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PLANNING COMMISSION WORKSHOP AGENDA
CITY HALL, 250 NORTH 5TH STREET
COMMUNITY DEVELOPMENT CONFERENCE ROOM

THURSDAY, SEPTEMBER 19, 2019 @ 12:00 PM

Call to Order - 12:00 PM

1. Discussion regarding Impact Fees - Fire, Police, Municipal Facilities, Parks and Transportation

2. Review Forthcoming Agenda

Other Business

Adjournment

Grand Junction City Council

Workshop Session

Item #1.

Meeting Date: September 19, 2019

Presented By: Greg Caton, City Manager, Trent Prall, Public Works Director

Department: Community Development

Submitted By: Tamra Allen, Community Development Department Director

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Information

SUBJECT:

Discussion regarding Impact Fees - Fire, Police, Municipal Facilities, Parks and Transportation

EXECUTIVE SUMMARY:

A workshop on impact fees was held on August 19, 2019. The consultant (Carson Bise of TischlerBise) for the fee study for Parks, Fire, Police and Municipal Facilities presented the fee study and the methodology for determining the fiscal impact (fees) that are assigned growth. This fee amount is the amount needed to be paid by development in order to maintain the current level of service for City capital needs such as new parks, new police annex (evidence), future fire stations and future administration buildings and shops.

BACKGROUND OR DETAILED INFORMATION:

A workshop on impact fees was held on August 19, 2019. The consultant (Carson Bise of TischlerBise) for the fee study for Parks, Fire, Police and Municipal Facilities presented the fee study and the methodology for determining the fiscal impact (fees) that are assigned growth. This fee amount is the amount needed in order to maintain the current level of service for City capital needs such as new parks, new police annex (evidence), future fire stations and future administration buildings and shops.

Staff had been working with various stakeholders on the cumulative fees (including Transportation) since mid-May when the hearing for the adoption of updated Transportation Capacity Fees (TCP) was tabled due to a request by industry representatives to review all the fees cumulatively. Staff met with stakeholders multiple times between May and the end of July to discuss and negotiate the fee structure,

keeping in mind that any fee would need to be defensible and its methodology aligned with a fee study.

Based on these discussions and work sessions, negotiations resulted in several deviations from the original fee study, based on the direct input from stakeholders. These changes were founded on additional work and analysis provided by either TischlerBise or Duncan Associates to ensure the methodology for the fee was legally defensible. The changes included:

- Creating a fee for single-family that was stratified by size. This resulted in a decreased fee for smaller units to address issues expressed about affordability/attainability of homes based on price.

- Reducing the Multi-family TCP to be consistent with the smallest single-family residential category to ensure parody between use types.

- Compressing TCP fees for commercial into six categories. This resulted in a significant decrease in the collection of commercial TCP for specific uses such as medical offices.

- Also, as a result of the passage of 2B, costs for vehicles for police were removed from the capital needs calculation.

The discussion with stakeholders also included a proposed implementation schedule. The implementation schedule remained the same as the originally proposed schedule, as follows:

a. Fee increases for Parks and TCP will begin January 1, 2020

b. New Fee Implementation (Fire, Police, Municipal Facilities) will begin January 1, 2020

c. The City will implement the full Parks, Fire, Police, Municipal Facilities fees over 3 years in equal annual increases. The City will implement the full TCP fee over three years in equal semi-annual increases.

d. For Single-Family (detached and attached) dwelling units, full fees will be collected at time of Planning Clearance. Staff recommends fees no longer will be deferred until time of Certificate of Occupancy.

e. For Multi-Family dwelling units, excluding those intended to be separate fee simple ownership (e.g. Duplex, Townhomes, Condominiums), implement the full fee.

f. For Multi-family and Non-Residential the fee would be established at time of complete application submittal and would be valid so long the project commenced construction within two years from the date of application submittal.

g. For TCP fees, after 3 years the fee will increase annually by a 10-year rolling average of CDOT's Construction Cost Index

h. For all other fees, after 3 years the fee will increase annually by the Denver-Aurora-Lakewood Consumer Price Index.

i. The City will retain its Redevelopment Area boundary that provides for significant reduction in fees equivalent to 50% of the fee in the area, then dividing by the number of building floors.

The requirement for the construction of safety improvements (eg. turn lanes) on roadways has also been a part of the ongoing. Staff is recommending the following:

a. Commencing January 1, 2021, development in which traffic warrants safety improvements (eg. Turn lane and deceleration lanes) for a development (as determined by a traffic study or similar methodology) will be required to make necessary safety improvements.

b. Should the safety improvements benefit future adjacent development, a cost reimbursement agreement may be executed on behalf of the developer for a period up to 15 years.

An opinion letter provided to the City prior to the August 19, 2019 workshop included a new request from stakeholders to:

- Not adopt fees for Fire, Police and Municipal Facilities

- Adopt half of the proposed fee for Parks ($1,605 to $812 per SF unit)

- Adopt half of the increase for TCP for all residential and commercial uses (Table attached)

As recommended by City Council at the August 19, 2019 workshop, Staff met with the stakeholder group to discuss the opinion letter. No additional changes to the Staff recommended fee schedule were proposed.

Update and adoption of these fees will require modification to the City's Zoning and Development Code. Review and recommendation by the Planning Commission is part

of the required adoption process. Looking forward, Staff is currently looking to schedule the review and recommendation of the full slate of impact fees at a Planning Commission meeting on October 8th. This would then be scheduled for a City Council meeting on October 16th.

Impact Fees

Impact fees are one-time payments for new development's proportionate share of the capital cost of infrastructure. TischlerBise, on behalf of the City, has drafted an impact fee study for fire, police, municipal facilities and parks and recreation pursuant to the State enabling legislation and consistent with Colorado Revised Statutes regarding the purpose and methodology related to calculation of impact fees. The study specifically addresses the City of Grand Junction's Municipal Facilities, Fire, Police, and Parks & Recreation facilities.

Impact fees have limitations and should not be regarded as the total solution for infrastructure funding. Rather, they are one component of a comprehensive funding strategy to ensure provision of adequate public facilities. Impact fees may only be used for capital improvements or debt service for growth-related infrastructure. They may not be used for operations, maintenance, replacement of infrastructure, or correcting existing deficiencies.

The regional Grand Valley Metropolitan Planning Organization (GVMPO) completed an update to their 2002 Transportation Impact Fee study in Fall of 2018. The report was authored by Duncan and Associates and recommended a significant increase in transportation impact fees, known as Transportation Capacity Payments (TCP).

In July of 2018, the City Council directed staff to engage a separate consultant to conduct a nexus study for development impact fees for Fire, Police, Municipal Facilities and Parks. The City engaged the consultant TischlerBise in this effort and a report was completed in April 2019. The report found that a substantial fee could be assigned to growth's share of maintaining capacity in the capital facilities related to Fire, Police and Municipal Facilities. These are areas in which the City does not currently collect impact fees. The report also recommended a significant increase in the Parks Impact Fee which was last increased over 34 years ago. A separate memo also produced by TischlerBise also recommended substantial increases to the City's Water Plant Investment Fee, a fee that also had not been increased for approximately three decades.

The Fee Study provides the following supportable fee schedule:

Residential (Per Unit)

Type	Fire	Police	Parks and Recreation	Municipal Services	Maximum Supportable Fee	Current Fee	Difference
Single-Family	$710	$305	$1,605	$785	**$3,405**	**$225**	$3,180
Multi-Family	$467	$200	$1,055	$516	**$2,238**	**$225**	$2,013

Nonresidential (Per 1,000 square feet)

Type	Fire	Police	Parks and Recreation	Municipal Services	Maximum Supportable Fee	Current Fee	Difference
Retail/Commercial	$489	$206	$0	$471	**$1,167**	**$0**	$1,167
Office/Institutional	$191	$81	$0	$598	**$870**	**$0**	$870
Industrial	$66	$28	$0	$234	**$328**	**$0**	$328
Warehousing	$34	$14	$0	$69	**$117**	**$0**	$117

FISCAL IMPACT:

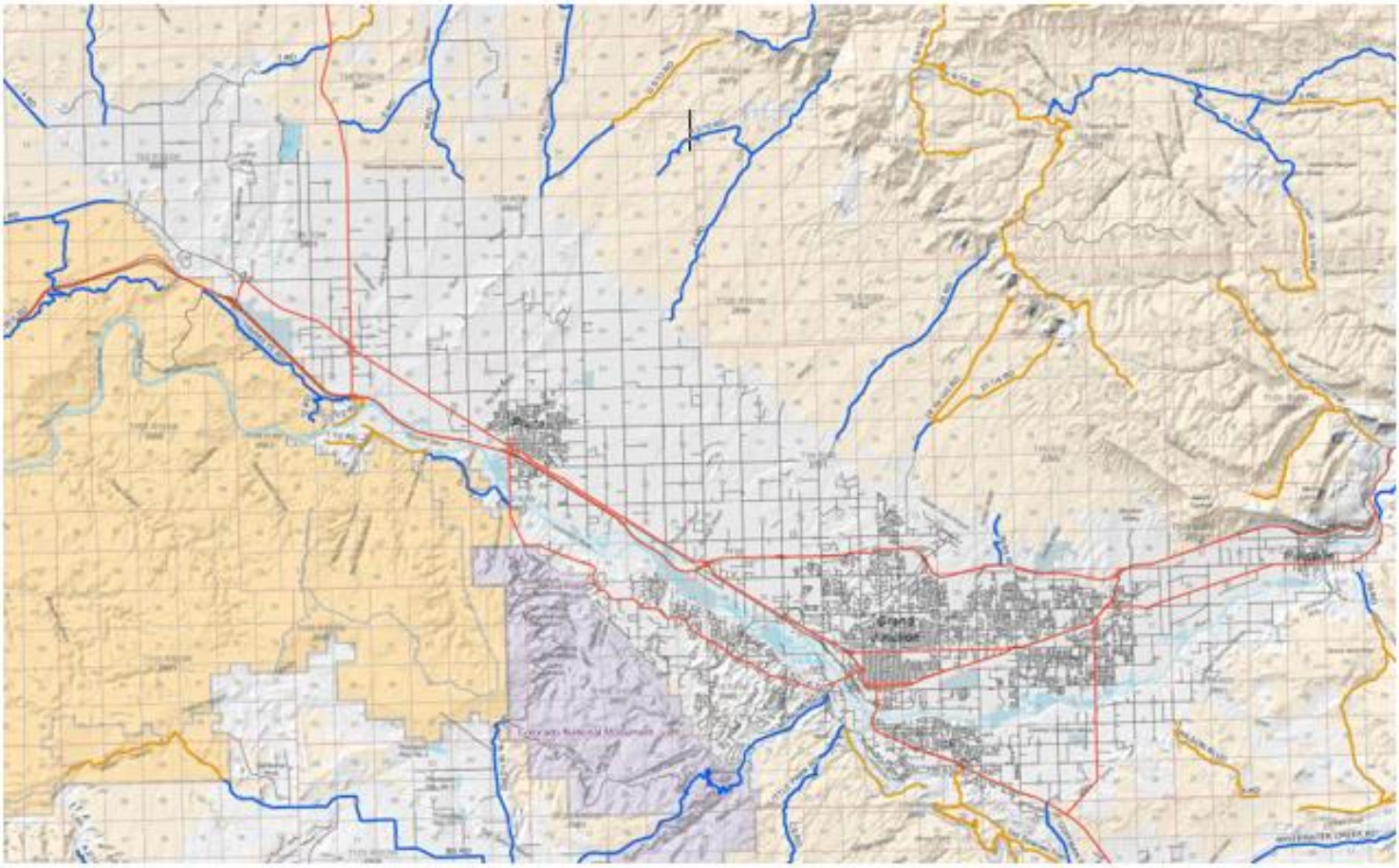
Currently the only impact fee the City charges is for Parks on residential development at $225 per unit for a total estimated revenue of $125,000 per year. At full implementation total annual revenue from Parks ($874,000) , Fire ($442,000), Police ($190,000), and Facilities ($524,000) is estimated at $2 million per year.

SUGGESTED ACTION:

For review and discussion.

Attachments

1. Grand Junction CO Dev Trransportation Impact Fee Study 2019_FINAL
2. Grand Junction CO Dev Fire Police Facilities Parks Impact Fee Study 4.10.19
3. City Council Presentation for 8-19-19 Workshop - Tischler Bise
4. Police Fire MF Parks Implementation Schedule
5. TIF Implementation Schedule
6. Comparison Industry to Staff Proposed
7. Stakeholder Position letter on impact fees
8. Fee Comparison - GJARA_MetroStudy
9. Fee Comparison - TischlerBise



Transportation Impact Fee Study

for Mesa County, Colorado

prepared by

Duncan Associates

November 2018

with minor revisions February 2019

Table of Contents

prepared by Duncan Associates
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List of Tables

EXECUTIVE SUMMARY

This is a slightly revised version of the November 28, 2018 study, which adds some alternative residential land use categories. Specifically, it (1) adds the option of single-family detached fees for four unit size categories, (2) breaks down the multi-family category into three potential subcategories (multi-family low-rise, multi-family mid-rise, and townhome), and (3) adds two senior adult housing categories (detached and attached). The changes modify Tables 7 and 17, and add a new Appendix E. In all other respects, the study is unchanged.

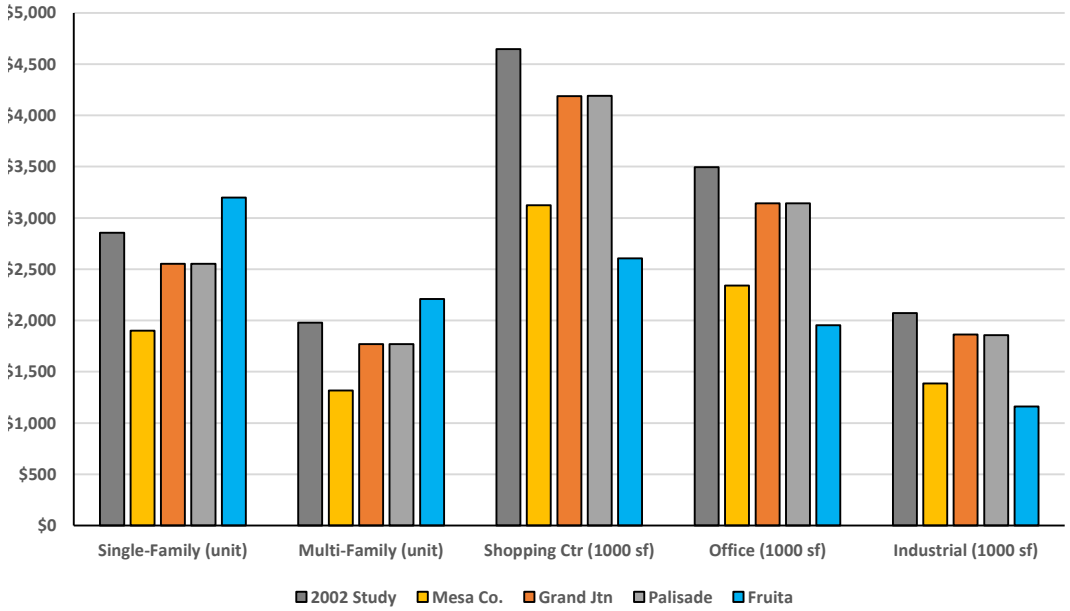
The purpose of this project is to assist Mesa County and participating municipalities (Grand Junction, Palisade and Fruita) by updating the county-wide transportation impact fees study. The previous study was prepared in 2002. The fees calculated in that study and the fees currently being charged by the participating jurisdictions are summarized in Table 1, and are illustrated in Figure 1 on the following page for five major land use categories. All jurisdictions originally adopted the fees at a lower rate than calculated in the 2002 study, and some have adjusted the fees periodically for inflation. Except for Fruita's residential fees, the current fees being charged are lower than the fees calculated 16 years ago.

Table 1. Current Transportation Impact Fees

Land Use	Unit	2002 Study	Mesa County	Grand Junction	Palisade	Fruita
Single-Family Detached	Dwelling	$2,854	$1,902	$2,554	$2,554	$3,200
Multi-Family	Dwelling	$1,979	$1,317	$1,769	$1,769	$2,208
Mobile Home/RV Park	Pad	$1,435	$958	$1,284	$1,284	$795
Hotel/Motel	Room	$2,687	$1,795	$2,407	$2,407	$1,494
Shopping Center (0 to <100k sf)	1,000 sf	$4,646	$3,124	$4,189	$4,190	$2,606
Shopping Center (100k to <249k sf)	1,000 sf	$4,393	$2,935	$3,933	$3,935	$2,447
Shopping Center (250k to <500k sf)	1,000 sf	$4,267	$2,843	$3,805	$3,815	$2,368
Shopping Center (500k sf or more)	1,000 sf	$3,942	$2,627	$3,525	$3,521	$2,193
Auto Sales/Service	1,000 sf	$4,232	$2,824	$3,780	$3,785	$2,352
Bank	1,000 sf	$7,117	$4,744	$6,359	$6,365	$3,957
Convenience Store w/Gas Sales	1,000 sf	$10,191	$6,818	$9,143	$9,149	$5,689
Golf Course	Hole	$6,578	$4,439	$5,951	$5,954	$3,702
Health Club	1,000 sf	$3,813	$2,542	$3,422	$3,410	$2,129
Movie Theater	1,000 sf	$11,834	$7,889	$10,574	$10,584	$6,578
Restaurant, Sit Down	1,000 sf	$5,757	$3,838	$5,159	$5,150	$3,210
Restaurant, Fast Food	1,000 sf	$12,846	$8,596	$11,544	$11,532	$7,182
Office, General (0 to <99k sf)	1,000 sf	$3,494	$2,342	$3,141	$3,142	$1,954
Office, General (100 sf or more)	1,000 sf	$2,973	$1,997	$2,682	$2,675	$1,668
Office, Medical	1,000 sf	$9,807	$6,607	$8,862	$8,865	$5,514
Hospital	1,000 sf	$4,554	$3,069	$4,112	$4,117	$2,558
Nursing Home	1,000 sf	$1,276	$860	$1,149	$1,153	$715
Church	1,000 sf	$2,184	$1,462	$1,967	$1,961	$1,224
Day Care Center	1,000 sf	$4,553	$3,052	$4,086	$4,094	$2,542
Elementary/Secondary School	1,000 sf	$713	$478	$639	$641	$397
Industrial Park	1,000 sf	$2,073	$1,385	$1,864	$1,857	$1,160
Warehouse	1,000 sf	$1,477	$987	$1,328	$1,324	$826
Mini-Warehouse	1,000 sf	$512	$344	$460	$463	$286

Source: 2002 study fees from Duncan Associates, *Transportation Impact Fee Study for Mesa County, Colorado*, September 2002; Mesa County fees from resolution adjusting the fees for inflation adopted January 8, 2018; Palisade fees from Town of Palisade, February 5, 2018; Fruita fees from 2018 fee schedule from City of Fruita, February 5, 2018.

Figure 1. Existing Transportation Impact Fees, Mesa County



Note: Shopping center and office fees based on 100,000 sq. ft. building

Update Overview

This study retains the general methodology used in the 2002 study (see discussion of methodology in Appendix D). The original study calculated regional and non-regional fees, under the expectation that the participating jurisdictions would pool the regional fees and use them to improve regional roadways. Instead, the jurisdictions are spending the fees they collect to improve roads within their jurisdiction, regardless of the regional/non-regional road distinction. This update does not calculate separate fees for the two categories.

Participating jurisdictions can adopt the updated fees at any level up to 100% of the amounts calculated in this study. The adoption percentage should be the same for all land uses to retain the proportionality of the fees to the impact on the major roadway system. If disproportionate reductions are made in fees assessed on selected types of development, the shortfall should be made up with general fund revenue, and a revenue credit should be calculated to avoid non-favored development paying more than its fair share (see Proportionality section in Appendix C).

This study calculates fees that exclude right-of-way (ROW) costs, both to keep the fees from increasing so much and to give jurisdictions the option not to provide developer credits for ROW exactions. However, if a jurisdiction opts to not give developers credit against the fees for required ROW dedications, that jurisdiction should consider restricting the funds collected from being spent on ROW (see Developer Credit section of Appendix C).

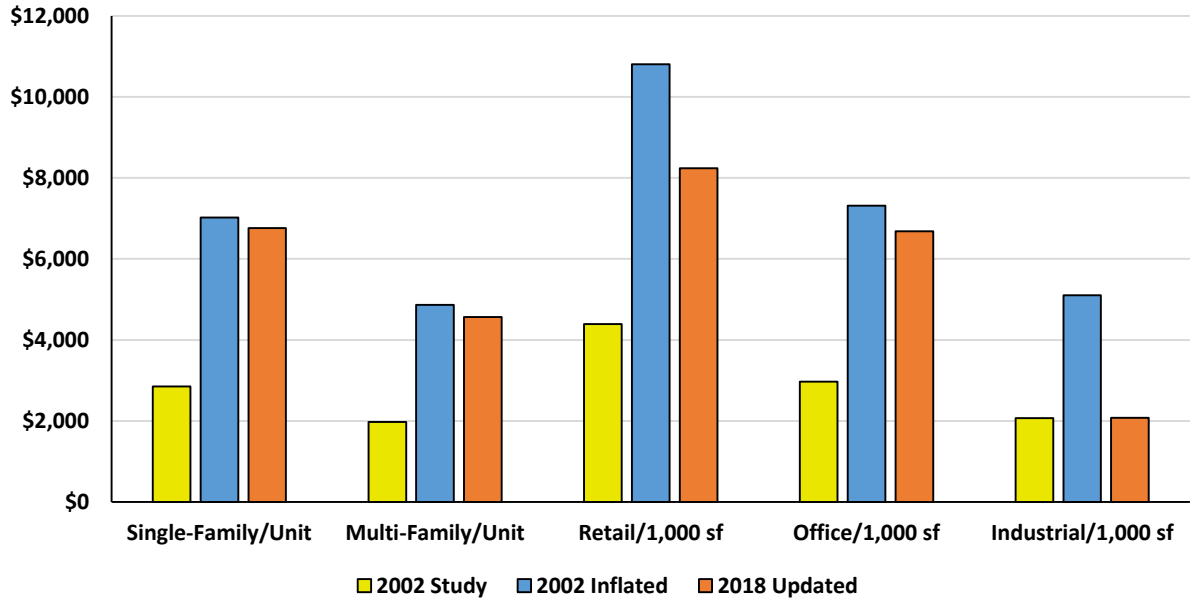
The inputs into the fee calculations are updated in this study based on the most current available data. Trip rates have been updated based on the September 2017 edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. Updated average trip lengths are from the U.S. Department of Transportation's 2017 *National Household Travel Survey*. An updated inventory of the county-wide major roadway system is used to calibrate the travel demand factors and ensure that they are consistent with existing travel on the major roadway system in Mesa County.

Several modifications to the fee schedule land use categories are made in this update to better reflect current available data and/or simplify the process of fee determination and collection. A discussion of the reasons for individual changes can be found in the summary section of the Travel Demand chapter. Recommended definitions for the land use categories are provided in Appendix B.

Updated Fees

The updated fees are compared with the fees calculated in the 2002 study in Table 2 on the following page. Not surprisingly, the fees are considerably higher than those calculated 16 years ago for most land uses. Construction costs have increased considerably over this time. The Colorado Department of Transporations Construction Cost Index is 2.46 times what it was in 2002. Compared to inflation-adjusted 2002 study fees, the updated fees are lower for the majority of land uses, including the major categories of single-family, multi-family, retail/commercial, general office, and industrial/warehouse uses, as illustrated in Figure 2.

Figure 2. Comparison of Current and Updated Transportation Impact Fees



The wide variation in percentage changes between land use categories reflects changes in travel demand factors, including trip generation rates (1997 versus 2017 ITE manual), percent new trips (also from ITE manual), and average trip lengths (1995 versus 2017 national travel survey).

Table 2. Comparison of Current and Updated Transportation Impact Fees

		2002 Study		Updated	% Change from	
Land Use Type	Unit	Original	Inflated	Fees	Original	Inflated
Single-Family Detached	Dwelling	$2,854	$7,021	$6,763	137%	-4%
Multi-Family	Dwelling	$1,979	$4,868	$4,570	131%	-6%
Mobile Home/RV Park	Pad	$1,435	$3,530	$3,583	150%	1%
Hotel/Motel	Room	$2,687	$6,610	$4,183	56%	-37%
Shopping Center/Commercial	1,000 sf	$4,393	$10,807	$8,240	88%	-24%
Auto Sales/Service	1,000 sf	$4,267	$10,497	$9,258	117%	-12%
Bank, Drive-In	1,000 sf	$7,117	$17,508	$18,365	158%	5%
Convenience Store w/Gas Sales	1,000 sf	$10,191	$25,070	$26,395	159%	5%
Golf Course	Hole	$6,578	$16,182	$12,850	95%	-21%
Movie Theater	1,000 sf	$11,834	$29,112	$33,028	179%	13%
Restaurant, Standard	1,000 sf	$5,757	$14,162	$14,975	160%	6%
Restaurant, Drive-Through	1,000 sf	$12,846	$31,601	$33,203	158%	5%
Office, General	1,000 sf	$2,973	$7,314	$6,685	125%	-9%
Office, Medical	1,000 sf	$9,807	$24,125	$25,665	162%	6%
Animal Hospital/Vet Clinic	1,000 sf	n/a	n/a	$15,858	n/a	n/a
Hospital	1,000 sf	$4,554	$11,203	$7,905	74%	-29%
Nursing Home	1,000 sf	$1,276	$3,139	$3,120	145%	-1%
Place of Worship	1,000 sf	$2,184	$5,373	$2,725	25%	-49%
Day Care Center	1,000 sf	$4,553	$11,200	$4,485	-1%	-60%
Elementary/Secondary School	1,000 sf	$713	$1,754	$1,688	137%	-4%
Public/Institutional	1,000 sf	n/a	n/a	$3,813	n/a	n/a
Industrial	1,000 sf	$2,073	$5,100	$2,078	0%	-59%
Warehouse	1,000 sf	$1,477	$3,633	$1,248	-16%	-66%
Mini-Warehouse	1,000 sf	$512	$1,260	$1,075	110%	-15%

Source: Original 2002 study fees from Duncan Associates, *Transportation Impact Fee Study for Mesa County, Colorado*, September 2002 (sum of regional road fees without major structure costs and nonregional road fees); inflated 2002 fees are 2.46 times the original fee, based on the increase in the Colorado Department of Transportation *Construction Cost Index* from 2nd quarter 2012 to 2nd quarter 2018; updated fees from Table 17.

Comparative Jurisdictions

Communities in the process of updating impact fees are naturally interested in knowing what other nearby or comparable jurisdictions are charging. However, concerns about "competitiveness" with other jurisdictions are not necessarily well-founded. Studies have found that reducing or eliminating fees did not have any perceptible effect on the rate of development that subsequently occurred. This is not surprising, given the myriad other market and regulatory factors that differ between jurisdictions besides transportation impact fees.

The fees from the 2002 study and this update are compared to transportation impact fees currently charged by 12 other Colorado jurisdictions in Table 3. Note that while only transportation fees are compared, two-thirds of the comparison jurisdictions also charge other types of impact fees.

Table 3. Transportation Impact Fees in Colorado

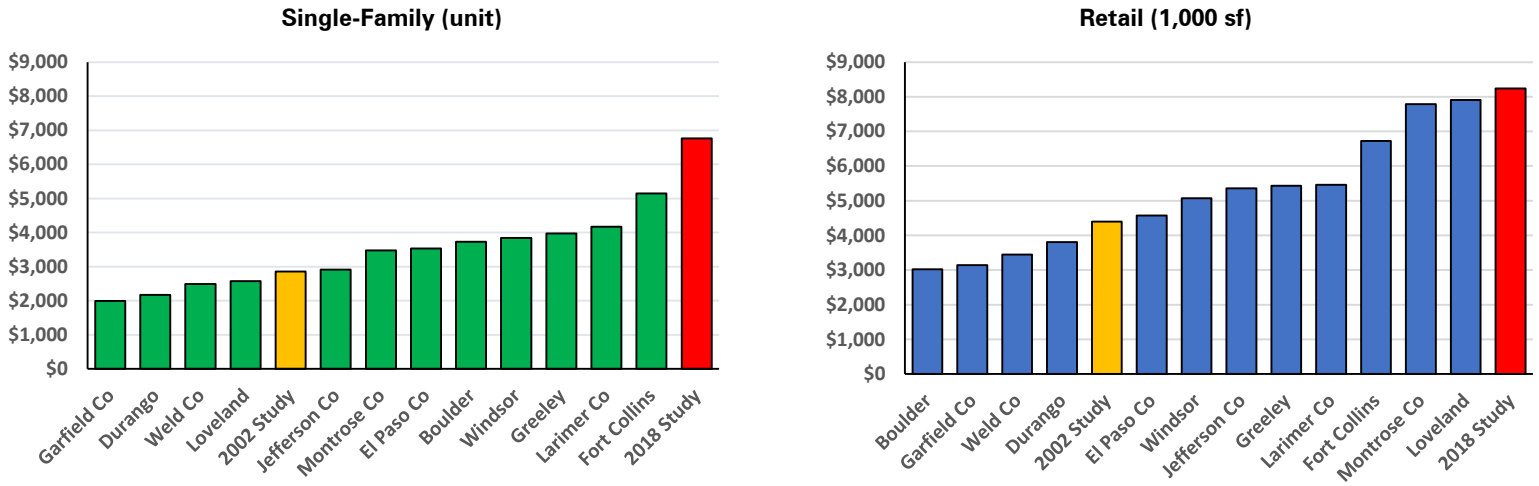
Jurisdiction	Study/ Adoption Year	Single-Family (per unit)	Multi-Family (per unit)	Retail (per 1,000 sq. ft.)	Office (per 1,000 sq. ft.)	Industrial (per 1,000 sq. ft.)
Boulder (1)	2017	$3,734	$2,702	$3,020	$2,700	$2,620
Durango	n/a	$2,169	$1,298	$3,810	$2,823	$1,963
El Paso County	2017	$3,532	$2,220	$4,572	$2,933	$3,366
Fort Collins	2017	$5,150	$3,392	$6,721	$4,951	$1,598
Garfield County (2)	2017	$1,992	$1,230	$3,145	$1,361	$472
Greeley	2015	$3,973	$2,565	$5,428	$4,650	$1,609
Jefferson County (3)	n/a	$2,911	$2,051	$5,360	$3,590	$1,550
Larimer County	2018	$4,168	$2,955	$5,461	$3,213	$1,296
Loveland	n/a	$2,578	$1,801	$7,910	$3,550	$1,890
Mesa Co (2002)	2002	$2,854	$1,979	$4,393	$2,973	$2,073
Mesa Co (updated)	2018	$6,763	$4,570	$8,240	$6,685	$2,078
Montrose County	2007	$3,480	$2,440	$7,790	$4,000	$2,530
Weld County	2011	$2,488	$1,630	$3,450	$2,275	$2,251
Windsor	2017	$3,838	$2,436	$5,076	$4,674	$2,016

Notes: (1) includes transportation excise tax; (2) average of two areas; (3) single-family fee is average of fees for up-to-two-car garages and three-or-more-car garages

Source: Duncan Associates internet survey, October 5, 2018 (where fees vary by size, assumes 2,000 sq. ft. single-family unit, 1,000 sq. ft. multi-family unit, and 1 million square foot retail center or office building).

Single-family and retail transportation fees charged by Mesa County and the other 12 Colorado jurisdictions are illustrated in the two charts below. The 2002 study fees for Mesa County are well below the median of the other jurisdictions for both single-family and retail. The updated fees are at the high end of what the other 12 jurisdictions currently charge. Multi-family and office fee comparisons are not shown, but are similar. Industrial fees are not going up much in this update.

Figure 3. Comparative Transportation Fees, Colorado Jurisdictions



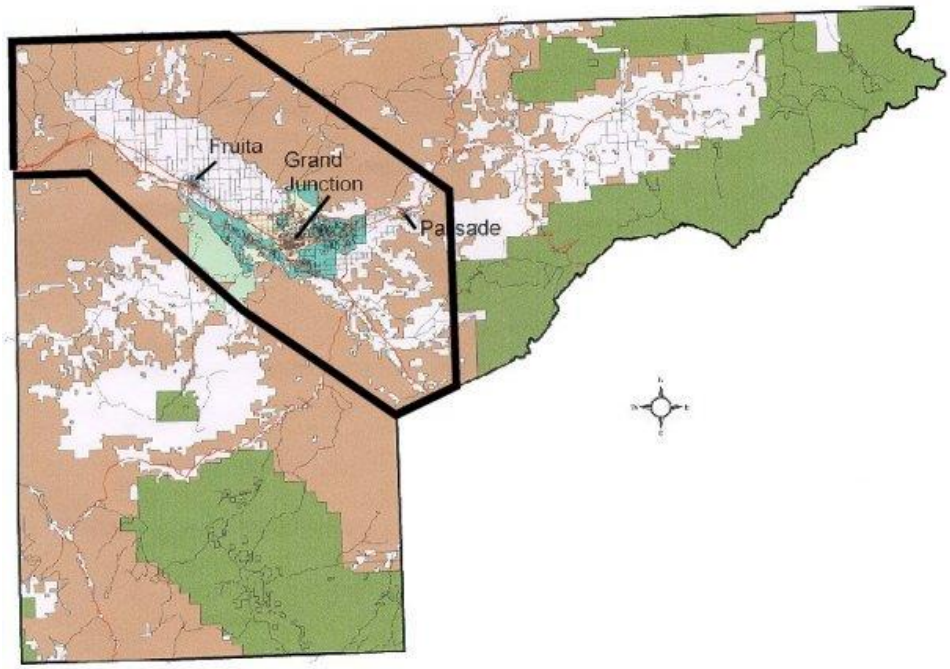
SERVICE AREAS

There are two kinds of geographic areas in impact fee systems: service areas and benefit districts. A service area is an assessment area that is served by a defined group of capital facilities and subject to a uniform impact fee schedule. A benefit district is an area within which fees collected are earmarked to be spent.

Generally, transportation impact fees tend to have a single service area and a uniform fee schedule, whether at the municipal level or the regional, county-wide level. That is because the arterial road system is designed to move traffic from one part of a community to another, and improvements to this system are generally of community-wide benefit. In some communities, major collectors may function as part of the arterial system as well.

The transportation impact fees apply only in the most rapidly developing area of the County. The boundaries of the Grand Valley Airshed as defined by the Colorado Department of Health for the purposes of monitoring air pollution is used as the transportation impact fee service area. Based on the 6,000-foot elevation line on the valley walls, the Airshed defines the developing area in and around the municipalities of Grand Junction, Palisade and Fruita. This transportation impact fee service area is about one-quarter of the area of the entire county, including roughly twice as much privately-owned land area as the area used in regional transportation planning. This area continues to be appropriate as the boundary of the service area for the transportation impact fees (see Figure 4).

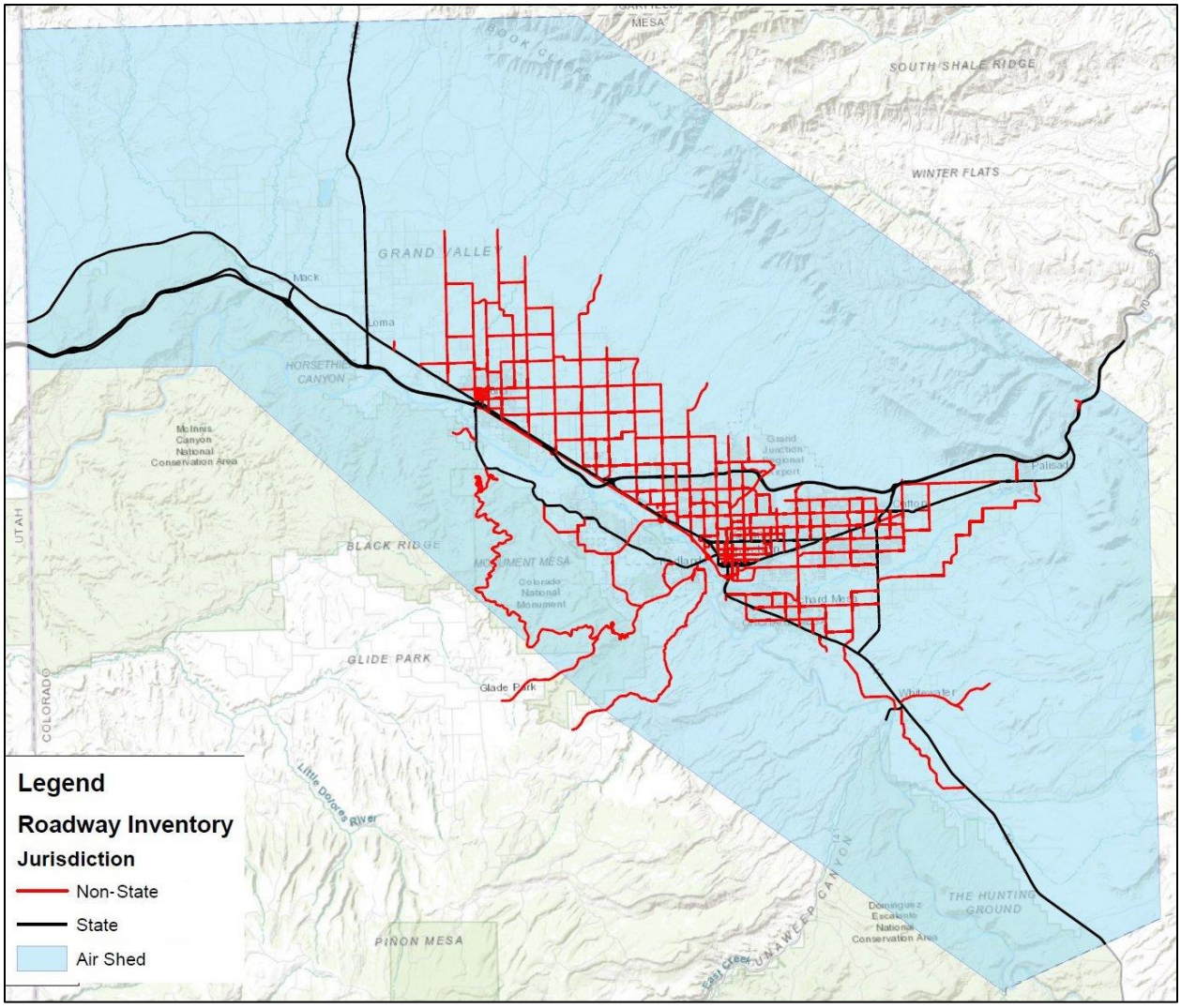
Figure 4. Transportation Impact Fee Service Area



MAJOR ROADWAY SYSTEM

A transportation impact fee system should include a clear definition of the major roadway system that is to be funded with the impact fees. The major roadway system consists of all state and federal highways (excluding I-70), principal arterials (e.g., 24 Road, Patterson Road), minor arterials, and major collector roads within the transportation impact fee service area (illustrated in Figure 5). Other roads will not be funded with transportation impact fees, nor will developer improvements to roads not included in the major roadway system be eligible for credits against the transportation impact fees. A detailed listing of the current road segments included in the major roadway system is provided in Table 18 in Appendix A.

Figure 5. Major Roadway System



TRAVEL DEMAND

The travel demand generated by specific land use types in Mesa County is a product of three factors: 1) trip generation, 2) percent new trips, and 3) average trip length. The first two factors are well documented in the professional literature – the average trip generation characteristics identified in studies of communities around the nation should be reasonably representative of trip generation characteristics in Mesa County. In contrast, trip lengths are much more likely to vary between communities, depending on the geographic size and shape of the community and its major roadway system.

Trip Generation

Trip generation rates are based on information published in the most recent edition of the Institute of Transportation Engineers' (ITE) Trip Generation manual. Trip generation rates represent trip ends, or driveway crossings at the site of a land use. Thus, a single trip from home to work counts as one trip end for the residence and one trip end for the work place, for a total of two trip ends. To avoid over counting, all trip rates are divided by two. This allocates travel equally between the origin and destination of the trip and avoids double charging. This update utilizes the most current edition of the ITE manual (the 10th edition published in 2017).

New Trip Factor

Trip rates must also be adjusted by a "new trip factor" to exclude pass by and diverted-linked trips. This adjustment is intended to reduce the possibility of over-counting by only including primary trips generated by the development. Pass by trips are those trips that are already on a particular route for a different purpose and simply stop at a development on that route. For example, a stop at a convenience store on the way home from the office is a pass by trip for the convenience store. A pass by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of impact fees. A diverted-linked trip is similar to a pass by trip, but a diversion is made from the regular route to make an interim stop. The reduction for pass by and diverted-linked trips is drawn from ITE manual and other published information.

Average Trip Length

In the context of a transportation impact fee based on a consumption-based methodology, it is important to determine the average length of a trip on the major roadway system within Mesa County. The average trip length can be determined by dividing the total vehicle-miles of travel (VMT) on the major roadway system by the total number of trips generated by existing development in the service area. Total VMT on the major roadway system is estimated by multiplying the length of each road segment by the current traffic volume on that segment and summing for the entire system. Total trips can be estimated by multiplying existing land uses by the appropriate trip generation rates (adjusted for new trip factors and divided by two) and summing for all existing development in the service area.

Existing land use information was compiled for all jurisdictions within the transportation impact fee service area to determine an average trip length. Existing land uses in each of the general categories are multiplied by average daily trip generation rates and summed to determine a reasonable estimate of total daily trips within the service area. As shown in Table 4, existing land uses within the transportation impact fee service area generate approximately 428,000 average daily trips.

Table 4. Existing Average Daily Trips

Land Use Type	ITE Code	Unit	Existing Units	Trips/ Unit	Daily Trips
Single-Family Detached	210	Dwelling	44,535	4.72	210,205
Multi-Family	220/221	Dwelling	11,383	3.19	36,312
Subtotal, Residential			55,918		246,517
Hotel/Motel	310/320	Rooms	3,806	2.92	11,114
Commercial	820	1,000 Sq. Ft.	13,754	8.30	114,158
Office	710	1,000 Sq. Ft.	3,028	4.87	14,746
Industrial	130	1,000 Sq. Ft.	3,655	1.68	6,140
Warehousing	150	1,000 Sq. Ft.	6,130	0.87	5,333
Public/Institutional	620	1,000 Sq. Ft.	8,999	3.32	29,877
Subtotal, Nonresidential			35,566		181,368
Total					427,885

Source: Existing development in service area from Mesa County GIS, March 12, 2018; trips per unit from Table 7.

A reasonable estimate of Mesa County's average trip length can be derived by dividing total daily VMT on the major roadway system by the total number of daily trips generated by existing development within the service area. This calculation, presented in Table 5, indicates that the average trip length on the major roadway system is about 5.5 miles.

Table 5. Average Trip Length

Daily VMT on Major Roads	2,347,636
÷ Daily Trips in Service Area	427,885
Average Trip Length (miles)	5.49

Source: VMT from Table 18; trips from Table 4.

Average trip lengths by trip purpose for the western region are available from the U.S. Department of Transportation's 2017 *National Household Travel Survey*. In addition, a residential trip length is determined, using a weighting of 20 percent work trips and 80 percent average trips. The average trip length on the major roadway system is 62.6% of the regional average trip length. Using this ratio, reasonable trip lengths were derived for specific trip purposes, including home-to-work trips, shopping, school/church and other personal trips, as shown in Table 6.

Table 6. Average Trip Lengths by Trip Purpose

Trip Purpose	Regional Trip Length (miles)	Local Ratio	Local Trip Length (miles)
To or from work	10.77	0.626	6.74
Residential	9.16	0.626	5.73
Doctor/Dentist	9.42	0.626	5.90
School/Church	5.01	0.626	3.14
Family/Personal	6.00	0.626	3.76
Shopping	6.34	0.626	3.97
Average of All Trip Purposes*	8.76	0.626	5.49

* weighted (not simple average of trip purposes shown)
Source: Regional average trip lengths for the western Census region from US. Department of Transportation, *National Household Travel Survey*, 2017; regional residential trip length estimated based on weighting of 20% work trips and 80% average trips (20% work trip factor based on 2016 5-year U.S. Census sample data for Mesa County showing the average dwelling unit has 0.91 workers, and 0.91 work trips per unit is 20% of average trips per unit, derived from Table 4); average local trip length from Table 5; ratio is average local to regional trip length; local trip length by purpose is product of regional trip length and local ratio.

Travel Demand Summary

The result of combining trip generation rates, new trip factors, average trip lengths and the local adjustment factor is the travel demand schedule. The travel demand schedule establishes the average daily vehicle-miles of travel (VMT) generated by various land use types per unit of development in the service area. The updated demand schedule reflects updated trip generation rates from the Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 10th edition, 2017. Average trip lengths are updated with the 2017 *National Household Travel Survey*. The adjustment factor ensures that the VMT generated by existing land uses does not exceed current observed VMT on the major roadway system. The updated travel demand schedule is presented in Table 7. For each land use, daily VMT is a factor of trip rate, trip length, new trip factor, and the local adjustment factor.

Some modifications to the land use categories are made in this update to better reflect available data and to simplify the process of fee determination and collection. Recommended definitions of all the categories are provided in Appendix B.

- The current four shopping center size categories are combined into a single retail/commercial category. It is based on average trip characteristics for shopping centers, which tend to include a relatively broad mix of commercial uses. While trip generation rates are available for shopping centers by size, data on new trip factors and average trip lengths by size are harder to come by. Trip generation rates tend to go down by shopping center size, but this is counterbalanced by fewer pass by trips and longer trip lengths. The average shopping center rate is the appropriate default for a wide range of retail and commercial uses not specifically identified in the fee schedule. Health club is merged into the new "Shopping Center/Commercial" category because the ITE manual does not have a daily trip generation rate, and the PM peak hour rate is similar to shopping center.

- The current two office categories by building size are combined into a single general office category, for the same reasons of data availability and counterbalancing applicable to shopping centers.

- Two new categories have been added: animal hospital/vet clinic and public/institutional. The new ITE manual now has an average daily trip rate for animal hospital. The public/institutional category, based on trip data for junior/community college, is intended to provide a default category for other public/institutional uses not specifically listed in the fee schedule.

- The sit-down and fast food restaurant categories have been renamed "standard" and "drive-through," and are defined by whether they have drive-through/drive-in facilities. This provides an administratively simple way to distinguish between them and is consistent with the ITE category from which the fast food trip rate is derived.

- Church has been renamed "Place of Worship" to better reflect its nondenominational character. Industrial park has been renamed "Industrial" to reflect its broader applicability.

- Finally, several additional residential subcategories are provided as alternatives to adopting the broader single-family detached and multi-family categories. In addition, two categories are added for senior adult housing.

The updated travel demand schedule is presented in Table 7 on the following page.

Table 7. Travel Demand Schedule

Land Use Type	ITE Code	Unit	Trips	% New	Miles	VMT
Single-Family Detached	210	Dwelling	4.72	100%	5.73	27.05
<1,250 sq. ft. of living area	210	Dwelling	2.27	100%	5.73	13.01
1,250 - 1,649 sq. ft. of living area	210	Dwelling	3.79	100%	5.73	21.72
1,650 - 2,299 sq. ft. of living area	210	Dwelling	4.41	100%	5.73	25.27
2,300 or more sq. ft. of living area	210	Dwelling	5.96	100%	5.73	34.15
Multi-Family (including townhome)	220/221	Dwelling	3.19	100%	5.73	18.28
Multi-Family, Low-Rise (1-2 stories)	220	Dwelling	3.66	100%	5.73	20.97
Multi-Family, Mid-Rise (3-10 stories)	221	Dwelling	2.72	100%	5.73	15.59
Townhouse	230	Dwelling	2.90	100%	5.73	16.62
Senior Adult Housing - Detached	251	Dwelling	2.13	100%	5.73	12.20
Senior Adult Housing - Attached	252	Dwelling	1.85	100%	5.73	10.60
Mobile Home/RV Park	240	Pad	2.50	100%	5.73	14.33
Hotel/Motel	310/320	Room	2.92	100%	5.73	16.73
Shopping Center/Commercial	820	1,000 sf	18.87	44%	3.97	32.96
Auto Sales/Service	840	1,000 sf	13.92	67%	3.97	37.03
Bank, Drive-In	912	1,000 sf	50.01	37%	3.97	73.46
Convenience Store w/Gas Sales	853	1,000 sf	312.10	17%	1.99	105.58
Golf Course	430	Hole	15.19	90%	3.76	51.40
Movie Theater	444	1,000 sf	39.04	90%	3.76	132.11
Restaurant, Standard	931	1,000 sf	41.92	38%	3.76	59.90
Restaurant, Drive-Through	934	1,000 sf	235.47	30%	1.88	132.81
Office, General	710	1,000 sf	4.87	100%	5.49	26.74
Office, Medical	720	1,000 sf	17.40	100%	5.90	102.66
Animal Hospital/Vet Clinic	650	1,000 sf	10.75	100%	5.90	63.43
Hospital	610	1,000 sf	5.36	100%	5.90	31.62
Nursing Home	620	1,000 sf	3.32	100%	3.76	12.48
Place of Worship	560	1,000 sf	3.47	100%	3.14	10.90
Day Care Center	565	1,000 sf	23.81	24%	3.14	17.94
Elementary/Secondary School	520/522/530	1,000 sf	8.96	24%	3.14	6.75
Public/Institutional	540	1,000 sf	10.12	48%	3.14	15.25
Industrial	130	1,000 sf	1.45	100%	5.73	8.31
Warehouse	150	1,000 sf	0.87	100%	5.73	4.99
Mini-Warehouse	151	1,000 sf	0.75	100%	5.73	4.30

Source: 1-way trips are ½ of trip ends from Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 10th Edition, 2017 (single-family by unit size from Table 23 in Appendix E); new trip percentages for retail/commercial uses from ITE, *Trip Generation Handbook*, 3rd Edition, 2017; new trip percentage for day care and schools based on Preston Hitchens, "Trip Generation of Day Care Centers," *1990 ITE Compendium*; average trip lengths from Table 6 (convenience store is one half retail, drive-through restaurant is one-half standard restaurant); VMT is product of trip rate, percent new trips, and trip length.

Comparisons of existing and updated travel demand factors are shown in Table 8. Travel demand per unit of development by land use type is lower for most land uses in this update. The change in travel demand per unit by land use exhibits considerable variation, ranging from a decline of 68% for warehouse to an increase of 7% for movie theater.

Table 8. Travel Demand Comparison

Land Use Type	Unit	VMT per Unit 2002	VMT per Unit Updated	Percent Change
Single-Family Detached	Dwelling	29.70	27.05	-9%
Multi-Family	Dwelling	20.59	18.28	-11%
Mobile Home/RV Park	Pad	14.94	14.33	-4%
Hotel/Motel	Room	27.96	16.73	-40%
Shopping Center/Commercial	1,000 sf	44.91	32.96	-27%
Auto Sales/Service	1,000 sf	43.97	37.03	-16%
Bank, Drive-In	1,000 sf	73.94	73.46	-1%
Convenience Store w/Gas Sales	1,000 sf	106.28	105.58	-1%
Golf Course	Hole	69.15	51.40	-26%
Movie Theater	1,000 sf	122.94	132.11	7%
Restaurant, Standard	1,000 sf	59.82	59.90	0%
Restaurant, Drive-Through	1,000 sf	133.96	132.81	-1%
Office, General	1,000 sf	33.80	26.74	-21%
Office, Medical	1,000 sf	103.00	102.66	0%
Hospital	1,000 sf	47.83	31.62	-34%
Nursing Home	1,000 sf	13.40	12.48	-7%
Place of Worship	1,000 sf	22.80	10.90	-52%
Day Care Center	1,000 sf	47.55	17.94	-62%
Elementary/Secondary School	1,000 sf	7.45	6.75	-9%
Industrial	1,000 sf	21.57	8.31	-61%
Warehouse	1,000 sf	15.37	4.99	-68%
Mini-Warehouse	1,000 sf	5.38	4.30	-20%

Source: 2002 VMT from Duncan Associates, *Transportation Impact Fee Study*, September 2002; updated VMT from Table 7.

COST PER SERVICE UNIT

There are two components to determining the average cost to add a unit of capacity to the major roadway system: the cost of a set of improvements, and the capacity added by those improvements. This section describes both components used to calculate the average cost per service unit.

This update excludes right-of-way (ROW) costs from the fee calculation. The exclusion of ROW eliminates the most variable component of project costs, keeps the fees lower, and allows jurisdictions the option of not providing developer credit for ROW dedication.

Average Cost per Lane-Mile

The first step is to determine the cost to add an additional lane-mile of roadway. While transportation impact fees can be used to pay for a variety of types of improvements that expand the capacity of the major roadway system without adding lanes, such as intersection improvements and signalization, it is difficult to quantify the vehicle-miles of capacity (VMC) added by these types of improvements. The cost per lane-mile can be calculated based on a representative list of historical or planned improvements. The average cost per lane-mile developed for this study uses a weighted average of urban and rural road improvements. Right-of-way costs have been excluded in this update.

Costs for improving urban road sections are drawn from cost data provided by the City of Grand Junction. The estimated costs of the City's planned improvements over the next ten years are summarized in Table 9. Mesa County engineers confirm these costs are reasonably representative of urban road capacity expansion in other parts of the county. None of the projects include major structures, such as overpasses, elevated ramps or bridges. As shown, the weighted average cost of urban road expansions is about $3.3 million per lane-mile.

Table 9. Urban Average Cost per Lane-Mile

				Lanes		New	Project	Cost per
Road	From	To	Miles	Ex.	Fut.	Ln-Mi.	Cost	Lane-Mile
24 Road	Patterson	I-70	1.20	3	5	2.40	$8,100,000	$3,375,000
25 Road	I-70B	F 1/4	0.75	3	5	1.50	$7,290,000	$4,860,000
25 Road	F 1/4 Road	G Road	0.75	2	3	0.75	$3,060,000	$4,080,000
26 Road	Patterson	H Road	2.00	2	3	2.00	$6,480,000	$3,240,000
26 1/2 Road	Horizon	Summerhill	2.20	2	3	2.20	$8,019,000	$3,645,000
28 1/4 Road	Patterson	Hawthorne	0.38	0	2	0.76	$390,000	$513,158
28 3/4 Road	North Ave	Orchard Ave	0.50	2	3	0.50	$4,500,000	$9,000,000
29 Rd Pkwy	F Road	I-70	1.00	2	5	3.00	$9,000,000	$3,000,000
Crosby Ave	25 1/2 Rd	Main St	0.63	2	3	0.63	$4,025,700	$6,390,000
D 1/2 Road	29 Road	30 Road	1.00	2	3	1.00	$4,500,000	$4,500,000
F 1/2 Pkwy	I-70B	F 1/4 Rd	1.70	0	3	5.10	$9,720,000	$1,905,882
G Road	24 Road	27 Road	3.00	2	3	3.00	$10,700,000	$3,566,667
Total			15.11			22.84	$75,784,700	$3,318,069

Source: Planned projects descriptions and costs in 2018 dollars from Trent Prall, Public Works Director, City of Grand Junction, September 19, 2018; cost per lane-mile is project cost divided by new lane-miles.

The cost of recent County rural road projects constructed or estimated in engineering studies are summarized in Table 10. All these projects or studies are from about three years ago and have been adjusted to current dollars. The costs do not include any bridge work, which the County often does as part of such projects. The list does not include any urban projects, or projects in the high country, which tend to cost quite a bit more. Many of these projects do not actually add new travel lanes, but rather the equivalent amount of pavement provided by new shoulders. The resulting average rural road cost is about $1.68 million per lane-mile in current dollars.

Table 10. Rural Average Cost per Lane-Mile

Road	From	To	Project Description	Miles	Lanes Ex.	Lanes Fut.	New Ln-Mi.	Project Cost	Cost/ Lane-Mile
22 Road	Ranchman's Ditch	H Road	Added 3rd lane w/shldrs	0.27	2	3	0.27	$948,300	$3,512,222
22 Road	H Road	H 1/2 Road	Added 3rd lane w/shldrs	0.41	2	3	0.41	$1,046,400	$2,552,195
22 Road	H 1/2 Road	I Road	Added 6' shoulders	0.59	2	3	0.59	$997,350	$1,690,424
22 Road	I Road	GVIC Canal	Added 6' shoulders	0.66	2	3	0.66	$1,008,250	$1,527,652
22 Road	GVIC Canal	J 1/2 Road	Added 6' shoulders	0.70	2	3	0.70	$1,057,300	$1,510,429
22 Road	J 1/2 Road	K Road	Added 6' shoulders	0.58	2	3	0.58	$784,800	$1,353,103
K Road	19 Road	19 1/2 Road	Added 6' shoulders	0.61	2	3	0.61	$833,850	$1,366,967
K Road	19 1/2 Road	20.2 Road	Added 6' shoulders	0.70	2	3	0.70	$1,286,200	$1,837,429
K Road	Adobe	20.8 Road	Added 6' shoulders	0.63	2	3	0.63	$693,240	$1,100,381
Total				5.15			5.15	$8,655,690	$1,680,717

Source: Mesa County Engineering, October 5, 2018; original costs inflated by the change in the CDOT Construction Cost Index over the last three years; cost per lane-mile is project cost divided by new lane-miles.

Average urban and rural costs per lane-mile identified above are converted to a weighted average cost per lane-mile in Table 11 based on the distribution of existing lane-miles. The weighted average is about $2.8 million per lane-mile.

Table 11. Weighted Average Cost per Lane-Mile

	Urban	Rural	Total
Average Cost per Lane-Mile	$3,318,069	$1,680,717	n/a
x Percent of Lane-Miles	66.2%	33.8%	100.0%
Weighted Average Cost per Lane-Mile	$2,196,562	$568,082	$2,764,644

Source: Average cost per lane-mile from Table 9 (urban) and Table 10; distribution of urban and rural major roadway lane-miles within the service area from Mesa County GIS, September 28, 2018.

Cost per Service Unit Summary

Dividing the weighted average cost per lane-mile by the average daily capacity per lane yields an average cost of per vehicle-mile of capacity or VMC. Under the modified consumption-based methodology, the cost per VMC needs to be multiplied by the VMC/VMT ratio (see discussion in Appendix D: Methodology) to determine the cost per vehicle-mile of travel or VMT. As shown in Table 12, the cost per service unit to accommodate the traffic generated by new development is $353 per VMT. Note that this updated cost per service unit excludes ROW costs.

Table 12. Transportation Cost per Service Unit

Weighted Average Cost per Lane-Mile	$2,764,644
÷ Average Daily Capacity per Lane	7,827
Average Cost per Vehicle-Mile of Capacity (VMC)	$353
x VMC/VMT Ratio	1.00
Cost per Vehicle-Mile of Travel (VMT)	$353

Source: Weighted average cost per lane-mile from Table 11; average capacity per lane derived from Table 18 (total VMC ÷ total lane-miles); VMC/VMT ratio is recommended ratio from Table 19.

As discussed in Appendix C: Legal Framework, revenue credits may be warranted for existing deficiencies, outstanding debt, the availability of State/Federal funding, and the historical use of local funding for major roadway expansion. There are no existing deficiencies from the perspective of the transportation impact fees because the fees are based on a level of service that is lower than what is currently provided to existing development.

The City of Grand Junction is the only one of the four jurisdictions that has any outstanding debt on existing major roadways. The City has about $25 million in outstanding debt for the Riverside Parkway widening. However, Riverside Parkway accounts for only about 4% of the total excess capacity in the major roadway system that is available for new development. The fees that Grand Junction collects could be used to retire this debt, although that is not the City's current practice. Consequently, no revenue credit is required for the outstanding debt.

While not necessarily required, as discussed in the Revenue Credits section of Appendix C, revenue credits will be calculated for direct state and federal funding for road improvements, and for local government's historical use of funding for capacity-expanding improvements.

Direct funding of road improvements with State and Federal funds is programmed through the *Transportation Improvement Program* (TIP) prepared by the Grand Valley Metropolitan Planning Organization. The current TIP includes $2.7 million in annual funding over next four years for improvements that are capacity-expanding. These improvements are summarized in Table 13.

Table 13. Average Annual State/Federal Road Capacity Funding, FY 2019-2022

Facility	Location	Description	Amount
I-70B	24 Rd-15th St	Widening	$2,000,000
US 6	Clifton-Palisade	Preliminary Engineering	$7,200,000
US 6	Fruita-I-70B	Highway & Intersection Improvements	$1,650,000
Total State/Federal Funding			$10,850,000
÷ Number of Years			4
Average Annual Funding			$2,712,500

Source: Grand Valley Metropolitan Planning Organization, *Transportation Improvement Program, State FY 2019 to 2022*, amended October 22, 2018.

In addition to direct state and federal funding for road improvements, other state highway revenues, primarily highway user taxes and motor vehicle registration fees, are allocated to local jurisdictions and earmarked for transportation-related expenditures. Other major local sources of revenue for road expenditures include Mesa County's sales tax and Grand Junction's general fund. The consultant analyzed the four jurisdictions' annual reports for the last five years to determine how much is spent on right-of-way, new roads, and roadway capacity improvements. As can be seen from Table 14, local governments in Mesa County are spending about $10 million annually on capacity improvements.

Table 14. Average Annual Local Road Capacity Expenditures

Jurisdiction	5-Yr. Avg.
Mesa County	$7,184,091
City of Grand Junction	$2,431,028
City of Fruita	$441,301
Town of Palisade	$0
Total	$10,056,420

Source: *Local Highway Finance Reports*, 2012-2016 for Mesa County and Grand Junction, 2013-2017 for Fruita and Palisade.

The amount of the revenue credit is determined by first dividing the total annual funding available for road capacity improvements by total VMT on the major roadway system, then multiplying by a present value factor. This results in a credit per service unit that is the current equivalent of the future 30-year stream of funding that will be available to help defray the growth-related costs of improving the major roadway system.

Table 15. Transportation Funding Credit

Annual State/Federal Capital Funding	$2,712,500
Annual Local Capital Expenditures	$10,056,420
Total Annual Capital Funding	$12,768,920
÷ Daily VMT on Major Road System	2,347,636
Annual Funding per Daily VMT	$5.44
x Present Value Factor (30 Years)	18.86
Funding Credit per Daily VMT	$103

Source: State/Federal funding from Table 13; local expenditures from Table 14; existing VMT from Table 18; present value factor is based on a discount rate of 3.30%, which is the national average yield on AAA 30-year municipal bonds from fmsbonds.com on November 27, 2018.

The net cost per service unit is the cost per VMT less the revenue credit for non-impact fee funding. As shown in Table 16, the net cost per service unit is $250 per VMT.

Table 16. Transportation Net Cost per Service Unit

Cost per Vehicle-Mile of Travel	$353
– Credit per Vehicle-Mile of Travel	-$103
Net Cost per Vehicle-Mile of Travel	$250

Source: Cost per VMT from Table 12; credit from Table 15.

NET COST SCHEDULE

The updated transportation impact fees for the various land use categories are shown in Table 17. Fees shown exclude ROW costs. The impact fee calculation for each land use category is the product of daily VMT per development unit on the major roadway system and the net cost per VMT, which takes into account the average cost to add roadway capacity as well as future revenue that will be generated by new development to help offset those costs. The comparison of the updated fees with current fees is presented in the Executive Summary.

Table 17. Updated Transportation Impact Fees

Land Use Type	Unit	VMT/ Unit	Net Cost/ VMT	Net Cost/ Unit
Single-Family Detached	Dwelling	27.05	$250	$6,763
<1,250 sq. ft. of living area	Dwelling	13.01	$250	$3,253
1,250 - 1,649 sq. ft. of living area	Dwelling	21.72	$250	$5,430
1,650 - 2,299 sq. ft. of living area	Dwelling	25.27	$250	$6,318
2,300 or more sq. ft. of living area	Dwelling	34.15	$250	$8,538
Multi-Family (including townhome	Dwelling	18.28	$250	$4,570
Multi-Family, Low-Rise (1-2 storie	Dwelling	20.97	$250	$5,243
Multi-Family, Mid-Rise (3-10 storie	Dwelling	15.59	$250	$3,898
Townhouse	Dwelling	16.62	$250	$4,155
Senior Adult Housing - Detached	Dwelling	12.20	$250	$3,050
Senior Adult Housing - Attached	Dwelling	10.60	$250	$2,650
Mobile Home/RV Park	Pad	14.33	$250	$3,583
Hotel/Motel	Room	16.73	$250	$4,183
Shopping Center/Commercial	1,000 sf	32.96	$250	$8,240
Auto Sales/Service	1,000 sf	37.03	$250	$9,258
Bank, Drive-In	1,000 sf	73.46	$250	$18,365
Convenience Store w/Gas Sales	1,000 sf	105.58	$250	$26,395
Golf Course	Hole	51.40	$250	$12,850
Movie Theater	1,000 sf	132.11	$250	$33,028
Restaurant, Standard	1,000 sf	59.90	$250	$14,975
Restaurant, Drive-Through	1,000 sf	132.81	$250	$33,203
Office, General	1,000 sf	26.74	$250	$6,685
Office, Medical	1,000 sf	102.66	$250	$25,665
Animal Hospital/Vet Clinic	1,000 sf	63.43	$250	$15,858
Hospital	1,000 sf	31.62	$250	$7,905
Nursing Home	1,000 sf	12.48	$250	$3,120
Place of Worship	1,000 sf	10.90	$250	$2,725
Day Care Center	1,000 sf	17.94	$250	$4,485
Elementary/Secondary School	1,000 sf	6.75	$250	$1,688
Public/Institutional	1,000 sf	15.25	$250	$3,813
Industrial	1,000 sf	8.31	$250	$2,078
Warehouse	1,000 sf	4.99	$250	$1,248
Mini-Warehouse	1,000 sf	4.30	$250	$1,075

Source: VMT per unit from Table 17; net cost per VMT from Table 16.

APPENDIX A: MAJOR ROAD INVENTORY

Table 18. Existing Major Roadway Inventory

Street	From	To	Type	Miles	Lns	Capacity	ADT	VMC	VMT
1 9/10 Rd	Highline Canal Rd	I-70	COL	0.588	2	12,000	97	7,056	57
4th Ave	S of S 7th St	S 9th 9th St	COL	0.558	2	12,000	228	6,696	127
14 Rd	Hwy 6 & 50	Node	COL	0.340	2	12,000	193	4,080	66
15 Rd	Hwy 6 & 50	L Rd	COL	0.114	2	12,000	151	1,368	17
15th St	North Ave	Patterson Rd	COL	0.998	2	12,000	838	11,976	836
16 Rd	Hwy 6 nd 50	Q Rd	COL	5.770	2	12,000	638	69,240	3,681
17 1/2 Rd	Applewood Dr	N 3/10 Rd	COL	2.827	2	12,000	1,502	33,924	4,246
17 Rd	K Rd	O Rd	COL	3.996	2	12,000	562	47,952	2,246
18 1/2 Rd	K Rd	N 3/10 Rd	COL	3.669	2	12,000	2,382	44,028	8,740
18 Rd	K 6/10 Rd	Node	COL	3.142	2	12,000	75	37,704	236
19 Rd	Hwy 6 and 50	Node	COL	6.690	2	12,000	3,349	80,280	22,405
20 1/2 Rd	Spoon Ct	E 3/4 Rd	COL	0.849	2	12,000	286	10,188	243
20 Rd	E 3/4 Rd	N Rd	COL	5.663	2	12,000	1,612	67,956	9,129
21 1/2 Rd	Hwy 6 & 50	I Rd	COL	0.979	2	12,000	536	11,748	525
21 Rd	Node	Node	COL	8.129	2	12,000	1,423	97,548	11,568
22 Rd	Hwy 6 & 50	Node	COL	5.128	2	12,000	146	61,536	749
23 Rd	Hwy 6 & 50	Orchard Ave	COL	5.600	2	12,000	2,928	67,200	16,397
24 1/2 Rd	Hwy 6 & 50	Patterson Rd	MA	0.301	4	40,000	11,141	12,040	3,353
24 1/2 Rd	Patterson Rd	F 3/8 Rd	COL	0.368	2	18,000	9,238	6,624	3,400
24 1/2 Rd	F 3/8 Rd	H Rd	COL	1.629	2	12,000	4,691	19,548	7,642
24 Rd	Node	Node	PA	0.466	2	18,000	5,041	8,388	2,349
24 Rd	Patterson Rd	I-70 Ramp	PA	1.290	2	26,000	14,869	33,540	19,181
24 Rd	I-70 Ramp	I-70 Ramp	COL	0.079	4	24,000	8,730	1,896	690
24 Rd	I-70 Ramp	K Rd	COL	3.438	2	12,000	6,335	41,256	21,780
25 1/2 Rd	Independent Ave	Patterson Rd	COL	0.753	2	18,000	4,696	13,554	3,536
25 1/2 Rd	Patterson Rd	Fall Valley Ave	COL	0.267	2	12,000	2,672	3,204	713
25 1/2 Rd	Fall Valley Ave	Moonridge Dr	COL	0.544	2	18,000	1,795	9,792	976
25 1/2 Rd	Moonridge Dr	G Rd	COL	0.201	2	12,000	1,309	2,412	263
25 Rd	Hwy 6 And 50	Riverside Pkwy	PA	0.332	4	44,000	17,671	14,608	5,867
25 Rd	Hwy 6 & 50	Patterson Rd	MA	0.610	2	24,000	18,733	14,640	11,427
25 Rd	Patterson Rd	Foresight Cir	MA	0.169	2	16,000	9,182	2,704	1,552
25 Rd	Foresight Cir	F 1/2 Rd	PA	0.326	2	18,000	9,066	5,868	2,956
25 Rd	F 1/2 Rd	Hayes Dr	MA	0.248	2	16,000	8,493	3,968	2,106
25 Rd	Hayes Dr	G Rd	MA	0.254	2	24,000	7,228	6,096	1,836
25 Rd	G Rd	Node	COL	4.344	2	12,000	2,728	52,128	11,850
26 1/2 Rd	Horizon Dr	H Rd	MA	1.740	2	16,000	254	27,840	442
26 1/2 Rd	H Rd	I Rd	COL	0.998	2	12,000	254	11,976	253
26 Rd	Patterson Rd	G 1/2 Rd	MA	1.453	2	16,000	6,526	23,248	9,482
26 Rd	G 1/2 Rd	Node	MA	0.110	2	24,000	4,332	2,640	477
26 Rd	Node	H Rd	MA	0.435	2	16,000	4,332	6,960	1,884
26 Rd	H Rd	I Rd	COL	0.999	2	12,000	1,113	11,988	1,112
27 1/2 Rd	Patterson Rd	Horizon Dr	COL	1.020	2	18,000	9,077	18,360	9,259
27 1/4 Rd	H Rd	Node	COL	0.926	2	12,000	52	11,112	48
27 Rd	B Rd	C Rd	COL	0.902	2	12,000	2,829	10,824	2,552
27 Rd	G Rd	H Rd	MA	0.999	2	16,000	3,138	15,984	3,135
28 1/2 Rd	Hwy 50	Orchard Ave	COL	1.944	2	12,000	6,159	23,328	11,973
28 1/4 Rd	North Ave	Orchard Ave	COL	0.504	2	18,000	2,666	9,072	1,344

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Table 18. Existing Major Roadway Inventory (continued)

Street	From	To	Type	Miles	Lns	Capacity	ADT	VMC	VMT
28 1/4 Rd	Orchard Ave	Patterson Rd	MA	0.498	4	32,000	7,803	15,936	3,886
28 1/4 Rd	Patterson Rd	Park Dr	COL	0.210	2	18,000	2,666	3,780	560
28 Rd	B 1/2 Rd	Unaweep Ave	COL	0.504	2	12,000	382	6,048	193
28 Rd	I-70 B	Node	MA	0.282	2	16,000	5,494	4,512	1,549
28 Rd	Node	Orchard Ave	MA	0.788	2	24,000	5,494	18,912	4,329
28 Rd	Patterson Rd	Ridge Dr	COL	0.498	2	18,000	3,302	8,964	1,644
28 Rd	Ridge Dr	Cortland Ave	COL	0.252	2	12,000	1,912	3,024	482
29 1/2 Rd	Hwy 50	F 1/2 Rd	COL	2.006	2	12,000	481	24,072	965
29 3/4 Rd	Old WW Rd	Hwy 50	COL	0.724	2	12,000	21	8,688	15
29 Rd	Hwy 50	Unaweep Ave	COL	0.987	2	18,000	3,125	17,766	3,084
29 Rd	Unaweep Ave	D Rd	PA	1.276	2	26,000	14,078	33,176	17,964
29 Rd	D Rd	D 1/2 Rd	PA	0.413	4	44,000	15,766	18,172	6,511
29 Rd	D 1/2 Rd	North Ave	PA	0.590	4	36,000	22,096	21,240	13,037
29 Rd	North Ave	Patterson Rd	MA	0.998	2	24,000	10,566	23,952	10,545
29 Rd	Patterson Rd	29 Rd	PA	0.876	2	18,000	5,850	15,768	5,125
29 Rd	G Rd	N I-70 Frontg Rd	COL	0.424	2	12,000	5	5,088	2
2nd St	Front St	F Rd	COL	0.276	2	12,000	1,410	3,312	389
30 Rd	Hwy 50	B 1/2 Rd	COL	1.231	2	12,000	766	14,772	943
30 Rd	D Rd	E Rd	MA	0.878	2	24,000	7,489	21,072	6,575
30 Rd	E Rd	Patterson Rd	MA	1.120	4	40,000	17,250	44,800	19,320
30 Rd	Patterson Rd	F 1/2 Rd	COL	0.497	2	12,000	6,188	5,964	3,075
31 1/2 Rd	E Rd	F 1/2 Rd	COL	1.456	2	12,000	3,895	17,472	5,671
31 Rd	Hwy 50	F 1/2 Rd	COL	4.399	2	12,000	1,440	52,788	6,335
32 Rd	I-70 B	Frontage Rd	MA	0.023	4	32,000	3,440	736	79
32 Rd	E 1/2 Rd	32 Rd	MA	0.217	4	40,000	5,896	8,680	1,279
32 Rd	32 Rd	F Rd	MA	0.246	2	16,000	6,713	3,936	1,651
32 Rd	F Rd	E 1/2 Rd	COL	0.500	2	12,000	2,518	6,000	1,259
32 1/2 Rd	E Rd	F Rd	COL	0.836	2	12,000	2,209	10,032	1,847
33 Rd	D 1/2 Rd	D 3/4 Rd	COL	0.249	2	12,000	1,877	2,988	467
33 Rd	D 3/4 Rd	E Rd	COL	0.751	2	18,000	369	13,518	277
33 Rd	E 1/2 Rd	Node	COL	1.672	2	12,000	91	20,064	152
34 1/2 Rd	C 1/2 Rd	D Rd	COL	0.504	2	12,000	1,319	6,048	665
34 Rd	E 1/4 Rd	G Rd	COL	1.757	2	12,000	48	21,084	84
35 1/2 Rd	E Rd	E 1/2 Rd	COL	0.497	2	12,000	454	5,964	226
35 Rd	34 1/2 Rd	E Rd	COL	1.435	2	12,000	1,319	17,220	1,893
36 Rd	E 1/2 Rd	F Rd	COL	0.496	2	12,000	454	5,952	225
37 1/4 Rd	F Rd	F 1/4 Rd	COL	0.243	2	12,000	1,079	2,916	262
37 3/10 Rd	G Rd	I-70	COL	0.777	2	12,000	2,168	9,324	1,685
38 Rd	Horse Mntn Rd	G Rd	COL	0.921	2	12,000	1,947	11,052	1,793
A 1/2 Rd	30 Rd	31 Rd	COL	0.999	2	12,000	182	11,988	182
American Way	Base Rock St	Maldonado St	COL	0.236	2	12,000	3867	2,832	913
B 1/2 Rd	Hwy 50	27 1/2 Rd	MA	0.208	2	24,000	4,382	4,992	911
B 1/2 Rd	27 1/2 Rd	32 Rd	MA	4.520	2	16,000	4382	72,320	19,807
B Rd	27 Rd	30 Rd	COL	3.055	2	12,000	2269	36,660	6,932
Base Rock	Node	Node	COL	0.556	2	18,000	4,509	10,008	2,507
Belford Ave	N 4th St	N 5th St	MA	0.092	4	16,000	1,447	1,472	133
Belford Ave	N 24th St	28 Rd	COL	0.199	2	12,000	3,642	2,388	725
Bookcliff Ave	26 1/2 Rd	N 12th St	COL	0.467	2	12,000	2,623	5,604	1,225
C 1/2 Rd	32 Rd	34 1/2 Rd	COL	2.549	2	12,000	1,656	30,588	4,221
C Rd	31 Rd	32 Rd	COL	0.998	2	12,000	128	11,976	128

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Table 18. Existing Major Roadway Inventory (continued)

Street	From	To	Type	Miles	Lns	Capacity	ADT	VMC	VMT
Canon St	Node	Hwy 50	COL	0.221	2	12,000	2,839	2,652	627
Coffman Rd	Hwy 141	Broadway	COL	3.662	2	12,000	10	43,944	37
Colorado Ave	S 3rd St	S 7th St	COL	0.365	2	12,000	7,799	4,380	2,847
Cortland Ave	27 1/2 Rd	28 Rd	COL	0.500	2	12,000	2,735	6,000	1,368
Crosby Ave	American Way	Broadway	COL	0.465	2	12,000	2,367	5,580	1,101
Crossroads Blvd	27 Rd	Horizon Dr	MA	1.088	2	16,000	6,177	17,408	6,721
D 1/2 Rd	29 Rd	D 1/2 Ct	COL	0.245	2	18,000	7,050	4,410	1,727
D 1/2 Rd	D 1/2 Ct	30 1/4 Rd	COL	1.044	2	12,000	7,050	12,528	7,360
D 1/2 Rd	30 1/4 Rd	Node	COL	0.077	2	18,000	9,619	1,386	741
D 1/2 Rd	Node	33 Rd	COL	2.669	2	12,000	7,669	32,028	20,469
D Rd	Monument Rd	Rosevale Rd	COL	0.306	2	12,000	2,191	3,672	670
D Rd	Node	Node	MA	0.373	4	32,000	4,849	11,936	1,809
D Rd	Node	Node	MA	0.300	2	16,000	4,983	4,800	1,495
D Rd	Node	Riverside Pkwy	MA	0.044	4	32,000	4,983	1,408	219
D Rd	D Rd	Node	PA	0.054	2	26,000	12,164	1,404	657
D Rd	29 Rd	32nd Rd	MA	2.993	2	16,000	15,986	47,888	47,846
Desert Rd	Hwy 50	Hwy 141	COL	4.787	2	12,000	11	57,444	53
DS Rd	17 3/10 Rd	Rim Rock Dr	COL	4.883	2	12,000	979	58,596	4,780
E 1/2 Rd	30 Rd	36 Rd	MA	1.497	2	16,000	5,706	23,952	8,542
E 1/2 Rd	32 Rd	Aaron Ct	COL	1.606	2	12,000	3,642	19,272	5,849
E 1/4 Rd	33 Rd	34 Rd	COL	1.009	2	12,000	833	12,108	840
E 3/4 Rd	20 1/2 Rd	20 3/4 Rd	COL	0.247	2	12,000	996	2,964	246
E Aspen Ave	N Mesa St	N Peach St	COL	1.212	2	12,000	4,328	14,544	5,246
E Grand Ave	Hwy 6 And 50	S PINE St	COL	0.485	2	12,000	612	5,820	297
E Ottley Ave	N Mesa St	Node	COL	0.447	2	12,000	4,369	5,364	1,953
E Pabor Ave	N Mesa St	N Maple St	COL	0.249	2	12,000	846	2,988	211
E Rd	30 Rd	35 1/2 Rd	COL	3.539	2	12,000	10,048	42,468	35,560
Elm Ave	N 7th St	Houston Ave	COL	1.848	2	12,000	2,868	22,176	5,300
F Rd	I-70 B	33 Rd	PA	0.675	2	26,000	17,935	17,550	12,106
F Rd	33 Rd	33 1/2 Rd	PA	0.512	2	18,000	8,076	9,216	4,135
F Rd	31 Rd	33 1/2 Rd	PA	1.320	4	44,000	19,165	58,080	25,298
F Rd	33 1/2 Rd	37 1/4 Rd	COL	1.721	2	12,000	1,323	20,652	2,277
F 1/4 Rd	37 1/4 Rd	Horse Mntain Rd	COL	0.809	2	12,000	1,485	9,708	1,201
F 1/2 Rd	25 Rd	32 Rd	COL	4.041	2	12,000	2,078	48,492	8,397
Frontage Rd	Timber Falls Dr	Hwy 6 and 50	COL	0.777	2	12,000	2,992	9,324	2,325
Frontage Rd	31 1/2 Rd	32 Rd	MA	0.487	2	16,000	3,860	7,792	1,880
G Rd	Power Rd	Hwy 6 & 50	COL	0.048	2	12,000	3,338	576	160
G Rd	Hwy 6 & 50	Horizon Dr	MA	4.944	2	16,000	1,727	79,104	8,538
G Rd	33 Rd	Front St	COL	3.710	2	12,000	1,398	44,520	5,187
Grand Ave	N 1ST St	N 7th St	MA	0.532	4	40,000	19,966	21,280	10,622
Grand Ave	N 7th St	N 12th St	MA	0.466	2	24,000	8,449	11,184	3,937
Grand Ave	N 12th St	28 Rd	COL	1.009	2	12,000	6,344	12,108	6,401
Gunnison Ave	N 1st St	N 9th St	COL	0.706	2	12,000	6,335	8,472	4,473
Gunnison Ave	N 9th St	N 12th St	COL	0.290	2	18,000	7,753	5,220	2,248
Gunnison Ave	N 12th St	Mantlo Cir	COL	0.809	2	12,000	3,912	9,708	3,165
H Rd	21 Rd	26 1/2 Rd	COL	4.495	2	12,000	1,074	53,940	4,828
H Rd	26 1/2 Rd	Jamaica Dr	COL	0.204	2	18,000	4,329	3,672	883
H Rd	Jamaica Dr	North Crest Dr	COL	1.131	2	12,000	3,117	13,572	3,525
H Rd	North Crest Dr	Horizon Dr	COL	0.455	2	18,000	1,659	8,190	755
Horizon Dr	26 1/2 Rd	N 2th St	MA	0.670	2	16,000	7,489	10,720	5,018

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Table 18. Existing Major Roadway Inventory (continued)

Street	From	To	Type	Miles	Lns	Capacity	ADT	VMC	VMT
O Rd	16 Rd	19 Rd	COL	1.999	2	12,000	185	23,988	370
Old 6 and 50	Node	2 8/10 Rd	MA	11.956	2	16,000	64	191,296	765
Orchard Ave	1st St	26 Rd	COL	2.016	2	12,000	4,826	24,192	9,729
Orchard Ave	28 Rd	30 Rd	MA	0.591	2	24,000	9,842	14,184	5,817
Orchard Ave	Normandy Dr	29 Rd	MA	0.397	2	16,000	8,059	6,352	3,199
Orchard Ave	29 Rd	29 1/2 Rd	MA	0.503	2	24,000	7,877	12,072	3,962
Orchard Ave	29 1/2 Rd	30 Rd	MA	0.500	2	16,000	5,282	8,000	2,641
Ottley Ave	Node	N Pine St	COL	0.300	2	12,000	2,779	3,600	834
Patterson Rd	Hwy 6 & 50	26 Rd	PA	2.417	4	44,000	8,723	106,348	21,083
Patterson Rd	26 Rd	Mira Vista Rd	PA	0.297	4	36,000	30,773	10,692	9,140
Patterson Rd	Mira Vista Rd	View Point Dr	PA	0.385	4	44,000	30,640	16,940	11,796
Patterson Rd	View Point Dr	Node	PA	0.209	4	36,000	28,741	7,524	6,007
Patterson Rd	Node	31 Rd	PA	4.108	4	44,000	26,667	180,752	109,548
Pkwy Ramp	Node	Riverside Pkwy	RMP	0.380	2	12,000	1,651	4,560	627
Pkwy Ramp	Node	Node	PA	0.027	1	9,000	186	243	5
Pkwy Ramp	Node	Node	RMP	0.542	2	6,000	2,915	3,252	1,580
Pitkin Ave	Ute Ave	2nd St	PA	0.114	4	18,000	13,144	2,052	1,498
Pitkin Ave	S 2nd St	S 12th St	PA	0.921	6	27,000	13,144	24,867	12,106
Pitkin Ave	S 12th St	Node	PA	0.440	4	18,000	12,263	7,920	5,396
Rabbit Valley Rd	Node	Node	RMP	0.170	2	12,000	9	2,040	2
Redlands Pkwy	S Broadway	Broadway	COL	0.440	2	12,000	7,715	5,280	3,395
Redlands Pkwy	Colorado River	Pkwy Ramp	PA	0.809	4	36,000	17,688	29,124	14,310
Redlands Pkwy	S Camp Rd	S Broadway	COL	0.262	2	12,000	7,715	3,144	2,021
Redlands Pkwy	Broadway	Colorado River	PA	0.827	2	18,000	12,843	14,886	10,621
Redlands Pkwy	Node	Node	PA	0.022	4	36,000	17,435	792	384
Redlands Pkwy	Node	Node	PA	0.336	2	18,000	8,540	6,048	2,869
Redlands-Riverside	Node	Node	RMP	0.095	2	6,000	608	570	58
Reeder Mesa Rd	Hwy 50	Goodfellow Ct	COL	2.567	2	12,000	381	30,804	978
Ridges Blvd	Ridgeway Ct	Broadway	COL	0.753	2	12,000	7,717	9,036	5,811
Rimrock Dr	N 16 1/2 Rd	S Camp Rd	COL	23.005	2	12,000	288	276,060	6,625
River Rd	Frontage Rd	Pkwy Ramp	COL	4.607	2	12,000	3,886	55,284	17,903
Riverside Pkwy	Pkwy Ramp	Overpass	COL	1.389	2	18,000	2,722	25,002	3,781
Riverside Pkwy	Node	Node	COL	0.161	2	12,000	1,980	1,932	319
Riverside Pkwy	Node	Node	COL	0.039	4	24,000	444	936	17
Riverside Pkwy	Node	29 Rd	MA	1.556	2	24,000	12,885	37,344	20,049
Riverside Pkwy	Node	Node	PA	0.306	2	9,000	1,215	2,754	372
Riverside Pkwy	Node	Node	PA	0.115	4	44,000	17,227	5,060	1,981
Riverside Pkwy	Node	Node	PA	0.132	2	9,000	1,536	1,188	203
Riverside Pkwy	Node	Node	PA	1.713	4	44,000	17,670	75,372	30,269
Riverside Pkwy	Hwy 50 Exit	Hwy 50 on-ramp	PA	0.230	4	44,000	12,420	10,120	2,857
Riverside Pkwy	Node	S 9th St	PA	0.330	4	44,000	12,276	14,520	4,051
Riverside Pkwy	S 9th St	D Rd	PA	1.011	2	26,000	10,253	26,286	10,366
Riverside Pkwy	Node	Node	RMP	0.252	2	6,000	10,313	1,512	2,599
Riverside Pkwy	Node	Node	RMP	0.255	1	6,000	177	1,530	45
Riverside Pkwy	Node	Node	RMP	0.264	2	6,000	9,264	1,584	2,446
Rood Ave	N 1st St	N 7th St	COL	0.529	2	12,000	3,134	6,348	1,658
Rosevale Rd	S Redlands Rd	D Rd	COL	0.820	2	12,000	1,570	9,840	1,287
S 1st St	Ute Ave	Main St	PA	0.116	4	36,000	25,971	4,176	3,013
S 5th St	Hwy 50	Pitkin Ave	EXP	1.143	4	24,000	14,590	27,432	16,676
S 5th St	Pitkin Ave	Ute Ave	MA	0.068	4	32,000	15,318	2,176	1,042

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Table 18. Existing Major Roadway Inventory (continued)

Street	From	To	Type	Miles	Lns	Capacity	ADT	VMC	VMT
S 4th St	Pitkin Ave	Main St	MA	0.205	4	16,000	4,410	3,280	904
S 5th St	Ute Ave	Main St	MA	0.131	6	24,000	7,584	3,144	994
S 7th St	Riverside Pkwy	Pitkin Ave	COL	0.539	2	18,000	1,203	9,702	648
S 7th St	Pitkin Ave	Main St	MA	0.202	4	40,000	8,117	8,080	1,640
S 9th St	Riverside Pkwy	4th Ave	COL	0.230	2	12,000	848	2,760	195
S 9th St	4th Ave	Ute Ave	MA	0.416	2	16,000	1,526	6,656	635
S 12th St	Pitkin Ave	Colorado Ave	PA	0.133	2	18,000	3,127	2,394	416
S 12th St	Colorado Ave	Main St	PA	0.070	2	26,000	3,127	1,820	219
S Broadway	Mnmnt Canyon Dr	S Camp Rd	COL	3.462	2	12,000	5,224	41,544	18,085
SB Pkwy on-ramp	Broadway	Riverside Pkwy	RMP	0.224	2	6,000	3,872	1,344	867
S Camp Rd	Monument Rd	Rimrock Rd	COL	0.626	2	12,000	3,335	7,512	2,088
S Camp Rd	Rimrock Rd	Buffalo Dr	COL	0.873	2	12,000	3,166	10,476	2,764
S Camp Rd	Buffalo Dr	Mckinley Dr	COL	0.858	2	18,000	2,419	15,444	2,076
S Camp Rd	Mckinley Dr	S Broadway	COL	0.295	2	12,000	3,605	3,540	1,063
S Coulson St	Hwy 6 & 50	W Aspen Ave	COL	0.051	2	12,000	3,664	612	187
S Maple St	Hwy 6 & 50	E Aspen Ave	COL	0.358	2	12,000	1,864	4,296	667
S Mesa St	Hwy 6 & 50	W Aspen Ave	COL	0.184	2	12,000	2,109	2,208	388
S Pine St	Hwy 6 & 50	J 2/10 Rd	COL	0.339	2	18,000	8,893	6,102	3,015
S Pine St	J 2/10 Rd	E Aspen Ave	COL	0.371	2	12,000	7,461	4,452	2,768
S Redlands Rd	Mount Sopris Dr	Monument Rd	COL	0.402	2	12,000	3,057	4,824	1,229
Teller Ave	I-70 B	29 Rd	RMP	0.189	4	24,000	3,973	4,536	751
Unaweep Ave	Hwy 50	29 Rd	COL	2.847	2	18,000	9,028	51,246	25,703
Ute Ave	S 1st St	N 5th St	PA	0.355	4	18,000	10,652	6,390	3,781
Ute Ave	S 5th St	S 12th St	PA	0.646	6	27,000	11,357	17,442	7,337
Ute Ave	S 12th St	I-70 B	PA	0.424	4	18,000	10,777	7,632	4,569
Warrior Way	I-70 B	E 1/2 Rd	COL	0.112	2	18,000	7,513	2,016	841
West Ave	Broadway	Riverside Pkwy	COL	0.170	2	12,000	8,172	2,040	1,389
W Aspen Ave	N Coulson St	N Mesa St	COL	0.250	2	12,000	4,037	3,000	1,009
W Grand Ave	Mulberry St	N 1st St	PA	0.154	4	44,000	20,840	6,776	3,209
W Ottley Ave	Hwy 6 And 50	N Mesa St	COL	0.885	2	12,000	1,256	10,620	1,112
W Pabor Ave	N Cherry St	N Mesa St	COL	0.251	2	12,000	2,587	3,012	649
Whitewtr Crk Rd	Reeder Mesa Rd	Node	COL	1.633	2	12,000	111	19,596	181
Subtotal, Non-State Roads				350.168				5,325,416	1,326,921
EB Off-Ramp	Node	Node	RMP	0.224	2	6,000	9,260	1,344	2,074
EB Off-Ramp	Node	Node	RMP	0.047	2	6,000	49	282	2
EB On-Ramp	Node	Node	RMP	0.031	2	6,000	2,984	186	93
EB On-Ramp	Node	Node	RMP	0.055	2	6,000	313	330	17
EB On-Ramp	Node	Node	RMP	0.321	2	6,000	3,110	1,926	998
EB to EB Off-ramp	Node	Node	RMP	0.201	2	6,000	9,211	1,206	1,851
EB to WB Off-ramp	Node	Node	RMP	0.035	2	6,000	29	210	1
EB to WB On-ramp	Node	Node	RMP	0.061	2	6,000	80	366	5
Hwy 6	N 1st St	I-70 B	PA	3.819	4	44,000	25,380	168,036	96,926
Hwy 6	Node	Node	RMP	0.316	4	12,000	11,903	3,792	3,761
Hwy 6	Node	Node	RMP	0.477	2	6,000	10,907	2,862	5,203
Hwy 6	Node	Node	RMP	0.101	4	12,000	11,903	1,212	1,202
Hwy 6	Node	N 1st St	PA	0.101	4	44,000	22,848	4,444	2,308
Hwy 6	F Rd	G Rd	PA	3.320	2	18,000	7,854	59,760	26,075
Hwy 6	G Rd	Shiraz Dr	PA	0.284	2	26,000	8,038	7,384	2,283
Hwy 6	Shiraz Dr	37 3/10 Rd	PA	0.388	2	18,000	6,705	6,984	2,602

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Table 18. Existing Major Roadway Inventory (continued)

Street	From	To	Type	Miles	Lns	Capacity	ADT	VMC	VMT
Hwy 6	37 3/10 Rd	Peach Ave	PA	0.382	2	26,000	5,940	9,932	2,269
Hwy 6	Peach Ave	Rapid Creek Rd	PA	2.482	2	18,000	3,985	44,676	9,891
Hwy 6	Node	Node	RMP	0.418	2	6,000	673	2,508	281
Hwy 6	Rapid Creek Rd	I-70	RMP	0.372	2	6,000	475	2,232	177
Hwy 6/50 offramp	Hwy 6 and 50	Redlands Pkwy	RMP	0.244	2	6,000	659	1,464	161
Hwy 6/50 onramp	Redlands Pkwy	Hwy 6 & 50	RMP	0.265	2	6,000	5,266	1,590	1,395
Hwy 6 and 50	Node	Old Hwy 6 & 50	EXP	0.763	2	24,000	446	18,312	340
Hwy 6 and 50	Hwy 6 & 50	past 22 Rd	EXP	13.894	2	24,000	1,082	333,456	15,033
Hwy 6 and 50	Node	Node	EXP	0.081	4	48,000	25,077	3,888	2,031
Hwy 6 and 50	Node	Node	EXP	0.430	4	24,000	11,656	10,320	5,012
Hwy 6 and 50	Node	Patterson Rd	EXP	2.003	4	48,000	29,287	96,144	58,662
Hwy 6 and 50	Node	Node	EXP	0.984	4	24,000	13,115	23,616	12,905
Hwy 6 and 50	Node	Node	EXP	0.155	6	36,000	15,170	5,580	2,351
Hwy 6 and 50	Node	Rimrock Ave	EXP	1.259	6	72,000	32,103	90,648	40,418
Hwy 6 and 50	Rimrock Ave	Node	EXP	0.794	6	24,000	19,314	19,056	15,335
Hwy 6 and 50	Node	Node	EXP	0.256	6	12,000	8,406	3,072	2,152
Hwy 6 and 50	Node	Node	EXP	0.514	6	24,000	10,339	12,336	5,314
Hwy 6 and 50	Node	Node	EXP	0.216	6	48,000	20,001	10,368	4,320
Hwy 50	Unaweep Ave	Palisade St	EXP	0.428	4	48,000	40,563	20,544	17,361
Hwy 50	Unaweep Ave	Unaweep Ave	EXP	1.116	4	24,000	19,139	26,784	21,359
Hwy 50	Palisade St	27 Rd	EXP	0.409	4	48,000	27,092	19,632	11,081
Hwy 50	27 Rd	B 1/2 Rd	EXP	0.294	4	24,000	13,212	7,056	3,884
Hwy 50	27 Rd	Hwy 50 Ramp	EXP	0.358	2	24,000	13,219	8,592	4,732
Hwy 50	B 1/2 Rd	27 1/2 Rd	EXP	0.375	4	24,000	9,085	9,000	3,407
Hwy 50	27 1/2 Rd	County Line	EXP	18.666	4	48,000	18,631	895,968	347,766
Hwy 50 Ramp	Hwy 50	Node	MA	0.135	2	8,000	4,114	1,080	555
Hwy 50 Ramp	Node	B 1/2 Rd	MA	0.221	2	24,000	4,148	5,304	917
Hwy 139	Node	Co Rd 258	MA	13.643	2	16,000	1,569	218,288	21,406
Hwy 141	Node	Hwy 50	MA	0.964	2	16,000	1,914	15,424	1,845
Hwy 141	Hwy 50	D Rd	PA	3.650	2	18,000	6,192	65,700	22,601
Hwy 141	D Rd	I-70 B	PA	1.792	4	44,000	17,659	78,848	31,645
Hwy 340	Raptor Rd	Red Cliffs Dr	MA	0.603	4	40,000	5,926	24,120	3,573
Hwy 340	Red Cliffs Dr	Kings View Rd	MA	0.655	4	32,000	3,553	20,960	2,327
Hwy 340	Kings View Rd	S Broadway	MA	4.026	2	16,000	2,884	64,416	11,611
Hwy 340	S Broadway	W Scenic Dr	PA	5.073	2	18,000	3,324	91,314	16,863
Hwy 340	W Scenic Dr	Pleasant Ridge Ln	PA	0.209	2	26,000	13,630	5,434	2,849
Hwy 340	Pleasant Ridge Ln	Ridges Blvd	PA	0.351	2	18,000	14,473	6,318	5,080
Hwy 340	Ridges Blvd	Country Club Park	PA	0.472	4	36,000	19,465	16,992	9,187
Hwy 340	Country Club Park	West Ave	PA	0.840	4	44,000	19,524	36,960	16,400
Hwy 340	West Ave	Pkwy On Ramp	PA	0.024	4	36,000	23,980	864	576
Hwy 340	Pkwy On Ramp	past Crosby Ave	PA	0.297	4	44,000	20,635	13,068	6,129
Hwy 340	W Aspen Ave	I-70	MA	0.209	4	40,000	15,948	8,360	3,333
Hwy 340	Ramp	Ramp	MA	0.095	4	40,000	14,906	3,800	1,416
I-70 B Ramp	I-70 B	29 Rd	RMP	0.277	2	6,000	5,356	1,662	1,484
I-70 Access Rd	Node	Node	RMP	0.179	2	6,000	6,429	1,074	1,151
I-70 Access Rd	Node	Node	RMP	0.529	2	6,000	5,558	3,174	2,940
I-70 Access Rd	Node	Node	RMP	0.562	2	6,000	5,733	3,372	3,222
I-70 B	Node	Node	EXP	0.147	4	24,000	17,021	3,528	2,502
I-70 B	Node	I-70 Off Ramp	EXP	5.886	4	48,000	18,112	282,528	106,607
I-70 B	Node	Node	EXP	0.377	4	24,000	12,901	9,048	4,864

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Table 18. Existing Major Roadway Inventory (continued)

Street	From	To	Type	Miles	Lns	Capacity	ADT	VMC	VMT
I-70 B	Node	Node	RMP	0.353	2	6,000	7,341	2,118	2,591
Ramp	Node	Node	RMP	0.049	2	6,000	2,799	294	137
WB Off-Ramp	Node	Node	RMP	0.015	2	6,000	3,068	90	46
WB Off-Ramp	Node	Node	RMP	0.287	2	6,000	3,224	1,722	925
WB On-Ramp	Node	Node	RMP	0.245	2	6,000	8,387	1,470	2,055
WB On-Ramp	Node	Node	RMP	0.010	2	6,000	8,331	60	83
WB-EB off-ramp	Node	Node	RMP	0.065	2	6,000	222	390	14
WB-WB off-ramp	Node	Node	RMP	0.084	2	6,000	3,280	504	276
WB-WB on-ramp	Node	Node	RMP	0.054	2	6,000	8,645	324	467
Subtotal, State Roads				99.317				2,925,706	1,020,715
Total				449.485				8,251,122	2,347,636

Notes: ADT is average daily traffic volume; VMC is vehicle-miles of capacity, VMT is vehicle-miles of travel
Source: Mesa County GIS, March 19, 2018.

APPENDIX B: LAND USE DEFINITIONS

Recommended definitions for the land uses in the updated impact fee schedule are provided below. If these are adopted by ordinance or resolution, those that differ from or overlap with zoning or general definitions should have a disclaimer that they only apply to the impact fee section.

Single-Family Detached means the use of a lot for only one dwelling unit, including a mobile home not located in a mobile home park, provided that a single-family detached use may also include an accessory dwelling unit, if allowed by zoning, which shall be assessed the rate for a multi-family unit.

Multi-Family means a building containing two or more dwelling units. It includes duplexes, apartments, residential condominiums, townhouses, and timeshares.

Mobile Home/RV Park means a parcel (or portion thereof) or abutting parcels of land designed, used or intended to be used to accommodate two or more occupied mobile homes or recreational vehicles, with necessary utilities, vehicular pathways, and concrete pads or vehicle stands.

Hotel/Motel means a building or group of buildings on the same premises and under single control, consisting of sleeping rooms kept, used, maintained or advertised as, or held out to the public to be, a place where sleeping accommodations are supplied for pay to transient guests or tenants. This land use category includes rooming houses, boardinghouses, and bed and breakfast establishments.

Shopping Center/Commercial means an integrated group of commercial establishments planned, developed, owned or managed as a unit, or a free-standing retail or commercial use not otherwise listed in the impact fee schedule. Uses located on a shopping center outparcel are considered free-standing for the purposes of this definition. A retail or commercial use shall mean the use of a building or structure primarily for the sale to the public of nonprofessional services, or goods or foods that have not been made, assembled or otherwise changed in ways generally associated with manufacturing or basic food processing in the same building or structure. This category includes but is not limited to all uses located in shopping centers and the following free-standing uses:

Amusement park
Auto parts store
Auto wrecking yard
Automobile repair
Bank without drive-through facilities
Bar and cocktail lounge
Camera shop
Car wash
Convenience food and beverage store without gas pumps
Department store
Florist shop
Food store
Grocery
Hardware store

Health or fitness club
Hobby, toy and game shop
Junkyard
Laundromat
Laundry or dry cleaning
Lawn and garden supply store
Massage establishment
Music store
Newsstand
Nightclub
Racetrack
Recreation facility, commercial
Rental establishment
Repair shop, other than auto repair
School, commercial
Specialty retail shop
Supermarket
Theater, indoor (excluding movie theaters)
Used merchandise store
Variety store
Vehicle and equipment dealer

Auto Sales/Service means an establishment primarily engaged in selling new or used motor vehicles, and which may also provide repair and maintenance services.

Bank, Drive-In means an establishment providing banking services to the public that includes drive-in or drive-through facilities.

Convenience Store w/Gas Sales means an establishment offering the sale of motor fuels and convenience items to motorists.

Golf Course means a golf course that is not restricted primarily for use by residents of a residential development of which it is a part, including commercial uses such as pro shop or bar that are designed primarily to serve patrons.

Movie Theater means a stand-alone establishment, not located in a shopping center, offering the viewing of motion pictures for sale to the public.

Restaurant, Standard means a stand-alone establishment, not located in a shopping center but may be located on an out-parcel, that sells meals prepared on site, and does not provide drive-through or drive-in service.

Restaurant, Drive-Through means a stand-alone establishment, not located in a shopping center but may be located on an out-parcel, that sells meals prepared on site, and provides drive-through or drive-in service.

Office, General means a building exclusively containing establishments providing executive, management, administrative, financial, or non-medical professional services, and which may include ancillary services for office workers, such as a restaurant, coffee shop, newspaper or candy stand, or child care facilities. It may be the upper floors of a multi-story office building with ground floor retail uses. Typical uses include banks without drive-in facilities, real estate, insurance, property management, investment, employment, travel, advertising, secretarial, data processing, telephone answering, telephone marketing, music, radio and television recording and broadcasting studios; professional or consulting services in the fields of law, architecture, design, engineering, accounting and similar professions; interior decorating consulting services; and business offices of private companies, utility companies, trade associations, unions and nonprofit organizations. This category does not include an administrative office that is ancillary to a principal commercial or industrial use.

Office, Medical means a building primarily used for the examination and/or treatment of patients on an outpatient basis (with no overnight stays by patients) by health professionals, and which may include ancillary services for medical office workers or a medical laboratory to the extent necessary to carry out diagnostic services for the medical office's patients.

Animal Hospital/Vet Clinic means the use of a site primarily for the provision of medical care and treatment of animals, and which may include ancillary boarding facilities.

Hospital means an establishment primarily engaged in providing medical, surgical, or skilled nursing care to persons, including overnight or longer stays by patients.

Nursing Home means an establishment primarily engaged in providing limited health care, nursing and health-related personal care but not continuous nursing services.

Place of Worship means a structure designed primarily for accommodating an assembly of people for the purpose of religious worship, including related religious instruction for 100 or fewer children during the week and other related functions.

Day Care Center means a facility or establishment that provides care, protection and supervision for six or more children unrelated to the operator and which receives a payment, fee or grant for any of the children receiving care, whether or not operated for profit. The term does not include public or nonpublic schools.

Elementary/Secondary School means a school offering an elementary through high school curriculum.

Public/Institutional means a governmental, quasi-public or institutional use, or a non-profit recreational use, not located in a shopping center or separately listed in the impact fee schedule. Typical uses include higher education institutions, city halls, courthouses, post offices, jails, libraries, museums, military bases, airports, bus stations, fraternal lodges, parks and playgrounds. It also includes bus terminals, fraternal clubs, adult day care centers, dormitories, and prisons.

Industrial means an establishment primarily engaged in the fabrication, assembly or processing of goods. Typical uses include manufacturing plants, industrial parks, research and development laboratories, welding shops, wholesale bakeries, dry cleaning plants, and bottling works.

Warehouse means an establishment primarily engaged in the display, storage and sale of goods to other firms for resale, as well as activities involving significant movement and storage of products or equipment. Typical uses include wholesale distributors, storage warehouses, trucking terminals, moving and storage firms, recycling facilities, trucking and shipping operations and major mail processing centers.

Mini-Warehouse means an enclosed storage facility containing independent, fully enclosed bays that are leased to persons for storage of their household goods or personal property.

APPENDIX C: LEGAL FRAMEWORK

Impact fees are a way for local governments to require new developments to pay a proportionate share of the infrastructure costs they impose on the community. In contrast to "negotiated" developer exactions, impact fees are charges assessed on new development using a standard formula based on objective characteristics, such as the number and type of dwelling units constructed. The fees are a one-time, up-front charge, with the payment made at the time of building permit issuance. Impact fees require that each new development project pay a pro-rata share of the cost of new capital facilities required to serve that development.

Dual Rational Nexus Test

Impact fees were pioneered in states that lacked specific enabling legislation, and they have generally been legally defended as an exercise of local government's broad "police power" to regulate land development in order to protect the health, safety and welfare of the community. To distinguish regulatory impact fees from unauthorized taxes, state courts have developed guidelines for constitutionally-valid impact fees, based on the "rational nexus" standard. The standard essentially requires that fees must be proportional to the need for additional infrastructure created by the new development, and the fees must be spent to provide that same type of infrastructure to benefit new development. A Florida district court of appeals described the dual rational nexus test in 1983 as follows, and this language was subsequently quoted and followed by the Florida Supreme Court in its 1991 St. Johns County decision:[1]

> *In order to satisfy these requirements, the local government must demonstrate a reasonable connection, or rational nexus, between the need for additional capital facilities and the growth in population generated by the subdivision. In addition, the government must show a reasonable connection, or rational nexus, between the expenditures of the funds collected and the benefits accruing to the subdivision. In order to satisfy this latter requirement, the ordinance must specifically earmark the funds collected for use in acquiring capital facilities to benefit the new residents.*

The Need Test

To meet the first prong of the dual rational nexus test, it is necessary to demonstrate that new development creates the need for additional roadway facilities. The demand on roadways created by new developments of different types is quantified in the form of trip generation rates per housing unit and per various measures of nonresidential development. Transportation impact fees are designed to be proportional to the capacity needed to accommodate each new development.

The Benefit Test

To meet the second prong of the dual rational nexus test, it is necessary to demonstrate that new development subject to the fee will benefit from the expenditure of the impact fee funds. One requirement is that the fees actually be used to fill the need that serves as the justification for the fees under the first part of the test.

[1] St. Johns County v. Northeast Florida Builders Association, Inc., 583 So.2d 635, April 18, 1991

Colorado Statutes

Impact fees were pioneered by local governments in the absence of explicit state enabling legislation. Consequently, such fees were originally defended as an exercise of local government's broad "police power" to protect the health, safety and welfare of the community. The courts gradually developed guidelines for constitutionally valid impact fees, based on a "rational nexus" that must exist between the regulatory fee or exaction and the activity that is being regulated.

Prior to 2001, the authority of counties in Colorado to impose transportation impact fees was not entirely clear. Several counties had adopted impact fees, which they felt were authorized under counties' implied powers. This changed with the passage of SB 15 by the Legislature and its signature by the governor on November 16, 2001. Among other things, this bill created a new section 104.5: Impact Fees, in Article 20 of Title 29, Colorado Revised Statutes, which includes the following authorization and major requirements:

> *(1) Pursuant to the authority granted in section 29-20-104 (1) (g) and as a condition of issuance of a development permit, a local government may impose an impact fee or other similar development charge to fund expenditures by such local government … needed to serve new development. No impact fee or other similar development charge shall be imposed except pursuant to a schedule that is:*
>
> *(a) Legislatively adopted;*
> *(b) Generally applicable to a broad class of property; and*
> *(c) Intended to defray the projected impacts on capital facilities caused by proposed development.*
>
> *(2) (a) A local government shall quantify the reasonable impacts of proposed development on existing capital facilities and establish the impact fee or development charge at a level no greater than necessary to defray such impacts directly related to proposed development. No impact fee or other similar development charge shall be imposed to remedy any deficiency in capital facilities that exists without regard to the proposed development.*
> …
> *(3) Any schedule of impact fees or other similar development charges adopted by a local government pursuant to this section shall include provisions to ensure that no individual landowner is required to provide any site specific dedication or improvement to meet the same need for capital facilities for which the impact fee or other similar development charge is imposed. …*

SB 15 clearly authorized counties in Colorado to assess impact fees. It also imposed requirements relating to level of service, proportionality, and developer credits. Another important legal requirement not addressed in Colorado statutes but firmly rooted in impact fee case law is the need to provide revenue credits to avoid double-charging by charging both impact fees and other taxes (rather than improvements required as a condition of development). These topics are discussed below. Other statutory provisions require accounting for fee revenues in special funds and authorize waivers of fees for affordable housing.

Level of Service

Subsection 104.5(2)(a) of the Impact Fees statute requires that the fees not exceed the cost directly related to the proposed development, and that they not be used to remedy any existing deficiency. The statute does not use the term "level of service," but the concept is implicit in establishing the relationship of the cost of improvements to the new development, as well as in determining existing deficiencies. These provisions get to the heart of the one of the most fundamental principles established in impact fee case law, which is that impact fees should not charge new development for a higher level of service than is provided to existing development. Basing the fees on a higher level of service (LOS) than is being provided to existing development means there is a deficiency in existing facilities to provide the same LOS new development is paying for through the impact fee. Such a deficiency needs to be paid for in such a way that it does not burden new development. The methodology used in this study results in a fee that does not exceed the cost to maintain the existing LOS.

Proportionality

One of the fundamental legal principles of impact fee case law is that the fees for each individual land use type should be proportional to the impact of that use. This is reflected in subsection (2)(a), which requires that the fees be "directly related" to the impacts of new development. The language could also be read as allowing lower fees for some uses compared to others, as long as the fee for each use does not exceed the cost attributable to the development. However, if the fees are not based on the actual impact of the development, there is a risk that the courts may deem it to be an unauthorized tax rather than a fee. There may be a temptation to simply adopt fees at a lower rate for certain types of development that are seen as more desirable. A better approach would be to appropriate general fund monies to pay a portion of the fees for desired types of development. It would also be advisable to calculate a revenue credit to account for future general fund taxes that non-subsidized development will generate that will be used to subsidize fees for other classes of development.

Developer Credits

Another fundamental requirement articulated in impact fee case law is the need to avoid double-charging new development through impact fees and other requirements or taxes. Subsection 104.5(3) reflects this principle in the context of improvements required as a condition of development approval. It states that developers should not be required to make "site-specific dedications or improvements" that "meet the same need" being addressed by the impact fees while also being required to pay the fee. In general, impact fees should be reduced by the value of dedications or improvements required of developers for the same type of improvements that would be eligible to be funded with the impact fees. These reductions are referred to as developer credits.

It is reasonable to have some restrictions on the types of improvements that are eligible for credit. Granting credits is essentially spending future impact fees, and the fees should be spent for priority improvements that benefit the community at large. Developers should not be allowed to monopolize the fees for localized improvements if they choose to develop in areas that lack adequate infrastructure. For example, credit eligibility could be restricted to contributions related to projects identified in a

local or regional transportation master plan or capital improvements plan. However, developers should be eligible for credits for required improvements related to projects that are consistent with the jurisdiction's land use and capital plans.

The updated fees do not include the cost of rights-of-way (ROW). This does not mean that the fees cannot be spent to acquire ROW needed to accommodate future capacity-expanding improvements. However, if a jurisdiction decides not to give developers credit for required ROW dedications on the major roadway system related to a future capacity-expanding project, it might be appropriate to restrict the fees collected to be spent only on improvements. This issue has not been litigated, but the expenditure restriction would establish a bright line between what the fees are and are not designed to pay for, and avoid any argument that developments paying the fee are not getting the full benefit of the improvements they are paying for through the fees.

Revenue Credits

A revenue credit is a reduction from the cost per service unit designed to equalize the burden between existing and new development arising from the expenditure of future revenues that can be attributed in part to new development. While developer credits are provided on a case-by-case basis, revenue credits must be addressed in the fee calculation study.

As noted above, if there are existing deficiencies with respect to the level of service used in the fee calculation, the fees should be reduced by a credit that accounts for the contribution of new development toward remedying the existing deficiencies. A similar situation arises when the existing level of service has not been fully paid for. Outstanding debt on existing facilities that are counted in the existing level of service will be retired, in part, by revenues generated from new development. Given that new development will pay impact fees to provide the existing level of service for itself, the fact that new development may also be paying for the facilities that provide that level of service for existing development could amount to paying for more than its proportionate share. Consequently, impact fees should be reduced to account for future payments that will retire outstanding debt on existing facilities that provide the level of service on which the fees are based for existing development.

The issue is less clear-cut when it comes to other types of revenue that may be used to make capacity-expanding capital improvements of the same type being funded by impact fees. The clearest case occurs when non-impact fee general fund tax revenues are programmed for capacity-expanding improvements on an "as available" basis because impact fees are insufficient to fund all needed growth-related improvements. These capacity-adding projects that may be funded in the future with non-impact fee dollars will be paid for by both existing and new development and will increase the overall level of service, benefitting both existing development and future growth.

Similar considerations apply to dedicated funding sources, such as special taxes that can only be used for the same type of facilities as the impact fees. Like discretionary revenue, these types of dedicated revenue sources are typically not specifically dedicated only for capacity-expanding improvements, and even if they are, their use to fund capacity-related improvements improves the level of service for both existing and new development.

Outside funding or grants for capacity-expanding improvements to major roads that can reasonably be anticipated in the future could warrant a credit, but this is not clear-cut. In addition to the argument made above (i.e., the additional funding raises the level of service and benefits both new development and existing development), two additional arguments can be made against providing credits for such funding. First, new development in a community does not directly pay for State and Federal grants in the same way they pay local gasoline and property taxes. Second, future grant funding is far more uncertain than dedicated revenue streams.

While these arguments are compelling, they have not been litigated, and the law on whether revenue credits may be warranted in situations other than existing deficiencies or outstanding debt on existing facilities is currently unclear In addition, such credits were provided in the original 2002 impact fee study. This update continues to incorporate revenue credits for both local and Federal/State non-impact fee funding anticipated to be available to help fund growth-related transportation improvements.

If fees are disproportionately reduced or waived for selected land use categories or types of development, a revenue credit should probably be provided for other land uses not subject to the reduction. Even if the targeted reductions are replaced with general funds, new development that is not eligible for the reduction will generate future general fund revenues that will be used to pay for the reduced fees for eligible development. This could arguably amount to new development that is not eligible paying more than its proportionate share of transportation improvement costs. While this issue has not been litigated, the prudent course would be either not to apply targeted fee reductions or else calculate an appropriate revenue credit for non-eligible development types.

APPENDIX D: METHODOLOGY

This appendix describes the methodology used to develop the transportation impact fees. A key concept in any transportation impact fee methodology is the definition of the "service unit," which is described first. This description is followed by an explanation of the "consumption-based" model used in this study. Finally, the appendix concludes with a description of the formula used to calculate the transportation impact fees.

Service Unit

A service unit creates the link between supply (roadway capacity) and demand (traffic generated by new development). An appropriate service unit basis for transportation impact fees is vehicle-miles of travel (VMT). Vehicle-miles is a combination of the number of vehicles traveling during a given time period and the distance (in miles) those vehicles travel.

The two time periods most often used in traffic analysis are the 24-hour day (average daily trips or ADT) and the single hour of the day with the highest traffic volume (peak hour trips or PHT). The current transportation impact fee system is based on ADT. The regional transportation model is also based on ADT. Daily trips will continue to be used in this update.

Consumption-Based Model

The two traditional alternative methodologies for calculating transportation impact fees are the "improvements-driven" and "consumption-based" approaches. The consumption-based methodology continues to be recommended for Mesa County's transportation impact fees.

The "improvements-driven" approach essentially divides the cost of growth-related improvements required over a fixed planning horizon by the number new service units (e.g., vehicle-mile of travel or VMT) projected to be generated by growth over the same planning horizon in order to determine a cost per service unit. The improvements-driven approach depends on accurate planning and forecasting. For example, the fees will be accurate only if the forecasted increase in traffic actually necessitates all of the improvements identified in the transportation master plan. If many of the planned improvements will provide excess capacity that will be available to serve additional development beyond the planning horizon on which the fees are based, the fees may be too high.

The "consumption-based" approach does not depend on knowing in advance what improvements will be made or what type or density of development will occur. The consumption-based model simply charges a new development the cost of replacing the capacity that it will consume on the major roadway system. That is, for every service unit of traffic generated by the development, the transportation impact fee charges the net cost to construct an additional service unit of capacity. Compiling a list of planned improvements needed to accommodate projected growth is not necessary for the development of consumption-based transportation impact fees, which can be calculated based on any representative list of road improvements, including an historical list or a list of projects needed at build-out.

In a consumption-based system, the list of road improvements is used to determine the cost per unit of capacity. Thus, doubling the total cost of the list of road improvements will not double the fee and in fact may very well not increase the fee at all. Only if the improvements added to the list were more expensive, per unit of capacity created, would their addition have the effect of increasing the impact fee.

In most rapidly growing communities, some roadways will be experiencing an unacceptable level of congestion at any given point in time. One of the principles of impact fees is that new development should not be charged, through impact fees, for a higher level of service than is provided to existing development. A consumption-based fee, unlike an improvements-driven one, is not designed to recover the full costs to maintain the desired LOS on all roadway segments. Instead, it is only designed to maintain a minimum system-wide ratio between demand and capacity. Virtually all major roadway systems have more capacity (VMC) than demand (VMT) on a system-wide basis. Consequently, under a consumption-based system, the level of service standard is the system-wide VMC/VMT ratio. If the major roadway system currently has a VMC/VMT ratio higher than the one on which the fees are based, there are no existing deficiencies.

Since travel is never evenly distributed throughout a roadway system, actual roadway systems require more than one unit of capacity for every unit of demand in order for the system to function at an acceptable level of service. Suppose, for example, that the community completes a major arterial widening project. The completed arterial is likely to have a significant amount of excess capacity for some time. If the entire system has just enough capacity to accommodate all the vehicle-miles of travel, then the excess capacity on this segment must be balanced by another segment being over-capacity. Clearly, roadway systems in the real world need more total aggregate capacity than the total aggregate demand, because the traffic does not always precisely match the available capacity. Consequently, the standard consumption-based model generally underestimates the full cost of growth.

A modified consumption-based transportation impact fee model that more accurately identifies the full growth-related cost of maintaining desired service levels uses the system-wide ratio of capacity to demand. Essentially, this approach requires that new development pay for the cost to construct more capacity than it directly consumes in order to maintain the system-wide ratio of capacity to demand. In this system, the cost per vehicle-mile of capacity (VMC) is multiplied by the system-wide ratio of VMC/VMT to determine the cost per VMT. The existing major roadway system has an overall ratio of 3.51 vehicle-miles of capacity for every vehicle-mile of travel, as shown in Table 19. However, that ratio may not be sustainable over the long term. As communities grow and become more urban, the ratio tends to fall. The 2002 study used a 1.50 VMC/VMT ratio. The 1.00 ratio implicit in the standard consumption-based methodology is recommended for this update.

Table 19. Existing Major Roadway Level of Service

	Non-State Roads	State Roads	Total System
Daily VMC on Major Roads	5,325,416	2,925,706	8,251,122
÷ Daily VMT on Major Roads	1,326,921	1,020,715	2,347,636
Existing VMC/VMT Ratio	4.01	2.87	3.51
Recommended VMC/VMT Ratio for Impact Fee Calculation			1.00

Source: VMC and VMT from Table 18 in the appendix.

The formula for the modified consumption-based methodology used in this study is summarized in Figure 6. The maximum fee calculated under this methodology is the number of service units (VMT) that will be generated by the development times the net cost per service unit. The inputs into the formula are described in more detail below.

Figure 6. Transportation Impact Fee Formula

FEE = VMT x NET COST/VMT

Where:

VMT	=	TRIPS x % NEW x LENGTH
TRIPS	=	1/2 average daily trip ends generated by the development during the work week
% NEW	=	Percent of trips that are primary trips, as opposed to passby or diverted-link trips
LENGTH	=	Average length of a trip on major roadway system
NET COST/VMT	=	COST/VMT - CREDIT/VMT
COST/VMT	=	COST/VMC x VMC/VMT
COST/VMC	=	Average cost to create a new VMC based on historical or planned improvements
VMC/VMT	=	The system-wide ratio of capacity to demand in the major roadway system
CREDIT/VMT	=	Credit per VMT, based on revenues to be generated by new development

APPENDIX E: TRIP RATES BY UNIT SIZE

The calculation of average daily trip generation rates for single-family detached units by dwelling unit size is addressed in this appendix. Information from U.S. Census for the Mesa County area, the national American Housing Survey, and the National Cooperative Highway Research Program are utilized in the calculations.

The 2017 American Housing Survey provides national data on the average size of single-family units by number of bedrooms in square feet of living area. This data is based on a national sample of over 34,000 single-family detached units containing one or more bedrooms (efficiency units have a very small sample size and are excluded from the analysis). The average sizes of single-family units by number of bedrooms are summarized in Table 20. These national average sizes should be reasonably representative of existing development in Mesa County.

Table 20. Unit Size by Number of Bedrooms, Single-Family

No. of Bedrooms	Sample Units	Weighted Square Feet	Weighted Units	Average Size
1	602	1,600,040,501	1,486,842	1,076
2	4,768	15,727,551,611	11,053,273	1,423
3	16,920	70,835,665,150	38,294,217	1,850
4 or more	12,483	70,293,266,037	25,784,587	2,726
Total	34,773	158,456,523,300	76,618,920	2,068

Source: U.S. Census Bureau, 2017 American Housing Survey, national microdata.

The Census Bureau conducts annual surveys of housing units, which include information on the number of bedrooms and the number of persons residing in the unit. These annual surveys are combined into 5-year data sets. The most recent is the 5% sample covering the years 2013-2017 and including over 3,700 units. To get a large enough sample in all bedroom categories (other than efficiencies, which were excluded) it was necessary to use data for the region that includes Mesa County and four adjoining Colorado counties. Mesa County accounts for 64% of the population of the five-county region, according to U.S. Census population estimates for 2017. These recent, localized data identify the following average number of persons per unit by number of bedrooms, which should be representative of the average occupancy in single-family detached units in Mesa County.

Table 21. Persons per Unit by Bedrooms, Single-Family

No. of Bedrooms	Sample Units	Weighted Persons	Weighted Units	Persons/ Unit
1	132	2,328	2,326	1.00
2	663	20,215	12,503	1.62
3	2,050	90,447	42,253	2.14
4 or more	883	47,398	17,068	2.78
Total	3,728	160,388	74,150	2.16

Source: U.S. Census Bureau, *American Community Survey*, 2013-2017 5% sample microdata for Mesa, Montrose, Delta, San Miguel, and Ouray Counties.

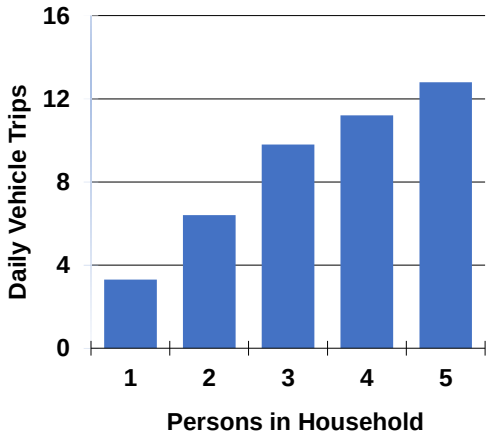
The National Cooperative Highway Research Program (NCHRP) of the National Research Council has developed estimates of average daily trip generation rates by the number of persons in a household. The NCHRP data indicate that trip generation is strongly related to the number of people residing in the unit, as shown in Table 22 and illustrated in Figure 7. While the trip rates themselves are somewhat dated due to the age of the study, the relative differences are still reasonable to rely on, if adjustments are made to account for the slight overall change in the average trip generation rates over the interval.[2]

Table 22. Trip Rates by Household Size

Household Size	Average Daily Trip Ends
One Person	3.3
Two Persons	6.4
Three Persons	9.8
Four Persons	11.2
Five or more Persons	12.8

Source: National Cooperative Highway Research Program, National Research Council, *NCHRP Report 365: Travel Estimation Techniques for Urban Planning,* Washington, D.C., 1998, Table 9: Trip estimation variables by urban size (for urban areas with population of 200,000-499,999)

Figure 7. Trip Rates by Household Size



[2] The average trip generation rate for a single-family detached unit declined 1.4% from the 6th edition (1997) to the 10th edition (2017) of the ITE *Trip Generation Manual* (9.57 in 1997 to 9.44 in 2017).

Data on unit size (in square feet) and the number of persons in the unit can be brought together because both sources also collect information on a related measure of unit size – the number of bedrooms. Then the number of persons in the unit can be related to trip generation, after adjusting for the overall decline in trip generation as well as the current average persons per unit for single-family units in Mesa County. The resulting trip generation rates for single-family detached units are presented in Table 23 for four unit size categories.

Table 23. Daily Trip Ends by Unit Size, Single-Family

No. of Bedrooms	Average Sq. Feet	Unit Size Range	Persons/ Unit	Daily Trips
1	1,076	<1,250 sf	1.00	4.54
2	1,423	1,250-1,649 sf	1.62	7.57
3	1,850	1,650-2,299 sf	2.14	8.81
4+	2,726	2,300 sf+	2.78	11.92
Total	2,068		2.16	9.44

Source: Average square feet from Table 20; unit size ranges based on approximate midpoints between the four average sizes; persons per unit from Table 21; daily trip ends based on linear interpolation between household size categories in Table 22, normalized for average persons per single-family unit from Table 21 and single-family average trip generation rate from Institute of Transportation Engineers, *Trip Generation Manual*, 2017.

2019 Impact Fee Study

Prepared for:

City of Grand Junction, Colorado

August 8, 2019

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IMPACT FEE STUDY

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EXECUTIVE SUMMARY

Impact fees are one-time payments for new development's proportionate share of the capital cost of infrastructure. The following study addresses the City of Grand Junction's Municipal Facilities, Fire, Police, and Parks & Recreation facilities. Impact fees do have limitations and should not be regarded as the total solution for infrastructure funding. Rather, they are one component of a comprehensive funding strategy to ensure provision of adequate public facilities. Impact fees may only be used for capital improvements or debt service for growth-related infrastructure. They may not be used for operations, maintenance, replacement of infrastructure, or correcting existing deficiencies. Although Colorado is a "home-rule" state and home-rule municipalities were already collecting "impact fees" under their home-rule authority granted in the Colorado Constitution, the Colorado Legislature passed enabling legislation in 2001, as discussed further below.

Colorado Impact Fee Enabling Legislation

For local governments, the first step in evaluating funding options for facility improvements is to determine basic options and requirements established by state law. Some states have more conservative legal parameters that basically restrict local government to specifically authorized actions. In contrast, "home-rule" states grant local governments broader powers that may or may not be precluded or preempted by state statutes depending on the circumstances and on the state's particular laws. Home rule municipalities in Colorado have the authority to impose impact fees based on both their home rule power granted in the Colorado Constitution and the impact fee enabling legislation enacted in 2001 by the Colorado General Assembly.

Impact fees are one-time payments imposed on new development that must be used solely to fund growth-related capital projects, typically called "system improvements". An impact fee represents new growth's proportionate share of capital facility needs. In contrast to project-level improvements, impact fees fund infrastructure that will benefit multiple development projects, or even the entire service area, as long as there is a reasonable relationship between the new development and the need for the growth-related infrastructure.

According to Colorado Revised Statute Section 29-20-104.5, impact fees must be legislatively adopted at a level no greater than necessary to defray impacts generally applicable to a broad class of property. The purpose of impact fees is to defray capital costs directly related to proposed development. The statutes of other states allow impact fee schedules to include administrative costs related to impact fees and the preparation of capital improvement plans, but this is not specifically authorized in Colorado's statute. Impact fees do have limitations and should not be regarded as the total solution for infrastructure funding. Rather, they are one component of a comprehensive portfolio to ensure adequate provision of public facilities. Because system improvements are larger and costlier, they may require bond financing and/or funding from other revenue sources. To be funded by impact fees, Section 29-20-104.5 requires that the capital improvements must have a useful life of at least five years. By law, impact fees can only be used for

capital improvements, not operating or maintenance costs. Also, impact fees cannot be used to repair or correct existing deficiencies in existing infrastructure.

Additional Legal Guidelines

Both state and federal courts have recognized the imposition of impact fees on development as a legitimate form of land use regulation, provided the fees meet standards intended to protect against regulatory takings. Land use regulations, development exactions, and impact fees are subject to the Fifth Amendment prohibition on taking of private property for public use without just compensation. To comply with the Fifth Amendment, development regulations must be shown to substantially advance a legitimate governmental interest. In the case of impact fees, that interest is the protection of public health, safety, and welfare by ensuring development is not detrimental to the quality of essential public services. The means to this end is also important, requiring both procedural and substantive due process. The process followed to receive community input (i.e. stakeholder meetings, work sessions, and public hearings) provides opportunities for comments and refinements to the impact fees.

There is little federal case law specifically dealing with impact fees, although other rulings on other types of exactions (e.g., land dedication requirements) are relevant. In one of the most important exaction cases, the U. S. Supreme Court found that a government agency imposing exactions on development must demonstrate an "essential nexus" between the exaction and the interest being protected (see Nollan v. California Coastal Commission, 1987). In a more recent case (Dolan v. City of Tigard, OR, 1994), the Court ruled that an exaction also must be "roughly proportional" to the burden created by development.

There are three reasonable relationship requirements for impact fees that are closely related to "rational nexus" or "reasonable relationship" requirements enunciated by a number of state courts. Although the term "dual rational nexus" is often used to characterize the standard by which courts evaluate the validity of impact fees under the U.S. Constitution, TischlerBise prefers a more rigorous formulation that recognizes three elements: "need," "benefit," and "proportionality." The dual rational nexus test explicitly addresses only the first two, although proportionality is reasonably implied, and was specifically mentioned by the U.S. Supreme Court in the Dolan case. Individual elements of the nexus standard are discussed further in the following paragraphs.

All new development in a community creates additional demands on some, or all, public facilities provided by local government. If the capacity of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Impact fees may be used to cover the cost of development-related facilities, but only to the extent that the need for facilities is a consequence of development that is subject to the fees. The Nollan decision reinforced the principle that development exactions may be used only to mitigate conditions created by the developments upon which they are imposed. That principle likely applies to impact fees. In this study, the impact of development on infrastructure needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific facilities, based on applicable level-of-service standards.

The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the Dolan case and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate impact fees for various types of facilities and categories of development. The demand for facilities is measured in terms of relevant and measurable attributes of development (e.g. persons per household).

A sufficient benefit relationship requires that impact fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. The calculation of impact fees should also assume that they will be expended in a timely manner and the facilities funded by the fees must serve the development paying the fees. However, nothing in the U.S. Constitution or the state enabling legislation requires that facilities funded with fee revenues be available exclusively to development paying the fees. In other words, benefit may extend to a general area including multiple real estate developments. Procedures for the earmarking and expenditure of fee revenues are discussed near the end of this study. All of these procedural as well as substantive issues are intended to ensure that new development benefits from the impact fees they are required to pay. The authority and procedures to implement impact fees is separate from and complementary to the authority to require improvements.

Proposed Maximum Supportable Impact Fee

The impact fees are based on the actual level of service for General Government, Police, Fire, and Parks & Recreation Facilities. The Parks & Recreation components includes improvements to parks, and recreational facilities. The Parks Impact Fee is only calculated for residential development while the fee for Municipal Facilities, Fire and Police are allocated to nonresidential development as well. A summary of methodologies used in the analysis is provided in Figure 1.

Figure 1. Summary of City of Grand Junction Impact Fees

Fee Category	*Service Area*	*Incremental Expansion*	*Plan-Based*	*Cost Recovery*	*Cost Allocation*
Fire	Citywide	Facilities, Apparatus	N/A	N/A	Population & Nonresidential Vehicle Trips
Police	Citywide	Facilities, Vehicles	N/A	N/A	Population & Nonresidential Vehicle Trips
Municipal Facilities	Citywide	Administrative Buildings	N/A	N/A	Population & Jobs
Parks and Recreation	201 Service Bdry	Amenities	N/A	N/A	Population

Maximum Supportable Impact Fees

Figure 2 provides a schedule of the maximum supportable impact fee for Municipal Services, Fire, Police, and Parks & Recreation. The fees represent the highest amount supportable for each type of residential

and nonresidential unit, which 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.

Figure 2. Maximum Supportable Impact Fee

Residential (Per Unit)

Type	Fire	Police	Parks and Recreation	Municipal Services	Maximum Supportable Fee	Current Fee	Difference
Single-Family	$710	$305	$1,605	$785	**$3,405**	**$225**	$3,180
Multi-Family	$467	$200	$1,055	$516	**$2,238**	**$225**	$2,013

Nonresidential (Per 1,000 square feet)

Type	Fire	Police	Parks and Recreation	Municipal Services	Maximum Supportable Fee	Current Fee	Difference
Retail/Commercial	$489	$206	$0	$471	**$1,167**	**$0**	$1,167
Office/Institutional	$191	$81	$0	$598	**$870**	**$0**	$870
Industrial	$66	$28	$0	$234	**$328**	**$0**	$328
Warehousing	$34	$14	$0	$69	**$117**	**$0**	$117

General Methods for Impact Fees

There are three general methods for calculating impact fees. The choice of a particular method depends primarily on the timing of infrastructure construction (past, concurrent, or future) and service characteristics of the facility type being addressed. Each method has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components.

Reduced to its simplest terms, the process of calculating 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, though, 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 within the designated service area. The following paragraphs discuss three basic methods for calculating impact fees and how those methods can be applied to City of Grand Junction.

Cost Recovery Method (past improvements)

The City of Grand Junction impact fees use the cost recovery method to address existing excess capacity provided at the Public Safety Building (police headquarters). The rationale for recoupment, or cost recovery, 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 utility systems that must provide adequate capacity before new development can take place.

Incremental Expansion Method (concurrent improvements)

The City of Grand Junction impact fees use the incremental expansion method to document current level-of-service (LOS) standards for the infrastructure types included in the study, using both quantitative and qualitative measures. This approach assumes there are no existing infrastructure deficiencies or surplus capacity. New development is only paying its proportionate share for growth-related infrastructure. 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 to keep pace with development. The incremental expansion methodology is used for four infrastructure categories included in the study. This is a conservative approach, which limits the City's General Fund exposure. If a plan-based approach were utilized, reliance on long-range growth projections would be likely, which could force the City to spend more General Fund dollars to implement the plan if growth does not occur as projected.

Plan-Based Method (future improvements)

Although not used in City of Grand Junction, the plan-based method allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two basic options for determining the cost per demand unit: 1) total cost of a public facility can be divided by total service units (average cost), or 2) the growth-share of the public facility cost can be divided by the net increase in service units over the planning timeframe (marginal cost).

Evaluation of Possible Credits

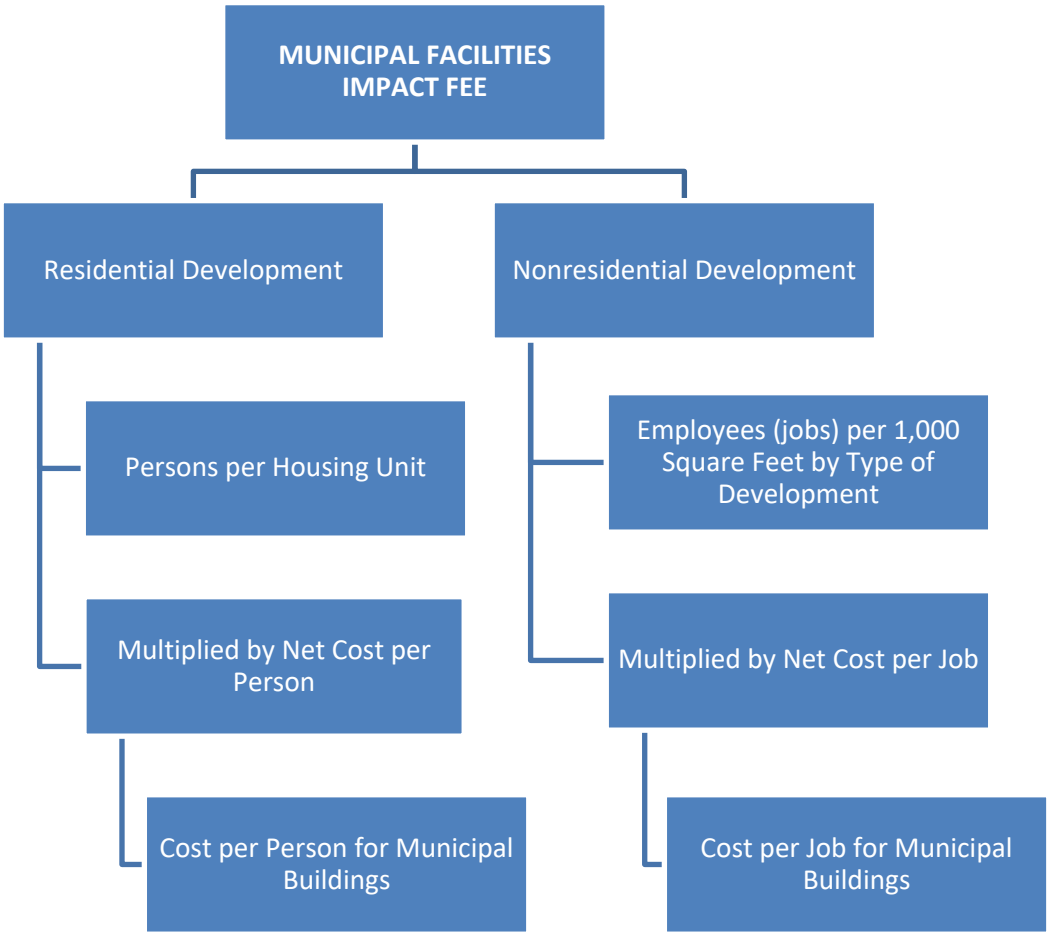
Regardless of the methodology, a consideration of "credits" is integral to the development of a legally defensible impact fee methodology. There are two types of "credits" with specific characteristics, both of which should be addressed in impact fee studies and ordinances. The first is a revenue credit due to possible double payment situations, which could occur when other revenues may contribute to the capital costs of infrastructure covered by the impact fee. This type of credit is integrated into the Fire impact fee calculation, thus reducing the fee amount. The second is a site-specific credit or developer reimbursement for construction of system improvements. This type of credit is addressed in the administration and implementation of the development impact fee program.

Please note, calculations throughout this report are based on an analysis conducted using MS Excel software. Results are discussed in the memo using one- and two-digit places (in most cases). Figures are typically either truncated or rounded. In some instances, 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).

MUNICIPAL FACILITIES DEVELOPMENT IMPACT FEE

The Municipal Facilities Impact Fee is calculated on a per capita basis for residential development and a per employee basis for nonresidential development. Figure M1 illustrates the methodology used to determine the development fee. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion is derived from the product of persons per housing unit (by type) multiplied by the net cost per person. The nonresidential portion is derived from the product of employees per 1,000 square feet of nonresidential space multiplied by the net cost per employee (job).

Figure M1. Municipal Facilities Impact Fee Methodology Chart



Municipal Facilities Proportionate Share Factors

Both residential and nonresidential developments increase the demand on Municipal Facilities infrastructure. To calculate the proportional share between residential and nonresidential demand on Municipal Facilities infrastructure, a functional population approach is used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the City through the 24 hours in a day.

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 Grand Junction are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Grand Junction are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Grand Junction, the cost allocation for residential development is 65 percent while nonresidential development accounts for 35 percent of the demand for municipal facilities, see Figure M2.

Figure M2. City of Grand Junction Functional Population

Demand Units in 2015				*Demand Hours/Day*	*Person Hours*	*Proportionate Share*
Residential						
Estimated Residents	60,588					
Residents Not Working		37,811		20	756,220	
Employed Residents		22,777				
Employed in Grand Junction			15,497	14	216,958	
Employed outside Grand Junction			7,280	14	101,920	
			Residential Subtotal		1,075,098	*65%*
Nonresidential						
Non-working Residents		37,811		4	151,244	
Jobs in Grand Junction		42,565				
Residents Employed in Grand Junction			15,497	10	154,970	
Nonresident Workers (Inflow Commuters)			27,068	10	270,680	
			Nonresidential Subtotal		576,894	*35%*
			TOTAL		1,651,992	*100%*

Source: City of Grand Junction 2015 population estimate based on 2015 Census Estimate Data; U.S. Census Bureau OnTheMap 6.5 Web Application, 2015.

Municipal Facilities Level of Service and Capital Costs

The Municipal Facilities Impact Fee is based on six primary facilities serving the public, and their associated replacement costs. The use of existing standards means there are no existing infrastructure deficiencies. New development is only paying its proportionate share for growth-related infrastructure. The floor area has been provided by the City of Grand Junction staff.

The municipal buildings included in the impact fee calculation are listed in Figure M3. In total, there is 122,187 square feet of general government municipal floor area in the City.

The functional population split for the City of Grand Junction found in Figure M2 is used to allocate the square footage and corresponding replacement cost of Municipal Facilities infrastructure in Figure M3. Of the 122,187 square feet of applicable general government facilities, 65 percent is allocated to residential growth (79,518 square feet) and 35 percent (42,669 square feet) is allocated to nonresidential growth. The 2018 population or job totals divide the floor area allocations to find the residential and nonresidential level of service standard. For example, the residential level of service is 1.20 square feet per person (79,518 square feet 66,425 residents = 1.20 square feet per person).

To estimate the replacement cost of the facilities, the average cost of $277 per square foot is used. As a result, the replacement cost of City Facilities is $33,845,799. To find the cost per person, the level of service standards is applied to the average replacement cost. For example, the residential cost per person is $331.60 (1.20 square feet person x $277 per square foot = $331.60 per person).

Figure M3. Municipal Facilities Level of Service and Cost Factors

Facility	Square Feet	Cost Per SF*	Replacement Cost
Transportation Engineering Office	3,600	$277	$997,200
Municipal Service Center	38,485	$277	$10,660,345
Municipal Operations Center	23,345	$277	$6,466,565
Field Engineering Building	3,234	$277	$895,818
Facilities Building	7,523	$277	$2,083,871
City Hall	46,000	$277	$12,742,000
TOTAL	**122,187**		**$33,845,799**

Level-of-Service (LOS) Standards

Population in 2018	66,425
Emplyment in 2018	58,660
Residential Share	65%
Nonresidential Share	35%
LOS: Square Feet per Person	**1.20**
LOS: Square Feet per Job	**0.73**

Cost Analysis

Cost per Square Foot*	$277.00
LOS: Square Feet per Person	1.20
Cost per Person	**$331.60**
LOS: Square Feet per Job	0.73
Cost per Job	**$201.49**

Source: City of Grand Junction; TischlerBise analysis
**2018 National Building Cost Manual*

Projection of Growth-Related Municipal Facilities Facility Needs

To estimate the 10-year growth needs for Municipal Facilities infrastructure, the current level of service (1.20 square feet per person and 0.73 square feet per job) is applied to the residential and nonresidential growth projected for the City of Grand Junction. The City is projected to increase by 12,025 residents and 11,035 jobs over the next ten years (see Appendix A). Figure M4 indicates that the City will need to construct 22,422 square feet of additional space to maintain current levels of service for Municipal Facilities. By applying the average cost of a building ($277 per square feet), the estimated growth-related cost for Municipal Facilities is approximately $6.2 million.

Figure M4. 10-Year Municipal Facilities Infrastructure Needs to Accommodate Growth

Type of Infrastructure	Level of Service			Demand Unit	Unit Cost / Sq. Ft.
Municipal Facilites	Residential	1.20	Square Feet	per persons	$277
	Nonresidential	0.73		per jobs	

Growth-Related Need for Municipal Facilities						
Year		Population	Jobs	Residential Square Feet	Nonresidential Square Feet	Total Square Feet
Base	2018	66,425	58,660	79,518	42,669	122,187
Year 1	2019	67,558	60,018	80,874	43,657	124,531
Year 2	2020	68,691	61,025	82,230	44,389	126,619
Year 3	2021	69,911	62,109	83,691	45,178	128,869
Year 4	2022	71,131	63,192	85,151	45,966	131,117
Year 5	2023	72,351	64,276	86,612	46,754	133,366
Year 6	2024	73,570	65,360	88,072	47,542	135,614
Year 7	2025	74,790	66,444	89,532	48,331	137,863
Year 8	2026	76,010	67,527	90,993	49,119	140,112
Year 9	2027	77,230	68,611	92,453	49,907	142,360
Year 10	2028	78,450	69,695	93,913	50,696	144,609
Ten-Year Increase		12,025	11,035	**14,395**	**8,027**	**22,422**
			Projected Expenditure	**$3,987,432**	**$2,223,462**	**$6,210,894**

Growth-Related Expenditure on Municipal Facilities	**$6,210,894**

Maximum Supportable Municipal Facilities Impact Fee

Figure M5 shows the maximum supportable Municipal Facilities Impact Fee. Impact fees for Municipal Facilities are based on persons per housing unit for residential development and employees per 1,000 square feet for nonresidential development. For residential development, the total cost per person is multiplied by the persons per housing unit to calculate the proposed fee. For nonresidential development, the total cost per job is multiplied by the jobs per 1,000 square feet to calculate the proposed fee. The fees represent the highest amount supportable for each type of development, which 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.

Figure M5. Maximum Supportable Municipal Facilities Impact Fee

Fee Component	Cost per Person	Cost per Job
Municipal Facilities Space	$331.60	$201.49

Residential (per unit)

Development Type	Persons per Housing Unit	Maximum Supportable Fee
Single Family	2.37	**$785**
Multi-Family	1.56	**$516**

Nonresidential

Type	*ITE Code*	*Unit*	*Employees**	*Maxmum Supportable Fee*
Retail/Commercial	820	1,000 SF	2.34	**$471**
Office/Institutional	710	1,000 SF	2.97	**$598**
Industrial	130	1,000 SF	1.16	**$234**
Warehousing	150	1,000 SF	0.34	**$69**

*Employment densities were calculated using data from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition.

Revenue from Municipal Facilities Impact Fee

Revenue from the Municipal Facilities Impact Fee is estimated in Figure M6. There is projected to be 4,744 new housing units and 4.7 million square feet of nonresidential space in Grand Junction by 2028. To determine the revenue from each development type, the fee is multiplied by the growth. Overall, the revenue from the impact fee covers 93 percent of the capital costs generated by projected growth in the City of Grand Junction.

Figure M6. Estimated Revenue from Municipal Facilities Impact Fee

	Total Cost	Growth Cost
Municipal Facilities	$6,210,894	$6,210,894
Total Expenditures	**$6,210,894**	**$6,210,894**

Projected Development Impact Fee Revenue

	Single-Family	Multi-Family	Commercial / Retail	Office/Instit.	Industrial
	$785 per unit	$516 per unit	$471 per 1,000 Sq Ft	$598 per 1,000 Sq Ft	$234 per 1,000 Sq Ft
Year	Housing Units		KSF	KSF	KSF
Base 2018	22,279	6,655	11,094	14,499	6,645
Year 1 2019	22,656	6,767	11,396	14,754	6,668
Year 2 2020	23,032	6,880	11,538	14,964	6,745
Year 3 2021	23,395	6,988	11,690	15,191	6,828
Year 4 2022	23,757	7,096	11,843	15,417	6,911
Year 5 2023	24,120	7,205	11,996	15,644	6,995
Year 6 2024	24,482	7,313	12,148	15,871	7,078
Year 7 2025	24,845	7,421	12,301	16,097	7,161
Year 8 2026	25,207	7,529	12,453	16,324	7,244
Year 9 2027	25,570	7,638	12,606	16,551	7,328
Year 10 2028	25,932	7,746	12,759	16,777	7,411
Ten-Year Increase	3,653	1,091	1,664	2,279	766
Projected Revenue =>	$2,867,795	$563,074	$784,765	$1,363,580	$179,046
				Projected Revenue =>	**$5,758,259**
				Total Expenditures =>	**$6,210,894**
				General Fund's Share =>	**$452,635**

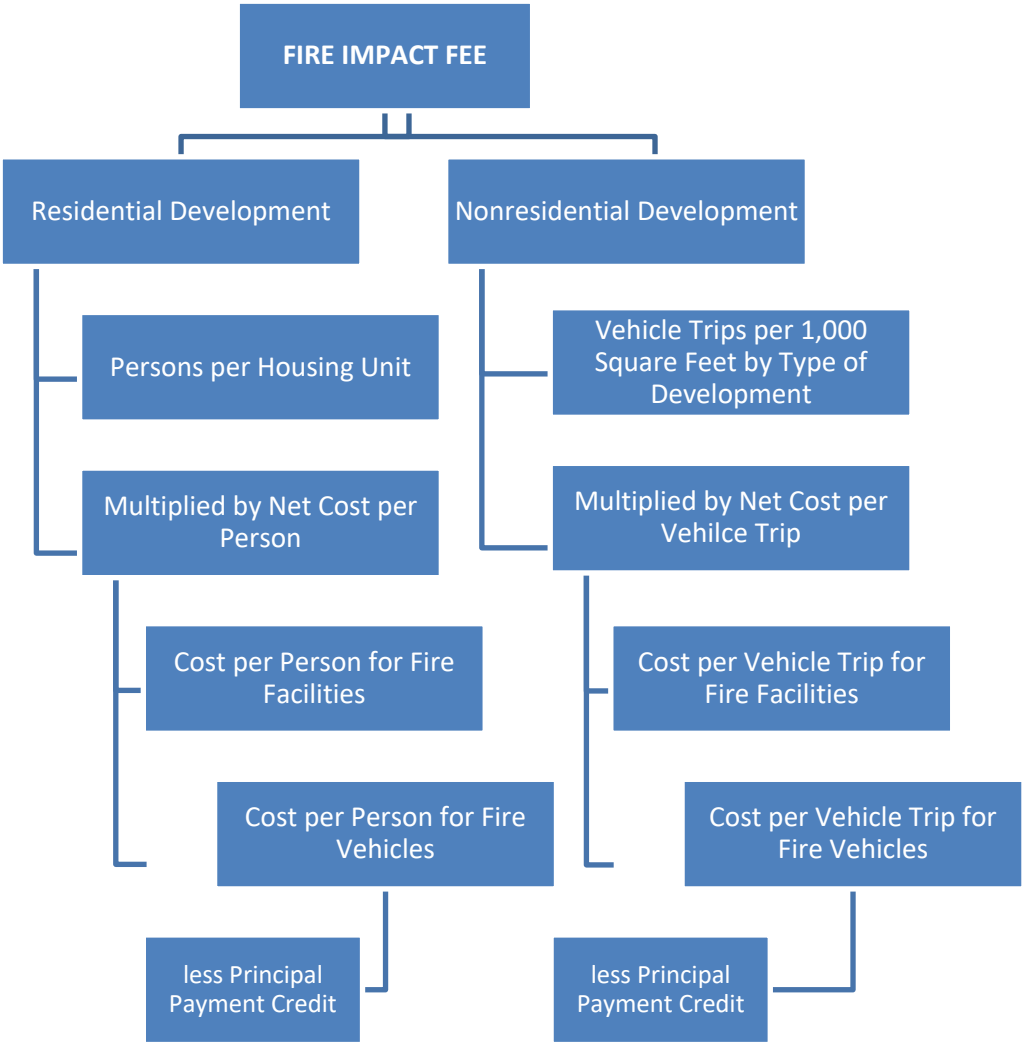
FIRE IMPACT FEE

The Fire Impact Fee is calculated on a per capita basis for residential development and a per vehicle trip basis for nonresidential development. Figure F1 illustrates the methodology used to determine the impact fee. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion is derived from the product of persons per housing unit (by type) multiplied by the net cost per person. The nonresidential portion is derived from the product of vehicle trips generated per 1,000 square feet of nonresidential space multiplied by the net cost per vehicle trip. There are two components to the Fire Facilities Impact Fee:

- Fire Facilities
- Fire Apparatus

The residential fire impact fees are calculated per housing unit. Because the Grand Junction Fire Department also provides emergency medical services and these calls represent the largest percentage of calls to which the Department responds, TischlerBise recommends using nonresidential vehicle trips as the best demand indicator for fire facilities and apparatus, as the trip rates will reflect the presence of people at nonresidential land uses. For example, vehicle trips are highest for commercial/retail developments, such as shopping centers, and lowest for industrial 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 and emergency medical services and facilities 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, fire 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.

Figure F1. Fire Facilities Impact Fee Methodology Chart



Fire Service Area

The Grand Junction Fire Department serves an area greater than the City of Grand Junction and the 201 Service Area Boundary. Because of this, that portion of the demand cannot be attributed to City residents and businesses or the impact fees will be disproportionate to demand. Therefore, we asked the Grand Junction Fire Department to conduct an analysis of calls for service inside and outside the City in order to determine the amount of activity directed toward residents and business inside the City limits. As shown in Figure F2, over the last two calendar years, the City of Grand Junction Fire Department has responded to slightly over 32,000 incidents. Of that total, 83 percent of the incidents were inside the City limits.

Figure F2. Fire and EMS Incident Data for Two-Year Period

Location	*Incidents*	*%*
Inside the City	26,536	83%
Incidents outside the City	5,534	17%
Total	**32,070**	**100%**

Source: Grand Junction Fire Department

Fire Proportionate Share Factors

Both residential and nonresidential developments increase the demand on Fire facilities and vehicles. To calculate the proportional share between residential and nonresidential demand on Fire facilities and vehicles, a functional population approach is used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the City through the 24 hours in a day.

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 Grand Junction are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Grand Junction are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Grand Junction, the cost allocation for residential development is 65 percent while nonresidential development accounts for 35 percent of the demand for Fire infrastructure, see Figure F3.

Figure F3. City of Grand Junction Functional Population

Demand Units in 2015				Demand Hours/Day	Person Hours	Proportionate Share
Residential						
Estimated Residents	60,588					
Residents Not Working		37,811		20	756,220	
Employed Residents		22,777				
Employed in Grand Junction			15,497	14	216,958	
Employed outside Grand Junction			7,280	14	101,920	
				Residential Subtotal	1,075,098	*65%*
Nonresidential						
Non-working Residents		37,811		4	151,244	
Jobs in Grand Junction		42,565				
Residents Employed in Grand Junction			15,497	10	154,970	
Nonresident Workers (Inflow Commuters)			27,068	10	270,680	
				Nonresidential Subtotal	576,894	*35%*
				TOTAL	1,651,992	*100%*

Source: City of Grand Junction 2015 population estimate based on 2015 Census Estimate Data; U.S. Census Bureau OnTheMap 6.5 Web Application, 2015.

Fire Station Level of Service

The first component of the Fire Impact Fee is based on an inventory of existing Citywide facilities and replacement costs. The use of existing standards means there are no existing infrastructure deficiencies. New development is only paying its proportionate share for growth-related infrastructure. The floor area has been provided by the City of Grand Junction staff.

The Fire Department occupies 60,577 square feet in 7 facilities. To determine the level of service factors for the impact fee calculation, the amount of facility square footage (60,577) is multiplied by the percentage of activity directed inside the City limits (83%) and then by the functional population split for the City of Grand Junction (found in Figure F3) is used to allocate the square footage and corresponding replacement cost of the fire stations in Figure F4. For example, of the 60,577 square feet of fire space in the City, 50,279 square feet is directed toward City of Grand Junction (60,577 multiplied by 83%). Of this 50,279 impact fee eligible square footage, 32,721 square feet is allocated to residential growth and 17,558 square feet is allocated to nonresidential growth.

The allocated square feet of the Grand Junction fire stations are divided by the 2018 residential and nonresidential demand units (population and nonresidential vehicle trips). The result is the current level

of service for fire stations in the City. Specifically, there is 0.49 square feet of fire stations space per capita and 0.06 square feet per nonresidential vehicle trip.

To estimate the replacement cost of the fire stations, the average cost of $450 per square foot is used. As a result, the total replacement cost for the 60,577 square feet of facilities is $27,259,650. To find the cost per person or cost per nonresidential vehicle trip, the level of service standards is applied to the cost per square foot for fire stations. For example, the residential cost per person is $253.92 (0.49 square feet per person x $450 per square foot = $221.67 per person).

Figure F4. Fire Station Level of Service and Cost Factors

Station	*Square Footage*	*Cost per Square Foot**	*Replacement Cost*
Fire Administration Building	14,576	$450.00	$6,559,200
Fire Station No. 1	13,544	$450.00	$6,094,800
Fire Station No. 2	8,461	$450.00	$3,807,450
Fire Station No. 3	5,477	$450.00	$2,464,650
Fire Station No. 4	8,982	$450.00	$4,041,900
Fire Station No. 5 Training	1,916	$450.00	$862,200
Fire Station No. 5	7,621	$450.00	$3,429,450
TOTAL	**60,577**	**$450.00**	**$27,259,650**

Level-of-Service (LOS) Standards

Percentage of Activity in City of Grand Junction	83%
Population in 2018	66,425
Nonresidential Vehicle Trip Ends in 2018	271,362
Residential Share	65%
Nonresidential Share	35%
LOS: Sq. Ft. per Person	**0.49**
LOS: Sq. Ft. per Vehicle Trip End	**0.06**

Cost Analysis

Cost per Square Foot*	$450
LOS: Square Feet per Person	0.49
Cost Per Person	**$221.67**
LOS: Square Feet per Vehicle Trip End	0.06
Cost per Vehicle Trip End	**$29.12**

**Source: City of Grand Junction*

Fire Apparatus Level of Service

The second component of the Fire impact fee involves the fire apparatus. The City's current inventory of apparatus is contained in Figure F5, which consists of 38 pieces with a total replacement value of $12.2 million, or a weighted average cost of $322,771 per piece of apparatus. Similar to the facilities component, the apparatus inventory is compared to the percentage of activity directed inside the City of Grand Junction, and then allocated based on the proportionate share factors shown in Figure F3. For example, of the 38 pieces of apparatus in the City, approximately 31.5 pieces of the inventory are directed toward City of Grand Junction (38 pieces of apparatus multiplied by 83%). Of the 31.5 pieces of impact fee eligible apparatus, approximately 20.5 pieces are allocated to residential growth and approximately 11 pieces are allocated to nonresidential growth. These allocations are divided by the demand units (population for residential development and nonresidential vehicle trips for nonresidential development) to calculate the current level of service. The current level of service is multiplied by the weighted average cost per fire apparatus to calculate the cost per capita and nonresidential vehicle trip.

For example, there is .00031 pieces of fire apparatus per person in Grand Junction (20.5 apparatus / 66,425 persons = .00031 apparatus per person). As discussed above, a new piece of fire apparatus has an average cost of $322,771, which results in the residential cost equaling $99.72 per person (.00031 vehicles per person x $322,711 per apparatus = $99.72 per person).

Figure F5. Fire Apparatus Inventory and Level of Service

Description	Model	# of Units	Unit Cost*	Replacement Cost
Truck	Smeal 100' Quint	1	$1,253,000	$1,253,000
Truck	Smeal 75' Quint	1	$1,253,000	$1,253,000
Engine	Smeal	4	$714,000	$2,856,000
Engine	E-One Pumper	2	$714,000	$1,428,000
Battalion	Dodge Ram	1	$65,000	$65,000
HazMat	BLM	1	$300,000	$300,000
Ambulance	Dodge/Ford/Chevy	8	$322,000	$2,576,000
Medic	Ford F150	1	$75,000	$75,000
Rescue	SVI Heavy Rescue Truck	1	$1,000,000	$1,000,000
Brush	HME	1	$379,000	$379,000
Brush	Ford F450	1	$294,000	$294,000
Tender	International Tender	1	$350,000	$350,000
UTV	Yamaha Rhino	2	$18,000	$36,000
ATV	Suzuki	2	$12,000	$24,000
Air Trailer	Air Trailer	1	$40,000	$40,000
Trailers	Various	4	$10,000	$40,000
Administrative	SUV	3	$55,000	$165,000
Administrative	Pick Ups	3	$43,000	$129,000
	TOTAL	**38**	**$322,711**	**$12,263,000**

Level-of-Service (LOS) Standards

Percentage of Activity in City of Grand Junction	83%
Population in 2018	66,425
Nonresidential Vehicle Trip Ends in 2018	271,362
Residential Share	65%
Nonresidential Share	35%
LOS: Units per Person	**0.00031**
LOS: Units per Vehicle Trip End	**0.00004**

Cost Analysis

Average Cost per Unit	$322,711
LOS: Units per Person	0.00031
Cost per Person	**$99.72**
LOS: Units per Vehicle Trip End	0.00004
Cost per Vehicle Trip End	**$13.10**

**Source: City of Grand Junction.*

Projection of Growth-Related Fire Needs

To estimate the 10-year growth needs for Fire infrastructure, the current level of service (0.49 square feet per person and 0.06 square feet per nonresidential vehicle trip) is applied to the residential and nonresidential growth projected for the City of Grand Junction. The City is projected to increase by 12,025 residents and 40,643 nonresidential vehicle trips over the next ten years (see Appendix A). As shown in Figure F6, there is a projected need for 8,554 square feet of Fire station space in the City to accommodate the growth at the present level of service. By applying the average cost of a building ($450 per square feet), the total projected expenditure to accommodate new development is estimated $3.8 million.

Figure F6. 10-Year Fire Infrastructure Needs to Accommodate Growth

Level-of-Service			*Demand Unit*	*Unit Cost*
Residential	0.49	Square Feet	per Person	$450
Nonresidential	0.06		per Trip End	

Growth-Related Need for Facilities						
Year		*Population*	*Nonres. Vehicle Trips*	*Residential Sq. Ft.*	*Nonres. Sq. Ft.*	*Total*
Base	2018	66,425	271,362	32,721	17,558	50,279
Year 1	2019	67,558	277,672	33,279	17,966	51,245
Year 2	2020	68,691	281,244	33,837	18,197	52,035
Year 3	2021	69,911	285,089	34,438	18,446	52,884
Year 4	2022	71,131	288,934	35,039	18,695	53,734
Year 5	2023	72,351	292,779	35,640	18,944	54,584
Year 6	2024	73,570	296,625	36,241	19,193	55,434
Year 7	2025	74,790	300,470	36,842	19,441	56,283
Year 8	2026	76,010	304,315	37,443	19,690	57,133
Year 9	2027	77,230	308,160	38,044	19,939	57,983
Year 10	2028	78,450	312,005	38,645	20,188	58,832
Ten-Year Increase		12,025	40,643	5,924	2,630	**8,554**
		Growth-Related Expenditure		$2,665,693	$1,183,388	**$3,849,081**

To estimate the 10-year growth needs for fire apparatus, the current level of service (.00031 apparatus per person and 0.00004 vehicles per nonresidential vehicle trip) is applied to the residential and nonresidential growth projected for the City of Grand Junction. The City is projected to increase by 12,025 residents and 40,643 nonresidential vehicle trips over the next ten years (see Appendix A). As shown in Figure F7, there is a projected need for approximately 5 additional growth-related pieces of apparatus. By applying the average cost of a vehicle ($322,711), the total projected growth-related expenditure is estimated at approximately $1.6 million.

Figure F7. 10-Year Fire Apparatus Needs to Accommodate Growth

Level-of-Service			*Demand Unit*	*Unit Cost*
Residential	0.00031	Units	per Person	$322,711
Nonresidential	0.00004		per Trip End	

Growth-Related Need for Apparatus						
Year		*Population*	*Nonres. Vehicle Trips*	*Residential Vehicles*	*Nonres. Vehicles*	*Total*
Base	2018	66,425	271,362	21	11	32
Year 1	2019	67,558	277,672	21	11	32
Year 2	2020	68,691	281,244	21	11	33
Year 3	2021	69,911	285,089	22	12	33
Year 4	2022	71,131	288,934	22	12	34
Year 5	2023	72,351	292,779	22	12	34
Year 6	2024	73,570	296,625	23	12	35
Year 7	2025	74,790	300,470	23	12	35
Year 8	2026	76,010	304,315	23	12	36
Year 9	2027	77,230	308,160	24	13	36
Year 10	2028	78,450	312,005	24	13	37
Ten-Year Increase		12,025	40,643	4	2	**5**
		Growth-Related Expenditure		$1,290,842	$645,421	**$1,613,553**

Fire Debt Service Credit

The City of Grand Junction has existing debt obligations from past fire facility projects: Tax Revenue Bond Series 2010A and Tax Revenue Build America Bond Series 2010B. The proceeds from these bonds funded a number of fire facilities including Fire Station #1, #2 and the Fire Administration building for a total of $7,100,000 of improvements, representing 20 percent of the 2010 Bonds. Figure F8 lists the remaining principal payment schedules for the bonds.

The total remaining annual principal payment schedule is distributed to the equivalent residential and nonresidential share, City's population and vehicle trip ends, to find the debt cost per attributed user. To account for the time value of money, annual payments are discounted using a net present value formula based on the applicable discount (7.1%) rate. This results in a credit of $21.68 per person, and $2.94 per nonresidential trip end.

Figure F8. Fire Debt Principal Payment Credit

Year	Principal Payment	Residential Share (65%)	Population	Debt Cost per Capita	Nonresidential Share (35%)	*Nonres. Vehicle Trips*	Debt Cost per Trip End
2019	$165,000	$107,250	67,558	$1.59	$57,750	277,672	$0.21
2020	$171,000	$111,150	68,691	$1.62	$59,850	281,244	$0.21
2021	$177,000	$115,050	69,911	$1.65	$61,950	285,089	$0.22
2022	$185,000	$120,250	71,131	$1.69	$64,750	288,934	$0.22
2023	$193,000	$125,450	72,351	$1.73	$67,550	292,779	$0.23
2024	$202,000	$131,300	73,570	$1.78	$70,700	296,625	$0.24
2025	$211,000	$137,150	74,790	$1.83	$73,850	300,470	$0.25
2026	$220,000	$143,000	76,010	$1.88	$77,000	304,315	$0.25
2027	$230,000	$149,500	77,230	$1.94	$80,500	308,160	$0.26
2028	$241,000	$156,650	78,450	$2.00	$84,350	312,005	$0.27
2029	$252,000	$163,800	79,862	$2.05	$88,200	316,292	$0.28
2030	$265,000	$172,250	81,300	$2.12	$92,750	320,823	$0.29
2031	$278,000	$180,700	82,763	$2.18	$97,300	325,436	$0.30
2032	$291,000	$189,150	84,253	$2.25	$101,850	330,132	$0.31
2033	$306,000	$198,900	85,769	$2.32	$107,100	334,912	$0.32
2034	$321,000	$208,650	87,313	$2.39	$112,350	339,778	$0.33
2035	$337,000	$219,050	88,885	$2.46	$117,950	344,732	$0.34
2036	$354,000	$230,100	90,485	$2.54	$123,900	349,775	$0.35
2037	$372,000	$241,800	92,113	$2.63	$130,200	354,909	$0.37
2038	$390,000	$253,500	93,771	$2.70	$136,500	360,135	$0.38
2039	$409,000	$265,850	95,459	$2.78	$143,150	365,456	$0.39
2040	$430,000	$279,500	97,178	$2.88	$150,500	370,872	$0.41
Total	**$6,000,000**	**$3,900,000**			**$2,100,000**		

Discount Rate		**7.1%**		**7.1%**
Net Present Value		**$21.68**		**$2.94**

Maximum Supportable Fire Impact Fee

Figure F9 shows the maximum supportable Fire Impact Fee. Impact fees for Fire are based on persons per housing unit for residential development and vehicle trips per 1,000 square feet for nonresidential development. For residential development, the total cost per person is multiplied by the persons per housing unit to calculate the proposed fee. For nonresidential development, the total cost per vehicle trip is multiplied by the trips per 1,000 square feet, hotel room or other applicable factor to calculate the proposed fee.

The fees represent the highest amount supportable for each type of development, which 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.

Figure F9. Maximum Supportable Fire Impact Fee

Fee Component	*Cost per Person*	*Cost per Vehicle Trip*
Facilities	$221.67	$29.12
Vehicles	$99.72	$13.10
Existing Principal Credit	($21.68)	($2.94)
NET COST PER DEMAND UNIT	**$299.71**	**$39.28**

Residential

Housing Type	*Persons per Housing Unit*	*Maximum Supportable Fee*
Single-Family	2.37	**$710**
Multi-Family	1.56	**$467**

Nonresidential

Type	*ITE Code*	*Unit*	*Average Daily Vehicle Trips**	*Trip Adjustment Factor**	*Maximum Supportable Fee*
Retail/Commercial	820	1,000 SF	37.75	33%	**$489**
Office/Institutional	710	1,000 SF	9.74	50%	**$191**
Industrial	130	1,000 SF	3.37	50%	**$66**
Warehousing	150	1,000 SF	1.74	50%	**$34**

*Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017

Revenue from Fire Impact Fee

Revenue from the Fire Impact Fee is estimated in Figure F10. There is projected to be 4,744 new housing units and 4.7 million square feet if new nonresidential development in Grand Junction by 2028. To find the revenue from each development type, the fee is multiplied by the growth. Overall, the revenue from the impact fee covers approximately 80 percent of the capital costs generated by projected growth in the City of Grand Junction.

Figure F10. Estimated Revenue from Fire Impact Fee

	Total Cost	*Growth Cost*
Facilities	$3,849,081	$3,849,081
Vehicles	$1,613,553	$1,613,553
Total Expenditures	**$5,462,634**	**$5,462,634**

Projected Fire and Rescue Impact Fee Revenue

		Single-Family	*Multi-Family*	*Commercial/ Retail*	Office/Instit.	*Industrial*
		$710 per Unit	$467 per Unit	$489 per KSF	$191 per KSF	$66 per KSF
Year		*Housing Units*	*Housing Units*	*KSF*	*KSF*	*KSF*
Base	2018	22,279	6,655	11,094	14,499	6,645
1	2019	22,656	6,767	11,396	14,754	6,668
2	2020	23,032	6,880	11,538	14,964	6,745
3	2021	23,395	6,988	11,690	15,191	6,828
4	2022	23,757	7,096	11,843	15,417	6,911
5	2023	24,120	7,205	11,996	15,644	6,995
6	2024	24,482	7,313	12,148	15,871	7,078
7	2025	24,845	7,421	12,301	16,097	7,161
8	2026	25,207	7,529	12,453	16,324	7,244
9	2027	25,570	7,638	12,606	16,551	7,328
10	2028	25,932	7,746	12,759	16,777	7,411
10-year Increase		3,653	1,091	1,664	2,279	766
10-year Projected Revenue		$2,593,395	$509,224	$814,447	$435,874	$50,701
					Projected Revenue =>	**$4,403,640**
					Total Expenditures =>	**$5,462,634**
					General Fund's Share =>	**$1,058,994**

POLICE IMPACT FEE

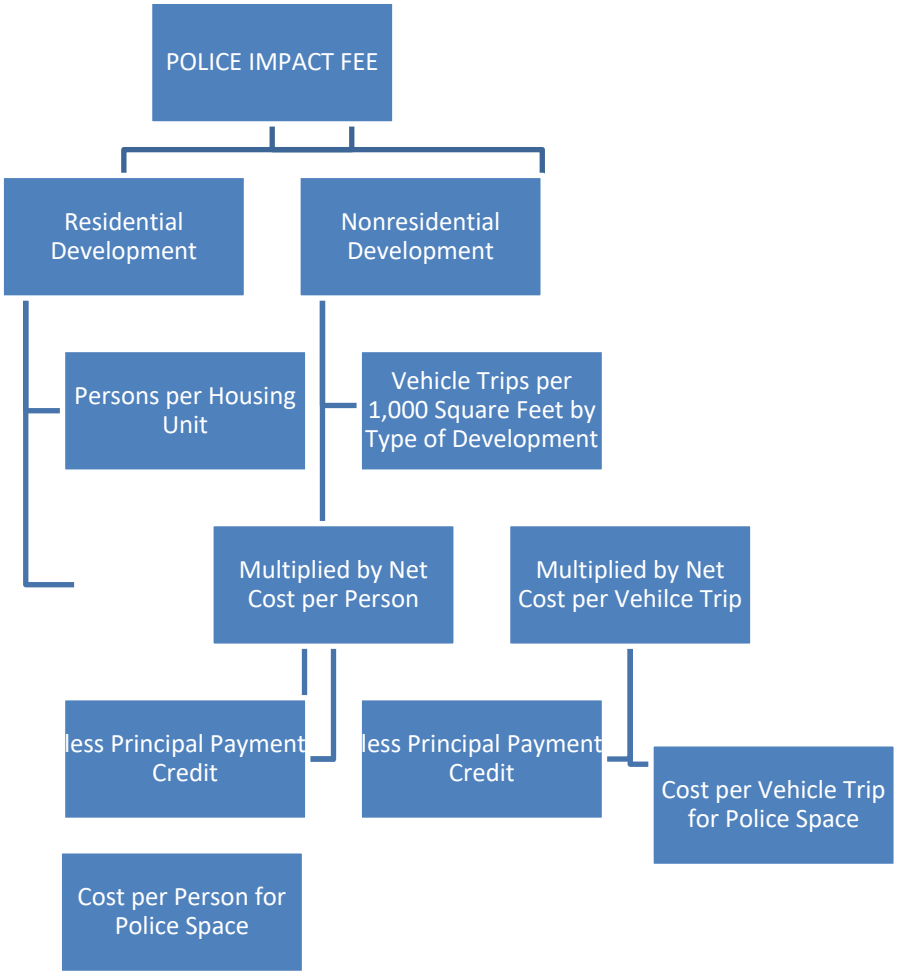
The Police Impact Fee is calculated on a per capita basis for residential development and a per vehicle trip basis for nonresidential development. Figure P1 illustrates the methodology used to determine the impact fee. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the components. The residential portion is derived from the product of persons per housing unit (by type) multiplied by the net cost per person. The nonresidential portion is derived from the product of vehicle trips generated per 1,000 square feet of nonresidential space multiplied by the net cost per vehicle trip. There are two components to the Police Impact Fee:

- Police Station – Incremental Expansion

One of the key considerations when developing impact fees is the ability to establish the existing level of service. Further detail about current and future level of service is provided in following sections of the report. For the police station component, the cost recovery methodology is used to calculate the portion of the facility attributed to future growth so that new development pays only its fair share of the cost of existing excess capacity which was provided by the original overbuilding of the facilities. In consideration of any outstanding debt associated with facility construction, TischlerBise incorporates a residential level-of-service debt recovery calculation based on the final year of debt payment, 2040, and the correlating residential population and vehicle trips. Additional detail regarding the debt recovery is provided in following sections of the report.

The residential police impact fees are calculated per housing unit. TischlerBise recommends using nonresidential vehicle trips as the best demand indicator for police facilities. Trip generation rates are used for nonresidential development because vehicle trips are highest for commercial/retail developments, such as shopping centers, and lowest for industrial 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 and facilities 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.

Figure P1. Police Impact Fee Methodology Chart



Police Proportionate Share Factors

Both residential and nonresidential developments increase the demand on police facilities. To calculate the proportional share between residential and nonresidential demand on police facilities, a functional population approach is used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the City through the 24 hours in a day.

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 Grand Junction are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside Grand Junction are assigned 14 hours to residential development. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data for Grand

Junction, the cost allocation for residential development is 65 percent while nonresidential development accounts for 35 percent of the demand for police facilities, see Figure P2.

Figure P2. City of Grand Junction Functional Population

Demand Units in 2015				Demand Hours/Day	Person Hours	Proportionate Share
Residential						
Estimated Residents	60,588					
Residents Not Working		37,811		20	756,220	
Employed Residents		22,777				
Employed in Grand Junction			15,497	14	216,958	
Employed outside Grand Junction			7,280	14	101,920	
			Residential Subtotal		1,075,098	*65%*
Nonresidential						
Non-working Residents		37,811		4	151,244	
Jobs in Grand Junction		42,565				
Residents Employed in Grand Junction			15,497	10	154,970	
Nonresident Workers (Inflow Commuters)			27,068	10	270,680	
			Nonresidential Subtotal		576,894	*35%*
			TOTAL		1,651,992	*100%*

Source: City of Grand Junction 2015 population estimate based on 2015 Census Estimate Data; U.S. Census Bureau OnTheMap 6.5 Web Application, 2015.

Police Station Level of Service

The first component of the Police Impact Fee is based on an inventory of existing citywide facilities and replacement costs. The use of existing standards means there are no existing infrastructure deficiencies. New development is only paying its proportionate share for growth-related infrastructure. The floor area has been provided by the City of Grand Junction staff.

The City of Grand Junction Police Department is housed in the Public Safety Building. The Police Department occupies 63,863 square feet. To determine the residential level of service, the current Police space square footage (63,863) is multiplied by the residential proportionate share factor (65%) and divided by the current population (66,425) for a level of service standard of 0.63 square feet per person. The nonresidential level of service standard of 0.08 square feet per nonresidential vehicle trip was determined by multiplying the current facility square footage (63,863) by the nonresidential proportionate share factor (35%) and divided by the current average daily nonresidential vehicle trips (271,362).

As shown in Figure P3, the estimated replacement cost is $344.20 per square foot. I do know there was some concern about the fleet issue and our dire needs there. This cost is based on the estimated cost for construction of a future Police Annex prepared by the Blythe Group. When the residential (0.63 per person) and nonresidential (0.08 per vehicle trip) per square foot level of service standards are multiplied by the cost per square foot ($344.20), the resulting cost per demand units are $215.36 per person and $28.29 per vehicle trip.

Figure P3. Police Station Level of Service and Cost Factors

Facility Components	*Square Footage*	*Cost per Square Foot**	*Replacement Cost*
Police Station Building	63,863	$344.20	$14,317,814
TOTAL	**63,863**	**$344.20**	**$14,317,814**

**Source: City of Grand Junction*

Level-of-Service (LOS) Standards

Population in 2018	66,425
Nonresidential Vehicle Trip Ends in 2018	271,362
Residential Share	65%
Nonresidential Share	35%
LOS: Square Feet per Person	**0.63**
LOS: Square Feet per Vehicle Trip End	**0.08**

Cost Analysis

Cost per Square Foot*	$344.20
LOS: Square Feet per Person	0.63
Cost per Person	**$215.36**
LOS: Square Feet per Vehicle Trip	0.08
Cost per Vehicle Trip	**$28.29**

Projection of Growth-Related Police Facility Needs

To estimate the 10-year growth needs for Police space, the current level of service (.63 square feet per person and 0.08 square feet per nonresidential vehicle trip) is applied to the residential and nonresidential growth projected for the City of Grand Junction. The City is projected to increase by 12,025 residents and 40,643 nonresidential vehicle trips over the next ten years (see Appendix A). Listed in Figure P4, there is projected need for 10,864 square feet of growth-related Police space to accommodate new development in the City at the present level of service. By applying the average cost per square foot ($344.20), the total projected growth-related building space expenditure is approximately $3.7 million.

Figure P4. 10-Year Police Space Needs to Accommodate Growth

Level-of-Service			*Demand Unit*	*Unit Cost*
Residential	0.63	Square Feet	per Person	$344
Nonresidential	0.08		per Trip End	

Growth-Related Need for Facilities						
Year		*Population*	*Nonres. Vehicle Trips*	*Residential Sq. Ft.*	*Nonres. Sq. Ft.*	*Total*
Base	2018	66,425	271,362	41,561	22,302	63,863
Year 1	2019	67,558	277,672	42,270	22,820	65,091
Year 2	2020	68,691	281,244	42,979	23,114	66,093
Year 3	2021	69,911	285,089	43,743	23,430	67,172
Year 4	2022	71,131	288,934	44,506	23,746	68,252
Year 5	2023	72,351	292,779	45,269	24,062	69,331
Year 6	2024	73,570	296,625	46,032	24,378	70,410
Year 7	2025	74,790	300,470	46,796	24,694	71,490
Year 8	2026	76,010	304,315	47,559	25,010	72,569
Year 9	2027	77,230	308,160	48,322	25,326	73,648
Year 10	2028	78,450	312,005	49,086	25,642	74,727
Ten-Year Increase		12,025	40,643	7,524	3,340	**10,864**
		Growth-Related Expenditure		$2,589,761	$1,149,628	**$3,739,389**

Police Debt Service Credit

The City of Grand Junction has existing debt obligations for the construction of the present Public Safety Building. The proceeds from these bonds funded a number of fire facilities including Fire Station #1, #2 and the Fire Administration building for a total of $7,100,000 of improvements, representing 20 percent of the 2010 Bonds. Figure P5 lists the remaining principal payment schedule for the bonds, which is totals $24 million.

The total remaining annual principal payment schedule is distributed to the equivalent residential and nonresidential share, City's population and vehicle trip ends, to find the debt cost per attributed user. To

account for the time value of money, annual payments are discounted using a net present value formula based on the applicable discount (7.1%) rate. This results in a credit of $86.71 per person, and $11.74 per nonresidential trip end.

Figure P5. Police Debt Principal Payment Credit

Year	Principal Payment	Residential Share (65%)	Population	Debt Cost per Capita	Nonresidential Share (35%)	*Nonres. Vehicle Trips*	Debt Cost per Trip End
2019	$660,000	$429,000	67,558	$6.35	$231,000	277,672	$0.83
2020	$684,000	$444,600	68,691	$6.47	$239,400	281,244	$0.85
2021	$708,000	$460,200	69,911	$6.58	$247,800	285,089	$0.87
2022	$740,000	$481,000	71,131	$6.76	$259,000	288,934	$0.90
2023	$772,000	$501,800	72,351	$6.94	$270,200	292,779	$0.92
2024	$808,000	$525,200	73,570	$7.14	$282,800	296,625	$0.95
2025	$844,000	$548,600	74,790	$7.34	$295,400	300,470	$0.98
2026	$880,000	$572,000	76,010	$7.53	$308,000	304,315	$1.01
2027	$920,000	$598,000	77,230	$7.74	$322,000	308,160	$1.04
2028	$964,000	$626,600	78,450	$7.99	$337,400	312,005	$1.08
2029	$1,008,000	$655,200	79,862	$8.20	$352,800	316,292	$1.12
2030	$1,060,000	$689,000	81,300	$8.47	$371,000	320,823	$1.16
2031	$1,112,000	$722,800	82,763	$8.73	$389,200	325,436	$1.20
2032	$1,164,000	$756,600	84,253	$8.98	$407,400	330,132	$1.23
2033	$1,224,000	$795,600	85,769	$9.28	$428,400	334,912	$1.28
2034	$1,284,000	$834,600	87,313	$9.56	$449,400	339,778	$1.32
2035	$1,348,000	$876,200	88,885	$9.86	$471,800	344,732	$1.37
2036	$1,416,000	$920,400	90,485	$10.17	$495,600	349,775	$1.42
2037	$1,488,000	$967,200	92,113	$10.50	$520,800	354,909	$1.47
2038	$1,560,000	$1,014,000	93,771	$10.81	$546,000	360,135	$1.52
2039	$1,636,000	$1,063,400	95,459	$11.14	$572,600	365,456	$1.57
2040	$1,720,000	$1,118,000	97,178	$11.50	$602,000	370,872	$1.62
Total	**$24,000,000**	**$15,600,000**			**$8,400,000**		
	Discount Rate			**7.1%**			**7.1%**
	Net Present Value			**$86.71**			**$11.74**

Maximum Supportable Police Impact Fee

Figure P6 shows the maximum supportable Police Impact Fee. Impact fees for Police are based on persons per housing unit for residential development and vehicle trips per 1,000 square feet for nonresidential development. For residential development, the total cost per person is multiplied by the housing unit size to calculate the proposed fee. For nonresidential development, the total cost per vehicle trip is multiplied by the trips per 1,000 square feet to calculate the proposed fee.

The fees represent the highest amount supportable for each type of development, which 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.

Figure P6. Maximum Supportable Police Impact Fee

Fee Component	Cost per Person	Cost per Vehicle Trip
Police Space	$215.36	$28.29
Existing Principal Credit	($86.71)	($11.74)
NET COST PER DEMAND UNIT	**$128.65**	**$16.55**

Residential

Housing Type	Persons per Housing Unit	Maximum Supportable Fee
Single-Family	2.37	**$305**
Multi-Family	1.56	**$200**

Nonresidential

Type	ITE Code	Unit	Average Daily Vehicle Trips*	Trip Adjustment Factor*	Maximum Supportable Fee
Retail/Commercial	820	1,000 SF	37.75	33%	**$206**
Office/Institutional	710	1,000 SF	9.74	50%	**$81**
Industrial	130	1,000 SF	3.37	50%	**$28**
Warehousing	150	1,000 SF	1.74	50%	**$14**

*Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017

Revenue from Police Impact Fee

Revenue from the Police Impact Fee is estimated in Figure P7. There is projected to be 4,744 new housing units and 4.7 million square feet of nonresidential development in Grand Junction by 2028. To find the revenue from each development type, the fee is multiplied by the growth for each land use. Overall, the projected revenue from the Police impact fee totals approximately $1.6 million. Impact fee revenue is less than the projected expenditures due to the required debt credit.

Figure P7. Estimated Revenue from Police Impact Fee

	Growth Cost
Police Facilities	$3,739,389
Total Expenditures	**$3,739,389**

Projected Development Impact Fee Revenue

		Single-Family	Multi-Family	Commercial / Retail	Office/Instit.	Industrial
		$305 per unit	$200 per unit	$81 per 1000 Sq Ft	$81 per 1000 Sq Ft	$28 per 1000 Sq Ft
Year		**Housing Units**	**Housing Units**	**KSF**	**KSF**	**KSF**
Base	2018	22,279	6,655	11,094	14,499	6,645
Year 1	2019	22,656	6,767	11,396	14,754	6,668
Year 2	2020	23,032	6,880	11,538	14,964	6,745
Year 3	2021	23,395	6,988	11,690	15,191	6,828
Year 4	2022	23,757	7,096	11,843	15,417	6,911
Year 5	2023	24,120	7,205	11,996	15,644	6,995
Year 6	2024	24,482	7,313	12,148	15,871	7,078
Year 7	2025	24,845	7,421	12,301	16,097	7,161
Year 8	2026	25,207	7,529	12,453	16,324	7,244
Year 9	2027	25,570	7,638	12,606	16,551	7,328
Year 10	2028	25,932	7,746	12,759	16,777	7,411
Ten-Year Increase		3,653	1,091	1,664	2,279	766
Projected Revenue =>		$1,113,195	$218,580	$134,161	$183,665	$21,364
					Projected Revenue =>	**$1,670,965**
					Total Expenditures =>	**$3,739,389**
					General Fund's Share =>	**$2,068,424**

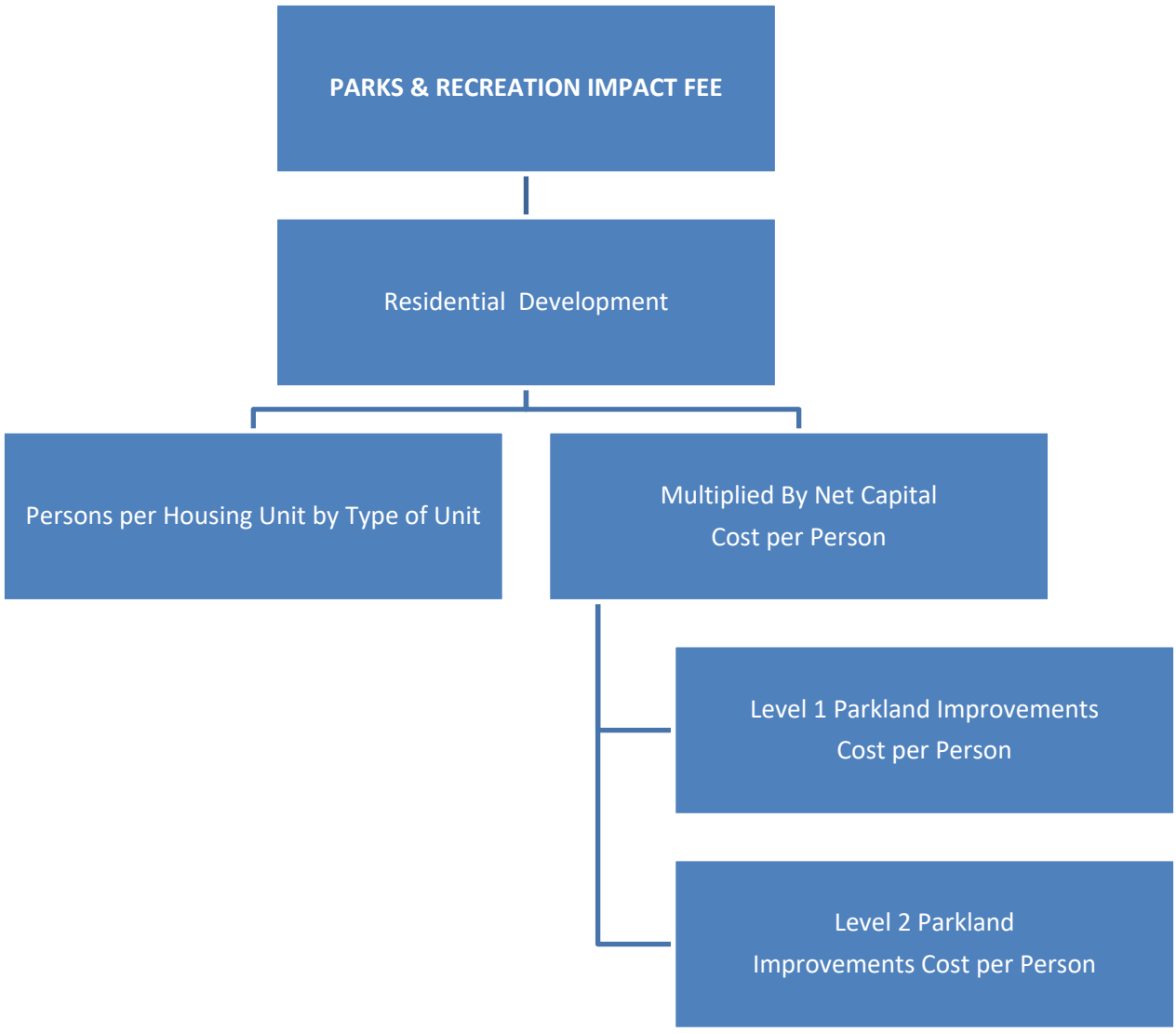
PARKS & RECREATION IMPACT FEE

The Parks & Recreation Impact Fee is based on the incremental expansion methodology. The impact fee methodology assumes the City will construct additional recreation improvements through the development of existing parks and banked park land to serve future growth to maintain current levels of service incrementally over time. The study includes only the replacement costs of improvements to park and recreational facilities, land acquisition is not included. However, the City will still maintain its current park land dedication requirement. Due to the recognition that Grand Junction Parks provide services to the larger population residing throughout the broader 201 Sewer Service Boundary, recreation capital improvements are allocated 100 percent to residential development within this area to establish the current level of service. No revenue credit is necessary to avoid double payments as there is no current debt obligations for the park improvements included in the impact fee calculations. There are two components to the Parks and Recreation Impact Fee:

- Level 1 Parkland Improvements
- Level 2 Parkland Improvements

Figure PR1 diagrams the general methodology used to calculate the Parks & Recreation impact fee. It is intended to read like an outline, with lower levels providing a more detailed breakdown of the impact fee components. The Parks and Recreation impact fee is derived from the product of persons per housing unit (by type of unit) multiplied by the net capital cost per person. The boxes in the next level down indicate detail on the components included in the fee.

Figure PR1. Parks & Recreation Impact Fee Methodology



Parks & Recreation Level of Service and Cost Factors

The Parks & Recreation Impact Fee is based on an inventory of existing developed City parks and current values of recreation improvements. The impact fee does not include a land purchase component as it is assumed the Parks and Recreation Department's focus over the next 5-10 years will be the buildout of existing park land. However, as mentioned previously, the City will still maintain its current park land dedication requirement. Improvement costs have been provided by the City of Grand Junction staff, referencing the *2011 City of Grand Junction Park Inventory and Future Needs Assessment* report, (updated in 2017). The use of existing standards means there are no existing infrastructure deficiencies. New development is only paying its proportionate share for growth-related infrastructure.

Discussions with City staff indicate the City's park system essentially serves residents who reside within the 201 Sewer Service Boundary. For purposes of determining level of service standards, this population base will be referred to as the "park population," which is larger than the existing population base of the City.

Current Inventory of Parkland and Improvements

Figure PR2 and PR3 lists the current inventory of parkland owned by the City of Grand Junction. For the purpose of this study, City staff allocated parks into one of two categories, Level-1 and Level-2 facilities. Figures PR2 and PR3 also indicate the total amount of Level-1 and Level-2 park acreage compared to the amount that is actually developed.

Level-1 parks are those improved with Phase-1 infrastructure, consisting of adequate soil preparation, irrigation systems, sewer and electrical services along with turf and tree plantings. Based on the development cost identified in the *Parks Inventory and Future Needs Assessment Report,* Phase-1 park improvements average $112,500 per acre.

Level-2 parks are categorized as parks with Phase-II improvements, typically including a wide range of amenities including; restroom facilities, playgrounds, shelters and walking paths. Special features in these parks can include, but are not limited to; swimming pools, tennis courts, sports fields, disk golf, skate parks and many other like features.

The *Parks Inventory and Future Needs Assessment Report* estimates Phase-2 park improvements to average $80,000 per acre (plus the cost of Level-1 improvements), for a total of $192,500 per acre. In total, there are seven Level-1 parks with an improved value of $812,250, and 29 Level-2 parks with a total improved value of $56.7 million.

Parkland Improvements Level of Service

To calculate the current level of service, the existing developed parkland acreage, (10.32 for Level-1 parks and 357.54 for Level-2 parks) is divided by the current park population (103,224). This results in level of service standards of 0.0001 acres of developed Level-1 parkland per person and 0.0035 acres of developed Level-2 parkland per person.

The parkland improvements cost per acre ($112,500 Level-1 and $192,500 Level-2) is then utilized to generate a cost per person factor which is calculated by applying the level of service factor to the total development cost per acre. As shown in Figure PR2, Level-1 parkland improvements of 0.0001 acres per person x $112,500 per acres = $11.25 per person. Similarly, Figure PR3 displays the breakdown for Level-2 parkland in the City, which results in park development cost of $666.76 per person.

Figure PR2. Level 1 Parkland Level of Service

Park	Park Type	Total Acreage	Developed Acreage	Improved Value
Autumn Ridge Park	Neighborhood/Mini Park	1.5	1.5	$168,750
Hidden Valley Park	Neighborhood/Mini Park	7	1	$112,500
Hillcrest Park	Neighborhood/Mini Park	0.23	0.23	$25,875
Lilac Park	Undeveloped/Open Space	1.7	1.7	$191,250
Ridges Tot Lot Park	Neighborhood/Mini Park	1.8	1.8	$201,375
Shadow Lake Park	Neighborhood/Mini Park	5.7	1	$112,500
Spring Valley Park	Neighborhood/Mini Park	3.1	3.1	$348,750
TOTAL		**21.02**	**10.32**	**$1,161,000**

Level-of-Service (LOS) Standards

Developed Acreage	10.32
Park Population in 2018 (includes 201 Boundary)	103,224
LOS: Improved Acres per Person	**0.0001**

Cost Analysis

Improvement Value per Acre*	$112,500
LOS: Improved Acres per Person	0.0001
Cost per Person	**$11.25**

**Source: City of Grand Junction*

Figure PR3. Level 2 Parkland Level of Service

Park	Park Type	Total Acreage	Developed Acreage	Improved Value
Canyon View Park	Community/Regional Park	114.2	114.2	$21,983,500
Columbine Park	Community/Regional Park	12	12	$2,310,000
Cottonwood Meadows Park	Neighborhood/Mini Park	0.8	0.8	$154,000
Darla Jean Park	Neighborhood/Mini Park	2.2	2.2	$423,500
Duck Pond Orchard Mesa Park	Neighborhood/Mini Park	4.4	4.4	$847,000
Duck Pond Park - Ridges	Neighborhood/Mini Park	2.82	2.82	$542,850
Eagle Rim Park	Neighborhood/Mini Park	12	12	$2,310,000
Emerson Park	Neighborhood/Mini Park	2.52	2.52	$485,100
Hawthorne Park	Neighborhood/Mini Park	3.5	3.5	$673,750
Honeycomb Park	Neighborhood/Mini Park	3.5	3.5	$673,750
Las Colonias Park	Community/Regional Park	140	115	$10,060,000
Lincoln Park	Community/Regional Park	42	42	$8,085,000
Pineridge Park	Neighborhood/Mini Park	15.7	3	$577,500
Paradise Hills Park	Neighborhood/Mini Park	5.57	2.78	$535,150
Rocket Park	Neighborhood/Mini Park	2.7	2.7	$519,750
Riverside Park	Neighborhood/Mini Park	1.5	1.5	$288,750
Sherwood Park	Neighborhood/Mini Park	13.87	13.87	$2,669,975
Spring Valley II Park	Neighborhood/Mini Park	2.52	2.52	$485,100
Washington Park	Neighborhood/Mini Park	3	3	$577,500
Whitman Park	Neighborhood/Mini Park	2.5	2.5	$481,250
Williams Park	Neighborhood/Mini Park	0.37	0.37	$71,225
Westlake Park	Neighborhood/Mini Park	10	5.5	$1,058,750
Wingate Park	Neighborhood/Mini Park	4.86	4.86	$935,550
Burkey Park North	Undeveloped/Open Space	18.37	0	$0
Burkey Park South	Undeveloped/Open Space	9.61	0	$0
Flint Ridge	Undeveloped/Open Space	3.3	0	$0
Horizon Park	Undeveloped/Open Space	12.65	0	$0
Matchett Park	Undeveloped/Open Space	205.52	0	$0
Saccomanno Park	Undeveloped/Open Space	30.73	0	$0
TOTAL		**682.71**	**357.54**	**$56,748,950**

Level-of-Service (LOS) Standards

Developed Acreage	357.54
Park Population in 2018 (includes 201 Boundary)	103,224
LOS: Improved Acres per Person	**0.0035**

Cost Analysis

Improvement Value per Acre*	$192,500
LOS: Improved Acres per Person	0.0035
Cost per Person	**$666.76**

**Source: City of Grand Junction*

Projection of Growth-Related Park Improvement Needs

To estimate the 10-year growth needs for Level 1 park improvements, the current level of service (0.0001 acres person) is applied to the projected park population growth. The 201 Sewer Service area is projected to increase by 18,688 residents over the next ten years (see Appendix A). As shown in Figure PR4, it is projected that the City will need to develop 1.3 acres of Level 1 park land to accommodate the needs generated by new development. By applying the average development cost for Level 1 parks ($112,500 per acre), the estimated growth-related expenditure is approximately $210,000.

Figure PR4. 10-Year Level 1 Park Improvement Needs to Accommodate Growth

Type	Level of Service	Demand Unit	Unit Cost / Acre
Level 1 Park Improvements	0.0001 Acres	per person	$112,500

Growth-Related Need for Level 1 Park Improvements			
Year		Population	Improved Acres
Base	2018	103,224	10.32
Year 1	2019	104,985	10.50
Year 2	2020	106,746	10.67
Year 3	2021	108,642	10.86
Year 4	2022	110,538	11.05
Year 5	2023	112,434	11.24
Year 6	2024	114,329	11.43
Year 7	2025	116,225	11.62
Year 8	2026	118,121	11.81
Year 9	2027	120,016	12.00
Year 10	2028	121,912	12.19
Ten-Year Increase		18,688	**1.87**
		Projected Expenditure	**$210,375**

Growth-Related Expenditure on Level 1 Park Improvements	**$210,375**

To estimate the 10-year growth needs for Level 2 park improvements, the current level of service (0.0035 acres person respectively for Level-2 improvements) is applied to the projected park population growth. The 201 Sewer Service area is projected to increase by 18,688 residents over the next ten years (see Appendix A). As shown in Figure PR5, it is projected that the City will need to develop 65 acres of Level 2 park land to accommodate the needs generated by new development. By applying the average development cost for Level 2 parks ($192,500 per acre), the estimated growth-related expenditure is approximately $12.5 million.

Figure PR5. 10-Year Level 2 Park Improvement Needs to Accommodate Growth

Type	Level of Service	Demand Unit	Unit Cost / Acre
Level 2 Park Improvements	0.0035 Acres	per 1,000 persons	$192,500

Growth-Related Need for Level 2 Park Improvements			
Year		Population	Improved Acres
Base	2018	103,224	357.54
Year 1	2019	104,985	363.64
Year 2	2020	106,746	369.74
Year 3	2021	108,642	376.31
Year 4	2022	110,538	382.87
Year 5	2023	112,434	389.44
Year 6	2024	114,329	396.00
Year 7	2025	116,225	402.57
Year 8	2026	118,121	409.14
Year 9	2027	120,016	415.70
Year 10	2028	121,912	422.27
Ten-Year Increase		18,688	**65**
		Projected Expenditure	**$12,512,500**

Growth-Related Expenditure Level 2 Park Improvements	$12,512,500

Parks & Recreation Impact Fee

Figure PR6 shows the cost factors for each component of the City of Grand Junction's Parks and Recreation Impact Fee. Impact fees for parks and recreation are based on persons per housing unit and are only assessed against residential development. The fees for park improvements are calculated per person, so by multiplying the total cost per person by the housing unit size calculates the maximum supportable fee.

The fees represent the highest amount supportable for each type of housing unit, which 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.

Figure PR6. Maximum Supportable Park & Recreation Impact Fee

Fee Component	Cost per Person
Level 1 Parkland Improvements	$11.25
Level 2 Parkland Improvements	$666.76
COST PER DEMAND UNIT	**$678.01**

Type	Persons per Housing Unit	Maximum Supportable Fee	Current Fee	Increase / (Decrease)
Single-Family	2.37	**$1,605**	$225	$1,380
Multi-Family	1.56	**$1,055**	$225	$830

Revenue from Parks & Recreation Impact Fee

Revenue from the City's Parks & Recreation Impact Fee is estimated in Figure PR7. Demand for park improvements is driven by both City residents and current/future residents within the 201 Sewer Service Boundary. Therefore, it is difficult to estimate impact fee revenue for parks and recreation because it is not known when (and if) the projected housing units in the 201 Sewer Service Boundary will be annexed into the City of Grand Junction prior to their construction (which is the time the impact fee is paid). Therefore, the impact fee revenue projection is based on projected units in the City of Grand Junction over the next ten years. By multiplying the projected residential growth in the City by the impact fee amounts, we estimate projected impact fee revenue of approximately $7.0 million. Projected expenditures total $12.7 million.

Figure PR7. Estimated Revenue from Parks & Recreation Impact Fee

	Growth Cost
Level 1 Parkland Improvements	$210,375
Level 2 Parkland Improvements	$12,512,500
Total Expenditures	**$12,722,875**

Projected Development Impact Fee Revenue

		Single-Family	*Multi-Family*
		$1,605 per unit	$1,055 per unit
Year		**Housing Units**	**Housing Units**
Base	2018	22,279	6,655
Year 1	2019	22,656	6,767
Year 2	2020	23,032	6,880
Year 3	2021	23,395	6,988
Year 4	2022	23,757	7,096
Year 5	2023	24,120	7,205
Year 6	2024	24,482	7,313
Year 7	2025	24,845	7,421
Year 8	2026	25,207	7,529
Year 9	2027	25,570	7,638
Year 10	2028	25,932	7,746
	Ten-Year Increase	3,653	1,091
	Projected Revenue =>	$5,863,453	$1,151,246
		Projected Revenue =>	**$7,014,699**
		Total Expenditures =>	**$12,722,875**
		General Fund's Share =>	**$5,708,176**

IMPLEMENTATION AND ADMINISTRATION

Impact fees should be periodically evaluated and updated to reflect recent data. City of Grand Junction will continue to adjust for inflation. If cost estimates or demand indicators change significantly, the City should redo the fee calculations.

Colorado's enabling legislation allows local governments to "waive an impact fee or other similar development charge on the development of low or moderate income housing, or affordable employee housing, as defined by the local government."

Credits and Reimbursements

A general requirement that is common to development impact fee methodologies is the evaluation of credits. A revenue credit may be necessary to avoid potential double payment situations arising from one-time development impact fees plus on-going payment of other revenues that may also fund growth-related capital improvements. The determination of revenue credits is dependent upon the development impact fee methodology used in the cost analysis and local government policies.

Policies and procedures related to site-specific credits should be addressed in the resolution or ordinance that establishes the development impact fees. Project-level improvements, required as part of the development approval process, are not eligible for credits against development impact fees. If a developer constructs a system improvement included in the fee calculations, it will be necessary to either reimburse the developer or provide a credit against the fees due from that particular development. The latter option is more difficult to administer because it creates unique fees for specific geographic areas.

Service Area

A development impact fee service area is a region in which a defined set of improvements provide benefit to an identifiable amount of new development. Within a service area, all new development of a type (single-family, commercial, etc.) is assessed at the same development impact fee rate. Land use assumptions and development impact fees are each defined in terms of this geography, so that capital facility demand, projects needed to meet that demand, and capital facility cost are all quantified in the same terms. Development impact fee revenue collected within a service area is required to be spent within that service area.

Implementation of a large number of small service areas is problematic. Administration is complicated and, because funds collected within the service area must be spent within that area multiple service areas may make it impossible to accumulate sufficient revenue to fund any projects within the time allowed.

As part of our analysis of the City and the type of facilities and improvements included in the development impact fee calculation, TischlerBise has determined that a citywide service area is appropriate for the City of Grand Junction for all impact fees with the exception of parks and recreation, which includes the 201 Service Area Boundary.

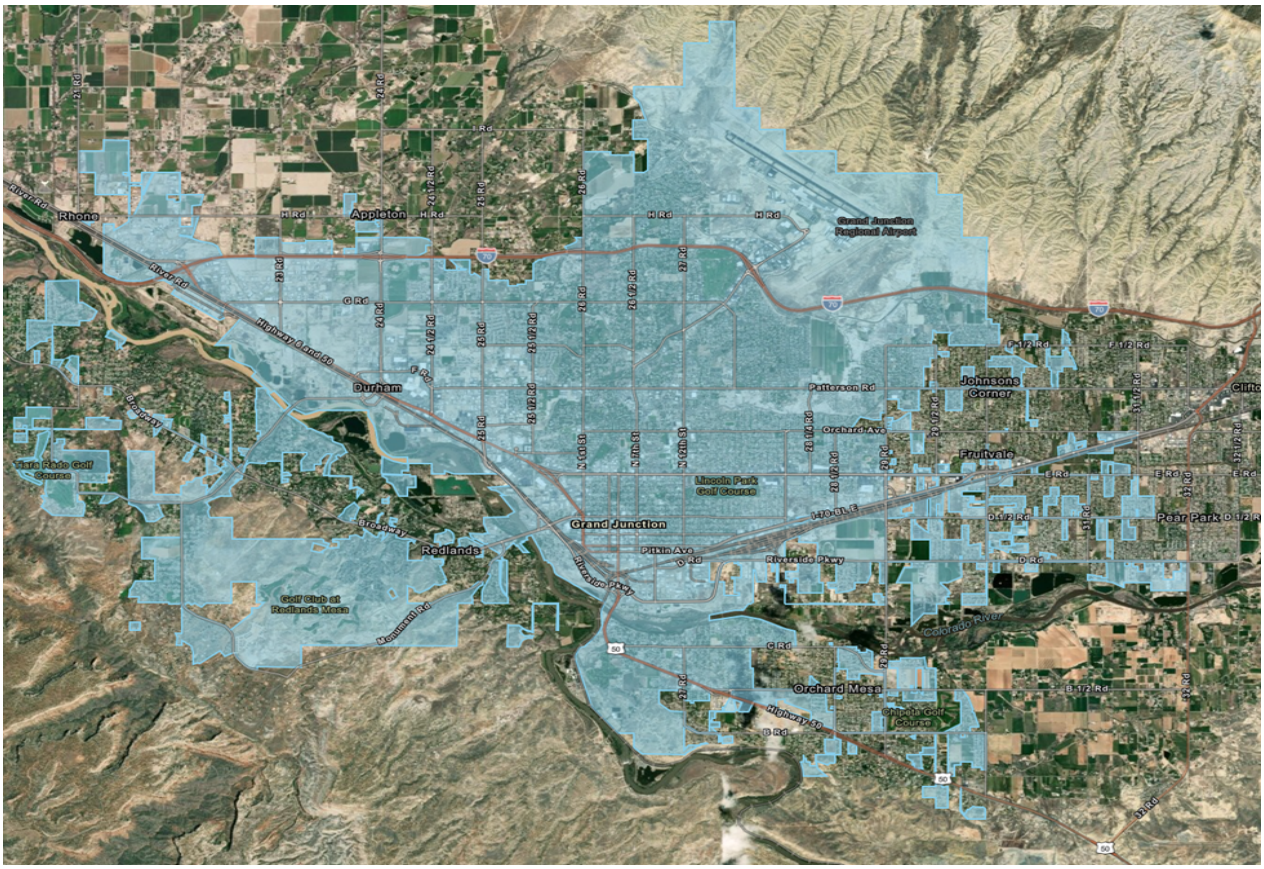
APPENDIX A: LAND USE ASSUMPTIONS

Overview

The City of Grand Junction, Colorado, retained TischlerBise to analyze the impacts of development on its capital facilities and to calculate impact fees based on that analysis. The population, housing unit, and job projections contained in this document provide the foundation for the impact fee study. To evaluate demand for growth-related infrastructure from various types of development, TischlerBise prepared documentation on demand indicators by type of housing unit, jobs and floor area by type of nonresidential development. These metrics (explained further below) are the demand indicators to be used in the impact fee study.

Impact fees are based on the need for growth-related capital improvements, and they must be proportionate by type of land use. The demographic data and development projections are used to demonstrate proportionality and to anticipate the need for future infrastructure. Demographic data reported by the U.S. Census Bureau, and data provided by Grand Junction and Mesa County Regional Transportation Planning Organization (RTPO) staff, are used to calculate base year estimates and annual *projections* for a 10-year horizon. Impact fee studies typically look out five to ten years, with the expectation that fees will be updated every three to five years.

Figure A1: Grand Junction Municipal Boundary



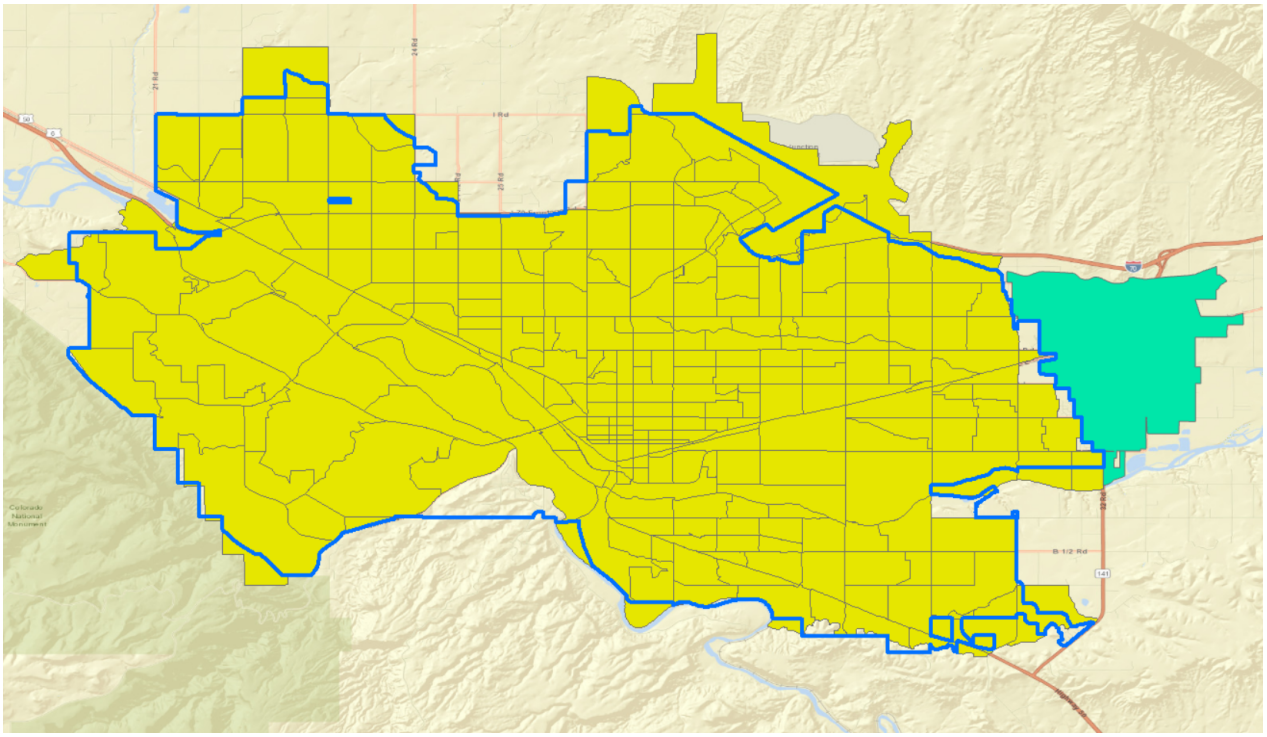
Residential Development

Current estimates and future projections of residential development are detailed in this section, including population and housing units by type (e.g., single-family versus multi-family units).

Population and Housing Units

Due to differing development patterns both in and outside of City limits, TischlerBise reviewed base year population and housing unit estimates for the City of Grand Junction and specific TAZ boundaries from the Transportation Master Plan which are also associated with the 201 Sewer Service Area Boundary. The task at hand is to provide baseline population and housing unit estimates for those areas of the 201 Sewer Service Area Boundary which can reasonably be expected to be annexed into the City of Grand Junction over the next ten years. Figure A2 depicts the 201 Sewer Service Area Boundary (light blue line) and TAZ areas (yellow) incorporated into the study population and housing estimates.

Figure A2: Map of 201 Sewer Service Boundary and TAZ Areas



Persons per Housing Unit

In 2010 the U.S. Census Bureau transitioned from the traditional long-form questionnaire to the American Community Survey (ACS), which is less detailed and has smaller sample sizes. As a result, Census data now has more limitations than before. For example, data on detached housing units are now combined with attached single units (commonly known as townhouses). For impact fees in Grand Junction, "single-family" residential includes detached units and townhouses that share a common sidewall but are constructed on

an individual parcel of land. The second residential category includes all multi-family structures with two or more units on an individual parcel of land. The third residential category (All Other Types) includes mobile homes and recreational vehicles.

According to the 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, or persons per household, to derive proportionate-share fee amounts. When persons per housing unit are used in the fee calculations, infrastructure standards are derived using year-round population. When persons per household are used in the fee calculations, the impact fee methodology assumes all housing units will be occupied, this requiring seasonal or peak population to be used when deriving infrastructure standards.

To estimate population for future years, the analysis applies growth assumptions derived from the *Grand Valley 2040 Transportation Master Plan 201 TAZ Estimates,* City GIS parcel data, 2018 ESRI Business Survey, Mesa County Building Permit data and standards from the Institute of Transportation Engineers, 10th addition. For the impact fee calculations, TischlerBise will rely on the above referenced as well as a variety of local and regional data sources including the 2017 ACS results shown at the top of Figure A3. Collectively, this information is used to indicate the relative number of persons per housing unit, by units in a residential structure, (2.37 PPHU Single-Family, 1.70 PPHU Multi-Family) and the housing mix (67% Single-Family, 27% Multi-Family) in Grand Junction. Because of the minimal seasonal population residing in the City, TischlerBise recommends that impact fees for residential development be imposed according to housing unit type.

Figure A3: Persons per Household and Persons per Housing Unit by Type of Housing

Units in Structure	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate [4]
Single-Family Units[1]	46,611	18,710	2.49	19,679	**2.37**	73%	4.92%
Multi-Family Units	11,391	6,788	1.68	7,316	**1.56**	27%	7.22%
Subtotal	58,002	25,498	2.27	26,995	**2.15**		5.55%
Group Quarters	2,880						
Total	60,882						

Source: U.S. Census Bureau, 2017 American Community Survey, Tables B25024, B25032, B25033, and B26001

1. Includes detached and attached units (i.e. townhouses) and mobile homes.

Recent Residential Construction

The City of Grand Junction provided TischlerBise with recent City residential building permit activity, shown in Figure A4. A total of 2,356 single-family and 514 multi-family permits were issued in the City from 2011 through 2018. Unit distribution over this period was 18 percent multi-family and 82 percent single-family. This ratio is slightly higher than the overall housing unit mix in the City which based on GIS parcel data analysis show that 77 percent of existing residential structures are single-family units and 23 percent are multi-family. It is worth mentioning that at the time of the writing of this report, over 150 multi-family units are in some stage of development review, which if constructed, would bring the 10-year average unit split closer to ratio reflected in the GIS parcel data.

Figure A4: Recent Grand Junction Residential Permit Activity

Year	Single Family	%	Multi-Family	%	Total
2011-2018	2,356	82%	514	18%	2,870

Source: City of Grand Junction, CO Building Permit Data

Current Population and Housing within Grand Junction City Limits

By December 31, 2018, Grand Junction's population grew to approximately 66,425 residing in 28,934 housing units according to analysis performed by TischlerBise which relied on the 2017 DOLA population estimate of 66,224, plus 1,201 new residents which represents observed growth over 2018. This rate of growth is above the average annual growth from 2011-2018 of 359 units and 798 persons per year (295 SF units x 2.37 PPHU=699) +(64 MF units x 1.56 PPHU=99) as shown below in Figure A5.

Figure A5: Grand Junction 2018 Population and Housing Unit Estimate

	DOLA 2017 est.	2011-2018 New Construction[1]	Avg. Annual New Units 2011-2018	2018 Housing Units Added	PPHU[2]	Est. 2018 Population Growth	Total
Single-Family Units		2,356	295	498	2.37	1,180	
Multi-Family Units		514	64	13	1.56	20	
Housing Units	**28,423**		**359**	**511**			**28,934**
Population	**65,224**					**1,201**	**66,425**

Sources: 1.City of Grand Junction Building Permit Data, TischlerBise Analysis
2. U.S. Census 2017 ACS 5-year Estimate

Current Population and Housing within 201 Growth Area Boundary

Population and housing unit estimates for the 201 Sewer Service Area Boundary were compiled from sewer boundary specific TAZ areas, less specific portions of zones which included neighborhood sewer systems and therefore are unlikely to be annexed into the City. TischlerBise applied the population, housing unit estimates found within the *Grand Valley 2040 Transportation Master Plan* in each TAZ) to derive the number of existing housing units in the service area but outside of the City limits. The resulting estimates, shown in Figure A6, suggest approximately 14,217 housing units (28,934 units within current municipal boundary-43,151 units within the sewer service area) exist in the 201 Sewer Service Area Boundary, outside of the City limits for which *impact fees will not be collected*. Deducting the estimated 2018 Grand Junction population from the 201 Sewer Service Area Boundary TAZ area (66,425-103,224) results in an estimated population of 36,800 currently residing in the 201 Sewer Service Area, outside of City limits.

Figure A6: 2018 Population and Housing Unit Estimates 201 Boundary Selected TAZ

Development Type	2018	2018	
Residential	**City Limits**	**201 Sewer Service Boundary**	**Total**
Population	66,425	36,800	103,224
Housing Units	28,934	14,217	43,151

Source: Grand Valley 2040 Transportation Master Plan 201 TAZ Estimates

Projected Population and Housing Units

The selected Transportation Master Plan TAZ areas, shown in Figure A7, include new housing unit projections from 2018 to 2028 of 708 units annually. A total of 50,227 housing units, (7,076 net new units) are projected in the area by 2028. Given historic housing dispersion throughout the 201 Sewer Boundary and observed residential unit composition for the area, housing estimates were broken down between existing City limits and areas currently outside but within the 201 Boundary. As observed within the City GIS parcel data, 77 percent of current Grand Junction housing units are single-family. City housing unit growth projections have mirrored this observed ratio resulting in an estimated addition of 3,653 single-family and 1,091 multi-family units by 2028. For areas outside current City limits but within the 201 Sewer Service Area Boundary, 100 percent the grow of new housing units, 2,331, have been attributed to single-family development reflecting the rural composition of the area.

The Transportation Master Plan model estimates a ten-year population increase of 18,688 persons for the selected 201 Sewer Service Area boundary TAZ areas. All totals shown below in Figure A7 represent estimates as of January 1st of each year.

Figure A7: Grand Junction Residential Development Projections for Selected TAZ Areas

						5-Year Increment			
		2018	*2019*	*2020*	*2021*	*2022*	*2023*	*2028*	*10-Year Increase*
		Base Year	*1*	*2*	*3*	*4*	*5*	*10*	
POPULATION									
	Grand Junction	**66,425**	**67,558**	**68,691**	**69,911**	**71,131**	**72,351**	**78,450**	**12,025**
	201 /Outside City	**36,800**	**37,428**	**38,055**	**38,731**	**39,407**	**40,083**	**43,462**	6,662
	Total	**103,224**	**104,985**	**106,746**	**108,642**	**110,538**	**112,434**	**121,912**	**18,688**
HOUSING UNITS									
	GJ Single-Family	22,279	22,656	23,032	23,395	23,757	24,120	25,932	3,653
	GJ Multi-Family	6,655	6,767	6,880	6,988	7,096	7,205	7,746	1,091
Grand Junction Total		**28,934**	**29,423**	**29,912**	**30,383**	**30,854**	**31,324**	**33,678**	**4,744**
	201 Bdry Single-Family	14,217	14,458	14,698	14,929	15,161	15,392	16,549	2,331
	Total Housing Units	**43,151**	**43,881**	**44,610**	**45,312**	**46,014**	**46,717**	**50,227**	**7,076**

Nonresidential Development

In addition to data on residential development, the calculation of impact fees requires data on nonresidential development. All land use assumptions and projected growth rates are consistent with socioeconomic data from the Grand Valley 2040 Regional Transportation Plan and the 2018 ESRI Business Summary Report for Grand Junction. TischlerBise uses the term "jobs" to refer to employment by place of

work. In Figure A8, the nonresidential development prototypes used by TischlerBise to derive nonresidential floor area and average weekday vehicle trips ends are shown.

Employment Density Factors and Trip Generation Factors

The prototype for future projections of commercial / retail development is an average-size Shopping Center (ITE 820). Commercial / retail development (i.e. retail and eating / drinking places) is assumed to average 427 square feet per job. For future industrial development, Industrial Park (ITE 130) is a reasonable proxy with an average of 864 square feet per job. For office / other service development, General Office (ITE 710) is the prototype for future development, with an average of 337 square feet per job.

Figure A8: Nonresidential Demand Indicators

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit*	Wkdy Trip Ends Per Employee*	Emp Per Dmd Unit	Sq. Ft. Per Emp
110	Light Industrial	1,000 Sq Ft	4.96	3.05	1.63	615
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	3.93	2.47	1.59	628
150	Warehousing	1,000 Sq Ft	1.74	5.05	0.34	2,902
254	Assisted Living	bed	2.60	4.24	0.61	na
320	Motel	room	3.35	25.17	0.13	na
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,076
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
540	Community College	student	1.15	14.61	0.08	na
550	University/College	student	1.56	8.89	0.18	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	354
710	General Office (avg size)	1,000 Sq Ft	9.74	3.28	2.97	337
760	Research & Dev Center	1,000 Sq Ft	11.26	3.29	3.42	292
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.75	16.11	2.34	427

* Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

Nonresidential Floor Area and Employment

To determine future employment growth TischlerBise utilized different data sources to forecast future nonresidential development in the study area. To project future employment, our analysis relies on the observed 2018 jobs to population ratio of .88 (88 jobs per 100 residents) resulting in a 1.8 percent annual growth in employment rather than the 2.3 percent annual growth forecasted in the Transportation Master Plan. In order better understand the relationship between Grand Junction City limits employment and nonresidential growth and areas outside but within the 201 Sewer Boundary, TischlerBise reviewed the areas separately. The findings show that for the base year of 2010, 99.5 percent of all 201 Boundary jobs were located within Grand Junction while .5 percent were located outside of the City. Utilizing this ratio as a proxy allows for the allocation of future projected nonresidential floor area and estimated job growth between the 201 Sewer Boundary and City limits.

Figure A9: 2010 Grand Junction vs. 201 Sewer Boundary Employment Distribution

Total Employment	2010		
	City Limits	Sewer Service Boundary	Total
Jobs	57,609	283	57,892

Source: Grand Valley 2040 Transportation Master Plan 201 TAZ Estimates for City Growth Boundary

TischlerBise then applied ESRI employment estimates (58,660) for Grand Junction to derive a 2018 base, with jobs allocated to one of three nonresidential categories: Commercial / Retail, Industrial / Flex, and Office / Institutional. Grand Junction staff provided floor area estimates from their GIS data for 2018 totaling approximately 32,237,608 million square feet of nonresidential construction. This results in a base year estimate of approximately 33 percent of jobs occupying 11 million square feet of Commercial / Retail development, 18 percent of jobs occupying 6.6 million square feet of Industrial development, and 49 percent of jobs occupying approximately 14.5 million square feet of Office / Institutional development.

Figure A10: Grand Junction Nonresidential Floor Area and Employment Estimates 2018

Industry Sector	2018 Jobs [1]	Share of Total Jobs	SF per Employee [2]	2018 Estimated Floor Area [2]	Jobs per 1,000 SF
Commercial/Retail[3]	19,099	33%	581	11,094,208	1.72
Office/Institutional[4]	28,811	49%	503	14,498,503	1.99
Industrial/Flex[5]	10,750	18%	618	6,644,897	1.62
TOTAL	58,660	100%		32,237,608	

1. ESRI Business Summary, Grand Junction, CO, 2018.
2. City of Grand Junction GIS Parcel Data, 2018
3. Major sector is Eating & Drinking places.
4. Major sectors are Health Services and Other Services.
5. Major sector are Construction and Manurfacturing.

Projected Nonresidential Floor Area and Employment

Once the 2018 employment data was derived for the City, TischlerBise then established future employment growth by industry across the entire 201 Sewer Service Area Boundary. TAZ employment growth projections were distributed according to observed 2018 ESRI employment sector percentages for the City of Grand Junction (33% Commercial/Retail, 49% Office/Institutional, 18 % Industrial/Flex) (Figure A10). The resulting analysis results in an increase of 11,090 jobs throughout the study area of which 11,035 (11,090 x 99.5%) can be attributed to growth within the City limits. To calculate growth of nonresidential floor area, TischlerBise applied ITE Sq. Ft. per employee estimates (Figure A8) by estimated sector employment to derive net new annual growth. Projected nonresidential development over the next ten years results in an increase of 4.73 million square feet of floor area of which 4.7 million Sq. Ft. are projected to be developed within existing City limits. All totals shown below in Figure A11 represent estimates as of January 1st of each year.

Figure A11: Nonresidential Development Projections–Selected 201 Boundary TAZ Areas

					5-Year Increment			
	2018	2019	2020	2021	2022	2023	2028	10-Year Increase
	Base Year	1	2	3	4	5	10	
POPULATION								
Grand Junction	66,425	67,558	68,691	69,911	71,131	72,351	78,450	12,025
201 /Outside City	36,800	37,428	38,055	38,731	39,407	40,083	43,462	6,662
Total	103,224	104,985	106,746	108,642	110,538	112,434	121,912	18,688
EMPLOYMENT BY TYPE								
GJ Commercial/Retail	19,099	19,806	20,138	20,496	20,853	21,211	22,999	3,900
GJ Office/Institutional	28,811	29,409	29,902	30,433	30,964	31,495	34,150	5,339
GJ Industrial/Flex	10,750	10,803	10,984	11,180	11,375	11,570	12,545	1,795
Grand Junction Total	58,660	60,018	61,025	62,109	63,192	64,276	69,695	11,035
201 Commercial/Retail	97	99	101	102	104	106	115	18
201 Office/Institutional	144	147	150	152	155	157	171	27
201 Industrial/Flex	53	54	55	56	57	58	63	10
Total Employment	58,953	60,318	61,330	62,419	63,508	64,597	70,043	11,090
NONRES. FLOOR AREA (X 1,000 SF)								
GJ Commercial/Retail	11,094	11,396	11,538	11,690	11,843	11,996	12,759	1,664
GJ Office/Institutional	14,499	14,754	14,964	15,191	15,417	15,644	16,777	2,279
GJ Industrial/Flex	6,645	6,668	6,745	6,828	6,911	6,995	7,411	766
Grand Junction Total	32,238	32,817	33,247	33,709	34,172	34,634	36,947	4,709
201 Commercial/Retail	41	42	43	44	44	45	49	8
201 Office/Institutional	48	50	50	51	52	53	58	9
201 Industrial/Flex	32	33	34	34	35	36	39	6
201 Bdry Total	122	125	127	129	132	134	145	23
Total Nonres. Floor Area	32,360	32,942	33,247	33,709	34,172	34,634	36,947	4,732

* Nonres Floor Area derived from Trip Generation, Institute of Transportation Engineers, 10th Edition (2017) Sq. Ft Per Emp. Multiplied by net new employment by sector.
* Population growth from TMP for Taz areas of 1.8%.
* Housing unit growth from TMP for TAZ areas of 1.6%
*Employment growth reflecting 2018 job/population ratio .8883. Applies sector % distribution from 2018 ESRI data.
*201 Outside City Employment .05% of Grand Junction employment held constant.

Summary of Growth Indicators

Key development projections for Grand Junction's impact fee study are housing units and nonresidential floor area, summarized above. These projections are used to estimate impact fee revenue and to indicate the anticipated need for growth-related infrastructure. The goal is to have reasonable projections without being overly concerned with precision, because impact fees methodologies are designed to reduce sensitivity to 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, Grand Junction will receive more impact fee revenue, but it will also need to accelerate infrastructure improvements to keep pace with the actual rate of development.

Based on these projections, development in the combined 201 Sewer Service area and City over the next ten years is expected to average 707 residential units per year and 473,000 square feet of nonresidential floor area per year. Although significantly above the average annual increase of 359 housing units from 2011 to 2018, these projections include the larger 201 Sewer Growth Boundary.

Figure A12: Summary of Development Projections and Growth Rates

						5-Year Increment		2018 to 2028 Average Annual	
	2018	2019	2020	2021	2022	2023	2028	Increase	Compound Growth Rate
GJ Housing Units	28,934	29,423	29,912	30,383	30,854	31,324	33,678	474	1.53%
201 Growth Bdry Housing Units	14,217	14,458	14,698	14,929	15,392	16,549	16,549	233	1.53%
GJ Nonresidential Sq. Ft x1,000	32,238	32,817	33,247	33,709	34,172	34,634	36,947	471	1.37%
201 Growth Bdry Nonresidential Sq. Ft x1,000	122	125	127	129	132	134	145	2	1.74%

Development Projections

Provided below is a summary of cumulative development projections used in the development impact fee study. Base year estimates for 2018 are used in the development impact fee calculations and *reflect the entirety of the City and Sewer Service 201 growth boundary*. Development projections are used to illustrate a possible future pace of demand for service units and cash flows resulting from revenues and expenditures associated with those demands. All totals represent estimates as of January 1st of each year.

Figure A13: Development Projections Summary Selected TAZ Areas

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	10-Year Increase
	Base Year	1	2	3	4	5	6	7	8	9	10	
POPULATION												
Grand Junction	**66,425**	**67,558**	**68,691**	**69,911**	**71,131**	**72,351**	**73,570**	**74,790**	**76,010**	**77,230**	**78,450**	**12,025**
201 /Outside City	**36,800**	**37,428**	**38,055**	**38,731**	**39,407**	**40,083**	**40,759**	**41,435**	**42,110**	**42,786**	**43,462**	6,662
Total	**103,224**	**104,985**	**106,746**	**108,642**	**110,538**	**112,434**	**114,329**	**116,225**	**118,121**	**120,016**	**121,912**	**18,688**
HOUSING UNITS												
GJ Single-Family	22,279	22,656	23,032	23,395	23,757	24,120	24,482	24,845	25,207	25,570	25,932	3,653
GJ Multi-Family	6,655	6,767	6,880	6,988	7,096	7,205	7,313	7,421	7,529	7,638	7,746	1,091
Grand Junction Total	**28,934**	**29,423**	**29,912**	**30,383**	**30,854**	**31,324**	**31,795**	**32,266**	**32,737**	**33,208**	**33,678**	**4,744**
201 Bdry Single-Family	14,217	14,458	14,698	14,929	15,161	15,392	15,623	15,855	16,086	16,317	16,549	2,331
Total Housing Units	**43,151**	**43,881**	**44,610**	**45,312**	**46,014**	**46,717**	**47,419**	**48,121**	**48,823**	**49,525**	**50,227**	**7,076**
EMPLOYMENT BY TYPE												
GJ Commercial/Retail	19,099	19,806	20,138	20,496	20,853	21,211	21,569	21,926	22,284	22,642	22,999	3,900
GJ Office/Institutional	28,811	29,409	29,902	30,433	30,964	31,495	32,026	32,557	33,088	33,619	34,150	5,339
GJ Industrial/Flex	10,750	10,803	10,984	11,180	11,375	11,570	11,765	11,960	12,155	12,350	12,545	1,795
Grand Junction Total	**58,660**	**60,018**	**61,025**	**62,109**	**63,192**	**64,276**	**65,360**	**66,444**	**67,527**	**68,611**	**69,695**	**11,035**
201 Commercial/Retail	97	99	101	102	104	106	108	110	111	113	115	18
201 Office/Institutional	144	147	150	152	155	157	160	163	165	168	171	27
201 Industrial/Flex	53	54	55	56	57	58	59	60	61	62	63	10
Total Employment	**58,953**	**60,318**	**61,330**	**62,419**	**63,508**	**64,597**	**65,687**	**66,776**	**67,865**	**68,954**	**70,043**	**11,090**
NONRES. FLOOR AREA (X 1,000 SF)												
GJ Commercial/Retail	11,094	11,396	11,538	11,690	11,843	11,996	12,148	12,301	12,453	12,606	12,759	1,664
GJ Office/Institutional	14,499	14,754	14,964	15,191	15,417	15,644	15,871	16,097	16,324	16,551	16,777	2,279
GJ Industrial/Flex	6,645	6,668	6,745	6,828	6,911	6,995	7,078	7,161	7,244	7,328	7,411	766
Grand Junction Total	**32,238**	**32,817**	**33,247**	**33,709**	**34,172**	**34,634**	**35,097**	**35,559**	**36,022**	**36,484**	**36,947**	**4,709**
201 Commercial/Retail	41	42	43	44	44	45	46	47	48	48	49	8
201 Office/Institutional	48	50	50	51	52	53	54	55	56	57	58	9
201 Industrial/Flex	32	33	34	34	35	36	36	37	37	38	39	6
201 Bdry Total	122	125	127	129	132	134	136	138	141	143	145	23
Total Nonres. Floor Area	**32,360**	**32,942**	**33,247**	**33,709**	**34,172**	**34,634**	**35,097**	**35,559**	**36,022**	**36,484**	**36,947**	**4,732**

* Nonres Floor Area derived from Trip Generation, Institute of Transportation Engineers, 10th Edition (2017) Sq. Ft Per Emp. Multiplied by net new employment by sector.
* Population growth from TMP for Taz areas of 1.8%.
* Housing unit growth from TMP for TAZ areas of 1.6%
*Employment growth reflecting 2018 job/population ratio .8883. Applies sector % distribution from 2018 ESRI data.
*201 Outside City Employment .05% of Grand Junction employment held constant.

Found below in Figure A14, in the base year, there is a total of 271,362 average weekday vehicle trips in the City of Grand Junction. The trip totals are calculated by multiplying the average weekday vehicle trip factors with the base year nonresidential floor area.

To project the 10-year increase in trips, the growth in nonresidential floor area is used. It is projected that over the next ten years there will be an increase of 40,643 nonresidential vehicle trips in the City of Grand Junction.

Figure A14: Nonresidential Vehicle Trip Projections

		5-Year Increment-->						
	2018	*2019*	*2020*	*2021*	*2022*	*2023*	*2028*	*10-Year*
	Base Yr	*1*	*2*	*3*	*4*	*5*	*10*	*Increase*
Commercial/Retail	184,275	189,286	191,641	194,176	196,711	199,246	211,921	**27,647**
Office/Institutional	70,608	71,850	72,875	73,979	75,083	76,186	81,705	**11,097**
Industrial/Flex	16,479	16,536	16,727	16,934	17,140	17,347	18,379	**1,900**
Total Nonres. Vehicle Trips	271,362	277,672	281,244	285,089	288,934	292,779	312,005	**40,643**

1. Trip rates are customized for Grand Junction.
2. Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2017).

APPENDIX B: LAND USE DEFINITIONS

Residential Development

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. Grand Junction will collect development fees from all new residential units. One-time development fees are determined by site capacity (i.e. number of residential units). This category also contains mobile homes and recreational vehicles

Single-Family: Single-Family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides. Also included in the definition is Single family attached (townhouse), which is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.

Multi-Family: 2+ units (duplexes and apartments) are units in structures containing two or more housing units, further categorized as units in structures with "2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments."

Nonresidential Development

The proposed general nonresidential development categories (defined below using 2017 ITE Land Use Code) can be used for all new construction within Grand Junction. Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (i.e., jobs per thousand square feet of floor area).

Land Use: 820 Shopping Center Description. A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands. Factory outlet center (Land Use 823) is a related use.

Land Use: 710 General Office Building Description. A general office building houses multiple tenants; it is a location where affairs of businesses, commercial or industrial organizations, or professional persons or firms are conducted. An office building or buildings may contain a mixture of tenants including professional services, insurance companies, investment brokers, and tenant services, such as a bank or savings and loan institution, a restaurant, or cafeteria and service retail facilities. A general office building with a gross floor area of 5,000 square feet or less is classified as a small office building (Land Use 712). Corporate headquarters building (Land Use 714), single tenant office building (Land Use 715), office park (Land Use 750), research and development center (Land Use 760), and business park (Land Use 770) are

additional related uses. If information is known about individual buildings, it is suggested that the general office building category be used rather than office parks when estimating trip generation for one or more office buildings in a single development. The office park category is more general and should be used when a breakdown of individual or different uses is not known. If the general office building category is used and if additional buildings, such as banks, restaurants, or retail stores are included in the development, the development should be treated as a multiuse project. On the other hand, if the office park category is used, internal trips are already reflected in the data and do not need to be considered. When the buildings are interrelated (defined by shared parking facilities or the ability to easily walk between buildings) or house one tenant, it is suggested that the total area or employment of all the buildings be used for calculating the trip generation. When the individual buildings are isolated and not related to one another, it is suggested that trip generation be calculated for each building separately and then summed.

Land Use: 130 Industrial Park Description. An industrial park contains a number of industrial or related facilities. It is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities—some with a large number of small businesses and others with one or two dominant industries. General light industrial (Land Use 110) and manufacturing (Land Use 140) are related uses.

Land Use: 150 Warehousing Description. A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas. High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related uses.

Impact Fee Study Workshop

Grand Junction, Colorado
8/19/19

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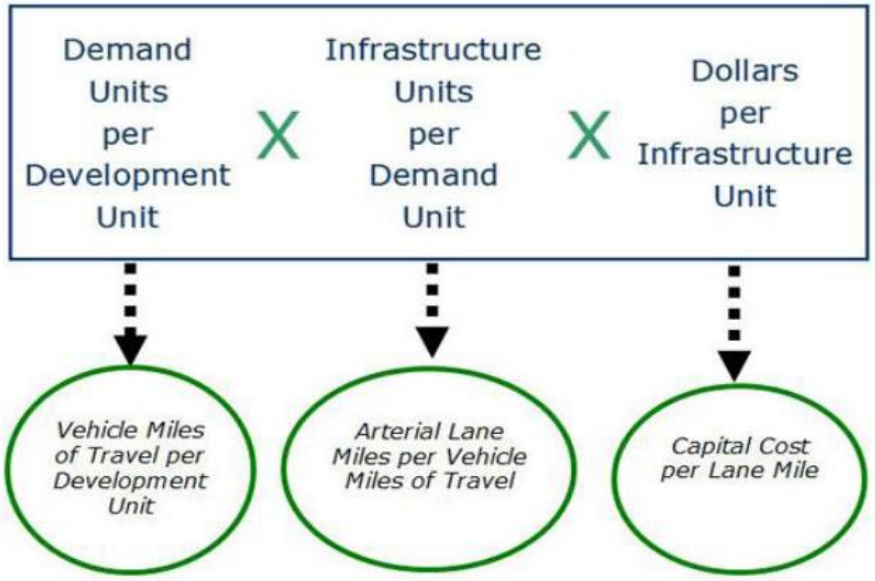
- 40-Year National Practice
  - » Impact fees
  - » Fiscal impact analysis
  - » Economic impact analysis
  - » Infrastructure funding strategies
  - » Market feasibility

Adams County	Arapahoe County	Aurora	Boulder
Castle Pines	Castle Rock	Centennial	Colorado Springs
Durango	Eaton	Erie	Evans
Fort Collins	Garfield County	Grand Junction	Greeley
Johnstown	La Plata County	Larimer County	Lone Tree
Longmont	Louisville	Mead	Mesa County
Montezuma County	Parker	Pitkin County	Pueblo
Steamboat Springs	Thornton	Vail	Westminster

Legal and Methodology

- One time payments to fund system improvements
- Cannot be deposited into General Fund
- Basic legal requirements are need, benefit, and proportionality
- General Methods
  - » Plan Based
  - » Cost Recovery
  - » Incremental Expansion



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Impact Fees in Colorado

- Governed by Senate Bill 15
  - October 2001
- Improvement or facility that:
  - Is directly related to any service that a local government is authorized to provide;
  - Has a useful life of five years or longer
- Specific accounting requirements
- Allows a local government to waive an impact fee on the development of low/moderate income housing
  - Does not address whether the local government is required to "make up" the difference

Grand Junction Impact Fee Program

- Existing impact fees
  - Parks
  - Water plant investment fee
  - Wastewater plant investment fee
- Potential impact fees as part of this study
  - Parks (updated)
  - Fire/EMS (new)
  - Police (new)
  - Municipal facilities (new)

Fire Impact Fee

- Consumption-based approach
- Service area exceeds City limits
  - 83% of incidents are inside City
- Components
  - Stations
  - Vehicles/Apparatus
- Credit for existing debt

Fire 10-Year Facility/Apparatus Demand

Level-of-Service			Demand Unit	Unit Cost
Residential	0.49	Square Feet	per Person	$450
Nonresidential	0.06		per Trip End	

Growth-Related Need for Facilities

Year		Population	Nonres. Vehicle Trips	Residential Sq. Ft.	Nonres. Sq. Ft.	Total
Base	2018	66,425	271,362	32,721	17,558	50,279
Year 1	2019	67,558	277,672	33,279	17,966	51,245
Year 2	2020	68,691	281,244	33,837	18,197	52,035
Year 3	2021	69,911	285,089	34,438	18,446	52,884
Year 4	2022	71,131	288,934	35,039	18,695	53,734
Year 5	2023	72,351	292,779	35,640	18,944	54,584
Year 6	2024	73,570	296,625	36,241	19,193	55,434
Year 7	2025	74,790	300,470	36,842	19,441	56,283
Year 8	2026	76,010	304,315	37,443	19,690	57,133
Year 9	2027	77,230	308,160	38,044	19,939	57,983
Year 10	2028	78,450	312,005	38,645	20,188	58,833
Ten-Year Increase		12,025	40,643	5,924	2,630	**8,554**
			Growth-Related Expenditure	$2,665,693	$1,183,388	**$3,849,081**

Level-of-Service			Demand Unit	Unit Cost
Residential	0.00031	Units	per Person	$322,711
Nonresidential	0.00004		per Trip End	

Growth-Related Need for Apparatus

Year		Population	Nonres. Vehicle Trips	Residential Vehicles	Nonres. Vehicles	Total
Base	2018	66,425	271,362	21	11	32
Year 1	2019	67,558	277,672	21	11	32
Year 2	2020	68,691	281,244	21	11	33
Year 3	2021	69,911	285,089	22	12	33
Year 4	2022	71,131	288,934	22	12	34
Year 5	2023	72,351	292,779	22	12	34
Year 6	2024	73,570	296,625	23	12	35
Year 7	2025	74,790	300,470	23	12	35
Year 8	2026	76,010	304,315	23	12	36
Year 9	2027	77,230	308,160	24	13	36
Year 10	2028	78,450	312,005	24	13	37
Ten-Year Increase		12,025	40,643	4	2	**5**
			Growth-Related Expenditure	$1,290,842	$645,421	**$1,613,553**

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Maximum Supportable Fire Impact Fee

Fee Component	Cost per Person	Cost per Vehicle Trip
Facilities	$221.67	$29.12
Vehicles	$99.72	$13.10
Existing Principal Credit	($21.68)	($2.94)
NET COST PER DEMAND UNIT	**$299.71**	**$39.28**

Residential

Housing Type	Persons per Housing Unit	Maximum Supportable Fee
Single-Family	2.37	**$710**
Multi-Family	1.56	**$467**

Nonresidential

Type	ITE Code	Unit	Average Daily Vehicle Trips*	Trip Adjustment Factor*	Maximum Supportable Fee
Retail/Commercial	820	1,000 SF	37.75	33%	**$489**
Office/Institutional	710	1,000 SF	9.74	50%	**$191**
Industrial	130	1,000 SF	3.37	50%	**$66**
Warehousing	150	1,000 SF	1.74	50%	**$34**

*Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017

Police Impact Fee

- Consumption-based approach
- Components
  - Police space
  - Vehicles funded through Proposition 2B
- Citywide service area

Police 10-Year Facility Demand

Police Station Level-of-Service Standards

Level-of-Service			*Demand Unit*	*Unit Cost*
Residential	0.63	Square Feet	per Person	$344
Nonresidential	0.08		per Trip End	

Growth-Related Need for Facilities						
Year		*Population*	*Nonres. Vehicle Trips*	*Residential Sq. Ft.*	*Nonresidential Sq. Ft.*	*Total*
Base	2018	66,425	271,362	41,561	22,302	63,863
Year 1	2019	67,558	277,672	42,270	22,820	65,091
Year 2	2020	68,691	281,244	42,979	23,114	66,093
Year 3	2021	69,911	285,089	43,743	23,430	67,172
Year 4	2022	71,131	288,934	44,506	23,746	68,252
Year 5	2023	72,351	292,779	45,269	24,062	69,331
Year 6	2024	73,570	296,625	46,032	24,378	70,410
Year 7	2025	74,790	300,470	46,796	24,694	71,490
Year 8	2026	76,010	304,315	47,559	25,010	72,569
Year 9	2027	77,230	308,160	48,322	25,326	73,648
Year 10	2028	78,450	312,005	49,086	25,642	74,727
Ten-Year Increase		12,025	40,643	**7,524**	**3,340**	**10,864**
			Growth-Related Expenditure	**$2,589,761**	**$1,149,628**	**$3,739,389**

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Maximum Supportable Police Impact Fee

Fee Component	Cost per Person	Cost per Vehicle Trip
Police Space	$215.36	$28.29
Existing Principal Credit	($86.71)	($11.74)
NET COST PER DEMAND UNIT	**$128.65**	**$16.55**

Residential

Housing Type	Persons per Housing Unit	Maximum Supportable Fee
Single-Family	2.37	**$305**
Multi-Family	1.56	**$200**

Nonresidential

Type	ITE Code	Unit	Average Daily Vehicle Trips*	Trip Adjustment Factor*	Maximum Supportable Fee
Retail/Commercial	820	1,000 SF	37.75	33%	**$206**
Office/Institutional	710	1,000 SF	9.74	50%	**$81**
Industrial	130	1,000 SF	3.37	50%	**$28**
Warehousing	150	1,000 SF	1.74	50%	**$14**

*Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017

Municipal Facilities Impact Fee

- Consumption-based approach
- Citywide service area
- Components
  - General Government Space

Municipal Facilities 10-Year Demand

Type of Infrastructure	Level of Service			Demand Unit	Unit Cost / Sq. Ft.
Municipal Facilites	Residential	1.20	Square Feet	per persons	$277
	Nonresidential	0.73		per jobs	

Growth-Related Need for Municipal Facilities						
Year		Population	Jobs	Residential Square Feet	Nonresidential Square Feet	Total Square Feet
Base	2018	66,425	58,660	79,518	42,669	122,187
Year 1	2019	67,558	60,018	80,874	43,657	124,531
Year 2	2020	68,691	61,025	82,230	44,389	126,619
Year 3	2021	69,911	62,109	83,691	45,178	128,869
Year 4	2022	71,131	63,192	85,151	45,966	131,117
Year 5	2023	72,351	64,276	86,612	46,754	133,366
Year 6	2024	73,570	65,360	88,072	47,542	135,614
Year 7	2025	74,790	66,444	89,532	48,331	137,863
Year 8	2026	76,010	67,527	90,993	49,119	140,112
Year 9	2027	77,230	68,611	92,453	49,907	142,360
Year 10	2028	78,450	69,695	93,913	50,696	144,609
Ten-Year Increase		12,025	11,035	**14,395**	**8,027**	**22,422**
			Projected Expenditure	**$3,987,432**	**$2,223,462**	**$6,210,894**

Growth-Related Expenditure on Municipal Facilities	$6,210,894

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Maximum Supportable Municipal Facilities Impact Fee

Fee Component	Cost per Person	Cost per Job
Municipal Facilities Space	$331.60	$201.49

Residential (per unit)

Development Type	Persons per Housing Unit	Maximum Supportable Fee
Single Family	2.37	$785
Multi-Family	1.56	$516

Nonresidential

Type	*ITE Code*	*Unit*	*Employees**	*Maxmum Supportable Fee*
Retail/Commercial	820	1,000 SF	2.34	$471
Office/Institutional	710	1,000 SF	2.97	$598
Industrial	130	1,000 SF	1.16	$234
Warehousing	150	1,000 SF	0.34	$69

*Employment densities were calculated using data from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition.

Parks and Recreation Impact Fee

- Consumption-based approach
  - Assumes the City does not purchase additional park land in the short-term
  - Impact fees go to develop existing parks and banked park land
- Citywide service area
  - Residents within the 201 Service Area population is used as “Park Population”
- Components
  - Level 1 and 2 park improvements

Level 1 Park Improvement Needs

Level 1 Park Infrastructure Level-of-Service Standards

Type	Level of Service	Demand Unit	Unit Cost / Acre
Level 1 Park Improvements	0.0001 Acres	per person	$112,500

Growth-Related Need for Level 1 Park Improvements			
Year		Population	Improved Acres
Base	2018	103,224	10.32
Year 1	2019	104,985	10.50
Year 2	2020	106,746	10.67
Year 3	2021	108,642	10.86
Year 4	2022	110,538	11.05
Year 5	2023	112,434	11.24
Year 6	2024	114,329	11.43
Year 7	2025	116,225	11.62
Year 8	2026	118,121	11.81
Year 9	2027	120,016	12.00
Year 10	2028	121,912	12.19
Ten-Year Increase		18,688	**1.87**
Growth-Related Expenditure on Level 1 Park Improvements			**$210,375**

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Level 2 Park Improvement Needs

Level 2 Park Infrastructure Level-of-Service Standards

Type	Level of Service	Demand Unit	Unit Cost / Acre
Level 2 Park Improvements	0.0035 Acres	per 1,000 persons	$192,500

Growth-Related Need for Level 2 Park Improvements			
Year		Population	Improved Acres
Base	2018	103,224	357.54
Year 1	2019	104,985	363.64
Year 2	2020	106,746	369.74
Year 3	2021	108,642	376.31
Year 4	2022	110,538	382.87
Year 5	2023	112,434	389.44
Year 6	2024	114,329	396.00
Year 7	2025	116,225	402.57
Year 8	2026	118,121	409.14
Year 9	2027	120,016	415.70
Year 10	2028	121,912	422.27
Ten-Year Increase		18,688	**65**
Growth-Related Expenditure Level 2 Park Improvements			**$12,512,500**

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Maximum Supportable Park Impact Fee

Fee Component	Cost per Person
Level 1 Parkland Improvements	$11.25
Level 2 Parkland Improvements	$666.76
COST PER DEMAND UNIT	**$678.01**

Type	Persons per Housing Unit	Maximum Supportable Fee	Current Fee	Increase
Single-Family	2.37	**$1,605**	$225	$1,380
Multi-Family	1.56	**$1,055**	$225	$830

Maximum Supportable Fee Summary

Residential (Per Unit)

Type	Fire	Police	Parks and Recreation	Municipal Facilities	Maximum Supportable Fee	Current Fee	Difference
Single-Family	$710	$305	$1,605	$785	**$3,405**	**$225**	$3,180
Multi-Family	$467	$200	$1,055	$516	**$2,238**	**$225**	$2,013

Nonresidential (Per 1,000 square feet)

Type	Fire	Police	Parks and Recreation	Municipal Facilities	Maximum Supportable Fee	Current Fee	Difference
Retail/Commercial	$489	$206	$0	$471	**$1,167**	**$0**	$1,167
Office/Institutional	$191	$81	$0	$598	**$870**	**$0**	$870
Industrial	$66	$28	$0	$234	**$328**	**$0**	$328
Warehousing	$34	$14	$0	$69	**$117**	**$0**	$117

Water Plant Investment Fee

- Last updated pre-1990s
- In 2015, Raftelis Financial Consultants proposed 2016 PIF:
  - » $4,100 per capacity unit (Cash Financed)
  - » System net equity = $69.9 million
  - » System capacity = 16.3 million gallons per day (16,900 capacity units)
  - » Does not include recovery of proportionate share of City's water rights
- 2019 PIF: $4,480 (3% escalation)

Fee	Purpose	Cost
Plant Investment Fee	• Recover the cost of constructing the system. • Cost range based on size of service line and meter (3/4" – 6").	$300 - $8,500
Tap Fee	• Recover cost of City crews making physical connection to water main line and supplying meter. • Cost range based on size of service line and meter (3/4" – 6").	$700 – 19,850

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Proposed Water Plant Investment Fees

Water Plant Investment Fees

SIZE (inch)	TAP	PIF	TOTAL CONNECTION FEE	PROPOSED
3/4 x 5/8	$700	$300	$1,000	$5,180
3/4 x 3/4				
1	$875	$375	$1,250	$6,850
1.5	$2,050	$900	$2,950	$12,580
2	$2,900	$1,250	$4,150	$18,520
3	$6,875	$2,975	$9,850	$33,360
4	$12,850	$5,550	$18,400	$54,480
6	$19,850	$8,500	$28,400	$155,632

Comparison of Water-Related Fees

Water Plant Investment Fees

SIZE (inch)	PROPOSED	Ute Water (2019)	Clifton Water (2019)	Denver Water (2019) (1)	Aurora	Greeley	Pueblo (4)	Flagstaff, AZ (5)	Cheyenne, WY
Single Family (1-2 bath, 1/8 ac lot)					$ 8,773.69				
Single Family (3-4 bath, 1/8 ac lot)					$ 15,530.69				
Single Family (5+ bath, 1/8 ac lot)					$ 22,755.69				
Multi-family (per unit)					$ 9,760.00		$ 2,880.00		
Single Family (2000 sf)				$ 4,430.00					
Multi-family (2 DU)				$ 1,040.00					
Multi-family (8 DU)				$ 24,560.00					
Mult-family (20 DU)				$ 47,840.00					
3/4 x 5/8	$5,180	$7,000	$7,000	$ 10,730.00	$ 22,195.00	$ 10,800.00	$ 5,069.00	$ 5,728.00	$ 8,030.00
3/4 x 3/4		$8,750	$8,750						
1	$6,850	$10,500	$16,250	$ 19,170.00	$ 39,729.00	$ 18,000.00	$ 4,909.00	$ 9,566.00	$ 19,420.00
1.5	$12,580	$15,725	$18,000	$ 42,180.00	$ 87,227.00	$ 36,000.00	$ 25,029.00	$ 19,074.00	$ 38,730.00
2	$18,520	$23,150	$27,000	$ 76,690.00	(3)	$ 57,500.00	$ 31,725.00	$ 30,530.00	$ 61,990.00
3	$33,360	$41,700	$40,500	$ 126,426.00	(3)	$ 126,000.00	$ 60,973.00	$ 57,279.00	$ 168,640.00
4	$54,480	$73,100	$60,840	$ 229,971.00	(3)	$ 216,600.00	$ 210,439.00	$ 95,484.00	$ 290,760.00
6	$155,632	$182,800	$91,260	$ 517,374.00		$ 450,000.00	$ 434,157.00	$ 190,910.00	$ 620,260.00
8			$136,890	$ 774,957.00			$ 1,007,583.00	$ 305,468.00	
10			$205,336	$ 1,200,204.00				$ 439,157.00	
12				$ 1,235,855.00					

(1) Denver Water Rates

Single Family Residential
Base Charge
$ per sf
ADU

Multi-family
First two DU
Next 6 DU
Over 8 DU, $ per unit
Fees for specific tap sizes are for nonresidential.

(2) Aurora Water Rates

Residential
Outdoor Use Fee (per sf lot size)
Outdoor use fee for common areas in non-fee simple lots will be supplied by an irrigation meter.

Commercial
Fees for specific tap sizes are for nonresidential.
(3) Commercial Water Connection fees for meters 2-inches and greater are based on the estimated daily volume of water and assessed at $63.82 per gallon/per day for connection and water transmission development fee. Consumption beyond initial allocation may be addressed through monthly bill or payment of additional connection fees.
Outdoor Use Fee (per sf lot size)
--Non-water Conserving
--Water Conserving

(4) Pueblo
Plant investment fee only, water tap fee charged separately

(5) Flagstaff
Water Capacity fee only, separate tap fee

TischlerBise
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Historical/Projected Water Revenue

City Water Meter Sales

Meter Size	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	Total Mtrs	PIF/Tap Revenue	Proposed PIF/Tap	Revenue Difference
2019 Year to Date	16	0	0	0	0	1	17	$34,400.00	$137,720.00	$103,320.00
2018	36	0	1	5	3	0	45	$89,250.00	$391,740.00	$302,490.00
2017	42	1	3	2	0	0	48	$60,400.00	$299,190.00	$238,790.00

2020 Estimated Meter Sales

	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	Total Mtrs		
2020	30	0	0	3	0	4	37		$430,320.00

TischlerBise
FISCAL | ECONOMIC | PLANNING

Fire, Police, Parks and Recreation and Municipal Services Impact Fee Implementation Schedule and Comparison

	Land Use Type	Unit	Current Fees	Jan 1 2020 33%	Jan 1 2021 66%	Jan 1 2022 Staff Proposed 100%	Stakeholder Proposed 8/30/2019
Residential	Single Family						
	Fire	Dwelling	$0	$234	$469	$710	$0
	Police	Dwelling	$0	$101	$201	$305	$0
	Parks and Recreation	Dwelling	$225	$680	$1,136	$1,605	$803
	Municipal Services	Dwelling	$0	$259	$518	$785	$0
	Multi-Family						
	Fire	Dwelling	$0	$154	$308	$467	$0
	Police	Dwelling	$0	$66	$132	$200	$0
	Parks and Recreation	Dwelling	$225	$499	$773	$1,055	$528
	Municipal Services	Dwelling	$0	$170	$341	$516	$0
Commercial & Industrial	Retail/Commercial						
	Fire	1,000 sf	$0	$161	$323	$489	$0
	Police	1,000 sf	$0	$68	$136	$206	$0
	Parks and Recreation	1,000 sf	$0	$0	$0	$0	$0
	Municipal Services	1,000 sf	$0	$155	$311	$471	$0
	Office/Institutional						
	Fire	1,000 sf	$0	$63	$126	$191	$0
	Police	1,000 sf	$0	$27	$53	$81	$0
	Parks and Recreation	1,000 sf	$0	$0	$0	$0	$0
	Municipal Services	1,000 sf	$0	$197	$395	$598	$0
	Industrial						
	Fire	1,000 sf	$0	$22	$44	$66	$0
	Police	1,000 sf	$0	$9	$18	$28	$0
	Parks and Recreation	1,000 sf	$0	$0	$0	$0	$0
	Municipal Services	1,000 sf	$0	$77	$154	$234	$0
	Warehousing						
	Fire	1,000 sf	$0	$11	$22	$34	$0
	Police	1,000 sf	$0	$5	$9	$14	$0
	Parks and Recreation	1,000 sf	$0	$0	$0	$0	$0
	Municipal Services	1,000 sf	$0	$23	$46	$69	$0

Transportation Impact Fee
Implementation Schedule and Comparison Chart

	Land Use Type	Unit	Current Fees	Jan 1 2020 16.7%	July 1 2020 33%	Jan 1 2021 50%	Jul 1 2021 67%	Jan 1 2022 83%	July 1 2022 Staff Proposed 100%	Stakeholder Proposed 8/30/2019	TIF Study 100%
Residential	All Multi-Family	Dwelling	$ 1,769	$ 2,016	$ 2,263	$ 2,511	$ 2,758	$ 3,005	$ 3,252	$ 2,511	$ 4,570
	<1,250 sq.ft of living area	Dwelling	$ 2,554	$ 2,670	$ 2,787	$ 2,903	$ 3,019	$ 3,136	$ 3,252	$ 2,903	
	1,250 to 1,649 sq.ft of living area	Dwelling	$ 2,554	$ 3,033	$ 3,513	$ 3,992	$ 4,472	$ 4,951	$ 5,430	$ 3,992	$ 6,763
	1,650 to 2,299 sq.ft of living area	Dwelling	$ 2,554	$ 3,181	$ 3,809	$ 4,436	$ 5,064	$ 5,691	$ 6,318	$ 4,436	
	2,300 or more of living area	Dwelling	$ 2,554	$ 3,552	$ 4,549	$ 5,547	$ 6,544	$ 7,542	$ 8,538	$ 5,546	
Commercial & Industrial	Hotel/Motel	Room	$ 2,407	$ 2,703	$ 2,999	$ 3,295	$ 3,591	$ 3,887	$ 4,183	$ 3,295	$ 4,183
	Shopping Center/Commercial	1,000 sf	$ 4,189	$ 4,864	$ 5,540	$ 6,215	$ 6,890	$ 7,566	$ 8,240	$ 6,215	$ 8,240
	Auto Sales/Service	1,000 sf	$ 3,780	$ 4,523	$ 5,267	$ 6,010	$ 6,754	$ 7,497	$ 8,240	$ 6,010	$ 9,258
	Golf Course	Hole	$ 5,951	$ 6,333	$ 6,714	$ 7,096	$ 7,477	$ 7,859	$ 8,240	$ 7,096	$ 12,850
	Movie Theater	1,000 sf	$ 10,574	$ 10,185	$ 9,796	$ 9,407	$ 9,018	$ 8,629	$ 8,240	$ 8,240	$ 33,028
	Restaurant, Standard	1,000 sf	$ 5,159	$ 5,673	$ 6,186	$ 6,700	$ 7,213	$ 7,727	$ 8,240	$ 6,700	$ 14,975
	Bank, Drive-In	1,000 sf	$ 6,359	$ 8,360	$ 10,362	$ 12,363	$ 14,365	$ 16,366	$ 18,365	$ 12,352	$ 18,365
	Convenience Store w/Gas Sales	1,000 sf	$ 9,143	$ 10,680	$ 12,218	$ 13,755	$ 15,292	$ 16,830	$ 18,365	$ 13,754	$ 26,395
	Restaurant, Drive-Through	1,000 sf	$ 11,544	$ 12,681	$ 13,818	$ 14,955	$ 16,092	$ 17,229	$ 18,365	$ 14,955	$ 33,203
	Office, General	1,000 sf	$ 3,141	$ 3,732	$ 4,323	$ 4,913	$ 5,504	$ 6,095	$ 6,685	$ 4,913	$ 6,685
	Office, Medical	1,000 sf	$ 8,862	$ 8,499	$ 8,136	$ 7,773	$ 7,410	$ 7,047	$ 6,685	$ 6,685	$ 25,665
	Animal Hospital/Vet Clinic	1,000 sf	$ 8,862	$ 8,499	$ 8,136	$ 7,773	$ 7,410	$ 7,047	$ 6,685	$ 6,685	$ 15,858
	Hospital	1,000 sf	$ 4,112	$ 4,541	$ 4,970	$ 5,399	$ 5,828	$ 6,257	$ 6,685	$ 5,399	$ 7,905
	Nursing Home	1,000 sf	$ 1,149	$ 1,239	$ 1,329	$ 1,419	$ 1,508	$ 1,598	$ 1,688	$ 1,419	$ 3,120
	Place of Worship	1,000 sf	$ 1,967	$ 1,920	$ 1,874	$ 1,827	$ 1,781	$ 1,734	$ 1,688	$ 1,688	$ 2,725
	Day Care Center	1,000 sf	$ 4,086	$ 3,686	$ 3,287	$ 2,887	$ 2,487	$ 2,087	$ 1,688	$ 1,688	$ 4,485
	Elementary/Secondary School	1,000 sf	$ 639	$ 814	$ 989	$ 1,164	$ 1,338	$ 1,513	$ 1,688	$ 1,164	$ 1,688
	Public/Institutional	1,000 sf	$ 639	$ 826	$ 998	$ 1,171	$ 1,343	$ 1,516	$ 1,688	$ 1,164	$ 3,813
	Industrial	1,000 sf	$ 1,864	$ 1,900	$ 1,935	$ 1,971	$ 2,007	$ 2,042	$ 2,078	$ 1,971	$ 2,078
	Warehouse	1,000 sf	$ 1,328	$ 1,286	$ 1,244	$ 1,201	$ 1,159	$ 1,117	$ 1,075	$ 1,075	$ 1,248
	Mini-Warehouse	1,000 sf	$ 460	$ 563	$ 665	$ 768	$ 870	$ 973	$ 1,075	$ 768	$ 1,075

Business Stakeholder Group Recommendation for items marked in red is that the 50% formula not be applied and that the new fees be adopted at 100% immediately

City of Grand Junction
Comparison of Staff Proposed to Industry Proposed
September 16, 2019

Residential Single Family (1,650 to 2,299 sq.ft.)

	Current	Annual Increase (avg)	Bi-Annual Increase (avg)	Staff Proposed at 100%	Total Increase	Industry Proposed at 100%	Total Increase	Industry Less Than Proposed	
Transportation	$ 2,554		$ 627	$ 6,318	$ 3,764	$ 4,436	$ 1,882	$ (1,882)	-30%
Fire	-	237		710	710	-	-	(710)	-100%
Police	-	102		305	305	-	-	(305)	-100%
Parks	225	460		1,605	1,380	915	690	(690)	-43%
Municipal Services	-	262		785	785	-	-	(785)	-100%
Total	**$ 2,779**			**$ 9,723**	**$ 6,944**	**$ 5,351**	**$ 2,572**	$ (4,372)	-45%

Residential Multi-Family

	Current	Annual Increase (avg)	Bi-Annual Increase (avg)	Staff Proposed at 100%	Total Increase	Industry Proposed at 100%	Total Increase	Industry Less Than Proposed	
Transportation	$ 1,769		$ 247	$ 3,252	$ 1,483	$ 2,511	$ 742	$ (741)	-23%
Fire	-	156		467	467	-	-	(467)	-100%
Police	-	67		200	200	-	-	(200)	-100%
Parks	225	277		1,055	830	640	415	(415)	-39%
Municipal Services	-	172		516	516	-	-	(516)	-100%
Total	**$ 1,994**			**$ 5,490**	**$ 3,496**	**$ 3,151**	**$ 1,157**	$ (2,339)	-43%

Retail Commercial Shopping Center

	Current	Annual Increase (avg)	Bi-Annual Increase (avg)	Staff Proposed at 100%	Total Increase	Industry Proposed at 100%	Total Increase	Industry Less Than Proposed	
Transportation	$ 4,189		$ 675	$ 8,240	$ 4,051	$ 6,215	$ 2,026	$ (2,025)	-25%
Fire	-	163		489	489	-	-	(489)	-100%
Police	-	69		206	206	-	-	(206)	-100%
Parks	-	-		-	-	-	-	-	n/a
Municipal Services	-	157		471	471	-	-	(471)	-100%
Total	**$ 4,189**			**$ 9,406**	**$ 5,217**	**$ 6,215**	**$ 2,026**	$ (3,191)	-34%

August 12, 2019

Mr. Greg Caton, City Manager
250 N. 5th Street
Grand Junction, CO 81501

RE: Current position on Proposed Impact Fees

The stakeholder groups that have participated in the current discussion of Impact fees for Grand Junction which includes the Grand Junction Chamber of Commerce, Western Colorado Contractors Association, Grand Junction Area Realtors Association, Association Members for Growth and Development, and the Homebuilders Association of Western Colorado have appreciated the collaborative nature of our meetings with you and other city staff to discuss and work at refining the development fees that will help the city address the need for building infrastructure capacity while not stymieing growth and economic development.

Recognizing that many residential and commercial projects are competitive in nature this stakeholder group commissioned a comparison of six cities in an attempt to as closely as possible compare current fees. That comparison is attached and we would ask that you share it and this letter with the City Council at your August 19th briefing during the Council Workshop.

In essence, the study concluded that Grand Junction is currently 52% above average on development fees for a single-family residence and 27% higher than the average on a commercial office project when compared to the five other selected cities. It is important to note that this is based on current fees and does not include the city's proposal for increasing the traffic capacity payment fees and park fees along with adding new impact fees for fire, police and facilities. It also does not include the proposal for more off-

site improvement costs being borne by the developer. In other words, we are already on the threshold of being much higher than our comparison cities with **no fee increases**.

The stakeholder group considers it important for policy decision makers to consider the following:

- There are additional revenues via sales, use and property taxes that the city will receive from the economic activity generated by new development that were not considered by the consultant study that recommended the increases in fees and levying of new fees. The National Realtor Association for example, has estimated that every new single-family home adds two jobs and $80,000 to an area's economy.
- Any increase in fees is ultimately borne by the homeowner or business owner as those costs are passed through to them by the developer which makes housing costs and business expansions more expensive. The Grand Junction Area Realtors Association has estimated that just 37% of Mesa County residents can currently afford a median priced home at the rate of $250,000.
- Area wages have been increasing for the past two year but are still substantially below those of other areas in Colorado. The most recent comparison from the Mesa County Workforce Center indicated that between third quarter of 2017 and third quarter of 2018 (most recent data available) the average wage increased a modest 4% to $854 per week. Such wages coupled with the increased fees for residential development will make housing even more unaffordable for the city's residents.
- According to information from Elizabeth Peetz, Government Affairs Director, Colorado Association of Realtors as of May 2019 **32,000 households on the Western Slope** are weighed down by the cost of housing which means they are already paying more that 30% of their income for housing. This includes renters.
- Representatives of the development community have asked that all fees be brought to the table for consideration. However, a proposed increase in water tap fees was only introduced to them in July and were not factored into our other discussions. It is our understanding that the proposal will take current tap fees from $1,000 to over $5,000 for the smallest tap fee on nonresidential projects.

As a result of our meetings and the additional information that we have been able to gather along with recognizing the need for increased

infrastructure capacity and an environment that does not stifle growth our organizations are proposing the following:

- Implement 50% of proposed increase in TCP (transportation capacity payment) fees for residential developments and commercial developments that were presented and agreed to during Discussion Meeting #4 on July 29th over a 3-year schedule. At that time once again review the fee to determine if adjustments should be made. This will increase fees to a manageable level acceptable by the development community without halting progress. The review will help allow for adjustments based on current market prices and needs.

- Implement 50% of the proposed fee increase for parks presented at Discussion Meeting #4 on July 29th over the next three years with a review and recommendation back to Council at the end of that period regarding fee adjustments.

- Do not implement any new fees (i.e. fire, police and facilities) at this time.

Thank you for your continued collaboration on this proposal and the consideration of the suggested solution by the collective stakeholders in Grand Junction.

Housing and Building Association of Northwest Colorado

Grand Junction Chamber of Commerce

Grand Junction Area Realtors Assn.

Western Colorado Contractors Association

Associated Members for Growth and Development

GRAND JUNCTION DEVELOPMENT IMPACT FEE COMPARATIVE ANALYSIS

GRAND JUNCTION, COLORADO

PREPARED FOR:

GRAND JUNCTION AREA REALTOR ASSOCIATION

August 6, 2019

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9033 East Easter Place, Suite 116
Centennial, CO 80112
www.metrostudy.com
Phone: 720.493.2020 Fax: 720.493.9222

August 6, 2019

Mrs. Diane Schwenke
Grand Junction Area Realtor Association
2743 Crossroads Blvd
Grand Junction, CO 81506

RE: Grand Junction Development Impact Fee Comparative Analysis ("Analysis")

Dear Mrs. Schwenke:

Metrostudy is pleased to present this Analysis of the development impact fees for comparative municipalities to the City of Grand Junction, Colorado. We have provided a detailed analysis of the development impact fees as well as accompanying demographic and housing, and mill levy and tax information on the following pages and Appendix for the Grand Junction Area Realtor Association ("Client"). This Analysis was conducted by Steven Saules, Manager. Metrostudy has been engaged in analyzing residential market conditions with its proprietary lot-by-lot survey nationally since 1975, and locally within the state of Colorado since 2001.

Please contact us at your convenience with any comments or questions regarding this Analysis, or with any other matters relevant to your real estate market research needs.

Respectfully Submitted,

Metrostudy

metrostudy

The following Grand Junction Development Impact Fee Comparative Analysis included herein summarizes the total estimated development impact fees associated with the new construction of two (2) property types ("Property Types") within the City of Grand Junction, Colorado ("City"), as well as within five (5) comparative Colorado municipalities. The Property Types include a 2,000 square foot single-family detached home and a 10,000 square foot single-structure office building. The five municipalities include the Town/City of Fruita, Montrose, Gunnison, Pueblo, and Sterling, Colorado (collectively the "Municipalities"). The development impact fees are collected for capital infrastructure items categorized for; however, not limited to police, fire, school, transportation, parks and recreation, public safety, etc., as well as those development impact fees pertaining to water and sewer plant investment fees exclusive of raw water rights (collectively the "DIFs"). The current Municipality DIFs are summarized in **Table-1** of the Analysis, while the detailed analysis for both Property Types is shown in **Table-2** and in **Table-3** on the following pages.

The current DIFs included in this Analysis are based on estimates and calculations derived from the applicable Municipalities' 2019 or most current fee schedules and Municipality provided data. The DIFs were affirmed through multiple iterations of research and conversations with Municipality staff and associated external entities.

Additionally, Metrostudy has reviewed and provided accompanying demographic and housing, and mill levy and tax information in order to further the Client's understanding of how the Municipalities' DIFs truly compare within the context of additional housing market affordability factors. Certain DIFs shown in the Analysis required different calculations depending on the Municipality.

Finally, the assumptions upon which all DIFs in this Analysis were estimated is shown by Product Type in **Exhibit-A**, while a map of the Municipalities' locations is detailed in **Exhibit-B** of the Appendix. As shown below, the DIFs associated with the construction of a new 2,000 square foot single-family detached home, and a new 10,000 square foot office building in Grand Junction are approximately 52.8 percent and 27.3 percent higher than that of the average of the comparative Municipalities, respectively.

Table-1: Summary of Total Development Impact Fees by Municipality

Total Development Impact Fees ($)	Fruita	Montrose	Gunnison	Pueblo	Sterling	Average	Grand Junction	Difference (%)
Single-Family Detached								
Metric: $/unit								
Total ($)	23,315	11,554	7,500	8,227	5,040	11,127	17,000	52.8%
Office								
Metric: $/building								
Total ($)	53,903	14,200	13,500	9,800	7,623	19,805	25,216	27.3%

Source: Municipality/DPFG

Table-2: Single-Family Detached Development Impact Fee Detailed Analysis ($/unit)

Development Impact Fees*	Fruita**	Montrose***	Gunnison	Pueblo****	Sterling*****	Average	Grand Junction******	Difference
Demographics and Housing	[1]	[1]	[1]	[1]	[1]		[1]	
Population	13,463	20,328	6,602	111,368	11,271	27,505	59,121	-
Households	5,035	8,300	2,583	45,209	4,867	13,199	24,495	-
Median Household Income ($)	56,018	44,801	45,219	37,453	39,519	44,602	48,844	-
Average New Home Price (All) ($)	372,509	299,771	299,000	263,409	251,579	297,254	311,739	-
Annual Income to Home Price	**15.0%**	**14.9%**	**15.1%**	**14.2%**	**15.7%**	**15.0%**	**15.7%**	**4.4%**
Annual Taxes	[2]	[2]	[2]	[2]	[2]		[2]	
Mill Levy	82.2370	70.2120	55.1480	88.7630	77.4420	74.7604	69.3920	-
Average New Home Price (All) ($)	372,509	299,771	299,000	263,409	251,579	297,254	311,739	-
Annual Taxes ($)	2,206	1,515	1,187	1,683	1,403	1,600	1,558	-
Annual Taxes to Home Price	**0.59%**	**0.51%**	**0.40%**	**0.64%**	**0.56%**	**0.54%**	**0.50%**	**-7.2%**
Development Impact Fees ($)	[3,4,5]	[6,7]	[8]	[9,10,11]	[12]		[5,13,14]	
Chip and Seal	80	-	-	-	-	-	-	-
Drainage	1,706	-	-	-	-	-	-	-
Inspection	-	-	-	-	-	-	-	-
Police	-	1,000	-	-	-	-	-	-
Parks, Open Space and Trails	1,860	1,575	-	-	-	-	-	-
Public Safety Fee	-	-	-	740	-	-	-	-
School	920	679	-	-	-	-	920	-
Transportation, Street, Road	3,200	1,500	-	-	-	-	2,554	-
Water Plant Investment Fees	8,750	2,635	2,500	5,747	2,690	-	8,750	-
Sewer Plant Investment Fees	6,800	4,165	5,000	1,740	2,350	-	4,776	-
Total Per Unit	**23,315**	**11,554**	**7,500**	**8,227**	**5,040**	**11,127**	**17,000**	**52.8%**
School District	*Mesa County Valley 51*	*Montrose County RE-1J*	*Gunnison Watershed RE1J*	*Pueblo City 60*	*RE-1 Valley*		*Mesa County Valley 51*	-
Fee	-	-	-	-	-	-	-	
Source	Diana Sirko 970-254-5100	Laurie Laird 970-252-7902	Leslie Nichols 970-641-7770	Dave Horner 719-549-7113	Jan Delay 970-522-0792		Diana Sirko 970-254-5100	
Fire District	*Lower Valley Fire Protection*	*Montrose Fire Protection*	*Gunnison Volunteer Fire Dept.*	*Pueblo Fire Dept.*	*Sterling Fire Dept.*		*Grand Junction Fire Dept.*	-
Fee	-	-	-	-	-	-	-	
Source	Frank Cavaliere 970-858-3133	Lindsey Wiley 970-249-9181	Eric Jansen 970-641-8090	James Riddell 719-553-2830	Levon Ritter 970-522-3823		Ken Watkins 970-549-5801	
Police District	*Fruita City Police Dept.*	*Montrose Police Dept.*	*Gunnison Police Dept.*	*Pueblo Police Dept.*	*Sterling Police Dept.*		*Grand Junction Police Dept.*	-
Fee	-	-	-	-	-	-	-	
Source	Glenda Willis 970-858-3008	Tim Cox 970-252-5200	Keith Robinson 970-641-8200	Troy Davenport 719-553-2420	Tyson Kerr 970-522-3512		Doug Shoemaker 970-242-6707	
Total DIF Per Unit	**23,315**	**11,554**	**7,500**	**8,227**	**5,040**	**11,127**	**17,000**	**52.8%**
DIF to Home Price	**6.3%**	**3.9%**	**2.5%**	**3.1%**	**2.0%**	**3.5%**	**5.5%**	**53.6%**

Source

(1) Metrostudy, Property Analysis, Steven Saules - 720-493-2020
(2) County GIS mapping system and Colorado Department of Local Affairs
(3) Fruita, Planning, Henry Hemphill - 970-858-0786
(4) Fruita, Engineering, Sam Atkins - 970-858-8377
(5) Ute Water Conservancy District, Jim Daugherty - 970-242-7491
(6) Montrose, Planning, Archie Byers - 970-240-1437
(7) Montrose, Engineering, Scott Murphy - 970-240-1498
(8) Gunnison, Building, Eric Jansen - 970-641-8090
(9) Pueblo, Planning, Alan Lamberg - 719-553-2241
(10) Pueblo, Land Use, Scott Hobson - 719-553-2244
(11) Pueblo, Board of Water Works, Rhonda Navarette - 719-584-0270
(12) Sterling, Public Works, George Good - 970-522-9700
(13) Grand Junction, Community Development, Lance Gloss - 970-244-1422
(14) Grand Junction, Residential Sewer, Amy Castaneda - 970-256-4027
(15) Grand Junction, Commercial Water/Sewer, Debi Overholt - 970-244-1520

Footnotes (residential)

*DIFs may vary by subdivision or subdivision filing within each jurisdiction. Metrostudy has included all known DIFs regardless of their inclusions or exclusions across subdivisions. Metrostudy has only utilized neighborhood specific DIFs when DIFs are not uniform across the municipality. Neighborhood or development agreement specific DIFs, DIF waivers, land dedication requirements, and/or DIF credits may impact actual DIFs within each jurisdiction. DIFs do not include facility fees where developers may be partially reimbursed from builders for initial upfront infrastructure investments. Water and sewer plant investment fees do not include additional acquisition costs for raw water rights. Any applicable landscaping/irrigation costs are based on T-ing off of the main water line. Residential home sales prices based on 7/1/2018 to 6/30/2019 time period. Colorado residential assessment rate of 7.20% and Municipality mill levy rates are based on 2018 figures. DIFs may be collected at time of annexation, platting, planning approvals, building permit issuance, certificate of occupancy, or other.

**(Fruita) Chip and seal DIFs based on actual costs for Brannon Estates Filing 2C with 10 lots. Drainage DIFs ($17,060 across 10 lots) are shown above; however, were exempted from Brannon Estates due to developer funding of detention ponds. DIFs payable at time of planning approval for issuance of building permit.

***(Montrose) Transportation DIFs based on building permit fee estimate for Estates of Stone Ridge Filing 2. Park DIFs were exempted from the development due to developer land dedication, which is standard. DIFs payable at time of building permit issuance. Police DIFs were not confirmed with documents but over the phone at approximately $1,000 per unit/lot.

****(Pueblo) At subdivision platting there is park dedication requirement of 8% of land (excluding right of way); however, most projects in recent times have dedicated land. City mitigates DIF costs by utilizing a facility fee. DIFs negotiated at annexation and apply only to those properties being annexed into the City. Transportation Department may assess traffic DIFs when a new building triggers new traffic signals, signs and/or pavement markings required by a subdivision improvement agreement (SIA); however, there are not recent examples that the municipality can provide. Public Safety DIFS based on 0.37 cents per square foot of residential structure.

*****(Sterling) Park and/or street site requirements are development specific; requirements are not payments in lieu or DIFs.

******(Grand Junction) Transportation DIFs may be deferred prior to the issuance of a certificate of occupancy. DIFs payable at time of planning approval for issuance of building permit.

Table-3: Office Development Impact Fee Detailed Analysis ($/building)

Development Impact Fees*	Fruita**	Montrose***	Gunnison	Pueblo****	Sterling*****	Average	Grand Junction******	Difference
Demographics	[1]	[1]	[1]	[1]	[1]		[1]	
Population	13,463	20,328	6,602	111,368	11,271	27,505	59,121	-
Households	5,035	8,300	2,583	45,209	4,867	13,199	24,495	-
Mill Levy	[2]	[2]	[2]	[2]	[2]		[2]	
Mill Levy	82.2370	70.2120	55.1480	88.7630	84.6600	-	74.8040	-
Total	**82.2370**	**70.2120**	**55.1480**	**88.7630**	**84.6600**	**76.2040**	**74.8040**	**-1.8%**
Development Impact Fees ($)	[3,4,5]	[6,7]	[8]	[9,10,11]	[12]		[13,15]	
Chip and Seal	-	-	-	-	-	-	-	-
Drainage	17,058	-	-	-	-	-	-	-
Inspection	-	-	-	-	-	-	550	-
Police	-	-	-	-	-	-	-	-
Parks, Open Space and Trails	-	-	-	-	-	-	-	-
Public Safety Fee	-	-	-	1,060	-	-	-	-
School	-	-	-	-	-	-	-	-
Transportation, Street, Road	19,545	-	-	-	-	-	18,640	-
Water Plant Investment Fees	10,500	4,140	4,500	5,830	3,940	-	1,250	-
Sewer Plant Investment Fees	6,800	10,060	9,000	2,910	3,683	-	4,776	-
Total Per Unit	**53,903**	**14,200**	**13,500**	**9,800**	**7,623**	**19,805**	**25,216**	**27.3%**
School District	*Mesa County Valley 51*	*Montrose County RE-1J*	*Gunnison Watershed RE1J*	*Pueblo City 60*	*RE-1 Valley*		*Mesa County Valley 51*	-
Fee	-	-	-	-	-	-	-	
Source	Diana Sirko 970-254-5100	Laurie Laird 970-252-7902	Leslie Nichols 970-641-7770	Dave Horner 719-549-7113	Jan Delay 970-522-0792		Diana Sirko 970-254-5100	
Fire District	*Lower Valley Fire Protection*	*Montrose Fire Protection*	*Gunnison Volunteer Fire Dept.*	*Pueblo Fire Dept.*	*Sterling Fire Dept.*		*Grand Junction Fire Dept.*	-
Fee	-	-	-	-	-	-	-	
Source	Frank Cavaliere 970-858-3133	Lindsey Wiley 970-249-9181	Eric Jansen 970-641-8090	James Riddell 719-553-2830	Levon Ritter 970-522-3823		Ken Watkins 970-549-5801	
Police District	*Fruita City Police Dept.*	*Montrose Police Dept.*	*Gunnison Police Dept.*	*Pueblo Police Dept.*	*Sterling Police Dept.*		*Grand Junction Police Dept.*	-
Fee	-	-	-	-	-	-	-	
Source	Glenda Willis 970-858-3008	Tim Cox 970-252-5200	Keith Robinson 970-641-8200	Troy Davenport 719-553-2420	Tyson Kerr 970-522-3512		Doug Shoemaker 970-242-6707	
Total DIF Per Building	**53,903**	**14,200**	**13,500**	**9,800**	**7,623**	**19,805**	**25,216**	**27.3%**

Source

(1) Metrostudy, Property Analysis, Steven Saules - 720-493-2020
(2) County GIS mapping system and Colorado Department of Local Affairs
(3) Fruita, Planning, Henry Hemphill - 970-858-0786
(4) Fruita, Engineering, Sam Atkins - 970-858-8377
(5) Ute Water Conservancy District, Jim Daugherty - 970-242-7491
(6) Montrose, Planning, Archie Byers - 970-240-1437
(7) Montrose, Engineering, Scott Murphy - 970-240-1498
(8) Gunnison, Building, Eric Jansen - 970-641-8090
(9) Pueblo, Planning, Alan Lamberg - 719-553-2241
(10) Pueblo, Land Use, Scott Hobson - 719-553-2244
(11) Pueblo, Board of Water Works, Rhonda Navarette - 719-584-0270
(12) Sterling, Public Works, George Good - 970-522-9700
(13) Grand Junction, Community Development, Lance Gloss - 970-244-1422
(14) Grand Junction, Residential Sewer, Amy Castaneda - 970-256-4027
(15) Grand Junction, Commercial Water/Sewer, Debi Overholt - 970-244-1520

Footnotes (office)

*DIFs may vary by area or filing within each jurisdiction. Metrostudy has included all known DIFs regardless of their inclusions or exclusions across areas. Metrostudy has only utilized location specific DIFs when DIFs are not uniform across the municipality. Development agreement specific DIFs, DIF waivers, land dedication requirements, and/or DIF credits may impact actual DIFs within each jurisdiction. Does not include facility fees. Water and sewer plant investment fees do not include additional acquisition costs for raw water rights. Any applicable landscaping/irrigation costs are based on T-ing off of the main water line. Colorado mill levy rates are based on 2018 figures. DIFs may be collected at time of annexation, platting, planning approvals, building permit issuance, certificate of occupancy, or other.

**(Fruita) DIFs payable at time of planning approval for issuance of building permit. The base rate for transportation DIFs for a 10,000 square foot commercial office buildings is $1,589 per 1,000 square feet multiplied by a 1.23 factor.

***(Montrose) Park and/or street site requirements are development specific; requirements are not payments in lieu or DIFs.

****(Pueblo) Drainage DIFs have the potential to exist; however, recent projects reviewed by the municipality have mitigated these costs by developer management of drainage slope on site as opposed to entering into discussions of associated DIFs; this form/process is expected to continue. Public Saftey DIFS based on 0.106 cents per square foot of commercial structure.

*****(Sterling) Park and/or street site requirements are development specific; requirements are not payments in lieu or DIFs.

******(Grand Junction) Commercial DIFs are project specific. Commercial sewer fees were estimated based on 20 employees and 500 square feet of space per employee. Transportation DIFs may be deferred prior to the issuance of a certificate of occupancy and are based on $1,864 per 1,000 square feet. DIFs payable at time of planning approval for issuance of building permit.

Disclaimer:

The development impact fees shown in this Analysis will vary depending on a multitude of factors, including; however, not limited to development timing, specific municipality and/or subdivision and/or subdivision phase/filing, school/fire/police jurisdictions development impact fee collection procedures, project size and square feet/acreage, number of units or buildings, water and sewer line requirements, landscaped area and/or necessity for additional water lines, impervious area, etc. The development impact fees shown in the Analysis were based on the Municipalities 2019 or most recent fee schedule, which may not be revised after the production of this Analysis. This Analysis did not consider timeline and upcoming changes to the development impact fees shown.

It is understood by the Client that Metrostudy can make no guarantees about the findings and/or recommendations in this Analysis. To protect the Client and to assure that Metrostudy's research results will continue to be accepted as objective and impartial by the business community, Metrostudy's fee for this Study is in no way dependent upon the specific conclusions reached or the nature of the advice given in this Analysis.

Reasonable efforts have been made to ensure that the data contained in this Analysis reflect the most accurate and timely information possible and are believed to be reliable. This Analysis is based on estimates, assumptions, and other information developed by Metrostudy from its independent research effort, general knowledge of the industry and consultations with the Client and its representatives. No responsibility is assumed for inaccuracies in reporting by the Client, its agents and representatives or any other data source used in preparing or presenting this Analysis. This Analysis is based on market-wide information that was current as of the production of the Analysis. While every reasonable effort was made to collect this information and it is deemed reliable, it cannot be guaranteed for accuracy. Metrostudy makes no warranty or representation that any of the estimated values or results in this Study will be achieved, and actual results will vary depending on project and development specific details.

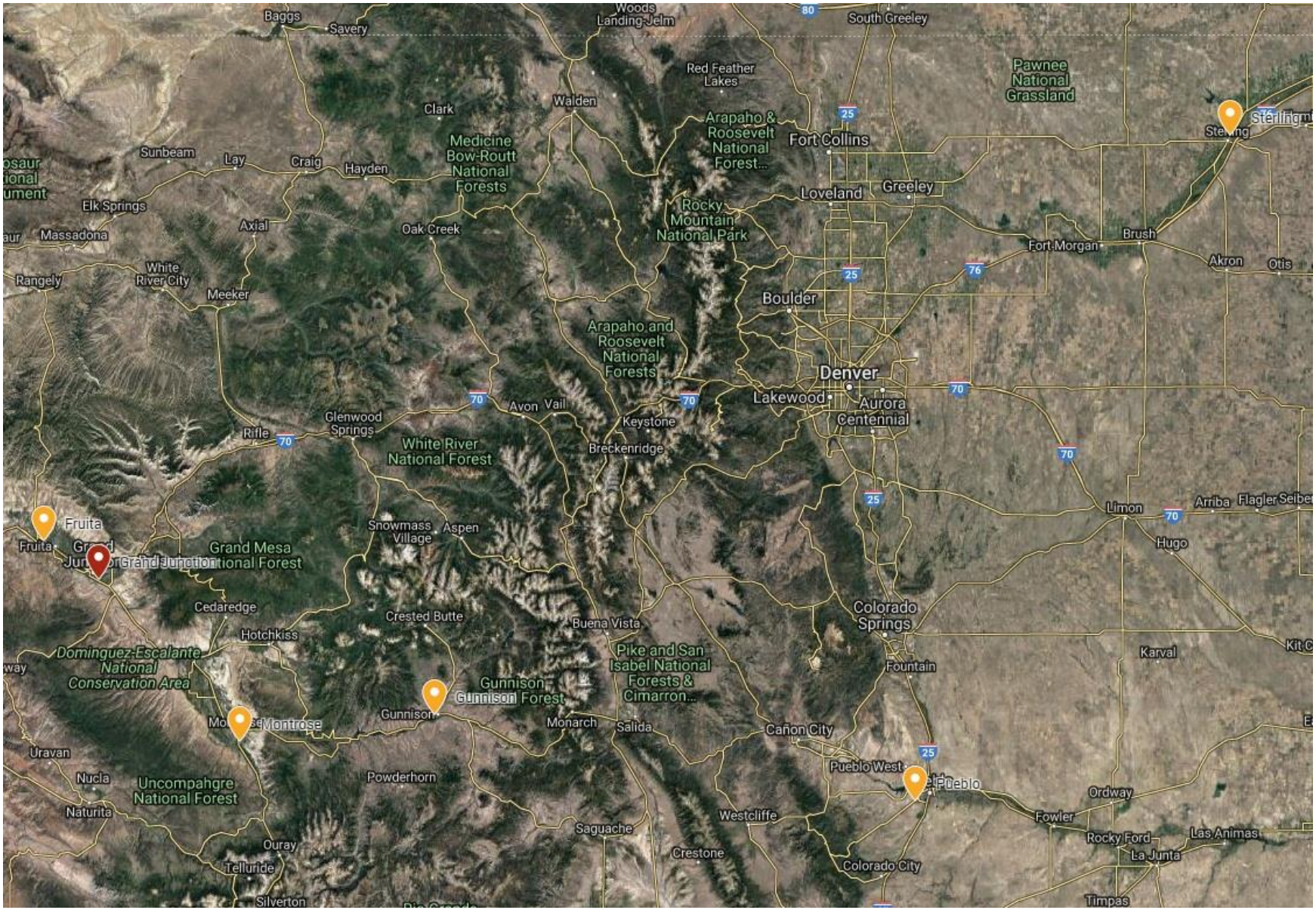
Appendix:

Exhibit A: Development Impact Fee Assumptions

Assumptions	Single-Family Detached	Office
Square Feet	2,000	10,000
Project Acres	0.25	0.50
Project Impervious Percent	50%	90%
Water Tap Size	3/4"	1"
Project Address / Location		
Fruita	1518 Myers Ln, Fruita, CO 81521	1672 Highway 6 50, Fruita, CO 81521
Montrose	3400 Ridgeline Dr, Montrose, CO 81401	1546 E Oak Grove Rd, Montrose, CO 81401
Gunnison	1499 W Gunnison Ave, Gunnison, CO 81230	499 W Georgia Ave, Gunnison, CO 81230
Pueblo	5601 Bellagio Way, Pueblo, CO 81005	718 W 6th St, Pueblo, CO 81003
Sterling	832 Nicole Rd, Sterling, CO 80751	218 N 2nd St, Sterling, CO 80751
Grand Junction	554 Crestwood Ave, Grand Junction, CO 81504	398 I-70BL, Grand Junction, CO 81501

Source: Municipality/Metrostudy

Exhibit B: Development Impact Fee Municipality Map



This Analysis was prepared by Metrostudy, a consulting firm and the nation's leading provider of primary and secondary market information to the housing, retail, and related industries nationwide.

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All fees are for single-family detached units of any size unless Communities	General Government	Police		Parks & Recreation		Schools	Transp.	Storm Drainage		Fire	Trails	Water		Sewer		Fire District	Recreation District
Aurora	$189	$94		$240			$589	$1,242	per acre	$92		$0	[3]	$550		No	No
Aurora - 2019#	$235	$116		$1,901			$612	$115								No	No
Castle Rock - 2019(Single family housing unit of 2,500 sq ft)	$355	$542		$3,720			$7,004	$1,098								No	No
Castle rock (Single-family detached or attached unit of 2,000-2,499 sq ft)	$325	$497		$3,406			$7,004	$843		$1,005						No	No
Fort Collins	$523	$220		$1,743			$3,112	$1,548	[4]	$440		$730 + $0.36 per sq ft of lot area	[5]	$3,537		Yes 10.95 mills	No
Glenwood Springs**				$5,775		$2,471				$1,290		$5,004	[6]	$5,380		No	No
Golden ##												$20,742		$3,486		No	No
Greeley (Single-family residence)	-	$135		$3,131			$4,194	$392		$603	$434	$10,800	[1]	$5,700	[2]		
Littleton - 2019	$1,904	$399		-			$1,049	$1,170								Yes 9.25 mills	Yes 8.496 mills
Lone Tree - 2018, TischlerBise Proposed Fee*	$1,152	$619		$7,286			-	-								Yes 9.25 mills	Yes 8.496 mills
Longmont (For any residential unit between 1,601-2,400 sq ft)				$6,962	[10]		$1,746	$923								No	No
Montrose %		$919	[8]	$1,575		$679						$1,882	[9]	$3,889	[9]	Yes 8.56 mills	Yes 4.5 mills
Parker - 2019 Max Supportable Fee	$381	$387		$5,289			$3,063	$293									
Westminster				$1,993		$876						$15,039	[7]	$5,733	[7]	No	No

Sources: Fees have been gathered from localities' websites and studies

[1], [2], [5] 'Plant Investment Fee' based on 3/4" tap size for residential units

[3] Water transmission development fee for extension of water transmission facilities is included in the water service connection fee; water connection fee = $6100 for single-family detached units of 1-2 bathrooms, not including half baths

[4] Example fee for a single-family unit with lot soze or 8,600 sq ft plus 6,156 sq ft of common area. This 'Plant Invertment Fee' is based on a base rate of $9,142 per gross acre

[6] Fee for 1 EQR, or the equivalent of a single-family unit up to 3BR and 2BA in size.

[7] Fees for single-family detached units with < 4 BR; fee includes treatment and transportation costs, but does not include connection charge

[8] Known as the City Operations and Police Services (COPS) Fee - to be used for both general government and police services

[9] Capacity charge, but does not include connection fee

[10] Combination of Recreation Buildings Fee ($1086.85) and Parks Improvement Fee ($8573.83)

* The fees listed for the City of Lone Tree

** Impact fees passed by Council

Most recent development fee schedule is from January 1, 2014

% Does not adopt impact fees in according to Colorado statue requirements; so the fees are not technically impact fees

Park Development Fee calculated as the fee-in-lieu option for park development. All fees listed are assessed on

Grand Junction Planning Commission

Workshop Session

Item #2.

Meeting Date: September 19, 2019

Presented By: David Thornton, Principal Planner

Department: Community Development

Submitted By:

Information

SUBJECT:

Review Forthcoming Agenda

RECOMMENDATION:

EXECUTIVE SUMMARY:

BACKGROUND OR DETAILED INFORMATION:

SUGGESTED MOTION:

Attachments

None