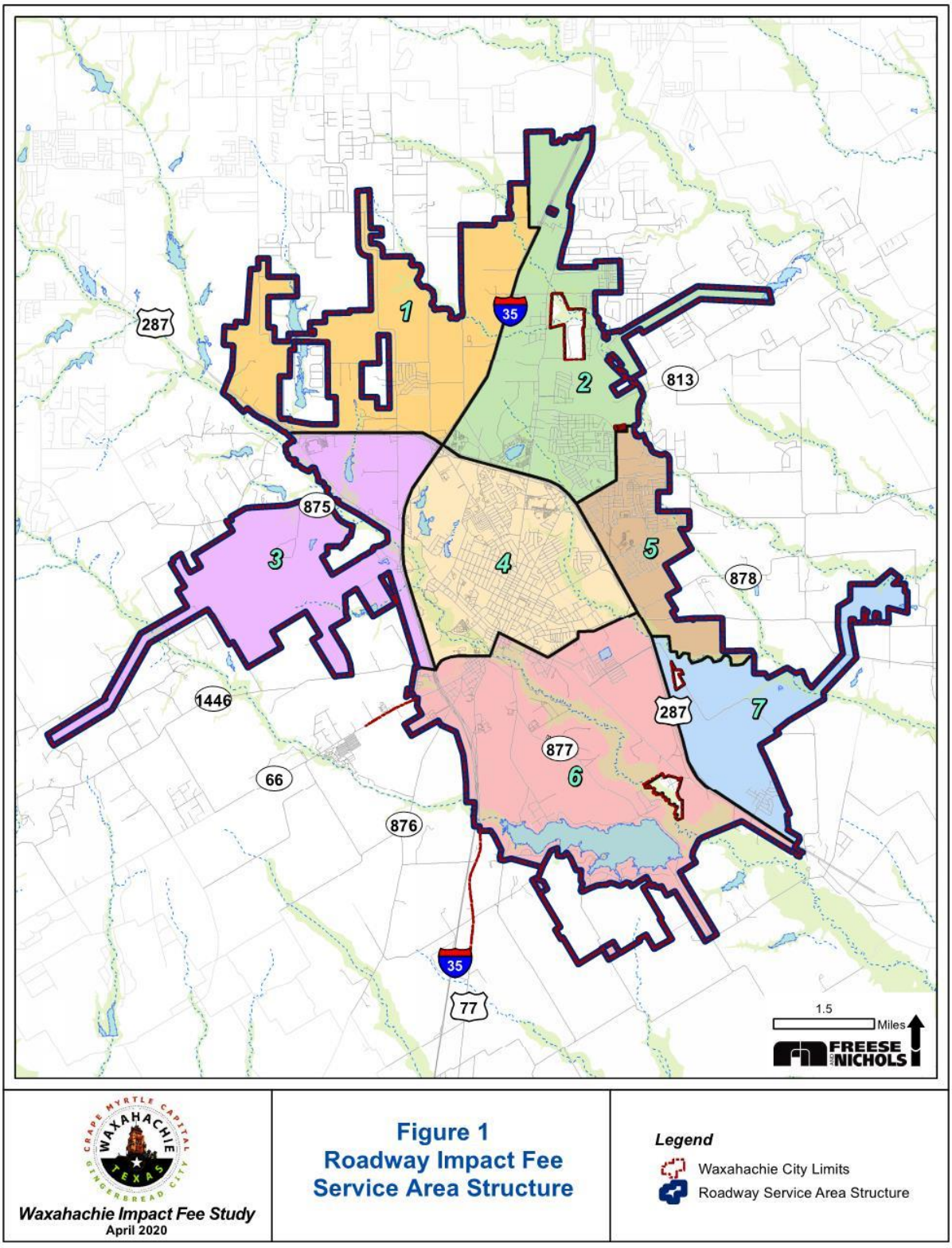
The data collection zones used for the land use assumptions are based on the 2020 demographic modeling structure from the North Central Texas Council of Governments (NCTCOG), composed of small geographic areas known as traffic survey zones (TSZs). A TSZ is a type of data collection zone that has been established by NCTCOG for all areas within the region, including areas within the corporate City limits of Waxahachie. Data sets in a TSZ include occupied households, the basis for the projections in this report. The TSZs within Waxahachie vary in size from about 50 acres to several hundred acres.

TSZs are formulated on the basis of homogeneity and traffic generation potential using major arterials, creeks, railroad lines and other physical boundaries for delineation. Since part of the data needed for the calculation of roadway impact fees is required to be compiled by TSZs, the land use assumptions are compiled by the same TSZs used by NCTCOG or combinations thereof. These TSZs are aggregated into different geographic boundaries to form service areas for roadway impact fees. The service area structure for roadway impact fees has remained unchanged since the 2015 impact fee update except for the inclusion of any annexed or de-annexed areas.

Service Area Maps

Figure 1, entitled "Roadway Impact Fee Service Area Structure", details the seven service area structures for roadway facilities. All of the roadway service area boundaries encompass several TSZs and, in accordance with Chapter 395 of the Texas Local Government Code, are no more than six miles. Although the capital improvements plan and impact fees will be prepared as a separate document for roadway facilities, the geographic boundaries of the roadway service areas will be as shown on **Figure 1** for both documents. In addition, no changes have been made to the geographic boundaries of the roadway service areas since the last update of this report.

Figure 2 and **Figure 3** show the service areas for water and wastewater facilities, respectively. The boundary for water facilities is the existing water service area as defined by the current Certificate of Convenience and Necessity (CCN). The boundary for the wastewater facilities is the general area of the City's extraterritorial jurisdiction. Documents containing the capital improvements plan for water and wastewater facilities will also be prepared separately.

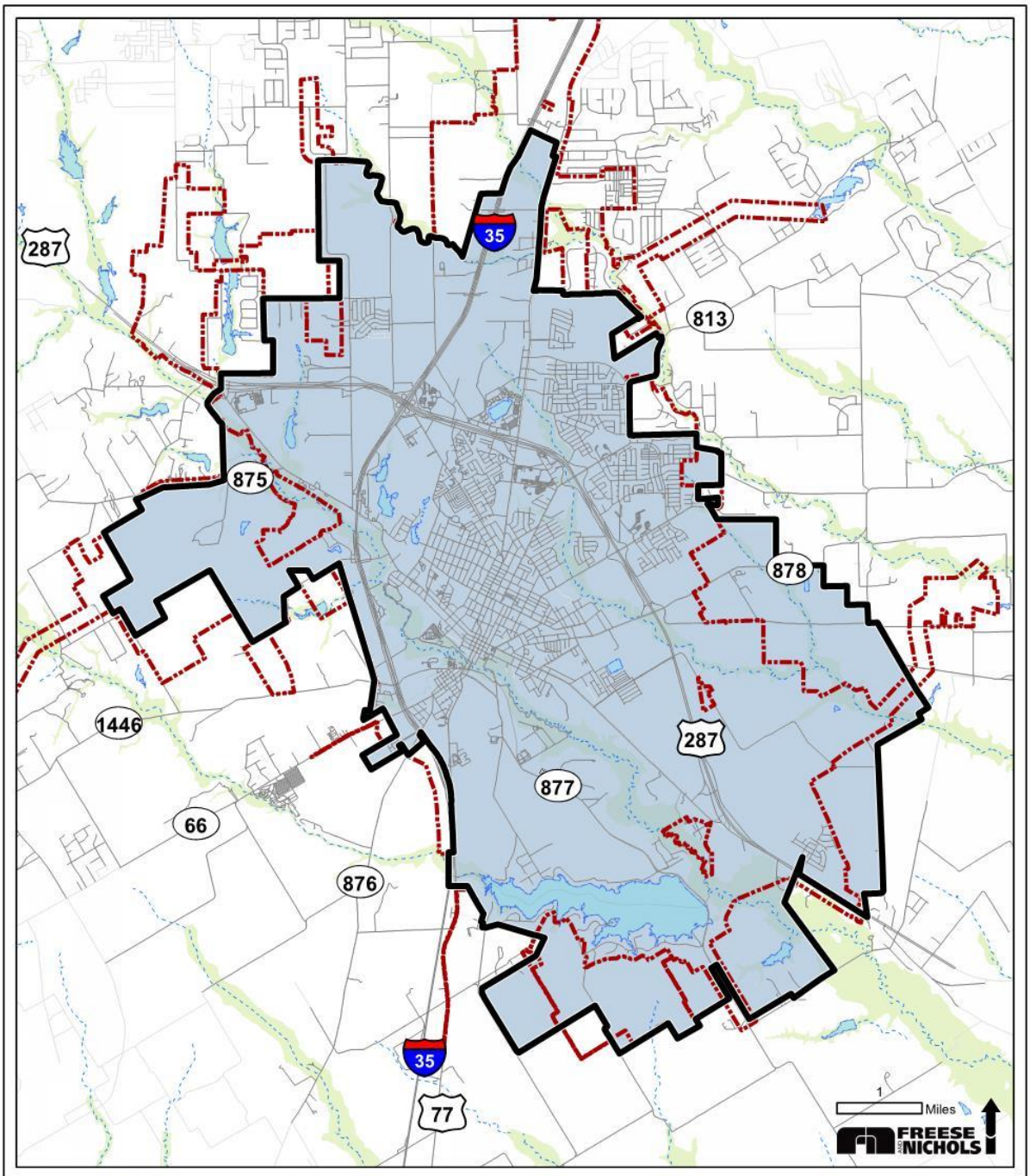


WAXAHACHIE TEXAS

Waxahachie Impact Fee Study
April 2020

Figure 1
Roadway Impact Fee
Service Area Structure

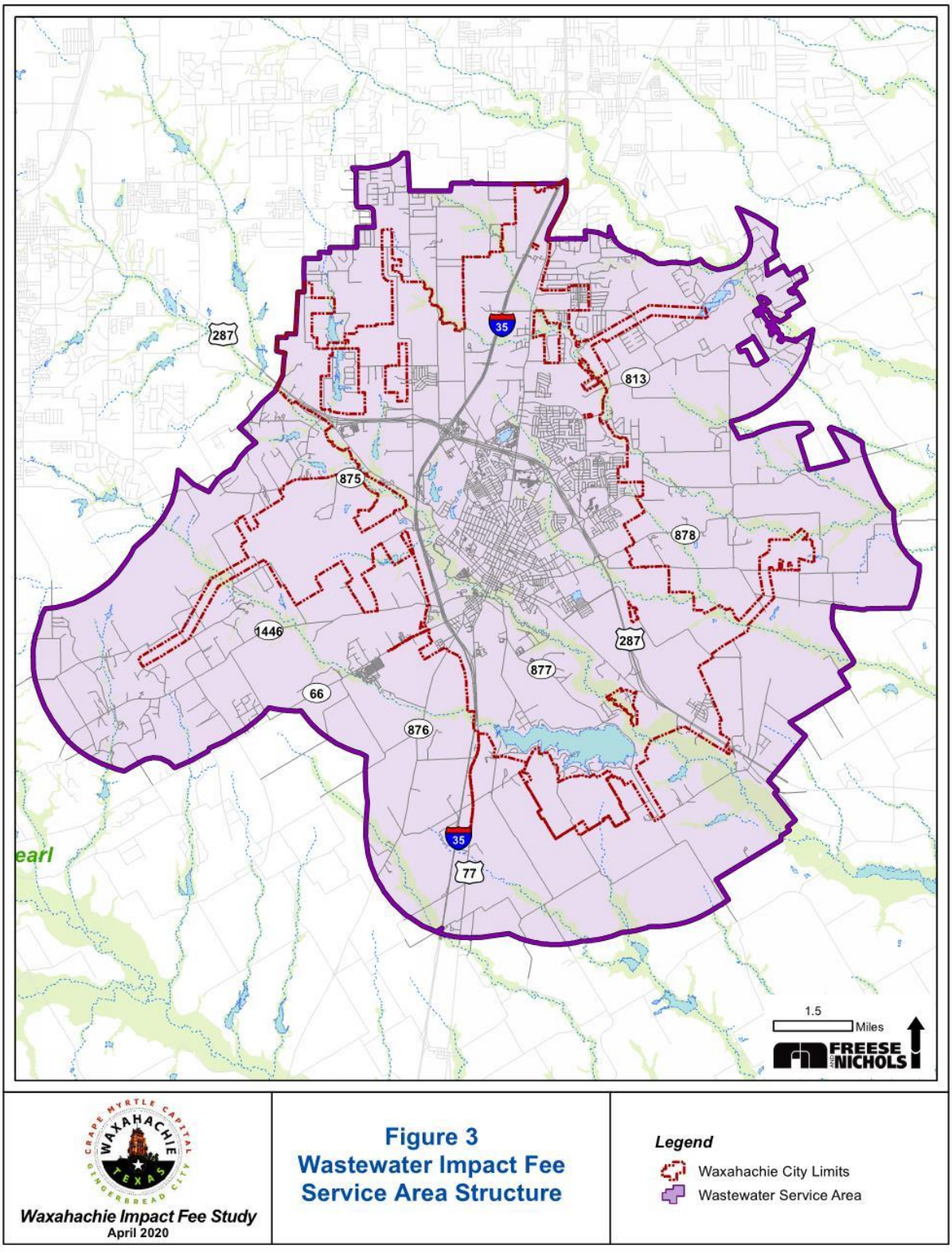
Legend
Waxahachie City Limits
Roadway Service Area Structure



Waxahachie Impact Fee Study
April 2020

Figure 2
Water Impact Fee
Service Area Structure

Legend
- Waxahachie City Limits
- Water Service Area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Waxahachie Impact Fee Study
April 2020
Figure 3
Wastewater Impact Fee
Service Area Structure
Legend
Waxahachie City Limits
Wastewater Service Area

Data Format

The existing database, as well as the future projections, were formulated according to the following format and categories:

Service Area — Correlates to the proposed roadway, water and wastewater service areas identified in **Figures 1, 2** and **3**.

Traffic Survey Zone (TSZ) — Geographic areas established by the NCTCOG for modeling purposes, used for data collection purposes and termed TSZs within this report.

Housing Units (2020) — All housing units including single-family, duplex, multi-family and group quarters. The number of existing housing units has been shown for the base year (January 2020). Housing unit projections for the City limits were taken from NCTCOG's 2015 estimates and were projected by Freese and Nichols, Inc. (FNI) to 2020 using building permit data provided by the City. Housing unit projections relating to the Water and Wastewater service boundaries were derived from NCTCOG's 2018 projections, interpolated to January 2020.

Housing Units (2030) — Projected housing units by service zone for January 2030 (ten-year growth projections).

Population (2020) — Existing population for the base year (January 2020).

Population (2030) — Projected population by service zone for the year 2030 (ten-year growth projections).

Employment (2020, 2030) — For this report, employment projections were taken from NCTCOG's 2018 estimates and interpolated by FNI to January 2020. Employment data is aggregated into three employment sectors by NCTCOG and include basic, retail and service. The following details which types of businesses fall within each of the three sectors:

- Basic – Land use activities that produce goods and services such as those that are exported outside the local economy; manufacturing, construction, transportation, wholesale trade, warehousing and other industrial uses.
- Retail – Land use activities that provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector such as grocery stores, restaurants, etc.
- Service – Land use activities that provide personal and professional services such as financial, insurance, government, and other professional and administrative offices.

4. BASE YEAR DATA

This section documents the City's historical growth trends and data to the base year of January 1, 2020. This "benchmark" information provided a starting basis of data for the ten-year growth assumptions that are presented within the following section.

Population Growth

One method of predicting future growth is looking at past growth. Per the U.S. Census, the historical populations for Waxahachie from 1940 to 2020 are shown below:

YEAR	POPULATION
1940	8,655
1950	11,204
1960	12,749
1970	13,452
1980	14,624
1990	18,168
2000	21,426
2010	30,152
2020[(1)]	39,221

Source: U.S. Census
[(1)] Estimate by Freese and Nichols, Inc. (FNI)

The 2020 population estimate shown above was derived from NCTCOG's 2015 estimate of 32,670 for the City of Waxahachie, projecting to 2020 using building permit data received from City Staff from January 2015 to January 2020. After occupied housing units had been projected using the building permit data, population projections were determined using a 2.72 persons per household multiplier.

Existing Land Use

In any projection, a documentation of existing conditions is essential. Documentation of existing land use patterns and housing units was made from evaluating the City's Comprehensive Plan and aerial imaging. For example, many TSZs were analyzed via aerial imaging to more accurately account for existing housing units – helping to mitigate potential duplication. These evaluations were then accounted for in the baseline for future growth projections.

Table 1 presents a summary of existing population and employment for Waxahachie and its associated water and wastewater service areas. The appendices detail data by various impact fee service areas and further, by traffic survey zones.

Table 1
EXISTING POPULATION & EMPLOYMENT – 2020
BY ROADWAY, WATER AND WASTEWATER SERVICE AREAS

Roadway Boundary – City Limits	
Housing Units [1]	14,420
Population [2]	39,221
Total Employment [3]	31,820
Basic Employment	*11,663*
Retail Employment	*3,740*
Service Employment	*16,417*
Water Boundary	
Housing Units [1]	13,276
Population [2]	36,110
Wastewater Boundary	
Housing Units [1]	21,969
Population [2]	59,756

Source: Freese and Nichols, Inc. (FNI)

[1] FNI housing unit estimates derived from persons per household multiplier of 2.72

[2] FNI population estimates derived from building permit data and/or NCTCOG estimates from 2015/2018

[3] FNI employment estimates derived from NCTCOG projections from 2018

5. TEN-YEAR GROWTH ASSUMPTIONS

Growth is characterized in two forms: population (residential land use) and employment (nonresidential land use). A series of assumptions were made to arrive at reasonable growth rates for population and employment. The following assumptions have been made as a basis from which ten-year projections could be developed.

- Future land uses will occur as identified on the Future Land Use Plan,
- The City will be able to finance the necessary improvements to accommodate growth,
- School facilities will accommodate increases in enrollment, and
- Densities will be as projected in the Comprehensive Plan.

The ten-year projections, or land use assumptions, are based on the establishment of a reasonable growth rate that is based upon past trends or other considerations. Due to increased growth over the past decade in the Dallas/Fort Worth Metroplex, an analysis of annual growth based on data from building permit data and the U.S. Census was undertaken to provide further insight into growth trends experienced within the City.

The single-family building permit activity since 2015 in Waxahachie has fluctuated with time, ranging from 344 in 2015 to a high of 763 in 2019. Similarly, the annual growth rate for the City fluctuated dramatically from 2.6% in 2015 to 5.0% in 2019. **Table 2** presents this fluctuation in growth using single-family building permit data provided by the City. From the beginning of January 2015 to the end of December 2019, the City saw an average growth rate of 3.4%.

Table 2
Growth Projection – 2020

Year	Total Pop. Jan. 1	Permits	Households Added	Pop. Increase[(1)]	Total Pop. Dec. 31	Compound Annual Growth Rate (CAGR)
2015	32,670	344	310	842	33,512	2.6%
2016	33,512	424	382	1,038	34,550	3.1%
2017	34,550	553	498	1,354	35,904	3.9%
2018	35,904	592	533	1,449	37,353	4.0%
2019	37,353	763	687	1,868	39,221	5.0%
Total/CAGR (Start of 2015-End of 2019)	--	2,676	2,408	6,551	--	3.4%

[(1)] Population increase based off persons per household (2.72)

U.S. Census data, projections from the 2016 Comprehensive Plan, and projections from the Texas Water Development Board (TWDB) reveals lower growth rates. Differences in growth rates from **Table 2** and **Table 3** may be attributed to both the Comprehensive Plan and TWDB not accounting for the significant growth the City has experienced in recent years.

Table 3
Historical and Projected CAGR for Waxahachie, TX

Years	U.S. Census	2016 Comprehensive Plan	TWDB
1970-1980	0.8%	--	--
1980-1990	2.2%	--	--
1990-2000	1.7%	--	--
2000-2010	3.3%	--	--
2010-2020	--	2.4%	2.4%
2020-2030	--	2.5%	1.3%
2030-2040	--	2.5%	2.0%
2040-2050	--	2.5%	2.1%
2050-2060	--	2.5%	2.0%

Sources: U.S. Census, 2016 Waxahachie Comprehensive Plan, Texas Water Development Board

Given these trends and an analysis of recommended growth rates from the 2016 Comprehensive Plan, a 3.5% annual growth rate was determined to be a reasonable rate at which Waxahachie could be expected to grow. This rate and associated data were reviewed and recommended by the Capital Improvements Advisory Committee (CIAC) in February 2020. As a point of reference, the previous land use assumption report for Waxahachie was based on a 2% growth rate.

The development of ten-year housing estimates was calculated using the 3.5% growth rate derived above. However, the growth was not projected to occur evenly throughout the roadway service areas of the City. The roadway service boundary, unlike the water and wastewater service boundaries, contains seven distinct service areas, making it important to determine population trends in each to determine where resources will be needed. While growth will generally occur throughout the city, the current City staff provided insight into the key growth areas within the community to help determine growth rate trends in each service area. The ten-year population estimates were determined by growing service areas to represent current development patterns while also generally maintaining the 3.5% overall growth rate. The household growth figures are shown by roadway service areas in **Table 4**.

Table 4 Projected Growth by Service Area			
Roadway Service Area	**2020 Households**	**2030 Households**	**Annual Growth Rate (2020-2030)**
1	630	1,040	5.0%
2	2,242	3,651	5.0%
3	238	982	15.0%
4	6,391	7,204	1.0%
5	1,679	2,523	4.0%
6	2,892	4,316	4.0%
7	348	624	6.0%
Total	**14,420**	**20,340**	**3.5%**

Source: Freese and Nichols, Inc.

Table 5 Anticipated Residential Building Permits by Service Area		
Roadway Service Area	**Occupied Housing Units[(1)] (2020-2030)**	**Anticipated Development Permits (2020-2030)**
1	410	439
2	1,409	1,508
3	744	796
4	813	870
5	844	903
6	1,424	1,524
7	276	296
Total	**5,920**	**6,335**

Source: Freese and Nichols, Inc.

[(1)] Based off household occupancy rate of 93.0%

Appendices A and B detail ten-year growth projections for population and employment by TSZ for roadway, water, and wastewater service areas. An average household size of 2.72 persons per household was used to project the population in 2030. **Table 6** and **Table 7** summarize ten-year population and employment projections for the City.

Table 6
Ten-Year Population Projections
City of Waxahachie, Texas

Roadway Service Area	2020		2030	
	Households	Population	Households	Population
1	630	1,714	1,040	2,829
2	2,242	6,099	3,651	9,931
3	238	647	982	2,671
4	6,391	17,384	7,204	19,595
5	1,679	4,568	2,523	6,863
6	2,892	7,867	4,316	11,740
7	348	942	624	1,697
Total	**14,420**	**39,221**	**20,340**	**55,326**

Source: Freese and Nichols, Inc.

Table 7
Ten-Year Employment Projections (Roadway Service Area)
City of Waxahachie, Texas

Roadway Service Area	Basic		Retail		Service		Total Employment	
	2020	2030	2020	2030	2020	2030	2020	2030
1	1,020	1,623	337	519	1,345	2,078	2,703	4,220
2	3,780	5,204	1,266	1,838	4,328	5,700	9,374	12,743
3	336	345	79	124	404	635	818	1,104
4	3,978	4,214	1,196	1,326	6,959	7,219	12,133	12,759
5	390	390	133	196	469	469	993	1,056
6	2,124	2,788	722	1,064	2,896	4,190	5,741	8,043
7	35	48	7	12	16	16	58	77
Total	**11,663**	**14,613**	**3,740**	**5,080**	**16,417**	**20,307**	**31,820**	**40,000**

Source: Freese and Nichols, Inc.

6. ULTIMATE POPULATION PROJECTION

An ultimate population projection was also calculated for the water and wastewater service boundaries based on the Future Land Use Plan from the 2016 Comprehensive Plan. This projection determines buildout, meaning all areas accounted for have been developed or redeveloped in conformance with the Future Land Use Plan and its corresponding Future Land Use categories. **Table 8** shows the total buildout population by residential category for the water service boundary – estimated to be roughly 130,000. **Table 9** shows the total buildout population by residential category for the wastewater service boundary – estimated to be roughly 409,000.

In comparison to the ultimate population projections from the 2013 Land Use Assumption Report, it is important to note that buildout projections from the 2013 report were based on the Future Land Use Plan from the 2007 Comprehensive Plan. Given that the previous study's ultimate population projections were estimated at 164,291 for the water service area and 327,094 for the wastewater service area, it is evident that density increased in many areas of the City's extraterritorial jurisdiction in the 2016 Future Land Use Plan.

Table 8
Ultimate Population Projection for Water Service Boundary
City of Waxahachie, Texas

Future Land Use[1]	Acres	Right-of-Way Reduction[2]	Households[3]	Population[4]
Estate Residential	4,114.0	3,702.6	3,443	9,365
Low Density Residential	12,957.9	9,070.5	29,525	79,821
Medium Density Residential	69.2	48.4	360	979
High Density Residential	273.3	232.3	3,889	10,578
Mixed Use Residential	709.7	603.2	5,835	15,871
Mixed Use Nonresidential	2,262.5	1,923.1	4,650	12,648
Total	**20,386.6**	**15,580.3**	**47,702**	**129,749**

Source: Freese and Nichols, Inc.
[1] Dwelling units per acre (DUA) based off multipliers from 2016 Comprehensive Plan
[2] Based off right-of-way (ROW) multipliers from 2016 Comprehensive Plan
[3] Based on household occupancy rate of 93.0%
[4] Based on persons per household multiplier of 2.72

Table 9 Ultimate Population Projection for Wastewater Service Boundary City of Waxahachie, Texas				
Future Land Use[1]	**Acres**	**Right-of-Way Reduction[2]**	**Households[2]**	**Population[3]**
Estate Residential	16,380.4	14,742.4	13,710	37,292
Low Density Residential	52,893.6	37,025.5	120,518	327,809
Medium Density Residential	81.4	57.0	425	1,153
High Density Residential	277.7	236.1	3,952	10,749
Mixed Use Residential	743.0	631.6	6,108	16,615
Mixed Use Nonresidential	2,733.2	2,323.2	5,618	15,280
Total	**73,109.3**	**55,015.7**	**150,331**	**408,898**

Source: Freese and Nichols, Inc.

(1) Dwelling units per acre (DUA) based off multipliers from 2016 Comprehensive Plan

(2) Based off right-of-way (ROW) multipliers from 2016 Comprehensive Plan

(3) Based on household occupancy rate of 93.0%

(4) Based on persons per household multiplier of 2.72

7. SUMMARY

- The existing estimated population of Waxahachie is 39,221 persons, and the existing estimated employment is 31,820 jobs.
- An average annual growth rate of 3.5 percent was used to calculate the Waxahachie ten-year population growth projections for all service area boundaries.
- The ten-year (2030) growth projection of Waxahachie's City limits is 55,326 persons, and the ten-year employment projection is 40,000 jobs.
- The ultimate population of Waxahachie's combined City limits and extraterritorial jurisdiction is projected to be approximately 408,898 persons.

Table 10
Summary of Population Projections
City of Waxahachie, Texas

	2020 Population	2030 Population	Ultimate Population
Roadway Service Boundary	39,221	55,326	--
Water Service Boundary	36,110	48,779	129,749
Wastewater Service Boundary	59,756	83,378	408,898

Source: Freese and Nichols, Inc.

Table 11
Summary of Employment Projections (Roadway Service Area)
City of Waxahachie, Texas

	2020 Employment	2030 Employment
Basic	11,663	14,613
Retail	3,740	5,080
Service	16,417	20,307
Total	**31,820**	**40,000**

Source: Freese and Nichols, Inc.

APPENDICES

Data Format for Appendices "A" and "B"

The land use assumptions database (Appendices "A" and "B"), as well as future projections, were formulated according to the following format and categories:

Appendix "A" - Ten-Year Population Projections

Roadway Service Area	Correlates to the roadway service areas identified on **Figure 1**.
2020 Households	Households represent all occupied dwelling units in 2020.
2020 Population	The 2020 calculated population for each TSZ.
2030 Households	Occupied dwelling units per TSZ in 2030.
2030 Population	The 2030 projected population tabulated for each TSZ and roadway service area.
Traffic Survey Zone (TSZ)	Traffic survey zones previously established by the NCTCOG for data collection purposes and termed TSZs in this report.

Appendix "B" - Ten-Year Employment Projections

Roadway Service Area Correlates to the roadway service areas identified on **Figure 1**.

Employment Three classifications were used for employment and compiled for each roadway service area:

- Basic – Land use activities that produce goods and services such as those that are exported outside the local economy: manufacturing, construction, transportation, wholesale trade, warehousing and other industrial uses.

- Retail – Land use activities that provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector such as grocery stores, restaurants, etc.

- Service – Land use activities that provide personal and professional services such as financial, insurance, government, and other professional and administrative offices.

Total Employment The total of the Basic, Retail, and Service employment categories.

Appendix A

Population Projections

Ten Year Population Projections for Waxahachie, Texas Roadway Service Area					
Traffic Survey Zone	Service Area	2020		2030	
		Households	Population	Households	Population
17067	1	24	65	33	90
40053	1	36	97	50	137
40093	1	19	53	27	75
40096	1	14	38	20	54
41080	1	30	82	52	140
41092	1	37	100	54	148
41100	1	470	1,279	803	2,185
Sub-Total		**630**	**1,714**	**1,040**	**2,829**
17081	2	395	1,075	675	1,836
17097	2	13	36	19	51
17114	2	440	1,198	621	1,689
17115	2	1,003	2,729	1,714	4,661
41093	2	49	132	72	195
41096	2	29	79	41	112
41101	2	313	851	510	1,386
Sub-Total		**2,242**	**6,099**	**3,651**	**9,931**
40047	3	22	59	106	288
41083	3	56	153	233	634
41110	3	21	58	107	291
41120	3	138	376	536	1,458
Sub-Total		**238**	**647**	**982**	**2,671**
17146	4	327	889	293	797
17147	4	873	2,376	1,182	3215
17169	4	211	575	211	574
17170	4	465	1,265	467	1270
17171	4	556	1,513	789	2146
40323	4	1,694	4,607	1,644	4472
41071	4	405	1,103	522	1420
41072	4	423	1,151	426	1159
41082	4	519	1,412	718	1953
41085	4	248	676	198	539

Ten Year Population Projections for Waxahachie, Texas Roadway Service Area					
Traffic Survey Zone	Service Area	2020		2030	
		Households	Population	Households	Population
41086	4	356	968	341	928
41107	4	313	851	413	1123
Sub-Total		**6,391**	**17,384**	**7,204**	**19,595**
17149	5	499	1,356	747	2,032
41078	5	1,152	3,134	1,706	4,640
41084	5	29	78	70	190
Sub-Total		**1,679**	**4,568**	**2,523**	**6,863**
17183	6	263	716	403	1,096
17189	6	853	2,320	1,457	3,963
17198	6	107	290	174	473
17201	6	359	977	532	1,447
17215	6	11	30	16	44
41068	6	202	550	285	775
41070	6	111	302	157	427
41081	6	572	1,556	572	1,556
41082	6	35	95	79	215
41103	6	184	501	341	928
41112	6	174	473	271	737
42002	6	21	56	29	79
Sub-Total		**2,892**	**7,867**	**4,316**	**11,740**
41102	7	312	848	548	1,491
41108	7	35	94	76	207
Sub-Total		**346**	**942**	**624**	**1,697**
Total		**14,420**	**39,221**	**20,340**	**55,326**

Population Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
17114	440	1,198	621	1,689	408	1,110
17115	953	2,592	1,628	4,427	2,786	7,578
17146	327	889	293	798	261	710
17147	873	2,376	1,182	3,215	641	1,744
17149	499	1,356	703	1,913	1,637	4,453
17169	211	575	161	439	167	454
17170	465	1,265	415	1,129	269	732
17171	556	1,513	773	2,104	717	1,950
17183	263	716	390	1,060	1,736	4,722
17189	853	2,320	1,457	3,963	5,026	13,671
17198	107	290	150	409	100	272
17201	359	977	532	1,447	192	522
17215	25	68	37	101	835	2,271
40047	22	59	106	288	98	267
40053	36	97	53	144	946	2,573
40323	1,694	4,607	1,644	4,471	699	1,901
41068	197	536	292	793	1,779	4,839
41070	111	302	164	447	157	427
41071	405	1,103	522	1,419	321	873
41072	423	1,151	373	1,015	312	849
41078	1,054	2,866	1,560	4,242	1,533	4,170
41080	4	10	6	17	6	17
41081	572	1,556	572	1,556	453	1,232
41082	554	1,508	718	1,953	365	993
41083	61	167	233	634	7,361	20,022
41084	56	152	83	226	1,558	4,238
41085	248	676	198	540	267	726
41086	356	968	306	832	449	1,221
41093	49	132	72	195	72	195
41096	14	38	21	57	21	57
41100	453	1,231	773	2,102	2,459	6,688
41102	171	465	292	795	8,238	22,407
41103	184	501	315	856	2,400	6,528
41107	313	851	413	1,126	1,617	4,398

Population Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
41108	35	94	51	139	51	139
41112	174	473	257	700	227	617
41120	138	376	536	1,458	1,509	4,104
42002	21	56	29	79	29	79
Total	**13,276**	**36,110**	**17,933**	**48,779**	**47,702**	**129,749**

Population Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
17065	2	5	3	8	21	57
17067	28	77	40	108	1,357	3,691
17068	105	284	147	401	658	1,790
17069	40	109	57	154	87	237
17081	821	2,233	1,402	3,814	4,617	12,558
17097	540	1,470	762	2,073	4,064	11,054
17114	440	1,198	621	1,689	408	1,110
17115	1,060	2,885	1,811	4,927	2,990	8,133
17146	327	889	293	798	261	710
17147	873	2,376	1,182	3,215	641	1,744
17149	530	1,443	748	2,035	2,639	7,178
17169	211	575	161	439	167	454
17170	465	1,265	415	1,129	269	732
17171	556	1,513	773	2,104	717	1,950
17183	263	716	390	1,060	1,736	4,722
17189	853	2,320	1,457	3,963	5,026	13,671
17198	365	993	515	1,401	2,623	7,135
17201	359	977	532	1,447	204	555
17215	54	147	80	217	951	2,587
17241	15	41	21	58	3,870	10,526
17246	13	36	18	50	67	182
17272	38	104	54	147	3,184	8,660
17274	18	49	26	69	989	2,690
17282	20	55	28	77	1,682	4,575
40047	249	678	369	1,004	2,291	6,232
40053	463	1,260	686	1,866	5,223	14,207
40093	29	79	41	112	521	1,417
40096	32	88	45	123	45	123
40103	324	881	457	1,243	5,796	15,765
40323	1,694	4,607	1,644	4,471	699	1,901
41068	329	896	487	1,326	3,689	10,034
41069	31	85	44	120	1,091	2,968
41070	111	302	164	447	157	427
41071	405	1,103	522	1,419	321	873

Population Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
41072	423	1,151	373	1,015	312	849
41075	650	1,767	917	2,493	110	299
41076	543	1,476	765	2,082	9,877	26,865
41078	1,152	3,134	1,706	4,639	2,107	5,731
41080	209	569	357	972	2,084	5,668
41081	572	1,556	572	1,556	453	1,232
41082	554	1,508	718	1,953	365	993
41083	391	1,063	578	1,573	16,046	43,645
41084	56	152	83	226	1,932	5,255
41085	248	676	198	540	267	726
41086	356	968	306	832	449	1,221
41092	608	1,655	901	2,450	3,587	9,757
41093	630	1,715	933	2,538	1,602	4,357
41094	58	159	82	224	214	582
41096	29	79	43	117	43	117
41100	453	1,231	773	2,102	2,461	6,694
41101	861	2,343	1,275	3,468	3,178	8,644
41102	289	785	493	1,342	14,855	40,406
41103	165	449	282	766	2,400	6,528
41104	71	194	101	274	386	1,050
41107	313	851	413	1,126	1,619	4,404
41108	165	448	244	663	9,799	26,650
41110	594	1,617	880	2,393	8,308	22,598
41112	543	1,477	804	2,187	5,341	14,528
41114	56	153	79	216	564	1,534
41120	138	376	536	1,458	1,509	4,104
42002	172	468	242	660	1,402	3,813
Total	**21,969**	**59,756**	**30,653**	**83,378**	**150,331**	**408,898**

Appendix B

Employment Projections

Ten Year Employment Projections for Waxahachie, Texas Roadway Service Area							
Traffic Survey Zone	Service Area	2020			2030		
		Basic	Retail	Service	Basic	Retail	Service
17067	1	95	28	130	134	39	184
40053	1	80	32	118	113	45	118
40093	1	0	28	0	0	28	0
40096	1	142	57	152	200	81	214
41080	1	18	5	25	31	8	25
41092	1	36	10	48	36	15	48
41100	1	649	178	871	1,109	304	1,488
Sub-Total		**1,020**	**337**	**1,345**	**1,623**	**519**	**2,078**
17081	2	203	68	237	203	117	237
17114	2	2,564	840	2,965	3,617	1,185	4,182
17115	2	169	60	219	288	103	374
41093	2	52	18	65	52	27	65
41096	2	615	222	637	867	313	637
41101	2	177	58	206	177	94	206
Sub-Total		**3,780**	**1,266**	**4,328**	**5,204**	**1,838**	**5,700**
40047	3	22	5	31	31	5	31
41083	3	94	28	145	94	41	214
41110	3	56	0	0	56	0	0
41120	3	163	45	228	163	78	390
Sub-Total		**336**	**79**	**404**	**345**	**124**	**635**
17146	4	1,237	360	2,295	1,237	379	2,295
17147	4	212	72	261	212	102	368
17169	4	344	115	402	344	115	402
17170	4	103	34	121	103	34	121
17171	4	116	39	144	116	58	144
40323	4	679	187	917	679	187	917
41071	4	299	78	1,109	422	110	1,109
41072	4	116	31	668	116	31	668
41085	4	578	192	672	578	192	672
41086	4	58	22	52	58	22	52

Ten Year Employment Projections for Waxahachie, Texas Roadway Service Area							
Traffic Survey Zone	Service Area	2020			2030		
		Basic	Retail	Service	Basic	Retail	Service
41107	4	236	65	318	349	97	470
Sub-Total		**3,978**	**1,196**	**6,959**	**4,214**	**1,326**	**7,219**
17149	5	45	16	62	45	23	62
41078	5	334	113	398	334	167	398
41084	5	11	4	9	11	5	9
Sub-Total		**390**	**133**	**469**	**390**	**196**	**469**
17183	6	117	42	106	174	63	157
17189	6	164	69	179	280	119	305
17198	6	104	30	143	104	42	202
17201	6	138	48	123	138	72	182
17215	6	6	3	4	6	4	4
41068	6	32	13	26	32	18	37
41070	6	263	94	728	263	133	1,027
41081	6	144	39	193	144	39	193
41082	6	879	269	1,045	1,301	398	1,547
41103	6	99	35	90	168	60	153
41112	6	178	79	258	178	117	382
Sub-Total		**2,124**	**722**	**2,896**	**2,788**	**1,064**	**4,190**
41102	7	19	7	16	32	12	16
41108	7	16	0	0	16	0	0
Sub-Total		**35**	**7**	**16**	**48**	**12**	**16**
Total		**11,663**	**3,740**	**16,417**	**14,613**	**5,080**	**20,307**

Ten Year Employment Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	2020			2030		
	Basic	Retail	Service	Basic	Retail	Service
17114	2,564	840	2,965	3,617	1,185	4,182
17115	169	60	219	288	103	374
17146	1,237	360	2,295	1,237	379	2,295
17147	212	72	261	212	102	368
17149	45	16	62	45	23	62
17169	344	115	402	344	115	402
17170	103	34	121	103	34	121
17171	116	39	144	116	58	144
17183	117	42	106	174	63	157
17189	164	69	179	280	119	305
17198	104	30	143	104	42	202
17201	138	48	123	138	72	182
17215	6	3	4	6	4	4
40047	22	5	31	31	5	31
40053	80	32	118	113	45	118
40323	679	187	917	679	187	917
41068	32	13	26	32	18	37
41070	263	94	728	263	133	1,027
41071	299	78	1,109	422	110	1,109
41072	116	31	668	116	31	668
41078	334	113	398	334	167	398
41080	18	5	25	31	8	25
41081	144	39	193	144	39	193
41082	879	269	1,045	1,301	398	1,547
41083	94	28	145	94	41	214
41084	11	4	9	11	5	9
41085	578	192	672	578	192	672
41086	58	22	52	58	22	52
41096	615	222	637	867	313	637
41100	649	178	871	1,109	304	1,488
41102	19	7	16	32	12	16

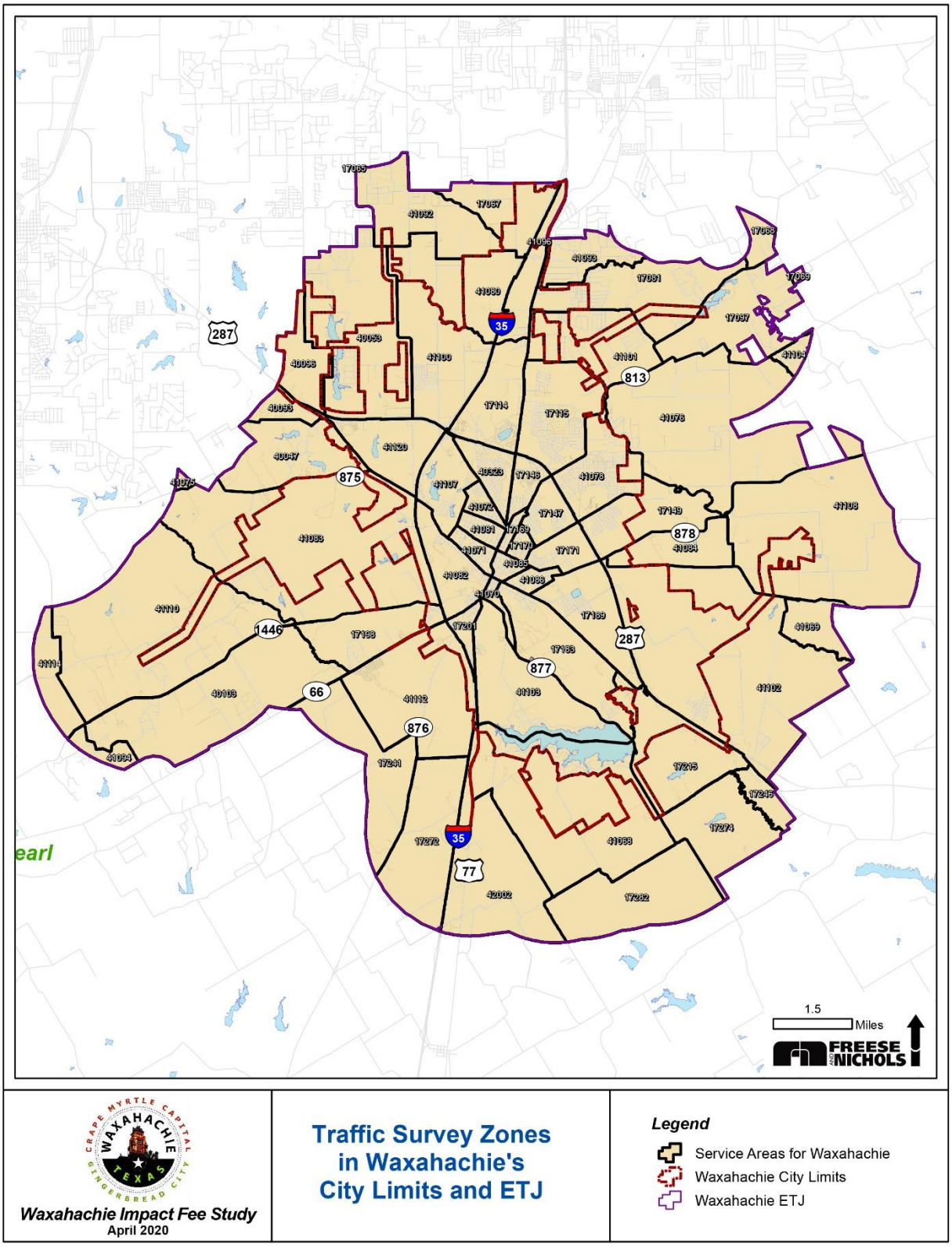
Ten Year Employment Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	**2020**			**2030**		
	Basic	**Retail**	**Service**	**Basic**	**Retail**	**Service**
41103	99	35	90	168	60	153
41107	236	65	318	349	97	470
41112	178	79	258	178	117	382
41120	163	45	228	163	78	390
Total	**10,885**	**3,471**	**15,578**	**13,737**	**4,681**	**19,351**

Ten Year Employment Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020			2030		
	Basic	Retail	Service	Basic	Retail	Service
17067	116	34	159	164	47	225
17068	7	3	35	10	4	49
17081	307	103	358	433	146	505
17097	59	20	72	83	28	102
17114	2,564	840	2,965	3,617	1,185	4,182
17115	169	60	219	288	103	374
17146	1,237	360	2,295	1,237	379	2,295
17147	212	72	261	212	102	368
17149	70	25	97	99	36	138
17169	344	115	402	344	115	402
17170	103	34	121	103	34	121
17171	116	39	144	116	58	144
17183	117	42	106	174	63	157
17189	164	69	179	280	119	305
17198	193	56	266	272	79	376
17201	138	48	123	138	72	182
17215	6	3	4	6	4	4
17241	5	3	7	8	4	10
17246	2	1	4	3	1	5
17272	7	3	9	10	4	13
17274	4	1	7	6	1	10
17282	4	2	4	6	2	6
40047	37	9	53	52	13	75
40053	119	48	176	168	68	249
40093	6	30	27	8	42	38
40096	142	57	152	200	81	214
40103	46	14	67	65	20	94
40323	679	187	917	679	187	917
41068	56	22	45	80	30	64
41069	9	2	13	13	3	18

Ten Year Employment Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020			2030		
	Basic	Retail	Service	Basic	Retail	Service
41070	263	94	728	263	133	1,027
41071	299	78	1,109	422	110	1,109
41072	116	31	668	116	31	668
41075	1	0	1	2	1	2
41076	58	20	67	81	28	94
41078	375	127	447	375	127	447
41080	18	5	25	31	8	25
41081	144	39	193	144	39	193
41082	879	269	1,045	1,301	398	1,547
41083	136	40	209	193	56	295
41084	20	7	16	20	7	16
41085	578	192	672	578	192	672
41086	58	22	52	58	22	52
41092	64	18	86	90	25	122
41093	70	24	88	99	34	124
41094	4	2	6	6	2	8
41096	615	222	637	867	313	637
41100	649	178	871	1,109	304	1,488
41101	287	94	334	404	133	471
41102	28	10	24	39	14	34
41103	99	35	90	168	60	153
41104	2	1	3	3	1	4
41107	236	65	318	349	97	470
41108	26	4	10	37	6	14
41110	91	13	39	129	18	55
41112	324	144	470	457	203	663
41114	4	2	6	6	3	9
41120	163	45	228	163	78	390
42002	24	9	23	33	13	33
Total	**12,669**	**4,092**	**17,752**	**16,417**	**5,486**	**22,464**

Appendix C

Supplemental Maps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WAXAHACHIE
CRAPE MYRTLE CAPITAL
GINGERBREAD CITY
TEXAS
Waxahachie Impact Fee Study
April 2020
Traffic Survey Zones in Waxahachie's City Limits and ETJ
Legend
Service Areas for Waxahachie
Waxahachie City Limits
Waxahachie ETJ

Exhibit B
Water & Wastewater
Capital Improvement Plan

WATER AND WASTEWATER IMPACT FEE UPDATE

2020 to 2030

Submitted To

Submitted By

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PROFESSIONAL ENGINEERS – Texas Firm F526
DALLAS, TEXAS

November 2020

CITY OF WAXAHACHIE, TEXAS
WATER AND WASTEWATER IMPACT FEE UPDATE
2020 TO 2030

TABLE OF CONTENTS

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CITY OF WAXAHACHIE
2020 REVIEW AND UPDATE
OF THE
WATER AND WASTEWATER IMPACT FEES

A. INTRODUCTION

Chapter 395, of the Local Government Code is an act that provides guidelines for financing capital improvements required by new development in municipalities, counties, and certain other local governments. Under Chapter 395, political subdivisions receive authorization to enact or impose impact fees on land that is located within their political subdivision's corporate boundaries or extraterritorial jurisdictions. No governmental entity or political subdivision can enact or impose an impact fee unless they receive specific authorization by state law or by Chapter 395.

An "Impact Fee" is a charge or assessment imposed by a political subdivision for new development within its service area in order to generate revenue for funding or recouping the costs of capital improvements of facility expansions necessitated by and attributable to the new development.[1] The City of Waxahachie Water Service Area is all land within the current water Certificate of Convenient and Necessity CCN (Certificate No. 10915). The City of Waxahachie Wastewater Service Area is all land within the current sewer CCN (Certificate No. 20361) and extending to the Extra Territorial Jurisdiction (ETJ). The Water and Wastewater Service Areas are shown on Figure 1. The first step in determining an impact fee is preparation of land use and growth assumptions for the service area for the next ten years. That step has been completed by a third-party consultant, contracted by the City of Waxahachie. Next, a Capital Improvements Plan must be created to describe the water and wastewater infrastructure that will be necessary to serve the anticipated land uses and growth. The following items can be included in the impact fee calculation:

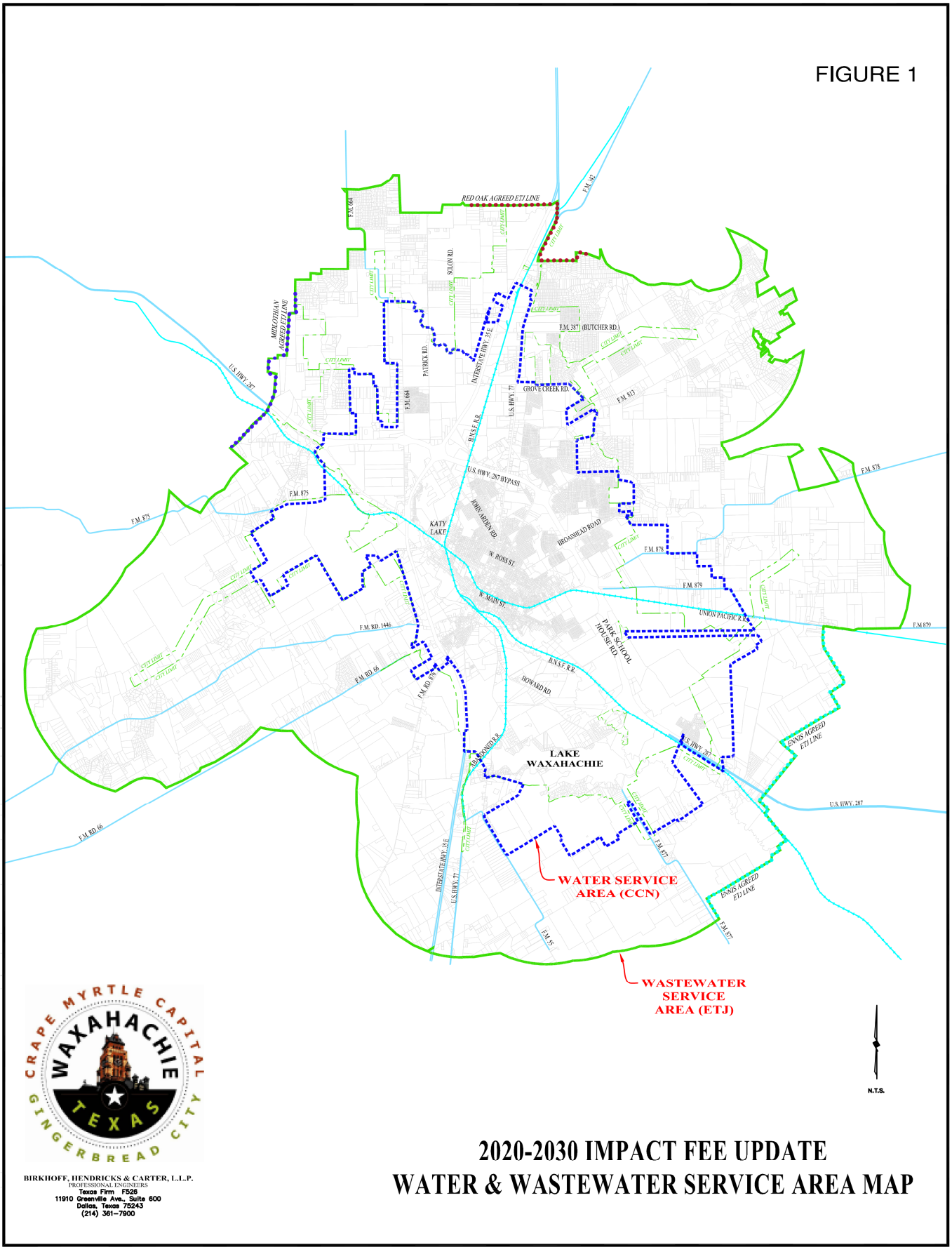
1) The portion of the cost of the new infrastructure that is to be paid by the City, including engineering, property acquisition and construction cost.

2) Existing excess capacity in lines and facilities that will serve future growth, and which were paid for in whole by the City or in part by the City with Developer participation.

3) Interest and other finance charges on bonds issued by the City to cover its portion of the project cost.

[1] P. 831, Texas Local Government Code, West's Texas Statutes and Codes, 1998 Edition.

FIGURE 1



CRAPE MYRTLE CAPITAL GINGERBREAD CITY
WAXAHACHIE TEXAS

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2020-2030 IMPACT FEE UPDATE
WATER & WASTEWATER SERVICE AREA MAP

These items are summed, and the utilized capacity is calculated over the impact fee period. The maximum allowable impact fee per service unit may not exceed fifty percent of the calculated maximum amount of the total utilized capital improvement cost divided by the total number of new standard service units. This maximum allowable impact fee recovers a portion of the City's costs to construct facilities to serve the new developments and growth. However, the City may recover the maximum fee by crediting the portion of utility service revenue generated by new service units during the 10-year program period.

The City of Waxahachie established water and wastewater impact fees by Ordinance No. 2494 on November 17, 2008 and updated the imposed amounts by Ordinance No. 2830 on November 11, 2015. The maximum calculated impact fee by the 2015 update and current imposed impact fees are summarized below:

	Impact Fee Per Service Unit – 2015 Update	
	Maximum Calculated Fee	**Fees Imposed (Ordinance No. 2830)**
Water	$2,100.00	$1,499.00
Wastewater	$3,082.00	$1,987.00

Chapter 395 requires that an update of the land use assumptions, capital improvement plan, and impact fees be performed every five years, unless it is determined by the political subdivision after a review that such an update is not necessary.

This document constitutes the 2020 update of the City's water and wastewater Capital Improvements Plans (CIP), and the resulting revision of the maximum allowable impact fees. As required by state law, the study period is a ten-year period with 2020 as the base year. The engineering analysis of the water and wastewater systems is based on established land use in year 2020 and on projected land uses in the year 2030 and at Buildout. Those land uses determine the utilization of the existing and proposed infrastructure.

The engineering analysis portion of the City of Waxahachie, 2020 Impact Fee Update determines utilized capacity cost of the water distribution and wastewater collection systems between the year 2020 and 2030. At the direction of the City, two analysis methods were considered, a "10-Year" approach based on a CIP limited to the geographical bounds of the 10-year growth area, and a "Full System" approach based on a CIP extending to the buildout planning area, generally consistent with the water and wastewater master plans. Both methods are based on the projected 10-year population growth, as estimated in the Land Use Assumptions. The maximum impact fee was calculated by both methods. The full-system method is presented herein at the direction of the Impact Fee Capital Improvements Advisory Committee and City Council.

B. LAND USE ASSUMPTIONS SUMMARY

Under Chapter 395, of the Local Government Code, "Land Use Assumptions" includes a description of service area and projections of changes in land uses, densities, intensities, and population in the service area for a minimum of a 10-year period. In order to impose an impact fee, the City must adopt an order, ordinance, or resolution that establishes a public hearing date to consider the land use assumptions within the designated service area. After the public hearing on the land use assumptions, the City makes a determination of adoption or rejection of the ordinance, order or resolution approving the land use assumptions, that will be utilized to develop the capital improvement plan.

The Land Use Assumptions used in this update were prepared by the City of Waxahachie's planning consultant, Freese & Nichols, Inc., and are presented in a separate document. The Land Use Assumptions for the 2020 Impact Fee Update was utilized to establish the Land Use Summary for the water and wastewater systems in Table 1.

TABLE NO. 1
LAND USE SUMMARY

Year	Water		Wastewater	
	Population	Employment	Population	Employment
2020	36,110	29,934	59,756	34,513
2030	48,779	37,769	83,378	44,367
Buildout	129,749	Not Projected	408,898	Not Projected

C. DEFINITION OF A SERVICE UNIT – WATER AND WASTEWATER

Chapter 395 of the Local Government Code requires that impact fees be based on a defined service unit. A "service unit" means a standardized measure of consumption, use generation, or discharge attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards. The City of Waxahachie has previously defined a water and wastewater service unit to be a 5/8 x 3/4-inch water meter and has referred to these service units as Single-Family Living Unit Equivalents (SFLUE). The service unit is based on the continuous duty capacity of a 5/8 x 3/4-inch water meter. This is the typical meter used for a single family detached dwelling, and therefore is considered to be equivalent to one "living unit". Other meter sizes can be compared to the 5/8 x 3/4-inch meter through a ratio of flow rates as published by the American Water Works Association as shown in Table No. 2 below. This same ratio is then used to determine the proportional water and sewer impact fee amount for each water meter size.

TABLE NO. 2
LIVING UNIT EQUIVALENCIES
FOR VARIOUS TYPES AND SIZES OF WATER METERS

Meter Type	Meter Size	Continuous Duty Maximum Rate (gpm) [(a)]	Living Unit Per Meter
Simple	5/8" x 3/4"	10	1.0
Simple	1"	25	2.5
Simple	1½"	50	5.0
Simple	2"	80	8.0
Compound	2"	80	8.0
Turbine	2"	100	10.0
Compound	3"	160	16.0
Turbine	3"	240	24.0
Compound	4"	250	25.0
Turbine	4"	420	42.0
Compound	6"	500	50.0
Turbine	6"	920	92.0
Compound	8"	800	80.0
Turbine	8"	1,600	160.0
Compound	10"	1,150	115.0
Turbine	10"	2,500	250.0
Turbine	12"	3,300	330.0

[(a)] *Source: AWWA Standard C700 (2002) - C702 (2001)*

D. CALCULATION OF WATER & WASTEWATER - LIVING UNIT EQUIVALENTS

The City of Waxahachie provided the existing water meter count by size as of July 2020. In total, 13,561 water meters serve the existing community of 36,110 residents and businesses in the Water Service Area. Table No. 3 shows the number of new living unit equivalents (LUE's) calculated for the water system in the 10-year period based on projected population growth, existing meter counts, and the living unit equivalency factors.

TABLE NO. 3
WATER LIVING UNIT EQUIVALENTS BY METER SIZE

Meter Size	2020			2030			New Living Units During Impact Fee Period
	Meter Count	Living Units per Meter	Total Living Units	Meter Count	Living Units per Meter	Total Living Units	
5/8" x 3/4"	**12,261**	1.00	12,261	**16,563**	1.00	16,562	4,301
1"	**620**	2.50	1,550	**838**	2.50	2,093	543
1½"	**141**	5.00	705	**190**	5.00	952	247
2"	**423**	10.00	4,230	**571**	10.00	5,714	1,484
3"	**44**	24.00	1,056	**59**	24.00	1,426	370
4"	**49**	42.00	2,058	**66**	42.00	2,780	722
6"	**18**	92.00	1,656	**24**	92.00	2,236	580
8"	**3**	160.00	480	**4**	160.00	648	168
10"	**2**	250.00	500	**3**	250.00	675	175
Totals:	**13,561**		**24,496**	**18,319**		**33,086**	**8,590**

Similarly, the City identified the number of water meters associated with wastewater accounts as of July 2020. Table No. 4 shows the projected new LUE's in the 10-year period for the wastewater system.

TABLE NO. 4
WASTEWATER LIVING UNIT EQUIVALENTS BY METER SIZE

Meter Size	2020			2030			New Living Units During Impact Fee Period
	Meter Count	Living Units per Meter	Total Living Units	Meter Count	Living Units per Meter	Total Living Units	
5/8" x 3/4"	**11,711**	1.00	11,711	**16,340**	1.00	16,340	4,629
1"	**337**	2.50	842	**470**	2.50	1,175	333
1½"	**93**	5.00	465	**130**	5.00	648	183
2"	**327**	10.00	3,270	**456**	10.00	4,562	1,292
3"	**42**	24.00	1,008	**59**	24.00	1,406	398
4"	**49**	42.00	2,058	**68**	42.00	2,871	813
6"	**18**	92.00	1,656	**25**	92.00	2,310	654
8"	**3**	160.00	480	**4**	160.00	669	189
10"	**2**	250.00	500	**3**	250.00	697	197
Totals:	**12,582**		**21,990**	**17,556**		**30,678**	**8,688**

E. WATER DISTRIBUTION SYSTEM, RAW WATER SUPPLY, AND TREATMENT

Hydraulic models of the City's water system were updated to reflect recently constructed projects and future projects associated with buildout development conditions. The models were loaded based on residential population projections by the North Central Texas Council of Governments (NCTCOG) traffic survey zones as provided in the Land Use Assumptions Report prepared by the City of Waxahachie's Planning consultant, Freese & Nichols. Model loads were assigned for employment projections in a similar manner. These modeled facilities include major distribution lines, pump stations, ground storage reservoirs and elevated storage tanks.

The models were run for a 72-hour Extended Period Simulation to ensure proper sizing of the facilities to meet peak demand periods.

1) Existing Pump Stations, Ground Storage Reservoirs & Elevated Storage Tanks

The existing water distribution system includes the facilities as shown below:

TABLE NO. 5
WATER DISTRIBUTION SYSTEM
EXISTING PUMP STATIONS & GROUND STORAGE

Pump Station	Number Of Pumps	Firm Capacity (MGD)	Number of Ground Storage Reservoirs	Total Ground Storage Available (MG)
Howard Rd. Water Treatment Plant Pump Station	4	12.5	3	4.5
Central Pump Station **	3	3.6	1	0.4
Grand Avenue Pump Station *	3	4.3	1	1.0
Indian Pump Station*	4	7.8	1	2.0
Sokoll Water Treatment Plant Pump Station	4	12.0	1	4.0
Total:	**18**	**40.2**	**7**	**11.9**

** These pump stations will be on stand-by service by 2030.*

*** Central Pump Station is anticipated to be decommissioned and demolished by 2025.*

TABLE NO. 6
WATER DISTRIBUTION SYSTEM -- EXISTING ELEVATED STORAGE

Elevated Storage Tanks	Capacity in Million Gallons
Highland Ave. Elevated Storage Tank	0.75
Solon Road Elevated Storage Tank	0.75
Indian Elevated Storage Tank	1.50
F.M. 664 Elevated Storage Tank	2.00
Total:	**5.00**

The pump stations and ground storage facilities were analyzed on the maximum daily water demand, while elevated storage tanks act dynamically and were therefore analyzed utilizing the difference between the maximum hourly demand and the maximum daily demand.

2) Water Distribution Lines

The water distribution lines consist of all lines within the service area planning boundary supplying water to customers in the City of Waxahachie. Water lines vary in size from 3/4-inch service lines to 24-inch and larger transmission lines. Unless a smaller diameter water line is expected to be constructed by the City, only those water lines larger than 12-inches in diameter were considered in the Impact Fee calculations. The cost of water distribution lines includes construction cost, appurtenances (water valves, fire hydrants, taps, etc.), utility relocations, purchase of easements and engineering costs. Actual costs were used for those existing projects where records were available and provided by the City. Financing cost is included for each project assuming a bond rate of 4.5% over a 20-year term.

Unit cost for water lines larger than 12-inches in diameter, which are anticipated to be constructed by private development, include the City's oversize cost participation only. City initiated water lines include the full cost of the proposed facility. Developer initiated water line projects which are 12-inches or less in diameter are not included in this Impact Fee analysis, as the cost for these size lines are the responsibility of the developer.

3) Existing Raw Water Supply & Treatment

The City of Waxahachie currently draws raw water from Lake Waxahachie and Lake Bardwell and transfers the raw water to the existing water treatment plant on Howard Road for treatment. The City also receives raw water from the Tarrant Regional Water District (TRWD) and treats the raw water at the existing R. W. Sokoll Water Treatment Plant on U.S. 77.

The existing raw water supply and treatment includes the rights and facilities shown below:

TABLE NO. 7
RAW WATER RIGHTS

Existing Water Rights	Average Day Rights in MGD
Lake Waxahachie	3.187
Lake Waxahachie (Reuse from Lake Bardwell)	4.578
Lake Bardwell	3.857
Tarrant Regional Water District	4.650
Total:	**16.272**

TABLE NO. 8
RAW WATER SUPPLY LINES & PUMP STATION

Raw Pump Station	Number of Pumps	Rated Capacity (MGD)	Water Line Size (Inches)	Water Line Capacity (MGD)
Lake Waxahachie Raw Water Pump Station No. 1	3	7.2	20"	10
Lake Waxahachie Raw Water Pump Station No. 2	4	19.4	2-20" & 36"*	27
Lake Bardwell Pump Station	3	13.1	20" & 27"	19.7
Tarrant Regional Water District	N/A	N/A	48"	30.2
Total	**10**	**39.7**		**86.9**

**36" water line will be constructed by 2030.*

TABLE NO. 9
TREATMENT PLANT CAPACITY

Treatment Plant	Capacity in (MGD)
Howard Road Water Treatment Plant (Howard Rd.)	18.2
R. W. Sokoll Water Treatment Plant (U.S. 77)	10.0*
Total:	**28.2**

**4.65 MGD contracted from TRWD.*

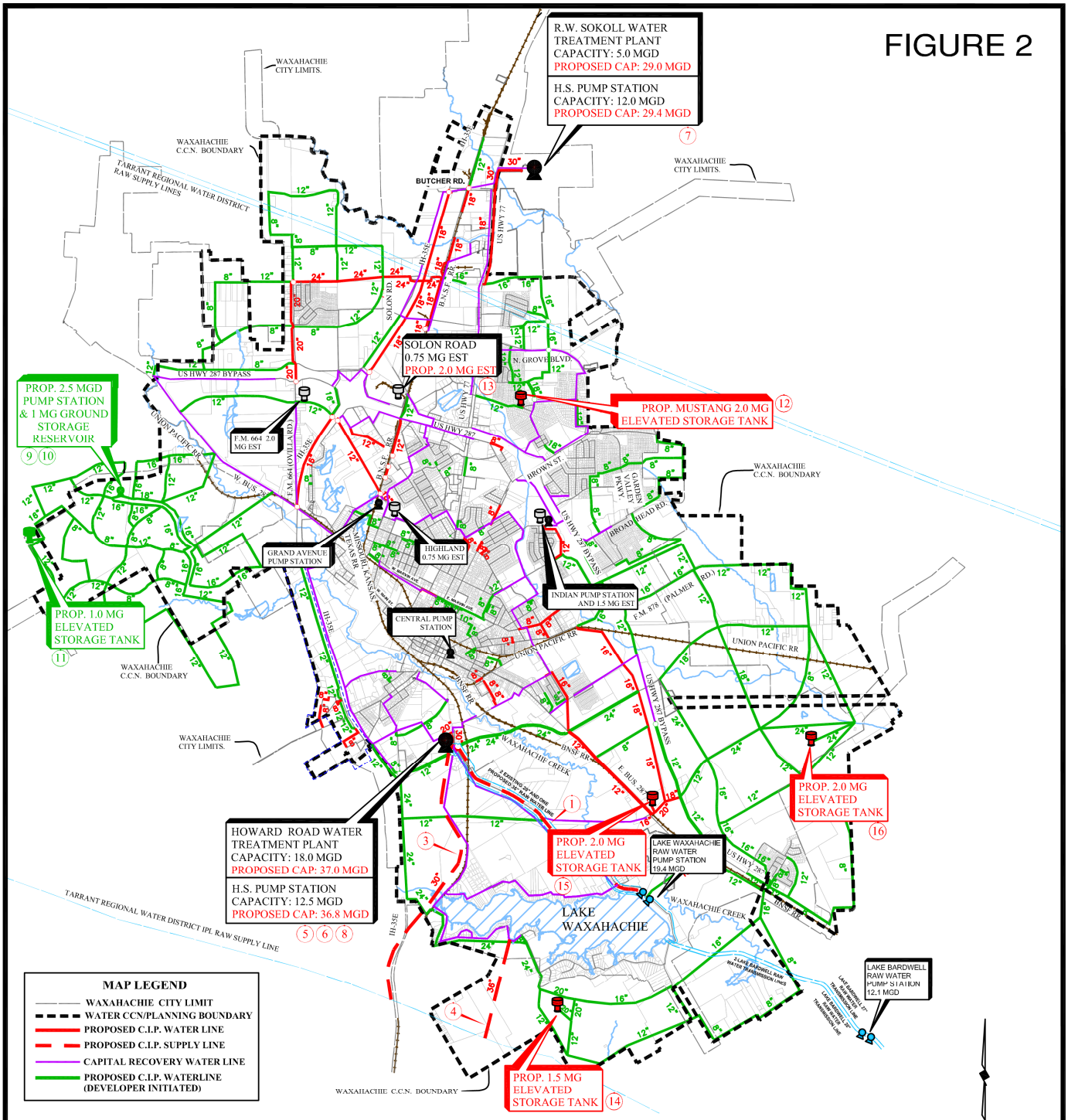
4) Capital Improvement Plan

The additions to the 2020 Water Distribution System, which are included in the Impact Fee study period, are shown in Figure 2 on the following page.

In order to meet the demands of the anticipated growth over the next 10-years, as provided in the Land Use Assumption Report, certain water distribution system improvements are required. Figure 2 shows the recommended total system improvements. Table No. 10 itemizes each project and the project cost.

Actual capital cost, including construction, engineering, and easements of the various elements of the existing water distribution and wastewater collection system was utilized where the information was known. The existing cost of facilities was determined from records provided by the City of Waxahachie. Where actual costs are not known, an average cost in 2020 dollars has been calculated. The average unit cost is from a limited survey of projects, which bid recently, plus an estimated cost for engineering and easements. These recommended improvements form the basis for the Water System Capital Improvement Plan and totals $143,334,042. Adding the cost of financing brings the total Water System Capital Improvement Plan cost to $220,379,366.

FIGURE 2



WATER DISTRICT SYSTEM 2020-2030 IMPACT FEE UPDATE CAPITAL IMPROVEMENT PLAN FULL SYSTEM

OCTOBER 2020

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TABLE NO. 10
IMPACT FEE CAPITAL IMPROVEMENT PLAN

Project I.D.		Project	Total Capital Cost [1]	Debt Service [2]	Total 20-Year Project Cost	10-Year Utilized Capacity Cost
		PROPOSED WATER FACILITIES				
1		Lake Waxahachie 36-inch Supply Line (19 MGD)	$7,200,000	$3,870,165	$11,070,165	$1,107,017
2		Purchase of Additional Raw Water Rights	$1,200,000	$645,027	$1,845,027	$184,503
3		Future 30-Inch Raw Water Line (TRWD IPL TO HOWARD RD. WTP)	$6,840,000	$3,676,657	$10,516,657	$1,051,666
4		Future 36-Inch Raw Water Line (TRWD IPL to LAKE WAXAHACHIE)	$3,528,000	$1,896,381	$5,424,381	$542,438
5		Howard Road WTP Improvements	$2,100,000	$1,128,798	$3,228,798	$322,880
6		Howard Road WTP Expansion	$40,000,000	$21,500,915	$61,500,915	$6,150,092
7		R.W. Sokoll WTP Expansion	$25,000,000	$13,438,072	$38,438,072	$3,843,807
8		Howard Road HS Pump Station Improvements	$1,400,000	$752,532	$2,152,532	$215,253
9	**	Future 868 Pump Station Phase I Improvements	$264,000	$141,906	$405,906	$40,591
10	**	Future 868 Ground Storage Reservoir	$240,000	$129,005	$369,005	$36,901
11	**	Future 868 Elevated Storage Tank	$480,000	$258,011	$738,011	$73,801
12		Future Mustang 2.0 MG Elevated Storage Tank	$3,600,000	$1,935,082	$5,535,082	$553,508
13		Future Solon Road 2.0 MG Elevated Storage Tank	$3,600,000	$1,935,082	$5,535,082	$553,508
14		Future 1.5 MG Elevated Storage Tank	$3,000,000	$1,612,569	$4,612,569	$461,257
15		Future 2.0 MG Elevated Storage Tank	$3,600,000	$1,935,082	$5,535,082	$553,508
16		Future 2.0 MG Elevated Storage Tank	$3,600,000	$1,935,082	$5,535,082	$553,508
17		CCN Acquisition	$750,000	$403,142	$1,153,142	$1,153,142
		SUBTOTAL:	**$106,402,000**	**$57,193,508**	**$163,595,508**	**$17,397,380**
		PROPOSED WATER LINES (TOTAL LINEAR FEET)				
	*	Total Length of 6-Inch Diameter Water Line: (1700)	$0	$0	$0	$0
	*	Total Length of 8-Inch Diameter Water Line: (171100)	$1,774,889	$954,042	$2,728,931	$2,459,446
	*	Total Length of 10-Inch Diameter Water Line: (3500)	$0	$0	$0	$0
	*	Total Length of 12-Inch Diameter Water Line: (274700)	$3,453,754	$1,856,471	$5,310,225	$3,944,611
	*	Total Length of 16-Inch Diameter Water Line: (99400)	$7,465,853	$4,013,068	$11,478,921	$4,117,625
	*	Total Length of 18-Inch Diameter Water Line: (46800)	$7,490,737	$4,026,441	$11,517,178	$4,284,508
	*	Total Length of 20-Inch Diameter Water Line: (10400)	$1,904,847	$1,023,898	$2,928,745	$1,186,741
	*	Total Length of 24-Inch Diameter Water Line: (58300)	$9,167,643	$4,927,819	$14,095,462	$5,653,721
	*	Total Length of 30-Inch Diameter Water Line: (12000)	$3,274,319	$1,760,022	$5,034,341	$1,987,018
		715/791 Boundary Line Adjustment	$2,400,000	$1,290,055	$3,690,055	$3,690,055
		SUBTOTAL:	**$36,932,042**	**$19,851,816**	**$56,783,858**	**$27,323,725**
		PROPOSED WATER SYSTEM TOTAL:	**$143,334,042**	**$77,045,324**	**$220,379,366**	**$44,721,105**

Notes:

(1) Opinion of Cost includes:
- a) Engineer's Opinion of Construction Cost
- b) Professional Services Fees (Survey, Engineering, Testing, Legal)
- c) Cost of Easement or Land Acquisitions

(2) Debt Service based on 20-year simple interest bonds at 4.5%

(3) * Developer initiated construction of proposed water lines 12-inch and smaller, with City participation in oversize cost

** Developer initiated construction of proposed facilities, with 20% City participation in project cost

5) Utilized Capacity

Utilized capacity for the water distribution system was calculated based on the size of water line required for each model year (2020, 2030 and Buildout). The models of the water distribution system are based on the 72-hour extended period simulation (EPS). The raw water pump stations, the water treatment plants, and pump stations capacities are generally based on the average or maximum daily system demand, while transmission and distribution facilities are sized based on either the maximum hourly demand or the minimum hourly demand, whichever demand is greater for a particular water line. Often times, the capacity of a water line is determined by the flows generated by the minimum hourly demand. The minimum hourly flows are usually higher in those lines which are used to refill elevated storage. Table No. 11 below shows the unit flow assumptions used for analysis of each element of the distribution system:

TABLE NO. 11
WATER DISTRIBUTION SYSTEM ANALYSIS
BASIS OF DEMAND CALCULATION

Type of Facilities	Demand Type	Impact Fee Per Capita Use
Pumping	Maximum Day	350 gallons/day per person
Distribution System	Maximum Hour	693 gallons/day per person
Ground Storage	Maximum Day x 6 Hours / 24 Hours / Day	
Elevated Storage	Maximum Hour (Distribution) –Maximum Day (Pumping) x 6 Hours / 24 Hours / Day	

For each line segment in the water distribution model, the Buildout flow rate in any given line was compared to the flow rate in the same line for the 2020 and the 2030 models. The utilized capacity was then calculated for each year based on the Buildout being 100 percent capacity. The utilized capacity during the Impact Fee period is the difference between the year 2020 percent utilized and the year 2030 percent utilized. The utilized capacity for each water distribution facility, both existing and proposed, is presented by the Impact Fee Capacity Calculation Tables provided in Appendix A. Table No. 12 summarizes the cost and the utilized capacity of the proposed water lines, pump stations, ground storage reservoirs and elevated storage facilities included, and the capital recovered in the impact fee period of 2020-2030. Table No. 12 also summarizes the cost and the utilized capacity for the existing lakes, water rights, treatment plants, water lines, pump stations, ground storage reservoirs and elevated storage facilities included and the capital recovered in the impact fee period.

TABLE NO. 12

SUMMARY OF ELIGIBLE CAPITAL COST & UTILIZED CAPACITY COST

Water System	Total 20-Year Project Cost	Utilized Capacity Cost During Fee Period
Existing Water Lines	$23,847,787	$2,831,133
Existing Water Facilities	$88,850,274	$8,675,553
Existing Water System Planning Expenses	$30,000	$30,000
Existing Water System Subtotal:	**$112,728,061**	**$11,536,686**
Proposed Water Lines	$56,783,858	$27,323,725
Proposed Water Facilities	$163,595,508	$17,397,380
Proposed Water System Subtotal:	**$220,379,366**	**$44,721,105**
Total:	**$333,107,427**	**$56,257,791**

F. WASTEWATER COLLECTION SYSTEM

1) General

As part of the 2016 Wastewater Master Plan Update for the City of Waxahachie, Birkhoff, Hendricks & Carter, L.L.P. developed a hydraulic model of the wastewater collection system. The model has been refined as part of the subsequent Master Plan and Impact Fee Updates to reflect the major projects constructed. The hydraulic wastewater analysis for this study was performed with InfoSewer ProSuite, Version 7.6 Software.

2) Major Basins

There are thirteen (13) major drainage basins within the wastewater planning area, the ETJ. These areas are typically defined by the natural topography. Each drainage basin is divided into sub-basins, generally defined by the existing wastewater collection system, major roads, and land uses. Figure 3 illustrates that general study area boundary and identifies the major wastewater collection basins. Flows generated from these basins reach the Jefferson Street Lift Station via the City's major collection lines and are conveyed by way of parallel 30-inch and 20-inch diameter force mains to the existing Wastewater Treatment Plant owned and operated by the City. The major basin boundaries, main trunk sewer lines, and the City's major collection lines are shown on the Wastewater Collection Master Plan Map included with the 2016 Wastewater Master Plan. The following alphabetically summarizes the major basins and their respective wastewater collection requirements during this impact fee period.

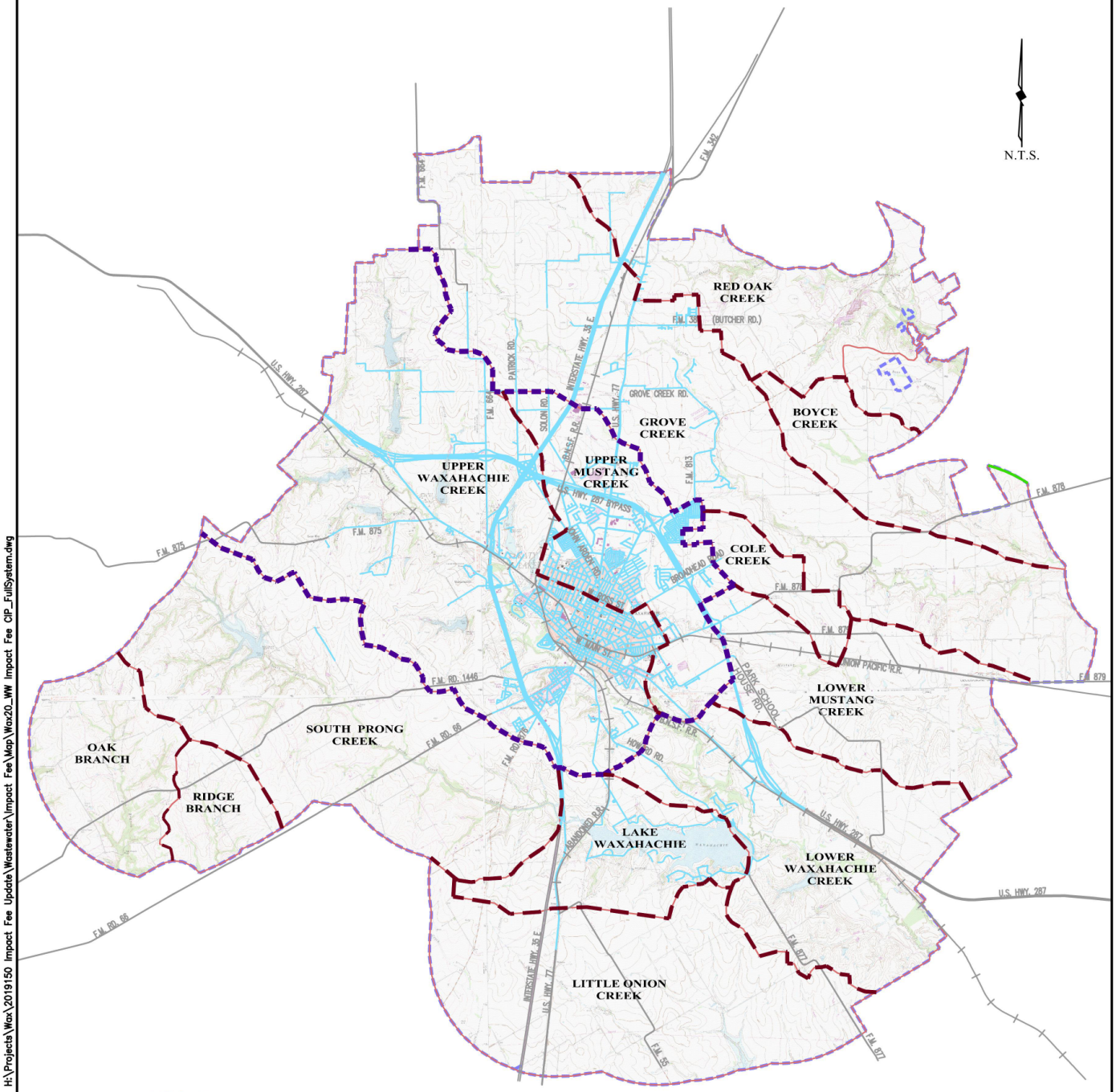
a) Boyce Creek Basin

The Boyce Creek Basin is located in the far eastern portion of the planning area. Boyce Creek flows southeasterly, parallel with Grove Creek. The existing wastewater collection system does not extend to service this basin.

b) Cole Creek Basin

The Cole Creek basin is located in a predominantly undeveloped area in the eastern portion of the planning area. The 24-inch Cole Creek Trunk Sewer was recently completed to provide ready service in the basin. The Cole Creek Trunk Sewer relieves Broadhead Road Lift Station, and for an interim period of time, will also support the growth in the Grove Creek Basin. The Grove Creek Lift Station force main was rerouted into the most northerly segment of the Cole Creek Trunk Sewer, which flows to the Lower Mustang Creek Lift Station.

FIGURE 3



WASTEWATER COLLECTION SYSTEM
2020-2030 IMPACT FEE UPDATE
BASIN MAP

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c) Grove Creek Basin

This basin collects the majority of the existing sanitary flow in the northern portion of the planning area. The Grove Creek basin is comprised of single family residential with commercial and industrial usage typically occurring along I.H. 35E. The flow in this drainage basin is pumped by the Grove Creek Lift Station located west of Grove Creek in the vicinity of Oak Creek Drive.

The Grove Creek Lift Station was recently expanded in capacity from 3.7 to 7.0 MGD, and its force main was redirected southerly to the new Cole Creek trunk sewer. The 18-inch trunk sewer upstream of the Grove Creek lift station is proposed to be paralleled with a 27-inch trunk sewer to support anticipated growth in the basin during the impact fee period.

A new lift station and trunk main is proposed in the basin, positioned downstream of the existing Grove Creek Lift Station, in east Waxahachie.

d) Lake Waxahachie Basin

The Lake Waxahachie Basin is located in a partially developed area in the southern portion of the planning area. This basin is not currently served by the existing collection system.

e) Little Onion Creek Basin

The Little Onion Creek Basin is located in an undeveloped area in the far south region of the planning area. Minimal growth is anticipated to occur in this basin during the impact fee period south of Lake Waxahachie.

f) Lower Mustang Creek Basin

The Lower Mustang Creek Basin is located in a future development area in the southeastern portion of the planning area. The existing flow produced by this basin is served by the existing Mustang Creek Lift Station and approximately 3-mile long, 14-inch force main. A parallel 20-inch force main is proposed to add capacity for the Mustang Creek Lift Station During the impact fee period. The 24-inch Cole Creek Trunk Sewer now connects to the 27-inch trunk sewer upstream of the Mustang Creek Lift Station. The Saddlebrook Estates off-site sanitary sewer, in the Little Waxahachie Creek basin, pumps into Lower Mustang Creek basin.

g) Lower Waxahachie Creek Basin

The Lower Waxahachie Creek Basin is located southeast of downtown and is distinguished from the Upper Waxahachie Creek Basin because it is downstream of the Jefferson Street Lift Station and WWTP. An interim sized lift station is proposed to provide new capacity to the upper basin during the impact fee period.

h) Oak Branch Basin

The Oak Branch Basin is located in the most westerly portion of the planning area and is currently not served by the existing collection system.

i) Red Oak Creek Basin

The Red Oak Creek Basin is in the far northeastern portion of the planning area boundary. The Red Oak Creek Basin boundary was slightly enlarged this update with the adjustment of the ETJ and planning area boundary line.

j) Ridge Branch Basin

The Ridge Branch Basin is in the westerly portion of the planning area boundary and lies between Oak Branch and South Prong Creek basins.

k) South Prong Creek Basin

The South Prong Creek Basin runs parallel with Waxahachie Creek to the south, and it is the surface water drainage area for Lake Waxahachie. Phase 1 of the South Prong Creek Lift Station is proposed during this impact fee period in response to projected growth in the upstream basin as well as its position to support flow transferred from Little Onion Creek and Lake Waxahachie basins.

l) Upper Mustang Creek Basin

The Upper Mustang Creek Basin is located in an established area, generally north of Ross Street and south of U.S. Highway 287 bypass. The basin is presently served by a trunk sewer (varying from 12-inch to 48-inch in diameter) following Mustang Creek from the BNSF railroad (formally M.K.T. Railroad) downstream to a point near Parks Schoolhouse Road where it crosses the natural drainage divide into the Waxahachie Creek Drainage Basin and out-falling into the Jefferson Street Lift Station. The existing facilities in this basin have adequate capacity to support growth occurring in the impact fee period.

m) Upper Waxahachie Creek Basin

Upper Waxahachie Creek serves the developed portion of Waxahachie south of a division line along Ross Street and Broadhead Road. This basin extends along Waxahachie Creek from the existing wastewater treatment plant on Howard Road until it meets the western portion of the planning boundary. Trunk sewer lines varying in diameter from 12 to 27-inches accommodate the flow produced by the Upper Waxahachie Creek Basin. The growth expected to occur within this basin over the duration of the impact fee period will be supported by developer initiated sanitary sewer lines ranging from 12 to 24-inches in diameter. No City initiated improvements are anticipated during the impact fee period.

3) Collection Lines

The wastewater collection system analysis covered all drainage basins within the study area. Recall that the basis for this impact fee update analysis is a 'Full System' configuration. In certain cases, interim facilities are required to provide service for growth areas prior to construction of the larger buildout facility. These interim improvements respond to growth and maximize the useful life of existing and interim City assets. It is assumed for the purpose of this analysis that these interim improvements will remain in service for the duration of the 10-year period, although in some cases at a reduced rate of utilization due to construction of more regional downstream improvements. Generally, sanitary sewer line sizes 12-inches in diameter and smaller were omitted from the calculation of maximum impact fee, unless identified as a City-initiated and funded capital improvement project.

The wastewater project cost includes necessary appurtenances (manholes, aerial crossings, and the like), purchase of easements, utility relocation, pavement removal and replacement, and engineering costs. For existing Impact Fee projects, actual costs were utilized where known and provided by the City. Future project cost estimates were based on 2020 average unit cost per linear feet and includes engineering, easements, and construction cost. Financing cost is included for each project assuming a bond rate of 4.5% over a 20-year term.

Unit cost for proposed sanitary sewer lines larger than 12-inches in diameter, which are anticipated to be constructed by private development, include the City's oversize cost participation only. Developer-initiated projects are shown in green on Figure 4. City-initiated sanitary sewer lines include the full cost of the proposed improvements. Developer-initiated sanitary sewer line projects which are 12-inches or less in diameter are

not included in this Impact Fee analysis, as the cost for these size lines are the responsibility of the developer.

All eligible existing sanitary sewer lines within the study area that were paid for by the City and have capacity available were included in the Impact Fee Study. The eligible existing and proposed wastewater lines and facilities are shown on Figure 4.

4) <u>Treatment</u>

The City of Waxahachie is currently the sole provider of wastewater collection and wastewater treatment for the Planning Area. This Impact Fee study includes the cost of the collection and treatment facilities, both existing and proposed.

The original construction of the Wastewater Treatment Plant (WWTP) was in 1974. The plant was then expanded in 1987 and again in 2005 to its current rated capacity of 8 MGD on an annual average day flow basis.

The City's wastewater treatment plant consultant, Kimley Horn & Associates, prepared the Waxahachie Wastewater Treatment Plant Master Plan Update and Biosolids Assessment in 2017, which addressed both immediate (Phase 1) and future (Phase 2) WWTP project needs and expenses. The project cost of those Phase 1 items that were found to contribute additional capacity or otherwise improve the overall ability of the plant to provide reliable service for future growth, were included in the Impact Fee study.

The future Phase 2 project identified those improvements necessary for the existing WWTP capacity expansion from 8 to 12 MGD. Considering current usage of the plant's existing 8 MGD capacity, and projected growth anticipated in the 10-year impact fee period, the planning and engineering phases for the expansion are expected to be completed, with construction started during the 10-year impact fee period.

A new WWTP, identified as Waxahachie WWTP No. 2, is also included in the Impact Fee study. WWTP No. 2 is shown to be conceptually located near the southern planning boundary in the Lower Waxahachie Creek basin.

5) Capital Improvement Plan

a) Proposed

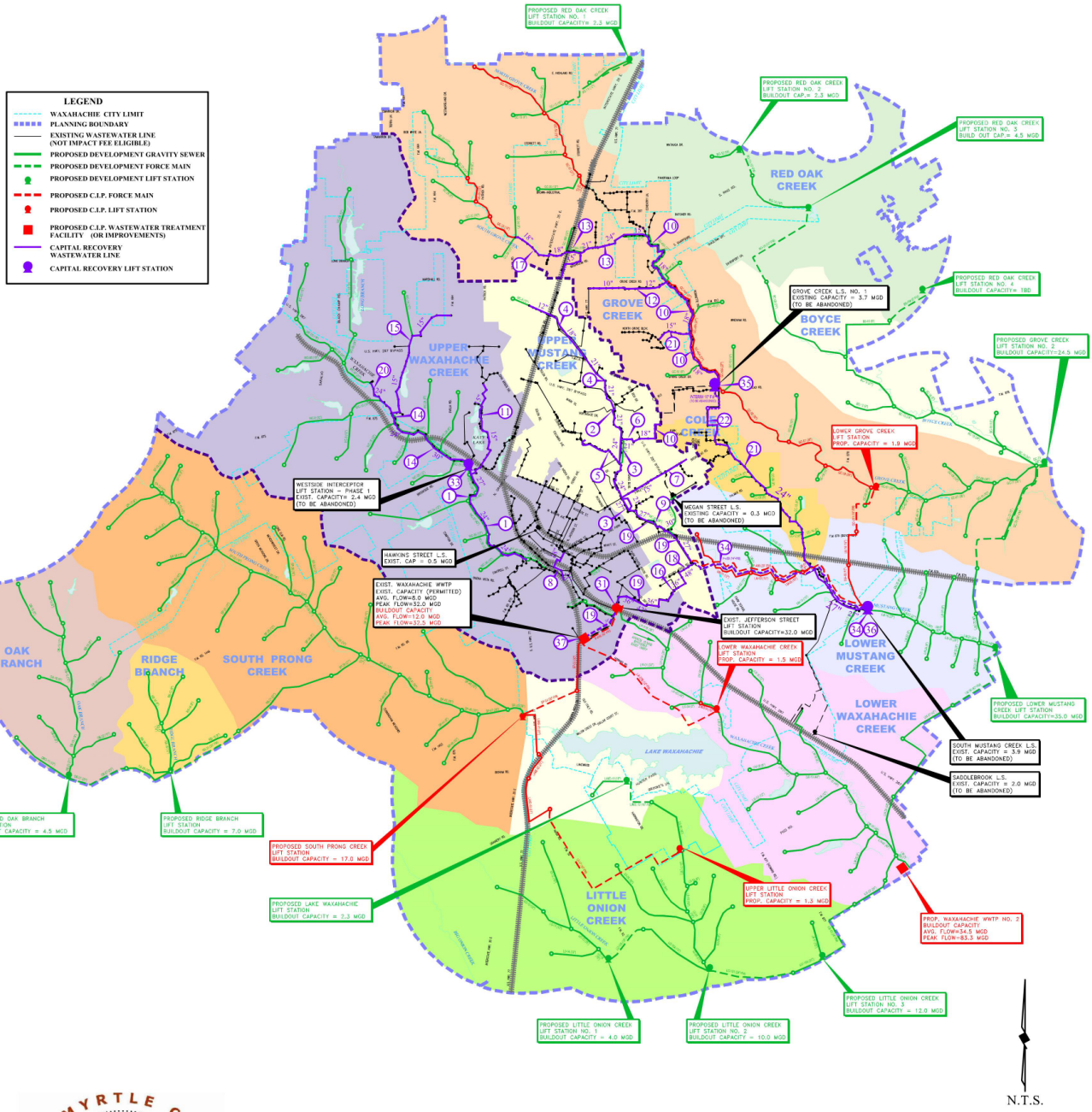
Figure 4 shows the proposed pipes and facilities used in the Full System analysis. This form of analysis was selected by the City to maximize flexibility for the City to respond to development, wherever it may occur. City-initiated projects that are proposed to provide interim lift station service in the next 10-years are also included in the analysis using estimated useful life in the calculation. It should be noted that not all of the developer-initiated pipes shown in Figure 4 are anticipated to be constructed in the 10-year period. Hydraulic model flow rates calculated from City Land Use projections determined the utilized capacities in the wastewater impact fee calculation.

Table No. 13 summarizes the costs and utilized capacity costs associated with the 10-year Capital Improvement Plan (CIP) for proposed facility and pipe projects.

b) Existing

Over time as growth has occurred, the City has improved the wastewater collection system by constructing collection lines, lift stations, force mains and treatment expansions to provide capacity for the increasing wastewater flows. These projects are referred to as recovery facilities and are shown in purple on Figure No. 4. Actual capital cost, including construction, engineering, and easements of the various elements of the existing wastewater system was utilized where the information was known and provided by the City. Where actual costs are not known, an average cost was calculated.

FIGURE 4



WASTEWATER COLLECTION SYSTEM
2020-2030 IMPACT FEE UPDATE
CAPITAL IMPROVEMENT PLAN
FULL SYSTEM

OCTOBER 2020

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REVISED: 10/10/20 – CBURGETT

TABLE NO. 13
IMPACT FEE CAPITAL IMPROVEMENT PLAN

Project I.D.	Project	Total Capital Cost [1]	Debt Service [2]	Total 20-Year Project Cost	10-Year Utilized Capacity Cost
	PROPOSED WASTEWATER LIFT STATIONS & TREATMENT				
SP-54	South Prong LS	$7,140,424	$3,838,141	$10,978,565	$356,115
RO-15	Red Oak LS #3	$3,036,131	$1,631,990	$4,668,121	$9,141
RO-13	Red Oak LS #2	$668,067	$359,101	$1,027,168	$269,998
RO-11	Red Oak LS #1	$1,055,405	$567,304	$1,622,709	$487,480
RB-20	Ridge Branch LS	$3,336,503	$1,793,447	$5,129,950	$76,730
P-416	Jefferson St. Parallel FM	$5,031,768	$2,704,690	$7,736,458	$1,317,628
P-1275B	Westside Interceptor Upsize FM	$421,656	$226,650	$648,306	$72,917
OB-27	Oak Branch LS	$2,849,351	$1,531,591	$4,380,942	$63,979
LO-101	Little Onion LS #2	$3,434,931	$1,846,354	$5,281,285	$50,458
LO-100	Little Onion LS #1	$1,492,896	$802,466	$2,295,362	$195,193
LM-36	Lower Mustang LS	$14,705,143	$7,904,351	$22,609,494	$174,524
LB-13	Little Onion LS #3	$2,122,071	$1,140,662	$3,262,733	$18,486
LAKE-12	Lake Waxahachie LS	$963,070	$517,672	$1,480,742	$89,789
GC-75	Lower Grove Creek LS #2	$11,900,137	$6,396,596	$18,296,733	$1,680,266
BBFM	Red Oak LS #4	$588,099	$316,117	$904,216	$266,796
6	Lower Grove Creek Lift Station & Force Main	$4,143,600	$2,227,280	$6,370,880	$1,676,547
8	Lower Mustang Creek Parallel Force Main	$5,198,400	$2,794,259	$7,992,659	$2,497,706
10	Lower Waxahachie Creek Lift Station & Force Main	$2,920,800	$1,569,997	$4,490,797	$1,603,856
12	South Prong Creek Lift Station & Force Main	$6,686,400	$3,594,093	$10,280,493	$902,153
15	Upper Little Onion Creek Lift Station & Force Main	$4,598,400	$2,471,745	$7,070,145	$1,414,029
18A	WWTP No.1 - Thickener Addition (50% Eligible)	$2,115,000	$1,136,861	$3,251,861	$2,114,198
18B	WWTP No.1 - Impound Basin Improvements (100% Eligible)	$1,175,000	$631,589	$1,806,589	$1,174,554
18C	WWTP No.1 - Site Electrical (50% Eligible)	$4,112,500	$2,210,563	$6,323,063	$4,110,941
19	WWTP No.1 - Expansion to 12-MGD	$7,050,000	$3,789,536	$10,839,536	$7,047,326
WWTP#2	Wastewater Treatment Plant No.2	$276,000,000	$148,356,317	$424,356,317	$7,762,294
	SUBTOTAL:	**$372,745,752**	**$200,359,372**	**$573,105,124**	**$35,433,104**
	SUMMARY OF PROPOSED WASTEWATER COLLECTION LINES				
8	Total Length of 8-Inch Diameter Gravity Sewer: (197,500)	$0	$0	$0	$0
10	Total Length of 10-Inch Diameter Gravity Sewer: (133,500)	$0	$0	$0	$0
12	Total Length of 12-Inch Diameter Gravity Sewer: (157,900)	$0	$0	$0	$0
15	Total Length of 15-Inch Diameter Gravity Sewer: (56,500)	$3,613,580	$1,942,382	$5,555,962	$637,911
18	Total Length of 18-Inch Diameter Gravity Sewer: (64,400)	$5,250,306	$2,822,160	$8,072,466	$299,222
21	Total Length of 21-Inch Diameter Gravity Sewer: (53,300)	$7,321,142	$3,935,281	$11,256,423	$649,401
24	Total Length of 24-Inch Diameter Gravity Sewer: (34,300)	$4,120,806	$2,215,027	$6,335,833	$205,763
27	Total Length of 27-Inch Diameter Gravity Sewer: (28,300)	$6,305,716	$3,389,467	$9,695,183	$1,582,811
30	Total Length of 30-Inch Diameter Gravity Sewer: (32,300)	$6,790,724	$3,650,170	$10,440,894	$212,031
33	Total Length of 33-Inch Diameter Gravity Sewer: (1,500)	$380,351	$204,447	$584,798	$17,929
36	Total Length of 36-Inch Diameter Gravity Sewer: (63,400)	$20,914,296	$11,241,913	$32,156,209	$3,940,273
39	Total Length of 39-Inch Diameter Gravity Sewer: ()	$0	$0	$0	$0
42	Total Length of 42-Inch Diameter Gravity Sewer: (44,600)	$15,625,366	$8,398,991	$24,024,357	$926,099
48	Total Length of 48-Inch Diameter Gravity Sewer: (22,000)	$9,658,994	$5,191,930	$14,850,924	$2,077,107
54	Total Length of 54-Inch Diameter Gravity Sewer: ()	$0	$0	$0	$0
60	Total Length of 60-Inch Diameter Gravity Sewer: ()	$0	$0	$0	$0
66	Total Length of 66-Inch Diameter Gravity Sewer: (1,500)	$1,061,819	$570,752	$1,632,571	$94,983
72	Total Length of 72-Inch Diameter Gravity Sewer: ()	$0	$0	$0	$0
	SUBTOTAL:	**$81,043,100**	**$43,562,520**	**$124,605,620**	**$10,643,530**
	PROPOSED WASTEWATER SYSTEM TOTAL:	**$453,788,852**	**$243,921,892**	**$697,710,744**	**$46,076,634**

6) Utilized Capacity

The utilized capacities for the wastewater collection system were calculated based on land absorption from population growth projections provided by the Land Use Assumptions prepared by Freese & Nichols. The population and employment growths were provided for sixty-five unique areas (Traffic Survey Zones (TSZ)) within the planning boundary that were established by the North Central Texas Council of Governments (NCTCOG). The growth rates in each TSZ were used to calculate 2020, 2030 and Buildout design flows that were applied to the hydraulic model. Utilized capacities were calculated using model-reported peak flow rates for each pipe segment in the analysis. The following summarizes each design flow component used to calculate the wastewater design flows.

a) Population Based Flow (Residential): For the purpose of this wastewater impact fee study base residential units flow of 90 gallons per capita per day (gpcd). Average daily flow rates were multiplied in the model by a uniformly-applied diurnal curve pattern which allows the hydraulic model to simulate a 24-hour cycle that follows the temporal variations in a wastewater system.

b) Non-Population Based Flow (Non-Residential): Non-residential average flows are estimated based on an average daily flow per acre for each non-residential land use category. Commercial/Retail/Public base unit flows generally ranged from 625 to 950 gallons per acre per day (gpad) in average dry weather flow conditions, while Industrial and future Mixed Use and Highway Commercial were estimated at 1,000 to 1,100 gpad.

c) Infiltration and Inflow (I&I): Groundwater Infiltration into the sanitary sewer system occurs at faulty sewer pipe joints, breaks in sewer pipes and manholes and faulty service lines. This infiltration can create a flow burden on the wastewater collection system and treatment plant. Normal plant capacity must be designed to handle these infiltration related conditions.

Inflow is a more rapid entry of surface water to the collection system following a rainfall event. The additional flow is generally recognized to enter through manhole openings, service line cleanouts, badly deteriorated collection lines, roof drains and storm drains. Excessive inflow can cause capacity issues in the collection system, including gravity sewer Sanitary Sewer Overflows (SSO's). Excessive peak wet-weather flows contribute to the risk of exceeding treatment facility capacity.

The effects of infiltration and inflow were simulated in the hydraulic model using a 5-year/6-hour design storm.

The City is currently engaged with Birkhoff, Hendricks, & Carter, on a system-wide temporary wastewater flow monitoring program aimed at identifying areas of the existing sanitary sewer system that contribute significant inflow or infiltration volumes. One of the next steps for the City will be to rehabilitate the key areas of the system identified as high I&I contributors.

The percent-utilized capacity was calculated from comparison of hydraulic model flow rates in the Existing and 10-year development conditions. Both flow rates are converted to percentage of the Buildout flow rate for each modeled pipe segment, and the difference taken is the percent-utilized in the 10-year period. The hydraulic model loads follow the growth projections provided for year 2020, the year 2030 and for Buildout.

Table No. 14 below summarizes the project cost and utilized cost over the impact fee period of 2020 – 2030 for each element of the wastewater system. The utilized capacity for each existing and proposed wastewater facility and collection line is presented in detail in the Wastewater Impact Fee Tables.

TABLE NO. 14
SUMMARY OF ELIGIBLE CAPITAL COST & UTILIZED CAPACITY COST

Wastewater System	Total 20-Year Project Cost	Utilized Capacity Cost During Fee Period
Existing Wastewater Collection Lines	$25,349,103	$6,958,717
Existing Wastewater Facilities	$48,027,859	$12,632,845
Existing Wastewater System Planning Expenses	$30,000	$30,000
Existing Wastewater System Subtotal:	**$73,406,962**	**$19,621,562**
Proposed Wastewater Collection Lines	$124,605,620	$10,643,530
Proposed Wastewater Facilities	$573,105,124	$35,433,104
Proposed Wastewater System Subtotal:	**$697,710,744**	**$46,076,634**
Total:	**$771,117,706**	**$65,698,196**

G. CALCULATION OF MAXIMUM IMPACT FEES - WATER & WASTEWATER SYSTEM

The maximum impact fees for the water and wastewater systems are calculated separately by dividing the cost of the capital improvements or facility expansions necessitated and attributable to new development in the service area within the ten year period by the number of living units anticipated to be added to City within the ten year period as shown on Table No. 3 and No. 4. The calculations are shown below:

The **Water System** impact fee for a 5/8" x 3/4" water meter is calculated as follows:

$$\textbf{Maximum Water Impact Fee} = \frac{\text{Eligible Existing Utilized Cost} + \text{Eligible Proposed Utilized Cost}}{\text{Number of New Living Unit Equivalent over the Next 10 Years}}$$

$$= \frac{\$11{,}536{,}686 + \$44{,}721{,}105}{8{,}590} = \frac{\$56{,}257{,}791}{8{,}590}$$

Calculated Maximum Impact Fee = $ 6,549.22

***Allowable Maximum Water Impact Fee: (Max Impact Fee x 50%) = $ 3,274.61**

** Maximum allowable impact fee is 50% of the maximum calculated impact fee per Chapter 395 LGC*

The **Wastewater System** impact fee for a 5/8" x 3/4" water meter user is calculated as follows:

$$\textbf{Maximum Wastewater Impact Fee} = \frac{\text{Eligible Existing Utilized Cost} + \text{Eligible Proposed Utilized Cost}}{\text{Number of New Living Unit Equivalent over the Next 10 Years}}$$

$$= \frac{\$19{,}621{,}562 + \$46{,}076{,}634}{8{,}688} = \frac{\$65{,}698{,}196}{8{,}688}$$

Calculated Maximum Impact Fee = $ 7,561.95

***Allowable Maximum Wastewater Impact Fee: (Max Impact Fee x 50%) = $ 3,780.97**

** Maximum allowable impact fee is 50% of the maximum calculated impact fee per Chapter 395 LGC*

Based on the Maximum Impact Fee Calculation for Water and Wastewater, Table No. 15 calculates the maximum impact fee for the various sizes of water meters.

TABLE NO. 15
ALLOWABLE MAXIMUM FEE PER LIVING UNIT EQUIVALENT
AND
PER METER SIZE AND TYPE

50% Max . Water Impact Fee /LUE $3,274.61
50% Max . Wastewater Impact Fee /LUE $3,780.97

Meter Type	Meter Size	LUE	Maximum Impact Fee		Total
			Water	Wastewater	
Simple	5/8" x 3/4"	1	$3,275	$3,781	$7,056
Simple	1"	2.5	$8,187	$9,452	$17,639
Simple	1-1/2"	5	$16,373	$18,905	$35,278
Simple	2"	8	$26,197	$30,248	$56,445
Compound	2"	8	$26,197	$30,248	$56,445
Turbine	2"	10	$32,746	$37,810	$70,556
Compound	3"	16	$52,394	$60,496	$112,889
Turbine	3"	24	$78,591	$90,743	$169,334
Compound	4"	25	$81,865	$94,524	$176,390
Turbine	4"	42	$137,534	$158,801	$296,335
Compound	6"	50	$163,731	$189,049	$352,779
Turbine	6"	92	$301,264	$347,850	$649,114
Compound	8"	80	$261,969	$302,478	$564,447
Turbine	8"	160	$523,938	$604,956	$1,128,893
Compound	10"	115	$376,580	$434,812	$811,392
Turbine	10"	250	$818,653	$945,243	$1,763,896
Turbine	12"	330	$1,080,621	$1,247,721	$2,328,343

APPENDIX A

WATER IMPACT FEE TABLES

TABLE A-1
FULL SYSTEM: Existing Water Facilities

Project No.	Water Facility Improvements	Year Const.	Estimated Capacity	Cost ($)				Capacity Utilized (%)			Capacity Utilized ($)		
				Total Capital Cost	Debt Service Interest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost $	2020	2030	In The CRF Period	2020	2030	In The CRF Period
	Water Supply												
35	(1) Lake Waxahachie	1954	11.6 MGD	$370,000	4.5%	$198,883	$568,883	28%	38%	10%	$158,324	$213,871	$55,547
36	(1) Waxahachie Dam Improvements	1993	11.6 MGD	$3,233,803	4.5%	$1,738,243	$4,972,046	28%	38%	10%	$1,383,753	$1,869,235	$485,482
37	(1) Water Rights in Lake Bardwell	1986	11.6 MGD	$909,800	4.5%	$489,038	$1,398,838	28%	38%	10%	$389,306	$525,892	$136,586
38	(1) W.W. Return Rate Water Rights in Lake Bardwell	1998	11.6 MGD	$10,500	4.5%	$5,644	$16,144	28%	38%	10%	$4,493	$6,069	$1,576
39	(1) Tarrant County Regional Water Rights	1991	4.6 MGD	$138,254	4.5%	$74,315	$212,569	28%	38%	10%	$59,159	$79,915	$20,756
40	(1) Tarrant County Regional Water Rights	2000	4.6 MGD	$479,288	4.5%	$257,628	$736,916	28%	38%	10%	$205,089	$277,043	$71,954
	Water Supply Subtotal:			**$5,141,645**		**$2,763,751**	**$7,905,396**				**$2,200,124**	**$2,972,025**	**$771,901**
	Raw Water Delivery												
41	(1) Lake Waxahachie Raw Water Pump Station #1	1954		$345,000	4.5%	$185,445	$530,445	28%	38%	10%	$147,626	$199,420	$51,794
42	(1) Lake Waxahachie Raw Water Pump Station #2	1991		$1,066,698	4.5%	$573,375	$1,640,073	28%	38%	10%	$456,443	$616,584	$160,141
43	(1) Lake Waxahachie Raw Water Pump Station #2 Expansion	2001		$507,150	4.5%	$272,605	$779,755	28%	38%	10%	$217,011	$293,148	$76,137
44	(1) Lake Waxahachie Raw Water Line #1	1954		$187,000	4.5%	$100,517	$287,517	28%	38%	10%	$80,018	$108,092	$28,074
45	(1) Lake Waxahachie Raw Water Line #2	1982		$607,802	4.5%	$326,707	$934,509	28%	38%	10%	$260,080	$351,328	$91,248
46	(1) Lake Waxahachie Raw Water Line Pig Launching Station	2001		$150,000	4.5%	$80,628	$230,628	28%	38%	10%	$64,185	$86,704	$22,519
47	(1) Bardwell Pump Station Raw Water Pump Station	1980		$647,937	4.5%	$348,281	$996,218	28%	38%	10%	$277,254	$374,527	$97,273
48	(1) Bardwell Pump Station Raw Water Pump Station Expansion #1	1997		$281,000	4.5%	$151,044	$432,044	28%	38%	10%	$120,241	$162,426	$42,185
49	(1) Bardwell Pump Station Raw Water Pump Station Expansion #2	2000		$581,285	4.5%	$312,454	$893,739	28%	38%	10%	$248,733	$336,000	$87,267
50	(1) Lake Bardwell Raw Water Line #1	1982		$1,364,073	4.5%	$733,220	$2,097,293	28%	38%	10%	$583,690	$788,475	$204,785
51	(1) Lake Bardwell Raw Water Line #2	2000		$3,994,000	4.5%	$2,146,866	$6,140,866	28%	38%	10%	$1,709,043	$2,308,652	$599,609
52	(1) Backside of Dam, Raw Water Supply Line	2004		$290,275	4.5%	$156,029	$446,304	28%	38%	10%	$124,209	$167,787	$43,578
53	(1) Lake Waxahachie Water Line #3*	2008		$2,895,000	4.5%	$1,556,129	$4,451,129	28%	38%	10%	$1,238,778	$1,673,397	$434,619
54	(1) R.W. Sokoll Water Treatment Plant Raw Water Line*	2008		$1,680,000	4.5%	$903,038	$2,583,038	28%	38%	10%	$718,876	$971,090	$252,214
55	(1) Howard Road Land Acquisition - Future Expansion of Howard Road WTP	0		$146,123	4.5%	$78,545	$224,668	28%	38%	10%	$62,527	$84,464	$21,937
	Raw Water Delivery Subtotal:			**$14,743,343**		**$7,924,883**	**$22,668,226**				**$6,308,714**	**$8,522,094**	**$2,213,380**
	Water Treatment Facilities												
56	(1) Water Treatment Plant			$345,000	4.5%	$185,445	$530,445	28%	38%	10%	$147,626	$199,420	$51,794
57	(1) Water Treatment Plant Expansion #1	1973	5.0 MGD	$1,015,036	4.5%	$545,605	$1,560,641	28%	38%	10%	$434,337	$586,721	$152,384
58	(1) Water Treatment Plant Expansion #2	1991	10.0 MGD	$4,025,687	4.5%	$2,163,899	$6,189,586	28%	38%	10%	$1,722,602	$2,326,968	$604,366
59	(1) Water Treatment Plant Expansion #3	2001	15.0 MGD	$653,791	4.5%	$351,428	$1,005,219	28%	38%	10%	$279,759	$377,911	$98,152
60	(1) RW Sokoll Water Treatment Plant	2008	25 MGD	$18,504,000	4.5%	$9,946,323	$28,450,323	28%	38%	10%	$7,917,912	$10,695,869	$2,777,957
61	(1) Clearwell #2	1973	1.0 MG	$226,356	4.5%	$121,672	$348,028	28%	38%	10%	$96,858	$130,841	$33,983
62	(1) Clearwell #3	1999	3.0 MG	$2,166,000	4.5%	$1,164,275	$3,330,275	28%	38%	10%	$926,837	$1,252,013	$325,176
63	(1) R.W. Sokoll Water Treatment Plant-Clearwell	2008	4.0 MG	$700,000	4.5%	$376,266	$1,076,266	28%	38%	10%	$299,532	$404,621	$105,089
64	(1) Grand Ave Pump Station	1964		$110,000	4.5%	$59,128	$169,128	28%	38%	10%	$47,069	$63,583	$16,514
	Water Treatment Facilities Subtotal:			**$27,745,870**		**$14,914,041**	**$42,659,911**				**$11,872,532**	**$16,037,947**	**$4,165,415**

TABLE A-1
FULL SYSTEM: Existing Water Facilities

Project No.	Water Facility Improvements	Year Const.	Estimated Capacity	Cost ($)				Capacity Utilized (%)			Capacity Utilized ($)		
				Total Capital Cost	Debt Service Interest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost $	2020	2030	In The CRF Period	2020	2030	In The CRF Period
	High Service Pump Stations												
65	(1) Grand Ave Pump Station- Pump No. 2 Replacement	1999		$128,166	4.5%	$68,892	$197,058	28%	38%	10%	$54,842	$74,084	$19,242
66	(1) Indian Pump Station	2000		$822,000	4.5%	$441,844	$1,263,844	28%	38%	10%	$351,736	$475,141	$123,405
67	(1) Water Treatment Plant High Service Pump Station- Metering and Piping	2004		$465,321	4.5%	$250,121	$715,442	28%	38%	10%	$199,112	$268,970	$69,858
68	(1) Indian Towers Pump Station-Pumps 3 & 4	2006		$389,048	4.5%	$209,122	$598,170	28%	38%	10%	$166,475	$224,881	$58,406
69	(1) R.W. Sokoll Water Treatment Plant-High Service Pump Station	2008		$2,171,049	4.5%	$1,166,989	$3,338,038	28%	38%	10%	$928,998	$1,254,932	$325,934
	High Service Pump Stations Subtotal:			**$3,975,584**		**$2,136,968**	**$6,112,552**				**$1,701,163**	**$2,298,008**	**$596,845**
	Ground Storage Reservoir												
70	(1) Grand Ave Ground Storage Reservoir	1974	1.0 MG	$232,000	4.5%	$124,705	$356,705	28%	38%	10%	$99,273	$134,103	$34,830
71	(1) Indian Pump Station Ground Storage Reservoir	2001	1.0 MG	$1,396,608	4.5%	$750,709	$2,147,317	28%	38%	10%	$597,612	$807,282	$209,670
	Ground Storage Reservoir Subtotal:			**$1,628,608**		**$875,414**	**$2,504,022**				**$696,885**	**$941,385**	**$244,500**
	Elevated Storage Tanks												
72	(1) Highland Elevated Storage Tank	1958	0.75 MG	$220,000	4.5%	$118,255	$338,255	28%	38%	10%	$94,139	$127,167	$33,028
73	(1) Solon Road Elevated Storage Tank	1964	0.75 MG	$385,000	4.5%	$206,946	$591,946	28%	38%	10%	$164,742	$222,541	$57,799
74	(1) Indian Tower Elevated Storage Tank	1987	1.5 MG	$1,055,947	4.5%	$567,596	$1,623,543	28%	38%	10%	$451,843	$610,369	$158,526
75	(1) F.M. 664 Elevated Storage Tank	2007	2.0 MG	$2,891,940	4.5%	$1,554,484	$4,446,424	28%	38%	10%	$1,237,469	$1,671,628	$434,159
	Elevated Storage Tanks Subtotal:			**$4,552,887**		**$2,447,281**	**$7,000,168**				**$1,948,193**	**$2,631,705**	**$683,512**
	TOTAL EXISTING WATER FACILITIES:			**$57,787,936**		**$31,062,338**	**$88,850,274**				**$24,727,611**	**$33,403,164**	**$8,675,553**

(1) Cost Obtained from Previous Impact Fees

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
1 - Water Distribution System Additions													
1973-146 20-inch to 8-inch, $872,300 Construction & $90,712 Engineering													
1276	999	14	$47.68	$47,635	4.5%	$25,605	$73,240	100%	100%	0%	$73,240	$73,240	$0
1277	1,256	14	$47.68	$59,889	4.5%	$32,192	$92,081	100%	100%	0%	$92,081	$92,081	$0
1278	242	14	$47.68	$11,539	4.5%	$6,202	$17,741	100%	100%	0%	$17,741	$17,741	$0
1279	272	14	$47.68	$12,970	4.5%	$6,972	$19,942	100%	100%	0%	$19,942	$19,942	$0
1280	276	14	$47.68	$13,160	4.5%	$7,074	$20,234	100%	100%	0%	$20,234	$20,234	$0
1281	272	14	$47.68	$12,970	4.5%	$6,972	$19,942	100%	100%	0%	$19,942	$19,942	$0
1283	1,092	16	$47.68	$52,070	4.5%	$27,989	$80,059	100%	100%	0%	$80,059	$80,059	$0
1284	2,030	16	$47.68	$96,796	4.5%	$52,030	$148,826	100%	100%	0%	$148,826	$148,826	$0
1285	1,562	12	$47.68	$74,478	4.5%	$40,034	$114,512	100%	100%	0%	$114,512	$114,512	$0
1322	943	14	$47.68	$44,987	4.5%	$24,182	$69,169	100%	100%	0%	$69,169	$69,169	$0
1547	3,255	24	$47.68	$155,201	4.5%	$83,424	$238,625	100%	100%	0%	$238,625	$238,625	$0
1574	5,862	14	$47.68	$279,516	4.5%	$150,246	$429,762	100%	100%	0%	$429,762	$429,762	$0
1742	1,994	24	$47.68	$95,075	4.5%	$51,105	$146,180	100%	100%	0%	$146,180	$146,180	$0
2182	141	14	$47.68	$6,726	4.5%	$3,615	$10,341	100%	100%	0%	$10,341	$10,341	$0
Subtotal:	**20,196**		**$47.68**	**$963,012**	**4.5%**	**$517,642**	**$1,480,654**				**$1,480,654**	**$1,480,654**	**$0**
2 - U.S. Highway 287 Bypass Water Line													
1985-168, 12-inch water line $80,401 construction and $8,775 Engineering													
5204	2,476	12	$18.74	$46,389	4.5%	$24,935	$71,324	100%	100%	0%	$71,324	$71,324	$0
5280	1,241	12	$18.74	$23,255	4.5%	$12,500	$35,755	100%	100%	0%	$35,755	$35,755	$0
5479	1,042	12	$18.74	$19,532	4.5%	$10,499	$30,031	100%	100%	0%	$30,031	$30,031	$0
Subtotal:	**4,759**		**$18.74**	**$89,176**	**4.5%**	**$47,934**	**$137,110**				**$137,110**	**$137,110**	**$0**
3 - Eastside Water Line													
89115, 24-inch water line $1,019, 000 construction, $99.776 Engineering													
1166	181	24	$90.69	$16,414	4.5%	$8,823	$25,237	63%	63%	0%	$15,899	$15,899	$0
1542	1,239	24	$90.69	$112,361	4.5%	$60,397	$172,758	74%	74%	0%	$127,841	$127,841	$0
1547	3,255	24	$90.69	$295,175	4.5%	$158,663	$453,838	100%	100%	0%	$453,838	$453,838	$0
1548	3,080	24	$90.69	$279,297	4.5%	$150,129	$429,426	55%	55%	0%	$236,184	$236,184	$0
1549	314	24	$90.69	$28,476	4.5%	$15,307	$43,783	54%	54%	0%	$23,643	$23,643	$0
1742	1,994	24	$90.69	$180,822	4.5%	$97,196	$278,018	100%	100%	0%	$278,018	$278,018	$0
1791	2,274	24	$90.69	$206,231	4.5%	$110,854	$317,085	59%	59%	0%	$187,080	$187,080	$0
Subtotal:	**12,337**		**$90.69**	**$1,118,776**	**4.5%**	**$601,369**	**$1,720,145**				**$1,322,503**	**$1,322,503**	**$0**

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
4 - Lake Waxahachie Water Line Extension													
1997-124 8-Inch Water Line. $67,372 Construction													
1116	1,834	8	$36.74	$67,372	4.5%	$36,214	$103,586	4%	44%	40%	$4,143	$45,578	$41,435
Subtotal:	**1,834**		**$36.74**	**$67,372**	**4.5%**	**$36,214**	**$103,586**				**$4,143**	**$45,578**	**$41,435**
5 - Lake Waxahachie Water System													
1978-142, 10 & 8 Inch water line, Construction $227,705 & $25,251													
1109	7,546	8	$11.79	$88,987	4.5%	$47,833	$136,820	9%	38%	29%	$12,314	$51,992	$39,678
1110	4,209	8	$11.79	$49,635	4.5%	$26,680	$76,315	6%	39%	33%	$4,579	$29,763	$25,184
1133	162	10	$11.79	$1,910	4.5%	$1,027	$2,937	51%	51%	0%	$1,498	$1,498	$0
1137	283	10	$11.79	$3,337	4.5%	$1,794	$5,131	51%	51%	0%	$2,617	$2,617	$0
1567	5,300	10	$11.79	$62,501	4.5%	$33,596	$96,097	27%	46%	19%	$25,946	$44,205	$18,259
1598	3,950	10	$11.79	$46,584	4.5%	$25,040	$71,624	19%	46%	27%	$13,609	$32,947	$19,338
Subtotal:	**21,450**		**$11.79**	**$252,954**	**4.5%**	**$135,970**	**$388,924**				**$60,563**	**$163,022**	**$102,459**
6 - Water Extensions Along MKT RR													
1981-116, 10-inch water line, Construction $ 65,030 & Engineering $5,336													
5218	2,593	10	$10.98	$28,478	4.5%	$15,308	$43,786	100%	100%	0%	$43,786	$43,786	$0
5223	1,391	10	$10.98	$15,277	4.5%	$8,212	$23,489	55%	77%	22%	$12,919	$18,087	$5,168
5224	920	10	$10.98	$10,104	4.5%	$5,431	$15,535	100%	100%	0%	$15,535	$15,535	$0
5234	639	10	$10.98	$7,018	4.5%	$3,772	$10,790	37%	54%	17%	$3,992	$5,827	$1,835
5515	864	10	$10.98	$9,489	4.5%	$5,101	$14,590	100%	100%	0%	$14,590	$14,590	$0
Subtotal:	**6,407**		**$10.98**	**$70,366**	**4.5%**	**$37,824**	**$108,190**				**$90,822**	**$97,825**	**$7,003**
7 - Lake Waxahachie Waterline													
1991-110, 10, 8 & 6 inch water lines, Construction $266,475 & Engineering $27,373													
1111	1,283	10	$29.93	$38,401	4.5%	$20,641	$59,042	30%	46%	16%	$17,713	$27,159	$9,446
1112	1,745	8	$29.93	$52,223	4.5%	$28,071	$80,294	25%	45%	20%	$20,074	$36,132	$16,058
1113	1,333	8	$29.93	$39,893	4.5%	$21,443	$61,336	18%	45%	27%	$11,040	$27,601	$16,561
1114	840	8	$29.93	$25,139	4.5%	$13,513	$38,652	12%	45%	33%	$4,638	$17,393	$12,755
1115	2,376	8	$29.93	$71,107	4.5%	$38,222	$109,329	5%	44%	39%	$5,466	$48,105	$42,639
1118	1,398	6	$29.93	$41,838	4.5%	$22,489	$64,327	12%	45%	33%	$7,719	$28,947	$21,228
1599	844	10	$29.93	$25,249	4.5%	$13,572	$38,821	31%	45%	14%	$12,035	$17,469	$5,434
Subtotal:	**9,819**		**$29.93**	**$293,850**	**4.5%**	**$157,951**	**$451,801**				**$78,685**	**$202,806**	**$124,121**

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
8 - I.H. 35 Water Main Extension													
1995-168, 8-inch water line , Construction $18,000													
1224	668	8	$9.81	$6,556	4.5%	$3,524	$10,080	4%	89%	85%	$403	$8,971	$8,568
1675	1,166	8	$9.81	$11,444	4.5%	$6,151	$17,595	7%	80%	73%	$1,232	$14,076	$12,844
Subtotal:	**1,834**		**$9.81**	**$18,000**	**4.5%**	**$9,675**	**$27,675**				**$1,635**	**$23,047**	**$21,412**
9 - Patrick Street Waterline													
1997-160, 12 -inch water line, Construction $100,014													
5342	1,021	12	$97.96	$100,014	4.5%	$53,760	$153,774	49%	49%	0%	$75,349	$75,349	$0
Subtotal:	**1,021**		**$97.96**	**$100,014**	**4.5%**	**$53,760**	**$153,774**				**$75,349**	**$75,349**	**$0**
10 - 715/791 Boundary Adjustments													
1997-190, 8 & 6 inch water lines Construction $246,988													
5053	648	10	$74.96	$48,573	4.5%	$26,109	$74,682	100%	100%	0%	$74,682	$74,682	$0
5078	1,275	12	$74.96	$95,572	4.5%	$51,372	$146,944	100%	100%	0%	$146,944	$146,944	$0
5096	169	8	$74.96	$12,668	4.5%	$6,809	$19,477	100%	100%	0%	$19,477	$19,477	$0
5140	458	6	$74.96	$34,331	4.5%	$18,454	$52,785	100%	100%	0%	$52,785	$52,785	$0
5593	745	12	$74.96	$55,844	4.5%	$30,017	$85,861	100%	100%	0%	$85,861	$85,861	$0
Subtotal:	**3,295**		**$74.96**	**$246,988**	**4.5%**	**$132,761**	**$379,749**				**$379,749**	**$379,749**	**$0**
11 - U.S. Highway 77 Water Line Extension													
1998-113, 12-inch water line Construction $584,955													
5225	530	12	$46.83	$24,810	4.5%	$13,336	$38,146	78%	78%	0%	$29,754	$29,754	$0
5337	668	12	$46.83	$31,288	4.5%	$16,818	$48,106	60%	60%	0%	$28,864	$28,864	$0
5338	986	12	$46.83	$46,192	4.5%	$24,829	$71,021	95%	95%	0%	$67,470	$67,470	$0
5339	1,686	12	$46.83	$78,939	4.5%	$42,432	$121,371	100%	100%	0%	$121,371	$121,371	$0
5340	2,252	12	$46.83	$105,431	4.5%	$56,672	$162,103	100%	100%	0%	$162,103	$162,103	$0
5341	1,598	12	$46.83	$74,825	4.5%	$40,220	$115,045	43%	56%	13%	$49,469	$64,425	$14,956
5466	389	12	$46.83	$18,234	4.5%	$9,801	$28,035	100%	100%	0%	$28,035	$28,035	$0
5467	812	12	$46.83	$38,004	4.5%	$20,428	$58,432	78%	78%	0%	$45,577	$45,577	$0
5468	725	12	$46.83	$33,939	4.5%	$18,243	$52,182	62%	62%	0%	$32,353	$32,353	$0
5469	544	12	$46.83	$25,483	4.5%	$13,698	$39,181	63%	63%	0%	$24,684	$24,684	$0
5522	501	12	$46.83	$23,467	4.5%	$12,614	$36,081	63%	63%	0%	$22,731	$22,731	$0
5531	635	12	$46.83	$29,735	4.5%	$15,983	$45,718	60%	60%	0%	$27,431	$27,431	$0
5533	420	12	$46.83	$19,648	4.5%	$10,561	$30,209	78%	78%	0%	$23,563	$23,563	$0
5806	747	12	$46.83	$34,960	4.5%	$18,792	$53,752	82%	82%	0%	$44,077	$44,077	$0
Subtotal:	**12,492**		**$46.83**	**$584,955**	**4.5%**	**$314,427**	**$899,382**				**$707,482**	**$722,438**	**$14,956**

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
12 - Broadhead Road Sport Complex Water Line													
1998-174, 18 & 12 Water Line, Construction $348,958													
5324	502	18	$73.06	$36,679	4.5%	$19,716	$56,395	100%	100%	0%	$56,395	$56,395	$0
5330	691	18	$73.06	$50,488	4.5%	$27,138	$77,626	100%	100%	0%	$77,626	$77,626	$0
5331	1,834	12	$73.06	$134,001	4.5%	$72,029	$206,030	100%	100%	0%	$206,030	$206,030	$0
5332	482	12	$73.06	$35,217	4.5%	$18,930	$54,147	100%	100%	0%	$54,147	$54,147	$0
5334	464	12	$73.06	$33,902	4.5%	$18,223	$52,125	100%	100%	0%	$52,125	$52,125	$0
5335	346	12	$73.06	$25,280	4.5%	$13,589	$38,869	100%	100%	0%	$38,869	$38,869	$0
5336	457	12	$73.06	$33,391	4.5%	$17,948	$51,339	100%	100%	0%	$51,339	$51,339	$0
Subtotal:	**4,776**		**$73.06**	**$348,958**	**4.5%**	**$187,573**	**$536,531**				**$536,531**	**$536,531**	**$0**
13 - Indian Hills/ U.S. Highway 287 Bypass Water Line													
2000-104, 18 Water Line, Construction $313,953													
5323	3,799	18	$43.22	$164,183	4.5%	$88,252	$252,435	100%	100%	0%	$252,435	$252,435	$0
5325	921	18	$43.22	$39,803	4.5%	$21,395	$61,198	100%	100%	0%	$61,198	$61,198	$0
5326	1,149	8	$43.22	$49,657	4.5%	$26,692	$76,349	62%	62%	0%	$47,336	$47,336	$0
5327	722	18	$43.22	$31,203	4.5%	$16,772	$47,975	40%	40%	0%	$19,190	$19,190	$0
5496	673	18	$43.22	$29,107	4.5%	$15,646	$44,753	46%	46%	0%	$20,586	$20,586	$0
Subtotal:	**7,264**		**$43.22**	**$313,953**	**4.5%**	**$168,757**	**$482,710**				**$400,745**	**$400,745**	**$0**
14 - Howard Road Water Line													
2000-129, 18 Water Line, Construction $858,189.5													
1119	4,506	18	$61.00	$274,889	4.5%	$147,759	$422,648	18%	46%	28%	$76,077	$194,418	$118,341
1120	3,713	18	$61.00	$226,488	4.5%	$121,742	$348,230	23%	45%	22%	$80,093	$156,704	$76,611
1121	731	18	$61.00	$44,590	4.5%	$23,968	$68,558	32%	43%	11%	$21,939	$29,480	$7,541
1125	3,103	18	$61.00	$189,279	4.5%	$101,742	$291,021	24%	43%	19%	$69,845	$125,139	$55,294
1583	302	18	$61.00	$18,422	4.5%	$9,902	$28,324	30%	44%	14%	$8,497	$12,463	$3,966
1743	1,714	18	$61.00	$104,522	4.5%	$56,183	$160,705	16%	45%	29%	$25,713	$72,317	$46,604
Subtotal:	**14,069**		**$61.00**	**$858,190**	**4.5%**	**$461,296**	**$1,319,486**				**$282,164**	**$590,521**	**$308,357**
15 - I.H. 35E Water Line Butcher Rd to Mustang Creek													
2003-129, 12 Water Line, Construction $356,846													
5312	603	12	$39.53	$23,835	4.5%	$12,812	$36,647	100%	100%	0%	$36,647	$36,647	$0
5313	2,990	12	$39.53	$118,184	4.5%	$63,527	$181,711	100%	100%	0%	$181,711	$181,711	$0
5314	2,634	12	$39.53	$104,113	4.5%	$55,963	$160,076	100%	100%	0%	$160,076	$160,076	$0
5315	920	12	$39.53	$36,364	4.5%	$19,546	$55,910	100%	100%	0%	$55,910	$55,910	$0
5316	1,333	12	$39.53	$52,689	4.5%	$28,322	$81,011	100%	100%	0%	$81,011	$81,011	$0
5395	548	12	$39.53	$21,661	4.5%	$11,643	$33,304	100%	100%	0%	$33,304	$33,304	$0
Subtotal:	**9,028**		**$39.53**	**$356,846**	**4.5%**	**$191,813**	**$548,659**				**$548,659**	**$548,659**	**$0**

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
16 - Cantrell Street and Howard Road Phase II Water Lines													
2004-136 & 137 12 & 8 Water Line, Construction $459,985													
1168	593	8	$72.43	$42,949	4.5%	$23,086	$66,035	100%	100%	0%	$66,035	$66,035	$0
1169	2,039	8	$72.43	$147,679	4.5%	$79,381	$227,060	73%	73%	0%	$165,754	$165,754	$0
1170	455	8	$72.43	$32,954	4.5%	$17,714	$50,668	74%	75%	1%	$37,494	$38,001	$507
1176	394	8	$72.43	$28,536	4.5%	$15,339	$43,875	84%	84%	0%	$36,855	$36,855	$0
1183	2,266	12	$72.43	$164,120	4.5%	$88,218	$252,338	88%	88%	0%	$222,057	$222,057	$0
1184	150	8	$72.43	$10,864	4.5%	$5,840	$16,704	24%	77%	53%	$4,009	$12,862	$8,853
1188	454	12	$72.43	$32,882	4.5%	$17,675	$50,557						
Subtotal:	**6,351**		**$72.43**	**$459,984**	**4.5%**	**$247,253**	**$707,237**				**$532,204**	**$541,564**	**$9,360**
17 - Southeast Water Line Extensions (Parks School House Road)													
2005-109A, 12 & 24 Water Line, Construction $434,492.81													
1143	2,135	12	$50.03	$106,806	4.5%	$57,411	$164,217	0%	36%	36%	$0	$59,118	$59,118
1145	997	24	$50.03	$49,876	4.5%	$26,809	$76,685	7%	34%	27%	$5,368	$26,073	$20,705
1146	2,160	12	$50.03	$108,057	4.5%	$58,083	$166,140	7%	42%	35%	$11,630	$69,779	$58,149
1147	154	12	$50.03	$7,704	4.5%	$4,141	$11,845	1%	41%	40%	$118	$4,856	$4,738
1148	1,250	12	$50.03	$62,533	4.5%	$33,613	$96,146	14%	38%	24%	$13,460	$36,535	$23,075
1631	1,989	12	$50.03	$99,517	4.5%	$53,493	$153,010	7%	55%	48%	$10,711	$84,156	$73,445
Subtotal:	**8,685**		**$50.03**	**$434,493**	**4.5%**	**$233,550**	**$668,043**				**$41,287**	**$280,517**	**$239,230**
18 - Southeast Water Line Extensions (Spur 394)													
2005-109B, 12 & 24 Water Line, Construction $725,758.18													
1122	6,505	12	$64.77	$421,297	4.5%	$226,457	$647,754	16%	39%	23%	$103,641	$252,624	$148,983
1123	3,941	12	$64.77	$255,239	4.5%	$137,197	$392,436	19%	31%	12%	$74,563	$121,655	$47,092
1124	760	24	$64.77	$49,221	4.5%	$26,457	$75,678	9%	22%	13%	$6,811	$16,649	$9,838
Subtotal:	**11,206**		**$64.77**	**$725,757**	**4.5%**	**$390,111**	**$1,115,868**				**$185,015**	**$390,928**	**$205,913**
19 - U.S. 287 Bypass Water Line													
2007-101, 18 & 12 Water Line, Construction $969,602.05													
5073	643	12	$99.56	$64,016	4.5%	$34,410	$98,426	100%	100%	0%	$98,426	$98,426	$0
5079	2,592	18	$99.56	$258,056	4.5%	$138,711	$396,767	65%	92%	27%	$257,899	$365,026	$107,127
5080	1,306	18	$99.56	$130,024	4.5%	$69,891	$199,915	100%	100%	0%	$199,915	$199,915	$0
5089	238	12	$99.56	$23,695	4.5%	$12,737	$36,432	100%	100%	0%	$36,432	$36,432	$0
5125	691	12	$99.56	$68,795	4.5%	$36,979	$105,774	100%	100%	0%	$105,774	$105,774	$0
5126	294	12	$99.56	$29,270	4.5%	$15,733	$45,003	100%	100%	0%	$45,003	$45,003	$0
5157	1,290	12	$99.56	$128,431	4.5%	$69,035	$197,466	100%	100%	0%	$197,466	$197,466	$0
5278	499	12	$99.56	$49,680	4.5%	$26,704	$76,384	100%	100%	0%	$76,384	$76,384	$0
5279	929	12	$99.56	$92,490	4.5%	$49,715	$142,205	100%	100%	0%	$142,205	$142,205	$0
5505	737	18	$99.56	$73,375	4.5%	$39,441	$112,816	100%	100%	0%	$112,816	$112,816	$0
5508	520	18	$99.56	$51,771	4.5%	$27,828	$79,599	98%	100%	2%	$78,007	$79,599	$1,592
Subtotal:	**9,739**		**$99.56**	**$969,603**	**4.5%**	**$521,184**	**$1,490,787**				**$1,350,327**	**$1,459,046**	**$108,719**

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
20 - Parks School House Road Water Line													
2007-107, 12 Water Line, Construction $87,100													
1655	1,270	12	$57.68	$73,256	4.5%	$39,377	$112,633	30%	35%	5%	$33,790	$39,422	$5,632
1656	151	12	$57.68	$8,710	4.5%	$4,682	$13,392	8%	40%	32%	$1,071	$5,357	$4,286
1657	89	12	$57.68	$5,134	4.5%	$2,760	$7,894	19%	35%	16%	$1,500	$2,763	$1,263
Subtotal:	**1,510**		**$57.68**	**$87,100**	**4.5%**	**$46,819**	**$133,919**				**$36,361**	**$47,542**	**$11,181**
21 - Sokoll Water Treatment Plant Main - Phase I													
2008-115, 48 & 42 Main Water Line, Construction $9481,427.70, Engineering $$180,490.00													
5598	1,430	42	$462.88	$661,918	4.5%	$355,796	$1,017,714	31%	38%	7%	$315,491	$386,731	$71,240
Subtotal:	**1,430**		**$462.88**	**$661,918**	**4.5%**	**$355,796**	**$1,017,714**				**$315,491**	**$386,731**	**$71,240**
22 - Sokoll Water Treatment Plant Main - Phase II													
2012-119, 18, 24, & 24 Water Line, Construction $1,084,000.00, Engineering $50,300.00													
6005	730	18	$513.25	$374,439	4.5%	$201,270	$575,709	60%	60%	0%	$345,425	$345,425	$0
P33A	1,480	24	$513.25	$759,861	4.5%	$408,443	$1,168,304	35%	39%	4%	$408,906	$455,639	$46,733
Subtotal:	**2,210**		**$513.25**	**$1,134,300**	**4.5%**	**$609,713**	**$1,744,013**				**$754,331**	**$801,064**	**$46,733**
23 - Baylor Water Line													
2012-142, 12 Water Line, Construction $372,486.75, Engineering $94,840.00													
5814	434	18	$163.45	$71,009	4.5%	$38,169	$109,178	35%	67%	32%	$38,212	$73,149	$34,937
P141	2,425	12	$163.45	$396,318	4.5%	$213,030	$609,348	36%	45%	9%	$219,365	$274,207	$54,842
Subtotal:	**2,859**		**$163.45**	**$467,327**	**4.5%**	**$251,199**	**$718,526**				**$257,577**	**$347,356**	**$89,779**
24 - West Marvin Avenue Reconstruction Phase 2													
10" Water Line, Construction $159,528.75, Engineering $24,050													
1523	1,389	10	$132.17	$183,579	4.5%	$98,678	$282,257	83%	100%	17%	$234,273	$282,257	$47,984
Subtotal:	**1,389**		**$132.17**	**$183,579**	**4.5%**	**$98,678**	**$282,257**				**$234,273**	**$282,257**	**$47,984**
25 - Offsite High School Water Line													
12"-18" Water Line, Construction $1,515,778, Land Acquisition $16,000													
4553	7,201	12	$81.20	$584,715	4.5%	$314,298	$899,013	12%	20%	8%	$107,882	$179,803	$71,921
5419	2,633	12	$81.20	$213,797	4.5%	$114,921	$328,718	10%	35%	25%	$32,872	$115,051	$82,179
5420	3,236	12	$81.20	$262,762	4.5%	$141,241	$404,003	5%	27%	22%	$20,200	$109,081	$88,881
5445	1,664	18	$81.20	$135,115	4.5%	$72,627	$207,742	3%	5%	2%	$6,232	$10,387	$4,155
5446	4,130	16	$81.20	$335,389	4.5%	$180,279	$515,668	6%	6%	0%	$30,940	$30,940	$0
Subtotal:	**18,865**		**$81.20**	**$1,531,778**	**4.5%**	**$823,366**	**$2,355,144**				**$198,126**	**$445,262**	**$247,136**

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
26 - IH-35 Utility Relocations - FM 66 Water Line													
12" Water Line, Construction $235,536.54													
1491	587	6	$401.25	$235,537	4.5%	$126,607	$362,144	100%	100%	0%	$362,144	$362,144	$0
Subtotal:	**587**		**$401.25**	**$235,537**	**4.5%**	**$126,607**	**$362,144**				**$362,144**	**$362,144**	**$0**
27 - Mustang Creek & Saddlebrook Oversize													
18" Water Line, Oversize Participation $176,805 and $91,000													
5281	486	12	$47.04	$22,862	4.5%	$12,289	$35,151	100%	100%	0%	$35,151	$35,151	$0
5282	227	12	$47.04	$10,678	4.5%	$5,740	$16,418	100%	100%	0%	$16,418	$16,418	$0
5283	434	12	$47.04	$20,416	4.5%	$10,974	$31,390	44%	100%	56%	$13,812	$31,390	$17,578
5294	219	12	$47.04	$10,284	4.5%	$5,528	$15,812	100%	100%	0%	$15,812	$15,812	$0
5342B	340	18	$47.04	$16,000	4.5%	$8,600	$24,600	100%	100%	0%	$24,600	$24,600	$0
5480	417	18	$47.04	$19,609	4.5%	$10,540	$30,149	100%	100%	0%	$30,149	$30,149	$0
5485	1,343	18	$47.04	$63,189	4.5%	$33,966	$97,155	100%	100%	0%	$97,155	$97,155	$0
5546	293	18	$47.04	$13,767	4.5%	$7,400	$21,167	100%	100%	0%	$21,167	$21,167	$0
Subtotal:	**3,759**		**$47.04**	**$176,805**	**4.5%**	**$95,037**	**$271,842**				**$254,264**	**$271,842**	**$17,578**
28 - The Haven at North Grove Phase 1 Water Line													
18" Water Line, Oversize Participation $72,000													
5482	2,561	18	$28.12	$72,000	4.5%	$38,702	$110,702	76%	76%	0%	$84,134	$84,134	$0
Subtotal:	**2,561**		**$28.12**	**$72,000**	**4.5%**	**$38,702**	**$110,702**				**$84,134**	**$84,134**	**$0**
29 - F.M. 664 /U.S. 287 Water Line													
12"-24" Water Line, Construction $1,367,277.83													
5447	4,205	24	$219.69	$923,734	4.5%	$496,528	$1,420,262	6%	34%	28%	$85,216	$482,889	$397,673
5448	2,019	24	$219.69	$443,544	4.5%	$238,415	$681,959	6%	33%	27%	$40,918	$225,046	$184,128
Subtotal:	**6,224**		**$219.69**	**$1,367,278**	**4.5%**	**$734,943**	**$2,102,221**				**$126,134**	**$707,935**	**$581,801**
30 - 791/769 Service Area 12-Inch Water Line Realignment													
12" Water Line, Construction $368,250, Engineering $49,600													
5188	374	12	$197.86	$73,998	4.5%	$39,776	$113,774	25%	81%	56%	$28,444	$92,157	$63,713
5187	1,404	12	$197.86	$277,791	4.5%	$149,319	$427,110	20%	73%	53%	$85,422	$311,790	$226,368
5486	1,288	12	$197.86	$254,880	4.5%	$137,004	$391,884	6%	39%	33%	$23,513	$152,835	$129,322
Subtotal:	**3,066**		**$197.86**	**$606,669**	**4.5%**	**$326,099**	**$932,768**				**$137,379**	**$556,782**	**$419,403**
31 - Oversize Participation for Atwood													
18" Water Line, Oversize Participation $61,675													
5829	722	18	$39.73	$28,696	4.5%	$15,425	$44,121	0%	38%	38%	$0	$16,766	$16,766
5831	830	18	$39.73	$32,979	4.5%	$17,727	$50,706	0%	38%	38%	$0	$19,268	$19,268
Subtotal:	**1,552**		**$39.73**	**$61,675**	**4.5%**	**$33,152**	**$94,827**				**$0**	**$36,034**	**$36,034**
32 - Cardinal Road Water Line Transmission Oversized Participation													

TABLE A-2
FULL SYSTEM: Existing Water Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
24" Water Line, Oversize Participation $107,000													
5682	1,133	24	$94.41	$107,000	4.5%	$57,515	$164,515	0%	38%	38%	$0	$62,516	$62,516
Subtotal:	**1,133**		**$94.41**	**$107,000**	**4.5%**	**$57,515**	**$164,515**				**$0**	**$62,516**	**$62,516**
33 - Katy Lake On the Green 715 to 197													
12" Water Line, Construction $453,346.87													
P183	2,371	12	$191.18	$453,347	4.5%	$243,684	$697,031	100%	100%	0%	$697,031	$697,031	$0
Subtotal:	**2,371**		**$191.18**	**$453,347**	**4.5%**	**$243,684**	**$697,031**				**$697,031**	**$697,031**	**$0**
34 - Saddlebrook 16-Inch Oversize Participation													
24" Water Line, Oversize Participation $90,960													
1624	2,173	16	$41.86	$90,960	4.5%	$48,893	$139,853	12%	24%	12%	$16,782	$33,565	$16,783
Subtotal:	**2,173**		**$41.86**	**$90,960**	**4.5%**	**$48,893**	**$139,853**				**$16,782**	**$33,565**	**$16,783**
TOTAL EXISTING COLLECTION LINES:	**218,251**			**15,510,520**		**8,337,267**	**23,847,787**				**11,689,654**	**14,520,787**	**2,831,133**

TABLE A-3
FULL SYSTEM: Proposed Water Facilities

Project No.	Water Facility Improvements	Estimated Capacity (MGD)	Cost ($)						Capacity Utilized (%)			Capacity Utilized ($)		
			Estimated Construction Cost	Engineering Cost	Total Project Cost	Debt Service Interest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost $	2020	2030	In The CRF Period	2020	2030	In The CRF Period
	Water Supply													
1	(2) Lake Waxahachie 36-inch Supply Line (19 MGD)	26 MGD	$6,000,000	$1,200,000	$7,200,000	4.5%	$3,870,165	$11,070,165	0%	10%	10%	$0	$1,107,017	$1,107,017
2	(2) Purchase of Additional Raw Water Rights	1.0 MGD	$1,200,000	$0	$1,200,000	4.5%	$645,027	$1,845,027	0%	10%	10%	$0	$184,503	$184,503
	Water Supply Subtotal:		**$7,200,000**	**$1,200,000**	**$8,400,000**		**$4,515,192**	**$12,915,192**				**$0**	**$1,291,520**	**$1,291,520**
	Raw Water Delivery													
3	(2) Future 30-Inch Raw Water Line (TRWD IPL TO HOWARD RD. WTP)		$5,700,000	$1,140,000	$6,840,000	4.5%	$3,676,657	$10,516,657	0%	10%	10%	$0	$1,051,666	$1,051,666
4	(2) Future 36-Inch Raw Water Line (TRWD IPL to LAKE WAXAHACHIE)		$2,940,000	$588,000	$3,528,000	4.5%	$1,896,381	$5,424,381	0%	10%	10%	$0	$542,438	$542,438
	Raw Water Delivery Subtotal:		**$8,640,000**	**$1,728,000**	**$10,368,000**		**$5,573,038**	**$15,941,038**				**$0**	**$1,594,104**	**$1,594,104**
	Water Treatment Plant Facility													
5	(2) Howard Road WTP Improvements		$2,100,000	$0	$2,100,000	4.5%	$1,128,798	$3,228,798	0%	10%	10%	$0	$322,880	$322,880
6	(2) Howard Road WTP Expansion		$40,000,000	$0	$40,000,000	4.5%	$21,500,915	$61,500,915	0%	10%	10%	$0	$6,150,092	$6,150,092
7	(2) R.W. Sokoll WTP Expansion		$25,000,000	$0	$25,000,000	4.5%	$13,438,072	$38,438,072	0%	10%	10%	$0	$3,843,807	$3,843,807
	Water Treatment Plant Facility Subtotal:		**$67,100,000**	**$0**	**$67,100,000**		**$36,067,785**	**$103,167,785**				**$0**	**$10,316,779**	**$10,316,779**
	High Service Pump Stations													
8	(2) Howard Road HS Pump Station Improvements		$1,400,000	$0	$1,400,000	4.5%	$752,532	$2,152,532	0%	10%	10%	$0	$215,253	$215,253
9	(1) Future 868 Pump Station Phase I Improvements	3.0 MGD	$220,000	$44,000	$264,000	4.5%	$141,906	$405,906	0%	10%	10%	$0	$40,591	$40,591
	High Service Pump Station Subtotal:		**$1,620,000**	**$44,000**	**$1,664,000**		**$894,438**	**$2,558,438**				**$0**	**$255,844**	**$255,844**
	Ground Storage Reservoir													
10	(1) Future 868 Ground Storage Reservoir	1.0 MG	$200,000	$40,000	$240,000	4.5%	$129,005	$369,005	0%	10%	10%	$0	$36,901	$36,901
	Ground Storage Reservoir Subtotal:		**$200,000**	**$40,000**	**$240,000**		**$129,005**	**$369,005**				**$0**	**$36,901**	**$36,901**
	Elevated Storage Tank													
11	(1) Future 868 Elevated Storage Tank	1.0 MG	$400,000	$80,000	$480,000	4.5%	$258,011	$738,011	0%	10%	10%	$0	$73,801	$73,801
12	(2) Future Mustang 2.0 MG Elevated Storage Tank	2.0 MG	$3,000,000	$600,000	$3,600,000	4.5%	$1,935,082	$5,535,082	0%	10%	10%	$0	$553,508	$553,508
13	(2) Future Solon Road 2.0 MG Elevated Storage Tank	2.0 MG	$3,000,000	$600,000	$3,600,000	4.5%	$1,935,082	$5,535,082	0%	10%	10%	$0	$553,508	$553,508
14	(2) Future 1.5 MG Elevated Storage Tank	1.5 MG	$2,500,000	$500,000	$3,000,000	4.5%	$1,612,569	$4,612,569	0%	10%	10%	$0	$461,257	$461,257
15	(2) Future 2.0 MG Elevated Storage Tank	2.0 MG	$3,000,000	$600,000	$3,600,000	4.5%	$1,935,082	$5,535,082	0%	10%	10%	$0	$553,508	$553,508
16	(2) Future 2.0 MG Elevated Storage Tank	2.0 MG	$3,000,000	$600,000	$3,600,000	4.5%	$1,935,082	$5,535,082	0%	10%	10%	$0	$553,508	$553,508
	Elevated Storage Tank Subtotal:		**$14,900,000**	**$2,980,000**	**$17,880,000**		**$9,610,908**	**$27,490,908**				**$0**	**$2,749,090**	**$2,749,090**
	CCN													
17	(2) CCN Acquisition	500 AC	$750,000	$0	$750,000	4.5%	$403,142	$1,153,142	0%	100%	100%	$0	$1,153,142	$1,153,142
	Ground Storage Reservoir Subtotal:		**$750,000**	**$0**	**$750,000**		**$403,142**	**$1,153,142**				**$0**	**$1,153,142**	**$1,153,142**
	TOTAL PROPOSED WATER FACILITIES:		**$100,410,000**	**$5,992,000**	**$106,402,000**		**$57,193,508**	**$163,595,508**				**$0**	**$17,397,380**	**$17,397,380**

(1) - City Participate in Cost Oversize

(2) - City Initiated and Funded

! Average Unit costs are based on Bid Tabulation or Design Opinion of Cost, plus Engineering and Easements

** Average Unit costs are based in 2020 dollars unless otherwise indicated and include 20% for engineering and easements.*

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
SYSTEM-WIDE: Ultimate Water Distribution Lines													
(1) * 1584	683	24	$135.00	$92,205	4.5%	$49,562	$141,767	0%	45%	45%	$0	$64,030	$64,030
(1) * 1585	3,006	24	$135.00	$405,810	4.5%	$218,132	$623,942	0%	46%	46%	$0	$288,289	$288,289
(1) * 1586	3,264	24	$135.00	$440,640	4.5%	$236,854	$677,494	0%	47%	47%	$0	$319,697	$319,697
(1) * 1587	4,749	24	$135.00	$641,115	4.5%	$344,614	$985,729	0%	41%	41%	$0	$403,682	$403,682
(2) * 1588	2,122	18	$230.00	$488,060	4.5%	$262,343	$750,403	0%	33%	33%	$0	$246,691	$246,691
(2) * 1589	4,575	18	$230.00	$1,052,146	4.5%	$565,553	$1,617,699	0%	36%	36%	$0	$578,580	$578,580
(2) * 1590	864	20	$250.00	$216,076	4.5%	$116,146	$332,222	0%	33%	33%	$0	$108,592	$108,592
(2) * 1591	4,749	12	$155.00	$736,095	4.5%	$395,668	$1,131,763	0%	43%	43%	$0	$483,629	$483,629
(2) * 1592	2,326	12	$155.00	$360,530	4.5%	$193,793	$554,323	0%	35%	35%	$0	$194,719	$194,719
(1) * 1594	3,521	8	$0.00	$0	4.5%			0%	47%	47%			
(1) * 1595	293	8	$0.00	$0	4.5%			0%	47%	47%			
(1) * 1596	632	8	$0.00	$0	4.5%			0%	97%	97%			
(1) * 1597	3,465	12	$0.00	$0	4.5%			0%	49%	49%			
(1) * 1600	2,139	24	$135.00	$288,765	4.5%	$155,218	$443,983	0%	44%	44%	$0	$194,504	$194,504
(1) * 1601	4,754	24	$135.00	$641,790	4.5%	$344,977	$986,767	0%	45%	45%	$0	$442,263	$442,263
(1) * 1602	2,047	24	$135.00	$276,365	4.5%	$148,553	$424,918	0%	45%	45%	$0	$190,608	$190,608
(1) * 1603	2,826	12	$0.00	$0	4.5%			0%	61%	61%			
(1) * 1604	5,502	12	$0.00	$0	4.5%			0%	35%	35%			
(1) * 1607	4,333	12	$0.00	$0	4.5%			0%	46%	46%			
(1) * 1608	7,870	12	$0.00	$0	4.5%			0%	19%	19%			
(1) * 1609	2,324	8	$0.00	$0	4.5%			0%	9%	9%			
(1) * 1610	6,042	8	$0.00	$0	4.5%			0%	14%	14%			
(1) * 1611	4,926	8	$0.00	$0	4.5%			0%	17%	17%			
(1) * 1612	6,689	16	$50.00	$334,450	4.5%	$179,775	$514,225	0%	15%	15%	$0	$75,742	$75,742
(1) * 1613	6,033	16	$50.00	$301,639	4.5%	$162,138	$463,777	0%	19%	19%	$0	$88,831	$88,831
(1) * 1615	4,118	18	$75.00	$308,850	4.5%	$166,014	$474,864	0%	28%	28%	$0	$132,827	$132,827
(1) * 1616	4,209	12	$0.00	$0	4.5%			0%	14%	14%			
(1) * 1617	1,543	16	$50.00	$77,150	4.5%	$41,470	$118,620	0%	15%	15%	$0	$18,140	$18,140
(1) * 1618	1,044	12	$0.00	$0	4.5%			0%	18%	18%			
(1) * 1619	943	8	$0.00	$0	4.5%			0%	12%	12%			
(1) * 1620	5,233	8	$0.00	$0	4.5%			0%	21%	21%			
(1) * 1621	8,651	8	$0.00	$0	4.5%			0%	26%	26%			
(1) * 1623	890	16	$50.00	$44,500	4.5%	$23,920	$68,420	0%	21%	21%	$0	$14,287	$14,287
(1) * 1624	2,173	16	$50.00	$108,648	4.5%	$58,401	$167,049	0%	24%	24%	$0	$39,362	$39,362
(1) * 1626	3,592	24	$135.00	$484,920	4.5%	$260,656	$745,576	0%	29%	29%	$0	$217,154	$217,154
(1) * 1627	3,906	16	$50.00	$195,300	4.5%	$104,978	$300,278	0%	24%	24%	$0	$71,690	$71,690
(1) * 1628	2,779	12	$0.00	$0	4.5%			0%	26%	26%			

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * 1629	3,415	12	$0.00	$0	4.5%			0%	28%	28%			
(1) * 1630	4,644	12	$0.00	$0	4.5%			0%	38%	38%			
(1) * 1632	956	24	$135.00	$129,060	4.5%	$69,373	$198,433	0%	33%	33%	$0	$66,001	$66,001
(1) * 1633	5,475	24	$135.00	$739,125	4.5%	$397,297	$1,136,422	0%	35%	35%	$0	$398,597	$398,597
(1) * 1634	7,197	8	$0.00	$0	4.5%			0%	15%	15%			
(1) * 1635	5,395	12	$0.00	$0	4.5%			0%	25%	25%			
(1) * 1636	4,722	18	$75.00	$354,150	4.5%	$190,364	$544,514	0%	32%	32%	$0	$176,720	$176,720
(1) * 1637	2,922	12	$0.00	$0	4.5%			0%	37%	37%			
(1) * 1638	1,473	16	$50.00	$73,650	4.5%	$39,589	$113,239	0%	21%	21%	$0	$23,234	$23,234
(1) * 1639	3,249	16	$50.00	$162,430	4.5%	$87,310	$249,740	0%	23%	23%	$0	$56,435	$56,435
(1) * 1640	2,740	12	$0.00	$0	4.5%			0%	24%	24%			
(1) * 1641	2,955	12	$0.00	$0	4.5%			0%	29%	29%			
(1) * 1642	4,431	12	$0.00	$0	4.5%			0%	33%	33%			
(1) * 1643	3,732	12	$0.00	$0	4.5%			0%	42%	42%			
(1) * 1650	2,224	12	$0.00	$0	4.5%			0%	50%	50%			
(1) * 1651	5,248	12	$0.00	$0	4.5%			0%	37%	37%			
(1) * 1658	4,432	12	$0.00	$0	4.5%			0%	33%	33%			
(1) * 1659	5,612	24	$135.00	$757,620	4.5%	$407,238	$1,164,858	0%	34%	34%	$0	$393,408	$393,408
(1) * 1660	6,291	12	$0.00	$0	4.5%			0%	26%	26%			
(1) * 1682	401	16	$50.00	$20,074	4.5%	$10,790	$30,864	0%	19%	19%	$0	$5,780	$5,780
(1) * 1745	623	8	$0.00	$0	4.5%			0%	13%	13%			
(1) * 1746	2,776	12	$0.00	$0	4.5%			0%	13%	13%			
(1) * 1747	2,126	20	$95.00	$202,016	4.5%	$108,588	$310,604	0%	47%	47%	$0	$144,775	$144,775
(1) * 1748	1,268	20	$95.00	$120,494	4.5%	$64,768	$185,262	0%	43%	43%	$0	$79,575	$79,575
(1) * 1749	2,032	12	$0.00	$0	4.5%			0%	37%	37%			
(1) * 1750	416	12	$0.00	$0	4.5%			0%	41%	41%			
(1) * 1751	3,905	12	$0.00	$0	4.5%			0%	28%	28%			
(1) * 1752	5,711	12	$0.00	$0	4.5%			0%	25%	25%			
(2) * 1753	3,611	8	$110.00	$397,172	4.5%	$213,489	$610,661	0%	81%	81%	$0	$493,658	$493,658
(1) * 1754	3,893	8	$0.00	$0	4.5%			0%	84%	84%			
(1) * 1765	1,588	12	$0.00	$0	4.5%			0%	21%	21%			
(1) * 1766	2,105	16	$50.00	$105,251	4.5%	$56,575	$161,826	0%	18%	18%	$0	$28,445	$28,445
(1) * 1802	768	30	$185.00	$141,991	4.5%	$76,323	$218,314	0%	43%	43%	$0	$94,558	$94,558
(1) * 1803	355	30	$185.00	$65,606	4.5%	$35,265	$100,871	0%	44%	44%	$0	$44,084	$44,084
(1) * 1804	57	30	$185.00	$10,636	4.5%	$5,717	$16,353	0%	40%	40%	$0	$6,574	$6,574
(1) * 1805	40	30	$185.00	$7,400	4.5%	$3,978	$11,378	0%	36%	36%	$0	$4,131	$4,131

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

	Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
									2020	2030	During Fee Period	2020	2030	During Fee Period
(1)	* 1806	104	24	$135.00	$14,023	4.5%	$7,538	$21,561	0%	40%	40%	$0	$8,692	$8,692
(1)	* 1807	331	24	$135.00	$44,713	4.5%	$24,034	$68,747	0%	40%	40%	$0	$27,720	$27,720
(1)	* 1808	155	30	$185.00	$28,627	4.5%	$15,388	$44,015	0%	100%	100%	$0	$44,015	$44,015
(1)	* 1809	590	20	$95.00	$56,039	4.5%	$30,122	$86,161	0%	57%	57%	$0	$48,949	$48,949
(1)	* 1810	656	12	$0.00	$0	4.5%			0%	42%	42%			
(1)	* 2200	6,487	18	$75.00	$486,525	4.5%	$261,518	$748,043	0%	33%	33%	$0	$247,084	$247,084
(1)	* 3000	738	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* 3001	403	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* 3002	372	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* 3007	803	8	$0.00	$0	4.5%			0%	85%	85%			
(1)	* 3008	1,281	10	$0.00	$0	4.5%			0%	56%	56%			
(1)	* 3009	879	6	$0.00	$0	4.5%			0%	62%	62%			
(1)	* 3010	834	6	$0.00	$0	4.5%			0%	100%	100%			
(1)	* 3011	553	10	$0.00	$0	4.5%			0%	68%	68%			
(1)	* 3012	1,654	10	$0.00	$0	4.5%			0%	56%	56%			
(2)	* 3015	715	8	$110.00	$78,596	4.5%	$42,247	$120,843	0%	100%	100%	$0	$120,843	$120,843
(2)	* 4554	5,817	16	$205.00	$1,192,485	4.5%	$640,988	$1,833,473	0%	35%	35%	$0	$635,707	$635,707
(1)	* 5173A	3,348	12	$0.00	$0	4.5%			0%	56%	56%			
(2)	* 5218A	2,658	18	$230.00	$611,300	4.5%	$328,588	$939,888	0%	40%	40%	$0	$377,558	$377,558
(1)	* 5293	113	18	$75.00	$8,456	4.5%	$4,545	$13,001	0%	100%	100%	$0	$13,001	$13,001
(2)	* 5396	1,671	24	$290.00	$484,590	4.5%	$260,478	$745,068	0%	38%	38%	$0	$280,548	$280,548
(1)	* 5397	1,807	12	$0.00	$0	4.5%			0%	29%	29%			
(1)	* 5398	2,719	12	$0.00	$0	4.5%			0%	38%	38%			
(1)	* 5399	3,337	12	$0.00	$0	4.5%			0%	8%	8%			
(1)	* 5400	4,158	12	$0.00	$0	4.5%			0%	22%	22%			
(1)	* 5401	3,744	8	$0.00	$0	4.5%			0%	32%	32%			
(1)	* 5402	746	8	$0.00	$0	4.5%			0%	18%	18%			
(1)	* 5403	2,583	8	$0.00	$0	4.5%			0%	40%	40%			
(1)	* 5404	2,073	12	$0.00	$0	4.5%			0%	12%	12%			
(2)	* 5405	1,616	24	$290.00	$468,749	4.5%	$251,963	$720,712	0%	41%	41%	$0	$292,195	$292,195
(1)	* 5406	2,019	12	$0.00	$0	4.5%			0%	30%	30%			
(1)	* 5411	2,677	12	$0.00	$0	4.5%			0%	20%	20%			
(1)	* 5412	1,988	8	$0.00	$0	4.5%			0%	32%	32%			
(1)	* 5413	3,557	8	$0.00	$0	4.5%			0%	42%	42%			
(1)	* 5414	4,548	8	$0.00	$0	4.5%			0%	20%	20%			
(1)	* 5415	2,575	8	$0.00	$0	4.5%			0%	40%	40%			

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * 5416	5,572	8	$0.00	$0	4.5%			0%	18%	18%			
(1) * 5417	2,905	12	$0.00	$0	4.5%			0%	40%	40%			
(1) * 5418	640	12	$0.00	$0	4.5%			0%	41%	41%			
(1) * 5421	2,793	12	$0.00	$0	4.5%			0%	12%	12%			
(1) * 5428	1,490	8	$0.00	$0	4.5%			0%	0%	0%			
(1) * 5442	3,408	16	$50.00	$170,413	4.5%	$91,601	$262,014	0%	23%	23%	$0	$60,802	$60,802
(1) * 5443	2,531	16	$50.00	$126,556	4.5%	$68,027	$194,583	0%	33%	33%	$0	$64,785	$64,785
(1) * 5444	3,007	16	$50.00	$150,364	4.5%	$80,824	$231,188	0%	36%	36%	$0	$84,305	$84,305
(1) * 5452	7,137	12	$0.00	$0	4.5%			0%	26%	26%			
(2) * 5458	6,813	30	$340.00	$2,316,426	4.5%	$1,245,132	$3,561,558	0%	38%	38%	$0	$1,368,114	$1,368,114
(1) * 5459	2,597	16	$50.00	$129,840	4.5%	$69,792	$199,632	0%	45%	45%	$0	$89,135	$89,135
(1) * 5460	1,714	16	$50.00	$85,695	4.5%	$46,063	$131,758	0%	46%	46%	$0	$60,817	$60,817
(1) * 5462	771	12	$0.00	$0	4.5%			0%	47%	47%			
(1) * 5462A	884	12	$0.00	$0	4.5%			0%	70%	70%			
(1) * 5462B	2,968	12	$0.00	$0	4.5%			0%	50%	50%			
(1) * 5462C	1,423	12	$0.00	$0	4.5%			0%	44%	44%			
(1) * 5463	1,135	18	$75.00	$85,145	4.5%	$45,767	$130,912	0%	61%	61%	$0	$80,490	$80,490
(1) * 5465	776	18	$75.00	$58,221	4.5%	$31,295	$89,516	0%	100%	100%	$0	$89,516	$89,516
(1) * 5470	1,351	16	$50.00	$67,558	4.5%	$36,314	$103,872	0%	44%	44%	$0	$45,770	$45,770
(1) * 5471	2,096	16	$50.00	$104,808	4.5%	$56,337	$161,145	0%	45%	45%	$0	$72,877	$72,877
(1) * 5473	788	12	$0.00	$0	4.5%			0%	46%	46%			
(1) * 5476	1,422	12	$0.00	$0	4.5%			0%	45%	45%			
(1) * 5478	284	12	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5480A	2,936	12	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5481	1,570	12	$0.00	$0	4.5%			0%	45%	45%			
(1) * 5489	3,618	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5490	4,433	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5491	2,191	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5493	2,751	8	$0.00	$0	4.5%			0%	54%	54%			
(1) * 5494	3,730	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5495	1,090	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5498	1,158	8	$0.00	$0	4.5%			0%	0%	0%			
(1) * 5499	1,437	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5500	3,737	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5502	2,862	8	$0.00	$0	4.5%			0%	79%	79%			
(1) * 5510	2,383	8	$0.00	$0	4.5%			0%	44%	44%			

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(2) * 5515A	861	18	$230.00	$197,960	4.5%	$106,408	$304,368	0%	43%	43%	$0	$129,634	$129,634
(1) * 5592	1,149	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5599	1,527	30	$185.00	$282,495	4.5%	$151,848	$434,343	0%	38%	38%	$0	$167,196	$167,196
(1) * 5609	1,663	12	$0.00	$0	4.5%			0%	39%	39%			
(1) * 5629	104	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5630	95	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5766	1,709	18	$75.00	$128,193	4.5%	$68,907	$197,100	0%	6%	6%	$0	$11,483	$11,483
(2) * 5775	460	24	$290.00	$133,413	4.5%	$71,713	$205,126	0%	39%	39%	$0	$80,805	$80,805
(2) * 5776	542	24	$290.00	$157,168	4.5%	$84,481	$241,649	0%	40%	40%	$0	$96,217	$96,217
(1) * 5818	2,426	12	$0.00	$0	4.5%			0%	40%	40%			
(1) * 5819	2,053	12	$0.00	$0	4.5%			0%	40%	40%			
(1) * 5820	2,474	12	$0.00	$0	4.5%			0%	76%	76%			
(2) * 5821	5,016	12	$155.00	$777,446	4.5%	$417,895	$1,195,341	0%	100%	100%	$0	$1,195,341	$1,195,341
(1) * 5830	1,287	18	$75.00	$96,540	4.5%	$51,892	$148,432	0%	38%	38%	$0	$56,886	$56,886
(1) * 5891	4,687	12	$0.00	$0	4.5%			0%	11%	11%			
(1) * 5892	5,639	12	$0.00	$0	4.5%			0%	14%	14%			
(1) * 5893	440	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 5894	483	8	$0.00	$0	4.5%			0%	100%	100%			
(1) * 6000	2,551	12	$0.00	$0	4.5%			0%	100%	100%			
(2) * 6001	1,546	18	$230.00	$355,575	4.5%	$191,130	$546,705	0%	38%	38%	$0	$209,024	$209,024
(2) * 6002	1,356	24	$290.00	$393,299	4.5%	$211,407	$604,706	0%	38%	38%	$0	$226,800	$226,800
(1) * 6003A	2,155	12	$0.00	$0	4.5%			0%	0%	0%			
(1) * 6004	1,223	24	$135.00	$165,126	4.5%	$88,759	$253,885	0%	38%	38%	$0	$96,825	$96,825
(2) * 6006	5,595	18	$230.00	$1,286,916	4.5%	$691,747	$1,978,663	0%	38%	38%	$0	$760,414	$760,414
(2) * 6007	2,438	18	$230.00	$560,793	4.5%	$301,439	$862,232	0%	40%	40%	$0	$345,487	$345,487
(2) * 6008	3,872	18	$230.00	$890,469	4.5%	$478,647	$1,369,116	0%	40%	40%	$0	$550,003	$550,003
(2) * 6010	2,850	12	$155.00	$441,691	4.5%	$237,419	$679,110	0%	100%	100%	$0	$679,110	$679,110
(1) * 6012	3,772	12	$0.00	$0	4.5%			0%	41%	41%			
(1) * 6013	362	24	$135.00	$48,859	4.5%	$26,263	$75,122	0%	38%	38%	$0	$28,354	$28,354
(1) * 6014	8,327	8	$0.00	$0	4.5%			0%	54%	54%			
(1) * 7511	3,655	12	$0.00	$0	4.5%			0%	46%	46%			
(1) * 7512	4,137	12	$0.00	$0	4.5%			0%	74%	74%			
(1) * 7521	767	12	$0.00	$0	4.5%			0%	100%	100%			
(1) * 7522	1,137	12	$0.00	$0	4.5%			0%	100%	100%			
(1) * 7523	913	12	$0.00	$0	4.5%			0%	100%	100%			
(1) * 8050	1,522	8	$0.00	$0	4.5%			0%	0%	0%			

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

	Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
									2020	2030	During Fee Period	2020	2030	During Fee Period
(1)	* 8051	1,282	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8052	2,257	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8053	1,246	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8054	1,935	16	$50.00	$96,759	4.5%	$52,010	$148,769	0%	7%	7%	$0	$10,874	$10,874
(1)	* 8055	2,214	16	$50.00	$110,679	4.5%	$59,492	$170,171	0%	10%	10%	$0	$16,300	$16,300
(1)	* 8056	2,434	16	$50.00	$121,693	4.5%	$65,413	$187,106	0%	33%	33%	$0	$62,295	$62,295
(1)	* 8057	5,498	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8058	7,224	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8059	1,637	16	$50.00	$81,840	4.5%	$43,991	$125,831	0%	49%	49%	$0	$61,397	$61,397
(1)	* 8060	5,409	12	$0.00	$0	4.5%			0%	37%	37%			
(1)	* 8061	2,037	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8062	2,789	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8101	1,290	16	$50.00	$64,481	4.5%	$34,660	$99,141	0%	0%	0%	$0	$79	$79
(1)	* 8102	1,731	16	$50.00	$86,562	4.5%	$46,529	$133,091	0%	0%	0%	$0	$73	$73
(1)	* 8103	2,511	16	$50.00	$125,541	4.5%	$67,481	$193,022	0%	0%	0%	$0	$326	$326
(1)	* 8104	2,526	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8105	5,764	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8106	659	16	$50.00	$32,926	4.5%	$17,698	$50,624	0%	0%	0%	$0	$0	$0
(1)	* 8107	1,693	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8108	3,572	16	$50.00	$178,598	4.5%	$96,001	$274,599	0%	0%	0%	$0	$241	$241
(1)	* 8109	3,417	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8110	489	20	$95.00	$46,459	4.5%	$24,973	$71,432	0%	0%	0%	$0	$0	$0
(1)	* 8111	2,282	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8112	2,434	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8113	3,442	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8114	4,160	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8115	4,594	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8116	2,594	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8117	1,069	12	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8118	5,220	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8119	2,057	16	$50.00	$102,841	4.5%	$55,279	$158,120	0%	0%	0%	$0	$225	$225
(1)	* 8120	1,861	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8121	2,260	8	$0.00	$0	4.5%			0%	0%	0%			
(1)	* 8122	2,233	16	$50.00	$111,628	4.5%	$60,003	$171,631	0%	0%	0%	$0	$473	$473
(1)	* 868EST	426	18	$75.00	$31,958	4.5%	$17,178	$49,136	0%	0%	0%	$0	$171	$171
(2)	* P101	2,387	12	$155.00	$369,985	4.5%	$198,875	$568,860	0%	81%	81%	$0	$458,595	$458,595

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

	Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
									2020	2030	During Fee Period	2020	2030	During Fee Period
(1)	* P103	3,242	16	$50.00	$162,124	4.5%	$87,145	$249,269	0%	59%	59%	$0	$146,861	$146,861
(2)	* P109	1,121	12	$155.00	$173,687	4.5%	$93,361	$267,048	0%	70%	70%	$0	$185,919	$185,919
(1)	* P111	1,884	16	$50.00	$94,200	4.5%	$50,635	$144,835	0%	64%	64%	$0	$92,836	$92,836
(1)	* P113	1,057	30	$185.00	$195,545	4.5%	$105,110	$300,655	0%	42%	42%	$0	$125,140	$125,140
(2)	* P115	2,269	12	$155.00	$351,695	4.5%	$189,044	$540,739	0%	83%	83%	$0	$449,791	$449,791
(1)	* P131	197	18	$75.00	$14,792	4.5%	$7,951	$22,743	0%	94%	94%	$0	$21,429	$21,429
(2)	* P133	2,694	24	$290.00	$781,328	4.5%	$419,982	$1,201,310	0%	38%	38%	$0	$456,740	$456,740
(2)	* P137	2,752	20	$250.00	$688,010	4.5%	$369,821	$1,057,831	0%	41%	41%	$0	$437,553	$437,553
(2)	* P139	2,303	20	$250.00	$575,753	4.5%	$309,480	$885,233	0%	41%	41%	$0	$367,297	$367,297
(2)	* P143	1,565	12	$155.00	$242,625	4.5%	$130,416	$373,041	0%	80%	80%	$0	$297,507	$297,507
(2)	* P145	1,093	18	$230.00	$251,420	4.5%	$135,144	$386,564	0%	39%	39%	$0	$149,656	$149,656
(1)	* P147	668	24	$135.00	$90,115	4.5%	$48,439	$138,554	0%	38%	38%	$0	$52,349	$52,349
(1)	* P155	1,855	12	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P156	989	8	$0.00	$0	4.5%			0%	68%	68%			
(1)	* P157	1,364	8	$0.00	$0	4.5%			0%	45%	45%			
(1)	* P158	346	8	$0.00	$0	4.5%			0%	100%	100%			
(2)	* P159	530	8	$110.00	$58,309	4.5%	$31,342	$89,651	0%	100%	100%	$0	$89,651	$89,651
(2)	* P160	757	8	$110.00	$83,231	4.5%	$44,739	$127,970	0%	69%	69%	$0	$87,868	$87,868
(1)	* P161	432	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P162	927	8	$0.00	$0	4.5%			0%	46%	46%			
(2)	* P163	805	8	$110.00	$88,551	4.5%	$47,598	$136,149	0%	100%	100%	$0	$136,149	$136,149
(2)	* P165	462	8	$110.00	$50,780	4.5%	$27,295	$78,075	0%	91%	91%	$0	$71,013	$71,013
(1)	* P166	90	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P167	35	8	$0.00	$0	4.5%			0%	100%	100%			
(2)	* P168	704	8	$110.00	$77,413	4.5%	$41,611	$119,024	0%	100%	100%	$0	$119,024	$119,024
(1)	* P169	1,509	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P170	1,375	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P171	1,413	8	$0.00	$0	4.5%			0%	28%	28%			
(1)	* P172	2,967	24	$135.00	$400,530	4.5%	$215,294	$615,824	0%	45%	45%	$0	$277,953	$277,953
(1)	* P173	592	8	$0.00	$0	4.5%			0%	24%	24%			
(2)	* P174	991	8	$110.00	$108,998	4.5%	$58,589	$167,587	0%	100%	100%	$0	$167,587	$167,587
(2)	* P175	994	8	$110.00	$109,322	4.5%	$58,763	$168,085	0%	68%	68%	$0	$113,921	$113,921
(1)	* P176	267	8	$0.00	$0	4.5%			0%	100%	100%			
(2)	* P177	751	8	$110.00	$82,559	4.5%	$44,377	$126,936	0%	100%	100%	$0	$126,936	$126,936
(2)	* P178	66	8	$110.00	$7,212	4.5%	$3,877	$11,089	0%	84%	84%	$0	$9,261	$9,261
(1)	* P179	761	8	$0.00	$0	4.5%			0%	71%	71%			

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

	Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
									2020	2030	During Fee Period	2020	2030	During Fee Period
(1)	* P180	17	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P181	1,394	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P182	371	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P184	470	8	$0.00	$0	4.5%			0%	88%	88%			
(1)	* P185	1,122	8	$0.00	$0	4.5%			0%	90%	90%			
(1)	* P186	1,186	8	$0.00	$0	4.5%			0%	91%	91%			
(1)	* P187	19	8	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P188	553	8	$0.00	$0	4.5%			0%	57%	57%			
(1)	* P190	456	8	$0.00	$0	4.5%			0%	85%	85%			
(1)	* P191	926	8	$0.00	$0	4.5%			0%	51%	51%			
(1)	* P192	1,067	8	$0.00	$0	4.5%			0%	95%	95%			
(1)	* P193	221	8	$0.00	$0	4.5%			0%	31%	31%			
(1)	* P194	712	8	$0.00	$0	4.5%			0%	46%	46%			
(1)	* P195	486	8	$0.00	$0	4.5%			0%	100%	100%			
(2)	* P196	1,620	8	$110.00	$178,155	4.5%	$95,762	$273,917	0%	100%	100%	$0	$273,917	$273,917
(2)	* P198	1,370	8	$110.00	$150,740	4.5%	$81,026	$231,766	0%	100%	100%	$0	$231,766	$231,766
(2)	* P199	452	8	$110.00	$49,703	4.5%	$26,717	$76,420	0%	100%	100%	$0	$76,420	$76,420
(1)	* P29	1,198	12	$0.00	$0	4.5%			0%	12%	12%			
(1)	* P33	1,219	30	$185.00	$225,593	4.5%	$121,261	$346,854	0%	38%	38%	$0	$133,206	$133,206
(1)	* P45	390	12	$0.00	$0	4.5%			0%	33%	33%			
(1)	* P49	2,210	12	$0.00	$0	4.5%			0%	37%	37%			
(2)	* P51	945	18	$230.00	$217,277	4.5%	$116,791	$334,068	0%	30%	30%	$0	$99,757	$99,757
(2)	* P53	353	16	$205.00	$72,365	4.5%	$38,898	$111,263	0%	36%	36%	$0	$40,077	$40,077
(1)	* P5421A	2,737	16	$50.00	$136,845	4.5%	$73,557	$210,402	0%	11%	11%	$0	$22,769	$22,769
(1)	* P5481A	1,428	8	$0.00	$0	4.5%			0%	54%	54%			
(1)	* P5631	136	12	$0.00	$0	4.5%			0%	100%	100%			
(1)	* P57	520	8	$0.00	$0	4.5%			0%	100%	100%			
(2)	* P59	1,312	8	$110.00	$144,368	4.5%	$77,601	$221,969	0%	78%	78%	$0	$172,643	$172,643
(2)	* P61	998	8	$110.00	$109,780	4.5%	$59,009	$168,789	0%	100%	100%	$0	$168,789	$168,789
(2)	* P73	1,883	16	$205.00	$386,015	4.5%	$207,492	$593,507	0%	62%	62%	$0	$370,367	$370,367

TABLE A-4
FULL SYSTEM: Ultimate Water Distribution Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * P77	80	18	$75.00	$5,991	4.5%	$3,220	$9,211	0%	88%	88%	$0	$8,097	$8,097
(1) * P87	2,842	12	$0.00	$0	4.5%			0%	69%	69%			
(1) * P89	8,062	24	$135.00	$1,088,315	4.5%	$584,994	$1,673,309	0%	45%	45%	$0	$750,290	$750,290
(2) * P95	4,175	16	$205.00	$855,875	4.5%	$460,052	$1,315,927	0%	48%	48%	$0	$629,151	$629,151
(2) * P97	3,864	16	$205.00	$792,120	4.5%	$425,783	$1,217,903	0%	64%	64%	$0	$782,767	$782,767
(1) * P99	3,775	12	$0.00	$0	4.5%			0%	69%	69%			
(1) * P95	4,175	16	$50.00	$208,750	4.5%	$112,208	$320,958	0%	48%	48%	$0	$153,452	$153,452
(1) * P97	3,864	16	$50.00	$193,200	4.5%	$103,849	$297,049	0%	64%	64%	$0	$190,918	$190,918
(1) * P99	3,775	12	$0.00	$0	4.5%			0%	69%	69%			
Subtotal:	**677,949**			**$11,065,241**	**4.5%**	**$18,561,761**	**$53,093,803**				**$0**	**$23,633,670**	**$23,633,670**
715/791 Boundary Line Adjustment													
			##########	$2,400,000		$1,290,055	$3,690,055	0%	100%	100%	$0	$3,690,055	$3,690,055
Subtotal:	**0**			**$2,400,000**	**4.5%**	**$1,290,055**	**$3,690,055**				**$0**	**$3,690,055**	**$3,690,055**
TOTAL PROPOSED WATER LINES:													
	677,949			**$13,465,241**		**$19,851,816**	**$56,783,858**				**$0**	**$27,323,725**	**$27,323,725**

(1) - City Participate in Cost Oversize

(2) - City Initiated and Funded

! Average Unit costs are based on Bid Tabulation or Design Opinion of Cost, plus Engineering and Easements

** Average Unit costs are based in 2020 dollars unless otherwise indicated and include 20% for engineering and easements.*

B - Bore Across State Highway or Interstate

APPENDIX B

WASTEWATER IMPACT FEE TABLES

TABLE B-1
Existing Wastewater Lift Stations

Project No.	Pump Station Improvements	Year Const.	Estimated Capacity	Cost ($)				Capacity Utilized (%)			Capacity Utilized ($)		
				Total Capital Cost	Debt Service Interest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost $	2020	2030	In The CRF Period	2020	2030	In The CRF Period
Existing Lift Station Facilities													
31	(2) Jefferson Street Lift Station Expansion & 30" F.M.	2001	23.0	$3,235,000	4.5%	$1,738,887	$4,973,887	62%	100%	38%	$3,061,981	$4,973,887	$1,911,906
33	(2) Westside Interceptor Sewer Lift Station	2003	2.4	$600,000	4.5%	$322,514	$922,514	17%	40%	23%	$159,804	$373,475	$213,671
34	(2) Lower Mustang Creek Lift Station & 14" F.M.	2005	3.9	$1,757,215	4.5%	$944,543	$2,701,758	26%	64%	38%	$704,656	$1,717,815	$1,013,159
35	(2) Grove Creek Lift Station & 18" F.M.	2019	7.0	$2,657,399	4.5%	$1,428,413	$4,085,812	26%	100%	74%	$1,077,487	$4,085,812	$3,008,325
36	(2) Lower Mustang Creek Lift Station Improvements	2019	8.6	$1,377,352	4.5%	$740,358	$2,117,710	26%	64%	38%	$552,328	$1,346,469	$794,141
37	(2) WWTP - Existing Capacity Improvements	n/a	8.0	$21,610,201	4.5%	$11,615,978	$33,226,179	43%	60%	17%	$14,398,011	$20,089,654	$5,691,643
TOTAL EXISTING WASTEWATER LIFT STATIONS:				**$31,237,166**		**$16,790,693**	**$48,027,859**				**$19,954,267**	**$32,587,112**	**$12,632,845**

(1) Opinion of Probable Cost
(2) Cost Obtained from the City of Waxahachie

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
1 - Southwest Interceptor Sewer Extension													
1985-115													
213	194	24	$337.86	$65,578	4.5%	$35,250	$100,828	71%	97%	26%	$71,226	$97,809	$26,583
221	271	24	$337.86	$91,486	4.5%	$49,176	$140,662	68%	100%	32%	$95,179	$140,662	$45,483
231	687	24	$337.86	$232,082	4.5%	$124,749	$356,831	59%	100%	41%	$212,241	$356,831	$144,590
243	487	21	$337.86	$164,549	4.5%	$88,449	$252,998	55%	100%	45%	$138,831	$252,383	$113,552
255	177	27	$337.86	$59,684	4.5%	$32,082	$91,766	48%	91%	44%	$43,614	$83,806	$40,192
Subtotal:	**1,815**		**$337.86**	**$613,379**	**4.5%**	**$329,706**	**$943,085**				**$561,091**	**$931,491**	**$370,400**
2 - NE Trunk Sewer Along Highway 287													
1995													
143	676	21	$245.21	$165,687	4.5%	$89,061	$254,748	64%	100%	36%	$164,149	$254,748	$90,599
149	548	21	$245.21	$134,313	4.5%	$72,196	$206,509	62%	95%	33%	$127,448	$196,237	$68,789
Subtotal:	**1,223**		**$245.21**	**$300,000**	**4.5%**	**$161,257**	**$461,257**				**$291,597**	**$450,985**	**$159,388**
3 - NE Interceptor Trunk Sewer (Lake Park to FM 813)													
1995-138													
87	162	21	$311.73	$50,466	4.5%	$27,127	$77,593	63%	95%	33%	$48,534	$73,812	$25,278
93	283	24	$311.73	$88,112	4.5%	$47,362	$135,474	100%	100%	0%	$135,474	$135,474	$0
101	210	24	$311.73	$65,464	4.5%	$35,188	$100,652	71%	94%	23%	$71,846	$94,958	$23,112
107	189	27	$311.73	$58,854	4.5%	$31,635	$90,489	71%	94%	23%	$64,592	$85,370	$20,778
133	514	27	$311.73	$160,335	4.5%	$86,184	$246,519	69%	90%	21%	$171,175	$222,258	$51,083
137	467	30	$311.73	$145,576	4.5%	$78,250	$223,826	71%	91%	20%	$157,821	$202,908	$45,087
Subtotal:	**1,825**		**$311.73**	**$568,807**	**4.5%**	**$305,746**	**$874,553**				**$649,442**	**$814,780**	**$165,338**
4 - Mustang Creek Trunk Sewer (US 287 To MKT Railroad)													
1997-182													
MC-10a	4,682	12	$71.99	$337,029	4.5%	$181,161	$518,190	0%	96%	96%	$0	$498,131	$498,131
159	636	18	$71.99	$45,758	4.5%	$24,596	$70,354	69%	100%	31%	$48,529	$70,354	$21,825
167	540	21	$71.99	$38,880	4.5%	$20,899	$59,779	67%	100%	33%	$40,207	$59,779	$19,572
169	254	21	$71.99	$18,263	4.5%	$9,817	$28,080	67%	100%	33%	$18,770	$28,080	$9,310
Subtotal:	**6,111**		**$71.99**	**$439,930**	**4.5%**	**$236,473**	**$676,403**				**$107,506**	**$656,344**	**$548,838**

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
5 - Little Creek Trunk Sewer (Mustang Creek to Northgate Drive)													
1998-103													
459	138	18	$1,943.27	$268,346	4.5%	$144,242	$412,588	88%	92%	4%	$362,437	$379,154	$16,717
Subtotal:	**138**		**$1,943.27**	**$268,346**	**4.5%**	**$144,242**	**$412,588**				**$362,437**	**$379,154**	**$16,717**
6 - Indian Hills Outfall Sewer													
1999-132													
389	553	18	$199.68	$110,395	4.5%	$59,340	$169,735	70%	96%	26%	$119,256	$163,425	$44,169
391	262	15	$199.68	$52,266	4.5%	$28,094	$80,360	70%	96%	26%	$56,461	$77,373	$20,912
393	413	21	$199.68	$82,554	4.5%	$44,375	$126,929	70%	96%	26%	$89,181	$122,210	$33,029
Subtotal:	**1,228**		**$199.68**	**$245,215**	**4.5%**	**$131,809**	**$377,024**				**$264,898**	**$363,008**	**$98,110**
7 - Broadhead Road Sanitary Sewer													
1999-150													
441	393	15	$573.52	$225,445	4.5%	$121,182	$346,627	46%	68%	22%	$158,727	$234,326	$75,599
445	628	15	$573.52	$360,021	4.5%	$193,520	$553,541	46%	68%	22%	$253,477	$374,204	$120,727
Subtotal:	**1,021**		**$573.52**	**$585,466**	**4.5%**	**$314,702**	**$900,168**				**$412,204**	**$608,530**	**$196,326**
8 - Jefferson Street Sanitary Sewer													
2000-130													
347	212	15	$342.13	$72,444	4.5%	$38,940	$111,384	86%	93%	7%	$95,703	$103,301	$7,598
369	257	18	$342.13	$87,916	4.5%	$47,257	$135,173	72%	80%	9%	$96,933	$108,494	$11,561
351	312	21	$342.13	$106,681	4.5%	$57,343	$164,024	81%	89%	7%	$133,249	$145,173	$11,924
Subtotal:	**781**		**$342.13**	**$267,041**	**4.5%**	**$143,540**	**$410,581**				**$325,885**	**$356,968**	**$31,083**
9 - Mustang Creek Trunk Sewer (FM 878 to Lake Park Drive)													
2001-119													
181	231	30	$340.86	$78,714	4.5%	$42,311	$121,025	70%	90%	20%	$84,934	$109,418	$24,484
185	483	30	$340.86	$164,475	4.5%	$88,409	$252,884	100%	100%	0%	$252,884	$252,884	$0
Subtotal:	**713**		**$340.86**	**$243,189**	**4.5%**	**$130,720**	**$373,909**				**$337,818**	**$362,302**	**$24,484**

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
10 - Grove Creek Trunk Sewer (Phase 1,2&3)													
1999-130													
401	273	15	$906.03	$247,262	4.5%	$132,909	$380,171						
557	266	18	$906.03	$240,598	4.5%	$129,327	$369,925	36%	100%	64%	$132,833	$369,925	$237,092
603	288	18	$906.03	$260,486	4.5%	$140,017	$400,503	51%	45%	0%	$202,470	$179,016	$0
627	500	18	$906.03	$452,977	4.5%	$243,486	$696,463	51%	40%	0%	$352,476	$279,901	$0
635	294	18	$906.03	$266,077	4.5%	$143,022	$409,099	93%	15%	0%	$381,054	$59,428	$0
649	212	18	$906.03	$192,005	4.5%	$103,207	$295,212	59%	47%	0%	$174,277	$138,851	$0
Subtotal:	**1,832**		**$906.03**	**$1,659,405**	**4.5%**	**$891,968**	**$2,551,373**				**$1,243,110**	**$1,027,121**	**$237,092**
11 - Country Club Sanitary Sewer													
2001-134													
945	428	15	$2,133.55	$912,914	4.5%	$490,712	$1,403,626	47%	64%	17%	$656,221	$895,391	$239,170
Subtotal:	**428**		**$2,133.55**	**$912,914**	**4.5%**	**$490,712**	**$1,403,626**				**$656,221**	**$895,391**	**$239,170**
12 - Grove Creek Road Sanitary Sewer													
2002-157													
1055	136	10	$738.38	$100,290	4.5%	$53,908	$154,198	55%	100%	45%	$84,991	$154,198	$69,207
1075	306	12	$738.38	$226,099	4.5%	$121,533	$347,632	40%	69%	30%	$137,660	$241,039	$103,379
Subtotal:	**442**		**$738.38**	**$326,389**	**4.5%**	**$175,441**	**$501,830**				**$222,651**	**$395,237**	**$172,586**
13 - Cardinal "CG" Sanitary Sewer													
2002-159													
499	411	12	$282.52	$116,124	4.5%	$62,419	$178,543	57%	95%	38%	$101,632	$170,303	$68,671
549	458	15	$282.52	$129,462	4.5%	$69,589	$199,051	56%	96%	40%	$111,775	$191,395	$79,620
503	370	12	$282.52	$104,623	4.5%	$56,237	$160,860	56%	96%	39%	$90,742	$154,261	$63,519
545	327	21	$282.52	$92,447	4.5%	$49,692	$142,139	17%	40%	23%	$23,927	$57,150	$33,223
513	179	24	$282.52	$50,520	4.5%	$27,156	$77,676	17%	43%	26%	$12,877	$33,023	$20,146
527	458	24	$282.52	$129,396	4.5%	$69,553	$198,949	59%	100%	41%	$118,009	$198,949	$80,940
Subtotal:	**2,204**		**$282.52**	**$622,572**	**4.5%**	**$334,646**	**$957,218**				**$458,962**	**$805,081**	**$346,119**

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
14 - Westside Interceptor Sanitary Sewer													
2003 (by others)													
1215	261	18	$566.79	$148,074	4.5%	$79,593	$227,667	22%	33%	11%	$50,363	$75,490	$25,127
1217	185	24	$566.79	$104,799	4.5%	$56,332	$161,131	7%	16%	9%	$12,021	$25,949	$13,928
1223	293	24	$566.79	$165,953	4.5%	$89,204	$255,157	19%	43%	24%	$49,446	$110,450	$61,004
1231	345	24	$566.79	$195,736	4.5%	$105,213	$300,949	19%	43%	24%	$56,404	$129,099	$72,695
1237	373	27	$566.79	$211,215	4.5%	$113,533	$324,748	30%	73%	44%	$97,311	$238,647	$141,336
1245	728	27	$566.79	$412,662	4.5%	$221,815	$634,477	17%	44%	27%	$110,096	$279,560	$169,464
1249	361	30	$566.79	$204,785	4.5%	$110,077	$314,862	15%	38%	23%	$47,245	$119,966	$72,721
Subtotal:	**2,546**		**$566.79**	**$1,443,224**	**4.5%**	**$775,767**	**$2,218,991**				**$422,886**	**$979,161**	**$556,275**
15 - Settler's Glen Addition Offsite Sanitary Sewer													
2003 (by others)													
1015	1,147	10	$34.96	$40,099	4.5%	$21,554	$61,653	21%	31%	11%	$12,826	$19,351	$6,525
1025	872	15	$34.96	$30,494	4.5%	$16,391	$46,885	22%	32%	10%	$10,426	$14,924	$4,498
Subtotal:	**2,019**		**$34.96**	**$70,593**	**4.5%**	**$37,945**	**$108,538**				**$23,252**	**$34,275**	**$11,023**
16 - Northeast Parallel 36" Trunk Sewer													
2007 (by others)													
1339	331	36	$169.06	$55,938	4.5%	$30,068	$86,006	86%	100%	14%	$74,067	$86,006	$11,939
1341	624	36	$169.06	$105,493	4.5%	$56,705	$162,198	86%	100%	14%	$139,683	$162,198	$22,515
1343	630	36	$169.06	$106,476	4.5%	$57,233	$163,709	86%	100%	14%	$140,984	$163,709	$22,725
Subtotal:	**1,585**		**$169.06**	**$267,907**	**4.5%**	**$144,006**	**$411,913**				**$354,734**	**$411,913**	**$57,179**

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
17 - South Grove Creek Trunk Sewer													
2009 (by others)													
1540	137	18	$11.19	$1,535	4.5%	$825	$2,360	100%	100%	0%	$2,353	$2,360	$7
1541	453	18	$11.19	$5,070	4.5%	$2,725	$7,795	100%	100%	0%	$7,771	$7,795	$24
1542	396	18	$11.19	$4,437	4.5%	$2,385	$6,822	100%	100%	0%	$6,801	$6,822	$21
1543	54	18	$11.19	$600	4.5%	$323	$923	100%	100%	0%	$920	$923	$3
1544	170	18	$11.19	$1,907	4.5%	$1,025	$2,932	100%	100%	0%	$2,923	$2,932	$9
1545	181	18	$11.19	$2,021	4.5%	$1,086	$3,107	7%	29%	22%	$228	$899	$671
1546	220	18	$11.19	$2,465	4.5%	$1,325	$3,790	7%	29%	22%	$278	$1,097	$819
1547	137	18	$11.19	$1,528	4.5%	$821	$2,349	7%	29%	22%	$173	$681	$508
1548	396	18	$11.19	$4,430	4.5%	$2,381	$6,811	7%	29%	22%	$502	$1,974	$1,472
1549	206	18	$11.19	$2,309	4.5%	$1,241	$3,550	7%	29%	22%	$260	$1,029	$769
1550	367	18	$11.19	$4,108	4.5%	$2,208	$6,316	7%	29%	22%	$463	$1,830	$1,367
1551	149	18	$11.19	$1,668	4.5%	$897	$2,565	6%	27%	21%	$160	$687	$527
1552	408	18	$11.19	$4,570	4.5%	$2,456	$7,026	0%	19%	19%	$0	$1,309	$1,309
1553	395	18	$11.19	$4,424	4.5%	$2,378	$6,802	0%	19%	19%	$0	$1,268	$1,268
1554	412	18	$11.19	$4,607	4.5%	$2,476	$7,083	0%	19%	19%	$0	$1,320	$1,320
1555	398	18	$11.19	$4,454	4.5%	$2,394	$6,848	0%	19%	19%	$0	$1,276	$1,276
1556	497	18	$11.19	$5,558	4.5%	$2,988	$8,546	0%	19%	19%	$0	$1,593	$1,593
1557	508	18	$11.19	$5,684	4.5%	$3,055	$8,739	0%	19%	19%	$0	$1,629	$1,629
1558	421	18	$11.19	$4,708	4.5%	$2,531	$7,239	0%	19%	19%	$0	$1,349	$1,349
1559	164	18	$11.19	$1,836	4.5%	$987	$2,823	0%	19%	19%	$0	$526	$526
1580	316	8	$11.19	$3,532	4.5%	$1,899	$5,431	49%	95%	46%	$2,666	$5,152	$2,486
1581	43	8	$11.19	$477	4.5%	$256	$733	49%	95%	46%	$358	$694	$336
1582	199	8	$11.19	$2,233	4.5%	$1,200	$3,433	49%	96%	46%	$1,691	$3,282	$1,591
1583	122	8	$11.19	$1,371	4.5%	$737	$2,108	49%	96%	47%	$1,023	$2,015	$992
1584	253	8	$11.19	$2,831	4.5%	$1,522	$4,353	21%	62%	42%	$906	$2,717	$1,811
Subtotal:	**7,001**		**$11.19**	**$78,363**	**4.5%**	**$42,121**	**$120,484**				**$29,476**	**$53,159**	**$23,683**
18 - NE Trunk 48" Gravity Trunk Sewer													
2009 (by others)													
MC-33	411	48	$2,552.05	$1,050,000	4.5%	$564,399	$1,614,399	92%	100%	8%	$1,479,617	$1,614,399	$134,782
Subtotal:	**411**		**$2,552.05**	**$1,050,000**	**4.5%**	**$564,399**	**$1,614,399**				**$1,479,617**	**$1,614,399**	**$134,782**

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
19 - Northeast Trunk Sewer Capacity Improvements													
2010135													
MC-25A	1,121	21	$312.06	$349,903	4.5%	$188,081	$537,984	72%	91%	19%	$385,741	$490,419	$104,678
MC-31	2,588	27	$312.06	$807,459	4.5%	$434,028	$1,241,487	50%	83%	33%	$619,352	$1,030,780	$411,428
MC-36	798	42	$312.06	$249,010	4.5%	$133,849	$382,859	80%	100%	20%	$307,855	$382,859	$75,004
MC-37	1,027	36	$312.06	$320,506	4.5%	$172,279	$492,785	79%	100%	21%	$390,447	$492,785	$102,338
Subtotal:	**5,534**		**$312.06**	**$1,726,878**	**4.5%**	**$928,237**	**$2,655,115**				**$1,703,395**	**$2,396,843**	**$693,448**
20 - Waxahachie Highschool Offsite Sanitary Sewer													
15-006													
2001	50	27	$179.31	$8,974	4.5%	$4,824	$13,798	2%	11%	8%	$322	$1,470	$1,148
2002	403	27	$179.31	$72,199	4.5%	$38,809	$111,008	2%	11%	8%	$2,594	$11,830	$9,236
2003	336	27	$179.31	$60,324	4.5%	$32,426	$92,750	2%	11%	8%	$2,167	$9,885	$7,718
2004	346	27	$179.31	$62,104	4.5%	$33,382	$95,486	2%	11%	8%	$2,231	$10,176	$7,945
2005	301	27	$179.31	$53,900	4.5%	$28,972	$82,872	2%	11%	8%	$1,936	$8,832	$6,896
2006	353	24	$179.31	$63,347	4.5%	$34,050	$97,397	4%	9%	6%	$3,540	$8,940	$5,400
2007	333	24	$179.31	$59,741	4.5%	$32,112	$91,853	4%	9%	6%	$3,339	$8,431	$5,092
2008	500	24	$179.31	$89,664	4.5%	$48,196	$137,860	4%	9%	6%	$5,011	$12,654	$7,643
2009	538	24	$179.31	$96,541	4.5%	$51,893	$148,434	4%	9%	6%	$5,395	$13,625	$8,230
Subtotal:	**3,161**		**$179.31**	**$566,794**	**4.5%**	**$304,664**	**$871,458**				**$26,535**	**$85,843**	**$59,308**
21 - Cole Creek Trunk Sewer													
18-003													
2109	500	27	$682.53	$341,571	4.5%	$183,602	$525,173	25%	34%	8%	$132,926	$177,234	$44,308
2110	128	27	$682.53	$87,508	4.5%	$47,038	$134,546	25%	34%	8%	$34,055	$45,406	$11,351
2111	493	27	$682.53	$336,369	4.5%	$180,806	$517,175	25%	34%	8%	$131,357	$175,142	$43,785
2112	501	27	$682.53	$342,046	4.5%	$183,858	$525,904	25%	34%	8%	$133,574	$178,098	$44,524
2113	434	27	$682.53	$296,381	4.5%	$159,312	$455,693	25%	34%	8%	$115,741	$154,321	$38,580
2114	178	27	$682.53	$121,709	4.5%	$65,421	$187,130	25%	34%	8%	$47,529	$63,372	$15,843
2115	184	27	$682.53	$125,719	4.5%	$67,577	$193,296	25%	34%	8%	$49,095	$65,460	$16,365
2116	229	27	$682.53	$156,253	4.5%	$83,990	$240,243	25%	34%	8%	$61,019	$81,359	$20,340
2117	234	27	$682.53	$160,041	4.5%	$86,026	$246,067	25%	34%	8%	$62,498	$83,331	$20,833
2118	298	27	$682.53	$203,418	4.5%	$109,342	$312,760	25%	34%	8%	$79,438	$105,917	$26,479
2119	310	27	$682.53	$211,695	4.5%	$113,791	$325,486	25%	34%	8%	$82,670	$110,226	$27,556
2120	262	27	$682.53	$178,484	4.5%	$95,939	$274,423	44%	58%	15%	$120,237	$160,316	$40,079
2121	520	27	$682.53	$354,621	4.5%	$190,617	$545,238	44%	58%	15%	$238,893	$318,524	$79,631
2122	337	27	$682.53	$230,123	4.5%	$123,696	$353,819	44%	58%	15%	$155,024	$206,698	$51,674

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
2123	156	27	$682.53	$106,308	4.5%	$57,143	$163,451	*44%*	58%	15%	$71,615	$95,487	$23,872
2124	461	27	$682.53	$314,744	4.5%	$169,182	$483,926	*44%*	58%	15%	$212,029	$282,706	$70,677
2125	500	27	$682.53	$341,099	4.5%	$183,349	$524,448	*44%*	58%	15%	$229,784	$306,379	$76,595
2126	331	27	$682.53	$226,162	4.5%	$121,567	$347,729	*44%*	58%	15%	$152,355	$203,141	$50,786
2127	332	27	$682.53	$226,831	4.5%	$121,927	$348,758	*54%*	72%	18%	$188,627	$251,503	$62,876
2128	143	27	$682.53	$97,828	4.5%	$52,585	$150,413	*54%*	72%	18%	$81,352	$108,469	$27,117
2129	277	27	$682.53	$188,966	4.5%	$101,574	$290,540	*56%*	74%	19%	$162,014	$216,018	$54,004
2130	388	27	$682.53	$264,517	4.5%	$142,184	$406,701	*56%*	74%	19%	$226,789	$302,385	$75,596
2131	388	27	$682.53	$265,108	4.5%	$142,502	$407,610	*56%*	74%	19%	$227,296	$303,061	$75,765
2132	469	24	$682.53	$320,022	4.5%	$172,019	$492,041	*57%*	76%	19%	$281,496	$375,328	$93,832
2133	303	24	$682.53	$206,690	4.5%	$111,101	$317,791	*57%*	76%	19%	$181,808	$242,411	$60,603
2134	382	24	$682.53	$260,800	4.5%	$140,186	$400,986	*57%*	76%	19%	$229,404	$305,872	$76,468
2135	442	24	$682.53	$301,610	4.5%	$162,122	$463,732	*57%*	76%	19%	$265,301	$353,734	$88,433
2136	500	24	$682.53	$341,079	4.5%	$183,338	$524,417	*57%*	76%	19%	$300,018	$400,025	$100,007
2137	500	24	$682.53	$341,274	4.5%	$183,443	$524,717	*57%*	76%	19%	$300,190	$400,253	$100,063
2138	499	24	$682.53	$340,863	4.5%	$183,222	$524,085	*57%*	76%	19%	$299,828	$399,771	$99,943
2139	240	24	$682.53	$164,024	4.5%	$88,167	$252,191	*57%*	76%	19%	$144,278	$192,371	$48,093
2140	241	24	$682.53	$164,469	4.5%	$88,406	$252,875	*57%*	76%	19%	$144,670	$192,893	$48,223
2141	288	24	$682.53	$196,745	4.5%	$105,755	$302,500	*57%*	76%	19%	$172,933	$230,577	$57,644
2142	142	24	$682.53	$96,886	4.5%	$52,078	$148,964	*57%*	76%	19%	$85,309	$113,745	$28,436
2143	420	24	$682.53	$286,959	4.5%	$154,247	$441,206	*66%*	87%	22%	$289,365	$385,821	$96,456
2144	499	24	$682.53	$340,621	4.5%	$183,092	$523,713	*66%*	87%	22%	$343,478	$457,970	$114,492
2145	481	24	$682.53	$328,053	4.5%	$176,336	$504,389	*66%*	87%	22%	$330,804	$441,072	$110,268
2146	501	24	$682.53	$342,182	4.5%	$183,931	$526,113	*66%*	88%	22%	$347,235	$462,979	$115,744
2147	497	24	$682.53	$339,506	4.5%	$182,492	$521,998	*66%*	88%	22%	$344,519	$459,358	$114,839
2148	401	24	$682.53	$273,724	4.5%	$147,133	$420,857	*66%*	88%	22%	$277,766	$370,354	$92,588
2149	206	24	$682.53	$140,877	4.5%	$75,725	$216,602	*66%*	88%	22%	$142,957	$190,610	$47,653
2150	414	24	$682.53	$282,528	4.5%	$151,865	$434,393	*66%*	88%	22%	$286,699	$382,266	$95,567
2151	500	24	$682.53	$341,111	4.5%	$183,355	$524,466	*66%*	88%	22%	$346,148	$461,530	$115,382
2152	273	24	$682.53	$186,384	4.5%	$100,186	$286,570	*66%*	88%	22%	$189,136	$252,182	$63,046
2153	185	24	$682.53	$126,533	4.5%	$68,014	$194,547	*65%*	87%	22%	$126,956	$169,275	$42,319
2154	38	24	$682.53	$25,812	4.5%	$13,875	$39,687	*65%*	87%	22%	$25,899	$34,532	$8,633
Subtotal:	**4,609**		**$682.53**	**$3,145,938**	**4.5%**	**$1,691,015**	**$4,836,953**				**$1,444,056**	**$1,925,404**	**$2,817,368**

TABLE B-2
Existing Wastewater Collection Lines

Pipe Number	Length (Ft.)	Diameter (Inches)	Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
22 - Grove Creek L.S. Southerly Outfall Gravity Sewer													
18-005													
2155	296	24	$220.80	$65,457	4.5%	$35,185	$100,642	100%	87%	0%	$100,642	$87,568	$0
2156	581	24	$220.80	$128,300	4.5%	$68,964	$197,264						
2157	286	24	$220.80	$63,063	4.5%	$33,898	$96,961						
2158	227	24	$220.80	$50,104	4.5%	$26,932	$77,036						
2159	452	24	$220.80	$99,839	4.5%	$53,666	$153,505						
2160	388	24	$220.80	$85,666	4.5%	$46,047	$131,713						
2161	523	24	$220.80	$115,396	4.5%	$62,028	$177,424						
2162	370	21	$220.80	$81,756	4.5%	$43,946	$125,702						
2163	377	21	$220.80	$83,145	4.5%	$44,692	$127,837						
2164	328	21	$220.80	$72,428	4.5%	$38,932	$111,360						
2165	329	21	$220.80	$72,621	4.5%	$39,035	$111,656						
2166	164	21	$220.80	$36,252	4.5%	$19,486	$55,738						
2167	140	21	$220.80	$30,963	4.5%	$16,643	$47,606						
2168	451	21	$220.80	$99,636	4.5%	$53,557	$153,193						
Subtotal:	**4,912**		**$220.80**	**$1,084,626**	**4.5%**	**$583,011**	**$1,667,637**				**$100,642**	**$87,568**	**$0**
TOTAL EXISTING WASTEWATER COLLECTION LINES:													
	51,540			**16,486,976**		**8,862,127**	**25,349,103**				**11,478,415**	**15,634,957**	**6,958,717**

TABLE B-3
Full System: Future Lift Stations & Treatment

Force Main Pipe Number/ Project No.			Cost ($)				(%) Utilized Capacity			($) Utilized Capacity		
			Total Capital Cost	Debt Service Intersest Rate %	Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	2020	2030	During Fee Period	2020	2030	During Fee Period
Full System: Future Lift Stations & Treatment												
(2) *	SP-54	B South Prong LS	$7,140,424	4.5%	$3,838,141	$10,978,565	29%	32%	3%	$3,202,409	$3,558,524	$356,115
(2) *	RO-15	Red Oak LS #3	$3,036,131	4.5%	$1,631,990	$4,668,121	54%	54%	0%	$2,520,072	$2,529,213	$9,141
(2) *	RO-13	Red Oak LS #2	$668,067	4.5%	$359,101	$1,027,168	47%	73%	26%	$484,656	$754,654	$269,998
(2) *	RO-11	Red Oak LS #1	$1,055,405	4.5%	$567,304	$1,622,709	9%	39%	30%	$146,912	$634,392	$487,480
(2) *	RB-20	Ridge Branch LS	$3,336,503	4.5%	$1,793,447	$5,129,950	87%	88%	1%	$4,445,282	$4,522,012	$76,730
(2) *	P-416	B Jefferson St. Parallel FM	$5,031,768	4.5%	$2,704,690	$7,736,458	19%	36%	17%	$1,466,826	$2,784,454	$1,317,628
(2) *	P-1275B	Westside Interceptor Upsize FM	$421,656	4.5%	$226,650	$648,306	20%	31%	11%	$127,137	$200,054	$72,917
(2) *	OB-27	Oak Branch LS	$2,849,351	4.5%	$1,531,591	$4,380,942	8%	9%	1%	$333,841	$397,820	$63,979
(2) *	LO-101	Little Onion LS #2	$3,434,931	4.5%	$1,846,354	$5,281,285	59%	60%	1%	$3,111,585	$3,162,043	$50,458
(2) *	LO-100	Little Onion LS #1	$1,492,896	4.5%	$802,466	$2,295,362	12%	21%	9%	$277,138	$472,331	$195,193
(2) *	LM-36	Lower Mustang LS	$14,705,143	4.5%	$7,904,351	$22,609,494	79%	79%	1%	$17,789,810	$17,964,334	$174,524
(2) *	LB-13	B Little Onion LS #3	$2,122,071	4.5%	$1,140,662	$3,262,733	6%	6%	1%	$184,857	$203,343	$18,486
(2) *	LAKE-12	Lake Waxahachie LS	$963,070	4.5%	$517,672	$1,480,742	11%	17%	6%	$162,252	$252,041	$89,789
(2) *	GC-75	Lower Grove Creek LS #2	$11,900,137	4.5%	$6,396,596	$18,296,733	30%	39%	9%	$5,431,182	$7,111,448	$1,680,266
(2) *	BBFM	Red Oak LS #4	$588,099	4.5%	$316,117	$904,216	25%	55%	30%	$226,054	$492,850	$266,796
(2) *	6	Lower Grove Creek Lift Station & Force Main	$4,143,600	4.5%	$2,227,280	$6,370,880	0%	26%	26%	$0	$1,676,547	$1,676,547
(2) *	8	Lower Mustang Creek Parallel Force Main	$5,198,400	4.5%	$2,794,259	$7,992,659	0%	31%	31%	$0	$2,497,706	$2,497,706
(2) *	10	Lower Waxahachie Creek Lift Station & Force Main	$2,920,800	4.5%	$1,569,997	$4,490,797	0%	36%	36%	$0	$1,603,856	$1,603,856
(2) *	12	South Prong Creek Lift Station & Force Main	$6,686,400	4.5%	$3,594,093	$10,280,493	0%	9%	9%	$0	$902,153	$902,153
(2) *	15	Upper Little Onion Creek Lift Station & Force Main	$4,598,400	4.5%	$2,471,745	$7,070,145	0%	20%	20%	$0	$1,414,029	$1,414,029
(2) *	18A	WWTP No.1 - Thickener Addition (50% Eligible)	$2,115,000	4.5%	$1,136,861	$3,251,861	0%	65%	65%	$0	$2,114,198	$2,114,198
(2) *	18B	WWTP No.1 - Impound Basin Improvements (100% Eligible)	$1,175,000	4.5%	$631,589	$1,806,589	0%	65%	65%	$0	$1,174,554	$1,174,554
(2) *	18C	WWTP No.1 - Site Electrical (50% Eligible)	$4,112,500	4.5%	$2,210,563	$6,323,063	0%	65%	65%	$0	$4,110,941	$4,110,941
(2) *	19	WWTP No.1 - Expansion to 12-MGD	$7,050,000	4.5%	$3,789,536	$10,839,536	0%	65%	65%	$0	$7,047,326	$7,047,326
(2) *	WWTP#2	Wastewater Treatment Plant No.2	$276,000,000	4.5%	$148,356,317	$424,356,317	20%	22%	2%	$83,601,709	$91,364,003	$7,762,294
Subtotal:			**$372,745,752**		**$200,359,372**	**$573,105,124**				**$123,511,722**	**$158,944,826**	**$35,433,104**
TOTAL Full System: Future Lift Stations & Treatment:					**$200,359,372**	**$573,105,124**				**$123,511,722**	**$158,944,826**	**$35,433,104**

(1) - City Participate in Cost Oversize

(2) - City Initiated and Funded

! Average Unit costs are based on Bid Tabulation or Design Opinion of Cost, plus Engineering and Easements

** Average Unit costs are based in 2020 dollars unless otherwise indicated and include 20% for engineering and easements.*

B - Bore Across State Highway or Interstate

TABLE B-4
Full System: Future Wastewater Collection Lines

(1) - City Participate in Cost Oversize
(2) - City Initiated and Funded
! Average Unit costs are based on Bid Tabulation or Design Opinion of Cost, plus Engineering and Easements
** Average Unit costs are based in 2020 dollars unless otherwise indicated and include 20% for engineering and easements.*
B - Bore Across State Highway or Interstate

	Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
									2020	2030	During Fee Period	2020	2030	During Fee Period
Full System: Future Wastewater Collection Lines														
(1)	* 1308	933	12	$0.00	$0	4.5%			27%	36%	9%			
(1)	* 2169	116	12	$0.00	$0	4.5%			84%	100%	16%			
(1)	* 2219	216	15	$35.00	$7,577	4.5%	$4,073	$11,650	63%	87%	25%	$7,281	$10,137	$2,856
(1)	* BB10	6,264	8	$0.00	$0	4.5%			18%	40%	23%			
(1)	* BB11	3,112	8	$0.00	$0	4.5%			25%	55%	30%			
(1)	* BBFM	3,635	6	$0.00	$0	4.5%								
(1)	* BC-10	6,248	21	$85.00	$531,122	4.5%	$285,490	$816,612	47%	49%	2%	$383,696	$401,870	$18,174
(1)	* BC-12	3,864	8	$0.00	$0	4.5%			3%	3%	0%			
(1)	* BC-13	3,521	24	$120.00	$422,531	4.5%	$227,120	$649,651	43%	45%	2%	$281,906	$294,988	$13,082
(1)	* BC-14	2,029	8	$0.00	$0	4.5%			3%	3%	0%			
(1)	* BC-15	6,458	24	$120.00	$774,989	4.5%	$416,574	$1,191,563	40%	42%	2%	$473,455	$497,303	$23,848
(1)	* BC-16	476	8	$0.00	$0	4.5%			2%	4%	1%			
(1)	* BC-18	3,134	10	$0.00	$0	4.5%			2%	4%	1%			
(1)	* BC-19	2,927	24	$120.00	$351,227	4.5%	$188,793	$540,020	36%	38%	2%	$195,125	$203,647	$8,522
(1)	* CC-04	1,588	8	$0.00	$0	4.5%			10%	17%	7%			
(1)	* CC-06	1,878	8	$0.00	$0	4.5%			14%	18%	4%			
(1)	* CC-08	1,200	8	$0.00	$0	4.5%			100%	100%	0%			
(1)	* CC-10	2,033	8	$0.00	$0	4.5%			14%	20%	6%			
(1)	* CC-12	820	8	$0.00	$0	4.5%			8%	10%	2%			
(1)	* CC-14	1,301	8	$0.00	$0	4.5%			4%	7%	3%			
(2)	* GC-10	7,059	12	$0.00	$0	4.5%			28%	30%	3%			
(1)	* GC-12	2,539	8	$0.00	$0	4.5%			11%	17%	6%			
(1)	* GC-14	4,150	8	$0.00	$0	4.5%			19%	23%	4%			
(2)	* GC-15	4,079	18	$240.00	$978,989	4.5%	$526,229	$1,505,218	55%	55%	0%	$823,838	$823,838	$0
(1)	* GC-16	4,616	8	$0.00	$0	4.5%			15%	50%	35%			
(2)	* GC-17	2,239	21	$265.00	$593,351	4.5%	$318,940	$912,291	46%	48%	3%	$416,295	$439,710	$23,415
(1)	* GC-20	3,966	12	$0.00	$0	4.5%			25%	49%	24%			
(2)	* GC-21	1,152	21	$265.00	$305,240	4.5%	$164,073	$469,313	41%	48%	7%	$193,517	$226,450	$32,933
(1)	* GC-23A	1,861	27	$150.00	$279,162	4.5%	$150,056	$429,218	20%	42%	22%	$85,607	$180,090	$94,483
(1)	* GC-24	5,486	10	$0.00	$0	4.5%			4%	8%	4%			
(1)	* GC-26	2,655	8	$0.00	$0	4.5%			6%	12%	6%			
(1)	* GC-27	1,406	12	$0.00	$0	4.5%			4%	9%	4%			
(1)	* GC-28	2,870	8	$0.00	$0	4.5%			19%	31%	12%			
(2)	* GC-29	2,360	15	$215.00	$507,362	4.5%	$272,719	$780,081	6%	11%	5%	$44,901	$85,474	$40,573

TABLE B-4
Full System: Future Wastewater Collection Lines

(1) - City Participate in Cost Oversize
(2) - City Initiated and Funded
! Average Unit costs are based on Bid Tabulation or Design Opinion of Cost, plus Engineering and Easements
** Average Unit costs are based in 2020 dollars unless otherwise indicated and include 20% for engineering and easements.*
B - Bore Across State Highway or Interstate

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * GC-30	3,944	8	$0.00	$0	4.5%			9%	16%	7%			
(2) * GC-31	1,737	15	$215.00	$373,352	4.5%	$200,685	$574,037	6%	11%	6%	$33,699	$65,484	$31,785
(1) * GC-32	2,391	10	$0.00	$0	4.5%			19%	26%	7%			
(2) * GC-33	2,880	18	$240.00	$691,229	4.5%	$371,551	$1,062,780	7%	12%	6%	$69,758	$131,309	$61,551
(1) * GC-34	2,413	8	$0.00	$0	4.5%			2%	20%	18%			
(1) * GC-36	2,439	10	$0.00	$0	4.5%			6%	29%	23%			
(1) * GC-38B	2,136	12	$0.00	$0	4.5%			60%	85%	25%			
(1) * GC-39A	1,225	18	$60.00	$73,473	4.5%	$39,493	$112,966	19%	39%	20%	$21,912	$44,180	$22,268
(1) * GC-40A	6,119	27	$150.00	$917,793	4.5%	$493,335	$1,411,128	25%	43%	18%	$355,896	$612,980	$257,084
(1) * GC-44	2,249	8	$0.00	$0	4.5%			26%	43%	17%			
(2) * GC-44A	3,948	27	$330.00	$1,302,995	4.5%	$700,390	$2,003,385	28%	46%	19%	$553,965	$929,187	$375,222
(2) * GC-46A	2,920	27	$330.00	$963,481	4.5%	$517,893	$1,481,374	35%	54%	19%	$519,653	$800,880	$281,227
(1) * GC-48	2,709	8	$0.00	$0	4.5%			10%	16%	6%			
(2) * GC-48A	1,739	27	$330.00	$573,981	4.5%	$308,528	$882,509	29%	48%	19%	$256,511	$421,339	$164,828
(1) * GC-50	2,903	8	$0.00	$0	4.5%			59%	81%	22%			
(2) * GC-50A	2,819	27	$330.00	$930,252	4.5%	$500,032	$1,430,284	27%	45%	18%	$386,166	$645,439	$259,273
(1) * GC-52	3,972	10	$0.00	$0	4.5%			17%	18%	1%			
(2) * GC-53	664	36	$460.00	$305,516	4.5%	$164,222	$469,738	30%	49%	19%	$139,840	$228,623	$88,783
(2) * GC-55	7,499	36	$460.00	$3,449,624	4.5%	$1,854,252	$5,303,876	29%	47%	18%	$1,546,507	$2,476,709	$930,202
(1) * GC-56	3,817	10	$0.00	$0	4.5%			12%	16%	4%			
(2) * GC-57	4,875	36	$460.00	$2,242,598	4.5%	$1,205,448	$3,448,046	29%	46%	17%	$993,966	$1,587,096	$593,130
(1) * GC-58	1,331	10	$0.00	$0	4.5%			13%	17%	4%			
(2) * GC-59	4,480	36	$460.00	$2,060,789	4.5%	$1,107,721	$3,168,510	29%	46%	17%	$909,740	$1,451,893	$542,153
(1) * GC-60	1,529	8	$0.00	$0	4.5%			9%	11%	2%			
(1) * GC-61	3,266	36	$280.00	$914,494	4.5%	$491,561	$1,406,055	29%	46%	17%	$402,764	$643,002	$240,238
(1) * GC-62	1,919	8	$0.00	$0	4.5%			3%	61%	58%			
(1) * GC-63	1,539	36	$280.00	$430,804	4.5%	$231,567	$662,371	28%	45%	17%	$184,073	$295,505	$111,432
(1) * GC-64	3,014	10	$0.00	$0	4.5%			2%	4%	1%			
(1) * GC-66	2,006	8	$0.00	$0	4.5%			1%	4%	2%			
(1) * GC-67	3,699	36	$280.00	$1,035,584	4.5%	$556,650	$1,592,234	27%	44%	16%	$431,105	$693,051	$261,946
(1) * GC-68	2,690	10	$0.00	$0	4.5%			2%	2%	0%			
(1) * GC-69	2,352	36	$280.00	$658,433	4.5%	$353,923	$1,012,356	26%	42%	16%	$267,867	$430,163	$162,296
(1) * GC-70	5,126	10	$0.00	$0	4.5%			13%	13%	0%			

TABLE B-4
Full System: Future Wastewater Collection Lines

(1) - City Participate in Cost Oversize
(2) - City Initiated and Funded
! Average Unit costs are based on Bid Tabulation or Design Opinion of Cost, plus Engineering and Easements
** Average Unit costs are based in 2020 dollars unless otherwise indicated and include 20% for engineering and easements.*
B - Bore Across State Highway or Interstate

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * GC-71	3,906	36	$280.00	$1,093,719	4.5%	$587,899	$1,681,618	26%	42%	16%	$443,092	$710,376	$267,284
(1) * GC-72	6,599	12	$0.00	$0	4.5%			4%	4%	0%			
(1) * GC-73	876	36	$280.00	$245,403	4.5%	$131,910	$377,313	30%	39%	9%	$112,001	$146,651	$34,650
(1) * GC-75	11,832	36	$280.00	$3,313,050	4.5%	$1,780,840	$5,093,890						
(1) * GC-76	3,696	30	$210.00	$776,188	4.5%	$417,219	$1,193,407	100%	100%	0%	$1,193,407	$1,193,407	$0
(2) * LAKE-01	4,236	21	$265.00	$1,122,653	4.5%	$603,452	$1,726,105	7%	11%	4%	$121,153	$193,454	$72,301
(2) * LAKE-02	2,377	21	$265.00	$629,868	4.5%	$338,568	$968,436	17%	28%	10%	$167,300	$266,592	$99,292
(2) * LAKE-03	5,480	21	$265.00	$1,452,097	4.5%	$780,535	$2,232,632	17%	28%	10%	$389,628	$618,458	$228,830
(1) * LAKE-10	3,005	18	$60.00	$180,310	4.5%	$96,921	$277,231	11%	17%	6%	$30,377	$47,188	$16,811
(1) * LAKE-12	3,322	16			4.5%								
(1) * LB-11	3,014	15	$35.00	$105,505	4.5%	$56,711	$162,216	6%	6%	1%	$9,191	$10,110	$919
(1) * LB-13	6,535	24	$120.00	$784,209	4.5%	$421,530	$1,205,739						
(1) * LB-15	3,204	24	$120.00	$384,433	4.5%	$206,642	$591,075	85%	86%	1%	$501,843	$509,648	$7,805
(2) * LM-01	6,597	12	$0.00	$0	4.5%			4%	22%	18%			
(1) * LM-02	3,916	10	$0.00	$0	4.5%			2%	9%	8%			
(2) * LM-03	2,424	15	$215.00	$521,137	4.5%	$280,123	$801,260	3%	15%	12%	$22,893	$116,646	$93,753
(1) * LM-04	1,625	10	$0.00	$0	4.5%			6%	10%	4%			
(2) * LM-05	2,569	15	$215.00	$552,409	4.5%	$296,932	$849,341	3%	14%	11%	$24,759	$119,489	$94,730
(1) * LM-06	1,197	8	$0.00	$0	4.5%			3%	7%	3%			
(2) * LM-07	741	18	$240.00	$177,883	4.5%	$95,616	$273,499	3%	10%	7%	$7,648	$26,103	$18,455
(1) * LM-08	6,010	10	$0.00	$0	4.5%			3%	6%	3%			
(1) * LM-10	4,924	10	$0.00	$0	4.5%			3%	10%	6%			
(2) * LM-14	3,296	10	$0.00	$0	4.5%			2%	3%	1%			
(1) * LM-16	2,978	10	$0.00	$0	4.5%			1%	1%	0%			
(2) * LM-18	3,833	10	$0.00	$0	4.5%			2%	5%	2%			
(1) * LM-19	3,305	27	$150.00	$495,749	4.5%	$266,476	$762,225	8%	13%	5%	$60,271	$101,418	$41,147
(1) * LM-20	6,928	8	$0.00	$0	4.5%			1%	1%	0%			
(1) * LM-21	1,177	27	$150.00	$176,608	4.5%	$94,931	$271,539	7%	11%	4%	$18,267	$30,360	$12,093
(1) * LM-22	2,763	8	$0.00	$0	4.5%			9%	10%	1%			
(1) * LM-24	4,121	8	$0.00	$0	4.5%			8%	12%	5%			
(1) * LM-25	1,532	30	$210.00	$321,669	4.5%	$172,904	$494,573	7%	11%	4%	$33,536	$55,334	$21,798
(1) * LM-26	2,254	8	$0.00	$0	4.5%			9%	14%	5%			
(1) * LM-27	971	30	$210.00	$203,988	4.5%	$109,648	$313,636	7%	11%	4%	$21,317	$35,111	$13,794

TABLE B-4
Full System: Future Wastewater Collection Lines

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B - Bore Across State Highway or Interstate

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * LM-28	4,577	8	$0.00	$0	4.5%			10%	10%	0%			
(1) * LM-29	1,539	30	$210.00	$323,166	4.5%	$173,709	$496,875	7%	11%	4%	$34,026	$55,434	$21,408
(1) * LM-30	2,326	8	$0.00	$0	4.5%			8%	10%	1%			
(1) * LM-32	2,409	36	$280.00	$674,409	4.5%	$362,510	$1,036,919	99%	99%	0%	$1,027,415	$1,027,677	$262
(1) * LM-33	1,429	30	$210.00	$300,075	4.5%	$161,297	$461,372	7%	11%	4%	$31,745	$51,387	$19,642
(1) * LM-34	2,473	8	$0.00	$0	4.5%			0%	1%	1%			
(1) * LM-35	1,232	42	$350.00	$431,076	4.5%	$231,713	$662,789	79%	79%	1%	$521,502	$526,618	$5,116
(1) * LM-36	7,194	42	$350.00	$2,518,035	4.5%	$1,353,501	$3,871,536						
(1) * LM-37	4,839	42	$350.00	$1,693,603	4.5%	$910,350	$2,603,953	100%	100%	0%	$2,603,473	$2,603,473	$0
(1) * LO-10	4,289	12	$0.00	$0	4.5%			2%	4%	1%			
(1) * LO-100	3,634	16			4.5%								
(1) * LO-101	6,581	20			4.5%								
(1) * LO-11	2,746	12	$0.00	$0	4.5%			9%	15%	6%			
(1) * LO-12	7,321	15	$35.00	$256,245	4.5%	$137,738	$393,983	36%	61%	25%	$140,416	$238,571	$98,155
(1) * LO-13	2,752	15	$35.00	$96,304	4.5%	$51,766	$148,070	13%	21%	9%	$18,671	$31,822	$13,151
(1) * LO-14	3,939	12	$0.00	$0	4.5%			11%	22%	11%			
(1) * LO-15	1,210	18	$60.00	$72,604	4.5%	$39,026	$111,630	12%	21%	9%	$13,478	$22,971	$9,493
(1) * LO-15A	6,300	15	$35.00	$220,499	4.5%	$118,523	$339,022	77%	77%	0%	$260,702	$260,702	$0
(1) * LO-16	5,026	18	$60.00	$301,581	4.5%	$162,107	$463,688	11%	17%	7%	$49,249	$79,450	$30,201
(1) * LO-17	2,936	18	$60.00	$176,175	4.5%	$94,698	$270,873	10%	17%	7%	$28,066	$46,347	$18,281
(1) * LO-18	696	8	$0.00	$0	4.5%			11%	16%	4%			
(1) * LO-19	2,151	18	$60.00	$129,074	4.5%	$69,380	$198,454	10%	17%	7%	$20,609	$34,112	$13,503
(1) * LO-20	4,566	10	$0.00	$0	4.5%			9%	16%	7%			
(1) * LO-21	963	18	$60.00	$57,755	4.5%	$31,045	$88,800	10%	17%	7%	$9,150	$15,300	$6,150
(1) * LO-22	4,337	8	$0.00	$0	4.5%			9%	9%	0%			
(1) * LO-24	8,416	12	$0.00	$0	4.5%			9%	10%	1%			
(1) * LO-25	3,466	21	$85.00	$294,633	4.5%	$158,372	$453,005	10%	16%	5%	$46,116	$70,272	$24,156
(1) * LO-26	5,279	8	$0.00	$0	4.5%			10%	10%	0%			
(1) * LO-27	762	21	$85.00	$64,743	4.5%	$34,801	$99,544	10%	15%	5%	$10,097	$14,681	$4,584
(1) * LW-01	4,223	30	$210.00	$886,835	4.5%	$476,694	$1,363,529	10%	13%	3%	$142,034	$179,910	$37,876
(1) * LW-01A	1,534	15	$35.00	$53,694	4.5%	$28,862	$82,556	37%	52%	15%	$30,308	$43,049	$12,741
(1) * LW-01B	5,774	36	$280.00	$1,616,645	4.5%	$868,984	$2,485,629	37%	53%	16%	$920,328	$1,306,003	$385,675
(1) * LW-02	3,138	8	$0.00	$0	4.5%			4%	10%	6%			

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								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * LW-03	4,549	15	$35.00	$159,201	4.5%	$85,574	$244,775	36%	52%	15%	$89,179	$126,684	$37,505
(1) * LW-04	2,360	8	$0.00	$0	4.5%			12%	20%	8%			
(1) * LW-06	5,025	12	$0.00	$0	4.5%			5%	9%	4%			
(1) * LW-07	8,840	48	$440.00	$3,889,424	4.5%	$2,090,654	$5,980,078	35%	50%	15%	$2,093,930	$2,978,332	$884,402
(1) * LW-08	2,483	8	$0.00	$0	4.5%			13%	17%	4%			
(1) * LW-10	8,148	12	$0.00	$0	4.5%			15%	24%	9%			
(1) * LW-11	1,756	48	$440.00	$772,660	4.5%	$415,322	$1,187,982	34%	49%	14%	$409,800	$581,798	$171,998
(1) * LW-12	5,279	12	$0.00	$0	4.5%			10%	14%	4%			
(1) * LW-13	2,331	48	$440.00	$1,025,808	4.5%	$551,395	$1,577,203	34%	48%	14%	$538,973	$764,771	$225,798
(1) * LW-14	6,440	12	$0.00	$0	4.5%			12%	14%	2%			
(1) * LW-15	1,927	48	$440.00	$848,056	4.5%	$455,850	$1,303,906	33%	46%	13%	$426,082	$598,677	$172,595
(1) * LW-16	4,303	8	$0.00	$0	4.5%			6%	6%	0%			
(1) * LW-17	3,660	48	$440.00	$1,610,268	4.5%	$865,556	$2,475,824	32%	45%	13%	$801,693	$1,126,287	$324,594
(1) * LW-18	7,115	12	$0.00	$0	4.5%			8%	10%	2%			
(1) * LW-18A	2,615	21	$85.00	$222,285	4.5%	$119,483	$341,768	86%	86%	0%	$295,006	$295,006	$0
(1) * LW-19	908	48	$440.00	$399,657	4.5%	$214,825	$614,482	32%	45%	13%	$195,676	$274,470	$78,794
(1) * LW-20	3,818	8	$0.00	$0	4.5%			6%	8%	2%			
(1) * LW-21	2,530	48	$440.00	$1,113,121	4.5%	$598,328	$1,711,449	32%	45%	13%	$543,681	$762,607	$218,926
(1) * LW-22	2,235	24	$120.00	$268,257	4.5%	$144,194	$412,451	72%	74%	2%	$296,525	$303,609	$7,084
(1) * LW-24	4,899	42	$350.00	$1,714,776	4.5%	$921,731	$2,636,507	91%	92%	0%	$2,412,143	$2,414,178	$2,035
(1) * LW-25	1,517	66	$700.00	$1,061,819	4.5%	$570,752	$1,632,571	63%	68%	6%	$1,022,998	$1,117,981	$94,983
(1) * LWO-10	6,505	42	$350.00	$2,276,811	4.5%	$1,223,838	$3,500,649	99%	99%	0%	$3,467,242	$3,467,242	$0
(1) * MC-08	1,420	12	$0.00	$0	4.5%			41%	100%	59%			
(1) * MC-19	2,145	21	$85.00	$182,334	4.5%	$98,009	$280,343	62%	94%	32%	$172,468	$262,986	$90,518
(1) * MC-27	881	24	$120.00	$105,700	4.5%	$56,816	$162,516	69%	88%	19%	$111,664	$142,487	$30,823
(1) * MC-28	2,536	12	$0.00	$0	4.5%			24%	34%	9%			
(1) * MC-29	672	27	$150.00	$100,836	4.5%	$54,202	$155,038	65%	84%	19%	$100,567	$129,789	$29,222
(1) * OB-10	3,488	8	$0.00	$0	4.5%			6%	8%	1%			
(1) * OB-11	1,108	8	$0.00	$0	4.5%			6%	8%	1%			
(1) * OB-12	5,899	8	$0.00	$0	4.5%			41%	43%	2%			
(1) * OB-13	2,138	12	$0.00	$0	4.5%			23%	25%	2%			
(1) * OB-14	3,447	8	$0.00	$0	4.5%			2%	3%	1%			
(1) * OB-15	2,735	12	$0.00	$0	4.5%			8%	10%	2%			

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Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * OB-16	5,533	10	$0.00	$0	4.5%			20%	22%	3%			
(1) * OB-18	3,189	8	$0.00	$0	4.5%			3%	4%	1%			
(1) * OB-19	5,068	15	$35.00	$177,373	4.5%	$95,342	$272,715	10%	11%	2%	$26,861	$31,201	$4,340
(1) * OB-20	4,272	8	$0.00	$0	4.5%			9%	11%	2%			
(1) * OB-22	3,767	10	$0.00	$0	4.5%			5%	7%	1%			
(1) * OB-23	1,903	21	$85.00	$161,788	4.5%	$86,965	$248,753	8%	10%	1%	$20,789	$24,412	$3,623
(1) * OB-27	4,988	20			4.5%								
(1) * OB-29	4,036	18	$60.00	$242,153	4.5%	$130,163	$372,316	99%	99%	0%	$369,271	$369,271	$0
(1) * OBO-11	5,292	12	$0.00	$0	4.5%			5%	6%	1%			
(1) * P-1275B	16	30	$210.00	$3,432	4.5%	$1,845	$5,277						
(1) * P-414	266	42	$350.00	$93,229	4.5%	$50,113	$143,342	19%	36%	17%	$27,178	$51,591	$24,413
(1) * P-416	4,147	42	$350.00	$1,451,455	4.5%	$780,190	$2,231,645						
(1) * RB-10	4,267	8	$0.00	$0	4.5%			31%	38%	7%			
(1) * RB-12	4,161	8	$0.00	$0	4.5%			22%	28%	6%			
(1) * RB-13	653	10	$0.00	$0	4.5%			28%	35%	6%			
(1) * RB-14	3,854	8	$0.00	$0	4.5%			8%	17%	10%			
(1) * RB-15	3,347	12	$0.00	$0	4.5%			23%	30%	7%			
(1) * RB-16	5,844	8	$0.00	$0	4.5%			6%	8%	3%			
(1) * RB-18	5,712	8	$0.00	$0	4.5%			31%	33%	2%			
(1) * RB-19	156	21	$85.00	$13,227	4.5%	$7,110	$20,337	87%	88%	1%	$17,623	$17,927	$304
(1) * RB-20	6,045	20			4.5%								
(1) * RB-21	9,018	18	$60.00	$541,098	4.5%	$290,853	$831,951	97%	97%	0%	$810,871	$810,871	$0
(1) * RO-10	3,560	15	$35.00	$124,587	4.5%	$66,968	$191,555	9%	39%	30%	$17,342	$74,888	$57,546
(1) * RO-11	6,339	12	$0.00	$0	4.5%								
(1) * RO-11A	1,959	18	$60.00	$117,563	4.5%	$63,193	$180,756	99%	99%	0%	$178,146	$178,146	$0
(1) * RO-12	2,417	15	$35.00	$84,604	4.5%	$45,477	$130,081	47%	73%	26%	$61,377	$95,570	$34,193
(1) * RO-13	2,312	10	$0.00	$0	4.5%								
(1) * RO-14	5,914	18	$60.00	$354,824	4.5%	$190,726	$545,550	54%	54%	0%	$294,514	$295,582	$1,068
(1) * RO-15	8,130	14			4.5%								
(1) * RO-16	9,740	21	$85.00	$827,905	4.5%	$445,018	$1,272,923	60%	60%	0%	$765,606	$765,606	$0
(1) * SP-10	2,748	10	$0.00	$0	4.5%			1%	13%	13%			
(1) * SP-12	5,232	8	$0.00	$0	4.5%			10%	11%	1%			
(1) * SP-13	994	12	$0.00	$0	4.5%			1%	13%	13%			

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								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * SP-14	2,983	8	$0.00	$0	4.5%			5%	5%	0%			
(1) * SP-15	1,060	12	$0.00	$0	4.5%			2%	13%	11%			
(1) * SP-16	3,226	8	$0.00	$0	4.5%			10%	10%	0%			
(1) * SP-17	1,528	12	$0.00	$0	4.5%			3%	12%	9%			
(1) * SP-18	4,599	10	$0.00	$0	4.5%			8%	9%	1%			
(1) * SP-19	2,102	15	$35.00	$73,555	4.5%	$39,537	$113,092	3%	12%	9%	$3,398	$13,049	$9,651
(1) * SP-20	7,016	10	$0.00	$0	4.5%			34%	46%	12%			
(1) * SP-21	1,784	18	$60.00	$107,052	4.5%	$57,543	$164,595	4%	11%	7%	$6,732	$18,008	$11,276
(1) * SP-22	4,505	10	$0.00	$0	4.5%			2%	4%	2%			
(1) * SP-23	3,407	18	$60.00	$204,424	4.5%	$109,883	$314,307	5%	9%	5%	$14,883	$29,105	$14,222
(1) * SP-24	5,599	10	$0.00	$0	4.5%			74%	85%	11%			
(1) * SP-25	3,717	21	$85.00	$315,983	4.5%	$169,848	$485,831	8%	13%	5%	$40,541	$65,426	$24,885
(1) * SP-26	5,549	10	$0.00	$0	4.5%			8%	11%	3%			
(1) * SP-27	1,548	21	$85.00	$131,619	4.5%	$70,748	$202,367	8%	13%	5%	$16,936	$26,408	$9,472
(1) * SP-28	4,973	12	$0.00	$0	4.5%			13%	16%	3%			
(1) * SP-29	970	21	$85.00	$82,432	4.5%	$44,309	$126,741	9%	13%	5%	$10,872	$16,845	$5,973
(1) * SP-30	5,311	10	$0.00	$0	4.5%			8%	12%	4%			
(1) * SP-31	1,551	21	$85.00	$131,845	4.5%	$70,870	$202,715	8%	13%	5%	$16,910	$26,428	$9,518
(1) * SP-32	4,249	10	$0.00	$0	4.5%			6%	9%	4%			
(1) * SP-33	3,737	24	$120.00	$448,414	4.5%	$241,033	$689,447	8%	13%	5%	$58,251	$90,195	$31,944
(1) * SP-34	2,434	8	$0.00	$0	4.5%			15%	15%	0%			
(1) * SP-36	2,960	21	$85.00	$251,558	4.5%	$135,218	$386,776	89%	89%	0%	$343,728	$343,728	$0
(1) * SP-37	754	27	$150.00	$113,087	4.5%	$60,787	$173,874	56%	57%	2%	$97,028	$99,856	$2,828
(1) * SP-38	4,423	10	$0.00	$0	4.5%			24%	27%	4%			
(1) * SP-39	2,789	30	$210.00	$585,731	4.5%	$314,844	$900,575	48%	50%	2%	$435,484	$450,967	$15,483
(1) * SP-40	4,457	8	$0.00	$0	4.5%			5%	5%	1%			
(1) * SP-41	3,028	30	$210.00	$635,871	4.5%	$341,795	$977,666	45%	46%	2%	$435,936	$452,349	$16,413
(1) * SP-42	1,938	8	$0.00	$0	4.5%			100%	100%	0%			
(1) * SP-43	2,891	30	$210.00	$607,086	4.5%	$326,323	$933,409	43%	45%	2%	$400,648	$417,719	$17,071
(1) * SP-44	4,035	8	$0.00	$0	4.5%			10%	13%	3%			
(1) * SP-45	1,390	30	$210.00	$291,879	4.5%	$156,892	$448,771	41%	42%	2%	$182,725	$190,678	$7,953
(1) * SP-46	5,157	10	$0.00	$0	4.5%			4%	15%	11%			
(1) * SP-47	2,379	36	$280.00	$666,105	4.5%	$358,047	$1,024,152	36%	38%	2%	$365,936	$389,228	$23,292

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									2020	2030	During Fee Period	2020	2030	During Fee Period
(1)	* SP-48	9,613	12	$0.00	$0	4.5%			22%	58%	36%			
(1)	* SP-49	1,492	33	$255.00	$380,351	4.5%	$204,447	$584,798	33%	36%	3%	$194,947	$212,876	$17,929
(1)	* SP-54	4,573	30	$210.00	$960,394	4.5%	$516,234	$1,476,628						
(1)	* SP-55	4,178	30	$210.00	$877,378	4.5%	$471,611	$1,348,989	28%	30%	3%	$373,283	$410,939	$37,656
(1)	* WC-01	6,229	18	$60.00	$373,750	4.5%	$200,899	$574,649	7%	16%	9%	$41,273	$93,261	$51,988
(1)	* WC-02	4,512	15	$35.00	$157,917	4.5%	$84,884	$242,801	38%	61%	23%	$93,121	$149,108	$55,987
(1)	* WC-03	3,995	15	$35.00	$139,832	4.5%	$75,163	$214,995	38%	61%	23%	$82,457	$132,032	$49,575
(1)	* WC-04	3,752	12	$0.00	$0	4.5%			8%	11%	3%			
(1)	* WC-05	1,451	24	$120.00	$174,167	4.5%	$93,619	$267,786	32%	41%	9%	$86,144	$110,429	$24,285
(1)	* WC-06	4,911	18	$60.00	$294,657	4.5%	$158,385	$453,042	30%	34%	4%	$136,472	$155,861	$19,389
(1)	* WC-07	2,908	27	$150.00	$436,133	4.5%	$234,431	$670,564	21%	30%	9%	$138,238	$200,515	$62,277
(1)	* WC-08	7,859	12	$0.00	$0	4.5%			4%	4%	1%			
(1)	* WC-09	2,486	24	$120.00	$298,284	4.5%	$160,334	$458,618	10%	20%	10%	$46,386	$90,413	$44,027
(1)	* WC-10	4,001	12	$0.00	$0	4.5%			5%	15%	10%			
(1)	* WC-11	2,929	18	$60.00	$175,712	4.5%	$94,449	$270,161	4%	6%	2%	$10,401	$14,967	$4,566
(1)	* WC-12	2,555	12	$0.00	$0	4.5%			7%	17%	10%			
(1)	* WC-14	3,539	12	$0.00	$0	4.5%			7%	11%	5%			
(1)	* WC-18	4,823	10	$0.00	$0	4.5%			17%	28%	10%			
(1)	* WC-19	905	24	$120.00	$108,595	4.5%	$58,372	$166,967	16%	25%	9%	$27,219	$41,562	$14,343
(1)	* WC-21	1,580	36	$280.00	$442,318	4.5%	$237,756	$680,074	15%	24%	8%	$104,930	$161,263	$56,333
(1)	* WC-22	2,716	10	$0.00	$0	4.5%			3%	7%	3%			
(1)	* WC-23	1,555	36	$280.00	$435,417	4.5%	$234,047	$669,464	15%	23%	8%	$101,913	$156,954	$55,041
(1)	* WC-24	4,454	8	$0.00	$0	4.5%			10%	56%	46%			
(1)	* WC-25	1,753	36	$280.00	$490,887	4.5%	$263,863	$754,750	16%	25%	9%	$120,009	$188,089	$68,080
(1)	* WC-26	5,148	8	$0.00	$0	4.5%			43%	74%	31%			
(1)	* WC-27	1,157	36	$280.00	$324,028	4.5%	$174,172	$498,200	16%	25%	9%	$79,439	$125,478	$46,039
(1)	* WC-28	4,238	8	$0.00	$0	4.5%			40%	53%	13%			
(1)	* WC-29	1,837	36	$280.00	$514,473	4.5%	$276,541	$791,014	16%	25%	9%	$127,041	$200,478	$73,437
(1)	* WC-29A	81	30	$210.00	$17,032	4.5%	$9,155	$26,187	20%	31%	11%	$5,137	$8,074	$2,937
(1)	* WC-30A	69	15	$35.00	$2,427	4.5%	$1,305	$3,732	24%	36%	12%	$903	$1,354	$451
(1)	* WC-31	622	42	$350.00	$217,655	4.5%	$116,995	$334,650	17%	27%	10%	$58,135	$91,705	$33,570
(1)	* WC-33	1,610	42	$350.00	$563,567	4.5%	$302,930	$866,497	17%	27%	10%	$149,555	$236,181	$86,626
(1)	* WC-34	8,161	12	$0.00	$0	4.5%			3%	10%	7%			

TABLE B-4
Full System: Future Wastewater Collection Lines

(1) - City Participate in Cost Oversize
(2) - City Initiated and Funded
! Average Unit costs are based on Bid Tabulation or Design Opinion of Cost, plus Engineering and Easements
** Average Unit costs are based in 2020 dollars unless otherwise indicated and include 20% for engineering and easements.*
B - Bore Across State Highway or Interstate

Pipe Number	Length (Ft.)	Diameter (Inches)	*Avg. Unit Cost ($/Ft.)	Total Capital Cost ($)	Debt Service Intersest Rate %	20 Year Debt Service Utilizing Simple Interest	Total 20 Yr. Project Cost ($)	(%) Utilized Capacity			($) Utilized Capacity		
								2020	2030	During Fee Period	2020	2030	During Fee Period
(1) * WC-34A	103	12	$0.00	$0	4.5%			56%	81%	24%			
(1) * WC-35	1,110	42	$350.00	$388,487	4.5%	$208,821	$597,308	18%	28%	10%	$104,963	$166,998	$62,035
(1) * WC-36	1,878	12	$0.00	$0	4.5%			7%	18%	11%			
(1) * WC-36A	137	12	$0.00	$0	4.5%			49%	73%	24%			
(1) * WC-37	3,128	42	$350.00	$1,094,801	4.5%	$588,481	$1,683,282	15%	25%	10%	$252,229	$423,834	$171,605
(1) * WC-38	2,153	12	$0.00	$0	4.5%			9%	11%	3%			
(1) * WC-38A	126	12	$0.00	$0	4.5%			47%	72%	25%			
(1) * WC-39	2,333	42	$350.00	$816,500	4.5%	$438,887	$1,255,387	14%	25%	10%	$181,085	$307,982	$126,897
(1) * WC-40A	76	21	$85.00	$6,459	4.5%	$3,472	$9,931	52%	66%	14%	$5,155	$6,578	$1,423
(1) * WC-41	2,323	42	$350.00	$813,157	4.5%	$437,090	$1,250,247	14%	24%	10%	$173,020	$301,139	$128,119
(1) * WC-43	1,781	42	$350.00	$623,223	4.5%	$334,997	$958,220	15%	25%	10%	$144,192	$242,830	$98,638
(1) * WC-44	1,416	12	$0.00	$0	4.5%			14%	40%	26%			
(1) * WC-44A	104	27	$150.00	$15,639	4.5%	$8,406	$24,045	24%	37%	13%	$5,835	$8,962	$3,127
(1) * WC-45	2,654	42	$350.00	$928,991	4.5%	$499,354	$1,428,345	24%	37%	13%	$345,314	$532,359	$187,045
Subtotal:	**927,495**		**$27,650.00**	**$81,043,100**		**$43,562,520**	**$124,605,620**				**$40,229,120**	**$50,872,650**	**$10,643,530**
TOTAL FULL SYSTEM: FUTURE WASTEWATER COLLECTION LINES:													
	927,495			**$81,043,100**		**$43,562,520**	**$124,605,620**				**$40,229,120**	**$50,872,650**	**$10,643,530**

APPENDIX C

10-YEAR PLAN ALLOWABLE MAXIMUM FEE PER LIVING UNIT EQUIVALENT AND PER METER SIZE AND TYPE

10-Year Plan Allowable Maximum Fee per Living Unit Equivalent
And
Per Meter Size and Type

50% Max . Water Impact Fee /LUE …… $2,701.01
50% Max . Wastewater Impact Fee /LUE …… $3,155.22

Meter Type	Meter Size	LUE	Maximum Impact Fee		Total
			Water	Wastewater	
Simple	5/8" x 3/4"	1	$2,701	$3,155	$5,856
Simple	1"	2.5	$6,753	$7,888	$14,641
Simple	1-1/2"	5	$13,505	$15,776	$29,281
Simple	2"	8	$21,608	$25,242	$46,850
Compound	2"	8	$21,608	$25,242	$46,850
Turbine	2"	10	$27,010	$31,552	$58,562
Compound	3"	16	$43,216	$50,484	$93,700
Turbine	3"	24	$64,824	$75,725	$140,550
Compound	4"	25	$67,525	$78,881	$146,406
Turbine	4"	42	$113,442	$132,519	$245,962
Compound	6"	50	$135,050	$157,761	$292,812
Turbine	6"	92	$248,493	$290,281	$538,773
Compound	8"	80	$216,081	$252,418	$468,498
Turbine	8"	160	$432,161	$504,836	$936,997
Compound	10"	115	$310,616	$362,851	$673,467
Turbine	10"	250	$675,252	$788,806	$1,464,058
Turbine	12"	330	$891,332	$1,041,224	$1,932,556

WATER AND WASTEWATER IMPACT FEE UPDATE

2020 to 2030

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
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November 2020

Exhibit C
Roadway Capital Improvement Plan

2020

Roadway Impact Fee Program Update

Final Report

Submitted By:

FREESE AND NICHOLS

November 2, 2020

2020
Roadway Impact Fee Program Update

Final Report

STATE OF TEXAS
NAMOO A. HAN
137262
LICENSED
PROFESSIONAL ENGINEER

11/02/2020

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

Submitted By:

November 2, 2020

Table of Contents

List of Tables

List of Figures

List of Appendices

Chapter 1: Introduction

Shrinking funds available for transportation improvements on city thoroughfares limit many cities from upgrading infrastructure to meet increasing travel demands. To meet the needs of new growth, many cities collect "impact fees" from new development to help fund transportation improvements necessitated by such development. What is unique about impact fees is that they often finance roadway improvements that are considered “offsite” to new development. However, when considering the traffic implications created by new development on the roadway system, impact fees provide a means by which infrastructure may keep pace with new development.

Texas initially authorized the use of impact fees with the during the 1987 legislature. Now codified in Section 395 of the Texas Local Government Codes, the legislation authorizes cities to collect fees from new developments to finance new construction or expansion of capital improvements such as road, water, and wastewater facilities. The law stipulates that all fees collected from new development must not exceed the maximum amount calculated by the methodology described therein. The law also mandates that impact fee systems be updated periodically (at least every five years) to ensure existence of excess capacity of the capital improvement plan and that costs necessitated by new growth are accurately reflected in the cost per service unit calculation. Modifications to the capital improvement plan (CIP) may be made, subject to compliance with the city’s official thoroughfare plan. Amendments to the CIP also must contemplate growth need identified in land use assumptions spanning a ten-year planning period.

The impact fee program offers several advantages to both a city and new development among which include: 1) a systematic, structured approach to assessment of fees, 2) a clear, equitable distribution of costs associated with the impact of new development, 3) the ability to pool funds, as well as flexibility, for phased project implementation of specifically identified projects, 4) assurance that fees collected will be spent in the area where new development is occurring (roadway service areas), 5) up-front knowledge of fees to be imposed, and 6) credits for developer participation.

Since the inception of roadway impact fees in 2008, the program was updated in 2012 and in 2015 and has helped to fund numerous projects citywide. In each program update, the roadway capital improvements plan was amended to incorporate additional projects and has served to provide increased capacity and accessibility to growth and development throughout the city.

This program update considers amendments to land use assumptions for the ten-year planning period 2020-2030, as well as to the roadway capital improvements plan to address long-term citywide growth and development. Per procedural requirements codified in Chapter 395, technical and administrative requirements of the program have been addressed, a Capital Improvements Advisory Committee was convened to provide comment to program land use assumptions, capital improvements plan, and calculated impact fees, appropriate public noticing provided, and public hearing held to consider amendments to the roadway impact fee program.

This program update incorporates a philosophical change to the roadway CIP. In prior programs, specific projects were identified from which the cost per service unit was calculated. Monies collected from new development are used to implement those projects in the impact fee CIP, in accordance with state law.

As such, if new development were to implement improvements outside of the impact fee CIP, no impact fee monies could be used nor enabled without an impact fee CIP amendment and associated public process.

This 2020 system update incorporates the full thoroughfare network into the impact fee program to both minimize the impact fee CIP amendment process as well as enabling the ability to credit new development for off-site roadway project improvements. This approach further enables more flexibility for the use of impact fee funds towards phased improvements, as appropriate, throughout the city's major street network. From a cost of implementation perspective, this may seem a drastic departure from the traditional program however it is important to note that from a unit cost perspective, the unit cost is generally the same as only cost of needed capacity is considered in the calculation. For example, capacity consumed by ten-year growth on the traditional program was determined to be 52% (calculated and refer to Appendices for Ten-Year Analysis) versus 12% of the full-system capacity, as documented in this report.

Study Methodology

The following steps were undertaken as part of this program update:

1. Meetings were held with the City of Waxahachie Staff and the Capital Improvement Advisory Committee to discuss technical approach, growth rates and land use assumptions, defined capital improvements plans, project costing and associated cost per service unit calculations, and program amendments for policy consideration.

2. Impact fee service areas were reviewed and amended for any city annexations. Roadway service areas are contained to the current city limits.

3. The vehicle-mile of travel (VMT) during the PM peak hour was retained as the unit of measure for the roadway impact fee system.

4. A roadway conditions inventory was conducted on Waxahachie thoroughfares for lane geometries, roadway classifications and segment lengths. New arterial and/or collector streets not previously assessed were added to the program database.

5. The existing roadway network was evaluated based on traffic volume count data collected January 2020, to determine roadway capacity, current utilization, and if any capacity deficiencies exist within each impact fee service area.

6. Projected 10-year growth, in terms of vehicle-miles of demand, was calculated for the service areas based on updated land use assumptions (projections of population and employment growth) prepared by Freese and Nichols in May 2020 and supplemented with service unit generation for residential, office, commercial and industrial land uses per an updated land use equivalency table. The Land Use Assumptions for Impact Fees report was reviewed and approved by the Capital Improvements Advisory Committee (CIAC) prior to development of VMT growth projections and capital improvements plan (CIP) update.

7. The existing impact fee CIP was evaluated with updated traffic count data to ensure that excess capacity remained within each impact fee project for retention in the program. The analysis of the

existing impact fee CIP revealed excess capacity and therefore could remain in the impact fee program.

8. A roadway impact fee CIP was amended to incorporate full-system buildout, per the current official City Thoroughfare Plan, into the impact fee program. Projects added to the impact fee program included only new lane additions to achieve thoroughfare plan standard. For example, for an ultimate six-lane roadway in which two lanes currently exist, only the difference in lanes (four additional lanes) was added to the program. This would ensure that only true capacity enhancement was considered as part of the full-system analysis and resultant cost per service unit calculation. It is important to note that an incremental 10-year traditional CIP was also developed to compare and verify that the "Full-System" program was a fair and equitable approach to the development community.

9. Roadway costs associated with construction, engineering, right-of-way, and project financing for recoupment projects were prepared by Freese and Nichols. A combination of updated construction cost estimate worksheets for the existing impact fee CIP projects and unit costing (linear foot basis) by roadway functional class for full-system roadways was prepared by individual projects. Costs for study updates are eligible for recovery and were included in the total project cost. Roadway cost data was compiled and summed by service area.

10. The cost of capacity supplied, cost attributable to new development and the maximum cost per service unit was calculated for each service area. A credit of 50% was applied to the overall cost of the capital improvements program for use in the calculation of the cost per service unit.

11. This report was prepared to document the procedures, findings, and conclusions of the study.

Organization of Report

This report describes the background information, analysis, and findings of the study in six parts, with a chapter devoted to each:

- Roadway Impact Fee Service Areas (Chapter 2)
- Roadway Impact Fee Service Units (Chapter 3)
- Existing Conditions Analysis (Chapter 4)
- Projected Conditions Analysis (Chapter 5)
- Calculation of Impact Fees (Chapter 6)
- Conclusion (Chapter 7)

Chapter 2: Roadway Impact Fee Service Areas

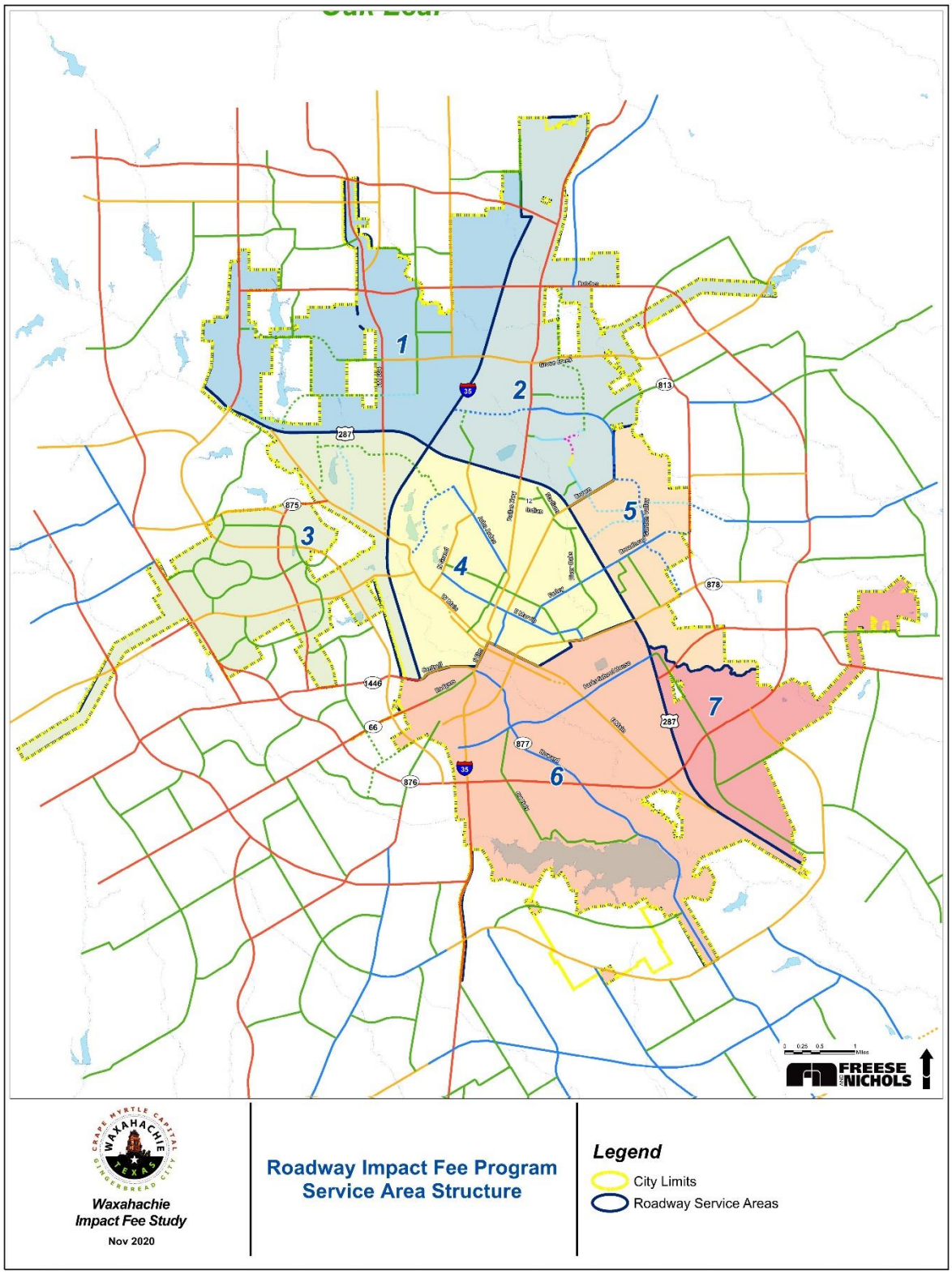
Chapter 395 requires that service areas be defined for impact fees to ensure that facility improvements are in proximity to the area that is generating need. State law mandates that roadway service areas be limited to a six-mile maximum and must be located within the current city limits. This is primarily because roadway systems are "open" to both local and regional use as opposed to a defined limit of service that is provided with water and wastewater systems. The result is that new development can only be assessed an impact fee based on the cost of necessary capital improvements within the city limits and further, within a defined service area.

Waxahachie's roadway impact fee system contains seven service areas as depicted in **Figure 1** and developed using the criteria defined in Chapter 395. Other considerations included use of physical or natural features, potential roadway projects and their relation to undeveloped areas of the community, and the planning areas used in long-range plan efforts (for consideration of service area expansion due to possible annexation).

Amendments to the service area structure include areas annexed into the city since 2015 and generally occur in the following service areas:

- Service Area 1: Near Marshall Road between FM 664/Ovilla Road and Black Champ Road
- Service Area 3: East of Lone Elm Road and north of FM 1446 (Emory Lakes area)
- Service Area 5: West of Broadhead Road near Youngblood Road
- Service Area 6: East of FM 877 (Howard Road) and Hunter Road

Figure 1: Service Areas for Roadway



Chapter 3: Roadway Impact Fee Service Units

An important aspect of the impact fee system is the definition of an appropriate service unit to relate roadway capacity with the ability to assess new development. As defined in Chapter 395, "Service unit means a standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development in accordance with generally accepted engineering or planning standards for a particular category of capital improvements or facility expansions."

To determine a roadway impact fee for a particular development, the service unit must accurately identify the impact that the development will have on the transportation system serving the development. This impact is a combination of the number of new trips generated by the development, the specific peaking characteristics of the land use(s) within the development, and the length of each new trip on the roadway system.

The service unit must also reflect the supply, which is provided by the roadway system, and the demand placed on the system during the time in which peak, or design, conditions are present on the system. Roadway facilities are designed and constructed to accommodate volumes expected to occur during the peak hours (design hours). These volumes typically occur during the morning (AM) and evening (PM) rush hours as motorists travel to and from work.

The vehicle-mile serves as the service unit for calculating and assessing roadway impact fees in Waxahachie and has been in place since 2007. The vehicle-mile as a service unit establishes a way to relate the intensity of land development to the demand on the system using published trip generation data. It also recognizes state legislation requirements with regards to trip length.

The PM peak hour was also retained as the period for assessing impacts because the greatest demand for roadway capacity occurs during this hour. Roadways are sized to meet this demand, and roadway capacity can more easily be defined on an hourly basis.

Service Units

Service units create a link between supply (roadway projects) and demand (development). Both can be expressed as a combination of the number of vehicles traveling during the peak hour and the distance traveled by these vehicles in miles.

Service Unit Supply

For roadway capital projects improvement, the number of service units provided during the peak hour is simply the product of the capacity of the roadway in one hour and the length of the project. For example:

> Given a four-lane divided roadway project with a 600 vehicle per hour per lane capacity and a length of two miles, the number of service units provided is:
>
> *600 vehicles per hour per lane x 4 lanes x 2 miles = 4,800 vehicle-miles*

Service Unit Demand

The demand placed on the system can be expressed in a similar manner. For example, a development generating 100 vehicle trips in the PM peak hour with an average trip length of two miles would generate:

100 vehicle-trips x 2 miles/trip = 200 vehicle-miles

Likewise, the existing demand placed on the roadway network is calculated in the same manner with a known traffic volume (peak hour roadway tube counts) on a street and an associated segment length.

Service Units for New Development

An important objective in the development of the impact fee system is the development of a specific service unit equivalency for individual developments. The vehicle-miles generated by a new development are a function of the trip generation and average trip length characteristics of that development. The following describes the process used to develop the vehicle-equivalency table, which relates land use types and sizes to the resulting vehicle-miles of demand created by that development.

Travel characteristics were reviewed and deemed to be similar in nature to the previous system update, and therefore no changes were made to the resultant land use equivalency table.

Trip Generation

Trip generation information for the PM peak hour was based on data published in the Tenth Edition of *Trip Generation* by the Institute of Transportation Engineers (ITE). *Trip Generation* is a reference publication that contains travel characteristics of over 160 land uses across the nation and is based on empirical data gathered from over 4,600 studies that were reported to the Institute by public agencies, developers and consulting firms. Data contained in this publication is generally accepted for use in studies by transportation engineers throughout the nation. Data not available was drawn from other published information. Rates were established for specific land use types within the broader categories of residential, office, commercial, industrial, and institutional land uses. Within each of the land use categories, a rate was also established for any land uses not specifically identified.

Adjustments

The actual "traffic impact" of a specific site for impact fee purposes is based on the amount of traffic added to the street system as a result of new development. To accurately estimate new trips generated, adjustments must be made to trip generation rates and equations to account for pass-by and diverted trips. The added traffic is adjusted so that each development is assigned only for a portion of trips associated with a specific development and thus reducing the possibility of over-counting by counting only primary trips generated. Trip generation rates were reduced by percentages presented in **Table 1** to isolate the primary trip purpose.

Pass-by trips are those trips that are already on a route for a different purpose and simply stop at a development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass-by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of impact fees of a convenience store.

A diverted trip is a similar situation, except that a diversion is made from the regular route to make an interim stop. For example, a trip from work to home using Brown Street (from US-287) would be a

diverted trip if the travel path were changed Hwy. 77 for the purpose of stopping at a retail site. On a system-wide basis, this trip places a slightly additional burden on the street system but in many cases, this burden is minimal.

Table 1 contains the documented estimates of trip rate adjustments used in determining the appropriate rate to use in the impact fee calculation process. Adjustments were based on studies documented in the ITE trip generation manual.

The resulting trip rates based on ITE Trip Generation are illustrated as part of Table 3 Land Use/Vehicle Mile Equivalency Table illustrated later in this chapter. Rates were developed in lieu of equations to simplify the assessment of impact fees by the City and likewise, the estimation of impact fees by persons who may be required to pay an impact fee in conjunction with a development project.

Trip Length

Trip lengths (in miles) are used in conjunction with site trip generation to estimate vehicle-miles of travel. Trip length data was based on information generated in the 1995 North Central Texas Council of Governments (NCTCOG) Workplace Survey and the National Workplace Survey. These travel characteristics were applied to Waxahachie to determine average trips lengths for common land use types.

Table 2 summarizes the derived average trip lengths for major land use categories. These trip lengths represent the average distance that a vehicle will travel between an origin and destination of which either the origin or destination contains the land-use category identified below. Data compiled by the Workplace Survey represents the best available information on trip lengths for this area.

Table 1: Trip Reduction Estimates (PM Peak Hour)

Land Use Category	ITE Code	Development Unit	Trip Gen Rate (PM Peak)	Pass-by Rate (%)	Diverted Rate (%)	Adjusted Trip Rate (PM Peak)
RESIDENTIAL						
Single-Family Detached Housing	210	Dwelling Units	0.99	0%	0%	0.99
Multifamily Housing (Low-Rise)	220	Dwelling Units	0.56	0%	0%	0.56
Mid-Rise Residential with 1st-Floor Commercial	231	Dwelling Units	0.36	0%	0%	0.36
Mobile Home Park	240	Dwelling Units	0.46	0%	0%	0.46
Senior Adult Housing - Attached	252	Dwelling Units	0.26	0%	0%	0.26
Assisted Living	254	Beds	0.26	0%	0%	0.26
OFFICE						
General Office Building	710	1,000 Sq Ft GFA	1.15	0%	0%	1.15
Medical-Dental Office Building	720	1,000 Sq Ft GFA	3.46	0%	0%	3.46
United States Post Office	732	1,000 Sq Ft GFA	11.21	70%	0%	3.36
Research and Development Center	760	1,000 Sq Ft GFA	0.49	0%	0%	0.49
COMMERCIAL/RETAIL						
Retail						
Shopping Center	820	1,000 Sq Ft GLA	3.81	34%	26%	1.52
Building Materials and Lumber Store	812	1,000 Sq Ft GFA	2.06	25%	0%	1.55
Hardware/Paint Store	816	1,000 Sq Ft GFA	2.68	26%	28%	1.23
Nursery (Garden Center)	817	1,000 Sq Ft GFA	6.94	25%	0%	5.21
Nursery (Wholesale)	818	1,000 Sq Ft GFA	5.18	25%	0%	3.89
Automobile Sales (New)	840	1,000 Sq Ft GFA	2.43	0%	0%	2.43
Automobile Parts Sales	843	1,000 Sq Ft GFA	4.91	43%	13%	2.16
Tire Store	848	1,000 Sq Ft GFA	3.98	28%	10%	2.47
Tire Superstore	849	1,000 Sq Ft GFA	2.11	28%	10%	1.31
Supermarket	850	1,000 Sq Ft GFA	9.24	36%	38%	2.40
Convenience Market w/ Gasoline Pumps	853	1,000 Sq Ft GFA	49.29	63%	26%	5.42
Discount Club	857	1,000 Sq Ft GFA	4.18	30%	0%	2.93
Home Improvement Superstore	862	1,000 Sq Ft GFA	2.33	48%	24%	0.65
Apparel Store	876	1,000 Sq Ft GFA	4.12	30%	0%	2.88
Pharmacy/Drugstore w/ Drive-Through Window	881	1,000 Sq Ft GFA	10.29	49%	13%	3.91
Furniture Store	890	1,000 Sq Ft GFA	0.52	53%	31%	0.08
Walk-in Bank	911	1,000 Sq Ft GFA	12.13	47%	26%	3.28
Drive-in Bank	912	Drive-in Lanes	27.15	47%	26%	7.33
Quality Restaurant	931	1,000 Sq Ft GFA	7.8	44%	27%	2.26
High-Turnover (Sit-Down) Restaurant	932	1,000 Sq Ft GFA	9.77	43%	26%	3.03
Fast-Food Restaurant w/ Drive-Through Window	934	1,000 Sq Ft GFA	32.67	50%	23%	8.82
Quick Lubrication Vehicle Shop	941	Service Positions	4.85	0%	0%	4.85
Gasoline/Service Station w/ Convenience Market	945	1,000 Sq Ft GFA	88.35	28%	10%	54.78
INDUSTRIAL						
General Light Industrial	110	1,000 Sq Ft GFA	0.63	0%	0%	0.63
Industrial Park	130	1,000 Sq Ft GFA	0.4	0%	0%	0.40
Mini-Warehouse	151	1,000 Sq Ft GFA	0.17	0%	0%	0.17
INSTITUTIONAL						
Junior/Community College	540	Students	0.11	0%	0%	0.11
Church	560	1,000 Sq Ft GFA	0.49	0%	0%	0.49
Day Care Center	565	Students	0.79	75%	0%	0.20

Table 2: Average Trip Lengths

Land Use Category	ITE Code	Average Trip Length (mi)	Localized Trip Length (mi)	Adjusted Trip Length (mi)
RESIDENTIAL				
Single-Family Detached Housing	210	11.27	5.62	2.81
Multifamily Housing (Low-Rise)	220	11.27	5.62	2.81
Mid-Rise Residential with 1st-Floor Commercial	231	9.42	4.70	2.35
Mobile Home Park	240	9.42	4.70	2.35
Senior Adult Housing - Attached	252	10.06	5.02	2.51
Assisted Living	254	5.18	2.58	1.29
Continuing Care Retirement Community	255	10.06	5.02	2.51
OFFICE				
General Office Building	710	11.88	5.93	2.96
Medical-Dental Office Building	720	9.64	4.81	2.41
United States Post Office	732	8.01	4.00	2.00
Research and Development Center	760	11.88	5.93	2.96
Business Park	770	11.88	5.93	2.96
COMMERCIAL/RETAIL				
Shopping Center	820	4.12	2.06	1.03
Building Materials and Lumber Store	812	1.61	0.80	0.4
Hardware/Paint Store	816	1.61	0.80	0.4
Nursery (Garden Center)	817	2.63	1.31	0.66
Nursery (Wholesale)	818	2.63	1.31	0.66
Automobile Sales (New)	840	4.47	2.23	1.12
Automobile Sales (Used)	841	4.47	2.23	1.12
Automobile Parts Sales	843	2.86	1.43	0.71
Tire Store	848	4.12	2.06	1.03
Tire Superstore	849	4.12	2.06	1.03
Supermarket	850	1.84	0.92	0.46
Convenience Market w/ Gasoline Pumps	853	1.77	0.88	0.44
Discount Club	857	3.98	1.99	0.99
Home Improvement Superstore	862	4.12	2.06	1.03
Apparel Store	876	3.39	1.69	0.85
Pharmacy/Drugstore w/ Drive-Through Window	881	1.93	0.96	0.48
Furniture Store	890	4.68	2.34	1.17
Walk-in Bank	911	2.63	1.31	0.66
Drive-in Bank	912	2.63	1.31	0.66
Quality Restaurant	931	3.75	1.87	0.94
High-Turnover (Sit-Down) Restaurant	932	3.89	1.94	0.97
Fast-Food Restaurant w/ Drive-Through Window	934	2.86	1.43	0.71
Quick Lubrication Vehicle Shop	941	2.86	1.43	0.71
Automobile Care Center	942	2.86	1.43	0.71
Gasoline/Service Station w/ Convenience Market	945	1.77	0.88	0.44
INDUSTRIAL				
General Light Industrial	110	9.95	4.97	2.48
Industrial Park	130	9.98	4.98	2.49
Manufacturing	140	10.28	5.13	2.56
Warehousing	150	8.84	4.41	2.21
Mini-Warehouse	151	6.34	3.16	1.58
INSTITUTIONAL				
Private School (K-12)	536	4.12	2.06	1.03
Junior/Community College	540	4.20	2.10	1.05
Church	560	2.48	1.24	0.62
Day Care Center	565	1.64	0.82	0.41

Adjustments

The assessment of an individual development's impact fee is based on the premise that each vehicle-trip has an origin and a destination and that the development end should pay for one-half of the cost necessary to complete each trip. Thus, the development is charged only for a portion of the vehicle-trip associated with that development.

To prevent double charging, and to fairly attribute the demand placed on the system to each trip end location, the trip length was adjusted to remove travel on the federal roadway system and then divided by two to reflect half of the vehicle trip to and from the development. Data from the NCTCOG travel forecast model was used to compare vehicle-miles of travel (VMT) by roadway functional class. Data revealed 49% of travel to use the federal system and thus the average trip length was reduced by this percentage to reflect localized travel on city streets (reflected in column 2). The average trip length, localized trip length, and adjustment for one-half trip length are illustrated in column 3 of Table 2. Where specific land uses were considered to exhibit different trip length characteristics than those identified in Table 3, engineering judgment was used to estimate the average trip length. Finally, as the service area structure was based on a six-mile boundary, those land uses that exhibited trip lengths greater than six miles were limited to this threshold.

Service Unit Equivalency Table

The result of combining the trip generation and trip length information is an equivalency table which establishes the service unit rate for various land uses. These service unit rates are based on an appropriate development unit for each land use. For example, a dwelling unit is the basis for residential uses, while 1,000 gross square feet of floor area is the basis for office, commercial, and retail uses. Other less common land uses are based on appropriate independent variables.

Separate rates have been established for specific land uses within the broader categories of residential, commercial, industrial, and institutional to reflect the differences between land uses within the categories. However, even with these specific land use types, information is not available for every conceivable land use, so limitations do exist.

The updated equivalency table is illustrated in **Table 3**. Table 3 is reflective of adjusted trip rates (detailed in Table 1) and trip lengths (Table 2).

Table 3: Land-Use Vehicle-Mile Equivalency Table

Land Use Category	ITE Code	Development Unit	Adjusted Trip Rate (PM Peak)	Adjusted Trip Length (mi)	Service Unit Equivalency
RESIDENTIAL					
Single-Family Detached Housing	210	Dwelling Units	0.99	2.81	2.78
Multifamily Housing (Low-Rise)	220	Dwelling Units	0.56	2.81	1.57
Mid-Rise Residential with 1st-Floor Commercial	231	Dwelling Units	0.36	2.35	0.85
Mobile Home Park	240	Dwelling Units	0.46	2.35	1.08
Senior Adult Housing - Attached	252	Dwelling Units	0.26	2.51	0.65
Assisted Living	254	Beds	0.26	1.29	0.34
Continuing Care Retirement Community	255	Dwelling Units	0.16	2.51	0.40
Others Not Specified		Dwelling Units	0.99	2.81	2.78
OFFICE					
General Office Building	710	1,000 Sq Ft GFA	1.15	2.96	3.40
Medical-Dental Office Building	720	1,000 Sq Ft GFA	3.46	2.41	8.34
United States Post Office	732	1,000 Sq Ft GFA	3.36	2.00	6.72
Research and Development Center	760	1,000 Sq Ft GFA	0.49	2.96	1.45
Business Park	770	1,000 Sq Ft GFA	0.42	2.96	1.24
Others Not Specified		Dwelling Units	1.15	2.96	3.40
COMMERCIAL/RETAIL					
Hotel	310	Rooms	0.60	1.04	0.62
All Suites Hotel	311	Rooms	0.36	1.04	0.37
Motel	320	Rooms	0.38	1.04	0.40
Movie Theater	444	Screens	14.60	0.82	11.97
Health/Fitness Club	492	1,000 Sq Ft GFA	3.45	0.51	1.76
Hospital	610	1,000 Sq Ft GFA	0.97	1.29	1.25
Nursing Home	620	1,000 Sq Ft GFA	0.59	1.29	0.76
Shopping Center	820	1,000 Sq Ft GLA	1.52	1.03	1.57
Building Materials and Lumber Store	812	1,000 Sq Ft GFA	1.55	0.4	0.62
Free-Standing Discount Superstore	813	1,000 Sq Ft GFA	3.12	1.78	5.55
Nursery (Garden Center)	817	1,000 Sq Ft GFA	5.21	0.66	3.44
Nursery (Wholesale)	818	1,000 Sq Ft GFA	3.89	0.66	2.57
Automobile Sales (New)	840	1,000 Sq Ft GFA	2.43	1.12	2.72
Automobile Sales (Used)	841	1,000 Sq Ft GFA	3.75	1.12	4.20
Automobile Parts Sales	843	1,000 Sq Ft GFA	2.16	0.71	1.53
Tire Store	848	1,000 Sq Ft GFA	2.47	1.03	2.54
Tire Superstore	849	1,000 Sq Ft GFA	1.31	1.03	1.35
Supermarket	850	1,000 Sq Ft GFA	2.40	0.46	1.10
Convenience Market w/ Gasoline Pumps	853	1,000 Sq Ft GFA	5.42	0.44	2.38
Convenience Market w/ Gasoline Pumps	853	Fueling Positions	2.53	0.44	1.11
Discount Supermarket	854	1,000 Sq Ft GFA	2.18	1.78	3.88
Discount Club	857	1,000 Sq Ft GFA	2.93	0.99	2.90
Home Improvement Superstore	862	1,000 Sq Ft GFA	0.65	1.03	0.67
Electronic Superstore	863	1,000 Sq Ft GFA	1.15	1.78	2.05
Apparel Store	876	1,000 Sq Ft GFA	2.88	0.85	2.45
Pharmacy/Drugstore w/ Drive-Through Window	881	1,000 Sq Ft GFA	3.91	0.48	1.88
Furniture Store	890	1,000 Sq Ft GFA	0.08	1.17	0.09
Other Not Specified		1,000 Sq Ft GFA	6.35	1.03	6.54
Walk-in Bank	911	1,000 Sq Ft GFA	3.28	0.66	2.16
Drive-in Bank	912	Drive-in Lanes	7.33	0.66	4.84

Table 3 (Continued): Land-Use Vehicle-Mile Equivalency Table

Land Use Category	ITE Code	Development Unit	Adjusted Trip Rate (PM Peak)	Adjusted Trip Length (mi)	Service Unit Equivalency
COMMERCIAL/RETAIL					
Quality Restaurant	931	1,000 Sq Ft GFA	2.26	0.94	2.12
High-Turnover (Sit-Down) Restaurant	932	1,000 Sq Ft GFA	3.03	0.97	2.94
Fast-Food Restaurant w/ Drive-Through Window	934	1,000 Sq Ft GFA	8.82	0.71	6.26
Quick Lubrication Vehicle Shop	941	Service Positions	4.85	0.71	3.44
Automobile Care Center	942	1,000 Sq Ft GFA	3.11	0.71	2.21
Gasoline/Service Station	944	Fueling Positions	8.70	0.3	2.61
Gasoline/Service Station w/ Convenience Market	945	1,000 Sq Ft GFA	54.78	0.44	24.1
Gasoline/Service Station w/ Convenience Market	945	Fueling Positions	3.64	0.44	1.60
Self-Service Car Wash	947	Wash Stalls	0.61	1.78	1.09
Car Wash and Detail Center	949	Wash Stalls	1.50	1.78	2.67
INDUSTRIAL					
General Light Industrial	110	1,000 Sq Ft GFA	0.63	2.48	1.56
Industrial Park	130	1,000 Sq Ft GFA	0.40	2.49	1.00
Manufacturing	140	1,000 Sq Ft GFA	0.67	2.56	1.72
Warehousing	150	1,000 Sq Ft GFA	0.19	2.21	0.42
Mini-Warehouse	151	1,000 Sq Ft GFA	0.17	1.58	0.27
High-Cube Fulfillment Center Warehouse	155	1,000 Sq Ft GFA	1.37	3.13	4.29
Data Center	160	1,000 Sq Ft GFA	0.09	3.13	0.28
INSTITUTIONAL					
Private School (K-12)	536	Students	0.17	1.03	0.18
Junior/Community College	540	Students	0.11	1.05	0.12
University/College	550	Students	0.15	1.25	0.19
Church	560	1,000 Sq Ft GFA	0.49	0.62	0.30
Day Care Center	565	Students	0.20	0.41	0.08

Chapter 4: Existing Conditions Analysis

Chapter 395 identifies specific requirements necessary in the capital improvements plan for impact fees. The existing conditions, including defining the existing roadway system, and analysis of the total capacity, the level of current usage, and commitments for usage of the existing roadway, are required as part of the capital improvements plan. This chapter discusses the existing conditions.

Existing Conditions

An inventory of the collector and arterial facilities within the city limits was conducted to determine existing roadway conditions throughout Waxahachie. This analysis determines the capacity provided by the existing street system, the demand currently placed on the system, and the potential existence of deficiencies on the system. The analyses is then totaled by roadway service area. Updated data for the inventory was obtained from traffic volume counts conducted in May 2020 and field reconnaissance of current roadway sections.

The roadways were divided into segments based on volume changes, major intersections, service area boundaries, and capacity changes. For each roadway segment, the length, number of lanes, cross-section, and PM peak hour volume data were obtained. Lane capacities were assigned to each segment based on functional street classification, associated roadway lane capacities and the present number of lanes. Lane capacities used in the analysis are shown in **Table 4.**

Table 4: Roadway Facility Vehicle-Mile Lane Capacities

Roadway Facility	Designation	Hourly Vehicle-Mile Capacity per Lane Mile of Roadway Facility
Divided Arterial	DA	665
Divided Collector	DC	565
Undivided Arterial	UA	590
Undivided Collector	UC	510
Arterial with Two-Way Left Turn Lane	SA	665

Roadway hourly volume capacities are based on information reflecting Level-of-Service “C/D” operation, as identified in the transportation element of the Waxahachie Comprehensive Plan.

Existing Volumes

Existing directional PM peak hour volumes were obtained from automated traffic counts conducted in May 2020 by the City. Automated traffic counts at 25 separate locations were collected on major roadways (as identified in the Thoroughfare Plan as arterial or collector status) throughout Waxahachie. To minimize the total number of counts, data was collected at locations where traffic volumes would typify link volumes on the major segments within the immediate area. For segments not counted, existing volumes were used, or estimates were developed based on data from adjoining roadway counts.

Data was compiled for roadway segments throughout the city and input into the database for use in calculations. A summary of volumes by roadway segment is included in **Appendix D** as part of the existing capital improvements database.

Vehicle-Miles of Existing Capacity Supply

An analysis of the total capacity for each service area was performed. For each roadway segment, the existing vehicle-miles of capacity supplied were calculated using the following equation:

Vehicle-Miles of Capacity = Link capacity per peak hour per lane x Number of lanes x Length of segment (miles)

A summary of the current capacity available on the roadway system is shown in **Table 5**. It is important to note that the roadway capacity depicted in Table 5 is based on arterial collector class facilities system-wide (of the current roadway network) and not connected with the capacity to be added as part of the impact fee capital improvements plan. Directional calculations of capacity were performed separately. For a detailed listing of vehicle-miles of capacity by roadway segment, refer to Appendix D.

Vehicle-Miles of Existing Demand

The level of current usage in terms of vehicle-miles was calculated for each roadway segment. The vehicle-miles of existing demand were calculated by the following equation:

Vehicle-Miles of Demand = PM peak hour volume x Length of segment (miles)

Table 5 also lists total vehicle-miles of demand. Appendix D includes a detailed listing of vehicle-miles of demand by directional roadway segment.

Vehicle-Miles of Existing Excess Capacity and Deficiencies

For each roadway segment, the existing vehicle-miles of excess capacity and/or deficiencies were calculated. Each direction was evaluated to determine if vehicle demands exceeded the available capacity. If demand exceeded capacity in one or both directions, the deficiency is deducted from the supply associated with the impact fee capital improvement plan. A summary of peak hour excess capacity and deficiencies are shown in **Table 6**. A detailed listing of the existing excess capacity and deficiencies by roadway segment is also located in Appendix D.

Table 5: Peak Hour Vehicle-Miles of Existing Capacity and Demand

Service Area	Capacity (Vehicle-Miles)	Demand (Vehicle-Miles)
1	13,066	3,636
2	24,630	15,269
3	4,083	1,419
4	26,655	12,737
5	6,400	2,417
6	23,422	4,435
7	2,795	11
Total	101,051	39,924

Table 6: Peak Hour Vehicle-Miles of Excess Capacity and Deficiencies

Service Area	Excess Capacity (Vehicle-Miles)	Deficiency (Vehicle-Miles)
1	9,715	285
2	9,360	0
3	2,664	0
4	13,934	16
5	3,982	0
6	18,992	4
7	2,784	0
Total	61,431	305

Chapter 5: Projected Conditions Analysis

Chapter 395 requires a description of all capital improvements or facility expansions and their costs necessitated by and attributable to new development within the service area. This chapter describes the projected growth, vehicle-miles of new demand, capital improvements program, vehicle-miles of new capacity supplied, and costs of the roadway improvements.

Projected Growth

The projected growth for each transportation service area is represented by the increase in the number of new vehicle-miles generated over the 10-year planning period. The basis for the calculation of new demand is the population and employment projections that were prepared as part of a technical report entitled *Land Use Assumptions for Impact Fees* submitted in May 2020 and located in Appendix H. Estimates of population and employment were prepared for the years 2020 and 2030.

Population data was provided in terms of the number of dwelling units, households, and persons. Employment data is aggregated into three sectors of employees: basic, service and retail. These employment sectors serve as the typical components used in the traffic forecast modeling process. The employment grouping also correlate with the North American Industrial Classification (NAIC) system and include: basic employment (NAIC 210000-422999) generally encompasses the industrial and manufacturing uses; service employment (NAIC 520000-928199) encompasses government, office and professional uses; and retail employment (NAIC 440000-454390) generally includes commercial and retail use. **Table 7** and **Table 8** summarize ten-year population and employment projections by service area.

Table 7: Ten-Year Population Projection by Service Area

Roadway Service Area	2020		2030		10-Year Growth	
	Households	Population	Households	Population	Households	Population
1	630	1,714	1,040	2,829	410	1,115
2	2,242	6,099	3,651	9,931	1,409	3,832
3	238	647	982	2,671	744	2,024
4	6,391	17,384	7,204	19,595	813	2,211
5	1,679	4,568	2,523	6,863	844	2,295
6	2,892	7,867	4,316	11,740	1,424	3,873
7	348	942	624	1,697	276	755
Total	**14,420**	**39,221**	**20,340**	**55,326**	**5,920**	**16,105**

Table 8: Ten-Year Employment Projection by Service Area

Roadway Service Area	Basic		Retail		Service		Total Employment		10-Year Growth
	2020	2030	2020	2030	2020	2030	2020	2030	
1	1,020	1,623	337	519	1,345	2,078	2,703	4,220	1,517
2	3,780	5,204	1,266	1,838	4,328	5,700	9,374	12,743	3,369
3	336	345	79	124	404	635	818	1,104	286
4	3,978	4,214	1,196	1,326	6,959	7,219	12,133	12,758	625
5	390	390	133	196	469	469	993	1,056	63
6	2,124	2,788	722	1,064	2,896	4,190	5,741	8,042	2,301
7	35	48	7	12	16	16	58	77	19
Total	**11,663**	**14,613**	**3,740**	**5,080**	**16,417**	**20,307**	**31,820**	**40,000**	**8,180**

Projected Vehicle-Miles of New Demand

Projected vehicle-miles of demand were calculated based on the growth expected to occur during the 10-year planning period and the service unit generation for each of the population and employment data components (basic, service and retail). Separate calculations were performed for each data component and were then aggregated for the service area. Vehicle-miles of demand for population growth were based on single-family residential dwelling units, and demand for employment based on the number of employees and estimates of square footage per employee. Assumptions for basic (industrial type land use), service (office type land use) and retail (commercial type land use) were estimated at 1,500, 500, and 1,000 square feet per employee, respectively.

Land Use Equivalency for 10-Year Demand Estimate

Service unit generation for residential and employment components were used to project ten-year demands by service area. The corresponding land use equivalencies are identified in Table 3 include: 2.78 vehicle-miles per dwelling unit for residential, 1.56 vehicle-miles per thousand square feet for industrial type activity, 1.57 vehicle miles per thousand square feet for commercial, and 3.40 vehicle-miles per thousand square feet for office type development. **Table 9** and **Appendix C** summarize the projected vehicle-miles of demand over the 10-year planning period 2020 and 2030 by service area.

Table 9: Vehicle-Miles of New Demand

Service Area	Projected 10-Year Growth (Vehicle-Miles)
1	4,083
2	10,479
3	2,553
4	3,458
5	2,445
6	8,250
7	811
Total	**32,079**

Capital Improvements Program

The impact fee CIP is aimed at facilitating long-term growth in Waxahachie and is rooted in arterial and collector class facilities identified in the City Thoroughfare Plan. The throughfare plan, as an element of the Comprehensive Plan also contemplates land use as defined in the Future Land Use Plan which was considered in the development of the Land Use Assumptions Report. Other considerations for the roadway CIP include:

- Recently completed projects with excess capacity available to serve growth;
- Projects currently under construction; and
- Remaining projects needed to complete the City Thoroughfare Plan.

Full-System Approach for Roadway CIP Development

This program update incorporates a change to the contents of the roadway capital improvements plan (CIP). In prior programs, a tailored program of projects was identified from which to address growth. One limitation is that impact fee monies can only be spent on the specific contents of the impact fee CIP. Further, if new development desired to implement a thoroughfare plan road as part of their development, impact fee monies could not be used unless an amendment was made to the via a public hearing process. This 2020 update curtails the amendment issue by incorporating the full thoroughfare network into the impact fee program to both minimize required public hearing processes as well as provide greater flexibility in the use of impact fee funds towards phased improvements of the CIP.

To address potential implications with regard to the resultant cost per service unit calculations, as well as offset public angst as to the overall cost of the CIP, an analysis evaluating a preliminary traditional 10-year CIP to the Full-System was conducted. In short, the analysis revealed that based on growth defined in the Land Use Assumptions Report for the period 2020-2030, a generally similar cost per service unit between the two approaches. The key difference was that only 12% of system capacity of the Full-System was necessitated versus the 10-Year scenario which consumed 52% of the capacity of a traditionally based plan since impact fees are calculated on the *cost necessitated by new growth* in the unit cost calculation. **Appendix J** contains a summary and comparison of the 10-year and Full-System resultant cost per service unit. Based on the benefits of greater flexibility in the use of impact fees offered in the Full-System approach, the CIAC recommended approval of this impact CIP approach.

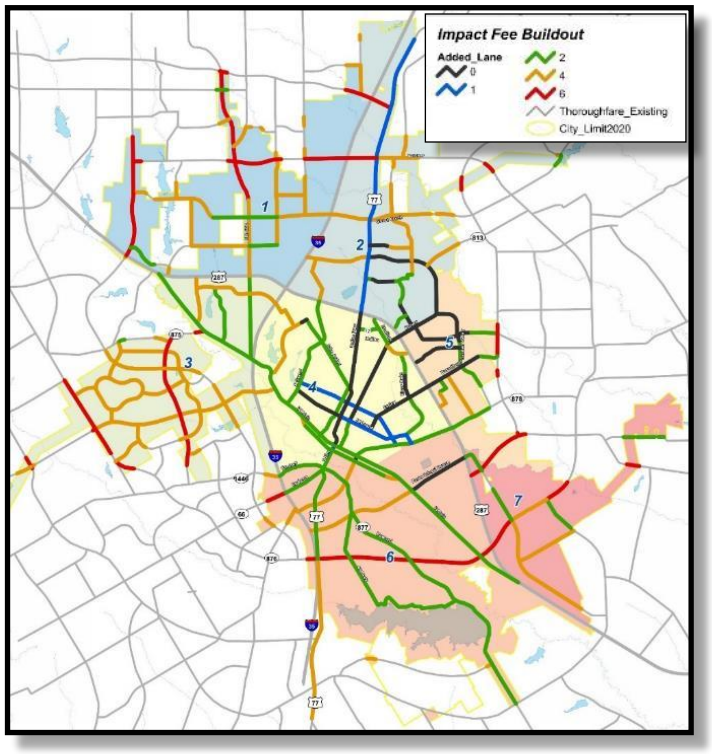
Evaluation of the 2015 Impact Fee CIP

At the outset of the update process, capacity of the 2015 CIP program was evaluated to ensure that excess capacity remained in previously approved impact fee projects. Chapter 395 mandates that only CIP projects with excess capacity are eligible for consideration. Traffic volume count data collected at locations throughout the city was used in this evaluation. The analysis revealed all previously identified CIP to contain excess capacity and therefore can be retained in the program. These projects, in conjunction with newly identified roadway projects will form the basis for the Full-System CIP.

Full-System CIP Projects

The Full-System CIP spans citywide incorporating all arterial and collector class facilities per the Thoroughfare Plan. For impact fee purposes, only new capacity, or lane additions to achieve thoroughfare standard is identified in the CIP. For example, a current two-lane roadway that is identified on the

Thoroughfare Plan as an ultimate six-lane, only four lanes of new capacity are considered as part of the program. Depicted at right is a graphical summary of the number of lanes needed to achieve full thoroughfare standard.



Eligible CIP Costs

The general, those costs associated with the design, right-of-way acquisition, and construction and financing of all items necessary to implement the roadway projects identified in the capital improvement plan are eligible. These estimates are based on roadway sections identified in the City Thoroughfare Plan. It is important to note that upon completion of the capital improvements identified in the CIP, the city must recalculate the impact fee using the *actual* costs. Chapter 395.012 identifies roadway costs eligible for impact fee recovery. The law states that:

> "An impact fee may be imposed only to pay the cost of constructing capital improvements for facility expansions, including and limited to the construction contract price, surveying and engineering fees, land acquisition costs, including land purchases, court awards and costs, attorney fees, and expert witness fees; and fees actually paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvement plan who is not an employee of the political subdivision."

> "Projected interest charges and other finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principal and interest on bonds, notes, or other obligations issued by or on behalf of the political subdivision to finance the capital improvements or facility expansions identified in the capital improvement plan and are not used to reimburse bond funds expended for facilities that are not identified in the capital improvement plan."

The following details the individual cost components of the impact fee CIP.

Construction: Unit cost estimates for application on a linear foot basis was prepared for each functional class of street identified in the Thoroughfare Plan. Unit cost estimates based on recent area bid tabs of other recently constructed facilities were used as a basis for induvial components to facility construction. Other sources of unit pricing included TxDOT 12-Month Averages, and other recently prepared estimates by Freese and Nichols. Items included in the unit costing are standard appurtenances to implement each roadway class type. Other items included in cost estimates included: sidewalks, traffic control devices at select locations (initial cost only), and minimal sodding/landscaping.

Engineering: These are the costs associated with the design and surveying necessary to construct the roadway. Because the law specifically references fees, it has generally been understood that in-house City design and surveying cannot be included. Only those services that are contracted out can be included and it may be necessary to use outside design and surveying firms to perform the work. For planned projects, a percentage based on typical engineering contracts was used to estimate these fees and was assumed to be 7%.

Right-of-Way: Any land acquisition cost estimated to be necessary to construct a roadway can be included in the cost estimate. For planning purposes, only 20 feet of additional land was assumed to be needed to achieve thoroughfare standard. This approach was aimed at being conservative. The cost for right-of-way may vary based on location of project and was assumed to be $0.50 per square foot.

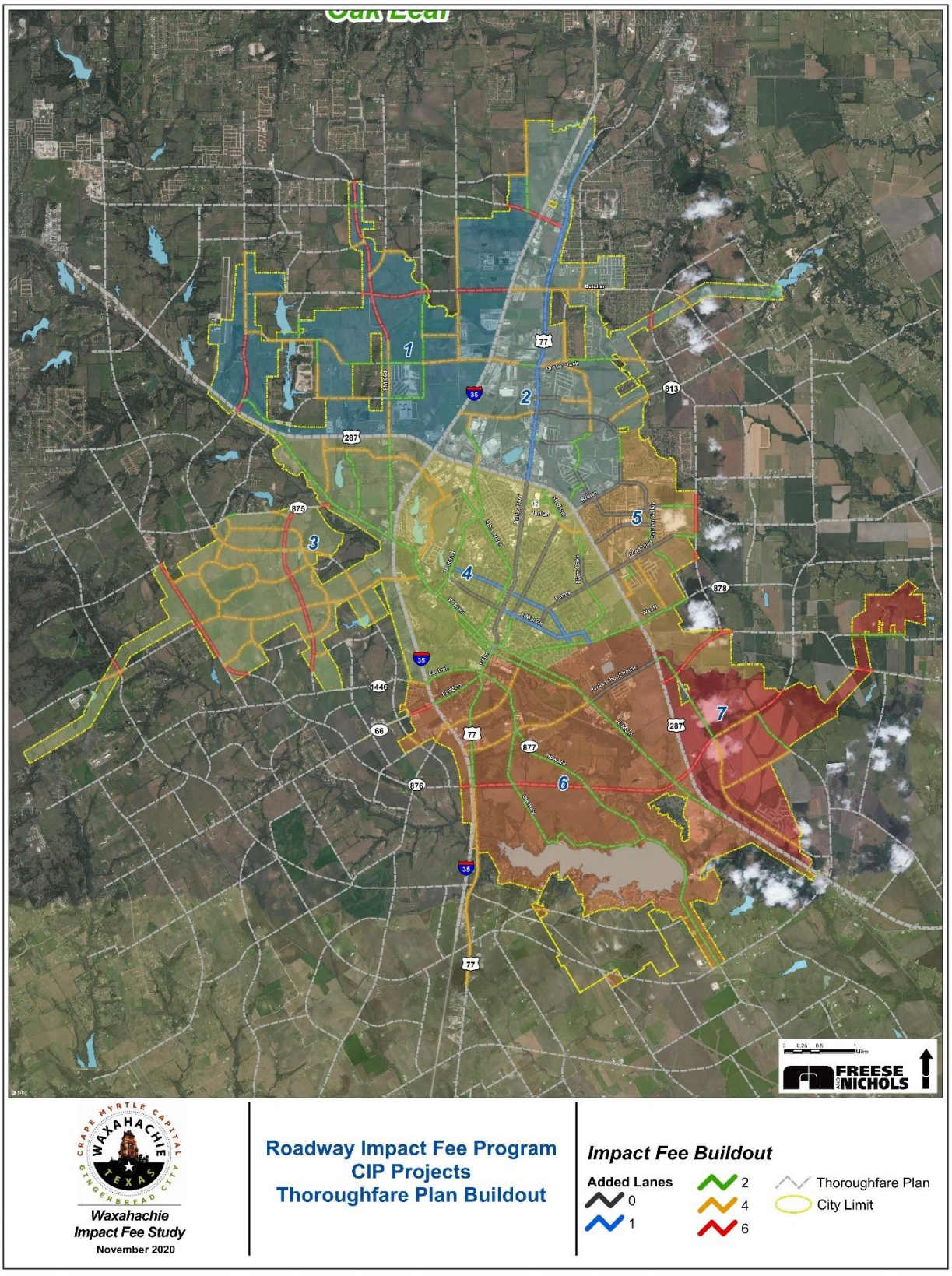
Debt Service: Predicted interest charges and finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principle and interest on bonds, notes, or other obligations issued by the city to finance capital improvements identified in the impact fee CIP. They cannot be used to reimburse bond funds for other facilities. Debt service was assumed to be 4% of total project cost and compounded over a 20-year period.

Study Updates: The fees paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvement plan who is not an employee of the political subdivision can be included in the impact fees. Two five-year updates at $50,000 were incorporated into the CIP.

The Full-System CIP consists of 242 project segments spanning the roadway service areas and are illustrated in **Figure 2**. Project costs were broken into general categories of construction, engineering, right-of-way, and debt service are detailed in **Appendix E**. The cost of the Full-System CIP totals $642M.

State legislation requires that a credit for the portion of ad-valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing a roadway impact fee capital improvements program be given. Based on a 50% credit, the cost that can be initially considered in the impact fee program is $321M. Impact fee law stipulates that only the cost attributable to new growth can be considered in the cost per service unit calculation. Based on the approved Land Use Assumptions, about 12% of capacity was necessitated and only $35M of this CIP can be considered for impact fees at this time. (The cost of excess capacity is not lost but is used as necessitated by future growth in the next program update – in at least, five years). The recommended Full-System CIP program will provide 275,497 vehicle-miles of new net capacity.

Figure 2: Roadway Impact Fee Capital Improvement



Projected Vehicle-Miles Capacity Available for New Growth

The vehicle-miles of new capacity supply were calculated similar to the vehicle-miles of existing capacity supplied. The equation used was:

Vehicle-Miles of New Capacity Supplied = Link capacity per peak hour per lane
x Num. of lanes within Service Area
x Length of segment (miles)

Vehicle-miles of new supply provided by the CIP are listed in **Table 10**. While the project has not been built, there are system deficiencies (by service area) that have been removed from the total supply to properly account for new "net" availability. Table 9 depicts net availability of supply by the CIP**. Appendix E** details capacity calculations provided by the CIP program.

Table 10: Vehicle-Miles of New Capacity Supplied

Service Area	Vehicle-Miles of New Capacity Supplied	Vehicle-Miles of Net New Capacity Supplied
1	52,102	51,817
2	35,273	35,273
3	67,211	67,211
4	25,508	25,492
5	16,169	16,169
6	61,024	61,020
7	18,515	18,515
Total	275,802	275,497

Cost of Roadway Improvements

The total and net cost to implement the roadway improvements plan projects by service area is shown in **Table 11**. If traffic exists on proposed CIP project roadways or there are any deficiencies present in each respective service area, the total system cost is adjusted to reflect the net capacity being made available by the impact fee program. In other words, only the unused portion of the CIP and its associated costs are considered eligible. A detailed listing of cost by project segment in each service area can be found in **Appendix F**. **Appendix G** details system costs by service area.

Table 11: Summary of Roadway Improvements Plan Cost Analysis

Service Area	Actual Cost of Proposed Impact Fee Program	Adjusted Cost (50% Credit) of Proposed Impact Fee Program
1	$114,134,639	$57,067,320
2	$79,767,179	$39,883,590
3	$181,270,721	$90,635,361
4	$60,889,012	$30,444,506
5	$39,487,440	$19,743,720
6	$112,653,809	$56,326,905
7	$54,189,439	$27,094,719
Total	$642,392,240	$321,196,120

State law is specific in identifying that only the portion of the CIP necessitated and attributable to new development is eligible for cost recovery. For example, if only 60% of the net service units supplied by the CIP are needed in the next 10 years, only 60% of the cost (credited at 50% per legislative requirements) may be considered in the calculation of fees. The Full-System CIP contains plenty of capacity to address future growth over the 10-year planning period. The cost attributable to new growth is $35.7 million and represents the citywide cost to implement projects on the impact fee program. **Table 12** depicts CIP costs attributable to new growth by service area.

Table 12: Capital Improvements Plan Costs Attributable to New Development

Service Area	Adjusted Cost (50% Credit) of Net New Capacity	Adjusted Cost (50% Credit) Attributable to New Growth
1	$56,755,159	$4,472,110
2	$39,883,590	$11,848,727
3	$90,635,361	$3,442,771
4	$30,425,410	$4,127,219
5	$19,743,720	$2,985,552
6	$56,323,213	$7,614,987
7	$27,094,719	$1,186,812
Total	$320,861,171	$35,678,177

Chapter 6: Calculation of Impact Fees

This chapter discusses the calculation of the cost per service unit and the calculation of roadway impact fees. The transportation impact fee will vary by the land use, service area, and size of the development. Examples are included to better illustrate the method by which the transportation impact fees are calculated.

Cost Per Service Unit

The cost per service unit is calculated by dividing the cost of the CIP necessitated and attributable to new demand (net cost) by the projected service units of growth over the 10-year planning period.

Generally, the cost per service unit varies by service area because of variations in cost of CIP, projected growth and the number of service units necessitated by new growth between zones. Where net capacity supplied is greater than demand, the cost per service unit is simply the cost of the net capacity divided by the number of service units provided. In this case, only the portion of the CIP necessitated by new development is used in the calculation. If the net capacity supplied is *less* than projected new demand, then the cost per service unit is calculated by dividing the total cost of net supply by the portion of new demand attributable and necessary by development. The result is generally a decrease in the cost per service unit, because such cost is spread over the larger number of service units of growth.

Table 13 lists the results of the cost per service unit calculation by service area. The actual cost per service unit reflects the true burden to the City for the implementation of the roadway capital improvements program. As per state law, a credit for the portion of ad-valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing the capital improvements plan must be given. Based on this analysis, the maximum collection rate reflects the maximum amount per service unit that can be charged to follow the state statute. **Appendix G** details the maximum fee per service unit calculation for each service area.

Table 13: Cost Per Service Unit Summary

Service Area	Actual Cost Per Service Unit	Maximum Fee per Service Unit (50% Credit)
1	$2,190.00	$1,095.00
2	$2,260.00	$1,130.00
3	$2,696.00	$1,348.00
4	$2,386.00	$1,193.00
5	$2,442.00	$1,221.00
6	$1,846.00	$923.00
7	$2,926.00	$1,463.00
Average	$2,328.00	$1,164.00

Calculation of Roadway Impact Fees

The calculation of roadway impact fees for new development involves a two-step process. Step one is the calculation of the total number of service units that will be generated by the development. Step two is the calculation of the impact fee due by the new development.

Step 1: Determine number of service units (vehicle-miles) generated by the development using the equivalency table.

No. of Development Units	x	Vehicle-miles per development unit	=	Development's Vehicle-miles

Step 2: Calculate the impact fee based on the fee per service unit for the service area where the development is located.

Development's Vehicle-miles	x	Fee per vehicle-mile	=	Impact Fee due from Development

Examples: The following fees would be assessed to new developments in Service Area 2 if the cost per service unit were $1014.00.

Single-Family Dwelling

1 dwelling unit x 2.78 vehicle-miles/dwelling unit = 2.78 vehicle-miles
2.78 vehicle-miles x $1,014.00 /vehicle-mile = $2,818.92

20,000 square foot (s.f.) Office Building

20 (1,000 s.f. units) x 3.40 vehicle-miles/1,000 s.f. units = 68.00 vehicle-miles
68.00 vehicle-miles x $1,014.00 /vehicle-mile = $68,952.00

100,000 s.f. Retail Center

100 (1,000 s.f. units) x 1.57 vehicle-miles/1,000 s.f. units = 157.00 vehicle-miles
157.00 vehicle-miles x $1,104.00 /vehicle-mile = 159,198.00

200,000 s.f. Industrial Development

200 (1,000 s.f. units) x 1.56 vehicle-miles/1,000 s.f. units = 312.00 vehicle-miles
312.00 vehicle-miles x $1,014.00 /vehicle-mile = $316,368.00.

Chapter 7: Conclusions

In Texas, Chapter 395 contains technical and administrative requirements for the implementation and update of impact fee programs in the state. By law, the impact fee program must be reviewed at least every five years. This program update serves to satisfy those legislative requirements. Waxahachie first adopted roadway impact fees in 2008, and subsequently updated the program in 2012 and in 2015. Since its inception, roadway impact fees have helped to fund numerous projects citywide as a means towards keeping pace with growth and development. In each program update, the roadway capital improvements plan was amended to incorporate additional projects to address growth throughout the city.

In Waxahachie, seven service areas were established at the outset of the program in 2008. In this update, those service areas are retained but have been amended to address changes in corporate limits due to annexation since the 2015 update. Slight adjustments were made to Service Areas 1, 2, 5, and 6 and each were reviewed to ensure that no point is greater than the six-mile maximum set forth by law. The six-mile limit ensures that roadway improvements are near where new development is occurring.

The vehicle-mile of travel in the PM peak hour was retained as the service unit for calculating and assessing roadway impact fees. This service unit establishes an appropriate relationship between the intensity of land development and the demand on the roadway system using published travel characteristics (trip generation and average trip length) of specific land use types. The PM peak hour is typically used as the design hour for roads as this period receives the greatest demand for roadway capacity during the day. Additionally, roadways are sized to meet this demand and roadway capacity can more accurately be defined on an hourly basis.

Service unit generation (vehicle-miles) for new development is a function of trip generation and the average trip length for specific land uses and detailed in the Land Use Equivalency table. Trip generation information was amended to incorporate updated data published in Trip Generation, 10th Edition by the Institute of Transportation Engineers in March 2018 and amended in September 2020. Where appropriate, trip generation rates were adjusted to reflect the primary trip purpose (pass-by and diverted trips netted out based on published documentation). This ensures that new development is assigned for only the portion of trips associated with that specific development. Average trip length data was based on information compiled by NCTCOG as part of the Mobility 2040 regional travel demand model, data from a NCTCOG Workplace Survey, statistics from the US Census Bureau National Workplace Survey, and tailored to Waxahachie. The result of combining updated trip generation and trip length information is an amended equivalency table that establishes service unit generation by specific land use types. Land use equivalencies were amended for specific land uses within the broader categories of residential, office, commercial, industrial, and institutional uses.

An analysis of existing conditions revealed that the current full roadway system provides over 101,051 vehicle-miles of capacity. The existing demand placed on the system was determined to be 39,924 vehicle-miles. Evaluation of the existing roadway system found 305 vehicle-miles of deficiencies on the existing roadway network.

Projected growth, in terms of vehicle-miles over the 10-year planning period, was based on population and employment data that was prepared in the Land Use Assumptions for Impact Fees Final Report dated

May 2020 by Freese and Nichols, Inc. Based on forecasted growth, which considers a compound annual growth rate of 3.5%, the projected vehicle-miles of demand calculated to be 32,079 over the ten-year planning period 2020-2030.

This program update incorporates a philosophical change to the contents of the roadway capital improvements plan (CIP). In prior programs, a tailored program of projects was identified from which to address growth. One limitation is that impact fee monies can only be spent on the specific contents of the impact fee CIP. If new development were to implement improvements outside of the impact fee CIP, no credit could be given, nor impact fee monies enabled without an amendment to the CIP via a public hearing process.

This 2020 update curtails this issue by incorporating the full thoroughfare network into the impact fee program to both minimize the impact FEE CIP amendment process as well as enable the ability to credit new development for off-site roadway project improvements. In essence, this approach enables further flexibility in the use of impact fee funds towards phased improvements, as appropriate, throughout the city's major street network. While at first glance it may seem like a drastic departure from an overall cost perspective, the unit cost to provide service is generally about the same. An analysis of the prepared 10-Year CIP relative to the Full System approach yielded a generally similar cost per service unit between the two approaches. The key difference was that only 12% of system capacity was necessitated by ten-year growth rather that 52% of the traditional program. Since impact fees are calculated on the *cost necessitated by new growth*, and a generally similar cost per service unit calculated, the benefits of greater flexibility in the use of impact fees justified the shift in philosophical approach.

The developed Full-System roadway impact fee CIP spans citywide capturing strictly new capacity or lane additions for arterial and collector class facilities identified on the official City Thoroughfare Plan. For example, a current two-lane roadway that is identified on the Thoroughfare Plan as an ultimate six-lane, only four lanes of new capacity are considered in the program. The Full-System CIP consists of 242 project segments totaling $642M. State legislation requires that a credit for the portion of ad-valorem tax revenues generated by improvements over the program period, or a credit equal to 50% of the total projected cost of implementing a roadway impact fee capital improvements program be given. Based on a 50% credit, the cost that can be initially considered in the impact fee program is $321M. Impact fee law stipulates that only the cost attributable to new growth can be considered in the cost per service unit calculation. Based on the approved Land Use Assumptions, about 12% of capacity was necessitated and only $35.7M of this CIP can be considered for impact fees at this time. (The cost of excess capacity is not lost but is used as necessitated by future growth in the next program update – in at least, five years). The recommended Full-System CIP program will provide 275,497 vehicle-miles of new net capacity.

Based on the cost necessitated by growth over the ten-year planning period, the calculated credited cost per service unit ranged from $923.00 and $1,463.00 within the seven service areas spanning the city. The *actual* cost per service unit was calculated to be between $1846.00 and $2,926.00. The difference reflects the burden that the city tax base will pick up over time.

The determination of impact fee due from new development is based upon the size, type and intensity of development, its associated service unit generation (determined through use of the equivalency table), and the cost per service unit adopted for collection within each roadway service area.

Work prepared as part of this program update, was formally reviewed, and commented on by the Waxahachie Capital Improvements Advisory Committee (CIAC). In addition to reviewing material with City Staff, meetings with the CIAC were held between February and October 2020 to discuss; 1) city growth rates and Land Use Assumptions, preliminary and final capital improvements plans (CIP) and associated project costing, and the resultant derived cost per service unit calculations. Recommendations for amendments to collection rates were also discussed and forwarded to the Waxahachie City Council. The program update was also presented in Workshop to the City Council in October 2020.

Per administrative requirements defined in Chapter 395, Texas Local Government Code, appropriate notifications through Council resolutions, public noticing, and posted agenda were prepared culminating in a public hearing in December 2020 to consider update to Land Use Assumptions, Capital Improvement Plans, and Impact Fees for the roadway program in Waxahachie.

APPENDICES

Appendix A: Roadway Impact Fee Definitions

ROADWAY IMPACT FEE DEFINITIONS

Average Trip Length - the average actual travel distance between two points. The average trip length by specific land use varies.

Diverted Trip - similar to pass-by trip, but a diversion is made from the regular route to make an interim stop.

Impact Fee - a charge or assessment imposed by a city against new development to generate revenue for funding or recouping roadway improvements necessitated and attributable to new development.

Land Use Equivalency – correlation of a land use to the rate of vehicle miles CIP of network capacity it would consume

Maximum Fee Per Service Unit - the highest impact fee that may be collected by the City per vehicle-mile of supply. Calculated by dividing the costs of the capital improvements by the total number of vehicle-miles of demand expected in the 10-year planning period.

Pass-by Trip - a trip made as an intermediate stop on the way from an origin to a primary trip destination. For example, a stop at a convenience store on the way to office from home.

PM Peak Hour - the hour when the highest volume of traffic typically occurs. Data collection (May 2019) revealed the peak hour of travel between 5:00 and 6:00 pm for Waxahachie.

PM Peak Hour Traffic Counts - the number of vehicles passing a certain point during the peak hours of travel. Traffic counts are conducted during the PM peak hour because the greatest demand for roadway capacity occurs during this hour.

Primary Trip - a trip made for the specific purpose of visiting a destination, for example, from home to office.

Roadway Demand - the demand placed on the roadway network because of development. Determined by multiplying the trip generation of a specific land use by the average trip length.

Roadway Supply (or Capacity) - the number of service units provided by a segment of roadway over a period. Determined by multiplying the lane capacity by the roadway length.

Service Area - the area within the city boundaries to be served by capital improvements. Criteria for developing the service area structure include; 1) restricted to six-mile limit by legislation (to ensure proximity of roadway improvements to development), 2) conforms to census or forecast model boundaries, 3) projects on CIP as boundaries, 4) effort to match roadway supply with projected demand, or 5) city limit boundaries.

Service Unit - a measure of use or generation attributable to new development for roadway improvements. Also used to measure supply provided by existing and proposed roadway improvements.

Trip - a single, one-direction vehicle movement from an origin to a destination.

Trip Generation - the total trip ends for a land use over a given period or the total of all trips entering and exiting a site during that designated time. Used in the development of the land use equivalency table for Waxahachie. Based primarily on data prepared by the Institute of Transportation Engineers (ITE).

Vehicle - for impact fee purposes, any motorized appurtenance that carries passengers and/or goods on the roadway system during peak periods of travel.

Vehicle-mile - a unit used to express both supply and demand provided by, and placed on, the roadway system. A combination of a number of vehicles traveling during a given period and the distance in which these vehicles travel in miles.

Appendix B: Land Use Definitions

LAND USE DEFINITIONS
Waxahachie Roadway Impact Fee Land Use Equivalencies

Land uses for the roadway impact fee service unit equivalency table have been grouped into the major categories of residential, office, commercial, industrial, and institutional uses. The following is a listing of land uses that apply within each category. The City Engineer's best judgment should be used for any land uses not specified herein.

Residential

Single-Family Detached - Any single-family detached home affixed to its foundation on an individual lot is included in this category. A range of density is associated with this land use and may be located in both suburban, rural, and urban locations. A typical example of this land use is a home in a residential subdivision.

Apartment - This land use includes both low-rise ("walk-up" dwellings) and high-rise multi-family apartments. An apartment is defined as a dwelling unit that is located within the same building with three or more dwelling units. Also included in this land use are triplex and quadplex units.

Residential Condominium / Townhouse – Residential condominiums and townhomes are defined as single-family units that have at least one other single-family unit within the same building structure.

Senior Adult Housing - Detached - Senior adult housing consists of detached independent living developments, including retirement communities, age-restricted housing, and active adult communities. These developments may include amenities such as golf courses, swimming pools, 24-hour security, transportation, and common recreational facilities. However, they generally lack centralized dining and on-site health facilities. Detached senior adult housing communities may or may not be gated. Residents in these communities are typically active (requiring little to no medical supervision). The percentage of retired residents varies by development.

Assisted Living – An assisted living complex is a residential setting that provides either routine general protective oversight or assistance with activities necessary for independent living to mentally or physically limited persons. It commonly has separate living quarters for residents. Its services typically include dining, housekeeping, social and physical activities, medication administration, and transportation. Alzheimer's and ALS care are commonly offered by these facilities, though the living quarters for these patients may be located separately from the other residents. Assisted care commonly bridges the gap between independent living and nursing homes. In some areas of the country, assisted living residences may be called personal care, residential care, or domiciliary care. Staff may be available at an assisted care facility 24 hours a day, but skilled medical care—which is limited in nature—is not required.

Continuing Care Retirement Community - A continuing care retirement community (CCRC) is a land use that provides multiple elements of senior adult living. CCRCs combine aspects of independent living with increased care, as lifestyle needs change with time. Housing options may include various combinations of senior adult (detached), senior adult (attached), congregate care, assisted living, and skilled nursing care—aimed at allowing the residents to live in one community as their medical

needs change. The communities may also contain special services such as medical, dining, recreational, and some limited, supporting retail facilities. CCRCs are usually self-contained villages.

Office

General Office Building - A general office building houses one or more tenants and is the location where affairs of a business are conducted. The building or buildings may be limited to one tenant, either the owner or lessee, or contain a mixture of tenants including professional services, insurance companies, investment brokers, company headquarters, and services for the tenants such as a bank or savings and loan, a restaurant or cafeteria, and service retail facilities. Also included in this category are other office uses not specified above.

Corporate Headquarters Building - A building that houses corporate headquarters of a company or organization and consists of offices, meeting rooms, space for storage and data processing, a cafeteria and other service functions. Such buildings typically house a single tenant although some sub-area space may be leased out.

Medical-Dental Office - A medical office building is a facility that provides diagnosis and outpatient care, but which is unable to provide prolonged in-house medical/surgical care. One or more private physicians generally operate this type of building. Also included in this category are dental facilities with one or more private dentists.

U.S. Post Office – A United States post office is a federal building that contains service windows for mailing packages and letters, post office boxes, offices, sorting and distributing facilities for mail, and vehicle storage areas.

Research and Development Center - A research and development center are a facility or group of facilities devoted almost exclusively to research and development activities. The range of specific types of businesses contained in this land use category varies significantly. Research and development centers may contain offices and light fabrication areas.

Business Park - Business parks consist of a group of one or multi-story buildings served by a common roadway system similar to an office or industrial park. The tenant space is flexible to house a variety of uses. Tenants may be start-up companies or fully matured relatively small companies that require a variety of space. Offices, retail and wholesale sales, restaurants, and recreation, as well as warehousing, manufacturing, light industrial, and scientific research uses are typical within this land use. Other similar uses include research and development centers, office parks, corporate headquarter buildings, single-tenant buildings and other uses not specified above.

For land uses not specified within this category, the General Office land use shall serve as a default use. The City Engineer shall make the final determination for a specific use in calculating impact fees.

Commercial

Hotel – A hotel is a place of lodging that provides sleeping accommodations and supporting facilities such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and/or other retail and service shops.

All Suites Hotel – An all-suites hotel is a place of lodging that provides sleeping accommodations, a small restaurant and lounge, and small amounts of meeting space. Each suite includes a sitting room and separate bedroom; limited kitchen facilities are provided within the suite.

Motel – A motel is a place of lodging that provides sleeping accommodations and often a restaurant. Motels generally offer free on-site parking and provide little or no meeting space and few (if any) supporting facilities. Exterior corridors accessing rooms—immediately adjacent to a parking lot—commonly characterize motels.

Movie Theater with Matinee - This land use consists of a movie or live theater and contains audience seating, single or multiple auditoriums, lobby, offices, and refreshment stands. Operational hours may vary but generally include movie showings from early afternoon through the evening hours. Matinee events may also begin as early as noon.

Health Fitness – This

Shopping Center - A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands.

Building Materials and Lumber Store – A building materials and lumber store is a free-standing building that sells hardware, building materials, and lumber. The lumber may be stored in the main building, yard, or storage shed.

Hardware/Paint Store – A hardware/paint store is a free-standing building that sells hardware and paint supplies.

Garden Center (Nursery) – A nursery or garden center is a free-standing building with an outside storage area for planting or landscape stock. The nurseries surveyed primarily serve the general public. Some have large greenhouses and offer landscaping services. Most have office, storage, and shipping facilities. Nurseries are characterized by seasonal variations in trip characteristics.

Nursery (Wholesale) – A wholesale nursery is a free-standing building with an outside storage area for planting or landscape stock. The nurseries surveyed primarily serve contractors and suppliers. Some have large greenhouses and offer landscaping services. Most have office, storage, and shipping facilities. Nurseries are characterized by seasonal variations in trip characteristics.

Automobile Sales (New) – An automobile sales dealership is typically located along a major corridor characterized by commercial development. The sale or leasing of new or used cars is the primary business at these facilities; however, automobile services and parts sales may also be available. Some dealerships also include leasing options, truck sales, and servicing.

Automobile Sales (Used) – Auto dealership typically with pre-owned vehicles. These dealerships are generally smaller in nature than new auto dealerships. This land use may not contain formalized maintenance or servicing facilities.

Auto Parts Sales – An automobile parts sales facility specializes in the sale of automobile parts for maintenance and repair. Items sold at these facilities include spark plugs, oil, batteries, and a wide range of automobile parts. These facilities are not equipped for on-site vehicle repair.

Tire Store – The primary business associated with a tire store is the sale and marketing of tires for automotive vehicles. Services offered by these stores usually include tire installation and repair, as well as other automotive maintenance or repair services and customer assistance. These stores generally do not contain large storage or warehouse areas.

Supermarket – A supermarket is a free-standing retail store selling a complete assortment of food, food preparation and wrapping materials, and household cleaning items. Supermarkets may also contain the following products and services: ATMs, automobile supplies, bakeries, books and magazines, dry cleaning, floral arrangements, greeting cards, limited-service banks, photo centers, pharmacies, and video rental areas. Some facilities may be open 24 hours a day.

Convenience Market with Gasoline Pumps – This land use includes convenience markets with gasoline pumps where the primary business is the selling of convenience items, not the fueling of motor vehicles. The sites included in this land use category have the following two specific characteristics:

- The gross floor area of the convenience market is at least 2,000 gross square feet
- The number of vehicle fueling positions is less than 10

Discount Club – A discount club is a discount store or warehouse where shoppers pay a membership fee in order to take advantage of discounted prices on a wide variety of items such as food, clothing, tires, and appliances; many items are sold in large quantities or bulk. Some sites may include on-site fueling pumps.

Home Improvement Superstore – A home improvement superstore is a free-standing facility that specializes in the sale of home improvement merchandise. These stores generally offer a variety of customer services and centralized cashiering. Home improvement superstores typically maintain long store hours 7 days a week. Examples of items sold in these stores include lumber, tools, paint, lighting, wallpaper and paneling, kitchen and bathroom fixtures, lawn equipment, and plant and garden accessories. The stores included in this land use are often the only ones on the site, but they can also be found in mutual operation with a related or unrelated garden center. Home improvement superstores are sometimes found as separate parcels within a retail complex, with or without their own dedicated parking. The buildings contained in this land use usually range in size from 50,000 to 200,000 square feet gross floor area. This land use does not include interior design stores.

Electronic Superstore – An electronics superstore is a free-standing facility that specializes in the sale of electronic merchandise. These facilities generally offer a variety of customer services and centralized cashiering. Electronics superstores typically maintain long store hours 7 days a week. Examples of items sold in these stores include televisions, audio and video players and recorders, software, telephones, computers, and general electronic accessories. Major home appliances may also be sold at these facilities. Electronics superstores are sometimes found as separate parcels within a retail complex, with or without their own dedicated parking.

Apparel Store – An apparel store is an individual store specializing in the sale of clothing.

Pharmacy with Drive Thru – A pharmacy/drugstore is a retail facility that primarily sells prescription and non-prescription drugs. These facilities may also sell cosmetics, toiletries, medications, stationery, personal care products, limited food products, and general merchandise. The drug stores in this category contain drive-through windows.

Furniture Store – A furniture store is a full-service retail facility that specializes in the sale of furniture and often carpeting. Furniture stores are generally large and may include storage areas. The sites surveyed included both traditional retail furniture stores and warehouse stores with showrooms. Although some home accessories may be sold, furniture stores primarily focus on the sale of pre-assembled furniture. A majority of items sold at these facilities must be ordered for delivery.

Bank with Drive Thru – A bank with drive-thru provides banking facilities for motorists who conduct financial transactions from their vehicles; many also serve patrons who walk into the building. The drive-in lanes may or may not provide automatic teller machines (ATMs).

Quality Restaurant – This land use consists of high quality, full-service eating establishments with a typical duration of stay of at least one hour. Quality restaurants generally do not serve breakfast; some do not serve lunch; all serve dinner. This type of restaurant often requests and sometimes requires reservations and is generally not part of a chain. Patrons commonly wait to be seated, are served by a waiter/waitress, order from menus and pay for meals after they eat. While some of the study sites have lounge or bar facilities (serving alcoholic beverages), they are ancillary to the restaurant.

High-Turnover (Sit-Down) Restaurant – This land use consists of sit-down, full-service eating establishments with typical duration of stay of approximately one hour. This type of restaurant is usually moderately priced and frequently belongs to a restaurant chain. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours a day. These restaurants typically do not take reservations. Patrons commonly wait to be seated, are served by a waiter/waitress, order from menus and pay for their meal after they eat. Some facilities contained within this land use may also contain a bar area for serving food and alcoholic drinks.

Fast food with Drive Thru – This category includes fast-food restaurants with drive-through windows. This type of restaurant is characterized by a large drive-through clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours a day) and high turnover rates for eat-in customers. These limited service eating establishments do not provide table service. Non-drive-through patrons generally order at a cash register and pay before they eat.

Quick Lubrication Vehicle Stop – A quick lubrication vehicle shop is a business where the primary activity is to perform oil change services for vehicles. Other ancillary services provided may include preventative maintenance, such as fluid and filter changes. Automobile repair service is generally not provided.

Automotive Care Center – An automobile care center houses numerous business that provide automobile-related services, such as repair and servicing, stereo installation, and seat cover upholstering.

Gas/Service Station with Convenience Market – This land use includes gasoline/service stations with convenience markets where the primary business is the fueling of motor vehicles. These service stations may also have ancillary facilities for servicing and repairing motor vehicles and may have a car wash. Some commonly sold convenience items are newspapers, coffee or other beverages, and snack items that are usually consumed in the car. The sites included in this land use category have the following two specific characteristics:

- The gross floor area of the convenience market is between 2,000 and 3,000 gross square feet
- The number of vehicle fueling positions is at least 10

Industrial

General Light Industrial - Light industrial facilities usually employ fewer than 500 persons and have an emphasis on activities other than manufacturing. Typical light industrial activities include printing plants, material testing laboratories, assemblers of data processing equipment, power stations and warehousing of less than 35,000 square feet; most facilities are freestanding and devoted to a single use.

Industrial Park - Industrial parks are areas containing a number of industrial or related facilities. They are characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities - some with a large number of small businesses and others with one or two dominant industries.

Manufacturing - Manufacturing facilities are sites where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary from one site to another. In addition to actual production of goods, manufacturing facilities generally also have office, warehouse, research, and associated functions.

Mini-warehouse (Self-Storage) - A mini-warehouse is a building in which a storage unit or vault is rented for the storage of goods. Each unit is physically separated from other units and access is usually provided through an overhead door or other common access point.

Utilities - A utility is a free-standing building that can house office space, a storage area, and electromechanical or industrial equipment that support a local electrical, communication, water supply or control, or sewage treatment utility.

For land uses not specified within this category, the General Light Industrial land use shall serve as a default use. The City Engineer shall make the final determination for a specific use in calculating impact fees.

Institutional

Private School (K-12) – A private school (K-8) primarily serves students attending kindergarten through the eighth grade but may also include students beginning with pre–K classes. These schools

may also offer extended care and day care. Students may travel a long distance to get to private schools.

Junior/Community College - This land use includes two-year junior colleges or community colleges. A number of two-year institutions have sizable evening programs.

Church - A church is a building in which public worship services are held. A church houses an assembly hall or sanctuary; it may also house meeting rooms, classrooms, and, occasionally, dining, catering, or party facilities.

Day Care Center - A day care center is a facility where care for pre-school age children is provided, normally during the daytime hours. Day care facilities generally include classrooms, offices, eating areas, and playgrounds. Some centers also provide after-school care for older children including after school care.

Other

Land Use not contained within Equivalency Table – This table contains typical land uses experienced within the city. Uses not specified herein should be discussed with the City Engineer. Data may be provided by an Applicant to consideration by the City Engineer. The City Engineer shall have the final determination in land use identification for impact fee purposes.

Source: Trip Generation Manual 10th Edition, Institute of Transportation Engineers
Freese and Nichols, Associates, Inc.

Appendix C: Calculation of Vehicle-Miles of New Demand

Vehicle-Mile Trip Generation by Service Area, Waxahachie Impact Fee Update

Based on 2020-2030 Land Use Assumptions dated May 2020

Estimated Residential Growth Vehicle-Mile Trip Generation

Service Area	Added Population	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
1	1,115	410	2.78	1,140
2	3,832	1,409	2.78	3,917
3	2,024	744	2.78	2,068
4	2,211	813	2.78	2,260
5	2,295	844	2.78	2,346
6	3,873	1,424	2.78	3,959
7	755	278	2.78	773
Total	16,105	5,922		16,463

Estimated Basic Employment Growth Vehicle-Mile Trip Generation

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	603	904,500	1.56	1,411
2	1,424	2,136,000	1.56	3,332
3	9	13,500	1.56	21
4	236	354,000	1.56	552
5	0	0	1.56	0
6	664	996,000	1.56	1,554
7	13	19,500	1.56	30
Total	2,949	4,423,500		6,900

Estimated Service Employment Growth Vehicle-Mile Trip Generation

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	733	366,500	3.40	1,246
2	1,372	686,000	3.40	2,332
3	231	115,500	3.40	393
4	260	130,000	3.40	442
5	0	0	3.40	0
6	1,294	647,000	3.40	2,200
7	0	0	3.40	0
Total	3,890	1,945,000		6,613

Estimated Retail Employment Growth Vehicle-Mile Trip Generation

Service Area	Added Employees	Total Square Feet	Vehicle-Miles per 1,000 Sq Ft	Total Vehicle-Miles
1	182	182,000	1.57	286
2	572	572,000	1.57	898
3	45	45,000	1.57	71
4	130	130,000	1.57	204
5	63	63,000	1.57	99
6	342	342,000	1.57	537
7	5	5,000	1.57	8
Total	1,339	1,339,000		2,103

Total Vehicle-Mile Generation Summary

Service Area	Residential Growth Vehicle-Miles	Basic Emp Growth Vehicle-Miles	Service Emp Growth Vehicle-Miles	Retail Emp Growth Vehicle-Miles	**Total Growth Vehicle-Miles**
1	1,140	1,411	1,246	286	**4,083**
2	3,917	3,332	2,332	898	**10,479**
3	2,068	21	393	71	**2,553**
4	2,260	552	442	204	**3,458**
5	2,346	0	0	99	**2,445**
6	3,959	1,554	2,200	537	**8,250**
7	773	30	0	8	**811**
Total	16,463	6,900	6,613	2,103	**32,079**

Appendix D: Existing Capital Improvements

EXISTING CAPITAL IMPROVEMENTS

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial UA = undivided arterial UC = undivided collector
PK-HR VOLUME	The existing volume of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel. A and B indicate the two directions of travel. Direction A is a northbound or eastbound and direction B is southbound or westbound. If only one half of the roadway is located within the service area (see % in service area), the opposing direction will have no volume in the service area.
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
VEH-MI SUPPLY PK-HR	The number of total service units (vehicle-miles) supplied within the service area, based on the length, and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
EXISTING DEFICIENCIES PK-HR VEH-MI	The number of service units of demand in excess of the service units supplied.

NOTE: Excess capacity and existing deficiencies are calculated separately for each direction. It is possible to have excess capacity in one direction and an existing deficiency in the other. When both directions have excess capacity or deficiencies, the total for both directions are presented.

Waxahachie Roadway Impact Fee Study Update
Existing Capital Improvements Analysis

Serv Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Peak Hr Capacity/Lane	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
1	SOLON RD	IH-35 SBFR	END OF ROAD	1.29	2	UC	510	100%	10	10	20	1,316	26	1,290	0
1	PATRICK RD	US 287	MARSHALL RD	1.12	2	UC	510	100%	10	10	20	1,142	22	1,120	0
1	PATRICK RD	MARSHALL RD	N CITY LIMIT	1.14	2	UC	510	100%	10	10	20	1,163	23	1,140	0
1	HIGHLAND RD	IH-35 SBFR	N CITY LIMIT	0.74	2	UC	510	50%		10	10	377	7	370	0
1	OVILLA RD (FM 664)	US 287	MARSHALL RD	0.92	2	UC	510	100%	591	361	952	938	876	137	75
1	OVILLA RD (FM 664)	MARSHALL RD	BOB WHITE RD	2.60	2	UC	510	100%	591	361	952	2,652	2,475	387	211
1	BLACK CHAMP RD	US 287	LONGBRANCH RD	1.40	2	UC	510	100%	61	30	91	1,428	127	1,301	0
1	MARSHALL RD	PATRICK RD	OVILLA RD (FM 664)	0.50	2	UC	510	100%	10	10	20	510	10	500	0
1	MARSHALL RD	OVILLA RD (FM 664)	BLACK CHAMP RD	1.62	2	UC	510	100%	10	10	20	1,652	32	1,620	0
1	LONGBRANCH RD	BLACK CHAMP RD	N CITY LIMIT	1.85	2	UC	510	100%	10	10	20	1,887	37	1,850	0
Sub-Total Service Area 1				**13.18**								**13,066**	**3,636**	**9,715**	**285**
2	HIGHLAND RD	IH 35	N CITY LIMIT	0.74	2	UC	510	50%	10		10	377	7	370	0
2	W. STERRETT RD	IH 35	US 77	0.33	2	UC	510	100%	10	10	20	337	7	330	0
2	BUTCHER RD (FM 387)	IH 35	US 77	0.43	2	UC	510	100%	470	330	800	439	344	95	0
2	BUTCHER RD (FM 387)	US 77	COVENTRY	0.71	2	UC	510	100%	470	330	800	724	568	156	0
2	BUTCHER RD (FM 387)	COVENTRY	1800' E OF COVENTRY	0.34	2	UC	510	50%		330	330	173	112	61	0
2	GROVE CREEK RD	US 77	BROOKBEND DR	0.96	2	UA	590	100%	107	52	159	1,133	153	980	0
2	N GROVE BLVD	US 77	BROWN ST	1.25	4	DA	665	100%	327	166	493	3,325	616	2,709	0
2	BROWN ST	US 287	400' SW OF SIOUX DR	0.59	5	SA	665	50%		585	585	785	345	439	0
2	BROWN ST	400' SW OF SIOUX DI	WASHINGTON AVE	0.88	2	UA	590	50%		547	547	519	482	38	0
2	BROWN ST	WASHINGTON AVE	SPRING CREEK DR	0.34	2	UA	590	50%		509	509	201	173	28	0
2	BROWN ST	SPRING CREEK DR	GROVE CREEK RD	0.46	2	UA	590	50%		509	509	271	234	37	0
2	US 77	IH 35 NBFR	SH 342	1.02	4	UA	590	100%	865	746	1,611	2,407	1,643	764	0
2	US 77	SH 342	STERRETT RD	0.97	5	SA	665	100%	900	800	1,700	2,580	1,649	931	0
2	US 77	STERRETT RD	BUTCHER (FM 387)	0.97	5	SA	665	100%	1,000	850	1,850	2,580	1,795	786	0
2	US 77	BUTCHER RD (FM 38	GROVE CREEK RD	1.50	5	SA	665	100%	1,100	900	2,000	3,990	3,000	990	0
2	US 77	GROVE CREEK RD	N GROVE BLVD	0.80	5	SA	665	100%	1,200	1,000	2,200	2,128	1,760	368	0
2	US 77	N GROVE BLVD	US 287	1.00	5	SA	665	100%	1,279	1,102	2,381	2,660	2,381	279	0
Sub-Total Service Area 2				**13.29**								**24,630**	**15,269**	**9,360**	**0**
3	OVILLA RD (FM 664)	US 287	BUS 287	1.38	2	UA	590	100%	140	103	243	1,628	335	1,293	0
3	BUS 287	OVILLA RD (FM 664)	FM 875 (LONE ELM)	0.91	2	UA	590	100%	214	214	427	1,074	389	685	0
3	BUS 287	FM 875 (LONE ELM)	US 287	1.05	2	UA	590	100%	310	310	620	1,239	651	588	0
3	CANTRELL ST (FM 1446)	IH 35 SBFR	COMPTON DR	0.24	2	UA	590	50%	181		181	142	43	98	0
Sub-Total Service Area 3				**3.58**								**4,083**	**1,419**	**2,664**	**0**
4	US 77 (Dallas Hwy)	US 287	INDIAN DR	0.43	5	DA	665	100%	1,498	1,356	2,854	1,430	1,227	202	0
4	US 77 (Dallas Hwy)	INDIAN DR	E. UNIVERSITY AVE	0.41	4	DA	665	100%	1,300	1,250	2,550	1,091	1,046	45	0
4	US 77 (Dallas Hwy)	E. UNIVERSITY AVE	KIRKSEY ST	0.09	4	DA	665	100%	900	850	1,750	239	158	82	0
4	US 77 (Dallas Hwy)	KIRKSEY ST	LAVISTA ST	0.12	5	SA	665	100%	875	800	1,675	319	201	118	0
4	US 77 (Dallas Hwy)	LAVISTA ST	JOHN ARDEN DR	0.26	4	UA	590	100%	857	776	1,633	614	425	189	0
4	US 77 (Dallas Hwy)	JOHN ARDEN DR	SYCAMORE ST	0.11	4	UA	590	100%	857	776	1,633	260	180	80	0
4	US 77 (Ferris Ave.)	SYCAMORE ST	MARVIN AVE	0.36	4	UA	590	100%	932	844	1,776	850	640	210	0
4	US 77 (Elm St.)	MARVIN AVE	RR CROSSING	0.42	4	UA	590	100%	900	800	1,700	991	714	277	0
4	US 77 (Elm St.)	RR CROSSING	MAIN ST	0.13	3	SA	665	100%	750	650	1,400	173	182	2	11
4	US 77 (Elm St.)	MAIN ST	JEFFERSON ST	0.10	3	SA	665	100%	700	600	1,300	133	130	7	4
4	US 77 (Elm St.)	JEFFERSON ST	MAIN ST	0.05	3	SA	665	100%	700	600	1,300	67	65	3	2
4	US 77 (Elm St.)	MAIN ST	MADISON ST	0.15	2	UA	590	50%		543	543	89	81	7	0
4	US 77 (Elm St.)	MADISON ST	FM 1446 (CANTRELL)	0.30	2	UA	590	50%		543	543	177	163	14	0
4	NORTHGATE DR	STADIUM DR	US 77 (Dallas Hwy)	0.40	2	UC	510	100%	204	35	239	408	96	312	0
4	NORTHGATE DR	US 77 (Dallas Hwy)	SOLON RD	0.67	2	UC	510	100%	204	35	239	683	160	523	0
4	BROWN ST	US 287	INDIAN DR	0.12	5	SA	665	100%	650	745	1,394	319	167	152	0
4	BROWN ST	INDIAN DR	KIRKSEY ST	0.80	5	SA	665	100%	642	736	1,378	2,128	1,102	1,026	0
4	BROWN ST	KIRKSEY ST	ROSS ST	0.40	2	UA	590	100%	300	400	700	472	280	192	0
4	BROWN ST	ROSS ST	MARVIN AVE	0.26	2	UA	590	100%	272	312	583	307	152	155	0
4	JOHN ARDEN DR	US 77 (Dallas Hwy)	E. UNIVERSITY AVE	0.49	2	UC	510	100%	196	229	425	500	208	292	0
4	JOHN ARDEN DR	E. UNIVERSITY AVE	SOLON RD	0.48	2	UC	510	100%	196	229	425	490	204	286	0
4	JOHN ARDEN DR	SOLON RD	CIVIC CENTER LANE	0.90	2	UC	510	100%	196	229	425	918	383	536	0
4	SOLON RD	US 287	JOHN ARDEN DR	0.70	2	UA	590	100%	100	100	200	826	140	686	0
4	SOLON RD	JOHN ARDEN DR	GRAND AVE N	0.37	2	UA	590	100%	100	100	200	437	74	363	0
4	GRAND AVE	SOLON RD	MARVIN AVE	0.58	2	UA	590	100%	100	100	200	684	116	568	0
4	GRAND AVE	MARVIN AVE	MAIN ST	0.30	2	UA	590	100%	100	100	200	354	60	294	0
4	E. UNIVERSITY AVE	US 77 (Dallas Hwy)	JOHN ARDEN DR	0.33	2	UC	510	100%	100	100	200	337	66	271	0
4	E. UNIVERSITY AVE	JOHN ARDEN DR	ROSS ST	0.39	2	UC	510	100%	100	100	200	398	78	320	0
4	E. UNIVERSITY AVE	ROSS ST	MARVIN AVE	0.38	2	UC	510	100%	100	100	200	388	76	312	0
4	FARLEY ST	US 287	ROSS ST	0.91	2	UC	510	100%	216	229	445	928	405	523	0
4	FARLEY ST	ROSS ST	MARVIN AVE	0.28	2	UC	510	100%	216	229	445	286	125	161	0
4	SYCAMORE ST	GRAND AVE	E. UNIVERSITY AVE	0.36	2	UC	510	100%	100	100	200	367	72	295	0
4	SYCAMORE ST	E. UNIVERSITY AVE	BRYSON ST	0.47	2	UC	510	100%	100	100	200	479	94	385	0
4	SYCAMORE ST	BRYSON ST	US 77 (Dallas Hwy)	0.10	2	UC	510	100%	100	100	200	102	20	82	0

Waxahachie Roadway Impact Fee Study Update
Existing Capital Improvements Analysis

Serv Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	PM Pk Hr Cap/Lane	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	Exist. VMT Deficiency
4	ROSS ST	GRAND AVE	E. UNIVERSITY AVE	0.36	2	UC	510	100%	100	100	200	367	72	295	0
4	ROSS ST	E. UNIVERSITY AVE	BRYSON ST	0.45	2	UC	510	100%	100	100	200	459	90	369	0
4	ROSS ST	BRYSON ST	US77 (Ferris Ave.)	0.10	2	UC	510	100%	100	100	200	102	20	82	0
4	ROSS ST	US77 (Ferris Ave.)	BROWN ST	0.19	2	UC	510	100%	100	100	200	194	38	156	0
4	ROSS ST	BROWN ST	FARLEY ST	0.39	2	UC	510	100%	100	100	200	398	78	320	0
4	ROSS ST	FARLEY ST	WYATT ST	0.46	2	UC	510	100%	100	100	200	469	92	377	0
4	MARVIN AVE	GRAND AVE	E. UNIVERSITY AVE	0.43	2	UC	510	100%	*454*	*454*	909	439	391	48	0
4	MARVIN AVE	E. UNIVERSITY AVE	BRYSON ST	0.43	2	UC	510	100%	*454*	*454*	909	439	391	48	0
4	MARVIN AVE	BRYSON ST	US77 (Ferris Ave.)	0.10	2	UC	510	100%	*454*	*454*	909	102	91	11	0
4	MARVIN AVE	US77 (Ferris Ave.)	BROWN ST	0.18	4	UC	510	100%	*454*	*454*	909	367	164	204	0
4	MARVIN AVE	BROWN ST	FARLEY ST	0.40	2	UC	510	100%	*454*	*454*	909	408	363	45	0
4	W. MAIN ST	IH 35 NBFR	GRAND AVE	1.00	2	UA	590	100%	*204*	*204*	409	1,180	409	771	0
4	W. MAIN ST	GRAND AVE	US 77 (Elm St)	1.11	2	UA	590	100%	*204*	*204*	409	1,310	454	856	0
4	MLK JR BLVD	US 77 (Elm St)	KAUFMAN ST	0.23	2	UA	590	50%		**247**	247	136	57	79	0
4	MLK JR BLVD	KAUFMAN ST	WYATT ST	0.21	2	UA	590	50%		*247*	247	124	52	72	0
4	MLK JR BLVD	WYATT ST	GETZENDANER ST	0.36	2	UA	590	50%		247	247	212	89	123	0
4	WYATT ST	MLK JR BLVD	PETERS ST	0.80	2	UC	510	100%	224	165	389	816	311	505	0
4	WYATT ST	PETERS ST	US 287 SBFR	0.83	2	UA	590	50%	224		224	490	186	304	0
4	CANTRELL ST (FM 1446)	IH 35 NBFR	S. ELM ST	0.79	2	UC	510	50%		*131*	131	403	104	299	0
Sub-Total Service Area 4				**21.44**								**26,655**	**12,737**	**13,934**	**16**
5	BROWN ST	US 287	400' SW OF SIOUX DR	0.59	5	SA	665	50%	*529*		529	785	312	473	0
5	BROWN ST	400' SW OF SIOUX DR	WASHINGTON AVE	0.88	2	UA	590	50%	495		495	519	435	84	0
5	BROWN ST	WASHINGTON AVE	SPRING CREEK DR	0.34	2	UA	590	50%	460		460	201	156	44	0
5	BROADHEAD LN	US 287 WBFR	BISON MEADOW	0.27	4	DA	665	100%	**509**	**285**	794	718	214	504	0
5	BROADHEAD LN	BISON MEADOW	GARDEN VALLEY	0.30	4	DA	665	100%	509	285	794	798	238	560	0
5	BROADHEAD LN	GARDEN VALLEY	APRIL LN	0.58	4	DA	665	100%	509	285	794	1,543	461	1,082	0
5	GARDEN VALLEY	BROADHEAD LN	PARK PLACE BLVD	0.32	2	UC	510	100%	**241**	**131**	372	326	119	207	0
5	GARDEN VALLEY	PARK PLACE BLVD	BROWN ST	0.89	2	UC	510	100%	**241**	**131**	372	908	331	577	0
5	PALMETTO RD (FM 878)	US 287 WBFR	E. CITY LIMIT	0.40	2	UC	510	100%	*180*	*101*	281	408	112	296	0
5	PARK PLACE BLVD	US 287 WBFR	E. CITY LIMIT	0.19	2	UC	510	100%	100	100	200	194	38	156	0
Sub-Total Service Area 5				**4.76**								**6,400**	**2,417**	**3,982**	**0**
6	CANTRELL ST (FM 1446)	IH 35 SBFR	COMPTON DR	0.24	2	UA	590	50%	*181*		181	142	43	98	0
6	CANTRELL ST (FM 1446)	IH 35 NBFR	S. ELM ST	0.79	2	UC	510	50%	*131*		131	403	104	299	0
6	US 77 (Elm St.)	MAIN ST	MADISON AVE	0.15	2	UA	590	50%	600		600	89	90	0	2
6	US 77 (Elm St.)	MADISON AVE	CANTRELL ST (FM 1446)	0.30	2	UA	590	50%	*600*		600	177	180	0	3
6	US 77 (Elm St.)	CANTRELL ST (FM 1446)	HILLTOP DR	0.57	2	UA	590	100%	*295*	*295*	590	673	336	336	0
6	US 77 (Elm St.)	HILLTOP DR	PARK HILLS DR	0.55	2	UA	590	100%	295	295	590	649	325	325	0
6	MLK JR BLVD	S ELM ST	KAUFMAN ST	0.23	2	UA	590	50%	**184**		184	136	42	93	0
6	MLK JR BLVD	KAUFMAN ST	WYATT ST	0.21	2	UA	590	50%	184		184	124	39	85	0
6	MLK JR BLVD	WYATT ST	GETZENDANER ST	0.36	2	UA	590	50%	184		184	212	66	146	0
6	MLK JR BLVD	GETZENDANER ST	GRAHAM ST	0.41	2	UA	590	100%	**167**	**138**	305	484	125	359	0
6	MLK JR BLVD	GRAHAM ST	PARKS SCHOOL HOUSE	0.39	2	UA	590	100%	150	125	275	460	107	353	0
6	MLK JR BLVD	PARKS SCHOOL HOUSE	US 287 SBFR	1.62	2	UA	590	100%	100	80	180	1,912	292	1,620	0
6	MLK JR BLVD	US 287 SB FR	US 287	0.44	2	UA	590	100%	*92*	*76*	168	519	74	445	0
6	WYATT	PETERS ST	US 287 SBFR	0.83	2	UA	590	50%		165	165	490	137	353	0
6	S RODGERS ST (FM 66)	W. CITY LIMIT	IH35 SBFR	1.20	2	UA	590	100%	*235*	*353*	588	1,416	705	711	0
6	S RODGERS ST (FM 66)	IH 35 NBFR	ELM ST	0.74	2	UA	590	100%	*324*	*486*	811	873	600	273	0
6	5 POINTS RD (FM 876)	W CITY LIMIT	IH35 SBFR	0.28	2	UA	590	100%	*41*	*62*	103	330	29	302	0
6	5 POINTS RD (FM 876)	IH35 NBFR	RODGERS ST	0.45	2	UC	510	100%	*41*	*62*	103	459	46	413	0
6	PARKS SCHOOL HOUSE	MLK JR BLVD	US 287	1.10	4	DA	665	100%	**29**	**32**	61	2,926	67	2,859	0
6	HOWARD RD	RODGERS ST	OLD ITALY RD	0.99	2	UA	590	100%	**101**	**169**	270	1,168	267	901	0
6	HOWARD RD	OLD ITALY RD	LAKESHORE DR	2.42	2	UA	590	100%	70	108	178	2,856	431	2,425	0
6	HOWARD RD	LAKESHORE DR	HUNTER PASS	1.23	2	UC	510	100%	**41**	**68**	109	1,255	134	1,121	0
6	HOWARD RD	HUNTER PASS	PIGG RD	0.95	2	UC	510	100%	41	68	109	969	104	865	0
6	OLD ITALY RD	HOWARD RD	LAKESHORE DR	1.75	2	UC	510	100%	10	10	20	1,785	35	1,750	0
6	LAKESHORE RD	OLD ITALY RD	HOWARD RD	1.58	2	UC	510	100%	10	10	20	1,612	32	1,580	0
6	PENN RD	HOWARD RD	CITY LIMITS	1.28	2	UC	510	100%	10	10	20	1,306	26	1,280	0
Sub-Total Service Area 6				**23.05**								**23,422**	**4,435**	**18,992**	**4**
7	PARKS SCHOOL HOUSE	US 287	CURVE IN ROAD	1.41	2	UC	510	100%	**2**	**2**	4	1,438	6	1,433	0
7	PARKS SCHOOL HOUSE	CURVE IN ROAD	S. CITY LIMITS	1.33	2	UC	510	100%	**2**	**2**	4	1,357	5	1,351	0
Sub-Total Service Area 7				**2.74**								**2,795**	**11**	**2,784**	**0**
Total												***101,051***	***39,924***	***61,431***	***305***

Notes:
* denotes deficiencies absorbed through CRF CIP
DA - Divided Arterial
UA - Undivided Arterial
SA - Special Arterial with two-way left turn lane (TWLTL)
DC - Divided collector
UC - Undivided Collector
SC - Special Collector with two-way left turn lane (TWLTL)

Appendix E: Roadway Improvement Plan Projects

ROADWAY IMPROVEMENTS PLAN PROJECTS

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial SA = special arterial (similar to DA)
PK-HR VOLUME	the existing volumes of cars on the roadway segment traveling during the afternoon (P.M.) peak hour of travel.
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
VEH-MI SUPPLY TOTAL	The number of total service units (vehicle-miles) supplied within the service area, based on the length, and established capacity of the roadway type.
VEH-MI TOTAL DEMAND PK-HR	The total service unit (vehicle-mile) demand created by existing traffic on the roadway segment in the afternoon peak hour.
EXCESS CAPACITY PK-HR VEH-MI	The number of service units supplied but unused by existing traffic in the afternoon peak hour.
FINANCE COST	Estimate of the cost of financing the cost of project development. Included for recoupment projects along John King Boulevard. Not applied for new recoupment and future projects added under this updated Impact Fee CIP
ROW	Estimated value of private owned right of way needed to be acquired for construction of the roadway improvements.

Waxahachie Roadway Impact Fee Study Update
Full System Roadway CIP

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	Type	Added Lanes	Proposed Lanes	PM Pk Hr Cap/Ln	Pct. in Serv. Area	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
1		Black Champ Rd	Long Branch Rd	N city limit	0.28	DC	2	4	565	100%	317	0	317	0
1		Bob White Ln	W city limit	E city limit	0.19	DA	2	4	665	100%	253	0	253	0
1		Butcher Rd	Solon Rd	I-35	0.68	DA	6	6	665	100%	2,723	0	2,723	0
1		Butcher Rd	W city limit	250' e of Patrick Rd	0.95	DA	6	6	665	100%	3,778	0	3,778	0
1	2	Highland Rd	New Road 1-c	N city limit	0.72	DC	4	4	565	50%	1,624	0	1,624	0
1		Little Branch Rd	w city limit	Ovilla Rd	0.19	DC	4	4	565	100%	419	0	419	0
1		Long Branch connector	Long Branch Rd	US 287	1.14	DA	6	6	665	100%	4,554	0	4,554	0
1		Long Branch Rd	New Long Branch Rd	Marshall Rd	0.67	DC	4	4	565	100%	1,510	0	1,510	0
1		Long Branch Rd	Long Branch Rd connector	city limit	0.22	DC	4	4	565	100%	502	0	502	0
1		Long Branch Road	Long Branch Road	1000' S of Daniel Road	1.08	DA	4	6	665	100%	2,864	0	2,864	0
1		Marshall Rd	Patrick Rd	I-35	0.89	DA	4	4	665	100%	2,360	0	2,360	0
1		Marshall Rd	Ovilla Rd	Patrick Rd	0.43	DA	2	4	665	100%	573	0	573	0
1		Marshall Rd	New Marshall Rd	city limit	0.38	DC	2	4	565	100%	428	0	428	0
1		Marshall Rd	Long Branch Rd	1575' s of Long Branch Rd	0.30	DC	2	4	565	100%	337	0	337	0
1		Marshall Rd	city limit	Ovilla Rd	0.10	DC	2	4	565	100%	111	0	111	0
1		Marshall Rd	2500' S of Marshall Rd	Marshall Road	0.48	DC	4	4	565	100%	1,079	0	1,079	0
1		New Marshall Rd	Marshall Rd	Long Branch Rd	0.57	DC	4	4	565	100%	1,284	0	1,284	0
1		New Road 1-a	Private roadway	450' w of FM 664	0.73	DC	4	4	565	100%	1,656	0	1,656	0
1		New Road 1-b	Westmoreland Rd Conn.	city limit	0.27	DC	4	4	565	100%	610	0	610	0
1		New Road 1-c	W city limit	Highland Rd	0.25	DC	4	4	565	100%	562	0	562	0
1		New Road 1-d	Patrick Rd		0.51	DC	4	4	565	100%	1,143	0	1,143	0
1		New Road 1-f	Long Branch Rd	Black Champ Rd	0.40	DA	4	6	665	100%	1,065	0	1,065	0
1		New Sterrett Rd	City limit	Highland Rd	0.22	DA	6	6	665	100%	863	0	863	0
1		Ovilla Road (FM 664)***	N City limit	Butcher Rd	1.63	DA	6	6	665	100%	6,512	0	6,512	0
1		Ovilla Road (FM 664)***	US 287	Marshall Rd	1.01	DA	4	6	665	100%	2,692	0	2,692	0
1		Ovilla Road (FM 664)***	Marshall Rd	Butcher Rd	1.03	DA	6	6	665	100%	4,118	0	4,118	0
1		Patrick Rd	Marshall Rd	N City limit	1.14	DC	2	4	565	100%	1,284	0	1,284	0
1		Patrick Rd	New Road 1-a	Marshall Rd	0.50	DC	2	4	565	100%	566	0	566	0
1		Solon Road	Marshall Road	northern city limit	1.96	DA	4	4	665	100%	5,217	0	5,217	0
1		Westmoreland Rd Conn.	Ovilla Rd	N city limit	0.41	DA	4	4	665	100%	1,098	0	1,098	0
Sub-Total Service Area 1					**23.41**						**52,102**	**0**	**52,101**	**0**
2		Bessie Coleman Blvd	US 77	650' E of US 77	0.13	DC	2	4	565	100%	142	0	142	0
2	5	Brown Rd***	Garden Valley	Washington Ave	0.64	DA	2	4	665	50%	846	0	846	0
2		Butcher Rd***	US 77	E City limit	1.11	DA	4	6	665	100%	2,961	0	2,961	0
2		Butcher Rd***	N City limit	S city limit	0.20	DA	4	6	665	100%	526	0	526	0
2		Butcher Rd***	I-35	US 77	0.48	DA	4	6	665	100%	1,275	0	1,275	0
2		Dean Box Dr	Bessie Coleman Blvd	Pinto Dr	0.16	UC	2	2	510	100%	164	0	164	0
2		FM 813***	N city limit	S city limit	0.22	DA	2	4	665	100%	290	0	290	0
2		FM 813***	Spring Creek	E city limit	0.51	DC	2	4	565	100%	580	0	580	0
2		FM 813***	North Grove	Spring Creek	0.29	DC	2	4	565	100%	325	0	325	0
2		Grove Creek Rd	US 77	Brookbend Dr	0.70	DA	2	4	665	100%	934	0	934	0
2		Grove Creek Rd	City limit	E City limit	0.30	DA	4	4	665	100%	793	0	793	0
2		Grove Creek Rd	I-35	US 77	0.65	DA	4	4	665	100%	1,737	0	1,737	0
2		Grove Creek Rd	Brookbend Dr	1450' e of Brookbend	0.27	DA	2	4	665	100%	362	0	362	0
2		Hedgewood Dr	Honeysuckle Ln	New Road 2-c	0.43	DC	4	4	565	100%	976	0	976	0
2		Highland Rd	New Road 1-c	Sterrett Rd	0.46	DC	2	4	565	100%	521	0	521	0
2	1	Highland Rd	New Road 1-c	N city limit	0.72	DC	4	4	565	50%	1,624	0	1,624	0
2		N Grove Blvd	I-35	US 77	1.09	DA	4	4	665	100%	2,899	0	2,899	0
2		N Grove Blvd (recoup)	US 77	FM 813	1.23	DA	4	4	665	100%	3,275	0	3,275	0
2		New Road 2-d	N Grove Blvd	E city limit	0.68	DC	4	4	565	100%	1,531	0	1,531	0
2		New Road 2-e	Solon Rd	N Grove Blvd	0.24	DC	4	4	565	100%	539	0	539	0
2		New roadway 2-a	N City limit	Butcher Rd	0.39	DA	4	4	665	100%	1,032	0	1,032	0
2		New roadway 2-b	N city limit	s city limit	0.22	DA	6	6	665	100%	880	0	880	0
2		New roadway 2-c	Grove Creek	1300' s of N Grove Blvd	1.23	DC	4	4	565	100%	2,783	0	2,783	0
2		New roadway 2-c	Butcher Rd	North Grove Creek	0.16	DC	4	4	565	100%	365	0	365	0
2		New roadway 2-c	2900' N of Grove Creek	Grove Creek	0.55	DC	4	4	565	100%	1,241	0	1,241	0
2		New Solon Rd	Solon Rd	US 287	0.20	DC	4	4	565	100%	452	0	452	0
2		Palomino Dr	Dean Box Dr	US 287 frontage Rd	0.29	DC	2	4	565	100%	325	0	325	0
2		Solon Rd	New Road 2-e	Solon Rd connector	0.36	DC	2	4	565	100%	404	0	404	0
2		Sterret Rd	Highland Rd	US 77	0.55	DA	6	6	665	100%	2,191	0	2,191	0
2		US 77***	North Grove Blvd	US 287	0.99	DA	1	6	665	100%	661	0	661	0
2		US 77***	N City Limit	Sterret Rd	1.29	DA	1	6	665	100%	859	0	859	0
2		US 77***	Butcher Rd	Grove Creek	1.11	DA	1	6	665	100%	737	0	737	0
2		US 77***	Grove Creek	North Grove Blvd	0.65	DA	1	6	665	100%	435	0	435	0
2		US 77***	Sterret Rd	Butcher Rd	0.91	DA	1	6	665	100%	608	0	608	0
Sub-Total Service Area 2					**28.11**						**35,273**	**0**	**35,275**	**0**

Waxahachie Roadway Impact Fee Study Update
Full System Roadway CIP

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	Type	Added Lanes	Proposed Lanes	PM Pk Hr Cap/Ln	Pct. in Serv. Area	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
3		Brookside Rd	Future Kempf Rd	Lone Elm Rd	2.35	DA	4	4	665	100%	6,259	0	6,259	0
3		Brookside Rd	I-35	Future Kempf Rd	0.58	DA	4	4	665	100%	1,554	0	1,554	0
3		Bus 287	FM 875	I-35	0.99	DA	2	4	665	100%	1,322	0	1,322	0
3		Bus 287***	US 287	FM 875	1.29	DA	2	4	665	100%	1,718	0	1,718	0
3	6	Cantrell St (FM 1446)***	city limit	I-35	0.26	DA	4	6	665	50%	698	0	698	0
3		FM 875***	N Kempf Dr	FM 875 connector	0.92	DA	2	4	665	100%	1,224	0	1,224	0
3		FM 875***	875' w of Bus 287	Bus 287	0.17	DA	6	6	665	100%	661	0	661	0
3		FM 875***	FM 875	New Road 3-b	0.27	DA	4	4	665	100%	715	0	715	0
3		FM 876***	Lone Elm Rd	S city limit	0.36	DA	6	6	665	100%	1,424	0	1,424	0
3		Kempf Dr	N city limit	brookside Rd	0.48	DA	4	4	665	100%	1,276	0	1,276	0
3		Kempf Dr	brookside Rd	S city limit	0.36	DA	4	4	665	100%	962	0	962	0
3		Kempf Dr	FM 875	city limit	1.78	DA	4	4	665	100%	4,734	0	4,734	0
3		Lone Elm Rd	Lone Elm Rd	City limit	0.50	DA	4	6	665	100%	1,332	0	1,332	0
3		Lone Elm Rd	Lone Elm Rd	W city limit	0.05	DA	6	6	665	100%	203	0	203	0
3		Lone Elm Rd	city limit	city limit	0.33	DA	4	4	665	100%	882	0	882	0
3		Lone Elm Rd	Lone Elm Rd	City limit	0.44	DA	4	6	665	100%	1,158	0	1,158	0
3		New Friar Ln	New Indian Rd	Ovilla Rd	0.98	DC	4	4	565	100%	2,223	0	2,223	0
3		New Friar Ln	Ovilla Rd	I-35	0.50	DC	4	4	565	100%	1,121	0	1,121	0
3		New Indian Rd	US 287	Bus 287	0.79	DC	4	4	565	100%	1,790	0	1,790	0
3		New road 3-c	Brookside Rd	city limit	0.46	DC	4	4	565	100%	1,031	0	1,031	0
3		New Road 3-c	city limit	city limit	1.28	DC	4	4	565	100%	2,889	0	2,889	0
3		New Road 3-d	Lone Elm Rd	New Road 3-e	0.55	DC	4	4	565	100%	1,246	0	1,246	0
3		New Road 3-e	FM 875	S city limit	2.51	DA	6	6	665	100%	10,004	0	10,004	0
3		New road 3-F	New Road 3-E	1150' east of New Rd 3-E	0.22	DC	4	4	565	100%	498	0	498	0
3		New Road 3-G	Loop	Loop	2.26	DC	4	4	565	100%	5,099	0	5,099	0
3		New Road 3-H	N city limit	Lone Elm Rd	1.03	DA	6	6	665	100%	4,092	0	4,092	0
3		New Road 3-I	New Road 3-H	New Road 3-G	0.42	DC	4	4	565	100%	940	0	940	0
3		New Road 3-J	FM 875	New Road 3-G	0.69	DC	4	4	565	100%	1,558	0	1,558	0
3		New Road 3-K	Lone Elm Rd	New Road 3-G	0.21	DC	4	4	565	100%	485	0	485	0
3		new Road 3-L	New Road 3-M	New Road 3-G	0.81	DC	4	4	565	100%	1,831	0	1,831	0
3		New Road 3-M	New Road 3-J	City Limit	1.53	DC	4	4	565	100%	3,450	0	3,450	0
3		New Road 3-N	city limit	city limit	0.22	DA	6	6	665	100%	871	0	871	0
3		Ovilla Rd***	US 287	Bus 287	1.47	DA	2	4	665	100%	1,961	0	1,961	0
Sub-Total Service Area 3					**31.40**						**67,211**	**0**	**67,212**	**0**
4		Alliance Blvd	I-35	Legacy Ranch	0.62	DC	4	4	565	100%	1,393	0	1,393	0
4		Brookside Rd	I-35	Bus 287	0.37	DA	4	4	665	100%	993	0	993	0
4		Bryson St	John Arden	Marvin Ave	0.52	DC	2	4	565	100%	588	0	588	0
4		Bus 287 @Katy Lake	Bus 287	Legacy Ranch Rd	1.24	DA	4	4	665	100%	3,294	0	3,294	0
4		Bus 287***	I-35	Grand Ave	1.06	DA	2	4	665	100%	1,404	0	1,404	0
4	6	Cantrell St***	I-35	Elm St	0.83	DA	2	4	665	50%	1,102	0	1,102	0
4	6	Cleaver Rd***	Parks School House	US 287	0.98	DA	2	4	665	50%	1,306	0	1,306	0
4		College St	Marvin Ave	Main ST	0.51	DA	2	4	665	100%	674	0	674	0
4	6	Elm St	Jefferson St	Cantrell St	0.29	DA	2	4	665	50%	383	0	383	0
4		Ennis St***	Marvin Ave	Cleaver St	0.18	DA	1	4	665	100%	117	0	117	0
4		Hawkins St	Marvin Ave	Jefferson St	0.54	DC	2	4	565	100%	607	0	607	0
4		Indian Dr	Brown St	US 287	0.39	DC	4	4	565	100%	883	0	883	0
4		Jefferson St	Main St	Jefferson St	0.18	DA	3	4	665	100%	362	0	362	0
4		Jefferson St	Jefferson St	Elm St	0.64	DA	1	4	665	100%	425	0	425	0
4		John Arden	Grand Ave	Solon	0.31	DA	2	4	665	100%	408	0	408	0
4		John Arden	Legacy Ranch	Grand Ave	0.17	DA	2	4	665	100%	221	0	221	0
4		John Arden Rd	Solon Rd	Dallas Hwy	0.98	DA	2	4	665	100%	1,303	0	1,303	0
4		Main St	Jefferson St	Elm St	0.76	DA	1	4	665	100%	508	0	508	0
4		Main St	Grand Ave	Jefferson St	0.34	DA	2	4	665	100%	456	0	456	0
4	6	Main St	Elm St	Getzendaner Ave	0.80	DA	1	4	665	50%	531	0	531	0
4		Marvin Ave***	Hackberry St	Farley St	0.60	DC	4	4	565	100%	1,355	0	1,355	0
4		Marvin Ave***	Ferris Ave	Ross St	0.99	DA	1	4	665	100%	661	0	661	0
4		Marvin Ave***	Ross St	Hackberry St	0.25	DA	1	4	665	100%	169	0	169	0
4		Marvin Ave***	Ross St	Hackberry St	0.25	DC	1	4	565	100%	141	0	141	0
4		Northgate Dr	US 77	Stadium Dr	0.21	DC	2	4	565	100%	242	0	242	0
4		River Oaks Blvd	Indian Dr	Postoak Dr	0.39	DC	2	4	565	100%	444	0	444	0
4		Ross St	Farley St	Wyatt St	0.61	DC	1	4	565	100%	342	0	342	0
4		Ross St	Grand Ave	Ferris Ave	0.90	DC	1	4	565	100%	509	0	509	0
4		Ross St	Ferris Ave	Farley St	0.58	DC	1	4	565	100%	329	0	329	0
4		Solon Rd	US 287	John Arden Rd	0.75	DA	2	4	665	100%	994	0	994	0
4		Solon Rd/Grand Ave	John Arden Rd	Main St	1.31	DA	2	4	665	100%	1,737	0	1,737	0
4		Stadium Dr	US 287	Brown St	0.49	DC	2	4	565	100%	550	0	550	0
4		Wyatt St	Main St	Parks School House	0.81	DA	2	4	665	100%	1,077	0	1,077	0
Sub-Total Service Area 4					**30.04**						**25,508**	**0**	**25,506**	**0**

Waxahachie Roadway Impact Fee Study Update
Full System Roadway CIP

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	Type	Added Lanes	Proposed Lanes	PM Pk Hr Cap/Ln	Pct. in Serv. Area	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
5		Vivian Dr	Broadhead Rd	Vivian Dr	0.35	DC	2	4	565	100%	394	0	394	0
5		Garden Valley	Sagebrush Ln	Broadhead	0.46	DA	2	4	665	100%	612	0	612	0
5		New roadway 7-a	Creek	Palmer and Boyce Rd	0.89	DA	6	6	665	100%	3,565	0	3,565	0
5		Bison Meadow Dr	Meagan St	FM 878	0.45	DC	4	4	565	100%	1,013	0	1,013	0
5		Broadhead Rd	Memory Ln	City limit	0.55	DA	6	6	665	100%	2,205	0	2,205	0
5		Broadhead Rd	US 287	April Ln	0.99	DA	2	4	665	100%	1,320	0	1,320	0
5		Garden Valley	Brown FM 813	Sagebrush	0.67	DA	4	4	665	100%	1,786	0	1,786	0
5		Vivian Dr	Vivian Dr	US 287	0.30	DC	4	4	565	100%	678	0	678	0
5		FM 878***	US 287	E city limit	0.72	DA	2	4	665	100%	960	0	960	0
5		Garden Valley Pkwy	Broadhead	City limit	0.49	DA	4	4	665	100%	1,313	0	1,313	0
5		Broadhead Rd	Memory Ln	City limit	0.37	DA	6	6	665	100%	1,477	0	1,477	0
5	2	Brown Rd***	Garden Valley	Washington Ave	0.64	DA	2	4	665	50%	846	0	846	0
Sub-Total Service Area 5					**13.72**						**16,169**	**0**	**16,168**	**0**
6		New roadway 6-a	E Jefferson St	E Main St	0.30	DA	4	4	665	100%	809	0	809	0
6		New roadway 6-b	Old Italy Rd	Howard Rd	1.06	DA	6	6	665	100%	4,238	0	4,238	0
6		Rogers St	I 35E	1600ft w of I 35E Serv. Rd	0.35	DA	6	6	665	100%	1,412	0	1,412	0
6		Parks School w/Ext	Howard Rd	E Main St	1.15	DA	4	4	665	100%	3,060	0	3,060	0
6		US 77***	New roadway 6-b	S City limit	2.85	DA	4	6	665	100%	7,584	0	7,584	0
6		Parks School House Rd	US 287	E Main St	1.12	DA	4	4	665	100%	2,976	0	2,976	0
6		Elm St	Main St	Jefferson St	0.10	DA	1	4	665	100%	65	0	65	0
6		5 Points Rd	I 35E	1500ft s of I 35E EBFR	0.30	DC	4	4	565	100%	668	0	668	0
6		Wyatt St s extend	Howard Rd	I 35E	1.02	DA	4	4	665	100%	2,703	0	2,703	0
6		Howard Rd***	Lakeshore Dr	New roadway 6-c	1.46	DA	2	4	665	100%	1,948	0	1,948	0
6		Rogers St	I 35E	Hilltop Dr	0.78	DC	2	4	565	100%	885	0	885	0
6		New roadway 6-d	W City limit	W City limit	0.21	DA	4	4	665	100%	556	0	556	0
6		E Jefferson St	S Elm St	Graham St	1.01	DA	2	4	665	100%	1,340	0	1,340	0
6		Old Italy Rd	New roadway 6-b	Howard Rd	2.59	DC	2	4	565	100%	2,922	0	2,922	0
6		US 77***	Cantrell St	I 35E Service Rd	1.69	DA	2	4	665	100%	2,253	0	2,253	0
6		E Main St***	Parks School House Rd	New roadway 6-b	1.68	DA	2	4	665	100%	2,233	0	2,233	0
6		E Main St***	New roadway 6-b	US 287 Frontage Rd	0.80	DA	2	4	665	100%	1,064	0	1,064	0
6		E Main St***	N Getzendaner St	Parks School House Rd	0.80	DA	2	4	665	100%	1,061	0	1,061	0
6		Wyatt St s extend	E Jefferson St	Howard Rd	0.41	DA	4	4	665	100%	1,085	0	1,085	0
6		Howard Rd***	S Elm St	Wyatt St s extend	0.46	DA	2	4	665	100%	614	0	614	0
6		Howard Rd***	Wyatt St s extend	Parks School w/Ext	0.58	DA	2	4	665	100%	774	0	774	0
6		Howard Rd***	Parks School w/Ext	New roadway 6-b	1.32	DA	2	4	665	100%	1,761	0	1,761	0
6		Howard Rd***	New roadway 6-b	Lakeshore Dr	1.11	DA	2	4	665	100%	1,474	0	1,474	0
6		New roadway 6-b	Howard Rd	E Main St	1.27	DA	6	6	665	100%	5,056	0	5,056	0
6		New roadway 6-b	E Main St	US 287 Frontage Rd	0.29	DA	6	6	665	100%	1,148	0	1,148	0
6		New roadway 6-b	US 77	Old Italy Rd	0.56	DA	6	6	665	100%	2,222	0	2,222	0
6		New roadway 6-b	W city limit	US 77	0.18	DA	6	6	665	100%	735	0	735	0
6		Old Italy Rd	Parks School w/Ext	New roadway 6-b	0.78	DC	2	4	565	100%	876	0	876	0
6		Howard Rd***	New roadway 6-c	S city limit	0.82	DA	2	4	665	100%	1,091	0	1,091	0
6		Parks School w/Ext	I 35E Service Road	Howard Rd	0.81	DA	4	4	665	100%	2,158	0	2,158	0
6		New roadway 6-c	Howard Rd	S city limit	0.10	DC	4	4	565	100%	233	0	233	0
6	3	Cantrell St (FM 1446)***	city limit	I-35	0.26	DA	4	6	665	50%	698	0	698	0
6	4	Cantrell St***	I-35	Elm St	0.83	DA	2	4	665	50%	1,102	0	1,102	0
6	4	Main St***	Elm St	Getzendaner Ave	0.80	DA	1	4	665	50%	531	0	531	0
6	4	Elm St	Jefferson St	Cantrell St	0.29	DA	2	4	665	50%	383	0	383	0
6	4	Cleaver Rd***	Parks School House	US 287	0.98	DA	2	4	665	50%	1,306	0	1,306	0
Sub-Total Service Area 6					**35.83**						**61,024**	**0**	**61,020**	**0**
7		New roadway 7-c	Parks School House Rd	E city limit	1.10	DC	4	4	565	100%	2,480	0	2,480	0
7		New roadway 7-e	New roadway 7-c	E city limit	1.41	DC	4	4	565	100%	3,191	0	3,191	0
7		Wilson Rd	city limit	Ruth Rd	0.65	DC	2	4	565	100%	730	0	730	0
7		New roadway 7-b	Parks School House Rd	E city limit	0.48	DA	6	6	665	100%	1,917	0	1,917	0
7		Parks School House Rd	New roadway 7-b	E city limit	0.67	DA	2	4	665	100%	897	0	897	0
7		FM 879	w city limit	E city limit	0.22	DA	6	6	665	100%	889	0	889	0
7		Parks School House Rd	2000ft east of Mueller	5700ft east of Mueller	0.67	DA	4	6	665	100%	1,792	0	1,792	0
7		Parks School House Rd	E City limit	3200ft south of E city limit	0.64	DC	2	4	565	100%	718	0	718	0
7		New roadway 7-a	US-287	Creek	0.33	DA	6	6	665	100%	1,319	0	1,319	0
7		Parks School House Rd	US-287	150ft S. of New Road 7-a	0.45	DC	2	4	565	100%	503	0	503	0
7		New roadway 7-d	Parks School House Rd	US-287	0.61	DA	6	6	665	100%	2,414	0	2,414	0
7		New roadway 7-e	Parks School House Rd	New Road 7-c	0.74	DC	4	4	565	100%	1,665	0	1,665	0
Sub-Total Service Area 7					**10.07**						**18,515**	**0**	**18,518**	**0**
Totals:											***275,802***	***0***	**275,799**	**0**

Notes:

DA - Divided Arterial

UA - Undivided Arterial

DC - Divided collector

UC - Undivided Collector

Appendix F: Roadway Improvements Plan Cost Analysis

ROADWAY IMPROVEMENTS PLAN COST ANALYSIS

Definitions

LANES	The total number of lanes in both directions available for travel.
TYPE	The type of roadway (used in determining capacity): DA = divided arterial SA = special arterial
% IN SERVICE AREA	If the roadway is located on the boundary of the service area (with the city limits running along the centerline of the roadway), then half of the roadway is inventoried in the service area and the other half is not. This value is either 50% or 100%.
TOTAL SEGMENT COST	The estimated cost (in dollars) of the entire segment of the proposed improvement.
TOTAL COST IN SERVICE AREA	The estimated cost (in dollars) of the portion of the proposed roadway improvement within the service area.

Waxahachie Roadway Impact Fee Study Update
Full System Roadway CIP Costing

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	Type	Added Lanes	Pct. in Serv. Area	Roadway Costs Engineering	ROW	Construction	Finance	Total Project Cost
1		Black Champ Rd	Long Branch Rd	N city limit	0.28	DC	2	100%	$ 44,124	$ 7,405	$ 630,340	$ 366,520	$ 1,048,388
1		Bob White Ln	W city limit	E city limit	0.19	DA	2	100%	$ 32,654	$ 5,015	$ 466,479	$ 270,991	$ 775,138
1		Butcher Rd	Solon Rd	I-35	0.68	DA	6	100%	$ 289,326	$ 36,040	$ 4,133,232	$ 2,396,598	$ 6,855,196
1		Butcher Rd	W city limit	250' e of Patrick Rd	0.95	DA	6	100%	$ 401,316	$ 49,990	$ 5,733,082	$ 3,324,249	$ 9,508,637
1	2	Highland Rd	New Road 1-c	N city limit	0.72	DC	4	50%	$ 113,006	$ 18,965	$ 1,614,367	$ 938,696	$ 2,685,034
1		Little Branch Rd	w city limit	Ovilla Rd	0.19	DC	4	100%	$ 58,276	$ 9,780	$ 832,508	$ 484,073	$ 1,384,637
1		Long Branch connector	Long Branch Rd	US 287	1.14	DA	6	100%	$ 483,843	$ 60,270	$ 6,912,039	$ 4,007,852	$ 11,464,003
1		Long Branch Rd	New Long Branch Rd	Marshall Rd	0.67	DC	4	100%	$ 210,221	$ 35,280	$ 3,003,157	$ 1,746,228	$ 4,994,886
1		Long Branch Rd	Long Branch Rd connector	city limit	0.22	DC	4	100%	$ 69,895	$ 11,730	$ 998,499	$ 580,591	$ 1,660,715
1		Long Branch Road	Long Branch Road	1000' S of Daniel Road	1.08	DA	4	100%	$ 304,205	$ 37,893	$ 4,345,781	$ 2,519,842	$ 7,207,720
1		Marshall Rd	Patrick Rd	I-35	0.89	DA	4	100%	$ 304,983	$ 46,840	$ 4,356,906	$ 2,531,049	$ 7,239,778
1		Marshall Rd	Ovilla Rd	Patrick Rd	0.43	DA	2	100%	$ 74,097	$ 11,380	$ 1,058,531	$ 614,930	$ 1,758,938
1		Marshall Rd	New Marshall Rd	city limit	0.38	DC	2	100%	$ 59,586	$ 10,000	$ 851,235	$ 494,963	$ 1,415,784
1		Marshall Rd	Long Branch Rd	1575' s of Long Branch Rd	0.30	DC	2	100%	$ 46,924	$ 7,875	$ 670,348	$ 389,783	$ 1,114,930
1		Marshall Rd	city limit	Ovilla Rd	0.10	DC	2	100%	$ 15,403	$ 2,585	$ 220,044	$ 127,948	$ 365,980
1		Marshall Rd	2500' S of Marshall Rd	Marshall Road	0.48	DC	4	100%	$ 150,277	$ 25,220	$ 2,146,815	$ 1,248,295	$ 3,570,607
1		New Marshall Rd	Marshall Rd	Long Branch Rd	0.57	DC	4	100%	$ 178,700	$ 29,990	$ 2,552,854	$ 1,484,393	$ 4,245,936
1		New Road 1-a	Private roadway	450' w of FM 664	0.73	DC	4	100%	$ 230,540	$ 38,690	$ 3,293,428	$ 1,915,010	$ 5,477,668
1		New Road 1-b	Westmoreland Rd Conn.	city limit	0.27	DC	4	100%	$ 84,911	$ 14,250	$ 1,213,010	$ 705,322	$ 2,017,492
1		New Road 1-c	W city limit	Highland Rd	0.25	DC	4	100%	$ 78,237	$ 13,130	$ 1,117,672	$ 649,886	$ 1,858,924
1		New Road 1-d	Patrick Rd		0.51	DC	4	100%	$ 159,155	$ 26,710	$ 2,273,649	$ 1,322,045	$ 3,781,559
1		New Road 1-f	Long Branch Rd	Black Champ Rd	0.40	DA	4	100%	$ 113,140	$ 14,093	$ 1,616,288	$ 937,182	$ 2,680,704
1		New Sterrett Rd	City limit	Highland Rd	0.22	DA	6	100%	$ 91,679	$ 11,420	$ 1,309,698	$ 759,410	$ 2,172,207
1		Ovilla Road (FM 664)***	N City limit	Butcher Rd	1.63	DA	6	100%	$ 138,353	$ 17,234	$ 1,976,474	$ 1,146,031	$ 3,278,092
1		Ovilla Road (FM 664)***	US 287	Marshall Rd	1.01	DA	4	100%	$ 57,202	$ 7,125	$ 817,166	$ 473,822	$ 1,355,315
1		Ovilla Road (FM 664)***	Marshall Rd	Butcher Rd	1.03	DA	6	100%	$ 87,488	$ 10,898	$ 1,249,832	$ 724,698	$ 2,072,917
1		Patrick Rd	Marshall Rd	N City limit	1.14	DC	2	100%	$ 178,730	$ 29,995	$ 2,553,279	$ 1,484,640	$ 4,246,644
1		Patrick Rd	New Road 1-a	Marshall Rd	0.50	DC	2	100%	$ 78,773	$ 13,220	$ 1,125,333	$ 654,340	$ 1,871,666
1		Solon Road	Marshall Road	northern city limit	1.96	DA	4	100%	$ 674,297	$ 103,560	$ 9,632,817	$ 5,595,975	$ 16,006,648
1		Westmoreland Rd Conn.	Ovilla Rd	N city limit	0.41	DA	4	100%	$ 141,878	$ 21,790	$ 2,026,835	$ 1,177,446	$ 3,367,950
Sub-Total Service Area 1					**23.41**				**$ 4,951,219**	**$ 728,374**	**$ 70,731,694**	**$ 41,072,809**	**$ 117,484,096**
2		Bessie Coleman Blvd	US 77	650' E of US 77	0.13	DC	2	100%	$ 19,812	$ 3,325	$ 283,036	$ 164,575	$ 470,748
2	5	Brown Rd***	Garden Valley	Washington Ave	0.64	DA	2	50%	$ 10,317	$ 1,680	$ 147,384	$ 85,670	$ 245,051
2		Butcher Rd***	US 77	E City limit	1.11	DA	4	100%	$ 62,917	$ 7,837	$ 898,821	$ 521,169	$ 1,490,745
2		Butcher Rd***	N City limit	S city limit	0.20	DA	4	100%	$ 11,175	$ 1,392	$ 159,641	$ 92,566	$ 264,773
2		Butcher Rd***	I-35	US 77	0.48	DA	4	100%	$ 27,092	$ 3,375	$ 387,022	$ 224,410	$ 641,898
2		Dean Box Dr	Bessie Coleman Blvd	Pinto Dr	0.16	UC	2	100%	$ 39,505	$ 8,480	$ 564,353	$ 329,146	$ 941,484
2		FM 813***	N city limit	S city limit	0.22	DA	2	100%	$ 7,507	$ 1,153	$ 107,248	$ 62,304	$ 178,212
2		FM 813***	Spring Creek	E city limit	0.51	DC	2	100%	$ 16,142	$ 2,709	$ 230,600	$ 134,085	$ 383,536
2		FM 813***	North Grove	Spring Creek	0.29	DC	2	100%	$ 9,051	$ 1,519	$ 129,303	$ 75,185	$ 215,058
2		Grove Creek Rd	US 77	Brookbend Dr	0.70	DA	2	100%	$ 120,652	$ 18,530	$ 1,723,601	$ 1,001,288	$ 2,864,071
2		Grove Creek Rd	City limit	E City limit	0.30	DA	4	100%	$ 102,551	$ 15,750	$ 1,465,014	$ 851,068	$ 2,434,383
2		Grove Creek Rd	I-35	US 77	0.65	DA	4	100%	$ 224,505	$ 34,480	$ 3,207,218	$ 1,863,163	$ 5,329,367
2		Grove Creek Rd	Brookbend Dr	1450' e of Brookbend	0.27	DA	2	100%	$ 46,783	$ 7,185	$ 668,325	$ 388,249	$ 1,110,542
2		Hedgewood Dr	Honeysuckle Ln	New Road 2-c	0.43	DC	4	100%	$ 135,917	$ 22,810	$ 1,941,667	$ 1,129,010	$ 3,229,403
2		Highland Rd	New Road 1-c	Sterrett Rd	0.46	DC	2	100%	$ 72,487	$ 12,165	$ 1,035,527	$ 602,122	$ 1,722,301
2	1	Highland Rd	New Road 1-c	N city limit	0.72	DC	4	50%	$ 113,006	$ 18,965	$ 1,614,367	$ 938,696	$ 2,685,034
2		N Grove Blvd	I-35	US 77	1.09	DA	4	100%	$ 353,519	$ 57,550	$ 5,050,277	$ 2,935,598	$ 8,396,944
2		N Grove Blvd (recoup)	US 77	FM 813	1.23	DA	4	100%	$ 399,345	$ 65,010	$ 5,704,926	$ 3,316,129	$ 9,485,410
2		New Road 2-d	N Grove Blvd	E city limit	0.68	DC	4	100%	$ 213,200	$ 35,780	$ 3,045,719	$ 1,770,976	$ 5,065,675
2		New Road 2-e	Solon Rd	N Grove Blvd	0.24	DC	4	100%	$ 75,019	$ 12,590	$ 1,071,705	$ 623,158	$ 1,782,472
2		New roadway 2-a	N City limit	Butcher Rd	0.39	DA	4	100%	$ 125,866	$ 20,490	$ 1,798,092	$ 1,045,185	$ 2,989,633
2		New roadway 2-b	N city limit	s city limit	0.22	DA	6	100%	$ 93,525	$ 11,650	$ 1,336,075	$ 774,705	$ 2,215,956
2		New roadway 2-c	Grove Creek	1300' s of N Grove Blvd	1.23	DC	4	100%	$ 387,372	$ 65,010	$ 5,533,879	$ 3,217,751	$ 9,204,012
2		New roadway 2-c	Butcher Rd	North Grove Creek	0.16	DC	4	100%	$ 50,827	$ 8,530	$ 726,103	$ 422,203	$ 1,207,664
2		New roadway 2-c	2900' N of Grove Creek	Grove Creek	0.55	DC	4	100%	$ 172,801	$ 29,000	$ 2,468,582	$ 1,435,391	$ 4,105,774
2		New Solon Rd	Solon Rd	US 287	0.20	DC	4	100%	$ 62,983	$ 10,570	$ 899,755	$ 523,175	$ 1,496,484
2		Palomino Dr	Dean Box Dr	US 287 frontage Rd	0.29	DC	2	100%	$ 45,196	$ 7,585	$ 645,662	$ 375,429	$ 1,073,872
2		Solon Rd	New Road 2-e	Solon Rd connector	0.36	DC	2	100%	$ 56,190	$ 9,430	$ 802,715	$ 466,750	$ 1,335,084
2		Sterret Rd	Highland Rd	US 77	0.55	DA	6	100%	$ 232,810	$ 29,000	$ 3,325,853	$ 1,928,450	$ 5,516,112
2		US 77***	North Grove Blvd	US 287	0.99	DA	1	100%	$ 14,044	$ 1,749	$ 200,622	$ 116,328	$ 332,742
2		US 77***	N City Limit	Sterret Rd	1.29	DA	1	100%	$ 18,245	$ 2,273	$ 260,640	$ 151,128	$ 432,286
2		US 77***	Butcher Rd	Grove Creek	1.11	DA	1	100%	$ 15,652	$ 1,950	$ 223,597	$ 129,649	$ 370,848
2		US 77***	Grove Creek	North Grove Blvd	0.65	DA	1	100%	$ 9,251	$ 1,152	$ 132,155	$ 76,628	$ 219,186
2		US 77***	Sterret Rd	Butcher Rd	0.91	DA	1	100%	$ 12,922	$ 1,610	$ 184,604	$ 107,040	$ 306,176
Sub-Total Service Area 2					**28.11**				**$ 3,358,186**	**$ 542,047**	**$ 47,974,086**	**$ 27,882,385**	**$ 79,754,390**

Waxahachie Roadway Impact Fee Study Update
Full System Roadway CIP Costing

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	Type	Added Lanes	Pct. in Serv. Area	Roadway Costs Engineering	ROW	Construction	Finance	Total Project Cost
3		Brookside Rd	Future Kempf Rd	Lone Elm Rd	2.35	DA	4	100%	$ 808,948	$ 124,240	$ 11,556,404	$ 6,713,440	$ 19,203,032
3		Brookside Rd	I-35	Future Kempf Rd	0.58	DA	4	100%	$ 200,805	$ 30,840	$ 2,868,637	$ 1,666,472	$ 4,766,754
3		Bus 287	FM 875	I-35	0.99	DA	2	100%	$ 170,821	$ 26,235	$ 2,440,295	$ 1,417,636	$ 4,054,987
3		Bus 287***	US 287	FM 875	1.29	DA	2	100%	$ 44,400	$ 6,819	$ 634,281	$ 368,472	$ 1,053,972
3	6	Cantrell St (FM 1446)***	city limit	I-35	0.26	DA	4	50%	$ 7,412	$ 923	$ 105,892	$ 61,400	$ 175,628
3		FM 875***	N Kempf Dr	FM 875 connector	0.92	DA	2	100%	$ 31,651	$ 4,861	$ 452,155	$ 262,669	$ 751,336
3		FM 875***	875' w of Bus 287	Bus 287	0.17	DA	6	100%	$ 14,049	$ 1,750	$ 200,698	$ 116,372	$ 332,869
3		FM 875***	FM 875	New Road 3-b	0.27	DA	4	100%	$ 18,479	$ 2,838	$ 263,982	$ 153,354	$ 438,653
3		FM 876***	Lone Elm Rd	S city limit	0.36	DA	6	100%	$ 30,265	$ 3,770	$ 432,361	$ 250,699	$ 717,095
3		Kempf Dr	N city limit	brookside Rd	0.48	DA	4	100%	$ 164,863	$ 25,320	$ 2,355,185	$ 1,368,193	$ 3,913,561
3		Kempf Dr	brookside Rd	S city limit	0.36	DA	4	100%	$ 124,298	$ 19,090	$ 1,775,690	$ 1,031,548	$ 2,950,627
3		Kempf Dr	FM 875	city limit	1.78	DA	4	100%	$ 611,855	$ 93,970	$ 8,740,786	$ 5,077,769	$ 14,524,380
3		Lone Elm Rd	Lone Elm Rd	City limit	0.50	DA	4	100%	$ 141,505	$ 17,627	$ 2,021,507	$ 1,172,143	$ 3,352,782
3		Lone Elm Rd	Lone Elm Rd	W city limit	0.05	DA	6	100%	$ 21,595	$ 2,690	$ 308,501	$ 178,880	$ 511,667
3		Lone Elm Rd	city limit	city limit	0.33	DA	4	100%	$ 114,011	$ 17,510	$ 1,628,724	$ 946,171	$ 2,706,416
3		Lone Elm Rd	Lone Elm Rd	City limit	0.44	DA	4	100%	$ 123,041	$ 15,327	$ 1,757,732	$ 1,019,197	$ 2,915,297
3		New Friar Ln	New Indian Rd	Ovilla Rd	0.98	DC	4	100%	$ 309,432	$ 51,930	$ 4,420,463	$ 2,570,340	$ 7,352,166
3		New Friar Ln	Ovilla Rd	I-35	0.50	DC	4	100%	$ 156,057	$ 26,190	$ 2,229,384	$ 1,296,307	$ 3,707,938
3		New Indian Rd	US 287	Bus 287	0.79	DC	4	100%	$ 249,191	$ 41,820	$ 3,559,865	$ 2,069,933	$ 5,920,809
3		New road 3-c	Brookside Rd	city limit	0.46	DC	4	100%	$ 143,544	$ 24,090	$ 2,050,625	$ 1,192,365	$ 3,410,624
3		New Road 3-c	city limit	city limit	1.28	DC	4	100%	$ 402,209	$ 67,500	$ 5,745,836	$ 3,340,997	$ 9,556,542
3		New Road 3-d	Lone Elm Rd	New Road 3-e	0.55	DC	4	100%	$ 173,516	$ 29,120	$ 2,478,796	$ 1,441,331	$ 4,122,763
3		New Road 3-e	FM 875	S city limit	2.51	DA	6	100%	$ 1,062,816	$ 132,390	$ 15,183,090	$ 8,803,708	$ 25,182,004
3		New road 3-F	New Road 3-E	1150' east of New Rd 3-E	0.22	DC	4	100%	$ 69,299	$ 11,630	$ 989,986	$ 575,641	$ 1,646,557
3		New Road 3-G	Loop	Loop	2.26	DC	4	100%	$ 709,853	$ 119,130	$ 10,140,763	$ 5,896,489	$ 16,866,234
3		New Road 3-H	N city limit	Lone Elm Rd	1.03	DA	6	100%	$ 434,712	$ 54,150	$ 6,210,169	$ 3,600,882	$ 10,299,913
3		New Road 3-I	New Road 3-H	New Road 3-G	0.42	DC	4	100%	$ 130,792	$ 21,950	$ 1,868,461	$ 1,086,443	$ 3,107,646
3		New Road 3-J	FM 875	New Road 3-G	0.69	DC	4	100%	$ 216,835	$ 36,390	$ 3,097,644	$ 1,801,169	$ 5,152,038
3		New Road 3-K	Lone Elm Rd	New Road 3-G	0.21	DC	4	100%	$ 67,571	$ 11,340	$ 965,300	$ 561,288	$ 1,605,499
3		new Road 3-L	New Road 3-M	New Road 3-G	0.81	DC	4	100%	$ 254,911	$ 42,780	$ 3,641,583	$ 2,117,450	$ 6,056,724
3		New Road 3-M	New Road 3-J	City Limit	1.53	DC	4	100%	$ 480,267	$ 80,600	$ 6,860,954	$ 3,989,398	$ 11,411,219
3		New Road 3-N	city limit	city limit	0.22	DA	6	100%	$ 92,562	$ 11,530	$ 1,322,313	$ 766,725	$ 2,193,130
3		Ovilla Rd***	US 287	Bus 287	1.47	DA	2	100%	$ 50,696	$ 7,786	$ 724,229	$ 420,725	$ 1,203,435
Sub-Total Service Area 3					**31.40**				**$ 7,632,260**	**$ 1,217,506**	**$ 109,032,292**	**$ 63,364,294**	**$ 181,246,352**
4		Allliance Blvd	I-35	Legacy Ranch	0.62	DC	4	100%	$ 193,954	$ 16,275	$ 2,770,770	$ 1,602,355	$ 4,583,354
4		Brookside Rd	I-35	Bus 287	0.37	DA	4	100%	$ 128,335	$ 9,855	$ 1,833,361	$ 1,059,753	$ 3,031,304
4		Bryson St	John Arden	Marvin Ave	0.52	DC	2	100%	$ 81,902	$ 6,873	$ 1,170,023	$ 676,632	$ 1,935,428
4		Bus 287 @Katy Lake	Bus 287	Legacy Ranch Rd	1.24	DA	4	100%	$ 401,679	$ 32,695	$ 5,738,273	$ 3,317,938	$ 9,490,585
4		Bus 287***	I-35	Grand Ave	1.06	DA	2	100%	$ 36,280	$ 2,786	$ 518,289	$ 299,591	$ 856,947
4	6	Cantrell St***	I-35	Elm St	0.83	DA	2	50%	$ 14,237	$ 1,093	$ 203,381	$ 117,562	$ 336,273
4	6	Cleaver Rd***	Parks School House	US 287	0.98	DA	2	50%	$ 16,880	$ 1,296	$ 241,146	$ 139,392	$ 398,714
4		College St	Marvin Ave	Main ST	0.51	DA	2	100%	$ 82,130	$ 6,685	$ 1,173,279	$ 678,404	$ 1,940,497
4	6	Elm St	Jefferson St	Cantrell St	0.29	DA	2	50%	$ 24,726	$ 1,899	$ 353,231	$ 204,181	$ 584,037
4		Ennis St***	Marvin Ave	Cleaver St	0.18	DA	1	100%	$ 2,841	$ 231	$ 40,586	$ 23,468	$ 67,126
4		Hawkins St	Marvin Ave	Jefferson St	0.54	DC	2	100%	$ 84,553	$ 7,095	$ 1,207,902	$ 698,538	$ 1,998,089
4		Indian Dr	Brown St	US 287	0.39	DC	4	100%	$ 122,867	$ 10,310	$ 1,755,247	$ 1,015,071	$ 2,903,495
4		Jefferson St	Main St	Jefferson St	0.18	DA	3	100%	$ 46,734	$ 3,589	$ 667,628	$ 385,915	$ 1,103,865
4		Jefferson St	Jefferson St	Elm St	0.64	DA	1	100%	$ 54,873	$ 4,214	$ 783,899	$ 453,124	$ 1,296,109
4		John Arden	Grand Ave	Solon	0.31	DA	2	100%	$ 49,726	$ 4,048	$ 710,373	$ 410,746	$ 1,174,894
4		John Arden	Legacy Ranch	Grand Ave	0.17	DA	2	100%	$ 26,998	$ 2,198	$ 385,681	$ 223,006	$ 637,882
4		John Arden Rd	Solon Rd	Dallas Hwy	0.98	DA	2	100%	$ 158,853	$ 12,930	$ 2,269,334	$ 1,312,156	$ 3,753,273
4		Main St	Jefferson St	Elm St	0.76	DA	1	100%	$ 65,649	$ 5,041	$ 937,842	$ 542,109	$ 1,550,641
4		Main St	Grand Ave	Jefferson St	0.34	DA	2	100%	$ 58,959	$ 4,528	$ 842,267	$ 486,863	$ 1,392,616
4	6	Main St	Elm St	Getzendaner Ave	0.80	DA	1	50%	$ 34,306	$ 2,634	$ 490,082	$ 283,286	$ 810,309
4		Marvin Ave***	Hackberry St	Farley St	0.60	DC	4	100%	$ 37,730	$ 3,166	$ 539,002	$ 311,708	$ 891,607
4		Marvin Ave***	Ferris Ave	Ross St	0.99	DA	1	100%	$ 16,125	$ 1,313	$ 230,356	$ 133,194	$ 380,988
4		Marvin Ave***	Ross St	Hackberry St	0.25	DA	1	100%	$ 4,110	$ 335	$ 58,708	$ 33,946	$ 97,097
4		Marvin Ave***	Ross St	Hackberry St	0.25	DC	1	100%	$ 3,939	$ 331	$ 56,267	$ 32,539	$ 93,075
4		Northgate Dr	US 77	Stadium Dr	0.21	DC	2	100%	$ 33,637	$ 2,823	$ 480,522	$ 277,889	$ 794,870
4		River Oaks Blvd	Indian Dr	Postoak Dr	0.39	DC	2	100%	$ 61,761	$ 5,183	$ 882,305	$ 510,243	$ 1,459,492
4		Ross St	Farley St	Wyatt St	0.61	DC	1	100%	$ 47,654	$ 3,999	$ 680,775	$ 393,697	$ 1,126,125
4		Ross St	Grand Ave	Ferris Ave	0.90	DC	1	100%	$ 70,833	$ 5,944	$ 1,011,906	$ 585,192	$ 1,673,875
4		Ross St	Ferris Ave	Farley St	0.58	DC	1	100%	$ 45,867	$ 3,849	$ 655,238	$ 378,929	$ 1,083,882
4		Solon Rd	US 287	John Arden Rd	0.75	DA	2	100%	$ 128,465	$ 9,865	$ 1,835,221	$ 1,060,829	$ 3,034,380
4		Solon Rd/Grand Ave	John Arden Rd	Main St	1.31	DA	2	100%	$ 224,440	$ 17,235	$ 3,206,288	$ 1,853,359	$ 5,301,322
4		Stadium Dr	US 287	Brown St	0.49	DC	2	100%	$ 76,539	$ 6,423	$ 1,093,411	$ 632,327	$ 1,808,700
4		Wyatt St	Main St	Parks School House	0.81	DA	2	100%	$ 139,241	$ 10,693	$ 1,989,164	$ 1,149,814	$ 3,288,911
Sub-Total Service Area 4					**30.04**				**$ 2,576,823**	**$ 207,428**	**$ 36,811,756**	**$ 21,283,757**	**$ 60,879,764**

Waxahachie Roadway Impact Fee Study Update
Full System Roadway CIP Costing

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	Type	Added Lanes	Pct. in Serv. Area	Roadway Costs Engineering	ROW	Construction	Finance	Total Project Cost
5		Vivian Dr	Broadhead Rd	Vivian Dr	0.35	DC	2	100%	$ 54,820	$ 4,600	$ 783,136	$ 452,893	$ 1,295,449
5		Garden Valley	Sagebrush Ln	Broadhead	0.46	DA	2	100%	$ 74,605	$ 6,073	$ 1,065,779	$ 616,247	$ 1,762,703
5		New roadway 7-a	Creek	Palmer and Boyce Rd	0.89	DA	6	100%	$ 378,677	$ 23,585	$ 5,409,671	$ 3,124,047	$ 8,935,980
5		Bison Meadow Dr	Meagan St	FM 878	0.45	DC	4	100%	$ 141,041	$ 11,835	$ 2,014,873	$ 1,165,215	$ 3,332,964
5		Broadhead Rd	Memory Ln	City limit	0.55	DA	6	100%	$ 234,255	$ 14,590	$ 3,346,496	$ 1,932,577	$ 5,527,918
5		Broadhead Rd	US 287	April Ln	0.99	DA	2	100%	$ 161,003	$ 13,105	$ 2,300,048	$ 1,329,915	$ 3,804,071
5		Garden Valley	Brown FM 813	Sagebrush	0.67	DA	4	100%	$ 217,763	$ 17,725	$ 3,110,900	$ 1,798,760	$ 5,145,148
5		Vivian Dr	Vivian Dr	US 287	0.30	DC	4	100%	$ 94,325	$ 7,915	$ 1,347,505	$ 779,271	$ 2,229,017
5		FM 878***	US 287	E city limit	0.72	DA	2	100%	$ 24,821	$ 1,906	$ 354,580	$ 204,961	$ 586,267
5		Garden Valley Pkwy	Broadhead	City limit	0.49	DA	4	100%	$ 160,082	$ 13,030	$ 2,286,885	$ 1,322,304	$ 3,782,301
5		Broadhead Rd	Memory Ln	City limit	0.37	DA	6	100%	$ 120,031	$ 9,770	$ 1,714,725	$ 991,474	$ 2,836,000
5	2	Brown Rd***	Garden Valley	Washington Ave	0.64	DA	2	50%	$ 10,317	$ 840	$ 147,384	$ 85,219	$ 243,760
Sub-Total Service Area 5					**13.72**				**$ 1,671,739**	**$ 124,973**	**$ 23,881,982**	**$ 13,802,883**	**$ 39,481,577**
6		New roadway 6-a	E Jefferson St	E Main St	0.30	DA	4	100%	$ 104,504	$ 8,025	$ 1,492,919	$ 862,965	$ 2,468,414
6		New roadway 6-b	Old Italy Rd	Howard Rd	1.06	DA	6	100%	$ 450,206	$ 28,040	$ 6,431,511	$ 3,714,152	$ 10,623,908
6		Rogers St	I 35E	1600ft w of I 35E Serv. Rd	0.35	DA	6	100%	$ 149,962	$ 9,340	$ 2,142,308	$ 1,237,167	$ 3,538,777
6		Parks School w/Ext	Howard Rd	E Main St	1.15	DA	4	100%	$ 373,054	$ 30,365	$ 5,329,336	$ 3,081,486	$ 8,814,241
6		US 77***	New roadway 6-b	S City limit	2.85	DA	4	100%	$ 161,126	$ 10,035	$ 2,301,796	$ 1,329,271	$ 3,802,227
6		Parks School House Rd	US 287	E Main St	1.12	DA	4	100%	$ 362,856	$ 29,535	$ 5,183,664	$ 2,997,257	$ 8,573,312
6		Elm St	Main St	Jefferson St	0.10	DA	1	100%	$ 8,432	$ 648	$ 120,457	$ 69,629	$ 199,165
6		5 Points Rd	I 35E	1500ft s of I 35E EBFR	0.30	DC	4	100%	$ 92,955	$ 7,800	$ 1,327,927	$ 767,949	$ 2,196,630
6		Wyatt St s extend	Howard Rd	I 35E	1.02	DA	4	100%	$ 349,390	$ 26,830	$ 4,991,280	$ 2,885,153	$ 8,252,653
6		Howard Rd***	Lakeshore Dr	New roadway 6-c	1.46	DA	2	100%	$ 47,502	$ 3,867	$ 678,606	$ 392,378	$ 1,122,353
6		Rogers St	I 35E	Hilltop Dr	0.78	DC	2	100%	$ 123,255	$ 10,343	$ 1,760,780	$ 1,018,271	$ 2,912,647
6		New roadway 6-d	W City limit	W City limit	0.21	DA	4	100%	$ 71,883	$ 5,520	$ 1,026,905	$ 593,591	$ 1,697,899
6		E Jefferson St	S Elm St	Graham St	1.01	DA	2	100%	$ 173,165	$ 13,298	$ 2,473,781	$ 1,429,941	$ 4,090,185
6		Old Italy Rd	New roadway 6-b	Howard Rd	2.59	DC	2	100%	$ 406,826	$ 34,138	$ 5,811,807	$ 3,361,007	$ 9,613,778
6		US 77***	Cantrell St	I 35E Service Rd	1.69	DA	2	100%	$ 58,249	$ 4,473	$ 832,128	$ 481,002	$ 1,375,852
6		E Main St***	Parks School House Rd	New roadway 6-b	1.68	DA	2	100%	$ 57,709	$ 4,432	$ 824,408	$ 476,540	$ 1,363,087
6		E Main St***	New roadway 6-b	US 287 Frontage Rd	0.80	DA	2	100%	$ 27,510	$ 2,113	$ 392,996	$ 227,167	$ 649,785
6		E Main St***	N Getzendaner St	Parks School House Rd	0.80	DA	2	100%	$ 27,432	$ 2,107	$ 391,880	$ 226,522	$ 647,939
6		Wyatt St s extend	E Jefferson St	Howard Rd	0.41	DA	4	100%	$ 140,186	$ 10,765	$ 2,002,651	$ 1,157,610	$ 3,311,212
6		Howard Rd***	S Elm St	Wyatt St s extend	0.46	DA	2	100%	$ 14,970	$ 1,219	$ 213,858	$ 123,655	$ 353,702
6		Howard Rd***	Wyatt St s extend	Parks School w/Ext	0.58	DA	2	100%	$ 18,865	$ 1,536	$ 269,494	$ 155,825	$ 445,719
6		Howard Rd***	Parks School w/Ext	New roadway 6-b	1.32	DA	2	100%	$ 42,938	$ 3,495	$ 613,405	$ 354,678	$ 1,014,516
6		Howard Rd***	New roadway 6-b	Lakeshore Dr	1.11	DA	2	100%	$ 35,936	$ 2,925	$ 513,364	$ 296,833	$ 849,058
6		New roadway 6-b	Howard Rd	E Main St	1.27	DA	6	100%	$ 537,068	$ 33,450	$ 7,672,398	$ 4,430,755	$ 12,673,671
6		New roadway 6-b	E Main St	US 287 Frontage Rd	0.29	DA	6	100%	$ 121,944	$ 7,595	$ 1,742,059	$ 1,006,026	$ 2,877,624
6		New roadway 6-b	US 77	Old Italy Rd	0.56	DA	6	100%	$ 236,021	$ 14,700	$ 3,371,726	$ 1,947,148	$ 5,569,595
6		New roadway 6-b	W city limit	US 77	0.18	DA	6	100%	$ 78,031	$ 4,860	$ 1,114,734	$ 643,751	$ 1,841,376
6		Old Italy Rd	Parks School w/Ext	New roadway 6-b	0.78	DC	2	100%	$ 121,944	$ 10,233	$ 1,742,052	$ 1,007,441	$ 2,881,669
6		Howard Rd***	New roadway 6-c	S city limit	0.82	DA	2	100%	$ 26,611	$ 2,166	$ 380,153	$ 219,809	$ 628,739
6		Parks School w/Ext	I 35E Service Road	Howard Rd	0.81	DA	4	100%	$ 263,158	$ 21,420	$ 3,759,407	$ 2,173,734	$ 6,217,719
6		New roadway 6-c	Howard Rd	S city limit	0.10	DC	4	100%	$ 32,475	$ 2,725	$ 463,923	$ 268,290	$ 767,413
6	3	Cantrell St (FM 1446)***	city limit	I-35	0.26	DA	4	50%	$ 7,412	$ 462	$ 105,892	$ 61,152	$ 174,918
6	4	Cantrell St***	I-35	Elm St	0.83	DA	2	50%	$ 14,237	$ 1,093	$ 203,381	$ 117,562	$ 336,273
6	4	Main St***	Elm St	Getzendaner Ave	0.80	DA	1	50%	$ 6,861	$ 527	$ 98,016	$ 56,657	$ 162,062
6	4	Elm St	Jefferson St	Cantrell St	0.29	DA	2	50%	$ 24,726	$ 1,899	$ 353,231	$ 204,181	$ 584,037
6	4	Cleaver Rd***	Parks School House	US 287	0.98	DA	2	50%	$ 16,880	$ 1,296	$ 241,146	$ 139,392	$ 398,714
Sub-Total Service Area 6					**35.83**				**$ 4,786,276**	**$ 353,270**	**$ 68,375,377**	**$ 39,515,948**	**$ 113,030,871**
7		New roadway 7-c	Parks School House Rd	E city limit	1.10	DC	4	100%	$ 345,303	$ 28,975	$ 4,932,907	$ 2,852,733	$ 8,159,918
7		New roadway 7-e	New roadway 7-c	E city limit	1.41	DC	4	100%	$ 444,217	$ 37,275	$ 6,345,957	$ 3,669,909	$ 10,497,358
7		Wilson Rd	city limit	Ruth Rd	0.65	DC	2	100%	$ 101,625	$ 8,528	$ 1,451,781	$ 839,575	$ 2,401,508
7		New roadway 7-b	Parks School House Rd	E city limit	0.48	DA	6	100%	$ 203,668	$ 12,685	$ 2,909,548	$ 1,680,243	$ 4,806,144
7		Parks School House Rd	New roadway 7-b	E city limit	0.67	DA	2	100%	$ 115,997	$ 8,908	$ 1,657,094	$ 957,864	$ 2,739,862
7		FM 879	w city limit	E city limit	0.22	DA	6	100%	$ 94,408	$ 5,880	$ 1,348,691	$ 778,859	$ 2,227,838
7		Parks School House Rd	2000ft east of Mueller	5700ft east of Mueller	0.67	DA	4	100%	$ 190,422	$ 11,860	$ 2,720,318	$ 1,570,964	$ 4,493,565
7		Parks School House Rd	E City limit	3200ft south of E city limit	0.64	DC	2	100%	$ 100,016	$ 8,393	$ 1,428,798	$ 826,283	$ 2,363,490
7		New roadway 7-a	US-287	Creek	0.33	DA	6	100%	$ 140,167	$ 8,730	$ 2,002,393	$ 1,156,367	$ 3,307,658
7		Parks School House Rd	US-287	150ft S. of New Road 7-a	0.45	DC	2	100%	$ 70,044	$ 5,878	$ 1,000,627	$ 578,669	$ 1,655,217
7		New roadway 7-d	Parks School House Rd	US-287	0.61	DA	6	100%	$ 256,492	$ 15,975	$ 3,664,172	$ 2,116,033	$ 6,052,672
7		New roadway 7-e	Parks School House Rd	New Road 7-c	0.74	DC	4	100%	$ 231,791	$ 19,450	$ 3,311,304	$ 1,914,949	$ 5,477,495
Sub-Total Service Area 7					**10.07**				**$ 2,294,151**	**$ 172,535**	**$ 32,773,588**	**$ 18,942,451**	**$ 54,182,726**
Totals:									**$ 27,270,654**	**$ 3,346,133**	**$ 389,580,776**	**$ 225,864,527**	**$ 646,059,776**

Notes:
DA - Divided Arterial
UA - Undivided Arterial
DC - Divided collector
UC - Undivided Collector

Appendix G: Service Area Analysis Summary

Waxahachie Roadway Impact Fee Study Update
Service Area Analysis Summary - 2020 Full System CIP

	A	B	C	D	E	F	G	H	I	J	K	L	M
				A - B - C		E x (50%)	F x (D / A)	F - G		I / D	G x J	K / I	L / (50%)
Service Area	Capacity Supplied by CIP	Existing Utilization	Existing Deficiencies	Net Capacity Supplied by CIP	Total Project Cost of CIP	Credited Project Cost of CIP	Cost of Net Capacity	Cost to Meet Existing Utilization	Projected New Development (10-Yr Demand)	Percent of CIP Attributable to New Dev.	Credited Cost Attributable to New Dev.	Credited Cost per Service Unit (Maximum Allowable)	Actual Cost per Service Unit
	(veh-mi)	(veh-mi)	(veh-mi)	(veh-mi)		(50% Credit)	(50% Credit)	(50% Credit)	(veh-miles)		(50% Credit)	(50% Credit)	(Full Cost)
1	52,102	0	285	51,817	114,134,639	57,067,320	$56,755,159	$312,160	4,083	7.9	$4,472,110	$1,095.00	$2,190.00
2	35,273	0	0	35,273	79,767,179	39,883,590	$39,883,590	$0	10,479	29.7	$11,848,727	$1,130.00	$2,260.00
3	67,211	0	0	67,211	181,270,721	90,635,361	$90,635,361	$0	2,553	3.8	$3,442,771	$1,348.00	$2,696.00
4	25,508	0	16	25,492	60,889,012	30,444,506	$30,425,410	$19,096	3,458	13.6	$4,127,219	$1,193.00	$2,386.00
5	16,169	0	0	16,169	39,487,440	19,743,720	$19,743,720	$0	2,445	15.1	$2,985,552	$1,221.00	$2,442.00
6	61,024	0	4	61,020	112,653,809	56,326,905	$56,323,213	$3,692	8,250	13.5	$7,614,987	$923.00	$1,846.00
7	18,515	0	0	18,515	54,189,439	27,094,719	$27,094,719	$0	811	4.4	$1,186,812	$1,463.00	$2,926.00
Totals	275,802	0	305	275,497	$642,392,240	$321,196,120	$320,861,171	$334,949	32,079	11.6	$35,678,177	$1,164.00	$2,328.00
												Weighted Average	

Waxahachie Roadway Impact Fee Study Update

Current Ordinance, 10-Year and Full-System Unit Cost Comparison

Service Area	Current Ordinance		2020 Update 10-Year CIP	2020 Update Full Buildout
	Max	Actual	50% Max	50% Max
1	$ 1,024.00	$ 1,024.00	$925.00	$1,095.00
2	$ 992.00	$ 992.00	$1,014.00	$1,130.00
3	$ 1,025.00	$ 1,025.00	$1,102.00	$1,348.00
4	$ 1,222.00	$ 1,222.00	$1,322.00	$1,193.00
5	$ 621.00	$ 621.00	$1,144.00	$1,221.00
6	$ 1,160.00	$ 1,160.00	$1,169.00	$923.00
7	$ 1,337.00	$ 1,337.00	$1,420.00	$1,463.00

Appendix H: Land Use Assumptions for Impact Fees Final Report

Table of Contents

1. PURPOSE

Chapter 395 of the Texas Local Government Code prescribes the process by which cities in Texas must formulate development impact fees. The initial process is the establishment of land use assumptions. These land use assumptions, which also include population and employment projections, will become the basis for the preparation of impact fee capital improvement plans for water, wastewater, and roadway facilities.

To assist the City of Waxahachie in determining the need and timing of capital improvements to serve future development, a reasonable estimation of future growth is required. The purpose of this report is to formulate growth and development projections based upon assumptions pertaining to the type, location, quantity and timing of various future land uses within the community, and to establish and document the methodology used for preparing the growth and land use assumptions.

Land Use Assumptions Report Elements

This report contains the following components:

I. **Methodology** – Explanation of the general methodology used to prepare the land use assumptions.

II. **Data Collection Zones & Service Area Maps** (**Figures 1, 2** and **3**) – Explanation of data collection zones (traffic survey zones), and division of the City into impact fee service areas for roadway, water, and wastewater facilities.

III. **Base Year Data** – Information on population, employment, and land use for Waxahachie as of 2020 for each capital facility service area.

IV. **Ten-Year Growth Assumptions** – Population and employment growth assumptions for ten years by impact fee service area.

V. **Ultimate Population Projection** – Projections that reflect a completely developed condition based upon the City's ultimate "build-out" scenario.

VI. **Summary** – Brief synopsis of the land use assumptions report.

2. METHODOLOGY

Based on the growth assumptions and the capital improvements needed to support growth, it is possible to develop an impact fee structure that fairly allocates improvement costs to growth areas in relation to their impact on the entire infrastructure system. The database and projections in this report have been formulated using reasonable and generally accepted planning principles.

These land use assumptions and future growth projections take into consideration several factors influencing development patterns, including the following:

- The character, type, density, and quantity of existing development
- Existing zoning patterns
- Anticipated future land use (as shown on the City's Future Land Use Plan)
- Availability of land for future expansion
- Current and historical growth trends within the City
- Building permit activity trends
- Employment and population absorption rates
- Physical holding capacity of the City
- Known or anticipated development projects

Following is the general methodology used for the preparation of this report:

1. Update impact fee service areas as necessary for roadway, water, and wastewater facilities (see 3. Data Collection Zones & Service Area Maps).
2. Collect/determine benchmark data on population, employment, and land use as of 2020 (see 4. Base Year Data).
3. Project population and employment growth for ten years by impact fee service area (see 5. Ten-Year Growth Assumptions).
4. Project the ultimate population for a fully developed City (see 6. Ultimate Population Projection).

More detailed discussion for each of the above is contained within the respective sections.

3. DATA COLLECTION ZONES & SERVICE AREA MAPS

Data Collection Zones

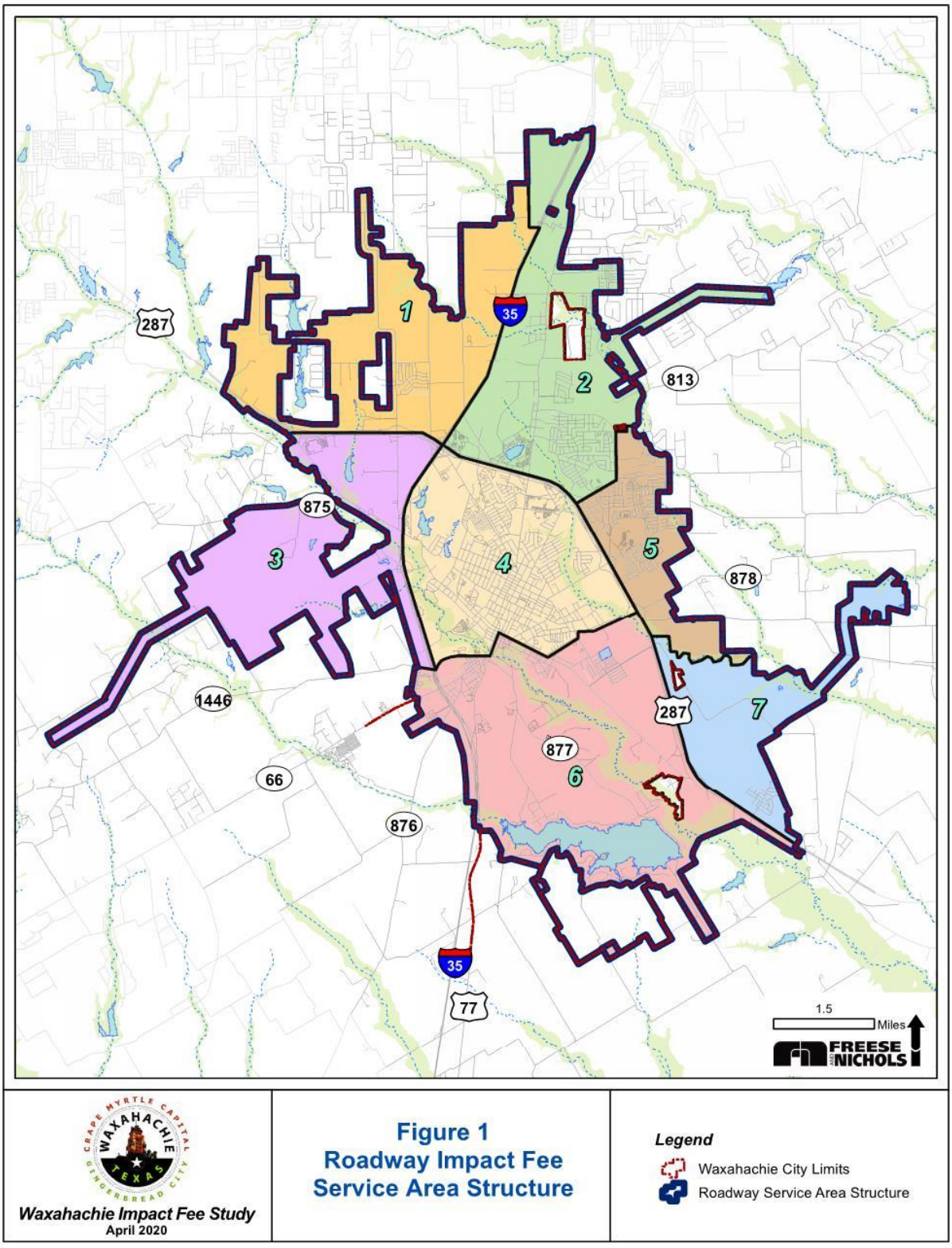
The data collection zones used for the land use assumptions are based on the 2020 demographic modeling structure from the North Central Texas Council of Governments (NCTCOG), composed of small geographic areas known as traffic survey zones (TSZs). A TSZ is a type of data collection zone that has been established by NCTCOG for all areas within the region, including areas within the corporate City limits of Waxahachie. Data sets in a TSZ include occupied households, the basis for the projections in this report. The TSZs within Waxahachie vary in size from about 50 acres to several hundred acres.

TSZs are formulated on the basis of homogeneity and traffic generation potential using major arterials, creeks, railroad lines and other physical boundaries for delineation. Since part of the data needed for the calculation of roadway impact fees is required to be compiled by TSZs, the land use assumptions are compiled by the same TSZs used by NCTCOG or combinations thereof. These TSZs are aggregated into different geographic boundaries to form service areas for roadway impact fees. The service area structure for roadway impact fees has remained unchanged since the 2015 impact fee update except for the inclusion of any annexed or de-annexed areas.

Service Area Maps

Figure 1, entitled "Roadway Impact Fee Service Area Structure", details the seven service area structures for roadway facilities. All of the roadway service area boundaries encompass several TSZs and, in accordance with Chapter 395 of the Texas Local Government Code, are no more than six miles. Although the capital improvements plan and impact fees will be prepared as a separate document for roadway facilities, the geographic boundaries of the roadway service areas will be as shown on **Figure 1** for both documents. In addition, no changes have been made to the geographic boundaries of the roadway service areas since the last update of this report.

Figure 2 and **Figure 3** show the service areas for water and wastewater facilities, respectively. The boundary for water facilities is the existing water service area as defined by the current Certificate of Convenience and Necessity (CCN). The boundary for the wastewater facilities is the general area of the City's extraterritorial jurisdiction. Documents containing the capital improvements plan for water and wastewater facilities will also be prepared separately.

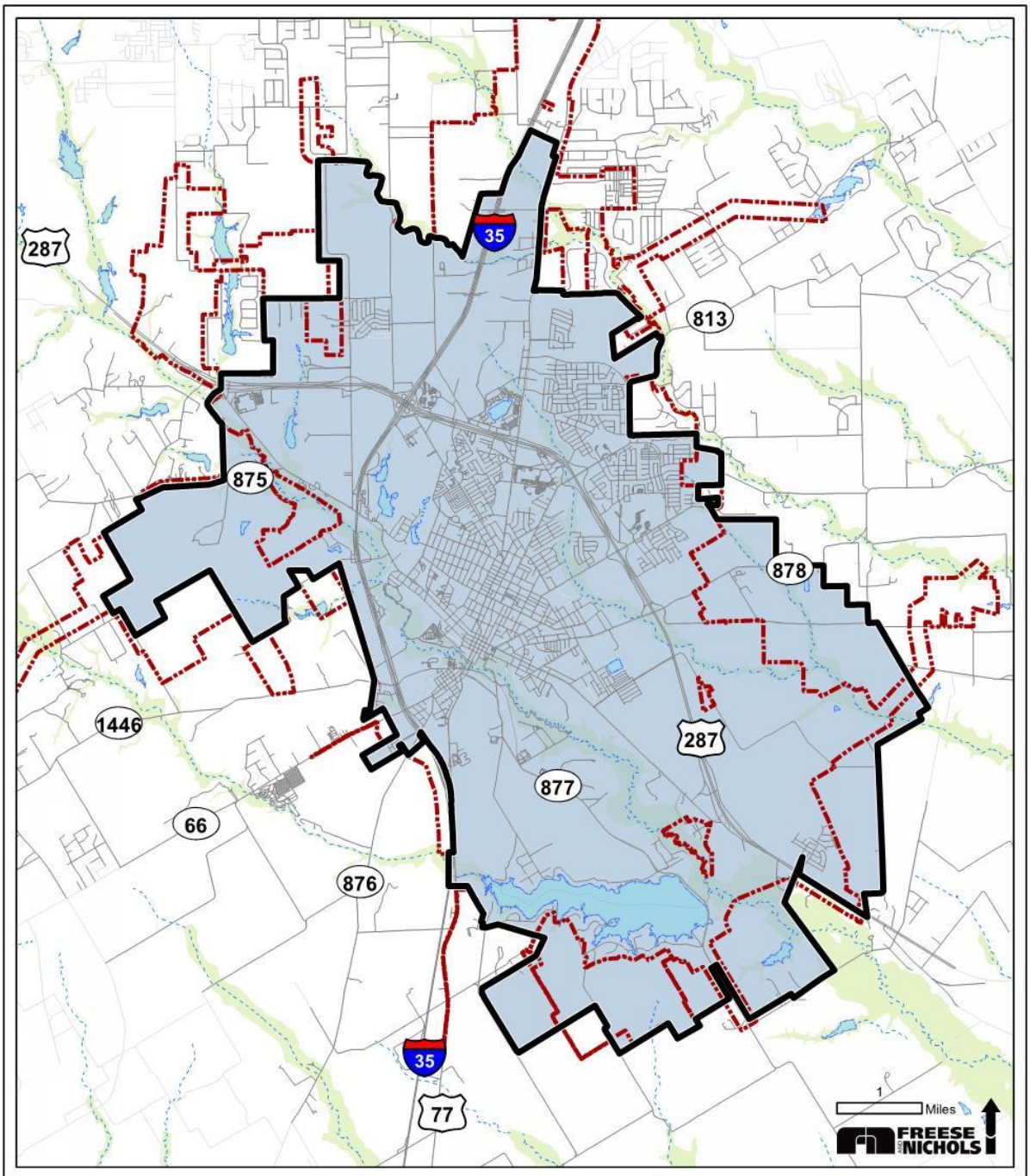


WAXAHACHIE TEXAS

Waxahachie Impact Fee Study
April 2020

Figure 1
Roadway Impact Fee
Service Area Structure

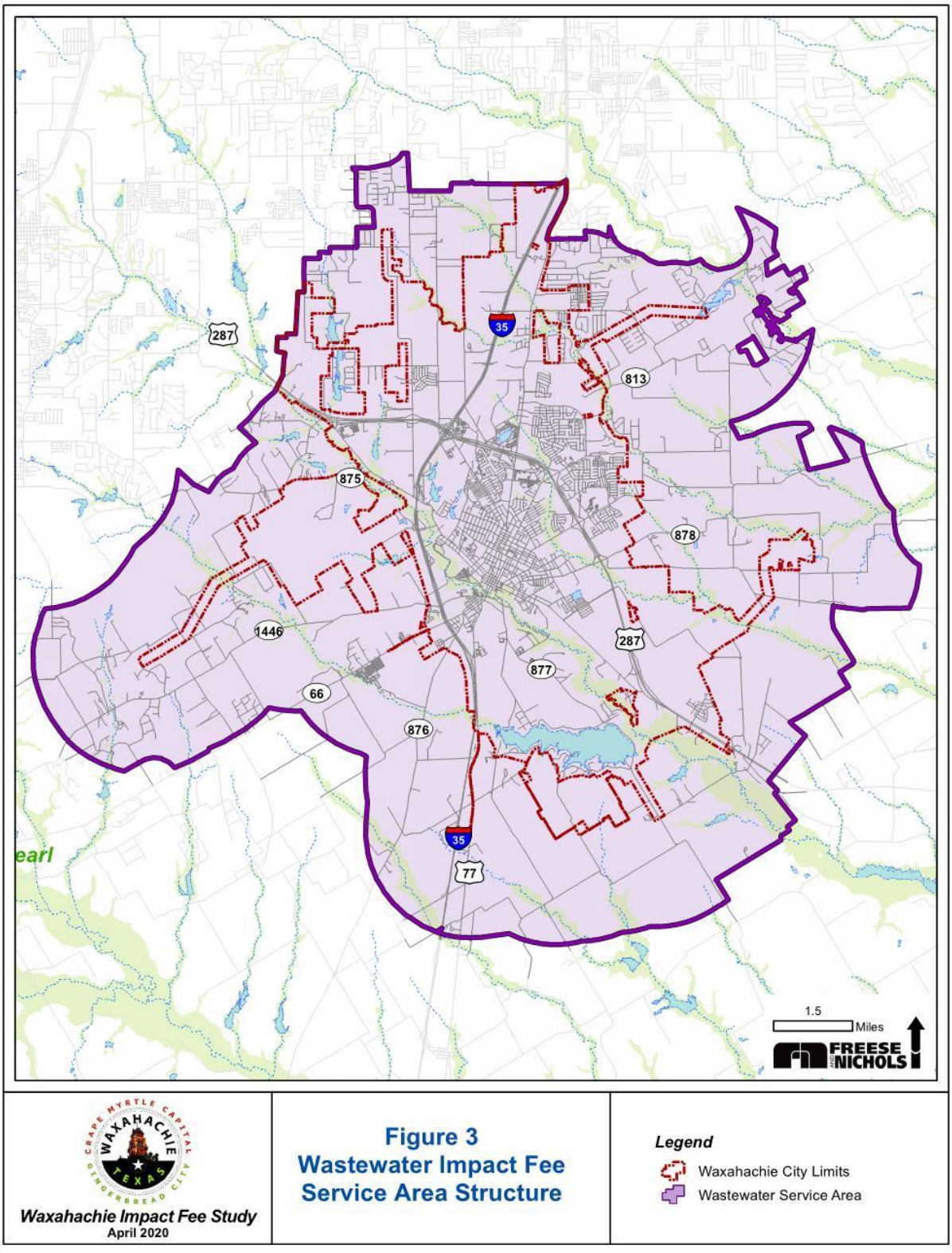
Legend
Waxahachie City Limits
Roadway Service Area Structure



Waxahachie Impact Fee Study
April 2020

Figure 2
Water Impact Fee
Service Area Structure

Legend
- Waxahachie City Limits
- Water Service Area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Waxahachie Impact Fee Study
April 2020
Figure 3
Wastewater Impact Fee
Service Area Structure
Legend
Waxahachie City Limits
Wastewater Service Area

Data Format

The existing database, as well as the future projections, were formulated according to the following format and categories:

Service Area — Correlates to the proposed roadway, water and wastewater service areas identified in **Figures 1, 2** and **3**.

Traffic Survey Zone (TSZ) — Geographic areas established by the NCTCOG for modeling purposes, used for data collection purposes and termed TSZs within this report.

Housing Units (2020) — All housing units including single-family, duplex, multi-family and group quarters. The number of existing housing units has been shown for the base year (January 2020). Housing unit projections for the City limits were taken from NCTCOG's 2015 estimates and were projected by Freese and Nichols, Inc. (FNI) to 2020 using building permit data provided by the City. Housing unit projections relating to the Water and Wastewater service boundaries were derived from NCTCOG's 2018 projections, interpolated to January 2020.

Housing Units (2030) — Projected housing units by service zone for January 2030 (ten-year growth projections).

Population (2020) — Existing population for the base year (January 2020).

Population (2030) — Projected population by service zone for the year 2030 (ten-year growth projections).

Employment (2020, 2030) — For this report, employment projections were taken from NCTCOG's 2018 estimates and interpolated by FNI to January 2020. Employment data is aggregated into three employment sectors by NCTCOG and include basic, retail and service. The following details which types of businesses fall within each of the three sectors:

- Basic – Land use activities that produce goods and services such as those that are exported outside the local economy; manufacturing, construction, transportation, wholesale trade, warehousing and other industrial uses.
- Retail – Land use activities that provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector such as grocery stores, restaurants, etc.
- Service – Land use activities that provide personal and professional services such as financial, insurance, government, and other professional and administrative offices.

4. BASE YEAR DATA

This section documents the City's historical growth trends and data to the base year of January 1, 2020. This "benchmark" information provided a starting basis of data for the ten-year growth assumptions that are presented within the following section.

Population Growth

One method of predicting future growth is looking at past growth. Per the U.S. Census, the historical populations for Waxahachie from 1940 to 2020 are shown below:

YEAR	POPULATION
1940	8,655
1950	11,204
1960	12,749
1970	13,452
1980	14,624
1990	18,168
2000	21,426
2010	30,152
2020[(1)]	39,221

Source: U.S. Census
[(1)] Estimate by Freese and Nichols, Inc. (FNI)

The 2020 population estimate shown above was derived from NCTCOG's 2015 estimate of 32,670 for the City of Waxahachie, projecting to 2020 using building permit data received from City Staff from January 2015 to January 2020. After occupied housing units had been projected using the building permit data, population projections were determined using a 2.72 persons per household multiplier.

Existing Land Use

In any projection, a documentation of existing conditions is essential. Documentation of existing land use patterns and housing units was made from evaluating the City's Comprehensive Plan and aerial imaging. For example, many TSZs were analyzed via aerial imaging to more accurately account for existing housing units – helping to mitigate potential duplication. These evaluations were then accounted for in the baseline for future growth projections.

Table 1 presents a summary of existing population and employment for Waxahachie and its associated water and wastewater service areas. The appendices detail data by various impact fee service areas and further, by traffic survey zones.

Table 1
EXISTING POPULATION & EMPLOYMENT – 2020
BY ROADWAY, WATER AND WASTEWATER SERVICE AREAS

Roadway Boundary – City Limits	
Housing Units [1]	14,420
Population [2]	39,221
Total Employment [3]	31,820
Basic Employment	*11,663*
Retail Employment	*3,740*
Service Employment	*16,417*
Water Boundary	
Housing Units [1]	13,276
Population [2]	36,110
Wastewater Boundary	
Housing Units [1]	21,969
Population [2]	59,756

Source: Freese and Nichols, Inc. (FNI)

[1] FNI housing unit estimates derived from persons per household multiplier of 2.72

[2] FNI population estimates derived from building permit data and/or NCTCOG estimates from 2015/2018

[3] FNI employment estimates derived from NCTCOG projections from 2018

5. TEN-YEAR GROWTH ASSUMPTIONS

Growth is characterized in two forms: population (residential land use) and employment (nonresidential land use). A series of assumptions were made to arrive at reasonable growth rates for population and employment. The following assumptions have been made as a basis from which ten-year projections could be developed.

- Future land uses will occur as identified on the Future Land Use Plan,
- The City will be able to finance the necessary improvements to accommodate growth,
- School facilities will accommodate increases in enrollment, and
- Densities will be as projected in the Comprehensive Plan.

The ten-year projections, or land use assumptions, are based on the establishment of a reasonable growth rate that is based upon past trends or other considerations. Due to increased growth over the past decade in the Dallas/Fort Worth Metroplex, an analysis of annual growth based on data from building permit data and the U.S. Census was undertaken to provide further insight into growth trends experienced within the City.

The single-family building permit activity since 2015 in Waxahachie has fluctuated with time, ranging from 344 in 2015 to a high of 763 in 2019. Similarly, the annual growth rate for the City fluctuated dramatically from 2.6% in 2015 to 5.0% in 2019. **Table 2** presents this fluctuation in growth using single-family building permit data provided by the City. From the beginning of January 2015 to the end of December 2019, the City saw an average growth rate of 3.4%.

Table 2
Growth Projection – 2020

Year	Total Pop. Jan. 1	Permits	Households Added	Pop. Increase[(1)]	Total Pop. Dec. 31	Compound Annual Growth Rate (CAGR)
2015	32,670	344	310	842	33,512	2.6%
2016	33,512	424	382	1,038	34,550	3.1%
2017	34,550	553	498	1,354	35,904	3.9%
2018	35,904	592	533	1,449	37,353	4.0%
2019	37,353	763	687	1,868	39,221	5.0%
Total/CAGR (Start of 2015-End of 2019)	--	2,676	2,408	6,551	--	3.4%

[(1)] Population increase based off persons per household (2.72)

U.S. Census data, projections from the 2016 Comprehensive Plan, and projections from the Texas Water Development Board (TWDB) reveals lower growth rates. Differences in growth rates from **Table 2** and **Table 3** may be attributed to both the Comprehensive Plan and TWDB not accounting for the significant growth the City has experienced in recent years.

Table 3
Historical and Projected CAGR for Waxahachie, TX

Years	U.S. Census	2016 Comprehensive Plan	TWDB
1970-1980	0.8%	--	--
1980-1990	2.2%	--	--
1990-2000	1.7%	--	--
2000-2010	3.3%	--	--
2010-2020	--	2.4%	2.4%
2020-2030	--	2.5%	1.3%
2030-2040	--	2.5%	2.0%
2040-2050	--	2.5%	2.1%
2050-2060	--	2.5%	2.0%

Sources: U.S. Census, 2016 Waxahachie Comprehensive Plan, Texas Water Development Board

Given these trends and an analysis of recommended growth rates from the 2016 Comprehensive Plan, a 3.5% annual growth rate was determined to be a reasonable rate at which Waxahachie could be expected to grow. This rate and associated data were reviewed and recommended by the Capital Improvements Advisory Committee (CIAC) in February 2020. As a point of reference, the previous land use assumption report for Waxahachie was based on a 2% growth rate.

The development of ten-year housing estimates was calculated using the 3.5% growth rate derived above. However, the growth was not projected to occur evenly throughout the roadway service areas of the City. The roadway service boundary, unlike the water and wastewater service boundaries, contains seven distinct service areas, making it important to determine population trends in each to determine where resources will be needed. While growth will generally occur throughout the city, the current City staff provided insight into the key growth areas within the community to help determine growth rate trends in each service area. The ten-year population estimates were determined by growing service areas to represent current development patterns while also generally maintaining the 3.5% overall growth rate. The household growth figures are shown by roadway service areas in **Table 4**.

Table 4 Projected Growth by Service Area			
Roadway Service Area	**2020 Households**	**2030 Households**	**Annual Growth Rate (2020-2030)**
1	630	1,040	5.0%
2	2,242	3,651	5.0%
3	238	982	15.0%
4	6,391	7,204	1.0%
5	1,679	2,523	4.0%
6	2,892	4,316	4.0%
7	348	624	6.0%
Total	**14,420**	**20,340**	**3.5%**

Source: Freese and Nichols, Inc.

Table 5 Anticipated Residential Building Permits by Service Area		
Roadway Service Area	**Occupied Housing Units[(1)] (2020-2030)**	**Anticipated Development Permits (2020-2030)**
1	410	439
2	1,409	1,508
3	744	796
4	813	870
5	844	903
6	1,424	1,524
7	276	296
Total	**5,920**	**6,335**

Source: Freese and Nichols, Inc.

[(1)] Based off household occupancy rate of 93.0%

Appendices A and B detail ten-year growth projections for population and employment by TSZ for roadway, water, and wastewater service areas. An average household size of 2.72 persons per household was used to project the population in 2030. **Table 6** and **Table 7** summarize ten-year population and employment projections for the City.

Table 6
Ten-Year Population Projections
City of Waxahachie, Texas

Roadway Service Area	2020		2030	
	Households	Population	Households	Population
1	630	1,714	1,040	2,829
2	2,242	6,099	3,651	9,931
3	238	647	982	2,671
4	6,391	17,384	7,204	19,595
5	1,679	4,568	2,523	6,863
6	2,892	7,867	4,316	11,740
7	348	942	624	1,697
Total	**14,420**	**39,221**	**20,340**	**55,326**

Source: Freese and Nichols, Inc.

Table 7
Ten-Year Employment Projections (Roadway Service Area)
City of Waxahachie, Texas

Roadway Service Area	Basic		Retail		Service		Total Employment	
	2020	2030	2020	2030	2020	2030	2020	2030
1	1,020	1,623	337	519	1,345	2,078	2,703	4,220
2	3,780	5,204	1,266	1,838	4,328	5,700	9,374	12,743
3	336	345	79	124	404	635	818	1,104
4	3,978	4,214	1,196	1,326	6,959	7,219	12,133	12,759
5	390	390	133	196	469	469	993	1,056
6	2,124	2,788	722	1,064	2,896	4,190	5,741	8,043
7	35	48	7	12	16	16	58	77
Total	**11,663**	**14,613**	**3,740**	**5,080**	**16,417**	**20,307**	**31,820**	**40,000**

Source: Freese and Nichols, Inc.

6. ULTIMATE POPULATION PROJECTION

An ultimate population projection was also calculated for the water and wastewater service boundaries based on the Future Land Use Plan from the 2016 Comprehensive Plan. This projection determines buildout, meaning all areas accounted for have been developed or redeveloped in conformance with the Future Land Use Plan and its corresponding Future Land Use categories. **Table 8** shows the total buildout population by residential category for the water service boundary – estimated to be roughly 130,000. **Table 9** shows the total buildout population by residential category for the wastewater service boundary – estimated to be roughly 409,000.

In comparison to the ultimate population projections from the 2013 Land Use Assumption Report, it is important to note that buildout projections from the 2013 report were based on the Future Land Use Plan from the 2007 Comprehensive Plan. Given that the previous study's ultimate population projections were estimated at 164,291 for the water service area and 327,094 for the wastewater service area, it is evident that density increased in many areas of the City's extraterritorial jurisdiction in the 2016 Future Land Use Plan.

Table 8
Ultimate Population Projection for Water Service Boundary
City of Waxahachie, Texas

Future Land Use[1]	Acres	Right-of-Way Reduction[2]	Households[3]	Population[4]
Estate Residential	4,114.0	3,702.6	3,443	9,365
Low Density Residential	12,957.9	9,070.5	29,525	79,821
Medium Density Residential	69.2	48.4	360	979
High Density Residential	273.3	232.3	3,889	10,578
Mixed Use Residential	709.7	603.2	5,835	15,871
Mixed Use Nonresidential	2,262.5	1,923.1	4,650	12,648
Total	**20,386.6**	**15,580.3**	**47,702**	**129,749**

Source: Freese and Nichols, Inc.
[1] Dwelling units per acre (DUA) based off multipliers from 2016 Comprehensive Plan
[2] Based off right-of-way (ROW) multipliers from 2016 Comprehensive Plan
[3] Based on household occupancy rate of 93.0%
[4] Based on persons per household multiplier of 2.72

Table 9 Ultimate Population Projection for Wastewater Service Boundary City of Waxahachie, Texas				
Future Land Use[1]	**Acres**	**Right-of-Way Reduction[2]**	**Households[2]**	**Population[3]**
Estate Residential	16,380.4	14,742.4	13,710	37,292
Low Density Residential	52,893.6	37,025.5	120,518	327,809
Medium Density Residential	81.4	57.0	425	1,153
High Density Residential	277.7	236.1	3,952	10,749
Mixed Use Residential	743.0	631.6	6,108	16,615
Mixed Use Nonresidential	2,733.2	2,323.2	5,618	15,280
Total	**73,109.3**	**55,015.7**	**150,331**	**408,898**

Source: Freese and Nichols, Inc.

(1) Dwelling units per acre (DUA) based off multipliers from 2016 Comprehensive Plan

(2) Based off right-of-way (ROW) multipliers from 2016 Comprehensive Plan

(3) Based on household occupancy rate of 93.0%

(4) Based on persons per household multiplier of 2.72

7. SUMMARY

- The existing estimated population of Waxahachie is 39,221 persons, and the existing estimated employment is 31,820 jobs.
- An average annual growth rate of 3.5 percent was used to calculate the Waxahachie ten-year population growth projections for all service area boundaries.
- The ten-year (2030) growth projection of Waxahachie's City limits is 55,326 persons, and the ten-year employment projection is 40,000 jobs.
- The ultimate population of Waxahachie's combined City limits and extraterritorial jurisdiction is projected to be approximately 408,898 persons.

Table 10
Summary of Population Projections
City of Waxahachie, Texas

	2020 Population	2030 Population	Ultimate Population
Roadway Service Boundary	39,221	55,326	--
Water Service Boundary	36,110	48,779	129,749
Wastewater Service Boundary	59,756	83,378	408,898

Source: Freese and Nichols, Inc.

Table 11
Summary of Employment Projections (Roadway Service Area)
City of Waxahachie, Texas

	2020 Employment	2030 Employment
Basic	11,663	14,613
Retail	3,740	5,080
Service	16,417	20,307
Total	**31,820**	**40,000**

Source: Freese and Nichols, Inc.

APPENDICES

Data Format for Appendices "A" and "B"

The land use assumptions database (Appendices "A" and "B"), as well as future projections, were formulated according to the following format and categories:

Appendix "A" - Ten-Year Population Projections

Roadway Service Area	Correlates to the roadway service areas identified on **Figure 1**.
2020 Households	Households represent all occupied dwelling units in 2020.
2020 Population	The 2020 calculated population for each TSZ.
2030 Households	Occupied dwelling units per TSZ in 2030.
2030 Population	The 2030 projected population tabulated for each TSZ and roadway service area.
Traffic Survey Zone (TSZ)	Traffic survey zones previously established by the NCTCOG for data collection purposes and termed TSZs in this report.

Appendix "B" - Ten-Year Employment Projections

Roadway Service Area Correlates to the roadway service areas identified on **Figure 1**.

Employment Three classifications were used for employment and compiled for each roadway service area:

- Basic – Land use activities that produce goods and services such as those that are exported outside the local economy: manufacturing, construction, transportation, wholesale trade, warehousing and other industrial uses.

- Retail – Land use activities that provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector such as grocery stores, restaurants, etc.

- Service – Land use activities that provide personal and professional services such as financial, insurance, government, and other professional and administrative offices.

Total Employment The total of the Basic, Retail, and Service employment categories.

Appendix A

Population Projections

Ten Year Population Projections for Waxahachie, Texas Roadway Service Area					
Traffic Survey Zone	Service Area	2020		2030	
		Households	Population	Households	Population
17067	1	24	65	33	90
40053	1	36	97	50	137
40093	1	19	53	27	75
40096	1	14	38	20	54
41080	1	30	82	52	140
41092	1	37	100	54	148
41100	1	470	1,279	803	2,185
Sub-Total		**630**	**1,714**	**1,040**	**2,829**
17081	2	395	1,075	675	1,836
17097	2	13	36	19	51
17114	2	440	1,198	621	1,689
17115	2	1,003	2,729	1,714	4,661
41093	2	49	132	72	195
41096	2	29	79	41	112
41101	2	313	851	510	1,386
Sub-Total		**2,242**	**6,099**	**3,651**	**9,931**
40047	3	22	59	106	288
41083	3	56	153	233	634
41110	3	21	58	107	291
41120	3	138	376	536	1,458
Sub-Total		**238**	**647**	**982**	**2,671**
17146	4	327	889	293	797
17147	4	873	2,376	1,182	3215
17169	4	211	575	211	574
17170	4	465	1,265	467	1270
17171	4	556	1,513	789	2146
40323	4	1,694	4,607	1,644	4472
41071	4	405	1,103	522	1420
41072	4	423	1,151	426	1159
41082	4	519	1,412	718	1953
41085	4	248	676	198	539

Ten Year Population Projections for Waxahachie, Texas Roadway Service Area					
Traffic Survey Zone	Service Area	2020		2030	
		Households	Population	Households	Population
41086	4	356	968	341	928
41107	4	313	851	413	1123
Sub-Total		**6,391**	**17,384**	**7,204**	**19,595**
17149	5	499	1,356	747	2,032
41078	5	1,152	3,134	1,706	4,640
41084	5	29	78	70	190
Sub-Total		**1,679**	**4,568**	**2,523**	**6,863**
17183	6	263	716	403	1,096
17189	6	853	2,320	1,457	3,963
17198	6	107	290	174	473
17201	6	359	977	532	1,447
17215	6	11	30	16	44
41068	6	202	550	285	775
41070	6	111	302	157	427
41081	6	572	1,556	572	1,556
41082	6	35	95	79	215
41103	6	184	501	341	928
41112	6	174	473	271	737
42002	6	21	56	29	79
Sub-Total		**2,892**	**7,867**	**4,316**	**11,740**
41102	7	312	848	548	1,491
41108	7	35	94	76	207
Sub-Total		**346**	**942**	**624**	**1,697**
Total		**14,420**	**39,221**	**20,340**	**55,326**

Population Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
17114	440	1,198	621	1,689	408	1,110
17115	953	2,592	1,628	4,427	2,786	7,578
17146	327	889	293	798	261	710
17147	873	2,376	1,182	3,215	641	1,744
17149	499	1,356	703	1,913	1,637	4,453
17169	211	575	161	439	167	454
17170	465	1,265	415	1,129	269	732
17171	556	1,513	773	2,104	717	1,950
17183	263	716	390	1,060	1,736	4,722
17189	853	2,320	1,457	3,963	5,026	13,671
17198	107	290	150	409	100	272
17201	359	977	532	1,447	192	522
17215	25	68	37	101	835	2,271
40047	22	59	106	288	98	267
40053	36	97	53	144	946	2,573
40323	1,694	4,607	1,644	4,471	699	1,901
41068	197	536	292	793	1,779	4,839
41070	111	302	164	447	157	427
41071	405	1,103	522	1,419	321	873
41072	423	1,151	373	1,015	312	849
41078	1,054	2,866	1,560	4,242	1,533	4,170
41080	4	10	6	17	6	17
41081	572	1,556	572	1,556	453	1,232
41082	554	1,508	718	1,953	365	993
41083	61	167	233	634	7,361	20,022
41084	56	152	83	226	1,558	4,238
41085	248	676	198	540	267	726
41086	356	968	306	832	449	1,221
41093	49	132	72	195	72	195
41096	14	38	21	57	21	57
41100	453	1,231	773	2,102	2,459	6,688
41102	171	465	292	795	8,238	22,407
41103	184	501	315	856	2,400	6,528
41107	313	851	413	1,126	1,617	4,398

Population Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
41108	35	94	51	139	51	139
41112	174	473	257	700	227	617
41120	138	376	536	1,458	1,509	4,104
42002	21	56	29	79	29	79
Total	**13,276**	**36,110**	**17,933**	**48,779**	**47,702**	**129,749**

Population Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
17065	2	5	3	8	21	57
17067	28	77	40	108	1,357	3,691
17068	105	284	147	401	658	1,790
17069	40	109	57	154	87	237
17081	821	2,233	1,402	3,814	4,617	12,558
17097	540	1,470	762	2,073	4,064	11,054
17114	440	1,198	621	1,689	408	1,110
17115	1,060	2,885	1,811	4,927	2,990	8,133
17146	327	889	293	798	261	710
17147	873	2,376	1,182	3,215	641	1,744
17149	530	1,443	748	2,035	2,639	7,178
17169	211	575	161	439	167	454
17170	465	1,265	415	1,129	269	732
17171	556	1,513	773	2,104	717	1,950
17183	263	716	390	1,060	1,736	4,722
17189	853	2,320	1,457	3,963	5,026	13,671
17198	365	993	515	1,401	2,623	7,135
17201	359	977	532	1,447	204	555
17215	54	147	80	217	951	2,587
17241	15	41	21	58	3,870	10,526
17246	13	36	18	50	67	182
17272	38	104	54	147	3,184	8,660
17274	18	49	26	69	989	2,690
17282	20	55	28	77	1,682	4,575
40047	249	678	369	1,004	2,291	6,232
40053	463	1,260	686	1,866	5,223	14,207
40093	29	79	41	112	521	1,417
40096	32	88	45	123	45	123
40103	324	881	457	1,243	5,796	15,765
40323	1,694	4,607	1,644	4,471	699	1,901
41068	329	896	487	1,326	3,689	10,034
41069	31	85	44	120	1,091	2,968
41070	111	302	164	447	157	427
41071	405	1,103	522	1,419	321	873

Population Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020		2030		Ultimate Build Out	
	Households	Population	Households	Population	Households	Population
41072	423	1,151	373	1,015	312	849
41075	650	1,767	917	2,493	110	299
41076	543	1,476	765	2,082	9,877	26,865
41078	1,152	3,134	1,706	4,639	2,107	5,731
41080	209	569	357	972	2,084	5,668
41081	572	1,556	572	1,556	453	1,232
41082	554	1,508	718	1,953	365	993
41083	391	1,063	578	1,573	16,046	43,645
41084	56	152	83	226	1,932	5,255
41085	248	676	198	540	267	726
41086	356	968	306	832	449	1,221
41092	608	1,655	901	2,450	3,587	9,757
41093	630	1,715	933	2,538	1,602	4,357
41094	58	159	82	224	214	582
41096	29	79	43	117	43	117
41100	453	1,231	773	2,102	2,461	6,694
41101	861	2,343	1,275	3,468	3,178	8,644
41102	289	785	493	1,342	14,855	40,406
41103	165	449	282	766	2,400	6,528
41104	71	194	101	274	386	1,050
41107	313	851	413	1,126	1,619	4,404
41108	165	448	244	663	9,799	26,650
41110	594	1,617	880	2,393	8,308	22,598
41112	543	1,477	804	2,187	5,341	14,528
41114	56	153	79	216	564	1,534
41120	138	376	536	1,458	1,509	4,104
42002	172	468	242	660	1,402	3,813
Total	**21,969**	**59,756**	**30,653**	**83,378**	**150,331**	**408,898**

Appendix B

Employment Projections

Ten Year Employment Projections for Waxahachie, Texas Roadway Service Area							
Traffic Survey Zone	Service Area	2020			2030		
		Basic	Retail	Service	Basic	Retail	Service
17067	1	95	28	130	134	39	184
40053	1	80	32	118	113	45	118
40093	1	0	28	0	0	28	0
40096	1	142	57	152	200	81	214
41080	1	18	5	25	31	8	25
41092	1	36	10	48	36	15	48
41100	1	649	178	871	1,109	304	1,488
Sub-Total		**1,020**	**337**	**1,345**	**1,623**	**519**	**2,078**
17081	2	203	68	237	203	117	237
17114	2	2,564	840	2,965	3,617	1,185	4,182
17115	2	169	60	219	288	103	374
41093	2	52	18	65	52	27	65
41096	2	615	222	637	867	313	637
41101	2	177	58	206	177	94	206
Sub-Total		**3,780**	**1,266**	**4,328**	**5,204**	**1,838**	**5,700**
40047	3	22	5	31	31	5	31
41083	3	94	28	145	94	41	214
41110	3	56	0	0	56	0	0
41120	3	163	45	228	163	78	390
Sub-Total		**336**	**79**	**404**	**345**	**124**	**635**
17146	4	1,237	360	2,295	1,237	379	2,295
17147	4	212	72	261	212	102	368
17169	4	344	115	402	344	115	402
17170	4	103	34	121	103	34	121
17171	4	116	39	144	116	58	144
40323	4	679	187	917	679	187	917
41071	4	299	78	1,109	422	110	1,109
41072	4	116	31	668	116	31	668
41085	4	578	192	672	578	192	672
41086	4	58	22	52	58	22	52

Ten Year Employment Projections for Waxahachie, Texas Roadway Service Area							
Traffic Survey Zone	Service Area	2020			2030		
		Basic	Retail	Service	Basic	Retail	Service
41107	4	236	65	318	349	97	470
Sub-Total		**3,978**	**1,196**	**6,959**	**4,214**	**1,326**	**7,219**
17149	5	45	16	62	45	23	62
41078	5	334	113	398	334	167	398
41084	5	11	4	9	11	5	9
Sub-Total		**390**	**133**	**469**	**390**	**196**	**469**
17183	6	117	42	106	174	63	157
17189	6	164	69	179	280	119	305
17198	6	104	30	143	104	42	202
17201	6	138	48	123	138	72	182
17215	6	6	3	4	6	4	4
41068	6	32	13	26	32	18	37
41070	6	263	94	728	263	133	1,027
41081	6	144	39	193	144	39	193
41082	6	879	269	1,045	1,301	398	1,547
41103	6	99	35	90	168	60	153
41112	6	178	79	258	178	117	382
Sub-Total		**2,124**	**722**	**2,896**	**2,788**	**1,064**	**4,190**
41102	7	19	7	16	32	12	16
41108	7	16	0	0	16	0	0
Sub-Total		**35**	**7**	**16**	**48**	**12**	**16**
Total		**11,663**	**3,740**	**16,417**	**14,613**	**5,080**	**20,307**

Ten Year Employment Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	2020			2030		
	Basic	Retail	Service	Basic	Retail	Service
17114	2,564	840	2,965	3,617	1,185	4,182
17115	169	60	219	288	103	374
17146	1,237	360	2,295	1,237	379	2,295
17147	212	72	261	212	102	368
17149	45	16	62	45	23	62
17169	344	115	402	344	115	402
17170	103	34	121	103	34	121
17171	116	39	144	116	58	144
17183	117	42	106	174	63	157
17189	164	69	179	280	119	305
17198	104	30	143	104	42	202
17201	138	48	123	138	72	182
17215	6	3	4	6	4	4
40047	22	5	31	31	5	31
40053	80	32	118	113	45	118
40323	679	187	917	679	187	917
41068	32	13	26	32	18	37
41070	263	94	728	263	133	1,027
41071	299	78	1,109	422	110	1,109
41072	116	31	668	116	31	668
41078	334	113	398	334	167	398
41080	18	5	25	31	8	25
41081	144	39	193	144	39	193
41082	879	269	1,045	1,301	398	1,547
41083	94	28	145	94	41	214
41084	11	4	9	11	5	9
41085	578	192	672	578	192	672
41086	58	22	52	58	22	52
41096	615	222	637	867	313	637
41100	649	178	871	1,109	304	1,488
41102	19	7	16	32	12	16

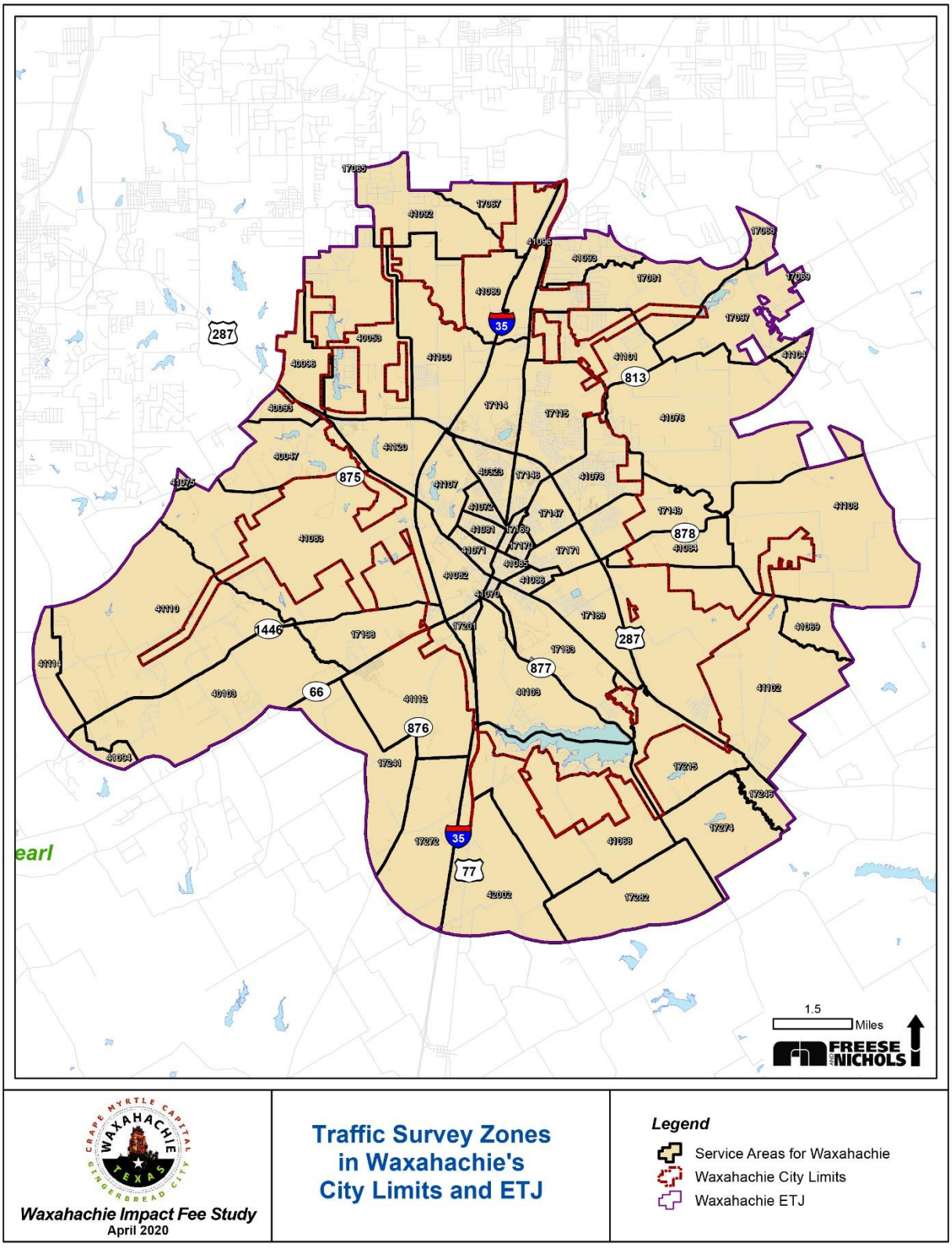
Ten Year Employment Projections for Waxahachie, Texas Water Service Area						
Traffic Survey Zone	**2020**			**2030**		
	Basic	**Retail**	**Service**	**Basic**	**Retail**	**Service**
41103	99	35	90	168	60	153
41107	236	65	318	349	97	470
41112	178	79	258	178	117	382
41120	163	45	228	163	78	390
Total	**10,885**	**3,471**	**15,578**	**13,737**	**4,681**	**19,351**

Ten Year Employment Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020			2030		
	Basic	Retail	Service	Basic	Retail	Service
17067	116	34	159	164	47	225
17068	7	3	35	10	4	49
17081	307	103	358	433	146	505
17097	59	20	72	83	28	102
17114	2,564	840	2,965	3,617	1,185	4,182
17115	169	60	219	288	103	374
17146	1,237	360	2,295	1,237	379	2,295
17147	212	72	261	212	102	368
17149	70	25	97	99	36	138
17169	344	115	402	344	115	402
17170	103	34	121	103	34	121
17171	116	39	144	116	58	144
17183	117	42	106	174	63	157
17189	164	69	179	280	119	305
17198	193	56	266	272	79	376
17201	138	48	123	138	72	182
17215	6	3	4	6	4	4
17241	5	3	7	8	4	10
17246	2	1	4	3	1	5
17272	7	3	9	10	4	13
17274	4	1	7	6	1	10
17282	4	2	4	6	2	6
40047	37	9	53	52	13	75
40053	119	48	176	168	68	249
40093	6	30	27	8	42	38
40096	142	57	152	200	81	214
40103	46	14	67	65	20	94
40323	679	187	917	679	187	917
41068	56	22	45	80	30	64
41069	9	2	13	13	3	18

Ten Year Employment Projections for Waxahachie, Texas Wastewater Service Area						
Traffic Survey Zone	2020			2030		
	Basic	Retail	Service	Basic	Retail	Service
41070	263	94	728	263	133	1,027
41071	299	78	1,109	422	110	1,109
41072	116	31	668	116	31	668
41075	1	0	1	2	1	2
41076	58	20	67	81	28	94
41078	375	127	447	375	127	447
41080	18	5	25	31	8	25
41081	144	39	193	144	39	193
41082	879	269	1,045	1,301	398	1,547
41083	136	40	209	193	56	295
41084	20	7	16	20	7	16
41085	578	192	672	578	192	672
41086	58	22	52	58	22	52
41092	64	18	86	90	25	122
41093	70	24	88	99	34	124
41094	4	2	6	6	2	8
41096	615	222	637	867	313	637
41100	649	178	871	1,109	304	1,488
41101	287	94	334	404	133	471
41102	28	10	24	39	14	34
41103	99	35	90	168	60	153
41104	2	1	3	3	1	4
41107	236	65	318	349	97	470
41108	26	4	10	37	6	14
41110	91	13	39	129	18	55
41112	324	144	470	457	203	663
41114	4	2	6	6	3	9
41120	163	45	228	163	78	390
42002	24	9	23	33	13	33
Total	**12,669**	**4,092**	**17,752**	**16,417**	**5,486**	**22,464**

Appendix C

Supplemental Maps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40108
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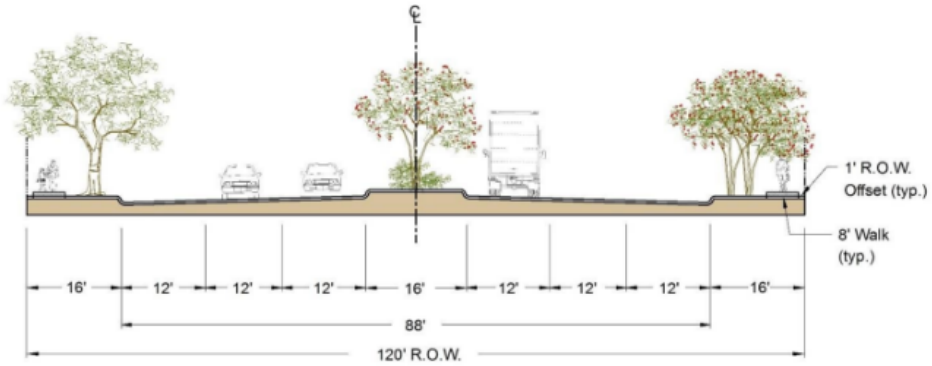
41112
41109
876
40994
17241
17215
17245
17274
35
17272
41039
77
42002
17282
earl
1.5
Miles
FREESE NICHOLS
WAXAHACHIE
CRAPE MYRTLE CAPITAL
GINGERBREAD CITY
TEXAS
Waxahachie Impact Fee Study
April 2020
Traffic Survey Zones in Waxahachie's City Limits and ETJ
Legend
Service Areas for Waxahachie
Waxahachie City Limits
Waxahachie ETJ

Appendix I: Roadway Unit Cost Estimates by Functional Classification

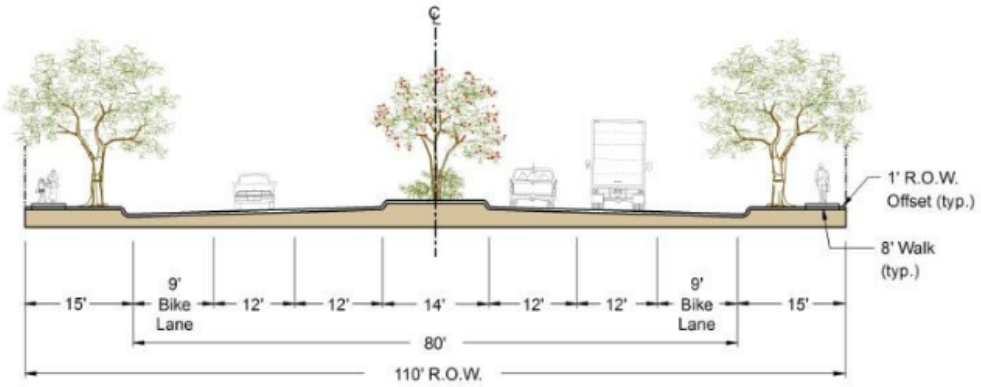
Type A - Major Thoroughfare



Estimate Per Linear Foot					
Description	**Unit**	**Quantity Formula**	**Quantity**	**Unit Price**	**Cost**
General					
Mobilization and Contingency (15.5% of Total Cost)	LS	N/A	1	$153.91	$153.91
Paving					
Preparing Right of Way (2.8% of Total Cost)	STA	N/A	0.01	$1,500.00	$15.00
Remove Existing Pavement	STA	N/A	0.01	$1,000.00	$10.00
Unclassified Street Excavation	CY	(ROW*2.5*1')/27	11.10	$10.00	$111.00
8" Lime Stabilized Subgrade	SY	(PVw+4)/9	8.40	$4.00	$34.00
Lime for Stabilization	Ton	((PVw+4)/9)*(35/2000)	0.15	$170.00	$25.00
8" Reinforced Concrete Pavement (Class C)	SY	(Lw*# of Lanes)/9	8.00	$45.00	$360.00
6" Concrete Monolithic Curb	LF	1+1+1+1	4.00	$20.00	$80.00
4" Reinforced Concrete Sidewalk	SY	(2*6)/9	1.33	$50.00	$67.00
Grass Seeding by Hydromulching	SF	ROW-PVw-Mw-SWw	19.00	$1.00	$19.00
4" Median Pavement (Class A)	SY	Mw/9	1.78	$11.00	$20.00
Non-Paving Costs					
Pavement Marking & Signage (2% of Paving Cost)	LS	N/A	1	$14.82	$14.82
Traffic Control (4% of Paving Cost)	LS	N/A	1	$29.64	$29.64
Erosion Control (3% of Paving Cost)	LS	N/A	1	$22.23	$22.23
Drainage Improvements (20% of Paving Cost)	LS	N/A	1	$148.20	$148.20
Utility Adjustment (5% of Paving Cost)	LS	N/A	1	$37.05	$37.05
				Total =	**$1,146.85**

PVw = pavement width
Lw = lane width
Mw = median width
SWw = sidewalk width

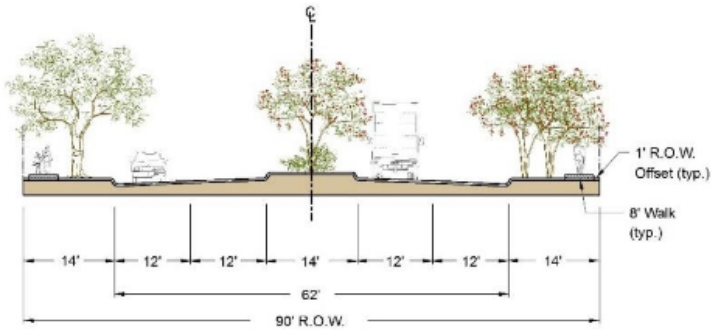
Type B - Major Thoroughfare



Estimate Per Linear Foot					
Description	**Unit**	**Quantity Formula**	**Quantity**	**Unit Price**	**Cost**
General					
Mobilization and Contingency (15.5% of Total Cost)	LS	N/A	1	$124.83	$124.83
Paving					
Preparing Right of Way (2.8% of Total Cost)	STA	N/A	0.01	$1,500.00	$15.00
Remove Existing Pavement	STA	N/A	0.01	$1,000.00	$10.00
Unclassified Street Excavation	CY	(ROW*2.5*1')/27	10.20	$10.00	$102.00
8" Lime Stabilized Subgrade	SY	(PVw+4)/9	7.80	$4.00	$31.00
Lime for Stabilization	Ton	((PVw+4)/9)*(35/2000)	0.14	$170.00	$23.00
8" Reinforced Concrete Pavement (Class C)	SY	(Lw*# of Lanes)/9	5.33	$45.00	$240.00
6" Concrete Monolithic Curb	LF	1+1+1+1	4.00	$20.00	$80.00
4" Reinforced Concrete Sidewalk	SY	(2*6)/9	1.33	$50.00	$67.00
Grass Seeding by Hydromulching	SF	ROW-PVw-Mw-SWw	16.00	$1.00	$16.00
4" Median Pavement (Class A)	SY	Mw/9	1.56	$11.00	$17.00
Non-Paving Costs					
Pavement Marking & Signage (2% of Paving Cost)	LS	N/A	1	$12.02	$12.02
Traffic Control (4% of Paving Cost)	LS	N/A	1	$24.04	$24.04
Erosion Control (3% of Paving Cost)	LS	N/A	1	$18.03	$18.03
Drainage Improvements (20% of Paving Cost)	LS	N/A	1	$120.20	$120.20
Utility Adjustment (5% of Paving Cost)	LS	N/A	1	$30.05	$30.05
				Total =	**$930.17**

PVw = pavement width
Lw = lane width
Mw = median width
SWw = sidewalk width

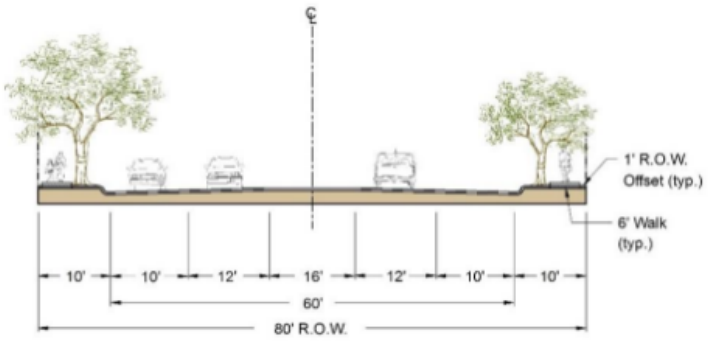
Type C - Major Thoroughfare



Estimate Per Linear Foot					
Description	**Unit**	**Quantity Formula**	**Quantity**	**Unit Price**	**Cost**
General					
Mobilization and Contingency (15.5% of Total Cost)	LS	N/A	1	$117.77	$117.77
Paving					
Preparing Right of Way (2.8% of Total Cost)	STA	N/A	0.01	$1,500.00	$15.00
Remove Existing Pavement	STA	N/A	0.01	$1,000.00	$10.00
Unclassified Street Excavation	CY	(ROW*2.5*1')/27	8.30	$10.00	$83.00
8" Lime Stabilized Subgrade	SY	(PVw+4)/9	5.80	$4.00	$23.00
Lime for Stabilization	Ton	((PVw+4)/9)*(35/2000)	0.10	$170.00	$17.00
8" Reinforced Concrete Pavement (Class C)	SY	PVw/9	5.33	$45.00	$240.00
6" Concrete Monolithic Curb	LF	1+1+1+1	4.00	$20.00	$80.00
4" Reinforced Concrete Sidewalk	SY	(2*6)/9	1.33	$50.00	$67.00
Grass Seeding by Hydromulching	SF	ROW-PVw-Mw-SWw	15.00	$1.00	$15.00
4" Median Pavement (Class A)	SY	Mw/9	1.56	$11.00	$17.00
Non-Paving Costs					
Pavement Marking & Signage (2% of Paving Cost)	LS	N/A	1	$11.34	$11.34
Traffic Control (4% of Paving Cost)	LS	N/A	1	$22.68	$22.68
Erosion Control (3% of Paving Cost)	LS	N/A	1	$17.01	$17.01
Drainage Improvements (20% of Paving Cost)	LS	N/A	1	$113.40	$113.40
Utility Adjustment (5% of Paving Cost)	LS	N/A	1	$28.35	$28.35
				Total =	**$877.55**

PVw = pavement width
Lw = lane width
Mw = median width
SWw = sidewalk width

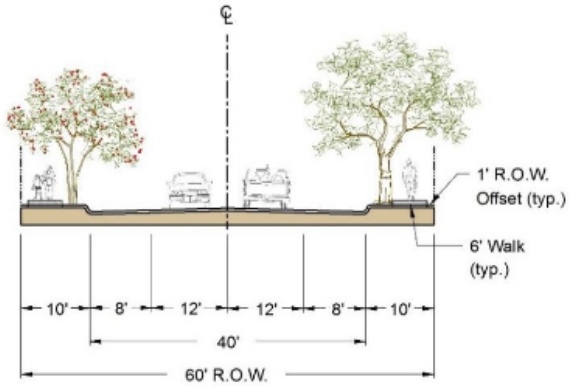
Type D - Secondary Thoroughfare



Estimate Per Linear Foot					
Description	**Unit**	**Quantity Formula**	**Quantity**	**Unit Price**	**Cost**
General					
Mobilization and Contingency (15.5% of Total Cost)	LS	N/A	1	$114.65	$114.65
Paving					
Preparing Right of Way (2.8% of Total Cost)	STA	N/A	0.01	$1,500.00	$15.00
Remove Existing Pavement	STA	N/A	0.01	$1,000.00	$10.00
Unclassified Street Excavation	CY	(ROW*2.5*1')/27	7.40	$10.00	$74.00
8" Lime Stabilized Subgrade	SY	(PVw+4)/9	7.10	$4.00	$28.00
Lime for Stabilization	Ton	((PVw+4)/9)*(35/2000)	0.12	$170.00	$21.00
8" Reinforced Concrete Pavement (Class C)	SY	PVw/9	6.67	$45.00	$290.00
6" Concrete Monolithic Curb	LF	1+1	2.00	$20.00	$40.00
4" Reinforced Concrete Sidewalk	SY	(2*6)/9	1.33	$50.00	$67.00
Grass Seeding by Hydromulching	SF	ROW-PVw-Mw-SWw	7.00	$1.00	$7.00
4" Median Pavement (Class A)	SY	Mw/9	0.00	$11.00	$0.00
Non-Paving Costs					
Pavement Marking & Signage (2% of Paving Cost)	LS	N/A	1	$11.04	$11.04
Traffic Control (4% of Paving Cost)	LS	N/A	1	$22.08	$22.08
Erosion Control (3% of Paving Cost)	LS	N/A	1	$16.56	$16.56
Drainage Improvements (20% of Paving Cost)	LS	N/A	1	$110.40	$110.40
Utility Adjustment (5% of Paving Cost)	LS	N/A	1	$27.60	$27.60
				Total =	**$854.33**

PVw = pavement width
Lw = lane width
Mw = median width
SWw = sidewalk width

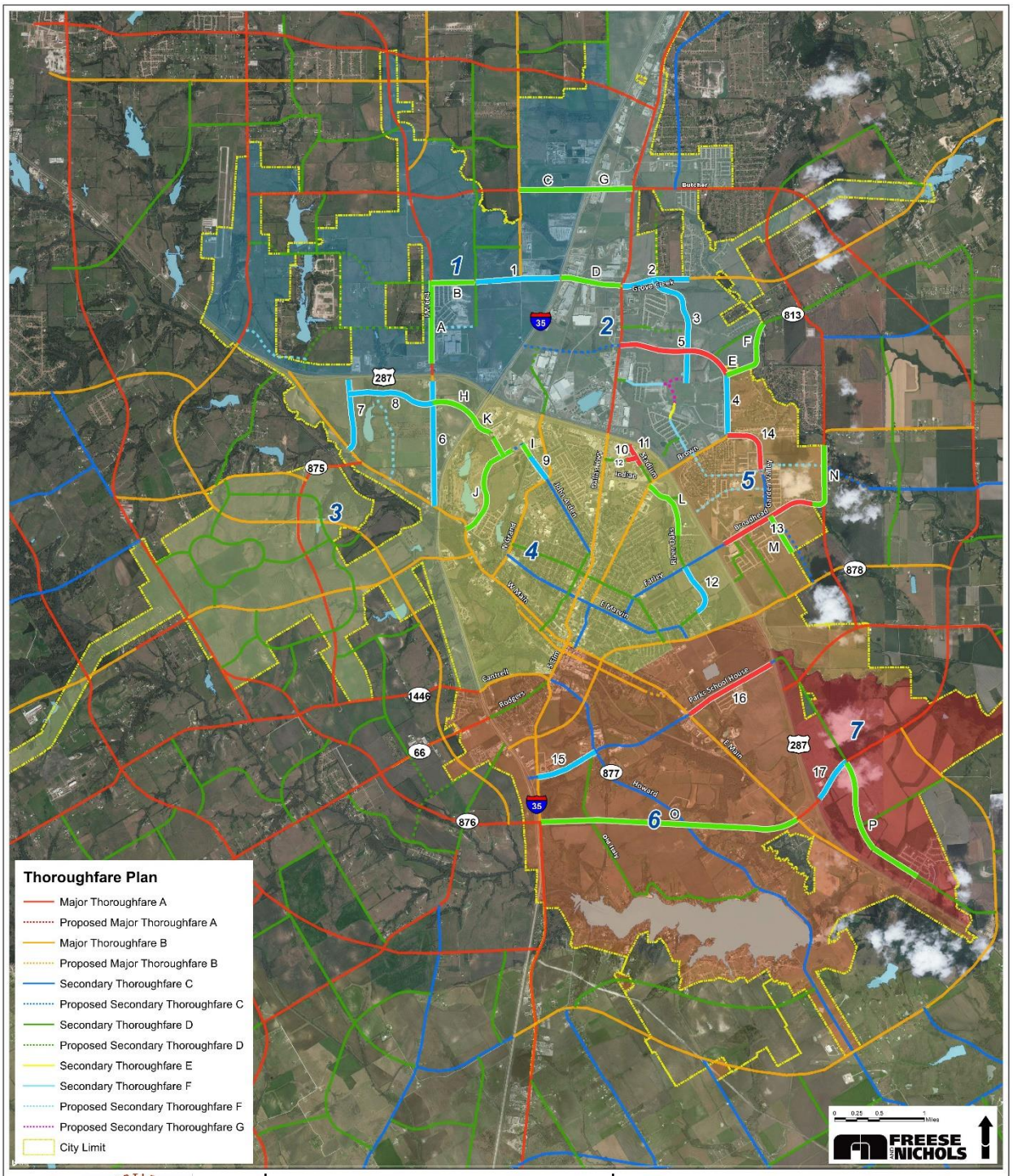
Type E - Collector Street



Estimate Per Linear Foot					
Description	**Unit**	**Quantity Formula**	**Quantity**	**Unit Price**	**Cost**
General					
Mobilization and Contingency (15.5% of Total Cost)	LS	N/A	1	$89.31	$89.31
Paving					
Preparing Right of Way (2.8% of Total Cost)	STA	N/A	0.01	$1,500.00	$15.00
Remove Existing Pavement	STA	N/A	0.01	$1,000.00	$10.00
Unclassified Street Excavation	CY	(ROW*2.5*1')/27	5.60	$10.00	$56.00
8" Lime Stabilized Subgrade	SY	(PVw+4)/9	4.90	$4.00	$20.00
Lime for Stabilization	Ton	((PVw+4)/9)*(35/2000)	0.09	$170.00	$15.00
8" Reinforced Concrete Pavement (Class C)	SY	PVw/9	4.44	$45.00	$200.00
6" Concrete Monolithic Curb	LF	1+1	2.00	$20.00	$40.00
4" Reinforced Concrete Sidewalk	SY	(2*6)/9	1.33	$50.00	$67.00
Grass Seeding by Hydromulching	SF	ROW-PVw-Mw-SWw	7.00	$1.00	$7.00
4" Median Pavement (Class A)	SY	Mw/9	0.00	$11.00	$0.00
Non-Paving Costs					
Pavement Marking & Signage (2% of Paving Cost)	LS	N/A	1	$8.60	$8.60
Traffic Control (4% of Paving Cost)	LS	N/A	1	$17.20	$17.20
Erosion Control (3% of Paving Cost)	LS	N/A	1	$12.90	$12.90
Drainage Improvements (20% of Paving Cost)	LS	N/A	1	$86.00	$86.00
Utility Adjustment (5% of Paving Cost)	LS	N/A	1	$21.50	$21.50
				Total =	**$665.51**

PVw = pavement width
Lw = lane width
Mw = median width
SWw = sidewalk width

Appendix J: 10-Year Roadway CIP and Cost Analysis


Thoroughfare Plan
Major Thoroughfare A
Proposed Major Thoroughfare A
Major Thoroughfare B
Proposed Major Thoroughfare B
Secondary Thoroughfare C
Proposed Secondary Thoroughfare C
Secondary Thoroughfare D
Proposed Secondary Thoroughfare D
Secondary Thoroughfare E
Secondary Thoroughfare F
Proposed Secondary Thoroughfare F
Proposed Secondary Thoroughfare G
City Limit
FREESE NICHOLS
Waxahachie
Impact Fee Study
May 26, 2020
Roadway Impact Fee Program
CIP Projects and
Potential Amendments
Roadway Impact Fee CIP
2020 Program Addition
Previous Program - New
Recoupment
City Limit

Waxahachie Roadway Impact Fee Study Update
10-Year Roadway CIP

50%

Proj No.	CIP Origin	Serv Area	Shared Svc Area	Project Type	Roadway	From	To	Length (mi)	Type	T. Plan Type	Exist Lanes	Proposed Lanes	Pct. in Serv. Area	Roadway Costs: Engineering	ROW	Construction	Finance	Total Project Cost
1	*07/15*	1		N	Marshall Rd	IH 35	Patrick Rd	0.94	DA	B	0	4	100%	$ 270,591	$ 272,195	$ 3,865,586	$ 2,369,601	$ 6,777,973
A	*2020*	1		N	Ovilla Rd***	US 287	Marshall Rd	0.91	DA	A-2	2	6	100%	$ 73,540	$ 28,956	$ 1,050,573	$ 619,801	$ 1,772,870
B	*2020*	1		N	Marshall Rd	Patrick Rd	Ovilla Road	0.49	DA	B	2	4	100%	$ 100,299	$ 143,000	$ 1,432,843	$ 900,965	$ 2,577,107
C	*2020*	1		N	Butcher Road	IH35	Solon Extension	0.72	DA	A-2	0	6	100%	$ 270,966	$ 226,680	$ 3,870,946	$ 2,348,218	$ 6,716,810
		Sub-Total Service Area 1						**3.06**						**$ 715,396**	**$ 670,831**	**$ 10,219,949**	**$ 6,238,584**	**$ 17,844,761**
2	*2007*	2		N	Grove Creek Ext	US 77	New Road B (W. of Brookstone)	0.69	DA	B	2	4	100%	$ 198,829	$ 199,430	$ 2,840,409	$ 1,740,857	$ 4,979,525
3	*2012*	2		N	New Road B	Grove Creek Ext	Ext. of Bessie Coleman Blvd.	1.57	UC	D-4	0	4	100%	$ 313,907	$ 255,520	$ 4,484,383	$ 2,716,538	$ 7,770,348
4	*2007*	2	5	N	Brown St (FM 813)***	Garden Valley Pkwy	Washington Ave/Brown St.	0.68	DA	C-1	2	4	50%	$ 19,948	$ 5,385	$ 284,975	$ 166,798	$ 477,106
5	*2012*	2		R	North Grove Blvd	US 77	Washington Ave/Brown St.	1.54	DA	C-1	4	4	100%	$ 422,488	$ -	$ 6,035,537	$ 3,471,336	$ 9,929,361
D	*2020*	2		N	Loftland Dr	IH35	US 77	0.61	DA	B	0	4	100%	$ 183,156	$ 176,000	$ 2,616,514	$ 1,599,491	$ 4,575,161
E	*2020*	2	5	N	FM 813***	North Grove	Spring Creek Dr	0.30	UC	D-4	2	4	50%	$ 8,014	$ 1,193	$ 114,483	$ 66,486	$ 190,177
F	*2020*	2		N	FM 813***	Spring Creek Dr	Grove Creek/E. City Limit	0.47	UC	D-4	2	4	100%	$ 24,753	$ 3,684	$ 353,618	$ 205,364	$ 587,419
G	*2020*	2		N	Butcher Rd (FM387)***	IH35 FR Access	US77	0.38	DA	A-2	2	6	100%	$ 31,277	$ 6,090	$ 446,809	$ 260,256	$ 744,432
		Sub-Total Service Area 2						**6.23**						**$ 1,202,371**	**$ 647,302**	**$ 17,176,730**	**$ 10,227,125**	**$ 29,253,529**
6	*2007*	3		N	Ovilla Rd***	US 287	Bus 287	1.27	DA	B	2	4	100%	$ 75,102	$ 33,654	$ 1,072,888	$ 635,161	$ 1,816,806
7	*2015*	3		N	New Indian Rd	Bus. 287	US 287	0.83	DA	C-1	-	4	100%	$ 238,220	$ 196,810	$ 3,403,139	$ 2,063,103	$ 5,901,271
8	*2015*	3		N	New Friar Ln	New Indian Rd	Ovilla Rd (FM 664)	0.79	UC	D-2	-	2	100%	$ 208,498	$ 166,440	$ 2,978,536	$ 1,802,568	$ 5,156,041
H	*2020*	3		N	New Friar Ln	Ovilla Rd (FM 664)	IH35	0.45	UC	D-4	0	4	100%	$ 131,629	$ 94,840	$ 1,880,410	$ 1,132,495	$ 3,239,374
		Sub-Total Service Area 3						**3.34**						**$ 653,448**	**$ 491,744**	**$ 9,334,973**	**$ 5,633,328**	**$ 16,113,492**
9	*2007*	4		N	John Arden Dr	Solon Rd	Legacy Ranch Road	0.47	DA	C-1	2	4	100%	$ 158,354	$ 62,075	$ 2,262,202	$ 1,334,471	$ 3,817,102
10	*2007*	4		R	Northgate Dr	Stadium Dr.	Existing Northgate Dr.	0.11	UC	D-2	0	2	100%	$ 9,740	$ -	$ 139,140	$ 80,026	$ 228,906
11	*2007*	4		R	Stadium Dr.	US 287	S. of Northgate Dr.	0.26	UC	D-2	0	2	100%	$ 21,584	$ -	$ 308,336	$ 177,339	$ 507,259
12	*2007*	4		N	River Oaks/Marvin Connec	Farley St	E. Marvin Ave	0.60	DC	D-3	-	2	100%	$ 165,429	$ 126,600	$ 2,363,267	$ 1,427,282	$ 4,082,578
I	*2020*	4		N	John Arden	N of Grand Avenue	Legacy Ranch Rd	0.07	DA	C-1	2	4	100%	$ 20,035	$ 8,875	$ 286,208	$ 169,383	$ 484,500
J	*2020*	4		N	Bus 287 @Katy Lake	Katy Lake	Legacy Ranch Rd	1.07	DA	D-3	-	2	100%	$ 317,570	$ 254,250	$ 4,536,713	$ 2,745,953	$ 7,854,486
K	*2020*	4		N	Alliance Blvd.	Oxford Crossroads Ct	Legacy Ranch Rd	0.34	UC	D-2	0	2	100%	$ 68,761	$ 71,640	$ 982,300	$ 603,477	$ 1,726,178
L	*2007*	4		N	River Oaks	Brown St	Post Oak St	0.66	DC	C-1	-	4	100%	$ 133,607	$ 139,520	$ 1,908,676	$ 1,172,769	$ 3,354,572
		Sub-Total Service Area 4						**3.58**						**$ 895,079**	**$ 662,960**	**$ 12,786,841**	**$ 7,710,700**	**$ 16,974,831**
5	*2007*	5	2	N	Brown Rd (FM 813) ***	Garden Valley Pkwy	Washington Ave	0.68	DA	C-1	2	4	50%	$ 19,948	$ 5,385	$ 284,975	$ 166,798	$ 477,106
13	*2007*	5		R	Broadhead Rd	US 287	April Ln	1.06	DA	C-1	2	4	100%	$ 278,610	$ 750	$ 3,980,138	$ 2,289,577	$ 6,549,075
14	*2012*	5		R	Garden Valley Pkwy	Sagebrush Ln	Brown Rd (FM 813)	0.69	UC	D-4	2	4	100%	$ 172,075	$ -	$ 2,458,212	$ 1,413,839	$ 4,044,126
E	*2020*	5	2	N	FM 813***	North Grove	Spring Creek Dr	0.30	UC	D-4	2	4	50%	$ 8,014	$ 1,591	$ 114,483	$ 66,700	$ 190,788
M	*2020*	5		N	Garden Valley Pkwy Ext	Broadhead	City Limit	0.47	DA	C-1	0	4	100%	$ 136,335	$ 112,455	$ 1,947,642	$ 1,180,632	$ 3,377,064
N	*2020*	5		N	Broadhead Ext	Memory Lane	N. City Limit on Broadhead	0.78	DA	B	2	4	100%	$ 228,623	$ 40,940	$ 3,266,038	$ 1,900,466	$ 5,436,067
		Sub-Total Service Area 5						**3.99**						**$ 843,604**	**$ 161,121**	**$ 12,051,489**	**$ 7,018,013**	**$ 20,074,226**
15	*2007*	6		N	New Road C - Segment 1	US 77	Howard Rd (FM 877)	0.71	DA	C-1	-	4	100%	$ 203,762	$ 168,531	$ 2,910,889	$ 1,764,785	$ 5,047,967
16	*2007*	6		R	Parks School House Rd	Main/Bus 287	US 287	1.09	DA	C-1	-	4	100%	$ 248,394	$ -	$ 3,548,480	$ 2,040,906	$ 5,837,780
O	*2020*	6		N	New Loop Road	IH35	Bus 287 Main St	2.81	DA	A-2	-	6	100%	$ 1,069,761	$ 890,220	$ 15,282,306	$ 9,268,123	$ 26,510,410
		Sub-Total Service Area 6						**4.61**						**$ 1,521,917**	**$ 1,058,751**	**$ 21,741,675**	**$ 13,073,814**	**$ 37,396,157**
17	*2007*	7		N	New Road D	US 287	Park School House	0.52	DA	A-2	-	6	100%	$ 195,020	$ 163,200	$ 2,786,003	$ 1,690,092	$ 4,834,315
P	*2020*	7		N	Connector Road	Pimlico	New Road "D"	1.59	UC	D-4	0	4	100%	$ 412,571	$ 335,800	$ 5,893,874	$ 3,570,358	$ 10,212,603
		Sub-Total Service Area 7						**2.11**						**$ 607,591**	**$ 499,000**	**$ 8,679,877**	**$ 5,260,450**	**$ 15,046,918**
		Totals:												**$ 6,439,407**	**$ 4,191,709**	**$ 91,991,533**	**$ 55,162,014**	**$ 152,703,914**

Notes:
DA - Divided Arterial
UA - Undivided Arterial
DC - Divided collector
UC - Undivided Collector

Notes:
* Assumes 7% cost of construction, interest rate for debt service @
** Collections received by the City previously
*** City Participation at 20%.

2020 Waxahachie Roadway Impact Fee Study Update
Service Area Analysis Summary - 10 Year CIP

	A	B	C	D	E	F	G	H	I	J	K	L	M
				A - B - C		E x (50%)	F x (D / A)	F - G		I / D	G x J	K / I	L / (50%)
Service Area	Capacity Supplied by CIP	Existing Utilization	Existing Deficiencies	Net Capacity Supplied by CIP	Total Project Cost of CIP	Credited Project Cost of CIP	Cost of Net Capacity	Cost to Meet Existing Utilization	Projected New Development (10-Yr Demand)	Percent of CIP Attributable to New Dev.	Credited Cost Attributable to New Dev.	Credited Cost per Service Unit (Maximum Allowable)	Actual Cost per Service Unit
	(veh-mi)	(veh-mi)	(veh-mi)	(veh-mi)		(50% Credit)	(50% Credit)	(50% Credit)	(veh-miles)		(50% Credit)	(50% Credit)	(Full Cost)
1	9,650	870	285	8,495	17,858,975	8,929,487	$7,860,725	$1,068,762	4,083	48.1	$3,778,145	$925.00	$1,850.00
2	14,434	2,127	0	12,307	29,274,789	14,637,395	$12,480,422	$2,156,972	10,479	85.1	$10,626,663	$1,014.00	$2,028.00
3	7,314	309	0	7,005	16,124,265	8,062,133	$7,721,526	$340,607	2,553	36.4	$2,814,141	$1,102.00	$2,204.00
4	6,423	285	16	6,122	16,982,683	8,491,342	$8,093,413	$397,928	3,458	56.5	$4,571,549	$1,322.00	$2,644.00
5	8,773	1,861	0	6,912	20,087,149	10,043,574	$7,913,050	$2,130,525	2,445	35.4	$2,799,104	$1,144.00	$2,288.00
6	15,998	67	4	15,927	37,419,722	18,709,861	$18,626,825	$83,035	8,250	51.8	$9,648,478	$1,169.00	$2,338.00
7	5,299	0	0	5,299	15,054,723	7,527,362	$7,527,362	$0	811	15.3	$1,152,046	$1,420.00	$2,840.00
Totals	67,891	5,519	305	62,067	$152,802,306	$76,401,153	$70,223,323	$6,177,830	32,079	51.7	$35,390,125	$1,125.00	$2,249.00
												Weighted Average	

Waxahachie Roadway Impact Fee Study Update				
Current Ordinance, 10-Year and Full-System Unit Cost Comparison				
Service Area	Current Ordinance		2020 Update 10-Year CIP	2020 Update Full Buildout
	Max	Actual	50% Max	50% Max
1	$ 1,024.00	$ 1,024.00	$925.00	$1,095.00
2	$ 992.00	$ 992.00	$1,014.00	$1,130.00
3	$ 1,025.00	$ 1,025.00	$1,102.00	$1,348.00
4	$ 1,222.00	$ 1,222.00	$1,322.00	$1,193.00
5	$ 621.00	$ 621.00	$1,144.00	$1,221.00
6	$ 1,160.00	$ 1,160.00	$1,169.00	$923.00
7	$ 1,337.00	$ 1,337.00	$1,420.00	$1,463.00

City of Waxahachie

SA: 1

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Marshall Rd

IH 35 to Patrick Rd

Roadway Information:			
Functional Classification:	B	No. of Lanes:	4
Length (lf):	4,949		
Right-of-Way Width (ft.):	110		
Median Type:	Raised		
Pavement Width (BOC to BOC):	80		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	50	STA	$ 1,500.00	$ 75,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	9,700	CY	$ 10.00	$ 97,000
4	8" Lime Stabilized Subgrade	26,400	SY	$ 4.00	$ 105,600
5	Lime for Stabilization (48 lb/SY)	560	TON	$ 170.00	$ 95,200
6	8" Concrete Pavement	26,400	SY	$ 45.00	$ 1,188,000
7	6" Monolithic Concrete Curb	19,800	LF	$ 20.00	$ 396,000
8	4" Concrete Sidewalk	6,600	SY	$ 50.00	$ 330,000
9	Hydromulching	84,100	SF	$ 1.50	$ 126,150
10	Median Pavement	7,698	SY	$ 11.00	$ 84,683
				Paving Estimate Subtotal:	**$ 2,497,633**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 50,000
10	Traffic Control	4%	$ 100,000
11	Erosion Control	3%	$ 75,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 499,600
13	Utility Adjustments	5%	$ 124,900
	Other Components Estimate Subtotal:		**$ 849,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	2 minor	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,347,133
Mobilization	5%	$ 167,400
Contingency	10%	$ 351,500
Construction Cost Estimate Total:		**$ 3,866,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,866,100
Engineering/Survey/Testing		7.0%	$ 270,600
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 272,195
	Impact Fee Project Cost Estimate Total:		**$ 4,408,895**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 1,088,900**

City of Waxahachie

SA: 1

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Ovilla Rd***

US 287 to Marshall Rd

Roadway Information:			
Functional Classification:	A-2	No. of Lanes:	8
Length (lf):	4,826		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	86		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	49	STA	$ 1,500.00	$ 73,500
2	Remove Existing Pavement	49	STA	$ 1,000.00	$ 49,000
3	Unclassified Street Excavation	14,200	CY	$ 10.00	$ 142,000
4	8" Lime Stabilized Subgrade	38,700	SY	$ 4.00	$ 154,800
5	Lime for Stabilization (48 lb/SY)	820	TON	$ 170.00	$ 139,400
6	8" Concrete Pavement	38,700	SY	$ 45.00	$ 1,741,500
7	6" Monolithic Concrete Curb	19,400	LF	$ 20.00	$ 388,000
8	4" Concrete Sidewalk	6,440	SY	$ 50.00	$ 322,000
9	Hydromulching	101,300	SF	$ 1.50	$ 151,950
10	Median Pavement	7,507	SY	$ 11.00	$ 82,578
				Paving Estimate Subtotal:	**$ 3,244,728**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 64,900
10	Traffic Control	4%	$ 129,800
11	Erosion Control	3%	$ 97,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 649,000
13	Utility Adjustments	5%	$ 162,300
	Other Components Estimate Subtotal:		**$ 1,103,400**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	2 minor	$ 200,000	$ 200,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 200,000**
		I, II, & III Construction Subtotal:		$ 4,548,128
		Mobilization	5%	$ 227,500
		Contingency	10%	$ 477,600
		Construction Cost Estimate Total:		**$ 5,253,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,253,300
Engineering/Survey/Testing		7.0%	$ 367,700
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 144,780
	Impact Fee Project Cost Estimate Total:		**$ 5,765,780**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 1,424,100**

B

City of Waxahachie

SA: 1

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Marshall Rd

Patrick Rd to Ovilla Road

Roadway Information:			
Functional Classification:	B	No. of Lanes:	2
Length (lf):	2,600		
Right-of-Way Width (ft.):	110		
Median Type:	Raised		
Pavement Width (BOC to BOC):	80		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	26	STA	$ 1,500.00	$ 39,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	2,600	CY	$ 10.00	$ 26,000
4	8" Lime Stabilized Subgrade	7,000	SY	$ 4.00	$ 28,000
5	Lime for Stabilization (48 lb/SY)	150	TON	$ 170.00	$ 25,500
6	8" Concrete Pavement	7,000	SY	$ 45.00	$ 315,000
7	6" Monolithic Concrete Curb	10,400	LF	$ 20.00	$ 208,000
8	4" Concrete Sidewalk	3,470	SY	$ 50.00	$ 173,500
9	Hydromulching	44,200	SF	$ 1.50	$ 66,300
10	Median Pavement	4,044	SY	$ 11.00	$ 44,489
				Paving Estimate Subtotal:	**$ 925,789**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 18,600
10	Traffic Control	4%	$ 37,100
11	Erosion Control	3%	$ 27,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 185,200
13	Utility Adjustments	5%	$ 46,300
		Other Components Estimate Subtotal:	**$ 315,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,240,789
Mobilization	5%	$ 62,100
Contingency	10%	$ 130,300
Construction Cost Estimate Total:		**$ 1,433,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,433,200
Engineering/Survey/Testing		7.0%	$ 100,300
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 143,000
	Impact Fee Project Cost Estimate Total:		**$ 1,676,500**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 414,000**

C **City of Waxahachie** **SA: 1**

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Butcher Road

IH35 to Solon Extension

Roadway Information:			
Functional Classification:	A-2	No. of Lanes:	6
Length (lf):	3,778		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	86		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	38	STA	$ 1,500.00	$ 57,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	11,100	CY	$ 10.00	$ 111,000
4	8" Lime Stabilized Subgrade	30,300	SY	$ 4.00	$ 121,200
5	Lime for Stabilization (48 lb/SY)	640	TON	$ 170.00	$ 108,800
6	8" Concrete Pavement	30,300	SY	$ 45.00	$ 1,363,500
7	6" Monolithic Concrete Curb	15,200	LF	$ 20.00	$ 304,000
8	4" Concrete Sidewalk	5,040	SY	$ 50.00	$ 252,000
9	Hydromulching	79,300	SF	$ 1.50	$ 118,950
10	Median Pavement	5,877	SY	$ 11.00	$ 64,646
				Paving Estimate Subtotal:	**$ 2,501,096**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 50,100
10	Traffic Control	4%	$ 100,100
11	Erosion Control	3%	$ 75,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 500,300
13	Utility Adjustments	5%	$ 125,100
	Other Components Estimate Subtotal:		**$ 850,700**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,351,796
Mobilization	5%	$ 167,600
Contingency	10%	$ 352,000
Construction Cost Estimate Total:		**$ 3,871,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,871,400
Engineering/Survey/Testing		7.0%	$ 271,000
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 226,680
	Impact Fee Project Cost Estimate Total:		**$ 4,369,080**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 1,079,100**

City of Waxahachie

SA: 2

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Grove Creek Ext

US 77 to New Road B (W. of Brookstone)

Roadway Information:			
Functional Classification:	B	No. of Lanes:	4
Length (lf):	3,626		
Right-of-Way Width (ft.):	110		
Median Type:	Raised		
Pavement Width (BOC to BOC):	80		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	37	STA	$ 1,500.00	$ 55,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	7,100	CY	$ 10.00	$ 71,000
4	8" Lime Stabilized Subgrade	19,400	SY	$ 4.00	$ 77,600
5	Lime for Stabilization (48 lb/SY)	410	TON	$ 170.00	$ 69,700
6	8" Concrete Pavement	19,400	SY	$ 45.00	$ 873,000
7	6" Monolithic Concrete Curb	14,600	LF	$ 20.00	$ 292,000
8	4" Concrete Sidewalk	4,840	SY	$ 50.00	$ 242,000
9	Hydromulching	61,600	SF	$ 1.50	$ 92,400
10	Median Pavement	5,640	SY	$ 11.00	$ 62,045
				Paving Estimate Subtotal:	**$ 1,835,245**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 36,800
10	Traffic Control	4%	$ 73,500
11	Erosion Control	3%	$ 55,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 367,100
13	Utility Adjustments	5%	$ 91,800
	Other Components Estimate Subtotal:		**$ 624,300**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,459,545
Mobilization	5%	$ 123,000
Contingency	10%	$ 258,300
Construction Cost Estimate Total:		**$ 2,840,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,840,900
Engineering/Survey/Testing		7.0%	$ 198,900
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 199,430
	Impact Fee Project Cost Estimate Total:		**$ 3,239,230**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 800,000**

City of Waxahachie

SA: 2

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

New Road B

Grove Creek Ext to Ext. of Bessie Coleman Blvd.

Roadway Information:			
Functional Classification:	D-4	No. of Lanes:	4
Length (lf):	6,388		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	46		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	64	STA	$ 1,500.00	$ 96,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	12,500	CY	$ 10.00	$ 125,000
4	8" Lime Stabilized Subgrade	34,100	SY	$ 4.00	$ 136,400
5	Lime for Stabilization (48 lb/SY)	720	TON	$ 170.00	$ 122,400
6	8" Concrete Pavement	34,100	SY	$ 45.00	$ 1,534,500
7	6" Monolithic Concrete Curb	12,800	LF	$ 20.00	$ 256,000
8	4" Concrete Sidewalk	8,520	SY	$ 50.00	$ 426,000
9	Hydromulching	134,100	SF	$ 1.50	$ 201,150
10	Median Pavement	0	SY	$ 11.00	$ -
				Paving Estimate Subtotal:	**$ 2,897,450**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 58,000
10	Traffic Control	4%	$ 115,900
11	Erosion Control	3%	$ 87,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 579,500
13	Utility Adjustments	5%	$ 144,900
	Other Components Estimate Subtotal:		**$ 985,300**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,882,750
Mobilization	5%	$ 194,200
Contingency	10%	$ 407,700
Construction Cost Estimate Total:		**$ 4,484,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,484,700
Engineering/Survey/Testing		7.0%	$ 313,900
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 255,520
	Impact Fee Project Cost Estimate Total:		**$ 5,054,120**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 1,248,300**

City of Waxahachie

SA: 2

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SA: 5

Brown St (FM 813)***

Garden Valley Pkwy to /Brown St.

Roadway Information:			
Functional Classification:	C-1	No. of Lanes:	6
Length (lf):	3,590		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	62		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	36	STA	$ 1,500.00	$ 54,000
2	Remove Existing Pavement	36	STA	$ 1,000.00	$ 36,000
3	Unclassified Street Excavation	7,100	CY	$ 10.00	$ 71,000
4	8" Lime Stabilized Subgrade	19,200	SY	$ 4.00	$ 76,800
5	Lime for Stabilization (48 lb/SY)	410	TON	$ 170.00	$ 69,700
6	8" Concrete Pavement	19,200	SY	$ 45.00	$ 864,000
7	6" Monolithic Concrete Curb	14,400	LF	$ 20.00	$ 288,000
8	4" Concrete Sidewalk	4,790	SY	$ 50.00	$ 239,500
9	Hydromulching	53,900	SF	$ 1.50	$ 80,850
10	Median Pavement	5,584	SY	$ 11.00	$ 61,429
				Paving Estimate Subtotal:	**$ 1,841,279**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 36,900
10	Traffic Control	4%	$ 73,700
11	Erosion Control	3%	$ 55,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 368,300
13	Utility Adjustments	5%	$ 92,100
	Other Components Estimate Subtotal:		**$ 626,300**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,467,579
Mobilization	5%	$ 123,400
Contingency	10%	$ 259,100
Construction Cost Estimate Total:		**$ 2,850,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,850,100
Engineering/Survey/Testing		7.0%	$ 199,500
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 53,850
	Impact Fee Project Cost Estimate Total:		**$ 3,103,450**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 766,500**

D

City of Waxahachie

SA: 2

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Loftland Dr

IH35 to US 77

Roadway Information:			
Functional Classification:	B	No. of Lanes:	4
Length (lf):	3,200		
Right-of-Way Width (ft.):	110		
Median Type:	Raised		
Pavement Width (BOC to BOC):	80		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	32	STA	$ 1,500.00	$ 48,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	6,300	CY	$ 10.00	$ 63,000
4	8" Lime Stabilized Subgrade	17,100	SY	$ 4.00	$ 68,400
5	Lime for Stabilization (48 lb/SY)	360	TON	$ 170.00	$ 61,200
6	8" Concrete Pavement	17,100	SY	$ 45.00	$ 769,500
7	6" Monolithic Concrete Curb	12,800	LF	$ 20.00	$ 256,000
8	4" Concrete Sidewalk	4,270	SY	$ 50.00	$ 213,500
9	Hydromulching	54,400	SF	$ 1.50	$ 81,600
10	Median Pavement	4,978	SY	$ 11.00	$ 54,756
				Paving Estimate Subtotal:	**$ 1,615,956**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 32,400
10	Traffic Control	4%	$ 64,700
11	Erosion Control	3%	$ 48,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 323,200
13	Utility Adjustments	5%	$ 80,800
		Other Components Estimate Subtotal:	**$ 549,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	1 minor	$ 100,000	$ 100,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
			Special Components Estimate Subtotal:	**$ 100,000**

I, II, & III Construction Subtotal:		$ 2,265,556
Mobilization	5%	$ 113,300
Contingency	10%	$ 237,900
Construction Cost Estimate Total:		**$ 2,616,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,616,800
Engineering/Survey/Testing		7.0%	$ 183,200
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 176,000
		Impact Fee Project Cost Estimate Total:	**$ 2,976,000**
		Estimated Finance Cost (24.7%; i.e. 5% over 10 years)	**$ 735,000**

E

City of Waxahachie

SA: 2

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SA: 5

FM 813

North Grove to Spring Creek Dr

Roadway Information:			
Functional Classification:	D-4	No. of Lanes:	6
Length (lf):	1,591		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	46		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	16	STA	$ 1,500.00	$ 24,000
2	Remove Existing Pavement	16	STA	$ 1,000.00	$ 16,000
3	Unclassified Street Excavation	3,200	CY	$ 10.00	$ 32,000
4	8" Lime Stabilized Subgrade	8,500	SY	$ 4.00	$ 34,000
5	Lime for Stabilization (48 lb/SY)	180	TON	$ 170.00	$ 30,600
6	8" Concrete Pavement	8,500	SY	$ 45.00	$ 382,500
7	6" Monolithic Concrete Curb	3,200	LF	$ 20.00	$ 64,000
8	4" Concrete Sidewalk	2,130	SY	$ 50.00	$ 106,500
9	Hydromulching	33,400	SF	$ 1.50	$ 50,100
10	Median Pavement	0	SY	$ 11.00	$ -
				Paving Estimate Subtotal:	**$ 739,700**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 14,800
10	Traffic Control	4%	$ 29,600
11	Erosion Control	3%	$ 22,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 148,000
13	Utility Adjustments	5%	$ 37,000
	Other Components Estimate Subtotal:		**$ 251,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 991,300
Mobilization	5%	$ 49,600
Contingency	10%	$ 104,100
Construction Cost Estimate Total:		**$ 1,145,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,145,000
Engineering/Survey/Testing		7.0%	$ 80,200
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 11,933

Impact Fee Project Cost Estimate Total:		**$ 1,237,133**
Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 305,500**

F

City of Waxahachie

SA: 2

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

FM 813

Spring Creek Dr to Grove Creek/E. City Limit

Roadway Information:			
Functional Classification:	D-4	No. of Lanes:	6
Length (lf):	2,456		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	46		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 1,500.00	$ 37,500
2	Remove Existing Pavement	25	STA	$ 1,000.00	$ 25,000
3	Unclassified Street Excavation	4,900	CY	$ 10.00	$ 49,000
4	8" Lime Stabilized Subgrade	13,100	SY	$ 4.00	$ 52,400
5	Lime for Stabilization (48 lb/SY)	280	TON	$ 170.00	$ 47,600
6	8" Concrete Pavement	13,100	SY	$ 45.00	$ 589,500
7	6" Monolithic Concrete Curb	5,000	LF	$ 20.00	$ 100,000
8	4" Concrete Sidewalk	3,280	SY	$ 50.00	$ 164,000
9	Hydromulching	51,600	SF	$ 1.50	$ 77,400
10	Median Pavement	0	SY	$ 11.00	$ -
				Paving Estimate Subtotal:	**$ 1,142,400**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 22,900
10	Traffic Control	4%	$ 45,700
11	Erosion Control	3%	$ 34,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 228,500
13	Utility Adjustments	5%	$ 57,200
	Other Components Estimate Subtotal:		**$ 388,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,531,000
Mobilization	5%	$ 76,600
Contingency	10%	$ 160,800
Construction Cost Estimate Total:		**$ 1,768,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,768,400
Engineering/Survey/Testing		7.0%	$ 123,800
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 18,420
	Impact Fee Project Cost Estimate Total:		**$ 1,910,620**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 471,900**

G

City of Waxahachie

SA: 2

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Butcher Rd

IH35 FR Access to US77

Roadway Information:			
Functional Classification:	A-2	No. of Lanes:	8
Length (lf):	2,030		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	86		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	21	STA	$ 1,500.00	$ 31,500
2	Remove Existing Pavement	21	STA	$ 1,000.00	$ 21,000
3	Unclassified Street Excavation	6,000	CY	$ 10.00	$ 60,000
4	8" Lime Stabilized Subgrade	16,300	SY	$ 4.00	$ 65,200
5	Lime for Stabilization (48 lb/SY)	350	TON	$ 170.00	$ 59,500
6	8" Concrete Pavement	16,300	SY	$ 45.00	$ 733,500
7	6" Monolithic Concrete Curb	8,200	LF	$ 20.00	$ 164,000
8	4" Concrete Sidewalk	2,710	SY	$ 50.00	$ 135,500
9	Hydromulching	42,600	SF	$ 1.50	$ 63,900
10	Median Pavement	3,158	SY	$ 11.00	$ 34,736
				Paving Estimate Subtotal:	**$ 1,368,836**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 27,400
10	Traffic Control	4%	$ 54,800
11	Erosion Control	3%	$ 41,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 273,800
13	Utility Adjustments	5%	$ 68,500
	Other Components Estimate Subtotal:		**$ 465,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	1 minor	$ 100,000	$ 100,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 100,000**

I, II, & III Construction Subtotal:		$ 1,934,436
Mobilization	5%	$ 96,800
Contingency	10%	$ 203,200
Construction Cost Estimate Total:		**$ 2,234,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,234,500
Engineering/Survey/Testing		7.0%	$ 156,400
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 30,450

Impact Fee Project Cost Estimate Total:		**$ 2,421,350**
Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 598,000**

City of Waxahachie

SA: 3

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Ovilla Rd***

US 287 to Bus 287

Roadway Information:			
Functional Classification:	6	No. of Lanes:	6
Length (lf):	6,731		
Right-of-Way Width (ft.):	110		
Median Type:	Raised		
Pavement Width (BOC to BOC):	80		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	68	STA	$ 1,500.00	$ 102,000
2	Remove Existing Pavement	68	STA	$ 1,000.00	$ 68,000
3	Unclassified Street Excavation	13,200	CY	$ 10.00	$ 132,000
4	8" Lime Stabilized Subgrade	35,900	SY	$ 4.00	$ 143,600
5	Lime for Stabilization (48 lb/SY)	760	TON	$ 170.00	$ 129,200
6	8" Concrete Pavement	35,900	SY	$ 45.00	$ 1,615,500
7	6" Monolithic Concrete Curb	27,000	LF	$ 20.00	$ 540,000
8	4" Concrete Sidewalk	8,980	SY	$ 50.00	$ 449,000
9	Hydromulching	114,400	SF	$ 1.50	$ 171,600
10	Median Pavement	10,470	SY	$ 11.00	$ 115,173
				Paving Estimate Subtotal:	**$ 3,466,073**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 69,400
10	Traffic Control	4%	$ 138,700
11	Erosion Control	3%	$ 104,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 693,300
13	Utility Adjustments	5%	$ 173,400
		Other Components Estimate Subtotal:	**$ 1,178,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 4,644,873
Mobilization	5%	$ 232,300
Contingency	10%	$ 487,800
Construction Cost Estimate Total:		**$ 5,365,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,365,000
Engineering/Survey/Testing		7.0%	$ 375,600
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 168,272
	Impact Fee Project Cost Estimate Total:		**$ 5,908,872**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 1,459,400**

City of Waxahachie

SA: 3

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

New Indian Rd

Bus. 287 to US 287

Roadway Information:			
Functional Classification:	6	No. of Lanes:	4
Length (lf):	4,374		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	62		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	44	STA	$ 1,500.00	$ 66,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	8,600	CY	$ 10.00	$ 86,000
4	8" Lime Stabilized Subgrade	23,400	SY	$ 4.00	$ 93,600
5	Lime for Stabilization (48 lb/SY)	500	TON	$ 170.00	$ 85,000
6	8" Concrete Pavement	23,400	SY	$ 45.00	$ 1,053,000
7	6" Monolithic Concrete Curb	17,500	LF	$ 20.00	$ 350,000
8	4" Concrete Sidewalk	5,840	SY	$ 50.00	$ 292,000
9	Hydromulching	65,600	SF	$ 1.50	$ 98,400
10	Median Pavement	6,803	SY	$ 11.00	$ 74,836
				Paving Estimate Subtotal:	**$ 2,198,836**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 44,000
10	Traffic Control	4%	$ 88,000
11	Erosion Control	3%	$ 66,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 439,800
13	Utility Adjustments	5%	$ 110,000
		Other Components Estimate Subtotal:	**$ 747,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,946,636
Mobilization	5%	$ 147,400
Contingency	10%	$ 309,500
Construction Cost Estimate Total:		**$ 3,403,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,403,600
Engineering/Survey/Testing		7.0%	$ 238,300
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 196,810
	Impact Fee Project Cost Estimate Total:		**$ 3,838,710**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 948,100**

City of Waxahachie

SA: 3

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

New Friar Ln

New Indian Rd to Ovilla Rd (FM 664)

Roadway Information:			
Functional Classification:	6	No. of Lanes:	2
Length (lf):	4,161		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	48		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	42	STA	$ 1,500.00	$ 63,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,100	CY	$ 10.00	$ 41,000
4	8" Lime Stabilized Subgrade	11,100	SY	$ 4.00	$ 44,400
5	Lime for Stabilization (48 lb/SY)	240	TON	$ 170.00	$ 40,800
6	8" Concrete Pavement	11,100	SY	$ 45.00	$ 499,500
7	6" Monolithic Concrete Curb	8,400	LF	$ 20.00	$ 168,000
8	4" Concrete Sidewalk	5,550	SY	$ 50.00	$ 277,500
9	Hydromulching	79,100	SF	$ 1.50	$ 118,650
10	Median Pavement	0	SY	$ 11.00	$ -
				Paving Estimate Subtotal:	**$ 1,252,850**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 25,100
10	Traffic Control	4%	$ 50,200
11	Erosion Control	3%	$ 37,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 250,600
13	Utility Adjustments	5%	$ 62,700
	Other Components Estimate Subtotal:		**$ 426,200**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ 900,000	$ 900,000
		Special Components Estimate Subtotal:		**$ 900,000**

I, II, & III Construction Subtotal:		$ 2,579,050
Mobilization	5%	$ 129,000
Contingency	10%	$ 270,900
Construction Cost Estimate Total:		**$ 2,979,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,979,000
Engineering/Survey/Testing		7.0%	$ 208,500
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 166,440
	Impact Fee Project Cost Estimate Total:		**$ 3,353,940**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 828,400**

H

City of Waxahachie

SA: 3

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

New Friar Ln

Ovilla Rd (FM 664) to IH35

Roadway Information:			
Functional Classification:	6	No. of Lanes:	4
Length (lf):	2,371		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	46		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	24	STA	$ 1,500.00	$ 36,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,700	CY	$ 10.00	$ 47,000
4	8" Lime Stabilized Subgrade	12,700	SY	$ 4.00	$ 50,800
5	Lime for Stabilization (48 lb/SY)	270	TON	$ 170.00	$ 45,900
6	8" Concrete Pavement	12,700	SY	$ 45.00	$ 571,500
7	6" Monolithic Concrete Curb	4,800	LF	$ 20.00	$ 96,000
8	4" Concrete Sidewalk	3,170	SY	$ 50.00	$ 158,500
9	Hydromulching	49,800	SF	$ 1.50	$ 74,700
10	Median Pavement	3,688	SY	$ 11.00	$ 40,570
				Paving Estimate Subtotal:	**$ 1,120,970**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 22,500
10	Traffic Control	4%	$ 44,900
11	Erosion Control	3%	$ 33,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 224,200
13	Utility Adjustments	5%	$ 56,100
	Other Components Estimate Subtotal:		**$ 381,400**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,502,370
Mobilization	5%	$ 75,200
Contingency	10%	$ 157,800
Construction Cost Estimate Total:		**$ 1,735,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,735,400
Engineering/Survey/Testing		7.0%	$ 121,500
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 94,840
	Impact Fee Project Cost Estimate Total:		**$ 1,951,740**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 482,000**

City of Waxahachie

SA: 4

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

John Arden Dr

Solon Rd to Legacy Ranch Road

Roadway Information:			
Functional Classification:	6	No. of Lanes:	6
Length (lf):	2,483		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	62		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 1,500.00	$ 37,500
2	Remove Existing Pavement	25	STA	$ 1,000.00	$ 25,000
3	Unclassified Street Excavation	4,900	CY	$ 10.00	$ 49,000
4	8" Lime Stabilized Subgrade	13,300	SY	$ 4.00	$ 53,200
5	Lime for Stabilization (48 lb/SY)	280	TON	$ 170.00	$ 47,600
6	8" Concrete Pavement	13,300	SY	$ 45.00	$ 598,500
7	6" Monolithic Concrete Curb	10,000	LF	$ 20.00	$ 200,000
8	4" Concrete Sidewalk	3,320	SY	$ 50.00	$ 166,000
9	Hydromulching	37,200	SF	$ 1.50	$ 55,800
10	Median Pavement	3,862	SY	$ 11.00	$ 42,487
				Paving Estimate Subtotal:	**$ 1,275,087**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 25,600
10	Traffic Control	4%	$ 51,100
11	Erosion Control	3%	$ 38,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 255,100
13	Utility Adjustments	5%	$ 63,800
		Other Components Estimate Subtotal:	**$ 433,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,708,987
Mobilization	5%	$ 85,500
Contingency	10%	$ 179,500
Construction Cost Estimate Total:		**$ 1,974,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,974,000
Engineering/Survey/Testing		7.0%	$ 138,200
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 62,075

Impact Fee Project Cost Estimate Total:		**$ 2,174,275**
Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 537,000**

City of Waxahachie

SA: 5

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate **SA: 2**

River Oaks/Marvin Connection

Farley St to E. Marvin Ave

Roadway Information:			
Functional Classification:	6	No. of Lanes:	2
Length (lf):	3,165		
Right-of-Way Width (ft.):	80		
Median Type:	Raised		
Pavement Width (BOC to BOC):	52		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	32	STA	$ 1,500.00	$ 48,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	3,100	CY	$ 10.00	$ 31,000
4	8" Lime Stabilized Subgrade	8,500	SY	$ 4.00	$ 34,000
5	Lime for Stabilization (48 lb/SY)	180	TON	$ 170.00	$ 30,600
6	8" Concrete Pavement	8,500	SY	$ 45.00	$ 382,500
7	6" Monolithic Concrete Curb	12,700	LF	$ 20.00	$ 254,000
8	4" Concrete Sidewalk	4,220	SY	$ 50.00	$ 211,000
9	Hydromulching	47,500	SF	$ 1.50	$ 71,250
10	Median Pavement	4,923	SY	$ 11.00	$ 54,157
				Paving Estimate Subtotal:	**$ 1,116,507**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 22,400
10	Traffic Control	4%	$ 44,700
11	Erosion Control	3%	$ 33,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 223,400
13	Utility Adjustments	5%	$ 55,900
		Other Components Estimate Subtotal:	**$ 379,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ 300,000	$ 300,000
16	Traffic Signals	None	$ -	$ -
			Special Components Estimate Subtotal:	**$ 300,000**

I, II, & III Construction Subtotal:		$ 1,796,407
Mobilization	5%	$ 89,900
Contingency	10%	$ 188,700
Construction Cost Estimate Total:		**$ 2,075,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,075,100
Engineering/Survey/Testing		7.0%	$ 145,300
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 126,600
	Impact Fee Project Cost Estimate Total:		**$ 2,347,000**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 579,700**

I

City of Waxahachie

SA: 4

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

John Arden

N of Grand Avenue to Legacy Ranch Rd

Roadway Information:			
Functional Classification:	6	No. of Lanes:	6
Length (lf):	355		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	62		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	4	STA	$ 1,500.00	$ 6,000
2	Remove Existing Pavement	4	STA	$ 1,000.00	$ 4,000
3	Unclassified Street Excavation	700	CY	$ 10.00	$ 7,000
4	8" Lime Stabilized Subgrade	1,900	SY	$ 4.00	$ 7,600
5	Lime for Stabilization (48 lb/SY)	40	TON	$ 170.00	$ 6,800
6	8" Concrete Pavement	1,900	SY	$ 45.00	$ 85,500
7	6" Monolithic Concrete Curb	1,500	LF	$ 20.00	$ 30,000
8	4" Concrete Sidewalk	480	SY	$ 50.00	$ 24,000
9	Hydromulching	5,300	SF	$ 1.50	$ 7,950
10	Median Pavement	552	SY	$ 11.00	$ 6,074
				Paving Estimate Subtotal:	**$ 184,924**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 3,700
10	Traffic Control	4%	$ 7,400
11	Erosion Control	3%	$ 5,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 37,000
13	Utility Adjustments	5%	$ 9,300
	Other Components Estimate Subtotal:		**$ 63,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 247,924
Mobilization	5%	$ 12,400
Contingency	10%	$ 26,100
Construction Cost Estimate Total:		**$ 286,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 286,500
Engineering/Survey/Testing		7.0%	$ 20,100
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 8,875
	Impact Fee Project Cost Estimate Total:		**$ 315,475**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 77,900**

J

City of Waxahachie

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SA: 5

SA: 2

Bus 287 @Katy Lake

Katy Lake to Legacy Ranch Rd

Roadway Information:			
Functional Classification:	6	No. of Lanes:	4
Length (lf):	5,650		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	62		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	57	STA	$ 1,500.00	$ 85,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	11,100	CY	$ 10.00	$ 111,000
4	8" Lime Stabilized Subgrade	30,200	SY	$ 4.00	$ 120,800
5	Lime for Stabilization (48 lb/SY)	640	TON	$ 170.00	$ 108,800
6	8" Concrete Pavement	30,200	SY	$ 45.00	$ 1,359,000
7	6" Monolithic Concrete Curb	22,600	LF	$ 20.00	$ 452,000
8	4" Concrete Sidewalk	7,540	SY	$ 50.00	$ 377,000
9	Hydromulching	84,800	SF	$ 1.50	$ 127,200
10	Median Pavement	8,789	SY	$ 11.00	$ 96,678
				Paving Estimate Subtotal:	**$ 2,837,978**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 56,800
10	Traffic Control	4%	$ 113,600
11	Erosion Control	3%	$ 85,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 567,600
13	Utility Adjustments	5%	$ 141,900
	Other Components Estimate Subtotal:		**$ 965,100**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,803,078
Mobilization	5%	$ 190,200
Contingency	10%	$ 399,400
Construction Cost Estimate Total:		**$ 4,392,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,392,700
Engineering/Survey/Testing		7.0%	$ 307,500
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 254,250
	Impact Fee Project Cost Estimate Total:		**$ 4,954,450**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 1,223,700**

City of Waxahachie

SA: 5

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SA: 2

Alliance Blvd.

Oxford Crossroads Ctr to Legacy Ranch Rd

Roadway Information:			
Functional Classification:	6	No. of Lanes:	2
Length (lf):	1,791		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	48		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	18	STA	$ 1,500.00	$ 27,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	1,800	CY	$ 10.00	$ 18,000
4	8" Lime Stabilized Subgrade	4,800	SY	$ 4.00	$ 19,200
5	Lime for Stabilization (48 lb/SY)	110	TON	$ 170.00	$ 18,700
6	8" Concrete Pavement	4,800	SY	$ 45.00	$ 216,000
7	6" Monolithic Concrete Curb	3,600	LF	$ 20.00	$ 72,000
8	4" Concrete Sidewalk	2,390	SY	$ 50.00	$ 119,500
9	Hydromulching	34,000	SF	$ 1.50	$ 51,000
10	Median Pavement	0	SY	$ 11.00	$ -
				Paving Estimate Subtotal:	**$ 541,400**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 10,900
10	Traffic Control	4%	$ 21,700
11	Erosion Control	3%	$ 16,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 108,300
13	Utility Adjustments	5%	$ 27,100
		Other Components Estimate Subtotal:	**$ 184,300**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 725,700
Mobilization	5%	$ 36,300
Contingency	10%	$ 76,200
Construction Cost Estimate Total:		**$ 838,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 838,200
Engineering/Survey/Testing		7.0%	$ 58,700
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 71,640
	Impact Fee Project Cost Estimate Total:		**$ 968,540**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 239,200**

L

City of Waxahachie

SA: 5

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

SA: 2

River Oaks

Brown St to Post Oak St

Roadway Information:			
Functional Classification:	6	No. of Lanes:	2
Length (lf):	3,488		
Right-of-Way Width (ft.):	80		
Median Type:	Raised		
Pavement Width (BOC to BOC):	52		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	35	STA	$ 1,500.00	$ 52,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	3,500	CY	$ 10.00	$ 35,000
4	8" Lime Stabilized Subgrade	9,400	SY	$ 4.00	$ 37,600
5	Lime for Stabilization (48 lb/SY)	200	TON	$ 170.00	$ 34,000
6	8" Concrete Pavement	9,400	SY	$ 45.00	$ 423,000
7	6" Monolithic Concrete Curb	14,000	LF	$ 20.00	$ 280,000
8	4" Concrete Sidewalk	4,660	SY	$ 50.00	$ 233,000
9	Hydromulching	52,300	SF	$ 1.50	$ 78,450
10	Median Pavement	5,426	SY	$ 11.00	$ 59,684
				Paving Estimate Subtotal:	**$ 1,233,234**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 24,700
10	Traffic Control	4%	$ 49,400
11	Erosion Control	3%	$ 37,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 246,700
13	Utility Adjustments	5%	$ 61,700
		Other Components Estimate Subtotal:	**$ 419,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	2 minor	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,652,734
Mobilization	5%	$ 82,700
Contingency	10%	$ 173,600
Construction Cost Estimate Total:		**$ 1,909,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,909,100
Engineering/Survey/Testing		7.0%	$ 133,600
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 139,520
	Impact Fee Project Cost Estimate Total:		**$ 2,182,220**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 539,000**

M **City of Waxahachie** **SA: 5**

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Garden Valley Pkwy Ext

Broadhead to City Limit

Roadway Information:			
Functional Classification:	6	No. of Lanes:	4
Length (lf):	2,499		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	62		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 1,500.00	$ 37,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	4,900	CY	$ 10.00	$ 49,000
4	8" Lime Stabilized Subgrade	13,400	SY	$ 4.00	$ 53,600
5	Lime for Stabilization (48 lb/SY)	290	TON	$ 170.00	$ 49,300
6	8" Concrete Pavement	13,400	SY	$ 45.00	$ 603,000
7	6" Monolithic Concrete Curb	10,000	LF	$ 20.00	$ 200,000
8	4" Concrete Sidewalk	3,340	SY	$ 50.00	$ 167,000
9	Hydromulching	37,500	SF	$ 1.50	$ 56,250
10	Median Pavement	3,887	SY	$ 11.00	$ 42,761
				Paving Estimate Subtotal:	**$ 1,258,411**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 25,200
10	Traffic Control	4%	$ 50,400
11	Erosion Control	3%	$ 37,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 251,700
13	Utility Adjustments	5%	$ 63,000
		Other Components Estimate Subtotal:	**$ 428,100**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,686,511
Mobilization	5%	$ 84,400
Contingency	10%	$ 177,100
Construction Cost Estimate Total:		**$ 1,948,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,948,100
Engineering/Survey/Testing		7.0%	$ 136,400
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 112,455

Impact Fee Project Cost Estimate Total:		**$ 2,196,955**
Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 542,600**

N

City of Waxahachie

SA: 5

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Broadhead Ext

Memory Lane to N. City Limit on Broadhead

Roadway Information:			
Functional Classification:	6	No. of Lanes:	6
Length (lf):	4,094		
Right-of-Way Width (ft.):	110		
Median Type:	Raised		
Pavement Width (BOC to BOC):	80		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	41	STA	$ 1,500.00	$ 61,500
2	Remove Existing Pavement	41	STA	$ 1,000.00	$ 41,000
3	Unclassified Street Excavation	8,100	CY	$ 10.00	$ 81,000
4	8" Lime Stabilized Subgrade	21,900	SY	$ 4.00	$ 87,600
5	Lime for Stabilization (48 lb/SY)	460	TON	$ 170.00	$ 78,200
6	8" Concrete Pavement	21,900	SY	$ 45.00	$ 985,500
7	6" Monolithic Concrete Curb	16,400	LF	$ 20.00	$ 328,000
8	4" Concrete Sidewalk	5,460	SY	$ 50.00	$ 273,000
9	Hydromulching	69,600	SF	$ 1.50	$ 104,400
10	Median Pavement	6,368	SY	$ 11.00	$ 70,053
				Paving Estimate Subtotal:	**$ 2,110,253**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 42,300
10	Traffic Control	4%	$ 84,500
11	Erosion Control	3%	$ 63,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 422,100
13	Utility Adjustments	5%	$ 105,600
	Other Components Estimate Subtotal:		**$ 717,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	2 minor	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,828,153
Mobilization	5%	$ 141,500
Contingency	10%	$ 297,000
Construction Cost Estimate Total:		**$ 3,266,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,266,700
Engineering/Survey/Testing		7.0%	$ 228,700
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 40,940
	Impact Fee Project Cost Estimate Total:		**$ 3,536,340**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 873,400**

City of Waxahachie

SA: 6

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

New Road C - Segment 1

US 77 to Howard Rd (FM 877)

Roadway Information:			
Functional Classification:	6	No. of Lanes:	4
Length (lf):	3,745		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	62		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	38	STA	$ 1,500.00	$ 57,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	7,400	CY	$ 10.00	$ 74,000
4	8" Lime Stabilized Subgrade	20,000	SY	$ 4.00	$ 80,000
5	Lime for Stabilization (48 lb/SY)	420	TON	$ 170.00	$ 71,400
6	8" Concrete Pavement	20,000	SY	$ 45.00	$ 900,000
7	6" Monolithic Concrete Curb	15,000	LF	$ 20.00	$ 300,000
8	4" Concrete Sidewalk	5,000	SY	$ 50.00	$ 250,000
9	Hydromulching	56,200	SF	$ 1.50	$ 84,300
10	Median Pavement	5,826	SY	$ 11.00	$ 64,084
				Paving Estimate Subtotal:	**$ 1,880,784**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 37,700
10	Traffic Control	4%	$ 75,300
11	Erosion Control	3%	$ 56,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 376,200
13	Utility Adjustments	5%	$ 94,100
		Other Components Estimate Subtotal:	**$ 639,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	2 minor	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,520,584
Mobilization	5%	$ 126,100
Contingency	10%	$ 264,700
Construction Cost Estimate Total:		**$ 2,911,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,911,400
Engineering/Survey/Testing		7.0%	$ 203,800
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 168,531
	Impact Fee Project Cost Estimate Total:		**$ 3,283,731**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 811,000**

City of Waxahachie

SA: 6

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

New Loop Road

IH35 to Bus 287 Main St

Roadway Information:			
Functional Classification:	6	No. of Lanes:	6
Length (lf):	14,837		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	86		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	149	STA	$ 1,500.00	$ 223,500
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	43,600	CY	$ 10.00	$ 436,000
4	8" Lime Stabilized Subgrade	118,700	SY	$ 4.00	$ 474,800
5	Lime for Stabilization (48 lb/SY)	2,500	TON	$ 170.00	$ 425,000
6	8" Concrete Pavement	118,700	SY	$ 45.00	$ 5,341,500
7	6" Monolithic Concrete Curb	59,400	LF	$ 20.00	$ 1,188,000
8	4" Concrete Sidewalk	19,790	SY	$ 50.00	$ 989,500
9	Hydromulching	311,600	SF	$ 1.50	$ 467,400
10	Median Pavement	23,080	SY	$ 11.00	$ 253,878
				Paving Estimate Subtotal:	**$ 9,799,578**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 196,000
10	Traffic Control	4%	$ 392,000
11	Erosion Control	3%	$ 294,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 1,960,000
13	Utility Adjustments	5%	$ 490,000
		Other Components Estimate Subtotal:	**$ 3,332,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ 100,000	$ 100,000
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
			Special Components Estimate Subtotal:	**$ 100,000**

I, II, & III Construction Subtotal:		$ 13,231,578
Mobilization	5%	$ 661,600
Contingency	10%	$ 1,389,400
Construction Cost Estimate Total:		**$ 15,282,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 15,282,600
Engineering/Survey/Testing		7.0%	$ 1,069,800
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 890,220

Impact Fee Project Cost Estimate Total:	**$ 17,242,620**
Estimated Finance Cost (24.7%; i.e. 5% over 10 years)	**$ 4,258,900**

City of Waxahachie

SA: 7

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

New Road D

US 287 to Park School House

Roadway Information:			
Functional Classification:	6	No. of Lanes:	6
Length (lf):	2,720		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	86		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	28	STA	$ 1,500.00	$ 42,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	8,000	CY	$ 10.00	$ 80,000
4	8" Lime Stabilized Subgrade	21,800	SY	$ 4.00	$ 87,200
5	Lime for Stabilization (48 lb/SY)	460	TON	$ 170.00	$ 78,200
6	8" Concrete Pavement	21,800	SY	$ 45.00	$ 981,000
7	6" Monolithic Concrete Curb	10,900	LF	$ 20.00	$ 218,000
8	4" Concrete Sidewalk	3,630	SY	$ 50.00	$ 181,500
9	Hydromulching	57,100	SF	$ 1.50	$ 85,650
10	Median Pavement	4,231	SY	$ 11.00	$ 46,542
				Paving Estimate Subtotal:	**$ 1,800,092**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 36,100
10	Traffic Control	4%	$ 72,100
11	Erosion Control	3%	$ 54,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 360,100
13	Utility Adjustments	5%	$ 90,100
	Other Components Estimate Subtotal:		**$ 612,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	None	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,412,592
Mobilization	5%	$ 120,700
Contingency	10%	$ 253,400
Construction Cost Estimate Total:		**$ 2,786,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,786,700
Engineering/Survey/Testing		7.0%	$ 195,100
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 163,200
	Impact Fee Project Cost Estimate Total:		**$ 3,145,000**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 776,800**

P

City of Waxahachie

SA: 7

Impact Fee Engineer's Opinion of Probable Construction Cost Estimate

Connector Road

Pimlico to New Road "D"

Roadway Information:			
Functional Classification:	6	No. of Lanes:	4
Length (lf):	8,395		
Right-of-Way Width (ft.):	80		
Median Type:	None		
Pavement Width (BOC to BOC):	46		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	84	STA	$ 1,500.00	$ 126,000
2	Remove Existing Pavement	0	STA	$ 1,000.00	$ -
3	Unclassified Street Excavation	16,500	CY	$ 10.00	$ 165,000
4	8" Lime Stabilized Subgrade	44,800	SY	$ 4.00	$ 179,200
5	Lime for Stabilization (48 lb/SY)	950	TON	$ 170.00	$ 161,500
6	8" Concrete Pavement	44,800	SY	$ 45.00	$ 2,016,000
7	6" Monolithic Concrete Curb	16,800	LF	$ 20.00	$ 336,000
8	4" Concrete Sidewalk	11,200	SY	$ 50.00	$ 560,000
9	Hydromulching	176,300	SF	$ 1.50	$ 264,450
10	Median Pavement	0	SY	$ 11.00	$ -
				Paving Estimate Subtotal:	**$ 3,808,150**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 76,200
10	Traffic Control	4%	$ 152,400
11	Erosion Control	3%	$ 114,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	20%	$ 761,700
13	Utility Adjustments	5%	$ 190,500
	Other Components Estimate Subtotal:		**$ 1,295,100**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
14	Drainage Structures	2 minor	$ -	$ -
15	Bridge Structures	None	$ -	$ -
16	Traffic Signals	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 5,103,250
Mobilization	5%	$ 255,200
Contingency	10%	$ 535,900
Construction Cost Estimate Total:		**$ 5,894,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,894,400
Engineering/Survey/Testing		7.0%	$ 412,600
Right-of-Way Acquisition	Cost per sq. ft.: $/SF	0.50	$ 335,800
	Impact Fee Project Cost Estimate Total:		**$ 6,642,800**
	Estimated Finance Cost (24.7%; i.e. 5% over 10 years)		**$ 1,640,700**

Exhibit D
Schedule 1
Maximum Assessment Rate

CITY OF WAXAHACHIE

SCHEDULE 1 - WATER AND WASTEWATER IMPACT FEE

MAXIMUM ASSESSMENT RATE

			Maximum Impact Fee		
Meter Type	**Meter Size**	**Land Use Equivalency**	**Water**	**Wastewater**	**Total**
Simple	5/8" X 3/4"	1	$3,275.00	$3,781.00	$7,056.00
Simple	1"	2.5	$8,187.00	$9,452.00	$17,639.00
Simple	1-1/2"	5	$16,373.00	$18,905.00	$35,278.00
Simple	2"	8	$26,197.00	$30,248.00	$56,445.00
Compound	2"	8	$26,197.00	$30,248.00	$56,445.00
Turbine	2"	10	$32,746.00	$37,810.00	$70,556.00
Compound	3"	16	$52,394.00	$60,496.00	$112,890.00
Turbine	3"	24	$78,591.00	$90,743.00	$169,334.00
Compound	4"	25	$81,865.00	$94,524.00	$176,389.00
Turbine	4"	42	$137,534.00	$158,801.00	$296,335.00
Compound	6"	50	$163,731.00	$189,049.00	$352,780.00
Turbine	6"	92	$301,264.00	$347,849.00	$649,113.00
Compound	8"	80	$261,969.00	$302,478.00	$564,447.00
Turbine	8"	160	$523,938.00	$604,955.00	$1,128,893.00
Compound	10"	115	$376,580.00	$434,812.00	$811,392.00
Turbine	10"	250	$818,653.00	$945,243.00	$1,763,896.00
Turbine	12"	330	$1,080,621.00	$1,247,720.00	$2,328,341.00

CITY OF WAXAHACHIE
SCHEDULE 1 - ROADWAY IMPACT FEE
MAXIMUM ASSESSMENT RATE

Roadway Service Area	Maximum Assessment Impact Fee Rate
1	$1,095.00
2	$1,130.00
3	$1,348.00
4	$1,193.00
5	$1,221.00
6	$923.00
7	$1,463.00

Exhibit E
Schedule 2
Maximum Collection Rate

CITY OF WAXAHACHIE
SCHEDULE 2 - WATER AND WASTEWATER IMPACT FEE
MAXIMUM COLLECTION RATE

			Rate to be Charged		
Meter Type	**Meter Size**	**Land Use Equivalency**	**Water***	**Wastewater***	**Total**
Simple	5/8" X 3/4"	1	$2,216.00	$2,321.00	$4,537.00
Simple	1"**	2.5	$5,540.00	$5,802.00	$11,342.00
Simple	1-1/2"	5	$11,080.00	$11,605.00	$22,685.00
Simple	2"	8	$17,728.00	$18,568.00	$36,296.00
Compound	2"	8	$17,728.00	$18,568.00	$36,296.00
Turbine	2"	10	$22,160.00	$23,210.00	$45,370.00
Compound	3"	16	$35,456.00	$37,136.00	$72,592.00
Turbine	3"	24	$53,184.00	$55,704.00	$108,888.00
Compound	4"	25	$55,400.00	$58,025.00	$113,425.00
Turbine	4"	42	$93,072.00	$97,482.00	$190,554.00
Compound	6"	50	$110,800.00	$116,050.00	$226,850.00
Turbine	6"	92	$203,872.00	$213,532.00	$417,404.00
Compound	8"	80	$177,280.00	$185,680.00	$362,960.00
Turbine	8"	160	$354,560.00	$371,360.00	$725,920.00
Compound	10"	115	$254,840.00	$266,915.00	$521,755.00
Turbine	10"	250	$554,000.00	$580,250.00	$1,134,250.00
Turbine	12"	330	$731,280.00	$765,930.00	$1,497,210.00

** The figures in Schedule 2 represent 67.66% of the Maximum Assessment Rate for Base Water Meter and 61.39% of the Maximum Assessment Rate for Base Wastewater Meter; percentages are carried to the 7th decimal for whole number calculations*

*** The Maximum Collection Rate for the 1" Simple Meter has been rounded down to the nearest whole dollar*

CITY OF WAXAHACHIE
SCHEDULE 2 - ROADWAY IMPACT FEE
MAXIMUM COLLECTION RATE

Roadway Service Area	Maximum Collection Impact Fee Rate	Percentage of Maximum Assessment Impact Fee Rate*
1	$925.00	84.47%
2	$1,014.00	89.73%
3	$1,102.00	81.75%
4	$1,193.00	100%
5	$1,144.00	93.69%
6	$923.00	100%
7	$1,420.00	97.06%

** Percentages are carried to the 7th decimal for whole number calculations*