

AGENDA

The Capital Improvements Advisory Committee (CIAC) of the City of Sherman will hold a meeting Tuesday, August 18, 2020 at 4:00P.M. in the Council Chambers at 220 W. Mulberry to consider the following:

1. **CALL TO ORDER**
2. **APPROVE MINUTES OF THE JULY 21, 2020, CAPITAL IMPROVEMENTS ADVISORY COMMITTEE MEETING.**
3. **RECEIVE PRESENTATION FROM KIMLEY-HORN AND ASSOCIATES, INC., ON THE DRAFT 2020 ROADWAY, WATER & WASTEWATER IMPACT FEE STUDY.**
4. **ANNOUNCEMENTS**
5. **ADJOURNMENT**

By direction of the Capital Improvements Advisory Committee of the City of Sherman.

Clay Mahone, Chairman

ATTEST: Rob Rae, Secretary

Meetings of this advisory board are open to the public.

Note: The above agenda schedule represents an estimate of the order for the indicated items and is subject to change at any time.

An unscheduled closed executive session may be held if the discussion of any of the above agenda items concerns the purchase, exchange, lease or value of real property; or requires consultations with City Attorney.

Certification

I, the undersigned authority, do hereby certify that the above Agenda of the Meeting of the Special Called Meeting of the Capital Improvements Advisory Committee of the City of Sherman is a true and correct copy of said Notice and that I posted a true and correct copy of said Notice on the bulletin board, at City Hall, of said City of Sherman, Texas, a place convenient to the public and said notice was posted on August 13, 2020 at 4:00 p.m., and said time of posting was 72 hours before said

meeting was convened or called to order.

Dated this 13th day of August, 2020
City of Sherman, Texas

Patsy Reeves,
Developmental Services Coordinator





**Capital Improvements Advisory Committee
(CIAC)**

2.

Meeting Date: 08/18/2020

Prepared By: Patsy Reeves, Developmental Services Coordinator

Issue:

**APPROVE MINUTES OF THE JULY 21, 2020, CAPITAL IMPROVEMENTS ADVISORY
COMMITTEE MEETING.**

List of Agenda Items:

Attachments

July 21, 2020 Draft Minutes

STATE OF TEXAS

§

July 21, 2020

COUNTY OF GRAYSON

§

BE IT REMEMBERED THAT A Regular Meeting of the Capital Improvements Advisory Committee (CIAC) and Planning and Zoning Commission of the City of Sherman, was begun and held on July 21, 2020.

MEMBERS PRESENT:

CHAIRMAN MAHONE

COMMISSION MEMBERS: DOWNTAIN, WOOD, MANLEY,
BACA, SIMS AND DAVIS

MEMBERS ABSENT:

STAFF PRESENT:

SCOTT SHADDEN, DIRECTOR OF DEVELOPMENTAL
SERVICES ROB RAE, INCOMING DIRECTOR OF
DEVELOPMENTAL SERVICES; CLINT PHILPOTT,
ASSISTANT CITY MANAGER; WAYNE LEE, DIRECTOR OF
ENGINEERING; ROBBY HEFTON, CITY MANAGER,
TERRENCE STEELE, ASSISTANT CITY MANAGER; AND
PATSY REEVES, DEVELOPMENTAL SERVICES
COORDINATOR

CALL TO ORDER

Chairman Mahone of the Capital Improvement Advisory
Committee and Planning and Zoning Commission called the
meeting to order at 4:17 p.m.

CALL TO ORDER

APPROVE MINUTES

The Capital Improvements Advisory Committee reviewed
the minutes of the June 3, 2020 training session. Motion by
Commission Member Downtain to approve the Minutes as
written. Second by Commission Member Davis. All present
voted AYE.

MOTION CARRIED.

APPROVE MINUTES

RECEIVE PRESENTATION FROM KIMLEY-HORN AND
ASSOCIATES, INC. ON THE PROPOSED LAND USE
ASSUMPTION AND CAPITAL IMPROVEMENT PROJECTS
(CIP) TO BE USED FOR THE IMPACT FEE STUDY

LAND USE
ASSUMPTION & CIP
PRESENTATION

Jeff Whitacre, Vice President of Kimley-Horn and
Associates, Inc., explained we are going to do a quick recap
from our meeting a month ago about the impact fee basics
and the land use growth projections and we will go over the
Capital Improvements Plan (CIP) and Land Use
Assumptions. We are asking you to give us feedback today
and some future considerations and schedule.

You have a purpose during the study and if it is adopted
then there is purpose after the study. During the study you
are to give us comments and feedback on the land use
assumptions, which I call projections and then you are

supposed to give us comments on the capital improvements plan that we are presenting tonight. I will file those written comments on the proposed impact fees. Today we are asking for comments on the land use assumptions and capital improvements plans. In the future, we are going to be asking for comments on the actual fees themselves.

After the study, your job is a monitoring body. You are supposed to meet every six months, at that meeting, staff will give you a presentation on how much has been collected, what it has been spent on, etc. Semiannual reports will be filed to the City Council and you advise the City Council of the need to update or revise the land use assumption, capital improvements plan and impact fees.

Impact fees are a one-time fee assessed for new development that helps a City pay for growth, and is not assessed on existing homeowners. It is for new development, new businesses, new growth, that put a demand on the system. It is a funding tool for infrastructure systems. Impact fees are governed by Chapter 395 of the Texas Local Government Code. It allows for the balance of planning sources for new development and existing tax base.

Components that must be addressed for impact fees include land use assumptions, master Infrastructure plans, capital improvement plans, service areas, service units, maximum fees, and the results. He discussed the data used to provide these components.

Service Areas are divided into four areas. Sherman's water and sewer service area would be the entire City or wherever you serve. The transportation service area is limited to a six-mile trip length, and cannot include the ETJ; in Sherman, it is four areas. Highway 82, Highway 75 and Travis Street divide the areas. We chose Travis Street because it is on the border of two service areas. The drainage service area could be citywide and regional.

Land Use Assumptions establishes infrastructure demands, population and employment projections. The Future Land Use Map is used as our guide, we also are thinking about our Planned Developments and historic growth trends for future growth projections for ten years. One of the things we do with growth projections is provide a range of projections and shoot for the conservative aggressive number because it helps with infrastructure planning.

It is important to know what a City might call a five-year Capital Improvement Plan (CIP) and a ten-year Impact Fee CIP. A five-year CIP, the time is different but it will include maintenance, operations, as well as capital projects. The ten-year CIP, you can only include capital capacity projects. We can also include completed projects, underway and

future projects. Working with staff, we developed a ten-year impact fee CIP for water, wastewater and roadways.

The roadway side is broken up to the service areas, it has a combination of projects, completed, new projects for roads that do not exist today, widening of existing roads, which includes the Highway 75 Gap Study. The City contributed about \$8.5 million towards Highway 75; we can recoup a portion of that money for the impact fee study.

One of the comments staff had for the CIP was we missed a little of the area to the south going through Service Area 4, so we are going to include that. Another comment was Highway 82 near Plainview Road and the frontage roads don't exist as shown on the slide and they want us to explore adding the City's contribution for Highway 82 as well as Plainview and the overpass to the impact fee.

Currently, we have the total cost at \$80,570,779 and the recoverable cost at \$17,779,968. Roadways are not quite the same; we have to have a different formula for new roads versus existing roads. Those numbers will slightly change as we add those to the projects we mentioned.

Chairman Mahone asked what makes it recoverable.

Mr. Whitacre responded adding capacity during that ten-year growth. You have a total need of \$80,000,000, we are anticipating the growth we need, the impact of growth is \$17,000,000.

The public hearing is August 17, 2020, so we have to have comments to the City Council by August 10, 2020. We can take comments today if you have those ready; it could be through a motion, some cities take these one at a time, the land assumption areas and the capital improvements plan and give us comments. Sometimes there are no comments on the service areas, only comments on the capital improvements plan. We are trying to get your feedback on the service areas and get any comments you may want to incorporate or pass on to the City Council before the August public hearing.

Commission Member Wood asked if the service areas could change or move.

Mr. Whitacre explained they could move now easily. Once it is adopted, there is a requirement to restudy every five years and we could change the service areas at that time.

Commission Member Davis stated did I read where they could only be so big.

Mr. Whitacre explained it could change if the City annexes areas. The way we set these up, we are trying to consider service areas, so say in five years from now you do not have

to completely change the service areas, but if you annex and your city doubles in size, you would have to add some service areas.

Chairman Mahone stated some of these service areas have the potential to grow in certain areas. They probably will all grow before we would add new service areas.

Commission Member Manley asked what criteria was used to define the four service areas.

Mr. Whitacre explained we think of travel patterns, being the highways as the boundaries is one thing; we looked how projects were grouped together and the growth.

Chairman Mahone asked if there was any one-service area that might be more work than the others might or are they evenly distributed of how much work is required.

Mr. Whitacre explained the largest growth for projects is probably Service Area 4; Service Area 3 probably has the least amount of projects, but it has the least amount of growth. When you start calculating the fee, it is growth and projects.

Commission Member Davis stated Area 3 is going to draw in a lot less money than the others do because they have no growth.

Mr. Whitacre responded, correct and they do not have any projects.

Chairman Mahone asked what other areas you used for these numbers.

Mr. Whitacre explained in Service Area 4; it was the Planned Developments that are out there now: the Terra Perpetua and the Village, so we pulled those numbers from those Planned Developments, if these developments happen. In Service Area 1, we took all the known developments, we looked at the normal growth and added it to the other; that's the process we came up with, what we normally see and what developments are coming up and added the two together.

Chairman Mahone asked what is normal for you, are you looking just in the State of Texas or are you looking nationwide?

Mr. Whitacre explained we were looking just at Sherman, how many permits you were doing; the way we come up with these numbers is you take the average growth you have experienced for the last ten years and you add those components together, the average growth experienced and planned developments; that is what the numbers are.

Rob Rae explained it is the historic patterns in Sherman but also in the last five years since growth has increased more, so they took that into account, the fact that Sherman is

growing more in the last five years than it was in the past twenty years.

Chairman Mahone stated, so it is not as if we are using numbers from other parts of the country, we are using our actual historical data.

Mr. Whitacre responded, yes.

Commission Member Downtain asked if the information is updated from what is on the charts. You are showing 1,900 new single-family units for 2030.

Mr. Whitacre explained it is the same information that is on the charts.

Mr. Rae explained the 1,900 does not include the planned development unit.

Commission Member Davis noticed there was nothing on Highway 75; is it because it is not Sherman related, I think Highway 75 is expanding.

Mr. Whitacre explained it is the Gap Study; green on the map is the City's contribution to Highway 75. One of the comments that staff added is, we should extend that green further south.

Commission Member Wood asked Mr. Whitacre about a completed capital improvements plan.

Clint Philpott, Assistant City Manager explained the one spot that is complete is Phase I of West Travis Street, which is FM 1417 (Heritage Parkway) street light, there is a little section just to the left of Highway 75.

Mr. Rae explained the other project that is completed is the small block of Legacy Drive that is built next to Highway 75.

Commission Member Davis asked about the area in Service Area 2 that is not included on the map.

Mr. Philpott explained it is going to, but we cannot include anything outside of our city limits in this study, so as it annexes, there will be updates to this plan that will include that area, but we cannot legally show it.

Commission Member Manley stated you could on the water and sewer side but not on the roadway side.

Mr. Rae explained that is one of the reasons we will meet every six months to update if we need to.

Mr. Whitacre explained as we start drafting the ordinance, we will define as property is annexed how that happens.

Chairman Mahone asked about the list of specific roads, was that recommended by City Staff or by your firm.

Mr. Whitacre responded it was a combination of both, we worked with city staff.

Commission Member Davis explained we are just trying to assess fees for new construction to help pay for this stuff instead of the burden going on people that are already here to pay it.

Mr. Whitacre explained for example you are saying you need \$80,000,000; \$17,000,000 is for future growth. The question at hand is how much of that \$17,000,000 would be for future development versus the City, the \$63,000,000 would be on the City's side.

Commission Member Davis asked, is the City looking at this so we can spend less and cut our budget or is the City looking at it to get more to do more.

Mr. Philpott explained it is another bucket of money.

Mr. Whitacre gave some scenarios of median pricing in Sherman; the home price and the listed price. The theoretical scenarios using the median price of the house could be \$2,000-\$6,000. Future consideration could be on a single-family home maximum for roadway - \$1,000-\$2,000, for water, \$5,288 and for wastewater, \$776. My job is to calculate the maximum by State Law and the City Council has the job of the cap. The City could decide to charge anywhere from zero to the cap.

Mr. Whitacre talked about the schedule to enact impact fees. This includes the study, setting up this advisory committee, reviewing the land use and master plan, the calculations, and holding public hearings, anticipating adopting an Ordinance by October 5, 2020.

We have to have comments by August 10th to the City Council for the August 17th public hearing. We will come back with you the day after the public hearing to talk about the study. On September 14th, your comments will be due to the public hearing. The goal is to have the whole study to the City Council by September 21st; it requires two public hearings.

Commission Member Downtain asked about the future considerations and the potential for each household that could be \$8,000.

Mr. Whitacre explained that would be the maximum, that would be the highest number based on the Capital Improvement Plan.

Mr. Rae asked Mr. Whitacre if that was based on the fifty percent you are allowed to assess, is it technically double that what the impact is.

Mr. Whitacre responded, not exactly; the fifty percent credit is for future taxes that they would pay, so there would be an offset for future taxes, we cut the number in half.

Commission Member Davis stated so we are going to charge them \$8,000, but only charge them for \$4,000 because we are giving them a 50% reduction.

Mr. Whitacre responded no; the 50% reduction is \$8,000. This is the calculated dollar amount. It doesn't mean that you are going to charge \$5,288 for water, this the maximum you could legally charge, however you decide to pay the water rate; they may decide to pay that some other way, this is the maximum dollar amount that would be charged for new development.

Commission Member Davis stated, if I am building a house and I don't want to pay that, I'm going to put a well in and a septic system; is the City good with that or I guess you don't build in the city limits.

Mr. Whitacre explained you would have to have the right acreage for that.

Mr. Rae stated, what is important to know is the City Council will be determining kind of what Jeff said on how much that charge could be assessed; that is the maximum by law the State of Texas allows us, based on the Capital Improvements Plan.

Commission Member Davis asked, are we going back to double and we cut it or they only allow by law 50%.

Mr. Whitacre responded, they only allow by law 50%.

The water is the highest because you have some major water treatment plants to consider.

Commission Member Downtain asked about the recoverable number on there could potentially be what the assessment could cover.

Mr. Whitacre responded, yes.

Commission Member Davis asked, if I live in Service Area 3 or building in 3, I am not going to pay that \$8,000 because I do not live in Service Area 2.

Mr. Whitacre responded, you would pay a different number.

Mr. Philpott explained the water and sewer number would be the same no matter what area you are in.

Chairman Mahone commented the service areas seem reasonable. The land use assumptions are your projections if you based it on our historical permits then it makes sense that you would just project that out. When you are talking about the Capital Improvements Plan, those are just those specific areas of the road city staff has recommended. When it comes to that, I have to trust them because I do not

know the roads nearly as well as they do; so that is where I am at, I do not have a reason to disagree with any of this so far. My only concern with this whole project is it could potentially make it hard for some, especially lower income for housing to be built. On a \$150,000 house, this is a much bigger percentage in an increase of cost than a \$300,000 house. I have economic concerns there.

Mr. Whitacre stated those comments are good and comments that we are going to request for the September 14th CIAC comments; that is the type of comments we are looking for when we actually get the dollar amount. Do you have a comment for that; it is common to say on the assumption side we are trusting staff and then we get to the dollar amount for the next public meeting.

Commission Member Davis stated, if I am a developer, do I pay that or is it for the sale of the house and then the commercial pays; how do you break it up to get your money.

Mr. Whitacre explained, they pay the water and sewer when they pay their water meter and for the roadway when they pay their building permit.

Commission Member Davis said it could be ten years down the road before it could actually be used on that.

Mr. Whitacre responded, it could be, they pay the fee now, it is a development fee, as if a planned development and they build some infrastructure and decide to build one of those roadways, they would get credit for the fee, they would not pay the fee and build the roadway. Anyone that chooses to build, like you are building a bigger development and build that roadway that goes through your development, you peak at an offset of that development.

Commission Member Davis stated you are waiting for two or three years for the last house to sale before I get my fee back. If I'm the developer and I'm developing and selling but there is going to be a last five lots sold and I am waiting for those last five sold before I get my money back, does the City charge me the full price on that road.

Mr. Whitacre responded, no, the City wouldn't, it is paid at the building permit, so they would be paying as they went, not up front unless they chose to build the road, in that case they build the road up front and the developer put in the lot price, etc., then they get their money back later. It is paid incrementally at the building permit time when development happens.

Chairman Mahone explained all these assumptions look good to me right now, but let us say a year goes by and the City Staff says one of these service areas needs to change a little bit, we have the opportunity to do that after at least one year.

Mr. Whitacre responded every six months you are supposed to look at it. Every six months, we are supposed to convene and look at it, there is not a lot of work that happens the first year. Every six months we have to get together and have a similar presentation and you can make changes then.

Commission Member Davis asked if there were any part not amendable.

Mr. Whitacre responded, no.

Commission Member Downtain asked about replats, if lots were divided into more lots.

Mr. Whitacre explained it is charged based on building permit and water meter. If someone had a two-acre lot and they tore down the house and built five homes, you would only pay for four because you do not pay for the existing home that is out there. Just as you decide to upgrade your water meter or remodel you do not have to pay.

Commission Member Downtain asked what cities around us are not doing this right now.

Mr. Whitacre explained I can answer the cities that have impact fees; Anna, Melissa, McKinney have impact fees. Gainesville and Pilot Point are in the same place you are right now.

Mr. Philpott explained Denison is waiting on us. The idea is new growth pays for infrastructure or part of that.

Commission Member Davis asked what size population drives this.

Mr. Whitacre explained he has done this for cities that have 5,000 people, the most common number of people is between 30,000-50,000.

We need to decide how we are going to get our comments to the City Council. It could be a motion, it could be a letter or it could be the minutes from this meeting.

Chairman Mahone thought the minutes should be forwarded to the City Council and if we had additional comments we could give them to Rob by August 10th.

ACTION TAKEN.

Motion by Commission Member Wood to use the official minutes of this meeting as our comments to the City Council and anyone that has further comments may submit that letter individually before August 10, 2020. Second by Commission Member Davis.

VOTING AYE: DAVIS, MAHONE, DOWNTAIN, MANLEY, SIMS, BACA AND WOOD.

CAPITAL IMPROVEMENTS ADVISORY COMMITTEE (CIAC) MINUTES – JULY 21, 2020

VOTING NAY: NONE
MOTION CARRIED

ADJOURNMENT

On Motion duly made and carried, the meeting adjourned at
4:58 p.m.

ADJOURNMENT

CHAIRMAN



SECRETARY



**Capital Improvements Advisory Committee
(CIAC)**

3.

Meeting Date: 08/18/2020

Prepared By: Patsy Reeves, Developmental Services Coordinator

Issue:

**RECEIVE PRESENTATION FROM KIMLEY-HORN AND ASSOCIATES, INC., ON THE
DRAFT 2020 ROADWAY, WATER & WASTEWATER IMPACT FEE STUDY.**

List of Agenda Items:

Attachments

Draft Sherman Impact Fee Report

PREPARED FOR

AUGUST
2020



CITY OF SHERMAN, TEXAS

2020 Roadway, Water, and Wastewater Impact Fee Study

PREPARED BY

KIMLEY-HORN AND ASSOCIATES, INC.
801 CHERRY STREET, UNIT 11, SUITE 1300
FORT WORTH, TX 76102

PHONE: 817.335.6511

TBPE FIRM REGISTRATION NUMBER: F-928

PROJECT NUMBER: 063493010

Kimley»Horn

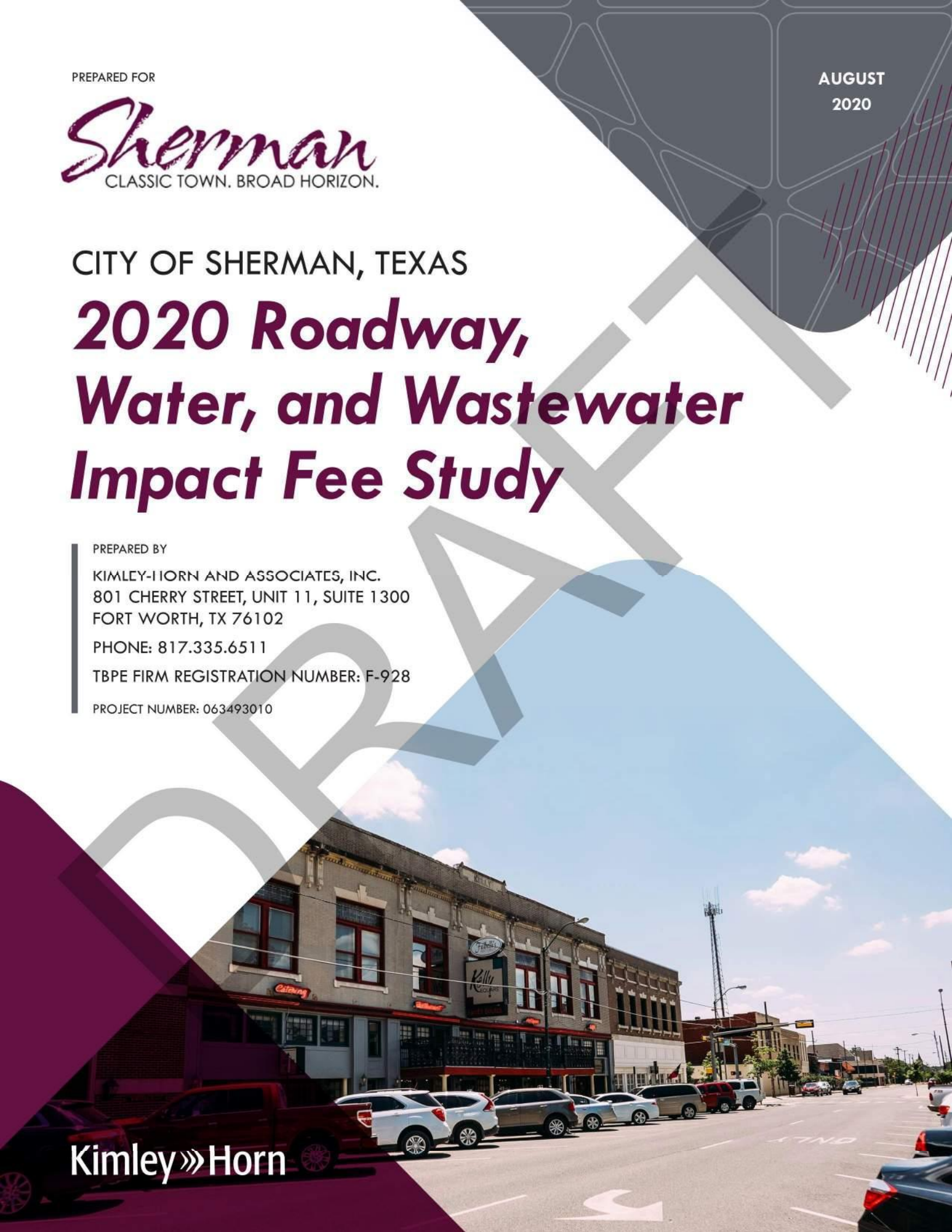


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APPENDIX

CONCEPTUAL LEVEL PROJECT COST PROJECTIONS
ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY
EXISTING ROADWAY FACILITIES INVENTORY

Executive Summary
2020 Impact Fee Study



Aug
2020

Prepared for the City of Sherman

Prepared by:

Kimley-Horn and Associates, Inc.

801 Cherry Street, Unit 11, Suite 1300

Fort Worth, TX 76102

Phone 817 335 6511

TBPE Firm Registration Number: F-928

Project Number: 063493010

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EXECUTIVE SUMMARY

Introduction

Impact Fees are a mechanism for funding the public infrastructure necessitated by new development. Across the country, they are used to fund police and fire facilities, parks, schools, roads, and utilities. In Texas, the legislature has allowed their use for roadway and drainage, water, and wastewater facilities. In 2020, the City of Sherman began exploring Roadway, Water, and Wastewater Impact Fees as a recommendation to be used as a funding tool for infrastructure needs as a result of growth in the City.

In the most basic terms, impact fees are meant to recover the incremental cost of the impact of each new unit of development towards new infrastructure needs. Impact Fees are a mathematical calculation that determine a maximum fee that would be equivalent to growth paying for growth. This study's purpose is to calculate the maximum impact fee per service unit of new growth.

The Maximum Impact Fee is considered an appropriate measure of the impacts generated by a new unit of development on a City's infrastructure system. An impact fee program is anticipated to be designed so that it is **predictable** for both the development community and City. An impact fee program is **transparent**. This report describes in detail how the fee is calculated and how the Capital Improvements Advisory Committee (CIAC) monitors the Impact Fee program. An impact fee program is **flexible** in that funds can be used on priority projects and not just on projects adjacent to a specific development. An impact fee program is both **equitable** and **proportional** in that every new development pays an equal fee that is directly related to its systemwide impact.

Impact Fee Basics

Service Areas

A Service Area is a geographic area within which a unique maximum impact fee is determined. All fees collected within the Service Area must be spent on eligible improvements within the same Service Area. For Roadway Impact Fees, the Service Area may not exceed a 6-mile diameter trip length. In Sherman, this results in the creation of four (4) separate Roadway Service Areas. For Water and Wastewater Impact Fees, a Service Area can consider the Certificate of Convenience and Necessity (CCN) area in the City of Sherman and its Extra-Territorial Jurisdiction that the City is providing or will be providing service. Therefore, this study utilizes a singular Service Area for the Water and Wastewater components respectively.

Land Use Assumptions

The Impact Fee determination is required to be based on the projected growth and corresponding capacity needs in a 10-year window. This study considers the years 2020-2030. The 10-year increase in residential units is projected to be 7,759 units within the City Limits and an addition 70 units for the water and wastewater ETJ. The 2030 projections show an increase of 7,504,000 square feet of non-residential land uses over the 10-year window. These projections set the basis for determining loadings and demands to serve new growth. The distribution of residential and non-residential growth utilized information from historical building permit data and input from City Staff on known future development locations.

Service Units

The “service unit” is a measure of consumption or use of the capital facilities by new development. In other words, it is the unit of measure used to quantify the supply and demand for roads and utilities in the City. Service units are attributable to an individual unit of development and utilized to calculate the maximum impact fee of a development.

For roadway purposes, the service unit is defined as a vehicle-mile. A “vehicle-mile” refers to the capacity consumed in a single lane by a vehicle making a trip one mile in length during the PM peak hour. The PM peak hour is the one-hour period during the afternoon/evening when the highest vehicular volumes are observed. In accordance with the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*, the PM Peak is used as the basis for transportation planning and the estimation of trips caused by new development.

The service unit for water and wastewater impact fees is the “single family equivalent” (SFE), which is based on the size of the individual water meters used to serve growth related development. The base water SFE is the water demand associated with the smallest water meter issued for a new single-family residence. The base wastewater SFE is the wastewater flow associated with the smallest water meter issued for a new single-family residence. The smallest water meter issued for a new single-family residence in the City of Sherman is a 3/4-inch meter.

Capital Improvement Plans

The City and project staff have identified the Roadway, Water, and Wastewater projects needed to accommodate the projected growth over the next ten (10) years within the City of Sherman. These projects include existing, proposed, and recently completed projects that were determined based on their current or anticipated impact on each defined Service Area and the City as a whole.

Roadway Impact Fee Capital Improvement Plan

The Grayson County Thoroughfare Plan is the ultimate plan for the roadway infrastructure within the City Limits. The projects on the Roadway Impact Fee Capital Improvement Plan were selected from the Thoroughfare Plan and cover existing, proposed, and completed roadway improvements, as well as intersection improvements with 10-year growth potential. The project team and City staff identified roadway and intersection projects with a projected total project cost (not impact fee eligible cost) of \$105,781,209 over four (4) Roadway Service Areas.

Water Impact Fee Capital Improvements Plan

The Water Impact Fee Capital Improvements Plan was developed for the City of Sherman based on the growth patterns and trends from the Land Use Assumptions. The recommended improvements will provide the required capacity and reliability to meet projected water demand through 2030. Elements of the water system, including storage facilities, pumping facilities, and the distribution network were evaluated against industry standards as outlined in the Design Criteria section of Water Impact Fee Chapter of this report.

A total of five (5) existing and thirteen (13) proposed projects were identified to develop the Water Impact Fee Capital Improvements Plan. The total project cost (not impact fee eligible cost) to be evaluated is \$150,600,000.

Wastewater Impact Fee Capital Improvements Plan

Similar to the Water Impact Fee Capital Improvements Plan, the Wastewater Impact Fee Capital Improvements Plan was developed to address system improvements driven by growth. Elements of the wastewater system, including gravity pipes, force mains, and lift stations were evaluated against industry standards as outlined in the Design Criteria section of the Wastewater Impact Fee Chapter of this Report.

A total of five (5) existing and five (5) proposed projects were identified to develop the Wastewater Impact Fee Capital Improvements Plan. The total project cost (not impact fee eligible cost) to be evaluated is \$20,990,000.

Recoverable Project Costs

Impact Fees are a one-time fee meant to recover the incremental cost of the impact of each new unit of development creating new infrastructure needs within a ten-year window. With this consideration, the maximum assessable impact fee does not specifically cover the entire cost of a roadway, water, or wastewater project. The calculations that determine the percentage of a project's cost that is impact fee eligible are defined as the project's *recoverable cost*.

Roadway Recoverable Project Costs

The recoverable costs for roadway projects are calculated by first determining the net capacity of vehicle-miles supplied to support future growth within a 10-year window. This net capacity is then multiplied by the percentage of roadway capacity added attributable to this 10-year growth. This growth percentage is obtained through the derivation of a *transportation demand factor* (TDF), which computes the total vehicle-miles associated to a single land use development unit. The TDF is applied to both the net vehicle-miles supplied and the vehicle-mile growth projections to calculate the growth percentage needed to determine the total recoverable project costs, which total \$46,834,979 (pre-finance) over four (4) Roadway Service Areas. Per state law this recoverable cost is reduced by 50% to account for future ad valorem tax revenues from the new development.

Water Recoverable Project Costs

The recoverable costs for water projects are calculated by determining the increase in water demand due to growth over the 10-year window. The City's current and future populations were utilized to calculate the percent utilization of each identified impact fee eligible project. The change in utilization of each project is multiplied by the total project cost to determine total recoverable project cost. The total recoverable cost is then divided by the growth in additional SFEs to determine the maximum fee per SFE. The total recoverable costs for the water distribution system is \$78,457,600 (pre-finance). Per state law this recoverable cost is reduced by 50% to account for future ad valorem tax and utility revenues from the new development.

Wastewater Recoverable Project Costs

The process for calculating the recoverable wastewater costs is similar to the water financial analysis. The recoverable costs for wastewater projects are calculated by determining the increase in wastewater flows due to growth over the 10-year window. The City's current and future populations were utilized to calculate the percent utilization of each identified impact fee eligible project. The change in utilization of each project is multiplied by the total project cost to determine total recoverable project cost. The total recoverable cost is then divided by the growth in additional SFEs to determine the maximum fee per SFE. The total recoverable costs for the wastewater collection system is \$11,478,300 (pre-finance). Per state law this recoverable cost is reduced by 50% to account for future ad valorem tax and utility revenues from the new development.

Maximum Assessable Impact Fee Calculation

In simplest terms, the maximum impact fee allowable by law is calculated by dividing the recoverable cost of the Capital Improvement Plans by the number of new service units of development. In accordance with state law, both the cost of the Capital Improvement Plan and the number of new service units of development used in the equation are based on the growth and corresponding capacity needs projected to occur within a 10-year window. This calculation is performed for each service area individually; each service area has a stand-alone Capital Improvement Plan and 10-year growth projection.

In practice, there are many factors that complicate this calculation. The maximum impact fee allowable by law for each service area is shown on the following page:

Roadway Service Area	Roadway Maximum Fee Per Single Family Dwelling ¹	Water Maximum Fee Per Single Family Equivalent (3/4-inch Meter)	Wastewater Maximum Fee Per Single Family Equivalent (3/4-inch Meter)
1	\$1,111	\$4,478	\$657
2	\$1,565		
3	\$2,222		
4	\$1,806		

¹Fee will change based upon land use and development intensity

Adoption Process

Chapter 395 of the Texas Local Government Code stipulates a specific process for the adoption of impact fees. A Capital Improvements Advisory Committee (CIAC) is required to review the Land Use Assumptions and Capacity Plan used in calculating the maximum fee, and to provide the Committee's findings for consideration by the City Council. This CIAC also reviews the calculation and resulting maximum fees and provides its findings to the City Council. The composition of the CIAC is required to have adequate representation of the building and development communities. In Sherman this is the Planning & Zoning Commission with an ETJ representative. The City Council then conducts a public hearing on the Land Use Assumptions, Capacity Plan, and Impact Fee Ordinance.

Following policy adoption, the CIAC is tasked with advising the City Council of the need to update the Land Use Assumptions or the Capacity Plan at any time within five years of adoption. Finally, the CIAC oversees the proper administration of the Impact Fee, once in place, and advises the Council as necessary.

Chapter 395 of the Texas Local Government Code requires a total of two (2) public hearings before Council to approve an impact fee program. The first public hearing to discuss the land use assumptions and capacity plans will be held on August 17, 2020. The second public hearing scheduled to be held on September 21, 2020 with the intent of presenting a proposal for impact fee calculations and the adoption of an impact fee report (this study) and ordinance.

DRAFT

Chapter 1
Land Use Assumptions for the
2020 Impact Fee Study



August
2020

Prepared for the City of Sherman

Prepared by:

Kimley-Horn and Associates, Inc.

801 Cherry Street, Unit 11, Suite 1300

Fort Worth, TX 76102

Phone 817 335 6511

TBPE Firm Registration Number: F-928

Project Number: 063493010

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1.1 PURPOSE

Chapter 395 of the Texas Local Government Code describes the procedure Texas political subdivisions must follow in order to assess impact fees for new development. The first step required in updating impact fees is the development of Land Use Assumptions. These Land Use Assumptions, which include both residential and employment estimates, form the basis for the development of impact fee Capital Improvement Plans (CIP) for roadway, water, and wastewater facilities.

Reasonable future growth estimates are necessary in order to aid the City of Sherman in establishing the need for capital improvements required to serve future development. In accordance with Chapter 395, Kimley-Horn has compiled the information required to complete the Land Use Assumptions using the following sources:

- City of Sherman Building Permit Data (2009 – 2019);
- Grayson County Thoroughfare Plan (2018 Update);
- Population Data from Workforce Solutions;
- City of Sherman Future Land Use;
- Aerial Overview of City Development Potential; and
- City of Sherman Staff.

1.2 COMPONENTS OF THE LAND USE ASSUMPTIONS CHAPTER

The Land Use Assumptions include the following components:

LAND USE ASSUMPTIONS METHODOLOGY

An overview of the general methodology used to generate the land use assumptions.

IMPACT FEE STUDY SERVICE AREAS

Explanation of the divisions of Sherman into service areas for roadway, water, and wastewater facilities.

10-YEAR GROWTH ASSUMPTIONS

Walk through of the growth projections for 2020-2030.

LAND USE ASSUMPTIONS SUMMARY

A synopsis of the land use assumptions.

1.3 LAND USE ASSUMPTIONS METHODOLOGY

The residential and employment growth projections formulated in this chapter were done using reasonable and generally accepted planning principles. The following factors were considered in developing these projections:

- Character, type, density, location and quantity of existing development;
- Building permit data;
- Probable future developments;
- Location of vacant land;
- Future Land Use; and
- Physical holding capacity of Sherman.

Research of historic building permits was performed to understand previous growth trends in the City of Sherman. **Figures 1.1 – 1.3** plot the number of permits pulled over the last 11 years for each of the five general land use categories.



Figure 1.1 Single Family Permit History

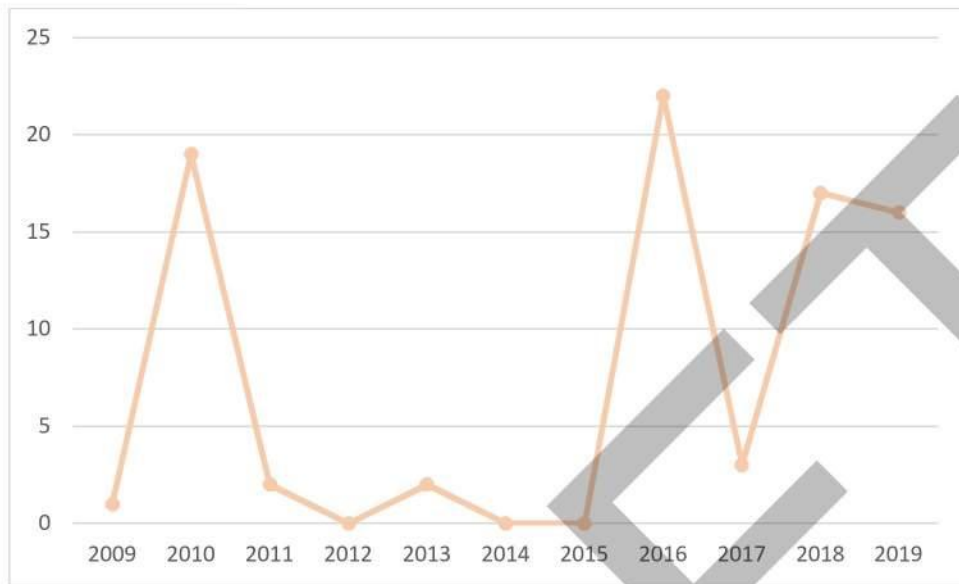


Figure 1.2 Multifamily Permit History

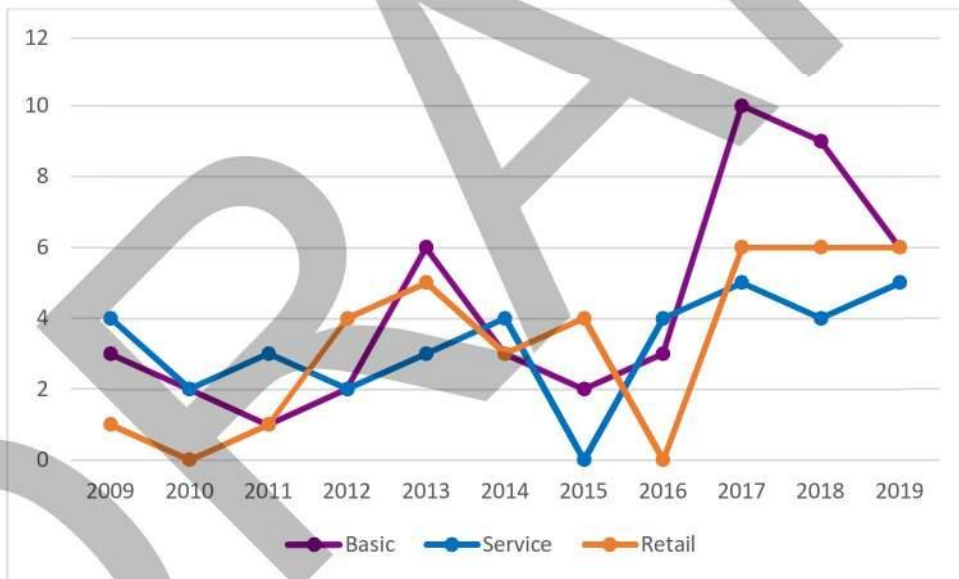


Figure 1.3 Employment Permit History

Based on the permit history over the past 11 years it can be observed that the number of single family permits has been steadily increasing, while the number of multifamily and employment permits do not follow a particular trend. For these reasons, single family growth estimates are based on a linear trend line of data from 2011 to 2030 projections based on probable future developments. The multifamily and employment growth estimates are based on average number of permits pulled per year which were found to be:

- 7 Multifamily
- 4 Basic
- 3 Service
- 3 Retail

Growth projections from 2020 – 2030 for the entire City of Sherman were established using these growth trendlines, growth averages, probable future developments, and generally accepted planning principles. These City-wide growth projections were broken out into Service Area growth projections based the location of the probable future developments and an aerial overview determining the location of vacant land and the future land use.

In addition to these base growth projections over the next ten years, the City provided anticipated development build out information for two planned developments located near the southern City Limit line.

Table 1.1 provides the anticipated ten-year city-wide growth projections for the City overall.

Table 1.1 Residential and Employment Land Use Assumptions Growth Projections (2020 – 2030)

Land Use	Growth Projections (Dwelling Units or ft ²)			
	Base	The Village	Terra Perpetua	City Total
Single Family	1,900	300	900	3,100
Multifamily	1,459	1,200	2,000	4,659
Basic	854,000	318,000	117,000	1,289,000
Service	655,000	1,630,000	74,000	2,359,000
Retail	1,637,000	2,145,000	74,000	3,856,000

1.4 IMPACT FEE SERVICE AREAS

SERVICE AREA DEFINITION

According to Chapter 395 of the Local Government Code, a Service Area refers to the area within the corporate boundaries or extraterritorial jurisdiction of the political subdivision to be served by the capital improvement or facilities specified in the Capital Improvement Plan. Funds collected in the specific service areas must be spent in the service area collected.

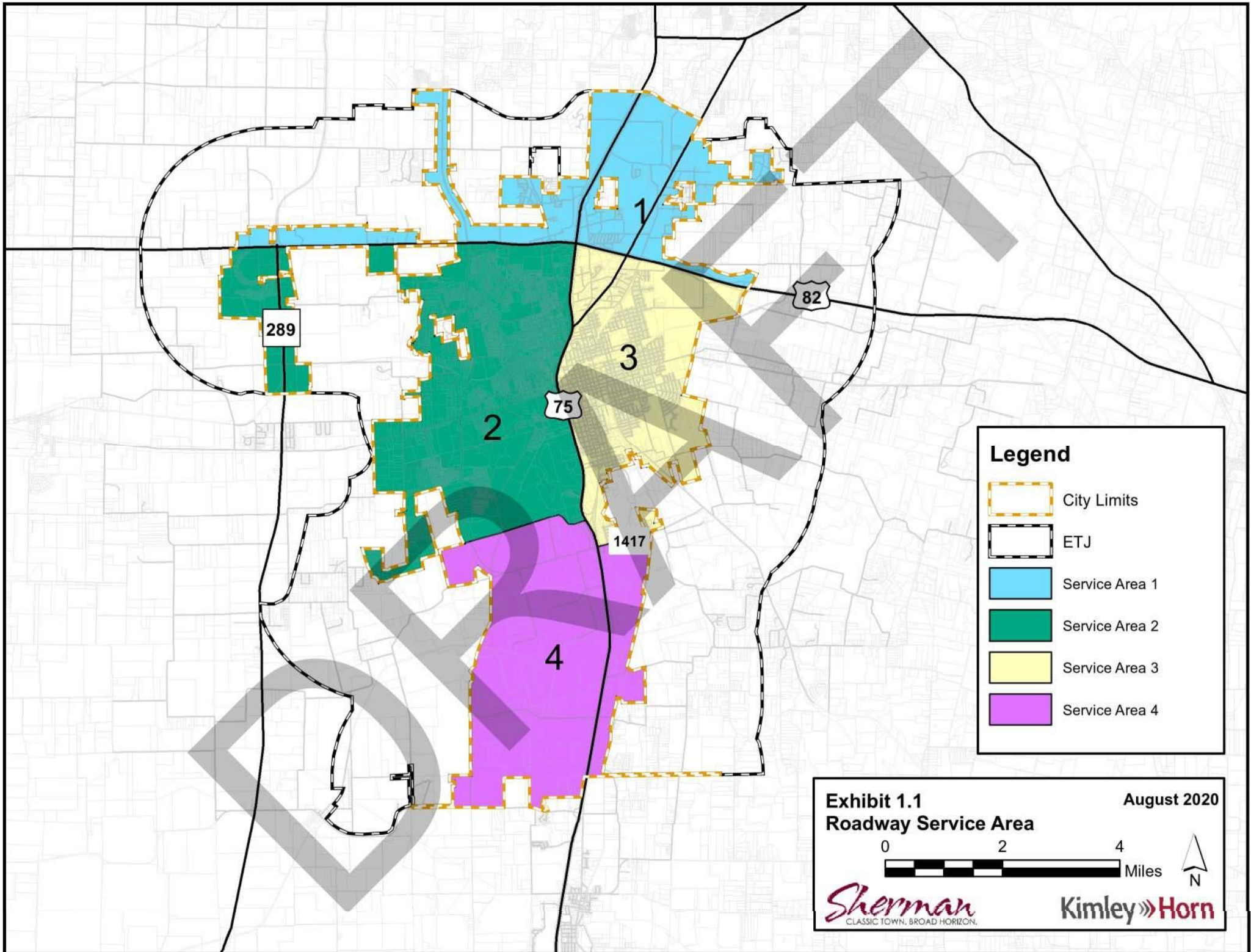
ROADWAY IMPACT FEE SERVICE AREAS

The geographic boundaries of the four (4) impact fee service areas for roadway facilities are shown in **Exhibit 1.1**. The roadway service areas cover the entire corporate boundary of the City of Sherman. Chapter 395 of the Texas Local Government Code specifies that “the service area is limited to an area within the corporate boundaries of the political subdivision and shall not exceed six (6) miles.”

Service Area 1 is located north of US 82. Service Area 2 is located west of US 75, between West Travis Street and US 82. Service Area 3 is located east of US 75, between US 82 and FM 1417. Service Area 4 is split by US 75 with the northern limit on the west side being West Travis Street and the northern limit on the east side being FM 1417.

WATER AND WASTEWATER IMPACT FEE SERVICE AREAS

The geographic boundaries of the impact fee service area for water and wastewater facilities are shown in **Exhibit 1.2** and **1.3**, respectively. The water and wastewater impact fee service areas include the area in the City’s water and wastewater Certificate of Convenience and Necessity (CCN).



Legend

- City Limits
- ETJ
- Service Area 1
- Service Area 2
- Service Area 3
- Service Area 4

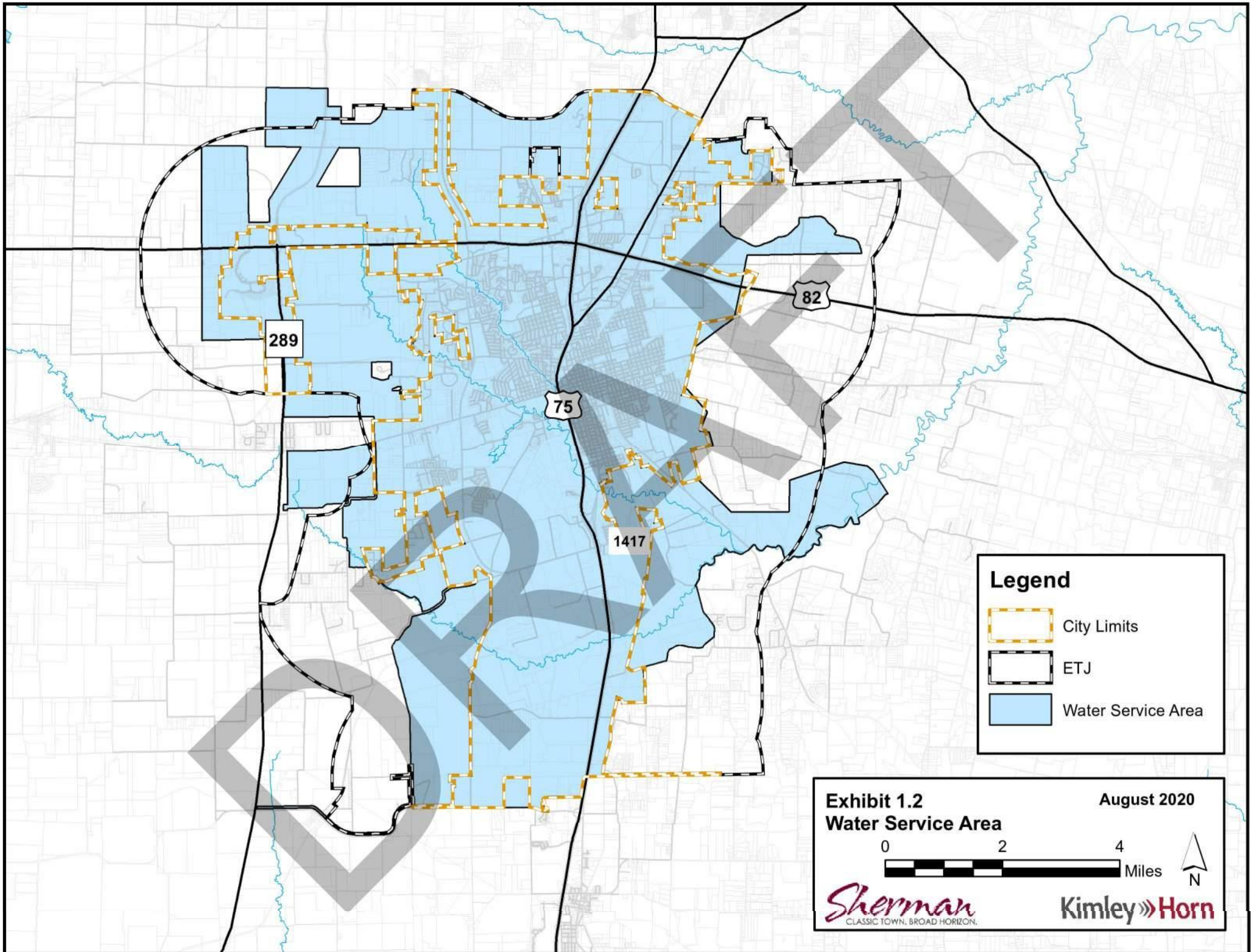
Exhibit 1.1
Roadway Service Area

August 2020

0 2 4 Miles

Sherman
CLASSIC TOWN. BROAD HORIZON.

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Legend

-  City Limits
-  ETJ
-  Water Service Area

Exhibit 1.2
Water Service Area

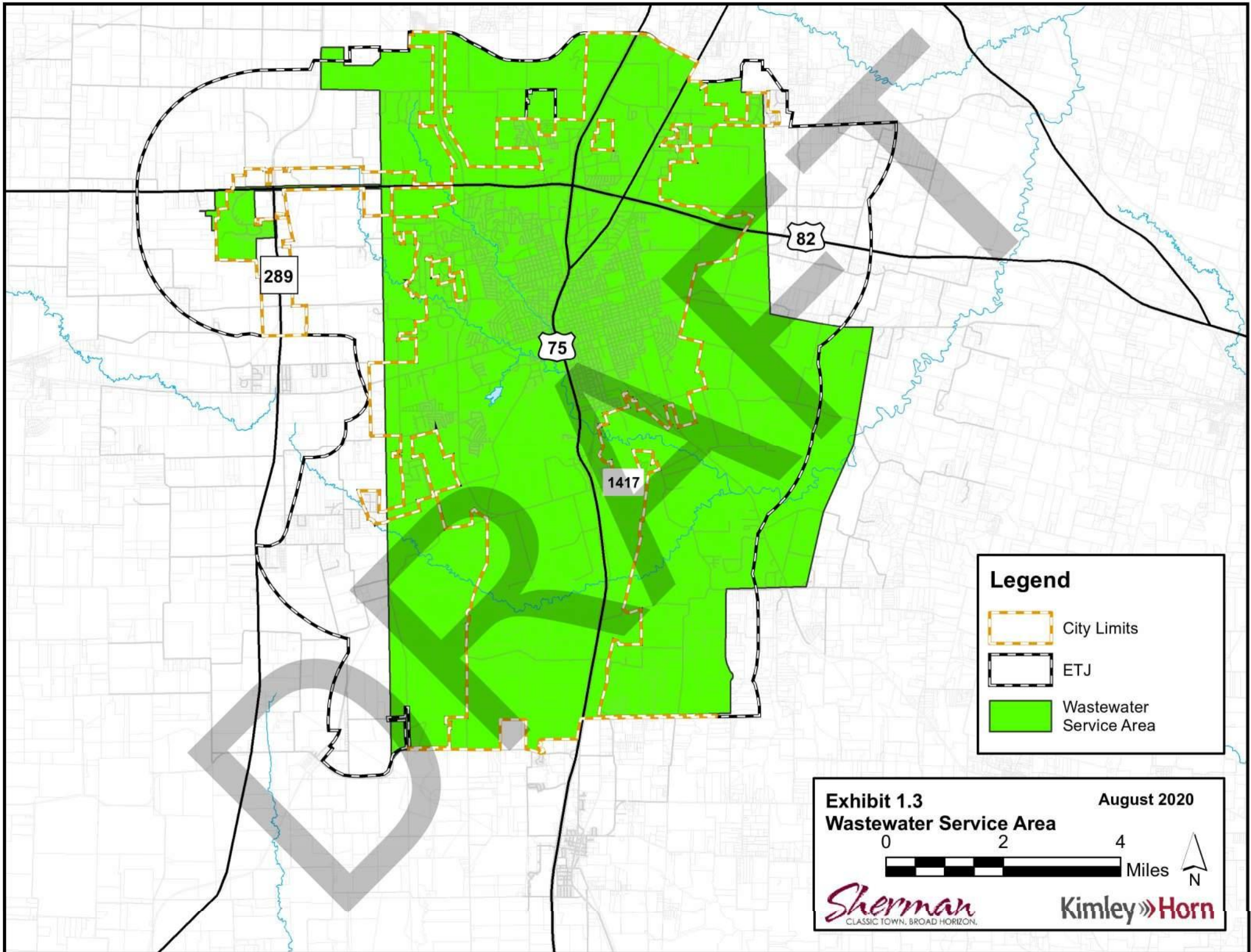
August 2020

0 2 4 Miles

 N

Sherman
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Legend

-  City Limits
-  ETJ
-  Wastewater Service Area

Exhibit 1.3
Wastewater Service Area

August 2020

0 2 4 Miles



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1.5 DATA FORMAT

The population and employment estimates were all compiled in accordance with the following categories and format:

IMPACT FEE SERVICE AREAS:

Larger zones, which correspond to the proposed roadway, water, and wastewater facilities service areas (as described in the previous section).

UNITS:

Number of dwelling units, both single and multifamily.

POPULATION:

Number of people based on person per dwelling unit factors.

EMPLOYMENT:

Square feet of building area based on three (3) different classifications:

Retail:

Land use activities which provide for the retail sale of goods that primarily serve households and whose location choice is oriented toward the household sector (i.e. grocery stores and restaurants).

Service:

Land use activities which provide personal and professional services such as government and other professional offices.

Basic:

Land use activities that produce goods and services, including those that are exported outside the local economy (i.e. manufacturing, construction, transportation, wholesale, trade, warehousing, and other industrial uses).

1.6 10-YEAR GROWTH SUMMARY

Table 1.1 summarizes the residential and employment 10-year growth projections within the City Limits and ETJ. These projections are summed using the building permit estimate and considering the planned developments of the City in Service Area 4.

Table 1.2 Residential and Employment Land Use Assumptions Growth Projections (2020 – 2030)

Service Area	Residential Units		Employment Units		
	Single Family	Multifamily	Basic Sq Ft	Service Sq Ft	Retail Sq Ft
1	550	521	154,000	77,000	889,000
2	1,250	938	98,000	5,000	535,000
3	100	-	66,000	3,000	136,000
4*	1,200	3,200	971,000	2,274,000	2,296,000
<u>City Total</u>	<u>3,100</u>	<u>4,659</u>	<u>1,289,000</u>	<u>2,359,000</u>	<u>3,856,000</u>
Water ETJ	70	-	-	-	-
Wastewater ETJ	70	-	-	-	-

*Includes LUA for Terra Perpetua and The Village

1.7 SUMMARY

The following is a land use assumptions summary for the City limits and ETJ. This City limit summary is equivalent to the roadway land use assumptions, which was then adjusted for the water and wastewater land use assumptions based on anticipated growth in the ETJ. Due to the land areas within the water and wastewater ETJ being comparable, the same single family growth was assumed for each.

- The ten year (2020 - 2030) residential growth projection is approximately:
 - City Total = 7,759 Dwelling Units
 - Water ETJ = 70 Dwelling Units
 - Wastewater ETJ = 70 Dwelling Units
- The ten-year (2020 - 2030) employment growth projection is approximately:
 - City Total = 7,504,000 ft²

Chapter 2
Roadway Impact Fee Study for the
2020 Impact Fee Study



Aug
2020

Prepared for the City of Sherman

Prepared by:

Kimley-Horn and Associates, Inc.

801 Cherry Street, Unit 11, Suite 1300

Fort Worth, TX 76102

Phone 817 335 6511

TBPE Firm Registration Number: F-928

Project Number: 063493010

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2.1 INTRODUCTION

Chapter 395 of the Texas Local Government Code describes the procedure political subdivisions must follow to create and implement impact fees. Chapter 395 defines an Impact Fee as “a charge or assessment imposed by a political subdivision against new development to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development.”

The City has retained Kimley-Horn and Associates, Inc. to provide professional transportation engineering services for the 2020 Roadway Impact Fee Study. This chapter includes details of the Roadway Impact Fee calculation methodology in accordance with Chapter 395, the applicable Land Use Assumptions, development of the Roadway Impact Fee CIP, and the Land Use Equivalency Table.

This report references two of the basic inputs to the Roadway Impact Fee:

1. **Land Use Assumptions (LUA)**
2. **Roadway Impact Fee Capital Improvements Plan (RIF CIP)**

Information from these LUA and RIF CIP are used extensively throughout the remainder of the report.

There is a detailed discussion of the methodology for the computation of impact fees. This discussion is broken into three components:

1. **Methodology for Roadway Impact Fees**
2. **Roadway Impact Fee Calculation**
3. **Plan for the Roadway Impact Fee Credit**

The components of the **Methodology for Roadway Impact Fees** include development of:

- Service Areas
- Service Units
- Cost Per Service Unit
- RIF CIP Costing Methodology
- Summary of RIF CIP Costs
- Service Unit Calculation

The **Roadway Impact Fee Calculation** includes the calculation of the:

- Maximum Assessable Impact Fee Per Service Unit
- Service Unit Demand Per Unit of Development

The **Plan for the Roadway Impact Fee Credit** outlines a 50% reduction of the RIF CIP as outlined in Chapter 395 of the Texas Local Government Code.

2.2 LAND USE ASSUMPTIONS

SUMMARY

The methodology for land use assumptions is presented in Chapter 1: Land Use Assumptions for the 2020 Impact Fee Study. **Table 2.1** presents the land use assumptions that were utilized in the roadway impact fee development. This table illustrates growth that is projected for the City of Sherman from 2020 – 2030. These values were derived based on identifying vacant land, the City's Future Land Use, probable future developments, building permit data, and input from City of Sherman staff.

Table 2.1 Residential and Employment Land Use Assumptions Growth Projections (2020 – 2030)

Service Area	Residential Units		Employment Units		
	Single Family	Multifamily	Basic Sq Ft	Service Sq Ft	Retail Sq Ft
1	550	521	154,000	77,000	889,000
2	1,250	938	98,000	5,000	535,000
3	100	-	66,000	3,000	136,000
4*	1,200	3,200	971,000	2,274,000	2,296,000
City Total	3,100	4,659	1,289,000	2,359,000	3,856,000

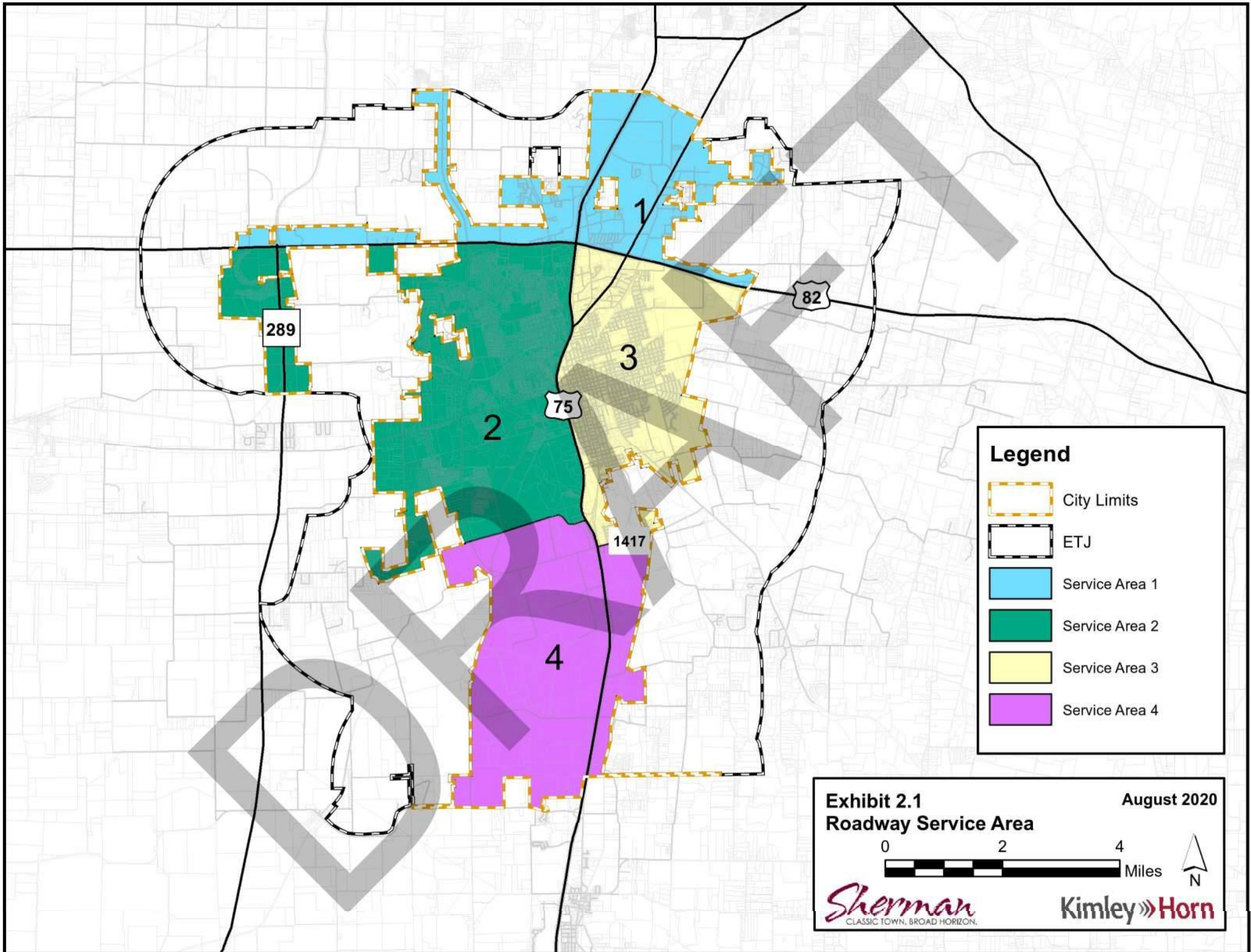
*Includes LUA for Terra Perpetua and The Village

ROADWAY IMPACT FEE SERVICE AREAS

The geographic boundary of the proposed roadway impact fee service areas is shown in **Exhibit 2.1**. The City of Sherman is divided into four (4) service areas. The service areas were based upon input from the City of Sherman staff.

- Service Area 1 is located north of US 82.
- Service Area 2 is located west of US 75, between West Travis Street and US 82.
- Service Area 3 is located east of US 75, between US 82 and FM 1417.
- Service Area 4 is split by US 75 with the northern limit on the west side being West Travis Street and the northern limit on the east side being FM 1417.

All thoroughfare facilities are assumed to be 100% within the City Limits, apart from facilities that border two service areas. In this instance, the proposed boundary is intended to follow the centerline of the roadway.



Legend

- City Limits
- ETJ
- Service Area 1
- Service Area 2
- Service Area 3
- Service Area 4

Exhibit 2.1
Roadway Service Area

August 2020

0 2 4 Miles

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2.3 ROADWAY IMPACT FEE CAPITAL IMPROVEMENTS PLAN

The City has identified the roadway projects needed to accommodate the projected growth within the City. The County Thoroughfare Plan is the ultimate plan for the infrastructure within the City Limits. Only capacity improvements still needed to build out the Thoroughfare Plan to accommodate the expected growth within the next 10-years are included in the RIF CIP. The RIF CIP consists of 5 categories of projects. They are as follows:

- **New** – Any future roadway identified by the City to be included in the CIP.
- **Widening** – Existing roadways not currently built to the ultimate classification in the Thoroughfare Plan and must be completely reconstructed.
- **Completed** – Completed project with excess capacity available to serve new growth that the City contributed to financially.
- **Gap Study** – Sections along US 75 where the City anticipates contributing a total of \$8.2 million to add main lane capacity.
- **Intersections** – Major intersection improvements identified by the City.

All the roadway facilities identified are part of the currently adopted Thoroughfare Plan.

The proposed RIF CIP is listed in **Tables 2.2 – 2.5** and mapped in **Exhibits 2.2 – 2.5**. The tables show the length of each project as well as the facility's Thoroughfare Plan classification. The RIF CIP was developed in conjunction with input from City of Sherman staff and represents projects that will be needed to accommodate the growth projected in Chapter 1: Land Use Assumptions for the 2020 Impact Fee Study.

Table 2.2 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 1

Service Area	Proj. #	Thoroughfare Plan Classification	Roadway	Limits	Length (mi)	% In Service Area
SA 1	1	Major Arterial	N HERITAGE PKWY (1)	FM 691 to US 82	2.68	100%
	2	Minor Arterial	PLAINVIEW RD	1,525' N of US 82 WBFR to US 82 WBFR	0.29	100%
	3	Minor Arterial	N TRAVIS ST	Kraeger Rd to US 82 WBFR	1.11	100%
	4	Freeway	US 75 (1)	1,875' N of US 82 to US 82	0.36	100%
	5	Frontage Road	US 82 WBFR (1)	N SH 289 to N Heritage Pkwy	3.24	100%
	6	Minor Arterial	FALLON DR (1)	N Loy Lake Rd to US 75 SBFR	0.31	100%
	7	Minor Arterial	FALLON DR (2)	1,525' N of Dripping Spring Rd to Dripping Spring Rd	0.29	100%
	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area
	1		US 82 & Plainview Rd	GRADE SEPERATED INTERCHANGE		50%

Legend

SA 1 Capital Improvements Plan

- Gap Study
- New
- Widening
- Intersections
- Thoroughfare Facilities
- Floodplain
- Local Roads
- City Limits
- ETJ

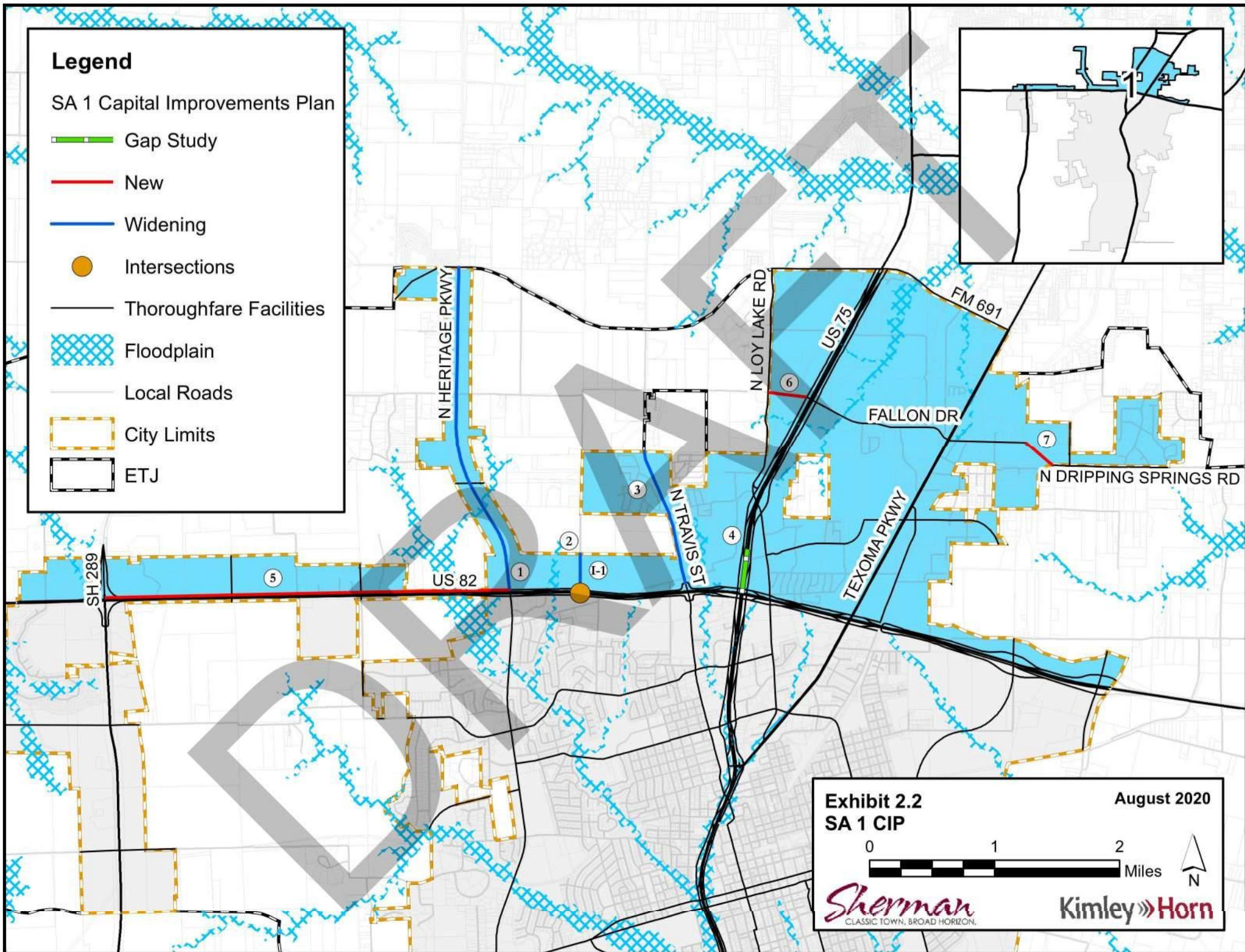


Exhibit 2.2
SA 1 CIP

August 2020



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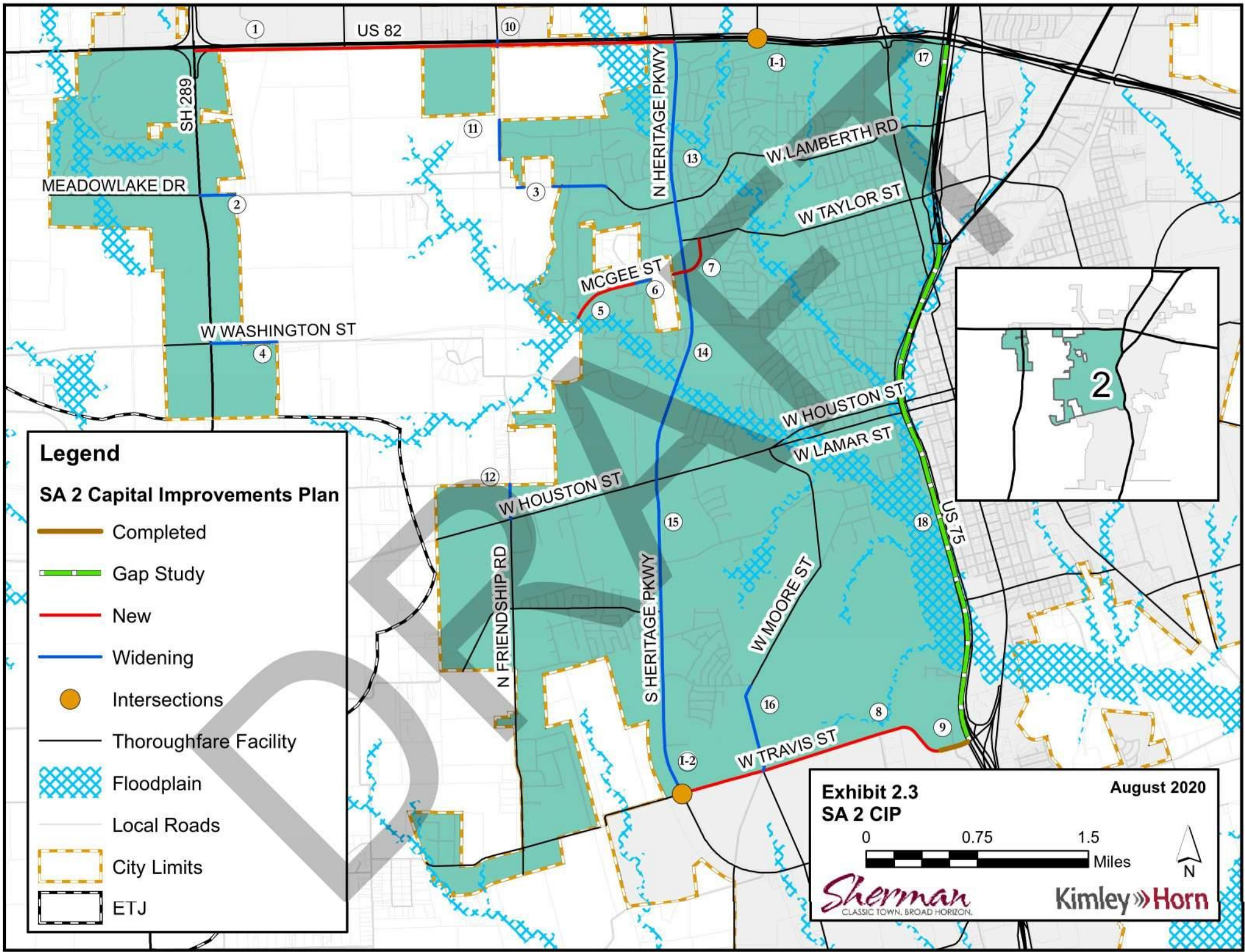
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Table 2.3 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 2

Service Area	Proj. #	Thoroughfare Plan Classification	Roadway	Limits	Length (mi)	% In Service Area
SA 2	1	Frontage Road	US 82 EBFR	N SH 289 to N Heritage Pkwy	3.24	100%
	2	Minor Arterial	MEADOWLAKE DR	N SH 289 to 1,235' E of N SH 289	0.23	100%
	3	Minor Arterial	W LAMBERTH RD (1)	1,800' W of Carriage Estates Rd to Shady Oaks Ln	0.41	100%
	4	Minor Arterial	W WASHINGTON ST	N SH 289 to 2,350' E of N SH 289	0.45	100%
	5	Minor Arterial	MCGEE ST (1)	2,545' W of Brookdale St to Brookdale St	0.48	100%
	6	Minor Arterial	MCGEE ST (2)	Brookdale St to Little Ln	0.10	100%
	7	Minor Arterial	MCGEE ST (3)	455' W of N Heritage Pkwy to W Taylor St	0.37	100%
	8	Minor Arterial	W TRAVIS ST (1)	S Heritage Pkwy to 480' W of Crossroads Blvd	1.88	50%
	9	Minor Arterial	W TRAVIS ST (2)	480' W of Crossroads Blvd to US 75 SBFR	0.19	50%
	10	Minor Arterial	W LAMBERTH RD (2)	US 82 WB to 220' S of US 82 WB	0.04	100%
	11	Minor Arterial	W LAMBERTH RD (3)	445' N of Canyon Creek Dr to 955' S of Canyon Creek Dr	0.27	100%
	12	Minor Arterial	N FRIENDSHIP RD	Elliott Rd to W Houston St	0.24	100%
	13	Major Arterial	N HERITAGE PKWY (2)	US 82 EBFR to W Taylor St	1.34	100%
	14	Major Arterial	N HERITAGE PKWY (3)	W Taylor St to W Houston St	1.66	100%
	15	Major Arterial	S HERITAGE PKWY	W Houston St to OG Groner Rd	2.14	100%
	16	Minor Arterial	W MOORE ST (1)	W Park Ave to W Travis St	0.60	100%
	17	Freeway	US 75 (2)	US 82 to 1,835' S of US 82	0.35	50%
	18	Freeway	US 75 (3)	SH 91 to W Travis St	3.48	50%
	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area
	1		US 82 & Plainview Rd	GRADE SEPERATED INTERCHANGE		50%
	2		FM 1417 & W Travis St	SIGNAL & TURN LANE IMPROVEMENTS		50%

Table 2.4 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 3

Service Area	Proj. #	Thoroughfare Plan Classification	Roadway	Limits	Length (mi)	% In Service Area
SA 3	1	Minor Arterial	E PARK AVE (1)	S Inwood St to 575' W of S Inwood St	0.11	100%
	2	Minor Arterial	E PARK AVE (2)	190' W of E Lake St to E Lake St	0.04	100%
	3	Minor Arterial	E PARK AVE (3)	E Lake Ave to SH 11	0.78	100%
	4	Major Arterial	FM 1417 (2)	US 75 to 455' E of Williams Blvd	0.97	50%
	5	Minor Arterial	W TRAVIS ST (3)	US 75 to S Travis St	0.25	100%
	6	Minor Arterial	S TRAVIS ST	W Park Ave to W Travis St	0.83	100%
	7	Freeway	US 75 (2)	US 82 to 1,835' S of US 82	0.35	50%
	8	Freeway	US 75 (3)	SH 91 to W Travis St	3.48	50%
	9	Freeway	US 75 (4)	W Travis St to FM 1417	0.52	50%
	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area
	1		US 75 & FM 1417	BRAIDED RAMP & U-TURN LANE		25%



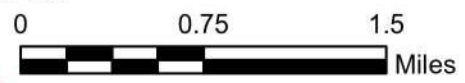
Legend

SA 2 Capital Improvements Plan

- Completed
- Gap Study
- New
- Widening
- Intersections
- Thoroughfare Facility
- Floodplain
- Local Roads
- City Limits
- ETJ

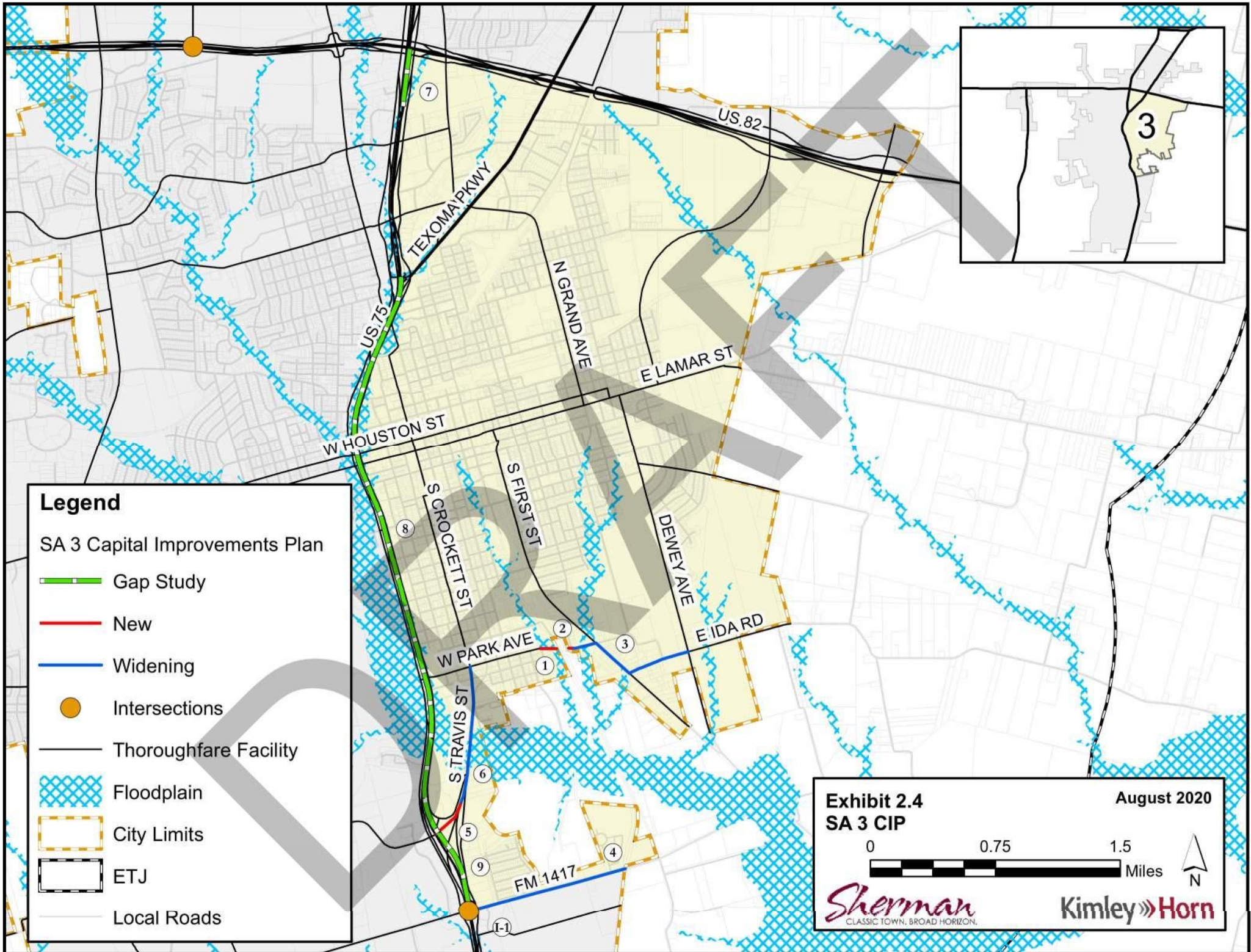
Exhibit 2.3
SA 2 CIP

August 2020



Sherman
CLASSIC TOWN. BROAD HORIZON.

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Legend

SA 3 Capital Improvements Plan

- Gap Study
- New
- Widening
- Intersections
- Thoroughfare Facility
- Floodplain
- City Limits
- ETJ
- Local Roads

Exhibit 2.4
SA 3 CIP

August 2020

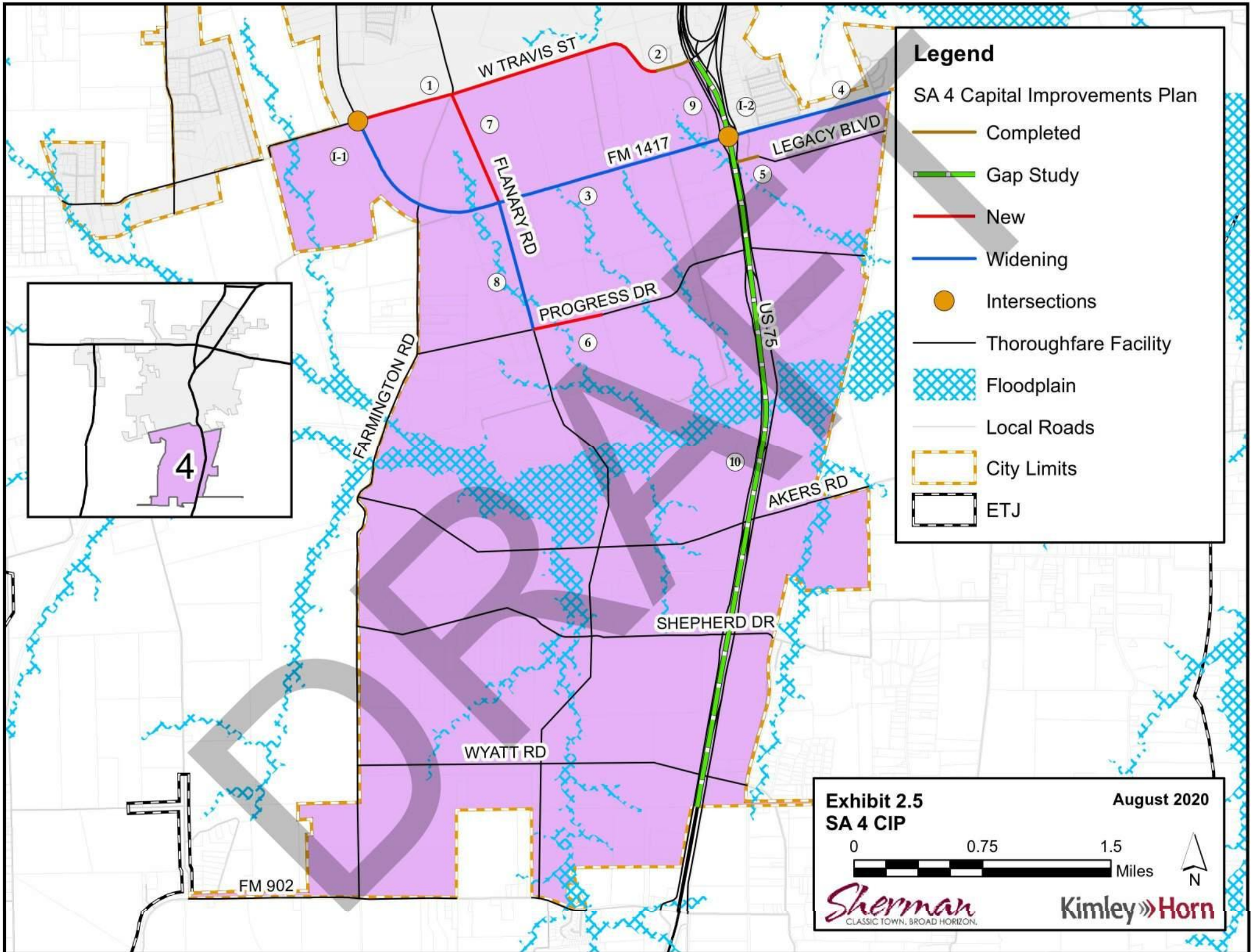


Sherman
CLASSIC TOWN. BROAD HORIZON.

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Table 2.5 10-Year Roadway Impact Fee Capital Improvements Plan – Service Area 4

Service Area	Proj. #	Thoroughfare Plan Classification	Roadway	Limits	Length (mi)	% In Service Area
SA 4	1	Minor Arterial	W TRAVIS ST (1)	S Heritage Pkwy to 480' W of Crossroads Blvd	1.88	50%
	2	Minor Arterial	W TRAVIS ST (2)	480' W of Crossroads Blvd to US 75 SBFR	0.19	50%
	3	Major Arterial	FM 1417 (1)	W Travis St to US 75	2.50	100%
	4	Major Arterial	FM 1417 (2)	US 75 to 455' E of Williams Blvd	0.97	50%
	5	Minor Arterial	LEGACY BLVD	US 75 NBFR to 650' E of US 75 NBFR	0.12	100%
	6	Major Arterial	PROGRESS DR	Flanary Rd to 2,170' E of Flanary Rd	0.41	100%
	7	Minor Arterial	W MOORE ST (2)	W Travis St to W FM 1417	0.69	100%
	8	Minor Arterial	FLANARY RD	W FM 1417 to W Progress Rd	0.76	100%
	9	Freeway	US 75 (4)	W Travis St to FM 1417	0.52	50%
	10	Freeway	US 75 (5)	FM 1417 to S City Limit	3.97	100%
	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area
	1		FM 1417 & W Travis St	SIGNAL & TURN LANE IMPROVEMENTS		50%
	2		US 75 & FM 1417	BRAIDED RAMP & U-TURN LANE		75%



Legend

SA 4 Capital Improvements Plan

- Completed
- Gap Study
- New
- Widening
- Intersections
- Thoroughfare Facility
- Floodplain
- Local Roads
- City Limits
- ETJ

Exhibit 2.5
SA 4 CIP

August 2020

0 0.75 1.5 Miles

Sherman
CLASSIC TOWN. BROAD HORIZON.

Kimley»Horn

2.4 METHODOLOGY FOR ROADWAY IMPACT FEES

SERVICE AREAS

The four (4) service areas used in the 2020 Roadway Impact Fee Study are shown in the previously referenced **Exhibit 2.1**. These service areas cover the entire corporate boundary of the City of Sherman. Chapter 395 of the Texas Local Government Code specifies that “the service area is limited to an area within the corporate boundaries of the political subdivision and shall not exceed six (6) miles.” The service areas in the 2020 Roadway Impact Fee Study are consistent with the specification of Chapter 395 of the Texas Local Government Code.

SERVICE UNITS

The “service unit” is a measure of consumption or use of the capital facilities by new development. In other words, it is the unit of measure used in the 2020 Roadway Impact Fee Study to quantify the supply and demand for roads in the City. For transportation purposes, the service unit is defined as a vehicle-mile. Below is the definition for vehicle-mile.

Vehicle-Mile: The capacity consumed in a single lane in the PM peak hour by a vehicle making a trip one mile in length. The PM Peak is used as the basis for transportation planning and the estimation of trips caused by new development.

Total Vehicle-Miles of Supply: Based on the total length (miles), number of lanes, and capacity (vehicles per hour) provided by the Thoroughfare Plan (see **Appendix B**).

Total Vehicle-Miles of Demand: Based on the 10-year growth projections. The demand is equal to PM Trip Rate (trips) * Trip Length (miles).

The capacity values used in the 2020 Roadway Impact Fee Study are based upon generally accepted thoroughfare capacity criteria. **Tables 2.6 and 2.7** show the service volumes as a function of the Thoroughfare Plan classification.

Table 2.6 Service Volumes for Proposed Facilities

Thoroughfare Plan Classification	Median Configuration	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
Freeway (2 Additional Lanes Assumed)	Divided	1,900
Frontage Road		900
6D - Major Arterial		750
4D - Minor Arterial		650

*Note: Used in Appendix B – CIP Units of Supply

Table 2.7 Service Volumes for Existing Facilities

Existing Section	Description	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
2U	Two-lane undivided	400
3U	Three-lane Undivided (W/ TWLTL)	600
4D	Four-lane divided	650
5U	Five-lane Undivided (W/ TWLTL)	750

COST PER SERVICE UNIT

A fundamental step in the impact fee process is to establish the cost for each service unit. In the case of the Roadway Impact Fee, this is the cost for each vehicle-mile of travel. Thus, it is the cost to construct a roadway (lane-mile) needed to accommodate a vehicle-mile of travel. The cost per service unit is calculated for each service area based on the roadway projects within that service area.

The second component of the cost per service unit is the determination of the number of service units in each service area. This number is the measure of the growth in transportation demand that is projected to occur in the ten-year period. Chapter 395 requires that Impact Fees be assessed only to pay for growth projected to occur in the city limits within the next ten-years. As noted earlier, the units of demand are vehicle-miles of travel

ROADWAY IMPACT FEE CIP COSTING METHODOLOGY

All of the project costs for a facility which serves the overall transportation system are eligible to be included in the RIF CIP. Chapter 395 of the Texas Local Government Code specifies that the allowable costs are "...including and limited to the:

1. Construction contract price;
2. Surveying and engineering fees; and
3. Fees actually paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the CIP who is not an employee of the political subdivision."

The engineer's opinion of the probable costs of the projects in the RIF CIP are based, in part, on the calculation of a unit cost of construction. This means that a cost per linear foot of roadway is calculated based on an average price for the various components of roadway construction. This allows the probable cost to be determined by the type of facility being constructed, the number of lanes, and the length of the project. The cost for location specific items such as bridges, highway ramps, drainage structures, or any other special components are added to each project, as appropriate. In addition, TxDOT driven projects have been included in the CIP as a 35% portion of the total cost where the City anticipates contributing a portion of the total project costs. This cost assumption is based on the typical cost that the City is responsible for in a state project such as utility adjustments, street lighting, landscaping, and engineering and survey. The following is a detailed description of the costing worksheet/methodology for the Roadway Impact Fee CIP.

Overview of Roadway Impact Fee CIP Costing Worksheets

For each project a specific costing worksheet has been developed (see **Appendix A**). Each worksheet contains project information, construction pay items, construction component allowances, and a summary of costs and allowances. An example costing sheet can be seen below.

City of Sherman
2020 Roadway Impact Fees
Conceptual Level Project Cost Projection

7/9/2020

Project Number: 8

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **FLANARY RD**
Type: **Widening**
Limits: **W FM 1417 to W Progress Rd**
Service Area: **4**
Existing Pavement Section: **2U**
Ultimate Pavement Section: **4D**
Length (Ft): **4,035**
Travelway (Ft): **24**
Roadbeds (divided #): **2**
Parkway (Ft): **10.5**
Median Width (Ft): **17**
Sidewalk Width (Ft): **5**
Sidewalks (#): **2**

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	5,579	CY	\$25.00	\$139,000
	Earthwork/Top Soil	6	2,092	CY	\$13.00	\$27,000
	Prepared Subgrade	6	3,886	CY	\$25.00	\$97,000
	Curb & Gutter	n/a	16,140	LF	\$10.00	\$161,000
	Concrete Sidewalk	n/a	40,350	SF	\$12.00	\$484,000
	Concrete Pavement	8	4,782	CY	\$245.00	\$1,172,000
Roadway Construction Cost Subtotal:						\$2,081,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$103,000
Utilities	Minor Adjustments	4%	\$85,000
Drainage	Bridge Width	20%	\$416,000
Special Drainage	58		\$250,000
Other Major Items			
ADA Ramps & Requirements		2%	\$42,000
Signs, Pavement Markings		2%	\$42,000
Traffic Control		3%	\$62,000
Street Lighting		5%	\$104,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$104,000
Construction Allowances Subtotal:			\$1,208,000
Roadway & ROW Construction Allowances Subtotal:			\$3,289,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$592,000
Contingency		10%	\$329,000
ROW / Easement Acquisition	None included		
CIP Allowances Subtotal:			\$921,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$2,081,000
ROW Construction Items		\$1,208,000
Capital Improvement Costs		\$921,000
Impact Fee Project Cost Total:		\$4,210,000

Project Information

Construction Pay Items

Construction Component Allowances

CIP Allowances

Impact Fee Project Costs

Project Information

In order to correctly estimate the cost of a roadway project, several attributes are first identified:

- Project Number – Identifies which Service Area the project is in with a corresponding number. The corresponding number does not represent any prioritizations and is used only to identify projects.
- Thoroughfare Plan Classification – The costing class to be used in the analysis. The description provides the width and depth for the various elements in the facility cross section. The construction costs are variable, based on the proposed Thoroughfare Plan classification of the roadway. Specialized cases are noted in the short description box located in this section.
- Name – A unique identifier for each project.
- Type – Describes the type of project identified. Includes; New, Widening, Completed, and Gap Study.
- Limits – Represents the beginning and ending location for each project.
- Service Area(s) – Represents the service area where the project is located. Multiple service areas will be listed if the project lies along a service area boundary.
- Pavement Sections – The existing and ultimate cross section of the thoroughfare.
- Length (ft) – The distance measured in feet that is used to cost out the project.
- Cross Section Dimensions – These items are entered based on the cross sectional elements included with the Thoroughfare Plan classification (travelway, number of roadbeds, parkway width, median width, and sidewalk width).

Roadway Construction Costs

A typical roadway project consists of a number of costs, including the following: planning, survey, design engineering, permitting, right-of-way acquisition, construction, and inspection. While the construction cost component of a project may actually consist of approximately 100 various pay items, a simplified approach was used for developing the conceptual level project costs. The pay items are listed below:

- Street Excavation
- Earthwork/Top Soil
- Prepared Subgrade
- Curb & Gutter
- Concrete Sidewalk (only Minor Arterials)
- Concrete Pavement

Construction Component Allowances

A percentage of the roadway construction cost is allotted for various major construction component allowances, as appropriate. These allowances include mobilization, utilities, drainage, ADA ramps and requirements, signage and pavement markings, traffic control, street lighting, and landscaping.

If the project type is “New,” utility adjustments were set to 0% and traffic control was set to 1%.

If the project type is “Widening,” these values were set to 4% and 3%, respectively.

For projects longer than a half mile in length, the mobilization was assumed to be 5%, while 10% was assumed for shorter projects.

In addition, lump sum dollar allowances are provided for special drainage structures. An allotment of \$250,000, or \$500,000, per crossing was assumed to account for minor, or major, stream or flood plain crossings, respectively.

CIP Allowances

To determine the total Impact Fee project cost, 18% of the roadway and ROW construction allowance subtotal is added for engineering, surveying, and geotechnical work. An additional allowance is given for contingency (10%).

Impact Fee Project Cost

The Impact Fee Project Cost Total is then the Roadway Construction Items, ROW Construction Items, and Capital Improvement Plan Allowances. State highway projects were included with a projected contribution of 35% of the total project. In addition, some projects have been included based on cost estimates from the City.

SUMMARY OF ROADWAY IMPACT FEE CIP COSTS

Tables 2.8 – 2.11 are the 10-Year RIF CIP project lists for each service area with planning level project costs. Individual project cost worksheets can be seen in **Appendix A**, Conceptual Level Project Cost Projections. It should be noted that these tables reflect only conceptual-level opinions or assumptions regarding the portions of future project costs that are potentially recoverable through impact fees. Actual project costs are likely to change with time and are dependent on market and economic conditions that cannot be predicted.

The RIF CIP establishes the list of projects for which Impact Fees may be utilized. Projects not included in the RIF CIP are not eligible to receive impact fee funding. The cost projections utilized in this study should not be utilized for the City's construction CIP.

Table 2.8 10-Year Roadway Impact Fee CIP with Conceptual Level Cost Projections – Service Area 1

Service Area	Proj. #	Thoroughfare System Classification	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 1	1	Major Arterial	N HERITAGE PKWY (1)	FM 691 to US 82	2.68	100%	\$ 5,154,000	\$ 5,154,000
	2	Minor Arterial	PLAINVIEW RD	1,525' N of US 82 WBFR to US 82 WBFR	0.29	100%	\$ 1,520,000	\$ 1,520,000
	3	Minor Arterial	N TRAVIS ST	Kraeger Rd to US 82 WBFR	1.11	100%	\$ 1,972,000	\$ 1,972,000
	4	Freeway	US 75 (1)	1,875' N of US 82 to US 82	0.36	100%	\$ 620,000	\$ 620,000
	5	Frontage Road	US 82 WBFR (1)	N SH 289 to N Heritage Pkwy	3.24	100%	\$ 1,451,000	\$ 1,451,000
	6	Minor Arterial	FALLON DR (1)	N Loy Lake Rd to US 75 SBFR	0.31	100%	\$ 344,305	\$ 344,305
	7	Minor Arterial	FALLON DR (2)	1,525' N of Dripping Spring Rd to Dripping Spring Rd	0.29	100%	\$ 1,459,000	\$ 1,459,000
	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
	1		US 82 & Plainview Rd	GRADE SEPERATED INTERCHANGE		50%	\$ 3,000,000	\$ 1,500,000
Service Area Roadway Project Cost Subtotal								\$ 12,520,305
Service Area Intersection Project Cost Subtotal								\$ 1,500,000
2020 Roadway Impact Fee Study Cost Per Service Area								\$ 12,500
Total Cost in SERVICE AREA 1								\$ 14,032,805

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Sherman
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

Table 2.9 10-Year Roadway Impact Fee CIP with Conceptual Level Cost Projections – Service Area 2

Service Area	Proj. #	Thoroughfare System Classification	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 2	1	Frontage Road	US 82 EBFR	N SH 289 to N Heritage Pkwy	3.24	100%	\$ 1,451,000	\$ 1,451,000
	2	Minor Arterial	MEADOWLAKE DR	N SH 289 to 1,235' E of N SH 289	0.23	100%	\$ 1,231,000	\$ 1,231,000
	3	Minor Arterial	W LAMBERTH RD (1)	1,800' W of Carriage Estates Rd to Shady Oaks Ln	0.41	100%	\$ 2,133,000	\$ 2,133,000
	4	Minor Arterial	W WASHINGTON ST	N SH 289 to 2,350' E of N SH 289	0.45	100%	\$ 2,343,000	\$ 2,343,000
	5	Minor Arterial	MCGEE ST (1)	2,545' W of Brookdale St to Brookdale St	0.48	100%	\$ 2,755,000	\$ 2,755,000
	6	Minor Arterial	MCGEE ST (2)	Brookdale St to Little Ln	0.10	100%	\$ 513,000	\$ 513,000
	7	Minor Arterial	MCGEE ST (3)	455' W of N Heritage Pkwy to W Taylor St	0.37	100%	\$ 1,856,000	\$ 1,856,000
	8	Minor Arterial	W TRAVIS ST (1)	S Heritage Pkwy to 480' W of Crossroads Blvd	1.88	50%	\$ 7,500,000	\$ 3,750,000
	9	Minor Arterial	W TRAVIS ST (2)	480' W of Crossroads Blvd to US 75 SBFR	0.19	50%	\$ 820,339	\$ 410,170
	10	Minor Arterial	W LAMBERTH RD (2)	US 82 WB to 220' S of US 82 WB	0.04	100%	\$ 219,000	\$ 219,000
	11	Minor Arterial	W LAMBERTH RD (3)	445' N of Canyon Creek Dr to 955' S of Canyon Creek Dr	0.27	100%	\$ 1,396,000	\$ 1,396,000
	12	Minor Arterial	N FRIENDSHIP RD	Elliot Rd to W Houston St	0.24	100%	\$ 1,241,000	\$ 1,241,000
	13	Major Arterial	N HERITAGE PKWY (2)	US 82 EBFR to W Taylor St	1.34	100%	\$ 2,756,000	\$ 2,756,000
	14	Major Arterial	N HERITAGE PKWY (3)	W Taylor St to W Houston St	1.66	100%	\$ 3,351,000	\$ 3,351,000
	15	Major Arterial	S HERITAGE PKWY	W Houston St to OG Groner Rd	2.14	100%	\$ 4,028,000	\$ 4,028,000
	16	Minor Arterial	W MOORE ST (1)	W Park Ave to W Travis St	0.60	100%	\$ 3,046,000	\$ 3,046,000
	17	Freeway	US 75 (2)	US 82 to 1,835' S of US 82	0.35	50%	\$ 606,000	\$ 303,000
	18	Freeway	US 75 (3)	SH 91 to W Travis St	3.48	50%	\$ 6,070,000	\$ 3,035,000
	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
	1		US 82 & Plainview Rd	GRADE SEPERATED INTERCHANGE		50%	\$ 3,000,000	\$ 1,500,000
	2		FM 1417 & W Travis St	SIGNAL & TURN LANE IMPROVEMENTS		50%	\$ 1,750,000	\$ 875,000
Service Area Roadway Project Cost Subtotal								\$ 35,817,170
Service Area Intersection Project Cost Subtotal								\$ 2,375,000
2020 Roadway Impact Fee Study Cost Per Service Area								\$ 12,500
Total Cost in SERVICE AREA 2								\$ 38,204,670

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Sherman.
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

Table 2.10 10-Year Roadway Impact Fee CIP with Conceptual Level Cost Projections – Service Area 3

Service Area	Proj. #	Thoroughfare System Classification	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 3	1	Minor Arterial	E PARK AVE (1)	S Inwood St to 575' W of S Inwood St	0.11	100%	\$ 1,353,000	\$ 1,353,000
	2	Minor Arterial	E PARK AVE (2)	190' W of E Lake St to E Lake St	0.04	100%	\$ 447,000	\$ 447,000
	3	Minor Arterial	E PARK AVE (3)	E Lake Ave to SH 11	0.78	100%	\$ 4,311,000	\$ 4,311,000
	4	Major Arterial	FM 1417 (2)	US 75 to 455' E of Williams Blvd	0.97	50%	\$ 1,829,000	\$ 914,500
	5	Minor Arterial	W TRAVIS ST (3)	US 75 to S Travis St	0.25	100%	\$ 437,000	\$ 437,000
	6	Minor Arterial	S TRAVIS ST	W Park Ave to W Travis St	0.83	100%	\$ 4,843,000	\$ 4,843,000
	7	Freeway	US 75 (2)	US 82 to 1,835' S of US 82	0.35	50%	\$ 606,000	\$ 303,000
	8	Freeway	US 75 (3)	SH 91 to W Travis St	3.48	50%	\$ 6,070,000	\$ 3,035,000
	9	Freeway	US 75 (4)	W Travis St to FM 1417	0.52	50%	\$ 902,000	\$ 451,000
	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
	1		US 75 & FM 1417	BRAIDED RAMP & U-TURN LANE		25%	\$ 7,600,000	\$ 1,900,000
Service Area Roadway Project Cost Subtotal							\$ 16,094,500	
Service Area Intersection Project Cost Subtotal							\$ 1,900,000	
2020 Roadway Impact Fee Study Cost Per Service Area							\$ 12,500	
Total Cost in SERVICE AREA 3							\$ 18,007,000	

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Sherman.
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

Table 2.11 10-Year Roadway Impact Fee CIP with Conceptual Level Cost Projections – Service Area 4

Service Area	Proj. #	Thoroughfare System Classification	Roadway	Limits	Length (mi)	% In Service Area	Total Project Cost	Cost in Service Area
SA 4	1	Minor Arterial	W TRAVIS ST (1)	S Heritage Pkwy to 480' W of Crossroads Blvd	1.88	50%	\$ 7,500,000	\$ 3,750,000
	2	Minor Arterial	W TRAVIS ST (2)	480' W of Crossroads Blvd to US 75 SBFR	0.19	50%	\$ 820,339	\$ 410,170
	3	Major Arterial	FM 1417 (1)	W Travis St to US 75	2.50	100%	\$ 4,922,000	\$ 4,922,000
	4	Major Arterial	FM 1417 (2)	US 75 to 455' E of Williams Blvd	0.97	50%	\$ 1,829,000	\$ 914,500
	5	Minor Arterial	LEGACY BLVD	US 75 NBFR to 650' E of US 75 NBFR	0.12	100%	\$ 1,968,565	\$ 1,968,565
	6	Major Arterial	PROGRESS DR	Flanary Rd to 2,170' E of Flanary Rd	0.41	100%	\$ 2,514,000	\$ 2,514,000
	7	Minor Arterial	W MOORE ST (2)	W Travis St to W FM 1417	0.69	100%	\$ 3,359,000	\$ 3,359,000
	8	Minor Arterial	FLANARY RD	W FM 1417 to W Progress Rd	0.76	100%	\$ 4,210,000	\$ 4,210,000
	9	Freeway	US 75 (4)	W Travis St to FM 1417	0.52	50%	\$ 902,000	\$ 451,000
	10	Freeway	US 75 (5)	FM 1417 to S City Limit	3.97	100%	\$ 6,450,000	\$ 6,450,000
SA 4	Proj. #	Intersection Improvements	Location	Improvement(s)		% In Service Area	Total Project Cost	Cost in Service Area
	1		FM 1417 & W Travis St	SIGNAL & TURN-LANE IMPROVEMENTS		50%	\$ 1,750,000	\$ 875,000
	2		US 75 & FM 1417	BRAIDED RAMP & U-TURN LANE		75%	\$ 7,600,000	\$ 5,700,000
Service Area Roadway Project Cost Subtotal							\$ 28,949,235	
Service Area Intersection Project Cost Subtotal							\$ 6,575,000	
2020 Roadway Impact Fee Study Cost Per Service Area							\$ 12,500	
Total Cost in SERVICE AREA 4							\$ 35,536,735	

- These planning level cost projections have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Projects within the City of Sherman.
- These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

SERVICE UNIT CALCULATION

The basic service unit for the computation of Sherman's Roadway Impact Fee is the vehicle-mile of travel during the afternoon peak-hour. To determine the cost per service unit, it is necessary to project the growth in vehicle-miles of travel for the service areas for the ten-year period.

The growth in vehicle-miles from 2020 to 2030 is based upon projected changes in residential units and employment for the period. These growth projections are discussed in Chapter 1: Land Use Assumptions for the 2020 Impact Fee Study.

For the purposes of impact fees, all developed and developable land is categorized as either residential or non-residential. For residential land uses, the existing and projected number of dwelling units are estimated. The number of dwelling units in each service area is multiplied by a transportation demand factor (discussed in more detail below) to compute the vehicle-miles of travel that occur during the afternoon peak hour. This factor indicates the average amount of demand created by the residential land uses in the service area.

For non-residential land uses, the process is similar. Existing and projected number of building square footages for three (3) categories of employment – basic, service, and retail – are provided. These categories correspond to an aggregation of other specific land use categories based on the North American Industrial Classification System (NAICS).

Building square footage is the most common independent variable for the estimation of non-residential trips in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. This characteristic is more appropriate than the number of employees, because building square footage is tied more closely to trip generation and is known at the time of application for any development that would require the assessment of an impact fee.

The existing and projected land use assumptions for the dwelling units and the square footage of basic, service, and retail land uses provide the basis for the projected increase in vehicle-miles of travel. As noted earlier, a transportation demand factor is applied to these values and then summed to calculate the total peak hour vehicle-miles of demand for each service area.

The transportation demand factors are aggregate rates derived from two sources – the ITE Trip Generation Manual, 10th Edition and information from the National Household Travel Survey (NHTS).

The ITE Trip Generation Manual, 10th Edition provides the number of trips that are produced or attracted to the land use for each dwelling unit, square foot of building, or other corresponding unit. For the retail category of land uses, the rate is adjusted to account for the fact that a percentage of retail trips are made by people who would otherwise be traveling past that particular establishment anyway, such as a trip between work and home. For example, a stop at a nearby supermarket on the way home from work does not create a new trip onto the roadway network. These trips are called pass-by trips, and since the travel demand is accounted for in the land use calculations relative to the primary trip, it is necessary to discount the retail trip generation rates to avoid double counting trips.

The next component of the transportation demand factor accounts for the length of each trip. The average trip length for each category is based on the region-wide travel characteristics survey conducted by NHTS, requirements in Chapter 395, and other generally accepted planning principles.

The computation of the transportation demand factor is based on the following equation:

$$TDF = T * (1 - P_b) * L_{Max}$$

Where... $L_{MaxIndustrial} = \min (L * OD \text{ or } 6)$ OR $L_{Max} = \min (L * OD \text{ or } 3)$

Variables:

TDF	= Transportation Demand Factor,
T	= Trip Rate (peak hour trips / unit),
P _b	= Pass-By Discount (% of trips),
L	= Average Trip Length (miles),
L _{Max}	= Maximum Trip Length (miles), and
OD	= Origin-Destination Reduction (50%)

The maximum trip length was limited to six (6) miles for industrial type land uses. For all other land uses, this max trip length was cut in half and assumed to be the radius of the service area (three (3) miles).

The adjustment made to the average trip length statistic in the computation of the maximum trip length is the origin-destination reduction. This adjustment is made because the RIF is charged to both the origin and destination end of the trip. For example, impact fee methodology will account for a trip from home to work within Sherman to both residential and non-residential land uses. To avoid counting these trips twice as both residential and non-residential trips, a 50% origin-destination (OD) reduction factor is applied. Therefore, only half of the trip length is assessed to each land use, and the total trip is only counted once. This methodology is consistent with that used in the National Household Travel Survey.

Table 2.12 shows the derivation of the Transportation Demand Factor for the two (2) residential land uses and the three (3) non-residential land use categories. The values utilized for all variables shown in the transportation demand factor equation are also shown in the table.

Table 2.12 Transportation Demand Factor Calculations

Variable	Residential		Basic	Service	Retail
	Single Family	Multifamily			
T	0.99	0.44	0.63	1.15	3.81
P _b	0%	0%	0%	0%	34%
L _{Max} *	3.0	3.0	5.01	3.0	2.8
TDF	2.97	1.32	3.16	3.45	7.03

*L_{Max} is 3 miles for all land uses apart from Basic; therefore this lower trip length is used for calculating the TDF for these land uses.

Variables:

- TDF = Transportation Demand Factor,
- T = Trip Rate (peak hour trips / unit),
- P_b = Pass-By Discount (% of trips),
- L = Average Trip Length (miles),
- L_{Max} = Maximum Trip Length (miles), and
- OD = Origin-Destination Reduction (50%)

The application of the demographic projections and the transportation demand factors are presented in the 10-Year Growth Projections in **Table 2.13**. This table shows the total growth in total vehicle-miles by service area between the years 2020 and 2030. These estimates and projections lead to the Vehicle-Miles of Travel for the 10-year period.

Table 2.13 10-Year Growth Projections

2020 - 2030 Growth Projections ¹												
SERVICE AREA	RESIDENTIAL VEHICLE-MILES				NON-RESIDENTIAL SQUARE FEET ⁵				TRANS. DEMAND FACTOR ⁶			TOTAL VEHICLE MILES ¹¹
	Single Family Units	Multi-Family Units	Trip Rate TDF ²	Trip Rate TDF ³	VEHICLE MILES ⁴	BASIC	SERVICE	RETAIL	BASIC ⁷	SERVICE ⁸	RETAIL ⁹	
1	550	521	0.99	0.44	2,321	154,000	77,000	889,000	0.63	1.15	2.51	9,324
2	1,250	938	2.97	1.32	4,951	98,000	5,000	535,000	3.16	3.45	7.03	9,039
3	100	0			297	66,000	3,000	136,000				1,472
4	1,200	3,200			7,788	971,000	2,274,000	2,296,000				34,842
Totals	3,100	4,659			15,357	1,289,000	2,359,000	3,856,000	4,074	8,138	27,108	54,677

VEHICLE-MILES OF INCREASE (2020 - 2030)

SERVICE AREA	VEH-MILES
1	9,324
2	9,039
3	1,472
4	34,842

Notes:

- From Chapter 1: Land Use Assumptions for 2020 Impact Fee Study
- Transportation Demand Factor for each Service Area (from LUVNET) using Single Family Detached Housing land use and trip generation rate
- Transportation Demand Factor for each Service Area (from LUVNET) using Multifamily Housing (Mid-Rise) land use and trip generation rate
- Calculated by multiplying TDF by the number of dwelling units
- From Chapter 1: Land Use Assumptions for 2020 Impact Fee Study
- Trip generation rate and Transportation Demand Factors from LUVNET for each land use
- 'Basic' corresponds to General Light Industrial land use and trip generation rate
- 'Service' corresponds to General Office land use and trip generation rate
- 'Retail' corresponds to Shopping Center land use and trip generation rate
- Calculated by multiplying Transportation Demand Factor by the number of thousand square feet for each land use
- Residential plus non-residential vehicle-mile totals for each Service Area

2.5 ROADWAY IMPACT FEE CALCULATION

MAXIMUM ASSESSABLE IMPACT FEE PER SERVICE UNIT

This section presents the maximum assessable impact fee rate calculated for each service area. The maximum assessable impact fee is the sum of the eligible RIF CIP costs for the service area divided by the growth in travel attributable to new development projected to occur within the 10-year period. A majority of the components of this calculation have been described and presented in previous sections of this report. The purpose of this section is to document the computation for each service area and to demonstrate that the guidelines provided by Chapter 395 of the Texas Local Government Code have been addressed.

Table 2.14 illustrates the computation of the maximum assessable impact fee computed for each service area. Each row in the table is numbered to simplify explanation of the calculation. The calculation of the maximum assessable impact fee is shown in **Table 2.15**.

Table 2.14 Maximum Assessable Roadway Impact Fee Computation

Line	Title	Description
1	<i>Total Vehicle-Miles of Capacity Added by the RIF CIP</i>	The total number of vehicle-miles added to the service area based on the capacity, length, and number of lanes in each project (from Appendix B – RIF CIP Units of Supply)

Each project identified in the CIP will add a certain amount of capacity to the City's roadway network based on its length and classification. This line displays the total amount added within each service area.

2	<i>Total Vehicle-Miles of Existing Demand</i>	A measure of the amount of traffic currently using the roadway facilities upon which capacity is being added. (from Appendix B – RIF CIP Units of Supply)
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A number of facilities identified in the CIP have traffic currently utilizing a portion of their existing capacity. This line displays the total amount of capacity along these facilities currently being used by existing traffic.

3	<i>Total Vehicle-Miles of Existing Deficiencies</i>	Number of vehicle-miles of travel that are not accommodated by the existing roadway system (from Appendix C – Existing Roadway Facilities Inventory)
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A number of facilities identified in the CIP have traffic currently utilizing a portion of their existing capacity. This line displays the total amount of capacity along these facilities currently being used by existing traffic.

4	<i>Net Amount of Vehicle-Miles of Capacity Added</i>	A measurement of the amount of vehicle-miles added by the RIF CIP that will not be utilized by existing demand (Line 1 – Line 2– Line 3)
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This calculation identifies the portion of the RIF CIP (in vehicle-miles) that may be recoverable through the collection of impact fees.

5	<i>Total Cost of the RIF CIP within the Service Area</i>	The total cost of the Roadway projects within each service area (from Table 2.8-11: 10-Year RIF CIP with Conceptual Level Cost Opinions)
----------	--	--

This line simply identifies the total cost of all of the Roadway projects identified in each service area.

6	<i>Cost of Net Capacity Supplied</i>	The total RIF CIP cost (Line 5) prorated by the ratio of Net Capacity Added (Line 4) to Total Capacity Added (Line 1). $[(\text{Line 4} / \text{Line 1}) * (\text{Line 5})]$
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Using the ratio of vehicle-miles added by the RIF CIP available to serve future growth to the total vehicle-miles added, the total cost of the RIF CIP is reduced to the amount available for future growth (i.e. excluding existing usage and deficiencies).

7	<i>Cost to Meet Existing Needs and Usage</i>	The difference between the Total Cost of the Roadway Impact Fee CIP (Line 5) and the Cost of the Net Capacity supplied (Line 6) (Line 5 – Line 6)
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This line is provided for information purposes only – it is to present the portion of the total cost of the RIF CIP that is required to meet existing demand.

8	<i>Total Vehicle-Miles of New Demand over Ten Years</i>	Based upon the growth projection provided in Chapter 1: Land Use Assumptions for the 2020 Impact Fee Study , an estimate of the number of new vehicle-miles within the service area over the next ten years (from Table 2.13)
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This line presents the amount of growth (in vehicle-miles) projected to occur within each service area over the next ten years.

9	<i>Percent of Capacity Added Attributable to New Growth</i>	The result of dividing Total Vehicle-Miles of New Demand (Line 8) by the Net Amount of Capacity Added (Line 4), limited to 100%. This calculation is required by Chapter 395 to ensure capacity added is attributable to new growth.
10	<i>Chapter 395 Check</i>	

In order to ensure that the vehicle-miles added by the RIF CIP do not exceed the amount needed to accommodate growth beyond the ten-year window, a comparison of the two values is performed. If the amount of vehicle-miles added by the RIF CIP exceeds the growth projected to occur in the next ten years, the RIF CIP cost is reduced accordingly. This occurs in Service Area 4.

11	<i>Cost of RIF CIP Attributable to New Growth</i>	The result of multiplying the Cost of Net Capacity Added (Line 6) by the Percent of Capacity Added Attributable to New Growth, limited to 100% (Line 10)
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This value is the total RIF CIP project costs (excluding financial costs) that may be recovered through impact fees. This line is determined considering the limitations to impact fees required by the Texas legislature.

12	<i>Pre-Credit Maximum Fee Per Service Unit (without financing)</i>	Found by dividing the Cost of the CIP by the Total Vehicle-Miles of New Demand Over Ten Years (Line 11 / Line 8)
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This value is the total pre-credit maximum fee per service unit (without finance) that may be recovered through impact fees. This line is determined considering limitations to impact fee required by Texas Legislature.

PLAN FOR THE ROADWAY IMPACT FEE CREDIT

Chapter 395 of the Texas Local Government Code requires the RIF CIP to contain specific enumeration of a plan for awarding the impact fee credit. Section 395.014 of the Code requires:

- (A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or
- (B) In the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan..."

The City of Sherman has determined the maximum assessable impact fee per service unit shall be 50% of the total projected cost of implementing the CIP. Therefore, the Credit Calculation (Line 13) is assumed to be half of the Cost of Total RIF CIP Attributable to Growth (Line 11). The sum of these values presents the Recoverable Cost of the RIF CIP (Line 14). The Recoverable Cost of the RIF CIP Plus Financing Costs (Line 15) are anticipated to add an additional 30.37% to account for an interest rate over a 20-year payment period. The Maximum Assessable Fee Per Service Unit (Line 16) is then found dividing the Recoverable Cost of the RIF CIP Plus Financing Costs (Line 15) by the Total Vehicle-Miles of Demand over Ten Years (Line 8).

The continuation of **Table 2.14** summarizes the additional computations carried out to provide the maximum assessable impact fee.

Table 2.14 Maximum Assessable Roadway Impact Fee Computation (Continued)

Line	Title	Description
13	<i>Credit Calculation</i>	Assumed to be 50% of the cost of the CIP (Line 11) as allowed by Chapter 395.
14	<i>Recoverable Cost of RIF CIP</i>	The sum of the cost of the CIP (Line 11) and the 50% Credit (Line 13) (Line 11 + Line 13)
15	<i>Recoverable Cost of RIF CIP Plus Financing Costs</i>	The sum of the cost of the Recoverable Cost of the CIP (Line 14) and Financing Costs (Assumed 30.37%)
16	<i>Maximum Assessable Fee Per Service Unit</i>	Found by dividing the Recoverable Cost of the CIP Plus Financing (Line 15) by the Total Vehicle-Miles of New Demand Over Ten Years (Line 8). (Line 15 / Line 8)

Table 2.15 summarizes the calculations walked through in **Table 2.14** and provides the maximum assessable impact fee for each service area.

Table 2.15 Maximum Assessable Roadway Impact Fee

SERVICE AREA:		1	2	3	4
1	TOTAL VEH-MI OF CAPACITY ADDED BY THE ROADWAY IMPACT FEE CIP (FROM ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY, APPENDIX B)	24,425	47,188	15,641	38,099
2	TOTAL VEH-MI OF EXISTING DEMAND (FROM ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY, APPENDIX B)	2,057	6,539	823	2,368
3	TOTAL VEH-MI OF EXISTING DEFICIENCIES (FROM EXISTING FACILITIES INVENTORY, APPENDIX C)	0	900	0	0
4	NET AMOUNT OF VEH-MI OF CAPACITY ADDED (LINE 1 - LINE 2 - LINE 3)	22,368	39,749	14,818	35,731
5	TOTAL COST OF THE ROADWAY IMPACT FEE CIP AND STUDY WITHIN SERVICE AREA (FROM TABLES 2.8 TO 2.11)	\$ 14,032,805	\$ 38,204,670	\$ 18,007,000	\$ 35,536,735
6	COST OF NET CAPACITY SUPPLIED (LINE 4 / LINE 1) * (LINE 5)	\$ 12,851,004	\$ 32,181,856	\$ 17,059,506	\$ 33,327,989
7	COST TO MEET EXISTING NEEDS AND USAGE (LINE 5 - LINE 6)	\$ 1,181,801	\$ 6,022,814	\$ 947,494	\$ 2,208,746
8	TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (FROM TABLE 2.13 AND CHAPTER 1)	9,324	9,039	1,472	34,842
9	PERCENT OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 8 / LINE 4)	41.6%	22.7%	9.9%	97.5%
10	IF LINE 8 > LINE 4, REDUCE LINE 9 TO 100%, OTHERWISE NO CHANGE	41.6%	22.7%	9.9%	97.5%
11	COST OF ROADWAY IMPACT FEE CIP ATTRIBUTABLE TO GROWTH (LINE 6 * LINE 10)	\$ 5,346,018	\$ 7,305,281	\$ 1,688,891	\$ 32,494,789
12	PRE-CREDIT MAXIMUM FEE PER SERVICE UNIT WITHOUT FINANCING (LINE 11 / LINE 8)	\$ 573	\$ 808	\$ 1,147	\$ 933
13	CREDIT CALCULATION (50% OF LINE 11)	\$ (2,673,009)	\$ (3,652,641)	\$ (844,446)	\$ (16,247,395)
14	RECOVERABLE COST OF ROADWAY IMPACT FEE CIP (LINE 11 + LINE 13)	\$ 2,673,009	\$ 3,652,641	\$ 844,446	\$ 16,247,395
15	RECOVERABLE COST OF ROADWAY IMPACT FEE CIP PLUS FINANCING COSTS (ASSUMED 30.37%)	\$ 3,484,802	\$ 4,761,947	\$ 1,100,904	\$ 21,181,728
16	MAXIMUM ASSESSABLE FEE PER SERVICE UNIT (LINE 15 / LINE 8)	\$ 374	\$ 527	\$ 748	\$ 608

SERVICE UNIT DEMAND PER UNIT OF DEVELOPMENT

The Roadway Impact Fee is determined by multiplying the impact fee rate by the number of service units projected for the proposed development. For this purpose, the City will utilize the Land Use/Vehicle-Mile Equivalency Table (LUVMET), presented in **Table 2.16**. This table lists the predominant land uses that may occur within the City of Sherman. For each land use, the development unit that defines the development's magnitude with respect to transportation demand is shown. Although every possible use cannot be anticipated, the majority of local uses are found in this table. The descriptions for each land use are presented in **Table 2.17**. If the exact use is not listed, one similar in trip-making characteristics can serve as a reasonable proxy. The individual land uses are grouped into categories, such as residential, office, commercial, industrial, and institutional.

The trip rates presented for each land use is a fundamental component of the LUVMET. The trip rate is the average number of trips generated during the afternoon peak hour by each land use per development unit. The next column in **Table 2.16**, if applicable to the land use, presents the number of trips to and from certain land uses reduced by pass-by trips, as previously discussed.

The definitive source of the trip generation and pass-by statistics is the ITE Trip Generation Manual, 10th Edition, the latest edition. This manual utilizes trip generation studies for a variety of land uses throughout the United States, and is the standard used by traffic engineers and transportation planners for traffic impact analysis, site design, and transportation planning. However, for land uses not contained within the 10th Edition of the ITE Trip Generation Manual, an alternative service unit demand could be calculated by completing a trip generation study based on the procedure identified in the ITE Trip Generation Handbook.

To convert vehicle trips to vehicle-miles, it is necessary to multiply trips by trip length. The trip length values are based on land use, as explained in Section 2.4 - Service Unit Calculation.

The remaining column in the LUVMET shows the vehicle-miles per development unit. This number is the product of the trip rate and the maximum trip length. This number, previously referred to as the Transportation Demand Factor, is used in the impact fee to compute the number of service units attributed to each land use category. The number of service units is multiplied by the impact fee rate (established by City ordinance) in order to determine the impact fee for a development.

Table 2.16 Land Use / Vehicle-Mile Equivalency Table (LUVMET)

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	Trip Length (mi)	Adj. For O-D	Trip Length (mi)	Max Trip Length (mi)	Veh-Mi Per Dev-Unit
PORT AND TERMINAL											
Truck Terminal	030	1,000 SF GFA	1.87			1.87	10.02	50%	5.01	5.01	9.37
Park-and-Ride	090	Parking Spaces	0.43			0.43	10.02	50%	5.01	5.01	2.15
INDUSTRIAL											
General Light Industrial	110	1,000 SF GFA	0.63			0.63	10.02	50%	5.01	5.01	3.16
Industrial Park	130	1,000 SF GFA	0.40			0.40	10.02	50%	5.01	5.01	2.00
Manufacturing	140	1,000 SF GFA	0.67			0.67	10.02	50%	5.01	5.01	3.36
Warehousing	150	1,000 SF GFA	0.19			0.19	10.02	50%	5.01	5.01	0.95
Mini-Warehouse	151	1,000 SF GFA	0.17			0.17	10.02	50%	5.01	5.01	0.85
Data Center	160	1,000 SF GFA	0.09			0.09	10.02	50%	5.01	5.01	0.45
RESIDENTIAL											
Single-Family Detached Housing	210	Dwelling Unit	0.99			0.99	9.79	50%	4.90	3.00	2.97
Multifamily Housing (Low-Rise)	220	Dwelling Unit	0.56			0.56	9.79	50%	4.90	3.00	1.68
Multifamily Housing (Mid-Rise)	221	Dwelling Unit	0.44			0.44	9.79	50%	4.90	3.00	1.32
Multifamily Housing (High-Rise)	222	Dwelling Unit	0.36			0.36	9.79	50%	4.90	3.00	1.08
Mobile Home Park / Manufactured Home	240	Dwelling Unit	0.46			0.46	9.79	50%	4.90	3.00	1.38
Senior Adult Housing-Detached	251	Dwelling Unit	0.30			0.30	9.79	50%	4.90	3.00	0.90
Senior Adult Housing-Attached	252	Dwelling Unit	0.26			0.26	9.79	50%	4.90	3.00	0.78
Assisted Living	254	Beds	0.26			0.26	9.79	50%	4.90	3.00	0.78
LODGING											
Hotel	310	Room	0.60			0.60	6.43	50%	3.22	3.00	1.80
Motel / Other Lodging Facilities	320	Room	0.38			0.38	6.43	50%	3.22	3.00	1.14
RECREATIONAL											
Golf Course	430	Hole	2.91			2.91	7.86	50%	3.93	3.00	8.73
Miniature Golf Course	431	Hole	0.33			0.33	7.86	50%	3.93	3.00	0.99
Golf Driving Range	432	Tee	1.25			1.25	7.86	50%	3.93	3.00	3.75
Bowling Alley	437	1,000 SF GFA	1.16			1.16	7.86	50%	3.93	3.00	3.48
Multiplex Movie Theater	445	Screens	13.73			13.73	15.77	50%	7.89	3.00	41.19
Ice Skating Rink	465	1,000 SF GFA	1.33			1.33	7.86	50%	3.93	3.00	3.99
Racquet / Tennis Club	491	Court	3.82			3.82	7.86	50%	3.93	3.00	11.46
Health/Fitness Club	492	1,000 SF GFA	3.45			3.45	7.86	50%	3.93	3.00	10.35
Recreational Community Center	495	1,000 SF GFA	2.31			2.31	7.86	50%	3.93	3.00	6.93
INSTITUTIONAL											
Primary/Middle School (1-8)	522	Students	0.17			0.17	3.49	50%	1.75	1.75	0.30
High School	530	Students	0.14			0.14	3.49	50%	1.75	1.75	0.25
Junior / Community College	540	Students	0.11			0.11	10.44	50%	5.22	3.00	0.33
University / College	550	Students	0.15			0.15	10.44	50%	5.22	3.00	0.45
Religious Institute	560	1,000 SF GFA	0.49			0.49	8.31	50%	4.16	3.00	1.47
Day Care Center	565	1,000 SF GFA	11.12	44%	B	6.23	3.49	50%	1.75	1.75	10.90
MEDICAL											
Hospital	610	1,000 SF GFA	0.97			0.97	9.85	50%	4.93	3.00	2.91
Nursing Home	620	Beds	0.22			0.22	9.85	50%	4.93	3.00	0.66
Clinic	630	1,000 SF GFA	3.28			3.28	9.85	50%	4.93	3.00	9.84
Animal Hospital/Veterinary Clinic	640	1,000 SF GFA	3.53	30%	B	2.47	9.85	50%	4.93	3.00	7.41
OFFICE											
General Office Building	710	1,000 SF GFA	1.15			1.15	14.65	50%	7.33	3.00	3.45
Corporate Headquarters Building	714	1,000 SF GFA	0.60			0.60	14.65	50%	7.33	3.00	1.80
Single Tenant Office Building	715	1,000 SF GFA	1.71			1.71	14.65	50%	7.33	3.00	5.13
Medical-Dental Office Building	720	1,000 SF GFA	3.46			3.46	9.85	50%	4.93	3.00	10.38
Office Park	750	1,000 SF GFA	1.07			1.07	14.65	50%	7.33	3.00	3.21

Key to Sources of Pass-by Rates:

A: ITE Trip Generation Handbook 10th Edition (September 2017)

B: Estimated by Kimley-Horn based on ITE rates for similar categories

C: ITE rate adjusted upward by KHA based on logical relationship to other categories

Table 2.16 LUVMET (Continued)

Land Use Category	ITE Land Use Code	Development Unit	Trip Gen Rate (PM)	Pass-by Rate	Pass-by Source	Trip Rate	Trip Length (mi)	Adj. For O-D	Trip Length (mi)	Max Trip Length (mi)	Veh-Mi Per Dev-Unit
COMMERCIAL											
Automobile Related											
New Car Sales	841	1,000 SF GFA	2.43	20%	B	1.94	5.60	50%	2.80	2.80	5.43
Automobile Parts Sales	843	1,000 SF GFA	4.91	43%	A	2.80	4.45	50%	2.23	2.23	6.24
Tire Store	848	1,000 SF GFA	3.98	28%	A	2.87	4.45	50%	2.23	2.23	6.40
Quick Lubrication Vehicle Shop	941	Servicing Positions	4.85	40%	B	2.91	4.45	50%	2.23	2.23	6.49
Automobile Care Center	942	1,000 SF GFA	3.11	40%	B	1.87	4.45	50%	2.23	2.23	4.17
Gasoline/Service Station	944	Vehicle Fueling Position	14.03	42%	A	8.14	1.20	50%	0.60	0.60	4.88
Gasoline/Service Station w/ Conv Market and Car Wash	945	Vehicle Fueling Position	13.99	56%	B	6.16	1.20	50%	0.60	0.60	3.70
Self-Service Car Wash	947	Stall	5.54	40%	B	3.32	1.20	50%	0.60	0.60	1.99
Dining											
Drinking Place	925	1,000 SF GFA	11.36			11.36	5.64	50%	2.82	2.82	32.04
Quality Restaurant	931	1,000 SF GFA	7.80	44%	A	4.37	5.64	50%	2.82	2.82	12.32
High Turnover (Sit-Down) Restaurant	932	1,000 SF GFA	9.77	43%	A	5.57	5.64	50%	2.82	2.82	15.71
Fast Food Restaurant without Drive-Thru Window	933	1,000 SF GFA	28.34	50%	B	14.17	5.64	50%	2.82	2.82	39.96
Fast Food Restaurant with Drive-Thru Window	934	1,000 SF GFA	32.67	50%	A	16.34	5.64	50%	2.82	2.82	46.08
Coffee/Donut Shop with Drive-Thru Window	937	1,000 SF GFA	43.38	70%	A	13.01	5.64	50%	2.82	2.82	36.69
Other Retail											
Free-Standing Store	815	1,000 SF GFA	4.83	30%	C	3.38	5.60	50%	2.80	2.80	9.46
Nursery (Garden Center)	817	1,000 SF GFA	6.94	30%	B	4.86	5.60	50%	2.80	2.80	13.61
Shopping Center	820	1,000 SF GLA	3.81	34%	A	2.51	5.60	50%	2.80	2.80	7.03
Supermarket	850	1,000 SF GFA	9.24	36%	A	5.91	5.60	50%	2.80	2.80	16.55
Home Improvement Superstore	862	1,000 SF GFA	2.33	48%	A	1.21	5.60	50%	2.80	2.80	3.39
Toy/Children's Superstore	864	1,000 SF GFA	5.00	30%	B	3.50	5.60	50%	2.80	2.80	9.80
Department Store	875	1,000 SF GFA	1.95	30%	B	1.37	5.60	50%	2.80	2.80	3.84
Pharmacy/Drugstore w/o Drive-Thru Window	880	1,000 SF GFA	8.51	53%	A	4.00	5.60	50%	2.80	2.80	11.20
Pharmacy/Drugstore w/ Drive-Thru Window	881	1,000 SF GFA	10.70	40%	A	5.75	5.60	50%	2.80	2.80	14.70
SERVICES											
Walk-In Bank	911	1,000 SF GFA	12.13	40%	B	7.28	4.45	50%	2.23	2.23	16.23
Drive-In Bank	912	Drive-In Lanes	27.15	35%	A	17.65	4.45	50%	2.23	2.23	39.36
Hair Salon	918	1,000 SF GLA	1.45	30%	B	1.02	6.41	50%	3.21	3.00	3.06

Key to Sources of Pass-by Rates:

A: ITE Trip Generation Handbook 10th Edition (September 2017)

B: Estimated by Kimley-Horn based on ITE rates for similar categories

C: ITE rate adjusted upward by KHA based on logical relationship to other categories

Table 2.17 Land Use Descriptions

Land Use Category	ITE Land Use Code	Land Use Description
PORT AND TERMINAL		
Truck Terminal	030	Point of good transfer between trucks or between trucks and rail
Park and Ride	090	Area used for the transfer of people between private vehicles and buses, light rail, or carpooling.
INDUSTRIAL		
General Light Industrial	110	Emphasis on activities other than manufacturing; typically employing fewer than 500 workers
Industrial Park	130	Area containing a number of industries or related facilities
Manufacturing	140	Primary activity is the conversion of raw materials or parts into finished products
Warehousing	150	Devoted to storage of materials but may include office and maintenance areas
Mini-Warehouse	151	Facilities with a number of units rented to others for the storage of goods
Data Center	160	Free-standing warehouse type facility that is primarily used for off-site storage of computer systems
RESIDENTIAL		
Single-Family Detached Housing	210	Single-family detached homes on individual lots
Multifamily Housing (Low-Rise)	220	One or two levels (floors) per building such as duplex and townhomes
Multifamily Housing (Mid-Rise)	221	Multi-family housing between three and ten levels (floors) per building
Multifamily Housing (High-Rise)	222	Multi-family housing more than ten levels (floors) per building
Mobile Home Park / Manufactured Housing	240	Consist of manufactured homes that are sited and installed on permanent foundations
Senior Adult Housing-Detached	251	Consists of detached independent living developments that include amenities such as golf courses and swimming pools
Senior Adult Housing-Attached	252	Consists of attached independent living developments that include limited social or recreation services
Assisted Living	254	Residential settings that provide either routine general protective oversight or assistance with activities.
LODGING		
Hotel	310	Lodging facilities that typically have on-site restaurants, lounges, meeting and/or banquet rooms, or other retail shops and services
Motel / Other Lodging Facilities	320	Lodging facilities that may have small on-site restaurant or buffet area but little or no meeting space
RECREATIONAL		
Golf Course	430	May include municipal courses and private country clubs; may have driving ranges, pro shops, and restaurant/banquet facilities
Miniature Golf Course	431	One or more individual putting courses; category should not be used when part of a larger entertainment center (with batting cages, video game centers, etc)
Golf Driving Range	432	Facilities with driving tees for practice; may provide individual or group lessons; may have pro shop and/or refreshment facilities
Bowling Alley	437	Recreational facility that include bowling lanes
Multiplex Movie Theater	445	Movie theater with audience seating, minimum of ten screens, lobby, and refreshment area.
Ice Skating Rink	465	Rinks for ice skating and related sports; may contain spectator areas and refreshment facilities
Racquet / Tennis Club	491	Indoor or outdoor facilities specifically designed for playing tennis
Health / Fitness Club	492	Privately owned facilities that primarily focus on individual fitness or training
Recreational Community Center	495	Public facilities that primarily focus on individual fitness or training
INSTITUTIONAL		
Primary / Middle School	522	Serves students prior to High School
High School	530	Serves students after Middle School
Junior / Community College	540	Two-year junior, community, or technical colleges
University / College	550	Four-year university or college that may or may not offer graduate programs
Religious Institute	560	Places of worship
Day Care Center	565	Generally includes facilities for care of pre-school aged children, generally includes classrooms, offices, eating areas, and playgrounds
MEDICAL		
Hospital	610	Medical and surgical facilities with overnight accommodations
Nursing Home	620	Rest and convalescent homes with residents who do little or no driving
Clinic	630	Facilities with limited diagnostic and outpatient care
Animal Hospital / Veterinary Clinic	640	Facility that specializes in the medical care and treatment of animals
OFFICE		
General Office Building	710	Office buildings which house multiple tenants
Corporate Headquarters Building	714	Office building housing corporate headquarters of a single company or organization
Single Tenant Office Building	715	Single tenant office buildings other than corporate headquarters
Medical/Dental Office	720	Multi-tenant building with offices for physicians and/or dentists
Office Park	750	Office buildings (typically low-rise) in a campus setting and served by a common roadway system

Table 2.17 Land Use Descriptions (Continued)

Land Use Category	ITE Land Use Code	Land Use Description
COMMERCIAL		
Automobile Related		
New Car Sales	841	New car dealerships, typically with automobile servicing and part sales
Automobile Parts Sales	843	Retail sale of auto parts but no on-site vehicle repair
Tire Store	848	Primary business is sales and installation of tires; usually do not have large storage or warehouse area
Quick Lubrication Vehicle Shop	941	Primary business is to perform oil changes and fluid/filter changes with other repair services not provided
Automobile Care Center	942	Automobile repair and servicing including stereo installations and upholstery
Gasoline / Service Station	944	Gasoline sales without convenience store or car wash; may include repair
Gasoline/Service Station w/ Conv Market	945	Gasoline sales with convenience store where the primary business is gasoline sales
Self-Service Car Wash	947	Has stalls for driver to park and wash the vehicle
Dining		
Drinking Place	925	Bar where alcoholic beverages and food are served
Sit Down Restaurant	931	Restaurants with turnover rates of one hour or longer; typically require reservations
High Turnover (Sit-Down) Restaurant	932	Restaurants with turnover rates less than one hour; typically includes moderately-priced chain restaurants
Fast Food Restaurant without Drive-Thru Window	933	High-turnover fast food restaurant for carry-out and eat-in customers, but without a drive-thru window
Fast Food Restaurant with Drive-Thru Window	934	High-turnover fast food restaurant for carry-out and eat-in customers with a drive-thru window
Coffee / Donut Shop with Drive-Thru Window	937	Coffee and Donut restaurants with drive-through windows, hold long store hours and have limited indoor seating
Other Retail		
Free-Standing Retail Store	815	Category includes free-standing stores with off-street parking; typically offer a variety of products and services with long store hours
Garden Center (Nursery)	817	Building with a yard of planting or landscape stock; may have office, storage, shipping or greenhouse facilities
Shopping Center	820	Integrated group of commercial establishments; planning, owned, and managed as a unit
Supermarket	850	Primary business is sale of groceries, food, and household cleaning items; may include photo, pharmacy, video rental, and/or ATM
Home Improvement Superstore	862	Warehouse-type facilities offering a large variety of products and services including lumber, tool, paint, lighting, and fixtures, among other items.
Toy/Children's Superstore	864	Businesses specializing in child-oriented merchandise
Department Store	875	Free-standing facility that specialize in the sale of a wide range of products
Pharmacy / Drugstore without Drive-Thru Window	880	Facilities that primarily sell prescription and non-prescription drugs without a drive-through window
Pharmacy / Drugstore with Drive-Thru Window	881	Facilities that primarily sell prescription and non-prescription drugs with a drive-through window
SERVICES		
Bank (Walk-In)	911	Bank without drive-thru lanes
Bank (Drive In)	912	Bank with drive-thru lanes
Hair Salon	918	Facilities that specialize in cosmetic and beauty services including hair cutting and styling

2.6 SAMPLE CALCULATIONS

The following section details two (2) examples of maximum assessable Roadway Impact Fee calculations.

Example 1:

Development Type - One (1) Unit of Single Family Housing in Service Area 1

Determine Development Unit and Vehicle-Miles Per Development Unit	
Step 1	<i>From Table 2.16 [Land Use – Vehicle-Mile Equivalency Table]</i> Development Type: 1 Dwelling Unit of Single-Family Detached Housing Development Units: 1 Dwelling Unit Veh-Mi Per Development Unit: 2.97
Determine Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile)	
Step 2	<i>From Table 2.15, Line 16 [Maximum Assessable Fee Per Service Unit]</i> Service Area A: \$374
Determine Maximum Assessable Impact Fee	
Step 3	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 1 * 2.97 * \$374 Maximum Assessable Impact Fee = \$1,111

Example 2:

Development Type - 150,000 Square Foot Home Improvement Store in SA 4

Determine Development Unit and Vehicle-Miles Per Development Unit	
Step 1	<i>From Table 2.16 [Land Use – Vehicle-Mile Equivalency Table]</i> Development Type: 150,000 square feet of Home Improvement Store Development Units: 1,000 square feet of Gross Floor Area Veh-Mi Per Development Unit: 3.39
Determine Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile)	
Step 2	<i>From Table 2.15, Line 16 [Maximum Assessable Fee Per Service Unit]</i> Service Area A: \$608
Determine Maximum Assessable Impact Fee	
Step 3	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 150 * 3.39 * \$608 Maximum Assessable Impact Fee = \$309,168

2.7 ADOPTION AND ADMINISTRATION OF ROADWAY IMPACT FEES

ADOPTION PROCESS

Chapter 395 of the Texas Local Government Code stipulates a specific process for the adoption of Roadway Impact Fees. A Capital Improvements Advisory Committee (CIAC) is required to review the Land Use Assumptions and Roadway Impact Fees CIP used in calculating the maximum fee, and to provide the Committee's findings for consideration by the City Council. This CIAC also reviews the calculation and resulting maximum fees and provides its findings to the City Council. The composition of the CIAC is required to adequately represent the building and development communities. The City Council then conducts a public hearing on the Roadway Impact Fee Assumptions (Land Use and Capital Improvements Plan) and a second public hearing on the Roadway Impact Fee Calculation and Roadway Impact Fee Ordinance.

Following policy adoption, the CIAC is tasked with advising the City Council of the need to update the Land Use Assumptions or the Roadway Impact Fees CIP at any time within five years of adoption. Finally, the CIAC oversees the proper administration of the Impact Fee, once in place, and advises the Council as necessary.

COLLECTION AND USE OF ROADWAY IMPACT FEES

Roadway Impact Fees are assessed when a final plat is recorded. The assessment defines the impact of each unit at the time of platting, according to land use, and may not exceed the maximum impact fee allowed by law. Roadway Impact Fees are collected when a building permit is issued. Therefore, funds are not collected until development-impacts are introduced to the transportation system. Funds collected within a service area can be used only within the same service area. Finally, fees must be utilized within 10 years of collection, or must be refunded with interest.

2.8 CONCLUSIONS

The City of Sherman has established a process to implement the assessment and collection of Roadway Impact Fees through the adoption of an impact fee ordinance that is consistent with Chapter 395 of the Texas Local Government Code.

This report establishes the maximum allowable Roadway Impact Fee that could be assessed by the City of Sherman, as shown in the previously referenced **Table 2.15**. This document serves as a guide to the assessment of Roadway Impact Fees pertaining to future development, and the City's need for transportation improvements to accommodate that growth. Following the public hearing process, the City Council may establish an impact fee amount to be collected, up to the calculated maximum and establish the Roadway Impact Fee Ordinance accordingly.

In conclusion, it is our opinion that the data and methodology used in this analysis are appropriate and consistent with Chapter 395 of the Texas Local Government Code. Furthermore, the Land Use Assumptions and the proposed Roadway Impact Fee Capital Improvements Plan are appropriately incorporated into the development of the maximum assessable Roadway Impact Fee.

Below is the listing of the 2020 Roadway Impact Fee Study's Maximum Assessable Impact Fee Per Service Unit (Vehicle-Mile):

Service Area	Maximum Fee Per Service Unit (per Vehicle-Mile)
1	\$374
2	\$527
3	\$748
4	\$608

Chapter 3
Water Impact Fee Study for the
2020 Impact Fee Study



Aug
2020

Prepared for the City of Sherman

Prepared by:

Kimley-Horn and Associates, Inc.

801 Cherry Street, Unit 11, Suite 1300

Fort Worth, TX 76102

Phone 817 335 6511

TBPE Firm Registration Number: F-928

Project Number: 063493010

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3.1 INTRODUCTION

The City of Sherman retained the services of Kimley-Horn and Associates, Inc., for the purpose of developing the impact fees for water system improvements required to serve new development. These fees were developed in accordance with Chapter 395 of the Local Government Code (impact fees).

The purpose of this report is to satisfy the requirements of the law and provide the City with an impact fee capital improvements plan and associated impact fees.

For convenience and reference, the following is excerpted from Chapter 395 of the code:

- (a) *The political subdivision shall use qualified professionals to prepare the capital improvements plan and to calculate the impact fee. The capital improvements plan must contain specific enumeration of the following items:*
- (1) *a description of the existing capital improvements within the service area and the costs to upgrade, update, improve, expand, or replace the improvements to meet existing needs and usage and stricter safety, efficiency, environmental, or regulatory standards, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - (2) *an analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - (3) *a description of all or the parts of the capital improvements or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - (4) *a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including but not limited to residential, commercial, and industrial;*
 - (5) *the total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria;*
 - (6) *the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years; and*

(7) plan for awarding:

- (A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or
- (B) in the alternative, a credit equal to 50 percent of the total project cost of implementing the capital improvements plan.

The study process was comprised of three tasks:

A. LAND USE ASSUMPTIONS

The development of land use assumptions included the following:

- Establishing impact fee service areas (SA) for water and wastewater;
- Collection/determination of population and employment data by SA; and
- Projection of the ten-year population and employment by SA.

A detailed discussion is outlined in the current Land Use Assumptions Chapter of this report.

B. EVALUATION OF THE CURRENT WATER CAPITAL IMPROVEMENT PLANS AND DEVELOPMENT OF THE IMPACT FEE CAPITAL IMPROVEMENTS PLAN

This task involved reviewing the City's current capital improvements plans, identifying proposed water capital improvements that will be built in the 10-year planning window, and interviews with planning and public works staff. Both parties provided information allowing us to develop the impact fee capital improvements plan. Water demand projections were then used to determine the additional single-family equivalents (SFE).

C. IMPACT FEE ANALYSIS AND REPORT

This task included calculating the additional single-family equivalent units and credit reduction. These values were then used to determine the impact fee per SFE and the maximum assessable impact fee by meter size.

3.2 DESIGN CRITERIA

In accordance with the Chapter 290 of the Texas Administrative Code (Public Drinking Water) and the American Water Works Associations (AWWA) requirements for the design and operation of potable water systems the following design criteria is followed when planning for future water infrastructure.

A. WATER LINES

Water lines are generally sized to maintain the following pressure requirements:

- Peak hour demand with a minimum pressure of 35 pounds per square inch (psi);
- Night-time tank filling with a maximum pressure of 100 psi; and
- Peak day demand plus fire flow with a minimum pressure of 20 psi.

B. STORAGE TANKS

The Texas Commission on Environmental Quality (TCEQ) and the State Board of Insurance (SBI) have established criteria for ground and elevated storage. These criteria address volume and height requirements only. The layout of the distribution system, location of the storage facilities, and the interaction with the high service and booster pumps affect the amount of storage necessary for the most efficient and reliable operation of the system.

(a) Ground Storage

Ground storage serves two functions:

- Equalization for differing feed rates between the water supply and pumping to the system; and
- Emergency capacity in the event of temporary loss of water supply.

Generally, ground storage facilities are located at water supply points or at each pump station within the water distribution system. Suggested storage capacities are established based on several criteria. There are specific requirements of the TCEQ. These criteria are detailed later in this section. Although ground and elevated storage facilities perform separate functions within the system, both are aimed at decreasing the impact of demand fluctuations. Their capacities are established based on knowledge of how demand varies seasonally and daily.

(b) Elevated Storage

Elevated storage serves three purposes:

- Functionally, elevated storage equalizes the pumping rate to compensate for daily variations in demand and to maintain a fairly constant pumping rate (usually referred to as operational storage), or a pumping rate that conforms to the requirements of the electrical rate structure.
- Provides pressure maintenance and protection against surges created by instantaneous demand, such as fire flow and main breaks, and instantaneous change in supply, such as pumps turning on and off.
- Maintains a reserve capacity for fire protection and pressure maintenance in case of power failure to one or more pump stations. Sufficient storage should be maintained to provide four hours of fire flow demand during a loss of power to the pump station.

Suggested storage capacities are established by the TCEQ. Adequate operational storage is established by determining the required volume to equalize the daily fluctuations in flow during the maximum day demand, plus the reserve volume required for fire protection.

The minimum requirements for storage, according to Chapter 290 of the Texas Administrative Code, are as follows:

- Total Storage - Equal to 200 gallons per connection.
- Elevated Storage - Equal to 100 gallons per connection; or
- Elevated Storage – Equal to 200 gallons per connection for a firm pumping capacity reduction from 2.0 gallons per connection to 0.6 gallons per connection.

C. PUMP STATIONS

Pumping capacities must provide the maximum demand or the peak hour demand required by the water system or the suggested capacities established by the TCEQ. Pumping capacity should supply the maximum demand with sufficient redundancy to allow for the largest pump at the pump station to be out of service. This is known as firm pumping capacity.

Each pump station or pressure plane must have two or more pumps that have a total capacity of 2.0 gallons per minute per connection, or have a total capacity of at least 1,000 gallons per minute and the ability to meet peak hour demand with the largest pump out of service, whichever is less. If the system provides elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required.

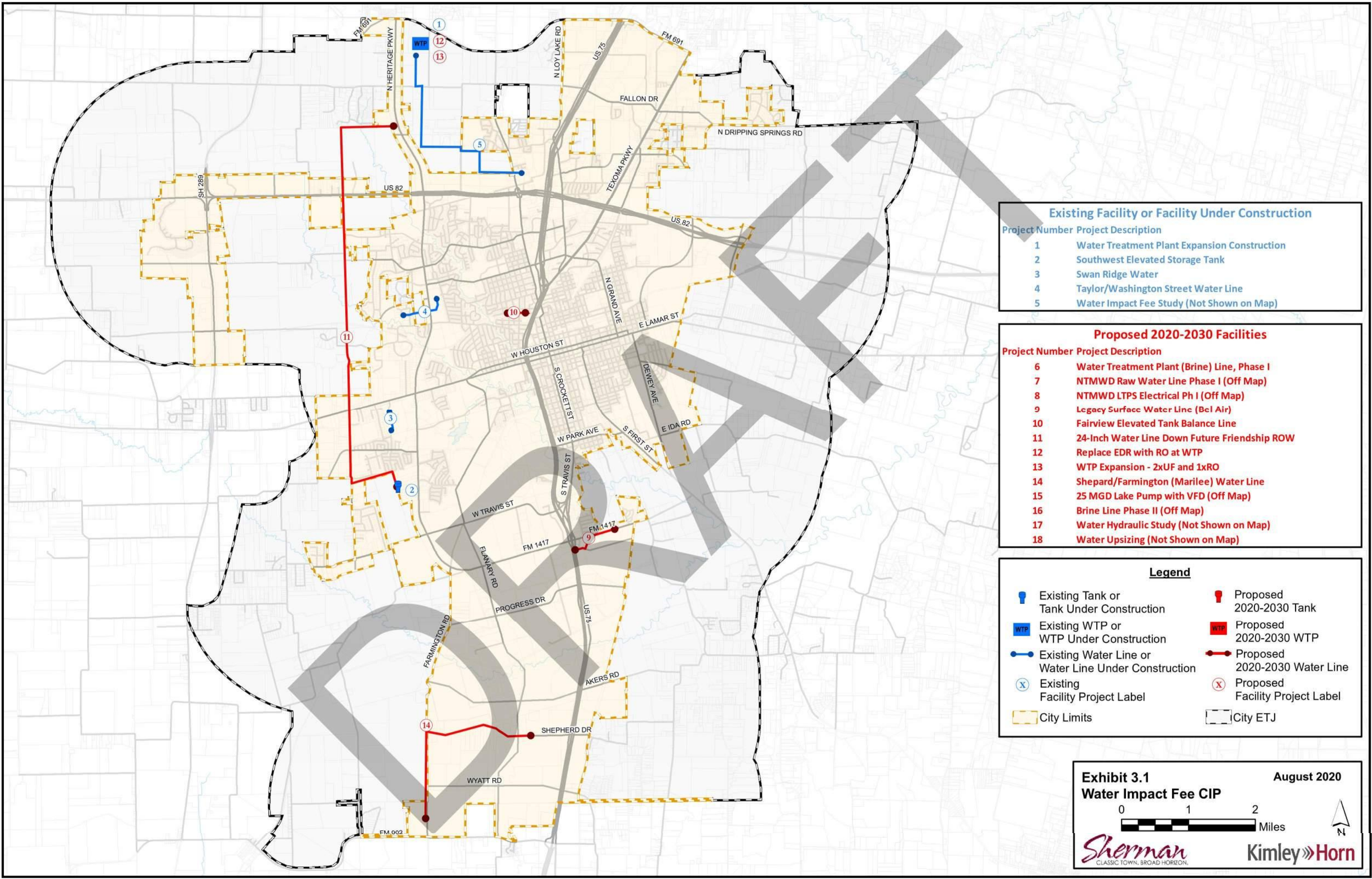
3.3 IMPACT FEE CAPITAL IMPROVEMENTS PLAN

The purpose of a capital improvements program is to provide the City with a logical strategy for upgrading and expanding its water distribution system to accommodate future growth and for addressing existing system deficiencies. The impact fee capital improvements plan is developed using projects identified during the capital improvement program planning process. State law only allows cost recovery associated with eligible projects in a ten (10) year planning window from the time of the impact fee study. The following details the projects and the eligible recoverable cost.

Five (5) existing and thirteen (13) proposed projects identified in the water capital improvements plan are determined eligible for recoverable cost over the next 10 years. The City of Sherman's total cost of these projects is \$150,600,000. The projected recoverable cost through impact fees is \$78,457,600. After debt service costs are added and the credit reduction calculation is complete, \$51,142,587 is recoverable through impact fees serving the 10-year system needs. These impact fee capital improvements are shown in **Table 3.1** and illustrated in **Exhibit 3.1**.

**Table 3.1 Water Impact Fee Capital Improvements
Project Cost and 10-Year Recoverable Cost**

Proj. #	Description	2020 Required Capacity (Percent Utilization)	2030 Required Capacity (Percent Utilization)	2020-2030 Required Capacity (Percent Utilization)	2030 Projected Recoverable Cost	Total Project Cost
EXISTING						
1	Water Treatment Plant Expansion Construction	9%	54%	45%	\$ 13,608,000	\$ 30,240,000
2	Southwest Elevated Storage Tank	9%	54%	45%	\$ 1,188,000	\$ 2,640,000
3	Swan Ridge Water	8%	54%	46%	\$ 59,800	\$ 130,000
4	Taylor/Washington Street Water Line	7%	54%	47%	\$ 32,900	\$ 70,000
5	Water Impact Fee Study	-	-	100%	\$ 35,000	\$ 35,000
Existing Subtotal					\$ 14,923,700	\$ 33,115,000
PROPOSED						
6	Water Treatment Plant (Brine) Line, Phase I	0%	54%	54%	\$ 1,728,000	\$ 3,200,000
7	NTMWD Raw Water Line Phase I	0%	54%	54%	\$ 12,960,000	\$ 24,000,000
8	NTMWD LTPS Electrical Ph I	0%	54%	54%	\$ 2,889,000	\$ 5,350,000
9	Legacy Surface Water Line (Bel Air)	0%	54%	54%	\$ 1,134,000	\$ 2,100,000
10	Fairview Elevated Tank Balance Line	0%	54%	54%	\$ 81,000	\$ 150,000
11	24-Inch Water Line Down Future Friendship ROW	0%	54%	54%	\$ 6,750,000	\$ 12,500,000
12	Replace EDR with RO at WTP	0%	54%	54%	\$ 6,480,000	\$ 12,000,000
13	WTP Expansion - 2xUF and 1xRO	0%	54%	54%	\$ 12,150,000	\$ 22,500,000
14	Shepard/Farmington (Marilee) Water Line	0%	54%	54%	\$ 432,000	\$ 800,000
15	25 MGD Lake Pump with VFD	0%	54%	54%	\$ 216,000	\$ 400,000
16	Brine Line Phase II	0%	54%	54%	\$ 18,360,000	\$ 34,000,000
17	Water Hydraulic Study	0%	100%	100%	\$ 200,000	\$ 200,000
18	Water Upsizing	0%	54%	54%	\$ 153,900	\$ 285,000
Proposed Subtotal					\$ 63,533,900	\$ 117,485,000
Total					\$ 78,457,600	\$ 150,600,000



Existing Facility or Facility Under Construction	
Project Number	Project Description
1	Water Treatment Plant Expansion Construction
2	Southwest Elevated Storage Tank
3	Swan Ridge Water
4	Taylor/Washington Street Water Line
5	Water Impact Fee Study (Not Shown on Map)

Proposed 2020-2030 Facilities	
Project Number	Project Description
6	Water Treatment Plant (Brine) Line, Phase I
7	NTMWD Raw Water Line Phase I (Off Map)
8	NTMWD LTPS Electrical Ph I (Off Map)
9	Legacy Surface Water Line (Bcl Air)
10	Fairview Elevated Tank Balance Line
11	24-Inch Water Line Down Future Friendship ROW
12	Replace EDR with RO at WTP
13	WTP Expansion - 2xUF and 1xRO
14	Shepard/Farmington (Marilee) Water Line
15	25 MGD Lake Pump with VFD (Off Map)
16	Brine Line Phase II (Off Map)
17	Water Hydraulic Study (Not Shown on Map)
18	Water Upsizing (Not Shown on Map)

Legend	
Existing Tank or Tank Under Construction	Proposed 2020-2030 Tank
Existing WTP or WTP Under Construction	Proposed 2020-2030 WTP
Existing Water Line or Water Line Under Construction	Proposed 2020-2030 Water Line
Existing Facility Project Label	Proposed Facility Project Label
City Limits	City ETJ

Exhibit 3.1

Water Impact Fee CIP

August 2020

012 Miles

Sherman
CLASSIC TOWN. BROAD HORIZON.

Kimley»Horn

3.4 WATER IMPACT FEE CALCULATION

Chapter 395 of the Local Government Code defines a service unit as follows, "Service Unit means a standardized measure of consumption attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards and based on historical data and trends applicable to the political subdivision in which the individual unit of development is located during the previous 10 years."

The service unit for Sherman's water impact fees is the "single family equivalent" (SFE), which is based on the size of the base water meter. An SFE is the water demand associated with the smallest water meter issued for new single-family development in the system (3/4-inch meter). The ratio of each larger meter's capacity to the capacity of the base meter determines the SFE multiplier applied to each larger meter size. The current SFE equivalency factors are shown in **Table 3.2**.

Table 3.2 Meter Capacity Ratios

Meter Size	SFEs/ Meter
3/4"	1
1"	1.67
1-1/2"	3.33
2"	5.33
3"	23.33
4"	43.33
6"	93.33
8"	160
10"	233.33
16"	433.33

Multiplying the number of existing connections for each meter size by the SFEs per meter yields the total SFEs for that meter size. Summing for all meter sizes yields the total number of water SFEs connected to the City's water system as shown in **Table 3.3**. The current population in the water service area is divided by the total number of SFEs yielding a Persons per SFE number.

Table 3.3 Capita per Single-Family Equivalent (SFE)

Meter Size	Existing Connections¹	SFEs/ Meter	Single Family Equivalents
5/8"	7,076	0.67	4,741
5/8"x3/4"	24	0.67	17
3/4"	6,814	1	6,814
1"	715	1.67	1,195
1-1/2"	375	3.33	1,249
2"	288	5.33	1,536
3"	68	23.33	1,587
4"	37	43.33	1,604
6"	23	93.33	2,147
8"	15	160	2,400
10"	2	233.33	467
16"	2	433.33	867
Total Existing Connections:		Total SFEs:	24,624
Total Served Population:			42,168
Persons per SFE:			1.71

(1) Data Sources: City of Sherman

The City of Sherman defines a single-family equivalent (SFE) based on historical water demand over the past 10 years. The single-family equivalent is the development type that predominately uses a 3/4-inch meter. The measure of consumption per SFE is based on a 3/4-inch meter and the data shown in **Table 3.4**.

Table 3.4 SFE Consumption Calculation

Year	Population ¹	Single-Family Equivalent (1.71 capita/SFE)	Water Average Day Demand (MGD) ¹	Demand per SFE (GPD)
2010	38,531	22,533	8.31	369
2011	38,214	22,347	9.48	424
2012	38,499	22,514	8.3	369
2013	38,805	22,693	8.37	369
2014	39,119	22,877	8.92	390
2015	39,569	23,140	10.12	437
2016	40,112	23,457	9.53	406
2017	40,543	23,709	9.48	400
2018	41,149	24,064	8.69	361
2019	42,168	24,660	8.35	339
Average Historical Demand per SFE				387

(1) Data Sources: City of Sherman

Based on the City's 10-year growth projections and the resulting water demand projections, water service will be required for an additional **11,421** SFEs by the year 2030 as shown in **Table 3.5**. The calculation is as follows:

- A single family equivalent, which is a unit of development that consumes approximately **387** gallons per day (GPD), is a typical residential connection that uses a 3/4-inch meter.

Table 3.5 10-year Additional Single-Family Equivalent Calculation

Year	Average Day Demand (MGD) ¹	SFE Demand (GPD)	Projected SFEs
2020	9.89	387	25,556
2030	14.31	387	36,977
10-year Additional SFEs			11,421

(1) Data Sources: City of Sherman

Impact fee law allows for a credit calculation to credit back the development community based on the utility revenues or ad valorem taxes that are allocated for paying a portion of future capital improvements. The intent of this credit is to prevent the City from double charging development for future capital improvements via impact fees and utility rates. If the city chooses not to do a financial analysis to determine the credit value they are required by law to reduce the recoverable cost by 50 percent. The city has chosen not to calculate the credit value. Therefore, the maximum recoverable cost for impact fee shown below is 50 percent of the Pre Credit Recoverable Cost.

A breakdown of the 10-year recoverable costs and the associated impact fee per service unit is as follows:

Table 3.6 Water 10-Year Recoverable Cost Breakdown

Recoverable Impact Fee CIP Costs	\$ 78,457,600
Debt Service*	\$ 23,827,573
Pre Credit Recoverable Cost for Impact Fee	\$ 102,285,173
Credit for Utility Revenues	\$ (51,142,587)
Maximum Recoverable Cost for Impact Fee	\$ 51,142,587

*Represents the interest costs associated with debt financing the new impact fee project costs.

$$\text{Impact fee per SFE} = \frac{\text{10-year recoverable costs}}{\text{10-year additional SFEs}}$$

$$\text{Impact fee per SFE} = \frac{\$51,142,587}{11,421}$$

$$\text{Impact fee per SFE} = \$4,478$$

Therefore, the maximum assessable impact fee per SFE is **\$4,478**.

For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 3/4-inch meter. The maximum impact fee that could be assessed for other meter sizes is based on the Equivalency Table (**Table 3.7**).

Table 3.7 Maximum Assessable Water Impact Fee for Commonly Used Meters

Meter Size	Maximum Continuous Operating Capacity (GPM)*	Single Family Equivalent	Maximum Assessable Water Impact Fee
3/4"	15	1	\$4,478
1"	25	1.67	\$7,478
1-1/2"	50	3.33	\$14,912
2"	80	5.33	\$23,868
3"	350	23.33	\$104,472
4"	650	43.33	\$194,032
6"	1400	93.33	\$417,932
8"	2400	160	\$716,480
10"	3500	233.33	\$1,044,852
16"	6500	433.33	\$1,940,452

**Operating capacities obtained from American Water Works Association (AWWA) C-700-15 and C-701-15

Chapter 4
Wastewater Impact Fee Study for the
2020 Impact Fee Study



Aug
2020

Prepared for the City of Sherman

Prepared by:

Kimley-Horn and Associates, Inc.

801 Cherry Street, Unit 11, Suite 1300

Fort Worth, TX 76102

Phone 817 335 6511

TBPE Firm Registration Number: F-928

Project Number: 063493010

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4.1 INTRODUCTION

The City of Sherman retained the services of Kimley-Horn and Associates, Inc., for the purpose of developing the impact fees for wastewater system improvements required to serve new development. These fees were developed in accordance with Chapter 395 of the Local Government Code (impact fees). The purpose of this report is to satisfy the requirements of the law and provide the City with an impact fee capital improvements plan and associated impact fees.

For convenience and reference, the following is excerpted from Chapter 395 of the code:

- (a) *The political subdivision shall use qualified professionals to prepare the capital improvements plan and to calculate the impact fee. The capital improvements plan must contain specific enumeration of the following items:*
- (1) *a description of the existing capital improvements within the service area and the costs to upgrade, update, improve, expand, or replace the improvements to meet existing needs and usage and stricter safety, efficiency, environmental, or regulatory standards, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - (2) *an analysis of the total capacity, the level of current usage, and commitments for usage of capacity of the existing capital improvements, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - (3) *a description of all or the parts of the capital improvements or facility expansions and their costs necessitated by and attributable to new development in the service area based on the approved land use assumptions, which shall be prepared by a qualified professional engineer licensed to perform such professional engineering services in this state;*
 - (4) *a definitive table establishing the specific level or quantity of use, consumption, generation, or discharge of a service unit for each category of capital improvements or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including but not limited to residential, commercial, and industrial;*
 - (5) *the total number of projected service units necessitated by and attributable to new development within the service area based on the approved land use assumptions and calculated in accordance with generally accepted engineering or planning criteria;*
 - (6) *the projected demand for capital improvements or facility expansions required by new service units projected over a reasonable period of time, not to exceed 10 years; and*

(7) plan for awarding:

- (A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or
- (B) in the alternative, a credit equal to 50 percent of the total project cost of implementing the capital improvements plan.

The study process was comprised of three tasks:

A. LAND USE ASSUMPTIONS

The development of land use assumptions included the following:

- Establishing impact fee service areas (SA) for water and wastewater;
- Collection/determination of population and employment data by SA; and
- Projection of the ten-year population and employment by SA.

A detailed discussion is outlined in the current Land Use Assumptions Chapter of this report.

B. EVALUATION OF THE CURRENT WASTEWATER CAPITAL IMPROVEMENT PLANS AND DEVELOPMENT OF THE IMPACT FEE CAPITAL IMPROVEMENTS PLAN

This task involved reviewing the City's current capital improvements plans, identifying proposed wastewater capital improvements that will be built in the 10-year planning window, and interviews with planning and public works staff. Both parties provided information allowing us to develop the impact fee capital improvements plan. Wastewater flow projections were then used to determine the additional single-family equivalents.

C. IMPACT FEE ANALYSIS AND REPORT

This task included calculating the additional single-family equivalent units and credit reduction. These values were then used to determine the impact fee per SFE and the maximum assessable impact fee by meter size.

4.2 DESIGN CRITERIA

In accordance with the Chapter 217 of the Texas Administrative Code (Design Criteria for Domestic Wastewater Systems) the following design criteria is followed when planning for future wastewater infrastructure.

A. SEWER TRUNK LINES (INTERCEPTORS)

The design criteria for sewer trunk lines or interceptors is based on the TCEQ requirements that meet peak wet weather design flows with no overflows while maintaining a minimum of 2 ft/sec cleaning velocity and a maximum of 8 ft/sec velocity.

B. LIFT STATIONS PUMPING CAPACITY

The design criteria for lift station pumping shall be to provide firm pumping capacity to meet 125% of the peak wet weather design flows. The firm pumping capacity is defined as the available total pumping capacity with the largest pump out of service.

C. LIFT STATION WET WELL CAPACITY

The design criteria for lift station wet wells are to provide adequate volumes to limit pump cycling to once every 10 minutes. Based on this criterion, the required operating volume for each pump can be calculated as

$$V = tQ/4 \quad \text{where,}$$

$$t = \text{Maximum pump cycling time} = 10 \text{ minutes}$$

$$Q = \text{Lead pump discharge rate in gallons per minute (gpm)}$$

$$V = \text{Required wet well volume between pump start and stop elevation}$$

D. FORCE MAINS

The design criteria recommended for force mains is to meet the required pumping capacity of the lift station at a velocity less than 8 feet per second and a maximum discharge pressure of 100 psi and to allow a minimum of 2 feet per second scouring velocity during a single pump operation.

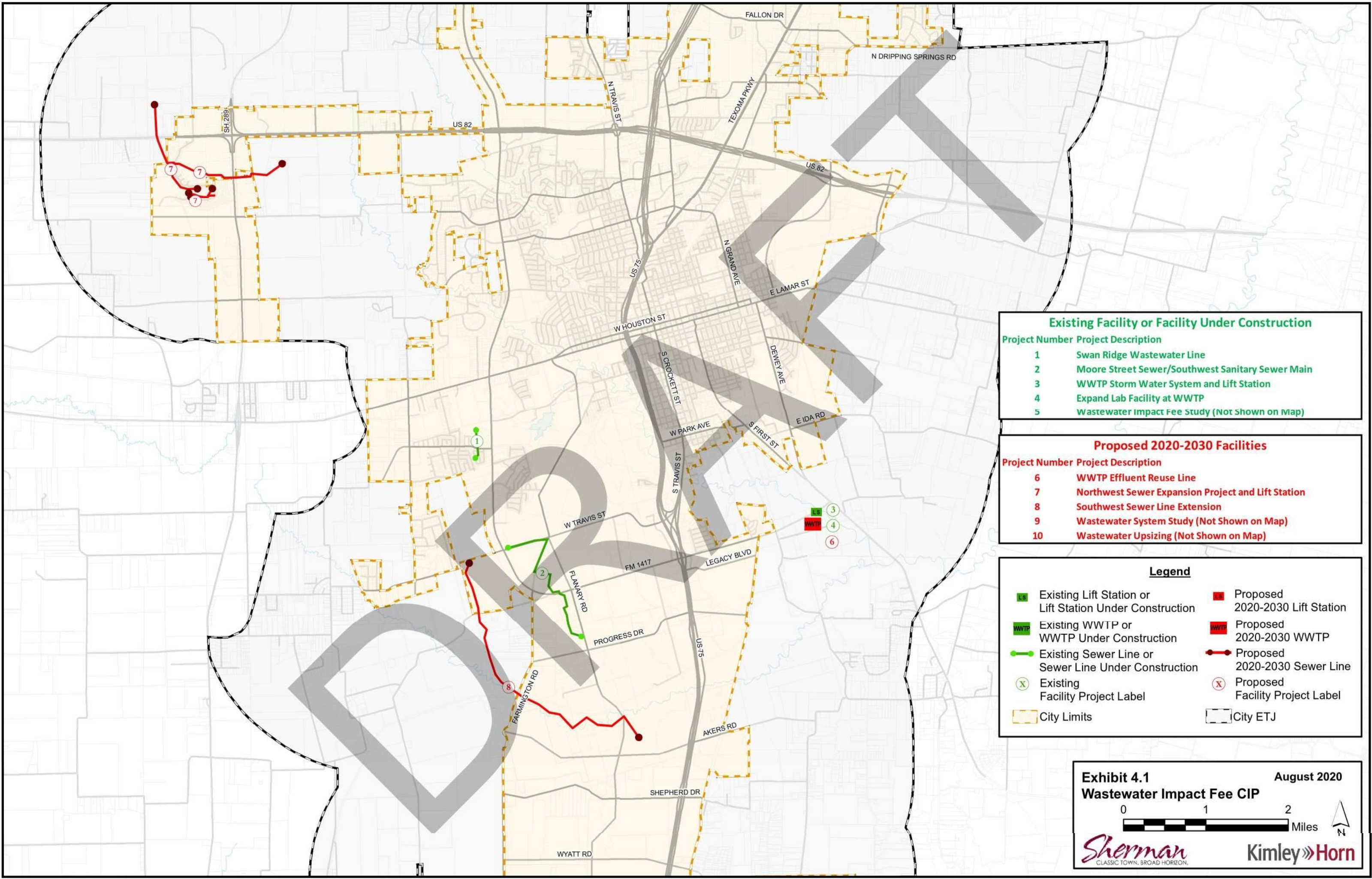
4.3 IMPACT FEE CAPITAL IMPROVEMENTS PLAN

The purpose of a capital improvements program is to provide the City with a logical strategy for upgrading and expanding its wastewater collection system to accommodate future growth and for addressing existing system deficiencies. The impact fee capital improvements plan is developed using projects identified during the capital improvement program planning process. State law only allows cost recovery associated with eligible projects in a ten (10) year planning window from the time of the impact fee study. The following details the projects and the eligible recoverable cost.

Five (5) existing and five (5) proposed projects identified in the wastewater capital improvements plan are determined eligible for recoverable cost over the next 10 years. The City of Sherman's total cost of these projects is \$20,990,000. The projected recoverable cost through impact fees is \$11,478,300. After debt service costs are added and the credit reduction calculation is complete, \$7,482,130 is recoverable through impact fees serving the 10-year system needs. These impact fee capital improvements are shown in **Table 4.1** and illustrated in **Exhibit 4.1**.

**Table 4.1 Wastewater Impact Fee Capital Improvements
Project Cost and 10-Year Recoverable Cost**

Proj. #	Description	2020 Required Capacity (Percent Utilization)	2030 Required Capacity (Percent Utilization)	2020-2030 Required Capacity (Percent Utilization)	2030 Projected Recoverable Cost	Total Project Cost
EXISTING						
1	Swan Ridge Wastewater Line	7%	54%	47%	\$ 56,400	\$ 120,000
2	Moore Street Sewer/Southwest Sanitary Sewer Main	4%	54%	50%	\$ 550,000	\$ 1,100,000
3	WWTP Storm Water System and Lift Station	4%	54%	50%	\$ 550,000	\$ 1,100,000
4	Expand Lab Facility at WWTP	4%	54%	50%	\$ 650,000	\$ 1,300,000
5	Wastewater Impact Fee Study	-	-	100%	\$ 35,000	\$ 35,000
Existing Subtotal					\$ 1,841,400	\$ 3,655,000
PROPOSED						
6	WWTP Effluent Reuse Line	0%	54%	54%	\$ 3,240,000	\$ 6,000,000
7	Northwest Sewer Expansion Project and Lift Station	0%	54%	54%	\$ 2,403,000	\$ 4,450,000
8	Southwest Sewer Line Extension	0%	54%	54%	\$ 3,240,000	\$ 6,000,000
9	Wastewater System Study	0%	100%	100%	\$ 600,000	\$ 600,000
10	Wastewater Upsizing	0%	54%	54%	\$ 153,900	\$ 285,000
Proposed Subtotal					\$ 9,636,900	\$ 17,335,000
Total					\$ 11,478,300	\$ 20,990,000



Existing Facility or Facility Under Construction	
Project Number	Project Description
1	Swan Ridge Wastewater Line
2	Moore Street Sewer/Southwest Sanitary Sewer Main
3	WWTP Storm Water System and Lift Station
4	Expand Lab Facility at WWTP
5	Wastewater Impact Fee Study (Not Shown on Map)

Proposed 2020-2030 Facilities	
Project Number	Project Description
6	WWTP Effluent Reuse Line
7	Northwest Sewer Expansion Project and Lift Station
8	Southwest Sewer Line Extension
9	Wastewater System Study (Not Shown on Map)
10	Wastewater Upsizing (Not Shown on Map)

Legend	
Existing Lift Station or Lift Station Under Construction	Proposed 2020-2030 Lift Station
Existing WWTP or WWTP Under Construction	Proposed 2020-2030 WWTP
Existing Sewer Line or Sewer Line Under Construction	Proposed 2020-2030 Sewer Line
Existing Facility Project Label	Proposed Facility Project Label
City Limits	City ETJ

Exhibit 4.1

Wastewater Impact Fee CIP

August 2020

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Kimley»Horn

4.4 WASTEWATER IMPACT FEE CALCULATION

Chapter 395 of the Local Government Code defines a service unit as follows, "Service Unit means a standardized measure of consumption attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards and based on historical data and trends applicable to the political subdivision in which the individual unit of development is located during the previous 10 years."

The service unit for Sherman's wastewater impact fees is the "single family equivalent" (SFE), which is based on the size of the base water meter. An SFE is the wastewater flow associated with the smallest water meter issued for new single-family development in the system (3/4-inch meter). The ratio of each larger meter's capacity to the capacity of the base meter determines the SFE multiplier applied to each larger meter size. The current SFE equivalency factors are shown in **Table 4.2**.

Table 4.2 Meter Capacity Ratios

Meter Size	SFEs/ Meter
3/4"	1
1"	1.67
1-1/2"	3.33
2"	5.33
3"	23.33
4"	43.33
6"	93.33
8"	160
10"	233.33
16"	433.33

Multiplying the number of existing connections for each meter size by the SFEs per meter yields the total SFEs for that meter size. Summing for all meter sizes yields the total number of wastewater SFEs connected to the City's wastewater system as shown in **Table 4.3**. The current population in the wastewater service area is divided by the total number of SFEs yielding a Persons per SFE number.

Table 4.3 Capita per Single-Family Equivalent (SFE)

Meter Size	Existing Connections¹	SFEs/ Meter	Single Family Equivalents
5/8"	7,076	0.67	4,741
5/8"x3/4"	24	0.67	17
3/4"	6,814	1	6,814
1"	715	1.67	1,195
1-1/2"	375	3.33	1,249
2"	288	5.33	1,536
3"	68	23.33	1,587
4"	37	43.33	1,604
6"	23	93.33	2,147
8"	15	160	2,400
10"	2	233.33	467
16"	2	433.33	867
Total Existing Connections:		Total SFEs:	24,624
Total Served Population:			42,168
Persons per SFE:			1.71

(1) Data Sources: City of Sherman

The City of Sherman defines a single-family equivalent (SFE) based on historical wastewater discharge over the past 10 years. The single-family equivalent is the development type that predominately uses a 3/4-inch meter. The measure of consumption per SFE is based on a 3/4-inch meter and the data shown in **Table 4.4**.

Table 4.4 SFE Consumption Calculation

Year	Population ¹	Single-Family Equivalent (1.71 capita/SFE)	Wastewater Average Day Flow (MGD) ¹	Flow per SFE (GPD)
2010	38,531	22,533	8.21	364
2011	38,214	22,347	6.93	310
2012	38,499	22,514	6.23	277
2013	38,805	22,693	6.11	269
2014	39,119	22,877	5.84	255
2015	39,569	23,140	8.81	381
2016	40,112	23,457	7.7	328
2017	40,543	23,709	6.57	277
2018	41,149	24,064	7.33	305
2019	42,168	24,660	7.79	316
Average Historical Flow per SFE				309

(1) Data Sources: City of Sherman

Based on the City's 10-year growth projections and the resulting wastewater flow projections, wastewater service will be required for an additional **11,392** SFEs by the year 2030 as shown in **Table 4.5**. The calculation is as follows:

- A single family equivalent, which is a unit of development that discharges approximately **309** gallons per day (GPD), is a typical residential connection that uses a 3/4-inch meter.

Table 4.5 10-year Additional Single-Family Equivalent Calculation

Year	Average Day Flow (MGD) ¹	SFE Discharge (GPD)	Projected SFEs
2020	7.89	309	25,534
2030	11.41	309	36,926
10-year Additional SFEs			11,392

(1) Data Sources: City of Sherman

Impact fee law allows for a credit calculation to credit back the development community based on the utility revenues or ad valorem taxes that are allocated for paying a portion of future capital improvements. The intent of this credit is to prevent the City from double charging development for future capital improvements via impact fees and utility rates. If the city chooses not to do a financial analysis to determine the credit value they are required by law to reduce the recoverable cost by 50 percent. The city has chosen not to calculate the credit value. Therefore, the maximum recoverable cost for impact fee shown below is 50 percent of the Pre Credit Recoverable Cost.

A breakdown of the 10-year recoverable costs and the associated impact fee per service unit is as follows:

Table 4.6 Wastewater 10-Year Recoverable Cost Breakdown

Recoverable Impact Fee CIP Costs	\$ 11,478,300
Debt Service*	\$ 3,485,960
Pre Credit Recoverable Cost for Impact Fee	\$ 14,964,260
Credit for Utility Revenues	\$ (7,482,130)
Maximum Recoverable Cost for Impact Fee	\$ 7,482,130

*Represents the interest costs associated with debt financing the new impact fee project costs.

$$\text{Impact fee per SFE} = \frac{\text{10-year recoverable costs}}{\text{10-year additional SFEs}}$$

$$\text{Impact fee per SFE} = \frac{\$7,482,130}{11,392}$$

$$\text{Impact fee per SFE} = \$657$$

Therefore, the maximum assessable impact fee per SFE is **\$657**.

For a development that requires a different size meter, a service unit equivalent is established at a multiplier based on its capacity with respect to the 3/4-inch meter. The maximum impact fee that could be assessed for other meter sizes is based on the Equivalency Table (**Table 4.7**).

Table 4.7 Maximum Assessable Wastewater Impact Fee for Commonly Used Meters

Meter Size	Maximum Continuous Operating Capacity (GPM)*	Single Family Equivalent	Maximum Assessable Wastewater Impact Fee
3/4"	15	1	\$657
1"	25	1.67	\$1,097
1-1/2"	50	3.33	\$2,188
2"	80	5.33	\$3,502
3"	350	23.33	\$15,328
4"	650	43.33	\$28,468
6"	1400	93.33	\$61,318
8"	2400	160	\$105,120
10"	3500	233.33	\$153,298
16"	6500	433.33	\$284,698

*Operating capacities obtained from American Water Works Association (AWWA) C-700-15 and C-701-15

APPENDIX

CONCEPTUAL LEVEL PROJECT COST PROJECTIONS

ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY

EXISTING ROADWAY FACILITIES INVENTORY

DRAFT

CONCEPTUAL LEVEL PROJECT COST PROJECTIONS

City of Sherman - 2020 Roadway Impact Fee Study
Capital Improvement Plan for Roadway Impact Fees
Summary of Conceptual Level Project Cost Projections

Roadway Improvements - Service Area 1

#	Thoroughfare Plan Classification	Project	Type	Limits		Percent in Service Area	Project Cost	Total Cost in Service Area
				From	To			
1	Major Arterial	N HERITAGE PKWY (1)	Widening	FM 691	US 82	100%	\$ 5,154,000	\$ 5,154,000
2	Minor Arterial	PLAINVIEW RD	Widening	1,525' N of US 82 WBFR	US 82 WBFR	100%	\$ 1,520,000	\$ 1,520,000
3	Minor Arterial	N TRAVIS ST	Widening	Kraeger Rd	US 82 WBFR	100%	\$ 1,972,000	\$ 1,972,000
4	Freeway	US 75 (1)	Gap Study	1,875' N of US 82	US 82	100%	\$ 620,000	\$ 620,000
5	Frontage Road	US 82 WBFR (1)	New	N SH 289	N Heritage Pkwy	100%	\$ 1,451,000	\$ 1,451,000
6	Minor Arterial	FALLON DR (1)	New	N Loy Lake Rd	US 75 SBFR	100%	\$ 344,305	\$ 344,305
7	Minor Arterial	FALLON DR (2)	New	1,525' N of Dripping Spring Rd	Dripping Spring Rd	100%	\$ 1,459,000	\$ 1,459,000
TOTAL							\$ 12,520,305	\$ 12,520,305

Intersection Improvements - Service Area 1

#	Project	Improvement		Percent in Service Area	Project Cost	Total Cost in Service Area
		Improvement 1	Improvement 2			
1	US 82 & Plainview Rd	GRADE SEPERATED INTERCHANGE		50%	\$ 3,000,000	\$ 1,500,000
TOTAL					\$ 3,000,000	\$ 1,500,000

NOTE: These planning level cost projections listed in this Appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman. These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman
2020 Roadway Impact Fees
Conceptual Level Project Cost Projection

8/3/2020

Project Number: 1

Project Information: Thoroughfare Plan Classification: Major Arterial

Name: **N HERITAGE PKWY (1)**

Type: **Widening**

Limits: **FM 691 to US 82**

Service Area:	1
Existing Pavement Section:	3U
Ultimate Pavement Section:	6D
Length (Ft):	14,140
Travelway (Ft):	36
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17

This project includes the widening of the existing section to a six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	27,931	CY	\$25.00	\$698,000
	Earthwork/Top Soil	6	9,950	CY	\$13.00	\$129,000
	Prepared Subgrade	6	19,901	CY	\$25.00	\$498,000
	Curb & Gutter	n/a	56,560	LF	\$10.00	\$566,000
	Concrete Pavement	8	23,741	CY	\$245.00	\$5,817,000

Roadway Construction Cost Subtotal: \$7,707,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$383,000
Utilities		4%	\$313,000
Drainage	Minor Adjustments	20%	\$1,541,000
Special Drainage	Internal Stormsewer System		\$250,000
Other Major Items	Minor Crossing		
ADA Ramps & Requirements		2%	\$154,000
Signs, Pavement Markings		2%	\$154,000
Traffic Control		3%	\$231,000
Street Lighting		5%	\$385,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$385,000

Construction Allowances Subtotal: \$3,798,000

Roadway & ROW Construction Allowances Subtotal: \$11,505,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$2,071,000
Contingency		10%	\$1,151,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$3,222,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$7,707,000
ROW Construction Items		\$3,798,000
Capital Improvement Costs		\$3,222,000

Impact Fee Project Cost Total (35% City Cost Participation): \$5,154,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 2

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **PLAINVIEW RD**Type: **Widening**Limits: **1,525' N of US 82 WBFR to US 82 WBFR**

Service Area:	1
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	1,525
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	2,109	CY	\$25.00	\$53,000
	Earthwork/Top Soil	6	791	CY	\$13.00	\$10,000
	Prepared Subgrade	6	1,469	CY	\$25.00	\$37,000
	Curb & Gutter	n/a	6,100	LF	\$10.00	\$61,000
	Concrete Sidewalk	n/a	15,250	SF	\$12.00	\$183,000
	Concrete Pavement	8	1,807	CY	\$245.00	\$443,000

Roadway Construction Cost Subtotal: \$787,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$78,000
Utilities	Minor Adjustments	4%	\$32,000
Drainage	Bridge Width Internal Stormsewer System	20%	\$157,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$16,000
Signs, Pavement Markings		2%	\$16,000
Traffic Control		3%	\$24,000
Street Lighting		5%	\$39,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$39,000

Construction Allowances Subtotal: \$401,000**Roadway & ROW Construction Allowances Subtotal: \$1,188,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$214,000
Contingency		10%	\$119,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$333,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$787,000
ROW Construction Items		\$401,000
Capital Improvement Costs		\$333,000

Impact Fee Project Cost Total: \$1,520,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 3

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **N TRAVIS ST**Type: **Widening**Limits: **Kraeger Rd to US 82 WBFR**Service Area: **1**Existing Pavement Section: **2U**Ultimate Pavement Section: **4D**Length (Ft): **5,845**Travelway (Ft): **24**Roadbeds (divided #): **2**Parkway (Ft): **10.5**Median Width (Ft): **17**Sidewalk Width (Ft): **5**Sidewalks (#): **2**

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	8,082	CY	\$25.00	\$202,000
	Earthwork/Top Soil	6	3,031	CY	\$13.00	\$39,000
	Prepared Subgrade	6	5,629	CY	\$25.00	\$141,000
	Curb & Gutter	n/a	23,380	LF	\$10.00	\$234,000
	Concrete Sidewalk	n/a	58,450	SF	\$12.00	\$701,000
	Concrete Pavement	8	6,927	CY	\$245.00	\$1,697,000

Roadway Construction Cost Subtotal: \$3,015,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$150,000
Utilities	Minor Adjustments	4%	\$123,000
Drainage	Bridge Width Internal Stormsewer System	20%	\$603,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$60,000
Signs, Pavement Markings		2%	\$60,000
Traffic Control		3%	\$90,000
Street Lighting		5%	\$151,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$151,000

Construction Allowances Subtotal: \$1,388,000**Roadway & ROW Construction Allowances Subtotal: \$4,402,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$792,000
Contingency		10%	\$440,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$1,233,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$3,015,000
ROW Construction Items		\$1,388,000
Capital Improvement Costs		\$1,233,000

Impact Fee Project Cost Total (35% City Cost Participation): \$1,972,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 4

Project Information:

Thoroughfare Plan Classification: Freeway

Name: US 75 (1)

Type: Gap Study

Limits: 1,875' N of US 82 to US 82

Service Area:

Length (Ft):

1

1,875

This project is one section of the US 75 Gap Study. The City anticipates contributing \$8.2 million for the US 75 Gap Study project which will add main lane capacity. This section accounts for \$620,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: \$620,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 5

Project Information:

Thoroughfare Plan Classification: Frontage Road

Name: **US 82 WBFR (1)**

Type: **New**

Limits: **N SH 289 to N Heritage Pkwy**

Service Area:

1

Length (Ft):

17,115

The MPO Plan projects an overall project cost of \$19,347,000 to provide US 82 Frontage Road and Ramp Reversals from FM 1417 (N Heritage Parkway) to SH 289. The City anticipates contributing approximately 15% to the overall project. The City cost for the US 82 WBFR is anticipated to be \$1,451,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: \$1,451,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 6

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **FALLON DR (1)**Type: **New**Limits: **N Loy Lake Rd to US 75 SBFR**Service Area: **1**Existing Pavement Section: **NA**Ultimate Pavement Section: **4D**Length (Ft): **1,645**Travelway (Ft): **24**Roadbeds (divided #): **2**Parkway (Ft): **10.5**Median Width (Ft): **17**Sidewalk Width (Ft): **5**Sidewalks (#): **2**

This project includes the construction of a new four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	2,275	CY	\$25.00	\$57,000
	Earthwork/Top Soil	6	853	CY	\$13.00	\$11,000
	Prepared Subgrade	6	1,584	CY	\$25.00	\$40,000
	Curb & Gutter	n/a	6,580	LF	\$10.00	\$66,000
	Concrete Sidewalk	n/a	16,450	SF	\$12.00	\$197,000
	Concrete Pavement	8	1,950	CY	\$245.00	\$478,000

Roadway Construction Cost Subtotal: \$848,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$84,000
Utilities	Minor Adjustments	0%	0
Drainage	Bridge Width Internal Stormsewer System	20%	\$170,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$17,000
Signs, Pavement Markings		2%	\$17,000
Traffic Control		1%	\$8,000
Street Lighting		5%	\$42,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$42,000

Construction Allowances Subtotal: \$381,000**Roadway & ROW Construction Allowances Subtotal: \$1,230,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$221,000
Contingency		10%	\$123,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$344,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$848,000
ROW Construction Items		\$381,000
Capital Improvement Costs		\$344,000

Impact Fee Project Cost Total: \$1,574,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 7

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **FALLON DR (2)**Type: **New**Limits: **1,525' N of Dripping Spring Rd to Dripping Spring Rd**

Service Area:	1
Existing Pavement Section:	NA
Ultimate Pavement Section:	4D
Length (Ft):	1,525
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the construction of a new four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	2,109	CY	\$25.00	\$53,000
	Earthwork/Top Soil	6	791	CY	\$13.00	\$10,000
	Prepared Subgrade	6	1,469	CY	\$25.00	\$37,000
	Curb & Gutter	n/a	6,100	LF	\$10.00	\$61,000
	Concrete Sidewalk	n/a	15,250	SF	\$12.00	\$183,000
	Concrete Pavement	8	1,807	CY	\$245.00	\$443,000

Roadway Construction Cost Subtotal: \$787,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$78,000
Utilities	Minor Adjustments	0%	0
Drainage	Bridge Width Internal Stormsewer System	20%	\$157,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$16,000
Signs, Pavement Markings		2%	\$16,000
Traffic Control		1%	\$8,000
Street Lighting		5%	\$39,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$39,000

Construction Allowances Subtotal: \$353,000**Roadway & ROW Construction Allowances Subtotal: \$1,140,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$205,000
Contingency		10%	\$114,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$319,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$787,000
ROW Construction Items		\$353,000
Capital Improvement Costs		\$319,000

Impact Fee Project Cost Total: \$1,459,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman - 2020 Roadway Impact Fee Study

Capital Improvement Plan for Roadway Impact Fees

Summary of Conceptual Level Project Cost Projections

Roadway Improvements - Service Area 2

#	Thoroughfare Plan Classification	Project	Type	Limits		Percent in Service Area	Project Cost	Total Cost in Service Area
				From	To			
1	Frontage Road	US 82 EBFR	New	N SH 289	N Heritage Pkwy	100%	\$ 1,451,000	\$ 1,451,000
2	Minor Arterial	MEADOWLAKE DR	Widening	N SH 289	1,235' E of N SH 289	100%	\$ 1,231,000	\$ 1,231,000
3	Minor Arterial	W LAMBERTH RD (1)	Widening	1,800' W of Carriage Estates Rd	Shady Oaks Ln	100%	\$ 2,133,000	\$ 2,133,000
4	Minor Arterial	W WASHINGTON ST	Widening	N SH 289	2,350' E of N SH 289	100%	\$ 2,343,000	\$ 2,343,000
5	Minor Arterial	MCGEE ST (1)	New	2,545' W of Brookdale St	Brookdale St	100%	\$ 2,755,000	\$ 2,755,000
6	Minor Arterial	MCGEE ST (2)	Widening	Brookdale St	Little Ln	100%	\$ 513,000	\$ 513,000
7	Minor Arterial	MCGEE ST (3)	New	455' W of N Heritage Pkwy	W Taylor St	100%	\$ 1,856,000	\$ 1,856,000
8	Minor Arterial	W TRAVIS ST (1)	New	S Heritage Pkwy	480' W of Crossroads Blvd	50%	\$ 7,500,000	\$ 3,750,000
9	Minor Arterial	W TRAVIS ST (2)	Completed	480' W of Crossroads Blvd	US 75 SBFR	50%	\$ 820,339	\$ 410,170
10	Minor Arterial	W LAMBERTH RD (2)	Widening	US 82 WB	220' S of US 82 WB	100%	\$ 219,000	\$ 219,000
11	Minor Arterial	W LAMBERTH RD (3)	Widening	445' N of Canyon Creek Dr	955' S of Canyon Creek Dr	100%	\$ 1,396,000	\$ 1,396,000
12	Minor Arterial	N FRIENDSHIP RD	Widening	Elliott Rd	W Houston St	100%	\$ 1,241,000	\$ 1,241,000
13	Major Arterial	N HERITAGE PKWY (2)	Widening	US 82 EBFR	W Taylor St	100%	\$ 2,756,000	\$ 2,756,000
14	Major Arterial	N HERITAGE PKWY (3)	Widening	W Taylor St	W Houston St	100%	\$ 3,351,000	\$ 3,351,000
15	Major Arterial	S HERITAGE PKWY	Widening	W Houston St	OG Groner Rd	100%	\$ 4,028,000	\$ 4,028,000
16	Minor Arterial	W MOORE ST (1)	Widening	W Park Ave	W Travis St	100%	\$ 3,046,000	\$ 3,046,000
17	Freeway	US 75 (2)	Gap Study	US 82	1,835' S of US 82	50%	\$ 606,000	\$ 303,000
18	Freeway	US 75 (3)	Gap Study	SH 91	W Travis St	50%	\$ 6,070,000	\$ 3,035,000
TOTAL							\$ 43,315,339	\$ 35,817,170

Intersection Improvements - Service Area 2

#	Project	Improvement		Percent in Service Area	Project Cost	Total Cost in Service Area
		Improvement 1	Improvement 2			
1	US 82 & Plainview Rd	GRADE SEPERATED	INTERCHANGE	50%	\$ 3,000,000	\$ 1,500,000
2	FM 1417 & W Travis St	SIGNAL	TURN LANE IMPROVEMENTS	50%	\$ 1,750,000	\$ 875,000
TOTAL					\$ 4,750,000	\$ 2,375,000

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 1

Project Information:

Thoroughfare Plan Classification: Frontage Road

Name: **US 82 EBFR**

Type: **New**

Limits: **N SH 289 to N Heritage Pkwy**

Service Area: **2**

Length (Ft): **17,115**

The MPO Plan projects an overall project cost of \$19,347,000 to provide US 82 Frontage Road and Ramp Reversals from FM 1417 (N Heritage Parkway) to SH 289. The City anticipates contributing approximately 15% to the overall project. The City cost for the US 82 EBFR is anticipated to be \$1,451,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: \$1,451,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 2

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: MEADOWLAKE DR

Type: Widening

Limits: N SH 289 to 1,235' E of N SH 289

Service Area:	2
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	1,235
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	1,708	CY	\$25.00	\$43,000
	Earthwork/Top Soil	6	640	CY	\$13.00	\$8,000
	Prepared Subgrade	6	1,189	CY	\$25.00	\$30,000
	Curb & Gutter	n/a	4,940	LF	\$10.00	\$49,000
	Concrete Sidewalk	n/a	12,350	SF	\$12.00	\$148,000
	Concrete Pavement	8	1,464	CY	\$245.00	\$359,000

Roadway Construction Cost Subtotal: \$637,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$63,000
Utilities	Minor Adjustments	4%	\$26,000
Drainage	Bridge Width	20%	\$127,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$13,000
Signs, Pavement Markings		2%	\$13,000
Traffic Control		3%	\$19,000
Street Lighting		5%	\$32,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$32,000

Construction Allowances Subtotal: \$325,000

Roadway & ROW Construction Allowances Subtotal: \$962,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$173,000
Contingency		10%	\$96,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$269,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$637,000
ROW Construction Items		\$325,000
Capital Improvement Costs		\$269,000

Impact Fee Project Cost Total: \$1,231,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 3

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W LAMBERTH RD (1)**Type: **Widening**Limits: **1,800' W of Carriage Estates Rd to Shady Oaks Ln**

Service Area:	2
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	2,140
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	2,959	CY	\$25.00	\$74,000
	Earthwork/Top Soil	6	1,110	CY	\$13.00	\$14,000
	Prepared Subgrade	6	2,061	CY	\$25.00	\$52,000
	Curb & Gutter	n/a	8,560	LF	\$10.00	\$86,000
	Concrete Sidewalk	n/a	21,400	SF	\$12.00	\$257,000
	Concrete Pavement	8	2,536	CY	\$245.00	\$621,000

Roadway Construction Cost Subtotal: \$1,104,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$110,000
Utilities	Minor Adjustments	4%	\$45,000
Drainage	Bridge Width Internal Stormsewer System	20%	\$221,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$22,000
Signs, Pavement Markings		2%	\$22,000
Traffic Control		3%	\$33,000
Street Lighting		5%	\$55,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$55,000

Construction Allowances Subtotal: \$563,000**Roadway & ROW Construction Allowances Subtotal: \$1,667,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$300,000
Contingency		10%	\$167,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$467,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$1,104,000
ROW Construction Items		\$563,000
Capital Improvement Costs		\$467,000

Impact Fee Project Cost Total: \$2,133,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 4

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W WASHINGTON ST**

Type: **Widening**

Limits: **N SH 289 to 2,350' E of N SH 289**

Service Area:	2
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	2,350
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	3,249	CY	\$25.00	\$81,000
	Earthwork/Top Soil	6	1,219	CY	\$13.00	\$16,000
	Prepared Subgrade	6	2,263	CY	\$25.00	\$57,000
	Curb & Gutter	n/a	9,400	LF	\$10.00	\$94,000
	Concrete Sidewalk	n/a	23,500	SF	\$12.00	\$282,000
	Concrete Pavement	8	2,785	CY	\$245.00	\$682,000

Roadway Construction Cost Subtotal: \$1,212,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$120,000
Utilities	Minor Adjustments	4%	\$49,000
Drainage	Bridge Width	20%	\$242,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$24,000
Signs, Pavement Markings		2%	\$24,000
Traffic Control		3%	\$36,000
Street Lighting		5%	\$61,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$61,000

Construction Allowances Subtotal: \$618,000

Roadway & ROW Construction Allowances Subtotal: \$1,830,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$329,000
Contingency		10%	\$183,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$512,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$1,212,000
ROW Construction Items		\$618,000
Capital Improvement Costs		\$512,000

Impact Fee Project Cost Total: \$2,343,000

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 5

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **MCGEE ST (1)**

Type: **New**

Limits: **2,545' W of Brookdale St to Brookdale St**

Service Area:	2
Existing Pavement Section:	NA
Ultimate Pavement Section:	4D
Length (Ft):	2,545
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the construction of a new four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	3,519	CY	\$25.00	\$88,000
	Earthwork/Top Soil	6	1,320	CY	\$13.00	\$17,000
	Prepared Subgrade	6	2,451	CY	\$25.00	\$61,000
	Curb & Gutter	n/a	10,180	LF	\$10.00	\$102,000
	Concrete Sidewalk	n/a	25,450	SF	\$12.00	\$305,000
	Concrete Pavement	8	3,016	CY	\$245.00	\$739,000

Roadway Construction Cost Subtotal: \$1,313,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$130,000
Utilities	Minor Adjustments	0%	0
Drainage	Bridge Width	20%	\$263,000
Special Drainage	Internal Stormsewer System		\$250,000
Other Major Items	Minor Crossing		
ADA Ramps & Requirements		2%	\$26,000
Signs, Pavement Markings		2%	\$26,000
Traffic Control		1%	\$13,000
Street Lighting		5%	\$66,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$66,000

Construction Allowances Subtotal: \$840,000

Roadway & ROW Construction Allowances Subtotal: \$2,152,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$387,000
Contingency		10%	\$215,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$603,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$1,313,000
ROW Construction Items		\$840,000
Capital Improvement Costs		\$603,000

Impact Fee Project Cost Total: \$2,755,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 6

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **MCGEE ST (2)**

Type: **Widening**

Limits: **Brookdale St to Little Ln**

Service Area:

2

Existing Pavement Section:

2U

Ultimate Pavement Section:

4D

Length (Ft):

515

Travelway (Ft):

24

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

Sidewalk Width (Ft):

5

Sidewalks (#):

2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	712	CY	\$25.00	\$18,000
	Earthwork/Top Soil	6	267	CY	\$13.00	\$3,000
	Prepared Subgrade	6	496	CY	\$25.00	\$12,000
	Curb & Gutter	n/a	2,060	LF	\$10.00	\$21,000
	Concrete Sidewalk	n/a	5,150	SF	\$12.00	\$62,000
	Concrete Pavement	8	610	CY	\$245.00	\$150,000

Roadway Construction Cost Subtotal: **\$266,000**

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$26,000
Utilities	Minor Adjustments	4%	\$11,000
Drainage	Bridge Width	20%	\$53,000
Special Drainage	Internal Stormsewer System		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$5,000
Signs, Pavement Markings		2%	\$5,000
Traffic Control		3%	\$8,000
Street Lighting		5%	\$13,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$13,000

Construction Allowances Subtotal: **\$135,000**

Roadway & ROW Construction Allowances Subtotal: **\$401,000**

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$72,000
Contingency		10%	\$40,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: **\$112,000**

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$266,000
ROW Construction Items		\$135,000
Capital Improvement Costs		\$112,000

Impact Fee Project Cost Total: **\$513,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 7

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **MC GEE ST (3)**

Type: **New**

Limits: **455' W of N Heritage Pkwy to W Taylor St**

Service Area:	2
Existing Pavement Section:	NA
Ultimate Pavement Section:	4D
Length (Ft):	1,940
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the construction of a new four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	2,682	CY	\$25.00	\$67,000
	Earthwork/Top Soil	6	1,006	CY	\$13.00	\$13,000
	Prepared Subgrade	6	1,868	CY	\$25.00	\$47,000
	Curb & Gutter	n/a	7,760	LF	\$10.00	\$78,000
	Concrete Sidewalk	n/a	19,400	SF	\$12.00	\$233,000
	Concrete Pavement	8	2,299	CY	\$245.00	\$563,000

Roadway Construction Cost Subtotal: \$1,001,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$99,000
Utilities	Minor Adjustments	0%	0
Drainage	Bridge Width	20%	\$200,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$20,000
Signs, Pavement Markings		2%	\$20,000
Traffic Control		1%	\$10,000
Street Lighting		5%	\$50,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$50,000

Construction Allowances Subtotal: \$450,000

Roadway & ROW Construction Allowances Subtotal: \$1,450,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$261,000
Contingency		10%	\$145,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$406,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$1,001,000
ROW Construction Items		\$450,000
Capital Improvement Costs		\$406,000

Impact Fee Project Cost Total: \$1,856,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 8

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W TRAVIS ST (1)**

Type: **New**

Limits: **S Heritage Pkwy to 480' W of Crossroads Blvd**

Service Area: **2,4**

Existing Pavement Section:

NA

Ultimate Pavement Section:

4D

Length (Ft):

9,915

Travelway (Ft):

24

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

Sidewalk Width (Ft):

5

Sidewalks (#):

2

This project includes the construction of a new four-lane divided concrete minor arterial. The City provided a cost estimate of \$7,500,000.

Impact Fee Project Cost Summary

Item

Notes

Item Cost

Impact Fee Project Cost Total: \$ **7,500,000**

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 9

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W TRAVIS ST (2)**

Type: **Completed**

Limits: **480' W of Crossroads Blvd to US 75 SBFR**

Service Area: **2,4**

Existing Pavement Section:

4D

Ultimate Pavement Section:

4D

Length (Ft):

1,005

Travelway (Ft):

24

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

Sidewalk Width (Ft):

5

Sidewalks (#):

2

This project included the construction of a four-lane divided concrete minor arterial. The City provided a cost estimate of \$820,339.

Impact Fee Project Cost Summary

Item

Notes

Item Cost

Impact Fee Project Cost Total: \$ **820,339**

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 10

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W LAMBERTH RD (2)**

Type: **Widening**

Limits: **US 82 WB to 220' S of US 82 WB**

Service Area:	2
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	220
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	304	CY	\$25.00	\$8,000
	Earthwork/Top Soil	6	114	CY	\$13.00	\$1,000
	Prepared Subgrade	6	212	CY	\$25.00	\$5,000
	Curb & Gutter	n/a	880	LF	\$10.00	\$9,000
	Concrete Sidewalk	n/a	2,200	SF	\$12.00	\$26,000
	Concrete Pavement	8	261	CY	\$245.00	\$64,000

Roadway Construction Cost Subtotal: \$113,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$11,000
Utilities	Minor Adjustments	4%	\$5,000
Drainage	Internal Stormsewer System	20%	\$23,000
Special Drainage	Bridge Width 58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$2,000
Signs, Pavement Markings		2%	\$2,000
Traffic Control		3%	\$3,000
Street Lighting		5%	\$6,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$6,000

Construction Allowances Subtotal: \$58,000

Roadway & ROW Construction Allowances Subtotal: \$171,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$31,000
Contingency		10%	\$17,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$48,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$113,000
ROW Construction Items		\$58,000
Capital Improvement Costs		\$48,000

Impact Fee Project Cost Total: \$219,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 11

Project Information: Thoroughfare Plan Classification: Minor Arterial

Name: **W LAMBERTH RD (3)**

Type: **Widening**

Limits: **445' N of Canyon Creek Dr to 955' S of Canyon Creek Dr**

Service Area:	2
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	1,400
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	1,936	CY	\$25.00	\$48,000
	Earthwork/Top Soil	6	726	CY	\$13.00	\$9,000
	Prepared Subgrade	6	1,348	CY	\$25.00	\$34,000
	Curb & Gutter	n/a	5,600	LF	\$10.00	\$56,000
	Concrete Sidewalk	n/a	14,000	SF	\$12.00	\$168,000
	Concrete Pavement	8	1,659	CY	\$245.00	\$407,000

Roadway Construction Cost Subtotal: \$722,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$72,000
Utilities	Minor Adjustments	4%	\$29,000
Drainage	Bridge Width Internal Stormsewer System	20%	\$144,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$14,000
Signs, Pavement Markings		2%	\$14,000
Traffic Control		3%	\$22,000
Street Lighting		5%	\$36,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$36,000

Construction Allowances Subtotal: \$368,000

Roadway & ROW Construction Allowances Subtotal: \$1,090,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$196,000
Contingency		10%	\$109,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$305,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$722,000
ROW Construction Items		\$368,000
Capital Improvement Costs		\$305,000

Impact Fee Project Cost Total: \$1,396,000

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 12

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **N FRIENDSHIP RD**

Type: **Widening**

Limits: **Elliott Rd to W Houston St**

Service Area: **2**

Existing Pavement Section: **2U**

Ultimate Pavement Section: **4D**

Length (Ft): **1,245**

Travelway (Ft): **24**

Roadbeds (divided #): **2**

Parkway (Ft): **10.5**

Median Width (Ft): **17**

Sidewalk Width (Ft): **5**

Sidewalks (#): **2**

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	1,721	CY	\$25.00	\$43,000
	Earthwork/Top Soil	6	646	CY	\$13.00	\$8,000
	Prepared Subgrade	6	1,199	CY	\$25.00	\$30,000
	Curb & Gutter	n/a	4,980	LF	\$10.00	\$50,000
	Concrete Sidewalk	n/a	12,450	SF	\$12.00	\$149,000
	Concrete Pavement	8	1,476	CY	\$245.00	\$362,000

Roadway Construction Cost Subtotal: \$642,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$64,000
Utilities	Minor Adjustments	4%	\$26,000
Drainage	Bridge Width	20%	\$128,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$13,000
Signs, Pavement Markings		2%	\$13,000
Traffic Control		3%	\$19,000
Street Lighting		5%	\$32,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$32,000

Construction Allowances Subtotal: \$327,000

Roadway & ROW Construction Allowances Subtotal: \$970,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$175,000
Contingency		10%	\$97,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$271,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$642,000
ROW Construction Items		\$327,000
Capital Improvement Costs		\$271,000

Impact Fee Project Cost Total: \$1,241,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 13

Project Information:

Thoroughfare Plan Classification: Major Arterial

Name: **N HERITAGE PKWY (2)**Type: **Widening**Limits: **US 82 EBFR to W Taylor St**

Service Area:

2

Existing Pavement Section:

3U

Ultimate Pavement Section:

6D

Length (Ft):

7,100

Travelway (Ft):

36

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

This project includes the widening of the existing section to a six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	14,025	CY	\$25.00	\$351,000
	Earthwork/Top Soil	6	4,996	CY	\$13.00	\$65,000
	Prepared Subgrade	6	9,993	CY	\$25.00	\$250,000
	Curb & Gutter	n/a	28,400	LF	\$10.00	\$284,000
	Concrete Pavement	8	11,921	CY	\$245.00	\$2,921,000

Roadway Construction Cost Subtotal: \$3,870,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$192,000
Utilities		4%	\$157,000
Drainage	Bridge Width	20%	\$774,000
Special Drainage	72		\$500,000
Other Major Items			
ADA Ramps & Requirements		2%	\$77,000
Signs, Pavement Markings		2%	\$77,000
Traffic Control		3%	\$116,000
Street Lighting		5%	\$194,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$194,000

Construction Allowances Subtotal: \$2,282,000**Roadway & ROW Construction Allowances Subtotal: \$6,152,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$1,107,000
Contingency		10%	\$615,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$1,722,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$3,870,000
ROW Construction Items		\$2,282,000
Capital Improvement Costs		\$1,722,000

Impact Fee Project Cost Total (35% City Cost Participation): \$2,756,000

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 14

Project Information:

Thoroughfare Plan Classification: Major Arterial

Name: **N HERITAGE PKWY (3)**

Type: **Widening**

Limits: **W Taylor St to W Houston St**

Service Area:

Existing Pavement Section:

Ultimate Pavement Section:

Length (Ft):

Travelway (Ft):

Roadbeds (divided #):

Parkway (Ft):

Median Width (Ft):

2

2U

6D

8,770

36

2

10.5

17

This project includes the widening of the existing section to a six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	17,323	CY	\$25.00	\$433,000
	Earthwork/Top Soil	6	6,171	CY	\$13.00	\$80,000
	Prepared Subgrade	6	12,343	CY	\$25.00	\$309,000
	Curb & Gutter	n/a	35,080	LF	\$10.00	\$351,000
	Concrete Pavement	8	14,725	CY	\$245.00	\$3,608,000
Roadway Construction Cost Subtotal:						\$4,780,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$237,000
Utilities		4%	\$194,000
Drainage	Bridge Width	20%	\$956,000
Special Drainage	72		\$500,000
Other Major Items			
ADA Ramps & Requirements		2%	\$96,000
Signs, Pavement Markings		2%	\$96,000
Traffic Control		3%	\$143,000
Street Lighting		5%	\$239,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$239,000
Construction Allowances Subtotal:			\$2,701,000

Roadway & ROW Construction Allowances Subtotal: **\$7,481,000**

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$1,347,000
Contingency		10%	\$748,000
ROW / Easement Acquisition	None included		
CIP Allowances Subtotal:			\$2,095,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$4,780,000
ROW Construction Items		\$2,701,000
Capital Improvement Costs		\$2,095,000
Impact Fee Project Cost Total (35% City Cost Participation):		\$3,351,000

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 15

Project Information:

Thoroughfare Plan Classification: Major Arterial

Name: **S HERITAGE PKWY**

Type: **Widening**

Limits: **W Houston St to OG Groner Rd**

Service Area:

2

Existing Pavement Section:

3U

Ultimate Pavement Section:

6D

Length (Ft):

11,295

Travelway (Ft):

36

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

This project includes the widening of the existing section to a six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	22,311	CY	\$25.00	\$558,000
	Earthwork/Top Soil	6	7,948	CY	\$13.00	\$103,000
	Prepared Subgrade	6	15,897	CY	\$25.00	\$397,000
	Curb & Gutter	n/a	45,180	LF	\$10.00	\$452,000
	Concrete Pavement	8	18,964	CY	\$245.00	\$4,646,000
Roadway Construction Cost Subtotal:						\$6,157,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$306,000
Utilities		4%	\$250,000
Drainage	Bridge Width	20%	\$1,231,000
Special Drainage	72		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$123,000
Signs, Pavement Markings		2%	\$123,000
Traffic Control		3%	\$185,000
Street Lighting		5%	\$308,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$308,000
Construction Allowances Subtotal:			\$2,834,000

Roadway & ROW Construction Allowances Subtotal: **\$8,991,000**

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$1,618,000
Contingency		10%	\$899,000
ROW / Easement Acquisition	None included		
CIP Allowances Subtotal:			\$2,517,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$6,157,000
ROW Construction Items		\$2,834,000
Capital Improvement Costs		\$2,517,000
Impact Fee Project Cost Total (35% City Cost Participation):		\$4,028,000

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 16

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W MOORE ST (1)**

Type: **Widening**

Limits: **W Park Ave to W Travis St**

Service Area:	2
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	3,160
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	4,369	CY	\$25.00	\$109,000
	Earthwork/Top Soil	6	1,639	CY	\$13.00	\$21,000
	Prepared Subgrade	6	3,043	CY	\$25.00	\$76,000
	Curb & Gutter	n/a	12,640	LF	\$10.00	\$126,000
	Concrete Sidewalk	n/a	31,600	SF	\$12.00	\$379,000
	Concrete Pavement	8	3,745	CY	\$245.00	\$918,000

Roadway Construction Cost Subtotal: \$1,630,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$81,000
Utilities	Minor Adjustments	4%	\$66,000
Drainage	Internal Stormsewer System	20%	\$326,000
Special Drainage	Bridge Width 58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$33,000
Signs, Pavement Markings		2%	\$33,000
Traffic Control		3%	\$49,000
Street Lighting		5%	\$81,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$81,000

Construction Allowances Subtotal: \$750,000

Roadway & ROW Construction Allowances Subtotal: \$2,380,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$428,000
Contingency		10%	\$238,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$666,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$1,630,000
ROW Construction Items		\$750,000
Capital Improvement Costs		\$666,000

Impact Fee Project Cost Total: \$3,046,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 17

Project Information:

Thoroughfare Plan Classification: Freeway

Name: **US 75 (2)**

Type: **Gap Study**

Limits: **US 82 to 1,835' S of US 82**

Service Area: **3,2**

Length (Ft): **1,835**

This project is one section of the US 75 Gap Study. The City anticipates contributing \$8.2 million for the US 75 Gap Study project which will add main lane capacity. This section accounts for \$606,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: **\$606,000**

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 18

Project Information:

Thoroughfare Plan Classification: Freeway

Name: **US 75 (3)**

Type: **Gap Study**

Limits: **SH 91 to W Travis St**

Service Area: **3,2**

Length (Ft): **18,360**

This project is one section of the US 75 Gap Study. The City anticipates contributing \$8.2 million for the US 75 Gap Study project which will add main lane capacity. This section accounts for \$6,070,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: \$6,070,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman - 2020 Roadway Impact Fee Study
Capital Improvement Plan for Roadway Impact Fees
Summary of Conceptual Level Project Cost Projections

Roadway Improvements - Service Area 3

#	Thoroughfare Plan Classification	Project	Type	Limits		Percent in Service Area	Project Cost	Total Cost in Service Area
				From	To			
1	Minor Arterial	E PARK AVE (1)	New	S Inwood St	575' W of S Inwood St	100%	\$ 1,353,000	\$ 1,353,000
2	Minor Arterial	E PARK AVE (2)	New	190' W of E Lake St	E Lake St	100%	\$ 447,000	\$ 447,000
3	Minor Arterial	E PARK AVE (3)	Widening	E Lake Ave	SH 11	100%	\$ 4,311,000	\$ 4,311,000
4	Major Arterial	FM 1417 (2)	Widening	US 75	455' E of Williams Blvd	50%	\$ 1,829,000	\$ 914,500
5	Minor Arterial	W TRAVIS ST (3)	New	US 75	S Travis St	100%	\$ 437,000	\$ 437,000
6	Minor Arterial	S TRAVIS ST	Widening	W Park Ave	W Travis St	100%	\$ 4,843,000	\$ 4,843,000
7	Freeway	US 75 (2)	Gap Study	US 82	1,835' S of US 82	50%	\$ 606,000	\$ 303,000
8	Freeway	US 75 (3)	Gap Study	SH 91	W Travis St	50%	\$ 6,070,000	\$ 3,035,000
9	Freeway	US 75 (4)	Gap Study	W Travis St	FM 1417	50%	\$ 902,000	\$ 451,000
TOTAL							\$ 20,798,000	\$ 16,094,500

Intersection Improvements - Service Area 3

#	Project	Improvement		Percent in Service Area	Project Cost	Total Cost in Service Area
		Improvement 1	Improvement 2			
1	US 75 & FM 1417	BRAIDED RAMP	U-TURN LANE	25%	\$ 7,600,000	\$ 1,900,000
TOTAL					\$ 7,600,000	\$ 1,900,000

NOTE: These planning level cost projections listed in this Appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman. These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 1

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **E PARK AVE (1)**

Type: **New**

Limits: **S Inwood St to 575' W of S Inwood St**

Service Area:

3

Length (Ft):

575

This project is one section of the new E Park Avenue project which the City provided a project cost projection of \$1,800,000. This section accounts for \$1,353,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: \$1,353,000

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 2

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **E PARK AVE (2)**

Type: **New**

Limits: **190' W of E Lake St to E Lake St**

Service Area:

3

Length (Ft):

190

This project is one section of the new E Park Avenue project which the City provided a project cost projection of \$1,800,000. This section accounts for \$447,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: **\$447,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 3

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **E PARK AVE (3)**

Type: **Widening**

Limits: **E Lake Ave to SH 11**

Service Area:	3
Existing Pavement Section:	2U
Ultimate Pavement Section:	4D
Length (Ft):	4,140
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	5,724	CY	\$25.00	\$143,000
	Earthwork/Top Soil	6	2,147	CY	\$13.00	\$28,000
	Prepared Subgrade	6	3,987	CY	\$25.00	\$100,000
	Curb & Gutter	n/a	16,560	LF	\$10.00	\$166,000
	Concrete Sidewalk	n/a	41,400	SF	\$12.00	\$497,000
	Concrete Pavement	8	4,907	CY	\$245.00	\$1,202,000

Roadway Construction Cost Subtotal: \$2,135,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$106,000
Utilities	Minor Adjustments	4%	\$87,000
Drainage	Bridge Width	20%	\$427,000
Special Drainage	Internal Stormsewer System		\$250,000
Other Major Items	Minor Crossing		
ADA Ramps & Requirements		2%	\$43,000
Signs, Pavement Markings		2%	\$43,000
Traffic Control		3%	\$64,000
Street Lighting		5%	\$107,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$107,000

Construction Allowances Subtotal: \$1,233,000

Roadway & ROW Construction Allowances Subtotal: \$3,368,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$606,000
Contingency		10%	\$337,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$943,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$2,135,000
ROW Construction Items		\$1,233,000
Capital Improvement Costs		\$943,000

Impact Fee Project Cost Total: \$4,311,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 4

Project Information:

Thoroughfare Plan Classification: Major Arterial

Name: **FM 1417 (2)**Type: **Widening**Limits: **US 75 to 455' E of Williams Blvd**Service Area: **3,4**

Existing Pavement Section:

3U

Ultimate Pavement Section:

6D

Length (Ft):

5,130

Travelway (Ft):

36

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

This project includes the widening of the existing section to a six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	10,133	CY	\$25.00	\$253,000
	Earthwork/Top Soil	6	3,610	CY	\$13.00	\$47,000
	Prepared Subgrade	6	7,220	CY	\$25.00	\$181,000
	Curb & Gutter	n/a	20,520	LF	\$10.00	\$205,000
	Concrete Pavement	8	8,613	CY	\$245.00	\$2,110,000
Roadway Construction Cost Subtotal:						\$2,796,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$139,000
Utilities		4%	\$114,000
Drainage	Bridge Width	20%	\$559,000
Special Drainage	72		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$56,000
Signs, Pavement Markings		2%	\$56,000
Traffic Control		3%	\$84,000
Street Lighting		5%	\$140,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$140,000
Construction Allowances Subtotal:			\$1,287,000

Roadway & ROW Construction Allowances Subtotal: \$4,083,000**Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$735,000
Contingency		10%	\$408,000
ROW / Easement Acquisition	None included		
CIP Allowances Subtotal:			\$1,143,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$2,796,000
ROW Construction Items		\$1,287,000
Capital Improvement Costs		\$1,143,000
Impact Fee Project Cost Total (35% City Cost Participation):		\$1,829,000

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 5

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W TRAVIS ST (3)**

Type: **New**

Limits: **US 75 to S Travis St**

Service Area:	3
Existing Pavement Section:	NA
Ultimate Pavement Section:	4D
Length (Ft):	1,305
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the construction of a new four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	1,804	CY	\$25.00	\$45,000
	Earthwork/Top Soil	6	677	CY	\$13.00	\$9,000
	Prepared Subgrade	6	1,257	CY	\$25.00	\$31,000
	Curb & Gutter	n/a	5,220	LF	\$10.00	\$52,000
	Concrete Sidewalk	n/a	13,050	SF	\$12.00	\$157,000
	Concrete Pavement	8	1,547	CY	\$245.00	\$379,000

Roadway Construction Cost Subtotal: \$673,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$67,000
Utilities	Minor Adjustments	0%	0
Drainage	Bridge Width	20%	\$135,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$13,000
Signs, Pavement Markings		2%	\$13,000
Traffic Control		1%	\$7,000
Street Lighting		5%	\$34,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$34,000

Construction Allowances Subtotal: \$302,000

Roadway & ROW Construction Allowances Subtotal: \$976,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$176,000
Contingency		10%	\$98,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$273,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$673,000
ROW Construction Items		\$302,000
Capital Improvement Costs		\$273,000

Impact Fee Project Cost Total (35% City Cost Participation): \$437,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 6

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **S TRAVIS ST**Type: **Widening**Limits: **W Park Ave to W Travis St**

Service Area:

3

Existing Pavement Section:

2U

Ultimate Pavement Section:

4D

Length (Ft):

4,360

Travelway (Ft):

24

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

Sidewalk Width (Ft):

5

Sidewalks (#):

2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	6,029	CY	\$25.00	\$151,000
	Earthwork/Top Soil	6	2,261	CY	\$13.00	\$29,000
	Prepared Subgrade	6	4,199	CY	\$25.00	\$105,000
	Curb & Gutter	n/a	17,440	LF	\$10.00	\$174,000
	Concrete Sidewalk	n/a	43,600	SF	\$12.00	\$523,000
	Concrete Pavement	8	5,167	CY	\$245.00	\$1,266,000

Roadway Construction Cost Subtotal: \$2,249,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$112,000
Utilities	Minor Adjustments	4%	\$91,000
Drainage	Bridge Width	20%	\$450,000
Special Drainage	Internal Stormsewer System		\$500,000
Other Major Items	Major Crossing		
ADA Ramps & Requirements		2%	\$45,000
Signs, Pavement Markings		2%	\$45,000
Traffic Control		3%	\$67,000
Street Lighting		5%	\$112,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$112,000

Construction Allowances Subtotal: \$1,535,000**Roadway & ROW Construction Allowances Subtotal: \$3,784,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$681,000
Contingency		10%	\$378,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$1,059,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$2,249,000
ROW Construction Items		\$1,535,000
Capital Improvement Costs		\$1,059,000

Impact Fee Project Cost Total: \$4,843,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 7

Project Information:

Thoroughfare Plan Classification: Freeway

Name: **US 75 (2)**

Type: **Gap Study**

Limits: **US 82 to 1,835' S of US 82**

Service Area: **2,3**

Length (Ft): **1,835**

This project is one section of the US 75 Gap Study. The City anticipates contributing \$8.2 million for the US 75 Gap Study project which will add main lane capacity. This section accounts for \$606,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: **\$606,000**

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 8

Project Information:

Thoroughfare Plan Classification: Freeway

Name: **US 75 (3)**

Type: **Gap Study**

Limits: **SH 91 to W Travis St**

Service Area: **2,3**

Length (Ft): **18,360**

This project is one section of the US 75 Gap Study. The City anticipates contributing \$8.2 million for the US 75 Gap Study project which will add main lane capacity. This section accounts for \$6,070,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: \$6,070,000

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 9

Project Information:

Thoroughfare Plan Classification: Freeway

Name: **US 75 (4)**

Type: **Gap Study**

Limits: **W Travis St to FM 1417**

Service Area: **4,3**

Length (Ft): **2,730**

This project is one section of the US 75 Gap Study. The City anticipates contributing \$8.2 million for the US 75 Gap Study project which will add main lane capacity. This section accounts for \$902,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: \$902,000

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City of Sherman - 2020 Roadway Impact Fee Study
Capital Improvement Plan for Roadway Impact Fees
Summary of Conceptual Level Project Cost Projections

Roadway Improvements - Service Area 4

#	Thoroughfare Plan Classification	Project	Type	Limits		Percent in Service Area	Project Cost	Total Cost in Service Area
				From	To			
1	Minor Arterial	W TRAVIS ST (1)	New	S Heritage Pkwy	480' W of Crossroads Blvd	50%	\$ 7,500,000	\$ 3,750,000
2	Minor Arterial	W TRAVIS ST (2)	Completed	480' W of Crossroads Blvd	US 75 SBFR	50%	\$ 820,339	\$ 410,170
3	Major Arterial	FM 1417 (1)	Widening	W Travis St	US 75	100%	\$ 4,922,000	\$ 4,922,000
4	Major Arterial	FM 1417 (2)	Widening	US 75	455' E of Williams Blvd	50%	\$ 1,829,000	\$ 914,500
5	Minor Arterial	LEGACY BLVD	Completed	US 75 NBFR	650' E of US 75 NBFR	100%	\$ 1,968,565	\$ 1,968,565
6	Major Arterial	PROGRESS DR	New	Flanary Rd	2,170' E of Flanary Rd	100%	\$ 2,514,000	\$ 2,514,000
7	Minor Arterial	W MOORE ST (2)	New	W Travis St	W FM 1417	100%	\$ 3,359,000	\$ 3,359,000
8	Minor Arterial	FLANARY RD	Widening	W FM 1417	W Progress Rd	100%	\$ 4,210,000	\$ 4,210,000
9	Freeway	US 75 (4)	Gap Study	W Travis St	FM 1417	50%	\$ 902,000	\$ 451,000
10	Freeway	US 75 (5)	Gap Study	FM 1417	S City Limit	100%	\$ 6,450,000	\$ 6,450,000
TOTAL							\$ 34,474,904	\$ 28,949,235

Intersection Improvements - Service Area 4

#	Project	Improvement		Percent in Service Area	Project Cost	Total Cost in Service Area
		Improvement 1	Improvement 2			
1	FM 1417 & W Travis St	SIGNAL	TURN LANE IMPROVEMENTS	50%	\$ 1,750,000	\$ 875,000
2	US 75 & FM 1417	BRAIDED RAMP	U-TURN LANE	75%	\$ 7,600,000	\$ 5,700,000
TOTAL					\$ 9,350,000	\$ 6,575,000

NOTE: These planning level cost projections listed in this Appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman. These planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 1

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W TRAVIS ST (1)**

Type: **New**

Limits: **S Heritage Pkwy to 480' W of Crossroads Blvd**

Service Area: **2,4**

Existing Pavement Section:

NA

Ultimate Pavement Section:

4D

Length (Ft): **9,915**

Travelway (Ft): **24**

Roadbeds (divided #): **2**

Parkway (Ft): **10.5**

Median Width (Ft): **17**

Sidewalk Width (Ft): **5**

Sidewalks (#): **2**

This project includes the construction of a new four-lane divided concrete minor arterial. The City provided a cost estimate of \$7,500,000.

Impact Fee Project Cost Summary

Item

Notes

Item Cost

Impact Fee Project Cost Total: \$ 7,500,000

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The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 2

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W TRAVIS ST (2)**

Type: **Completed**

Limits: **480' W of Crossroads Blvd to US 75 SBFR**

Service Area: **2,4**

Existing Pavement Section:

4D

Ultimate Pavement Section:

4D

Length (Ft):

1,005

Travelway (Ft):

24

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

Sidewalk Width (Ft):

5

Sidewalks (#):

2

This project included the construction of a four-lane divided concrete minor arterial. The City provided a cost estimate of \$820,339.

Impact Fee Project Cost Summary

Item

Notes

Item Cost

Impact Fee Project Cost Total: \$ **820,339**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 3

Project Information:

Thoroughfare Plan Classification: Major Arterial

Name: FM 1417 (1)

Type: Widening

Limits: W Travis St to US 75

Service Area:	4
Existing Pavement Section:	2U
Ultimate Pavement Section:	6D
Length (Ft):	13,175
Travelway (Ft):	36
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17

This project includes the widening of the existing section to a six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	26,025	CY	\$25.00	\$651,000
	Earthwork/Top Soil	6	9,271	CY	\$13.00	\$121,000
	Prepared Subgrade	6	18,543	CY	\$25.00	\$464,000
	Curb & Gutter	n/a	52,700	LF	\$10.00	\$527,000
	Concrete Pavement	8	22,121	CY	\$245.00	\$5,420,000
Roadway Construction Cost Subtotal:						\$7,181,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$357,000
Utilities		4%	\$292,000
Drainage	Bridge Width	20%	\$1,436,000
Special Drainage	72		\$500,000
Other Major Items			
ADA Ramps & Requirements		2%	\$144,000
Signs, Pavement Markings		2%	\$144,000
Traffic Control		3%	\$215,000
Street Lighting		5%	\$359,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$359,000
Construction Allowances Subtotal:			\$3,806,000

Roadway & ROW Construction Allowances Subtotal: \$10,987,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$1,978,000
Contingency		10%	\$1,099,000
ROW / Easement Acquisition	None included		
CIP Allowances Subtotal:			\$3,076,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$7,181,000
ROW Construction Items		\$3,806,000
Capital Improvement Costs		\$3,076,000
Impact Fee Project Cost Total (35% City Cost Participation):		\$4,922,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 4

Project Information:

Thoroughfare Plan Classification: Major Arterial

Name: **FM 1417 (2)**Type: **Widening**Limits: **US 75 to 455' E of Williams Blvd**Service Area: **3,4**

Existing Pavement Section:

3U

Ultimate Pavement Section:

6D

Length (Ft):

5,130

Travelway (Ft):

36

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

This project includes the widening of the existing section to a six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	10,133	CY	\$25.00	\$253,000
	Earthwork/Top Soil	6	3,610	CY	\$13.00	\$47,000
	Prepared Subgrade	6	7,220	CY	\$25.00	\$181,000
	Curb & Gutter	n/a	20,520	LF	\$10.00	\$205,000
	Concrete Pavement	8	8,613	CY	\$245.00	\$2,110,000
Roadway Construction Cost Subtotal:						\$2,796,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$139,000
Utilities		4%	\$114,000
Drainage	Bridge Width	20%	\$559,000
Special Drainage	72		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$56,000
Signs, Pavement Markings		2%	\$56,000
Traffic Control		3%	\$84,000
Street Lighting		5%	\$140,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$140,000
Construction Allowances Subtotal:			\$1,287,000

Roadway & ROW Construction Allowances Subtotal: \$4,083,000**Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$735,000
Contingency		10%	\$408,000
ROW / Easement Acquisition	None included		
CIP Allowances Subtotal:			\$1,143,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$2,796,000
ROW Construction Items		\$1,287,000
Capital Improvement Costs		\$1,143,000
Impact Fee Project Cost Total (35% City Cost Participation):		\$1,829,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 5

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **LEGACY BLVD**

Type: **Completed**

Limits: **US 75 NBFR to 650' E of US 75 NBFR**

Service Area:

4

Existing Pavement Section:

4D

Ultimate Pavement Section:

4D

Length (Ft):

650

Travelway (Ft):

24

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

Sidewalk Width (Ft):

5

Sidewalks (#):

2

This project included the construction of a four-lane divided concrete minor arterial. The City provided a cost estimate of \$1,968,565.

Impact Fee Project Cost Summary

Item

Notes

Item Cost

Impact Fee Project Cost Total: \$ 1,968,565

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees**Conceptual Level Project Cost Projection**

Project Number: 6

Project Information:

Thoroughfare Plan Classification: Major Arterial

Name: **PROGRESS DR**Type: **New**Limits: **Flanary Rd to 2,170' E of Flanary Rd**

Service Area:

4

Existing Pavement Section:

NA

Ultimate Pavement Section:

6D

Length (Ft):

2,170

Travelway (Ft):

36

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

This project includes the construction of a new six-lane divided concrete major arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	4,286	CY	\$25.00	\$107,000
	Earthwork/Top Soil	6	1,527	CY	\$13.00	\$20,000
	Prepared Subgrade	6	3,054	CY	\$25.00	\$76,000
	Curb & Gutter	n/a	8,680	LF	\$10.00	\$87,000
	Concrete Pavement	8	3,643	CY	\$245.00	\$893,000

Roadway Construction Cost Subtotal: \$1,183,000**Major ROW Construction Component Allowances**

Description	Notes	Allowance	Item Cost
Mobilization		10%	\$118,000
Utilities		0%	0
Drainage	Bridge Width	20%	\$237,000
Special Drainage	72		\$250,000
Other Major Items			
ADA Ramps & Requirements		2%	\$24,000
Signs, Pavement Markings		2%	\$24,000
Traffic Control		1%	\$12,000
Street Lighting		5%	\$59,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$59,000

Construction Allowances Subtotal: \$782,000**Roadway & ROW Construction Allowances Subtotal: \$1,964,000****Capital Improvement Project (CIP) Allowances**

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$354,000
Contingency		10%	\$196,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$550,000**Impact Fee Project Cost Summary**

Item	Notes	Item Cost
Roadway Construction Items		\$1,183,000
ROW Construction Items		\$782,000
Capital Improvement Costs		\$550,000

Impact Fee Project Cost Total: \$2,514,000

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 7

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **W MOORE ST (2)**

Type: **New**

Limits: **W Travis St to W FM 1417**

Service Area:	4
Existing Pavement Section:	NA
Ultimate Pavement Section:	4D
Length (Ft):	3,635
Travelway (Ft):	24
Roadbeds (divided #):	2
Parkway (Ft):	10.5
Median Width (Ft):	17
Sidewalk Width (Ft):	5
Sidewalks (#):	2

This project includes the construction of a new four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	5,026	CY	\$25.00	\$126,000
	Earthwork/Top Soil	6	1,885	CY	\$13.00	\$25,000
	Prepared Subgrade	6	3,500	CY	\$25.00	\$88,000
	Curb & Gutter	n/a	14,540	LF	\$10.00	\$145,000
	Concrete Sidewalk	n/a	36,350	SF	\$12.00	\$436,000
	Concrete Pavement	8	4,308	CY	\$245.00	\$1,055,000

Roadway Construction Cost Subtotal: \$1,875,000

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$93,000
Utilities	Minor Adjustments	0%	0
Drainage	Bridge Width Internal Stormsewer System	20%	\$375,000
Special Drainage	58		
Other Major Items	None		
ADA Ramps & Requirements		2%	\$37,000
Signs, Pavement Markings		2%	\$37,000
Traffic Control		1%	\$19,000
Street Lighting		5%	\$94,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$94,000

Construction Allowances Subtotal: \$749,000

Roadway & ROW Construction Allowances Subtotal: \$2,624,000

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$472,000
Contingency		10%	\$262,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: \$735,000

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$1,875,000
ROW Construction Items		\$749,000
Capital Improvement Costs		\$735,000

Impact Fee Project Cost Total: \$3,359,000

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City of Sherman

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

8/3/2020

Project Number: 8

Project Information:

Thoroughfare Plan Classification: Minor Arterial

Name: **FLANARY RD**

Type: **Widening**

Limits: **W FM 1417 to W Progress Rd**

Service Area:

4

Existing Pavement Section:

2U

Ultimate Pavement Section:

4D

Length (Ft):

4,035

Travelway (Ft):

24

Roadbeds (divided #):

2

Parkway (Ft):

10.5

Median Width (Ft):

17

Sidewalk Width (Ft):

5

Sidewalks (#):

2

This project includes the widening of the existing section to a four-lane divided concrete minor arterial.

Roadway Construction Cost Projection

Item	Description	Depth in Inches	Quantity	Unit	Unit Cost	Extended Cost
	Street Excavation	8	5,579	CY	\$25.00	\$139,000
	Earthwork/Top Soil	6	2,092	CY	\$13.00	\$27,000
	Prepared Subgrade	6	3,886	CY	\$25.00	\$97,000
	Curb & Gutter	n/a	16,140	LF	\$10.00	\$161,000
	Concrete Sidewalk	n/a	40,350	SF	\$12.00	\$484,000
	Concrete Pavement	8	4,782	CY	\$245.00	\$1,172,000

Roadway Construction Cost Subtotal: **\$2,081,000**

Major ROW Construction Component Allowances

Description	Notes	Allowance	Item Cost
Mobilization		5%	\$103,000
Utilities	Minor Adjustments	4%	\$85,000
Drainage	Bridge Width	20%	\$416,000
Special Drainage	Internal Stormsewer System		\$250,000
Other Major Items	Minor Crossing		
ADA Ramps & Requirements		2%	\$42,000
Signs, Pavement Markings		2%	\$42,000
Traffic Control		3%	\$62,000
Street Lighting		5%	\$104,000
Landscaping (Grass, Trees, Restoration, E/S Controls)		5%	\$104,000

Construction Allowances Subtotal: **\$1,208,000**

Roadway & ROW Construction Allowances Subtotal: **\$3,289,000**

Capital Improvement Project (CIP) Allowances

Description	Notes	Allowance	Item Cost
Engineering / Surveying / Geotechnical	(12%+4%+2%)	18%	\$592,000
Contingency		10%	\$329,000
ROW / Easement Acquisition	None included		

CIP Allowances Subtotal: **\$921,000**

Impact Fee Project Cost Summary

Item	Notes	Item Cost
Roadway Construction Items		\$2,081,000
ROW Construction Items		\$1,208,000
Capital Improvement Costs		\$921,000

Impact Fee Project Cost Total: **\$4,210,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 9

Project Information:

Thoroughfare Plan Classification: Freeway

Name: **US 75 (4)**

Type: **Gap Study**

Limits: **W Travis St to FM 1417**

Service Area: **4,3**

Length (Ft): **2,730**

This project is one section of the US 75 Gap Study. The City anticipates contributing \$8.2 million for the US 75 Gap Study project which will add main lane capacity. This section accounts for \$871,000.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: **\$902,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

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City of Sherman

8/3/2020

2020 Roadway Impact Fees

Conceptual Level Project Cost Projection

Project Number: 10

Project Information:

Thoroughfare Plan Classification: Freeway

Name: **US 75 (5)**

Type: **Gap Study**

Limits: **FM 1417 to S City Limit**

Service Area:

4

Length (Ft):

20,936

This project is separate from the other US 75 Gap Study. The City anticipates contributing \$6.45 million for this section of US 75 Gap which will add main lane capacity.

Impact Fee Project Cost Summary

Impact Fee Project Cost Total: **\$6,450,000**

NOTE: The planning level cost projections listed in this appendix have been developed for Impact Fee calculations only and should not be used for any future Capital Improvement Planning within the City of Sherman.

The planning level cost projections shall not supersede the City's design standards or the determination of the City Engineer for a specific project.

ROADWAY IMPACT FEE CIP SERVICE UNITS OF SUPPLY

City of Sherman - 2020 Roadway Impact Fee Study

CIP Service Units of Supply

8/3/2020

Service Area 1

Project ID #	ROADWAY	LIMITS	LENGTH (MI)	LANES	THOROUGHFARE PLAN CLASSIFICATION	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
1	N HERITAGE PKWY (1)	FM 691 to US 82	2.68	6	Major Arterial	538	100%	750	12051	1,441	10,610	\$ 5,154,000	\$ 5,154,000
2	PLAINVIEW RD	1,525' N of US 82 WBFR to US 82 WBFR	0.29	4	Minor Arterial	200	100%	650	751	58	693	\$ 1,520,000	\$ 1,520,000.00
3	N TRAVIS ST	Kraeger Rd to US 82 WBFR	1.11	4	Minor Arterial	504	100%	650	2878	558	2320	\$ 1,972,000	\$ 1,972,000
4	US 75 (1)	1,875' N of US 82 to US 82	0.36	2	Freeway	New	100%	1900	1349	0	1,349	\$ 620,000	\$ 620,000
5	US 82 WBFR (1)	N SH 289 to N Heritage Pkwy	3.24	2	Frontage Road	New	100%	900	5835	0	5,835	\$ 1,451,000	\$ 1,451,000
6	FALLON DR (1)	N Loy Lake Rd to US 75 SBFR	0.31	4	Minor Arterial	New	100%	650	810	0	810	\$ 344,305	\$ 344,305
7	FALLON DR (2)	1,525' N of Dripping Spring Rd to Dripping Spring Rd	0.29	4	Minor Arterial	New	100%	650	751	0	751	\$ 1,459,000	\$ 1,459,000
SUBTOTAL									24,425	2,057	22,368	\$ 12,520,305	\$ 12,520,305
1	US 82 & Plainview Rd	GRADE SEPERATED INTERCHANGE					50%					\$ 3,000,000	\$ 1,500,000
SUBTOTAL												\$ 3,000,000	\$ 1,500,000

2020 Roadway Impact Fee Study Cost Per Service Area \$ 12,500
TOTAL COST IN SERVICE AREA 1 \$ 14,032,805

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Sherman - 2020 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 2

8/3/2020

Project ID #	ROADWAY	LIMITS	LENGTH (MI)	LANES	THOROUGHFARE PLAN CLASSIFICATION	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
1	US 82 EBFR	N SH 289 to N Heritage Pkwy	3.24	2	Frontage Road	New	100%	900	5,835	0	5,835	\$ 1,451,000	\$ 1,451,000
2	MEADOWLAKE DR	N SH 289 to 1,235' E of N SH 289	0.23	4	Minor Arterial	200	100%	650	608	47	561	\$ 1,231,000	\$ 1,231,000
3	W LAMBERTH RD (1)	1,800' W of Carriage Estates Rd to Shady Oaks Ln	0.41	4	Minor Arterial	200	100%	650	1,054	81	973	\$ 2,133,000	\$ 2,133,000
4	W WASHINGTON ST	N SH 289 to 2,350' E of N SH 289	0.45	4	Minor Arterial	200	100%	650	1,157	89	1,068	\$ 2,343,000	\$ 2,343,000
5	MC GEE ST (1)	2,545' W of Brookdale St to Brookdale St	0.48	4	Minor Arterial	New	100%	650	1,253	0	1,253	\$ 2,755,000	\$ 2,755,000
6	MC GEE ST (2)	Brookdale St to Little Ln	0.10	4	Minor Arterial	24	100%	650	254	2	252	\$ 513,000	\$ 513,000
7	MC GEE ST (3)	455' W of N Heritage Pkwy to W Taylor St	0.37	4	Minor Arterial	New	100%	650	955	0	955	\$ 1,856,000	\$ 1,856,000
8	W TRAVIS ST (1)	S Heritage Pkwy to 480' W of Crossroads Blvd	1.88	4	Minor Arterial	New	50%	650	2,441	0	2,441	\$ 7,500,000	\$ 3,750,000
9	W TRAVIS ST (2)	480' W of Crossroads Blvd to US 75 SBFR	0.19	4	Minor Arterial	125	50%	650	247	12	235	\$ 820,339	\$ 410,170
10	W LAMBERTH RD (2)	US 82 WB to 220' S of US 82 WB	0.04	4	Minor Arterial	200	100%	650	108	8	100	\$ 219,000	\$ 219,000
11	W LAMBERTH RD (3)	445' N of Canyon Creek Dr to 955' S of Canyon Creek Dr	0.27	4	Minor Arterial	200	100%	650	689	53	636	\$ 1,396,000	\$ 1,396,000
12	N FRIENDSHIP RD	Elliott Rd to W Houston St	0.24	4	Minor Arterial	200	100%	650	613	47	566	\$ 1,241,000	\$ 1,241,000
13	N HERITAGE PKWY (2)	US 82 EBFR to W Taylor St	1.34	6	Major Arterial	1,234	100%	750	6,051	1,659	4,392	\$ 2,756,000	\$ 2,756,000
14	N HERITAGE PKWY (3)	W Taylor St to W Houston St	1.66	6	Major Arterial	1,116	100%	750	7,474	1,854	5,620	\$ 3,351,000	\$ 3,351,000
15	S HERITAGE PKWY	W Houston St to OG Groner Rd	2.14	6	Major Arterial	1,200	100%	750	9,626	2,567	7,059	\$ 4,028,000	\$ 4,028,000
16	W MOORE ST (1)	W Park Ave to W Travis St	0.60	4	Minor Arterial	200	100%	650	1,556	120	1,436	\$ 3,046,000	\$ 3,046,000
17	US 75 (2)	US 82 to 1,835' S of US 82	0.35	2	Freeway	New	50%	1900	660	0	660	\$ 606,000	\$ 303,000
18	US 75 (3)	SH 91 to W Travis St	3.48	2	Freeway	New	50%	1900	6,607	0	6,607	\$ 6,070,000	\$ 3,035,000
SUBTOTAL									47,188	6,539	40,649	\$ 43,315,339	\$ 35,817,170
1	US 82 & Plainview Rd	GRADE SEPERATED INTERCHANGE					50%					\$ 3,000,000	\$ 1,500,000
2	FM 1417 & W Travis St	SIGNAL & TURN LANE IMPROVEMENTS					50%					\$ 1,750,000	\$ 875,000
SUBTOTAL												\$ 4,750,000	\$ 2,375,000

2020 Roadway Impact Fee Study Cost Per Service Area \$ 12,500

TOTAL COST IN SERVICE AREA 2 \$ 38,204,670

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Sherman - 2020 Roadway Impact Fee Study

CIP Service Units of Supply

8/3/2020

Service Area 3

Project ID #	ROADWAY	LIMITS	LENGTH (MI)	LANES	THOROUGHFARE PLAN CLASSIFICATION	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
1	E PARK AVE (1)	S Inwood St to 575' W of S Inwood St	0.11	4	Minor Arterial	New	100%	650	283	0	283	\$ 1,353,000	\$ 1,353,000
2	E PARK AVE (2)	190' W of E Lake St to E Lake St	0.04	4	Minor Arterial	New	100%	650	94	0	94	\$ 447,000	\$ 447,000
3	E PARK AVE (3)	E Lake Ave to SH 11	0.78	4	Minor Arterial	102	100%	650	2039	80	1959	\$ 4,311,000	\$ 4,311,000
4	FM 1417 (2)	US 75 to 455' E of Williams Blvd	0.97	6	Major Arterial	850	50%	750	2186	413	1773	\$ 1,829,000	\$ 914,500
5	W TRAVIS ST (3)	US 75 to S Travis St	0.25	4	Minor Arterial	New	100%	650	643	0	643	\$ 437,000	\$ 437,000
6	S TRAVIS ST	W Park Ave to W Travis St	0.83	4	Minor Arterial	400	100%	650	2147	330	1817	\$ 4,843,000	\$ 4,843,000
7	US 75 (2)	US 82 to 1,835' S of US 82	0.35	2	Freeway	New	50%	1900	660	0	660	\$ 606,000	\$ 303,000
8	US 75 (3)	SH 91 to W Travis St	3.48	2	Freeway	New	50%	1900	6607	0	6607	\$ 6,070,000	\$ 3,035,000
9	US 75 (4)	W Travis St to FM 1417	0.52	2	Freeway	New	50%	1900	982	0	982	\$ 902,000	\$ 451,000
SUBTOTAL										15,641	823	\$ 20,798,000	\$ 16,094,500
1	US 75 & FM 1417	BRAIDED RAMP & U-TURN LANE					25%					\$ 7,600,000	\$ 1,900,000
SUBTOTAL												\$ 7,600,000	\$ 1,900,000

2020 Roadway Impact Fee Study Cost Per Service Area \$ 12,500
TOTAL COST IN SERVICE AREA 3 \$ 18,007,000

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% In Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Sherman - 2020 Roadway Impact Fee Study

CIP Service Units of Supply

Service Area 4

8/3/2020

Project ID #	ROADWAY	LIMITS	LENGTH (MI)	LANES	THOROUGHFARE PLAN CLASSIFICATION	PEAK HOUR VOLUME	% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN	VEH-MI SUPPLY PK-HR TOTAL ¹	VEH-MI TOTAL DEMAND PK-HR ²	EXCESS CAPACITY PK-HR VEH-MI ³	TOTAL PROJECT COST	TOTAL PROJECT COST IN SERVICE AREA
1	W TRAVIS ST (1)	S Heritage Pkwy to 480' W of Crossroads Blvd	1.88	4	Minor Arterial	New	50%	650	2441	0	2,441	\$ 7,500,000	\$ 3,750,000
2	W TRAVIS ST (2)	480' W of Crossroads Blvd to US 75 SBFR	0.19	4	Minor Arterial	200	50%	650	247	19	228	\$ 820,339	\$ 410,170
3	FM 1417 (1)	W Travis St to US 75	2.50	6	Major Arterial	770	100%	750	11229	1921	9308	\$ 4,922,000	\$ 4,922,000
4	FM 1417 (2)	US 75 to 455' E of Williams Blvd	0.97	6	Major Arterial	850	50%	750	2186	413	1773	\$ 1,829,000	\$ 914,500
5	LEGACY BLVD	US 75 NBFR to 650' E of US 75 NBFR	0.12	4	Minor Arterial	0	100%	650	320	0	320	\$ 1,968,565	\$ 1,968,565
6	PROGRESS DR	Flanary Rd to 2,170' E of Flanary Rd	0.41	6	Major Arterial	New	100%	750	1849	0	1849	\$ 2,514,000	\$ 2,514,000
7	W MOORE ST (2)	W Travis St to W FM 1417	0.69	4	Minor Arterial	New	100%	650	1790	0	1790	\$ 3,359,000	\$ 3,359,000
8	FLANARY RD	W FM 1417 to W Progress Rd	0.76	4	Minor Arterial	20	100%	650	1987	15	1972	\$ 4,210,000	\$ 4,210,000
9	US 75 (4)	W Travis St to FM 1417	0.52	2	Freeway	New	50%	1900	982	0	982	\$ 902,000	\$ 451,000
10	US 75 (5)	FM 1417 to S City Limit	3.97	2	Freeway	New	100%	1900	15068	0	15068	\$ 6,450,000	\$ 6,450,000
SUBTOTAL									38,099	2,368	35,731	\$ 34,474,904	\$ 28,949,235
1	FM 1417 & W Travis St	SIGNAL & TURN LANE IMPROVEMENTS	Intersection Improvements				50%	Intersection Improvements				\$ 1,750,000	\$ 875,000
2	US 75 & FM 1417	BRAIDED RAMP & U-TURN LANE					75%					\$ 7,600,000	\$ 5,700,000
SUBTOTAL												\$ 9,350,000	\$ 6,575,000

2020 Roadway Impact Fee Study Cost Per Service Area \$ 12,500

TOTAL COST IN SERVICE AREA 4 \$ 35,536,735

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

EXISTING ROADWAY FACILITIES INVENTORY

City of Sherman - 2020 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 1

8/3/2020

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXISTING CROSS SECTION	CLASS	ULTIMATE CROSS SECTION	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴	
					NB/EB	SB/WB				NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB		
N HERITAGE PKWY	365' S of FM 691	US 82	13,775	2.61	1	1	3U	Major Arterial	6D	269	269	100%	600	600	1,565	1,565	702	702	864	864		
N HERITAGE PKWY	FM 691	365' S of FM 691	366	0.07	2	2	5U	Major Arterial	6D	269	269	100%	750	750	104	104	19	19	85	85		
N TRAVIS ST	Kreager Rd	W Canyon Grove Rd	5,624	1.07	1	1	2U	Minor Arterial	4D	252	252	100%	400	400	426	426	268	268	158	158		
N TRAVIS ST	US 82 WBFR	N Canyon Grove Rd	223	0.04	2	2	4D	Minor Arterial	4D	252	252	100%	650	650	55	55	11	11	44	44		
PLAINVIEW RD	1,525' N of US 82 WBFR	US 82 WBFR	1,531	0.29	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	116	116	29	29	87	87		
SUBTOTAL			21,520	4.08											2,266	2,266	1,029	1,029	1,238	1,238	0	0
																4,533	2,057	2,476		0		

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% In Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% In Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Sherman - 2020 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

8/3/2020

Service Area 2

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXISTING CROSS SECTION	CLASS	ULTIMATE CROSS SECTION	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴	
					NB/EB	SB/WB				NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB		
MC GEE ST	Brookdale St	Little Ln	515	0.10	1	1	2U	Minor Arterial	4D	24	24	100%	400	400	39	39	2	2	37	37		
MEADOWLAKE DR	N SH 289	1,235' E of N SH 289	1,233	0.23	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	93	93	23	23	70	70		
N FRIENDSHIP RD	Elliott Rd	W Houston St	1,244	0.24	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	94	94	24	24	71	71		
N HERITAGE PKWY	W Lamberth Rd	W Taylor St	1,402	0.27	1	1	3U	Major Arterial	6D	617	617	100%	600	600	159	159	164	164	-5	-5	5	5
N HERITAGE PKWY	US 82 EBFR	W Lamberth Rd	5,699	1.08	1	1	3U	Major Arterial	6D	617	617	100%	600	600	648	648	666	666	-18	-18	18	18
N HERITAGE PKWY	W Washington St	W Houston St	5,656	1.07	1	1	2U	Major Arterial	6D	558	558	100%	400	400	428	428	598	598	-169	-169	169	169
N HERITAGE PKWY	W Taylor St	W Washington St	3,115	0.59	1	1	2U	Major Arterial	6D	558	558	100%	400	400	236	236	329	329	-93	-93	93	93
S HERITAGE PKWY	W Center St	Quail Run Rd	1,775	0.34	1	1	3U	Major Arterial	6D	600	600	100%	600	600	202	202	202	202	0	0		
S HERITAGE PKWY	Quail Run Rd	1,520' S of W Park Ave	3,806	0.72	1	1	3U	Major Arterial	6D	600	600	100%	600	600	433	433	433	433	0	0		
S HERITAGE PKWY	1,520' S of W Park Ave	OG Groner Rd	2,787	0.53	1	1	2U	Major Arterial	6D	600	600	100%	400	400	211	211	317	317	-106	-106	106	106
S HERITAGE PKWY	W Houston St	1,560' S of W Houston St	1,562	0.30	1	1	2U	Major Arterial	6D	600	600	100%	400	400	118	118	177	177	-59	-59	59	59
S HERITAGE PKWY	1,560' S of W Houston St	W Center St	1,364	0.26	1	1	3U	Major Arterial	6D	600	600	100%	600	600	155	155	155	155	0	0		
W LAMBERTH RD	445' N of Canyon Creek Dr	955' S of Canyon Creek Dr	1,402	0.27	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	106	106	27	27	80	80		
W LAMBERTH RD	1,800' W of Carriage Estates Rd	Shady Oaks Ln	2,138	0.41	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	162	162	41	41	122	122		
W LAMBERTH RD	US 82 WB	220' S of US 82 WB	219	0.04	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	17	17	4	4	12	12		
W MOORE ST	W Park Ave	W Travis St	3,160	0.60	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	239	239	60	60	180	180		
W TRAVIS ST	480' W of Crossroads Blvd	US 75 SBFR	1,003	0.19	2	2	4D	Minor Arterial	4D	125	125	50%	650	650	123	123	12	12	112	112		
W WASHINGTON ST	N SH 289	2,350' E of N SH 289	2,350	0.45	1	1	2U	Minor Arterial	4D	100	100	100%	400	400	178	178	45	45	134	134		
SUBTOTAL			40,430	7.66											3,642	3,642	3,277	3,277	366	366	450	450
																7,285	6,553		731		900	

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% in Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Sherman - 2020 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 3

8/3/2020

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXISTING CROSS SECTION	CLASS	ULTIMATE CROSS SECTION	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴		
					NB/EB	SB/WB				NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB			
E IDA RD	S First St	Dewey Ave	1,709	0.32	1	1	2U	Minor Arterial	4D	51	51	100%	400	400	129	129	17	17	113	113			
E IDA RD	S First St	Dewey Ave	287	0.05	1	1	2U	Minor Arterial	4D	51	51	100%	400	400	22	22	3	3	19	19			
E LAKE ST	E Park Ave	S First St	726	0.14	1	1	2U	Minor Arterial	4D	51	51	100%	400	400	55	55	7	7	48	48			
S CROCKETT ST	W Park Ave	S Travis St	950	0.18	1	1	2U	Minor Arterial	4D	200	200	100%	400	400	72	72	36	36	36	36			
S FIRST ST	E Lake Ave	E Ida Rd	1,417	0.27	1	1	2U	Minor Arterial	4D	51	51	100%	400	400	107	107	14	14	94	94			
S TRAVIS ST	S Crockett St	S Travis St Ramps	2,503	0.47	1	1	2U	Minor Arterial	4D	200	200	100%	400	400	190	190	95	95	95	95			
S TRAVIS ST	W Travis St	S Travis St Ramps	941	0.18	1	1	2U	Minor Arterial	4D	200	200	100%	400	400	71	71	36	36	36	36			
VIETNAM VETERANS PKWY	US 75 NBFR	320' E of US 75 NBFR	322	0.06	2	2	5U	Major Arterial	6D	425	425	50%	750	750	46	46	13	13	33	33			
VIETNAM VETERANS PKWY	320' E of US 75 NBFR	Williams Blvd	4,103	0.78	1	1	3U	Major Arterial	6D	425	425	50%	600	600	233	233	165	165	68	68			
VIETNAM VETERANS PKWY	Williams Blvd	455' E of Williams Blvd	454	0.09	1	1	3U	Major Arterial	6D	425	425	50%	600	600	26	26	18	18	8	8			
W FM 1417	US 75	US 75 NBFR	251	0.05	2	2	4D	Major Arterial	6D	425	425	50%	650	650	31	31	10	10	21	21			
SUBTOTAL			13,661	2.59											982	982	413	413	569	569	0	0	
																1,964		826		1,138		0	

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% in Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].

City of Sherman - 2020 Roadway Impact Fee Study
Existing Roadway Facilities Inventory

Service Area 4

8/3/2020

ROADWAY	FROM	TO	LENGTH (ft)	LENGTH (mi)	EXIST LANES		EXISTING CROSS SECTION	CLASS	ULTIMATE CROSS SECTION	PM PEAK HOUR VOL		% IN SERVICE AREA	VEH-MI CAPACITY PK-HR PER LN		VEH-MI SUPPLY PK-HR TOTAL ¹		VEH-MI DEMAND PK-HR TOTAL ²		EXCESS CAPACITY PK-HR VEH-MI ³		EXISTING DEFICIENCIES PK-HR VEH-MI ⁴	
					NB/EB	SB/WB				NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB		
FLANARY RD	W FM 1417	W Progress Rd	4,035	0.76	1	1	2U	Minor Arterial	4D	10	10	100%	400	400	306	306	8	8	298	298		
LEGACY BLVD	US 75 NBFR	650' E of US 75 NBFR	650	0.12	2	2	4D	Minor Arterial	4D	N/A	N/A	100%	650	650	160	160						
VIETNAM VETERANS PKWY	US 75 NBFR	320' E of US 75 NBFR	322	0.06	2	2	5U	Major Arterial	6D	425	425	50%	750	750	46	46	13	13	33	33		
VIETNAM VETERANS PKWY	320' E of US 75 NBFR	Williams Blvd	4,103	0.78	1	1	3U	Major Arterial	6D	425	425	50%	600	600	233	233	165	165	68	68		
VIETNAM VETERANS PKWY	Williams Blvd	455' E of Williams Blvd	454	0.09	1	1	3U	Major Arterial	6D	425	425	50%	600	600	26	26	18	18	8	8		
W FM 1417	US 75	US 75 NBFR	251	0.05	2	2	4D	Major Arterial	6D	425	425	50%	650	650	31	31	10	10	21	21		
W FM 1417	OG Groner Rd	1,180' E of S Northgate Dr	10,538	2.00	1	1	2U	Major Arterial	6D	385	385	100%	400	400	798	798	768	768	30	30		
W FM 1417	Howie Dr	US 75 SBFR	1,673	0.32	2	2	5U	Major Arterial	6D	385	385	100%	750	750	475	475	122	122	353	353		
W FM 1417	1,180' E of S Northgate Dr	Howie Dr	715	0.14	1	1	3U	Major Arterial	6D	385	385	100%	600	600	81	81	52	52	29	29		
W FM 1417	US 75 SBFR	US 75	248	0.05	2	2	4D	Major Arterial	6D	385	385	100%	650	650	61	61	18	18	43	43		
W TRAVIS ST	480' W of Crossroads Blvd	US 75 SBFR	1,003	0.19	2	2	4D	Minor Arterial	4D	125	125	50%	650	650	123	123	12	12	112	112		
SUBTOTAL			23,991	4.54											2,341	2,341	1,187	1,187	994	994	0	0
																4,681	2,373	1,988	0			

1. Veh-Mi Supply Pk-Hr Total = [Length (mi)] * [Exist Lanes] * [Veh-Mi Capacity Pk-Hr Per Ln] * [% in Service Area]

2. Veh-Mi Demand Pk-Hr Total = [Length (mi)] * [PM Peak Hour Vol] * [% in Service Area]

3. Excess Capacity Pk-Hr Veh-Mi = [Veh-Mi Supply Pk-Hr Total] - [Veh-Mi Demand Pk-Hr Total]

4. Existing Deficiencies Pk-Hr Veh-Mi = [Veh-Mi Demand Pk-Hr Total] - [Veh-Mi Supply Pk-Hr Total]

Note: Mileage lengths are shown as rounded to the nearest 0.01. Actual calculations were performed using exact mileage length [Length (ft) / 5,280].