

Meeting Minutes
August 20, 2015
3:30 pm
Evans Community Complex
Council Chambers
1100 37th Street, Evans, Colorado

I. CALL TO ORDER by Jeff Oyler at 3:35pm

II. ROLL CALL

Chairman: Jeff Oyler - Here
Vice Chairman: James Krenzel - Here

Commissioners: Lee Morrison - Absent
Glenn Snyder - Here
Vacant

Staff in Attendance:

Dawn Anderson
Jessica Gonifas
Chad Reischl
Pat Zietz

Others in Attendance:

Bob Bolton, Vice President – Dewberry Engineering
Dave Butler, Senior Engineer – Dewberry Engineering

III. APPROVAL OF MINUTES of June 18, 2015 by Jeff Oyler

Motion to approve the minutes by Glenn Snyder, seconded by James Krenzel. Jeff Oyler - Motion has been made and seconded. All in favor signify by saying AY, all opposed NAY. Motion carries.

Jeff Oyler – any agenda additions?

IV. AGENDA ITEMS

- 1) Windy Gap Funding ..... Jessica Gonifas
Quick update - Lease ends at the end of the year; have to buy the shares or let it go. Debt is 4.9 million, the design is around \$300,000. Could be split over two years instead of having to do that whole piece at once. Will go on the October 6th Council meeting.
2) Wastewater Update ..... Jessica Gonifas
They are working on survey, they are progressing. Everything seems to be going well. Discussion over the new plant being in the flood plain, it will not. Jeff reported on repairs to the old plant and violations. The State is working with Evans as this plant will have to stay running until the new plant is complete. Ground breaking will be in October, 2016. Discussion on having another Public Meeting or two.
3) Water Master Plan ..... Jessica Gonifas
a. Dave Butler - Dewberry Engineering: Handouts

Discussion regarding utilizing the Evans Ditch.

Discussion on the park and if it will be a park again.

Dewberry: Will revisit the Water & Sewer Board in October to give them an update.

Discussion regarding the contract with City of Greeley, costs, overages and the cap.

4) Impact Fee Study ..... Jessica Gonifas

a. Handouts from Carson Bise of Tischler Bise

Jessica went over the fees, the Waste Water rate increase is included in the fee schedule for 2016.

Set to go to Council for the first reading on September 16, the increases will be set to go into effect

January 2016. We will revisit it at next meeting. Send any comments to Pat, she will forward them

onto Jessica.

5) Stormwater Master Plan ..... Dawn Anderson/Chad Reischl

Dawn introduced Chad, gave a brief history of projects he has been involved with. Chad: The City applied for

CDBG-DR funds for a Storm Water Master Plan. We were awarded \$265,000 for this plan. We had five firms

provide proposals and selected Mueller Engineering out of Lakewood. Kick-off meeting on September 3<sup>rd</sup>. We

want to disconnect the storm water from the Evans Ditch and look at the South Platte River interface. We'll

hold two public meetings during this project. Project will take about one year, grant runs through the end of

December of 2016. Discussion on the last plan, in '97 and didn't go beyond 49<sup>th</sup>.

**V. GENERAL UPDATES**

Dawn: July usage – We expect August to remain high, will keep our eyes on it for the next couple of months. Discussion on water usage and the Windy Gap situation.

Discussion on the Godfrey Ditch Water.

Update on equipment to

Update on the Fire District installing a dry hydrant for pump training. Dawn explained they put a pump that will pull water from the South Platte and not use City Water. This will help with the cap.

Discussion over vacant position, board members would like to see if we could advertise to get the word out about the need. Dawn thought maybe the water bill and other social media. Maybe the Chambers?

Jeff Oyler asked for a motion to adjourn the meeting. Motion to adjourn by Glen Snyder, seconded by James Krenzel. All approved, motion passed. Meeting adjourned at 4:30pm.

Water and Sewer Board packets are prepared several days prior to the meetings. This information is reviewed and studied by the Board, eliminating lengthy discussions to gain basic understanding. Timely action and/or short discussion on agenda items do not reflect lack of thought or analysis. An informational packet is available for public inspection, which is posted on the bulletin board adjacent to the Council Chambers as soon as its available, and which can be accessed Monday through Friday 8:00 a.m. to 5:00 p.m. excluding holidays.



**Evans, Colorado**

# **Water Master Plan Project Management Plan**

**August 2015**



990 South Broadway, Suite 400  
Denver, CO 80209  
303.951.0628

## GOALS AND OBJECTIVES

The objective of this project is to provide a complete, up-to-date picture of the City’s water service operation with realistic, consistent projections for future demands, identification of the system improvements that will best meet those demands, and setting up the financial systems and rate structure to support the water system going forward. This project will conduct a thorough study of the City’s water system operation, assess current conditions, project future conditions and consider options for meeting those future conditions. The Master Plan will encompass:

- Water Resources
- Water Use and Conservation
- Water Treatment and Transmission
- Water Distribution
- Support of Land Use
- Capital Improvement Planning
- Rate Structure Review and Revisions
- Staffing
- Customer Billing Impacts

The end product will be a complete master plan report that summarizes current conditions, data, analyses, evaluations and the decision making process to provide a reliable, comprehensive reference that City staff can depend on as their definitive go to source of information and guidance for managing and upgrading the water system.

## PROJECT TEAM

Team Member	Affiliation	Responsibility	Telephone	Email
Jessica Gonifas Deputy City Manager	City of Evans	Project Manager	970-475-1106	jgonifas@evanscolorado.gov
	City of Evans			
	City of Evans			
	City of Evans			
Bob Bolton Vice President	Dewberry	Principle in Charge/ Project Manager	303-951-0611	rbolton@dewberry.com
Dave Butler Senior Engineer	Dewberry	Project Engineer	303-951-0628	dbutler@dewberry.com
Kevin Burnett	Wildan	Water Rate Structure Analysis	303-990-4616	KBurnett@willdan.com

## SCOPE OF WORK

The scope of work defines the specific tasks to be executed to accomplish the goals and objectives of the project.

### Task 1 - Project Coordination and Management

Prepare a project management plan. The plan will include the project schedule, project scope, team with responsibility matrix, invoicing procedures and cost tracking procedures. Plan and budget project activities, assign and supervise project engineering staff, monitor and control work schedule and engineering budgets. Prepare monthly status reports that will include a schedule of products and milestones, written summary of work accomplished during the reporting period, progress achieved toward meeting milestones, explanations of complications in reaching milestones, and explanation of out-of-scope work completed with justification and authorization received. Prepare monthly invoices, maintain files and project documentation.

Administration of subcontracts will also be performed under this task.

We anticipate having a Project Kick-Off Meeting at the beginning of the project to clarify project roles and responsibilities, and confirm goals and objectives. Milestone and progress meetings will occur approximately monthly throughout the project. The following key points are anticipated to establish the framework for these meetings:

- Preliminary Rate Study Findings
- Population and Flow Projections
- Water Resources and Conservation
- System Hydraulic Modeling Results
- Treatment and Transmission Alternatives Evaluation
- Capital Improvements Plan

At the end of the project the Master Plan Report will be presented and reviewed with City Staff.

### Task 2 - Previous Planning Data Review

Review and summarize previous work related to the Water master Plan. Prepare a technical memorandum that summarizes the previous work related to the Water master Plan. The previous work to be reviewed and summarized includes;

- Water Master Plan Update - May 2005
- Water Conservation Plan - 2009
- Regional Transmission and Treatment Feasibility Study – 2014

### Task 3 - Rate Evaluation

Meet with City staff members early on to collect and review available information and review the methodology used in the development of the current rate structure for water services. The existing rate structure will be evaluated for its ability to generate the revenue needed to operate and maintain the current water infrastructure. Based on this assessment, recommendations for a revised rate structure will be developed that will provide for distribution of costs on an equitable basis between current and new customers, as well as by class (Residential, Multi-Family, Commercial, industrial, and City) of customer. We will also evaluate the impact on rates of capital improvements needed to meet future water demands and will provide the City with a projection of systematic future rate increases that will provide the necessary funds with a minimum of inconvenience to customers. The results of the rate evaluation will be suitable for review by City Management and the Water and Sewer Board as the basis of recommendation of new rates to City Council for adoption.

## **Task 4 - Water Resources Evaluation**

Provide an overview summary of the City's water resources and how they affect various parts of the Water Master Plan. This will include allocations of raw water resources to the City of Greeley for potable water treatment, use of Evans Town Ditch water as a non-potable irrigation source for citizens and other long term participation in water development projects relative to the City's strategic direction. Prepare a technical memorandum that summarizes the Water Resources Evaluation.

## **Task 5 - Water Use and Conservation**

Using current data on population and land use projections and water use by service class (Residential, Multi-Family, Commercial, industrial, and City) update potable and non-potable water demand forecasts. Current trends in water use, particularly any identifiable trends associated with water conservation measures will be considered in making projections of future demands. This task will also include updating the City's 2009 Water Conservation Plan. The update will outline accomplishments in water conservation from the 2009 study, evaluation of the effectiveness of implemented conservation measures, updating costs and benefits for the various conservation programs contemplated, and updating recommendations.

## **Task 6 - Water Treatment and Transmission Evaluation**

Evaluate summary elements from the 2014 Water Transmission and Treatment Feasibility Study and their interrelationships to the City's desires for water treatment planning initiatives. This task is primarily focused on verifying the capital improvement planning and financial analysis of participation in regionalization of water treatment. This evaluation will also consider the costs and benefits of changes in water resource utilization, as well as transmission of raw and treated water, and distribution system impacts including the need for storage facilities. This task includes contacting and meeting with other regional entities to gather planning and development information for inclusion into future water distribution system modeling scenarios including level of interest in participation and timing of implementation. Entities to be contacted include:

- Northern Water Conservancy District
- Town of Eaton
- Town of Firestone
- Town of Frederick
- City of Loveland
- Town of Milliken
- Town of Severance
- Town of Windsor
- Fort Collins-Loveland Water District
- Central Weld County Water District

Prepare a technical memorandum that summarizes the findings of the Water Treatment and Transmission Evaluation.

## **Task 7 - Water Distribution System Modeling**

Update the hydraulic distribution system model prepared by HDR in the 2005 Master Plan Update. Review existing model and operational data and perform calibration model runs to determine if the model produces sufficiently accurate results for further use. This work will result in an updated CIP and condition assessment of the distribution system. Multiple model runs are anticipated to ensure proper fire flow exists when simulating peak demand conditions. The water distribution planning efforts will also include concepts to provide service to other areas inside the City's growth management planning boundaries.

### **Task 7.1 - Verify & Update Planning & Design Criteria**

Verify the accuracy of the planning and design criteria prepared as part of the HDR in the 2005 Master Plan Update. The following planning and design criteria will be updated.

- Population projections
- System demand by pressure zone
- System demand by service area

- System demand by use
- Land use, service area and demand rates
- System peaking factors
- System operating pressures and zoning

Collaborate with Evans to evaluate demand data, growth projections, and water production data provided by the Town. Working with the Town and local fire authorities, establish reasonable fire flow demands. Prepare a technical memorandum that summarizes the current planning and design criteria and make recommendations to update the current values.

### **Task 7.2 - Model Existing System**

Model the existing water distribution system to determine system adequacy to meet existing conditions. Model shall be used to simulate low flow, peak month, peak day, peak hour and fire flow conditions. Steady state simulations will be modeled. Identify any system deficiencies and document necessary improvements to resolve problems.

### **Task 7.3 - Model Future Conditions**

Based on projected 5, 10, 15, 20 year and ultimate growth scenarios, use the system model to evaluate future growth scenarios and identify necessary facility upgrades to meet future demands. Model shall be used to simulate low flow, peak month, peak day, peak hour and fire flow conditions.

## **Task 8 - Support of Land Use**

Each of the main work products summarized in the master plan report will support future land use and other established City planning documents. The selected Consultant will be expected to coordinate with City departments to gather applicable data related to these points for incorporation into the plan.

### **Task 8.1 - Develop Conceptual Non Potable Irrigation Distribution System Plan**

Develop a conceptual plan for the implementation of an irrigation system for the City's parks and commercial areas using non potable water will be prepared. The plan will be based on concepts developed by City's and discussed in the Water Conservation Plan. The Non Potable Irrigation Distribution Plan (NIDS Plan) will encompass pretreatment, pumping facilities, piping, valves and appurtenances necessary for a complete operational system.

## **Task 9 - Capital Improvement Plan**

Utilizing the output from the previously prepare technical memorandums develop the overall composite water master plan that combines the near-term and long-term projects. The sections of the Master Plan are expected to each include cost estimates, forecasting and details surrounding capital improvements that may be implemented by Evans as a result of this combined planning effort. Prepare draft and final versions of a Master Plan Report. The report will, at a minimum include the following sections and information:

- Preliminary Rate Evaluation
- Water Resources Evaluation
- Water Treatment and Transmission Evaluation
- Summary Water Distribution Modeling
- Description, summary of key planning, design criteria and mapping for the existing distribution system
- Summary of Water Use and Conservation
- Conceptual Non-potable Water Use Plan

- Projections of timing, location and type of anticipated future growth. Population and treated water demand projections for 5 year, 10 year, 20 year and ultimate development
- Water distribution system model documentation. Description and documentation of model calibration efforts. Description and documentation of model scenarios and modeling results
- Program of facility improvements. Based on modeling efforts, identify near term, 5 year, 10 year, 15 year, 20 year and ultimate water treatment and distribution system improvements needed to meet projected growth. Provide mapping showing needed facility improvements. Develop a table summarizing improvement descriptions, timing, and costs
- An analysis of the existing rate structures related to multi- family, industrial and commercial rates for various use categories

## PROJECT BUDGET

The project budget is broken down by task in the following table.

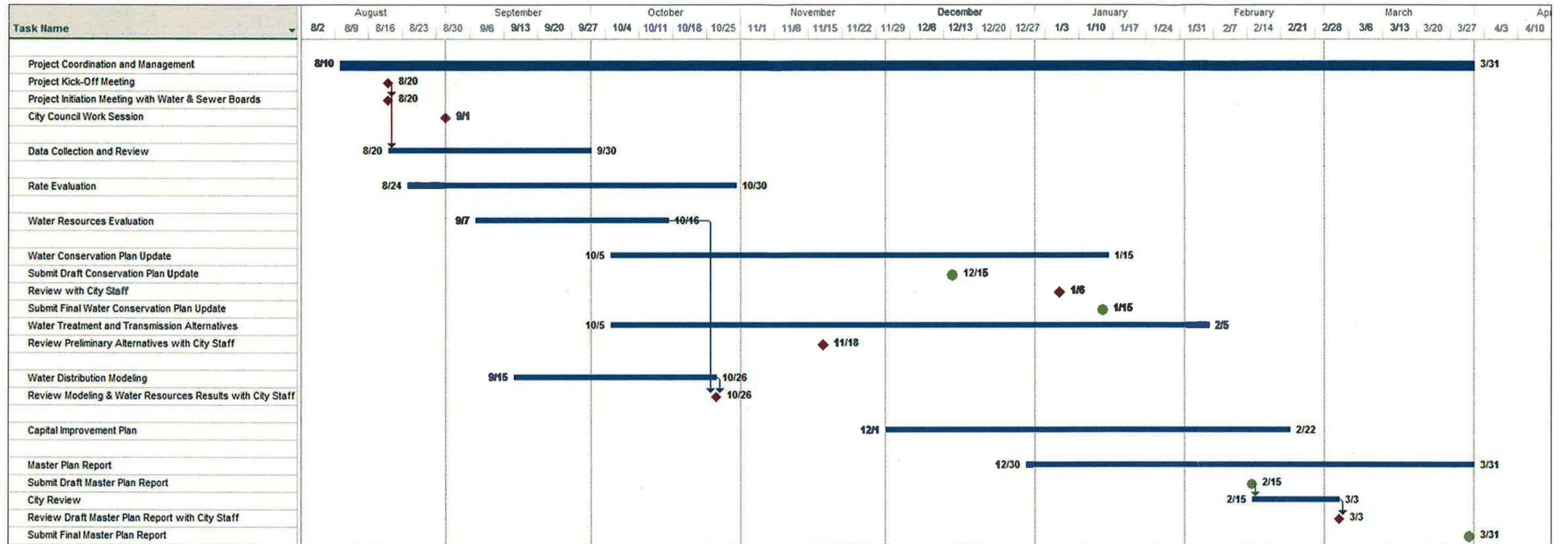
Task	Task Description	Task Cost	Rate Study Subconsultant	Direct Costs	Labor Cost	Total Hours	Dewberry					
							Eng 10	Eng 6	Eng 5	Eng 4	Eng 1	Admin
							\$ 195	\$ 150	\$ 140	\$ 120	\$ 90	\$ 75
1	Project Coordination & Management	\$ 15,560		\$ 5,000	\$ 10,560	88	8	40				40
2	Previous Planning Data Review	\$ 8,060		\$ 500	\$ 7,560	48	8	40				
3	Rate Evaluation	\$ 21,880	\$ 15,000	\$ 1,400	\$ 5,480	36	8	16	4	8		
4	Water Resources Evaluation	\$ 8,280		\$ 1,500	\$ 6,780	44	4	40				
5	Water Use and Conservation	\$ 24,960		\$ 1,000	\$ 23,960	168	8	80	40	40		
6	Water Treatment and Transmission Evaluation	\$ 35,580		\$ 3,500	\$ 32,080	264	16	40	80	8	120	
7	Water Distribution System Modeling	\$ 35,260		\$ 2,500	\$ 32,760	248	8	80		160		
8	Support of Land Use	\$ 11,240		\$ 1,000	\$ 10,240	72	8	20	20	24		
9	Capital Improvement Plan	\$ 39,180	\$ 3,000	\$ 1,500	\$ 34,680	256	24	80	60	60		32
Project Total		\$ 200,000	\$ 18,000	\$ 17,900	\$ 164,100	1,224	92	436	204	300	120	72

Throughout the project charges to the project will be monitored by task to verify that the level of effort is as required to meet the project schedule and budget.

## PRELIMINARY PROJECT SCHEDULE

The following milestones and key task elements provide the schedule framework for efficiently completing the project scope.

Milestone	Date
Project Kick-off Meeting	August 20, 2015
Project Initiation Meeting with Evans Water and Sewer Boards	August 20, 2015
City Council Work Session	September 1, 2015
Data Collection and Review	August 20, 2015 - September 30, 2015
Distribution System Modeling	September 15, 2015 – October 26, 2015
Draft Preliminary Rate Evaluation TM	October 30, 2015
Review Updated Water Conservation Plan with City Staff	January 6, 2016
Submit Draft Master Plan Report	February 15, 2016
Review Draft Master Plan Report with City Staff	March 3, 2016
Submit Final Master Plan Report	March 31, 2016



# Impact Fee Study: City of Evans, Colorado

*Prepared for:  
City of Evans, CO*

*July 22, 2015*



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**2015 IMPACT FEE STUDY**  
**CITY OF EVANS, COLORADO**

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## EXECUTIVE SUMMARY

The City of Evans, Colorado retained TischlerBise, Inc. to update the impact fees imposed on new development to meet the new demand generated for five types of public facilities in the City:

- Parks, Recreation and Trails
- Fire/Rescue
- Police
- Transportation
- Wastewater

*Impact fees for Water and Stormwater are also part of our contract with the City of Evans. However, key assumptions for future capital facility needs are still be formulated and considered and will be presented subsequently in a separate report.*

This report presents the methodologies and calculations used to generate current levels of service and updated maximum allowable impact fees. It is intended to serve as supporting documentation for future updates to impact fees in the City of Evans.

The purpose of 2015 Impact Fee Study is to demonstrate the City's compliance with the Colorado Revised Statute 29-20-104.5. Consistent with the authorization, it is the intent of the City of Evans to:

- Collect impact fees to fund capital improvements required to serve growth, and
- To use revenue generated from impact fees to benefit new development by maintaining current levels of service.

Impact fees are one-time payments used to construct system improvements needed to accommodate new development. An impact fee represents new growth's fair share of capital facility needs. By law, impact fees can only be used for *capital* expansions, not operating or maintenance costs. Impact fees are subject to legal standards, which require fulfillment of three key elements: **need**, **benefit** and **proportionality**.

- First, to justify a fee for necessary public services, it must be demonstrated that new development will create a **need** for capital improvements.
- Second, new development must derive a **benefit** from the payment of the fees (i.e., in the form of public facilities constructed within a reasonable timeframe).
- Third, the fee paid by a particular type of development should not exceed its **proportionate** share of the capital cost for system improvements.

TischlerBise evaluated possible methodologies and documented appropriate demand indicators by type of development for the levels of service and impact fees. Local demographic data and improvement costs were used to identify specific capital costs attributable to growth. This report includes summary tables indicating the specific factors, referred to as level of service standards, used to derive the impact fees.

## METHODOLOGIES AND CREDITS

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Development impact fees can be calculated by any one of several legitimate methods. The choice of a particular method depends primarily on the service characteristics and planning requirements for each facility type. Each method has advantages and disadvantages in a particular situation, and to some extent can be interchangeable, because each allocates facility costs in proportion to the needs created by development.

Reduced to its simplest terms, the process of calculating development impact fees involves two main steps: (1) determining the cost of development-related capital improvements, and (2) allocating those costs equitably to various types of development. In practice, the calculation of impact fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities. The following paragraphs discuss three basic methods for calculating development impact fees, and how each method can be applied.

*Plan-Based Fee Calculation.* The plan-based method allocates costs for a specified set of improvements to a specified amount of development. Facility plans identify needed improvements, and land use plans identify development. In this method, the total cost of relevant facilities is divided by total demand to calculate a cost per unit of demand. Then, the cost per unit of demand is multiplied by the amount of demand per unit of development (e.g., housing units or square feet of building area) in each category to arrive at a cost per specific unit of development (e.g., single family detached unit).

*Cost Recovery or Buy-In Fee Calculation.* The rationale for the cost recovery approach is that new development is paying for its share of the useful life and remaining capacity of facilities already built or land already purchased from which new growth will benefit. This methodology is often used for systems that were oversized such as sewer and water facilities.

*Incremental Expansion Fee Calculation.* The incremental expansion method documents the current level of service (LOS) for each type of public facility in both quantitative and qualitative measures, based on an existing service standard (such as square feet per student). This approach ensures that there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. The level of service standards are determined in a manner similar to the current replacement cost approach used by property insurance companies. However, in contrast to insurance practices, the fee revenues would not be for renewal and/or replacement of existing facilities. Rather, revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments, with LOS standards based on current conditions in the community.

*Credits.* Regardless of the methodology, a consideration of “credits” is integral to the development of a legally valid impact fee methodology. There are two types of “credits,” each with specific and distinct characteristics, but both of which should be addressed in the calculation of development impact fees. The first is a credit due to possible double payment situations. This could occur when contributions are made by the property owner toward the capital costs of the public facility covered by the impact fee. This type of credit is integrated into the impact fee calculation. The second is a credit toward the payment of a fee for dedication of public sites or improvements provided by the developer and for which the facility fee is imposed. This type of credit is addressed in the administration and implementation of a facility fee program.

### FEE METHODOLOGIES

The following table summarizes the method(s) used to derive the impact fee for each type of public facility in Evans.

**Figure 1: Summary of Impact Fee Methodologies**

Type of Public Facility	Methodology		
	Cost Recovery (Past)	Incremental Expansion (Present)	Plan Based (Future)
Parks	Not Applicable	<ul style="list-style-type: none"> <li>• Park Land and Open Space and Recreation Improvements</li> </ul>	
Fire/Rescue		<ul style="list-style-type: none"> <li>• Fire Station Space</li> <li>• Apparatus</li> </ul>	
Police		<ul style="list-style-type: none"> <li>• Police Space</li> <li>• Police Vehicles</li> </ul>	
Transportation			<ul style="list-style-type: none"> <li>• Road Improvements</li> </ul>
Wastewater			<ul style="list-style-type: none"> <li>• Wastewater Treatment Plant</li> </ul>

**MAXIMUM ALLOWABLE IMPACT FEES BY TYPE OF LAND USE**

Figure 2 provides a schedule of the maximum allowable impact fees by type of land use for the City of Evans. *As mentioned previously, this does not include the City's impact fees for Water and Stormwater.* The fees represent the highest amount allowable for each type of applicable land use, and represents new growth's fair share of the cost for capital facilities. The City may adopt fees that are less than the amounts shown. However, a reduction in impact fee revenue will necessitate an increase in other revenues, a decrease in planned capital expenditures, and/or a decrease in levels of service.

The fees for residential development are to be assessed per housing unit and should be collected when building permits are issued. For nonresidential development, the fees are assessed per square foot of floor area, and should be collected when building permits are issued. Nonresidential development categories are consistent with the terminology and definitions contained in the reference book, Trip Generation 9<sup>th</sup> Edition, published by the Institute of Transportation Engineers.

**Figure 2: Summary of Maximum Allowable Impact Fees by Land Use**

Maximum Supportable Impact Fees

Land Use Category	Parks	Police	Fire/Rescue	Transportation	Wastewater	PROPOSED Impact Fee
<b>Residential</b>						
<i>Per Housing Unit</i>						
Single Unit	\$4,594	\$274	\$930	\$4,317	\$4,354	\$14,469
2+ Unit	\$3,587	\$214	\$726	\$3,511	\$3,400	\$11,438
Manufactured Home	\$3,569	\$212	\$723	\$6,141	\$3,383	\$14,028
<b>Nonresidential</b>						
<i>Per Square Foot of Floor Area</i>						
Commercial	\$0.00	\$0.28	\$1.00	\$5.61		\$6.89
Office/Institutional	\$0.00	\$0.11	\$0.39	\$2.42		\$2.92
Industrial/Flex	\$0.00	\$0.07	\$0.25	\$1.53		\$1.85

Utility Meter Size and Type	PROPOSED Wastewater Impact Fee
<b>Meters</b>	
0.75" Displacement	\$3,400
1.00" Displacement	\$7,394
1.50" Displacement	\$14,354
2.00" Displacement/Compound	\$23,054
3.00" Displacement/Compound	\$46,544
4.00" Displacement/Compound	\$72,644

Please note, calculations throughout this technical memo are based on an analysis conducted using Excel software. Results are discussed in the memo using one-and two-digit places (in most cases), which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

## PARKS , RECREATIONAL FACILITIES AND TRAILS

### OVERVIEW

An incremental expansion cost methodology was used to calculate the community parkland, open space, park improvements, multi-use trails, and recreational facilities components of the Parks and Recreational Facilities Impact Fees. Therefore, the assumption is that as population in the City increases, the City will continue to make investments in the system-wide inventory. Parks, Recreational Facilities and Trails Impact Fees are assessed only against residential development.

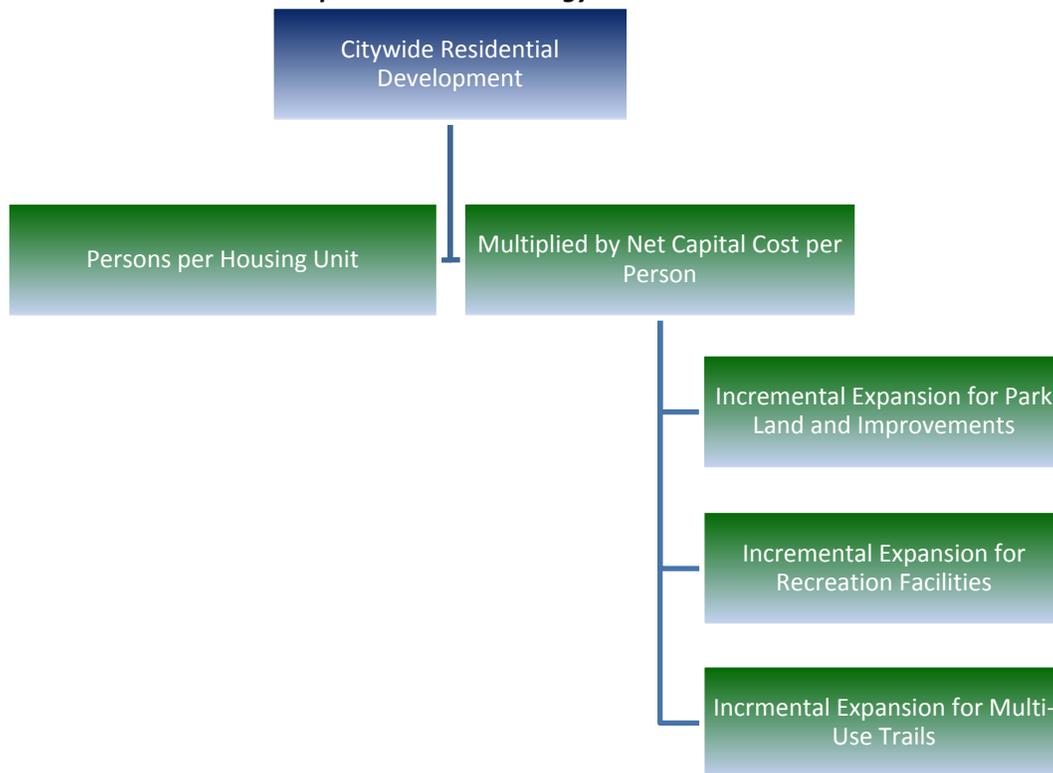
### Service Area

The City of Evans plans to provide a uniform level of service and equal service for all community Parks, Recreational Facilities and Trails throughout the City. As a result, the service area for the category is citywide.

### METHODOLOGY

As shown in Figure 3, all capital costs for Parks and Recreational Facilities Impact Fees have been allocated 100 percent to residential development. The impact fees are calculated on a per capita basis, and then they are converted to an appropriate amount for each housing unit type, based on *Persons per Housing Unit* indicators.

Figure 3: Parks and Recreation Impact Fee Methodology Chart



## PARKS AND RECREATIONAL FACILITIES IMPROVEMENTS AND COSTS

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### Community Parkland and Open Space

Community parkland and open space is based on the *incremental expansion* methodology. As shown in Figure 4 the City has 173.4 acres of community parkland and open space. This includes all the acreage associated with Riverside Park, although a portion as damaged by the recent flood. Since the City has secured alternative revenues to restore Riverside Park to full operations, and impact fee revenue will not be used to restore the park to its original condition, it is included as part of the City's inventory. Impact fee revenue will be used to prepare other open space for community park improvements.

The City plans to maintain the level of service for parkland that it provides to existing development. Thus, the incremental expansion methodology is used to calculate this component. Based on the assumption that population generates demand for parks and open space, the formula to determine level of service for residential development is as follows: (173.4 acres X 100% proportionate share) / 19,200 population = 0.0090 acres per capita.

According to projected cost estimates in the 2014 Riverside Park Master Plan, it costs approximately \$120,000 to purchase and develop an acre of land. To calculate the cost to purchase and develop park and open space per demand unit, the cost per acre of \$120,000 is multiplied by the per service unit LOS (0.0090) resulting in a cost per capita of \$1,083.75.

**Figure 4: Incremental Expansion – Community Parkland and Open Space**

Community Parkland and Open Space	Acres	Cost per Acre [1]	Total Value
City Park	2.95	\$120,000	\$354,000
Driftwood Park	6.70		\$804,000
Evans Community Complex	3.25		\$390,000
EMOC Greenbelt	3.50		\$420,000
Pheasant Crt ISD	0.25		\$30,000
Freedom Park	7.25		\$870,000
Grapevine Hollow Green Space	4.25		\$510,000
Municipal Pool	0.85		\$102,000
Green Meadows	2.30		\$276,000
Riverside Park	88.70		\$10,644,000
Riverside Sports Park	12.30		\$1,476,000
Vineyard Park	4.25		\$510,000
Renaissance Park	1.00		\$120,000
Dante Park	1.00		\$120,000
35th Avenue	2.50		\$300,000
Village Park	3.10		\$372,000
Prairie View Park	10.00		\$1,200,000
Ridge Park	9.00		\$1,080,000
Pioneer Park	10.25		\$1,230,000
<b>TOTAL</b>	<b>173.40</b>		

Source: City of Evans

[1] Based on Projected Cost Estimates from Riverside Park Master Plan, 16Dec14.

Assumes dedication of acres ( no land purchase)

Land Use	Proportionate Share	2014 Demand Units	Developed Acres per Demand Unit	Cost per Demand Unit
Residential	100%	19,200 Population	0.0090	\$1,083.75

### Park Improvements

The City of Evans provides active and passive park improvements for use by the current population. Park improvements include playgrounds, sports fields and courts, and a skate park.

The City plans to maintain the level of service for park improvements that it provides to existing development. Thus, the incremental expansion methodology is used to calculate this component. Based on the assumption that population generates demand for Parks and Recreational Facilities, the formula to determine LOS for residential development is as follows: (32 units X 100% proportionate share) / 19,200 population = 0.002 units per capita.

According to discussion with staff and projected cost estimates in the 2014 Riverside Park Master Plan, the average park improvement costs \$113,631. To calculate the cost of park improvements per service unit, the cost per unit (\$113,631) is multiplied by the per demand unit LOS (0.002) resulting in a park improvements cost per capita of \$189.39.

**Figure 5: Incremental Expansion – Park Improvements**

Park Improvements	Units	Cost per Unit [1]	Total Value
Baseball Fields	5	\$135,000	\$675,000
Skate Parks	1	\$350,000	\$350,000
Volleyball	2	\$30,000	\$60,000
Basketball/Tennis Courts	7	\$21,600	\$151,200
Sports Fields	4	\$200,000	\$800,000
Playgrounds	9	\$100,000	\$900,000
Restrooms and Concessions	4	\$175,000	\$700,000
<b>TOTAL</b>	<b>32</b>	<b>\$113,631</b>	<b>\$3,636,200</b>

Source: City of Evans

[1] Based on Projected Cost Estimates from Riverside Park Master Plan, 16Dec14

Land Use	Proportionate Share	2014 Demand Units	Developed Acres per Demand Unit	Cost per Demand Unit
Residential	100%	19,200 Population	0.002	\$189.39

### Multi-Use Paths

The City of Evans provides 5 miles of 10' concrete walks in developed Community parks. The City plans to maintain the level of service for the multi-use path that it provides to existing development. Thus, the incremental expansion methodology is used to calculate this component. Based on the assumption that population generates demand for Parks and Recreational Facilities, the formula to determine LOS for residential development is as follows: (5 miles X 100% proportionate share) / 19,200 population = 0.0003 units per capita.

According to discussion with staff and projected cost estimates in the 2014 Riverside Park Master Plan, the average costs per mile of multi-use path is \$264,061. To calculate the cost of multi-use paths per service unit, the cost per mile (\$264,061) is multiplied by the per demand unit LOS (0.0003) resulting in a multi-use path cost per capita of \$68.77.

**Figure 6: Incremental Expansion – Multi-Use Paths**

Multi-Use Paths	Mile	Cost per Mile [1]	Total Value
Maintained Paths	5.00	\$264,061	\$1,320,306

Source: City of Evans

[1] Based on 2.45 miles of 10' concrete walks in Riverside Park plan with a cost of \$646,950

Land Use	Proportionate Share	2014 Demand Units	Miles per Demand Unit	Cost per Demand Unit
Residential	100%	19,200 Population	0.0003	\$68.77

### Recreational Facilities

The City of Evans owns and operates the Evans Community Complex, which includes 20,443 square feet of community recreation space. The existing facility is sufficient to serve the current community and the City plans to maintain the level of service as new development occurs. Thus, the incremental expansion

methodology is used to calculate this component. Based on the assumption that population generates demand for Parks and Recreational Facilities, the formula to determine LOS for residential development is as follows: (20,443 miles X 100% proportionate share) / 19,200 population = 1.065 square feet per capita.

According to discussion with staff the approximate cost per square foot for a similar facility is \$136 and the recreation portion of the complex building requires approximately 5 acres of land. Assuming \$600,000 in land development costs, the cost per square foot for recreation facilities is \$166. To calculate the cost of recreation facilities per service unit, the cost per square foot (\$166) is multiplied by the per service unit LOS (1.065) resulting in a multi-use path cost per capita of \$176.58.

**Figure 7: Incremental Expansion – Recreational Facilities**

Recreation Facilities	Square Feet	Cost per Sq. Ft. [1]	Total Value
Evans Community Complex	20,443	\$166	\$3,390,265

Source: City of Evans

[1] Total Value includes \$600,000 for 5 acres of land (i.e., the recreation portion of the total 7 acre Evans Community Complex site).

Land Use	Proportionate Share	2014 Demand Units	Developed Acres per Demand Unit	Cost per Demand Unit
Residential	100%	19,200 Population	1.065	<b>\$176.58</b>

**PARKS, RECREATIONAL FACILITIES AND TRAIL CAPITAL IMPROVEMENT NEEDS TO SERVE GROWTH**

Ten-year growth projections for the City of Evans suggest the City will add 4,205 new residents (an increase of approximately 22 percent). In order to maintain current levels of service for developed parkland, park improvements, multi-use paths, and recreation facilities the City will need to make incremental investments. Shown in Figure 8 below are the acres and units needed to maintain current levels of service for each component and the total investment necessary based on 10-years of population growth.

**Figure 8: Projected Demand for Parks, Recreational Facilities and Trails**

Demand Unit	Land (acres)	Park Improvements (units)	Multi-Use Trails (miles)	Recreational Facilities (square feet)
per Person	0.0090	0.002	0.0003	1.065
Average Cost per Component	\$120,000	\$113,631	\$264,061	\$166

		Projected Demand (Rounded)				
		Demand Units Population	Land (acres)	Park Improvements (units)	Multi-Use Trails (miles)	Recreational Facilities (square feet)
Base	2014	19,200	173.40	32	5.00	20,443
1	2015	19,584	176.87	33	5.10	20,852
2	2016	19,976	180.41	33	5.20	21,269
3	2017	20,375	184.01	34	5.31	21,694
4	2018	20,783	187.70	35	5.41	22,128
5	2019	21,198	191.44	35	5.52	22,570
6	2020	21,622	195.27	36	5.63	23,022
7	2021	22,055	199.18	37	5.74	23,483
8	2022	22,496	203.17	37	5.86	23,952
9	2023	22,946	207.23	38	5.98	24,432
10	2024	23,405	211.38	39	6.10	24,920
<b>Ten Yr Total</b>		<b>4,205</b>	<b>38</b>	<b>7</b>	<b>1.10</b>	<b>4,477</b>
<b>Cost of Developed Parkland</b>		<b>\$4,557,169</b>				
<b>Cost of Park Improvements</b>		<b>\$795,419</b>				
<b>Cost of Multi-Use Trails</b>		<b>\$289,161</b>				
<b>Cost of Recreation Facilities</b>		<b>\$742,503</b>				

**CREDIT EVALUATION**

A credit for future revenue generated by new development is only necessary if there is potential double payment for system improvements. In Evans, impact fee revenue will be used exclusively for growth-related capacity improvements. If elected make a legislative policy decision to fully fund growth-related improvements from impact fees, a credit for other revenue sources is unnecessary.

**PARKS, RECREATIONAL FACILITIES AND TRAILS INPUT VARIABLES AND IMPACT FEES**

Figure 9 provides a summary of the input variables (described in the chapter sections above) used to calculate the net capital cost per person for each Parks and Recreational Facilities component.

The residential Parks, Recreational Facilities and Trails Impact Fees are the product of persons per type of housing unit multiplied by the total net capital cost per person. An example of the calculation for an average single family unit is: the net capital cost per person (\$1,524.99) multiplied by the persons per housing unit (3.01) to arrive at the impact fee per average single family unit of \$4,594. Also shown is a comparison with the City’s current fees.

**Figure 9: Parks, Recreation Facilities and Trails Input Variables and Maximum Allowable Impact Fees**

<i>Parks and Recreational Facilities Capital Costs</i>	<i>Per Person</i>
Improved Parkland	\$1,083.75
Park Improvements	\$189.39
Multi-Use Trails	\$68.77
Recreational Facilities	\$176.58
Impact Fee Study	\$6.50
<b>GROSS CAPITAL COST</b>	<b>\$1,524.99</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$1,524.99</b>

<i>Parks and Recreational Facilities Impact Fee Schedule</i>		<i>Impact Fee per Housing Unit</i>		
<i>Unit Type</i>	<i>Persons per Housing Unit [1]</i>	<i>Proposed Fee</i>	<i>Current Fee [2]</i>	<i>Increase (Decrease)</i>
Single Unit	3.01	\$4,594	\$4,604	(\$10)
2+ Unit	2.35	\$3,587	\$4,604	(\$1,017)
Manufactured Home	2.34	\$3,569	\$4,604	(\$1,035)

[1] TischlerBise. 2014 Impact Fee Demographic Data and Development Projections

[2] City of Evans, City Code Title 15 Buildings and Construction

**CASH FLOW PROJECTIONS**

This section summarizes the potential cash flow to the City, if the Parks, Recreational Facilities and Trails Impact Fees are implemented at the maximum allowable amounts. The cash flow projections are based on the assumptions detailed in this chapter. The summary provides an indication of the impact fee revenue generated by new development projected over the next ten years, and capital expenditures necessary to meet the demand for new Park and Recreational Facilities brought about by new development.

**Figure 10: Cash Flow Summary for Parks and Recreation**

**Ten-Year Growth-Related Costs for Parks and Recreational Facilities**

Improved Parkland	\$4,557,169
Park Improvements	\$795,419
Multi-Use Trails	\$289,161
Recreational Facilities	\$742,503
Impact Fee Study	\$7,898
<b>Total Projected Costs</b>	<b>\$6,392,150</b>

		<i>per Housing Unit</i>	
		<i>Single Unit</i>	<i>2+ Units</i>
		<b>\$4,594</b>	<b>\$3,587</b>
		<i>Housing Units Added</i>	
Base	2014	5,350	1,509
Year 1	2015	5,438	1,534
Year 2	2016	5,547	1,565
Year 3	2017	5,658	1,596
Year 4	2018	5,771	1,628
Year 5	2019	5,887	1,660
Year 6	2020	6,004	1,694
Year 7	2021	6,125	1,727
Year 8	2022	6,247	1,762
Year 9	2023	6,372	1,797
Year 10	2024	6,499	1,833
	<i>Ten-Yr Increase</i>	1,149	324
	Projected Fees (Rounded)=>	\$5,278,506	\$1,162,188
	<b>Total Projected Revenues</b>	<b>\$6,440,694</b>	
	Cumulative Net Surplus/(Deficit)	\$48,544	

## POLICE

### OVERVIEW

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The Police Impact Fee addresses the need for additional facilities, vehicles, and equipment that would be needed to support the greater demand for law enforcement services and facilities due to future residential and nonresidential development in Evans. The impact fee is derived using the incremental expansion methodology, meaning that the impact fee is calculated based on the cost of maintaining the City's current level of service to residential and nonresidential development. Figure 12 shows the methodology chart used for the Police Impact Fee.

### Service Area

The City of Evans provides a uniform level of Police service throughout the City. As a result, the service area for the category is citywide.

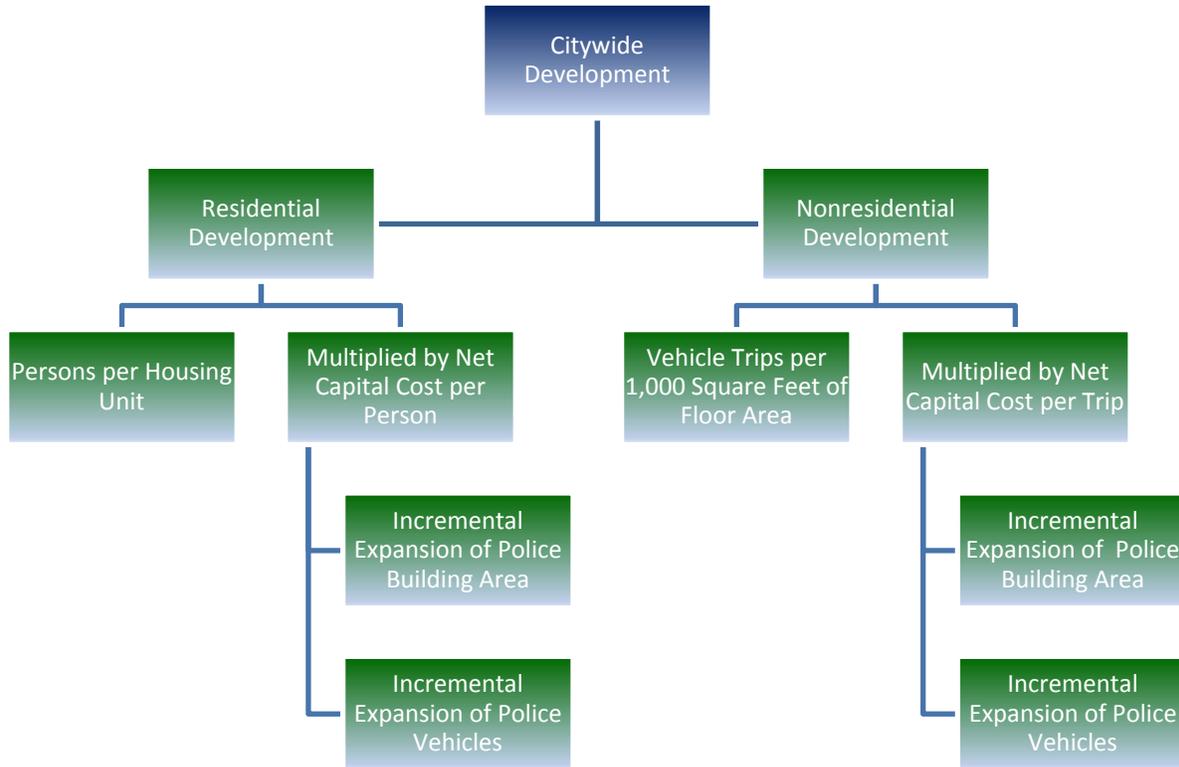
### METHODOLOGY

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Figure 11 shows that Police Impact Fees use different demand indicators for residential and nonresidential development. Residential impact fees are calculated on a per capita basis and then converted to a proportionate fee amount by type of housing, based on the number of persons per housing unit.

For nonresidential impact fees, TischlerBise recommends using nonresidential vehicle trips as the best demand indicator for Police facilities and equipment. Trip generation rates are used for nonresidential development because vehicle trips are highest for commercial developments, such as shopping centers, and lowest for industrial/warehouse development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for Police services from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, will not accurately reflect the demand for service. For example, if employees per thousand square feet were used as the demand indicator, Police Impact Fees would be too high for office and institutional development because offices typically have more employees per 1,000 square feet than retail uses. If floor area were used as the demand indicator, Police Impact Fees would be too high for industrial development.

Figure 11: Police Impact Fee Methodology Chart



### PROPORTIONATE SHARE

As shown in Figure 12, the Police Impact Fee uses functional population to determine the proportionate cost share for residential and nonresidential development. For residential development, the proportionate share factor is based on estimated person hours of non-working residents, plus the non-working hours of resident workers. Based on 2011 U.S. Census Bureau data, approximately 56% of Evan’s population worked in 2011. For resident workers, two-thirds of a day (i.e., annualized average) was allocated to residential demand. Time spent at work (i.e., annualized average of 8 hours per day) was allocated to nonresidential development. In 2011, the U.S. Census Bureau’s OnTheMap4 web application indicated that 391 town residents also worked in Evans, but 95% of workers commuted to out-of-town jobs. Total jobs located in Evans include 2,723 inflow commuters. Based on estimated person hours, the cost allocation for residential development is 82% while nonresidential development accounts for 18% of the demand for infrastructure.

Figure 12: Proportionate Share Determination

	Demand Units in 2011	Demand Hours/Day	Person Hours	Proportionate Share
<b>Residential</b>				
Estimated Residents	18,943			
56% Residents Not Working	10,694	20	213,880	
44% Employed Residents	8,249			
5% Employed in Service Area	391	14	5,474	
95% Employed outside Service Area	7,858	14	110,012	
<i>Residential Subtotal</i>			329,366	<b>82%</b>
<b>Nonresidential</b>				
Non-working Residents	10,694	4	42,776	
Jobs in Service Area	3,114			
Residents Employed in Service Area	391	10	3,910	
Non-Resident Workers (inflow Commuters)	2,723	10	27,230	
<i>Nonresidential Subtotal</i>			73,916	<b>18%</b>
<b>TOTAL</b>			<b>403,282</b>	<b>100%</b>

Source: 2011 population estimate from Colorado State Demography Office; U.S. Census Bureau, OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics

## POLICE FACILITIES/VEHICLES AND COSTS

### Police Buildings

The City of Evans community is protected by a complement of 29 police officers who provide service 24-hours a day. Police Department offices are housed in the Evans Community Complex, which is located at 1100 37th Street.

The City plans to maintain the level of service for Police buildings in the future. There are several options for increasing space, including a new stand-alone Police Headquarters or a joint use facility with the Fire District. It is anticipated that more concrete plans will be made in the next few years. Therefore, an incremental expansion methodology is used to calculate this component until a new Police Station is programmed in the Capital Improvement Plan, which ensures new growth's share of the cost is captured.

As shown in Figure 13, the Police Department currently occupies 6,168 square feet of the Evans Community Complex. Figure 13 also indicates residential/nonresidential proportionate share factors (from Figure 13 above), current level of service (LOS) standards, and cost per demand unit. The current residential level of service is derived by multiplying the total square footage of Police space by the

residential proportionate share factor and dividing by the estimated 2014 populations (6,168 X 82% / 19,200) resulting in a level of service of 0.263 square feet per person. Similarly, nonresidential level of service (LOS) is derived by multiplying total square footage by the proportionate share and dividing by total nonresidential vehicle trips (6,168 X 18% / 18,130) resulting in a level of service of .061 sq. ft. per nonresidential trip.

The cost per demand unit is derived using the total cost per square foot (\$236) and existing levels of service discussed above. For residential development, the cost per demand unit is \$62.17 per person. The cost per demand unit for nonresidential development is \$14.45 per nonresidential vehicle trip.

**Figure 13: Incremental Expansion – Police Buildings**

Facility	Total Square Feet	Cost per Square Foot [1]	Total Value
Evans Community Complex - Police Portion	6,168	\$236.00	\$1,455,648

Source: City of Evans, Police Department

[1] Based on 2003 cost per square foot of \$177.61 adjusted for inflation using BLS Consumer Price Index, plus \$20 per square foot multiplier for land

Land Use	Proportionate Share	2014 Demand Units	Square Feet per Demand Unit	Cost per Demand Unit
Residential	82%	19,200 Population	0.263	<b>\$62.17</b>
Nonresidential	18%	18,130 Nonres Vehicle Trips	0.061	<b>\$14.45</b>

### Police Vehicles Levels of Service Standards and Cost Factors

Figure 14 indicates the City’s current patrol car inventory, residential/nonresidential proportionate share factors, current level of service (LOS) standards, and cost per demand unit. In accordance with Colorado Impact Fee Act (SB15), Police vehicles qualify as an eligible cost component, given their five-year useful life. The current residential level of service is derived by multiplying the total vehicle inventory by the residential proportionate share factor and dividing by the total residential proportionate share factor and dividing by the estimated 2014 populations (10 X 82% / 19,200) resulting in a level of service of 0.00043 vehicles per person. Similarly, nonresidential level of service (LOS) is derived by multiplying total vehicles by the proportionate share and dividing by total nonresidential vehicle trips (10 X 18% / 18,130) resulting in a level of service of .00010 vehicles per nonresidential trip.

The cost per demand unit is derived using the average vehicle value (\$55,034) and existing levels of service discussed above. For residential development, the cost per demand unit is \$23.50 per person. The cost per demand unit for nonresidential development is \$5.46 per nonresidential vehicle trip.

**Figure 14: Incremental Expansion – Police Vehicles**

Vehicles	Units in Service	Unit Price	Total Value
Marked Patrol Cars	10	\$55,034	\$550,340

Source: City of Evans Police Department

Land Use	Proportionate Share	2014 Demand Units	Vehicles per Demand Unit	Cost per Service Unit
Residential	82%	19,200 Population	0.00043	\$23.50
Nonresidential	18%	18,130 Nonres Vehicle Trips	0.00010	\$5.46

**POLICE FACILITIES CAPITAL IMPROVEMENT NEEDS TO SERVE GROWTH**

Ten-year growth projections for the City of Evans suggest the City will add 4,205 new residents and 2,138 nonresidential vehicle trips. In order to maintain current levels of service for Police space and vehicles the City will need to make incremental investments. Shown in Figure 15 below is the square footage and vehicles needed to maintain current levels of service for each component and the total investment necessary based on 10-years of population growth.

**Figure 15: Projected Demand for Police Space and Vehicles**

		Demand Units		Facilities per Demand Unit	Vehicles per Demand Unit
Res LOS		Persons		0.26	0.00043
Nonres LOS		Nonresidential Vehicle Trips		0.06	0.00010
		Average Cost per Unit		\$236	\$55,034

		Projected Demand Units		Projected Demand (Rounded)	
		Persons	Nonres. Vehicle Trips	Facilities (square feet)	Vehicles (units)
Base	2014	19,200	18,130	6,168	10
1	2015	19,584	18,326	6,281	10
2	2016	19,976	18,536	6,397	10
3	2017	20,375	18,749	6,515	11
4	2018	20,783	18,955	6,636	11
5	2019	21,198	19,168	6,758	11
6	2020	21,622	19,382	6,883	11
7	2021	22,055	19,604	7,010	11
8	2022	22,496	19,821	7,140	12
9	2023	22,946	20,044	7,272	12
10	2024	23,405	20,268	7,407	12
<b>Ten Yr Total</b>		<b>4,205</b>	<b>2,138</b>	<b>1,239</b>	<b>2</b>
<b>Cost of Facilities</b>		<b>\$292,316</b>			
<b>Cost of Vehicles</b>		<b>\$110,068</b>			

## CREDIT EVALUATION

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A credit for future revenue generated by new development is only necessary if there is potential double payment for system improvements. In Evans, impact fee revenue will be used exclusively for growth-related capacity improvements. If elected officials make a legislative policy decision to fully fund growth-related improvements from impact fees, a credit for other revenue sources is unnecessary.

## POLICE FACILITIES INPUT VARIABLES AND IMPACT FEES

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Figure 16 provides a summary of the input variables (described in the chapter sections above) used to calculate the net capital cost per person for each Police component.

The residential Police Impact Fees are the product of persons per type of housing unit multiplied by the total net capital cost per person. An example of the calculation for an average single family unit is: the net capital cost per person (\$91) multiplied by the persons per housing unit (3.01) to arrive at the impact fee per average single family unit of \$274. Figure 16 indicates proposed nonresidential Police Impact Fees for Evans. The average daily vehicle trips per 1,000 square feet (42.70 for commercial space) is multiplied by trip adjustment factor (33 percent) and the capital cost of \$19.99 per vehicle trip and divided by 1,000, which yields a Police Impact Fee of \$.28 per square foot.

**Figure 16: Police Input Variables and Maximum Allowable Impact Fees**

<i>Residential Capital Costs</i>	<u>Per Person</u>
Police Space	\$62.17
Police Vehicles	\$23.50
Impact Fee Study	\$5.33
<b>GROSS CAPITAL COST</b>	<b>\$91.00</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$91.00</b>

<i>Police Impact Fee Schedule</i>		<i>Impact Fee per Housing Unit</i>		
<i>Unit Type</i>	<i>Persons per Housing Unit [1]</i>	<i>Proposed Fee</i>	<i>Current Fee [2]</i>	<i>Increase</i>
Single Unit	3.01	\$274	\$0	\$274
2+ Unit	2.35	\$214	\$0	\$214
Manufactured Home	2.34	\$212	\$0	\$212

[1] TischlerBise. 2014 Impact Fee Land Use Assumptions

[2] The City of Evans currently does not collect a Police impact fee

<i>Nonresidential Capital Costs</i>	<u>Per Trip</u>
Police Space	\$14.45
Police Vehicles	\$5.46
Impact Fee Study	\$0.07
<b>GROSS CAPITAL COST</b>	<b>\$19.99</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$19.99</b>

<i>Police Impact Fee Schedule</i>			<i>Impact Fee per Square Foot of Floor Area</i>		
<i>Nonresidential Land Use</i>	<i>Trips [3]</i>	<i>Trip Rate Adj. Factors</i>	<i>Proposed Fee</i>	<i>Current Fee [4]</i>	<i>Increase (Decrease)</i>
	<i>(per 1,000 SF)</i>		<i>(Per 1,000 Square Feet of Floor Area)</i>		
Commercial	42.70	33%	\$0.28	\$0.00	\$0.28
Office/Institutional	11.03	50%	\$0.11	\$0.00	\$0.11
Industrial/Flex	6.97	50%	\$0.07	\$0.00	\$0.07

[3] Institute of Transportation Engineers. (2012). Trip Generation Manual 9th Edition.

[4] City of Evans, City Code Title 15 Buildings and Construction

**CASH FLOW PROJECTIONS**

This section summarizes the potential cash flow to the City, if the Police Impact Fees are implemented at the maximum allowable amounts. The cash flow projections are based on the assumptions detailed in this chapter. The summary provides an indication of the impact fee revenue generated by new development projected over the next ten years, and capital expenditures necessary to meet the demand for new Police space and vehicles brought about by new development.

**Figure 17: Cash Flow Summary for Police**

		<i>Ten-Year Growth-Related Costs for Police Facilities</i>				
		Police Space	\$292,316			
		Police Vehicles	\$110,068			
		Impact Fee Study	\$7,898			
		<b>TOTAL</b>	<b>\$410,282</b>			

		<i>per Housing Unit</i>		<i>Per Square Foot of Floor Area</i>		
		<i>Single Unit</i>	<i>2+ Units</i>	<i>Commercial</i>	<i>Office/Inst.</i>	<i>Industrial</i>
		\$274	\$214	\$0.28	\$0.11	\$0.07
		<i>Housing Units Added</i>		<i>Square Feet Added (1,000)</i>		
Base	2014	5,350	1,509	733	1,043	628
Year 1	2015	5,438	1,534	741	1,054	635
Year 2	2016	5,547	1,565	750	1,066	642
Year 3	2017	5,658	1,596	759	1,079	649
Year 4	2018	5,771	1,628	768	1,091	657
Year 5	2019	5,887	1,660	777	1,103	664
Year 6	2020	6,004	1,694	785	1,116	671
Year 7	2021	6,125	1,727	793	1,128	679
Year 8	2022	6,247	1,762	802	1,141	686
Year 9	2023	6,372	1,797	811	1,153	694
Year 10	2024	6,499	1,833	820	1,166	702
	<i>Ten-Yr Increase</i>	1,149	324	87	123	74
	Projected Fees (Rounded)=>	\$314,826	\$69,336	\$25,000	\$14,000	\$5,000
	<b>Total Projected Revenues</b>	<b>\$428,162</b>				
	Cumulative Net Surplus/(Deficit)	\$17,880				

## FIRE/RESCUE

### OVERVIEW

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The Fire/Rescue Impact Fee addresses the need for additional facilities, apparatus and equipment that would be needed to support the greater demand for Fire/Rescue services and facilities due to future residential and nonresidential development in Evans. The impact fee is derived using the incremental expansion methodology, meaning that the impact fee is calculated based on the cost of maintaining the City's current level of service to residential and nonresidential development. Figure 19 shows the methodology chart used for the Fire/Rescue Impact Fee.

### Service Area

Fire and emergency services are provided to City of Evans residents through the Evans Fire Protection District. There is a small area within the City boundaries south of the South Platte River, which is in the LaSalle Fire Protection District. Due to mutual aid, a uniform level of Fire/Rescue service is provided throughout the City. As a result, the service area for the category is citywide.

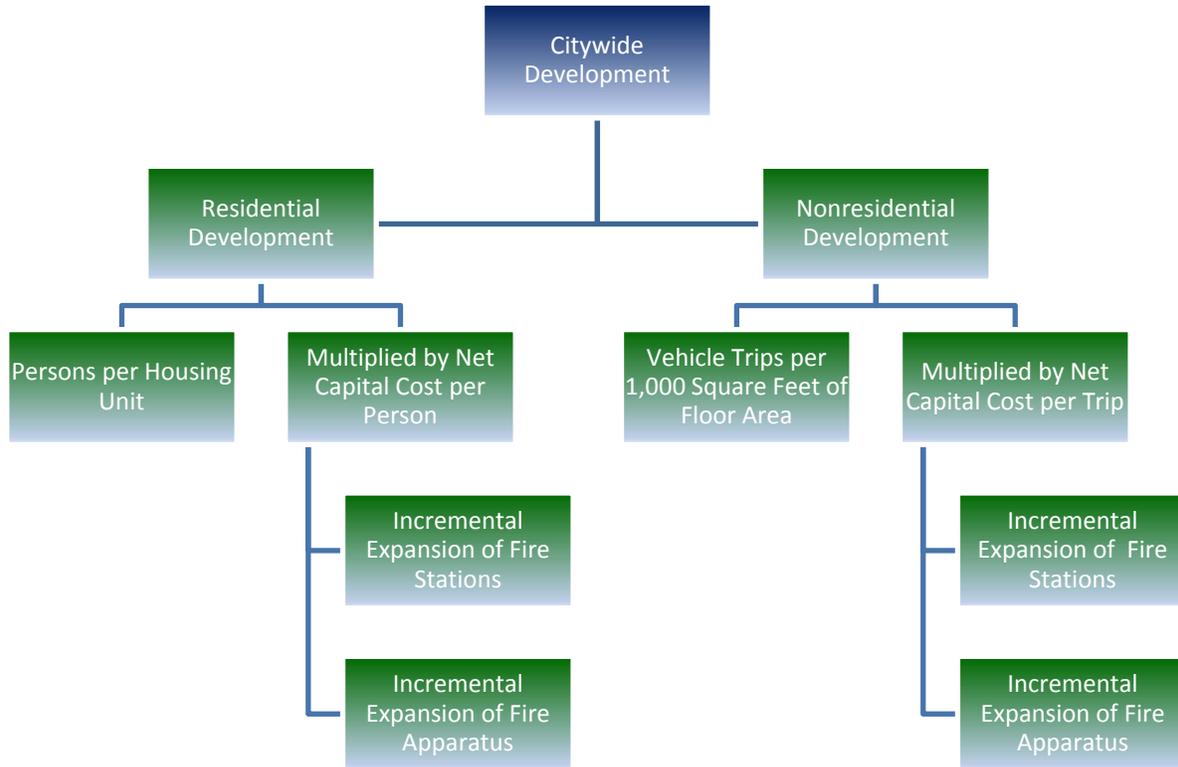
### METHODOLOGY

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Figure 18 below shows that Fire/Rescue impact fees use different demand indicators for residential and nonresidential development. Residential impact fees are calculated on a per capita basis and then converted to a proportionate fee amount by type of housing, based on the number of persons per housing unit.

According to discussions with District staff, the majority of calls for service are for emergency services responses, rather than fire protection, and the need for emergency services is driven by the presence of people. Therefore, TischlerBise recommends using nonresidential vehicle trips as the best demand indicator of demand for Fire/Rescue resulting from nonresidential development. This method will show that demand will be highest for commercial developments, such as shopping centers, and lowest for industrial/warehouse development. Office and institutional trip rates fall between the other two categories. This ranking of trip rates is consistent with the relative demand for Fire/Rescue from nonresidential development. Other possible nonresidential demand indicators, such as employment or floor area, will not accurately reflect the demand for service. For example, if employees per thousand square feet were used as the demand indicator, police impact fees would be too high for office and institutional development because offices typically have more employees per 1,000 square feet than retail uses. If floor area were used as the demand indicator, Fire/Rescue impact fees would be too high for industrial development.

Figure 18: Fire/Rescue Impact Fee Methodology Chart



**PROPORTIONATE SHARE**

Similar to Police, the Fire/Rescue impact fee uses functional population to determine the proportionate cost share for residential and nonresidential development. For residential development, the proportionate share factor is based on estimated person hours of non-working residents, plus the non-working hours of resident workers. Based on 2011 U.S. Census Bureau data, approximately 56% of Evan’s population worked in 2011. For resident workers, two-thirds of a day (i.e., annualized average) was allocated to residential demand. Time spent at work (i.e., annualized average of 8 hours per day) was allocated to nonresidential development. In 2011, the U.S. Census Bureau’s OnTheMap web application indicated that 391 town residents also worked in Evans, but 95% of workers commuted to out-of-town jobs. Total jobs located in Evans include 2,723 inflow commuters. Based on estimated person hours, the cost allocation for residential development is 82% while nonresidential development accounts for 18% of the demand for infrastructure.

Figure 19: Proportionate Share Determination

	Demand Units in 2011	Demand Hours/Day	Person Hours	Proportionate Share
<b>Residential</b>				
Estimated Residents	18,943			
56% Residents Not Working	10,694	20	213,880	
44% Employed Residents	8,249			
5% Employed in Service Area	391	14	5,474	
95% Employed outside Service Area	7,858	14	110,012	
<b>Residential Subtotal</b>			<b>329,366</b>	<b>82%</b>
<b>Nonresidential</b>				
Non-working Residents	10,694	4	42,776	
Jobs in Service Area	3,114			
Residents Employed in Service Area	391	10	3,910	
Non-Resident Workers (inflow Commuters)	2,723	10	27,230	
<b>Nonresidential Subtotal</b>			<b>73,916</b>	<b>18%</b>
<b>TOTAL</b>			<b>403,282</b>	<b>100%</b>

Source: 2011 population estimate from Colorado State Demography Office; U.S. Census Bureau, OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics

## FIRE/RESCUE STATIONS/APPARATUS AND COSTS

### Fire Stations

The Evans Fire Protection District delivers fire and emergency services out of two fire stations (primarily Fire Station No. 2) within the City limits of Evans. Administrative and support offices for the department are located in Fire Station No. 2.

The District intends to maintain the level of service for Fire/Rescue stations in the future. There are several options for increasing space, somewhat dependent on where and when development and annexation occur. Therefore, an incremental expansion methodology is used to calculate the Station component of the impact fee.

As shown in Figure 20, the Evans Fire Protection District’s two stations total 14,612 square feet. Figure 21 also indicates residential/nonresidential proportionate share factors (from Figure 19 above), current level of service (LOS) standards, and cost per demand unit. The current residential level of service is

derived by multiplying the total square footage of Fire/Rescue space by the residential proportionate share factor and dividing by the estimated 2014 populations (14,612 X 82% / 19,200) resulting in a level of service of 0.624 square feet per person. Similarly, nonresidential level of service (LOS) is derived by multiplying total square footage by the proportionate share and dividing by total nonresidential vehicle trips (14,612 X 18% / 18,130) resulting in a level of service of .145 sq. ft. per nonresidential trip.

The cost per demand unit is derived using the total cost per square foot (\$360) and existing levels of service discussed above. For residential development, the cost per demand unit is \$224.65 per person. The cost per demand unit for nonresidential development is \$52.22 per nonresidential vehicle trip.

**Figure 20: Incremental Expansion – Fire/Rescue Stations**

Stations	Square Feet	Total Cost to Construct Today	Cost per Square Foot
Station 1	3,660	\$1,317,600	\$360
Station 2	10,952	\$3,942,720	\$360
TOTAL	14,612	\$5,260,320	\$360

Source: City of Evans

Land Use	Proportionate Share	2014 Demand Units	Square Feet per Demand Unit	Cost per Demand Unit
Residential	82%	19,200 Population	0.624	<b>\$224.65</b>
Nonresidential	18%	18,130 Nonres Vehicles Trips	0.145	<b>\$52.22</b>

### Fire/Rescue Apparatus Levels of Service Standards and Cost Factors

Figure 21 indicates the Evans Fire Protection District’s current inventory of apparatus, residential/nonresidential proportionate share factors, current level of service (LOS) standards, and cost per demand unit. The current residential level of service is derived by multiplying the total apparatus inventory by the residential proportionate share factor and dividing by the total residential proportionate share factor and dividing by the estimated 2014 populations (18X 82% / 19,200) resulting in a level of service of 0.00034 apparatus per person. Similarly, nonresidential level of service (LOS) is derived by multiplying total apparatus by the proportionate share and dividing by total nonresidential vehicle trips (8 X 18% / 18,130) resulting in a level of service of .00008 apparatus per nonresidential trip.

The cost per demand unit is derived using the average apparatus value (\$231,250) and existing levels of service discussed above. For residential development, the cost per demand unit is \$79.01 per person. The cost per demand unit for nonresidential development is \$18.37 per nonresidential vehicle trip.

**Figure 21: Incremental Expansion – Fire/Rescue Apparatus**

Vehicles and Apparatus	Units in Service	Cost per Unit	Total Value
Rosenbauer 78' Quint	1	\$700,000	\$700,000
Rosenbauer Engine	1	\$390,000	\$390,000
ALF Engine	1	\$400,000	\$400,000
Brush Truck/EMS Response	1	\$160,000	\$160,000
SUV/Trucks	4	\$50,000	\$200,000
<b>TOTAL</b>	<b>8</b>	<b>\$231,250</b>	<b>\$1,850,000</b>

Source: Evans Fire Protection District

Land Use	Proportionate Share	2014 Demand Units	Vehicles per Demand Units	Cost per Demand Unit
Residential	82%	19,200 Population	0.00034	<b>\$79.01</b>
Nonresidential	18%	18,130 Nonres Vehicles Trips	0.00008	<b>\$18.37</b>

**FIRE/RESCUE FACILITIES CAPITAL IMPROVEMENT NEEDS TO SERVE GROWTH**

Ten-year growth projections for the City of Evans suggest the City will add 4,205 new residents and 2,138 nonresidential vehicle trips. In order to maintain current levels of service for Police space and vehicles the City will need to make incremental investments. Shown in Figure 22 below is the square footage and vehicles needed to maintain current levels of service for each component and the total investment necessary based on 10-years of population growth.

Figure 22: Projected Demand for Fire/Rescue Space and Apparatus

	Demand Units	Facilities (square feet)	Apparatus (units)
Res LOS	Units Per Person	0.62405	0.00034
Nonres LOS	Units Per Vehicle Trip	0.14507	0.00008
	Average Cost per Component	\$360	\$231,250

		Projected Demand (Rounded)			
		Projected Demand Units		Facilities (square feet)	Apparatus (units)
		Persons	Nonres. Vehicle Trips		
Base	2013	19,200	18,130	14,612	8
1	2014	19,584	18,326	14,880	8
2	2015	19,976	18,536	15,155	8
3	2016	20,375	18,749	15,435	8
4	2017	20,783	18,955	15,720	9
5	2018	21,198	19,168	16,009	9
6	2019	21,622	19,382	16,305	9
7	2020	22,055	19,604	16,608	9
8	2021	22,496	19,821	16,914	9
9	2022	22,946	20,044	17,227	9
10	2023	23,405	20,268	17,546	10
<b>Ten Yr Total</b>		<b>4,205</b>	<b>2,138</b>	<b>2,934</b>	<b>2</b>
<b>Cost of Facilities</b>		<b>\$1,056,240</b>			
<b>Cost of Vehicles</b>		<b>\$462,500</b>			

### CREDIT EVALUATION

A credit for future revenue generated by new development is only necessary if there is potential double payment for system improvements. In Evans, impact fee revenue will be used exclusively for growth-related capacity improvements. If elected make a legislative policy decision to fully fund growth-related improvements from impact fees, a credit for other revenue sources is unnecessary.

### FIRE/RESCUE FACILITIES INPUT VARIABLES AND IMPACT FEES

Figure 23 provides a summary of the input variables (described in the chapter sections above) used to calculate the net capital cost per person for each Police component.

The residential Fire/Rescue impact fees are the product of persons per type of housing unit multiplied by the total net capital cost per person. An example of the calculation for an average single family unit is: the net capital cost per person (\$363.23) multiplied by the persons per housing unit (3.01) to arrive at the impact fee per average single family unit of \$1,094. Figure 23 indicates proposed nonresidential Fire/Rescue impact fees for Evans. The average daily vehicle trips per 1,000 square feet (42.70 for commercial space) is multiplied by trip adjustment factor (33 percent) and the capital cost of \$83.27 per vehicle trip and divided by 1,000, which yields a Fire/Rescue impact fee of \$1.17 per square foot.

**Figure 23: Fire/Rescue Input Variables and Maximum Allowable Impact Fees**

<b>Residential Capital Costs</b>	<b>Per Person</b>
Fire Facilities	\$79.01
Fire Vehiles	\$224.65
Impact Fee Study	\$5.33
<b>GROSS CAPITAL COST</b>	<b>\$308.99</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$308.99</b>

<b>Fire Impact Fee Schedule</b>		<b>Impact Fee per Housing Unit</b>		
<b>Unit Type</b>	<b>Persons per Housing Unit [1]</b>	<b>Proposed Fee</b>	<b>Current Fee [2]</b>	<b>Increase (Decrease)</b>
Single Unit	3.01	\$930	\$805	\$125
2+ Unit	2.35	\$726	\$805	(\$79)
Manufactured Home	2.34	\$723	\$805	(\$82)

[1] TischlerBise. 2014 Impact Fee Land Use Assumptions

[2] City of Evans, City Code Title 15 Buildings and Construction

<b>Nonresidential Capital Costs</b>	<b>Per Trip</b>
Fire Facilities	\$18.37
Fire Vehiles	\$52.22
Impact Fee Study	\$0.07
<b>GROSS CAPITAL COST</b>	<b>\$70.66</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$70.66</b>

<b>Impact Fee Schedule</b>			<b>Impact Fee per Square Foot of Floor Area</b>		
<b>Nonresidential Land Use</b>	<b>Trips [3]</b>	<b>Trip Rate Adj. Factors</b>	<b>Proposed Fee</b>	<b>Current Fee [4]</b>	<b>Increase (Decrease)</b>
	<i>(per 1,000 SF)</i>		<i>(Per Square Feet of Floor Area)</i>		
Commercial	42.70	33%	\$1.00	\$0.46	\$0.54
Office/Institutional	11.03	50%	\$0.39	\$0.46	(\$0.07)
Industrial/Flex	6.97	50%	\$0.25	\$0.46	(\$0.21)

[3] Institute of Transportation Engineers. (2012). Trip Generation Manual 9th Edition.

[4] City of Evans, City Code Title 15 Buildings and Construction

## CASH FLOW PROJECTIONS

This section summarizes the potential cash flow to the City, if the Fire/Rescue impact fees are implemented at the maximum allowable amounts. The cash flow projections are based on the assumptions detailed in this chapter. The summary provides an indication of the impact fee revenue generated by new development projected over the next ten years, and capital expenditures necessary to meet the demand for new Police space and vehicles brought about by new development.

Figure 24: Cash Flow Summary for Fire/Rescue Buildings

Ten-Year Growth-Related Costs for Fire Facilities

Fire Facilities	\$1,056,240
Fire Vehiles	\$462,500
Impact Fee Study	\$7,898
<b>TOTAL</b>	<b>\$1,526,638</b>

		per Housing Unit		Per Square Foot of Floor Area		
		Single Unit	2+ Units	Commercial	Office/Instit.	Industrial
		\$930	\$726	\$1.00	\$0.39	\$0.25
		Housing Units Added		Square Feet Added (1,000)		
Base	2013	5,350	1,509	733	1,043	628
Year 1	2014	5,438	1,534	741	1,054	635
Year 2	2015	5,547	1,565	750	1,066	642
Year 3	2016	5,658	1,596	759	1,079	649
Year 4	2017	5,771	1,628	768	1,091	657
Year 5	2018	5,887	1,660	777	1,103	664
Year 6	2019	6,004	1,694	785	1,116	671
Year 7	2020	6,125	1,727	793	1,128	679
Year 8	2021	6,247	1,762	802	1,141	686
Year 9	2022	6,372	1,797	811	1,153	694
Year 10	2023	6,499	1,833	820	1,166	702
	Ten-Yr Increase	1,149	324	87	123	74
	Projected Fees (Rounded)=>	\$1,068,570	\$235,224	\$87,000	\$48,000	\$18,000
	<b>Total Projected Revenues</b>			<b>\$1,456,794</b>		
	Cumulative Net Surplus/(Deficit)			<b>(\$69,844)</b>		

# TRANSPORTATION

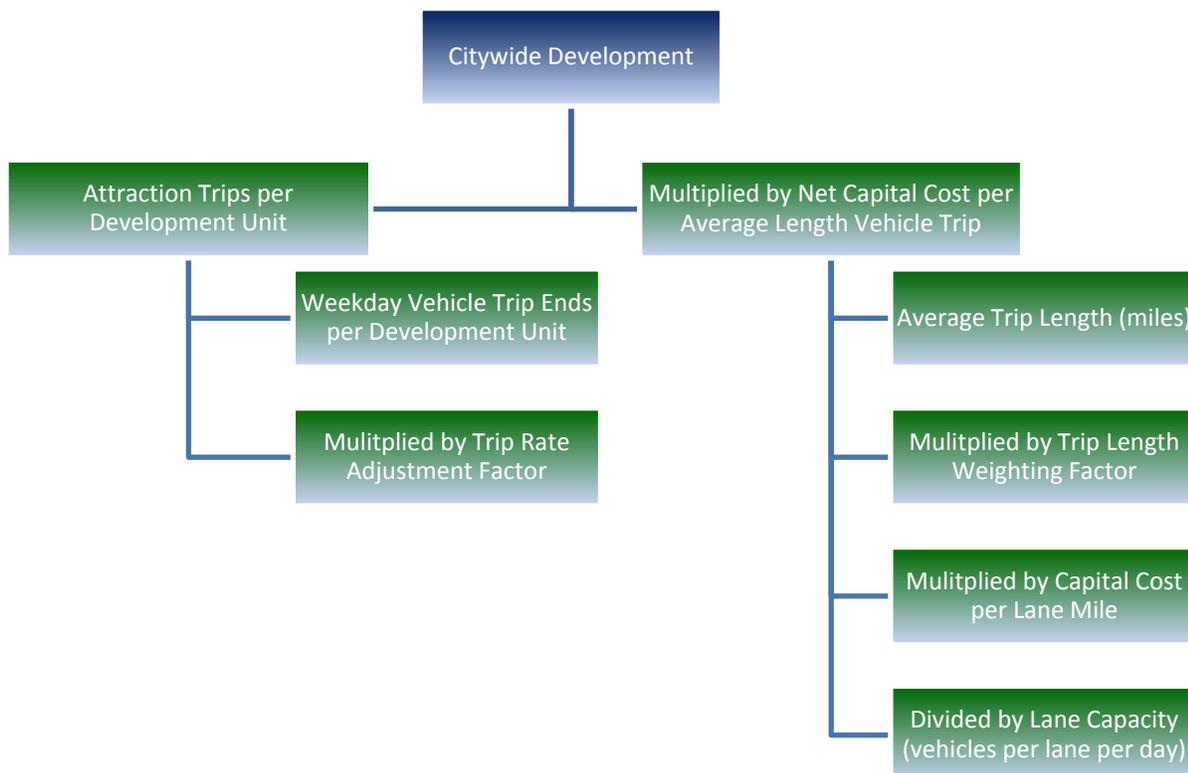
## METHODOLOGY

The City of Evans Transportation impact fees are calculated using a plan-based approach for system improvements, including arterial roads, and signalized intersections. As shown in Figure 25, trip generation rates by type of development are multiplied by the total capital cost per unit of trip capacity to yield the impact fees. The plan based approach for road improvements in Evans reflects those planned improvements that will increase system-wide capacity.

### Service Area

The City’s transportation network functions on a citywide basis. As a result, the service area for this impact fee category is citywide.

Figure 25: Transportation Impact Fee Methodology Chart



## EXISTING LEVELS OF SERVICE FOR TRANSPORTATION

The City currently maintains 69.52 lane miles of arterial and collector roads in the city owned and maintained system.

**Figure 26: City of Evans Transportation System Inventory**

Existing Lane Miles

Existing Roadways	Lanes	Miles	Lane Miles	Daily Per-Lane Capacity
Arterials	2.00	13.66	27.33	6,000
Arterials	4.00	4.60	18.41	8,000
Collectors	2.00	7.08	14.15	5,000
Collectors	4.00	2.41	9.63	5,000
<b>TOTAL</b>	<b>12.00</b>	<b>27.75</b>	<b>69.52</b>	

Source: GIS Centerline Roads.

The steps to calculate a current level of service for the City’s street network involve calibrating existing development to the system network. To do so, development units by type are multiplied by adjusted vehicle trip ends per development unit. The factors used to calculate the current level of service expressed in Vehicle Miles of Travel (VMT) are discussed below, and shown in Figure 30 after the discussion.

**Trip Generation Rates**

Trip generation rates are from the reference book *Trip Generation* (Institute of Transportation Engineers, 2012). City of Evans Transportation Impact Fees are based on average weekday vehicle trip ends. A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). To calculate the impact fees, trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed below, the impact fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

### Residential Vehicle Trip Ends

As an alternative to simply using the national average trip generation rate for residential development, the Institute of Transportation Engineers (ITE) publishes regression curve formulas that may be used to derive custom trip generation rates using local demographic data. Key independent variables needed for the analysis (i.e., vehicles available, housing units, households, and persons) are only available from the ACS Estimates for Evans. This data was used to derive custom average weekday vehicle trip ends by type of housing, as shown in Figure 27.

**Figure 27: Average Weekday Vehicle Trip Ends by Housing Type**

	Vehicles Available [1]	Households by Structure Type[2]			Vehicles per Household by Tenure
		Single Unit	2+ Units	Total	
	A	B	C	D = B+C	E = A/D
Owner-occupied	7,134	3,419	131	3,550	2.01
Renter-occupied	4,610	1,350	1,176	2,526	1.83
<b>TOTAL</b>	<b>11,744</b>	<b>4,769</b>	<b>1,307</b>	<b>6,076</b>	<b>1.93</b>

[1] Vehicles available by tenure from Table B25046, American Community Survey, 2012.

[2] Households by tenure and units in structure from Table B25032, American Community Survey, 2012.

	Persons in Households [3]	Trip Ends [4]	Vehicles by Type of Housing H=Owner(B*E)+ Renter (B*E)	Trip Ends [5]	Average Trip Ends J = Avg of G,I	Housing Units [6]	Trip Ends per Unit	
							L= J/K	ITE [7]
	F	G		I		K	L= J/K	M
Single Units	15,040	38,927	9,335	53,954	46,440	5,115	9.10	9.52
2+ Units	3,465	11,959	2,409	9,787	10,873	1,473	7.40	6.65
<b>TOTAL</b>	<b>18,505</b>	<b>50,886</b>	<b>11,744</b>	<b>63,741</b>	<b>57,313</b>	<b>6,588</b>	<b>8.70</b>	

[3] Total population in households from Table 25033, American Community Survey, 2012.

[4] Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2012). For single units (ITE 210), the fitted curve equation is  $EXP(0.91 * LN(persons) + 1.52)$ . To approximate the average population of the ITE studies, persons were divided by 27 and the equation result multiplied by 27. For 2+ units (ITE 220), the fitted curve equation is  $(3.47 * persons) - 64.48$ .

[5] Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2012). For single units (ITE 210), the fitted curve equation is  $EXP(0.99 * LN(vehicles) + 1.81)$ . To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 36 and the equation result multiplied by 36. For 2+ units (ITE 220), the fitted curve equation is  $(3.94 * vehicles) + 293.58$ .

[6] Housing units from Table B25024, American Community Survey, 2012.

[7] Trip Generation, Institute of Transportation Engineers, 9th Edition (2012).

### Nonresidential Vehicle Trip Ends

Vehicle Trip Ends for nonresidential development are from the reference book, *Trip Generation* (Institute of Transportation Engineers, 2012). The shaded categories in Figure 28 represent the proxy categories for use in determining existing and projected trips from nonresidential development in Evans.

**Figure 28: The Institute of Transportation Engineers, Nonresidential Trip Ends, 2012**

ITE Code	Land Use	Demand Unit	Wkdy Trip Ends Per 1,000 Sq Ft [1]	Wkdy Trip Ends Per Employee [1]	Emp Per 1,000 Sq Ft	Sq Ft Per Emp [2]
<b>Industrial</b>						
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
130	Industrial Park	1,000 Sq Ft	6.83	3.34	2.04	489
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
150	Warehousing	1,000 Sq Ft	3.56	3.89	0.92	1,093
254	Assisted Living	bed	2.66	3.93	0.68	na
320	Motel	room	5.63	12.81	0.44	na
<b>Institutional</b>						
520	Elementary School	1,000 Sq Ft	15.43	15.71	0.98	1,018
530	High School	1,000 Sq Ft	12.89	19.74	0.65	1,531
540	Community College	student	1.23	15.55	0.08	na
550	University/College	student	1.71	8.96	0.19	na
565	Day Care	student	4.38	26.73	0.16	na
610	Hospital	1,000 Sq Ft	13.22	4.50	2.94	340
620	Nursing Home	1,000 Sq Ft	7.60	3.26	2.33	429
<b>Office</b>						
710	General Office (avg size)	1,000 Sq Ft	11.03	3.32	3.32	301
760	Research & Dev Center	1,000 Sq Ft	8.11	2.77	2.93	342
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
857	Discount Club	1,000 Sq Ft	41.80	32.21	1.30	771
<b>Commercial</b>						
820	Shopping Center (avg size)	1,000 Sq Ft	42.70	na	2.00	500

[1] Trip Generation, Institute of Transportation Engineers, 2012.

[2] Square feet per employee calculated from trip rates except for Shopping Center data, which are derived from the Urban Land Institute's Development Handbook and Dollars and Cents of Shopping Centers.

### Adjustment for Journey-To-Work Commuting

Residential development in the City of Evans has a larger trip adjustment factor of 65 percent to account for commuters leaving Evans for work. According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of “production” trips, also known as out-bound trips (which are 50 percent of all trip ends). Data from the LEHD for 2011 indicate that 95 percent of Evan’s employed residents travel outside the City for work. In combination, these factors ( $0.31 \times 0.50 \times 0.95 = 0.15$ ) account for 15 percent (rounded) of additional production trips. The total adjustment factor for residential includes attraction trips (50% of trip ends) plus the journey-to-work commuting adjustment for a total of 65 percent.

**Figure 29: Adjustment for Journey-to-Work Commuting**

<b>Trip Adjustment Factor for Commuters [1]</b>	
Employed Residents	8,249
Residents Working in City	391
Residents Commuting Outside City for Work	7,858
<b>Percent Commuting out of the City</b>	<b>95%</b>
Additional Production Trips [2]	15%
<b>Residential Trip Adjustment Factor</b>	<b>65%</b>

[1] U.S. Census Bureau, 2011 OnTheMap Application (version 6) and LEHD Origin-Destination Employment Statistics

[2] Outbound trip statistics from National Household Travel Survey, 2009: Table 30

### Adjustment for Pass-By Trips

For commercial and institutional development, the trip adjustment factor is less than 50 percent because these land uses attract vehicles as they pass by. For example, when someone stops at a convenience store or school on the way home from work, the convenience store is not the primary destination. For the average shopping center, the ITE data indicate that 34 percent of the vehicles that enter are passing-by on their way to some other primary destination. The remaining 66 percent of attraction trips have the commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends. These factors are shown to derive inbound vehicle trips for each type of nonresidential land use.

### Trip Length Weighting Factor by Type of Land Use

The Transportation Impact Fees methodology includes a percentage adjustment, or weighting factor, to account for trip length variation by type of land use. As documented in Table 6 of the 2009 National Household Travel Survey, vehicle trips from residential development are approximately 121 percent of the average trip length. The residential trip length adjustment factor includes data on home-base work trips, social, and recreational purposes. Conversely, shopping trips associated with commercial development are roughly 66 percent of the average trip length while other nonresidential development typically accounts for trips that are 73 percent of the average for all trips.

### Lane Capacity

Transportation impact fees are based on established daily per-lane capacities for each classification of roadways. According to the 2004 City of [Evans Transportation Plan](#) completed for the City by Felsburg, Holt and Ullevig, the daily per-lane capacity of major arterials in Evans is 8,000. Minor arterials were established to have a daily per-lane capacity of 6,000. Collectors were established to each have a 5,000 daily per-lane capacity.

### Summary of Demand Model Inputs

Figure 30 shows the calibration of existing development to the City's current street network of 2-lane arterial roads. Knowing the current lane miles of 2-lane arterial streets (27.33), TischlerBise determined a weighted-average trip length of 3.67 miles on the current system using a series of spreadsheet iterations. As shown in Figure 30 below, based on the trip generation, trip adjustment, and trip length factors discussed above, existing development within Evans attracted an estimated 218,676 Vehicle Miles of Travel (VMT) in 2014. A VMT is a measurement unit equal to one vehicle traveling one mile. In the aggregate, VMT is the product of vehicle trips multiplied by the average trip length<sup>1</sup>. The current infrastructure standard is 1.25 lane miles per 10,000 vehicle miles of travel (i.e., 27.33 lane miles divided by 218,676 VMT expressed in ten-thousands).

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<sup>1</sup> Typical VMT calculations for development-specific traffic studies, along with most transportation models of an entire urban area, are derived from traffic counts on particular road segments multiplied by the length of that road segment. For the purpose of impact fees, VMT calculations are based on attraction (inbound) trips to development located in the service area, with the trip lengths calibrated to the road network considered to be system improvements. This refinement eliminates pass-through or external- external trips, and travel on roads that are not system improvements (e.g. interstate highways).

Figure 30: Existing Level of Service on the City Street Network

Development Type [1]	Dev. Unit	[A]	[B]	[A]X[B]=[C]	X[D]
		Avg Wkdy Veh Trip Ends per Dev. Unit [2]	Trip Adjustment Factors [3]	Trip Length	Trip Length Weighting Factor [4]
<b>RESIDENTIAL</b>					
Single Units	HU	9.10	65%	5.92	121%
2+ Units	HU	7.40	65%	4.81	121%
<b>NONRESIDENTIAL</b>					
Commercial	KSF	42.70	33%	14.09	66%
Office/ Other	KSF	11.03	50%	5.52	73%
Industrial	KSF	6.97	50%	3.49	73%
Institutional	KSF	15.43	33%	5.09	73%
Average Trip Length (Miles) [5]		3.67			
Capacity per Lane		8,000			
Base Year 2014					

Development Unit	
Single Units	5,350
2+ Units	1,509
Commercial KSF	733
Office/ Other KSF	719
Industrial KSF	628
Institutional KSF	324
Vehicle Trips	
Single Units	31,645
2+ Units	7,258
Commercial KSF	10,329
Office KSF	3,964
Industrial KSF	2,188
Institutional KSF	1,649
TOTAL Trips	57,033
Vehicle Miles of Travel (VMT)	218,676
Total Arterial Lane Miles (2 Lanes)	27.33
Lane Miles per 10,000 VMT	1.25

[1] KSF = square feet of floor area in thousands.

[2] Residential: TischlerBise Impact Fee Land Use Assumptions; Nonresidential: Trip Generation, Institute of Transportation Engineers, 2012.

[3] On an average weekday, half of all trip ends are inbound. Retail and institutional include 34% pass-by adjustment (i.e. 66% are primary trips) half of which are trip ends. The residential adjustment factor accounts for 65% of employed residents commuting to jobs outside the Community.

[4] Table 6, National Household Travel Survey, 2009.

[5] TischlerBise

## PROJECTED TRAVEL DEMAND

The projected need for system lane miles is a function of the ten-year development forecast (see Appendix A) and the existing infrastructure standards discussed above. A typical vehicle trip, such as a person leaving their home and traveling to work, generally begins on a local street that connects to a collector street, which connects to an arterial road and eventually to a state or interstate highway. For the purpose of impact fees, this progression of travel up and down the functional classification chain narrows the average trip length determination to the following question, “what is the average vehicle trip length on

Transportation Impact Fee system improvements (i.e., the same type of streets used to document current infrastructure standards)?”

As shown in Figure 31 below, new development increases vehicle miles of travel on 2-lane arterials from 218,675 in 2014 to 261,196 in 2024, for a net increase of 42,521 VMT. When VMT is compared to the current infrastructure (existing level of service) standards discussed previously new development generates the need for an additional 5.32 lane miles of City-maintained roads in the next 10 years in order to maintain the current level of service.

**Figure 31: Transportation Improvement Demand Model**

	Base Yr	1	2	3	4	5	10
Year->	2014	2015	2016	2017	2018	2019	2024
<b>DEMAND DATA</b>							
SINGLE UNIT	5,350	5,438	5,547	5,658	5,771	5,887	6,499
2+ UNIT	1,509	1,534	1,565	1,596	1,628	1,660	1,833
SINGLE UNIT TRIPS	31,645	32,166	32,811	33,467	34,135	34,822	38,442
2+ UNIT TRIPS	7,258	7,379	7,528	7,677	7,831	7,985	8,817
<b>RES TRIPS</b>	<b>38,903</b>	<b>39,545</b>	<b>40,339</b>	<b>41,144</b>	<b>41,966</b>	<b>42,807</b>	<b>47,259</b>
COMMERCIAL KSF	733	741	750	758	767	775	820
OFFICE KSF	719	727	735	743	752	760	804
INDUSTRIAL KSF	628	635	642	649	656	664	702
INSITUTIONAL KSF	324	327	331	335	338	342	361
COMMERCIAL TRIPS	10,329	10,441	10,561	10,681	10,801	10,921	11,548
OFFICE TRIPS	3,964	4,009	4,054	4,100	4,145	4,192	4,434
INDUSTRIAL TRIPS	2,188	2,212	2,236	2,262	2,288	2,313	2,446
INSTITUTIONAL TRIPS	1,649	1,664	1,685	1,706	1,721	1,742	1,840
<b>NONRES TRIPS</b>	<b>18,130</b>	<b>18,326</b>	<b>18,536</b>	<b>18,749</b>	<b>18,955</b>	<b>19,168</b>	<b>20,268</b>
<b>Total VMT on Planned Improv.</b>	<b>218,675</b>	<b>222,022</b>	<b>226,080</b>	<b>230,195</b>	<b>234,366</b>	<b>238,640</b>	<b>261,196</b>
Lane Miles	27.33	27.75	28.26	28.77	29.30	29.83	32.65
Annual Lane Mile Increase		0.42	0.51	0.51	0.52	0.53	0.58
<b>Cumulative Lane Miles</b>		<b>0.42</b>	<b>0.93</b>	<b>1.44</b>	<b>1.96</b>	<b>2.50</b>	<b>5.32</b>

Source: TischlerBise

**COST PER LANE MILE AND POTENTIAL IMPACT FEE ELIGIBLE PROJECTS**

Figure 32 summarizes a list of potential transportation system improvement projects the City will fund through impact fees. The projects are from the Evans Transportation Plan. This list of projects is also used to determine the cost per lane mile factor used in the impact fee calculation. As shown in Figure 32 potential impact fee funded projects total \$34.9 million. When this total is compared to the increase in lane miles (26.7), the cost per lane mile \$1,310,261.

**Figure 32: Summary of Growth-Related Transportation Projects (10-Year Plan)**

Location	From	To	Lanes 2014	Future Lane Miles	LaneMi Miles Increase	City Cost	\$/LnMi	
35th Ave Widening	Prairie View	49th St	2	4	0.7	1.4 \$1,700,000	\$1,246,667	
35th Ave	CR 394	Hwy 85	2	4	3.0	6.0 \$7,000,000	\$1,169,620	
23rd Ave	42nd St	49th St	2	4	0.5	0.9 \$400,000	\$422,400	
47th Ave Widening	32nd St	37th St	2	4	0.5	1.0 \$750,000	\$754,286	
35th Ave Widening	Prairie View	49th St	2	4	0.7	1.4 \$1,700,000	\$1,246,667	
37th St Widening	47th Ave	65th Ave	2	4	1.5	3.0 \$3,200,000	\$1,056,000	
65th Ave Widening	37th St	N City Limits	2	4	0.5	1.0 \$800,000	\$804,571	
49th St Widening	35th Ave	65th Ave	2	4	3.0	2.7 \$7,860,795	\$2,911,406	
65th Ave Widening	49th St	54th St	2	4	0.8	1.5 \$1,900,000	\$1,254,000	
37th St Widening	35th Ave	47th Ave	2	4	1.1	2.3 \$3,363,637	\$1,480,000	
65th Ave Widening	37th Ave	S City Limits	2	4	1.0	2.0 \$1,504,545	\$749,434	
23rd Ave Widening	37th St	42nd St	2	4	0.5	1.0 \$2,273,864	\$2,286,858	
Two Rivers Parkway	37th St	49th St	2	4	1.0	2.0 \$1,488,637	\$744,319	
35th Ave Widening	37th St	Prairie View	2	4	0.3	0.5 \$1,040,000	\$1,961,143	
Subtotal						26.7	\$34,981,478	\$1,310,261
Cost Per Lane Mile							\$1,310,261	

**TRANSPORTATION INPUT VARIABLES AND IMPACT FEES**

Figure 15 provides a summary of the input variables (described in the chapter sections above) used to calculate the net capital cost per vehicle mile of travel for Transportation improvements.

The residential Transportation Impact Fees are the product of adjusted residential vehicle miles of travel multiplied by the total net capital cost per VMT (\$164.38). Also shown is a comparison with the City’s current fees. For example, the net capital cost per VMT (\$164.20) multiplied by the single unit Vehicle Miles Travel factor (26.27) resulting in a Transportation Impact Fee of \$4,317 per housing unit. The nonresidential Transportation Impact Fees are calculated in the same way. Fees are provided for three categories of nonresidential land use. TischlerBise used 2012 weekday vehicle trip ends factors published by The Institute of Transportation Engineers in Trip Generation, 9<sup>th</sup> Edition for the *Weekday Vehicle Trip Ends* factors by land use.

**Figure 33: Transportation Input Variables and Maximum Allowable Impact Fees**

*Street Level Of Service and Capital Costs*

Lane Miles Needed to Maintain LOS	5.32
Cost Per Lane Mile	\$1,310,261
Total Cost of System Improvements	\$6,964,239
Net Increase in VMT	42,521
<b>Cost per VMT</b>	<b>\$163.78</b>
Impact Fee Study Cost per VMT	\$0.59
<b>NET CAPITAL COST</b>	<b>\$164.38</b>

*Residential Schedule*

	[A]	[B]	[C]	[D]	VMT = [A] x [B] x [C] x [D]	Proposed Impact Fee	Current Fee	Increase (Decrease)
	Weekday Vehicle Trip Ends	Trip Rate Adjustment Factors	Avg Miles per Veh. Trip on System	Trip Length Weighting Factors	VMT			
					per unit	(Per Housing Unit)		
Single Unit	9.10	65%	3.67	121%	26.27	\$4,317	\$1,894	\$2,423.00
2+ Unit	7.40	65%	3.67	121%	21.36	\$3,511	\$1,306	\$2,205.00
Manufactured Home	9.10	65%	5.22	121%	37.36	\$6,141	\$1,894	\$4,247.00

*Nonresidential Schedu*

	[A]	[B]	[C]	[D]	VMT = [A] x [B] x [C] x [D]	Proposed Impact Fee	Current Fee	Increase (Decrease)
	Weekday Vehicle Trip Ends	Trip Rate Adjustment Factors	Avg Miles per Veh. Trip on System	Trip Length Weighting Factors	VMT			
					(Per 1,000 sq. ft.)	(Per Square Foot of Floor Area)		
Commercial	42.70	33%	3.67	66%	34.13	\$5.61	\$2.36	\$3.26
Office/Institutional	11.03	50%	3.67	73%	14.78	\$2.42	\$1.82	\$0.60
Industrial	6.97	50%	3.67	73%	9.34	\$1.53	\$0.55	\$0.98

**CASH FLOW PROJECTIONS**

This section summarizes the potential cash flow to the City of Evans, if the Transportation Impact Fees are implemented at the maximum allowable amounts. The cash flow projections are based on the assumptions detailed in this chapter. To the extent the rate of development either accelerates or slows down from those detailed in Appendix A, there will be a corresponding change in the impact fee revenue available for the prioritized projects.

The cash flow summary provides an indication of the impact fee revenue generated by new development over the next ten years, and capital expenditures necessary to meet existing and new demand for new Transportation system improvements.

**Figure 34: Cash Flow Summary for Transportation**

**Ten-Year Growth-Related Costs for Transportation Improvements**

Total Cost of System Improvements	\$6,964,239
Impact Fee Study	\$11,847
<b>TOTAL</b>	<b>\$6,976,086</b>

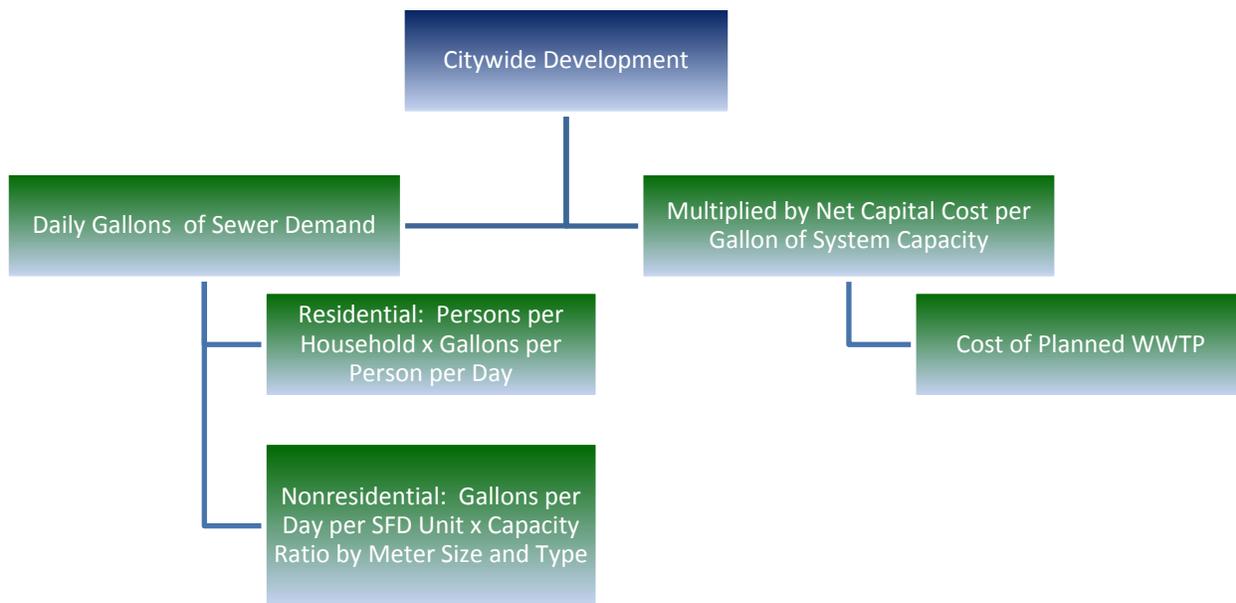
		<i>per Housing Unit</i>		<i>Per Square Foot of Floor Area</i>		
		<i>Single Unit</i>	<i>2+ Units</i>	<i>Commercial</i>	<i>Office/Inst.</i>	<i>Industrial</i>
		\$4,317	\$3,511	\$5.61	\$2.42	\$1.53
		<i>Housing Units Added</i>		<i>Square Feet Added (1,000)</i>		
Base	2014	5,350	1,509	733	1,043	628
Year 1	2015	5,438	1,534	741	1,054	635
Year 2	2016	5,547	1,565	750	1,066	642
Year 3	2017	5,658	1,596	759	1,079	649
Year 4	2018	5,771	1,628	768	1,091	657
Year 5	2019	5,887	1,660	777	1,103	664
Year 6	2020	6,004	1,694	785	1,116	671
Year 7	2021	6,125	1,727	793	1,128	679
Year 8	2022	6,247	1,762	802	1,141	686
Year 9	2023	6,372	1,797	811	1,153	694
Year 10	2023	6,499	1,833	820	1,166	702
	<i>Ten-Yr Increase</i>	1,149	324	87	123	74
	Projected Fees (Rounded)=>	\$4,960,233	\$1,137,564	\$488,000	\$298,000	\$113,000
	<b>Total Projected Revenues</b>	<b>\$6,996,797</b>				
	Cumulative Net Surplus/(Deficit)	\$20,711				

## WASTEWATER

### METHODOLOGY

Wastewater Impact Fees are derived using a plan-based approach. As shown in Figure 35, the impact fees are based on the average daily gallons of sewage flow demand for a single-family housing unit and the net capital cost per gallon of system capacity. Wastewater Impact Fees are based on the cost of the proposed wastewater treatment plant. Impact fees paid by nonresidential development are derived from capacity ratios according to the size of the new customer’s water meter. Capacity ratios were obtained from the American Water Works Association (AWWA).

**Figure 35. Wastewater Impact Fee Methodology**



### LEVEL OF SERVICE/PROPORTIONATE SHARE ANALYSIS FOR WASTEWATER DEMAND

Wastewater use by current customers was determined from the City’s utility billing records. The City of Evans does not track wastewater consumption by customer, so water consumption by customer is used as a proxy for wastewater demand. The number of utility customers (the City does not differentiate between water and sewer customers) and use for 2013 is shown in Figure 36. As shown in Figure 36, Evans has 6,557 connections with average daily demand of 1.74 million gallons per day. This equates to average daily demand of 266 gallons per day per connection and 253 gallons per day per residential connection.

Figure 36. Average Day Utility System Demand

Current Usage	Customer Connections	Average Day Gallons per Land Use	Average Day Gallons per Connection	Gallons Per Day Per Person*
Residential	6,316	1,186,921	253	90
Nonresidential	241	559,779	2,323	
<b>TOTAL</b>	<b>6,557</b>	<b>1,746,700</b>	<b>266</b>	

Source: Evans Finance Department

\*Gallons per day per person based on an average persons per housing unit of 2.81

### PROJECTION OF WASTEWATER SYSTEM DEMAND

Annual wastewater demand projections are shown in Figure 37 for informational purposes. Projected utility demand is a function of the development projections (discussed in Appendix A) and the wastewater demand factors shown above in Figure 35 (266 gallons per day per customer). Based on the increase in utility customers shown below, wastewater system demand will be approximately 2.16 million gallons per day (MGD) by 2024.

Figure 37. Projected Wastewater System Demand

		Demand Unit: Connections				Service Unit: MGD			
		Housing Units	Jobs	Residential	Nonresidential	Total	Residential	Nonresidential	Total
Year				0.92 Con/HU	23 Jobs/Con		253 Gal/Con	2,323 Gal/Con	
Base	2014	6,859	5,621	6,316	241	6,557	1.19	0.56	1.75
1	2015	6,972	5,684	6,420	244	6,664	1.21	0.57	1.78
2	2016	7,112	5,748	6,549	246	6,795	1.25	0.57	1.82
3	2017	7,254	5,813	6,680	249	6,929	1.28	0.58	1.86
4	2018	7,399	5,878	6,813	252	7,065	1.31	0.59	1.90
5	2019	7,547	5,944	6,950	255	7,205	1.35	0.59	1.94
6	2020	7,698	6,011	7,089	258	7,347	1.38	0.60	1.98
7	2021	7,852	6,079	7,230	261	7,491	1.42	0.61	2.02
8	2022	8,009	6,147	7,375	264	7,639	1.45	0.61	2.07
9	2023	8,169	6,216	7,522	267	7,789	1.49	0.62	2.11
10	2024	8,332	6,286	7,672	270	7,942	1.53	0.63	2.16
<b>Ten Yr Increase</b>		<b>1,473</b>	<b>665</b>	<b>1,356</b>	<b>29</b>	<b>1,385</b>	<b>0.343</b>	<b>0.067</b>	<b>0.410</b>

### PLANNED WASTEWATER SYSTEM IMPROVEMENTS

#### Treatment

As Figure 38 indicates, the City currently has two wastewater treatment facilities, totaling 1.70 million gallons of daily treatment capacity. These two facilities are presently at capacity.

**Figure 38. Sewer Capital Improvement Program-Treatment**

Existing Facilities				
Wastewater Treatment	Total Capacity (MGD)	Usage (MGD)	Remaining	Today's Value
Evans System	1.20	1.20	0.00	\$12,000,000
Hill n/ Park System	0.50	0.50	0.00	\$5,000,000

Figure 39 indicates the City's capital plan for increasing wastewater treatment capacity. As Figure 39 indicates, the City plans on constructing a new wastewater treatment plant with 3.0 millions of gallons of daily capacity, with a total cost of \$30 million. The cost per demand unit of \$10.00 per gallon of capacity was determined by dividing the future treatment plant cost (\$30,000,000) by the increase in treatment capacity.

**Figure 39. Wastewater Treatment Projects**

Wastewater Treatment	Total Capacity (MGD)	Cost	Cost per Gallon
New Wastewater Treatment Plant	3.00	\$30,000,000	\$10.00

### Collection

Figure 40 indicates the City's capital plan for sewer collection projects over the next ten years. As the Figure indicates, collection projects total \$7,883,000. These cost estimates were provided by the City of Evans Finance Department. The cost per demand unit of \$6.06 per gallon was determined by dividing the future collection improvement costs (\$7,883,000) by the increase in system capacity provided by these pipes (1,300,000 gallons per day).

**Figure 40. Collection Projects**

Collection	Total Capacity (MGD)	Original Cost	Cost per Gallon
40th and Pueblo Street-Phase I		\$1,502,000	
43rd Street		\$2,080,000	
37th Street Area		\$617,000	
49th Street		\$3,684,000	
	1.30	\$7,883,000	\$6.06

### WASTEWATER INPUT VARIABLES AND IMPACT FEES

Input variables for the Wastewater Impact Fees are shown in the upper section of Figure 41. Residential fees are calculated by multiplying the number of persons per housing unit by type of housing unit by the

average number of gallons per person per day. The average number of gallons per housing unit is then multiplied by the net capital cost per gallon of system capacity. For example, the calculation for a single family housing unit is 3.01 persons per housing unit x 90 gallons per person per day = 271 gallons per day per housing unit. This figure is then multiplied by the net capital cost per gallon of \$16.06 for a Wastewater Impact Fee of \$4,354.

Nonresidential fees are based on size and type of meter and their restrictive capacity. The capacity ratios by meter size and type are from the American Water Works Association (AWWA). The demands of an average single family housing unit are used as the basis of the calculation.

**Figure 41. Wastewater Input Variables and Maximum Allowable Impact Fees**

<b>Level Of Service</b>		<i>Standards:</i>		
Gallons per Person per Day		90		
Capital Cost per Gallon-Treatment		\$10.00		
Capital Cost per Gallon-Collection		\$6.06		
Net Capital Cost per Gallon		<b>\$16.06</b>		

<b>Residential Impact Fees per Housing Unit</b>				
Unit Type	Persons per Housing Unit	Impact Fee Per Housing Unit	Current Fee	Increase (Decrease)
Single Unit	3.01	\$4,354	\$4,024	\$330
2+ Unit	2.35	\$3,400	\$4,024	(\$624)
Manufactured Home	2.34	\$3,383	\$4,024	(\$641)

<b>Nonresidential</b>			<b>Per Meter</b>	<b>Current Fee</b>	<b>Increase (Decrease)</b>
Meter Size (inches)*		Capacity Ratio	Proposed Fee		
0.75	Displacement	1.00	\$3,400	\$4,024	(\$624)
1.00	Displacement	1.70	\$7,394	\$6,721	\$673
1.50	Displacement	3.30	\$14,354	\$13,401	\$953
2.00	Compound	5.30	\$23,054	\$21,450	\$1,604
3.00	Compound	10.70	\$46,544	\$42,940	\$3,604
4.00	Compound	16.70	\$72,644	\$67,086	\$5,558

\* Fees for meters larger than four inches will be based on annualized average day demand and the net capital cost per gallon of capacity.

## APPENDIX A: DEMOGRAPHIC DATA AND DEVELOPMENT PROJECTIONS

The population, housing unit, job, and nonresidential floor area projections discussed in this document provide the foundation for the Impact Fee Study. To evaluate the demand for growth-related infrastructure from various types of development, TischlerBise prepared documentation on population, housing units by type, jobs, floor area by type of nonresidential development, and average weekday vehicle trip generation rates. These metrics (explained further below) are the service units and demand indicators that will be used in the Impact Fee Study.

The demographic data and development projections will be used to demonstrate proportionality and anticipate the need for future infrastructure. Demographic data reported by the U.S. Census Bureau, and data provided by the City, are used to calculate base year estimates and annual projections for a 10-year horizon. Typically, impact fee studies look out five to ten years, with the expectation that fees will be periodically updated (every three to five years).

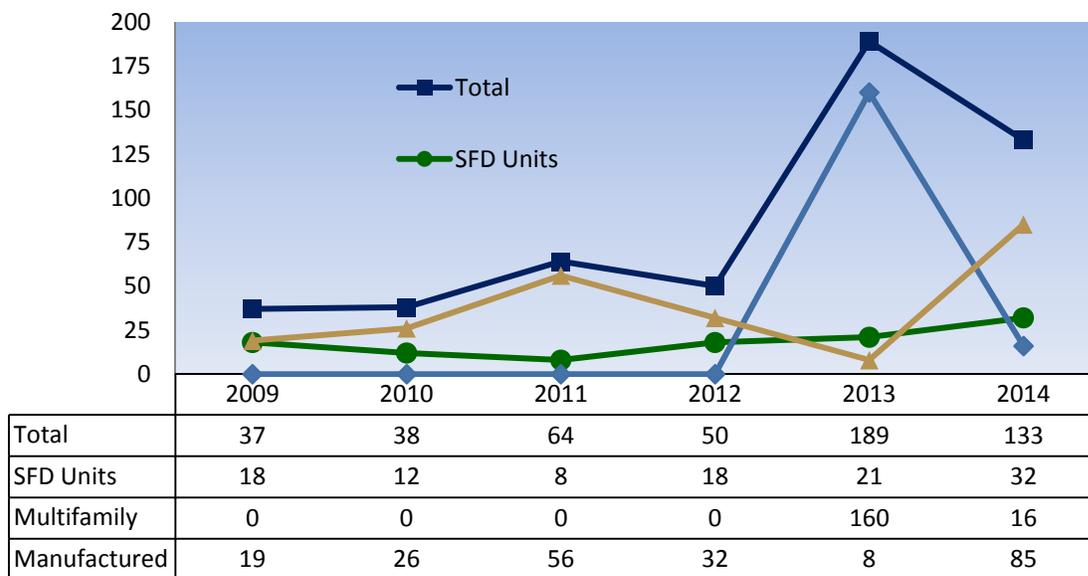
### RESIDENTIAL DEVELOPMENT

Current estimates and future projections of residential development are detailed in this section, including population and housing units by type.

#### Recent Residential Construction

Figure A1 shows residential building permit trends since 2009 by type of housing unit (tracked by the City of Evans). Recent building activity suggests increasing market demand, which is reflected in the residential development projections discussed in the next section.

**Figure A1: Residential Building Permits in the City of Evans, 2009-2014**



• Source: City of Evans

## Residential Estimates and Projections

Based on an analysis of base year estimates provided by the City, data compiled by the City of Evans for its 2010 Comprehensive Plan Update, and recent residential building trends, over the next decade, the City is projected to add population at a compound annual growth rate of two percent. This equates to an additional 4,205 persons above the 2014 base year estimate of 19,200, which was provided by the City.

Given the expectation that impact fees are updated every three to five years, TischlerBise held constant base year demographic indicators, including the average *Persons per Housing Unit* (PPHU) factor of 2.81, derived from 2012 American Community Survey 5-Year Estimates for Evans. As discussed further below, TischlerBise recommends the use of PPHU to derive impact fees.

The base year housing unit estimate is calculated as follows: 19,200 [population] / 2.81[PPHU] = 6,835 [housing units]. To calculate housing unit projections for each year past the base, the annual population projection is divided by the PPHU factor of 2.81. Next, to calculate the annual projections of housing units by type, the annual total unit projection is multiplied by the 2012 ACS Estimates housing stock distribution of 78 percent single unit dwellings, and 22 percent units in multi-unit structures (see Figure A12). The City is projected to gain 1,497 new housing units between 2014 and 2024, at an average annual increase of 150 units.

Figure A2: Residential Development in the City of Evans

		Dec 31 <sup>st</sup> ==>	Five-Year Increment						2014-2024 Cumulative	
		Base Yr 2014	1 2015	2 2016	3 2017	4 2018	5 2019	10 2024		
<b>POPULATION</b>										
	Growth Rate [1]									
Total Population [1]	2.00%	19,200	19,584	19,976	20,375	20,783	21,198	23,405	4,205	
Persons per Housing Unit		2.81	2.81	2.81	2.81	2.81	2.81	2.81		
<b>RESIDENTIAL DEVELOPMENT</b>										
<b>Housing Units</b>										
	Distribution [2]									
Single Unit	78%	5,307	5,413	5,522	5,632	5,745	5,860	6,469	1,162	
2+ Unit	22%	1,528	1,559	1,590	1,622	1,654	1,687	1,863	335	
Total Residential Units [1]	2.00%	6,835	6,972	7,112	7,254	7,399	7,547	8,332	1,497	
<b>ANNUAL INCREASES</b>								Average Annual Increases		
			2015	2016	2017	2018	2019	2024	5-Years	10-Years
Year-Round Population			384	392	399	408	415	459	400	421
Total Residential Units			137	140	142	145	148	163	142	150
Jobs			63	64	65	65	66	70	65	67
Commercial Sq. Ft. (x1,000)			8	9	9	9	9	9	8	9
Office/Other Services Sq. Ft. (x1,000)			8	8	8	8	8	9	8	9
Industrial Sq. Ft. (x1,000)			7	7	7	7	7	8	7	7
Institutional Sq. Ft. (x1,000)			3	4	4	3	4	4	4	4
Total Nonres Floor Area Sq. Ft. (x1,000)			26	28	28	27	28	30	28	28

[1] Base year estimate as of 31Dec14: City of Evans.  
Annual projections based on recent building trends  
[2] 2012 American Community Survey 5-Year Estimates

## NONRESIDENTIAL DEVELOPMENT

Current estimates and future projections of nonresidential development are detailed in this section, including employment and square footage by industry type.

### Nonresidential Square Footage Development

TischlerBise uses the term “jobs” to refer to employment by place of work. Job estimates by industry type are used to calculate nonresidential square footage based on nationally recognized average *Square Feet per Employee* data published by The Institute of Transportation Engineers (ITE), and shown in Figure A3 below. The four land uses highlighted in grey serve as nonresidential prototypes that will be used by TischlerBise to derive average weekday vehicle trips, vehicle miles of travel, and the projected increase in nonresidential floor area. Current Floor area estimates for commercial, office/other services, industrial, and institutional land uses are documented in the next section.

**Figure A3: Nonresidential Service Units per Development Unit**

ITE Code	Land Use	Demand Unit	Wkdy Trip Ends Per 1,000 Sq Ft [1]	Wkdy Trip Ends Per Employee [1]	Emp Per 1,000 Sq Ft	Sq Ft Per Emp [2]
<b>Industrial</b>						
110	Light Industrial	1,000 Sq Ft	6.97	3.02	2.31	433
130	Industrial Park	1,000 Sq Ft	6.83	3.34	2.04	489
140	Manufacturing	1,000 Sq Ft	3.82	2.13	1.79	558
150	Warehousing	1,000 Sq Ft	3.56	3.89	0.92	1,093
254	Assisted Living	bed	2.66	3.93	0.68	na
320	Motel	room	5.63	12.81	0.44	na
<b>Institutional</b>						
520	Elementary School	1,000 Sq Ft	15.43	15.71	0.98	1,018
530	High School	1,000 Sq Ft	12.89	19.74	0.65	1,531
540	Community College	student	1.23	15.55	0.08	na
550	University/College	student	1.71	8.96	0.19	na
565	Day Care	student	4.38	26.73	0.16	na
610	Hospital	1,000 Sq Ft	13.22	4.50	2.94	340
620	Nursing Home	1,000 Sq Ft	7.60	3.26	2.33	429
<b>Office</b>						
710	General Office (avg size)	1,000 Sq Ft	11.03	3.32	3.32	301
760	Research & Dev Center	1,000 Sq Ft	8.11	2.77	2.93	342
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
857	Discount Club	1,000 Sq Ft	41.80	32.21	1.30	771
<b>Commercial</b>						
820	Shopping Center (avg size)	1,000 Sq Ft	42.70	na	2.00	500

[1] Trip Generation, Institute of Transportation Engineers, 2012.

[2] Square feet per employee calculated from trip rates except for Shopping Center data, which are derived from the Urban Land Institute's Development Handbook and Dollars and Cents of Shopping Centers.

## Jobs by Type of Nonresidential Development

TischlerBise reviewed data prepared by the U.S. Census Bureau, the Colorado Department of Local Affairs, and the North Front Range Metropolitan Planning Organization (NFRMPO) to calculate a 2014 estimate of jobs, and used a four-step process summarized below to estimate base year jobs and annual projections by industry type.

- First, TischlerBise used the U.S. Census 2011 distribution of Weld County jobs in Evans, organized by industry sector, and the State’s 2012 Weld County jobs estimate of 113,032 to calculate a cumulative 2012 City jobs estimate of 5,497.
- Second, the 2012 City estimate and County jobs projections, reported by NFRMPO, were used to calculate a 1.12 percent (rounded) projected jobs growth rate for the City, which was then used to calculate total City jobs estimates for each year past the base.
- Third, the U.S. Census Bureau 2011 distribution of jobs in the City of Evans organized by industry type (shown below in Figure A4) was applied to the 2014 jobs estimate of 5,621 (based on the 1.12% growth rate) to establish base year rounded estimates of jobs by industry type.
- Lastly, TischlerBise used the annual total jobs projection for each year past the base, and the distribution of jobs by industry, to calculate the jobs by industry for each year past the base (see Figure A5).

As shown in Figure A4, 26 percent of jobs located in Evans in 2014 are assumed to be commercial jobs, 42 percent were office/other services jobs, 26 percent were industrial jobs, and 6 percent of all jobs in the City were estimated to be institutional jobs, which includes both government and education jobs. Also shown in Figure A4 is an estimate of the current nonresidential floor area calculated by multiplying the 2014 jobs by industry estimates, by the ITE *Square Feet per Employee* factors from Figure A3 above.

**Figure A4: Distribution of Jobs by Industry Type**

	2011 Distribution by Industry [1]		Base Year 2014 Estimate Jobs by Industry [2]	Square Feet Per Employee [3]	Nonresidential Floor Area
Commercial	812	26%	1,466	500	733,000
Office/Other Services	1,323	42%	2,388	301	718,782
Industrial	803	26%	1,449	433	627,831
Institutional	176	6%	318	1,018	323,771
<b>TOTAL</b>	<b>3,114</b>	<b>100%</b>	<b>5,621</b>	<b>428</b>	<b>2,403,383</b>

[1] OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics

[2] TischlerBise; North Front Range Metropolitan Planning Organization

[3] Trip Generation Manual, Institute of Transportation Engineers, 9th Edition (2012).

## Jobs and Nonresidential Development Projections

Based on data compiled by the U.S. Census Bureau, Colorado Department of Local Affairs, and the NFRMPO, over the next decade, the City is projected to add jobs at an annual growth rate of 1.12 percent. This equates to an additional 665 jobs above the 2014 base year estimate of 5,621.

To calculate jobs projections for each year past the base, the 1.12 percent projected job growth rate calculated from NFRMPO data was held constant for the 10-year projection period, as was the distribution of jobs by industry type, shown in Figure A4. The City is projected to gain an average of 67 jobs a year for the next ten years.

Using Commercial development as an example, the annual square footage by industry type is calculated as follows: 1,466 [2014 Commercial jobs] X 500 [ITE SF per Emp. Factor] = 733 square feet [expressed in thousands]. This calculation is repeated for each industry type and for each year of the 10-year projection period. To keep pace with job growth, the City should expect to add roughly 28,000 square feet of nonresidential development each year.

Figure A5: Nonresidential Development in the City of Evans

	Dec 31 <sup>st</sup> ==>	Five-Year Increment							2014-2024 Cumulative
		Base Yr 2014	1 2015	2 2016	3 2017	4 2018	5 2019	10 2024	
<b>NONRESIDENTIAL DEVELOPMENT</b>									
<b>Employment By Type</b>									
	Share of Ttl [3]								
Commercial	26%	1,466	1,482	1,499	1,516	1,533	1,550	1,639	173
Office/Other Services	42%	2,388	2,415	2,442	2,470	2,497	2,525	2,671	283
Industrial	26%	1,449	1,466	1,482	1,499	1,516	1,533	1,621	172
Institutional	6%	318	321	325	329	332	336	355	37
Total Jobs [4]	1.12%	5,621	5,684	5,748	5,813	5,878	5,944	6,286	665
Jobs to Housing Ratio		0.82	0.82	0.81	0.80	0.79	0.79	0.75	
<b>Nonres Floor Area (x1,000 Sq. Ft.)</b>									
	Sq.Ft./Emp. [5]								
Commercial	500	733	741	750	758	767	775	820	87
Office/Other Services	301	719	727	735	743	752	760	804	85
Industrial	433	628	635	642	649	656	664	702	74
Institutional	1,018	324	327	331	335	338	342	361	38
Total Nonresidential Square Feet (x1,000)		2,403	2,430	2,457	2,486	2,513	2,541	2,687	283
Avg. Sq. Ft. per Job		428	427	427	428	427	427	427	
Avg. Jobs per KSF		2.34	2.34	2.34	2.34	2.34	2.34	2.34	
<b>ANNUAL INCREASES</b>									
		Average Annual Increases						5-Years	10-Years
	Jobs	63	64	65	65	66	70	65	67
	Commercial Sq. Ft. (x1,000)	8	9	9	9	9	9	8	9
	Office/Other Services Sq. Ft. (x1,000)	8	8	8	8	8	9	8	9
	Industrial Sq. Ft. (x1,000)	7	7	7	7	7	8	7	7
	Institutional Sq. Ft. (x1,000)	3	4	4	3	4	4	4	4
	Total Nonres Floor Area Sq. Ft. (x1,000)	26	28	28	27	28	30	28	28

[3] U.S. Census, 2011 OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics  
 [4] TischlerBise; State of Colorado, North Front Range Metropolitan Planning Organization  
 [5] Trip Generation Manual, Institute of Transportation Engineers, 9th Edition (2012)

## DETAILED LAND USE ASSUMPTIONS – RESIDENTIAL AND NONRESIDENTIAL

Demographic data summarized in Figure A6 are the key inputs for the Impact Fee Study. Cumulative data are shown at the top and projected annual increases by type of development are shown at the bottom of

the figure. The annual increases for the demographic indicators increase over the ten-year projection period, which is reflected by the 5-year and 10-year average annual increases shown at the bottom of Figure A6.

These projections will be used to estimate impact fee revenue and to indicate the anticipated need for growth-related infrastructure. However, impact fee methodologies are designed to reduce sensitivity to accurate development projections in the determination of the proportionate share fee amounts. If actual development is slower than projected, impact fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development is faster than anticipated, the City will receive an increase in impact fee revenue, but will also need to accelerate capital improvements to keep pace with development.

Figure A6: Annual Demographic Data, 2014-2024, City of Evans

		Dec 31 <sup>st</sup> ==>							Five-Year Increment	
		Base Yr	1	2	3	4	5	10	2014-2024	
		2014	2015	2016	2017	2018	2019	2024	Cumulative	
<b>POPULATION</b>										
		Growth Rate [1]								
Total Population [1]	2.00%	19,200	19,584	19,976	20,375	20,783	21,198	23,405	4,205	
Persons per Housing Unit		2.81	2.81	2.81	2.81	2.81	2.81	2.81		
<b>RESIDENTIAL DEVELOPMENT</b>										
<b>Housing Units</b>										
		Distribution [2]								
Single Unit	78%	5,307	5,413	5,522	5,632	5,745	5,860	6,469	1,162	
2+ Unit	22%	1,528	1,559	1,590	1,622	1,654	1,687	1,863	335	
Total Residential Units [1]	2.00%	6,835	6,972	7,112	7,254	7,399	7,547	8,332	1,497	
<b>NONRESIDENTIAL DEVELOPMENT</b>										
<b>Employment By Type</b>										
		Share of Ttl [3]								
Commercial	26%	1,466	1,482	1,499	1,516	1,533	1,550	1,639	173	
Office/Other Services	42%	2,388	2,415	2,442	2,470	2,497	2,525	2,671	283	
Industrial	26%	1,449	1,466	1,482	1,499	1,516	1,533	1,621	172	
Institutional	6%	318	321	325	329	332	336	355	37	
Total Jobs [4]	1.12%	5,621	5,684	5,748	5,813	5,878	5,944	6,286	665	
Jobs to Housing Ratio		0.82	0.82	0.81	0.80	0.79	0.79	0.75		
<b>Nonres Floor Area (x1,000 Sq. Ft.)</b>										
		Sq.Ft./Emp. [5]								
Commercial	500	733	741	750	758	767	775	820	87	
Office/Other Services	301	719	727	735	743	752	760	804	85	
Industrial	433	628	635	642	649	656	664	702	74	
Institutional	1,018	324	327	331	335	338	342	361	38	
Total Nonresidential Square Feet (x1,000)		2,403	2,430	2,457	2,486	2,513	2,541	2,687	283	
Avg. Sq. Ft. per Job		428	427	427	428	427	427	427		
Avg. Jobs per KSF		2.34	2.34	2.34	2.34	2.34	2.34	2.34		
<b>ANNUAL INCREASES</b>										
								Average Annual Increases		
		2015	2016	2017	2018	2019	2024	5-Years	10-Years	
Year-Round Population		384	392	399	408	415	459	400	421	
Total Residential Units		137	140	142	145	148	163	142	150	
Jobs		63	64	65	65	66	70	65	67	
Commercial Sq. Ft. (x1,000)		8	9	9	9	9	9	8	9	
Office/Other Services Sq. Ft. (x1,000)		8	8	8	8	8	9	8	9	
Industrial Sq. Ft. (x1,000)		7	7	7	7	7	8	7	7	
Institutional Sq. Ft. (x1,000)		3	4	4	3	4	4	4	4	
Total Nonres Floor Area Sq. Ft. (x1,000)		26	28	28	27	28	30	28	28	

[1] Base year estimate as of 31Dec14: City of Evans.

Annual projections based on recent building trends

[2] 2012 American Community Survey 5-Year Estimates

[3] U.S. Census, 2011 OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics

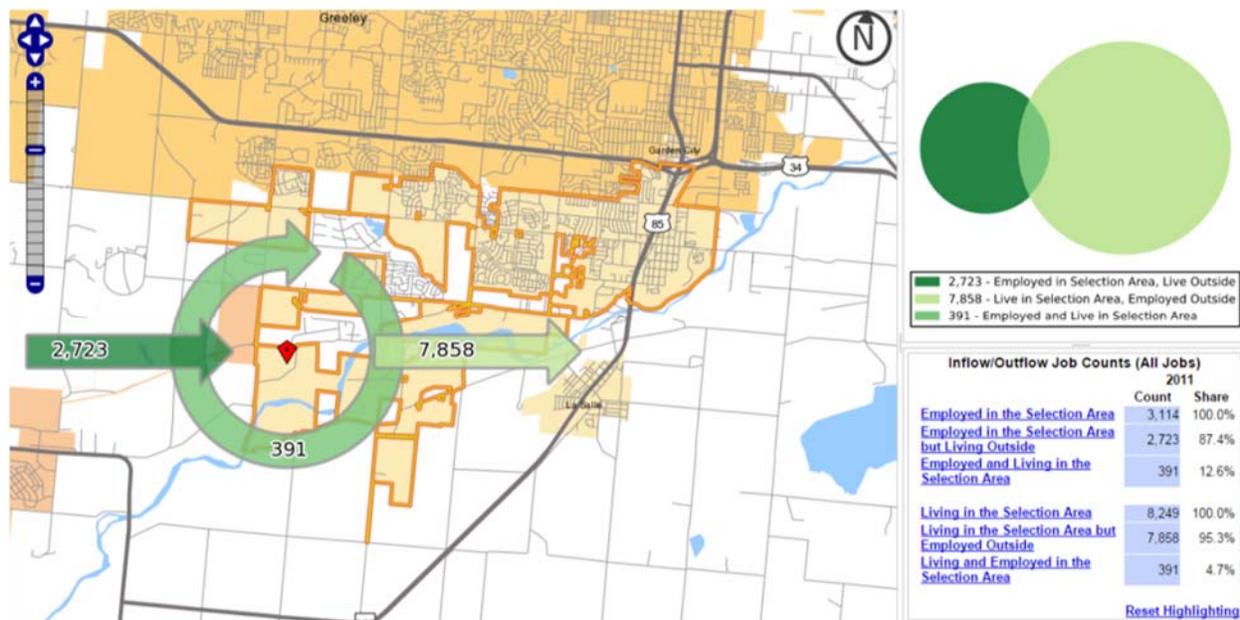
[4] TischlerBise; State of Colorado, North Front Range Metropolitan Planning Organization

[5] Trip Generation Manual, Institute of Transportation Engineers, 9th Edition (2012)

## COMMUTING PATTERNS AND FUNCTIONAL POPULATION

As shown in Figure A7, the U.S. Census Bureau’s Longitudinal Employer-Household Dynamics (LEHD) web application OnTheMap indicates that Evans received a significant inflow of 2,723 workers on an average weekday in 2011 (the most recent data year available). In addition to these non-resident workers, another 391 persons lived and worked in Evans in 2011. TischlerBise will account for commuting patterns in the allocation of transportation infrastructure costs to residential and nonresidential development, and to derive functional population, as described below.

Figure A7: Inflow/Outflow Analysis, City of Evans



Source: U.S. Census Bureau. (14Aug14). OnTheMap Version 6, Inflow/Outflow Jobs Counts All Jobs) City of Evans, CO.

## Functional Population

If local public safety calls for service data are not available by land use, TischlerBise recommends functional population to allocate the cost of certain facilities to residential and nonresidential development. Functional population has a long history in the professional literature. Originally called activity analysis by Stuart Chapin in 1965, and incorporated into the impact fee methodology by James Nicholas in the mid-1980s, functional population can be used to equitably spread infrastructure costs between residential and nonresidential sectors. TischlerBise has refined the functional population concept by incorporating what the U.S. Census Bureau calls “daytime population.” Using jurisdiction-specific data on commuting patterns (discussed above), it is now possible to roughly estimate where people live and work (i.e., spend their daily hours).

As shown below, residents that do not work are assigned 20 hours per day to residential development and four hours per day to nonresidential development (annualized averages). Residents that work in the City are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside the City are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development.

Based on 2011 population data from the City, and U.S. Census Bureau data from the LEHD program, the proportionate share for residential development is 82 percent (rounded), while nonresidential development accounts for 18 percent (rounded) of the functional population distribution.

Figure A8: Functional Population

	Demand Units in 2011	Demand Hours/Day	Person Hours	Proportionate Share
<b>Residential</b>				
Estimated Residents	18,943			
Residents Not Working	10,694	20	213,880	
Employed Residents	8,249			
Employed in Service Area	391	14	5,474	
Employed outside Service Area	7,858	14	110,012	
<b>Residential Subtotal</b>			<b>329,366</b>	<b>82%</b>
<b>Nonresidential</b>				
Non-working Residents	10,694	4	42,776	
Jobs in Service Area	3,114			
Residents Employed in Service Area	391	10	3,910	
Non-Resident Workers (inflow Commuters)	2,723	10	27,230	
<b>Nonresidential Subtotal</b>			<b>73,916</b>	<b>18%</b>
<b>TOTAL</b>			<b>403,282</b>	<b>100%</b>

Source: 2011 population estimate from Colorado State Demography Office; U.S. Census Bureau, OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics

## AVERAGE DAILY VEHICLE TRIPS

Average Daily Vehicle Trips are used for the Streets impact fee category as a measure of demand by land use. Vehicle trips are estimated using average weekday trip ends from the reference book, Trip Generation, 9<sup>th</sup> Edition, published by the Institute of Transportation Engineers (ITE) in 2012. A vehicle trip end represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway).

### Trip Rate Adjustments

Trip generation rates are adjusted to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed below, additional adjustments are made to ensure the fees are proportionate to the infrastructure demand for particular types of development.

#### *Adjustment for Journey-To-Work Commuting*

Residential development in the City of Evans has a larger trip adjustment factor of 65 percent to account for commuters leaving Evans for work. According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of “production” trips, also known as out-bound trips (which are 50 percent of all trip ends). Data from the LEHD for 2011 indicate that 95 percent of Evan’s employed residents travel outside the City for work. In combination, these factors ( $0.31 \times 0.50 \times 0.95 = 0.15$ ) account for 15 percent (rounded) of additional production trips. The total adjustment factor for residential includes attraction trips (50% of trip ends) plus the journey-to-work commuting adjustment for a total of 65 percent.

**Figure A9: Adjustment for Journey-to-Work Commuting**

<i>Trip Adjustment Factor for Commuters [1]</i>	
Employed Residents	8,249
Residents Working in City	391
Residents Commuting Outside City for Work	7,858
<b>Percent Commuting out of the City</b>	<b>95%</b>
Additional Production Trips [2]	15%
<b>Residential Trip Adjustment Factor</b>	<b>65%</b>

[1] U.S. Census Bureau, 2011 OnTheMap Application (version 6) and LEHD Origin-Destination Employment Statistics

[2] Outbound trip statistics from National Household Travel Survey, 2009: Table 30

#### *Adjustment for Pass-By Trips*

The basic trip adjustment factor of 50 percent is applied to both the office and industrial categories. The commercial and institutional categories have a trip factor of less than 50 percent because these types of development attract vehicles as they pass-by on arterial and collector roads. For example, for an average size shopping center, the ITE (2012) indicates that on average 34 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 66 percent of attraction trips

have the shopping center as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 66 percent multiplied by 50 percent, or approximately 33 percent of the trip ends.

### Customized Trip Generate Rates per Housing Unit

As an alternative to simply using the national average trip generation rate for residential development, the ITE publishes regression curve formulas that may be used to derive custom trip generation rates using local demographic data. Key independent variables needed for the analysis (i.e., vehicles available, housing units, households, and persons) are only available collectively from the 2012 ACS 5-Year Estimates for Evans.

Customized average weekday trip generation rates by type of housing are shown in Figure A10. A vehicle trip end represents a vehicle either entering or exiting a development, as if a traffic counter were placed across a driveway. The custom trip generation rates for Evans vary slightly from the national averages. For example, single unit structures in the City of Evans have an average daily trip rate of 9.10 per unit (compared to the national average of 9.52), and units in multi-unit structures have an average daily trip rate of 7.40 trips per unit (compared to the national average of 6.65).

Figure A10: Residential Trip Generation Rates by Type of Housing

	Vehicles Available [1]	Households by Structure Type[2]			Vehicles per Household by Tenure
		Single Unit	2+ Units	Total	
	A	B	C	D = B+C	E = A/D
Owner-occupied	7,134	3,419	131	3,550	2.01
Renter-occupied	4,610	1,350	1,176	2,526	1.83
<b>TOTAL</b>	<b>11,744</b>	<b>4,769</b>	<b>1,307</b>	<b>6,076</b>	<b>1.93</b>

[1] Vehicles available by tenure from Table B25046, American Community Survey, 2012.

[2] Households by tenure and units in structure from Table B25032, American Community Survey, 2012.

	Persons in Households [3]	Trip Ends [4]	Vehicles by Type of Housing	Trip Ends [5]	Average Trip Ends	Housing Units [6]	Trip Ends per Unit	
							H=Owner(B*E)+ Renter (B*E)	J = Avg of G,I
	F	G		I		K		
Single Units	15,040	38,927	9,335	53,954	46,440	5,115	9.10	9.52
2+ Units	3,465	11,959	2,409	9,787	10,873	1,473	7.40	6.65
<b>TOTAL</b>	<b>18,505</b>	<b>50,886</b>	<b>11,744</b>	<b>63,741</b>	<b>57,313</b>	<b>6,588</b>	<b>8.70</b>	

[3] Total population in households from Table 25033, American Community Survey, 2012.

[4] Vehicle trips ends based on persons using formulas from Trip Generation (ITE 2012). For single units (ITE 210), the fitted curve equation is  $EXP(0.91*LN(persons)+1.52)$ . To approximate the average population of the ITE studies, persons were divided by 27 and the equation result multiplied by 27. For 2+ units (ITE 220), the fitted curve equation is  $(3.47*persons)-64.48$ .

[5] Vehicle trip ends based on vehicles available using formulas from Trip Generation (ITE 2012). For single units (ITE 210), the fitted curve equation is  $EXP(0.99*LN(vehicles)+1.81)$ . To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 36 and the equation result multiplied by 36. For 2+ units (ITE 220), the fitted curve equation is  $(3.94*vehicles)+293.58$ .

[6] Housing units from Table B25024, American Community Survey, 2012.

[7] Trip Generation, Institute of Transportation Engineers, 9th Edition (2012).

Figure A11 below details the calculations to determine that existing development in Evans generates an average of 58,309 vehicle trips on an average weekday. Residential development is estimated to generate 40,180 vehicle trips, or 69 percent of all trips, compared to 18,129 vehicle trips (31 percent) generated by nonresidential development. An example of the calculation is as follows for single residential units: 5,504 units X 9.10 vehicle trips per day per unit X 65% adjustment factor = 32,556 total vehicle trips per day from single residential units in the City. The same calculation is repeated for each land use type.

Figure A11: Average Daily Trips from Existing Development in the City of Evans

<b>Residential Vehicle Trips on an Average Weekday*</b>		<b>2014</b>	
<b>Residential Units</b>		<i>Assumptions</i>	
Single Unit		5,504	
2+ Unit		1,585	
<b>Average Weekday Vehicle Trip Ends per Unit*</b>		<i>Trip Rate</i>	<i>Trip Factor</i>
Single Unit		9.10	65%
2+ Unit		7.40	65%
<b>Residential Vehicle Trip Ends of an Average Weekday</b>			
Single Unit		32,556	
2+ Unit		7,624	% of total
<b>Total Residential Trips</b>		<b>40,180</b>	<b>69%</b>
<b>Nonresidential Vehicle Trips on an Average Weekday**</b>		<b>2014</b>	
<b>Nonresidential Gross Floor Area (1,000 sq. ft.)</b>		<i>Assumptions</i>	
Commercial		733	
Office/Other Services		719	
Industrial		628	
Institutional		324	
<b>Average Weekday Vehicle Trips Ends per 1,000 Sq. Ft.**</b>		<i>Trip Rate</i>	<i>Trip Factor</i>
Commercial		42.70	33%
Office/Other Services		11.03	50%
Industrial		6.97	50%
Institutional		15.43	33%
<b>Nonresidential Vehicle Trips on an Average Weekday</b>			
Commercial		10,329	
Office/Other Services		3,964	
Industrial		2,188	
Institutional		1,649	
<b>Total Nonresidential Trips</b>		<b>18,129</b>	<b>31%</b>
<b>TOTAL TRIPS</b>		<b>58,309</b>	<b>100%</b>

\*Trip rates are customized for City. See accompanying tables and discussion.

\*\*Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2012)

**PERSONS PER HOUSING UNIT**

According to the U.S. Census Bureau, a household is a housing unit that is occupied by year-round residents. Impact fees often use per capita standards and persons per housing unit (PPHU) or persons per household (PPH) to derive proportionate share fee amounts. When PPHU is used in the fee calculations, infrastructure standards are derived using year-round population. When PPH is used in the fee calculations, the impact fee methodology must assume all housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. **TischlerBise recommends that impact fees for residential development in the City of Evans be imposed according to the number of year-round residents per housing unit. This methodology acknowledges that some portion of the housing stock will be vacant during the course of a year. According to the U.S. Census Bureau American Community Survey, the City of Evans had a 2012 vacancy rate of eight percent.**

The 2010 census did not obtain detailed information using a “long-form” questionnaire. Instead, the U.S. Census Bureau switched to a continuous monthly mailing of surveys, known as the American Community Survey (ACS), which has limitations due to sample-size constraints. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). For impact fees in Evans, units in single unit structures include detached stick-built units and attached units (commonly known as townhouses, which share a common sidewall, but are typically constructed on an individual parcel of land) and manufactured units (formerly known as mobile homes). The second residential category (2+ Units) includes structures with two or more units on an individual parcel of land, such as duplexes and apartments.

Figure A12 shows the ACS 2012 5-Year Estimates for the City of Evans. To calculate the citywide average PPHU, persons in units (18,505) is divided by housing units (6,588), resulting in a PPHU factor of 2.81. Dwellings with a single unit per structure averaged 3.01 PPHU. Dwellings in structures with multiple units averaged 2.35 PPHU. *(Note: ACS estimates will not equal base year estimates provided by the City. These data are used only to derive the custom PPHU factors for each type of residential unit).*

**Figure A12: Year-Round Persons per Housing Unit by Type of Structure**

<b>2012 Summary by Type of Housing</b>	<i>Persons</i>	<i>House-holds</i>	<i>Housing Units</i>	<b>PPHU</b>	<i>Housing Mix</i>
Single Units [1]	13,748	4,249	4,563	<b>3.01</b>	69%
2+ Units [2]	3,465	1,307	1,473	<b>2.35</b>	22%
Mobile Homes	1,292	520	552	<b>2.34</b>	8%
Subtotal	18,505	6,076	6,588	<b>2.81</b>	<i>Vacancy Rate</i>
Group Quarters Population	8				
<b>TOTAL</b>	18,513	6,076	6,588		8%

2012 American Community Survey 5-Year Estimates

[1] "Single Unit" includes detached, attached, and manufactured homes

[2] "2+ Unit" includes duplex and all other units with 2 or more units per structure

# City of Evans Impact Fee Study Overview

8/3/15



# Impact Fee Categories

- ✧ Parks, Recreational Facilities, and Open Space
- ✧ Fire/EMS
- ✧ Police
- ✧ Transportation
- ✧ Wastewater
- ✧ Water (will be provided once Master Plan is complete)
- ✧ Stormwater (will be provided once Master Plan is complete)

# Study Process

- ✧ Determine existing development base and project future growth/redevelopment
- ✧ Determine existing levels of service and capital needs due to new growth
- ✧ Determine appropriate indicators of demand
- ✧ Evaluate methodological alternatives
- ✧ Evaluate need for credits
- ✧ Calculate fees
- ✧ Adoption process

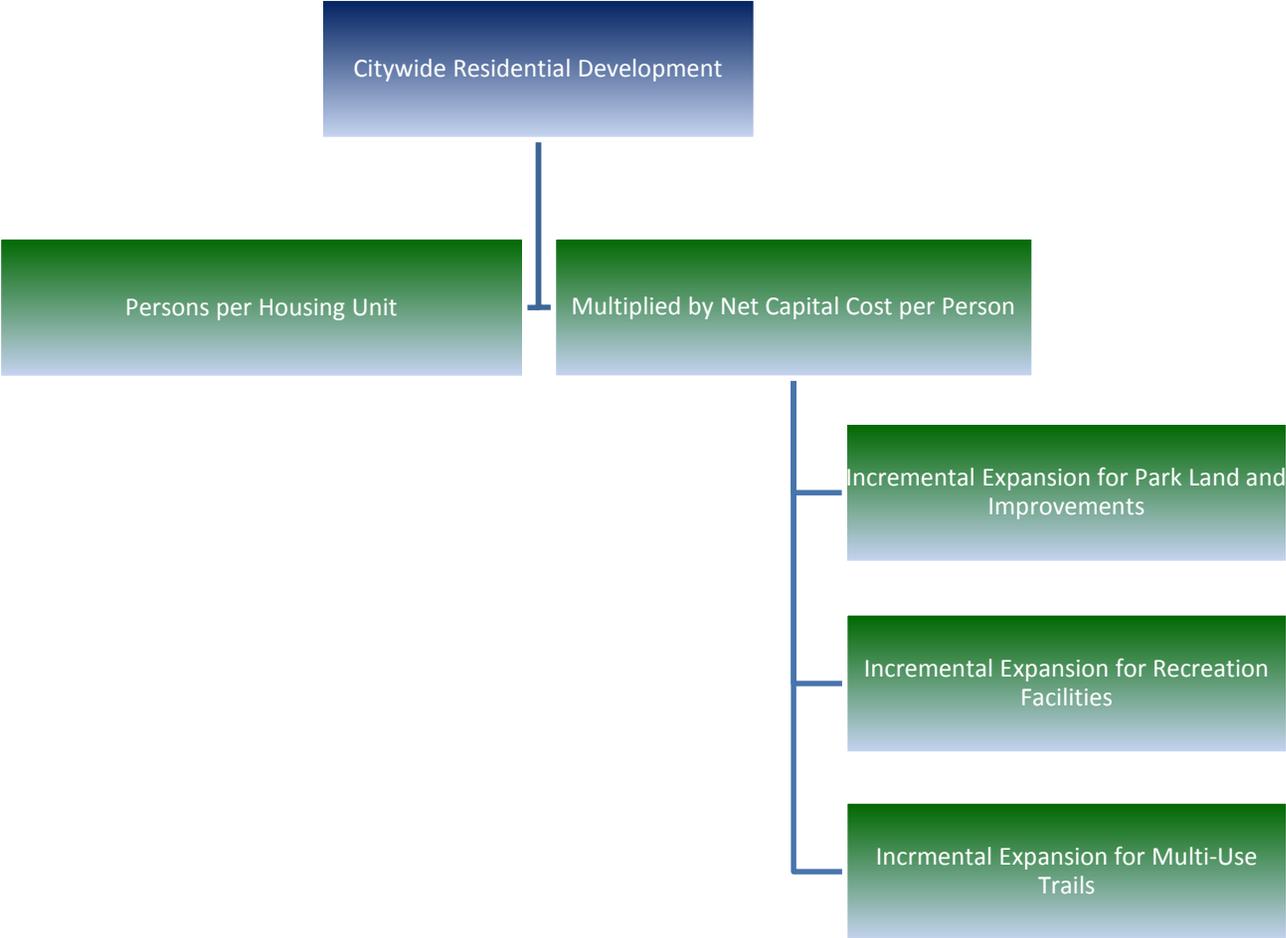
# Overview of Methodologies Used

<i>Type of Fee</i>	<i>Cost Recovery (past)</i>	<i>Incremental Expansion (present)</i>	<i>Plan-Based (future)</i>
Parks, Recreation & Open Space		Park Land, Trails, Open Space and Recreational Improvements	
Fire/EMS		Fire Station Space Apparatus	
Police		Police Space Police Vehicles	
Transportation			Road Improvements
Wastewater			Wastewater Treatment Plant

# Eligible Costs

- ✧ Facilities/improvement required to serve new development - Yes
- ✧ Maintenance and repairs – No
- ✧ Excess capacity in existing facilities – Yes
- ✧ Improvements required to correct existing deficiencies – No
  - Unless there is a funding plan

# Park, Recreational Facilities and Open Space



# Park, Recreational Facilities and Open Space

<b><i>Parks and Recreational Facilities Capital Costs</i></b>	<b><i>Per Person</i></b>
Improved Parkland	\$1,083.75
Park Improvements	\$189.39
Multi-Use Trails	\$68.77
Recreational Facilities	\$176.58
Impact Fee Study	\$6.50
<b>GROSS CAPITAL COST</b>	<b>\$1,524.99</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$1,524.99</b>

<b><i>Parks and Recreational Facilities Impact Fee Schedule</i></b>		<b><i>Impact Fee per Housing Unit</i></b>		
<b><i>Unit Type</i></b>	<b><i>Persons per Housing Unit [1]</i></b>	<b><i>Proposed Fee</i></b>	<b><i>Current Fee [2]</i></b>	<b><i>Increase (Decrease)</i></b>
Single Unit	3.01	\$4,594	\$4,604	(\$10)
2+ Unit	2.35	\$3,587	\$4,604	(\$1,017)
Manufactured Home	2.34	\$3,569	\$4,604	(\$1,035)

[1] TischlerBise. 2014 Impact Fee Demographic Data and Development Projections

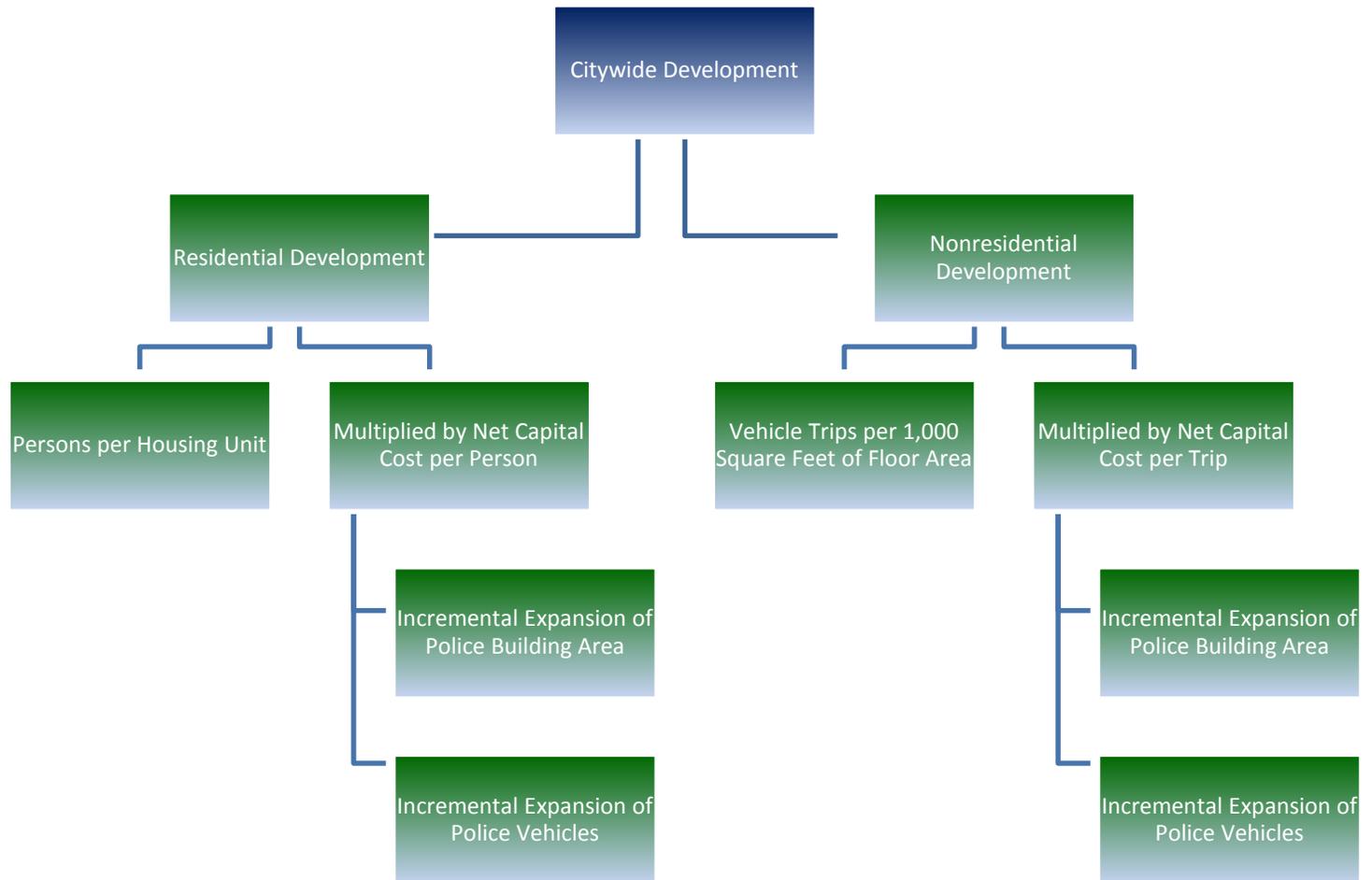
[2] City of Evans, City Code Title 15 Buildings and Construction

# Park, Recreational Facilities and Open Space Demand

Demand Unit	Land (acres)	Park Improvements (units)	Multi-Use Trails (miles)	Recreational Facilities (square feet)
per Person	0.0090	0.002	0.0003	1.065
Average Cost per Component	\$120,000	\$113,631	\$264,061	\$166

		Projected Demand (Rounded)				
		Demand Units Population	Land (acres)	Park Improvements (units)	Multi-Use Trails (miles)	Recreational Facilities (square feet)
Base	2014	19,200	173.40	32	5.00	20,443
1	2015	19,584	176.87	33	5.10	20,852
2	2016	19,976	180.41	33	5.20	21,269
3	2017	20,375	184.01	34	5.31	21,694
4	2018	20,783	187.70	35	5.41	22,128
5	2019	21,198	191.44	35	5.52	22,570
6	2020	21,622	195.27	36	5.63	23,022
7	2021	22,055	199.18	37	5.74	23,483
8	2022	22,496	203.17	37	5.86	23,952
9	2023	22,946	207.23	38	5.98	24,432
10	2024	23,405	211.38	39	6.10	24,920
<b>Ten Yr Total</b>		<b>4,205</b>	<b>38</b>	<b>7</b>	<b>1.10</b>	<b>4,477</b>
<b>Cost of Developed Parkland</b>		<b>\$4,557,169</b>				
<b>Cost of Park Improvements</b>		<b>\$795,419</b>				
<b>Cost of Multi-Use Trails</b>		<b>\$289,161</b>				
<b>Cost of Recreation Facilities</b>		<b>\$742,503</b>				
<b>TOTAL</b>		<b>\$6,384,252</b>				

# Police



# Police

<b>Residential Capital Costs</b>	<b>Per Person</b>
Police Space	\$62.17
Police Vehicles	\$23.50
Impact Fee Study	\$5.33
<b>GROSS CAPITAL COST</b>	<b>\$91.00</b>

Revenue Credit	\$0.00
<b>NET CAPITAL COST</b>	<b>\$91.00</b>

<b>Police Impact Fee Schedule</b>		<b>Impact Fee per Housing Unit</b>		
<b>Unit Type</b>	<b>Persons per Housing Unit [1]</b>	<b>Proposed Fee</b>	<b>Current Fee [2]</b>	<b>Increase</b>
Single Unit	3.01	\$274	\$0	\$274
2+ Unit	2.35	\$214	\$0	\$214
Manufactured Home	2.34	\$212	\$0	\$212

[1] TischlerBise. 2014 Impact Fee Land Use Assumptions

[2] The City of Evans currently does not collect a Police impact fee

<b>Nonresidential Capital Costs</b>	<b>Per Trip</b>
Police Space	\$14.45
Police Vehicles	\$5.46
Impact Fee Study	\$0.07
<b>GROSS CAPITAL COST</b>	<b>\$19.99</b>

Revenue Credit	\$0.00
<b>NET CAPITAL COST</b>	<b>\$19.99</b>

<b>Police Impact Fee Schedule</b>			<b>Impact Fee per Square Foot of Floor Area</b>		
<b>Nonresidential Land Use</b>	<b>Trips [3]</b>	<b>Trip Rate Adj. Factors</b>	<b>Proposed Fee</b>	<b>Current Fee [4]</b>	<b>Increase (Decrease)</b>
	<i>(per 1,000 SF)</i>		<i>(Per 1,000 Square Feet of Floor Area)</i>		
Commercial	42.70	33%	\$0.28	\$0.00	\$0.28
Office/Institutional	11.03	50%	\$0.11	\$0.00	\$0.11
Industrial/Flex	6.97	50%	\$0.07	\$0.00	\$0.07

[3] Institute of Transportation Engineers. (2012). Trip Generation Manual 9th Edition.

[4] City of Evans, City Code Title 15 Buildings and Construction

# Police

<b>Residential Capital Costs</b>	<b>Per Person</b>
Police Space	\$62.17
Police Vehicles	\$23.50
Impact Fee Study	\$5.33
<b>GROSS CAPITAL COST</b>	<b>\$91.00</b>

Revenue Credit	\$0.00
<b>NET CAPITAL COST</b>	<b>\$91.00</b>

<b>Police Impact Fee Schedule</b>		<b>Impact Fee per Housing Unit</b>		
<b>Unit Type</b>	<b>Persons per Housing Unit [1]</b>	<b>Proposed Fee</b>	<b>Current Fee [2]</b>	<b>Increase</b>
Single Unit	3.01	\$274	\$0	\$274
2+ Unit	2.35	\$214	\$0	\$214
Manufactured Home	2.34	\$212	\$0	\$212

[1] TischlerBise. 2014 Impact Fee Land Use Assumptions

[2] The City of Evans currently does not collect a Police impact fee

<b>Nonresidential Capital Costs</b>	<b>Per Trip</b>
Police Space	\$14.45
Police Vehicles	\$5.46
Impact Fee Study	\$0.07
<b>GROSS CAPITAL COST</b>	<b>\$19.99</b>

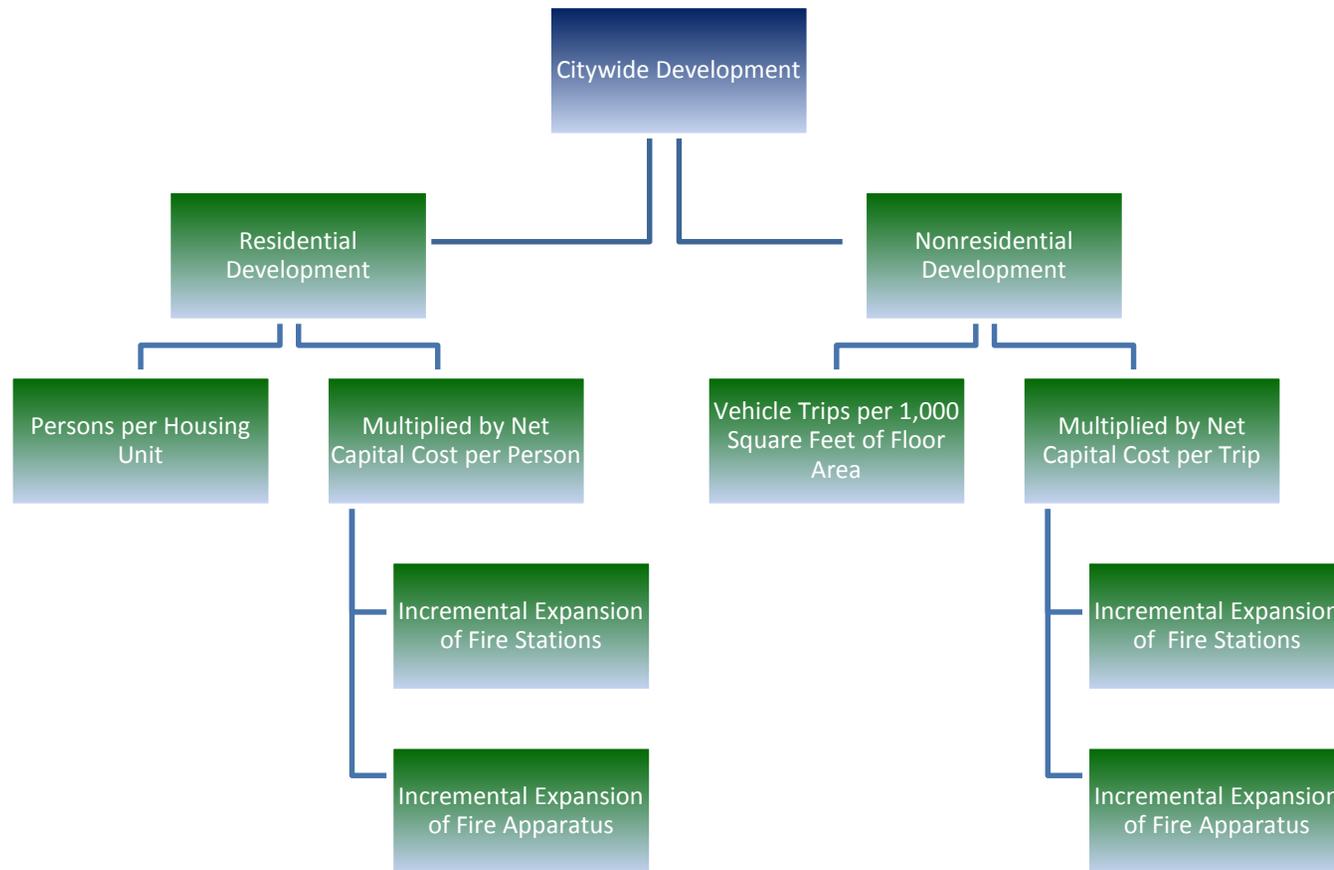
Revenue Credit	\$0.00
<b>NET CAPITAL COST</b>	<b>\$19.99</b>

<b>Police Impact Fee Schedule</b>			<b>Impact Fee per Square Foot of Floor Area</b>		
<b>Nonresidential Land Use</b>	<b>Trips [3]</b>	<b>Trip Rate Adj. Factors</b>	<b>Proposed Fee</b>	<b>Current Fee [4]</b>	<b>Increase (Decrease)</b>
	<i>(per 1,000 SF)</i>		<i>(Per 1,000 Square Feet of Floor Area)</i>		
Commercial	42.70	33%	\$0.28	\$0.00	\$0.28
Office/Institutional	11.03	50%	\$0.11	\$0.00	\$0.11
Industrial/Flex	6.97	50%	\$0.07	\$0.00	\$0.07

[3] Institute of Transportation Engineers. (2012). Trip Generation Manual 9th Edition.

[4] City of Evans, City Code Title 15 Buildings and Construction

# Fire/EMS



# Fire/EMS

<b>Residential Capital Costs</b>	<b>Per Person</b>
Fire Facilities	\$79.01
Fire Vehicles	\$224.65
Impact Fee Study	\$5.33
<b>GROSS CAPITAL COST</b>	<b>\$308.99</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$308.99</b>

<b>Fire Impact Fee Schedule</b>		<b>Impact Fee per Housing Unit</b>		
<b>Unit Type</b>	<b>Persons per Housing Unit [1]</b>	<b>Proposed Fee</b>	<b>Current Fee [2]</b>	<b>Increase (Decrease)</b>
Single Unit	3.01	\$930	\$805	\$125
2+ Unit	2.35	\$726	\$805	(\$79)
Manufactured Home	2.34	\$723	\$805	(\$82)

- [1] TischlerBise. 2014 Impact Fee Land Use Assumptions  
 [2] City of Evans, City Code Title 15 Buildings and Construction

<b>Nonresidential Capital Costs</b>	<b>Per Trip</b>
Fire Facilities	\$18.37
Fire Vehicles	\$52.22
Impact Fee Study	\$0.07
<b>GROSS CAPITAL COST</b>	<b>\$70.66</b>
<b>Revenue Credit</b>	<b>\$0.00</b>
<b>NET CAPITAL COST</b>	<b>\$70.66</b>

<b>Impact Fee Schedule</b>			<b>Impact Fee per Square Foot of Floor Area</b>		
<b>Nonresidential Land Use</b>	<b>Trips [3]</b>	<b>Trip Rate Adj. Factors</b>	<b>Proposed Fee</b>	<b>Current Fee [4]</b>	<b>Increase (Decrease)</b>
	<i>(per 1,000 SF)</i>		<i>(Per Square Feet of Floor Area)</i>		
Commercial	42.70	33%	\$1.00	\$0.46	\$0.54
Office/Institutional	11.03	50%	\$0.39	\$0.46	(\$0.07)
Industrial/Flex	6.97	50%	\$0.25	\$0.46	(\$0.21)

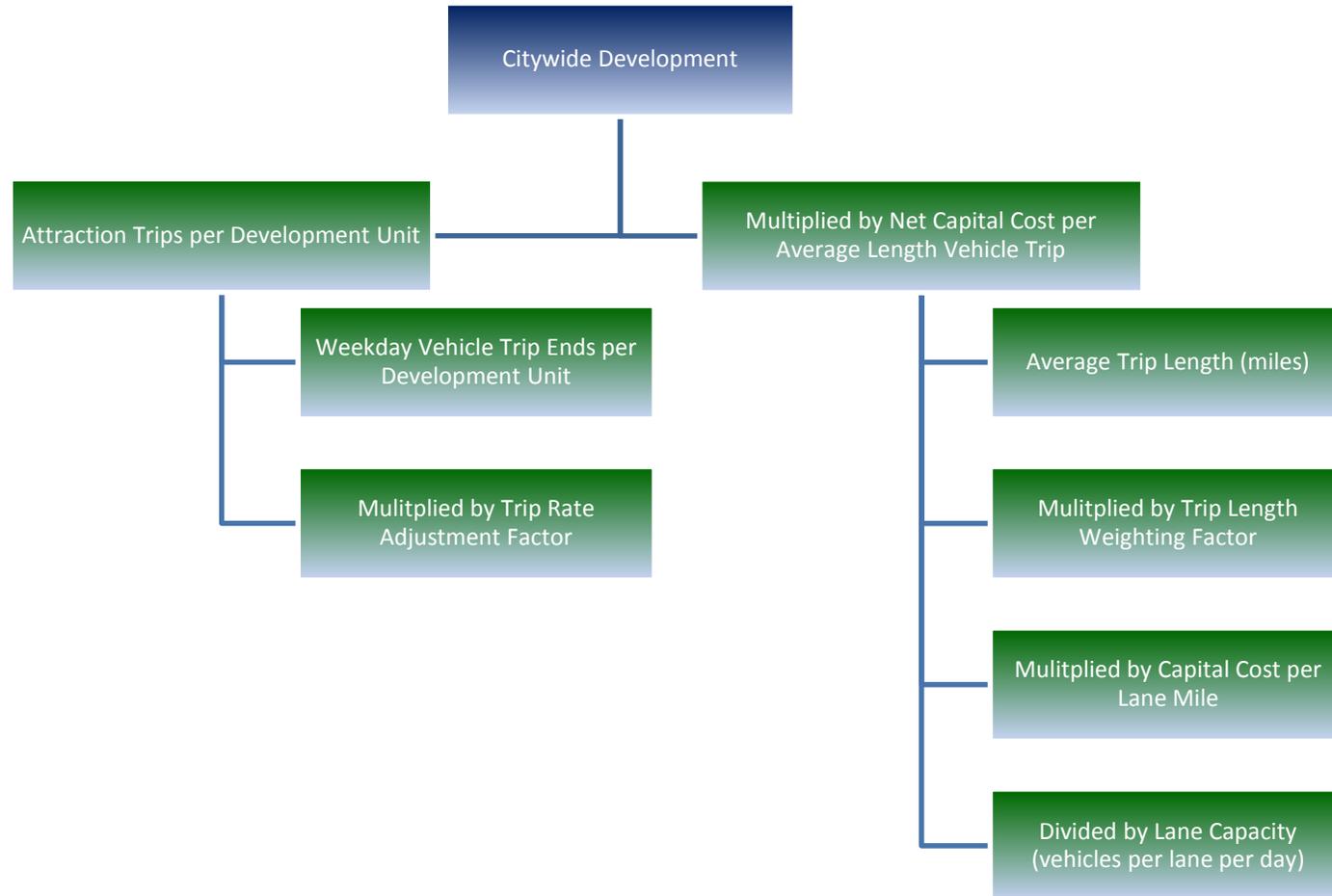
- [3] Institute of Transportation Engineers. (2012). Trip Generation Manual 9th Edition.  
 [4] City of Evans, City Code Title 15 Buildings and Construction

# Fire/EMS Demand

	Demand Units	Facilities (square feet)	Apparatus (units)
Res LOS	Units Per Person	0.62405	0.00034
Nonres LOS	Units Per Vehicle Trip	0.14507	0.00008
	Average Cost per Component	\$360	\$231,250

		Projected Demand (Rounded)			
		Projected Demand Units		Facilities (square feet)	Apparatus (units)
		Persons	Nonres. Vehicle Trips		
Base	2013	19,200	18,130	14,612	8
1	2014	19,584	18,326	14,880	8
2	2015	19,976	18,536	15,155	8
3	2016	20,375	18,749	15,435	8
4	2017	20,783	18,955	15,720	9
5	2018	21,198	19,168	16,009	9
6	2019	21,622	19,382	16,305	9
7	2020	22,055	19,604	16,608	9
8	2021	22,496	19,821	16,914	9
9	2022	22,946	20,044	17,227	9
10	2023	23,405	20,268	17,546	10
<b>Ten Yr Total</b>		<b>4,205</b>	<b>2,138</b>	<b>2,934</b>	<b>2</b>
<b>Cost of Facilities</b>		<b>\$1,056,240</b>			
<b>Cost of Vehicles</b>					<b>\$462,500</b>
<b>TOTAL</b>					<b>\$1,518,740</b>

# Transportation



# Transportation

## Street Level Of Service and Capital Costs

Lane Miles Needed to Maintain LOS	5.32
Cost Per Lane Mile	\$1,310,261
Total Cost of System Improvements	\$6,964,239
Net Increase in VMT	42,521
<b>Cost per VMT</b>	<b>\$163.78</b>
Impact Fee Study Cost per VMT	\$0.59
<b>NET CAPITAL COST</b>	<b>\$164.38</b>

## Residential Schedule

	[A]	[B]	[C]	[D]	VMT = [A] x [B] x [C] x [D]			
	Weekday Vehicle Trip Ends	Trip Rate Adjustment Factors	Avg Miles per Veh. Trip on System	Trip Length Weighting Factors	VMT	Proposed Impact Fee	Current Fee	Increase (Decrease)
Unit Type					per unit	(Per Housing Unit)		
Single Unit	9.10	65%	3.67	121%	26.27	\$4,317	\$1,894	\$2,423.00
2+ Unit	7.40	65%	3.67	121%	21.36	\$3,511	\$1,306	\$2,205.00
Manufactured Home	9.10	65%	5.22	121%	37.36	\$6,141	\$1,894	\$4,247.00

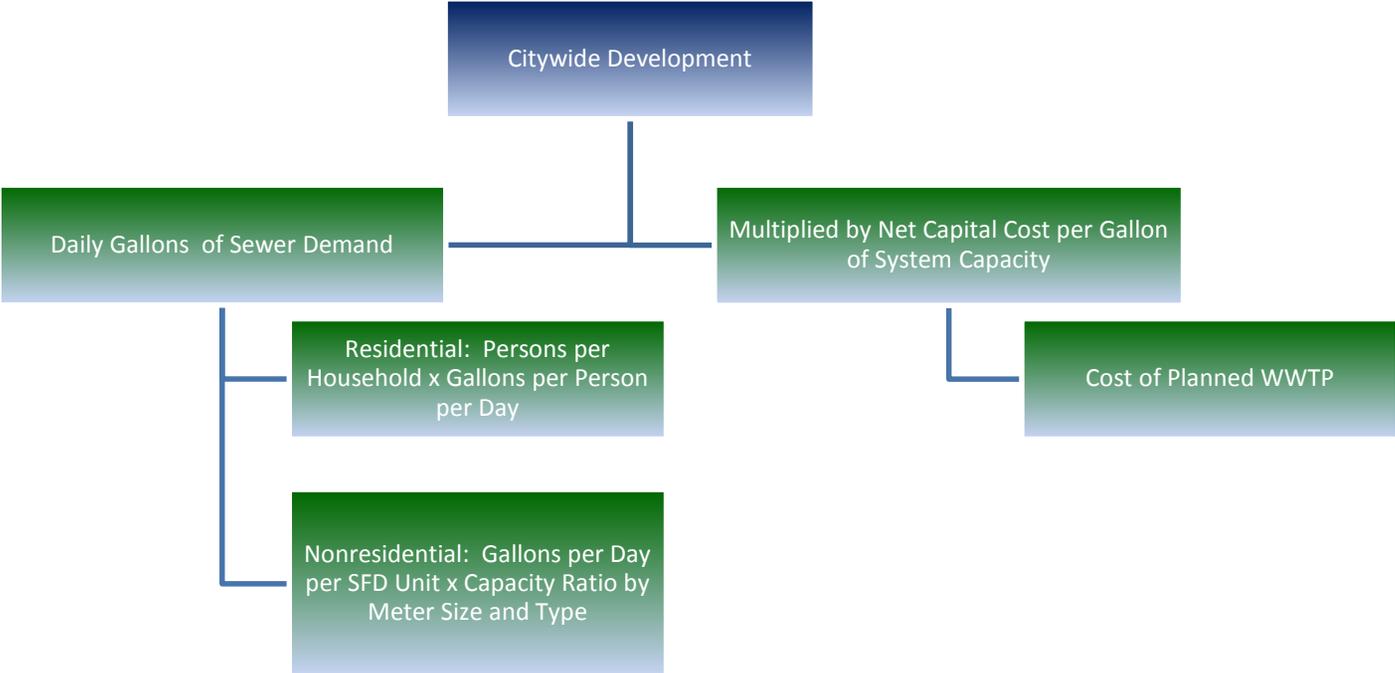
## Nonresidential Schedule

	[A]	[B]	[C]	[D]	VMT = [A] x [B] x [C] x [D]			
	Weekday Vehicle Trip Ends	Trip Rate Adjustment Factors	Avg Miles per Veh. Trip on System	Trip Length Weighting Factors	VMT	Proposed Impact Fee	Current Fee	Increase (Decrease)
	(Per 1,000 sq. ft.)				(Per Square Foot of Floor Area)			
Commercial	42.70	33%	3.67	66%	34.13	\$5.61	\$2.36	\$3.26
Office/Institutional	11.03	50%	3.67	73%	14.78	\$2.42	\$1.82	\$0.60
Industrial	6.97	50%	3.67	73%	9.34	\$1.53	\$0.55	\$0.98

# Transportation Capital Plan

<i>Location</i>	<i>From</i>	<i>To</i>	<i>Lanes 2014</i>	<i>Future Lane Miles</i>	<i>Miles</i>	<i>LaneMi Increase</i>	<i>City Cost</i>	<i>\$/LnMi</i>
35th Ave Widening	Prairie View	49th St	2	4	0.7	1.4	\$1,700,000	\$1,246,667
35th Ave	CR 394	Hwy 85	2	4	3.0	6.0	\$7,000,000	\$1,169,620
23rd Ave	42nd St	49th St	2	4	0.5	0.9	\$400,000	\$422,400
47th Ave Widening	32nd St	37th St	2	4	0.5	1.0	\$750,000	\$754,286
35th Ave Widening	Prairie View	49th St	2	4	0.7	1.4	\$1,700,000	\$1,246,667
37th St Widening	47th Ave	65th Ave	2	4	1.5	3.0	\$3,200,000	\$1,056,000
65th Ave Widening	37th St	N City Limits	2	4	0.5	1.0	\$800,000	\$804,571
49th St Widening	35th Ave	65th Ave	2	4	3.0	2.7	\$7,860,795	\$2,911,406
65th Ave Widening	49th St	54th St	2	4	0.8	1.5	\$1,900,000	\$1,254,000
37th St Widening	35th Ave	47th Ave	2	4	1.1	2.3	\$3,363,637	\$1,480,000
65th Ave Widening	37th Ave	S City Limits	2	4	1.0	2.0	\$1,504,545	\$749,434
23rd Ave Widening	37th St	42nd St	2	4	0.5	1.0	\$2,273,864	\$2,286,858
Two Rivers Parkway	37th St	49th St	2	4	1.0	2.0	\$1,488,637	\$744,319
35th Ave Widening	37th St	Prairie View	2	4	0.3	0.5	\$1,040,000	\$1,961,143
<b>Subtotal</b>						<b>26.7</b>	<b>\$34,981,478</b>	<b>\$1,310,261</b>
<b>Cost Per Lane Mile</b>							<b>\$1,310,261</b>	

# Wastewater



# Wastewater

## Level Of Service

Gallons per Person per Day  
 Capital Cost per Gallon-Treatment  
 Capital Cost per Gallon-Collection  
 Net Capital Cost per Gallon

## Standards:

	90
	\$10.00
	\$6.06
	<b>\$16.06</b>

## Residential Impact Fees per Housing Unit

Unit Type	Persons per Housing Unit	Impact Fee Per Housing Unit	Current Fee	Increase (Decrease)
Single Unit	3.01	\$4,354	\$4,024	\$330
2+ Unit	2.35	\$3,400	\$4,024	(\$624)
Manufactured Home	2.34	\$3,383	\$4,024	(\$641)

## Nonresidential

### Meter Size (inches)\*

Meter Size (inches)*	Capacity Ratio
0.75 Displacement	1.00
1.00 Displacement	1.70
1.50 Displacement	3.30
2.00 Compound	5.30
3.00 Compound	10.70
4.00 Compound	16.70

Per Meter Proposed Fee	Current Fee	Increase (Decrease)
\$3,400	\$4,024	(\$624)
\$7,394	\$6,721	\$673
\$14,354	\$13,401	\$953
\$23,054	\$21,450	\$1,604
\$46,544	\$42,940	\$3,604
\$72,644	\$67,086	\$5,558

\* Fees for meters larger than four inches will be based on annualized average day demand and the net capital cost per gallon of capacity.

# Wastewater Capital Plan

<i>Wastewater Treatment</i>	<i>Total Capacity (MGD)</i>	<i>Cost</i>	<i>Cost per Gallon</i>
New Wastewater Treatment Plant	3.00	\$30,000,000	\$10.00

<i>Collection</i>	<i>Total Capacity (MGD)</i>	<i>Original Cost</i>	<i>Cost per Gallon</i>
40th and Pueblo Street-Phase I		\$1,502,000	
43rd Street		\$2,080,000	
37th Street Area		\$617,000	
49th Street		\$3,684,000	
	1.30	\$7,883,000	\$6.06

# Fee Summary

## Maximum Supportable Impact Fees

Land Use Category	Parks	Police	Fire/Rescue	Transportation	Wastewater	PROPOSED Impact Fee
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### Residential

	Per Housing Unit					
Single Unit	\$4,594	\$274	\$930	\$4,317	\$4,354	\$14,469
2+ Unit	\$3,587	\$214	\$726	\$3,511	\$3,400	\$11,438
Manufactured Home	\$3,569	\$212	\$723	\$6,141	\$3,383	\$14,028

### Nonresidential

	Per Square Foot of Floor Area					
Commercial	\$0.00	\$0.28	\$1.00	\$5.61		\$6.89
Office/Institutional	\$0.00	\$0.11	\$0.39	\$2.42		\$2.92
Industrial/Flex	\$0.00	\$0.07	\$0.25	\$1.53		\$1.85

Utility Meter Size and Type	PROPOSED Wastewater Impact Fee
-----------------------------	--------------------------------

### Meters

0.75"	Displacement	\$3,400
1.00"	Displacement	\$7,394
1.50"	Displacement	\$14,354
2.00"	Displacement/Compound	\$23,054
3.00"	Displacement/Compound	\$46,544
4.00"	Displacement/Compound	\$72,644



# CITY OF EVANS STORMWATER MANAGEMENT PLAN

REQUEST FOR PROPOSALS

## I. INTRODUCTION

The City of Evans, Colorado is seeking a qualified professional planning firm or consultant to facilitate a community planning process that culminates in the development of a Stormwater Master Plan (as described under “Project Objective” below). The planning study is funded by disaster recovery money through the Community Development Block Grant program (CDBG-DR) awarded to the City by the Colorado Department of Local Affairs. The selected consultant will facilitate discussions with city staff, engage the public on storm water management issues/concerns, and propose and prioritize improvements to the existing system. They will also aid the City of Evans in creating best practice standards for future residential, commercial, industrial and institutional development within the City, addressing system maintenance and management needs, creating cost estimates for our capital improvement plan and summarizing options for funding the implementation of the master plan.

### STUDY AREA DESCRIPTION

The map shown in “Figure A” shows the boundaries of the study area for this project.

The primary focus of work will be in annexed and developed portions of the City. Secondary focus will be on annexed and non-annexed land East of Two Rivers Parkway and north of the River. Only general recommendations will be given for the remaining land in the Urban Growth Area.

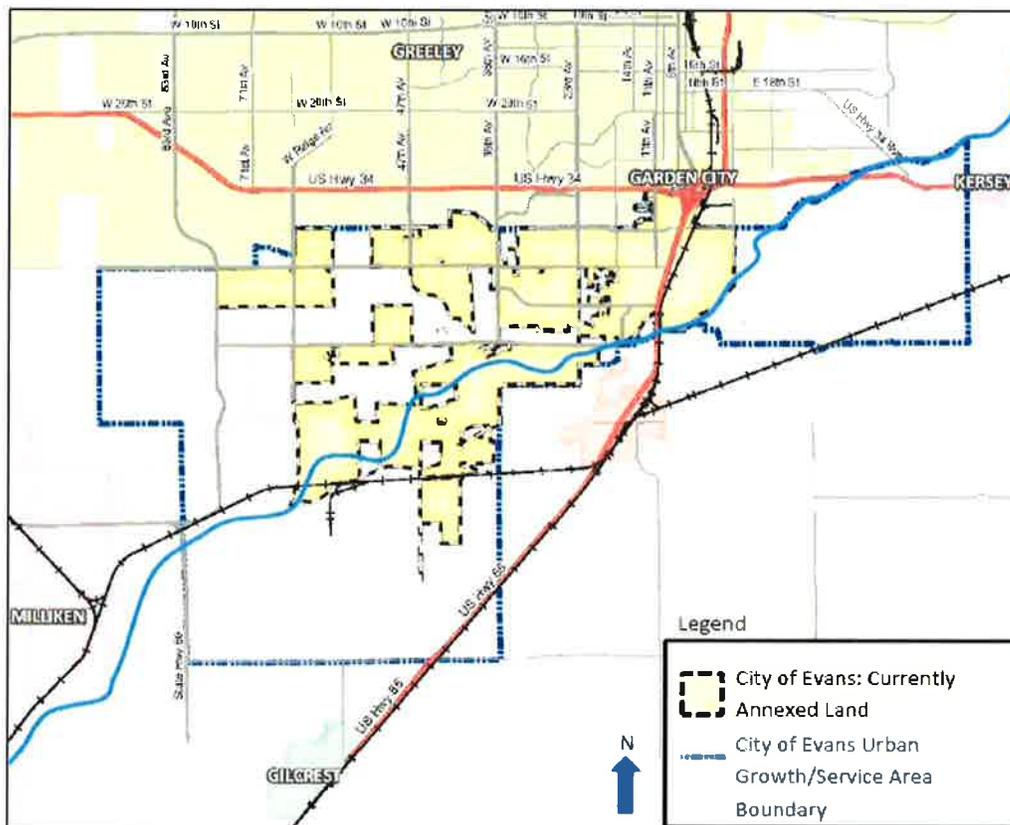


Figure A: Map of Evans with Urban Growth Area

## II. PURPOSE AND GOALS

In March 1997 the City of Evans approved a Comprehensive Drainage Study for the community. This was the last time that the City's stormwater system was given a full examination. Since 1997 the city has more than doubled in size in both population and area. The city has grown both within the boundaries set forward in the previous study and has grown significantly in areas outside the boundary as well. Since completing the plan, we have seen new commercial developments with their associated parking lots and impervious surfaces spring up around town, constructed new stormwater infrastructure and made changes and upgrades to old systems. Time and growth have dictated that we now provide a new holistic look at our stormwater management system. Additionally the South Platte River flooding of 2013 and the damage associated with it reinforced our need to plan for the future with sustainability and resiliency in mind.

The purpose of this plan is to provide a comprehensive review and analysis of the existing stormwater system, to recommend improvements to ensure current and future demands are met, and to maintain the City's sustainability goals. This report will provide further detailed information of where the critical repairs in the City's infrastructure are most warranted and what alternatives would be best suited for the City. This plan will prioritize the environmental, fiscal, operations and maintenance needs for the City of Evans over the next 10+ years. The improvements suggested in this report will incorporate regulatory impacts, sustainability (based on best management practices), sustainable infrastructure, operations and maintenance, and cost estimates which will be prioritized into a Capital Improvements Plan (CIP)

While the stormwater management plan will provide detailed mapping and analysis of all drainage ways and stormwater infrastructure within the City of Evans and its growth area, a special focus will need to be placed on the following areas:

- The Highway 85 corridor – Identified in Northeast Colorado Regional Hazard Mitigation Plan as an area of concern for street flooding in a major storm event.
- The Riverside Neighborhood east of Highway 85 where there is currently a lack of stormwater infrastructure. This area saw a great deal of street flooding during the heavy rains preceding the 2013 flood. It will specifically address how to best serve the stormwater needs of the riverside neighborhood without putting a significant strain on community fiscal resources.
- Protecting the Evans Ditch from stormwater infiltration.
- Impacts of the flood on stormwater infrastructure and drainage ways along the South Platte River.

This project seeks to address multiple objectives for the city including

- Hazard Mitigation
- Quality of Life
- Economic and Community Development
- Fiscal Sustainability
- Flood Resiliency

### III. SCOPE OF SERVICES

The selected consultant will be expected to provide a full range of planning and engineering services in order to meet the goals of the city listed above. This scope of services will include, but not be limited to the following:

- **Meeting and engaging with all necessary city staff** - In order to fully understand existing infrastructure and determine areas of concern within the city, the consultant team will need to meet extensively with city staff including public works, planning, finance, parks and recreation, fire, police, etc.
- **Public engagement** – While much of this planning process will be directed by the knowledge and experience of city staff, planning should never occur without the input of the community. Therefore, some level of public engagement should be considered in this planning process. That input may be garnered from community meetings, community surveys, or other means deemed appropriate by the planning team. The consultant should address how they intend to engage the public in their proposal. This proposed public involvement plan will be reviewed and approved during the negotiation of a final contract.
- **Mapping** – The City of Evans has very limited mapping resources. The planning/engineering team will need to consider how they will provide adequate mapping for hydrologic analysis of existing drainage ways. Additional on the ground analysis may be necessary to fully map and analyze all current infrastructure and drainage ways, including facilities on private property. As part of the process, the City would like to work with the consultant to acquire GIS data sets created during the process for future use.
- **Coordination with other planning efforts** – The City is currently engaged in several planning, financing and infrastructural projects including, but not limited to, the Riverside Neighborhood Master Plan, a complete overhaul of the wastewater treatment system, re-design and reconstruction of Riverside Park, an impact fee study, and a restoration master plan for the South Platte River. These and all existing plans will need to be taken into consideration in this planning effort.
- **Reporting** – The consultant team should provide a 50% review copy to city staff, a 75% draft plan for public comment and following an appropriate comment period a full report to be approved by the Water and Sewer Board as well as City Council. The final report shall fully address all items listed below as well as feedback received from both city staff and public comment.
- **Inventory and Analysis of Existing Public and Private Infrastructure** – A comprehensive evaluation of the existing facilities related to stormwater runoff, especially those impacted by the 2013 flooding. This inventory will involve coordination with previous and ongoing planning efforts of the City of Evans and where necessary those of neighboring jurisdictions.
- **Proposed System Improvements** – Recommended improvements to the existing infrastructure analyzed in the above section. Alternatives will be evaluated to determine the most environmentally conscious, economical, and sustainable solution in accordance with the City's goals.
- **Sustainability** – The City's goals are to implement low impact design solutions and integrated management practices that serve the stormwater needs of the city while improving quality of life, and lowering the impacts on town resources and the surrounding environment.
- **Resilience** - Incorporate resiliency by tracking the following items in the event of 25, 50 and 100 yr. storms.
  - # and location of properties currently at risk of localized flooding and building damage
  - List of public facilities (e.g. playgrounds, bike trails, buildings, equipment storage, pump houses, etc) at risk of flooding
  - Locations and number of miles of roadway potentially impacted by street flooding and/or flooding of drainage ways

- **Capital Improvement Plan** – Conceptual level cost estimates will be included as part of the capital improvement plan for projects identified in the planning efforts. Projects are prioritized and categorized into near-term (0-3 years), medium-term (4-7 years), and long-term (7+ years) improvements.
- **Suggested Development Standards** – Recommended best management practices for new developments shall be provided in order to ensure that new growth and its associated infrastructure best integrates into the existing system. Furthermore, specific minimum design and specification criteria shall be provided for analysis of future storm drainage facilities.
- **System Maintenance** – A summary of system maintenance items to be frequently addressed in order to maintain the functionality of the stormwater system.
- **System Management Requirements** – A summary of system requirements to maintain the highest order of efficiencies from the proposed improvements in order to accommodate future needs and generations well in to the future.
- **Funding Options**– A summary of the available grants and loan options from various agencies.

**Schedule:**

The city of Evans is anticipating a 14 to 16 month schedule for this planning project and hopes to have planning activities wrapped up by mid-2016. Following the RFP process and awarding of this project the selected consultant will work with city planning staff to develop an appropriate schedule for this project.

**Firm Selection:**

After receiving 5 proposals and interviewing our top two candidates, City staff selected Muller Engineering out of Lakewood, CO as the consultant on this project. We felt that their previous experience in the Highway 85 corridor and in the older portions of Lakewood (very similar in many ways to East Evans) made them an excellent candidate for this work. Work will be performed under the Leadership of Bruce Behr project engineer.

**Cost:**

The CDBG-DR grant for this project is for \$265,000. Our contract with Muller Engineering is for \$255,000 leaving \$10,000 for public engagement activities and any minor additions to the scope of work that may arise. The City is not obligated to spend any money on this project.